

FANUC Robot series

**R-30iB/R-30iB Mate/R-30iB Plus/R-30iB Mate Plus/
R-30iB Compact Plus/R-30iB Mini Plus CONTROLLER**

Alarm Code List

OPERATOR'S MANUAL

B-83284EN-1/08

- **Original Instructions**

Thank you very much for purchasing FANUC Robot.

Before using the Robot, be sure to read the "FANUC Robot series SAFETY HANDBOOK (B-80687EN)" and understand the content.

- No part of this manual may be reproduced in any form.
- All specifications and designs are subject to change without notice.

The products in this manual are controlled based on Japan's "Foreign Exchange and Foreign Trade Law". The export from Japan may be subject to an export license by the government of Japan.

Further, re-export to another country may be subject to the license of the government of the country from where the product is re-exported. Furthermore, the product may also be controlled by re-export regulations of the United States government.

Should you wish to export or re-export these products, please contact FANUC for advice.

In this manual, we endeavor to include all pertinent matters. There are, however, a very large number of operations that must not or cannot be performed, and if the manual contained them all, it would be enormous in volume. It is, therefore, requested to assume that any operations that are not explicitly described as being possible are "not possible".

SAFETY PRECAUTIONS

This chapter describes the precautions which must be followed to enable the safe use of the robot. Before using the robot, be sure to read this chapter thoroughly.

For detailed functions of the robot operation, read the relevant operator's manual to understand fully its specification.

For the safety of the operator and the system, follow all safety precautions when operating a robot and its peripheral equipment installed in a work cell.

For safe use of FANUC robots, you must read and follow the instructions in the “FANUC Robot series SAFETY HANDBOOK (B-80687EN)”.

1 PERSONNEL

Personnel can be classified as follows.

Operator:

- Turns the robot controller power ON/OFF
- Starts the robot program from operator panel

Programmer or Teaching operator:

- Operates the robot
- Teaches the robot inside the safeguarded space

Maintenance technician:

- Operates the robot
 - Teaches the robot inside the safeguarded space
 - Performs maintenance (repair, adjustment, replacement)
-
- The operator is not allowed to work in the safeguarded space.
 - The programmer or teaching operator and maintenance technician are allowed to work in the safeguarded space. Work carried out in the safeguarded space include transportation, installation, teaching, adjustment, and maintenance.
 - To work inside the safeguarded space, the person must be trained on proper robot operation.

Table 1 (a) lists the work outside the safeguarded space. In this table, the symbol “○” means the work allowed to be carried out by the specified personnel.

Table 1 (a) List of work outside the Safeguarded Space

	Operator	Programmer or Teaching operator	Maintenance technician
Turn power ON/OFF to Robot controller	○	○	○
Select operating mode (AUTO/T1/T2)		○	○
Select remote/local mode		○	○
Select robot program with teach pendant		○	○
Select robot program with external device		○	○
Start robot program with operator's panel	○	○	○
Start robot program with teach pendant		○	○
Reset alarm with operator's panel		○	○
Reset alarm with teach pendant		○	○
Set data on teach pendant		○	○
Teaching with teach pendant		○	○
Emergency stop with operator's panel	○	○	○
Emergency stop with teach pendant	○	○	○
Operator's panel maintenance			○
Teach pendant maintenance			○

During robot operation, programming and maintenance, the operator, programmer, teaching operator and maintenance technician take care of their safety using at least the following safety protectors:

- Use clothes, uniform, overall adequate for the work
- Safety shoes
- Helmet

2 DEFINITION OF SAFETY NOTATIONS

To ensure the safety of users and prevent damage to the machine, this manual indicates each precaution on safety with "WARNING" or "CAUTION" according to its severity. Supplementary information is indicated by "NOTE". Read the contents of each "WARNING", "CAUTION" and "NOTE" before using the robot.

Symbol	Definitions
 WARNING	Used if hazard resulting in the death or serious injury of the user will be expected to occur if he or she fails to follow the approved procedure.
 CAUTION	Used if a hazard resulting in the minor or moderate injury of the user, or equipment damage may be expected to occur if he or she fails to follow the approved procedure.
NOTE	Used if a supplementary explanation not related to any of WARNING and CAUTION is to be indicated.

TABLE OF CONTENTS

SAFETY PRECAUTIONS	s-1
1 PREFACE.....	1
1.1 ABOUT MANUAL	1
2 OVERVIEW	3
2.1 OVERVIEW	3
2.2 ERROR CODE PROPERTIES	4
2.2.1 Overview	4
2.2.2 Facility Name and Code	8
2.2.3 Severity Descriptions	10
2.2.4 Error Message Text	13
3 ALARM RECOVERY.....	15
3.1 GENERAL ALARM RECOVERY PROCEDURES	15
3.1.1 Overview	15
3.1.2 Overtravel Release.....	15
3.1.3 Hand Breakage Recovery	17
3.1.4 Pulsecoder Alarm Recovery	17
3.1.5 Chain Failure Detection Error Recovery	19
4 ALARM CODES	21
4.1 A	21
4.1.1 ACAL Alarm Code.....	21
4.1.2 APSH Alarm Code	31
4.1.3 ARC Alarm Code	43
4.1.4 ASBN Alarm Code.....	61
4.1.5 ATGP Alarm Code	68
4.1.6 ATZN Alarm Code.....	68
4.2 B	72
4.2.1 BBOX Alarm Code	72
4.2.2 BRCH Alarm Code.....	74
4.3 C	76
4.3.1 CALM Alarm Code.....	76
4.3.2 CD Alarm Code.....	79
4.3.3 CMND Alarm Code	81
4.3.4 CNTR Alarm Code.....	83
4.3.5 COND Alarm Code	84
4.3.6 COPT Alarm Code	85
4.3.7 CPMO Alarm Code	87
4.3.8 CVIS Alarm Code	94
4.4 D	152
4.4.1 DIAG Alarm Code	152
4.4.2 DICT Alarm Code	153
4.4.3 DJOG Alarm Code	156
4.4.4 DMDR Alarm Code	157
4.4.5 DMER Alarm Code.....	158
4.4.6 DNET Alarm Code.....	162

4.4.7	DPMO Alarm Code.....	172
4.4.8	DTBR Alarm Code.....	173
4.4.9	DX Alarm Code.....	174
4.5	E.....	175
4.5.1	ELOG Alarm Code.....	175
4.6	F.....	176
4.6.1	FFL Alarm Code.....	176
4.6.2	FIG Alarm Code.....	183
4.6.3	FILE Alarm Code.....	185
4.6.4	FLPY Alarm Code.....	193
4.6.5	FORC Alarm Code.....	194
4.6.6	FPLN Alarm Code.....	218
4.6.7	FRSY Alarm Code.....	219
4.6.8	FXTL Alarm Code.....	221
4.7	H.....	230
4.7.1	HOST Alarm Code.....	230
4.7.2	HRTL Alarm Code.....	248
4.8	I.....	253
4.8.1	IB-S Alarm Code.....	253
4.8.2	ICRZ Alarm Code.....	275
4.8.3	IFPN Alarm Code.....	276
4.8.4	INTP Alarm Code.....	278
4.8.5	IRPK Alarm Code.....	314
4.8.6	ISD Alarm Code.....	329
4.8.7	ISDT Alarm Code.....	338
4.9	J.....	338
4.9.1	JOG Alarm Code.....	338
4.10	K.....	341
4.10.1	KALM Alarm Code.....	341
4.11	L.....	341
4.11.1	LANG Alarm Code.....	341
4.11.2	LECO Alarm Code.....	344
4.11.3	LNTK Alarm Code.....	355
4.11.4	LRNR Alarm Code.....	361
4.11.5	LSR Alarm Code.....	362
4.11.6	LSTP Alarm Code.....	364
4.12	M.....	366
4.12.1	MACR Alarm Code.....	366
4.12.2	MARL Alarm Code.....	367
4.12.3	MASI Alarm Code.....	369
4.12.4	MCTL Alarm Code.....	370
4.12.5	MEMO Alarm Code.....	372
4.12.6	MENT Alarm Code.....	379
4.12.7	MHND Alarm Code.....	380
4.12.8	MOTN Alarm Code.....	388
4.12.9	MUPS Alarm Code.....	427
4.13	O.....	428
4.13.1	OPTN Alarm Code.....	428
4.13.2	OS Alarm Code.....	431
4.14	P.....	432
4.14.1	PALL Alarm Code.....	432
4.14.2	PALT Alarm Code.....	449
4.14.3	PICK Alarm Code.....	450

4.14.4	PLUG Alarm Code	453
4.14.5	PMON Alarm Code	453
4.14.6	PNT1 Alarm Code	454
4.14.7	PNT2 Alarm Code	525
4.14.8	PRIO Alarm Code	582
4.14.9	PROC Alarm Code	614
4.14.10	PROF Alarm Code	615
4.14.11	PROG Alarm Code	616
4.14.12	PTPG Alarm Code	621
4.14.13	PWD Alarm Code	622
4.15	Q	627
4.15.1	QMGR Alarm Code	627
4.16	R	627
4.16.1	RIPE Alarm Code	627
4.16.2	ROUT Alarm Code	629
4.16.3	RPC Alarm Code	631
4.16.4	RPM Alarm Code	632
4.16.5	RTCP Alarm Code	633
4.17	S	634
4.17.1	SCIO Alarm Code	634
4.17.2	SDTL Alarm Code	635
4.17.3	SEAL Alarm Code	645
4.17.4	SENS Alarm Code	666
4.17.5	SHAP Alarm Code	667
4.17.6	SPOT Alarm Code	670
4.17.7	SPRM Alarm Code	694
4.17.8	SRIO Alarm Code	695
4.17.9	SRVO Alarm Code	696
4.17.10	SSPC Alarm Code	750
4.17.11	SVGN Alarm Code	758
4.17.12	SYST Alarm Code	793
4.18	T	821
4.18.1	TANG Alarm Code	821
4.18.2	TAST Alarm Code	823
4.18.3	TCPP Alarm Code	824
4.18.4	TG Alarm Code	826
4.18.5	THSR Alarm Code	828
4.18.6	TJOG Alarm Code	832
4.18.7	TMAT Alarm Code	833
4.18.8	TOOL Alarm Code	835
4.18.9	TPIF Alarm Code	837
4.18.10	TRAK Alarm Code	852
4.19	V	854
4.19.1	VARS Alarm Code	854
4.20	W	860
4.20.1	WEAV Alarm Code	860
4.20.2	WNDW Alarm Code	862
4.21	X	864
4.21.1	XMLF Alarm Code	864

ADDITIONAL INFORMATION

1 PREFACE

This chapter explains the manual plan and the safety precautions that must be observed in working with the FANUC Robot.

1.1 ABOUT MANUAL

About this manual

FANUC Robot series OPERATOR'S MANUAL (Basic Operation) (B-83284EN) describes how to operate the FANUC Robot, an all-purpose compact robot. It is controlled by the FANUC R-30iB, R-30iB Mate, R-30iB Plus, R-30iB Mate Plus and R-30iB Compact Plus controller (called the robot controller hereinafter) containing the FANUC Robot software. This manual describes the error code listings, causes, and remedies.

Related manuals

The following manuals are available:

Robot controller	OPERATOR'S MANUAL (Alarm Code List) B-83284EN-1 (This manual)	Topics: Error code listings, causes, and remedies. Use: Installing and activating the system, connecting the mechanical unit to the peripheral device and maintenance the robot.
	OPERATOR'S MANUAL (Basic Operation) B-83284EN	Intended readers: Operators responsible for designing, introducing, operating, and adjusting the robot system at the work site. Topics: Functions, operations and the procedure for operating the robot. Programming procedure, interface and alarm. Use: Guide to teaching, introducing, and adjusting the robot at the work site, and application designing.
	Optional Function OPERATOR'S MANUAL B-83284EN-2	Intended readers: Operators responsible for designing, introducing, operating, and adjusting the robot system at the work site. Topics: Description of the software optional functions. Use: Guide to teaching, introducing, and adjusting the robot at the work site, and application designing.
	Arc Welding Function OPERATOR'S MANUAL B-83284EN-3	Intended readers: Operators responsible for designing, introducing, operating, and adjusting the robot system at the work site. Topics: Description of the setting and operation for arc welding application software. Use: Guide to teaching, introducing, and adjusting the robot at the work site, and application designing.

Robot controller	Spot Welding Function OPERATOR'S MANUAL B-83284EN-4	Intended readers: Operators responsible for designing, introducing, operating, and adjusting the robot system at the work site. Topics: Description of the setting and operation for spot welding application software. Use: Guide to teaching, introducing, and adjusting the robot at the work site, and application designing.
	Dispense Function OPERATOR'S MANUAL B-83284EN-5	Intended readers: Operators responsible for designing, introducing, operating, and adjusting the robot system at the work site. Topics: Description of the setting and operation for dispense application software. Use: Guide to teaching, introducing, and adjusting the robot at the work site, and application designing.
	MAINTENANCE MANUAL B-83195EN (for R-30iB, R-30iB Plus), B-83525EN (for R-30iB Mate, R-30iB Mate Plus) B-84035EN (R-30iB Compact Plus)	Topics: Installing and activating the system, connecting the mechanical unit to the peripheral device and maintenance the robot.
Mechanical unit	OPERATOR'S MANUAL	Topics: Installing and activating the robot, connecting the mechanical unit to the controller, maintaining the robot. Use: Guide to installation, activation, connection, and maintenance.

2 OVERVIEW

2.1 OVERVIEW

Errors occur because of

- Hardware problems - a broken cable or tooling
- Software problems - incorrect program or data
- External problems - an open safety door or an overtravel has occurred.

Depending on the severity of the error, you must take certain steps to recover from it.

A complete listing of error codes is provided in this manual. Use Procedure 2-1 as the recommended error recovery procedure.

Some errors require minimal corrective action to recover from them. Others require procedures that are more involved. The first step in the error recovery process is to determine the kind and severity of the error. After you determine this information, the appropriate error recovery procedure can be used.

Procedure 2-1 Error Recovery Recommendation

Conditions

- An error has occurred.

Steps

- 1 Determine the cause of the error.
- 2 Correct the problem which caused the error.
- 3 Release the error.
- 4 Restart the program or robot.

If the basic recovery procedures do not clear the error, try restarting the controller. Refer to Table 2.1 for the methods of starting the controller. First try a Cold start. If Cold start does not solve the problem, try a Controlled start and then a Cold start.

Table 2.1(a) Startup Methods

Start Method	Description	Procedure
Cold start (START COLD)	Initializes changes to system variables Initializes changes to I/O setup Displays the UTILITIES Hints screen	Turn the power disconnect circuit breaker to ON. When the BMON screen is displayed on the teach pendant, press and hold [SHIFT] and [RESET] keys. After you see files beginning to load on the teach pendant screen, release all of the keys.
Controlled start (START CTRL)	Allows you to set up application specific information Allows you to install options and updates Allows you to save specific information Allows you to start KCL Allows you to print teach pendant screens and the current robot configuration Allows you to unsimulate all I/O Does not allow you to load teach pendant programs	Press [FCTN] key and select CYCLE POWER, select YES, and press [ENTER] key. When the BMON screen is displayed on the teach pendant, press and hold [PREV] and [NEXT] keys. After the Configuration Menu screen is displayed, release the keys. Select Controlled start and press [ENTER] key.

2.2 ERROR CODE PROPERTIES

2.2.1 Overview

An error code consists of:

- The facility name and error code number
- The severity of the error
- The message text of the error

Refer to Section 2.2.2, Section 2.2.3, and Section 2.2.4.

The error code will be displayed as follows:

FACILITY_NAME - ERROR_CODE_NUMBER Error message text

The Alarm Log screen displays a list of errors that have occurred. There are two ways to display alarms:

- **Automatically** using the Active Alarm screen. This screen displays only active errors (with a severity other than WARN) that have occurred since the last time RESET was pressed.
- **Manually** using the History Alarm screen. This screen displays up to the last 100 alarms, regardless of their severity. You can also display detailed information about a specific alarm.

Table 2.2.1(a) through Table 2.2.1(e) describe each kind of alarm that can be displayed.

Table 2.2.1(a) Alarm log screen

ITEM	DESCRIPTION
Alarm Status	This item allows you to monitor the entire list of active alarms. Press F3, HIST, to display the history of alarms.

Table 2.2.1(b) Application alarm screen

ITEM	DESCRIPTION
Application Alarm Status	This item allows you to monitor application alarms. Application alarms include anything that is related to the given application-specific tool that is loaded.

Table 2.2.1(c) Comm log screen

ITEM	DESCRIPTION
Comm Log Status	This item allows you to monitor any communication alarms when a communication option is loaded.

Table 2.2.1(d) Motion alarm screen

ITEM	DESCRIPTION
Motion Alarm Status	This item allows you to monitor the Motion Alarm screen status such as, SRVO alarms or any other alarms related to robot movement.

Table 2.2.1(e) System alarm screen

ITEM	DESCRIPTION
System Alarm Status	This item allows you to monitor system alarm messages such as SYST alarms.

Use Procedure 2-2 to display the Alarm Log screen.

Procedure 2-2 Displaying the Alarm Log Automatically

Conditions

- To display the Active Alarm screen automatically,
 - Set the system variable \$ER_AUTO_ENB to TRUE either on the SYSTEM Variables menu or by setting Auto display of alarm menu to TRUE on the SYSTEM Configuration menu. Then perform a Cold start.
 - An error, whose severity is either PAUSE or ABORT must have occurred.

Steps

- The following screen will automatically be displayed. It lists all errors with a severity other than WARN, that have occurred since the last controller RESET. The most recent error is number 1.

				SRVO-007 External emergency stop	
				TEST1 LINE 15 AUTO ABORTED JOINT	30%
Alarm : Active					
1/1					
				1 SRVO-007 External emergency stop	

- To toggle between the Active Alarm screen and Hist Alarm screen, press F3 (ACTIVE or HIST).
- If you are in Single Display Mode, you can toggle between wide screen and normal screen. Press F2, [VIEW] and select Wide or Normal.
- To disable the automatic display of all errors with a certain severity type, modify the value of the system variable \$ER_SEV_NOAUTO[1-5]. These errors will still be logged in the Active Alarm screen, but they will no longer force the screen to immediately become visible.

Table 2.2.1(f) Setting of \$ER_SEV_NOAUTO[]

SEVERITY	\$ER_SEV_NOAUTO[1-5]
PAUSE	\$ER_SEV_NOAUTO[1]
STOP	\$ER_SEV_NOAUTO[2]
SERVO	\$ER_SEV_NOAUTO[3]
ABORT	\$ER_SEV_NOAUTO[4]
SYSTEM	\$ER_SEV_NOAUTO[5]

TRUE: Automatic alarm screen display is enabled.

FALSE: Automatic alarm screen display is disabled.

NOTE

If a PAUSE alarm is detected, followed by an ABORT alarm, when the automatic display of a PAUSE alarm is disabled, automatic display is not performed during FAULT output.

- To disable the automatic display of a specific error code, modify the following system variables. The errors designated in the following system variables will still be logged in the Active Alarm screen, but they will no longer force the screen to immediately become visible.

Table 2.2.1(g) System variables to disable the automatic display of a specific alarm

System variables	Description
\$ER_NOAUTO. \$NOAUTO_ENB	Enables or disables the function to suppress automatic alarm screen display for an alarm specified in \$ER_NOAUTO.\$NOAUTO_CODE[] while the automatic alarm screen display is enabled. FALSE : The function to suppress automatic alarm screen display is disabled. TRUE : The function to suppress automatic alarm screen display is enabled.
\$ER_NOAUTO. \$NOAUTO_NUM	Sets the number of alarms set in \$ER_NOAUTO.\$NOAUTO_CODE[].

System variables	Description
\$ER_NOAUTO. \$NOAUTO_CODE [1 to 20]	Error number consisting of facility code and alarm number. Example <u>11 002</u> (SRVO-002 alarm) Facility code : 11, Alarm number : 002 About facility code, refer to 2.2.2 Facility Name and Code.

For the alarms listed below, which are caused by a user operation and which cause the system to stop, \$ER_NOAUTO.\$NOAUTO_ENB is set to TRUE by default. When the setting is changed to FALSE, the corresponding alarm screen is automatically displayed.

SRVO-001	Operator panel E-stop
SRVO-002	Teach pendant E-stop
SRVO-003	Deadman switch released
SRVO-004	Fence open
SRVO-005	Robot overtravel
SRVO-012	Power failure recovery

When an alarm set in \$ER_NOAUTO.\$NOAUTO_CODE[] and another alarm are detected in that order while \$ER_NOAUTO.\$NOAUTO_ENB is set to TRUE, automatic display is not performed.

• In case FAULT signal is output

If an alarm screen is displayed every time PAUSE or more severe alarms occur, display of the other screens could be prevented because an alarm screen was displayed automatically. If the screen change happened frequently, recoveries or verifications for settings in the other screen would be difficult. To avoid this, automatic alarm screen display is disabled while alarms are occurring.

FAULT signal output is detected to judge for whether alarms are occurring or not.

Regardless of whether servo power is off or on, when FAULT signal is output, automatic display is not performed even if an alarm is detected.

NOTE

1. When a PAUSE, STOP, ABORT alarm is detected, the FAULT signal is output with the servo system started. Each time an alarm reset signal is input, the FAULT signal is reset. If continuous monitoring is performed to raise an alarm, automatic alarm display may be performed at each RESET input.
2. When a SERVO or SYSTEM alarm is detected, the FAULT signal is reset after the servo system starts.

Automatic return function

The automatic return function displays the screen which was displayed until automatic screen display when an alarm reset signal is input. This function is used together with the automatic display function. The automatic return function is executed as describe below.

- When the automatic alarm screen display function is enabled, the alarm screen is automatically displayed if an alarm occurs. When the alarm is eliminated by the input of an alarm reset signal, the previous screen is automatically displayed.
- If the alarm screen is not displayed automatically because of an alarm but displayed by means of menu selection, the previous screen is not displayed even if an alarm reset signal is input.
- If another screen is displayed before an alarm reset signal is input, the automatic return function is not executed.
- The automatic return function is executed when the FAULT signal is turned off.
- If the power is turned off and on after the alarm screen is displayed by automatic alarm display function, the automatic return function does not work after the start-up. This is not affected by the start mode (cold start, hot start, etc.)

- 6 To display the screen that occurred immediately before the alarm, press RESET. If you have toggled between HIST and ACTIVE, the previous screen might not be available. When there are no active alarms (the system is not in error status), the following message will be displayed on the Active Alarm screen.

There are no active alarms.
Press F3(HIST) to enter alarm history screen.

NOTE

When you reset the system by pressing the RESET key, the alarms displayed on this screen are cleared.

Procedure 2-3 Displaying the Alarm Log Manually

Steps

- 1 Press the [MENU] key.
- 2 Select ALARM.
- 3 Press F1, [TYPE].
- 4 Select Alarm Log.
- 5 Press F3, HIST. The alarm log will be displayed. This lists all errors. See the following screen for an example.

Alarm : Hist				
				1/25
1	SRVO-007	External emergency stop		
2	R E S E T			
3	SRVO-001	Operator panel E-stop		
4	R E S E T			
5	SRVO-001	Operator panel E-stop		
6	SRVO-012	Power fail recovery		
7	INTP-127	Power fail detected		
8	SRVO-047	LVAL alarm (Group:1 Axis:5)		
9	SRVO-047	LVAL alarm (Group:1 Axis:4)		
10	SRVO-002	Teach pendant E-stop		
11	R E S E T			
[TYPE]	[VIEW]	ACTIVE	CLEAR	DETAIL

NOTE

The most recent error is number 1.

- To display the complete error message that does not fit on the screen, press F5, DETAIL, and the right arrow key on the teach pendant.
 - To display the cause code for an error message, press F5, DETAIL. Cause codes provide further information about the cause of the error. If the specified error has a cause code, the cause code message is displayed immediately below the error line, on the status line. When you press RESET, the error and cause code disappears and the status line is redisplayed.
- 6 To display the motion log, which lists only motion-related errors, press F1, [TYPE], and select Motion Log.
 - 7 To display the system log, which displays only system errors, press F1, [TYPE], and select System Log.
 - 8 To display the application log, which displays only application-specific errors, press F1, [TYPE], and select Appl Log.
 - 9 To display the communication log, which displays only communication-specific errors, press F1, [TYPE], and select Comm Log.

- 10 To display the password log, which displays only password-specific errors, press F1, [TYPE], and select Password Log.
- 11 To display more information about an error, move the cursor to the error and press F5, DETAIL. The error detail screen displays information specific to the error you selected, including the severity. If the error has a cause code, the cause code message will be displayed. When you are finished viewing the information, press PREV.
- 12 To remove all of the error messages displayed on the screen, press and hold SHIFT and press F4, CLEAR.
- 13 To change the view displayed on the screen, press F2, [VIEW]. To show or hide the cause codes for each alarm, select Show Cause or Hide Cause. If an alarm has no cause code, the time the alarm occurred will be shown instead. If you are in Single Display Mode, you can also toggle between wide screen and normal screen by selecting Wide or Normal.

2.2.2 Facility Name and Code

The facility name and code identify the type of error that occurred. Facility information is displayed at the beginning of the error code:

PROG-048 PAUSE Shift released while running

In the example, the facility name PROG corresponds to facility code 3. The error code number is 048. Facility codes are used in error handling from a KAREL program. The facility codes are listed in Table 2.2.2(a).

Table 2.2.2(a) Error facility codes

Facility Name	Facility Code (Decimal)	Facility Code (Hexadecimal)	Description
ACAL	112	0x70	AccuCal
APSH	38	0x26	Application shell
ARC	53	0x35	Arc welding application
ASBN	22	0x16	Mnemonic editor
ATZN	138	0x8a	Auto zone
BBOX	118	0x76	Bump box
CALM	106	0x6a	Calibration Mate
CD	82	0x52	Coordinated motion
CMND	42	0x2a	Command processor
CNTR	73	0x49	Continuous turn
COND	4	0x4	Condition handler
COPT	37	0x25	Common options
CPMO	114	0x72	Constant Path
CUST	97	0x61	Customer specific errors
CVIS	117	0x75	Vision
DIAG	148	0x94	Diagnostics/Maintenance
DICT	33	0x21	Dictionary processor
DJOG	64	0x40	Detached jog
DMER	40	0x28	Data monitor
DNET	76	0x4c	DeviceNet
DX	72	0x48	Delta Tool/Frame
ELOG	5	0x5	Error logger
FILE	2	0x2	File system
FLPY	10	0xa	Serial floppy disk system
FORC	91	0x5b	force control (force sensor)
FRSY	85	0x55	Flash file system
FXTL	136	0x88	F-100iA tool

Facility Name	Facility Code (Decimal)	Facility Code (Hexadecimal)	Description
HOST	67	0x43	Host communications general
HRTL	66	0x42	Host communications run time library
IB-S	88	0x58	Interbus-S
INTP	12	0xc	Interpreter internal errors
IRPK	127	0x7f	iRPickTool
ISD	39	0x27	ISD (Integral Servo Dispenser)
JOG	19	0x13	Manual jog
KALM	122	0x7a	KAREL alarm
LANG	21	0x15	Language utility
LECO	109	0x6d	Arc errors from Lincoln Electric
LNTK	44	0x2c	Line tracking
LSTP	108	0x6c	Local Stop error
MACR	57	0x39	MACRO
MARL	83	0x53	Material removal
MCTL	6	0x6	Motion control
MEMO	7	0x7	Memory
MHND	41	0x29	Material Handling shell and menus
MOTN	15	0xf	Motion
MUPS	48	0x30	Multi-pass motion
OPTN	65	0x41	Option installation
OS	0	0x0	Operating system
PALL	115	0x73	PalletTool
PALT	26	0x1a	Palletizing application
PICK	132	0x84	Pick tool
PMON	28	0x1c	PC monitor
PNT1	86	0x56	Paint application
PNT2	137	0x89	Paint application
PRI0	13	0xd	Digital I/O
PROF	92	0x5c	Profibus DP
PROG	3	0x3	Interpreter
PTPG	140	0x8c	Paint plug-in
PWD	31	0x1f	Password logging
QMGR	61	0x3d	KAREL queue manager
RIPE	130	0x82	Ros IP errors
ROUT	17	0x11	Softpart built-in routine for interpreter
RPC	93	0x5d	RPC
RPM	43	0x2b	Root Pass Memorization
RTCP	89	0x59	Remote TCP
SCIO	25	0x19	Syntax checking for teach pendant programs
SDTL	123	0x7b	System design tool
SEAL	51	0x33	Sealing application
SENS	58	0x3a	Sensor interface
SHAP	79	0x4f	Shape generation
SPOT	23	0x17	Spot welding application
SPRM	131	0x83	Ramp motion
SRIO	1	0x1	Serial driver
SRVO	11	0xb	Servo
SSPC	69	0x45	Special space checking
SVGN	30	0x1e	Servo weld gun application
SYST	24	0x18	System
TAST	47	0x2f	Through-Arc Seam Tracking

Facility Name	Facility Code (Decimal)	Facility Code (Hexadecimal)	Description
TCP	46	0x2e	TCP speed prediction
TG	90	0x5a	Triggering accuracy
THSR	60	0x3c	Touch Sensing
TJOG	116	0x74	Tracking Jog
TMAT	119	0x77	Torch Mate
TOOL	29	0x1d	Servo tool change
TPIF	9	0x9	Teach pendant user interface
TRAK	54	0x36	Tracking
VAR	16	0x10	Variable
WEAV	45	0x2d	Weaving
WMAP	103	0x67	All wafer handling robot
WINDW	18	0x12	Window I/O
XMLF	129	0x81	XML errors

2.2.3 Severity Descriptions

The severity of the error indicates how serious the error is. The severity is displayed after the error number. For example:

PROG-048 PAUSE Shift released while running

NOTE

You can display the severity of the error code on the ALARM screen. Refer to Procedure 2-2.

WARN

WARN errors only warn of potential problems or unexpected circumstances. They do not directly affect any operations that might be in progress. If a WARN error occurs, you should determine what caused the error and what, if any, actions should be taken.

For example, the WARN error **Singularity position** indicates a singularity position was encountered during a move. No action is required. However, if you do not want the motion to encounter a singularity position, you can reattach the program positions.

PAUSE

PAUSE errors pause program execution but allow the robot to complete its current motion segment, if any are in progress. This error typically indicates that some action must be taken before program execution can be resumed. PAUSE errors cause the operator panel FAULT light to go on and the teach pendant FAULT LED to go on.

Depending on the action that is required, you might be able to resume a paused program at the point where the PAUSE error occurred after you have corrected the error condition. If the program can be resumed, press the operator CYCLE START button if the setting of the REMOTE/LOCAL setup item on the System Configuration menu is set to LOCAL.

STOP

STOP errors pause program execution and stop robot motion. When a motion is stopped, the robot decelerates to a stop and any remaining part of the current motion segment is saved, meaning the motion can be resumed. STOP errors usually indicate that some action must be taken before the motion and program execution can be resumed.

Depending on the action that is required, you might be able to resume the motion and program execution after correcting the error condition. If the motion and program can be resumed, press the operator CYCLE START button if the setting of the REMOTE/LOCAL setup item on the System Configuration menu is set to LOCAL. If the robot is in production mode, you must choose the appropriate recovery option.

SERVO

SERVO errors shut off the drive power to the servo system and pause program execution. SERVO errors cause the operator panel FAULT light to go on and the teach pendant FAULT LED to go on.

SERVO errors are usually caused by hardware problems and could require trained service personnel. However, some SERVO errors require you to reset the servo system by pressing the operator panel FAULT RESET button or the teach pendant RESET key. Others require a Cold start of the controller.

ABORT

ABORT errors abort program execution and STOP robot motion. When an ABORT error occurs, the robot decelerates to a STOP and the remainder of the motion is canceled. An ABORT error indicates that the program has a problem that is severe enough to prevent it from continuing to run.

You will need to correct the problem and then restart the program. Depending on the error, correcting the problem might mean editing the program or modifying the data.

SYSTEM

SYSTEM errors usually indicate a system problem exists that is severe enough to prevent any further operation. The problem could be hardware or software related.

You will need the assistance of trained service personnel to correct SYSTEM errors. After the error has been corrected, you will need to reset the system by turning off the robot, waiting a few seconds, and turning on the robot.

If a program was executing when the error occurred, you will need to restart the program.

ERROR

ERROR errors occur during the translation of a KAREL program. When an ERROR error occurs, translation is stopped and a .PC file is not generated. Fix the error in the program and retranslate it. When you translate a program and no ERROR errors occur, translation is successful and a .PC file is generated.

NONE

NONE errors can be returned as status from some KAREL built-in routines and can also be used to trigger KAREL condition handlers. NONE errors are not displayed on the teach pendant or CRT/KB. They also are not displayed on the alarm log screen. NONE errors do not have any effect on programs, robot motion, or servo motors.

Table 2.2.3(a) summarizes the effects of error severities.

Table 2.2.3(a) Effects of error severity

Severity	Program	Robot Motion	Servo Motors	Range
WARN	No effect	No effect	No effect	--
PAUSE	Paused	The current move is completed then the robot stops.	No effect	LOCAL (PAUSE.L) GLOBAL (PAUSE.G)
STOP	Paused	Decelerated STOP, motion retained	No effect	LOCAL (STOP.L) GLOBAL (STOP.G)
SERVO	Paused	Immediate STOP, motion retained	Power shutdown	GLOBAL
SREVO2	Aborted	Immediate STOP, motion canceled	Power shutdown	GLOBAL
ABORT	Aborted	Decelerated STOP, motion canceled	No effect	LOCAL (ABORT.L) GLOBAL (ABORT.G)
SYSTEM	Aborted	Immediate STOP, motion canceled	Power shut down Requires a FCTN: CYCLE POWER	GLOBAL
ERROR	No effect	No effect	No effect	--
NONE	No effect	No effect	No effect	--

Range	Range in which the alarm is applied when multiple programs run simultaneously (multitask function)	
	LOCAL	The alarm is applied only to a program which has caused the alarm.
	GLOBAL	The alarm is applied to all programs.

Color Display According to the Alarm Severity

On the alarm history screen, each message is displayed in the color specified according to its alarm severity.

Busy	Stop	Hold	Ready			T1	JOINT	100%
Run	I/O	Prod	Prog					

Alarm : Hist

1/63

1 R E S E T

2 SRVO-012 Power failure recovery

3 INTP-127 Power fail detected

4 SYST-043 TP disabled in T1/T2 mode

5 R E S E T

6 SYST-043 TP disabled in T1/T2 mode

7 SYST-043 TP disabled in T1/T2 mode

8 SYST-038 Operation mode T1 Selected

9 SYST-040 Operation mode AUTO Selecte

10 SRVO-027 Robot not mastered(Group:1)

11 SRVO-037 IMSTP input (Group:1)

[TYPE]	[VIEW]	ACTIVE	CLEAR	DETAIL	

The color assigned to each alarm severity is listed below:

Table 2.2.3(b) Alarm Severity and the color of alarm message

Alarm severity	Color
NONE	White
WARN	
PAUSE.L	Yellow
PAUSE.G	
STOP.L	Yellow
STOP.G	
SERVO	Red
SERVO2	
ABORT.L	Red
ABORT.G	
SYSTEM	Red
RESET(*)	Blue
SYST-026 System normal power up(*)	Blue

NOTE

Messages "RESET" and "SYST-026 System normal power up" are displayed in blue.

2.2.4 Error Message Text

The message text describes the error that has occurred. Message text is displayed at the end of the error code. For example:

PROG-048 PAUSE Shift released while running

Some error messages might contain cause codes, percent (%) notation, or hexadecimal notation. For more information on displaying cause codes, refer to Procedure 2-3.

Percent Notation (%)

A percent sign followed by the letter *s* (%s) indicates that a string, representing a program name, file name, or variable name, actually appears in the error message when the error occurs.

A percent sign followed by the letter *d* (%d) indicates that an integer, representing a program line number or other numeric value, actually appears in the error message when the error occurs.

For example:

INTP-327 ABORT (%^s, %d^5) Open file failed

When this error occurs, the actual name of the file that could not be opened will appear on the teach pendant error line instead of %s. The actual program line number on which that error occurred will appear on the teach pendant error line instead of %d.

Hexadecimal Notation

Hexadecimal notation is used to indicate the specific axes in error, when one or more axes are in error at the same time.

Most robots have interaction limits, in addition to normal joint limits. Even when all axes are within their respective limits an error might occur. This could possibly be caused by the interaction between multiple axes. In this case, hexadecimal notation can help you to find the specific axis in error. For example:

MOTN-017 STOP limit error (G:1 A:6 Hex)

The number after the **A** is the hexadecimal digit that shows which axes are out of limit. The **Hex** indicates that the axis numbers are in hexadecimal format. Table 2.2.4(a) lists the sixteen hexadecimal digits and the corresponding axes that are in error.

NOTE

Hexadecimal digits for the decimal values of 10 through 15 are represented by the letters **A** through **F** respectively. Refer to Table 2.2.4(a).

To determine which axes are in error, you must evaluate each digit in the error message separately. Refer to Table 2.2.4(a).

NOTE

If only one number appears in the error message after the **A:**, you must read it as the first digit.

Table 2.2.4(a) Hexadecimal Error Message Display

MOTN-017 limit error (G:1 A:(3)(2)(1) HEX)			
Hexadecimal Digit	Third Digit (3)	Second Digit (2)	First Digit (1)
0	none	none	none
1	axis 9	axis 5	axis 1
2	n/a	axis 6	axis 2
3	n/a	axes 5 & 6	axes 1 & 2
4	n/a	axis 7	axis 3
5	n/a	axes 5 & 7	axes 1 & 3
6	n/a	axes 6 & 7	axes 2 & 3
7	n/a	axes 5, 6, & 7	axes 1, 2, & 3
8	n/a	axis 8	axis 4
9	n/a	axes 5 & 8	axes 1 & 4
A	n/a	axes 6 & 8	axes 2 & 4
B	n/a	axes 5, 6, & 8	axes 1, 2, & 4
C	n/a	axes 7 & 8	axes 3 & 4
D	n/a	axes 5, 7, & 8	axes 1, 3, & 4
E	n/a	axes 6, 7, & 8	axes 2, 3, & 4
F	n/a	axes 5, 6, 7, & 8	axes 1, 2, 3, & 4
Note: If only one number appears in the error message after the A: , you must read it as the first digit (1).			

Table 2.2.4(b) contains some examples of how to interpret Hexadecimal notation in an error message.

Table 2.2.4(b) Hexadecimal Notation and Axis in Error Examples

Error	Explanation
MOTN-017 (G:1 A:6 Hex)	Axes 2 and 3 are out of their interaction limit.
JOG-013 (G:1 A:20 Hex)	Axis 6 jogged to limit.
MOTN-017 (G:1 A:100 Hex)	Axis 9 limit error.

3 ALARM RECOVERY

3.1 GENERAL ALARM RECOVERY PROCEDURES

3.1.1 Overview

This section contains procedures for recovery from certain errors. These errors are:

- Overtravel release
- Hand breakage recovery
- Pulsecoder alarm
- Chain failure detection recovery

3.1.2 Overtravel Release

An overtravel error occurs when one or more of the robot axes moves beyond the software motion limits. When this happens one of the overtravel limit switches is tripped and the system does the following:

- Shuts off drive power to the servo system and applies robot brakes.
- Displays an overtravel alarm error message.
- Lights the operator panel FAULT light.
- Turns on the teach pendant FAULT status indicator.
- Limits motion for the axes involved in the overtravel.

If you are jogging in JOINT, the axis number indicating the axis (or axes) in an overtravel will be displayed in the error log. You can manually release overtravel on your system from the MANUAL OT Release screen. The axis that is in overtravel will display TRUE in either OT_MINUS or OT_PLUS.

Refer to Table 3.1.2 for information on the MANUAL OT Release items.

Use Procedure 3-1 to recover from an overtravel error.

Table 3.1.2 MANUAL OT Release Items

ITEM	DESCRIPTION
AXIS	This item displays the number for each axis.
OT MINUS	This item displays whether a particular axis is in an overtravel condition.
OT PLUS	This item displays whether a particular axis is in an overtravel condition.

Procedure 3-1 Recovering from an Overtravel Error

Conditions

- An axis (or axes) are in overtravel and the overtravel alarm has occurred. If you are jogging in JOINT the axis number indicating the axis (or axes) in an overtravel will be displayed in the error log.

Steps

- 1 Press [MENU] key.
- 2 Select SYSTEM.
- 3 Press F1, [TYPE].
- 4 Select OT Release. The following screen will be displayed. The axis that is overtraveled will display TRUE in either OT_MINUS or OT_PLUS.

MANUAL OT Release			1/9
AXIS	OT MINUS	OT PLUS	
1	FALSE	TRUE	
2	FALSE	FALSE	
3	FALSE	FALSE	
4	FALSE	FALSE	
5	FALSE	FALSE	
6	FALSE	FALSE	
7	FALSE	FALSE	
8	FALSE	FALSE	
9	FALSE	FALSE	

- 5 Move the cursor to the OT PLUS or OT MINUS value of the axis in overtravel.
- 6 Press F2, RELEASE. The value of the overtraveled axis should change back to FALSE.
- 7 If the robot is calibrated, you will see the message Can't Release OT. Press HELP for detail.
 - a If you press F5, DETAIL, you will see a screen similar to the following.

MANUAL OT Release
 When robot is calibrated, overtravel cannot be released. Press SHIFT & RESET to clear the error, and jog out of the overtravel condition.

NOTE

For the following steps, press and **hold down the SHIFT key** until you have completed Step 7.b through Step 7.d.

- b Press and continue pressing SHIFT and press F2, RESET. Wait for servo power.
- c Continuously press and hold the DEADMAN switch and turn the teach pendant ON/OFF switch to ON.
- d Jog the overtraveled axis off the overtravel switch. When you have finished jogging, you can release [SHIFT] key.

NOTE

If you accidentally release the shift key during Step 7.b through Step 7.d, you will have to repeat them.

- 8 If the robot is not calibrated, perform the following steps:

NOTE

For the following steps, press and **hold down the SHIFT key** until you have completed Step 8.a through Step 8.d.

- a Press and continue pressing SHIFT and press F2, RESET. Wait for servo power.
- b Press COORD until you select the JOINT coordinate system.
- c Continuously press and hold the DEADMAN switch and turn the teach pendant ON/OFF switch to ON.
- d Jog the overtraveled axis off the overtravel switch. When you have finished jogging, you can release the SHIFT key.

NOTE

If you accidentally release the shift key during this step, you will need to repeat it.

- 9 Turn the teach pendant ON/OFF switch to OFF and release the DEADMAN switch.
- 10 Check CRM68 & CRF8 connection on the amplifier PCB if the robot is not in an actual overtravel condition.

3.1.3 Hand Breakage Recovery

A hand breakage error occurs when the hand breakage detection switch is tripped on robots equipped with hand breakage hardware. The switch is tripped when the robot tool strikes an obstacle, which could possibly cause the tool to break. The system

- Shuts off drive power to the servo system and applies robot brakes.
- Displays an error message indicating that the hand is broken.
- Lights the operator panel FAULT light.
- Lights the teach pendant FAULT LED.

The status of the hand breakage detection switch is displayed on the STATUS Stop Signals screen. Use Procedure 3-2 to recover from a hand breakage.

Procedure 3-2 Recovering from a Hand Breakage

Conditions

- The hand breakage error message is displayed.

Steps

- 1 If you have not already done so, continuously press and hold the DEADMAN switch and turn the teach pendant ON/OFF switch to ON.
- 2 Hold down the SHIFT key and press RESET. The robot can now be moved.
- 3 Jog the robot to a safe position.
- 4 Press the EMERGENCY STOP button.
- 5 Request a trained service person to inspect and, if necessary, repair the tool.
- 6 Determine what caused the tool to strike an object, causing the hand to break.
- 7 If the hand breakage occurred while a program was being executed, you might need to reteach positions, modify the program, or move the object that was struck.
- 8 Test run the program if it has been modified, if new positions have been recorded, or if objects in the work envelope have been moved.

3.1.4 Pulsecoder Alarm Recovery

You need to do PULSE RESET to clear following alarms.

SRVO-038	Pulse mismatch
SRVO-062	BZAL alarm
SRVO-063	RCAL alarm
SRVO-073	CMAL alarm
SRVO-085	RCAL alarm
SRVO-095	CMAL alarm

In order to clear these alarms other than SRVO-038, you need to cycle the power after PULSE RESET. If the alarm still shows up, the cause of the alarm may remain. Get rid of the cause, first. Please refer to the section of Cause and Remedy for the cause of each alarm.

Refer to Procedure 3-3 for the PULSE RESET procedure.

Procedure 3-3 PULSE RESET

Steps

- 1 Press [MENU] key.
- 2 Select SYSTEM.
- 3 Press F1, [TYPE].
- 4 Select Master/Cal.
 - If Master/Cal is not listed on the [TYPE] menu, do the following; otherwise, continue to Step 5.
 - a Select Variables from the [TYPE] menu.
 - b Move the cursor to \$MASTER_ENB.
 - c Press the numeric key 1 and then press ENTER on the teach pendant.
 - d Press F1, [TYPE].
 - e Select Master/Cal. The following screen will be displayed.

SYSTEM Master/Cal					
					TORQUE = [ON]
1 FIXTURE POSITION MASTER					
2 ZERO POSITION MASTER					
3 QUICK MASTER					
4 QUICK MASTER FOR SINGLE AXIS					
5 SINGLE AXIS MASTER					
6 SET QUICK MASTER REF					
7 CALIBRATE					
Press 'ENTER' or number key to select.					
[TYPE]		RES_PCA		DONE	

- 5 Press F3, RES_PCA. The following screen will be displayed.

SYSTEM Master/Cal					
					TORQUE = [ON]
1 FIXTURE POSITION MASTER					
2 ZERO POSITION MASTER					
3 QUICK MASTER					
4 QUICK MASTER FOR SINGLE AXIS					
5 SINGLE AXIS MASTER					
6 SET QUICK MASTER REF					
7 CALIBRATE					
Press 'ENTER' or number key to select.					
Reset Pulsecoder alarm? [NO]					
[TYPE]			YES	NO	

- 6 Press F4, YES. The following screen will be displayed.

SYSTEM Master/Cal					
TORQUE = [ON]					
1 FIXTURE POSITION MASTER					
2 ZERO POSITION MASTER					
3 QUICK MASTER					
4 QUICK MASTER FOR SINGLE AXIS					
5 SINGLE AXIS MASTER					
6 SET QUICK MASTER REF					
7 CALIBRATE					
Pulsecoder alarm reset!					
	[TYPE]		RES_PCA		DONE

3.1.5 Chain Failure Detection Error Recovery

A Single Chain Failure Detection fault will be set if one safety chain is in an Emergency Stop condition, and the other is not in an Emergency Stop condition.

When a Single Chain Failure Detection fault occurs, the system does the following:

- Shuts off drive power to the servo system and applies robot brakes.
- Displays an error message indicating that a single chain failure has occurred.
- Lights the operator panel FAULT light.
- Lights the teach pendant FAULT LED.

Chain Failure Detection Errors

Refer to the *Maintenance Manual* for more information on chain failure detection errors, SRVO-230 and 231, SRVO-266 through 275, and SRVO-370 through 385.

Procedure 3-4 Chain Failure Detection Error Recovery

Conditions

- The system detected either a SRVO-230 Chain 1 abnormal or a SRVO-231 Chain 2 abnormal error.
- You cannot reset the chain failure errors, even after cycling power of the controller.

Steps

- 1 Correct the cause of the alarm.
- 2 Press [MENU] key.
- 3 Select ALARM. The following screen will be displayed.

Alarm : Active		1/1
1	SRVO-230 Chain 1 abnormal	0,0

- 4 Press F4, RES_CH1. The following screen will be displayed.

Alarm : Active		1/1
1	SRVO-230 Chain 1 abnormal	0,0
Reset Single Channel Fault? [NO]		

- 5 Press F4, YES to reset the fault.
- 6 Press the RESET button on the teach pendant or operator panel.

**WARNING**

If you reset the chain failure fault without fixing the cause of it, the same alarm will occur, but the robot can move until the alarm occurs again. Be sure to fix the cause of the chain failure before you continue. Otherwise, you could injure personnel or damage equipment.

4 ALARM CODES

NOTE

The following symbols are used in alarm codes

%d : Decimal number

%f : Floating number

%x : Hexadecimal

%s : String

Number may be inserted after "%". It means display width

4.1 A

4.1.1 ACAL Alarm Code

ACAL-000 Fail to run DETECT Motn

Cause: The AccuCal2 Motn failed to run. The AccuCal2 motion cannot be started.

Remedy: Clear all the errors before executing AccuCal2.

ACAL-001 Robot is not ready.

Cause: The robot is not ready. The system cannot issue motion because it is in an error state.

Remedy: Clear all faults, then retry the operation.

ACAL-002 Fail to fit circle.

Cause: AccuCal2 cannot converge within the set threshold.

Remedy: Perform the following:

- Increase the number of iterations allowed.
- Increase the convergence threshold setting.
- Make sure the TCP has not been changed.

ACAL-003 Contact before search.

Cause: The robot is in contact with the part before starting a search motion.

Remedy: Reteach the starting position.

ACAL-004 No contact detected.

Cause: No contact was made during the AccuCal2 motion.

Remedy: Make sure the sensor and software are installed correctly.

ACAL-005 Undefined program name.

Cause: The AccuCal2 program name was not defined.

Remedy: Select an AccuCal2 teach pendant program before pressing the EXEC key.

ACAL-006 TPE operation error.

Cause: This is an internal teach pendant editor program error.

Remedy: Abort the program and run again. If this doesn't resolve the problem, cycle power and try again. If this doesn't resolve the problem, reinstall the controller software.

ACAL-007 Calibration internal error.

Cause: This is an AccuCal2 internal error.

Remedy: Turn off the controller, and turn it on again to recover. If the problem persists, reinstall the controller software.

ACAL-008 File open error.

Cause: The output file cannot be opened.

Remedy: Check the path, and file name to be sure they are correct.

ACAL-010 Invalid schedule number.

Cause: The schedule number in CALIB, UTOOL, or UFRAME START is invalid.

Remedy: Provide a correct schedule number in CALIB (or UTOOL or UFRAME) START[] teach pendant instruction.

ACAL-011 Cannot access \$MNUFRAME.

Cause: The current \$MNUFRAMENUM[] is incorrect and cannot be accessed.

Remedy: Go to the USER FRAME menu to select a valid user frame.

ACAL-012 Cannot access \$MNUTOOL.

Cause: Cannot access \$MNUTOOL. The current \$MNUTOOLNUM[] is incorrect.

Remedy: Display the FRAME menu to select a valid tool frame.

ACAL-013 Backward execution ignored.

Cause: Backward execution was ignored. The AccuCal2 instructions can not be executed backward.

Remedy: The backward execution of the AccuCal2 instructions is ignored. Rewrite the instructions if you do not want this to happen.

ACAL-014 System loading error.

Cause: System loading error. The AccuCal2 is loaded incorrectly.

Remedy: Reload the system.

ACAL-015 Not enough data.

Cause: Not enough data exists to compute the frame offset.

Remedy: Add more Detect instructions in the AccuCal2 program.

ACAL-017 Wrong number of searches.

Cause: An incorrect number of searches was performed.

Remedy: Re-teach the AccuCal2 program with an appropriate number of searches. Refer to the application-specific Operator's Manual for information on the number of searches required for each calibration type.

ACAL-018 Nonorthogonal search vector

Cause: The 3 planes method requires three search directions be normal to each other.

Remedy: Re-teach the cell finder program with three search directions that are normal to each other.

ACAL-019 Positions are too close.

Cause: Positions are too close. The taught positions are too close to each other.

Remedy: Re-teach the cell finder program so that the contact positions are at least 10mm apart.

ACAL-020 Invalid Frame number.

Cause: The current frame number setting is invalid.

Remedy: Use the SETUP/FRAME menu to set up the correct frame.

ACAL-021 Large Frame deviation.

Cause: The computed frame offset exceeds the pre-set value.

Remedy: Run the calibration program again to make sure the robot makes solid contacts with the part. Change the XYZ and ORNT change value in the schedule if these numbers are very small.

ACAL-022 Detect without mastering

Cause: An AccuCal2 teach pendant program is running without performing mastering it first.

Remedy: Display the AccuCal2 menu, and master the program first.

ACAL-023 No EXEC at Single Step Mode.

Cause: The robot cannot execute an AccuCal2 program in Single Step Mode.

Remedy: Turn off Single Step before executing the cell finder program.

ACAL-024 Master Update failed.

Cause: A failure occurred while trying to update the master data in a FIND instruction.

Remedy: Re-master the frame search teach pendant program.

ACAL-025 Large frame shift.

Cause: A very large frame shift has occurred.

Remedy: Check the UTOOL and the fixture to make sure that they are properly installed.

ACAL-026 No CALIB END instruction.

Cause: No CALIB END instruction. AccuCal2 program does not have a FIND END instruction.

Remedy: Add CALIB END instruction at the end of the frame search teach pendant program.

ACAL-027 Counts do not match.

Cause: The number of master data and number of run time data does not match each other.

Remedy: Run the finder program again.

ACAL-028 No logged frame data.

Cause: No logged frame data exists and the frame cannot be restored.

Remedy: Select a logged frame.

ACAL-029 Zero offset, No Update.

Cause: No change occurred in the offset frame.

Remedy: Run Cell Finder again to compute a new offset.

ACAL-030 Frame Log is disabled.

Cause: The Frame data log is disabled.

Remedy: Enable the frame log first.

ACAL-031 Cold start to set \$USEUFRAME

Cause: \$USEUFRAME is set to FALSE. AccuCal2 reset it to TRUE.

Remedy: Turn off the controller, then turn it on again to perform a Cold start.

ACAL-032 Invalid motion group.

Cause: The motion group number is invalid.

Remedy: Use only one group in the program and make sure the group is available.

ACAL-033 Other group is running.

Cause: The other program has motion control.

Remedy: Abort the other running program.

ACAL-034 Group mismatched.

Cause: The motion group number is not right.

Remedy: Use only one group in the program, and make sure group is available.

ACAL-035 Press Shift Key.

Cause: The SHIFT key was not pressed.

Remedy: Press the SHIFT key.

ACAL-036 Failed to create TPE program

Cause: The teach pendant program could not be created.

Remedy: Check the following:

- Make sure enough memory is available.
- Make sure the program is not being edited.
- Make sure the program is not write protected.

ACAL-037 TPE Position is not recorded

Cause: The teach pendant position has not been recorded. Make sure the program is not protected for writing.

Remedy: Unprotect the write protected program.

ACAL-038 TPE Program does not exist.

Cause: The selected teach pendant program was not found and does not exist.

Remedy: Select an existing teach pendant program.

ACAL-039 Move to recorded posn failed

Cause: The robot could not move to the recorded position.

Remedy: Make sure the position is reachable and that another program does not have motion control.

ACAL-040 Invalid Detection TP program

Cause: The detection teach pendant program is not usable.

Remedy: Load a proper detection program.

ACAL-041 Override should be 100%.

Cause: The speed override is not 100%.

Remedy: Before running the program, increase the override to 100%.

ACAL-042 Large orientation change.

Cause: The found orientation is larger than the tolerance allows.

Remedy: Adjust the object so that orientation is smaller. Increase the orientation tolerance.

ACAL-043 Points & solution mismatch.

Cause: The number of search points does not match the selected solution type.

Remedy: Select a different solution type, or adjust number of detect statements.

ACAL-044 Solution type error.

Cause: An unsupported solution type error was selected.

Remedy: Choose a different solution type.

ACAL-045 Failed to set register.

Cause: The specified register was not set.

Remedy: Make sure the specified register exists.

ACAL-046 Failed to convert position.

Cause: The position failed to convert. The internal position was not set.

Remedy: Make sure the points are taught in the proper sequence and are not near limits.

ACAL-047 Too many points used.

Cause: Too many points are used.

Remedy: Reduce the number of detect points.

ACAL-048 Solution failed.

Cause: The solution failed to complete.

Remedy: Make sure the correct numbers of points are taught in the correct directions and orientation.

ACAL-049 Motion limit error.

Cause: This is a motion limit error. The detect motion failed due to a limit error for the destination position.

Remedy: Move the robot away from the joint limit, or reduce the search distance in the detection schedule.

ACAL-050 iRCal. TCP is not loaded.

Cause: TCP Cal is not loaded.

Remedy: Try to run the TCP Calibration instruction without the TCP Cal software. Perform a Controlled start, and load the TCP Cal software from the option menu.

ACAL-051 iRCal. Frame is not loaded.

Cause: Cell Cal is not loaded.

Remedy: Try to run the Cell Calibration instruction without the Cell Cal software. Perform a Controlled start, and load the Cell Cal software from the option menu.

ACAL-052 iRCal. Master is not loaded.

Cause: Robot Cal is not loaded. The robot tried to run the robot Calibration instruction without the Robot Cal software.

Remedy: Perform a Controlled start, and load the Robot Cal software from the OPTION menu.

ACAL-053 No calibration software.

Cause: No calibration software. The robot tried to run a detect instruction without Calibration software.

Remedy: Perform a Controlled start, and load one of the Calibration software options from the OPTION menu.

ACAL-054 Invalid Calibration program.

Cause: Invalid Calibration program. The calibration program type does not match the calibration menu.

Remedy: Check the teach pendant program's calibration start instruction so it matches the calibration menu.

ACAL-055 Too Many Parallel Searches.

Cause: Too Many Parallel Searches have occurred. More than three parallel searches occurred when the total number of searches is less than 7.

Remedy: Teach more searches, or change the excess parallel searches to be in a different direction.

ACAL-056 Skip Update Frame Inst.

Cause: The robot executed an UPDATE FRAME instruction in a non-Cell calibration program.

Remedy: UPDATE FRAME only works in Cell Calibration programs with Uframe Start instruction. Remove the UPDATE FRAME instruction from the non-CellCal program.

ACAL-057 Large Calibration Error

Cause: Residual maximum calibration has exceeded the limit allowed by the specified schedule.

Remedy: Verify solid tooling and good contact is made during all searches. Increase the limit in the schedule.

ACAL-058 UFRAME Change Not Allowed

Cause: The UFRAME was changed during UTOOL calibration and this is not allowed.

Remedy: Use the same UFRAME for all points during the initial UTOOL calib.

ACAL-059 All Positions Not Recorded

Cause: All required positions are not recorded.

Remedy: Record all necessary positions, and retry the operation.

ACAL-060 Excessive Accumulated offset

Cause: The accumulated offset exceeds the tolerance specified in the schedule.

Remedy: Repair the tool so that the TCP is closer to the reference TCP, or increase Accumulated Error Threshold in the tool calibration schedule.

ACAL-061 UFrame mismatch.

Cause: A UFrame mismatch has occurred. The current MNUFRAME number does not match the program's uframe.

Remedy: Change the current user frame number to match the program's user frame number.

ACAL-062 Too many moves in a program.

Cause: Too many moves have been attempted in a program. The Calibration program has too many motion lines in it.

Remedy: Limit the number of move instructions in a calibration program to less than 256.

ACAL-063 Failed to update master data

Cause: The master data failed to update. The master count cannot be updated when the robot is in motion.

Remedy: Abort the robot motion and then press the UPDATE soft key again.

ACAL-064 UTool Mismatch.

Cause: A UTool mismatch has occurred. The current MNUTOOL number does not match the program's utool.

Remedy: Change the current tool number to match the program's utool number.

ACAL-065 TCP calibration failed

Cause: The TCP calibration failed to complete.

Remedy: Review the previous error to identify the cause.

ACAL-066 Frame calibration failed

Cause: Cell calibration failed to complete.

Remedy: Review the previous error to identify the cause.

ACAL-067 Circle fit error %s

Cause: The circle fit error exceeds the threshold.

Remedy: Check for a lost fixture or tool, or change the fit error tolerance in the detection schedule.

ACAL-068 Radius err %s

Cause: Circle radius error exceeds threshold.

Remedy: Check for a lost fixture or tool, or change the radius error tolerance in the detection schedule.

ACAL-069 Auto Update is ON.

Cause: Auto Update is on therefore the frame has been updated automatically.

Remedy: An update is not required.

ACAL-070 No update on record points.

Cause: No update on record points. The teach pendant program has a different number of DETECT instructions than expected. The positions cannot automatically update in the screen.

Remedy: Manually record positions to create the calibration program.

ACAL-071 Invalid joint number.

Cause: The axis number specified in the DETECT Joint instruction is invalid.

Remedy: Change the axis number to a valid one.

ACAL-072 Invalid joint sensor type.

Cause: The Detect Joint instruction cannot use TOS WRIST sensor type for contact detection.

Remedy: Change sensor type to either IO or TOS all axes in the detection schedule.

ACAL-073 Skip Detect Joint

Cause: The Detect Joint instruction is not valid for TCP or CELL calibration.

Remedy: The Detect Joint instruction is for ROBOT calibration only. Change the calibration start instruction to CALIB START or delete the instruction from the program.

ACAL-074 No motion before DETECT.

Cause: No motion exists before the DETECT instruction. Detect instructions require a motion line preceding them.

Remedy: Add a MOVE instruction before the DETECT instruction.

ACAL-075 Mixed Detect instructions.

Cause: Mixed Detect instructions have occurred. The Detect Joint instruction cannot be used with other Detect instructions within the same Calib Start - Calib End instructions.

Remedy: Delete the other DETECT instruction from the program.

ACAL-076 More than one Detect Joint.

Cause: More than one Detect Joint instruction exists. Only one Detect Joint instruction is allowed between Calib Start and Calib End instructions.

Remedy: Delete the extra DETECT JOINT instructions.

ACAL-077 No Detect Joint in Init. Cal

Cause: No Detect Joint should exist in Initial Calibration. The Detect Joint instruction does not apply to the initial robot calibration.

Remedy: Run the program from the robot master recovery menu.

ACAL-078 Skip Update Tool instruction

Cause: Execute the Update Utool instruction in a non-TCPCal program.

Remedy: Update Tool only works in TCP Calibration programs with a UTool Start instruction.

ACAL-079 Large approach angle error.

Cause: The search start position's approach vector does not align with the plate's normal vector.

Remedy: Touch up the search start position so that the position's approach vector is aligned to the plate's normal vector.

ACAL-080 Failed to update TPE program

Cause: Failed to update the teach pendant program's search start position.

Remedy: Make sure there is not system fault before pressing UPDATE. If the problem persists, perform a Cold start.

ACAL-081 Destination %s Limit Error

Cause: The recorded position is too close to the joint limit.

Remedy: Re-teach the position away from joint limit.

ACAL-082 Tool is 180 degree off in Z

Cause: The Tool approach vector is 180 degrees off in Z from the search direction.

Remedy: Change the system variable \$cb_vars.\$z_out to FALSE if it is set to TRUE, or vice versa.

ACAL-083 Invalid TPE instruction.

Cause: Invalid teach pendant calibration instruction.

Remedy: The teach pendant program memory might be corrupted. Replace the instruction with a new one.

ACAL-084 Failed to access Karel vars.

Cause: Failed to access the calibration program's KAREL variables.

Remedy: Cold start the controller. If the problem persists, re-install the calibration option again.

ACAL-085 UFrame is too small

Cause: The specified UFrame is zero or small, and Calibrate UFrame is disabled.

Remedy: Set UFrame to be the precision calibration fixture location or enable UFrame calibration in the calibration schedule.

ACAL-086 UTool is too small

Cause: The specified UTool is zero or small, and the Calibrate UTool is disabled.

Remedy: Set UTool to be the precision calibration fixture location or enable UTool calibration in the calibration schedule.

ACAL-087 Joint[%s^1] rotation is small

Cause: The joint angle motion is too small.

Remedy: Modify calibration points to provide more motion on the specified axis. Or, disable calibration of one or more joints.

ACAL-088 Points are colinear

Cause: Three or more points with the same search direction are colinear or nearly colinear.

Remedy: Reteach one of the points so that the points are not colinear, or teach another non-colinear point.

ACAL-089 Not enough search direction

Cause: There must be at least three different search directions that are close to perpendicular to each other. There must also be at least three non-colinear points in one search direction and at least two points in another search direction.

Remedy: Add more search points or reteach existing points to have sufficient search directions and a sufficient number of points in the search directions.

ACAL-090 Large joint angle correction

Cause: Calibration joint angle correction exceeds the limit.

Remedy: Identify the cause of the large correction. If the robot joint angle is actually off by that large amount, then you can either increase the tolerance in the schedule or manually remaster the robot to reduce the error and touchup the calibration points and rerun the calibration. If the calibration result is incorrect, then check that Calibrate UFrame is TRUE unless you are doing calibration recovery or use a precision fixture. Check that Calibrate UTool is TRUE unless you are doing calibration recovery or use a precision calibration tool. If you are doing recovery then check that the calibration fixture is in the correct location and the UFrame is the same as the original UFrame from when the calibration was run in MASTER mode. If recovering J6, then verify that UTool and the calibration tool are the same as when the calibration was run in MASTER mode.

ACAL-091 UFrame orientation not zero

Cause: The UFrame orientation must be zero.

Remedy: Use a UFrame with WPR values where all are set to zero.

ACAL-092 Position close to joint limit

Cause: The search destination position is too close to the joint limit.

Remedy: Re-teach the position away from joint limits.

ACAL-093 Invalid CD pair number

Cause: The Coordinate Motion Pair number is invalid.

Remedy: Check the CD pair setup to make sure the CD pair has been set up correctly.

ACAL-094 Invalid Process Sync Setup

Cause: Invalid Process Sync Set up.

Remedy: Check the Process Sync setup to make sure the Process Sync has been set up correctly.

ACAL-095 No Coordinate Motion software

Cause: The CD pair calibration requires Coordinate Motion Software.

Remedy: Load the Coordinate Motion software on the controller.

ACAL-096 No Process Sync software

Cause: Robot Link calibration requires Robot Link Software.

Remedy: Load the Robot Link software on the controller.

ACAL-097 MultiCal is not loaded.

Cause: The user is trying to run the MultiCal instruction without MultiCal software.

Remedy: Perform a Control start and load the MultiCal software from option menu.

ACAL-098 Bar method is not supported

Cause: Calibration Bar is not support in the V7.20 MultiCal Release.

Remedy: Use supported software.

ACAL-099 Positioner is not supported

Cause: Positioner calibration is not supported in the V7.20 MultiCal release.

Remedy: Use supported software.

ACAL-100 Program Group Mismatch

Cause: The read in the program group does not match the current default motion group.

Remedy: Use the FCTN key to change the current motion group or select another calibration program.

ACAL-101 TCP Alignment error

Cause: The maximum alignment distance was exceeded.

Remedy: Fix the TCP Alignment and run TCPCal again.

ACAL-102 Process is not yet completed

Cause: Cannot execute current step without completing previous steps.

Remedy: Complete all steps leading to the current step.

ACAL-103 Update already applied

Cause: Update is already applied.

Remedy: No remedy is required.

ACAL-104 No Analog port data file

Cause: There is no associated Analog data file in FRS: for the specified analog port number.

Remedy: Copy the analog data file to the FRS: directory and cold start the controller.

ACAL-105 Option does not support AIN

Cause: RobotCal and MultiCal does not support analog sensor.

Remedy: Select a different sensor type in the detection schedule.

ACAL-106 No analog sensor support

Cause: The Detect Circle and Detect Joint instructions do not support an analog sensor.

Remedy: Select a different sensor type in the detection schedule.

ACAL-107 Invalid AIN port number

Cause: The AIN port number is not valid.

Remedy: Select a different AIN port number that has its data file in an FRS: directory.

ACAL-108 Dynamic UFrame setup error

Cause: Dynamic Uframe setting require cd pair setting in its schedule.

Remedy: Set the cd pair number in the schedule or change the CellCal calibration mode in the setup menu.

ACAL-109 Standard UFrame setup error

Cause: The schedule used by UFrame has a cd_pair set.

Remedy: Select a new schedule or change the cd_pair variable to 0 in the current schedule.

ACAL-110 Please turn off single step

Cause: Disable single step mode.

Remedy: Press the STEP key to disable single step.

ACAL-111 No nominal position data

Cause: No nominal position data.

Remedy: Type in nominal position data.

ACAL-112 Invalid Position Type.

Cause: Position register is in JOINT representation.

Remedy: Change the position type to Cartesian for vision position register.

ACAL-113 Vision measurement failed.

Cause: Vision cannot get the location of the target.

Remedy: Check the vision setting and make sure the target is trained.

ACAL-114 iRCal. V. Frame not loaded

Cause: Try to run Vision Frame Shift/Set instruction without Vision Frame software.

Remedy: Do Control start and load the iRCal VFrame software from option menu.

ACAL-115 Joint position not allowed

Cause: TP program has position with joint representation.

This is not allowed in High Accuracy Mode.

Remedy:

1. Exit High Accuracy Mode
2. Move to the position
3. Enable High Accuracy Mode
4. Change to Cartesian rep.

ACAL-116 Joint motion not allowed

Cause: Joint motion is not allowed in High Accuracy Mode.

Remedy: Change motype to Linear or exit High Accuracy Mode.

ACAL-117 UTool change not allowed

Cause: UTool change is not allowed in High Accuracy Mode.

Remedy: Exit High Accuracy Mode before changing UTool.

ACAL-118 Wristjoint not allowed

Cause: WJNT motion is not allowed in High Accuracy Mode.

Remedy: Exit High Accuracy Mode before using WJNT motion.

ACAL-120 Remote TCP not allowed

Cause: RTCP motion is not allowed in High Accuracy Mode.

Remedy: Exit High Accuracy Mode before using RTCP motion.

ACAL-122 Gravity comp. not allowed

Cause: Gravity compensation is not allowed with High Accuracy.

Remedy: Please set FALSE to \$PARAM_GROUP[g].\$SV_DMY_LNK[8] to disable Gravity Compensation, and then cycle power.

ACAL-125 Problem with Sec. Encoders

Cause: Secondary encoder mode failed to be entered.

Remedy: Check alarm history and correct problem.

ACAL-126 High Acc. Mode entered

Cause: Information status. High Accuracy Mode successfully entered.

Remedy: No action necessary.

ACAL-129 Not in High Acc. mode

Cause: Information status. Not in High Accuracy Mode.

Remedy: No action necessary.

ACAL-130 Filter not empty

Cause: Motion is still active.

Remedy: Use FINE termtype.

ACAL-131 Invalid motion change

Cause: Motion changed.

Remedy: Remove any motion options on the TP motion line.

ACAL-132 Invalid Selection

Cause: Invalid Signature Setting.

Remedy: TCP and UFrame cannot be both FALSE for UFrame and UTool calibration.

ACAL-133 Mismatch measure points

Cause: The measured points does not the command points.

Remedy: Please re-do the calibration.

ACAL-134 DC compensation clamped

Cause: The DC compensation exceed preset threshold.

Remedy: Change \$CBSK_SCHD[schedule number].\$MAX_COMP to allow larger correction.

ACAL-135 Exceed max. residual tol.

Cause: Maximum residual error of calculation exceed tolerance.

Remedy: 1. Review the calibration procedure.
2. Re-do the calibration.

ACAL-136 Exceed mean residual tol.

Cause: Mean residual error of calculation exceed tolerance.

Remedy: 1. Review the calibration procedure.
2. Re-do the calibration.

ACAL-137 Exceed max. error tol.

Cause: Maximum error of validation exceed tolerance.

Remedy: 1. Review the calibration procedure.
2. Re-do the calibration.

ACAL-138 Exceed mean error tol.

Cause: Mean error of validation exceed tolerance.

- Remedy:**
1. Review the calibration procedure.
 2. Re-do the calibration.

ACAL-139 SIG Unexpected Motion(G:%d)

Cause: A current robot position that software calculates is abnormal.

- Remedy:**
1. Mastering data could be incorrect. Confirm whether incorrect backup data is restored or mastering has been executed at the wrong position. In that case, execute mastering.
 2. Document the events that led to the error, and contact your local FANUC representative.

4.1.2 APSH Alarm Code

APSH-000 %s

Cause: General status messages.

Remedy: None.

APSH-001 %s missing

Cause: A MACRO was called without a parameter that must be entered.

Remedy: Check the MACRO call in the TP program.

APSH-002 %s Illegal type

Cause: A MACRO was called with a parameter that is illegal. The parameter has the wrong data type.

Remedy: Check the MACRO call in the TP program.

APSH-003 %s Illegal zone number

Cause: A zone number less than 1 or greater than \$IZONEIO.\$NO_ZONES was used.

Remedy: Use an event number from 1 to \$IZONEIO.\$NO_ZONES.

APSH-004 Waiting for interf. zone %s

Cause: The robot has requested an interference zone, but has not been given permission to enter by the cell controller.

Remedy: If the cell controller does not give control of an interference zone to the robot when it should, check the cell controller's interference zone programming.

APSH-005 Entering interf. zone %s

Cause: The robot has received permission to enter the interference zone.

Remedy: Used to clear the waiting for interference zone message only.

APSH-006 PERM memory is low

Cause: This warning indicates that the amount of free memory in the CMOS memory partition has gotten dangerously low. If the PERM memory runs out, you will experience strange MEMO errors and possibly robot lock-ups or register dumps.

Remedy: Warning only. Delete any unneeded data. Contact your FANUC representative with this error. You will probably have to adjust the memory configuration in your robot controller.

APSH-007 TEMP DRAM memory is low

Cause: This warning indicates that the amount of free memory in the TEMP memory partition has gotten dangerously low. If the TEMP memory runs out, you will experience strange MEMO errors and possibly robot lock-ups or register dumps.

Remedy: Warning only. Delete any unneeded data. Contact your FANUC representative with this error. You will probably have to adjust the memory configuration in your robot controller.

APSH-008 FAULT must be reset

Cause: A fault has occurred, so the operation requested cannot be performed.

Remedy: Clear the source of the fault, and press FAULT RESET.

APSH-009 Program already running

Cause: The shell detected a start signal but a program is already running.

Remedy: Re-issue start request when current program is paused or aborted.

APSH-010 %s aborted

Cause: A UOP CYCLE START or DI[Initiate Style] was detected when a non-production (i.e. test cycle) program was paused. This paused program was aborted for safety reasons.

Remedy: None is required. The next production start signal will start the current style.

APSH-012 REMOTE switch must be on LOCAL

Cause: The robot's REMOTE condition is TRUE, so the remote operating device (PLC) currently has motion control over the robot.

Remedy: Disable the REMOTE condition by turning the REMOTE keyswitch on the SOP to LOCAL.

APSH-013 Place robot into REMOTE state

Cause: The REMOTE condition is currently false, so the robot is not under the control of the remote operating device (PLC).

Remedy: Verify that the following conditions are true in order to put the robot into the REMOTE condition: 1. UOP inputs #1 (IMSTP), #3 (SFTYSPD), and #8 (ENBL) are all HIGH. 2. SOP REMOTE/LOCAL keyswitch is set to REMOTE. 3. Teach pendant is disabled. 4. Robot Auto/Bypass mode input is HIGH (if so assigned). 5. Make sure a user program is not setting \$RMT_MASTER = 1.

APSH-014 RESET Failure

Cause: There is an active fault, which prevents the reset request from executing.

Remedy: Clear the source of the fault (usually an external E-Stop) and press FAULT RESET.

APSH-015 Step mode must be disabled

Cause: Step mode is enabled, which prevents the run request from executing.

Remedy: Disable step mode by pressing the STEP hardkey.

APSH-016 Robot is not under PLC control

Cause: The UOP is not the master device, which prevents the run request from executing.

Remedy: Turn SOP REMOTE/LOCAL keyswitch to REMOTE. Make sure all UOP signals are correct for execution. Set \$RMT_MASTER to 0.

APSH-017 Running with process disabled

Cause: This is a warning to notify the user that a production job is running with the sealant disabled.

Remedy: None needed.

APSH-018 WARNING - Machine lock is on

Cause: This is a warning to notify the user that a production job is running with machine lock on.

Remedy: None needed.

APSH-019 Job queue is full

Cause: The job queue cannot accept the next job because it is full.

Remedy: Manually edit the job queue to delete any unneeded jobs or increase queue size.

APSH-020 Job queue is empty

Cause: A request to run the next job in the queue came in, but the queue is empty.

Remedy: Check the external device to make sure that a job number was correctly sent to the controller, or manually edit the job queue to CREATE a job.

APSH-021 Raise UOP ENBL input

Cause: Robot motion and/or program execution cannot occur unless UOP input 8 is ON.

Remedy: Check UOP I/O setup. UOP input 8 (ENBL) must be ON.

APSH-022 Safety fence is open

Cause: The safety fence input is LOW.

Remedy: The safety fence input must be ON to resume normal robot operation. Raise the safety fence input.

APSH-024 Program %s not loaded

Cause: The program name that the shell was requested to run is not loaded on the controller.

Remedy: Check PLC->Robot style communication. Verify that specified JOB name was requested by PLC. Load or create the specified JOB program.

APSH-025 WARNING - Running at < 100%%

Cause: This is a warning to notify the user that a production job is running at less than 100% speed override.

Remedy: None needed. Dispense tool can increase the override speed to 100% if you require it. Go to the Cell Setup menu to access this option.

APSH-027 Press FAULT RESET button

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-028 Increasing speed to 100%%

Cause: This is a warning to notify the user that Dispense tool in increasing the genoverride (speed override) to 100%.

Remedy: None needed. To disable this feature, you may change this option on the Cell Setup menu.

APSH-029 Robot must be at home

Cause: The robot must be at the HOME position in order to perform the requested operation. This error is usually posted when the PLC sends a cycle start and the robot is not at home.

Remedy: Move the robot to the home position.

APSH-030 Style code %s is invalid

Cause: The GIN[style_in] is set to an invalid number.

Remedy: Check the GIN[style_in] value as well as the Group input configuration.

APSH-031 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Check the GIN[style_in] value as well as the Group input configuration.

APSH-032 Robot Servos Disabled

Cause: Dispense tool has detected that the robot servos have been disabled manually.

Remedy: This is a status message to make sure the user is aware that the robot cannot move. The servos must be re-enabled to resume normal production operations.

APSH-033 PLC comm error - timeout

Cause: A communication sequence took too long to complete.

Remedy: Increase communication timeout value in PNS Cell Communication setup menu or disable communication timeout checking.

APSH-034 No UOP output defined

Cause: The User Operator Panel output group has not been defined.

Remedy: Set up the UOP Outputs in the UOP I/O menu and restart the robot controller.

APSH-035 Robot is in Bypass mode

Cause: The MODE input is low, forcing the robot into BYPASS mode. The robot will now ignore all PLC style initiation.

Remedy: Set the MODE switch to ON. The robot will then re-enter AUTOMATIC mode and again accept PLC signals.

APSH-036 User JOB has been paused

Cause: The current JOB has been paused. This often happens if the HOLD input is turned ON or the UOP ENBL signal is set to OFF.

Remedy: If the REMOTE condition is TRUE, the fault recovery menu will appear and give the user the appropriate recovery options. If the REMOTE condition is not TRUE, recovery is up to the user. If all else fails, select FCTN (Function hardkey) then ABORT ALL.

APSH-037 No UOP input defined

Cause: The User Operator Panel input group has not been defined.

Remedy: Set up the UOP Inputs in the UOP I/O menu.

APSH-038 No style input group defined

Cause: The group, which carries the style code in to the controller, has not been defined.

Remedy: Set up a STYLE SELECT group in the Cell I/O and GROUP I/O input menus and restart the robot.

APSH-039 No style ack strobe defined

Cause: The style acknowledge strobe, which is needed with the current communication configuration, has not been defined.

Remedy: Set up a Style Ack Strobe in the Cell Output I/O menu and restart the robot.

APSH-040 No backup input group defined

Cause: The backup input group, which is needed with the current communication configuration, has not been defined.

Remedy: Set up a Backup Style Select group in the Cell output I/O and GROUP I/O menus and restart the robot.

APSH-041 No style input strobe defined

Cause: The style strobe, which is needed with the current communication configuration (queue enabled), has not been defined.

Remedy: Set up a PNS Strobe in the Cell Input I/O menu and restart the robot.

APSH-042 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Set up a PNS Strobe in the Cell Input I/O menu and restart the robot.

APSH-043 No style ack group defined

Cause: The style acknowledge group, which is needed with the current communication configuration, has not been defined.

Remedy: Set up a Style Ack Group in the Cell output I/O and GROUP I/O menus and restart the robot.

APSH-044 A user program is HELD

Cause: The current job has been held by pressing the HOLD button or setting the UOP HOLD input LOW.

Remedy: Release the HOLD button and raise the UOP HOLD input.

APSH-045 No program setup for style %s

Cause: No program number has been set up for this RSR input.

Remedy: Enter a program number for this RSR input in the RSR Cell Setup menu.

APSH-046 Robot is in Automatic mode

Cause: This is a notice that the robot is leaving BYPASS mode and entering AUTOMATIC mode, where it can respond to PLC inputs.

Remedy: None needed.

APSH-047 Shell will not run without UOPs

Cause: This is a warning, telling the user that the UOPs have not yet been set up, so the shell will wait for the UOPs to be defined before resuming.

Remedy: The shell requires the UOPs to run. Once the UOPs have been set up, the shell will continue its initialization sequence.

APSH-048 PLC comm error - invert check

Cause: The backup style group is not the 1's complement (inverse) of the style input group.

Remedy: Verify that the PLC is sending the correct invert style to the correct group. Disable invert checking in the PNS Cell Setup menu.

APSH-049 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Verify that the PLC is sending the correct invert style to the correct group. Disable invert checking in the PNS Cell Setup menu.

APSH-050 Cell IO setup is invalid

Cause: Signals which are required for this cell IO configuration have not been configured.

Remedy: Check the messages posted previous to the in the error log for the names of the incorrect signals. Fix the IO setup of these signals and cold start the controller.

APSH-051 Connect or deassign UOP inputs

Cause: The robot cannot move while the UOP inputs are in this state.

Remedy: You must either wire UOP inputs #1, #2, #3, and #8 high or deassign the UOP inputs and restart the controller.

APSH-052 Critical UOP inputs are LOW

Cause: UOP inputs #1 (IMSTP), #2 (HOLD), #3(SFTYFNC), #8 (ENBL) are all LOW. These must all be HIGH for normal production operation.

Remedy: See remedy for APSH-051, Connect or deassign UOP inputs.

APSH-054 Release SOP E-STOP

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-055 Raise UOP IMSTP input

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-056 Release SOP E-STOP

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-057 Release TP E-STOP

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-058 Pause forced by shell

Cause: This error is posted to simulate a PAUSE error.

Remedy: This error is posted by Dispense tool during normal operation, but should not be visible to the user. If you see this error, report it to you FANUC representative.

APSH-059 Abort forced by shell

Cause: This error is posted to simulate an ABORT error.

Remedy: This error is posted by Dispense tool during normal operation, but should not be visible to the user. If you see this error, report it to you FANUC representative.

APSH-060 Cycle start ignored-not in AUTO

Cause: This is not a fault. This error is posted when the robot is sent a cycle start from the cell controller, but the robot is either in BYPASS mode (set from Soft Panel menu) or in MANUAL mode, but no manual cycle start has been initiated. It is also possible that the robot is in the MANUAL mode and a MANUAL CYCLE was requested, but the style sent by the PLC does not match the one specified on the SOFT PANEL.

Remedy: In most cases, this fault can be ignored. This fault was put in to assist in debugging problems with the soft panel in Dispense tool. If you are trying to initiate a MANUAL CYCLE, make sure the MANUAL CYCLE STYLE inputted into the Soft Panel menu is the same as what the PLC is sending.

APSH-061 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: In most cases, this fault can be ignored. This fault was put in to assist in debugging problems with the soft panel in Dispense tool. If you are trying to initiate a MANUAL CYCLE, make sure the MANUAL CYCLE STYLE inputted into the Soft Panel menu is the same as what the PLC is sending.

APSH-062 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: In most cases, this fault can be ignored. This fault was put in to assist in debugging problems with the soft panel in Dispense tool. If you are trying to initiate a MANUAL CYCLE, make sure the MANUAL CYCLE STYLE inputted into the Soft Panel menu is the same as what the PLC is sending.

APSH-063 A HOLD input is active

Cause: The current job has been paused by pressing the HOLD button or setting the UOP HOLD input LOW.

Remedy: Release the HOLD button and raise the UOP HOLD input.

APSH-064 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Release the HOLD button and raise the UOP HOLD input.

APSH-065 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Release the HOLD button and raise the UOP HOLD input.

APSH-066 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Release the HOLD button and raise the UOP HOLD input.

APSH-070 Failed to continue %s

Cause: The error handler was unable to continue the task named when the user requested that all tasks be continued. This is probably due to one of the E-Stops or HOLD buttons being active.

Remedy: Disable all E-Stops and release HOLD buttons. If it is not desired that the task named be continued, abort it.

APSH-071 Failed to pause robot task

Cause: A Karel PAUSE_TASK() command failed to pause a task which the error handler believes should be paused.

Remedy: The task which the error handler tried to pause was probably a system utility, and is not allowed to be paused. You can probably ignore this fault without any problems.

APSH-072 Failed to abort robot task

Cause: A Karel ABORT_TASK() command failed. When you run a program immediately after aborting a suspended program on Dispense tool, "APSH-72 Failed to abort robot task" could occur.

Remedy: Cold start the robot controller, then manually restore production status. Dispense tool requires that you set a one or more second interval between resetting alarms and running the next program, when you abort a suspended program.

APSH-073 Servos Locked-out, enable servos

Cause: Robot servos are locked out.

Remedy: Enable robot servos.

APSH-074 Disable Teach Pendant

Cause: In order to resume normal production operation, Dispense tool requires that you perform this action.

Remedy: Perform the action stated in the error message when you are ready to resume normal operation.

APSH-075 Error in accessing TPE:%s

Cause: The following error occurred when the data associated with a TPE program was accessed.

Remedy: Verify that this TPE program exists. Go into the DETAIL pages under the SELECT menu and hit NEXT key until robot allows this mode to END.

APSH-076 Shell could not run:%s

Cause: The shell tried to execute a program, but was stopped by the operating system.

Remedy: Make sure the program exists and it is not already running or paused. Use the PROGRAM STATUS display to make sure you have not exceeded the maximum number of tasks. Abort all programs which do not need to be running.

APSH-077 No positions in %s

Cause: This TPE did not contain a position to represent HOME, SERVICE, or PURGE.

Remedy: If you need to use the AT PERCH, AT PURGE, or AT SERVICE outputs, teach the positions you need in the appropriate TPEs. If you do not need these outputs to be updated ignore this warning.

APSH-078 Shell could not run program

Cause: The shell tried to execute a program, but was stopped by the operating system.

Remedy: Make sure the program exists and it is not already running or paused. Use the PROGRAM STATUS display to make sure you have not exceeded the maximum number of tasks. Abort all programs which do not need to be running.

APSH-079 No DIN for Auto/Bypass

Cause: No Auto/Bypass input has been defined, but one was expected.

Remedy: Set an Auto/Bypass input in the Cell I/O Input menu and restart the robot.

APSH-080 Waiting for Cancel/Continue

Cause: The robot is currently waiting for Cancel or continue (Wet or Dry) or a HOME input from the PLC.

Remedy: This is a warning to inform the person at the teach pendant that the PLC has been given exclusive control over how the robot will recover from the current error.

APSH-081 Waiting for Cancel

Cause: The robot is currently waiting for a cancel input from the PLC. The current JOB has had a fault so severe that it cannot recover and must be aborted or receives the HOME UOP input.

Remedy: This is a warning to inform the person at the teach pendant that the PLC has been given exclusive control over how the robot will recover from the current error.

APSH-082 No \$ERROR_PROG defined

Cause: No \$ERROR_PROG has been defined for this JOB. This fault will only appear if the Karel variable [SLERROR]POST_NO_ERRP is set to TRUE (default = FALSE).

Remedy: Use the TPE ERROR_PROG command, under Program Control, to set up an Error Program for this JOB. This will allow the robot to move out of the work area when an error occurs.

APSH-083 No \$RESUME_PROG defined

Cause: No \$RESUME_PROG has been defined for this JOB.

Remedy: Use the TPE RESUME_PROG command, under Program Control, to set up a Resume Program for this JOB. This will allow the JOB to resume the interrupted program.

APSH-084 WARNING - simulated I/O

Cause: The robot is running a style program with one or more I/O ports simulated. Unexpected motions and actions may occur.

Remedy: Verify that all simulated I/O points should be simulated. Un-simulate all I/O ports which should not be simulated.

APSH-090 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Verify that all simulated I/O points should be simulated. Un-simulate all I/O ports which should not be simulated.

APSH-091 %s

Cause: Place holder error, used to keep documentation for errors from Drastically changing.

Remedy: Verify that all simulated I/O points should be simulated. Un-simulate all I/O ports which should not be simulated.

APSH-092 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-093 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-094 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-095 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-096 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-097 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-098 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-099 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-100 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

APSH-110 READ IO parm %s missing

Cause: The READ IO MACRO was called without a parameter that must be entered. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-111 READ IO parm %s is wrong type

Cause: The READ IO MACRO was called with illegal parameters. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-112 signal %s does not exist

Cause: The READ IO MACRO was called but the signal could not be found. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-113 can't fetch signal type

Cause: The READ IO MACRO was called but the signal could not be found. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-114 can't fetch signal number

Cause: The READ IO MACRO was called but the signal could not be found. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-115 can't read signal %s

Cause: The READ IO MACRO was called but the signal could not be found. READ IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-116 Reg %s could not be set

Cause: Register operation failed.

Remedy: Check if the register is defined, if it is between 1-64 and if it has the right value. Must ABORT ALL and retry.

APSH-117 Register not defined %s

Cause: This is just a debug message.

Remedy: None.

APSH-118 WRITE IO parm %s missing

Cause: The WRITE IO MACRO was called without a parameter that must be entered. WRITE IO(signal name string, integer value to write)

Remedy: Check the MACRO call in the TP program.

APSH-119 WRITE IO parm %s is wrong type

Cause: The WRITE IO MACRO was called with illegal parameters. WRITE IO(signal name string, integer value to write)

Remedy: Check the MACRO call in the TP program.

APSH-120 signal %s does not exist

Cause: The WRITE IO MACRO was called but the signal could not be found. WRITE IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-121 can't write signal %s

Cause: The WRITE IO MACRO was called but the signal could not be found. WRITE IO(signal name string, integer register number)

Remedy: Check the MACRO call in the TP program.

APSH-122 GET IO PORT parm %s missing

Cause: The GET IO MACRO was called without a parameter that must be entered. GET IO(signal name string, integer port number)

Remedy: Check the MACRO call in the TP program.

APSH-123 GET IO PORT parm %s is wrong type

Cause: The GET IO MACRO was called with illegal parameters. GET IO(signal name string, integer port number)

Remedy: Check the MACRO call in the TP program.

APSH-124 signal %s does not exist

Cause: The GET IO MACRO was called but the signal could not be found. GET IO(signal name string, integer port number)

Remedy: Check the MACRO call in the TP program.

APSH-125 Forcing Process Enabled

Cause: It was detected that the Process was DISABLED at the start of this production program. A choice (or setup selection) has indicated that the Process should be FORCED to the enabled state.

Remedy: - Don't choose to FORCE the process enable. - Change Prog Select-Production Check Process ready setup to NOT Force Condition. - Ensure that Process Enabled input is on at the start of the next production cycle.

APSH-126 %s

Cause: Robot is paused.

Remedy: Status message.

APSH-127 Repower to activate change.

Cause: The joint velocity limit has changed. This parameter change requires you to cycle controller power in order to take effect.

Remedy: Turn off the controller, then turn it on again.

APSH-128 Tryout mode enabled

Cause: Tryout mode state has CHANGED from disable to enable. This is only a status message, it is not a fault. Note: tryout mode is a test function - part thickness value is ignored, when tryout mode is enabled.

Remedy: Disable tryout mode, if desired.

APSH-129 Tryout mode disabled

Cause: Tryout mode state has CHANGED from enabled to disabled. This is only a status message, it is not a fault. Note: tryout mode is a test function - part thickness value is ignored, when tryout mode is enabled.

Remedy: Enable tryout mode, if desired.

APSH-130 Cannot access FR: %s *.DT files

Cause: Error occurred while accessing the FR: device. No .dt files found.

Remedy: .DT files must exist on the FR: device.

APSH-131 I/O data error: %s

Cause: I/O port defined wrong: Illegal type, Default data is used.

Remedy: .DT file on the FR: device must be corrected.

APSH-132 Selected Prog %s not loaded

Cause: The program name that the shell was requested to run is not loaded on the controller.

Remedy: Check PLC->Robot style communication. Verify that specified Program name was requested by PLC. Load or create the specified Program.

APSH-133 Not in safe starting position

Cause: The robot has been jogged away from the position where the teach pendant was enabled.

Remedy: Move the robot back to the position where the teach pendant was enabled, abort the program, or continue (in linear motion) from position where the robot is currently positioned.

APSH-141 %s

Cause: The robot has been jogged away from the position where the teach pendant was enabled.

Remedy: Move the robot back to the position where the teach pendant was enabled, abort the program, or continue (in linear motion) from position where the robot is currently positioned.

APSH-142 WARNING - System is in dry run

Cause: This is a warning to notify you that a production job is running with the process disabled.

Remedy: None is required.

APSH-143 Robot motion is not enabled

Cause: Robot motion and/or program execution cannot occur unless UOP input 8 is ON.

Remedy: Check UOP I/O setup. UOP input 8 must be ON.

APSH-144 WARNING - Process Complete manually turned on at end of %s

Cause: A 'Force Process Complete' was performed from the Soft Panel.

Remedy: This is just a warning to let the operator know that Process Complete was manually turned on.

APSH-150 Gun operation is NOSTROKE

Cause: A production job is running with the gun set to NOSTROKE.

Remedy: None.

APSH-151 Weld operation is NOWELD

Cause: A production job is running with weld set to NOWELD.

Remedy: None.

APSH-152 Robot mode must be AUTO

Cause: The robot must be in full automatic mode with the PLC before production operation can occur.

Remedy: Go to the SOFT PANEL menu and set Robot mode=AUTO.

APSH-153 Must press SHIFT key too

Cause: The shift key must be pressed when accessing this teach pendant hardkey.

Remedy: Press the shift key.

APSH-154 Only one gun defined

Cause: Because the system is currently configured for one equipment with a single gun, there is no need to set the equipment that that GUN and BACKUP hardkeys will operate on; they will always operate on the one gun.

Remedy: None is required.

APSH-155 HOME position not recorded

Cause: The HOME position has not been recorded yet. The HOME position is contained in Reference Position menu.

Remedy: In case that you enable "At home check" in Automatic operation check, record a reference position and set the item "Is a valid HOME" of that reference position to TRUE in Reference Position menu. Though "At home check" in Automatic operation check is disabled, this warning may occur. Especially, when "Use HOT START" in System Configuration menu is set to FLASE, this warning may occur at every turning on the controller. In that case, none is required. NOTE: In some software versions or applications, in case that the item "Is a valid HOME" is set to TRUE in

Reference Position menu, when the robot reaches the reference position, the program HOME_IO is executed. If you want not to execute HOME IO at reference position, delete all instructions in the program HOME_IO.

APSH-156 Specify Home in Ref Pos Menu

Cause: The HOME position has not been recorded yet. The HOME position is contained in Reference Position menu.

Remedy: In case that you enable “At home check” in Automatic operation check, record a reference position and set the item “Is a valid HOME” of that reference position to TRUE in Reference Position menu. Though “At home check” in Automatic operation check is disabled, this warning may occur. Especially, when “Use HOT START” in System Configuration menu is set to FLASE, this warning may occur at every turning on the controller. In that case, none is required.

APSH-157 Teach pendant must be enabled

Cause: The teach pendant must be enabled when accessing this teach pendant hardkey.

Remedy: Enable the teach pendant.

APSH-158 No group output for weld sched

Cause: The group output that contains the weld schedule has not been configured yet.

Remedy: Go to the Weld Intface Output menu, and edit the index of the Weld Schedule I/O point. Make sure the group output has been properly configured from the Group Output menu. You must cold start the controller when changing this index, or redefining the group output.

APSH-159 Servos are not ready

Cause: The servos are not ready, so operation requested cannot be performed.

Remedy: When resetting a fault, wait for the servos to click on before attempting to execute a program.

APSH-160 Robot not at POUNCE position

Cause: The robot is not at the POUNCE position, so the operation requested cannot be performed.

Remedy: Re-issue this request when the robot is AT POUNCE.

APSH-161 No production program is running

Cause: The robot is not currently running a production style, so the operation requested cannot be performed.

Remedy: Re-issue the request when the robot is running a production style.

APSH-162 No group output for multi-pressure

Cause: The group output that contains the setting for the multi-pressure valving has not been configured yet.

Remedy: Go to the Spot Equipment Intface Output menu, and edit the index of the Valve pressure I/O point. Make sure the group output has been properly configured from the Group Output menu. You must cold start the controller when changing this index, or redefining the group output.

APSH-163 No motion allowed--gun closed

Cause: No motion can occur because the gun is closed. This prevents the user from jogging or running a program while the gun is closed, and damaging parts and/or tooling.

Remedy: Open the gun.

APSH-164 Home I/O program %s not loaded

Cause: The HOME I/O program as specified from the Cell Setup menu does not exist and was not run.

Remedy: Go to the Cell Setup menu and either check the name of the HOME I/O macro name menu item. Make sure the file specified exists on the controller. Either creates a program by that name or change this menu item to a program that already exists on the controller.

APSH-165 Invalid Studgun Selection

Cause: There I/O configuration for the proper studwelding gun has not been initialized.

Remedy: Proceed to the Spot Equipment I/O setup screen and configure the digital inputs Gun Present = On/Off, Gun in Nest = On/Off for the 2 stud guns. Proper configuration if gun 1 is on the robot is for Gun 1 (Gun Present = ON, Gun in Nest = OFF and for Gun 2 (Gun Present = OFF, Gun in Nest = ON. Proper configuration if gun 2 is on the robot is for Gun 1 (Gun Present = OFF, Gun in Nest = ON and for Gun 2 (Gun Present = ON, Gun in Nest = OFF.

APSH-166 Studgun Change Unsuccessful

Cause: The robot was aborted or interrupted during the studgun change sequence.

Remedy: Manually change the stud guns and move the robot to the home position. Press cycle start to run production.

APSH-167 Move robot home & cycle start

Cause: The stud gun change program was interrupted.

Remedy: To resume production the robot must be manually returned home and cycle start must be pressed to continue.

APSH-168 No GO for EQP pressure

Cause: The group output that contains the setting for the equalization pressure has not been configured yet.

Remedy: Go to the Spot Equipment Interface Output menu, and edit the index of the Equal pressure I/O point. Make sure the group output has been properly configured from the Group Output menu. You must cold start the controller when changing this index, or redefining the group output.

APSH-169 Uninitialized Stud Macros

Cause: A macro program to drop off or pickup studgun 1 or 2 has not been initialized.

Remedy: Proceed to Spot Equipment Menu under MENUS-SETUP and initialize the studwelding macros which will only appear if STUD BACKUP is ENABLED at CONTROLLED START.

APSH-170 Check Nest/Changer Inputs

Cause: The inputs on the stud welder nest do not appear to be set up correctly.

Remedy: Verify on the Spot Equip I/O menu that the Head in Nest inputs are set up correctly.

APSH-171 HOME_IO has not completed running

Cause: HOME_IO has not completed successfully, so new program cannot be ran.

Remedy: Check HOME_IO and see if it is looping on some I/O.

APSH-174 SCR overtemp detected

Cause: An SCR overtemp signal has been received.

Remedy: Check the SCR for overheating.

APSH-175 Req. Press. Not mapped for WC:%s

Cause: The Request Pressure digital input is not mapped.

Remedy: Map request pressure input on Weld Interface Menu.

APSH-176 GIN For Weld Press. Not mapped for WC:%s

Cause: The GIN for Weld Pressure is not mapped.

Remedy: Map Weld Pressure input on Weld Interface Menu.

APSH-177 Read Press. Not mapped for WC:%s

Cause: Read pressure input is not mapped on weld interface Menu.

Remedy: Map read pressure input on Weld Interface Menu.

APSH-178 Map I/O in Weld Interface Menu

Cause: There is not cause. This is a help code.

Remedy: No remedy required.

APSH-179 Upd. Press. timeout WC:%s

Cause: The weld controller did not set Read Pressure input in time.

Remedy: Check if weld controller is functioning correctly, or increase Weld Pres time-out at CTRL start menu.

APSH-180 Could not communicate to WC.

Cause: Could not read any I/O from the Weld controller. Device may be offline.

Remedy: Check if weld controller is functioning correctly, or powered on.

APSH-201 Automatic Collision Recovery

Cause: Automatic Collision recovery is beginning.

Remedy: None.

APSH-202 Recovery Program not found

Cause: Automatic Collision recovery was attempting to run the recovery program.

Remedy: Make sure the program is loaded, and retry the operation.

APSH-203 Error running %s

Cause: The task could not run or continue.

Remedy: Check the associated error message for the task error and follow the recovery procedure.

APSH-204 Running recovery prog %s

Cause: Automatic Collision recovery is about to run the recovery program.

Remedy: None.

APSH-205 Running original prog %s

Cause: Automatic Collision recovery is about to run the original program.

Remedy: None.

APSH-206 Invalid Group Specified

Cause: The group specified to get_home does not exist.

Remedy: Verify the specified group number exists, and retry the operation.

APSH-207 Invalid Ref Pos Specified

Cause: The reference position specified to get_home.

Remedy: Verify the specified Reference position exists.

APSH-208 Failed to check %s

Cause: This error is related to production setup check screen. This item should not be checked on the present configuration.

Remedy: Press F6,REDO and cycle power to update items.

APSH-209 Fault Disabled: single cycle.

Cause: This is a warning message to log that the user chose to disable fault checking for one cycle.

Remedy: None.

APSH-210 Fault Disabled: multiple cycles.

Cause: This is a warning message to log that the user chose to disable fault checking for multiple cycles.

Remedy: None.

4.1.3 ARC Alarm Code

ARC-001 Illegal arc equipment config

Cause: An attempt was made to add or use more equipment than permitted.

ARC-002 Illegal arc schedule number (%s^4,%d^5)

Cause: An arc instruction contained an illegal schedule number.

Remedy: Check weld schedule number.

ARC-003 No gas flow (%s^4,%d^5)

Cause: No gas flow was detected during an arc start.

Remedy: Investigate the gas supply unit.

ARC-004 Gas flow after weld (%s^4,%d^5)

Cause: The gas fault input was not ON after the gas output was set to OFF.

Remedy: Check if weld controller is functioning correctly, or powered on.

ARC-005 Gas fault (%s^4,%d^5)

Cause: A gas fault input was detected during welding.

Remedy: Investigate the gas supply unit.

ARC-006 Wire fault (%s^4,%d^5)

Cause: A wire fault input was detected during welding.

Remedy: Investigate the wire feeder.

ARC-007 Water fault (%s^4,%d^5)

Cause: A water fault input was detected during welding.

Remedy: Investigate the water supply unit.

ARC-008 Weld power supply fault (%s^4,%d^5)

Cause: A power fault input was detected during welding or weld start/end process.

Remedy: Investigate weld power supply.

ARC-010 Wire stick detected (%s^4,%d^5)

Cause: A wire stick has occurred.

Remedy: Secure the robot and equipment. Cut the wire.

ARC-011 Wire stick, not reset (%s^4,%d^5)

Cause: A wirestick was detected and wirestick reset was not performed. Wirestick reset may be disabled. Wirestick reset is not done during TIG welding or if welding is stopped by turning weld enable off.

Remedy: Secure the robot and equipment. Cut the wire.

ARC-012 Wire stick reset(s) failed (%s^4,%d^5)

Cause: A wirestick was detected and the automatic wirestick reset failed to break the wirestick.

Remedy: Secure the robot and equipment. Cut the wire.

ARC-013 Arc Start failed (%s^4,%d^5)

Cause: The arc detect input did not stabilize during an arc start.

Remedy: Check if weld controller is functioning correctly, or powered on. Perform following solution.

1. Investigate the wire and weld power supply
2. Adjust arc start error time on arc weld equipment screen.
3. Change weld schedule.

ARC-014 Teach pendant is disabled

Cause: The weld enable or a wire inch hardkey was pressed with the teach pendant enable switch OFF.

Remedy: Enable the teach pendant.

ARC-015 Press shift with this key

Cause: The weld enable or a wire inch hardkey was pressed without holding the shift key.

Remedy: Perform with holding the shift key.

ARC-016 Weld by Shift FWD is disabled

Cause: A program executing from the teach pendant attempted an Arc Start with welding from the teach pendant disabled.

Remedy: Perform the following solution.

1. Execute program from the operator's panel or the remote operating device.
2. Enable "Weld from teach pendant" on the arc weld system setup screen.

ARC-017 Arc Start was disabled (%s^4,%d^5)

Cause: An Arc Start instruction was executed with welding disabled.

Remedy: Perform following solution.

1. If the teach pendant is enabled, enable weld mode by pressing the WELD ENBL key.
2. If REMOTE switch is turned to REMOTE side, turn "Arc enable" of Weld I/O ON.
3. Check if machine lock or dry run is enabled on the test cycle setup screen.

ARC-018 Lost arc detect (%s^4,%d^5)

Cause: The arc detect signal was lost during a weld.

Remedy: Perform following solution.

1. Investigate the wire feeder.
2. Check speed of weld schedule and arc loss error time.

ARC-019 Can't read arc detect input (%s^4,%d^5)

Cause: The arc detect input could not be read.

Remedy: Check the connection of process I/O board.

ARC-020 No plan data area available

Cause: Insufficient memory exists to plan an arc instruction.

Remedy: Decrease the number of programs.

ARC-021 Program aborted while welding (%s^4,%d^5)

Cause: A program was aborted while welding.

Remedy: Check if weld end instruction is taught.

ARC-022 Weld AO scaling limit used (%s^4,%d^5)

Cause: The programmed analog output is beyond the equipment limits.

Remedy: Perform following solution.

1. Adjust weld command in setting range.
2. In the case of Lincoln welder, setting range of command is different from each weld mode. So it is necessary to check if each command setting of weld schedule is in setting range after weld mode is changed. Setting range of command can be confirmed on the weld procedure screen.

ARC-023 Illegal arc schedule type (%s^4,%d^5)

Cause: The arc instruction register is not an integer type.

Remedy: Use register whose value is integer.

ARC-024 Invalid equipment range

Cause: The equipment min to max range is too small.

Remedy: Enter new min or max values for the equipment.

ARC-025 Invalid A/D or D/A range

Cause: The binary range data for the A/D or D/A is too small.

Remedy: Modify the correct system variable fields within \$AWEPRR.

ARC-026 Cannot scale AIO while welding

Cause: An analog scaling limit was modified while welding. The scaling was not changed.

Remedy: Turn off the controller and turn it on again.

ARC-027 %d arc log files auto delete

Cause: Free space on Memory Device is insufficient, so cannot save the log file for Arc Weld Log function.

Remedy: Arrange the contents of Memory Device and get enough free space on Memory device for Arc Weld Log function.

ARC-028 Arc log failed: Device full

Cause: Free space on Memory Device is insufficient, so cannot save the log file for Arc Weld Log function.

Remedy: Arrange the contents of Memory Device and get enough free space on Memory device for Arc Weld Log function.

ARC-029 Illegal num of weld I/O(%s)

Cause: About weld output signals for command parameters or weld input signals for feedback parameters, setup of number of signals, port type, etc. have some problems.

Remedy: Perform Controlled Start and fix the setup of number of signals, etc.

ARC-030 Wire stick is still detected (%s^4,%d^5)

Cause: A wire stick is still detected after a system RESET.

Remedy: Secure the robot and equipment. Cut the wire.

ARC-031 No motion while welding (%s^4,%d^5)

Cause: Motion has stopped longer than \$arc_loss_tim while welding.

Remedy: If no motion is needed during welding, increase the arc loss time in the Weld Equipment SETUP screen or disable arc loss detection in the Weld System SETUP screen.

ARC-032 Weld stopped by single step (%s^4,%d^5)

Cause: Welding was stopped by entering single step mode after welding began.

Remedy: To continue welding you must exit single step mode.

ARC-033 Override must be 100%% to weld (%s^4,%d^5)

Cause: The speed override is less than 100%.

Remedy: Set the speed override to 100% to weld or disable welding to continue at a low speed.

ARC-034 Task does not control welding (%s^4,%d^5)

Cause: A task which does not have weld control attempted to execute an Arc Start or an Arc End instruction. Only one task is permitted to have weld control.

Remedy: Allow the task which has weld control to end or abort before attempting to weld with another task.

ARC-035 Equipment number isn't set (%s^4,%d^5)

Cause: The arc instruction does not have the equipment number.

Remedy: Please set the equipment number to the program attribute data or the arc instruction.

ARC-036 Such equipment mask isn't supported (%s^4,%d^5)

Cause: An attempt was made to add or use more equipment than permitted.

Remedy: Please set the equipment number to the program attribute data or the arc instruction.

ARC-037 Another equipment is inching now

Cause: Another equipment is wire inching now.

Remedy: Please stop wire inching for another equipment by releasing the shift key or user key.

ARC-038 Already held another equipment (%s^4,%d^5)

Cause: This program (task) has already held another equipment A task can only use an equipment.

Remedy: Please control the equipment by another task.

ARC-039 %s^1 AO[%d^2] is not scaled (%s^4,%d^5)

Cause: The named weld analog output signal is not scaled properly.

Remedy: Adjust the weld analog output scaling in the Weld I/O screen using the CONFIG function key.

ARC-040 EQ%d^1 Missing I/O: %s^2

Cause: The named weld I/O signal is not detected or configured properly.

Remedy: Verify the I/O hardware is connected and the signal is assigned a port number in the Weld I/O screen. Use the CONFIG function key if the signal is unassigned.

ARC-041 Weld EQ needs DeviceNet option

Cause: The weld equipment has been configured to use DeviceNet by setting the fields \$VENDOR_ID, \$DEV_TYPE, and \$PROD_CODE in the system variable \$AWEPRR to non-zero values. However, the DeviceNet option is not installed.

Remedy: Add the DeviceNet option or choose a weld equipment model which does not require DeviceNet. If the weld equipment model is correct and does not require DeviceNet then set the \$AWEPRR fields mentioned above to zero and cycle power.

ARC-042 Weld EQ needs Expl Msg option

Cause: The weld equipment has been configured to use DeviceNet by setting the fields \$VENDOR_ID, \$DEV_TYPE, and \$PROD_CODE in the system variable \$AWEPRR to non-zero values. However, the Explicit Messaging option is not installed.

Remedy: Add the Explicit Messaging option or choose a weld equipment model which does not require DeviceNet. If the weld equipment model is correct and does not require DeviceNet then set the \$AWEPRR fields mentioned above to zero and cycle power.

ARC-043 Weld EQ needs DeviceNet board

Cause: The weld equipment has been configured to use DeviceNet by setting the fields \$VENDOR_ID, \$DEV_TYPE, and \$PROD_CODE in the system variable \$AWEPRR to non-zero values. However, DeviceNet hardware was not detected.

Remedy: Add DeviceNet hardware or choose a weld equipment model which does not require DeviceNet. If the weld equipment model is correct and does not require DeviceNet then set the \$AWEPRR fields mentioned above to zero and cycle power.

ARC-044 Weld EQ needs DeviceNet defn.

Cause: The weld equipment has been configured to use DeviceNet by setting the fields \$VENDOR_ID, \$DEV_TYPE, and \$PROD_CODE in the system variable \$AWEPRR to non-zero values. A DeviceNet device definition could not be found for that product.

Remedy: You can add a DeviceNet definition for this product or if the weld equipment you are using does not support DeviceNet you can set the \$AWEPRR fields mentioned above to zero and cycle power.

ARC-045 Weld EQ Device is OFFLINE

Cause: ArcTool attempted to communicate with the Welding Equipment using the DeviceNet network, but could not because the link was not properly established.

Remedy: Verify the Weld Equipment is ON. Verify the DeviceNet cable is connected. Check the DeviceNet I/O screen board status and device status.

ARC-046 Weld EQ communication error

Cause: There was a communication error detected between ArcTool and the Weld Equipment.

Remedy: Verify the Weld Equipment is ON. Verify the DeviceNet cable is connected. Check the DeviceNet I/O screen board status and device status.

ARC-047 Not allowed during a weld

Cause: An operation was attempted which is not permitted while a weld is executing or paused.

Remedy: Try the operation after the program ends or is aborted.

ARC-048 Auto AI/O setup is unsupported

Cause: Auto AI/O setup for the mounted I/O module is not supported. Therefore parameters are not set automatically.

Remedy: Verify mounted I/O module and set system variables of \$AWEPRR[] in system variable screen manually if need.

ARC-049 Process %d switch to %d failed

Cause: ArcTool failed to switch weld processes.

Remedy: The weld power supply may be OFF, unconnected, or data in the second process may be incorrect.

ARC-050 Process %d NOT found

Cause: ArcTool failed to find this process on the weld power supply.

Remedy: Enter a different number or use the SEARCH parameters and function key.

ARC-051 Weld EQ%d ONLINE: %s

Cause: ArcTool is communicating with the weld power supply. The version number of the power supply is shown.

Remedy: This message is for notification and information. It does not indicate a problem.

ARC-052 Bad %s %s Prc %d

Cause: The indicated parameter is out of range.

Remedy: Enter a number within range.

ARC-053 No ramp at process switch (%s^4,%d^5)

Cause: Ramping is not allowed when switching weld processes.

Remedy: Complete the process switch first, then ramp with another arc start instruction.

ARC-054 No motion while arc welding

Cause: Emergency Arc Off function stops welding by this error because motion had stopped while welding longer than the specified time (it is 1000ms by default).

Remedy: Emergency Arc Off function is for safety. You can change the above-mentioned specified time with \$awsemgoff.\$chk_time (ms) (it is called Emergency Arc Off time) but please change it only if necessary.

ARC-055 No sync Eq (%s^4,%d^5)

Cause: An Arc Start instruction specified synchronizing with an equipment that is not also doing an Arc Start.

Remedy: Determine why the sync Equipment is not starting, or do not use synchronization.

ARC-056 Invalid sync (%s^4,%d^5)

Cause: An Arc Start instruction specified synchronizing with an Equipment that is not also synchronized.

Remedy: Check the synchronization equipment number specified in the Arc instruction or in the specified weld schedule SYNC DT detail menu. Refer to the Arc Start Synchronization section in the FANUC ArcTool Operator's Manual.

ARC-057 Cannot ramp t1=%d > t2=%d

Cause: Arc process ramping cannot continue because the delay to communicate between the robot and the welder (t1) is longer than the command update cycle time (t2). This may occur with weld schedule ramping or HeatWave Mode 2.

Remedy: Normally, this appears just before ARC-133. If ARC-133 is also posted just after this alarm, there is no need to remedy. Please resume the program.

If ARC-133 is not posted just after this alarm, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

ARC-058 Wire stick is still detected

Cause: A wire stick is still detected after a system RESET.

Remedy: Secure the robot and equipment. Cut the wire.

ARC-059 Gas purge stopped

Cause: Following operations are performed with gas on by the gas purge operation (pressing GAS/STATUS key with holding shift key). To prevent leaving the state of gas on, gas purge automatically stops when this alarm is posted.

- Perform the TP program
- Disable the teach pendant, switch to AUTO mode
- The setting item of "Gas purge key" in weld system setup screen is changed to disable

Remedy: Please do not perform the above-mentioned operations. If it is necessary to perform the above-mentioned operations, please perform it after gas off.

ARC-060 Cmd %s NOT found

Cause: The voltage or current command do not exist, so Arc Abnormal Monitor cannot decide the WARN and STOP Limit ranges. The monitoring by Arc Abnormal Monitor is never performed.

Remedy: If you want to use Arc Abnormal Monitor without voltage and current command, please set ABS(V,A) as Monitoring Method and input the absolute values to WARN and STOP Limit ranges in Arc Abnormal Monitor screen. If you do not want to monitor feedback values, please set DISABLED to Arc Abnormal Monitor.

ARC-061 Illegal instruction

Cause: The arc weld instruction is not supported in current configuration.

Remedy: Arc Start instruction and Arc End instruction can not be used in the weld procedure configuration. Weld Start instruction and Weld End instruction can be used in the weld procedure configuration.

ARC-072 Illegal AMR packet

Cause: Internal error.

Remedy:

1. Sometimes this error requires cycling the controller power.
2. If the same alarm occurs, execute the cycle power, return the robot to the home position and then execute the program.
3. If the program persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

ARC-084 Application process is changed during welding

Cause: Application is changed during welding.

Remedy: Please change the program.

ARC-085 Incomplete of conversion factor setup

Cause: Incomplete the analog signal conversion factor.

Remedy: Please set it.

ARC-086 Invalid of binary data in conversion factor

Cause: The binary data(\$AWEPRR.\$io_min/max_bin) is invalid. The difference is zero.

Remedy: Please set correct value.

ARC-087 Invalid conversion factor data

Cause: The conversion factor data is invalid. It must be filled more than 2 tables at least. But the value of the second table is zero.

Remedy: Please set conversion factor more than 2 tables.

ARC-088 Over selected AO factor No.

Cause: The selected number of AO conversion factor data is over the number of the actual data array.

Remedy: Please select the correct number of AO conversion factor data.

ARC-090 Weld disable by reason[%d]

Cause: In this situation, the welding is disabled by the following reason.

- 1: In Single step mode
- 2: In Machine lock mode
- 3: In Dry run mode
- 4: No I/O board exist
- 5: No I/O assignment for welding
- 6: In Flush AMR status
- 7: In Application disabled mode
- 8: In Arc disabled status
- 9: In Skip welding status
- 10: In disable status mode by AWDBG

Remedy: Please remove the specified reason to perform the welding.

ARC-091 Arc End cannot ramp to position (%s^4,%d^5)

Cause: An Arc End weld schedule specified a time of 99.0 seconds. This time value is sometimes used with Arc Starts to indicate ramping during an entire motion. This type of ramping is not available for an Arc End. A time of 99.0 seconds for an Arc End crater fill time is very long and is not recommended. If a long time is needed then 98.0 seconds will work without this error.

Remedy: Use a different weld schedule for the Arc End or change the time value to a smaller value.

ARC-092 Weld Cmd error EQ%d (%d,%d)

Cause: Error occurs when the welding command is sent to weld equipment.

Remedy: Please perform the following solution.

1. Please confirm whether other alarms have been generated at the same time on the alarm history screen. If it generates, please perform the remedy of that alarm and confirm whether ARC-092 is solved at the same time.
2. Please perform the welding after establishing the communication with the weld equipment. If communication with the weld equipment can not be established, please refer to the remedy of ARC-045 alarm.
3. Please confirm whether the alarm of weld equipment generates by checking the LED on the weld equipment. If it generates, please confirm the error number and values in ().
4. In addition to Remedy 3, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

ARC-093 Wire Feed Cmd error EQ%d (%d,%d)

Cause: Error occurs when the welding command is sent to wire feeder.

Remedy: Please perform the following solution.

1. Please confirm whether the setting value of strike wire feed speed in weld equipment setup screen is set to limit lower / upper bound. When you press ENTER key after setting it to 0 , the limit lower / upper bound is displayed at the bottom line of the screen likely "Invalid real (76.000, 999.000)", values in () are lower / upper limit. If the setting value is in just lower limit bound, please extend it a little.

2. Please confirm whether other alarms have been generated at the same time on the alarm history screen. If it generates, please perform the remedy of that alarm and confirm whether ARC-093 is solved at the same time.
3. Please perform the wire inching and welding after establishing the communication with the weld equipment. If communication with the weld equipment can not be established, please refer to the remedy of ARC-045 alarm.
4. Please confirm whether the alarm of weld equipment generates by checking the LED on the weld equipment. If it generates, please confirm the error number and values in ().
5. In addition to Remedy 4, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-094 %s EQ%d is OFFLINE

Cause: The operation described in alarm message can not be performed because the Power Wave is in offline.

Remedy: Please perform the operation after establishing the communication to the weld equipment. If communication with the weld equipment can not be established, please refer to the remedy of ARC-045 alarm.

ARC-095 Feedback Exceeds STOP Limit (%s^4,%d^5)

Cause: Feedback voltage or current exceeds the alarm range that is set by operator in arc abnormal monitor setup screen.

Remedy: This message is notification to the operator. Please investigate the cause that the feedback values becomes abnormal. If this message is displayed though the welding is excellent, please reexamine the alarm range that is set in arc abnormal monitor setup screen.

ARC-096 Feedback Exceeds WARN Limit (%s^4,%d^5)

Cause: Feedback voltage or current exceeds the warning range that is set by operator in arc abnormal monitor setup screen.

Remedy: This message is notification to the operator. Please investigate the cause that the feedback values becomes abnormal. If this message is displayed though the welding is excellent, please reexamine the warning range that is set in arc abnormal monitor setup screen.

ARC-097 %sV, %sA, Pos %smm

Cause: This message is always displayed with ARC-095 or ARC-096. The difference value of the feedback and the command is displayed. The distance value from the position of welding start point to the position in which the feedback exceeds the alarm / warning range is also displayed.

Remedy: Please perform the remedy of ARC-094 or ARC-095.

ARC-098 STOP After 1 Bead EQ%d

Cause: This message is displayed at the weld end timing after ARC-095 generates, and program execution stops. As the result, it is prevented that the defective welding is continuously performed.

Remedy: Please perform the remedy of ARC-095.

ARC-099 Some Bead Exceeds STOP Limit EQ%d

Cause: This message is displayed at the program end timing after ARC-095 generates.

Remedy: Please perform the remedy of ARC-095.

ARC-100 SVT: Unsupported Wire material

Cause: The selected wire material is not supported for Servo Torch.

Remedy: Please select the correct wire material.

ARC-101 SVT: Unsupported Wire size

Cause: The selected wire size is not supported for Servo Torch.

Remedy: Please select the correct wire size.

ARC-102 SVT: Unsupported speed unit

Cause: The selected unit of inching speed is not supported for Servo Torch.

Remedy: Please select the correct unit of inching speed.

ARC-103 SVT: WFS conversion failed

Cause: Failed to convert weld schedule to wire feed speed command for Servo Torch.

Remedy: If another alarm is also occurred at the same time, please check it and remove the cause of the alarm. If no other alarm is occurred, some internal error is occurred.

ARC-104 SVT: Invalid sequence mode

Cause: This alarm is an internal error. Invalid sequence mode command is sent to Servo Torch.

Remedy: This alarm is an internal error. Cycle power to recover.

ARC-105 Cannot read WSTK input signal

Cause: Cannot received WSTK signal from serial communication power supply.

Remedy: Confirm which type of weld equip is used. Confirm the connection with serial communication power supply. Confirm the setting of serial port.

ARC-106 Config of Roboweld is invalid

Cause: Configuration of Roboweld was invalid. Therefore data for Robowelds were set inappropriately.

Remedy: Remove all Robowelds by selecting other equip in weld equip select screen. Then select and setup Roboweld again, if you want to use Roboweld.

ARC-107 Roboweld internal Error(%d)

Cause: RoboWeld internal error.

Remedy: Cycle power to recover.

ARC-108 Wire touching before TRS seq

Cause: Wire has already touched to a work before Touch Retract Start sequence starts.

Remedy: Check whether the torch is too close to the work at the arc start position. If this is too close, please fix the teaching point. When the wire stickout just after arc end point of previous arc weld is too long, this may occur. Then, please adjust a burnback schedule for arc end point of previous arc weld to make wire stickout proper.

ARC-109 Arc Lost: Voltage < %d V

Cause: Feedback voltage fell down to displayed value over Arc Loss Error Time. Therefore, robot judges that arc is lost.

Remedy: Remove the cause of lower voltage. If the weld has no problem, the voltage threshold for arc loss detect may be higher. Then, set \$AWEUPR[eq].\$ARC_LOSS_V (eq is a weld equipment number) to lower value.

ARC-110 Arc Lost: Current < %d A

Cause: Feedback current fell down to displayed value over Arc Loss Error Time. Therefore, robot judges that arc is lost.

Remedy: Remove the cause of lower current. If the weld has no problem, the voltage threshold for arc loss detect may be high. Then, set \$AWEUPR[eq].\$ARC_LOSS_A (eq is a weld equipment number) to lower value.

ARC-111 Assignment of SVT I/O invalid

Cause: ServoTorch I/O assignment is invalid.

Remedy: Please confirm the assignment of signals for arc welding on Weld I/O screen. If you find a wrong assignment, please correct it. After that, please cycle power. If there is no problem in the assignment, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-120 Enable/Disable Sim mode failed

Cause: The necessary signals for Simulation mode cannot be detected.

Remedy: Verify that AI/O and WDI/O signals are assigned appropriately.

ARC-121 Weld not performed(Sim mode)

Cause: Simulation mode is enabled. Actual welding is not performed.

Remedy: None.

ARC-122 Cannot SIM/UNSIM(%s,Id:%d)

Cause: I/O signals were not set to sim/unsim appropriately when Simulation mode was enabled/disabled.

Remedy: Verify that the AI/O and WDI/O signals are assigned appropriately.

ARC-123 Memory size is too small

Cause: The memory size is too small to get the memory area for the necessary data.

Remedy: Change the memory module into the one which has appropriate size, and perform an INIT start.

ARC-124 EQ%d E:%d %s

Cause: The weld equipment has reported an error.

Remedy: Refer to the weld equipment manual for more information.

ARC-129 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-130 Term-type is corrected

Cause: Term-type of arc end position is changed from CNT to FINE automatically.

Remedy: There is no need to remedy. Normally, please choose FINE term-type on motion instruction just before arc end instruction when an arc end instruction is added.

ARC-131 Weld procedure %d NOT found

Cause: The weld procedure number entered in a Weld Start or a Weld End instruction is not found on the controller.

Remedy: Enter the number of an existing weld procedure or create or load the missing weld procedure.

ARC-132 Weld schedule %d NOT found

Cause: The weld schedule number entered in a Weld Start or a Weld End instruction is not found on the controller.

Remedy: Enter the number of an existing weld schedule or increase the number of weld schedules in the weld procedure.

ARC-133 Adjusted time_factor %d to %d

Cause: This error is reported just after “ARC-057 Cannot ramp t1 > t2” or “ARC-136 Cannot pulse t1 > t2”. When this alarm is posted, an update cycle time of weld schedules (\$aweramp[eq].\$time_factor) is automatically adjusted according to a delay to communicate between the robot and the welder. Therefore, you can resume the program with new adjusted situation.

Remedy: There is no need to remedy. Please resume the program.

**ARC-134 EQ%d E:8 PM missing machine option
EQ%d E:9 PM missing robot option**

Cause: This error is related to Lincoln Production Monitor function.

Remedy: Lincoln Production Monitor function has not been supported yet. There is no problem even when this alarm is posted. There is no need to remedy.

ARC-135 %s^7

Cause: This error is related to Production Monitor macro operation.

Remedy: Refer to the manual for details on the specific error reported.

ARC-136 Cannot pulse t1=%d > t2=%d

Cause: Low Frequency Pulse Welding cannot continue because the delay to communicate between the robot and the welder (t1) is longer than the pulse command update cycle time (t2). This may occur with Low Frequency Pulse Welding.

Remedy: Normally, this appears just before ARC-133. If ARC-133 is also posted just after this alarm, there is no need to remedy. Please resume the program.

If ARC-133 is not posted just after this alarm, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-137 Clamp pulse, %f Hz, %f %

Cause: Pulse Frequency or Pulse Duty Cycle for Low-Frequency Pulse Welding is clamped because pulse waveform exceeds the available range.

Remedy: Adjust Pulse Frequency or Pulse Duty Cycle for Low-Frequency Pulse Welding again. Decrease Frequency value, or bring. Duty Cycle close to 50%.

ARC-138 Internal error: ID = %d

Cause: Intenal error of ArcTool software. Normally this is not occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative. Following table is reference information concerning to each ID.

ID	Contents
1, 2, 3, 4	At the beginning of HeatWave welding or Low Frequency Pulse welding, internal error occurred.
5	At the Touch Retract Start of Servo Torch, internal error occurred.
6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22	At the Arc Retry or Scratch Start sequence, internal error occurred.
16	At the Arc Retry or Scratch Start sequence, communication with weld equipment is performed. The communication failed. This error ID may be due to a certain problem of weld equipment side or noise environment that interferes the communication.
23	At the initial auto setup concerning to communication with weld equipment, internal error occurred.

ARC-139 Weld ID %d is already used

Cause: The specified Weld ID in the weld End instruction has already been used in the current TP program.

Remedy: Enter other Weld ID which has not been used in this TP program.

ARC-140 MCC I/O parameter wrong(E:%d, %d)

Cause: Setup parameter for MMC I/O assignment is wrong.

Remedy: Check the parameters.

ARC-141 MCC stick detected(E:%d)

Cause: The MCC was stuck but has been turned ON.

Remedy: Check the MCC.

ARC-142 MCC monitor abnormal(E:%d)

Cause: MCC is OFF even though the MCC request is ON.

Remedy: Check the MCC and signal line for MCC.

ARC-143 Power supply/feeder com alarm(E:%d)

Cause: In the power supply, the communication between the operation board and the control board was disconnected.

Remedy:

1. Check the fuses [For feeder: 3A(FU2)/8A(FU3)]. If the fuses were blown, please perform the following remedy.
Change the encoder cable and fuses Change the encoder board in the wire feeder, and change fuses.
2. Change the Gabana board.
3. Change operation board in the welding power supply.

ARC-144 PS internal com-error(E:%d)

Cause: In Power supply, the communication alarm between GABANA CPU and Main CPU occurred.

Remedy: Cycle power of the power supply by pressing E-STOP then pressing RESET.

ARC-145 PS internal abnormal com-data(E:%d)

Cause: In the Power supply, the communication data between GABANA CPU and Main CPU was abnormal.

Remedy: Cycle power of the power supply by pressing E-STOP then RESET.

ARC-146 Can't use Pulse in CO2(E:%d)

Cause: In CO2 setup, you cannot use Pulse mode.

Remedy: Set pulse mode to disabled in the weld schedule detail menu. If you use the direct command AS instruction, AS[20V, 200A], the pulse mode is always ON. So use the AS instruction with the weld schedule number.

ARC-147 Can't use Pulse in this setup(E:%d)

Cause: In CO2 setup, you cannot use Pulse mode.

Remedy: Set pulse mode to disabled in the weld schedule detail menu. If you use the direct command AS instruction, AS[20V, 200A], the pulse mode is always ON. So use the AS instruction with the weld schedule number.

ARC-148 Can't use Pulse in CO2

Cause: In CO2 setup, you cannot use Pulse mode.

Remedy: Set pulse mode to disabled in the weld schedule DETAIL menu. If you use the direct command AS instruction, AS[20V, 200A], the pulse mode is always ON. Therefore, use the AS instruction with the weld schedule number.

ARC-149 Can't use Pulse in this setup

Cause: In CO2 setup, you cannot use Pulse mode.

Remedy: Set pulse mode to disabled in the weld schedule detail menu. If you use the direct command AS instruction, AS[20V, 200A], the pulse mode is always ON. So use the AS instruction with the weld schedule number.

ARC-150 Invalid op. in weld(0x%X)(E:%d)

Cause: Detect invalid signal operation in welding.

Remedy: Reset and try again after Arc OFF.

ARC-151 Invalid wire size(E:%d)

Cause: Detect invalid wire size.

Remedy: Set proper wire size.

ARC-152 Invalid weld process(E:%d)

Cause: Detect invalid welding process.

Remedy: Set proper welding process.

ARC-153 Invalid wire material(E:%d)

Cause: Detect invalid wire material.

Remedy: Set proper wire material.

ARC-154 Invalid Arc Loss Time(E:%d)

Cause: Arc loss time is invalid range.

Remedy: Set proper arc loss time.

ARC-155 Comm. Timeout(E:%d)

Cause: Communication with RoboWeld power source is timeout.

Remedy: Confirm port setup and connection cable.

ARC-156 RoboWeld Error(0x%X, %d)

Cause: RoboWeld internal error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-157 Receive error(0x%X)(E:%d)

Cause: Receive invalid data from Power Source.

Remedy: Confirm noise environment and cable.

ARC-158 1st currency (E:%d)

Cause: Detect 1st currency abnormal.

Remedy: Check currency.

ARC-159 2nd currency (E:%d)

Cause: Detect 2nd currency abnormal.

Remedy: Check currency.

ARC-160 Temperature alaram(E:%d)

Cause: Detect temperature abnormal.

Remedy: Check overload.

ARC-161 High voltage(E:%d)

Cause: Detect high voltage.

Remedy: Check voltage.

ARC-162 Low voltage(E:%d)

Cause: Detect low voltage.

Remedy: Check voltage.

ARC-163 Start signal error(E:%d)

Cause: Detect start signal abnormal.

Remedy: Check start signal.

ARC-164 Power source error(E:%d)

Cause: Detect 3-phase power source abnormal.

Remedy: Check 3-phase power source.

ARC-165 EQ is detached(E:%d)

Cause: RoboWeld is detached.

Remedy: Confirm port setup.

ARC-166 Comm. stopped in weld(E:%d)

Cause: Communication with RoboWeld power source stopped in welding.

Remedy: Confirm another error message and port, cable setup.

ARC-167 I/O asginment overlap(%d)(E:%d)

Cause: I/O space for RoboWeld is already in use.

Remedy: Confirm another I/O device and \$IO_START in \$RBWLD.

ARC-168 I/O error(%d)(%d, E:%d)

Cause: I/O initialization error.

Remedy: Confirm another I/O device and \$IO_START in \$RBWLD.

ARC-169 Invalid wire op.(E:%d)

Cause: An invalid wire FWD/BWD operation was detected.

Remedy: Confirm the wire control sequence.

ARC-170 Detect Arc OFF(E:%d)

Cause: Detect ARC off.

Remedy: Confirm welding device and workpiece status.

ARC-171 Unified data RCV error(%d,0x%X)(E:%d)

Cause: Failed to receive unified data.

Remedy: Confirm port setup, noise environment, cable status.

ARC-172 Warning, Rcv(0x%X)(E:%d)

Cause: Receive invalid command from power source.

Remedy: Confirm noise environment, cable setting.

ARC-173 Warning, Retry(0x%X)(E:%d)

Cause: Retry to send the command to power source.

Remedy: Confirm noise environment, cable setting.

ARC-174 Warning, NAK for(0x%X)(E:%d)

Cause: Receive NAK from power source.

Remedy: Confirm noise environment, cable setting.

ARC-175 Signal change is ignored(E:%d)

Cause: Communication with power source is stopped.

Remedy: Confirm welding setup, cable connection, then reset.

ARC-176 No sysvar \$RBWLD for E:%d

Cause: Sysvar \$RBWLD is not setup for new EQ number.

Remedy: Confirm \$RBWLD and \$RBWLD_CFG setup.

ARC-177 RoboWeld(E:%d) reset complete

Cause: RoboWeld reset sequence is complete.

Remedy: Arc welding is now available.

ARC-179 Power supply com alarm(E:%d)

Cause: This alarm occurs when communication between the welding equipment control board and the robot controller stops.

Remedy:

1. If this alarm occurred with ARC-143, please perform the remedy for ARC-143.
2. If this alarm is still occurred after restarting the system, check the wiring between the controller and welding power supply. If problem is not found, check the power supply control board.

ARC-180 Gabana alarm(E:%d)

Cause: Wire feeder motor speed is over the limited speed.

Remedy: Check the wire feeder motor. After check try the operation again. If the same alarm occurs, document the events that led to the error and call your local FANUC representative.

ARC-181 Encoder alarm(E:%d)

Cause: Wire feeder motor sensor line was connected off or wire feeder motor did not rotate correctly.

Remedy: Check the wire feeder motor sensor line. After check try again. If the same alarm occurs, inform of the service.

ARC-182 Motor alarm(E:%d)

Cause: While the motor should stop, the motor rotation was detected.

Remedy: If the motor was rotated actually, the control board in wire feed controller may be broken.

ARC-188 External emergency input(E:%d)

Cause: An ESTOP signal was input from an external source.

Remedy: Turn off controller power, remove the cause for the error, reset the ESTOP, then turn on the controller again.

ARC-189 External input1(E:%d)

Cause: An External1 hold signal was input from an external source.

Remedy: Turn off controller power, remove the cause for the error, reset the ESTOP, then turn on the controller again.

ARC-190 External input2(E:%d)

Cause: An External1 hold signal was input from an external source.

Remedy: Turn off controller power, remove the cause for the error, reset the ESTOP, then turn on the controller again.

ARC-191 Memory alarm(E:%d)

Cause: Power supply control memory error.

Remedy: Turn off the power then try again. If the same alarm occurs again, inform of the service.

ARC-192 CPU alarm(E:%d)

Cause: A Weld power supply CPU error has occurred.

Remedy: Perform a Cold start:

1. Turn off the robot.

2. On the teach pendant, press and hold [SHIFT] and [RESET] keys.
3. While still pressing the [SHIFT] and [RESET] keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

ARC-193 Arc start alarm(E:%d)

Cause: The Torch switch was turned ON but the arc could not started within 4sec.

Remedy: By turning off the Torch switch, the alarm will disappear. Confirm that the weld power lines are connected correctly.

ARC-195 Not support weld type(E:%d)

Cause: The specified weld type has not been supported for this power supply.

Remedy: Check the setup of process type, wire size, wire material in weld equipment setup screen and pulse mode in weld schedule. Then change them.

ARC-196 Loading weld type ...(E:%d)

Cause: Loading weld type data now. Please wait for a moment.

Remedy: None.

ARC-197 Complete loading weld type (E:%d)

Cause: Complete to load weld type data. So you can do arc welding.

Remedy: None.

ARC-198 Not support weld type

Cause: The specified weld type has not been supported for this power supply.

Remedy: Check the setup of process type, wire size, wire material in weld equipment setup screen and pulse mode in weld schedule. Then change them.

ARC-199 This weld EQ isn't supported(E:%d)

Cause: The connected weld equipment is not supported.

Remedy: Check the weld equipment.

ARC-200 Arclink ch%d heartbeat timeout

Cause: The welding equipment connected on the Arclink is not responding to queries.

Remedy: Check the power and Arclink connections to the welding equipment.

ARC-201 Arclink ch%d obj # %d no resp

Cause: A welding equipment component on the Arclink failed to respond to a request issued by the controller.

Remedy: Check the power and Arclink connections between the controller and welding equipment.

ARC-202 Arclink ch%d obj # %d error resp

Cause: A welding equipment component returned an error in response to a request from the controller.

Remedy: Turn the controller and welding equipment off then on again.

ARC-203 Arclink ch%d reset by master

Cause: The Arclink network was reset by a request from the welding equipment.

Remedy: None. This usually happens as a result of an error detected by the welder.

ARC-204 Arclink ch%d available

Cause: This is an informational message indicating that the Arclink network has been initialized and is ready for normal operation.

Remedy: None.

ARC-205 Arclink ch%d h/s event lost

Cause: The high speed event message expected during welding failed to arrive in time.

Remedy: The Arclink network is automatically reset. If this error persists, it indicates a problem with the communications network or welding equipment.

ARC-206 Arclink ch%d too many errors

Cause: The Arclink CAN interface is detecting a high rate of errors on the connection to the welder. This is usually caused by electrical noise on the Arclink network.

Remedy: Check all Arclink connections and wiring to eliminate the electrical noise.

ARC-207 Arclink ch%d no bus power

Cause: The Arclink interface on the controller cannot detect any power or other equipment on the network connections. This indicates that there is no Arclink network connected, or that the welding equipment is turned off or has been disconnected.

Remedy: Make sure that all Arclink connections are properly made and that the connected welding equipment is also connected and turned on.

ARC-208 Arclink ch%d no nodes on bus

Cause: No other equipment can be detected on the Arclink network.

Remedy: Check to make sure that the Arclink network is properly connected and that the attached welding equipment is turned on.

ARC-209 Arclink ch%d bus errors

Cause: The Arclink interface is detecting unexpected errors on the network, indicating possible electrical noise or other interference. If these errors continue, a network failure could occur.

Remedy: Check all Arclink connections and wiring to eliminate the source of the noise.

ARC-210 Arclink ch%d network flooded

Cause: The Arclink interface on the controller is unable to communicate due to too many messages flooding the network.

Remedy: Reduce the message traffic by running fewer utility program sessions to the same controller.

ARC-211 Arclink ch%d comm error %d

Cause: An unexpected communications error has occurred on the Arclink CAN interface.

Remedy: Check all Arclink connections and wiring, then turn off the controller, and restart it.

ARC-212 Arclink ch%d CAN-Enet conflict

Cause: A CANbus card has been detected for an Arclink communications channel that has already been assigned as an Arclink-over-Ethernet channel.

Remedy: Assign the Ethernet connection to a different channel to make this channel available for use by the CANbus card.

ARC-213 %s: Invalid Arclink I/O EQ%d

Cause: The assignment of Arclink I/O whose signal name is displayed on this message is wrong.

Remedy: Check Arclink I/O assignment on DI/DO assignment screen or AI/AO assignment screen. If you only want to jog or run programs without arc before solving this alarm, turn the weld equipment off.

ARC-249 E%d Weld Table %d not set

Cause: The weld table number could not be selected on the weld equipment.

Remedy: Check the weld table in the Weld Eq setup screen. The Powerwave may need another weld table.

ARC-250 Arclink ch%d CAN-Enet conflict

Cause: A CANbus card has been detected for an Arclink communications channel that has already been assigned as an Arclink-over-Ethernet channel.

Remedy: Assign the Ethernet connection to a different channel to make this channel available for use by the CANbus card.

ARC-251 Arclink ch%d CAN-Enet conflict

Cause: A CANbus card has been detected for an Arclink communications channel that has already been assigned as an Arclink-over-Ethernet channel.

Remedy: Assign the Ethernet connection to a different channel to make this channel available for use by the CANbus card.

ARC-253 I/O polarity is inverted:E%d

Cause: Some I/O polarities are set to Inverse. This needs cycle power.

Remedy: Please power OFF/ON.

ARC-254 Please power OFF/ON.

Cause: Cycle power is needed.

Remedy: Please power OFF/ON.

ARC-255 Weld EQ%d setup incomplete.

Cause: Weld EQ setup has not been completed yet.

Remedy: Please complete Weld EQ setup for Digital Weld EQ on ArcTool Setup screen with Controlled Start.

ARC-256 Initial communicate is failed:E%d.

Cause: First connection with weld EQ is failed.

Remedy: Please check follows.

1. All programs are aborted.
2. Alarm of Weld EQ is not posted.

ARC-257 Torch collision is detected

Cause: Torch collision is detected during communication with welder.

Remedy:

1. Hold down [SHIFT] key, and then press [RESET] key to clear the alarm.
2. While holding down the SHIFT key, jog the tool to the axis away from the collision.
3. If this alarm cannot be reset after these measures, torch may be broken.

ARC-258 Wire stick detect failed (%s^4,%d^5)

Cause: Wirestick detect is not executed correctly at welder because voltage for detecting wirestick is not applied.

Remedy: Check follows and press [RESET] key.

1. If ARC-008 and ARC-124 occurred at same time, remove the cause of them.
2. Check the voltage detection cable setting.

ARC-259 Cannot weld start during communication

Cause: Weld start instruction was performed during communication process with weld equipment.

Remedy: Program execution can be resumed after finishing communication with weld equipment. Basically, it is recommended that you do not perform communication during weld program execution.

ARC-280 E%d EMG Arc Off time too short

Cause: The Emergency Arc Off time specifies how long welding is permitted without any motion group moving. For more detail, please refer to the description of ARC-054. The time (\$AWSEMGOFF.\$CHK_TIME) is shorter than the delay during the Weld Start.

Remedy: Reduce the weld start time on the welder or increase the allowable welding time with no motion by setting \$AWSEMGOFF.\$CHK_TIME.

ARC-281 E%d motion release timeout

Cause: The Motion Release DI was not ON when the weld start time completed.

Remedy: Resume the program. If this alarm happens repeatedly, check the power supply settings.

ARC-282 E%d motion release problem %d

Cause: A problem occurred during a Weld Start using the motion release feature. The last number shows following state.

1. Motion release port is not defined.
2. Motion release port read failed.
3. Start time (of Fronius TPS/i Special 2 step) port is not defined.
4. Start time (of Fronius TPS/i Special 2 step) port read failed.
5. Motion release DI ON before start.

Remedy: Check port definitions.

ARC-300 Argument is not integer

Cause: The argument for Adjust Start Height macro is not integer.

Remedy: Use integer value for Adjust Start Height macro.

ARC-301 Invalid EQ number

Cause: The specified equipment number for Arc Start Height Adjust is invalid.

Remedy: Specify the existed equipment number by Adjust Start Height macro.

ARC-302 Invalid robot group number

Cause: The specified robot group number for Arc Start Height Adjust is invalid.

Remedy: Specify the proper robot group number in Arc Start Height Adjust setup screen.

ARC-303 Invalid I/O assignment

Cause: The specified I/O assignment for Arc Start Height Adjust is invalid.

Remedy: Specify the proper I/O assignment in Arc Start Height Adjust setup screen.

ARC-304 Cannot use same PR number

Cause: In Arc Start Height Adjust function, you cannot use same PR number for both Touch Command Signal and Touch Detect Signal.

Remedy: Use different PR number for Touch Command Signal and Touch Detect Signal.

ARC-305 Other task adjusts height

Cause: Other task has already start Arc Start Height Adjust for the specified equipment.

Remedy: Do not perform Arc Start Height Adjust for one equipment at the same timing.

ARC-306 Start Height Adjust is ignored

Cause: Arc Start Height Adjust is ignored because of Single Step, Dry Run. Or because of Weld Disabled. If Lincoln welder is used, ArcLink may be disconnected.

Remedy: Release Single Step or Dry Run or set Weld Enabled to perform Arc Start Height Adjust. If you want to perform Arc Start Height Adjust with Weld Disabled, set "Skip with Weld Disabled" item to FALSE on Arc Start Height Adjust setup screen. If you are using Lincoln welder, establish the ArcLink connection. If you do not want to display the warning message, set \$AWSTHOF. \$POST_WARN to FALSE.

ARC-307 Contact before search

Cause: Contact has already detected before search is started for Arc Start Height Adjust function.

Remedy: Perform Arc Start Height Adjust at the position which the torch (electrode) never touch the work. If you want to continue Arc Start Height Adjust in this situation, set "Contact Before Search" item in Arc Start Height Adjust setup screen to WARN.

ARC-308 Contact is not detected

Cause: Contact is not detected during the search motion for Arc Start Height Adjust function.

Remedy: Perform search motion from closer position against the work. Or change Search Speed or Search Max Distance.

ARC-309 Start Height Adjust failed

Cause: Arc Start Height Adjust is failed by some reason.

Remedy: Confirm that the setting for Arc Start Height Adjust is proper. If other alarm is posted at the same time, solve the other alarm first. If this problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-310 Too long adjust motion time

Cause: The motion for Arc Start Height Adjust function is too long.

Remedy: If Arc Start Height Adjust is performed with very low override, the alarm may be posted. If you encounter the alarm with 100% override, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ARC-400 Laser PW Up limit (%s^4,%d^5)

Cause: The laser power exceeds up limit.

Remedy: Check laser power.

ARC-401 Laser PW Lo limit (%s^4,%d^5)

Cause: The laser power is below lower limit.

Remedy: Check laser power.

ARC-402 WF speed Up limit (%s^4,%d^5)

Cause: The wire feed speed exceeds up limit.

Remedy: Check wire feed speed.

ARC-403 WF speed Lo limit (%s^4,%d^5)

Cause: The wire feed speed is below lower limit.

Remedy: Check wire feed speed.

ARC-404 Lost Laser detect (%s^4,%d^5)

Cause: The laser on signal is lost during laser weld.

Remedy: Check laser oscillator.

ARC-405 CTRL STOP (%s^4,%d^5)

Cause: There was a request to stop the program from the PLC.

Remedy: Check PLC.

ARC-406 Exceeds Max Laser Sch (%s^4,%d^5)

Cause: Exceeds maximum laser schedule number.

Remedy: Change schedule number.

ARC-407 No Direct Value Input (%s^4,%d^5)

Cause: Direct Value Input is not supported.

Remedy: Use Arc Schedule.

ARC-408 No Laser detected (%s^4,%d^5)

Cause: No Laser detected at laser start.

Remedy: Check laser oscillator.

4.1.4 ASBN Alarm Code

ASBN-001 End of File

Cause: The end of the file was found before parsing is complete.

Remedy: Fix syntax errors within the file.

ASBN-002 Error occurred during load

Cause: An unspecified error occurred while loading the file.

Remedy: Fix the syntax errors within the file. The cause code may have additional information.

ASBN-003 File line %4d

Cause: A syntax error was detected on this line.

Remedy: Fix the syntax error on this line.

ASBN-008 file '%s'

Cause: An error occurred while loading this file.

Remedy: Fix the syntax errors within the file. The cause code may have additional information.

ASBN-009 on line %d, column %d

Cause: A syntax error was detected at the specified line and column.

Remedy: Fix the syntax error.

ASBN-010 Memory allocation error

Cause: There is not sufficient free memory to process this file.

Remedy: Cycle power on the controller.

ASBN-011 Cannot read ASCII source file

Cause: The POS section of the file is missing.

Remedy: Fix the syntax of the file.

ASBN-012 Invalid character

Cause: An invalid character was found.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-013 Unable to open source file

Cause: The source file could not be opened.

Remedy: The file does not exist or is corrupt.

ASBN-020 Invalid section encountered

Cause: An unexpected section was detected within the file.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-021 Expecting a '['

Cause: A required [was not found in this context.

Remedy: Add [] to this register reference, application modifier, or as otherwise necessary.

ASBN-022 Out of range

Cause: An index or value was specified that is not within acceptable bounds.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-023 Configuration error

Cause: The configuration string for the position is malformed.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-024 Expecting a comma

Cause: A comma is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-025 Expecting a '='

Cause: An equal character, '=' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-026 Expecting a ']'

Cause: A ']' character is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-027 Expecting a '('

Cause: A '(' character is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-028 Expecting a ')'

Cause: A ')' character is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-029 Expecting ';'

Cause: A ';' character is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-030 Invalid operator

Cause: Operator is invalid.

Remedy: Fix the syntax error. . The cause code may have additional information.

ASBN-031 Expecting ':'

Cause: A ':' character is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-032 Expecting a real number

Cause: A real floating point number is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-033 Expecting an integer

Cause: An integer value is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-034 Expecting 'mm'

Cause: 'mm' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-035 Expecting 'mm/sec'

Cause: 'mm/sec' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-036 Expecting 'sec'

Cause: 'sec' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-037 Expecting 'deg'

Cause: 'deg' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-038 Invalid group number

Cause: An invalid motion group has been specified.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-039 Invalid combination of AND/OR

Cause: AND/OR operators cannot be mixed within a single instruction.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-040 Invalid operator combination

Cause: + and - operators cannot be mixed with * and / operators.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-041 Too many AND/OR operator

Cause: A maximum of 4 AND/OR operators can be used per line.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-042 Too many arithmetic operator

Cause: A maximum of 5 +, -, or *, / operations can be used per line.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-046 Expecting a unit

Cause: A unit declaration is required.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-047 String argument too long

Cause: The string specified is too long.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-050 Invalid name in /PROG section

Cause: The program name does not match the filename or has invalid characters.

Remedy: Fix the syntax error.

ASBN-051 Invalid subtype /PROG section

Cause: The TP subtype specified is not valid.

Remedy: Fix the syntax error.

ASBN-060 Invalid attribute syntax

Cause: The program header is invalid or missing.

Remedy: Repair or provide a valid /ATTR section. Print a program from this robot for an example.

ASBN-061 No /ATTR section in file

Cause: The /ATTR section is required.

Remedy: Fix the syntax error.

ASBN-070 Invalid application syntax

Cause: The /APPL section has a general syntax error.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-073 No /APPL section in file

Cause: The /APPL section is required for this program but none was found.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-080 Duplicated Position data

Cause: A position register has been defined twice.

Remedy: Make sure that each entry in the /POS section has a unique P[] number.

ASBN-081 Unused Position data

Cause: P[(number)] is referenced somewhere but is not defined in the /POS section.

Remedy: Define P[(number)] in /POS section.

ASBN-082 Syntax error in position data

Cause: The position data is not correctly formatted.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-083 Invalid data in /POS section

Cause: The data in the /POS section is not in the correct format.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-084 Mismatch unit of joint

Cause: The joint units in the file do not match the units for one or more joints of the robot.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-085 Mismatch number of joint

Cause: Number of joints specified in the position does not match the robot configuration.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-090 Undefined macro

Cause: The macro is not defined.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-092 Undefined instruction

Cause: The instruction is not defined. The instruction is either invalid or not used correctly.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-093 Expecting integer or Register

Cause: A direct or indirect index is expected. An integer constant or register type is required.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-094 Position not in /POS section

Cause: /Pos section is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-095 Instruction not supported

Cause: Instruction is not supported on this robot as configured.

Remedy: Load or enable the relevant feature. Delete the instruction if unnecessary. Modify the instruction appropriately for the currently configured robot.

ASBN-096 Duplicated label

Cause: The same label is used at some lines.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-097 Internal error

Cause: An error occurred that was not anticipated.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-098 Invalid encoding of line

Cause: There is a syntax error within the line.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-099 Register cannot be used

Cause: Register cannot be used.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-100 Invalid data in robot configuration file, rerun setrobot program

Cause: Data in robot configuration is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-107 Could not open robot configuration file

Cause: Robot configuration file could not be opened.

Remedy: Confirm robot configuration file.

ASBN-110 CS without CD

Cause: CS is only valid with CD or CNT100.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-115 AutoZone Mastering may be needed

Cause: This is a warning message, Interference Avoidance AutoZone mastering may be needed after ASCII upload.

Remedy: This is a warning message, Interference Avoidance AutoZone mastering may be needed after ASCII upload.

ASBN-120 Undefined pallet number

Cause: Palet number is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-121 Wrong route position

Cause: Route position is wrong.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-122 Duplicated Palletizing data

Cause: Palletizing dat is duplicated.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-123 Duplicated pattern

Cause: Palletixing pattern is duplicated.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-124 Undefined pattern number

Cause: Pettern number is invlid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-125 Wrong route position type

Cause: Route position is wrong.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-126 Wrong route position number

Cause: Route position number is wrong.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-127 Wrong bottom position count

Cause: Bottom position count is wrong.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-128 Pallet register already used

Cause: Pallet register is already used.

Remedy: Use other pallet register.

ASBN-129 Expecting 'WID'

Cause: 'WID' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-130 Invalid Backup

Cause: Stroke condition is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-131 Invalid Pressure

Cause: Pressure condition is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-133 Invalid Equipment number

Cause: Equipment number is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-135 Expecting 'BU'

Cause: 'BU' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-136 Expecting 'P'

Cause: 'P' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-137 Expecting 'S'

Cause: 'S' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-142 SpotTool not configured

Cause: SpotTool is not configured.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-144 Expecting 'WC'

Cause: 'WC' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-145 Expecting 'OPEN', 'CLOSE', or '*'

Cause: 'OPEN', 'CLOSE' or '*' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-146 Expecting 'OPEN' or 'CLOSE'

Cause: 'OPEN' or 'CLOSE' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-147 Expecting 'SV'

Cause: 'SV' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-148 Expecting 'SN'

Cause: 'SN' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-149 Invalid number

Cause: Number is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-150 Invalid Equalization Pressure

Cause: Equalization Pressure is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-152 Expecting 'EP'

Cause: 'EP' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-154 Expecting unit

Cause: Unit is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-155 Expecting 'ED'

Cause: 'ED' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-156 Expecting 'SD'

Cause: 'SD' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-157 Invalid distance schedule

Cause: Chip distance schedule is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-158 Expecting 'SEL'

Cause: 'SEL' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-159 Expecting 't'

Cause: 't' is expected.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-161 Tracking not configured

Cause: Tracking is not configured.

Remedy: Configure Tracking data.

ASBN-162 Tracking not complete, P[%d]

Cause: Tracking is not completed.

Remedy: Complete tracking.

ASBN-170 Invalid arc weld data

Cause: Arc weld data is invalid.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-171 Touch Mastering may be needed

Cause: Touch Mastering is needed.

Remedy: Execute Touch Mastering.

ASBN-190 Motion instruction in daughter

Cause: Motion instruction is taught in daughter programs.

Remedy: Fix the syntax error. The cause code may have additional information.

ASBN-195 Tool frame number mismatch

Cause: The tool frame number in /MN is different from that in /POS.

Remedy: Use the same tool frame number in both /MN and /POS section.

ASBN-196 Duplicated Position ID

Cause: Same position ID has been used twice in /MN.

Remedy: Make sure that each entry in the /MN section has a unique Position ID.

ASBN-197 Too many Positions are taught

Cause: More than 9999 positions are taught in the program.

Remedy: Reduce the number of teach positions in the program.

ASBN-198 Too many I/Os are specified

Cause: More than 64 I/Os are specified in one line.

Remedy: Reduce the specified I/Os in the line.

4.1.5 ATGP Alarm Code

ATGP-001 No global variables

Cause: Attach group global variables are not loaded.

Remedy: Perform a Controlled start and initialize motion softparts.

ATGP-002 Joint motion not allow

Cause: No joint motion allowed with an attach group option.

Remedy: Change motype to Linear or Circular before attempting the operation again.

ATGP-003 Wrist Joint motion not allow

Cause: No wrist joint motion allowed with the attach group option.

Remedy: Remove the wrist joint instruction before attempting the operation again.

ATGP-004 UFRAME must be zero

Cause: Uframe number is not set to zero.

Remedy: Set the current uframe number to zero.

4.1.6 ATZN Alarm Code

ATZN-001 Calibration internal error.

Cause: AutoZone internal error.

Remedy: Power off to recover. If problem persists, please reload the controller.

ATZN-002 Name not found in HDR Table

Cause: Internal error..

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-003 Name not found in PRG Table

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-004 Name not found in REC Table

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-005 Name not found in REQ Table

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-006 AZ HDR Table is full

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-007 AZ PRG Table is full

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-008 AZ REC Table is full

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-009 AZ REQ Table is full

Cause: Internal error.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-010 Master flags not in sync

Cause: Master flags in main and sub program header are not synchronized.

Remedy: Check master flag in both main and sub program header, ensure that master flags are synchronized. For example, both flags are enabled, or both flags are disabled.

ATZN-011 %s start mastering

Cause: Program start mastering process.

Remedy: This is a warning message to indicate that mastering process has started.

ATZN-012 %s end mastering

Cause: Program end mastering process.

Remedy: This is a warning message to indicate that mastering process has ended.

ATZN-013 Not calibrated w.r.t. ZMGR

Cause: Robot is not calibrated w.r.t. zone manager.

Remedy: Calibrate the robot w.r.t. zone manager in AutoZone manager setup menu.

ATZN-014 G:%d AZ Jog close to target

Cause: Robot is close to target during Jogging.

Remedy: This alarm will stop the Jogging motion.

ATZN-015 Resend G:%d AZ Jog request

Cause: AutoZone jog request has not received a response for a period of time. AutoZone jog request will be resent.

Remedy: This is a warning message to indicate that the AutoZone jog request will be resent.

ATZN-016 Prg needs re-master(mdf tim)

Cause: Program modification time retrieved is different between program mastering and run-time program execution.

Remedy: Re-master the program will synchronize the program modification time saved in the program mastering data.

ATZN-017 %s Append Mode enabled

Cause: Append mode has been enabled. The new mastering data file will be merged into the existing data file.

Remedy: This is a warning message to indicate that the append mode is enabled during program mastering process.

ATZN-018 Space setup not initialized

Cause: Space has not been configured and enabled in AutoZone space setup menu.

Remedy: Configure the space and enable it in AutoZone space setup menu.

ATZN-019 No AutoZone CD Jogging

Cause: AutoZone does not support coordinated jogging.

Remedy: Disable AutoZone jogging from AutoZone test-run setup menu during coordinated jogging.

ATZN-020 Constant Path not enabled

Cause: Constant Path is not enabled.

Remedy: Enable Constant Path and Cold Start to take effect.

ATZN-021 Exceed max DP comb zone(%d)

Cause: Exceed maximum Deadlock Prevention zone per DP combination analysis.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-022 Exceed max DP total zone(%d)

Cause: Exceed maximum Deadlock Prevention total zones.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-023 Minimum 2 prog for DP analysis

Cause: Minimum of 2 TP programs required for Deadlock Prevention analysis.

Remedy: Modify setup of Deadlock Prevention schedule.

ATZN-024 Exceed max DP total space(%d)

Cause: Exceed maximum Deadlock Prevention total spaces.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical

representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-025 No %s space data

Cause: Program space data is not available for the request.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-026 No overlap space data

Cause: Overlap space data is not available for the request.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-027 No robot space data

Cause: Robot space data is not available for the request.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-028 Invalid Voxel Id

Cause: Invalid Voxel Id during individual voxel query.

Remedy: Internal error. Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

ATZN-029 Dup prg %s schd %d

Cause: Duplicated host name and program name found in specified Deadlock Prevnetion schedule.

Remedy: Use a unique host name and program name in current Deadlock Prevnetion schedule.

ATZN-030 Same grp in %s %s

Cause: Same motion group number found in specified TP programs.

Remedy: Same motion group number can not be shared by two TP programs with same host name in the Deadlock Prevnetion schedule.

ATZN-031 %s first pt in DP zone

Cause: The first motion point of the TP program is inside the Deadlock Prevention zone.

Remedy: Re-teach the TP program, enable the Deadlock Prevention analysis, and then verify that the first motion point is outside the Dealock Prevention zone.

ATZN-032 %s last pt in DP zone

Cause: The last motion point of the TP program is inside the Deadlock Prevention zone.

Remedy: Re-teach the TP program, enable the Deadlock Prevention analysis, and then verify that the last motion point is outside the Dealock Prevention zone.

4.2 B

4.2.1 BBOX Alarm Code

BBOX-020 No %ss in the program

Cause: There are no application process instructions in the program. Automatic detection of Bump schedule Lines cannot be done.

Remedy: Manually insert Bump schedule Line numbers in the schedule.

BBOX-021 Cannot bump from TP when I/O enabled

Cause: TP is enabled when Bump DI is input.

Remedy: 1. Select a Bump schedule, go to the DETAIL screen, scroll to the bump offset and use BUMP_UP or BUMP_DN. 2. Turn TP off to use Bump DI input.

BBOX-022 Invalid bump schedule

Cause: Bump Group input value is out of range.

Remedy: Change the value of the Group input to select a defined schedule.

BBOX-023 Invalid Bump Group Input

Cause: Bump schedule Group input is not configured correctly.

Remedy: Configure the Bump Schedule Group input to valid digital inputs.

BBOX-024 Invalid Bump Digital Inputs

Cause: Bump inputs are not configured correctly.

Remedy: Configure the Bump input to valid digital inputs.

BBOX-025 Invalid acknowledge output DO

Cause: Bump Acknowledge offset output is not configured correctly.

Remedy: Configure the Bump Acknowledge offset output to a valid digital output.

BBOX-026 Invalid error output DO

Cause: Bump Limit error output is not configured correctly.

Remedy: Configure the Bump Error output to a valid digital output.

BBOX-027 Invalid line numbers

Cause: Bump schedule in the Lines are not correct.

Remedy: Set valid Line numbers in the Bump schedule.

BBOX-028 Bump limit exceeded

Cause: Bump offset limit has been reached.

Remedy: 1. Review part placement or part specification. 2. Change the Bump limit to a higher value.

BBOX-029 First 2 positions are too close

Cause: Two sequential points are too close.

Remedy: 1. Reteach one or more of the positions.

BBOX-030 Program does not exist

Cause: Bump schedule Program name does not exist.

Remedy: Use a correct Program name in the Bump schedule.

BBOX-031 Need 2 positions to determine offsets

Cause: The Bump schedule Program has only 1 point.

Remedy: 1. This program cannot use Bumpbox. 2. Add another position to program.

BBOX-032 Program is write protected

Cause: Bump schedule Program has the write protect attribute ON.

Remedy: Edit the Bump schedule Program header to disable write protect.

BBOX-033 Bump schedule is uninitialized

Cause: The selected Bump schedule has no Program name assigned.

Remedy: 1. Use a valid Bump schedule. 2. Insert a Program name in the Bump schedule being used.

BBOX-034 Invalid group number

Cause: The Bump schedule Group number is not correct.

Remedy: Set the Bump schedule Group number to a valid group for your system.

BBOX-035 Group is not a robot

Cause: The Bump schedule Group number is not a Robot group.

Remedy: Change the Bump schedule Group number to a Robot group.

BBOX-036 Group is not in group mask

Cause: The Bump schedule Group number does not exist in the Bump program.

Remedy: Set the Bump schedule Group number to a valid group for your program.

BBOX-037 Cannot bump COORD motion

Cause: The Bump schedule Program has coordinated motion.

Remedy: Remove the coordinated motion.

BBOX-038 CD leader not found

Cause: There is no CD_PAIR that matches the Bump Program group mask.

Remedy: 1. Define a CD_PAIR that includes the leader and follower in the program. 2. Review the Bump schedule Group number.

BBOX-039 CD leader and follower are robots

Cause: The leader group and the follower are robots.

Remedy: Bump operation is not permitted for robot to robot Coord Motion.

BBOX-040 CD leader grp change in bump path

Cause: The leader group in a coordinated motion program is changed.

Remedy: Change the Bump schedule lines to exclude the changed leader lines.

BBOX-041 BBOX program did not load

Cause: A program file is missing.

Remedy: Contact the FANUC Support hotline.

BBOX-042 Bump start line is circle VIA

Cause: Bump lines do not include circle START point.

Remedy: Set the schedule 'Lines' to include the START point.

BBOX-043 CD unit vector calculation failed

Cause: CD and NON-CD positions are used to calculate unit vector.

Remedy: Edit program so the first 2 positions are both CD or NON-CD moves.

BBOX-044 Program position number UNINIT

Cause: Position number value is uninitialized.

Remedy: Train the position, or insert a number value in the instruction.

BBOX-045 Preview operation failed

Cause: The prescan operation failed.

Remedy: See cause alarm for more information.

BBOX-046 Position register will not be bumped

Cause: Position register will not be bumped.

Remedy: Replace position register with position if this point must be offset.

BBOX-047 Too many positions in Bump Lines

Cause: Bump positions in this schedule exceed maximum.

Remedy: Reduce the Line parameter to include fewer positions.

BBOX-048 COORD[Idr] value is not correct.

Cause: The group in COORD[Idr] or COORD[R[#]] is not correct.

Remedy: Change the value to a valid coordinated leader group.

4.2.2 BRCH Alarm Code

BRCH-001 All brake are normal

Cause: Checked brakes are all normal.

Remedy: No remedy is required.

BRCH-002 Brake abnormal (G:%d,A:%d)

Cause: Abnormal brake was detected in the axis displayed in the warning message by the brake check.

Remedy: Replace the motor with a new one when the replacement work does not have a big impact on system running.

BRCH-003 Last check was failed

Cause: The controller power was turned OFF during the last brake check.

Remedy: The last brake check was not completed and the results was not output. If needed, re-execute brake check again.

BRCH-004 Robot not calibrated (G:%d)

Cause: The robot of the group displayed in the alarm message is not calibrated.

Remedy: Calibrate the robot and re-execute brake check again.

BRCH-005 Detect robot motion (G:%d)

Cause: The motion command of the group displayed in the alarm message was detected during brake check.

Remedy: Execute brake check after all groups and axes are completely stopped. Also do not move any axis during brake check.

BRCH-006 Servo not ready (G:%d)

Cause: The ready signal of the servo amplifier corresponding to the displayed group is OFF when brake check is executed.

Remedy: Remove the cause of servo ready off alarm, press RESET, and re-execute brake check again.

BRCH-007 SVPAM updating (G:%d,A:%d)

Cause: The servo parameter of the axis displayed in the alarm message is being updated when brake check is executed.

Remedy: Execute brake check after updating servo parameter is complete (\$MCR_GRP[group].\$DSP_UPDATE[axis] = 0).

BRCH-008 Dual motor adjusting(G:%d,D:%d)

Cause: The axis for dual drive motor is in adjusting mode (\$DUAL_DRIVE[group].\$ADJUST_SEL[dual drive pair number displayed in the alarm message] was non-zero) when brake check is executed.

Remedy: Execute brake check after adjusting mode for the dual drive motor is complete (\$DUAL_DRIVE[group].\$ADJUST_SEL[dual drive pair number displayed in the alarm message] = 0).

BRCH-009 \$FLEXTOOLTYP not zero(G:%d)

Cause: System variable \$SCR_GRP[group].\$FLEXTOOLTYP is non-zero when brake check is executed.

Remedy: Set \$SCR_GRP[group].\$FLEXTOOLTYP = 0, and re-execute brake check again.

BRCH-010 Brake torque not set(G:%d,A:%d)

Cause: The brake torque [kgfcm] (\$BCK_GRP[group].\$BRK_TORQUE[axis]) of the axis displayed in the alarm message is not set.

Remedy:

1. In case that you execute brake check for the axis displayed in the alarm message, set the brake torque [kgf*cm] of the axis in system variable \$BCK_GRP[group].\$BRK_TORQUE[axis] , and re-execute brake check again. For specification value of brake torque, please refer "BRAKE SPECIFICATIONS" on AC SERVO MOTOR DESCRIPTIONS corresponding to your motor. Please note that the unit of this variable is [kgf*cm].

AC SERVO MOTOR DESCRIPTIONS	Specification number
AC SERVO MOTOR α series DESCRIPTIONS	B-65142EN
AC SERVO MOTOR β series DESCRIPTIONS	B-65232EN
AC SERVO MOTOR αi series DESCRIPTIONS	B-65262EN
AC SERVO MOTOR βi series DESCRIPTIONS	B-65302EN

- In case that you do not execute brake check for the axis displayed in the alarm message, set \$BCK_GRP[group].\$CHK_AXIS[axis] = FALSE to disable brake check for the axis, and re-execute brake check again. If the axis is used for dual drive, set the above system variable with same value for master and slave axis.

BRCH-011 Please disable TP

Cause: The teach pendant was enabled during brake check.

Remedy: Disable the teach pendant, and re-execute brake check again.

BRCH-012 SV No152 is zero(G:%d,A:%d)

Cause: The servo parameter No.152 of the axis displayed in the alarm message is zero when brake check is executed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

BRCH-013 \$MAX_AMP_CUR is zero(G:%d,A:%d)

Cause: The max amplifier current (\$PARAM_GROUP[group].\$MAX_AMP_CUR[axis]) of the axis displayed in the alarm message is zero when brake check is executed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

BRCH-014 \$STOPERLIM too small(G:%d,A:%d)

Cause: The threshold of SRVO-023 Stop error excess (\$PARAM_GROUP[group].\$STOPERLIM[axis]) of the axis displayed in the alarm message is 1250 or less when brake check is executed.

Remedy: Set \$PARAM_GROUP[group].\$STOPERLIM[axis] with an appropriate value, and cycle power, or execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative.

BRCH-015 Gravity trq too large (G:%d,A:%d)

Cause: The gravity torque of the axis displayed in the alarm message is excessive when brake check is executed.

Remedy: Move the robot to the position that the gravity torque of the axis is less, and re-execute brake check again.

BRCH-016 \$SV_OFF_ENB changed(G:%d,A:%d)

Cause: The brake control setting (\$PARAM_GROUP[group].\$SV_OFF_ENB[axis]) of the axis displayed in the alarm message was changed during brake check.

Remedy: Do not change \$PARAM_GROUP[group].\$SV_OFF_ENB[axis] during brake check.

BRCH-017 trq limit changed(G:%d,A:%d)

Cause: The torque limit of the axis displayed in the alarm message was changed during brake check.

Remedy: Do not change the torque limit during brake check.

BRCH-018 ABC was enabled (G:%d)

Cause: The software internal variable was enabled during brake check.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

BRCH-019 OVC limit (G:%d,A:%d)

Cause: The brake check torque of the axis displayed in the warning message was limited by OVC level.

Remedy: N/A.

BRCH-020 Brake check abend %d

Cause: Abnormal termination occurred at the last brake check by the following causes;

1. \$BCCFG.\$BCK_START was set to FALSE during the brake check.
2. \$BCCFG.\$CHK_MODE was changed during the brake check.

Remedy: Do not change \$BCCFG.\$BCK_START and \$BCCFG.\$CHK_MODE. When brake check completes, these variables will be automatically reset to zero.

BRCH-021 \$INPOS_TIME changed(G:%d,A:%d)

Cause: The in-position monitor time setting (\$PARAM_GROUP[group].\$INPOS_TIME[axis]) of the axis displayed in the alarm message was changed during brake check.

Remedy: Do not change \$PARAM_GROUP[group].\$INPOS_TIME[axis] during brake check.

BRCH-022 Near by stroke limit(G:%d,A:%x Hex)

Cause: The current position of the axis displayed in the alarm message is near by the stroke limit. The axis number in the alarm message is defined in HEX as follows;

J1: 1, J2: 2, J3: 4,
J4: 8, J5: 10, J6: 20,
J7: 40, J8: 80, J9: 100

If this alarm occurs with multiple axes, the sum value will be displayed in the alarm message.

For example, when this alarm occurs with J1, J3, J4, J6, and J9, 12D will be displayed.

J1 + J3 + J4 + J6 + J9 = 12D
1 4 8 20 100

Remedy: Move away from the stroke limit, and re-execute brake check again.

BRCH-023 \$TORQUE_RATE error (G:%d,A:%d)

Cause: System variable \$BCK_GRP[group].\$TORQUE_RATE[axis] is invalid.

Remedy: Set \$BCK_GRP[group].\$TORQUE_RATE[axis] with 1-100 [%] (the default is 80[%]).

4.3 C

4.3.1 CALM Alarm Code

CALM-000 Cal Mate motion aborted.

Cause: The TCP Mate motion was aborted because of an unexpected change of menu, or it was aborted by the user.

Remedy: Start the motion again.

CALM-001 Form Operation Error.

Cause: A Form Operation Error occurred because the dictionary was not found.

Remedy: Turn off the controller and turn it on again. If the error still exists, document the events that led to the error and call your local FANUC representative.

CALM-002 System is not initialized.

Cause: The system is not fully initialized.

Remedy: Use the SETUP menu to set up all required variables.

CALM-003 Fail to run CalMate Motion

Cause: The TCP Mate motion cannot be started.

Remedy: Clear all the errors before running TCP Mate motion.

CALM-004 Please record all position

Cause: Not all positions in the reference menu are recorded.

Remedy: Verify that all the positions in the menu have been recorded, and try the operation again.

CALM-005 Do reference motion first.

Cause: TCPMate cannot be executed without mastering the TCP first.

Remedy: Display the reference menu, and press MASTER to run the reference motion first. Then try the operation again.

CALM-006 Point is not initialized.

Cause: The position is not initialized.

Remedy: Record positions in the reference menu first. Then, try the operation again.

CALM-007 Robot is not calibrated.

Cause: The position cannot be recorded since the robot is not calibrated.

Remedy: Calibrate the robot. Then, try the operation again.

CALM-008 Record home position first

Cause: The home position must be recorded before recording other positions.

Remedy: Record the home position. Then, try the operation again.

CALM-009 Keep same WPR as home pos.

Cause: These positions require to have the same WPR as the home position.

Remedy: Keep the same orientation (WPR) when recording these positions.

CALM-010 Please press SHIFT key.

Cause: The SHIFT key was not pressed.

Remedy: Press the SHIFT key.

CALM-011 Position is not in range.

Cause: The destination position is not reachable.

Remedy: Re-teach a new starting position.

CALM-012 Singular solution.

Cause: The robot cannot compute the circle due to a singularity.

Remedy: Check and correct robot's mastering, and check the hardware. Try reteaching the position.

CALM-013 Cannot converge.

Cause: The robot cannot converge to a solution.

Remedy: Check and correct the robot's mastering. Check hardware. Try to re-teach the position.

CALM-014 Points are too close.

Cause: The recorded positions are too close to each other.

Remedy: Points should be at least 10 mm apart. Reteach the positions.

CALM-015 Contact before search.

Cause: The robot was in contact with the part before starting a search motion.

Remedy: Reteach the starting position so that the robot is not in contact with the part before starting the search motion.

CALM-016 No contact detected.

Cause: No contact was made during the TCPMate motion.

Remedy: Make sure the sensor and software are installed correctly.

CALM-017 Undefined program name.

Cause: The enter/exit program names are not defined.

Remedy: Display the SETUP menu to select teach pendant programs.

CALM-018 TPE operation error.

Cause: An internal teach pendant program error has occurred.

Remedy: Turn off the controller and turn it on again. If the error still exists, document the events that led to the error and call your local FANUC representative.

CALM-019 Circle Fitting error: %s.

Cause: The circle fitting error is greater than expected.

Remedy: Check hardware/tooling or increase the fit tolerance.

CALM-020 No DIN support.

Cause: The search motion can not be executed without TOS sensor.

Remedy: Display the SETUP menu and select TOS in the Sensor Type.

CALM-021 Cannot continue motion.

Cause: The robot cannot continue the paused motion.

Remedy: Abort the paused motion and re-run TCPMate again.

CALM-022 Cal Mate internal error.

Cause: A CalMate internal error has occurred.

Remedy: Turn off the controller and turn it on again. If the error still exists, document the events that led to the error and call your local FANUC representative.

CALM-023 Dictionary is not loaded.

Cause: The dictionary file is not loaded.

Remedy: Turn off the controller and turn it on again. If the error still exists, document the events that led to the error and call your local FANUC representative.

CALM-024 No saved reference data.

Cause: No saved reference data exists for the current tool.

Remedy: Set the reference motion for the current tool.

CALM-025 File open error: %s

Cause: The output file cannot be opened.

Remedy: Check the path and file name of the output file.

CALM-026 No recorded Utool.

Cause: No recorded utool exists to save.

Remedy: Record a new utool.

CALM-027 Not enough TPE stack.

Cause: The teach pendant program does not have enough stack size to run TCPMate automatically.

Remedy: Display the TCPMATE main menu. TCPMate will update your teach pendant program stack size after you have displayed this menu. Leave the menu, and re-run the teach pendant program again.

CALM-028 Cannot compute new TCP.

Cause: TCPMate cannot complete its operation successfully.

Remedy: Check for a severely bent tool, or for loose hardware.

CALM-029 Please record all position

Cause: Not all positions in the SETUP menu are recorded.

Remedy: All positions in the menu must be recorded. Check the recorded positions and try the operation again.

CALM-030 Position is not in range.

Cause: The center position is not within CalMate joint limits.

Remedy: Re-teach a new center position with all joints at least 45 degrees away from the limits.

CALM-031 Run new tcp mode first.

Cause: The new tcp mode has not been performed.

Remedy: Set the adjust mode to the new tcp and run it once before running Mastering recovery mode.

CALM-032 Surface point not measured

Cause: No Z points were measured.

Remedy: Check for a severely bent tool or loose hardware.

CALM-033 Large fit error.

Cause: The Fit error is greater than expected.

Remedy: Check for a severely loose tool or for loose hardware.

CALM-034 Insufficient points.

Cause: The number of positions measured is less than required.

Remedy: Record positions away from joint limits and singularity positions in the Touch Plate menu.

CALM-035 Search distance <= 10mm

Cause: The move distance is set to less than 10 mm.

Remedy: Enter a value greater than 10mm for the move distance.

CALM-036 Invalid data restore index

Cause: There is no data to restore.

Remedy: Move the cursor to a valid data line, and press the F3 function key.

CALM-037 Orientation not calculated

Cause: The orientation point was not measured correctly and orientation will not be calculated.

Remedy: Check and repair any loose server tools or loose hardware.

CALM-038 Invalid \$MNUTOOLNUM.

Cause: \$MNUTOOLNUM is invalid.

Remedy: Calmate reset \$MNUTOOLNUM=1.

4.3.2 CD Alarm Code

CD-001 No global variables

Cause: Coordinated Motion global variables are not loaded.

Remedy: Perform a controlled start and initialize motion softparts.

CD-002 Unable to allocate memory

Cause: A failure occurred while allocating memory.

Remedy: Check amount of memory being used by the system.

CD-003 Follower recv invalid segment

Cause: Leader segment MMR number does not match that of the follower.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CD-004 Illegal leader INTR point data

Cause: Illegal Leader Interpolated Point Data is detected when trying to convert it to a transform.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CD-006 Illegal follower joint motion

Cause: JOINT MOTYPE was used for a follower during coordinated motion.

Remedy: Use LINEAR or CIRCULAR MOTYPE instead.

CD-008 No leader

Cause: There is no leader in the coordinated motion.

Remedy: Check motion statement. Perform Coordinated Motion SETUP and then perform a COLD START.

CD-009 More than one leader

Cause: There is more than one leader in the coordinated motion.

Remedy: Check motion statement. Perform Coordinated Motion SETUP and then perform a COLD START.

CD-010 Invalid angle in point data

Cause: Invalid Angle detected in Point Data.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CD-012 Illegal leader motion

Cause: Leader single group motion after coordinated motion not allowed.

Remedy: Issue non-coordinated motion involving the follower group.

CD-013 Jog group is not a leader

Cause: Attempt to perform coordinated jog with a non-leader group.

Remedy: Select leader group for coordinated jog.

CD-015 Wrist joint is not supported

Cause: WRIST JOINT Motion is not supported with coordinated motion.

Remedy: Delete Wjnt motion instruction.

CD-016 INC motion is not supported

Cause: INCREMENTAL motion is not supported with coordinated motion.

Remedy: Delete INC instruction.

CD-017 INDEP motn is not supported

Cause: Independent motion is not supported with coordinated motion.

Remedy: Change Independent motion to Simultaneous motion.

CD-018 No calibration for CD

Cause: Calibration for coordinated motion is not done

Remedy: Execute calibration of coordinated motion in SETUP screen

CD-019 Illegal follower setting

Cause: Number of follower is zero or two or greater on this motion.

Remedy: Set number of follower correctly or set group mask correctly.

CD-020 Not reach relative speed

Cause: Follower can not reach relative speed in program.

Remedy: Teach follower and leader position again to reach relative speed.

CD-021 No kinematics in CD group

Cause: Attempt to perform coordinated motion with non-kinematics robot.

Remedy: Initialize robot library correctly.

CD-022 Prev term type is not FINE

Cause: Term type before coordinated motion is not Fine or CNT0.

Remedy: Change term type before coordinated motion to FINE or CNT0 or JOINT motion.

CD-023 Illegal CD setting

Cause: Setting of coordinated motion is not correct.

Remedy: Check setting of coordinated motion in SETUP screen And set correctly.

CD-024 Calibration was inaccurate

Cause: Teaching points is incorrect or Leader's mechanics is inaccurate.

Remedy: Check the mechanics and reteach the points.

CD-025 Can't convert position

Cause: System can't convert position properly.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CD-028 T1 speed limit(G:%d^2)

Cause: The speed of the TCP or Face Plate exceeded the T1 speed limit.

Remedy: Specify a slower speed or change to AUTO mode.

CD-029 Illegal to switch leader

Cause: Cannot switch leader group while in coordinated motion.

Remedy: Use the same leader group number. Change the leader only when proceeded by a non-coordinated motion.

CD-030 Weave not support in Dyn UF

Cause: Dynamic user frame does not support Weave motion.

Remedy: Don't use this combination.

CD-031 TRACK not support in Dyn UF

Cause: Dynamic user frame does not support Track motion.

Remedy: Don't use this combination.

CD-032 MPASS not support in Dyn UF

Cause: Dynamic user frame does not support MPASS.

Remedy: Don't use this combination.

CD-033 Option not support in Dyn UF

Cause: The option not supported in Dynamic user frame is used.

Remedy: For example, Dynamic user frame does not support ARC utilities.

4.3.3 CMND Alarm Code

CMND-001 Directory not found

Cause: The specified directory can not be found.

Remedy: Check the device and path that you entered. If none entered, check the system default device from the FILE Menu or from the KCL command, CHDIR.

CMND-002 File not found

Cause: The specified file could not be found.

Remedy: Check to make sure the file has been spelled correctly and that it exists. Also verify the device and path name are correct.

CMND-003 File already exists

Cause: The file already exists and cannot be overwritten.

Remedy: Make sure the overwrite option has been specified.

CMND-006 Self copy not allowed

Cause: A file cannot be copied to itself.

Remedy: Change the name of the destination file so it is different from the source file.

CMND-010 Source type code is invalid

Cause: The source variable was not a position type when converting between a Cartesian and joint position.

Remedy: The valid position types are POSITION, JOINTPOS, XYZWPR, and XYZWPREXT.

CMND-011 Destination type code is invalid

Cause: The destination variable was not a position type when converting between a Cartesian and joint position.

Remedy: The valid position types are POSITION, JOINTPOS, XYZWPR, and XYZWPTEXT.

CMND-012 Type codes do not match

Cause: The requested type code doesn't match the passed variable type.

Remedy: Internal error. Insure that the type code matches the variable type.

CMND-013 Representation mismatch

Cause: An attempt was made to compare two positions that are not the same type.

Remedy: Both positions must be the same type. Convert one before comparing.

CMND-014 Positions are not the same

Cause: Two positions were compared and found not to be equal.

Remedy: The two positions were not equal within the specified tolerance. This could be a normal occurrence. This warning is the logical opposite of SUCCESS.

CMND-015 Both arguments are zero

Cause: Both arguments to ATAN2 were zero or an internal error occurred when attempting to convert a POSITION to XYZWPR.

Remedy: If calling ATAN2, insure that both arguments are not zero. If converting a POSITION, then it cannot be converted to an XYZWPR.

CMND-016 Division by zero

Cause: An attempt was made to divide by zero.

Remedy: This is an internal error. Insure that the divisor is not equal or close to zero.

CMND-017 Angle is out of range

Cause: The rotational angle is too great.

Remedy: Make sure that the rotational angle is no greater than 100 times PI, or about 314.15926...

CMND-018 Invalid device or path

Cause: An invalid device or path has been specified.

Remedy: Check the device and path that you entered. If none entered, check the system default device from the FILE Menu or from the KCL command, CHDIR.

CMND-019 Operation cancelled

Cause: The operation was cancelled because CTRL-C or CTRL-Y was pressed.

Remedy: Repeat the operation.

CMND-020 End of directory

Cause: The directory listing is finished.

Remedy: This is a notification. You do not have to do anything for this warning message.

CMND-021 Cannot rename file

Cause: The destination file name contained both alphanumeric characters and the global character '*'.

Remedy: Use only alphanumeric characters or a single global character when renaming a file.

CMND-022 Time motion with dist before

Cause: A time-based motion was specified along with distance before.

Remedy: Do not use these options in combination.

CMND-023 No destination device or path

Cause: No device or path has been specified for the destination.

Remedy: Check the device and path that was provided. If none, provide a destination device or path.

CMND-024 %s invalid entry

Cause: The indicated system variable has invalid information. See the cause code regarding the cause.

Remedy: Change the system variable entry, or provide a valid directory or device.

CMND-025 %d FILE programs not saved

Cause: This system has programs of FILE storage type. FILE programs are not part of the standard backup.

Remedy: Please back up these files via another mechanism.

CMND-029 Creation or update of ZIP file failed.

Cause: ZIP file processing failed and creation or update of ZIP file failed.

Remedy: Please check file device is available. If output file already exist, it should not be write protected. Lack of temporary pool can cause ZIP command failure. Decrease the number of file included in a ZIP file. If available temporary pool is low constantly, consider increasing memory of controller.

CMND-030 Decompression of ZIP file failed.

Cause: Decompression of ZIP file failed.

Remedy: Please check file device is available. Please check ZIP file is valid. It may be broken. If output file already exist, it should not be write protected. Lack of temporary pool can cause the error. If available temporary pool is low constantly, consider increasing memory of controller.

CMND-031 File not found in ZIP

Cause: This system has programs of FILE storage type. FILE programs are not part of the standard backup.

Remedy: Please check string to specify file(s) to be extracted is correct. Please check ZIP file is the ZIP file you want to decompress. Different ZIP file may be specified.

4.3.4 CNTR Alarm Code

CNTR-001 No global variables

Cause: Continuous Turn global variables are not loaded.

Remedy: Perform a controlled start and initialize motion softparts. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CNTR-002 No MIR pointer

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CNTR-003 No sysvar pointer

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CNTR-004 No cnir pointer

Cause: This is an internal system error.

Remedy: Perform a controlled start and initialize the motion softparts. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CNTR-005 Wrong CN Axis/N1 or N2(G:%d^2)

Cause: The continuous turn axis that was selected is not a valid cont. turn axis, or cn_gear_n1 or cn_gear_n2 have a zero value.

Remedy: Check Continuous turn axis, cn_gear_n1, and cn_gear_n2. Select different continuous turn axis and/or set correct gear ratio for continuous turn axis.

CNTR-006 Unable to Allocate Memory

Cause: A failure occurred while allocating memory.

Remedy: Check amount of memory being used by the system.

CNTR-007 Serious Internal error (G:%d^2)

Cause: Internal Continuous Turn error.

Remedy: P Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CNTR-008 Invalid dest. angle, (G:%d^2)

Cause: Invalid destination angle during linear motion. Incompatibility with Continuous Turn and other options.

Remedy: Check compatibility of motion options. Remove other options.

CNTR-009 Warn-Cont Vel too high(G:%d^2)

Cause: Continuous rotation speed is too high. If this warning occurs, \$CN_USR_GRP[g].\$CN_TURN_NO will not be valid.

Remedy: You can ignore this warning if you don't use \$CN_USR_GRP[g].\$CN_TURN_NO (This system variable is not used in general usage). However, if same motion is executed in single-step mode, alarm "CNTR-011 Axis speed exceeds lim(G:%d^2)" will be posted. If you need the motion can be performed also in single-step mode or you use \$CN_USR_GRP[g].\$CN_TURN_NO, it is necessary to decrease the continuous rotation speed.

CNTR-010 Ind.EV option not allowed.

Cause: Continuous turn is not compatible with independent extended axes The Ind.EV motion option is not allowed.

Remedy: Remove Ind.EV option or disable continuous turn on the group.

CNTR-011 Axis speed exceeds lim(G:%d^2)

Cause: Non-continuous rotation is to be performed on the continuous rotation axis and the speed exceeds the speed limit (180[deg] / \$SCR.\$ITP_TIME[msec]) on the continuous turn axis. [Note] Even if it is the continuous turn axis, it becomes non-continuous rotation motion (normal motion) if there is no continuous rotation speed instruction. And, even if there is a continuous rotation speed instruction, it will be non-continuous rotation in single-step mode.

Remedy: Disable single-step mode, if the motion is executed in single-step mode. If you need non-continuous rotation motion can be performed, it is necessary to decrease the maximum speed setting of the axis. However, it is limited to axes that user can set the maximum speed, such as additional axes. Note that motion performance of taught program may change by changing the maximum speed.

CNTR-012 Ending Cont Rot on Rel Motion

Cause: Attempted to end Continuous Rotation with a Relative Motion.

Remedy: Continuous Rotation must be ended with an absolute motion Use an absolute motion to end continuous rotation.

4.3.5 COND Alarm Code

COND-001 Condition does not exist

Cause: Specified condition does not exist.

Remedy: Check for condition statements to verify if the specified condition has really been created or not.

COND-002 Condition handler superseded

Cause: The specified condition number already exists in the system, and has been superseded by the new condition.

Remedy: This is just a notification, and you do not have to do anything for this warning message.

COND-003 Already enabled, no change

Cause: The specified condition is already enabled. No change has been made.

Remedy: This is just a notification, and you do not have to do anything for this warning message.

COND-004 Already disabled, no change

Cause: The specified condition is already disabled. No change has been made.

Remedy: This is just a notification, and you do not have to do anything for this warning message.

COND-005 No more conditions defined

Cause: No more conditions are defined for the specified task.

Remedy: No action is required.

COND-009 Break point encountered

Cause: Break point has been encountered.

Remedy: No action is required.

COND-010 Cond exists, not superseded

Cause: Specified condition already exists. Condition was not superseded. May indicate two condition handlers for the same task with the same condition handler.

Remedy: Either renumber the condition handler or avoid re-defining the same condition handler.

COND-011 Scan time took too long

Cause: There are too many conditions defined. It took too long to scan them all.

Remedy: Reduce the number of conditions defined.

4.3.6 COPT Alarm Code

COPT-001 Send_PC error

Cause: The system was not able to setup the message packet to send to the PC.

Remedy: System probably out of memory. Cold start.

COPT-002 Add PC Uninit prog or var name

Cause: An ADD PC buffer built-in was called with a parameter that is uninitialized.

Remedy: All parameters must have a value when calling the create a data buffer to PC built-ins.

COPT-003 Add PC Variable not found

Cause: The variable requested in the ADD Byname or Send SysVar routines does not exist.

Remedy: Check program and variable name spellings. Check variable data type. Only integer, real and string data is supported.

COPT-004 Add PC Var type not supported

Cause: The variable requested in the ADD Byname or Send SysVar routines is of a data type that is not supported.

Remedy: Check variable data type. Only integer, real and string data is supported. Check program and variable name spellings.

COPT-005 Add PC illegal index into buffer

Cause: An ADD PC buffer built-in was called with the index parameter set too big or too small.

Remedy: Set the index parameter correctly. Make sure the data buffer is big enough for your data.

COPT-006 Add PC buffer overflow - parm %s

Cause: The data could not be copied to the data buffer because the buffer is too small.

Remedy: Make sure the data buffer is big enough for your data. If there is too much data to send, you might have to use more than one event to send the data.

COPT-007 Add PC Un-initialized parameter %s

Cause: An ADD PC buffer built-in was called with a parameter that is uninitialized.

Remedy: All parameters must have a value when calling the create a data buffer to PC built-ins.

COPT-008 Send_PC Un-initialized parameter

Cause: A Send PC built-in was called with a parameter that is uninitialized.

Remedy: All parameters must have a value when calling the send PC built-ins.

COPT-009 Send_PC Illegal event number

Cause: An event number less than 0 or greater than 255 was used.

Remedy: Use an event number from 0 to 255.

COPT-010 Send_PC Illegal wait flag

Cause: Only wait flags of 0 or 1 are allowed.

Remedy: Use a legal wait flag.

COPT-011 Send_PC Buffer too big for packet

Cause: The maximum data buffer size supported is 244 bytes.

Remedy: Use a legal data buffer size.

COPT-020 Send_PC builtin failed

Cause: A system error occurred when trying to send the data buffer to the PC.

Remedy: Check other alarms in alarm log for details.

COPT-021 Send_PC event parm %s error

Cause: A Send to PC MACRO was called with a parameter that is illegal. The parameter is uninitialized or the wrong data type.

Remedy: Check the MACRO call in the TP program.

COPT-022 Still waiting for %s

Cause: Status message only. A controller task is waiting for an event flag back from the PC.

Remedy: Check PC communications.

COPT-023 Abort wait for %s

Cause: A controller task waited too long for an event flag from the PC. The controller task was aborted.

Remedy: Check PC communications.

COPT-024 Continuing without %s

Cause: Status message only. A controller task was waiting for an event flag back from the PC. The PC is taking too long. The controller task has continued without receiving the event flag.

Remedy: Check PC communications.

COPT-025 Received answer for %s

Cause: Status message only. The PC set the event flag and the controller task is continuing.

Remedy: N/A

COPT-026 Wait timer cannot be set

Cause: A system timer cannot be created or set for this controller task.

Remedy: Cold start.

COPT-027 Reg %s could not be set

Cause: Register operation failed.

Remedy: Check if the register is defined and if it has the right value. Must ABORT ALL and retry.

COPT-028 Register %s not defined

Cause: This is just a debug message.

Remedy: N/A

COPT-029 Macro Table too small for send option

Cause: The MACRO table must have at least 60 elements for the SEND PC MACRO option to be installed properly.

Remedy: Increase the MACRO table size.

COPT-030 Parameter %s error

Cause: Send PC Macro data error.

Remedy: Check other alarm log errors for more details.

COPT-031 Send Macro - no data to send

Cause: The Send Data PC MACRO was not given any data to send.

Remedy: Check MACRO parameters.

COPT-032 Send_n_wait - Illegal action

Cause: The wait action parameter must be 0 through 3.

Remedy: Check MACRO parameters.

COPT-033 Send_n_wait - Uninit parm %s

Cause: A send PC MACRO was called with a parameter that is uninitialized.

Remedy: All parameters must have a value.

COPT-034 %s missing

Cause: A MACRO was called without a parameter that must be entered.

Remedy: Check the MACRO call in the TP program.

COPT-035 Aborting TP program

Cause: An error occurred in the TP program.

Remedy: Check the TP program.

COPT-036 %s Illegal type

Cause: A MACRO was called with a parameter that is illegal. The parameter has the wrong data type.

Remedy: Check the MACRO call in the TP program.

4.3.7 CPMO Alarm Code

CPMO-001 Internal PLAN error (G: %d^2)**CPMO-002 Internal INTR error (G: %d^2)****CPMO-003 Internal CP error (G: %d^2)**

Cause: An internal error occurred. The system might have been corrupted. This class of error should not be encountered during normal operation.

Remedy: This might have been caused by any of a number of reasons including: Incorrect loading and setup, loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies:

1. Perform a Cold start.
2. Perform an init start and set up the robot again.
3. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software versions is not matched, a complete re-load with the correct software will be necessary.
4. Confirm that no incompatible or mutually exclusive option has been loaded.
5. Perform a full software reload.
6. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-004 Feature not Supported (G: %d^2)

Cause: CP does NOT support this feature.

Remedy: Disable the feature and try the operation again.

CPMO-005 Out of memory

Cause: CP ran out of memory during initialization.

Remedy: Check the \$CP_PARAMGRP variables for too large values. Use a larger memory configuration.

CPMO-006 Simulated Hold (G: %d^2)

Cause: A Constant Path (CP) simulated Hold has occurred.

Remedy: Reset the error and perform a Cycle Start.

CPMO-007 Simulated E-Stop (G: %d^2)

Cause: A Constant Path (CP) simulated E-Stop has occurred.

Remedy: Reset the error and cycle start the controller.

CPMO-010 Cycle power:JBF size (G: %d^2)

Cause: The allocated internal memory size is insufficient. Therefore, it is impossible to continue to execute a program.

Remedy: Cycle power to increase the internal memory size automatically just after the alarm occurs. If the alarm occurs again, please cycle power again.

CPMO-011 JBF INTR_T < Ts (G: %d^2)**CPMO-012 JBF Len<0 (G: %d^2)****CPMO-014 JBF NULL PTR (G: %d^2)****CPMO-015 JBF Ts>itp (G: %d^2)****CPMO-018 JBF nitp_time < 1 (G: %d^2)****CPMO-019 JBF INTR_T > itp (G: %d^2)****CPMO-020 JBF MEMORY ALLOC ERROR****CPMO-021 JBF Index < 0 (G: %d^2)****CPMO-022 JBF Ptout > Ptin (G: %d^2)****CPMO-023 JBF Ptout != Ptin (G: %d^2)****CPMO-024 JBF (Ptin-Ptout)>itp (G: %d^2)****CPMO-025 JBF Ts < 0 (G: %d^2)****CPMO-026 JBF Ts != 0 (G: %d^2)****CPMO-027 JBF Ts > itp****CPMO-028 JBF TS, Ptin & Ptout mismatch****CPMO-029 JBF Index > 1 (G: %d^2)****CPMO-030 JBF Ptout > npts (G: %d^2)****CPMO-031 JBF Len <= 0 (G: %d^2)****CPMO-032 JBF Set not empty (G: %d^2)****CPMO-033 JBF not empty (G: %d^2)****CPMO-034 JBF len mismatch (G: %d^2)****CPMO-035 JBF set not main (G: %d^2)****CPMO-036 JBF set not valid (G: %d^2)****CPMO-040 GTF not empty (G: %d^2)****CPMO-041 GTF no main filter (G: %d^2)****CPMO-042 GTF fout too big (G: %d^2)****CPMO-043 GTF num_tf != 1 (G: %d^2)**

Cause: An Internal error has occurred. The system might have been corrupted. This class of error should not be encountered during normal operation.

Remedy: This might have been caused by any of a number of reasons including: Incorrect loading and setup loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies:

1. Perform a Cold start.
2. If CPMO-014 occurs, check the setting of Independent Axes(H895). When an auxiliary axis(J518) is set for a group of Independent Axes which no axis has been set, add at least one independent axis.
3. Perform an Init start and set up the robot again.
4. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software version is not matched, a complete re-load with the correct software will be necessary.
5. Confirm that no incompatible or mutually exclusive option has been loaded.
6. Perform a full software reload.
7. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-044 Cycle power: GTFsize (G: %d^2)

Cause: The allocated internal memory size is insufficient. Therefore, it is impossible to continue to execute a program.

Remedy: Cycle power to increase the internal memory size automatically just after the alarm occurs. If the alarm occurs again, please cycle power again.

CPMO-045 Local Hold error (G: %d^2)**CPMO-046 Chnl != ChO + CIF (G: %d^2)**

Cause: An internal error has occurred.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-050 No System Variables (G: %d^2)**CPMO-051 No Data Structure (G: %d^2)****CPMO-052 Stack Underflow (G: %d^2)****CPMO-053 No Stack (G: %d^2)****CPMO-054 Stack Overflow (G: %d^2)****CPMO-055 Stack Not Full (G: %d^2)****CPMO-056 Corrupt data (G: %d^2)****CPMO-057 Wrong MT or OT (G: %d^2)**

Cause: An Internal error has occurred. The system might have been corrupted. This class of error should not be encountered during normal operation.

Remedy: This might have been caused by any of a number of reasons including: Incorrect loading and setup loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies:

1. Perform a Cold start.
2. Perform an Init start and set up the robot again.
3. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software version is not matched, a complete re-load with the correct software will be necessary.
4. Confirm that no incompatible or mutually exclusive option has been loaded.
5. Perform a full software reload.
6. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-058 Cycle power: CHNs (G: %d^2)

Cause: When continuously switching Utool number and changing motion type (Joint/Cartesian) with CNT, if crossover motion number by CNT exceed predefined upper limit, CPMO-058 will occur. Upper limit of crossover motion number is defined by system variable \$CP_PAEAMGRP[group].\$NUM_CHN. Cycling power on the controller will increase 2 CHANNELs automatically. Note: Do not change \$CP_PAEAMGRP[group].\$NUM_CHN directly.

Remedy: After this alarm occurred, please cycle power then run the same TP program again. If the alarm cannot be avoided even repeat upon operation several times, please change motion type which line the alarm occurred on (or the following motion line) from CNT to Fine.

CPMO-059 Cycle power: JBFSETs (G: %d^2)**CPMO-060 Cycle power: JBFs (G: %d^2)****CPMO-061 Cycle power: TFs (G: %d^2)****CPMO-062 Cycle power: RSINFOs (G: %d^2)**

Cause: The allocated internal memory size is insufficient. Therefore, it is impossible to continue to execute a program.

Remedy: Cycle power to increase the internal memory size automatically just after the alarm occurs. If the alarm occurs again, please cycle power again.

CPMO-063 MAINCHN is NULL (G: %d^2)**CPMO-064 MAINCHN is Unknown (G: %d^2)**

Cause: A data mismatch occurs in an internal calculation.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-065 Need Abort:GmSTOPPOS MisSyn**CPMO-066 Need Abort:GmRSType MisSyn****CPMO-067 Need Abort:GmRsInfo Mismatch**

Cause: A data mismatch occurs in an internal calculation.

Remedy: Just after the alarm occurred, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-069 Step mode enabled (G: %d^2)

Cause: Step mode was enabled after a constant path hold. The path will vary from normal motion path.

Remedy: None. This is normal behavior.

CPMO-070 Channel not empty (G: %d^2)**CPMO-071 Channel not main (G: %d^2)**

Cause: An Internal error has occurred. The system might have been corrupted. This class of error should not be encountered during normal operation.

Remedy: This might have been caused by any of a number of reasons including: Incorrect loading and setup loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies:

1. Perform a Cold start.
2. Perform an Init start and set up the robot again.
3. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software version is not matched, a complete re-load with the correct software will be necessary.
4. Confirm that no incompatible or mutually exclusive option has been loaded.
5. Perform a full software reload.
6. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-072 Need Abort:PathChanged(G:%d^2)**CPMO-073 Need Abort:PathChanged(G:%d^2)**

Cause: If the resume motion cannot continue on a constant path, this alarm occurs.

Remedy: Reset the alarm and perform a backward execution.

NOTE:

- (1) When this error message is posted, the system no longer maintains a constant path (path would change) at resume.
- (2) If you ABORT the program, then the cursor will not stay at the same line of the program and you might lose the track of your programs.
- (3) To track the cursor position, one can move the robot backward one motion line by pressing BWD key and then resume the motion.
- (4) Move the robot to a safe position before resuming the motion and watch path closely at resume to avoid any collision and damage.

If it is impossible to reset the alarm or the alarm occurs again and again, just after the alarm occurs, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging,

and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-074 Can't resume blend path (G: %d^2)

Cause: This is for warning that it is impossible to guarantee a constant path at resume motion.

Remedy: Press RESET and cycle start to continue. The path might deviate from the normal path.

CPMO-075 %s

Cause: This is only a warning.

Remedy: None.

CPMO-076 Can't resume same path (G: %d^2)

Cause: Resume motion cannot continue on a constant path.

Remedy: Press RESET and cycle start to continue. The path might deviate from the normal path.

CPMO-078 Seg Overrun (G: %d^2)

Cause: The system is ready to start next segment, but none are available. The path might deviate from the normal path. The segment might be delayed by processor loading or by statements that prevent pre-execution, such as WAIT or BREAK.

Remedy: Increase the ITP time if the processor loading is high. The alarm can be disabled by setting
\$cp_paramgrp[.].\$warnmessenb = FALSE.

CPMO-079 Preplan fail (G: %d^2)

Cause: The system is ready to start the next segment, but planning was cancelled. The path might deviate from the normal path.

Remedy: Press RESET and cycle start the controller to continue. The path might deviate from the normal path.

CPMO-080 EXTChannel not empty (G:%d^2)

CPMO-081 EXT JBFSet not empty (G:%d^2)

CPMO-082 EXT JBF not empty (G:%d^2)

CPMO-085 EXT JBF NULL PTR (G:%d^2)

Cause: An Internal INTR error has occurred. This class of error should not be encountered during normal operation.

Remedy: The system might have been corrupted. This might have been caused by any of a number of reasons including:

Incorrect loading and setup loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies:

1. Perform a Cold start.
2. Perform an Init start and set up the robot again.
3. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software version is not matched, a complete re-load with the correct software will be necessary.
4. Confirm that no incompatible or mutually exclusive option has been loaded.
5. Perform a full software reload.
6. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-086 Cycle power: EXT JBFs (G:%d^2)

Cause: The allocated internal memory size is insufficient. Therefore it is impossible to continue to execute a program.

Remedy: Cycle power to increase the internal memory size automatically just after the alarm occurs. If the alarm occurs again, please cycle power again.

CPMO-090 Invalid MainChn ID (G: %d^2)**CPMO-091 Invalid JBF MainChn ID (G: %d)****CPMO-092 JF NewLastAng Mismatch (G: %d^2)****CPMO-093 JB NewLastAng Mismatch (G: %d^2)****CPMO-094 Invalid JBF New Chnld (G: %d^2)**

Cause: A data mismatch occurs in an internal calculation.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-095 Too Large Jnt Cmd (G: i A: j)

Cause: A very large axis speed which may exceed the safety limit was detected. i indicates the group number and j indicates the axis number in which this error was detected.

Remedy: (1) Axis speed can become very high during linear or circular motion which satisfies at least one of the following conditions;

- TCP travels near singular point.
- Tool posture changes largely.

For a remedy, modify the motion instruction as below so that this axis gets slower during this motion;

1. Divide the motion into two instructions using a mid point which is away from the singular point, or/and
2. Decrease the speed (feed rate) of the motion instruction, or
3. Change the motion format to J (Joint motion).

(2) If the remedy (1) does not resolve this alarm, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-100 Forward Resume Offset (G: %d^2)

Cause: CP does not support forward resume offset.

Remedy: Use backward resume offset only.

CPMO-101 Rsm Ofst Buffer Limit (G: %d^2)

Cause: Could not reach the desired resume offset because the distance exceeded the available time buffer.

Remedy: Try the following:

- Reduce resume offset.
- Increase move speed.
- Increase the JBF size.

CPMO-102 Resume Offset Limit (G: %d^2)

Cause: Could not reach desired resume offset because the distance exceeded the buffer limit.

Remedy:

1. Increase \$CPCFG.\$RSM_OFST_ITP.
2. Reduce resume offset.
3. Increase the move speed.

CPMO-103 Resume Offset Gp Limit (G: %d^2)

Cause: Could not reach the desired resume offset because the offset was limited by another group.

Remedy: Try the following:

- Remove the limitation on the other group.
- Reduce the resume offset.
- Increase the move speed.
- Increase the JBF size.

CPMO-104 Resume prior Offset (G: %d^2)

Cause: A prior resume offset position was reused because a second hold occurred before the prior stop position was reached. This occurred during the resume motion.

Remedy: None. This prevents indefinite resume offsets with repeated hold/resume.

CPMO-105 Rsm Ofst Coord Sync Fail G: %d^2

Cause: The coordinated groups for resume offset could not be synchronized. The path might deviate from the taught positions.

Remedy: None.

CPMO-130 T1 speed excess (G: %d^2)

Cause: T1 speed exceeds the safe speed for T1 mode.

Remedy: In case that robot moves with very short acceleration and deceleration time, when robot moves from small speed to high speed motion sentence with CNT, it is possible that T1 speed limit process cannot regulate robot speed during acceleration and deceleration time and robot speed exceeds T1 speed limitation for a moment and causes this alarm. In this case, this alarm can be avoided by switching T1 speed limitation from every interpolation interval method to every motion sentence method. Please try following countermeasure.

1. Set \$CP_T1_MODE.\$ENABLE FALSE and confirm. (This setup switches T1 speed limitation to every motion sentence method.)
2. If the error is not cleared, Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-135 NO CR allowed in this region

Cause: Corner Region is not allowed in this block.

Remedy: Remove Corner Region and use CNT.

CPMO-136 NO PSPD allowed in this region

Cause: Process Speed is not allowed in this application block.

Remedy: Remove the PSPD (Process Speed) option.

CPMO-137 NO mspd allowed in this region

Cause: max_speed is not allowed in this application block.

Remedy: Change the max_speed to mm/sec.

CPMO-138 NO LD allowed in this region

Cause: AP_LD and RT_LD are not allowed in this application block.

Remedy: Remove the AP_LD or RT_LD option.

CPMO-139 Can't maintain CRval L:%d^5

Cause: The specified CR value was too big to achieve since the actual CR value is limited by either CNT100 corner path or half-distance of involved segments. This is only a warning message.

Remedy: Use a higher programmed speed, or use ACCxx, xx<100.

CPMO-140 NO CD allowed in this region

Cause: Corner Distance is not allowed in this block.

Remedy: Remove Corner Distance and use CNT.

CPMO-150 Wrong CP State (G: %d^2)

Cause: An internal data mismatch occurs at resume.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

CPMO-151 No Stoppos at OrgRsm (G:%d^2)

Cause: CP detected that at resume stoppose was not initialized.

Remedy: Reset the system and try again.

CPMO-199 NotSupport Simul/Indep GP L:%d^5

Cause: CP does NOT support Simultaneous GP or Independent GP motions.

Remedy: Either remove Simultaneous GP Independent GP motion lines or disable the Constant Path function.

4.3.8 CVIS Alarm Code

CVIS-001 Not enough memory to process

Cause: Not enough memory is available to process the request.

Remedy: First, make sure your RD: drive is not unnecessarily large. If so, reduce the size of it. If you continue to encounter the error, cycle power on your controller. If the error still occurs, please get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-002 Bad arguments to the function

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC representative.

CVIS-003 Cannot find specified file

Cause: The specified file cannot be found.

Remedy: Check to make sure you have entered the correct filename. If the file is supposed to be on a memory card or other removable media, check to make sure you are using the correct media.

CVIS-004 The file already exists

Cause: The specified file already exists.

Remedy: Change the file name or, if using removable media such as a memory card, change the media.

CVIS-005 File access is denied

Cause: File access is denied.

Remedy: Make sure you are attempting to access the correct file. If the file is on media which has a read/write lock, and you are attempting to write or modify the file, make sure the lock is off.

CVIS-006 Not enough space on the disk

Cause: Not enough space exists on the media.

Remedy: Free up space on the existing media by deleting unused files, or switch to a larger or emptier media. If the error still occurs, please get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-007 Unsupported image file

Cause: The image file is corrupted or uses an unsupported file format.

Remedy: The iRVision supports 8 or 24 bit/pixel BMP and PNG only.

CVIS-008 Bad vector/matrix dimensions

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-010 The matrix is singular

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-011 The objects are parallel

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-012 The quadratic is a parabola

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-013 The quadratic is a hyperbola

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-014 Not enough points for fitting

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-015 Too few calibration points

Cause: The number of points is not enough to compute the calibration.

Remedy: The minimum number of points to compute the calibration is 5 for one surface and 7 for two surfaces. Please check the number of points can be recognized. If it is out of focus, recognizing the points is difficult. Please adjust focus of the camera.

CVIS-016 Cannot calibrate the camera

Cause: Calibration cannot be computed from the given point set.

Remedy: Check if the calibration points are found properly. You might need to adjust your camera settings, or lighting.

CVIS-017 Invalid file name

Cause: The specified file name is invalid.

Remedy: Check if the file name contains unusable characters. Note that the controller only supports DOS file names (8-character file name, followed by a period, followed by a 3-character extension) and does not support Windows-style long file names.

CVIS-018 The mask size is bad

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-019 The window size is bad

Cause: The specified window is bad.

Remedy: Change the window size.

CVIS-020 Big circles cannot be distinguished

Cause: Big circles could not be distinguished.

Remedy: Determine if the calibration plate is tilted too much. Also, check to see if big circles are incorrectly found. If the alarm still appears, check the orientation of the grid pattern because this alarm can be posted when the grid pattern is upsidedown.

CVIS-021 Exceed VisPool(%d Bytes)

Cause: Vision pool lacked sufficient available memory to perform the specified image processing, so the image processing was performed using some memory from Temporary pool. The alarm message shows the amount of memory used from Temporary pool.

Remedy: Urgent remedy would not be needed, but if this alarm is posted too frequently, consider taking the following actions:

- Consider replacing your controller's CPU card to be the one with 64 MB DRAM module. Contact your local FANUC representative.
- While the production line is under execution, do not open the iRVision setup window on PC. If a setup window is opened, the setup window uses a significantly large memory space, so that memory space required for line execution may become unavailable.
- When a vision process based on multiple cameras or three-dimensional sensors is used, modify your TP program and add CAMERA_VIEW[X] to the VISION RUN_FIND command so that the VISION RUN_FIND command is called for each camera view. Compared with a case where all camera views are executed at a time, the maximum memory space momentarily required is reduced.
- When the vision process has many locator tools, consider splitting the vision process into some vision process. A larger memory space is needed to execute if a vision process has many locator tools.

- Consider adjusting parameters for the pattern match tool that has been taught to the vision process. A larger memory space is needed as a larger search range is specified for the search window, angle, size, aspect, and so forth. A larger memory space is required as a smaller value is specified for the score threshold, contrast threshold, and so forth.
- Consider modifying a model pattern for the pattern match tool that has been taught to the vision process. As the figure of a model pattern is simpler, judgment as to whether the figure is identical is more difficult and a larger memory space is needed.
- Consider improving the illumination and background. If the background is more complicated and its image varies more in darkness, a larger memory space is required for detection.

CVIS-022 Focal length and Z distance could not be calculated

Cause: Focal distance and Z distance could not be calculated. When optical axis of camera is perpendicular to plate, focal distance and Z distance cannot be calculated accurately.

Remedy: In the case of a robot-mounted camera is used or when the calibration grid plate is mounted on the robot end of arm tooling, 2-plane calibration should be done. In the case of lens which projects orthogonally as telecentric lens, set Projection to Orthogonal and retry calibration. In other case, set Override Focal Distance to Yes and Focal Dist to the value of nominal focal distance of the lens, and retry calibration.
When the situation is not improved even if the actions above are taken, please get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-023 Failed to paste the tool because the clipboard is empty.

Cause: The copy/paste clipboard is empty. There is no data in the copy/paste clipboard to paste into the selected tool. The clipboard may have been manually cleared in the iRVision config page.

Remedy: Copy the source tool into the clipboard again.

CVIS-024 Failed to paste the selected tool from the clipboard.

Cause: Failed to paste the tool from the clipboard.

Remedy: Recopy the tool to the clipboard and paste again. Repower the controller, recopy the tool to the clipboard, and paste again.

CVIS-030 The model pattern is not trained.

Cause: The model pattern is not trained.

Remedy: Train the model pattern, and retry the operation.

CVIS-031 There are not enough features in the training window.

Cause: There are not enough features in the image to train the model pattern.

Remedy: Use another part of the image as the model. Or, teach a model using another image by taking it after adjusting the exposure time so that the contrast becomes high.

CVIS-032 Bad arguments.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-033 The operation has timed out.

Cause: The system could not find the object within the time limit.

Remedy: In the Geometric Pattern Match (GPM) Tool Setup screen, check if you have the Orientation, Scale, or Aspect Ratio degrees of freedom enabled. If so, reduce the maximums and/or increase the minimums and try to find again. If it still fails, disable one or more degrees of freedom. Increase the allowable processing time. Alternatively, make one of the following adjustments so as to decrease the required processing time.

- Use a complex geometry as the model.
- Uncheck the orientation, scale, and aspect ratio check boxes whichever are unnecessary.
- Specify a larger score threshold.
- Specify a larger contrast threshold.
- Narrow the orientation, scale, and aspect ratio search ranges.
- Reduce the size of the search window.

CVIS-034 The emphasis area is not trained.

Cause: The emphasis area is not trained.

Remedy: Train the emphasis area, or configure the tool not to use emphasis area.

CVIS-035 The emphasis area is too large.

Cause: The emphasis area is too large to train.

Remedy: Train a smaller area as the emphasis area.

CVIS-036 The emphasis area is too small.

Cause: The emphasis area is too small and does not contain enough features to train.

Remedy: Train a larger area as the emphasis area.

CVIS-037 The model origin of the model pattern cannot be calculated.

Cause: For a non-rotatable model, an attempt was made to have the model origin automatically set by clicking the Center Origin button.

Remedy: The model origin of a non-rotatable model cannot be set automatically by clicking the Center Origin button. Use the Set Origin button to set the model origin.

CVIS-038 Too many candidates to process.

Cause: There is not enough memory to perform the detection with the specified condition. The image has too many candidate patterns to find.

Remedy: In the Geometric Pattern Match (GPM) Tool SETUP screen, check if you have the Orientation, Scale, or Aspect Ratio degrees of freedom enabled. If so, reduce the maximums and/or increase the minimums and try to find again. If it still fails, disable one or more degrees of freedom. Make the following adjustments to reduce the search candidates:

- Use a complex geometry as the model.
- Of Orientation, Scale, and Aspect Ratio, uncheck the unnecessary items.
- Specify a larger score threshold.
- Specify a larger contrast threshold.
- Narrow the search ranges for Orientation, Scale, and Aspect Ratio.
- Reduce the size of the search window.

CVIS-039 The mask doesn't fit the model pattern.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-040 The mask doesn't fit the search window.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-041 File version error.

Cause: The version of the file is too new to load.

Remedy: This error indicates there is no way to convert the file to use on this robot controller. To use this file, you will either need to find a controller with newer software, or reload this controller with newer software. If necessary, contact your local FANUC representative for updated robot software.

CVIS-042 File is corrupted.

Cause: The GPM tool data in the file is corrupted.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-043 The search window is too small.

Cause: The specified search window is too small to process.

Remedy: Set the search area larger, and retry the operation.

CVIS-050 Exposure is invalid

Cause: The exposure time is too long or short.

Remedy: Set it in the range from 0.04 ms to 250 ms.

CVIS-051 Laser window is invalid

Cause: No laser measurement area has been set up or a set laser measurement area is too small.

Remedy: Re-teach a measurement area. The minimum allowable laser measurement area is 8 pixels in both height and width. If it is necessary to measure laser beams in a smaller area, increase the size of the measurement area and then limit it by setting up a mask.

CVIS-052 Calibration data is not perspective

Cause: The calibration data is improper.

Remedy: Make sure that 3D laser sensor calibration data has been selected.

CVIS-053 Calculation is not converged.

Cause: Measured laser spots did not converge at one point.

Remedy: The probable causes are that the calibration data is incorrect, or within the measurement range the height of a workpiece differs largely from that of another workpiece.

CVIS-054 Laser line is not found.

Cause: No straight line was found from a string of laser spots.

Remedy: First, adjust the setting of exposure so that an appropriate laser image can be obtained. Next, make sure that the laser measurement area was taught properly. If the pattern match model origin is changed after the laser measurement area has been taught, it is likely that the laser measurement area might move to an unintended position during execution. If you changed the model origin, re-set the laser measurement area. If these methods cannot solve the problem, adjust the detection parameter for the string of laser spots.

CVIS-055 Not enough laser points for calculation.

Cause: The number of found laser spots is not larger than the threshold.

Remedy: First, adjust the setting of exposure so that an appropriate laser image can be obtained. Next, make sure that the laser measurement area was taught properly. If the pattern match model origin is changed after the laser measurement area has been taught, it is likely that the laser measurement area may move to an unintended position during execution. If you changed the model origin, re-set the laser measurement area. If these methods cannot solve the problem, adjust the detection parameter for the string of laser spots. Alternatively, enabling the [Search narrow area] function can increase the number of laser spots even if the measurement area remains the same.

CVIS-056 Laser plane is not found.

Cause: No plane was found during laser measurement.

Remedy: First, adjust the setting of exposure so that an appropriate laser image can be obtained. Next, make sure that the laser measurement area was taught properly. If the pattern match model origin is changed after the laser measurement area has been taught, it is likely that the laser measurement area may move to an unintended position during execution. If you changed the model origin, re-set the laser measurement area. If these methods cannot solve the problem, adjust the detection parameter for the string of laser spots.

CVIS-057 Zero vector is used in calculation.

Cause: This is an internal error found during laser measurement.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-058 Input data is out of range.

Cause: This is an internal error found during laser measurement.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-059 Leaning angle exceeded limit.

Cause: During 3D measurement, it was found that the workpiece had been tilted more than the setting, as compared when the reference data was obtained.

Remedy: If this tilting of the workpiece is permissible, increase the setting. Otherwise, eject the workpiece. Alternatively, make adjustments so that the tilting of the workpiece will fall within the setting.

CVIS-060 No features in image

Cause: No features are found in the image.

Remedy: Check that your field of view is well-lit, and your image is in focus.

CVIS-062 Target is rotated too much

Cause: Vision Shift error. Unable to find a target in an image because the rotation angle of the target is larger than the allowable rotation angle.

Remedy: Adjust the Rotation Angle parameter in the Vision SETUP screen.

CVIS-063 Target is too close

Cause: Vision Shift error. Unable to find a target in an image because the target in the image is too large.

Remedy: The distance between a camera and a target might be shorter than the allowable distance limit. Check the distance between the target and the camera, or adjust the 'Distance Limit' parameter in Vision SETUP screen.

CVIS-064 Target is too far away

Cause: Vision Shift error. Unable to find a target in an image because the target in the image is too small.

Remedy: The distance between a camera and a target might be longer than the allowable distance limit. Check the distance between the target and the camera, or adjust the 'Distance Limit' parameter in the Vision SETUP screen.

CVIS-065 Target is tilted too much

Cause: Vision Shift error. Unable to find a target in an image because the target in an image is too small.

Remedy: The distance between a camera and a target may be longer than allowable distance limit. Check the distance between the target and the camera, or adjust the 'Distance Limit' parameter in Vision SETUP screen.

CVIS-066 Contrast is too low

Cause: Vision Shift error. Unable to find a target in an image because the image contrast is low.

Remedy: The image contrast may be lower than the image contrast threshold. Check the image and adjust camera and lighting conditions so that the clear target image can be captured. Otherwise adjust the Contrast parameter in Vision SETUP screen.

CVIS-067 Target is not clear

Cause: Vision Shift error. Unable to find a target in an image because the detection score is low.

Remedy: The score of geometrical feature matching between the target and the taught model might be less than the threshold value. Check the image or adjust the Score parameter in Vision SETUP screen.

CVIS-068 Mastering calculation is failed

Cause: An internal Vision Shift error has occurred.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

CVIS-069 Data is not for iRCalibration

Cause: iRCalibration error. Specified vision data is not for iRCalibration.

Remedy: The specified vision data may be created by iRVision setup. Rename or delete the currently speified vision data using iRVision setup, then create the vision data using vision setup screen for iRCalibration.

CVIS-079 Vision log timeout

Cause: Timeout occurred during logging vision results.

Remedy: Change the memory card, or delete some files.

CVIS-080 The camera is busy

Cause: The camera is busy and cannot respond to the request.

Remedy: None.

CVIS-081 Invalid camera type specified

Cause: The camera has been changed after the training or the color camera is selected with the 3D area sensor.

Remedy: Check that the camera is not changed after the training and a color camera is not selected for the 3D area sensor. Check that the configuration of the multiplexer is not changed after the training and the power of the multiplexer is on and the connection of the CCU is correct, just in case.

CVIS-082 Invalid image object passed

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-083 Exposure time is out of range

Cause: The specified exposure time is out of range.

Remedy: Select an exposure time within range.

CVIS-084 Invalid camera port specified

Cause: The invalid camera port is specified.

Remedy: Select a correct camera port.
Check that the multiplexer is connected properly, just in case.

CVIS-085 Camera time out

Cause: This could be due to the following:

1. Camera cable may not be inserted properly.
2. There is a possibility that a communication error has occurred due to noise.
3. There is a possibility of disconnection of the camera cable or failure of the CCU (CCU is used only R-30iB, R30iB Mate).

Remedy: Perform the following:

1. Check the camera cables.
2. Check whether the controller and peripheral equipment are grounded securely. When the noise source cannot be determined, take the following measures to reduce the influence of noise.
 - Separate earth of controller and earth of peripheral equipment.
 - Shorten the camera cable .
 - Attach a ferrite core to the camera cable.
 - Wrap the camera cable with a zipper tube to make the shield thick.
 - Ground the camera mount.
 - If it is not a camera package, insulate the camera from the camera mount.
3. Change the camera cable.
4. Change the CCU. (In case of R-30iB, R30iB Mate)
5. If communication errors are sporadic, change the setting of system variable \$VISION_CFG.\$ECCU_RETRY to 1.
6. If the error is not cleared, **please get a diagnostic log and image backup just after the alarm occurred**, document the events that led to the error, and contact your FANUC technical representative.

CVIS-086 Camera is not 3D laser sensor

Cause: The specified camera is not the 3D laser sensor.

Remedy: Configure the camera to be 3D laser sensor.

CVIS-087 USB camera internal error

Cause: Images could not be captured by a USB camera.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-088 Vision FPGA version error

Cause: The FPGA version is too old to work with vision. There is a possibility that this alarm occurs after the main board causes old controller to load latest image backup.

Remedy: Please check the version of main CPU board and contact FANUC/FANUC Robotics.

CVIS-089 Camera is not initialized

Cause: The camera is not initialized.

Remedy: Check that the camera cable is securely connected to both the camera and the robot controller. If the problem persists, contact your local FANUC representative.

CVIS-090 Vision DMA error

Cause: DMA transfer error occurred during image acquisition.

Remedy: Please try the following measures.

1. Check that the camera cable is securely connected to both the camera and the robot controller.
2. Check whether the controller and peripheral equipment are grounded securely. When the noise source cannot be determined, take the following measures to reduce the influence of noise. Change the camera cable.
 - Separate earth of controller and earth of peripheral equipment.
 - Shorten the camera cable .
 - Attach a ferrite core to the camera cable.
 - Wrap the camera cable with a zipper tube to make the shield thick.
 - Ground the camera mount.
3. Change the CCU. (In case of R-30iB, R30iB Mate)
4. Change the camera.
5. If communication errors are sporadic, change the setting of system variable \$VISION_CFG.\$ECCU_RETRY to 1.
6. If the error is not cleared, get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-091 The auto exposure setting is not trained

Cause: The auto exposure setting has not been trained.

Remedy: Train the auto exposure setting.

CVIS-092 The auto exposure area is too bright

Cause: The auto exposure area is too bright.

Remedy: Change the auto exposure area or dim the lighting.

CVIS-093 The auto exposure area is too dark

Cause: The auto exposure area is too dark.

Remedy: Change the auto exposure area or brighten the lighting.

CVIS-094 The auto exposure area is too narrow

Cause: The auto exposure area is too narrow.

Remedy: Retrain the auto exposure area.

CVIS-095 This Board has no CAMERA I/F

Cause: The main CPU board currently in the controller does not have a camera interface.

Remedy: Change the Main Board.

CVIS-096 Multi exposure exceeded the limit. Number of exposures will be modified at execution

Cause: Multi exposure exceeded the limit. The number of exposures will be modified at execution.

Remedy: Exposure times calculated for the multi-exposure function exceeded the limit of the exposure time available with the camera. The number of exposures will be different from your setting. Changing the number of exposures or exposure time is recommended.

CVIS-098 The camera is disconnected

Cause: 1. The camera may be turned off due to sensor detachable function..
2. The camera or camera cable may be broken.

Remedy: Please try the following measures.

1. Execute the sensor installation command and supply power to the camera.
2. Change the camera cable.
3. Change the CCU. (In case of R-30iB, R30iB Mate)
4. Change the camera.

CVIS-099 Not support this config of MUX

Cause: Not support this config of MUX.

Remedy: Please change the config of MUX.

CVIS-100 A vision data file with that name already exists.

Cause: The specified vision data already exists.

Remedy: Specify another name for the vision data.

CVIS-101 The vision data file does not exist.

Cause: The specified vision data does not exist.

Remedy: Use an existing vision data name.

CVIS-102 Invalid vision data pointer

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-103 The vision data file is already open for writing.

Cause: The vision data file is already opened for writing.

Remedy: Close the setup window for this vision data file.

CVIS-104 No more vision data found

Cause: Internal error. No more vision data exists.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-105 Cannot delete the vision data file because it is open.

Cause: Cannot delete the vision data because it is opened for setup.

Remedy: Close the vision data before performing the delete.

CVIS-106 Cannot rename the vision data file because it is open.

Cause: Cannot rename the vision data because it is opened for setup.

Remedy: Close the vision data before renaming.

CVIS-107 Cannot save the vision data file because it is open.

Cause: Cannot save the vision data because it is opened for setup.

Remedy: Close the vision data before performing the operation.

CVIS-108 Tool type not found

Cause: The vision data included a vision tool that this controller does not support.

Remedy: Order the option for the vision tool.

CVIS-109 Interface not supported

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-110 Double registration

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-111 The vision data file is corrupted.

Cause: The vision data file is corrupted.

Remedy: The corrupted data file cannot be recovered. If you have a backup of the vision data file, overwrite the existing data file with the backup. You can use the robot normally except its vision data.

CVIS-112 Parent camera view not found

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-113 The vision data file is too old to load.

Cause: The vision data is too old, and this version of controller cannot load it.

Remedy: Contact your local FANUC representative to obtain an updated version of your robot software. You can use the robot normally except its vision data.

CVIS-114 The vision data file is too new to load.

Cause: The vision data is too new, and this version of controller cannot load it.

Remedy: This error indicates there is no way to convert the file to use on this robot controller. To use this file, you will need to either find a controller with older software, or reload this controller with older software. You can use the robot normally except its vision data.

CVIS-115 Invalid vision data name

Cause: The vision data name might contain invalid characters.

Remedy: Check the name for invalid characters.

CVIS-116 There is not enough space on the disk.

Cause: There is not enough space on the disk to save the vision data.

Remedy: Delete any unnecessary vision data, and try the operation again.

CVIS-117 Cannot insert this tool

Cause: The selected tool cannot be inserted.

Remedy: The 3DL vision process allows only laser measurement tools of the same type to be added. If it is necessary to add a different type, the existing laser measurement tools must be deleted.

CVIS-118 Target Controller has no vision

Cause: The target controller has no vision.

Remedy: Select the correct robot and retry the operation.

CVIS-119 The vision program can not output this vision parameter.

Cause: The vision program can not output this vision parameter.

Remedy: Select a valid vision parameter id.

CVIS-120 Could not log data

Cause: The vision log could not be recorded to the log file.

Remedy: Change the new memory card, or delete files on the disk.

CVIS-121 Could not log image

Cause: Vision log function error. The logged image could not be recorded.

Remedy: Insert a new memory card into the controller, or delete unnecessary files.

CVIS-122 Log file is corrupted

Cause: The log file is corrupted and cannot be read.

Remedy: None. The log file is not recoverable. Select a new log file to view.

CVIS-123 Unknown tag specified to log

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-124 Bad log file open mode

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-125 Log record is full

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-126 No more elements in log record

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-127 Invalid index specified

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-128 Specified tag not found

Cause: An internal error of the vision log function occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-129 Unknown tag found in log file

Cause: The log file is too new, and this version of the system cannot read it.

Remedy: This error indicates there is no way to convert the file to use on this robot controller. To use this file, you will need to either find a controller with newer software, or reload this controller with newer software. If necessary, contact your local FANUC representative for updated robot software.

CVIS-130 No free disk space to log

Cause: There is not enough space to write the log file.

Remedy: Change the memory card, or delete some files.

CVIS-131 Resume data logging

Cause: Data logging is resumed.

Remedy: None.

CVIS-132 Cannot log because of bad clock setup

Cause: Data cannot be logged because of bad clock setup.

Remedy: Set the clock properly.

CVIS-133 Missing my work area

Cause: Missing my work area.

Remedy: Please train the line data.

CVIS-134 Line data is not trained

Cause: Line data is not trained.

Remedy: Please train the line data.

CVIS-135 This tool is not trained.

Cause: This tool is not trained.

Remedy: Train the selected vision tool.

CVIS-139 Cannot delete this tool.

Cause: The specified tool cannot be deleted from the tree window.

Remedy: Some programs have been designed to prevent the number of command tools from being set below a predetermined number. Before trying to delete the specified tool, create another one.

CVIS-140 The value %s is out of range. The valid range is %s to %s.

Cause: The specified value is out of range.

Remedy: Specify a value within the range.

CVIS-141 The tool name '%s' is already in use.

Cause: The specified name is already in use.

Remedy: Specify another name.

CVIS-143 The image display is in the Graphic Edit Mode.¥n (Exit mode by pressing the OK or Cancel button.)

Cause: An attempt was made to perform another operation while a window or mask was being set.

Remedy: Complete the setting of the window or mask before performing another operation.

CVIS-144 The name has been truncated to '%s'.

Cause: The specified tool name is too long and therefore truncated to a valid length.

Remedy: If truncating the tool name poses a problem, specify a shorter tool name.

CVIS-145 The image display is in live mode.¥n (Exit mode by pressing the Snap button.)

Cause: An attempt was made to perform another operation while an image was being displayed in live mode.

Remedy: Complete the live mode display before performing another operation.

CVIS-146 There is no image.

Cause: An attempt was made to teach a model using a pattern match when there was no image snapped.

Remedy: Snap an image or read a saved image file.

CVIS-147 Load failed for %s.

Cause: The tool failed to be loaded.

Remedy: None.

CVIS-148 There are no found results.

Cause: No object was found.

Remedy: Adjust the exposure so that an appropriate image can be taken. Alternatively, adjust the parameter.

CVIS-149 The image display is in Continuous S+F Mode.¥n (Exit mode by pressing the Stop button.)

Cause: Continuous location is running.

Remedy: Before trying to perform another operation, press the [Stop S+F] button to stop the continuous location.

CVIS-150 Camera view index out of range

Cause: The camera view index specified in the RUN_FIND command is out of range.

Remedy: Type the correct camera view index for the vision process.

CVIS-151 No more vision offsets

Cause: The number of calls for VISION GET_OFFSET command exceeds the number of found objects.
Or, the number of found objects set to zero because the fit error exceeds the specified limit in a multi-view vision process.

Remedy: When the number of calls for VISION GET_OFFSET command exceeds the number of found objects, the execution of this TP program is not paused and jumps to the label. So, it is no problem.
When a multi-view vision process is used, please check that the fit error does not exceed the specified limit.
This alarm code is not displayed on the TP but it is recorded to the vision log.

CVIS-152 Failed to set ref. position

Cause: The object has not been found.

Remedy: Find the results before setting the reference position.

CVIS-153 Ref. position has not been set

Cause: The reference position has not been set.

Remedy: Execute the SET_REFERENCE command before executing GET_OFFSET command.

CVIS-154 Reference data does not exist

Cause: Reference data for the found model ID does not exist.

Remedy: Create a reference data, set the model ID, and set the reference position.

CVIS-155 Bad vision process name

Cause: The vision process with the specified name does not exist.

Remedy: Check if the specified vision process exists, and type the correct name.

CVIS-156 Vision process was not found

Cause: The vision process with the specified name does not exist.

Remedy: Check if the specified vision process exists, and type the correct name.

CVIS-157 Camera does not exist (In case of R-30iB, R-30iB Mate)

Cause: The camera set up with the specified name does not exist.

Remedy: Check if the specified camera setup exists, and type the correct name.

CVIS-157 Camera data does not exist (In case of R-30iB Plus, R-30iB Mate Plus)

Cause: The camera data with the specified name does not exist.

Remedy: Check if the specified camera data exists, and type the correct name.

CVIS-158 Camera calib. does not exist

Cause: The camera calibration with the specified name does not exist.

Remedy: Check if the specified camera calibration exists, and type the correct name.

CVIS-159 Inappropriate request to tool

Cause: The vision tool cannot work for the given request.

Remedy: Do not use this request for the specified vision tool in this case. You might need to use a different vision tool to fulfill this request.

CVIS-160 Find has not been executed

Cause: The RUN_FIND command has not been executed in advance.

Remedy: Execute the RUN_FIND command.

CVIS-161 No camera setup is selected (In case of R-30iB, R-30iB Mate)

Cause: The camera setup has not been selected.

Remedy: Select a camera setup.

CVIS-161 No camera data is selected (In case of R-30iB Plus, R-30iB Mate Plus)

Cause: The camera data has not been selected in the vision process setup page.

Remedy: Select a camera data.

CVIS-162 No camera calibration selected

Cause: The camera calibration has not been selected.

Remedy: Select a camera calibration.

CVIS-164 No robot position for robot mounted camera

Cause: In the case of robot a mounted camera, the robot position is needed to compute the part position. However, the robot position is not set. Maybe the image is loaded from a file.

Remedy: Snap the image from a camera.

CVIS-165 No robot position for tool offset

Cause: In case of tool offset, the robot position is needed to compute the part position. However, the robot position is not set. Maybe the image is loaded from a file.

Remedy: Snap the image from a camera.

CVIS-166 Vision Standard DEMO expired

Cause: The 60-day use period of the iRVision demo version has expired.

Remedy: In order to continue using iRVision, you must restart the controller in Controlled Start mode, enter the Option menu, and enter the necessary PAC code(s) for the iRVision option(s) you require. NOTE: You MUST also enter a PAC code for the iRVision Demo option. To purchase PAC codes for iRVision options, including the iRVision Demo option, contact your local FANUC representative. For further instructions on authorizing options using PAC codes.

CVIS-168 Target Controller is off-line

Cause: The target controller is off-line.

Remedy: Check the target controller power and networks.

CVIS-169 Object is not found in some camera view(s).

Cause: The offset cannot be computed because the object is not found in some camera views.

Remedy: Modify parameters to find the object properly, then click Snap+Find to find the object.

CVIS-170 Combine error exceed the limit.

Cause: Calculating a compensation value resulted in the misalignment becoming equal to or greater than the permissible value.

Remedy: Check the found result of each camera view and make sure that no mal-detection occurred. If no mal-detection occurred, make adjustments, using the program's combined error limit.

CVIS-171 Calibration must be perspective.

Cause: Camera calibration is not perspective.

Remedy: Use a perspective camera calibration.

CVIS-172 Robot Pos(Z) is different from Calib Pos.

Cause: The robot position(Z) is different from the position to calibrate the camera.

Remedy: The robot position(Z) must be the same as the position to calibrate the camera.

CVIS-173 Robot Pos(WP) is different from Calib Pos.

Cause: The robot position(WP) is different from the position to calibrate the camera.

Remedy: The robot position(WP) must be the same as the position to calibrate the camera.

CVIS-174 Offset Z is not zero.

Cause: The Z element of the offset must be zero for 2D vision application, but not.

Remedy: Check the robot position Z and the part Z height are the same as the one when setting in the reference position.

CVIS-175 Offset WP is not zero.

Cause: The W and P angle of the offset must be zero for 2D vision application, but not.

Remedy: Check the robot position WP are the same as the one when setting the reference position.

CVIS-176 Application-Z has been changed after SetRef.

Cause: Application-Z has been changed after setting the reference data.

Remedy: Set the reference data again.

CVIS-177 Error occurred in Camera View %d.

Cause: An error occurred in this camera view.

Remedy: Check another error posted at the same time, and correct the setting of the camera view.

CVIS-178 Not Available

Cause: No application data has been selected.

Remedy: Select the application data.

CVIS-180 No images found for image playback.

Cause: No images were found for image playback for the selected date. If you have selected to use only images for the current vision process, there might be images for the selected date that were logged for other processes.

Remedy: Verify that the log folder corresponding to the selected date contains the images you are expecting. If so, select to use all images for the selected date.

CVIS-181 End of image playback.

Cause: Image Playback has reached the end date/time limit. This is an internal error.

Remedy: Document the events that led to the error and contact your local FANUC representative.

CVIS-182 VOFFSET type is wrong.

Cause: The VOFFSET type is wrong.

Remedy: Change the VOFFSET type. Verify if your teach pendant program or KAREL program unexpectedly changed the offset type in the vision register.

CVIS-184 GET_OFFSET command is conflicted.

Cause: GET_OFFSET command is conflicted. This is an internal error.

Remedy: Check the teach pendant program logic. Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-187 VOFFSET(frame offset) is duplicated

Cause: VOFFSET(frame offset) is duplicated.

Remedy: Check the index value and offset type of VR[].

CVIS-188 VOFFSET(tool offset) is duplicated

Cause: VOFFSET(tool offset) is duplicated.

Remedy: Check index value and offset type of VR[].

CVIS-189 Vision Register is locked

Cause: Vision register is also locked by LOCK PREG command.

Remedy: Unlock vision register to use UNLOCK PREG command.

CVIS-191 The comment string has been truncated to '%s'.

Cause: The specified comment string was too long, and has automatically been truncated.

Remedy: Review the truncated comment string and edit, if necessary.

CVIS-192 The system is low on temporary memory and cannot open the vision process setup page.

Cause: The amount of temporary memory available on the robot is currently low, so the specified vision setup page was not opened.

Remedy: Please contact your local FANUC representative if you receive this error. Notify FANUC of the conditions (program executed, operation mode, etc.) during which the error occurred.

CVIS-193 The maximum number of setup pages are already open. A vision process setup page must be closed before another can be opened.

Cause: You have opened the maximum allowed number of vision setup pages.

Remedy: Close any vision setup pages that do not need to remain open.

CVIS-194 The sorting parameters are not completely defined. Please select all sorting parameters.

Cause: The sorting parameters have not been completely defined for the vision process.

Remedy: Select and specify all of the available sorting parameters.

CVIS-195 The sorting parameters are now invalid. They have been reset to the default values.

Cause: The specified name is invalid.

Remedy: Specify a valid name.

CVIS-196 Another setup page '%s' is already in live mode. Exit live mode in the other setup page first.

Cause: You have tried to enable live mode in a setup page when another setup page was already in live mode. Live mode is only supported in one setup page at a time.

Remedy: Stop live mode in the other setup page first.

CVIS-197 This tool was not found

Cause: The vision tool with the specified name does not exist.

Remedy: Check if the specified vision tool exists, and select the correct name.

CVIS-198 Layer threshold exceeded limit

Cause: The calculated layer value exceeded threshold limit.

Remedy: Adjust the layer tolerance parameter.

CVIS-199 Layer output number is used elsewhere

Cause: Layer output number is used by measurement output.

Remedy: Change the layer output number.

CVIS-200 The camera calibration tool is not trained.

Cause: The camera calibration has not been trained.

Remedy: Train the camera calibration.

CVIS-201 The camera calibration tool is corrupted.

Cause: The calibration data might be corrupted.

Remedy: Create a new calibration data.

CVIS-202 The offset frame is not specified.

Cause: The offset frame for 2D vision application is not specified.

Remedy: Select a offset frame.

CVIS-203 Invalid calibration plane number.

Cause: An invalid calibration plane number is passed to the CAMERA_CALIB command.

Remedy: Enter the correct plane number to the CAMERA_CALIB command.

CVIS-204 Either camera or fixture needs to be mounted on a robot.

Cause: Either the camera or fixture needs to be mounted on a robot for 2-plane calibration.

Remedy: Mount either the camera or fixture on a robot, and retry the operation.

CVIS-205 Both camera and fixture should not be mounted on a robot.

Cause: Both the camera and fixture should not be mounted on robots.

Remedy: Fix either the camera or fixture on a table or other sturdy surface.

CVIS-206 No robot position for robot mounted camera.

Cause: The position of the robot holding the camera is unknown.

Remedy: You need to snap an image from the camera instead of loading an image file.

CVIS-207 No robot position for robot mounted fixture.

Cause: The position of the robot holding fixture is unknown.

Remedy: You need to snap an image from the camera instead of loading an image from a file.

CVIS-214 Laser calibration fails.

Cause: No calibration data was calculated for the 3D laser sensor.

Remedy: Perform calibration again.

CVIS-215 Laser frame cannot be calculated.

Cause: No calibration data was calculated for the 3D laser sensor.

Remedy: Perform calibration again.

CVIS-216 Laser window is not trained.

Cause: No laser measurement area has been set up.

Remedy: Set up the measurement area.

CVIS-217 No laser image.

Cause: No laser image was taken.

Remedy: Snap an image using the Snap button.

CVIS-218 No found pose of parent locator tool.

Cause: The parent tool of the associate tool has not been found.

Remedy: Check whether the target is within the camera view. Adjust the parent tool parameters and model so that the parent tool can be found normally.

CVIS-219 Histogram tool is not trained.

Cause: There is a histogram tool yet to be taught.

Remedy: Teach all histogram tools or delete the unnecessary tool yet to be taught.

CVIS-220 Fail to get reference position.

Cause: Fail to get the reference position.

Remedy: Please notify FANUC of the conditions (program executed, operation made, etc.) in which the error occurred.

CVIS-222 Sub tool is not trained.

Cause: A child tool is not trained.

Remedy: Train all of the child tools.

CVIS-223 Conditional Execution: Fail to set measurement.

Cause: An internal histogram tool error has occurred.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

CVIS-224 Camera is too tilted with respect to Application UF.

Cause: The camera is too tilted with respect to Application User Frame.

Remedy: Adjust the camera orientation or Application User Frame.

CVIS-225 Conditional Execution is not trained

Cause: The conditional execution tool is not trained.

Remedy: Train the conditional execution tool.

CVIS-228 The calibration planes are too close.

Cause: The calibration planes are too close.

Remedy: The calibration planes must be apart from each other.

CVIS-229 Model ID mismatch.

Cause: The Model ID of a found part is different from the one of the selected reference data.

Remedy: Place a part for the model ID in view of the camera.

CVIS-230 Reference data is not set.

Cause: No reference scales are set.

Remedy: Set the reference scales in advance.

CVIS-231 Identical reference values exist for different Z.

Cause: Two reference scales must be different for different application Z values.

Remedy: Set reference scales with the different application Z values.

CVIS-232 No robot position for reference scale is set.

Cause: No robot position is set for the reference scale. The current reference scale would be set with the camera on the robot disabled.

Remedy: Set reference scale with the camera on the robot enabled.

CVIS-233 Robot pose must not be changed.

Cause: The robot position must be the same as the one when you set the reference scales.

Remedy: Run the vision process with the same robot position.

CVIS-234 Robot-mounted camera is not supported.

Cause: A Robot-mounted camera is not supported in visual tracking.

Remedy: Change camera setup to use a fixed camera.

CVIS-235 Encoder count is not consistent with the current image.

Cause: Encoder count is not consistent with the current image.

Remedy: Perform the snap again.

CVIS-236 Encoder count of this robot is different from that of another robot.

Cause: The encoder count of this robot is different from one of other robots.

Remedy: Turn all robots off and then on again.

CVIS-237 The points are too close together to calculate the frame.

Cause: The points are too close together to calculate the frame.

Remedy: Touch points that are further apart.

CVIS-238 Double GetQueue from the robot.

Cause: GET_QUEUE is executed twice in the programs.

Remedy: Modify your teach pendant programs not to call GET_QUEUE twice.

CVIS-247 There are not any blobs in the training window.

Cause: There are not any blobs in the training window.

Remedy: Train another part of the image, or use another image.

CVIS-248 Invalid register number.

Cause: The register number is not specified so the software cannot get the application Z value.

Remedy: Set the register number in which the application Z value is set.

CVIS-249 GetQueue is timeout.

Cause: GET_QUEUE has timed out.

Remedy: Adjust the waittime.

CVIS-250 This robot received packet from robot with the different software series

Cause: This robot received a packet from a robot with a different software series.

Remedy: Use the same software series for all robots.

CVIS-251 The distance between reference positions is too small

Cause: The distance between reference positions is too small.

Remedy: Change the Minimum distance between reference positions.

CVIS-252 The range maximum value must be greater than or equal to the minimum.

Cause: You have entered a maximum value for the range that is less than the minimum value.

Remedy: Enter a maximum value that is greater than the minimum value.

CVIS-253 The range minimum value must be less than or equal to the maximum.

Cause: You have entered a minimum value for the range that is greater than the maximum value.

Remedy: Enter a minimum value that is less than the maximum value.

CVIS-254 AckQueue with invalid vision register number

Cause: AckQueue is called with a wrong vision register number.

Remedy: The last part retrieved by GET_QUEUE can be used for AckQueue.

CVIS-257 The camera must be a robot-mounted camera.

Cause: The fixed camera is specified.

Remedy: Open the camera setup in the iRVision Setup and mark the camera as robot mounted.

CVIS-258 Measurement Output is not trained

Cause: The conditional execution tool is not trained.

Remedy: Train this conditional execution tool.

CVIS-261 Invalid work area specified.

Cause: Invalid work area is specified.

Remedy: Please specify a valid work area.

CVIS-262 Invalid line specified

Cause: Invalid line is specified.

Remedy: Please specify a valid line.

CVIS-263 Invalid tray specified

Cause: Invalid tray pattern is specified.

Remedy: Please specify a valid tray pattern.

CVIS-264 Invalid track schedule specified

Cause: Invalid tracking schedule is specified.

Remedy: Please specify a valid tracking schedule.

CVIS-267 Part with invalid model ID is pushed into queue

Cause: Part with invalid model ID is pushed into the queue.

Remedy: Add the model ID in the line configuration.

CVIS-268 Unknown function code

Cause: Part queue manager recieved unknow request.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-269 Application UF is not selected

Cause: The application UF is not set.

Remedy: Set the application UF.

CVIS-270 The calibration grid frame is not selected

Cause: Failed to get the reference pose (position).

Remedy: Set the calibration grid frame.

CVIS-271 User tool number is not selected

Cause: The utool frame in which you perform the tool offset is not set.

Remedy: Set the utool frame that you perform the tool offset.

CVIS-273 The multi-locator tool is not trained.

Cause: The multi-locator tool has not been trained.

Remedy: Add and train one or more child location tools and set the location tool index register.

CVIS-274 The index of location tool index register is invalid.

Cause: The index of location tool index register is invalid.

Remedy: Select a valid index for the location tool index register.

CVIS-275 The register value of location tool index register is invalid.

Cause: The register value of location tool index register is invalid.

Remedy: Set the location tool index register to a value between 1 and the number of child location tools.

CVIS-276 A child location tool of the multi-locator tool is not trained.

Cause: A child location tool of the multi-locator tool is not trained.

Remedy: Train all of the child location tools.

CVIS-278 The multi-window tool is not trained.

Cause: The multi-window tool is not trained.

Remedy: Add and train a child location tool and set the window index register.

CVIS-279 The index of window index register is invalid.

Cause: The index of window index register is invalid.

Remedy: Select a valid index for the window index register.

CVIS-280 The register value of window index register is invalid.

Cause: The register value of window index register is invalid.

Remedy: Set the window index register to a value between 1 and the number of windows.

CVIS-281 The child location tool of the multi-window tool is not trained.

Cause: The child location tool of the multi-window tool has not been trained.

Remedy: Train the child location tool.

CVIS-282 Blob locator: The search window is too small.

Cause: The specified search window is too small to process.

Remedy: Set a larger search area.

CVIS-283 The sum of sorting priority weights is zero.

Cause: The sum of sorting priority weights is zero.

Remedy: Enable some of the sorting priority weights and set plus values to them.

CVIS-284 The vision process is not trained.

Cause: The Error Proofing vision process has not been fully trained.

Remedy: Check the measurements configuration to make sure that no invalid measurements have been enabled. Check also to make sure that all child tools have been trained.

CVIS-285 To overwrite position and angle, two or more child location tools must be set.

Cause: To overwrite position and angle, two or more child location tools must be set.

Remedy: Set two or more child location tools.

CVIS-286 Any child location tools are not set on the setup page.

Cause: No child location tools have been set on the setup screen.

Remedy: Set some location tools on the setup screen.

CVIS-287 No found pose of parent locator tool.

Cause: No found position of the parent tool.

Remedy: Adjust parameters of the parent tool.

CVIS-288 A child location tool fails to find anything.

Cause: A child location tool failed to find anything.

Remedy: Adjust parameters of the child location tool.

CVIS-289 Position Adjust tool is not trained.

Cause: The Position Adjust tool has not been set.

Remedy: Set some child location tools and set a reference position.

CVIS-290 Invalid ACK status in AckQueue

Cause: Invalid ACK status.

Remedy: Modify call to AcqQueue in your program to pass a correct ACK status.

CVIS-291 AckQueue before GetQueue

Cause: AckQueue is called before a part is allocated in GetQueue.

Remedy: Modify your teach pendant program to call AckQueue after a part is allocated by GetQueue.

CVIS-292 No AckQueue before next GetQueue

Cause: AcqQueue is not called before the next GetQueue.

Remedy: Modify your teach pendant program to call AckQueue after GetQueue.

CVIS-293 Work area is disabled

Cause: The GetQueue request is canceled because the work area is disabled.

Remedy: Do not call GetQueue until the work area is re-enabled.

CVIS-294 The DVM snap interval is too short.

Cause: The exposure time plus typical system overhead to snap a picture exceeds the interval time specified in the schedule.

Remedy: Increase the interval or reduce the exposure time.

CVIS-295 The DVM log path is invalid.

Cause: DVM could not access the log path specified.

Remedy: Verify that the specified log media exists and is not full.

CVIS-296 DVM internal error #%d.

Cause: A system error is inhibiting Diagnostic Video Monitoring (DVM) from enabling a schedule.

Remedy: Document the events that led to the error and contact your local FANUC representative.

CVIS-297 %s specified for DVM event %d cannot be accessed.

Cause: Diagnostic Video Monitoring (DVM) cannot read the specified I/O signal.

Remedy: Check your I/O configuration.

CVIS-298 There is not TEMP memory to run DVM at this time.

Cause: Diagnostic Video Monitoring (DVM) needs more TEMP memory than is currently available.

Remedy: Reduce the number of pictures in the video loop. If the state of the schedule becomes POWER UP, try cycling power on the robot. This might free up some memory.

CVIS-299 Snap camera port %d failed. Code %d.

Cause: An error occurred while acquiring an image from the camera.

Remedy: Verify that there is a camera connected to the port. If the connection looks OK, call the FANUC Hot-line and tell them the code number that is at the end.

CVIS-303 This function is obsolete.

Cause: This function is obsolete and not available on your controller.

Remedy: Refer to the manual and use appropriate function.

CVIS-304 No work area in the line.

Cause: No work area is added in the line, so the required operation cannot be performed.

Remedy: Add one or more work areas in the line.

CVIS-305 No more line can be created.

Cause: No more lines can be created.

Remedy: Delete unused lines before creating a new one.

CVIS-306 No more area can be created.

Cause: No more work areas can be created.

Remedy: Delete unused work areas before creating a new one.

CVIS-307 No more tray pattern can be created.

Cause: No more tray patterns can be created.

Remedy: Delete any unused tray patterns before creating a new one.

CVIS-308 No more cell can be added to the tray.

Cause: No more tray patterns can be created.

Remedy: Delete unused cells in the tray pattern.

CVIS-309 Visual tracking system error.

Cause: Visual tracking system error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-310 Invalid name is specified.

Cause: The specified name is too long, or an unacceptable character is used.

Remedy: Correct the name and try the operation again.

CVIS-311 Specified name is already in use.

Cause: The specified name is already used.

Remedy: Enter another name and try the operation again.

CVIS-312 Specified data is in edit.

Cause: The specified data cannot be deleted or renamed, because it is in edit.

Remedy: Close the setup window of the data before trying to delete or rename the data.

CVIS-313 No custodianship for that operation.

Cause: Another controller on the network has custodianship for that operation.

Remedy: Close the setup window on the controller that has the custodianship.

CVIS-316 HDI is not set up.

Cause: HDI is not set up.

Remedy: Set up HDI.

CVIS-317 Invalid trigger type.

Cause: An invalid trigger type has occurred.

Remedy: Set the correct trigger type.

CVIS-318 Some controllers are offline.

Cause: There are some offline controllers. Visual tracking configuration of such controllers are inconsistent.

Remedy: Use the SYNC button on the visual tracking main setup menu to synchronize after turning on those controllers.

CVIS-319 The IP address of could not be set on this camera.

Cause: The iRVision software could not set the IP address of the selected GiGe Camera.

Remedy: Use the vendor utility to set up the IP address for this camera.

CVIS-320 The IP address is in use by another device.

Cause: The IP address is assigned to another computer or other device on the network.

Remedy: Use a different IP address for this camera.

CVIS-321 Any locator tools are not set.

Cause: Locator tools are not set.

Remedy: Set some locator tools.

CVIS-323 The model pattern is not trained.

Cause: The model pattern is not trained.

Remedy: Train the model pattern, and retry the operation.

CVIS-324 The operation has timed out.

Cause: The system could not find the object within the time limit.

Remedy: In the Curved Surface Match (CSM) Tool Setup screen, check if you have the Orientation or Scale degrees of freedom enabled. If so, reduce the maximums and/or increase the minimums and try to find it again. If it still fails, disable one or more degrees of freedom. Increase the allowable processing time. Alternatively, make one of the following adjustments so as to decrease the required processing time. Uncheck the orientation and scale ratio check boxes whichever are unnecessary. Specify a larger score threshold. Specify a larger contrast threshold. Narrow the orientation and scale search ranges. Reduce the size of the search window.

CVIS-325 There are not enough features in the training window.

Cause: There are not enough features in the image to train the model pattern.

Remedy: Use another part of the image as the model or teach a model using another image by taking it after adjusting the exposure time or the contrast threshold so that a sufficient amount of the features is received.

CVIS-326 Saved laser image and laser number are not consistent. Change laser number in setup page.

Cause: The saved laser image and laser number are not consistent.

Remedy: Change the laser number in the setup page.

CVIS-329 CSM Locator: The search window is too small.

Cause: The specified search window is too small to process.

Remedy: Set the search area larger.

CVIS-331 The search window is too small or set to the outside of the image.

Cause: The specified search window is too small or set to the outside of the image.

Remedy: When the search window is too small, set the search area larger. When the search window is set to the outside of the image, confirm that parent locator tool finds the model correctly and change the search window if necessary.

CVIS-333 The found positions are too close to each other.

Cause: The found positions are too close to each other.

Remedy: Train fundamental data again so that fundamental data won't be too close.

CVIS-334 All found positions are on a same line.

Cause: All found positions are on a same line.

Remedy: Train fundamental data again so that fundamental data won't be on a same line.

CVIS-335 The fundamental data are too close to each other.

Cause: The fundamental data are too close to each other.

Remedy: Train fundamental data again so that fundamental data won't be too close.

CVIS-336 All fundamental data are on a same line.

Cause: All fundamental data are on a same line.

Remedy: Train fundamental data again so that fundamental data won't be on a same line.

CVIS-337 The fundamental data have not been set.

Cause: The fundamental data have not been set.

Remedy: Set the fundamental data in camera view set-up page.

CVIS-338 The application user frames in calibration data are not same.

Cause: The numbers of application user frames in calibration data of each camera view are not same.

Remedy: Set the same application frame number to the calibration data of each camera view.

CVIS-339 The distance between camera and target has not been set.

Cause: The distance between camera and target has not been set.

Remedy: Select the calibration data that is trained and perspective.

CVIS-340 The cylinder is not found.

Cause: No cylinder was found during laser measurement.

Remedy: First, adjust the setting of exposure so that an appropriate laser image can be obtained. Next, make sure that the laser measurement area was taught properly. If the pattern match model origin is changed after the laser measurement area has been taught, it is likely that the laser measurement area may move to an unintended position during execution. If you changed the model origin, re-set the laser measurement area. If these methods cannot solve the problem, adjust the detection parameter for the string of laser spots.

CVIS-341 The cylinder is not trained.

Cause: The cylinder is not trained.

Remedy: Train the laser window, the cylinder direction or the cylinder diameter. And retry the operation.

CVIS-342 No 2D measurement result.

Cause: There is no 2D measurement result.

Remedy: Make 2D measurement successful. If no 2D measurement is trained, train it.

CVIS-343 Fail to initialize the cylinder calculation.

Cause: There are too few laser slit points or too many noisy points.

Remedy: First, adjust the setting of exposure or min laser contrast so that an appropriate laser image can be obtained. Second, adjust the laser measurement area properly. Last, adjust the setting of max fit error.

CVIS-344 The cylinder calculation did not converge.

Cause: The max fit error is too small. Or there are too few laser slit points or too many noisy points.

Remedy: First, adjust the setting of max fit error. Second, adjust the setting of exposure or min laser contrast so that an appropriate laser image can be obtained. Last, adjust the laser measurement area properly.

CVIS-345 There are too few calibration points.

Cause: There are too few calibration points.

Remedy: Add many calibration points.

CVIS-346 There are no target position.

Cause: There is no target position.

Remedy: Train target position.

CVIS-347 This configuration between camera and target is not supported.

Cause: This camera-target configuration is not supported.

Remedy: Change camera or target configuration.

CVIS-348 The camera that is connected to other controller is not supported.

Cause: The camera that is connected to other controller is not supported.

Remedy: Change robot name.

CVIS-351 Invalid motion group number.

Cause: Invalid motion group number.

Remedy: Set a valid number as motion group.

CVIS-352 The two found positions are too close.

Cause: The two found positions are too close.

Remedy: Please set trigger offset 1 and trigger offset 2 correctly.

CVIS-353 Window shift tool does not exist, or failed to find

Cause: The window shift tool failed to find the target or was deleted.

Remedy: Teach the window shift tool so that it can find the target first. If the window shift tool is deleted, re-teach the command tool.

CVIS-354 Window shift tool is not trained

Cause: Window shift tool is not trained.

Remedy: Teach the window shift tool or a child locator tool of the window shift tool first.

CVIS-355 No vision logs exist in the specified directory

Cause: No vision log is found in the specified directory.

Remedy: Specify a directory containing the vision log.

CVIS-356 Operation cancelled

Cause: The CANCEL key was pressed during vision log operation on the vision log menu.

Remedy: Perform the operation again.

CVIS-357 Log file has read-only attribute

Cause: Log file has read-only attribute.

Remedy: Uncheck the [Read-only] check box on the log file properties dialog box.

CVIS-358 Vision override is not trained properly

Cause: The vision override specified with VISION OVERRIDE is not taught properly.

Remedy: Teach the vision override.

CVIS-359 Count tool is not trained

Cause: The vision process contains a count tool which is not taught yet.

Remedy: Teach all count tools.

CVIS-360 Arithmetic calculation tool is not trained

Cause: The vision process contains an arithmetic calculation tool which is not taught yet.

Remedy: Teach all arithmetic calculation tools.

CVIS-361 Geometric calculation tool is not trained

Cause: The vision process contains a geometric calculation tool which is not taught yet.

Remedy: Teach all geometric calculation tools.

CVIS-362 Statistic calculation tool is not trained

Cause: The vision process contains a statistic calculation tool which is not taught yet.

Remedy: Teach all statistic calculation tools.

CVIS-364 Edge histogram tool is not trained

Cause: There is an edge histogram tool which is not taught yet.

Remedy: Teach all edge histogram tools or delete any unnecessary tool that is not taught yet.

CVIS-367 Found result is not set to the specified vision register(In case of R-30iB, R-30iB Mate)

Cause: This error occurs when [Other VP Result] or [IA result] is set for [Mode] for a window shift tool and no value is set in the vision register used for calculating the window shift amount.

Remedy: Execute the vision process used for window shift and set a value in the vision register.

CVIS-367 Found result is not set to the specified vision register(In case of R-30iB Plus, R-30iB Mate Plus)

Cause: This error occurs when [Other VP Result] is set for [Input Data Type] for a window shift tool and no value is set in the vision register used for calculating the window shift amount.

Remedy: Execute the vision process used for window shift and set a value in the vision register.

CVIS-368 Position data is not set to the specified position register

Cause: This error occurs when [IA result] is set for [Mode] for a window shift tool and no value is set in the position register containing the result of interface avoidance used for calculating the window shift amount.

Remedy: Execute the KAREL program which avoids the interference and set the result of interference avoidance in the position register.

CVIS-369 Type of the specified position register is not supported

Cause: When [IA result] is set for [Mode] for a window shift tool, the format of the position register containing the result of interference avoidance is not supported.

Remedy: Use the Cartesian or matrix format for the position register containing the result of interference avoidance.

CVIS-370 Measuring plane not set.

Cause: Measuring plane is not trained.

Remedy: Place a grid pattern plate in the camera field of view and teach the measuring plane or, check use grid calibration checkbox and choose a grid-pattern calibration data.

CVIS-371 Cannot find evaluation tool.

Cause: Evaluation tool does not exist.

Remedy: Create a new evaluation tool under the vision process.

CVIS-372 Cannot add multiple evaluation tools

Cause: An attempt was made to add two evaluation tools to the same tool.

Remedy: Change the evaluation tool setting, or delete the current tool and create a new tool.

CVIS-373 Evaluation tool not trained

Cause: Evaluation tool not trained.

Remedy: Set the evaluation tool.

CVIS-374 The 3-D fit error exceeds the limit

Cause: Error of a 3DL multi-view vision process. The fit error exceeds the specified limit.

Remedy: Check whether the targets are found correctly. Also check whether the specified fit error limit is not too small.

CVIS-375 Not enough targets were found to compute the 3-D offset

Cause: Error of a 3DL multi-view vision process. At least three targets must be found. The required number of targets were not found.

Remedy: Check whether the targets are captured in the camera view. Adjust the locator tool parameters so that the targets are found.

CVIS-376 One of the targets was discarded

Cause: Error of a 3DL multi-view vision process. Four targets were found, but one of them was not used for calculating offset data.

Remedy: Not needed.

CVIS-377 No more targets can be added

Cause: Error of a 3DL multi-view vision process. Up to four targets can be added.

Remedy: Not needed.

CVIS-378 There is no image register

Cause: There is no image register.

Remedy: Set the number of image registers in system variable \$VISIMREGNUM. After changing the system variable, turn the power to the controller off, then on again.

CVIS-379 The image register failed to be allocated

Cause: An image register cannot be created due to insufficient memory.

Remedy: Increase the DRAM size or change the value of system variable \$VISIMREGSIZ to decrease the image register size. After changing the system variable, turn the power to the controller off, then on again.

CVIS-380 The image register is too small

Cause: Data cannot be contained in the image register.

Remedy: Change the value of system variable \$VISIMREGSIZ to increase the image register size. After changing the system variable, turn the power to the controller off, then on again.

CVIS-381 The image register has no data

Cause: The image register has no data.

Remedy: Before executing KAREL program IRVFINDD, execute KAREL program IRVSNAP to save data in the image register.

CVIS-382 The user frame is different from that of the image register

Cause: The user frame is different from that of the image register.

Remedy: Set the same number for the user frame used for compensation that is selected for a vision process snapping an image and that used for compensation that is selected for a vision process finding the target without snapping an image.

CVIS-383 The tool frame is different from that of the image register

Cause: The tool frame is different from that of the image register.

Remedy: Set the same number for the user tool of the robot holding the workpiece that is specified for a vision process snapping an image and that of the robot holding the workpiece that is specified for a vision process finding the target without snapping an image.

CVIS-384 The robot is different from that of the image register

Cause: The robot is different from that of the image register.

Remedy: Specify the same robot holding the workpiece for a vision process which snaps an image and that which finds the target without snapping an image.

CVIS-385 The condition of detection is different from that of the image register

Cause: The condition of detection is different from that of the image register.

Remedy: The condition of detection specified for a vision process which snaps an image must satisfy the condition of detection specified for a vision process which finds the target without snapping an image. Review the offset mode and whether to perform laser measurement.

CVIS-386 Image register index is out of range

Cause: The specified image register number is out of range.

Remedy: Specify an appropriate image register number with KAREL program IRVSNAP or IRVFINDD.

CVIS-387 The camera is different from that of the image register

Cause: The camera is different from that of the image register.

Remedy: The same camera must be used for snapping an image and finding the target without snapping an image.

CVIS-388 There is no part with the specified work_id in queue

Cause: There is no part with the specified work_id in queue.

Remedy: Please confirm the specified work_id.

CVIS-389 Invalid data is specified

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-391 Interference setup system error

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-392 Specified data is in edit

Cause: Specified data is in edit.

Remedy: Close data being edited.

CVIS-393 No more interference setup data (system) can be created

Cause: No more interference setup data (system) can be created.

Remedy: Delete unnecessary interference setup data (system).

CVIS-394 No more interference setup data (robot) can be created

Cause: No more interference setup data (robot) can be created.

Remedy: Delete unnecessary interference setup data (robot).

CVIS-395 No more interference setup data (condition) can be created

Cause: No more interference setup data (condition) can be created.

Remedy: Delete unnecessary interference setup data (condition).

CVIS-396 No more object can be created

Cause: No more object can be created.

Remedy: Delete any unnecessary object.

CVIS-397 Invalid name is specified

Cause: The number of characters in the specified name exceeds the limit.

Remedy: Specify a name within 20 characters.

CVIS-398 Specified name is already in use

Cause: Specified name is already in use.

Remedy: Set another name.

CVIS-399 Specified object shape is invalid

Cause: Specified object shape is invalid.

Remedy: Change the position or size of the object.

CVIS-400 Zero vector

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-401 Invalid vertex index

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-402 Invalid direction index

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-403 Invalid segment edge index

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-404 Invalid half line edge index

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-405 Invalid number of edges

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-406 III fitted vertices on polygon

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-407 III fitted vertices on surface

Cause: Internal error related to the interference check, interference avoidance, or wall avoidance.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-408 Invalid group number

Cause: An invalid group number is set for interference setup data (robot).

Remedy: Check whether the group number set for interference setup data (robot) is valid.

CVIS-409 Invalid utool number

Cause: An invalid tool frame number is set for interference setup data (condition).

Remedy: Check whether the tool frame number set for interference setup data (condition) is valid.

CVIS-412 The computed offset failed a limit check

Cause: The offset is determined to be outside the limit by an offset limit check. This alarm is issued when [Raise robot alarm and pause program execution] is selected for [Action on failed check] for an offset limit check tool.

Remedy: Not needed.

CVIS-413 Limit check failed, offset skipped

Cause: The offset is determined to be outside the limit by an offset limit check. This warning is issued when [Skip the failed offset and evaluate the next offset] is selected for [Action on failed check] for an offset limit check tool.

Remedy: Not needed.

CVIS-414 Limit Check Tool is not trained

Cause: Limit Check Tool is not trained.

Remedy: Check whether the offset limit check tool specified in the vision process is taught.

CVIS-416 CONS was not opened

Cause: The setting is made so that a terminal is not opened, or a terminal could not be opened.

Remedy: Make the setting so that the terminal is opened and set the test terminal to the port.

CVIS-417 Measurement is too many divided

Cause: Measurement is too many divided.

Remedy: Decrease the number by which to divide measurement.

CVIS-418 Incorrect camera pos. setting

Cause: The camera position setting is invalid.

Remedy: Set a valid value for the camera position setting.

CVIS-421 %s may be invalid path.

Cause: An invalid path is specified for the vision log directory.

Remedy: Specify a valid path for the vision log directory.

CVIS-422 Barcode library is not initialized.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-423 Barcode library is already initialized.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-425 Barcode lib: parameter out of range.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-426 Barcode lib: invalid parameters.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-427 Barcode lib: invalid image.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-428 Barcode lib: NULL parameter passed.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-429 Barcode lib: invalid grayscale variable.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-430 Barcode lib: incompatible image buffers.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-431 Barcode lib: invalid 1D Barcode structure.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-432 Barcode lib: invalid calculation lines.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-433 Barcode lib: invalid result structures.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-434 Barcode lib: barcode not found.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-435 Barcode lib: error calculating orientation.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-436 Barcode lib: error calculating location.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-437 Unknown error from barcode library.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-447 Relative limit check is not supported for this process.

Cause: This vision process does not support relative limit checks, because there is no defined reference position.

Remedy: Change the limit check type to absolute, or select a new limit check tool for this vision process.

CVIS-448 Vision measurement was aborted.

Cause: Vision measurement was aborted.

Remedy: Don't push key while executing.

CVIS-449 Override value is out of range.

Cause: Override value is out of range.

Remedy: Input valid value.

CVIS-450 No more big dot can be deleted.

Cause: When the number of found big dots is less than four, the big dots can't be deleted.

Remedy: When the number of correctly found big dots is less than three, please retry the grid pattern detection.

CVIS-453 Camera setup is not trained.

Cause: The camera setup is not trained.

Remedy: Train the camera setup.

CVIS-454 Camera communication error.

Cause: The camera communication error occurs. This could be due to the following:

1. Camera cable may not be inserted properly.
2. There is a possibility that a communication error has occurred due to noise.
3. There is a possibility of disconnection of the camera cable or failure of the CCU (CCU is used only R-30iB, R30iB Mate).

Remedy: Perform the following:

1. Check the camera cables.
2. Check whether the controller and peripheral equipment are grounded securely. When the noise source cannot be determined, take the following measures to reduce the influence of noise.
 - Separate earth of controller and earth of peripheral equipment.
 - Shorten the camera cable .
 - Attach a ferrite core to the camera cable.
 - Wrap the camera cable with a zipper tube to make the shield thick.
 - Ground the camera mount.
 - If it is not a camera package, insulate the camera from the camera mount.
3. Change the camera cable.
4. Change the CCU. (In case of R-30iB, R30iB Mate)

5. If communication errors are sporadic, change the setting of system variable \$VISION_CFG.\$ECCU_RETRY to 1.
6. If the error is not cleared, please get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-456 This camera is not supported.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-457 A 2-D Barcode could not be found in the image.

Cause: A 2-D Barcode could not be found in the image.

Remedy: View the binary image on the setup page to verify that the threshold is correct. Check the search window on the setup page to verify that the 2-D Barcode is within the window.

CVIS-458 The 2-D Barcode geometry is bad.

Cause: The 2-D Barcode geometry is bad.

Remedy: View the binary image on the setup page to verify that the threshold is correct. Check the search window on the setup page to verify that the 2-D Barcode is within the window. For Data Matrix code, verify that the 2-D Barcode has an even number of rows and columns. Verify that the 2-D Barcode is not damaged.

CVIS-459 The 2-D Barcode is too damaged to read.

Cause: The 2-D Barcode is too damaged to read.

Remedy: For Data Matrix code, view the binary image on the setup page to verify that the threshold is correct. Check the search window on the setup page to verify that the 2-D Barcode is within the window. Verify that the 2-D Barcode is not damaged.

CVIS-460 2-D Barcode reader internal software error.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-461 Illegal character found in 2-D Barcode.

Cause: An illegal text character was found in the 2-D Barcode.

Remedy: Verify that the 2-D Barcode is not damaged.

CVIS-462 The 2-D Barcode reader does not support Base 256 encoding.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-463 The 2-D Barcode reader does not support FNC1 alternate data types.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-464 The 2-D Barcode reader does not support Structured Append sequences.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-465 The 2-D Barcode reader does not support Reader Programming.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-466 The 2-D Barcode reader does not support Upper Shift to Extended ASCII characters.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-467 The 2-D Barcode reader does not support 05 Macros.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-468 The 2-D Barcode reader does not support 06 Macros.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-469 The 2-D Barcode reader does not support ANSI X12 encoding.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-470 The 2-D Barcode reader does not support EDIFACT encoding.

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-471 The 2-D Barcode reader does not support Extended Channel Interpretation (ECI).

Cause: The 2-D Barcode contains an unsupported feature.

Remedy: None.

CVIS-473 Invalid model ID is specified.

Cause: Invalid model ID is specified.

Remedy: Specify the model ID for that you want to change a load balance in VSTKSTLB.PC.

CVIS-474 Specified load balance is over range.

Cause: Specified load balance is over range.

Remedy: Specify load balance in the 0 to 255 range.

CVIS-475 Specified parameter is not supported.

Cause: Specified parameter is not supported.

Remedy: Specify supported parameter.

CVIS-506 Posture W and P can not be calculated.

Cause: Posture W and P can not be calculated.

Remedy: Enable aspect in GPM locator tool of robot-generated grid calibration.

CVIS-507 Move area is limited in the measurement of robot-generated grid calibration.

Cause: Move area is limited in the measurement of robot-generated grid calibration.

Remedy: Make sure to check accuracy of measured results.

CVIS-513 Log is on process to export

Cause: Log is on process to export.

Remedy: Wait for completion of process to export.

CVIS-515 Camera is not connected

Cause: Camera is not connected. If this alarm occurs in spite of the camera is connected, the possible causes are:

1. Camera cable may not be inserted properly.
2. There is a possibility that a communication error has occurred due to noise.
3. There is a possibility of disconnection of the camera cable or failure of the CCU (CCU is used only R-30iB, R30iB Mate).

Remedy: Connect a camera. If this alarm occurs in spite of the camera is connected, please check and perform the following:

1. Check the camera cables.
2. Check whether the controller and peripheral equipment are grounded securely. When the noise source cannot be determined, take the following measures to reduce the influence of noise.
 - Separate earth of controller and earth of peripheral equipment.
 - Shorten the camera cable .
 - Attach a ferrite core to the camera cable.
 - Wrap the camera cable with a zipper tube to make the shield thick.
 - Ground the camera mount.
 - If it is not a camera package, insulate the camera from the camera mount.
3. Change the camera cable.
4. Change the CCU. (In case of R-30iB, R30iB Mate)

5. Change the camera.

6. If the error is not cleared, please get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-516 The 2-D Barcode reader does not support QR Code Model 1.

Cause: The 2-D Barcode is QR Code Model 1. This code is old and not supported.

Remedy: None.

CVIS-522 Failed to detect motion.

Cause: Motion of axis failed to be detected.

Remedy: Check measuring group number is the same as selected group number on UIF. Check measuring axis number is the same as selected axis number on UIF.

CVIS-523 Failed to align to ref. pos.

Cause: Target mark can't be aligned to reference position.

Remedy: Check measuring group number is the same as selected group number on UIF. Check measuring axis number is the same as selected axis number on UIF. Check attachment of measuring target mark again.

CVIS-524 Robot position is invalid.

Cause: Robot position is invalid.

Remedy: Please don't jog robot or execute other programs during step data measurement.

CVIS-525 Master image is not trained.

Cause: Master image is not trained.

Remedy: Train master image first.

CVIS-526 Wrong master image size.

Cause: The size of image to add does not coincide with the size of master image.

Remedy: Either capture or load an image with the size of master image, or clear the master image first.

CVIS-527 Master image reference pose is not set.

Cause: Window Shift Tool is inserted before Surface Flaw Inspection Tool.

Remedy: Train master image for static removal again.

CVIS-528 Shading coefficients are not set.

Cause: Shading coefficients are not set.

Remedy: Train master image for shading removal first.

CVIS-529 Shading coefficients cannot be calculated.

Cause: Not enough pixels are available to calculate the shading coefficients.

Remedy: Re-edit the run-time mask for shading background removal and reduce the area to mask.

CVIS-530 Image is not suitable for teaching shading removal.

Cause: The image is not suitable for teaching shading removal.

Remedy: Use another image preprocess, or mask the pixels that have irrelevant grayscale change.

CVIS-531 Buffer is full

Cause: Buffer for the Vision Runtime is full.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-532 Vision data is too big.

Cause: Vision data is too big.

Remedy: Reduce number of command tools in a vision process so that it is not too big. Mask the unused features of GPM Locator Tools.

CVIS-533 Cannot remove this tool.

Cause: The command tool cannot be removed.

Remedy: None.

CVIS-534 This camera is not color camera.

Cause: A grayscale camera is used for color image operation.

Remedy: Use a color camera.

CVIS-535 Multi-Exposure cannot be used with color camera.

Cause: Multi-exposure function cannot be used with a color camera.

Remedy: Use it in the single exposure mode.

CVIS-536 Auto-Exposure cannot be used with color camera.

Cause: Auto exposure function cannot be used with a color camera.

Remedy: Use it is the fixed exposure mode.

CVIS-537 Cannot find specified tool.

Cause: The tool specified as the input image is not found in the vision process.

Remedy: Select a proper tool, or add a image filter tool.

CVIS-538 Image Filter tool is not trained.

Cause: A image filter tool is not trained.

Remedy: Train the image filter tool.

CVIS-539 Color Extract tool is not trained.

Cause: A color extract tool is not trained.

Remedy: Train the color extract tool.

CVIS-540 Work area is too narrow"

Cause: Specified work area is too narrow.

Remedy: Set up proper boundaries of work area.

CVIS-541 Fail to calculate parameter

Cause: The robot-generated grid calibration failed to calculate parameters to move the robot.

Remedy: The target mark is missed. Adjust the detection parameters of the GPM locator tool in the camera calibration.

CVIS-542 Taught vertices are too near

Cause: Taught vertices are too near.

Remedy: Reteach vertex.

CVIS-543 All taught vertices are on a same line

Cause: All taught vertices are on a same line.

Remedy: Reteach vertex.

CVIS-544 Inspection interval is too long with respect to Inspection line

Cause: Inspection interval is too long with respect to Inspection line.

Remedy: Change inspection interval or reteach vertex.

CVIS-545 TP disabled and Auto mode, cannot snap or find.

Cause: Test detection and snapping a new image are not allowed during production (when the TP is disabled and the controller is in AUTO mode).

Remedy: Enable the TP, or select T1/T2 mode.

CVIS-546 Internal error.

Cause: In Bin Picking, an internal error has occurred.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-547 No argument.

Cause: In Bin Picking, a KAREL program has been executed with an argument missing.

Remedy: Please enter the correct argument.

CVIS-548 Bad argument.

Cause: In Bin Picking, a KAREL program has been executed with an argument invalid.

Remedy: Please enter the correct argument.

CVIS-549 No Parts List.

Cause: In Bin Picking, the Parts List ID specified as an argument of a KAREL program does not exist.

Remedy: Please enter the correct Parts List ID.

CVIS-550 No Part Data.

Cause: In Bin Picking, Part Data which has been popped by IMPOP.PC or is specified as an argument does not exist. In the case that no Part Data is specified, IMPOP.PC has not been executed or the popped Part Data has been deleted. In the other case, the specified Part ID is invalid or the Part Data has been deleted.

Remedy: Please confirm the TP program to enter correct Part Data ID.

CVIS-551 Not trained.

Cause: In Bin Picking, the Parts List Manager's setup referred by a KAREL program is not trained.

Remedy: Please complete the setup.

CVIS-552 The setup is invalid. Please set FINE Position ID and FINE VP correctly.

Cause: In Bin Picking, FINE vision process and FINE position refers each other in a circle.

Remedy: Please set FINE Position ID and FINE VP correctly.

CVIS-553 Wizard process has timed out.

Cause: In Bin Picking, a wizard process has timed out.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-554 Bad PR type.

Cause: In Bin Picking, the type of a Position Register which has been referred by a KAREL program is invalid.

Remedy: Please make the type Cartesian.

CVIS-555 Uninitialized PR.

Cause: In Bin Picking, a Position Register which has been referred by a KAREL program is not initialized.

Remedy: Please initialize the Position Register.

CVIS-556 Model ID does not match between FIND and Setup.

Cause: In Bin Picking, the Model ID of Part Data does not correspond with that of the setup.

Remedy: Please correct the Part ID or the setup.

CVIS-557 Vision process does not match between FIND and Setup.

Cause: In Bin Picking, the vision process of Part Data does not correspond with that of the setup.

Remedy: Please correct the Part ID or the setup.

CVIS-558 Snap retry occurred.

Cause: Digital camera retried image acquisition.

Remedy: When the system variable \$VISION_CFG.\$ECCU_RETRY is not 0 and a communication error occurs during image acquisition due to the influence of noise, re-acquisition is performed. This alarm is displayed as a record of re-acquisition, and the system will not stop even if it occurs. Urgent remedy would not be needed, but if this alarm is posted too frequently, contact your FANUC technical representative.

CVIS-559 There is no suitable candidate from the tilt of the Z-axis.

Cause: In Interference Avoidance, there is no suitable candidate because of the tilt of the Z-axis.

Remedy: This alarm does not mean a serious problem. If it persists, please tune 'Angle Between Z-axis And Pos' or correct Reference Position.

CVIS-560 Another Camera is running.

Cause: Another Camera is running.

Remedy: Please don't use Analog Camera while Digital Camera is running.

CVIS-561 The offset frame is not specified.

Cause: The offset frame is not specified.

Remedy: Specify the offset frame in the vision process setup page.

CVIS-562 The result is too large.

Cause: The absolute value of Arithmetic Calculation Tool result is larger than the limit.

Remedy: Readjust Arithmetic Calculation Tool's parameters so that its result becomes smaller than ten to the 15th power.

CVIS-563 The mask setting is bad.

Cause: The edited mask was not good for the function, so it was not used.

Remedy: Don't mask the entire area of the image.

CVIS-564 3D map write error.

Cause: This is an alarm of 3D Area Sensor. The acquired 3D map could not be stored in the memory buffer. This alarm can occur when the runtime process and the setup process tried to acquire 3D map at the same time.

Remedy: Don't try to acquire 3D map on the setup page during production.

CVIS-565 Projector is already used.

Cause: This is an alarm of 3D Area Sensor. The projector unit is in use for another process. This alarm can occur when the runtime process and the setup process tried to acquire 3D map at the same time.

Remedy: Don't try to acquire 3D map on the setup page during production.

CVIS-566 Projector setting error.

Cause: This is an alarm of 3D Area Sensor. The specified projector ID is not correct.

Remedy: Select a correct Projector ID in the 3D Area Sensor setup page.

CVIS-567 Projector control error.

Cause: This is an alarm of 3D Area Sensor. Controlling the projector unit failed.

Remedy: Please try the following measures in order.

1. Check the wiring of the projector connection cable.
2. Changing the projector connection cable.
3. Changing the projector.

CVIS-568 3D map buffer is not found.

Cause: This is an alarm of 3D Area Sensor. Acquired 3D map for the specified 3D Area Sensor was not found. Perhaps the 3D Area Sensor has not acquired a 3D map.

Remedy: Acquire a 3D map with the 3D Area Sensor before trying to use it.

CVIS-569 Intersect point calculation error.

Cause: This is an internal error of 3D Area Sensor.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-570 Subpixel calculation error.

Cause: This is an internal error of 3D Area Sensor.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-571 No 3D points.

Cause: This is an alarm of 3D Area Sensor. No 3D points could be measured.

Remedy: Try the following measures.

1. Check if the camera is in focus. If not, bring the cameras into focus and calibrate the cameras again.
2. Check if the projected pattern is within the cameras' FOV. If not, adjust the camera directions and calibrate the cameras again.

3. Snap 2D image with stripe pattern and check if neither the bright stripes on image is too dark nor too bright. If so, adjust projector intensity and exposure time on the 3D Area Sensor setup page.
4. Check if the measuring area is correct. If not, set a correct measuring area on the 3D Area Sensor setup page.

CVIS-572 Projector time out.

Cause: This is an alarm of 3D Area Sensor. The projector unit did not respond within the prescribed timeout time.

Remedy: Try to perform the following procedure according to the situation.

[1] The alarm is posted in the first acquisition of 3D map after the controller power up:

- Check the cables of the projector unit .
- Check the projector ID of the 3D Area Sensor setup page.
- Replace the cables of the projector unit(and the projector itself).

[2] The alarm is posted after several successful acquisitions of 3D map after the controller power up

- Check such TP program that it has the repetition process of the logical procedures or motion of 0 meters.
- Insert the wait instructions into above TP programs.
- Replace the cables of the projector unit.

CVIS-573 Temperature of projector increases.

Cause: This is a warning of 3D Area Sensor. A temperature of the projector unit is increasing. The projector unit can run even after this alarm occurred, but if the temperature becomes higher, CVIS-574 will occur resulting the projector unit being stopped.

Remedy: No urgent measure is necessary, but less frequent 3D map acquisition is recommended.

CVIS-574 Projector temperature error.

Cause: This is an alarm of 3D Area Sensor. A temperature of the projector is beyond the limit. The projector unit cannot be used until the temperature become lower than the limit.

Remedy: Cool down the projector unit.

CVIS-575 Projector fan error.

Cause: This is an alarm of 3D Area Sensor. The cooling fan in the projector unit is not working.

Remedy: Replace the projector unit.

CVIS-576 All cameras are not calibrated based on same UF.

Cause: This is an alarm of 3D Area Sensor. Cameras are calibrated based on different application user frames.

Remedy: Recalibrate cameras based on the same application user frame.

CVIS-577 Projector communication error.

Cause: This is an alarm of 3D Area Sensor. Communication between the robot controller and the projector unit failed.

Remedy: Replace the projector connection cables.

CVIS-578 Camera layout error.

Cause: This is an alarm of 3D Area Sensor. 3D map acquisition failed because layout of cameras is not appropriate.

Remedy: Re-install the cameras so that their +Vt axes are parallel to each other and calibrate them again.

CVIS-579 3D map buffer time out.

Cause: This is an alarm of 3D Area Sensor. Access to the specified 3D map cannot be made within the prescribed timeout time. This alarm can occur when the runtime process and the setup process tried to acquire 3D map at the same time.

Remedy: Don't try to acquire 3D map on the setup page while production.

CVIS-580 Unsupported 3D map file.

Cause: This is an alarm of 3D Area Sensor. The format of the 3D map file is not correct.

Remedy: None.

CVIS-581 Wait for cooling down projector X ms.

Cause: This is a notification of 3D Area Sensor. 3D map acquisition is delayed by X ms to keep the prescribed duty.

Remedy: No measurement is necessary. If you don't like to see this alarm being posted, modify your TP program so that the 3D map acquisition is executed less frequently.

CVIS-582 Invalid image size.

Cause: This is an alarm of 3D Area Sensor. A wrong image size is selected in the camera setup.

Remedy: Select SXGA as the image size in the Digital Camera setup page.

CVIS-583 Projector version error.

Cause: This is an alarm of 3D Area Sensor. The firmware version of the projector unit is too old.

Remedy: Contact your local FANUC representative.

CVIS-584 The dimension of Ref. Pos is invalid.***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: Window Shift Tool failed to shift the search window because the dimension of reference pose of the the Area Sensor Preprocess Tool was different from that of the Window Shift Tool.

Remedy: On the Area Sensor Preprocess Tool, re-teach the container shape to update the reference position.

CVIS-584 The dimension of Ref. Pos is invalid.***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: Window Shift Tool failed to shift the search window because the dimension of reference pose of the the 3D Data Preprocess Tool was different from that of the Window Shift Tool.

Remedy: On the 3D Data Preprocess Tool, re-teach the container shape to update the reference position.

CVIS-585 Window shift tool doesn't have 3D result.

Cause: The specified Window Shift Tool did not have a 3D result.

Remedy: Configure the Window Shift Tool to use Vision Register.

CVIS-586 The size of log image is wrong.

Cause: On the Area Sensor Vision Process, the image playback failed because the size of the logged image did not match the current setup of the vision process.

Remedy: Confirm that the size of logged image and the setting of [Use Shrink Image] on the Area Sensor Vision Process setup page are set correctly.

CVIS-587 No 3D Map Mask.***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: Area Sensor Preprocess Tool may not be taught or the result of the Area Sensor Preprocess Tool(3D Map Mask) may be no more valid.

Remedy: Train Area Sensor Preprocess Tool or select proper Area Sensor Preprocess Tool when the selected Area Sensor Preprocess Tool is not taught.

Otherwise, execute the Area Sensor Preprocess Tool again when 3D Map is updated.

CVIS-587 No 3D Map Mask.***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: 3D Data Preprocess Tool may not be taught or the result of the 3D Data Preprocess Tool(3D Map Mask) may be no more valid.

Remedy: Train 3D Data Preprocess Tool or select proper 3D Data Preprocess Tool when the selected 3D Data Preprocess Tool is not taught.

Otherwise, execute the 3D Data Preprocess Tool again when 3D Map is updated.

CVIS-588 Not enough 3D points for calculation.

Cause: The number of 3D points in the measurement area is less than the threshold. There may be the following causes:

1. The position or size of the measurement area is not appropriate.
2. The 3D Map is sparse.
3. The threshold of the number of 3D points is not appropriate.

Remedy: Depending on the causes, adjust or re-teach the following items:

1. Re-teach the measurement area.
2. Adjust parameters of 3D Area Sensor.
3. Adjust the [Min Num. Valid Points] .

CVIS-589 Suitable plane for 3D Map is not found.***This alarm is issued in R-30/B/R-30/B Mate Controller.****Cause:** No plane was found during plane measurement. There may be the following causes.

1. The position or size of the measurement area is not appropriate.
2. The 3D Map is sparse.
3. The set of 3D points in the measurement area is not suitable for the model to fit.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Re-teach the measurement area.
2. Adjust parameters of 3D Area Sensor.
3. Adjust the [Min Num. Valid Points] and [Fit Error Threshold] of Area Sensor Plane Tool.

CVIS-589 Suitable plane for 3D Map is not found.***This alarm is issued in R-30/B Plus/R-30/B Mate Plus Controller.****Cause:** No plane was found during plane measurement. There may be the following causes.

1. The position or size of the measurement area is not appropriate.
2. The 3D Map is sparse.
3. The set of 3D points in the measurement area is not suitable for the model to fit.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Re-teach the measurement area.
2. Adjust parameters of 3D Area Sensor.
3. Adjust the [Min Num. Valid Points] and [Fit Error Threshold] of 3D Plane Tool.

CVIS-590 Center of gravity of 3D Map cannot be calculated.***This alarm is issued in R-30/B/R-30/B Mate Controller.****Cause:** Valid 3D points in the measurement area did not converge at one point. There may be the following causes.

1. The height of a part of a workpiece differs largely from that of another part within the measurement area or the position or size of the measurement area is not appropriate.
2. The range where valid 3D points belong is not appropriate.
3. Parameters to acquire the 3D Map are inappropriate or the calibration data is incorrect.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Re-teach the measurement area.
2. Adjust the [Z Range] of Area Sensor COG Tool.
3. Adjust parameters of 3D Area Sensor or calibrate cameras again.

CVIS-590 Center of gravity of 3D Map cannot be calculated.***This alarm is issued in R-30/B Plus/R-30/B Mate Plus Controller.****Cause:** Valid 3D points in the measurement area did not converge at one point. There may be the following causes.

1. The height of a part of a workpiece differs largely from that of another part within the measurement area or the position or size of the measurement area is not appropriate.
2. The range where valid 3D points belong is not appropriate.
3. Parameters to acquire the 3D Map are inappropriate or the calibration data is incorrect.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Re-teach the measurement area.
2. Adjust the [Z Range] of 3D COG Tool.
3. Adjust parameters of 3D Area Sensor or calibrate cameras again.

CVIS-590 Center of gravity of 3D Map cannot be calculated.**Cause:** Valid 3D points in the measurement area did not converge at one point. There may be the following causes.

1. The height of a part of a workpiece differs largely from that of another part within the measurement area or the position or size of the measurement area is not appropriate.
2. The range where valid 3D points belong is not appropriate.
3. Parameters to acquire the 3D Map are inappropriate or the calibration data is incorrect.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Re-teach the measurement area.
2. Adjust the [Z Range].
3. Adjust parameters of 3D Area Sensor or calibrate cameras again.

CVIS-591 USB Camera isn't connected.

Cause: USB camera was not connected to the USB port on iPendant.

Remedy: Connect a USB camera to the USB port on iPendant.

CVIS-592 USB Camera system error.

Cause: This is an internal error of the USB camera connected to the USB port on iPendant.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-593 Fail to calculate parameter.

Cause: This is an alarm of Robot-generated Grid Calibration. Calculation of parameters for moving the robot failed.

Remedy: Try the following measures:

1. Enable the orientation, scale, and aspect ratio DOF in the GPM locator tool setup page.
2. Set the plane spacing to about 10% of the distance between the camera and the initial position of the target.

CVIS-594 Robot cannot move to the destination.

Cause: This is an alarm of Robot-generated Grid Calibration. The robot cannot move the target so that it appears at the desired position in the image.

Remedy: Move the target to the point where the alarm occurred. By continuously snapping the image and finding the target, check the variability of the found target position. If it is large, try the following measures:

1. Adjust the parameters of GPM locator tool.
2. Check the focus of the camera. If it is out of focus, tweak the camera focus, or change the initial position so that the target is in camera focus and then retrain the model pattern and the search window.
3. Make sure that the target has a geometry for which any rotation of $\pm 45^\circ$ or so and whose size can be identified. If not, change the target so that its geometry meets the above conditions.
4. The vaguely-outlined workpiece such as the rounded workpiece or cast workpiece are unsuitable for the target of the robot-generated grid calibration. Use clear-outlined workpiece as the target.

If the variability is small, the robot mastering may not be accurate. Perform the robot mastering again.

CVIS-595 Size of model is too large.

Cause: This is an alarm of Robot-generated Grid Calibration. The trained model pattern is too large with respect to the search window. There may be the following causes:

1. After training the model pattern, the search window is changed smaller.
2. After training the model pattern, the smaller image size is selected in the digital camera setup page.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Make the search window larger.
2. Train the model pattern and the search window again.

CVIS-596 Target is not found.

Cause: This is an alarm of Robot-generated Grid Calibration. The target cannot be found during measuring.

Remedy: Adjust the parameters of GPM locator tool.

CVIS-597 When offset type is tool offset, window shift tool can't use other VP Result.

Cause: This is an alarm of Window Shift Tool. When the offset type is tool-offset, Window Shift Tool cannot shift the search window based on an offset from another vision process.

Remedy: Modify your system so that it shifts the position of the robot holding the part using the offset from another vision process. Then you don't have to shift the search window by using Window Shift Tool.

CVIS-598 When robot-mounted camera is used, window shift tool can't use other VP Result.

Cause: This is an alarm of Window Shift Tool. When a robot-mounted camera is used, Window Shift Tool cannot shift the search window based on an offset from another vision process.

Remedy: Modify your system so that it shift the position of the robot holding the camera using the offset from another vision process. Then you don't have to shift the search window by using Window Shift Tool.

CVIS-599 Frame number is different on vision proccess and vision register.

Cause: This is an alarm of Window Shift Tool. Different offset frames are selected in the vision proccess which Window Shift Tool runs in and the vision process that outputs the offset referred to by the Window Shift Tool.

Remedy: Select the same offset frame in two vision processes.

CVIS-600 Because of software update, window shift tool must be taught again.

Cause: This is an alarm of Window Shift Tool. Because of software update, Window Shift Tools need to be setup again.

Remedy: Perform the following operations, where VP1 is the vision process in which a Window Shift Tool runs and VP2 is the vision process that output a vision offset referred to by the Window Shift Tool:

1. On the VP2 setup page, select the same Offset Frame as VP1, and reset the reference data.
2. Set a new reference data for VP2.
3. Run RUN_FIND and GET_OFFSET for VP2 so that an offset from VP2 is in the vision register.
4. Open VP1, and re-teach the search windows or the measurement area of all command tools in VP1.

CVIS-601 Camera type has been changed after teaching model.

Cause: This is an alarm of iRCalibration. The camera type has been changed after a model pattern is being trained.

Remedy: Retrain the model pattern, or change the camera type back.

CVIS-602 Reference data corresponding to the specified model ID is not found.

Cause: This is an alarm of External Model Training. Reference data corresponding to the specified model ID is not found.

Remedy: Check to make sure that the vision process has reference data for the specified model ID.

CVIS-603 Tag nesting too deep.

Cause: This is an alarm of External Model Training. Model train file tag nesting is too deep.

Remedy: Check and fix the model train file format.

CVIS-604 External model train data is broken.

Cause: This is an alarm of External Model Training. Model train file is broken.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-605 Tag not supported by the current tool type.

Cause: This is an alarm of External Model Training. Current tool type does not support the specified tag.

Remedy: Check and fix the model train file format.

CVIS-606 This tag cannot be specified here.

Cause: This is an alarm of External Model Training. This tag cannot be a child element of the current parent tag.

Remedy: Check and fix the model train file format.

CVIS-607 Specified vision tool not found.

Cause: This is an alarm of External Model Training. A vision tool with the specified tool name does not exist.

Remedy: Check and fix the model train file.

CVIS-608 No model info in external model train file.

Cause: This is an alarm of External Model Training. No information about the model is specified in the model train file.

Remedy: Check and fix the model train file format.

CVIS-609 Invalid image for external model train.

Cause: This is an alarm of External Model Training. Image name specified does not exist.

Remedy: Check and fix the model train file format. Write "SNAP" to snap a new image, or a filename in the format "xxxx.BMP" or "xxxx.PNG" to load an image to train a model with.

CVIS-610 Insufficient data to train model.

Cause: This is an alarm of External Model Training. Specified data is insufficient to train a model.

Remedy: Check and fix the model train file format.

CVIS-611 Model train mode conflict.

Cause: This is an alarm of External Model Training. Cannot use both an image and graphics to train a model.

Remedy: Check and fix the model train file format.

CVIS-612 Invalid value.

Cause: This is an alarm of External Model Training. The value specified is invalid for this tag.

Remedy: Check and fix the model train file format.

CVIS-613 Invalid attribute.

Cause: This is an alarm of External Model Training. The attribute specified is invalid for this tag.

Remedy: Check and fix the model train file format.

CVIS-614 Dynamic window not supported.

Cause: This is an alarm of External Model Training. External Model Training does not support tools with a dynamic search window.

Remedy: Choose another tool, or remove the window shift tool.

CVIS-615 Cannot form an arc.

Cause: This is an alarm of External Model Training. The specified points may be too close, or the radius is too small.

Remedy: Check and fix the model train file.

CVIS-616 Trained model exceeds image size.

Cause: This is an alarm of External Model Training. The model specified with graphics does not fit in the image.

Remedy: Check and fix the model train file.

CVIS-617 Model is not trained with an image.

Cause: This is an alarm of GPM Locator Tool. The model pattern is not trained with an image.

Remedy: Train the model pattern using an image.

CVIS-618 Model train file error. (Line: %s)

Cause: This is an alarm of External Model Training. Bad model train file format.

Remedy: Check the format of the specified row in the Model Train File.

CVIS-619 External model train not supported.

Cause: This is an alarm of External Model Training. Specified vision process does not support External Model Training.

Remedy: Train the model from UIF.

CVIS-620 Exceeded external model train daily limit.

Cause: This is an alarm of External Model Training. Exceeded external model train daily limit.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-621 The strobe function of the digital camera is enabled.

Cause: The strobe function is enabled for a digital camera used by the 3D Area Sensor.

Remedy: Disable the strobe function of the digital camera.

CVIS-622 User frame number is different from the one when teaching.

Cause: The current user frame number is different from the one when the position was taught.

Remedy: Set the correct user frame number.

CVIS-623 Tool number is different from the one when teaching.

Cause: The current tool frame number is different from the one when the position was taught.

Remedy: Set the correct tool frame number.

CVIS-624 Invalid position type.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-625 Not supported with this vision data.

Cause: A function is executed for a vision data which does not support the function.

Remedy: Check the type of the selected vision data.

CVIS-626 Parent aspect DOF must be 100%.

Cause: Surface Flaw Inspection Tool could not teach the master image of the static background removal because the found aspect ratio of the parent tool was not 100%.

Remedy: Disable the aspect DOF of the parent command tool.

CVIS-627 Parent DOF result does not match the master data.

Cause: Surface Flaw Inspection Tool could not run the static background removal because the found scale of the parent tool was not the same as the one when the master image was trained.

Remedy: Disable the scale DOF of the parent command tool.

CVIS-628 Edge Data is too old to load.

Cause: This is an alarm of Deburring Line Detection Function. The format of the Edge Data is too old, and the controller cannot load it.

Remedy: Regenerate the Edge Data for this version of controller, or use that Edge Data on an older version of controller.

CVIS-629 Edge Data is too new to load.

Cause: This is an alarm of Deburring Line Detection Function. The format of the Edge Data is too new, and the controller cannot load it.

Remedy: Regenerate the Edge Data for this version of controller, or use that Edge Data on a newer version of controller.

CVIS-630 Edge Data is broken.

Cause: This is an alarm of Deburring Line Detection Function. Edge Data is broken.

Remedy: Regenerate the Edge Data.

CVIS-631 Edge Data does not exist.

Cause: This is an alarm of Deburring Line Detection Function. Edge Data does not exist.

Remedy: Specify a correct Edge Data name.

CVIS-632 Edge Data is not specified.

Cause: This is an alarm of Deburring Line Detection Function. Edge Data is not specified.

Remedy: Specify an Edge Data name using prepared Karel program.

CVIS-633 Too small circle exists in Edge Data.

Cause: This is an alarm of Deburring Line Detection Function. There is a too small circle in the Edge Data.

Remedy: Confirm the contents of the Edge Data.

CVIS-634 Too sharp angle exists in Edge Data.

Cause: This is an alarm of Deburring Line Detection Function. There is a too sharp angle in the Edge Data.

Remedy: Confirm the contents of the Edge Data.

CVIS-635 Measurement range is not set.

Cause: On the 3D Area Sensor Vision Process setup page, the [Range] is not set.

Remedy: Please set the [Range].

CVIS-636 Reference plane is not found.

***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: In the Obstruction Measurement Tool, Reference plane is not found.

Remedy: Confirm that the specified plane measurement tool actually measures plane in the 3D Obstruction Meas. Tool.

CVIS-636 Reference plane is not found.

***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: In the 3D Obstruction Meas. Tool, 3D Reference plane is not found.

Remedy: Confirm that the specified plane measurement tool actually measures plane in the 3D Obstruction Meas. Tool.

CVIS-637 LED channel is out of range.

Cause: The specified LED light channel is out of range.

Remedy: Specify an LED light channel within the range.

CVIS-638 LED intensity is out of range.

Cause: The specified LED light intensity is out of range.

Remedy: Verify the LED light intensity specified in the following places.

- 2nd argument passed to the VISION OVERRIDE instruction
- 2nd argument passed to the KAREL program IRVLEDON

When you modified an argument to IRVLEDON, move the cursor position up by 1 line and then restart the program.

CVIS-639 LED is not supported in this configuration.

Cause: LED light is not supported in this configuration.

Remedy: Check the hardware configuration, such as the multiplexer. If there are nothing wrong in the hardware configuration, some device may be broken down. Try to replace the cable between CRS35 (CRS41 in the case of R-30iB Mate) and the MUX, the MUX itself and the MAIN board.

CVIS-640 Cannot return packet

Cause: System error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-641 3D Map Storage is too small.

Cause: 3D Map Storage is too small.

Remedy: Increase 3D Map Storage.

CVIS-642 3D Map Storage Allocation Error

Cause: 3D Map Storage is too large to allocate.

Remedy: Reduce the 3D Map Storage and cycle power.

CVIS-643 Laser measurement tool is not trained

Cause: Some laser measurement tools are not trained.

Remedy: Train all of the laser measurement tools.

CVIS-644 Fail to calculate grippable possibility

***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: Area Sensor GF Locator Tool can't calculate a grippable possibility.

Remedy: Contact your local FANUC representative.

CVIS-644 Fail to calculate grippable possibility

***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: 3D GF Locator Tool can't calculate a grippable possibility.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-645 Container Wall RM. is not valid

***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: [Container Wall RM.] of Area Sensor Preprocess Tool selected by Area Sensor GF Locator Tool is not valid.

Remedy: Check [Enable] of [Container Wall RM.] and teach [Container Shape] on Area Sensor Preprocess Tool.

CVIS-645 Container Wall RM. is not valid

***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: Container Wall RM. is not valid.

Remedy: Please tick Enable of Container Wall RM.in 3D Data Preprocess Tool.

CVIS-646 There is no container shape

***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: There is no container shape.

Remedy: Train Area Sensor Preprocess Tool or select proper Area Sensor Preprocess Tool. Then, run a test by pressing F4 FIND on Area Sensor Preprocess Tool.

CVIS-646 There is no container shape

***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: There is no found container shape.

Remedy: Train 3D Data Preprocess Tool or select proper 3D Data Preprocess Tool. Then, run a test by pressing F4 FIND on 3D Data Preprocess Tool.

CVIS-647 Not enough Vision Tool Private Storage to process

Cause: Not enough Vision Tool Private Storage to process.

Remedy: Please increase the size of Vision Tool Private Storage in iRVision Configuration Menu and cycle power.

CVIS-648 Specified Vision Tool Private Storage is not found

Cause: Specified Vision Tool Private Storage is not found.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-649 Vision Tool Private Storage timeout

Cause: Vision Tool Private Storage timeout.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-650 Vision Tool Private Storage internal error

Cause: Vision Tool Private Storage internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-651 Specified Vision Data is in use

Cause: Specified Vision Data is in use.

Remedy: Please retry the operation.

CVIS-652 GPM Statistic Function internal error

Cause: GPM Statistic Function internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-653 Camera Disconnection internal error

Cause: Digital camera disconnection internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-654 DO to control MUX power is on

Cause: DO to control MUX power is ON.

Remedy: Please turn off this DO after turning off the lasers of all 3DL sensors.

CVIS-655 DO to control MUX power is off

Cause: DO to control MUX power is off.

Remedy: Please turn on this DO after checking the connections of 3DL sensors and cameras are stable.

CVIS-656 There is a MUX whose power is off

Cause: There is a MUX whose power is off.

Remedy: Please turn on the MUX whose power is off.

CVIS-657 Cannot control MUX power

Cause: Can not control MUX power.

Remedy: Please check connections and arguments.
Check that the devices (relay, cables, CCU, MUX, etc) are not broken, just in case.

CVIS-658 The execution sequence is wrong.

Cause: .Out of sequence internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your local FANUC representative.

CVIS-659 Did not converge.

Cause: .Robot did not converge to a designated position.

Remedy: Adjust the appropriate convergence limit.

CVIS-660 There is no image.

Cause: .Image has not been captured.

Remedy: Snap an image or read a saved image file.

CVIS-661 Work plane cannot be calculated.

Cause: .Target plane could not be calculated.

Remedy: Clear the learn data, and start over the learning process with appropriate part placements.

CVIS-662 Bad robot position.

Cause: .The robot posture to snap the image is inappropriate.

Remedy: Make sure that the robot posture matches with the posture when the destination position was set.

CVIS-663 Target lost.

Cause: .The target part cannot be found.

Remedy: The target part may have been moved or the view may be obstructed. If not, test-run the problem image and adjust the detection parameters.

CVIS-664 Failed to set dest. position.

Cause: .An object has not been found.

Remedy: Find an object before setting the destination position.

CVIS-665 Dest. position has not been set.

Cause: .Destination position is not trained.

Remedy: Train the destination position first.

CVIS-666 The settings of the selected camera is incorrect for 3DL.

Cause: The settings of the selected digital camera are incorrect for 3DL.

Remedy: In the setup page of digital camera, select 1/2" VGA as the camera mode and uncheck Use Strobe.

CVIS-667 The cylinder is not found***This alarm is issued in R-30iB/R-30iB Mate Controller.**

Cause: No cylinder was found from 3D Map. There may be the following cases.

1. The 3D map is sparse.
2. The set of 3D points in 3D Blob is not suitable for the model to fit.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. The setting of 3D Area Sensor.
2. [Min. Num. Valid Points] and [Cyl. Error Threshold] of Area Sensor Cyl. Loc. Tool.

CVIS-667 The cylinder is not found***This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.**

Cause: No cylinder was found from 3D Map. There may be the following cases.

1. The 3D map is sparse.
2. The set of 3D points in 3D Blob is not suitable for the model to fit.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. The setting of 3D Area Sensor.
3. [Min. Num. Valid Points] and [Cyl. Error Threshold] of 3D Cylinder Tool.

CVIS-668 Invalid Part Z Height

Cause: Part Z Height is invalid.

Remedy: Specify correct Part Z Height.

CVIS-669 The millimeter conversion setting was changed.

Cause: The millimeter conversion is enabled/diabled after teaching the model blob.

Remedy: Reteach the model blob and the search ranges.

CVIS-670 The blob is too large.

Cause: The blob which is converted to millimeters is too large.

Remedy: Adjust the image size so that the scale factor (mm/pixels) becomes more small.

CVIS-671 The blob is too small.

Cause: The blob which is converted to millimeters is too small.

Remedy: Adjust the image size so that the scale factor (mm/pixels) becomes more large.

CVIS-672 Can not convert to millimeters.

Cause: The blob can not be converted to millimeters.

Remedy: Reteach the model blob and the search ranges.

CVIS-673 The scale factor is too large.

Cause: The scale factor to which convert the blob to millimeters is too large.

Remedy: Adjust the image size so that the scale factor (mm/pixels) becomes more small.

CVIS-674 Chromatic color pixels are too little.

Cause: Chromatic color pixels are too little in the trained area.

There may be the following cases.

1. The overall color in the window is too dark.
2. The overall color in the window is too bright.
3. There is shadow in the part of the window.
4. There is halation in the part of the window.
5. The color of the image is different from the color of the actual object.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Increase the intensity of the illumination or the exposure time.
2. Decrease the intensity of the illumination or the exposure time.
3. Change the layout of the illumination not to make the shadow in the window.
4. Change the layout of the illumination not to make the halation in the window.
5. Use the white light source and illuminate the workpiece uniformly.

CVIS-675 Multi colors are included in the trained area.

Cause: Multi colors are included in the trained area.

There may be the following cases.

1. There is shadow in the part of the window.
2. There is halation in the part of the window.
3. There are multi colors in the window.
4. The colored illumination is used.
5. There are shade from the shape of the workpiece.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Change the layout of the illumination not to make the shadow in the window.
2. Change the layout of the illumination not to make the halation in the window.
3. Mask the colors that you don't want to measure.
4. Use the white light source and illuminate the workpiece uniformly.
5. Mask the area which its colors appear dark.

CVIS-676 Invalid color is trained.

Cause: The color can not be measured correctly.

There may be the following cases.

1. There is shadow in the part of the window.
2. There is halation in the part of the window.
3. There are multi colors in the window.
4. The colored illumination is used.
5. There are shade from the shape of the workpiece.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Change the layout of the illumination not to make the shadow in the window.
2. Change the layout of the illumination not to make the halation in the window.
3. Mask the colors that you don't want to measure.

4. Use the white light source and illuminate the workpiece uniformly.
5. Mask the area which its colors appear dark.

CVIS-677 The index of found part is out of range.

Cause: The specified index number of found part is out of range.

Remedy: Specify an appropriate index number of found part with KAREL program IRVGETMSL.

CVIS-678 The vision process specified in '%s' and the executed VP do not match.

Cause: The vision process specified in Vision Override and the executed VP do not.

Remedy: Check the followings:

1. Whether the vision process name passed to RUN_FIND command is correct.
2. Whether the vision process name specified in Vision Override is correct.

CVIS-679 The vision tool specified in Vision Override does not exist in the executed VP.

Cause: The vision tool specified in Vision Override does not exist in the executed VP.

Remedy: Check the followings:

1. Whether the vision process name passed to RUN_FIND command is correct.
2. Whether the vision process name passed to IRVOVRDANYVP is correct.
3. Whether the vision tool name specified in Vision Override is correct.

CVIS-680 The property specified in Vision Override does not exist in the executed VP.

Cause: The property specified in Vision Override does not exist in the executed VP.

Remedy: Check the followings:

1. Whether the vision process name passed to RUN_FIND command is correct.
2. Whether the vision process name passed to IRVOVRDANYVP is correct.
3. Whether the property specified in Vision Override is correct.

CVIS-681 Learning mode conflict.

Cause: The target for learning cannot be changed.

Remedy: Clear the learning data, or use the same target for learning.

CVIS-682 Offset type conflict.

Cause: The selected offset type does not match with the trained data.

Remedy: Clear the trained data by selecting another camera data, or select an appropriate camera data.

CVIS-683 Cannot start learning.

Cause: The number of learned parts has reached its maximum, or a UF is used to calculate the offset plane.

Remedy: Clear the learning data, or uncheck the 'Fixed Plane' checkbox.

CVIS-684 The relation between the robot and the offset frame is not set.

Cause: The relation between the robot and the offset frame is not set.

Remedy: Set the relation between the robot and the offset frame on the Floating Frame vision process setup page.

CVIS-685 Img arith image sizes differ.

Cause: The two input images for the Image Arithmetic tool are not the same size.

Remedy: Choose images that are the same size and try again.

CVIS-686 Input image size is incorrect.

Cause: The camera image size is different from the trained dark field or flat field image sizes in the Flat Field tool.

Remedy: Retrain the dark field and flat field images with the new camera.

CVIS-687 This function requires iRConnect or ZDT.

Cause: The requested function requires either iRConnect or ZDT to be loaded.

Remedy: Order and load either the iRConnect or ZDT options.

CVIS-688 Learning Index file is broken.

Cause: This is an alarm of Vision Learning Function. Learning Index file is broken.

Remedy: Remove the Learning Index file from the device specified as Log Path.

CVIS-689 Learning Index file is too old to load.

Cause: This is an alarm of Vision Learning Function. The format of the Learning Index file is too old, and the controller cannot load it.

Remedy: Remove the Learning Index file from the device specified as Log Path.

CVIS-690 Learning Index file is too new to load.

Cause: This is an alarm of Vision Learning Function. The format of the Learning Index file is too new, and the controller cannot load it.

Remedy: Remove the Learning Index file from the device specified as Log Path.

CVIS-691 Learning Data file is broken.

Cause: This is an alarm of Vision Learning Function. Learning Data file is broken.

Remedy: Remove the Learning Data file from the device specified as Log Path.

CVIS-692 Learning Data file is too old to load.

Cause: This is an alarm of Vision Learning Function. The format of the Learning Data file is too old, and the controller cannot load it.

Remedy: Remove the Learning Data file from the device specified as Log Path.

CVIS-693 Learning Data file is too new to load.

Cause: This is an alarm of Vision Learning Function. The format of the Learning Data file is too new, and the controller cannot load it.

Remedy: Remove the Learning Data file from the device specified as Log Path.

CVIS-694 Value in learning data is too big.

Cause: This is an alarm of Vision Learning Function. The value in the Learning Data file is too big, and the controller cannot load it.

Remedy: Remove the Learning Data file from the device specified as Log Path.

CVIS-695 Model Learning failed.

Cause: This is an alarm of Vision Learning Function. Model Learning failed.

Remedy: Verify images and detections in Learning Data are correct.

CVIS-696 Learning Index file does not exist.

Cause: This is an alarm of Vision Learning Function. The Learning Index file does not exist.

Remedy: Verify Log Path is correct.

CVIS-697 Learning Data file does not exist.

Cause: This is an alarm of Vision Learning Function. The Learning Data file does not exist.

Remedy: Verify Log Path is correct.

CVIS-698 Cannot find targets.

Cause: This is an alarm of Model Learning Function. The target cannot be found in the specified images.

Remedy: Set up proper parameters so that targets can be found in the specified images.

CVIS-699 Image sizes differs.

Cause: This is an alarm of Model Learning Function. Log image size differs from size of image in Learning Data.

Remedy: Change image size of the selected camera and start Model Learning again.

CVIS-700 Circular target mark was not found.

Cause: Circular target mark for learning was not found. Or, the size of the mark may be too small or too large.

Remedy: Place circular target marks in the field of view before learning.

CVIS-701 Target for learning was not found.

Cause: Parts for learning was not found.

Remedy: Place parts in the field of view before learning.

CVIS-702 External model train not supported with this Depalletizing VP setting.

Cause: The selected App. Z Mode of the Depalletizing VP is not compatible with External Model Train.

Remedy: Select the Use Register Value mode.

CVIS-703 Wrong robot is selected.

Cause: The vision data was trained using a different robot.

Remedy: Open the vision data with correct robot, or select the correct group number.

CVIS-704 Too many results for ZDT/iRConnect

Cause: There are too many vision results to send to ZDT/iRConnect at this time

Remedy: If the desired vision result(s) are not being transmitted, modify the vision process to reduce the number of potential results. If the desired results are being transmitted, you may safely disregard this error.

CVIS-705 Cannot merge the 3D maps

Cause: Cannot merge the 3D maps.

Remedy: Merging 3D maps is available only when they are the same in size.

CVIS-706 Device for exporting Vision Log doesn't exist

Cause: Device for recording Vision Log doesn't exist.

Remedy: Check the communication error with device, or check the device name inputted.

CVIS-707 ZDT Runtime Image could not be sent.

Cause: ZDT could not send the runtime image.

Remedy: ZDT communication is likely overloaded. Consider lowering the frequency of sending ZDT data, reducing the ZDT image size in the Vision Configuration settings, or disabling ZDT images.

CVIS-708 Normal vectors have not been calculated.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Normal vectors have not been calculated in 3D Data Preprocess Tool

Remedy: Please tick Enable checkbox of Normal Calculation in 3D Data Preprocess Tool.

CVIS-709 3D Area Sensor is not trained.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Selected Area Sensor is not trained.

Remedy: Train the Area Sensor.

CVIS-710 3D points in the model are too short.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: 3D points in the model are too short.

Remedy: Train a proper model including 3D points enough.

CVIS-711 3D points in the model are too many.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: 3D points in the model are too many.

Remedy: Please reduce 3D Map Density on the setup page of 3D Area Sensor.

CVIS-712 Range is too wide.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Range is too wide.

Remedy: Set Range properly.

CVIS-713 Log file is too old to load

Cause: The format of the log file is too old, and the controller cannot load it.

Remedy: Remove the log file from the device specified as Log Path.

CVIS-714 Log file is too new to load

Cause: The format of the log file is too new, and the controller cannot load it.

Remedy: Remove the log file from the device specified as Log Path.

CVIS-715 The value set in Number of Found is too big

Cause: The value set in Number of Found is too big.

Remedy: Change the value of Number of Found to lower value.

CVIS-716 Invalid frame number is specified

Cause: Invalid frame number is specified.

Remedy: Specify valid frame number.

CVIS-717 Grid spacing is not specified

Cause: Grid spacing is not specified.

Remedy: Specify valid grid spacing.

CVIS-718 Camera is locked

Cause: Camera is locked.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-719 LED settings cannot changed while LED being turned on

Cause: LED settings cannot changed while LED being turned on.

Remedy: Turn off LED.

CVIS-720 Laser settings cannot changed while laser being turned on

Cause: Laser settings cannot changed while laser being turned on.

Remedy: Turn off laser.

CVIS-721 Camera Data has not been calibrated yet

Cause: The camera data has not been calibrated yet.

Remedy: Calibrate the camera data.

CVIS-722 The camera specified cannot be found

Cause: The camera specified cannot be found.

Remedy: Select a camera again.

CVIS-723 Memory consumption does not match

Cause: Memory consumption does not match between before and after the vision data is opened.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-724 The image register is locked

Cause: The image register is locked.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-725 The image register is broken

Cause: The image register is broken.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-726 Camera is already connected to the port

Cause: Camera is already connected to the port.

Remedy: Disconnect the camera before connecting new camera.

CVIS-727 Binning Level of Input Image is different on this tool and parent tool

Cause: Binning level of input image is different on this tool and parent tool.

Remedy: Please set to the same binning level as input image of parent tool to input image of this tool.

CVIS-728 Two cameras are not connected to the same MUX

Cause: Two cameras are not connected to the same multiplexer.

Remedy: Connect two cameras to the same multiplexer.

CVIS-729 This model id is already used

Cause: Input model id is already used.

Remedy: Please set a unique model id.

CVIS-730 The model id of selected result is not same with the selected reference data

Cause: The model id of selected result is not same with the selected reference data.

Remedy: Please select the correct result.

CVIS-731 Can't find the result of model id

Cause: There is no result with the model id of selected reference data.

Remedy: Please place the correct workpiece and run find.

CVIS-732 There is not 3D Map.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There is no 3D Map.

Remedy: Please call ACQVAMAP correctly or click [2-3D Snap] on the setup page.

CVIS-733 Points Data is not selected.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Points Data is not selected.

Remedy: Please select Points Data first.

CVIS-734 There is an uninitialized value to calculate pick score.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There is an uninitialized measurement value.

Remedy: Please select correct measurement value to calculate pick score.

CVIS-735 Image Shrink tool is not trained

Cause: Image Shrink tool is not trained.

Remedy: Train Image Shrink tool.

CVIS-736 Too many feature points.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There are too many feature points in 3D model.

Remedy: Please tune so that there are fewer 3D Blob or input larger value in Feature Interval.

CVIS-737 No camera is selected

Cause: No camera is selected in camera data.

Remedy: Select a camera.

CVIS-738 Input image is not selected

Cause: Input image is not selected.

Remedy: Select an input image.

CVIS-739 Binning Level of input image is not valid

Cause: Binning level of input image has been changed after teaching this tool.

Remedy: Select an input image of the same binning level as input image used for teaching, or retrain this tool using new input image.

CVIS-740 Color Component tool is not trained

Cause: Color Component tool is not trained.

Remedy: Train Color Component tool.

CVIS-741 Flat Field tool is not trained

Cause: Flat Field tool is not trained.

Remedy: Train Flat Field tool.

CVIS-742 Image Arithmetic tool is not trained

Cause: Image Arithmetic tool is not trained.

Remedy: Train Image Arithmetic tool.

CVIS-743 Candidates of 3D Blob are too many.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Candidates of 3D Blob are too many.

Remedy: Please set up so that less 3D blobs are found. The larger [Z Height] for 3D blobs connection might be effective.

CVIS-744 Internal error.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-745 There is a command tool which is not trained

Cause: There is a command tool which is not trained above the treeview.

Remedy: Please train the untrained command tool above the treeview.

CVIS-746 There is no input 3D data.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There is no input 3D data.

Remedy: If you are using 3D Area Sensor, please call ACQVAMAP correctly or click [2-3D Snap] on the setup page.

CVIS-747 The parent tool is not trained

Cause: The parent tool is not trained.

Remedy: Please train the parent tool.

CVIS-748 Trained auto exposure area is out of snap window.

Cause: The auto exposure area is trained out of the snap window

Remedy: Retrain the auto exposure area within the snap window.

CVIS-749 Trained multi exposure area is out of snap window.

Cause: The multi exposure area is trained out of the snap window.

Remedy: Retrain the multi exposure area within the snap window.

CVIS-750 Trained snap window cannot be snapped by this camera.

Cause: The snap window is trained out of the area where the connected camera can snap.

Remedy: Retrain the snap window within the area where the connected camera can snap.

CVIS-751 The result in VR is leaning.

Cause: The result in Vision Register is leaning.

Remedy: Use a result not leaning against the offset frame in the window shift tool.

CVIS-752 There is no cross image.

Cause: A cross image is not snapped.

Remedy: Please set the 3DL Cross Section Snap Tool properly so that cross image can be snapped.

CVIS-753 Fail to calibrate camera.

Cause: The calibration of camera has failed. There might be some invalid calibration points.

Remedy: Delete invalid calibration points on the setup page of calibration.

CVIS-754 The multi exposure area is too narrow.

Cause: The multi exposure area is too narrow.

Remedy: Retrain the multi exposure area.

CVIS-755 There is no valid reference position.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There is no valid reference position.

Remedy: Please retrain the existing items of Model, Search Window, Measurement Area and Container Shape.

CVIS-756 No argument. %s

Cause: A KAREL program has been executed with an argument missing.

Remedy: Please enter the correct argument.

CVIS-757 Bad argument. %s

Cause: A KAREL program has been executed with an argument invalid.

Remedy: Please enter the correct argument.

CVIS-758 3D Area Sensor cannot be turned on/off.

Cause: The camera connection/disconnection function does not support 3D Area Sensor.

Remedy: None.

CVIS-759 No offset type is selected

Cause: The offset type has not been selected.

Remedy: Please select an offset type.

CVIS-760 Temperature increases.

Cause: The temperature of 3DV Sensor is rising.

Remedy: Cool down the 3DV Sensor.

CVIS-761 Temperature error

Cause: The led of 3DV Sensor is too hot and 3DV Sensor can not acquire.

Remedy: Cool down the 3DV Sensor.

CVIS-762 The sharpness is not valid.

Cause: The bad sharpness is specified in the depth snap tool.

Remedy: Specify the valid value in the sharpness.

CVIS-763 3DV Sensor: load error.

Cause: Data can not be loaded from 3DV Sensor.

Remedy: Check main board, FROM, multiplexer, cables and 3DV Sensor.

CVIS-764 Mounting position of 3DV Sensor is not trained.

Cause: The mounting position of 3DV Sensor is not trained.

Remedy: Train the mounting position of 3DV Sensor.

CVIS-765 The big dots cannot be found.

Cause: The big dots cannot be found. There may be the following cases.

1. The background is detected as the big dots.
2. The depth around the big dots could not be measured.
3. The big dot could not be detected from the grayscale image.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Hide the area which is erroneously detected.
2. Adjust the parameters with the 3D setting of 3DV sensor.
3. Adjust the parameters with the 2D setting of 3DV sensor.

CVIS-766 The plane cannot be calculated.

Cause: The plane cannot be calculated. There may be the following cases.

1. Grid pattern jig has distortion or warp.
2. Depth could not be measured from the plane of grid pattern.

Remedy: Depending on the causes, adjust or re-teach the following items.

1. Use the grid pattern jig without distortion or warpage, in order to set the mounting position.
2. Adjust the parameters with the 3D setting of 3DV sensor.

CVIS-767 Projection process failed.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-768 There is no valid 3D point.

Cause: This alarm can occur only on the setup page of the command tool. If there is no workpiece in the field of view, there is no problem. If this alarm occurs even when there is a workpiece, there may be the following cases.

1. The condition of 3D snap is not proper for the workpiece and there is no measured 3D point.
2. The [Meas. Z Range] in the vision process is not proper.

Remedy: Please adjust the condition of 3D snap and [Meas. Z Range]. If you are using 3D Area Sensor, please adjust the condition of 3D snap on the setup page of the 3D Area Sensor data. If you are using 3D Vision Sensor, please adjust it on the setup page of Depth Image Snap Tool.

CVIS-769 All 3D points are removed.

Cause: This alarm can occur only on the setup page of the command tool. If there is no workpiece in the field of view, there is no problem. If this alarm occurs even when there is a workpiece, all 3D points are removed by 3D Data Preproc Tool or 3D Data Generator Tool.

Remedy: Please adjust the setup parameters of 3D Data Preproc Tool or 3D Data Generator Tool correctly.

CVIS-770 Z-Axis is invalid.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: 3D position and posture facing the other side of camera can't be projected to camera image. Or 2D position and posture can't be projected to the plane facing the other side of camera.

Remedy: Please take one of following countermeasures.

1. Please set up the offset frame correctly. The z-axis direction of the offset frame need to be roughly equal to the upward direction of the camera.
2. If you use 3DV Sensor Single View Vision Process, please enable [Camera Base Find].

CVIS-771 There is no multiplexer

Cause: The multiplexer is not connected.

Remedy: Please connect the multiplexer.

CVIS-772 3DV Sensor is not specified

Cause: The camera data of 3DV Sensor is not specified.

Remedy: Please specify the camera data of 3DV Sensor.

CVIS-773 The shape of model is incorrect

Cause: The shape of model to detect is incorrect.

Remedy: Please modify the model to detect.

CVIS-774 Camera command ID does not match

Cause: This could be due to the following:

1. Camera cable may not be inserted properly.
2. There is a possibility that a communication error has occurred due to noise.
3. There is a possibility of disconnection of the camera cable or failure of the CCU (CCU is used only R-30iB, R30iB Mate).

Remedy: Perform the following:

1. Check the camera cables.
2. Check whether the controller and peripheral equipment are grounded securely. When the noise source cannot be determined, take the following measures to reduce the influence of noise.
 - Separate earth of controller and earth of peripheral equipment.
 - Shorten the camera cable .
 - Attach a ferrite core to the camera cable.
 - Wrap the camera cable with a zipper tube to make the shield thick.
 - Ground the camera mount.
 - If it is not a camera package, insulate the camera from the camera mount.
3. Change the camera cable.

4. Change the CCU. (In case of R-30iB, R30iB Mate)
5. If communication errors are sporadic, change the setting of system variable \$VISION_CFG.\$ECCU_RETRY to 1.
6. If the error is not cleared, **please get a diagnostic log and image backup just after the alarm occurred**, document the events that led to the error, and contact your FANUC technical representative.

CVIS-775 Camera parameter setting error.

Cause: Internal error.

Remedy: Get a diagnostic log and image backup just after the alarm occurred, document the events that led to the error, and contact your FANUC technical representative.

CVIS-776 The file format isn't supported

Cause: Unsupported the file format.

Remedy: Please confirm the file format.

CVIS-777 Position adjustment not supported

Cause: The parent tool doesn't support 2D position adjustment..

Remedy: Please remove position adjustment tool.

CVIS-778 Camera mounting axis is not last axis

Cause: The camera is not mounted on the last axis of robot.

Remedy: Please mount the camera on the last axis of robot.

CVIS-779 User frame has been changed after teaching

Cause: User frame has been changed after teaching.

Remedy: Please recalibrate the camera.

CVIS-780 [Camera Installation] is unset.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Setup item [Camera Installation] is unset.

Remedy: Please set the setup item [Camera Installation].

CVIS-781 [Camera Installation] is not consistent with actual type of cameras in camera views.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Setup item [Camera Installation] is not consistent with actual type of cameras in camera views.

Remedy: Please take one of following countermeasures.

1. Please change the setup item [Camera Installation] so that it is equivalent to the actual type of cameras in camera views.
2. Please change the actual type of cameras in camera views so that these are equivalent to the setup item [Camera Installation].

CVIS-782 Camera Views are not trained.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Camera Views are not trained.

Remedy: Please setup camera view tools.

CVIS-783 There is no 3D points.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: There is no 3D points.

Remedy: Please take one of following countermeasures.

1. Please check and change the setup parameters if needed of the following tools. Depth Snap Tool, 3D Data Generator Tool, Stitching Tool, and 3DV Stitching Vision Process.
2. Please check sensor pose and position and setup of its camera data and change them if needed.

CVIS-784 Sensor is tilted more than 90 degree.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: The sensor is tilted more than 90 degree from opposite z-direction of offset frame.

Remedy: Please take one of following countermeasures.

1. Please check sensor pose and position and change them if needed.

2. Please check offset frame and change it if needed.

CVIS-785 Selected Camera Data does not match logged Camera Data.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Camera Data logged in Vision Log is not equal to the selected Camera Data.

Remedy: Please select the same Camera Data as logged Camera Data in Vision Log.

CVIS-786 Camera connection unit cannot be connected

Cause: Camera connection unit is not connected.

Remedy: Please connect camera connection unit to PC before starting ROBOGUIDE.

CVIS-787 This unit type is not supported.

Cause: Unsupported the unit type.

Remedy: Please specify supported unit type.

CVIS-791 Intensity of 3DV Sensor is invalid.

Cause: Intensity of 3DV Sensor is invalid.

Remedy: Please retrain the intensity of 3DV Sensor or depth snap tool.

CVIS-792 This camera data is not supported with this vision process

Cause: Unsupported the camera data.

Remedy: Please specify supported camera data.

CVIS-793 The Meas. Z Range is invalid

Cause: The Meas. Z Range is invalid

Remedy: Please change the Meas. Z Range.

CVIS-794 Fail to export vision log.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: Vision log could not be exported to the specified device.

Remedy: Check the devices of input source and output destination.

CVIS-795 The part Z height is not set

Cause: The part Z height is not set

Remedy: Please set the part Z height.

CVIS-796 The logged image buffer is full.

*This alarm is issued in R-30iB Plus/R-30iB Mate Plus Controller.

Cause: The logged image buffer is full.

Remedy: Add 'CALL IRVWAITLOG' in a TP program in order to specify at which line the program can wait for completion of logging.

CVIS-797 Vision override was not found

Cause: The specified vision override does not exist.

Remedy: Check the vision override name, and enter the correct name.

CVIS-798 3DV Sensor was adjusted. Xpix(Vt)

Cause: The amount of adjustment stored in the 3DV sensor.

Remedy: No measures required.

CVIS-802 ZDT for vision has been disabled in config settings.

Cause: ZDT has been selectively disabled from the vision related view in the ZDT setup menu.

Remedy: If ZDT messages are desired, go to the vision related view in the ZDT setup menu and check enable ZDT for iRVision.

CVIS-803 ZDT for vision queue is full.

Cause: ZDT queue for vision data is full.

Remedy: If this message persists, consider increasing the queue size limit.

CVIS-804 ZDT for vision has exceeded the data limit.

Cause: ZDT for vision data size has exceeded the data limit.

Remedy: If this message persists, consider increasing the data size limit.

CVIS-805 Select a same type of 3DV Sensor for all camera views.

Cause: The type of selected 3DV Sensor is different from that in the other camera views.

Remedy: Select a same type of 3DV Sensor for all camera views.

CVIS-806 Wait for cooling down projector X ms.

Cause: This is a notification of 3DV Sensor. The image is delayed by X ms to keep the prescribed duty.

Remedy: No measurement is necessary. If you don't like to see this alarm being posted, modify your TP program so that the image snapping is executed less frequently.

CVIS-807 Snap in Motion cannot be executed.

Cause: Snap in Motion is not enabled for GigE camera.

Remedy: Execute KAREL program IRVGVSMO(1) to enable Snap in Motion function for GigE camera.

When disabling this function, please execute IRVGNMO(0).

Note that Snap in Motion cannot be used with CoaX camera and GigE camera at same time.

CVIS-808 Specified image is not depth image.

Cause: The specified image is not depth image.

Remedy: Please specify a depth image.

CVIS-809 Invalid request code specified.

Cause: The invalid request code is specified in the camera calib command.

Remedy: Please change the request code.

CVIS-810 The search window is too large.

Cause: The search window is too large.

Remedy: Shrink the image or make the search window smaller.

CVIS-811 GPM Locator Tool and 3D One-Sight-Model Loc. Tool cannot exist simultaneously in Camera View. If you add the selecting Locator Tool, please remove other Locator Tools before adding it.

Cause: GPM Locator Tool and 3D One-Sight-Model Loc. Tool cannot exist simultaneously in Camera View.

Remedy: If you add the selecting Locator Tool, please remove other Locator Tools before adding it.

CVIS-812 Output error number to the specified register failed.

Cause: Output error number to the specified register failed in 3-Marker Runtime Offset or Find Marker.

Remedy: Set the valid register number to output error number.

CVIS-813 The gaze line inclination is too small.

Cause: The gaze line inclination is too small in Find Marker.

Remedy: Expand the distance between 1st snap and 2nd snap to increase the gaze line inclination.

CVIS-814 The distance between two gaze lines exceeds limit.

Cause: The calculated distance between two gaze lines exceeds limit in Find Marker.

Remedy: Calibrate the camera again or increase the error limit of the distance between two gaze lines.

CVIS-815 The error limit of the distance between two gaze lines is negative.

Cause: The error limit of the distance between two gaze lines is negative in Find Marker.

Remedy: Set the positive value to the error limit of the distance between two gaze lines.

CVIS-816 Marker not found. (Snap position: %s)

Cause: Marker is not found in Find Marker.

Remedy: Make sure to detect the marker in displayed snap position.

CVIS-817 The motion group is not 1.

Cause: The motion group is not 1 in 3-Marker Runtime Offset or Find Marker.

Remedy: Use the robot of motion group 1 in 3-Marker Runtime Offset or Find Marker.

CVIS-818 Setting the reference position failed.

Cause: Setting the reference position failed in 3-Marker Runtime Offset.

Remedy: Please notify FANUC of the conditions (program executed, operation made, etc.) in which the error occurred.

CVIS-819 Offset data failed to be calculated.

Cause: Offset data failed to be calculated in 3-Marker Runtime Offset.

Remedy: Please notify FANUC of the conditions (program executed, operation made, etc.) in which the error occurred.

CVIS-822 3D Vision Sensor is not supported.

Cause: This function does not support 3DV sensors.

Remedy: Use a 2D camera instead of a 3DV sensor.

4.4 D

4.4.1 DIAG Alarm Code

DIAG-002 Group is not supported (G: %d)

Cause: The group mask of the program analyzed by Motion Profiler includes the group (G:) not supported by the function.

Remedy: -Create a program without unsupported program to analyze.

-Use the result keeping it in mind that the corresponding group is not analyzed.

DIAG-003 Data process stops

Cause: Analyzing process stopped because the program to be analyzed by Motion Profiler was stopped during execution.

Remedy: Eliminate the cause of the program stop, enable status, and execute the program from the top.

DIAG-005 Reducer load excess (G:%d A:%d L:%d P:%s)

Cause: Reducer load level of the axis(A:) of group(G:) exceeds the limit at line(L:) of program(P:).

Remedy: Continued use may result in premature failure of driving element, such as reducers and gears. Reduce the load level by changing the program such as acceleration override instruction (ACC) or feed rate, so the warning would not be posted.

DIAG-008 WARN Baseline prog changed (G:%d A:%d)

Cause: Program created for Robot Condition Detection was changed, or a program different from the one that was used for master ran. The function does not analyze properly, because acquired data changes.

Remedy: -if created program is edited, the program cannot be used to analyze properly.

-if Utility program creation was used to overwrite the program with same name, the original data cannot be used.

Please follow master procedure from the top.

-if new program was created using Utility, follow master procedure with data acquired with new program.

However in any of those cases, the data "mastered" would be set as "normal" condition, and analysis afterwards would be based on "mastered" data, so the function may not be able to analyze properly.

Basically, perform master at installation and when reducer is replaced only. Please understand that if "mastered" after certain period of use, there is a possibility that the function cannot analyze properly.

DIAG-009 WARN G:%d %s in %s %f %s

Cause: The displayed maintenance is approaching. If the remaining value, such as hour, is negative number, it is past due.

Remedy: Execute the maintenance at appropriate timing, and process it done in Maintenance Reminder screen.

DIAG-010 WARN Maintenance Items were overwritten

Cause: Some of the Supplemental Maintenances were deleted to add the Required Maintenances.

Remedy: If necessary, please setup the Supplemental Maintenances again.

4.4.2 DICT Alarm Code

DICT-001 Dictionary already loaded

Cause: A dictionary cannot be reloaded if it was loaded into FROM.

Remedy: Load into a different language and use KCL SET LANG to set the language.

DICT-002 Not enough memory to load dict

Cause: There is no more permanent memory available in the system to load another dictionary.

Remedy: Clear all unnecessary programs, dictionaries or variables.

DICT-003 No dict found for language

Cause: There are no dictionaries loaded for the specified language.

Remedy: Use the DEFAULT language or a language in which a dictionary has been loaded.

DICT-004 Dictionary not found

Cause: The specified dictionary was not found.

Remedy: Use KCL LOAD DICT to load the dictionary into the DEFAULT language or the current language.

DICT-005 Dictionary element not found

Cause: The dictionary element was not found.

Remedy: Check the dictionary or element number to be sure it is specified correctly.

DICT-006 Nested level too deep

Cause: Only five levels of dictionary elements can be nested.

Remedy: Fix the dictionary text file to include fewer nested levels.

DICT-007 Dictionary not opened by task

Cause: The dictionary was never opened.

Remedy: Remove the close operation.

DICT-008 Dictionary element truncated

Cause: The dictionary element was truncated because the KAREL string array is not large enough to hold all the data.

Remedy: Increase either the size of the string or the number of strings in the array.

DICT-009 End of language list

Cause: The language list has completed.

Remedy: This is a notification. You do not have to do anything for this warning message.

DICT-010 End of dictionary list

Cause: The dictionary list has completed.

Remedy: This is a notification. You do not have to do anything for this warning message.

DICT-011 Dict opened by too many tasks

Cause: Only five dictionaries can be open by one task at one time.

Remedy: Load the dictionary to memory or close an unused dictionary.

DICT-012 Not enough memory to load dict

Cause: Not enough memory exists in TEMP pool on the controller. The dictionary was not loaded.

Remedy: This is a notification of insufficient memory resources on the controller. The hardware and software configurations need to be verified.

DICT-013 Cannot open dictionary file

Cause: The dictionary file does not exist on the specified device or in the specified directory.

Remedy: Select the proper device/directory and try again.

DICT-014 Expecting \$ in dictionary file

Cause: The dictionary text incorrectly specifies an element without a \$.

Remedy: Make sure all dictionary elements begin with \$.

DICT-015 Reserved word not recognized

Cause: A reserved word was not recognized in the dictionary text.

Remedy: Check for misspelling or look up the correct word in the KAREL Reference Manual.

DICT-016 Ending quote expected

Cause: The dictionary text incorrectly specifies an element without using quotes.

Remedy: Make sure all dictionary text is surrounded by double quotes. Use a backslash if you want an actual quote to appear in the text. For example, ¥"This is an example¥" will produce "This is an example".

DICT-017 Expecting element name or num

Cause: A reference to another element is expected.

Remedy: Use the element number to reference the element.

DICT-018 Invalid cursor position

Cause: The cursor position is specified incorrectly or the values are outside the limits.

Remedy: Make sure the cursor position is valid. For example, use @1,1 for the first row and col respectively.

DICT-019 ASCII character code expected

Cause: A series of digits are expected after the # to specify an ASCII character code.

Remedy: Remove the # or look up the ASCII character code in the KAREL Reference Manual.

DICT-020 Reserved word expected

Cause: An identifier is expected after the and to specify a reserved word.

Remedy: Remove the and or look up the reserved word in the KAREL Reference Manual.

DICT-021 Invalid character

Cause: An unexpected character was found in the dictionary text file.

Remedy: Make sure all dictionary text is correct.

DICT-022 Dict already opened by task

Cause: The dictionary is already open by the task.

Remedy: This is a notification. You do not have to do anything for this warning message.

DICT-023 Dict does not need to be opened

Cause: Dictionaries loaded to memory do not need to be opened.

Remedy: Do not try to open the dictionary file.

DICT-024 Cannot remove dictionary file

Cause: Dictionaries loaded to FROM cannot be removed or a dictionary cannot be removed if another task has it opened.

Remedy: Do not try to remove a dictionary loaded to FROM. Remove the dictionary from the same task which loaded it.

DICT-025 Invalid state - internal error

Cause: Illegitimate dictionary scan was executed.

Remedy: Make sure all dictionary text is correct.

DICT-028 Not enough memory to load dict

Cause: Not enough memory exists in TEMP pool on the controller. The dictionary was not loaded.

Remedy: This is a notification of insufficient memory resources on the controller. The hardware and software configurations need to be verified.

DICT-029 Help element not found

Cause: The help dictionary element was not found.

Remedy: Check the dictionary to be sure the help dictionary element was specified correctly. The help dictionary element must be specified with a question mark (?) followed by the element number.

DICT-030 Function key element not found

Cause: The function key dictionary element was not found.

Remedy: Check the dictionary to be sure the function key element was specified correctly. The function key element must be specified with a caret (^) followed by the element number.

DICT-031 %4s-%03d \$%8IX, no message found

Cause: The dictionary containing the error message could not be found.

Remedy: Refer to the System Reference Manual for the error message.

DICT-032 %4s-%03d, see posted error

Cause: The error message was posted to the error log.

Remedy: See error window or the Alarms menu for the error message.

DICT-040 Expecting element num after \$

Cause: The dictionary text incorrectly specifies an element number.

Remedy: Make sure all dictionary elements begin with \$ followed by the element number.

DICT-041 Expecting element name after ,

Cause: The dictionary text incorrectly specifies an element name.

Remedy: Make sure all dictionary elements are specified as, **element_name** after the add constant name.

DICT-042 Expecting add constant name

Cause: The dictionary text was specified incorrectly.

Remedy: Make sure all dictionary elements are specified as **+add_const_name** after the element number.

DICT-043 Element number out of sequence

Cause: The dictionary text was not specified in sequence.

Remedy: Make sure all dictionary elements are specified in sequential order.

DICT-044 Warning - large hole in ele seq

Cause: The dictionary text has a large gap between element numbers.

Remedy: Reduce the gap in the element sequence. Each missing element uses up five bytes of memory.

DICT-045 .LIT or .END mismatch

Cause: The dictionary text was specified incorrectly.

Remedy: Verify that each .LIT is matched with an .END.

DICT-046 Command already encountered

Cause: The dictionary text was specified incorrectly.

Remedy: Remove the extra command.

DICT-047 File extension required

Cause: The dictionary compressor expects a file extension.

Remedy: Use the .etx file extension for error text, the .utx file extension for uncompressed text, or the .ftx file extension for form text.

DICT-048 Invalid file extension

Cause: The dictionary compressor did not recognize the file extension.

Remedy: Use the .etx file extension for error text, the .utx file extension for uncompressed text, or the .ftx file extension for form text.

DICT-049 Expecting file name

Cause: The dictionary compressor expects a file name.

Remedy: Specify a file name after the command.

DICT-050 Expecting facility number

Cause: The dictionary compressor expects a facility number in the .KL command.

Remedy: Specify the facility number after the file name.

DICT-051 Symbol invalid for dictionary type

Cause: An invalid command was specified for this type of dictionary file.

Remedy: Check the command and if a form is used, verify the file extension is .ftx.

DICT-052 Expecting .ENDFORM symbol

Cause: The dictionary text was specified incorrectly.

Remedy: Verify that each .FORM is matched with an .ENDFORM.

DICT-053 Cannot open include file

Cause: The include file could not be created.

Remedy: Make sure a valid file name has been specified.

DICT-054 Form is being displayed

Cause: The form you are trying to compress is currently being displayed.

Remedy: Abort the KAREL program that is displaying the form.

DICT-055 %% not allowed in KANJI string

Cause: %% is not allowed in KANJI string.

Remedy: End the KANJI string with a single quote. Use double quotes around the format specifier and afterwards resume the KANJI string with single quotes.

DICT-058 NAVID is too long in FLX file

Cause: NAVID has more than 240 characters in FLX file.

DICT-059 FLX to UTX conversion failed

Cause: FLX file to UTX file conversion failed.

4.4.3 DJOG Alarm Code

DJOG-000 Unknown error (DJ00)

Cause: System internal error.

Remedy: Document the events that led to the error, and contact your FANUC representative.

DJOG-001 DJOG overtravel violation

Cause: DJOG overtravel.

Remedy: Release overtravel.

DJOG-002 Motion control prog aborted

Cause: Program abort during DJOG enable.

Remedy: Run the program.

DJOG-003 Manual brake enabled

Cause: manual brake enabled.

Remedy: Engage all the brakes and reset.

DJOG-004 TP enabled during DJOG

Cause: TP enabled during DJOG.

Remedy: Disable TP, RESET, resume Prog.

DJOG-005 Prog has MCTL of DJOG group

Cause: DJOG attempt on attached group.

Remedy: Disable DJOG, RESET, and resume.

DJOG-006 Robot not clear for DJOG

Cause: Robot not clear of DJOG cell.

Remedy: Move robot or disable DJOG.

DJOG-007 DJOG station fence open

Cause: Fence safety violation.

Remedy: Insert fence connector, RESET.

DJOG-008 DJOG axis limit

Cause: DJOG Axis limit reached.

Remedy: Reset limit value if required.

DJOG-009 Max group number exceeded

Cause: Max group number exceeded.

Remedy: Reduce number of DJOG groups.

DJOG-010 Max input number exceeded

Cause: Max input number exceeded.

Remedy: Reduce starting point number.

DJOG-011 Max output number exceeded

Cause: Max output number exceeded.

Remedy: Reduce starting point number.

DJOG-020 Unexpected DJOG packet

Cause: System internal error.

Remedy: Document the events that led to the error, and contact your FANUC representative.

DJOG-021 Bad data in DJOG packet

Cause: System internal error.

Remedy: Document the events that led to the error, and contact your FANUC representative.

DJOG-022 Uninitialized DJOG I/O

Cause: Uninitialized I/O.

Remedy: Inspect I/O and/or I/O setup.

DJOG-023 Uninitialized DJOG data

Cause: Uninitialized variable.

Remedy: Inspect DJOG vars.

DJOG-030 Motion control taken by prog

Cause: Program attempt to get MCTL.

Remedy: Abort program or disable DJOG.

DJOG-031 DJOG enabled

Cause: Run program while same group djog is enable.

Remedy: Disable DJOG.

4.4.4 DMDR Alarm Code

DMDR-001 Adjust mode canceled G:%d M:%d

Cause: This will be reported when adjusting mode is canceled and normal mode is selected.

Remedy: Calibration will be lost when this error is posted. Calibration is required to run the program after canceling adjusting mode.

DMDR-002 Master gets selected G:%d M:%d

Cause: This will be reported when a master axis is selected in adjusting mode.

Remedy: Set \$DUAL_DRIVE.\$ADJUST_SEL to 0 when you cancel adjusting mode. Calibration will be lost when this error is posted.

DMDR-003 Slave gets selected G:%d M:%d

Cause: This will be reported when a slave axis is selected in adjusting mode.

Remedy: Set \$DUAL_DRIVE.\$ADJUST_SEL to 0 when you cancel adjusting mode. Calibration will be lost when this error is posted.

DMDR-004 Wrong adjust number(G:%d M:%d)

Cause: This will be reported when a wrong number is selected in adjusting mode.

Remedy: Set \$DUAL_DRIVE.\$ADJUST_SEL to the valid number. Variable settings:

- 0: Both axes move coordinately.
- 1: A master axis only moves.
- 2: A slave axis only moves.

NOTE: Calibration will be lost when this error is posted.

DMDR-005 Large position gap (G:%d M:%d)

Cause: The position inconsistency between a master axis and a slave axis is too large. That is, \$DUAL_DRIVE.\$POS_GAP has exceeded \$DUAL_DRIVE.\$POS_GAPTOL.

Remedy: See if no mechanical problem exists. Or, tune up \$DUAL_DRIVE.\$POS_GAPTOL properly again. Calibration will be lost when this error is posted.

DMDR-006 Large command gap1 (G:%d M:%d)

Cause: Motion command inconsistency between a master axis and a slave axis is too large. That is, \$DUAL_DRIVE.\$CMD_GAP1 has exceeded \$DUAL_DRIVE.\$CMD_GAPTOL1.

Remedy: See that no mechanical problem exists. Or tune up \$DUAL_DRIVE.\$CMD_GAPTOL1 properly again.

DMDR-008 Large command gap3 (G:%d M:%d)

Cause: The motion command inconsistency between a master axis and a slave axis is too large. That is, \$DUAL_DRIVE.\$CMD_GAP3 has exceeded \$DUAL_DRIVE.\$CMD_GAPTOL3.

Remedy: See that no mechanical problem exists. Or, tune up \$DUAL_DRIVE.\$CMD_GAPTOL3 properly again.

DMDR-009 Large synch error (G:%d M:%d)

Cause: The servo error inconsistency between a master axis and a slave axis is too large. That is, \$DUAL_DRIVE.\$SYNC_ER has exceeded \$DUAL_DRIVE.\$SYNC_ER_TOL.

Remedy: See that no mechanical problem exists. Or, tune synchronous compensation parameters again. Calibration will be lost when this error is posted.

DMDR-010 Invalid dual axis config(G:%d)

Cause: Dual axis configuration is invalid.

Remedy: Check \$DUAL_DRIVE.\$M_AXIS_NUM and \$DUAL_DRIVE.\$S_AXIS_NUM.

DMDR-021 Selected adjust mode G:%d M:%d

Cause: This will be reported when you perform calibration under adjusting mode.

Remedy: Cancel adjusting mode first when you perform calibration. Calibration will be lost when this error is posted.

DMDR-031 Fail to get memory area

Cause: There is insufficient memory (DRAM) to allocate memory for the Dual-Drive option.

Remedy: Check the amount of memory (DRAM) being used by the system. Replace the CPU card to the one that has a larger memory size if necessary.

4.4.5 DMER Alarm Code

DMER-010 (%s^4, %d^5)Uninitialized data

Cause: Internal data does not exist at execution of Sample Start/End.

Remedy: Check the available size of permanent memory. Perform controlled start.

DMER-011 (%s^4, %d^5)Already sampling

Cause: A Sample Start instruction has already been executed.

Remedy: Remove the duplicate Sample Start instruction.

DMER-012 (%s^4, %d^5)Other task sampling

Cause: Sampling has already been started by another task.

Remedy: Sample with one task at a time when using multiple tasks.

DMER-013 Invalid item number

Cause: The executing Data Monitor schedule specifies an invalid item number.

Remedy: Edit the Data Monitor schedule specified in the program. Correct all monitored items which do not have item numbers in the range of 1 to \$DMONCFG.\$NUM_DM_ITMS.

DMER-014 Unsupported item type

Cause: The item type is not supported for sampling.

Remedy: Change the item type.

DMER-015 Invalid schedule number

Cause: The sampling schedule references an invalid item number.

Remedy: Change the item number in the sampling schedule.

DMER-016 Invalid register type

Cause: The register n referenced by the Sample Start[R[n]] instruction is not a valid type.

Remedy: Change the register type in the DATA screen.

DMER-017 Warn Limit item (%d)

Cause: The Data Monitor functions is checking this item. The item is past the warning limit.

Remedy: Examine the system for problems.

DMER-018 Pause Limit item (%d)

Cause: The Data Monitor function is checking this item. The item is past the pause limit.

Remedy: Examine the system for problems.

DMER-019 Data cannot be saved

Cause: Data Monitor cannot save data to the specified device.

Remedy: Check the if the device listed in the schedule is available.

DMER-020 Record buffer limit

Cause: The Data Monitor record buffer became full.

Remedy: Decrease the record frequency or increase the record buffer size and cold start.

DMER-021 Not enough device memory free

Cause: The device specified in the Data Monitor schedule does not have enough file space available.

Remedy: Use a memory card or floppy disk with more memory available or specify a smaller file_size in the Data Monitor schedule.

DMER-022 Invalid file size

Cause: The file size specified in the Data Monitor schedule is invalid. This error is reported if the file size specified is negative or larger than the media you are using.

Remedy: Make sure the file size specified in the Data Monitor schedule is not negative and is less than the size of the media you are using. If you specify the file_size to be zero, Data Monitor only checks that there is at least one free block available.

DMER-023 File is incomplete

Cause: The data file created on the specified device does not contain a complete record of the sampling session from Sample Start to Sample End. This is most likely due to insufficient memory on the specified device.

Remedy: Increase the amount of available memory on the device. Delete old data files if necessary. Reduce the recording rate specified in the schedule. Reduce the time between the Sample Start and Sample End.

DMER-024 Data is not saved

Cause: Data Monitor is not saving data to the specified device.

Remedy: Verify the device listed in the schedule is available.

DMER-025 Data item type mismatch

Cause: The type specified for a Data Monitor item does not match the type of the variable being monitored.

Remedy: Correct the item type in the Data Monitor screen, and retry the operation.

DMER-026 Not enough memory for pipe

Cause: There is not enough memory to allocate the size of the requested pipe.

Remedy: Select a smaller size for the pipe, or select a different device.

DMER-027 Failed to write to pipe

Cause: Data Monitor was not able to write data to the pipe.

Remedy: Reallocate the pipe by changing the pipe size or device using the system variables \$DMONCFG.\$PIP_SIZE and \$DMONCFG.\$PIP_DEV_TYP.

DMER-031 DAQ task not available

Cause: Data Acquisition task is not active on the system.

Remedy: Make sure the Data Acquisition option has been loaded. Contact your local FANUC representative for assistance.

DMER-032 DAQ system failed

Cause: The Data Acquisition system has encountered a critical failure.

Remedy: Contact your local FANUC representative for assistance.

DMER-033 DAQ initialization failed

Cause: The Data Acquisition system failed to initialize properly.

Remedy: Contact your local FANUC representative for assistance.

DMER-034 Pipe tag invalid

Cause: The tag used for referencing a Data Acquisition pipe is invalid.

Remedy: Check the value of the tag to make sure it falls within the proper limits.

DMER-035 Pipe already registered

Cause: The Data Acquisition pipe you are attempting to register has already been registered in the system.

Remedy: Unregister the pipe and attempt the operation again.

DMER-036 Pipe not registered

Cause: The Data Acquisition pipe you are attempting to use has not been registered.

Remedy: DAQ pipes must be registered by a controller task before they can be used.

DMER-037 Pipe already active

Cause: You are attempting to activate a Data Acquisition pipe which is already active.

Remedy: Deactivate the pipe first.

DMER-038 Cannot allocate global FD

Cause: No global files are available to be used by the Data Acquisition system.

Remedy: Close a global file before re-attempting this operation.

DMER-039 Pipe %d could not be activated

Cause: The pipe you have attempted to use could not be activated for some reason.

Remedy: Check all parameters of the activation call.

DMER-040 Pipe not active

Cause: The pipe you are attempting to access has not been activated.

Remedy: Activate the pipe before attempting this operation.

DMER-041 DAQ ran out of memory

Cause: The Data Acquisition system has run out of memory.

Remedy: Remove programs to free controller memory, then re-attempt the operation.

DMER-042 Invalid DAQ output device

Cause: You have specified an invalid output device.

Remedy: Check the device parameter you have specified.

DMER-043 DAQ output mode mismatch

Cause: The output operation you are attempting cannot be performed using the current output device.

Remedy: Check the parameters of your output operation.

DMER-044 DAQ output file not defined

Cause: No output file has been defined for the requested operation.

Remedy: Define an output file for the pipe, then re-attempt the operation.

DMER-045 DAQ monitor not found

Cause: The specified Data Acquisition monitor could not be located.

Remedy: Correct your monitor parameter for the requested operation.

DMER-046 DAQ monitor already exists

Cause: You are attempting to add a Data Acquisition monitor which already exists.

Remedy: Use the existing monitor, or remove the existing monitor before proceeding.

DMER-047 No client tags available

Cause: No client device tags are available for use.

Remedy: Deallocate one or more client tags before proceeding.

DMER-048 Client tag not used

Cause: The specified client tag is not being used.

Remedy: Check the client tag parameter to make sure the correct tag is specified.

DMER-049 DAQ data size mismatch

Cause: A mismatch has been detected between the specified data size and the data size for the pipe.

Remedy: Check the specified data size.

DMER-050 DAQ: Bad parameter

Cause: A bad parameter has been detected in the routine call.

Remedy: Check all parameter values before making the routine call.

DMER-051 DAQ: monitors still active

Cause: Monitors are still active when you attempted the current operation.

Remedy: Remove monitors from the pipe before attempting the operation.

DMER-052 DAQ: Bad parameter: mem type

Cause: The memory type parameter is invalid.

Remedy: Specify a valid memory type.

DMER-053 DAQ: Bad parameter: pipe size

Cause: The pipe size parameter is invalid.

Remedy: Specify a valid pipe size.

DMER-054 DAQ: Bad parameter: prog name

Cause: The program name parameter is invalid.

Remedy: Specify a valid program name.

DMER-055 DAQ: Bad parameter: var name

Cause: The variable name parameter is invalid.

Remedy: Specify a valid variable name.

DMER-056 DAQ: Bad param: output mode

Cause: The output mode parameter is invalid.

Remedy: Specify a valid output mode.

DMER-057 DAQ task ID mismatch

Cause: The specified task ID does not match the task ID used to register the pipe.

Remedy: Unregister the pipe only from the task in which the pipe was registered.

DMER-058 Invalid DAQ pipe name

Cause: The specified pipe name is invalid.

Remedy: Check the name of the pipe for a null string or invalid characters.

DMER-100 Buffer index error(Item:%d)

Cause: \$DMONBUF specified by \$DMONITEM.\$BFFV_INDEX does not exist.

Remedy: Set the index properly, and retry the operation.

DMER-101 [%s]%s doesn't exist

Cause: A KAREL variable has been specified that does not exist.

Remedy: Confirm whether the variable name is correct. Confirm if specified program is loaded. Then, retry the operation.

DMER-102 [%s]%s isn't array

Cause: The KAREL variable for the data output must be an array.

Remedy: Use an ARRAY variable.

DMER-103 [%s]%s is array

Cause: The KAREL variable to store the number of record must not be an array.

Remedy: Use a variable that is not an array.

DMER-104 [%s]%s is full

Cause: The KAREL variable for data output is used up.

Remedy: Change the setup for the array to accommodate all records. Or increase the number of elements of the array.

DMER-105 [%s]%s is full

Cause: The KAREL variable for data output is used up.

Remedy: Change setup for the array to accommodate all records. Or increase the number of elements of the array.

DMER-106 [%s]%s is multiple dimension array

Cause: The KAREL variable for data output must be a single dimension array.

Remedy: Use a single dimension array.

DMER-107 Invalid axis number

Cause: The Data Monitor item to be sampled specifies an invalid axis number.

Remedy: Edit the Data Monitor Item to be sampled to specify the correct axis number and group number. The present axis should be specified.

4.4.6 DNET Alarm Code

DNET-001 No system device file

Cause: The system device definition file is missing from the system.

Remedy: Document the events that led to the error and call your local FANUC representative.

DNET-002 No application device file

Cause: The application device definition file is missing from the system.

Remedy: Document the events that led to the error and call your local FANUC representative.

DNET-003 Too many DNet motherboards

Cause: There are too many DeviceNet motherboards connected to the robot controller.

Remedy: Turn off controller power. Disconnect one of the DeviceNet motherboards. Re-connect any DeviceNet cables to the other DeviceNet motherboard. Power on your controller.

DNET-004 Board init failed: Bd %d

Cause: The specified board has failed to initialize.

Remedy: Make sure the board parameters are correct. Make sure the board is properly connected to the network and power is supplied.

DNET-005 User dev def Err, line:%d

Cause: The text based device definition is invalid. It is missing one of the required fields or the values specified are invalid.

Remedy: Correct the text based device definition and then use it. Refer to the header in MD:dndef.dg for more information regarding validity and required fields.

DNET-006 System error: %d

Cause: A system error has occurred.

Remedy: Document the events that led to the error and call your local FANUC representative.

DNET-007 Invalid device definition

Cause: Invalid Entry in MD:DNDEF.DG.

Remedy: Please check syntax in MD:DNDEF.DG.

DNET-008 Invalid board index

Cause: An invalid board index has been specified.

Remedy: Specify a board index between 0 and 3.

DNET-009 Invalid MAC Id: Bd %d MAC %d

Cause: An invalid MAC Id has been specified.

Remedy: Specify a MAC Id between 0 and 63 inclusive.

DNET-010 Board already online

Cause: The specified board is already on-line.

Remedy: Take the board off-line before attempting the operation.

DNET-011 Board not online

Cause: The specified board is not on-line.

Remedy: Put the board on-line before attempting the operation.

DNET-012 Device already online

Cause: The specified device is already on-line.

Remedy: Take the device off-line before attempting the operation.

DNET-013 Device not online

Cause: The specified device is not on-line.

Remedy: Put the device on-line before attempting the operation.

DNET-014 Request timed out

Cause: The attempted DeviceNet command request has timed out.

Remedy: Check all network connections. If all connections appear to be in order, re-attempt the command.

DNET-015 Board not initialized

Cause: The specified board has not been initialized.

Remedy: Initialize the board by attempting to put it on-line, and then cycle power. Then, re-attempt the operation.

DNET-016 System failed

Cause: The DeviceNet Interface system has failed.

Remedy: Document the events that led to the error and call your local FANUC representative.

DNET-017 Board not found

Cause: The specified board was not found in the system.

Remedy: Make sure the daughter boards are properly configured and properly seated on the motherboard.

DNET-019 Code file open failed

Cause: The code file required to initialize the board cannot be accessed.

Remedy: Cold start the system. If the problem persists, call your local FANUC representative.

DNET-020 Code file read failed

Cause: The code file required to initialize the board cannot be read.

Remedy: Cold start the system. If the problem persists, call your local FANUC representative.

DNET-021 Code file checksum error

Cause: There is a problem with the DeviceNet scanner code file.

Remedy: Cold start the system. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-022 Board initialization timeout

Cause: The board initialization routine has timed out.

Remedy: Turn the controller off. Make sure the motherboard is correctly seated on the back plane. Cold start the controller. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-023 Board initialization error

Cause: An error has occurred in the board initialization process.

Remedy: Cycle power to the controller. If the problem persists, turn the controller off and check the motherboard connection to the back plane. Cold start the controller. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-025 No device assigned for Bd/MAC

Cause: A data mismatch has occurred such that the system cannot find a device assigned for the specified board number and MAC Id.

Remedy: Turn the controller off and cold start the controller. If the problem persists, delete the board from the Board List screen, reconfigure the board, and re-add devices to the Device List. Cycle power. Also, check the device MAC Id configurations.

DNET-026 No match on dev type look-up

Cause: The system cannot find the specified device type in its list of defined device types.

Remedy: Check the selected device type on the Device List. Next, check the Defined Device List and the Standard Device Definition List for the required device type. If it does not appear, go to the Defined Device List and add the required device definition, then select it on the Device List screen. When you have finished, turn off then turn on the controller.

DNET-027 Dev online err: Bd %d MAC %d

Cause: The device at the specified board number and MAC Id cannot be brought on-line.

Remedy: Make sure the device is properly connected to the network. Check the device's MAC Id and baud rate configuration. Check the board's baud rate configuration on the Board Detail screen. Check the board's network connection. Cold Start the controller.

DNET-028 Board online err: Bd %d

Cause: The specified board cannot be brought on-line.

Remedy: Make sure the board is properly connected to the network. Check that network power is being supplied. Check that baud rates for the board and devices are in agreement. Cold Start the controller.

DNET-030 Std dev file fmt err: Line %d

Cause: There is an error in the format of the specified device definition file, on the specified line.

Remedy: Contact your local FANUC representative to obtain a correct device definition file.

DNET-031 App dev file fmt err: Line %d

Cause: There is an error in the format of the specified device definition file, on the specified line.

Remedy: Contact your local FANUC representative to obtain a correct device definition file.

DNET-033 Unknown keyword

Cause: An unknown keyword has been found in the device definition files.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-034 Cycle power to bring online

Cause: The user must turn power off and on to the controller to bring online a newly-added device to a board's device list.

Remedy: Cycle power to the controller. You will then be able to bring the device online.

DNET-035 Bad format or out of range

Cause: An integer value in the device definition files is incorrect.

Remedy: Document the events that led to the error, and contact your local FANUC representative to obtain the correct device definition files.

DNET-036 I/O size/type not specified

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-037 No PDTCODE line

Cause: The specified line was not found in a device definition file.

Remedy: Document the events that led to the error and contact your local FANUC representative to obtain the correct device definition files.

DNET-038 No MODULE lines with MULTIMOD

Cause: The specified lines were not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-039 Too many MODULE lines

Cause: The specified lines were incorrect in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-040 MODULE specified w/o MULTIMOD

Cause: A definition was incorrect in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-041 Required field missing

Cause: A definition was incorrect in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-042 DEVTYPE line absent/invalid

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-043 VENDORID line absent/invalid

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-044 PRODCODE line absent/invalid

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-045 No I/O mode line supplied

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-046 No PDTCODE line supplied

Cause: The specified line was not found in a device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-047 DeviceNet motherboard not found

Cause: The DeviceNet motherboard is not plugged into the back plane.

Remedy: Turn off the controller and make sure the motherboard is properly seated into the back plane of the controller. Cold start the controller.

DNET-048 Multiple DEFAULT modes; ignored

Cause: The device definition file has too many I/O access modes designated as DEFAULT. Only one mode should be designated as DEFAULT.

Remedy: Remove the DEFAULT designation from all I/O access modes except one.

DNET-049 Device Name not found

Cause: Text based device definition does not have the device name for the device.

Remedy: Supply a device name along with the device definition and then use the text based device definition. The device name is required and is the primary identification for that definition.

DNET-050 Board or network warning: Bd %d

Cause: A problem has occurred with the specified daughter board or the DeviceNet network connected to it. The problem is not severe enough to disrupt communications, but should be addressed as soon as possible.

Remedy: Refer to the next DNET alarm posted in the alarm log for specific alarm recovery information.

DNET-051 Netwk comm errors: Bus warning

Cause: The DeviceNet scanner has detected an abnormal number of communications errors on the network. This message is a warning that the scanner may go offline if errors continue to occur at an abnormal rate.

Remedy: Check your network topology to ensure conformance with DeviceNet standards. Check that your network terminators are in place and properly connected. Check that your network power supply is able to handle all of the devices on the network. Ensure that you are using properly shielded cables and connectors.

DNET-052 Data line too long

Cause: The specified line was incorrect in the device definition file.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-053 Line above DEVICE line ignored

Cause: An extraneous line was found in a device definition file.

Remedy: Check the Standard Device Definition List to see if device types have been properly loaded. If not, contact your local FANUC representative to obtain the correct device definition files.

DNET-054 All space in shared RAM used

Cause: There is no space left in the DeviceNet I/O buffer.

Remedy: Contact your local FANUC representative to report the problem. Provide all details of the DeviceNet network, including number and type of devices, baud rates, MAC Ids, and network wiring configuration.

DNET-055 Board or network error: Bd %d

Cause: An error has occurred with the specified daughter board or the DeviceNet network connected to it.

Remedy: Refer to the Cause and Remedy of the cause code (displayed immediately below this error code on the teach pendant).

DNET-056 Network power lost

Cause: Power has been removed from the DeviceNet network.

Remedy: Check the cable connecting the daughter board to the DeviceNet network. Also, check the connection to the power source. Cycle power to the controller.

DNET-057 Network communications error

Cause: A network communications error has occurred on the network connected to the specified board.

Remedy: Check that the board's baud rate corresponds to that of the devices. Check cable connections to both the board and devices. Check that the proper device definitions are selected for the devices on the network and that parameters are correct for user-defined devices. Turn off both the controller and the DeviceNet network power, then cold start the controller.

DNET-058 Message queue overrun

Cause: The board has received more messages than it can handle at one time.

Remedy: The problem may be momentary; attempt to bring the board on-line again. If the problem persists, check that the board baud rate corresponds to the baud rate of the devices. Turn off then turn on the controller.

DNET-059 Message lost

Cause: The board has missed a message over the DeviceNet network.

Remedy: The problem might be momentary; attempt to bring the board on-line again. If the problem persists, check that the board baud rate corresponds to the baud rate of the devices. Turn off then turn on power to the controller.

DNET-060 Xmit timeout: Network flooded

Cause: The traffic on the DeviceNet network is too heavy for the board to communicate with the devices.

Remedy: Check that the board baud rate agrees with the baud rate of the devices. If no baud rate problem exists, turn off both the controller and the DeviceNet network power, then turn on both. Don't disconnect all other nodes from DeviceNet network.

DNET-061 No other nodes on network

Cause: All of the devices expected by the board to be on the network appear to be disconnected to the network.

Remedy: Check cable connections to the board and to the devices. If a device has been disconnected, reconnect and press RESET on the teach pendant. Check that the board baud rate is the same as baud rate of the devices.

DNET-062 Bus off due to comm errors

Cause: The board is not communicating to the network because there are too many errors.

Remedy: Check that the baud rate of the board and of the devices is the same. Make sure that power is connected to the DeviceNet network. Press RESET on the teach pendant. If the problem persists, begin removing devices from the network; after each device is removed, press RESET. When the board is brought on-line, check the device configuration and the parameters of the device definition.

DNET-063 Device error: Bd %d MAC %d

Cause: An error has occurred with the device at the specified board number and MAC Id.

Remedy: Refer to the Cause and Remedy for the cause code (displayed directly beneath this error code on the teach pendant).

DNET-064 Connection error

Cause: An error has occurred when attempting connection to the specified device.

Remedy: Check that the baud rate of the device agrees with the board baud rate. Check that the device is properly connected to the network; make sure the device is receiving power from the network. Inspect the device definition to see that the I/O type, access mode, and size of I/O are correct. Press RESET on the teach pendant to re-attempt connection.

DNET-065 Incorrect vendor Id

Cause: The vendor Id for the device, as specified in the device definition, is incorrect.

Remedy: Delete the device from the Device List. Check the device documentation for the correct vendor Id. Make corrections in the device definition and add the device to the Device List.

DNET-066 Incorrect product code

Cause: The product code for the device, as specified in the device definition, is incorrect.

Remedy: Delete the device from the Device List. Check the device documentation for the correct product code. Make corrections in the device definition and add the device to the Device List.

DNET-067 Incorrect device type

Cause: The device type for the device, as specified in the device definition, is incorrect.

Remedy: Delete the device from the Device List. Check the device documentation for the correct device type. Make corrections in the device definition and add the device to the Device List.

DNET-068 Device timeout

Cause: The connection to the specified device has timed out.

Remedy: Check the device's connection to the network. Make sure the device baud rate agrees with the board baud rate. Attempt to bring the device on-line by pressing RESET on the teach pendant.

DNET-069 Unknown error code %d

Cause: An unknown error has occurred with the specified device.

Remedy: Document the events that led to the error and call your local FANUC representative. Make sure the error code number is noted and reported.

DNET-070 Connection allocation error

Cause: An error has occurred when attempting connection to the specified device.

Remedy: Check that the baud rate of the device agrees with the board baud rate. Check that the device is properly connected to the network; make sure the device is receiving power from the network. Inspect the device definition to see that the I/O type, access mode, and size of I/O are correct. Press RESET on the teach pendant to re-attempt connection.

DNET-071 Dup dbrd: Bd:%d Mbd:%s

Cause: You have two or more DeviceNet daughter boards with the same board number configuration.

Remedy: Re-configure the DIP switches on your daughter boards so that you no longer have duplicates. DIP switch configuration information is found in the FANUC DeviceNet Operator's Manual.

DNET-072 Found dupl. DNet daughterboard

Cause: This cause code is posted together with DNET-071 above to allow the user to easily identify the duplicate daughter board. Please see the Cause text for DNET-071 for more information.

Remedy: Please see the Remedy text for DNET-071 to fix this problem.

DNET-073 No match on mod type look-up

Cause: The system could not find the module type corresponding to a module on the specified device.

Remedy: View the module list for the device and delete or change the module in question. If this module was previously functional, cold start the controller and attempt to use this module type again. If the problem persists, call your local FANUC representative.

DNET-074 Load only at ctrl start

Cause: An I/O configuration file (.IO file) containing DeviceNet configuration data was loaded at COLD START. The DeviceNet configuration data in this file is ignored.

Remedy: Reload the .IO file at controlled start.

DNET-076 \$DN_DEV_DEFS array is full

Cause: There is no more room in the Defined Device List system variable.

Remedy: Delete any unneeded device definitions from the Defined Device List before adding a new one.

DNET-077 DNet I/O inactive at CTRL start

Cause: At controlled start, I/O data assigned to DeviceNet devices is not active.

Remedy: This message is for informational purposes only. To make DeviceNet I/O active, COLD start the controller.

DNET-078 No room for more devices

Cause: The system variable for storage of devices is full.

Remedy: If there are devices which are off-line, delete these devices unless they are required to be kept on the Device List. After entries in the device list are freed, new devices can be added.

DNET-079 Unknown dev type: Bd %d MAC %d

Cause: The device type used by this device is currently unknown to the system.

Remedy: This error occurs during the I/O restore. Cold start the controller, add a new device definition corresponding to the specified device, then add the device to the device list.

DNET-080 Loaded config too large

Cause: The previous I/O configuration contains too many modules, devices, or device definitions to be loaded.

Remedy: Make sure you have the same memory configuration as the system on which the I/O configuration was saved.

DNET-082 Press RESET to reconnect

Cause: This message appears when a board automatically restarts communication with a DeviceNet network, but some or all devices are not designated as auto reconnecting. Pressing RESET will attempt reconnection with these devices.

Remedy: Pressing RESET will attempt reconnection with the non-communicating devices and clear this message.

DNET-083 Board %d auto-restarted

Cause: A board which was previously in error state has automatically restarted communications with the DeviceNet network.

Remedy: This message is intended for user notification only and does not indicate the presence of an error situation.

DNET-084 Board reset failed: Bd %d

Cause: The command to reset the specified board has failed.

Remedy: Refer to the Cause and Remedy for the cause code (displayed directly beneath this error code on the teach pendant).

DNET-085 Dev reset failed: Bd %d MAC %d

Cause: The command to reset the specified device has failed.

Remedy: Refer to the Cause and Remedy for the cause code (displayed directly beneath this error code on the teach pendant).

DNET-086 Stop scan cmd failed: Bd %d

Cause: The specified board is unable to acknowledge the stop-scanning command.

Remedy: Check DeviceNet connection to the board, as well as DeviceNet power to the network. If board is already in ERROR state, this error can be disregarded.

DNET-087 Bd offline cmd failed: Bd %d

Cause: The board is not acknowledging the command to take it off-line.

Remedy: Check DeviceNet connection to the board, as well as DeviceNet power to the network. If the board is already in the ERROR state, this error can be disregarded.

DNET-088 Ignored: Bd %d MAC %d Slot %d

Cause: The system does not recognize the module type of the module being loaded.

Remedy: Make sure the device definition data files are the same between the current system being loaded and the system on which the I/O configuration was saved. Contact your local FANUC representative for the correct definition files.

DNET-089 Can't specify POLL and STROBE

Cause: The data file contains lines which specify both POLL access and STROBE access for the same device.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-090 Can't STROBE w/ num outs > 0

Cause: The device definition file specifies a strobed-access device but the number of outputs is not equal to zero.

Remedy: Contact your local FANUC representative to obtain the correct device definition files.

DNET-091 Input size error

Cause: The number of inputs specified in the device definition for this device does not match the number expected by the scanner when it communicates with the device.

Remedy: Delete the device, correct the device definition, then re-add the device to the device list.

DNET-092 Output size error

Cause: The number of outputs specified in the device definition for this device does not match the number expected by the scanner when it communicates with the device.

Remedy: Delete the device, correct the device definition, then re-add the device to the device list.

DNET-093 Error reading vendor ID

Cause: The scanner board encountered an error while trying to read the device's vendor ID.

Remedy: Check that the device baud rate matches the board baud rate. Check also the device's connection to the network.

DNET-094 Error reading device type

Cause: The scanner board encountered an error while trying to read the device's device type.

Remedy: Check that the device baud rate matches the board baud rate. Check also the device's connection to the network.

DNET-095 Error reading product code

Cause: The scanner board encountered an error while trying to read the device's product code.

Remedy: Check that the device baud rate matches the board baud rate. Check also the device's connection to the network.

DNET-096 Error setting packet rate

Cause: The scanner board encountered an error while trying to set the communication packet rate for this device.

Remedy: Check that the device baud rate matches the board baud rate. Check also the device's connection to the network. Reset the device if possible.

DNET-097 Connection sync fault

Cause: The board was unable to achieve synchronization in the connection with the specified device.

Remedy: Check that the device baud rate matches the board baud rate. Check also the device's connection to the network. Reset the device if possible.

DNET-098 BROWSE failed

Cause: The BROWSE operation failed.

Remedy: Check that the board status is ONLINE. Check that the board is not the only node.

DNET-100 NULL cmd error ret'd by board

Cause: The board returned an error response to the command.

Remedy: This is a system error. Document the events that led to the error and call your local FANUC representative.

DNET-101 CMD cmd error ret'd by board

Cause: The board returned an error response to the command.

Remedy: This is a system error. Document the events that led to the error and call your local FANUC representative.

DNET-102 Invalid board MAC Id

Cause: The board's MAC Id is not between 0 and 63.

Remedy: Check the Board Detail screen to see if the board's MAC Id is between 0 - 63, inclusive. If it is not, change the MAC Id to a valid value and press RESET on the teach pendant. If the MAC Id appears valid, cold start the controller. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-103 Invalid board baud rate

Cause: The board's baud rate is not one of: 125 KB, 250 KB, or 500 KB.

Remedy: Check the Board Detail screen to see if the board's baud rate is one of the above values. If it is not, change the baud rate to a valid value and press RESET on the teach pendant. If the baud rate appears valid, cold start the controller. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-104 Duplicate MAC Id error

Cause: The specified device has the same MAC Id as another device on the network.

Remedy: Check that no other devices have the same MAC Id, particularly those connected to a different master on the same network. Change the MAC Id of the offending device at both the device and on the Device List, and attempt to bring it on-line. If the problem persists, cold start the controller and try again. If the problem continues, document the events that led to the error and call your local FANUC representative.

DNET-105 Duplicate device error

Cause: There was an attempt to add a device to the board's device list that was a duplicate of a device already on the list.

Remedy: If the desired device is already on the network and a second one is not being added, you may ignore the error. Otherwise, change the MAC Id of one of the duplicate devices.

DNET-106 Device not found error

Cause: A device expected to be on the network was not found.

Remedy: Check that the device is connected to the network. Check that the device baud rate matches the board baud rate. Reset the device if possible. Cycle power to the controller. If the problem persists, document the events that led to the error and call your local FANUC representative.

DNET-107 Bus offline error

Cause: The board could not perform an operation because the bus was off-line.

Remedy: Press RESET on the teach pendant to attempt to bring the board on-line. If the problem persists, cycle power to the controller. If the problem continues to persist, cycle power to the DeviceNet network.

DNET-108 Scanner active error

Cause: The board could not perform an operation because the it is actively scanning the network.

Remedy: Take the board off-line and re-attempt the operation.

DNET-109 Bus not offline error

Cause: The board could not perform an operation because the bus is not off-line.

Remedy: Take the board off-line and re-attempt the operation.

DNET-110 Error: board scanning

Cause: The board could not perform an operation because it is actively scanning the network.

Remedy: Take the board off-line and re-attempt the operation.

DNET-111 Error: board not scanning

Cause: The board could not perform an operation because it is not actively scanning the network.

Remedy: Bring the board on-line and re-attempt the operation.

DNET-112 Board not ready; pls. wait

Cause: An attempt to bring the board on-line was unsuccessful because the board was busy.

Remedy: Wait ten seconds and re-attempt to bring the board on-line. If the problem persists, check board connection to the network, baud rate, and network power.

DNET-114 Bus fault error detected

Cause: The board has detected a fault on the DeviceNet network, and cannot communicate with devices.

Remedy: Check that the baud rate of the board matches the baud rate of all devices on the network. Also, check that power is being supplied to the network. If the problem persists, cycle power to the controller, and then to the network if the problem continues.

DNET-115 Invalid I/O connection attempt

Cause: A device does not support the requested I/O connection(s), and cannot communicate with devices.

Remedy: Check the device documentation to ensure that the requested I/O connection is supported.

DNET-119 Dup. MAC Ack Fault

Cause: This is an Ack Fault. No acknowledge was received during the Duplicate MAC ID sequence.

Remedy: Check whether the interface is not the only node on the network. Also check the baud rate of the interface and make sure it is the network baud rate. Finally, check the physical wiring of the network.

DNET-120 Dev online err: Bd %d MAC %d

Cause: The device at the specified board number and MAC Id cannot be brought on-line.

Remedy: Make sure the device is properly connected to the network. Check the device's MAC Id and baud rate configuration. Check the board's baud rate configuration on the Board Detail screen. Check the board's network connection. Cold Start the controller.

DNET-121 Device not ready: Bd %d MAC %d

Cause: When a device has been added to a scan list, it cannot be brought online without cycling power to the controller.

Remedy: Cycle power to the controller. You will then be able to bring the device online.

DNET-122 Device error: Bd %d MAC %d

Cause: An error has occurred with the device at the specified board number and MAC Id.

Remedy: Refer to the Cause and Remedy for the cause code (displayed directly beneath this error code on the teach pendant).

DNET-123 Dev reset failed: Bd %d MAC %d

Cause: The command to reset the specified device has failed.

Remedy: Refer to the Cause and Remedy for the cause code (displayed directly beneath this error code on the teach pendant).

DNET-124 Device not autorec: Bd %d MAC %d

Cause: This message appears when a board automatically restarts communication with a DeviceNet network, but some or all devices are not designated as auto reconnecting. Pressing RESET will attempt reconnection with these devices.

Remedy: Pressing RESET will attempt reconnection with the non-communicating devices and clear this message.

DNET-125 Slave Conn. Idle: Bd %d

Cause: The slave connection of the specified board is idle. The remote Master has not yet connected to the slave connection.

Remedy: Make sure the remote Master is online and configured properly.

DNET-130 Invalid parameter

Cause: An invalid parameter has been specified for a DeviceNet KAREL built-in.

Remedy: Refer to the cause code to determine which parameter is invalid.

DNET-131 Invalid board number

Cause: The specified board number is invalid.

Remedy: Make sure the board number is an integer between 1 and 4, inclusive.

DNET-132 Invalid MAC ID

Cause: The specified MAC ID is invalid.

Remedy: Make sure the MAC ID is an integer between 0 and 63, inclusive.

DNET-133 I/O Size mismatch

Cause: This indicates that there is a user device definition on the system that matches the one supplied using text-based definitions except for the I/O size. A match is indicated by name, vendor id, device type, product code and mode of operation.

Remedy: This error is for display only. No action is required.

DNET-134 Mode mismatch

Cause: The text-based device definition has matched with an existing user definition on the robot except for the mode of operation. A match is indicated by name, vendor id, device type and product code.

Remedy: This error is for display only. No action is required.

DNET-135 Analog size mismatch

Cause: There is a user definition on the system that matches one of the entries in the text-based user definition except the size of analog input/outputs. A match is indicated by name, vendor id, product code, device type and mode of operation.

Remedy: This is for display only. No action is required.

DNET-136 Name does not match

Cause: Please check MD:DNDEF.DG.

Remedy: Please check MD:DNDEF.DG.

DNET-137 Name and Analog do not match

Cause: The text-based device definition matches one that exists on the controller, except for the name and number of analog points. Any entry that has the same vendor id, product code, device type and mode of operation is considered a perfect match.

Remedy: This error is for display only. No action is required.

DNET-138 IDNS unsupported H/W, Bd %d

Cause: A DeviceNet channel has been configured for safety. A safety DeviceNet channel requires DN4 hardware. The detected hardware is not supported for a safety channel.

Remedy: Use DN4 DeviceNet hardware or disable safety on this channel. .

4.4.7 DPMO Alarm Code

DPMO-002 STOP Cyc Offset Limit Err

Cause: Excess offset limit in an interpolate cycle.

Remedy: Increase "Max offset/ITP" in the schedule screen.

DPMO-003 WARN Offset is ignored

Cause: Offset is required without robot moving process by delay process.

Remedy: Change the delay time. The above offset requirement is ignored

DPMO-004 WARN Offset is too late

Cause: Offset is required without robot moving process by delay process.

Remedy: Change the delay time. The above offset requirement is ignored

DPMO-005 STOP No Zero Dist motion

Cause: Offset is required in spite of the target robot group do not move.

Remedy: Please change the program to the robot moves.

DPMO-006 STOP NO Joint Motion

Cause: Offset is required to joint motion.

Remedy: Please change the motion type to linear motion.

DPMO-014 STOP Dest Offset Limit Error

Cause: Excess offset limit in a path

Remedy: Increase "Max offset/path" in the schedule screen.

DPMO-015 STOP Analog IN not set

Cause: The port number of Analog IN is not defined.

Remedy: Please change the schedule setting.

DPMO-016 STOP Group IN not set

Cause: The port number of Group IN is not defined.

Remedy: Please change the schedule setting.

DPMO-017 STOP Bump IN not set

Cause: The port number of Bump IN is not defined.

Remedy: Please change the schedule setting.

DPMO-018 STOP Analog IN not calibrated

Cause: The Conversion formula of Analog IN is not defined.

Remedy: Please change the slope/offset in the schedule setting.

DPMO-019 STOP Group IN not calibrated

Cause: The Conversion formula of Analog IN is not defined.

Remedy: Please change the Scale factor in the schedule setting.

DPMO-020 STOP Inline DPM is not set

Cause: Inline DPM instruction is required but inline DPM mode is disabled.

Remedy: Enable inline DPM mode or delete inline DPM instruction.

DPMO-027 STOP Mismatch DPM type

Cause: Inline DPM instruction is required but modal DPM mode is enabled or modal DPM is required but inline DPM mode is enabled

Remedy: Change the DPM type in the setting screen.

DPMO-028 STOP Buffer is too short

Cause: Buffer is too short.

Remedy: Increase buffer size.

4.4.8 DTBR Alarm Code

DTBR-001 STOP.L host name is null string

Cause: Host name or IP address is null string.

Remedy: Please check argument of standard program or built-in of Data transfer between robots function. If you use string register, please check its value.

DTBR-002 STOP.L RPC Call timed out

Cause: Communication with specified host took time and timeout happened.

Remedy: Please make sure network is working properly and stably.

PING should always work for specified remote host.

If there is heavy traffic, please reduce it.

Hardware problem like cable disconnection can cause this error. For cable connection, please refer to "Appendix D CABLE CONNECTION" of "FANUC Robot series "R-30iA/R-30iA Mate CONTROLLER Ethernet Function OPERATOR'S MANUAL" (B-82974EN/01).

If standard data transfer program or built-in of this function are used very often, please lessen frequency of use.

If standard data transfer program or built-in of this function is executed consecutively, there should be interval. If there is already interval, please lengthen it.

DTBR-003 STOP.G Connection failed

Cause: Ethernet connection to specified host failed.

Remedy: Please make sure network is working properly and stably. If there is heavy traffic, please reduce it. PING should always work for specified remote host.

DTBR-004 STOP.G Request to remote host failed

Cause: Request (read of register for example) could not be sent to specified host.

Remedy: Please refer to cause code.

DTBR-005 STOP.G Error from %s

Cause: Host of %s returned error.

Remedy: Please refer to cause code.

DTBR-014 STOP.L Bad variable or register index (%s)

Cause: Specified register or position register doesn't exist on specified host.

Remedy: Please check parameter. Please check valid range of index of specified host.

DTBR-015 STOP.L Illegal group number(%s)

Cause: Specified group doesn't exist on specified host.

Remedy: Please check parameter. Please check valid range of group number of specified host.

4.4.9 DX Alarm Code

DX-000 Unknown error (DX00)

Cause: System internal error.

Remedy: Notify FANUC.

DX-001 No global variables

Cause: The Delta Tool/Frame global variables have NOT been properly loaded.

Remedy: Check the application installation manual for the proper installation procedure for Delta Tool/Frame.

DX-002 Error allocating data memory

Cause: Delta Tool/Frame internal memory allocation failed.

Remedy: Check Memory usage and Delta Tool/Frame installation.

DX-003 No system variables

Cause: Delta Tool/Frame system variables (e.g. \$DXSCH[]) not found.

Remedy: Check the application installation manual for the proper installation procedure for the Delta Tool/Frame system.

DX-004 Illegal schedule number

Cause: Invalid Delta Tool/Frame schedule number.

Remedy: Check all schedule numbers used within the specified program to verify that they are within the allowable range specified for the \$DXSCH[] system variable.

DX-005 Schedule already enabled

Cause: Requested Delta Tool/Frame schedule number has already been enabled.

Remedy: Use END_OFFSET or abort program to disable schedule.

DX-006 Schedule not enabled

Cause: Try to disable a schedule which has not been enabled.

Remedy: Check to see if the requested schedule has been disabled before, or whether the requested schedule has not been enabled at all.

DX-007 Schedule not enabled

Cause: Try to apply offset to a schedule which has not been enabled.

Remedy: Check to see if the requested schedule has been disabled before, or whether the requested schedule has not been enabled at all.

DX-008 Internal error

Cause: Internal error: cannot find dxfindofs schedule.

Remedy: Notify FANUC.

DX-009 Internal error

Cause: Wrong packet was sent to INTP to signal completion of updating \$DXMOR deltatool or deltaframe offset.

Remedy: Notify FANUC.

DX-010 DeltaJ DeltaT/F incompatible

Cause: Attempt to enable deltajoint with deltatool and/or deltaframe in a schedule.

Remedy: Do not enable deltajoint with deltatool and/or deltaframe in a schedule.

DX-011 DeltaT DeltaF incompatible

Cause: Attempt to enable deltatool with deltaframe in a schedule.

Remedy: Do not enable deltatool with deltaframe in a schedule.

DX-012 Specified group already enabled

Cause: The specified motion group has been already enabled by DX function.

Remedy: Abort the enabled DX function before this start.

DX-013 Invalid robot link group tracking

Cause: Invalid motion group tracking for robot link function.

Remedy: Contact your local FANUC representative.

DX-014 Invalid offset orientation

Cause: The calculated offset orientation of this time is out of range specified by \$DXRLINK.\$sortmax.

Remedy: Decrease the speed of the Master robot or Check the noise on the Ethernet.

DX-015 Invalid offset distance

Cause: The calculated offset distance of this time is out of range specified by \$DXRLINK.\$locmax.

Remedy: Decrease the speed of the Master robot or Check the noise on the Ethernet.

DX-016 UT is changed

Cause: UT of master robot is changed.

Remedy: Don't change UT of master during robot link.

4.5 E

4.5.1 ELOG Alarm Code

ELOG-009 call a service man

Cause: A system error has occurred.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

ELOG-011 Power off, if you want to recover.

Cause: A system error has occurred.

Remedy: Perform a Cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

ELOG-012 A system error has been occurred.

Cause: A system error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

4.6 F

4.6.1 FFL Alarm Code

FFL-001 Internal error (%s)

Cause: Internal error is occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-002 Assist gas ready time out

Cause: Even after "Assist gas ready latency" time on Laser Setup screen, "Gas ready" signal didn't become ON.

Remedy: Please check assist gas and gas valve unit (sensor).

FFL-003 Las control stat OFF time out

Cause: Even after "Laser control OFF latency" time on Time Sharing Control screen, "Laser control st" signal didn't become OFF.

Remedy: Please check if Laser control OFF latency time is appropriate. Please set appropriate value as system.

FFL-004 Las control stat ON time out

Cause: Even after "Laser control ON latency" time on Time Sharing Control screen, "Laser control st" signal didn't become ON.

Remedy: Please check if Laser control ON latency time is appropriate. Please set appropriate value as system.

FFL-005 Shutter close time out

Cause: Even after "Shutter open/close latency" time on Time Sharing Control screen, "Shutter open st" signal didn't become OFF.

Remedy: Please check if Shutter open/close latency time is appropriate.

Beam switch unit may be broken down. Please refer to the manual of laser oscillator, and confirm the status of beam switch unit.

FFL-006 Shutter open time out

Cause: Even after "Shutter open/close latency" time on Time Sharing Control screen, "Shutter open st" signal didn't become ON.

Remedy: Please check if Shutter open/close latency time is appropriate.

Beam switch unit may be broken down. Please refer to the manual of laser oscillator, and confirm the status of beam switch unit.

FFL-007 Shutter status mismatch

Cause: Even after “Shutter open/close latency” time on Time Sharing Control screen, “Shutter open rq” signal and “Shutter open st” signal didn’t correspond.

Remedy: Please check if Shutter open/close latency time is appropriate.

Beam switch unit may be broken down. Please refer to the manual of laser oscillator, and confirm the status of beam switch unit.

FFL-008 Received laser alarm

Cause: Robot received the laser alarm from laser oscillator.

Remedy: Please confirm the co-occurring FFL-025 alarm, and take measures with reference to the manual of laser oscillator. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-009 Laser control status mismatch

Cause: “Laser control rq” signal was turned ON, but “Laser control st” signal didn’t become ON. Otherwise, “Laser control rq” signal was turned OFF, but “Laser control st” signal didn’t become OFF.

Remedy: Please check if laser oscillator is ready to provide the control of laser.

FFL-010 Stand-by status is OFF

Cause: During the processing, “Laser ready st” signal is ON, but “Stand-by st” signal become OFF.

Remedy: Laser oscillator may be broken down. Please take measures with reference to the manual of laser oscillator. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-011 No Beam ON

Cause: “Beam ON st” signal didn’t turn ON during processing. Otherwise, “Beam ON rq” signal was turned ON, but “Beam ON st” signal didn’t become ON.

Remedy: Please check if laser oscillator is ready to output beam.

FFL-012 Beam is NOT interlocked

Cause: “Interlock OFF rq” signal is OFF, but “Interlock OFF st” signal is ON.

Remedy: This is illegal case. Please check the laser oscillator. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-013 Guide light ON status mismatch

Cause: “Guide light ON rq” signal was turned ON, but even after constant time, “Guide light ON st” signal didn’t become ON.

Remedy: Please check the laser oscillator.

FFL-014 Command Type status mismatch

Cause: “Command type rq” signal was turned ON, but even after constant time, “Command type st” signal didn’t become ON.

Remedy: Please check the laser oscillator.

FFL-015 Stand-by status (%s)

Cause: “Stand-by st” signal was changed. (%s) shows the transition.

Remedy: This message is just for notification and information.

FFL-016 Laser ready status (%s)

Cause: “Laser ready st” signal was changed. (%s) shows the transition.

Remedy: This message is just for notification and information.

FFL-017 Beam interlocked

Cause: “Interlock OFF st” signal is changed from ON to OFF. It means that beam was interlocked.

Remedy: This message is just for notification and information.

FFL-018 Guide light ON status (%s)

Cause: “Guide light ON st” signal was changed. (%s) shows the transition.

Remedy: This message is just for notification and information.

FFL-019 Command type status (%s)

Cause: “Command type st” signal was changed. (%s) shows the transition.

Remedy: This message is just for notification and information.

FFL-020 Laser ready status mismatch

Cause: “Laser ready rq” signal was turned ON, but even after “Laser ready latency” time on Laser Setup screen, “Laser ready st” signal didn’t become ON.

Remedy: It takes a few second to become laser ready state from initial state. Please check if Laser ready latency is correct. Please check if “Stand-by st” signal is ON, and if “Stand-by st” signal is OFF, check the chiller or peripherals. There is a possibility that laser alarm is co-occurring. Please check if FFL-025 is occurring on active alarm log screen.

FFL-021 There is no (%s)

Cause: Slope control instruction was tried to be added to the motion instruction without LS, LE instruction.

Remedy: Slope control instructions can be added to the motion instructions with LS, LE instructions only.

FFL-022 Wire feed fault

Cause: Even after “Wire feed OK latency” time on Laser Setup screen, “Wire feed OK” signal didn’t become ON.

Remedy: Please confirm the wire feeder and wire shortage detector.

FFL-023 Present ITP_TIME is invalid

Cause: When this function is used, ITP time must be less than 16 msec. (Normally, ITP is less than 8 msec.)

Remedy: System should be re-examined in order to set ITP time less than 16 msec. You can confirm the temporary ITP by \$SCR.\$ITP_TIME of System variables.

FFL-024 Connection to CNC fails

Cause: The connection with CNC integrated in laser oscillator was lost.

Remedy: Please confirm that laser oscillator power is turn on.
Please check the hard-wiring between the robot and laser oscillator.
Please reconfigure the transmission setting on Laser Initialization screen.

FFL-025 %s

Cause: Robot received the laser alarm message from laser oscillator.

Remedy: Laser alarm received from laser oscillator is displayed at %s. The laser alarm consists of laser alarm number and laser alarm message. Please confirm the alarm number and laser alarm message, and take measures with reference to the manual of laser oscillator. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-026 Laser control status is OFF

Cause: Even though “Laser control st” signal is OFF, “Laser ready rq” signal, “Beam ON rq” signal, “Interlock OFF rq” signal, “Guide light ON rq” signal or “Command type rq” signal became ON.

Remedy: When “Laser control st” signal is OFF, status signals do not become ON by request signals’ ON.

FFL-027 %s is OFF

Cause: “Beam ON rq” signal was ON, but “Beam ON st” signal didn’t become ON.

Remedy: Because the status signal displayed at %s was OFF, “Beam ON st” signal didn’t become ON. The strings displayed at %s mean the followings.

Standby: "Stand-by st" signal

Beam interlock st: "Interlock OFF st" signal

FFL-028 Laser alarm is ON

Cause: Robot received the laser alarm from laser oscillator.

Remedy: Please confirm the co-occurring FFL-025 alarm, and take measures with reference to the manual of laser oscillator. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-029 Out of range(%s)

Cause: The specified parameter is outside the range.

Remedy: Please consult to the string displayed at %, and configure the suitable setting for the laser oscillator model on Laser Initialization screen.

FFL-030 Laser instruction error

Cause: The parameter of laser instruction is not correct.

Remedy: Please configure the suitable setting for the laser oscillator model on Laser Initialization screen.

FFL-031 Power control schedule error

Cause: The parameter of power control schedule is not correct.

Remedy: Please confirm the co-occurring FFL-025 alarm, and configure the suitable setting for the laser oscillator model on Laser Initialization screen.

FFL-032 Slope up schedule error

Cause: The parameter of slope up schedule is not correct.

Remedy: Please confirm the co-occurring FFL-025 alarm, and configure the suitable setting for the laser oscillator model on Laser Initialization screen.

FFL-033 Slope down schedule error

Cause: The parameter of slope down schedule is not correct.

Remedy: Please confirm the co-occurring FFL-025 alarm, and configure the suitable setting for the laser oscillator model on Laser Initialization screen.

FFL-034 Processing speed is too large

Cause: The processing speed in LS instruction is too large.

Remedy: Please correct the processing speed in LS instruction to appropriate value.

FFL-035 CNC connection error

Cause: The connection with CNC integrated in laser oscillator was lost.

Remedy: Please confirm that laser oscillator power is turn on.
Please check the hard-wiring between the robot and laser oscillator.
Please reconfigure the transmission setting on Laser Initialization screen.

FFL-036 Laser control request(%s)

Cause: Laser control request was changed. (%s) shows the transition.

Remedy: This is not an alarm, in a notification.

FFL-037 Assist gas ready OFF during LS

Cause: Assist "Gas ready" signal is turned off during processing.

Remedy: Please check assist gas and gas valve unit (sensor).

FFL-038 Laser ready status ON time out

Cause: Even after "Laser ready latency" time on Laser Setup screen, "Laser ready st" signal didn't become ON.

Remedy: Please check if laser alarm is occurring.
Please check if Laser ready latency time is appropriate. Please set appropriate value as system.

FFL-039 Output of ITP signal failed

Cause: Output of ITP signal is failed.

Remedy: Please confirm that laser oscillator power is turn on.
Please check the hard-wiring between the robot and laser oscillator.
Please reconfigure the transmission setting on Laser Initialization screen.

FFL-041 Teach pendant is enabled

Cause: Teach pendant is enabled.

Remedy: This message is just for notification and information.

FFL-042 Teach pendant is disabled

Cause: Teach pendant is disabled.

Remedy: This message is just for notification and information.

FFL-043 Controlled start is necessary

Cause: ITP_TIME was changed.

Remedy: Controlled start is necessary to enable this ITP_TIME.

FFL-044 Release beam interlock

Cause: “Interlock OFF st” signal is changed from OFF to ON. It means that the interlock of beam is released.

Remedy: This message is just for notification and information.

FFL-045 Stand-by ON time out

Cause: Even after “Stand-by ON latency” time on Laser Setup screen, “Stand-by st” signal didn’t become ON.

Remedy: Please check if laser alarm is occurring.
Please check if Stand-by ON latency time is appropriate. Please set appropriate value as system.

FFL-046 Laser ready request (%s)

Cause: Laser ready request was changed. (%s) shows the transition.

Remedy: This is not an alarm, in a notification.

FFL-047 Beam is interlocked

Cause: Beam is interlocked.

Remedy: Beam is not output.
This message is just for notification and information.

FFL-048 Beam is not interlocked

Cause: Beam is not interlocked and “Guide light rq” signal became ON.

Remedy: To turn on guide light, beam should be interlocked.

FFL-049 No Beam ON for restart

Cause: Because “Process disable for restart” on Laser Setup screen is enabled, beam isn’t output on the restart during laser processing.

Remedy: This message is just for notification and information.

FFL-050 There is no %s

Cause: The function displayed to %s is not loaded.

Remedy: Please confirm your order list.

FFL-051 Minute output mode is OFF

Cause: The value of S is too low.

Remedy: Please execute MINUTE_OUTPUT_RQ, and enable minute output mode.

FFL-052 Minute output mode is ON

Cause: The value of S is too large.

Remedy: Please remove MINUTE_OUTPUT_RQ, and disable minute output mode.

FFL-053 Minute output status mismatch

Cause: State of minute output request signal and minute output status signal is the mismatch.

Remedy: Please check the laser oscillator.

FFL-054 Guide light off automatically

Cause: The guide light turned off automatically to save the life of guide light.

Remedy: Adjust the guide light auto OFF timer on laser setup screen

FFL-055 Interlock OFF status mismatch

Cause: "Interlock OFF rq" signal was turned ON, but even after constant time, "Interlock OFF st" signal didn't become ON.

Remedy: Please make sure "Stand-by st" signal is ON. There is another line "Interlock OFF rq" signal (between peripheral equipment and laser oscillator). Another line "Interlock OFF rq" signal may remain OFF. Please check the laser oscillator.

FFL-056 Invalid laser control request

Cause: CH (channel) of this laser control request is disabled.

Remedy: Enable the "CH # Laser Ctrl rq" on the time sharing control setup screen.

FFL-057 CNC battery low

Cause: The battery level of the CNC built into the laser oscillator is low.

Remedy: If you turn off the laser oscillator while the CNC battery is empty, the settings will be lost. Replace the CNC battery.

FFL-058 Direct power override is ON

Cause: When the direct power override mode is enabled, the LS and LP instructions cannot be used.

Remedy: Specify 0 for the argument PO in the PRE_LS instruction.

FFL-059 Direct power override is OFF

Cause: When the direct power override mode is disabled, the LS_PO instruction cannot be used.

Remedy: Specify 1 for the argument PO in the PRE_LS instruction.

FFL-060 Argument %s is incorrect

Cause: The argument specified for this program is incorrect.

Remedy: Check the type and range of the argument.

FFL-061 Standalone PR_CALL cannot use

Cause: This instruction cannot be called from a standalone PR_CALL.

Remedy: Call this instruction from motion option PR_CALL.

FFL-062 Execute PRE_LS[CH=#] first

Cause: LS instruction was executed before PRE_LS[CH=#] instruction was executed.

Remedy: When "CH# Laser Ctrl rq switching" on Laser Initialization screen is enabled, PRE_LS[CH=#] instruction must be executed before LS instruction.

FFL-063 PRE_LS[CH=#] and CH# mismatch

Cause: CH# of "Laser Ctrl rq when TP is ON" on the time sharing control screen does not match the CH=# of PRE_LS.

Remedy: When executing the PRE_LS[CH=#] instruction while the teach pendant is enabled, the CH=# of PRE_LS instruction and the CH# of "Laser Ctrl rq when TP is ON" must be the same.

FFL-064 %s

Cause: Refer to message in string

Remedy: Refer to remedy for message in string.

FFL-065 Only 1st window can display it

Cause: This screen can only be displayed in the primary window.

Remedy: Display this screen after moving to the primary window.

FFL-100 Received scanner alarm

Cause: Robot received the scanner alarm from the laser scanner.

Remedy: Please confirm the co-occurring FFL-101 alarm, and take measures with reference to the manual of the laser scanner. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-101 %s

Cause: Robot received the scanner alarm from the laser scanner.

Remedy: Scanner alarm received from the laser scanner is displayed at %s. Scanner alarm consists of scanner alarm number and scanner alarm message. Please confirm scanner alarm number and scanner alarm message, and take measures with reference to the manual of the laser scanner. If all else fails, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

FFL-102 Setting failed (%s)

Cause: Failed to set up to communicate with laser scanner.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative.

FFL-103 Setting is already complete

Cause: Communication setting with the laser scanner has already been completed.

Remedy: If you want to delete the communication setting with the laser scanner, please set the KAREL variable COMM_SETUP in the KAREL program FGSEISET to 0 and delete the communication setting with the laser scanner.

FFL-104 Setting is already delete

Cause: The communication setting with the laser scanner has already been deleted.

Remedy: To set communication with the laser scanner, set the KAREL variable COMM_SETUP in the KAREL program FGSEISET to 1 and set the communication with the laser scanner.

FFL-105 Setting complete. Cycle power.

Cause: Communication setting with the laser scanner is completed.

Remedy: Cycle power is needed.

FFL-106 Delete complete. Cycle power.

Cause: Deletion of the communication setting with the laser scanner is completed.

Remedy: Cycle power is needed.

FFL-107 Failed to start RLS:%s

Cause: Processing of RLS instruction failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative.

FFL-108 Invalid program number

Cause: Program number specified in RLS instruction is out of range.

Remedy: Program number that can be specified for the RLS instruction is 1 to 9998.

FFL-109 Scanner connection error

Cause: The connection with the laser scanner was lost.

Remedy: Please check the hard-wiring between the robot and the laser scanner.

FFL-110 MOVE_ORIGIN failure:%s

Cause: Processing of MOVE_ORIGIN instruction failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative.

FFL-111 Origin return complete

Cause: Processing of MOVE_ORIGIN instruction has been completed.

Remedy: This message is just for notification and information.

FFL-112 Air ready ON time out

Cause: Even after “Air ready latency” time on Laser Setup screen, “Air ready” signal didn’t become ON.

Remedy: Please check air supply unit (sensor).

FFL-113 Air ready OFF during RLS

Cause: “Air ready” signal was turned off during processing.

Remedy: Please check air supply unit (sensor).

FFL-114 Scanner battery low

Cause: The battery of the CNC built in the scanner controller is low.

Remedy: If you turn off the power while the battery is low, the setting contents etc. may be lost. Immediately replace the battery.

FFL-115 RLS was skipped (OVR<100%)

Cause: RLS instruction was skipped because the speed override is less than 100%.

Remedy: RLS instruction is executed only when the speed override is 100%.

FFL-116 Power override:%s

Cause: If the power override is not specified as 100%, this warning will be displayed if the RLS instruction is executed.

Remedy: This is just a warning.

4.6.2 FIG Alarm Code

FIG-010 Parameter error

Cause: No parameters are specified in a programmed motion statement.

Remedy: Specify parameters in the motion statement.

FIG-011 L1,L2 is different

Cause: The L1 and L2 settings are invalid. Because L2 is larger than L1, the figure cannot be drawn.

Remedy: Correct the settings so that L1 is larger than L2.

FIG-012 Length,Width is different

Cause: The length and width settings are invalid. Because the length is smaller than the width, the figure cannot be drawn.

Remedy: Correct the settings so that the length is larger than the width.

FIG-013 R is different

Cause: Because the corner radius is larger than the width, the figure cannot be drawn.

Remedy: Change the corner radius setting.

FIG-014 L1 is short

Cause: L1 is too small. The value of beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of L1 or beam radius compensation.

FIG-015 Length is short

Cause: The length is too small. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of the length or beam radius compensation.

FIG-016 L1 is long

Cause: L1 is too large. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of L1 or beam radius compensation.

FIG-017 Length is long

Cause: The length is too large. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of the length or beam radius compensation.

FIG-018 L2 is short

Cause: L2 is too small. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of L2 or beam radius compensation.

FIG-019 Width is short

Cause: The width is too small. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of the width or beam radius compensation.

FIG-020 L2 is long

Cause: L2 is too large. The value of the beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of L2 or beam radius compensation.

FIG-021 Width is long

Cause: The width is too large. The value of beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the value of the width or beam radius compensation.

FIG-022 \$FCMIN_INTR is short

Cause: The setting of \$FCMIN_INTR is too small.

Remedy: Change the setting of \$FCMIN_INTR.

FIG-023 \$FCMIN_INTR is long

Cause: The setting of \$FCMIN_INTR is too large.

Remedy: Change the setting of \$FCMIN_INTR.

FIG-024 BRC is short

Cause: The value of the beam radius compensation is too small.

Remedy: Change the value of the beam radius compensation.

FIG-025 BRC is long

Cause: The value of the beam radius compensation is too large.

Remedy: Change the value of the beam radius compensation.

FIG-026 MJ is different

Cause: The micro joint is too long.

Remedy: Change the length of the micro joint.

FIG-027 MJ is short

Cause: Because the micro joint is too short, the figure cannot be drawn.

Remedy: Change the length of the micro joint.

FIG-028 Figure not write

Cause: The figure is too large for the robot to draw.

Remedy: Check the parameters.

FIG-029 Don't effective Lof

Cause: The piercing offset results in a longer machining time.

Remedy: The piercing offset is not performed.

FIG-030 Index value code is different

Cause: The data number is not specified.

Remedy: Check the data number. Specify data for the data number.

FIG-031 Speed value is different

Cause: The operation cannot be performed at the specified speed.

Remedy: Change the speed.

FIG-032 Group setup is wrong

Cause: The group setting is invalid.

Remedy: Correct the group setting.

FIG-033 Speed unit is different

Cause: The units of speed is not specified.

Remedy: Specify the units of speed on the data screen.

FIG-034 MJ is long

Cause: The micro joint is too long.

Remedy: Change the length of the micro joint.

FIG-035 Diameter is long

Cause: The diameter is too large. The value of beam radius compensation is invalid. Accordingly, the figure cannot be drawn.

Remedy: Change the diameter or the value of the beam radius compensation.

FIG-036 Change MODEL to TIG(Amps)

Cause: Model should be TIG(Amps).

Remedy: Change MODEL to TIG(Amps) on ArcTool Setup Screen

FIG-037 Prepare weld procedure 98

Cause: Arc weld procedure 98 is necessary for this instruction.

Remedy: Prepare arc weld procedure 98 on Arc Weld Procedure Setup.

FIG-038 Prepare weld procedure 99

Cause: Arc weld procedure 99 is necessary for this instruction.

Remedy: Prepare arc weld procedure 99 on Arc Weld Procedure Setup.

FIG-039 Re-create weld procedure 98

Cause: Number of weld schedule changed.

Remedy: Re-create arc weld procedure 98 on Arc Weld Procedure Setup.

FIG-040 Re-create weld procedure 99

Cause: Number of weld schedule changed.

Remedy: Re-create arc weld procedure 99 on Arc Weld Procedure Setup.

FIG-041 TP Group mask is wrong

Cause: Invalid group mask in TP program detail.

Remedy: Remove the cutting tool group from group mask

4.6.3 FILE Alarm Code

FILE-001 Device not ready

Cause: Specified file device is not ready.

Remedy: Check if the device is mounted and ready to use. Check if the device name is correct.

FILE-002 Device is Full

Cause: Device is full. There is no more space to store data on the device.

Remedy: Delete any unnecessary files or change to a new device.

FILE-003 Device is protected

Cause: Device is protected. So, you cannot write to the device.

Remedy: Release the device protection.

FILE-004 Device not assigned

Cause: The device is not assigned. The specified device is not recognized by the system. If using RD, then \$FILE_MAXSEC is set to 0.

Remedy: If using RD, set \$FILE_MAXSEC > 0, or else a system error will occur.

FILE-005 Device not mounted

Cause: Device is not mounted. You should mount the device before using it.

Remedy: Mount the correct file device.

FILE-006 Device is already mounted

Cause: You tried to mount the device which had been already mounted.

Remedy: Mount device only once.

FILE-008 Illegal device name

Cause: Device name contains an illegal character.

Remedy: Check spelling and validity of device name.

FILE-009 Illegal logical unit number

Cause: Illegal LUN is used.

Remedy: This is an internal error. Check the validity of the logical unit number.

FILE-010 Directory not found

Cause: Specified directory does not exist.

Remedy: Check validity of directory name.

FILE-011 Directory full

Cause: Directory is full. You tried to create a file in the root directory which exceeded the maximum number of files allowed on the device.

Remedy: Delete unnecessary files in the root directory.

FILE-012 Directory is protected

Cause: You tried to write to a write protected directory.

Remedy: Release the protection to the directory.

FILE-013 Illegal directory name

Cause: Directory name contains an illegal character.

Remedy: Check spelling of directory name.

FILE-014 File not found

Cause: The specified file was not found.

Remedy: Check that the file exists and that the file name was spelled correctly.

FILE-015 File is protected

Cause: You tried to access a protected file.

Remedy: Release the protection from file.

FILE-017 File not open

Cause: You tried to access a file which is not open.

Remedy: Open the file before accessing.

FILE-018 File is already opened

Cause: You tried to create/delete/rename a file which is already opened.

Remedy: Close file before such operations.

FILE-019 File is locked

Cause: You tried to access a file which is locked.

Remedy: Release the lock.

FILE-020 Illegal file size

Cause: File size is invalid.

Remedy: Change file size to be correct.

FILE-021 End of file

Cause: End of file was detected.

Remedy: This is a notification. You do not have to do anything for this warning message.

FILE-022 Illegal file name

Cause: File name contains an illegal character.

Remedy: Check spelling of file name.

FILE-023 Illegal file number

Cause: File number is illegal.

Remedy: Use a valid file number which is the ID returned from an open request.

FILE-024 Illegal file type

Cause: File type contains an illegal character.

Remedy: Check the spelling and validity of the file type.

FILE-025 Illegal protection code

Cause: File protection code is illegal.

Remedy: Check if the protection code is correct.

FILE-026 Illegal access mode

Cause: File access mode is illegal.

Remedy: Check if the access mode is correct.

FILE-027 Illegal attribute

Cause: File attribute in the SET_ATTRIBUTE request is illegal.

Remedy: Check that attribute specified is valid.

FILE-028 Illegal data block

Cause: Data block is broken which is used in FIND_NEXT request.

Remedy: You should keep the data block which is returned from the previous FIND_FIRST or FIND_NEXT request.

FILE-029 Command is not supported

Cause: Illegal request command is specified.

Remedy: Check if the request code is correct.

FILE-030 Device lun table is full

Cause: Device management table is full.

Remedy: Dismount any unnecessary devices.

FILE-031 Illegal path name

Cause: Path name contains an illegal character.

Remedy: Check if the path name is correct.

FILE-032 Illegal parameter

Cause: Illegal parameter is detected.

Remedy: Check that all parameters for the request are valid.

FILE-033 System file buffer full

Cause: File management buffer is full.

Remedy: Close unnecessary files.

FILE-034 Illegal file position

Cause: Illegal file position is specified.

Remedy: Check that the file position parameter from SEEK request is positive and not beyond the end of file.

FILE-035 Device not formatted

Cause: You tried to access an unformatted device.

Remedy: Format the device before using it.

FILE-036 File already exist

Cause: You tried to rename a file to an already existing file name.

Remedy: Change the new file name to be unique or delete the existing file.

FILE-037 Directory not empty

Cause: You tried to remove a subdirectory which contains some files or directories.

Remedy: Remove all files and directories in the subdirectory before removing subdirectory.

FILE-038 File locked by too many tasks

Cause: There are too many lock requests to same file.

Remedy: Unlock any unnecessary file lock requests.

FILE-039 Directory already exists

Cause: You tried to create a sub-directory that already exists.

Remedy: Use a unique name for new sub-directory.

FILE-040 Illegal file access mode

Cause: You tried to read from a write only opened file or tried to write to a read only opened file.

Remedy: Open a file with correct access mode.

FILE-041 File not locked

Cause: You tried to unlock file which you had not locked.

Remedy: Don't unlock a file that is not locked. You can only unlock files which YOU have locked.

FILE-045 need to set \$FILE_MAXSEC

Cause: \$FILE_MAXSEC has not been set and must be set before device can be formatted.

Remedy: Set variable \$FILE_MAXSEC to valid value. 800 is a good default value.

FILE-049 File is not standard file

Cause: A file operation has been attempted on a file which is not a standard file.

Remedy: Use a standard file device. (e.g., FR: or RD:)

FILE-050 PChomp %s device NOT ready - device FULL

Cause: PChomp output device NOT ready or FULL.

Remedy: Check device OR delete old files on device.

FILE-051 NESTED kread issued

Cause: A call to kread was made while a WOULDBLOCK read was pending.

Remedy: Do not call kread again until the packet from the previous read has been rcvd.

FILE-052 Kread re-call with different buf_p

Cause: A call to kread was made following a WOULDBLOCK read with a different buf_p.

Remedy: Call kread with the same buf_p as was used in the original kread call.

FILE-053 MC Inserted

Cause: Memory Card (MC) has been inserted and properly detected by the system.

Remedy: Start MC access after receiving this message.

FILE-054 MC Removed

Cause: Memory Card (MC) has been removed from the system.

Remedy: Reinstall Memory Card if you wish to continue.

FILE-055 MC not detected

Cause: Either the Memory Card (MC) is not properly inserted or the Card that is inserted is not a Memory Card type. (SRAM or Flashdisk)

Remedy: Either insert a MC or exchange inserted card with a MC.

FILE-056 Modem Card Inserted

Cause: Modem Card has been inserted and properly detected by the system.

Remedy: Start Modem Card access after receiving this message.

FILE-057 Modem Card Removed

Cause: Modem Card has been removed from the system.

Remedy: Reinstall Modem Card if you wish to continue.

FILE-058 Illegal Character in Name

Cause: Name contains an illegal character.

Remedy: Remove any non-alphanumeric character which is not an underscore.

FILE-059 Not enough TEMP memory for file operation

Cause: The TEMP memory is too low to complete the file operation.

Remedy: Try one of the following: 1. Remove unnecessary files/programs from the system. 2. Remove unused options from the controller by reloading with fewer options. 3. Add more D-RAM to the system.

FILE-060 Max %d,Req %d,Ac %d

Cause: Requested RD Size (Req) exceeds Max Available (Max). RD Left at Actual Size (Ac).

Remedy: Adjust \$FILE_MAXSEC Memory Size (Req) to less than or equal to the Max Available (Max).

FILE-061 Requested RD Sz too big

Cause: The requested RD Size (Req) exceeds the Max Available (Max). RD Left at Actual Size (Ac).

Remedy: Adjust \$FILE_MAXSEC Memory Size (Req) to less than or equal to the Max Available (Max).

FILE-062 Backup files are not correct

Cause: The backup file is not correct.

Remedy: Try performing the file backup operation to another device, or use another media type.

FILE-063 (%s) is not loaded

Cause: The indicated file is not loaded when all files are restored in Automatic Software Update function.

Remedy: Check cause code for more information.

FILE-064 Unspecified DOS system error:%d

Cause: An unusual File System error has occurred. This alarm should rarely occur. The number after the error text indicates:

- 50 -- Device was removed and replaced before flush.
- 51 -- Driver reports that the device is not working.
- 52 -- Trying to access a drive that wasn't initialized.
- 53 -- Driver reports that the device is empty.
- 54 -- Driver reports that the device is not recognized.
- 60 -- No signature found in BPB (need to format).
- 61 -- No signature found in MBR.
- 62 -- Partition requested but none at that offset.
- 63 -- IO error reading MBR (note: MBR is first to be read on a new insert).
- 64 -- IO error reading BPB (block 0).
- 65 -- IO error reading FAT32 INFO struc (BPB extension).
- 70 -- Error reading a directory block through the buffer pool.
- 71 -- Error reading a fat block through the fat buffer pool.
- 72 -- Error writing a directory block through the buffer pool.
- 73 -- Error writing a fat block through the fat buffer pool.
- 74 -- Error writing info block during fat flush.

Remedy: Retry the operation. If the alarm consistently occurs then manually check that the files were read, written, etc. Using a personal computer check the media with a Check Disk or Error-checking tool. If reporting the alarm to FANUC, be sure to include the number that is provided.

FILE-065 Internal DOS system error: %d

Cause: An unexpected internal File System error has occurred. This alarm should occur very rarely. The number after the error text indicates:

- 100 -- Unexpected block number encountered, use a check disk.
- 101 -- Unexpected cluster encountered, use a check disk.
- 102 -- A specified path that must be a directory was not.
- 103 -- Unexpected condition, use a check disk.
- 110 -- Out of directory object structures.
- 111 -- Out of directory and scratch blocks.

Remedy: Retry the operation. If the alarm consistently occurs then manually check that the files were read, written, etc. Using a personal computer check the media with a Check Disk or Error-checking tool. If reporting the alarm to FANUC, be sure to include the number that is provided.

FILE-066 UD%d Ins %s %s

Cause: The USB memory stick has been inserted and properly detected by the system.

Remedy: Start UDx: access after receiving this message.

FILE-067 UD%d Removed

Cause: The USB memory stick has been removed from the system.

Remedy: Reinstall the memory stick if you want to continue.

FILE-068 UD not detected

Cause: Either the USB memory stick is not properly inserted, or the stick that is inserted is not a correct type.

Remedy: Try removing and reinserting the memory stick, or use a different memory stick.

FILE-069 USB hub Ins %s %s

Cause: A USB hub was inserted and detected as identified in the string parameters. This is informational only to identify the insertion of a hub device.

Remedy: None.

FILE-070 USB hub Removed

Cause: A USB hub was removed. This is informational only.

Remedy: None.

FILE-071 USB vend: %04x prod: %04x

Cause: USB device details. This will appear as a cause code to the FILE-066 alarm to identify the device inserted.

Remedy: None.

FILE-072 USB over current detected

Cause: The attached USB devices are drawing more than 500mA of current.

Remedy: Reduce the power draw by removing some devices, or use an external power supply.

FILE-073 USB error %d

Cause: An unusual USB File System error has occurred. This alarm should rarely occur.

Remedy: Report the error number to your local FANUC representative.

FILE-074 USB not supported

Cause: The USB device is not supported on this hardware.

Remedy: Document the events that led to the error, and call your local FANUC representative.

FILE-075 No media inserted or detected

Cause: The appropriate media is not inserted or properly inserted, or the media that is inserted is not of the correct type.

Remedy: Insert the appropriate media, such as a USB memory stick or a memory card. Try removing and reinserting the media, or use a different one.

FILE-076 %s invalid sector size %d

Cause: The device has an invalid sector size and can not be used by the file system.

Remedy: Try a different device.

FILE-077 Auto backup start (%s)

Cause: Auto backup start.

Remedy: None.

FILE-078 Auto backup complete

Cause: Auto backup was finished.

Remedy: None.

FILE-079 Error Auto backup %s

Cause: Error occurred at Auto backup.

Remedy: Check.

FILE-080 Backup in progress

Cause: Auto backup in progress Auto backup.

Remedy: Check.

FILE-081 Load fail %s (%d,%d)

Cause: The named file failed to be read and loaded correctly.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

FILE-082 Backup file not found: %s

Cause: This occurs with the alarm: Backup file is not correct. This alarm indicates the file or one of the files that was not found.

Remedy: Find this file in an older backup or maybe on another controller and load it.

FILE-083 A Backup file is empty: %s

Cause: This occurs with the alarm: Backup file is not correct. This alarm indicates the file or one of the files that was found to be empty or have a zero length.

Remedy: Find this file in an older backup or maybe on another controller and load it.

FILE-084 The format operation failed

Cause: The device has some problem or is worn out.

Remedy: Retry the operation. If the alarm consistently occurs then try a different device. Using a personal computer check the device with a Check Disk or Error-checking tool.

FILE-085 chkdsk %s

Cause: CHKDSK has determined that the file device has an error.

Remedy: Contact your local FANUC representative.

FILE-086 Failed to save MC:

Cause: Failed to save MC:.

Remedy: This is just message.

FILE-087 Failed to save UD1:

Cause: Failed to save UD1:.

Remedy: This is just message.

FILE-088 Failed to save UT1:

Cause: Failed to save UT1:.

Remedy: This is just message.

FILE-089 USB kb Ins %s %s

Cause: USB device key board is installed and detected.

Remedy: It is possible to use USB device key board.

FILE-090 USB kb Removed

Cause: USB device key board is removed.

Remedy: Connect the USB device key board again if you want to continue.

FILE-091 USB mouse Ins %s %s

Cause: USB device mouse is installed and detected.

Remedy: It is possible to use USB device mouse.

FILE-092 USB mouse Removed

Cause: USB device mouse is removed.

Remedy: Connect the USB device mouse again if you want to continue.

FILE-093 USB ram parity

Cause: A parity error was detected in the USB controllers ram.

Remedy: Contact your local FANUC representative.

FILE-094 USB ram dma %d

Cause: An error occurred with DMA transfer from or to the USB controllers ram. It was then done without DMA.

Remedy: Contact your local FANUC representative.

FILE-095 (%s) is not loaded

Cause: Refer to other warning that is displayed at the same time.

Remedy: Handle other warning that is displayed at the same time.

FILE-096 on line %d, %s

Cause: Description is wrong.

Remedy: Fix description.

FILE-097 Out of memory

Cause: Memory is lack.

Remedy: Decrease description or increase memory.

FILE-098 Over 1000 programs

Cause: Described programmes are too many.

Remedy: Decrease the number of program.

FILE-099 Wrong end of file

Cause: Description is wrong.

Remedy: Fix description.

FILE-100 Wrong tag/item/character code

Cause: Description is wrong.

Remedy: Fix description.

FILE-101 Over 35 definitions

Cause: Described definitions are too many.

Remedy: Decrease the number of definition.

FILE-102 Over limit value

Cause: Described value is over the limit.

Remedy: Fix the value not to be over the limit.

FILE-102 Over limit value

Cause: Described value is over the limit.

Remedy: Fix the value not to be over the limit.

FILE-103 %s isn't detected

Cause: Displayed device isn't prepared.

Remedy: Prepare the displayed device.

FILE-104 File is too large

Cause: The file is over the max size allowed.

Remedy: Reduce file size by splitting up into multiple files

FILE-105 Max %d,Req %d,Ac %

Cause: Requested Memory Size (\$FILE_MAXSEC) exceeds Max Available. TD Left at Actual Size

Remedy: Adjust Requested Memory Size (\$FILE_TD_SEC) to less than or equal to the Max Available

FILE-106 Requested TD Sz too big

Cause: Requested TD Size (Req) exceeds Max Available (Max).TD Left at Actual Size (Ac)

Remedy: Adjust \$FILE_TD_SEC Memory Size (Req) to less than or equal to the Max Available (Max)

FILE-108 Auto backup is executed frequently

Cause: Frequent auto backup to FRA: can reduce FROM life

Remedy: Reduce the frequency of auto backup to FRA: within 5 times in a day or change device to MC: or USB:

4.6.4 FLPY Alarm Code

FLPY-001 End of directory reached

Cause: Your listing has reached the end of the directory. You do not have to do anything for this warning message.

Remedy: This is a notification. You do not have to do anything for this warning message.

FLPY-002 File already exists

Cause: The file name you are trying to create already exists on this device.

Remedy: Delete the file of this name or choose a different file name.

FLPY-003 File does not exist

Cause: The file you are trying to open does not exist on this device.

Remedy: Open a file that does exist on the device.

FLPY-004 Unsupported command

Cause: Operation is not supported on floppy disk.

Remedy: Use only operations supported on floppy disk.

FLPY-005 Disk is full

Cause: The disk file capacity has been reached.

Remedy: Delete some unneeded files or use a disk with sufficient free space.

FLPY-006 End of file reached

Cause: The end of the file was reached while reading.

Remedy: Do not attempt to read beyond the end of a file.

FLPY-008 Only one file may be opened

Cause: An attempt was made to open more than one file.

Remedy: Do not attempt to open more than one file at a time.

FLPY-009 Communications error

Cause: The protocol format was invalid.

Remedy: Retry the operation.

FLPY-015 Write protection violation

Cause: The disk has write protection enabled.

Remedy: Remove write protection from the disk or use a disk that is not write protected.

FLPY-100 Directory read error

Cause: The directory information is corrupted and unreadable.

Remedy: Try another disk or reformat the disk.

FLPY-101 Block check error

Cause: The checksum data is bad. Data is corrupted on disk and can not be read.

Remedy: Try another disk, or reformat the disk.

FLPY-103 Seek error

Cause: There is a bad sector or track on the disk.

Remedy: Clean the disk drive, try another disk, or reformat the disk.

FLPY-104 Disk timeout

Cause: The drive did not respond to a command.

Remedy: Check the cable to the drive and make sure drive power is on.

FLPY-105 Write protection violation

Cause: The disk has write protection enabled.

Remedy: Remove write protection from the disk or use a disk that is not write protected.

FLPY-106 Memory Card hardware error

Cause: Memory Card hardware error is detected.

Remedy: Check Memory Card I/F unit connection or battery of the card.

FLPY-107 Not formatted card

Cause: The Memory Card is not formatted.

Remedy: Format the card with UTILITY menu on FILE screen.

4.6.5 FORC Alarm Code

FORC-001 Main board type is wrong

Cause: The controller's main board does not have a force sensor interface.

Remedy:

1. Make sure that the controller's main board has a force sensor interface.
2. If it does not have a force sensor interface, replace it with the one that has a force sensor interface.
3. If the main board type is unknown, contact the FANUC service center.

FORC-004 Communication error

Cause: Software internal error

Remedy:

1. Turn the controller OFF then ON again. If it occurs again, replace the R-30iB controller's main board.
2. Contact the FANUC service center and report the error status.

FORC-005 Robot not mastered

Cause: Robot mastering is not completed.

Remedy: Perform mastering.

FORC-006 Sensor board is disabled 2

Cause: Software internal error

Remedy:

1. Turn the controller OFF then ON again. If it occurs again, replace the R-30iB controller's main board.
2. Contact the FANUC service center and report the error status.

FORC-007 Memory initialization error

Cause: An error related to memory initialization occurred inside the software. The capacity of the memory may be insufficient or the memory may be destroyed.

Remedy: Contact the FANUC service center and report the error status.

FORC-008 Option is not loaded

Cause: The software option required for the force control schedule(force control fitting) is not incorporated into the controller.

Remedy: Install the software option (force control fitting). Contact the FANUC service center.

FORC-011 Force group mismatch

Cause: Motion group of force control is mismatched to the default motion group of the program.

Remedy: Check the default motion groups of the program.

FORC-012 Time out error occurred

Cause: Software internal error

Remedy: 1. Turn the controller OFF then ON again. If it occurs again, replace the R-30iB controller's main board.

FORC-013 Communications error

Cause: Software internal error

Remedy: 1. Turn the controller OFF then ON again. If it occurs again, replace the R-30iB controller's main board.
2. Contact the FANUC service center and report the error status.

FORC-014 Invalid tool number

Cause: The tool number is set to 0.

Remedy: Please set the correct tool number.

FORC-015 Force sensor error exceed limit

Cause: As a result of the force sensor diagnosis the error of the force sensor exceeded the tolerance.

Remedy: Check the force sensor values. Contact the FANUC service center and report the error status.

FORC-016 Diagnosis normal end

Cause: Force sensor is normal.

Remedy: No action is required.

FORC-017 Diag. data has been set

Cause: Force Sensor Diagnosis Instruction is executed with a 3-axis Force sensor and its data has been set. These values can be seen on Force Sensor Diagnosis Results screen. (UTILITIES → Force Sensor → Force Sensor Diagnosis Results)

Remedy: No action is required.

FORC-018 Uninitialized data

Cause: Initial force sensor data is uninitialized.

Remedy: Please initialize the force sensor data.

FORC-019 Tolerance data is 0 or less

Cause: Tolerance data is uninitialized.

Remedy: Please set up the system variable \$CCS_GRP.\$INIT_TOL.

FORC-020 Servo is not ready

Cause: Immediately after force control execution, an emergency stop was performed or a servo alarm was issued.

Remedy: Check the surroundings for abnormalities.

If no abnormality is found, reset the alarm then reexecute, or turn off the power then turn on the power again.

If normal execution is still disabled, contact the FANUC service center and report the error status.

FORC-022 OFFSET/VOFFSET not executed

Cause: FORCE CTRL instruction was executed before OFFSET CONDITION or VOFFSET CONDITION instruction needed for User Frame compensation. The vision register index may be inappropriate.

Remedy: If the "User Frame Compensation" is ON, add OFFSET CONDITION or VOFFSET CONDITION instruction before FORCE CTRL instruction.
Confirm that the vision register index is appropriate.

FORC-023 Force sensor error occurred

Cause: Force sensor error has been occurred.

Remedy: The already generated alarm concerning the force sensor is not released. Refer to the remedy of the generated alarm.

FORC-024 Force control error occurred

Cause: The error occurred during the force control. The error jump is not done, because label number is 0.

Remedy: Refer to the remedy of the force control alarm generated before this alarm.

FORC-025 Function type is unused

Cause: Cannot execute FORCE CTRL instruction because Unused is selected.

Remedy: Select the appropriate function type.

FORC-026 Init data has been set

Cause: The force sensor data diagnosis has been set now.

Remedy: No action is required.

FORC-027 Another tuning already enabled

Cause: Another tuning mode is already enabled.

Remedy: Abort the program and remove another tuning instruction.

FORC-028 Internal error(%d) occurred

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-029 Ext-Axis setting is invalid

Cause: Extended Axis which is set as rotation mechanism of "Threading" function is invalid for use.

Remedy: Check the items from 1 to 5 shown below.

1. The system software contains J518 (Extended Axis Control) and J613(Continuous turn) options.
2. The extended axis is connected as selected axis number.
3. The type of the extended axis is not integrated axis.
4. The type of the extended axis is rotary axis.
5. The extended axis is set so that it can rotate continuously.

FORC-030 The memory device doesn't exist

Cause: Force data cannot be saved.

Remedy: Prepare the memory device such as USB or memory card or disable force data log function.

FORC-034 Vision Reg non-existent

Cause: The software option required for the Vision register is not incorporated into the controller, although "User Frame Compensation SW" in Performance screen is "VISION REG".

Remedy: 1. Set "OFF" or "POS REG" to "User Frame Compensation SW" in Performance screen.
2. Install the software option of iRVision. Contact the FANUC service center.

FORC-035 Vision OFFSET is invalid

Cause: Vision OFFSET is invalid although "User Frame Compensation SW" in Performance screen is "VISION REG".

Remedy: Push MENU button on the teach pendant and select "SETUP" --> F1 "General". Move the cursor to "Enable VOFFSET" and select F4 "ENABLED".

FORC-036 Vision Register wrong Type

Cause: The software option required for the Vision register is not incorporated into the controller, although "User Frame Compensation SW" in Performance screen is "VISION REG".

Remedy: Set Vision Register's type Fixed Frame Offset.

FORC-037 Fixed sensor option is not ordered

Cause: The software option required for the Fixed sensor is not incorporated into the controller.

Remedy: Install the software option (Fixed sensor). Contact the FANUC service center.

FORC-038 Please set sensor frame

Cause: Sensor frame for fixed sensor is not set.

Remedy: Make one of the following changes:

1. In case of fixed force sensor, refer to subsection of "FIXING FORCE SENSOR ON THE WORKING TABLE" in " R-30iB CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)", and set sensor frame.
2. In case of hand sensor, refer to subsection of "CHANGING ONLY SENSOR ATTACHMENT TYPE" in " R-30iB CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)", and change sensor attachment type.

FORC-039 Please reboot controller

Cause: After setting sensor frame by "FORCE SENSOR ATTACHMENT SETTING FUNCTION", reboot is necessary.

Remedy: Reboot controller. If this alarm does not disappear, contact the FANUC service center.

FORC-040 Can't exec. F/C with hand sensor

Cause: [Sensor attachment] is set as "HAND" in "FORCE SENSOR ATTACHMENT SETTING FUNCTION" for M-1iA/0.5A.

Remedy: The force sensor can be used only with Fixture mount for M-1iA/0.5A. Refer to subsection of "FIXING FORCE SENSOR ON THE WORKING TABLE" in " R-30iB CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)".

FORC-041 This controller isn't supported

Cause: The combination of the robot and controller is wrong.

Remedy: Contact the FANUC service center and report the error status.

FORC-042 Vision Register is not set

Cause: The values are not set in the Vision Register which is designated in VOFFSET CONDITION instruction.

Remedy: Check the Vision Register index and execute *iR*Vision.

FORC-050 ForceSensor can't be connected

Cause: Force Sensor can't be connected.

Remedy: Do not execute "SENSOR CONNECT" while the robot is moving.

FORC-051 ForceSensor can't be disconnected

Cause: Force Sensor cannot be disconnected.

Remedy: Do not execute "SENSOR DISCONNECT" while the robot is moving.

FORC-052 ForceSensor disconnection

Cause: Tried to execute Force control while force sensor is disconnected.

Remedy: Attach the force sensor.

FORC-053 FS disconnect internal error

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-054 Port setting is incorrect

Cause: RS-232-C port setting for Force Sensor is incorrect.

Remedy: Please check the port settings and correct these settings.

FORC-055 Communication with FS timeout

Cause: Communication with force sensor times out.

Remedy:

1. Make sure that the sensor cable is properly connected to the force sensor.
2. Replace the sensor cable.
3. Replace the force sensor head.

FORC-101 Default data is incorrect

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-103 Index value is incorrect

Cause: Index value of FORCE CTRL instruction is not correct.

Remedy: Set the index value of FORCE CTRL instruction correctly.

FORC-105 Force group is incorrect

Cause: The force group of program has not been existed in this system.

Remedy: Create this instruction in this system again.

FORC-106 Mass data is out of range

Cause: The mass data which has been calculated by input data is out of range.

Remedy: Input the appropriate data.

FORC-107 Damper data is out of range

Cause: The damper data which has been calculated by input data is out of range.

Remedy: Input the appropriate data.

FORC-108 Input data is out of minimum

Cause: The input data is out of minimum range.

Remedy: Input the appropriate data.

FORC-109 Input data is out of maximum

Cause: The input data is out of maximum range.

Remedy: Input the appropriate data.

FORC-110 Can not use memory card

Cause: Selected memory card on a controller where memory card is not available.

Remedy: Select devices other than memory card.

FORC-111 Rotation velocity is limited

Cause: The rotation axis of threading is not on J6 of a robot. Rotation velocity is limited for safety.

Remedy: This is not an error. If fast rotation is needed, design the tool so that the rotation axis of threading corresponds to J6 of the robot first and set a Tool frame whose origin is on J6.

FORC-114 Converted individual difference

Cause: Because the "Ending Condition Switch" in Performance data is changed, "Individual diff. (-)" in Basic data is converted.

Remedy: Verify "Individual diff.(-)" in Basic data.

FORC-115 Insert direction is changed

Cause: "Insert Direction" in Basic data is changed because the modified "Bearing Rotation Axis" is the same as "Insert Direction" and this case cannot be realistically.

Remedy: Verify "Insert Direction" in Basic data.

FORC-116 SoftFloat Combi. is prohibited

Cause: "SoftFloat" and "Force Control" were executed simultaneously.

Remedy: Don't execute "SoftFloat" and "Force Control" simultaneously.

FORC-117 Auto tuning not done

Cause: Cannot set "Phase Match Imp. Rate" in Performance data because impedance parameters auto tuning is not finished.

Remedy: Perform the impedance parameters auto tuning previously.

FORC-118 Groove direction is changed

Cause: "Insert Direction" in Basic data is changed because the modified groove direction is the same as "Insert Direction". This alarm is issued only in "Groove Insert".

Remedy: Verify "Insert Direction" in Basic data.

FORC-119 Customize infinit loop

Cause: In successive execution of force control, a schedule specifies another schedule as the parent, but the former schedule is also specified as the parent by the latter schedule.

Remedy: There is a parent number specification that causes a loop of parent-child relationship. Check the schedule data, and correct the parent number specification.

FORC-120 Customize exceed retry-child num

Cause: In successive execution of force control, an attempt was made to set in "Customize Parent Number" in the performance data of a schedule set for retry (draw) operation the number of another schedule, but that schedule already had a child schedule for retry (draw) operation.

Remedy: For a schedule, only one child schedule for retry (draw) operation can be specified. Make one of the following changes:

1. When setting a new schedule as the child schedule for retry (draw) operation
Set "Customize Parent Number" for the existing schedule for retry (draw) operation to 0, and specify "Customize Parent Number" for a new schedule.
2. When the specified parent schedule number is incorrect
Correct the parent schedule number.

FORC-121 Customize exceed ins-child num

Cause: In "Customize Parent Number" in the performance data of a schedule set for insertion, an attempt was made to set the number of another schedule, but that schedule already had a child schedule for insertion.

Remedy: For a schedule, only one child schedule for insertion can be specified. Make one of the following changes:

1. When setting a new schedule as the child schedule for insertion
Set "Customize Parent Number" for the existing child schedule for insertion to 0, and specify "Customize Parent Number" for the new schedule.
2. When the specified parent schedule number is incorrect
Correct the parent schedule number.
3. When the child schedule to be specified is a schedule for retry (draw) operation.
The child schedule for retry (draw) operation has the following features:
(1) The user frame and tool frame are the same as those for the parent schedule.
(2) The insertion direction of the child schedule is the same as that of the parent schedule, but the orientation is opposite to that of the parent schedule. (Example: If the insertion direction of the parent is -Z, the insertion direction of the child schedule for retry (draw) operation is +Z.)
After setting (1) and (2) correctly, set "Customize Parent Number".

FORC-122 Customize exceed retry num

Cause: A child schedule for retry operation is specified as a parent schedule.

Remedy: A child schedule for retry operation cannot be specified as a parent schedule.

1. When using more than one schedule to perform retry (draw) operation. Specify an insertion schedule to be paired with retry (draw) operation as the parent schedule.
2. When a wrong schedule number is specified. Specify correct schedule data for insertion.
3. When the insertion direction of the schedule specified as the parent is incorrect. Because the insertion direction of the parent schedule is the same as the insertion direction of the parent of that parent schedule, but their orientations are opposite to each other, that parent schedule is regarded as a child schedule data for retry (draw) operation. Correct the insertion direction of that parent schedule data.

FORC-123 Customize syncro change OK

Cause: This is not an error. Parameters are copied between schedule data having a parent-child relationship.

Remedy: Because this is not an error, no action need not be taken.

FORC-124 Customize syncro change NG

Cause: This is not an error. Parameters are copied between schedule data having a parent-child relationship.

Remedy: Because this is not an error, no action need not be taken.

FORC-125 Customize intr. TP err0

Cause: Software internal error

Remedy: Contact the FANUC service center and report the alarm status.

FORC-126 Customize Auto.Exec Set. err

Cause: Parameters of customized schedules Auto.Cont.Exec. is inappropriate.

Remedy: Check Function, Frame, Parent number, Child number, Vision Compensation etc. Refer to subsection, "Customization Automatic Continuous Execution function" in "R-30iB/R-30iB Mate CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)".

FORC-127 Signal Output for ERR Set.err

Cause: Parameters of Signal Output for ERR is inappropriate.

Remedy: Check Signal Type, Signal Number.

FORC-128 Turn on Gain Auto Modify

Cause: “F.Ctrl. Gain Auto Modify” is turned off. For a force control instruction between the ‘AUTO TUNING ON’ instruction and the ‘AUTO TUNING OFF’ instruction, the “F.Ctrl. Gain Auto Modify” switch needs to be turned on.

Remedy: Using automatic force control gain tuning, turn on “F.Ctrl. Gain Auto Modify” on the corresponding schedule data screen.

If automatic force control gain tuning is not performed, the ‘AUTO TUNING ON’ instruction may be executed somewhere improperly. Review and correct the program so that the ‘AUTO TUNING ON’ instruction is not executed improperly.

FORC-129 Direction is same as ins. dir.

Cause: An attempt was made to set a parameter for the insertion direction on the search basic screen or search performance screen of the "Search" function. This alarm is issued only in the "Search" function.

Remedy: On the search basic screen and search performance screen, no parameter can be set for the insertion direction. Check whether the insertion direction and search direction are correct.

FORC-130 Illegal insert data index

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-131 Can not execute Gain Tuning

Cause: Force Control Gain Auto Tuning Instruction was executed when the robot is not prepared.

Remedy: Move the robot in X, Y and Z directions with about several hundred mm/s and get back to original position. Execute force control gain auto tuning again before releasing the deadman switch or applying an emergency stop. If the deadman switch has been released or emergency stop has been applied, start over from moving the robot in X, Y, and Z directions..

FORC-151 F/S FPGA version error (F:%d^1)

Cause: The version of FPGA is improper.

Remedy: Contact the FANUC service center and report the error status.

FORC-158 F/S gauge data overflow (F:%d^1)

Cause: Sensor head output exceeded the limit value.

Remedy:

1. Move the robot to the position that it does not contact any object to take away the overload from the force sensor.
2. Turn the controller OFF then ON again. If this alarm occurs again, go to the next step.
3. A sudden acceleration may have caused this error. Lighten the tool that is attached to the force sensor or decrease the TCP speed and acceleration where this alarm occurred.
4. If the tool such as grinder or nut-runner is attached to the robot, make sure that it does not exert big force to the sensor. Decrease the tool rotation speed, if possible.
5. Replace the sensor head.

FORC-159 F/S sensor limit overflow (F:%d^1)

Cause: Excessive load were put on the sensor head.

Remedy:

1. Make sure that the robot is not in touch with any object. If it is, it may have collided with it.
2. If it does not contact anything, a sudden acceleration might have caused this error. Lighten the tool or decrease the TCP speed and acceleration.
3. If the tool such as grinder or nut-runner is attached to the robot, make sure that it does not exert big force to the sensor. Decrease the tool rotation speed, if possible.
4. Make sure that the value of “Insert Force” in Basic data is too big. If not, go to the next step.
5. The robot might have vibrated due to a big “force control gain”. Decrease the value of Master Frequency of “force control gain” gradually.
6. Move the robot to a base position and clear the force sensor output from a “Force Sensor Current Value Screen”(Refer to section "FORCE SENSOR STATUS SCREEN" in "R-30iB/R-30iB Mate CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)"). Make sure to check the force sensor by executing Force Sensor Diagnosis instruction (Refer to subsection "Force Sensor Diagnosis Instructions" in the same manual).

FORC-160 F/S cable is cut (F:%d^1)

Cause: The force sensor cable is broken. Or a sensor cable is loosely connected to the force sensor. The force sensor head may be broken.

- Remedy:**
1. Make sure that the sensor cable is properly connected to the force sensor.
 2. Replace the sensor cable.
 3. Confirm that the R-30iB Plus main board has a Force sensor Interface.
 4. Replace the force sensor head.

FORC-161 F/S calibration data not loaded

Cause: Force sensor Calibration data has not been loaded correctly.

- Remedy:** In case of 6-axis force sensor, copy "CCSCB2.CM" file from the CD-R which is appendix of the force sensor to a memory card or USB memory. Perform the same file with a teach pendant.
As this file is unique to each force sensor, do not use other sensor's file. Check that the serial number which is printed on CD-R is same as the number which is written on the surface of the force sensor.

FORC-162 F/S temperature data overflow (F:%d^1)

Cause: Temperature output error occurred in the sensor head.

- Remedy:**
1. Move the robot to the position that it does not contact any object.
 2. Turn the controller OFF then ON again. If this alarm occurs again, go to the next step.
 3. Replace the sensor head.

FORC-164 F/S temp. lower limit error (F:%d^1)

Cause: Temperature of the sensor head is too low.

- Remedy:**
1. Check if the ambient temperature is not too low or there are not very cold objects around the sensor head. Read the temperature data in "Force Sensor Current Value" screen and make sure that its value is higher than 0 degree Celsius. If it still occurs, go to the next step.
 2. Make sure that the sensor cables are connected correctly, no lines are cut. If there is nothing wrong, go to the next step.
 3. Replace the R-30iB controller's main board. If this alarm occurs again, go to the next step.
 4. Replace the sensor head.

FORC-165 F/S temp. upper limit error (F:%d^1)

Cause: Temperature of the sensor head is too high.

- Remedy:**
1. Check if the ambient temperature is not too high or there are not very hot objects around the sensor head. Read the temperature data in "Force Sensor Current Value" screen and make sure that its value is lower than 60 degree Celsius. If it still occurs, go to the next step.
 2. Make sure that the sensor cables are connected correctly, no lines are cut. If there is nothing wrong, go to the next step.
 3. Replace the R-30iB controller's main board. If this alarm occurs again, go to the next step.
 4. Replace the sensor head.

FORC-171 F/S output data frozen (F:%d^1)

Cause: The output data of the sensor head are frozen. (Force sensor returns constant data)

- Remedy:**
1. Check the force sensor output data on TP (Force sensor status screen). It is O.K. if the values change every moment. If the values keep same values, go to the next step.
 2. Make sure that the sensor cables are connected correctly, no lines are cut. If there is nothing wrong, go to the next step.
 3. Check a fuse in multiplexer if 3DL is also installed.
 4. Replace the R-30iB controller's main board. If this alarm occurs again, go to the next step.
 5. Replace the sensor head.

FORC-175 F/S force differential limit (F:%d^1)

Cause: Differential value of the force during force control is too large.

- Remedy:**
1. Check the position of the approach point so that the robot does not contact to the object.
 2. If the tool such as grinder or nut-runner is attached to the robot, make sure that it does not exert big force to the sensor. Decrease the tool rotation speed, if possible. Set ON to "Force Denoising Sw" in the Performance data setting screen.
 3. The robot might have vibrated due to a big "force control gain". Decrease the value of Master Frequency of "force control gain" gradually.
 4. Decrease the value of "Insert Force" or "Pushing Force" in Basic data.

5. In case of "Contour" function, increase the values of "Force Change Limit" in the Performance data setting screen.

FORC-180 F/S ITP counter error (F:%d^1)

Cause: Communication failed.

- Remedy:**
1. Move the robot to the position that it does not contact any object.
 2. Turn the controller OFF then ON again. If this alarm occurs again, go to the next step.
 3. Make sure that the sensor cables are connected correctly, no lines are cut. If there is nothing wrong, go to the next step.
 4. Replace the R-30iB controller's main board. If this alarm occurs again, go to the next step.
 5. Replace the sensor head.

FORC-181 Force sensor type error (F:%d^1)

Cause: The controller can not judge Force sensor type properly.

- Remedy:**
1. Turn the controller OFF then ON again. If this alarm occurs again, go to the next step.
 2. Check the sensor cable connectivity. Check also for cut lines.
 3. Replace the sensor head.

FORC-183 Mass Measure execution error

Cause: The values of "Reg. No. Basis Measure", "Reg. No. Mass Measure", "Reg. No. Mass Result" are illegal for "Mass Measurement by a Force Sensor". Or "Mass Measurement" and "Force Control" were executed simultaneously.

- Remedy:**
1. When "Mass Measurement SW" is ON, don't change the values of "Reg. No. Basis Measure", "Reg. No. Mass Measure", "Reg. No. Mass Result". In order to change these values, set OFF to "Mass Measurement SW" first.
 2. Check if "Reg. No. Basis Measure", "Reg. No. Mass Measure", "Reg. No. Mass Result" are different.
 3. Check if "Reg. No. Basis Measure", "Reg. No. Mass Measure", "Reg. No. Mass Result" are positive integers.
 4. Don't execute "Basis Measurement" and "Mass Measurement" simultaneously.
 5. Don't execute "Mass Measurement" and "Force Control" simultaneously.

FORC-184 Mass Measure timeout error

Cause: The elapsed time of "Basis Measurement" and "Mass Measurement" exceeded "Max. Data Record Time" for "Mass Measurement by a Force Sensor".

- Remedy:**
1. Check the start timing and end timing of "Basis Measurement" or "Mass Measurement".
 2. Increase "Max. Data Record Time".

FORC-188 Auto Tuning SW is turned off

Cause: "F.Ctrl. Gain Auto Modift" switch is turned off.

- Remedy:** This is not an error. If you desire to execute Force Control Gain Auto Tuning Instruction again, turn on "F.Ctrl. Gain Auto Modift" again.

FORC-199 Single singularity error (F:%d^1)

Cause: The axis, which might become singularity, has approached a singularity point during the force control.

- Remedy:** There are two kinds of singularity orientation which causes this alarm.

J5 angle is 0 degree.

J2, J3 and J5 are on a line.

Be sure to execute the force control by a position and an orientation away enough from these states.

FORC-201 Complex singularity error (F:%d^1)

Cause: J1 and J6 have reached nearby singularity point during the force control.

- Remedy:** Don't execute the force control in a posture that J6 comes on the axis of J1. (The robot hand reaches right above the robot base.)

FORC-203 Envelope limit error

Cause: The some joints have approached the stroke limit.

- Remedy:** Avoid executing the force control when each joint comes near the stroke limit.

FORC-211 Servo error occurred (F:%d^1)

Cause: Servo error occurred.

- Remedy:** Another servo error occurred at the same time. Do measures of the another alarm.

FORC-216 X Force Limit (F:%d^1)

Cause: The X component of force exceeds the limit.

Remedy: Check items 1 through 6 sequentially.

1. Check the position of the approach point so that the robot does not contact to the object.
2. If the tool such as grinder or nut-runner is attached to the robot, make sure that it does not exert big force to the sensor. Set ON to "Force Denoising Sw" in the Performance data setting screen.
3. The robot may have vibrated due to an inappropriate "Force Control Gain". Decrease "Master Frequency" of the "Force Control Gain" gradually.
4. If the velocity in insertion direction is too fast, the impact force may have exerted. Decrease the value of "Insert Velocity" on the basic screen in steps of 10%.
5. Decrease the value of "Insert Force" on the basic screen in steps of 10%.
6. Increase the X component of "Force Limit", "Phase M Force Limit" or "Insert Force Limit" on the performance screen in steps of 10%.

FORC-217 Y Force Limit (F:%d^1)

Cause: The Y component of force exceeds the limit.

Remedy: Similar to FORC-216.

FORC-218 Z Force Limit (F:%d^1)

Cause: The Z component of force exceeds the limit.

Remedy: Similar to FORC-216.

FORC-219 W Moment Limit (F:%d^1)

Cause: The W component of force exceeds the limit.

Remedy: Similar to FORC-216.

FORC-220 P Moment Limit (F:%d^1)

Cause: The P component of force exceeds the limit.

Remedy: Similar to FORC-216.

FORC-221 R Moment Limit (F:%d^1)

Cause: The R component of force exceeds the limit.

Remedy: Similar to FORC-216.

FORC-223 Illegal end force control (F:%d^1)

Cause: An error occurred during force control.

Remedy: Another force control alarm is issued at the same time. Refer to the description of remedy for the alarm.

FORC-224 Inverse kinematics Error

Cause: Software internal error

Remedy: Change the position and orientation of the robot and execute force control. If this error occurs again, Contact the FANUC service center and report the error status.

FORC-225 Forward kinematics Error

Cause: Software internal error

Remedy: Change the position and orientation of the robot and execute force control. If this error occurs again, Contact the FANUC service center and report the error status.

FORC-260 Force at the end is not ok (F:%d^1)

Cause: When force control was executed with "Force End Judgment Switch" set to ON, the magnitude of force did not become larger than the product of "Min. Force Rate" and "Insert(Pushing) Force" within the time limit.

Remedy:

1. Increase the insertion depth,
2. Increase "Pushing Time" or "Insert Time MAX Limit",
3. Decrease "Min. Force Rate" of the performance data, or
4. Modify the force control gain setting.

Modify the schedule data as mentioned above or check the workpiece for abnormalities.

FORC-261 Torque at the end is not ok (F:%d^1)

Cause: When force control was executed with “Torque End Judgment Switch” set to ON, the magnitude of torque did not become smaller than “Max. Torque”.

Remedy: 1. Modify the force control gain setting,
 2. Increase “Max. Torque” of the performance data, or
 3. Increase “Pushing Time” or “Insert Time MAX Limit”.
 Modify the schedule data as mentioned above or check the workpiece for abnormalities.

FORC-262 End Force and Torque is not ok (F:%d^1)

Cause: When force control was executed with “Force End Judgment Switch” and “Torque End Judgment Switch” set to ON, the magnitude of force did not become larger than the product of “Min. Force Rate” and “Insert(Pushing) Force” and the magnitude of torque did not become smaller than “Max. Torque” within the time limit.

Remedy: See FORC-260 and FORC-261.

FORC-263 Approach timeout error (F:%d^1)

Cause: The workpiece could not contact to the object in a limit time.

Remedy: 1. Check the distance between the approach position and the contact position is too long. (5mm is appropriate.)
 2. Make the value of “Approach Velocity” in Basic data faster than the present value.
 3. If you use “Auto. Follow” function, set the value of “Approach Velocity” in Basic data larger than the present value or check the approach direction and modify it or set the start point of force control closer to the target object. And if you change the start point, check and modify other teaching points appropriately.

FORC-264 Insertion timeout error (F:%d^1)

Cause: Insertion could not finish in a limit time.

Remedy: In case of “Shaft Insert”, check the items 1 to 4 shown below.
 1. The orientation of the robot change too much during the force control. If so, correct the approach position.
 2. The clearance between the workpiece and the object is too small.
 3. “Insert Velocity” in Basic data is too small.
 4. “Insert time MAX Limit” in Basic data is too short.
 In case of “Phase Search”, check the items 5 to 7 shown below.
 5. “PhaseMatch Ang. Limit” in Basic data is too small.
 6. “PhaseMatch Push Force” in Basic data is too small.
 7. “PhaseMatch Torque” in Basic data is too small.
 In case of “Hole Search” or “Clutch Search”, check the items 8 to 10 shown below.
 8. “Size of Search Range” in Search parameters Basic screen is too small.
 9. “Search Push Force” in Basic data is too small.
 10. “Target Force” or “Target Torque” in Search parameters Basic screen is too small.

FORC-265 Angle change limit error (F:%d^1)

Cause: The orientation of the workpiece changes bigger than the limit value during insertion. Or if you use “Face Match” function of the contouring function, the orientation difference between the tool frame and the teaching point exceeds the designated value.

Remedy: 1. Check the orientation of workpiece is correct.
 2. Check “Change MAX Limit” in Basic data is too small.
 3. If you use “Face Match” function of the contouring function, check the value of “Orient.Chg. UpperLim” or check teaching points or check the situation of the tool or the work-piece.

FORC-266 Insert depth is abnormal (F:%d^1)

Cause: At the “Threading” function after the generated torque surpassed the “Target torque”, the insert depth did not reach the “Minimum depth”.

Remedy: Check the items 1 to 5 shown below.
 1. The screw can be tighten by the hand until the insert depth overreach the “Minimum depth”.
 2. “Target torque” in Basic data is too small.

FORC-267 Rotation timeout error (F:%d^1)

Cause: Threading could not finish in a limit time.

Remedy: Check the items 1 to 5 shown below.
 1. The screw can be tighten by the hand.

2. The orientation of the robot change too much during the force control. If so, correct the approach position.
3. "Rotation Velocity" in Basic data is too small.
4. "Rotation Time Limit" in Basic data is too small.

FORC-269 Insert direction error (F:%d^1)

Cause: Insertion direction acquired by the end condition acquisition is wrong.

Remedy: Execute the end condition acquisition again.

FORC-270 Insert length error (F:%d^1)

Cause: Insertion length acquired by the end condition acquisition is wrong.

Remedy: Execute the end condition acquisition again.

FORC-271 Invalid teaching (F:%d^1)

Cause: The sign of the force command during the torque error acquisition is different from the one during the force control.

Remedy: Reverse the sign of "Insert Force" in Basic data, or execute the torque error acquisition again.

FORC-272 Simple Customize error (F:%d^1)

Cause: A force schedule with "Simple Customize Sw" ON is executed before other force schedule with "Simple Customize Sw" OFF was executed. Or a force schedule with "Simple Customize Sw" ON is executed more times than the value of "Cont. Exec. Max. Count".

- Remedy:**
1. Execute a force schedule with "Simple Customize Sw" OFF before executing a force schedule with "Simple Customize Sw" ON. Force sensor initial values are acquired in a force schedule for which Simple Customize is invalid and it is used as a basis of force sensor in a force schedule for which Simple Customize is valid.
 2. Increase the value of "Cont. Exec. Max. Count" of a force schedule with "Simple Customize Sw" ON.
 3. If the alarm still occurs, contact your local FANUC representative.

FORC-273 Retry Setting error (F:%d^1)

Cause: "User Frame No.", "Tool Frame No.", "Insert Direction" of a force schedule with "Simple Customize Sw" and "Retry Sw" ON are wrong. Or internal data of Simple Customize function are inappropriate.

- Remedy:**
1. "User Frame No." and "Tool Frame No." of a schedule for retry have to be same as those of a schedule which was executed just before. "Insert Direction" of the schedule for retry has to be opposite of the schedule which was executed just before. Confirm that "Function" of the schedule that was executed before is not "Contour" or "Contour End".
 2. If "Customize Parent Number" of a force schedule which was executed before is not zero, check above conditions for all parent schedules.
 3. If "Customize Auto. Cnt. Exec. Sw" of a force schedule that was executed before is ON, check above conditions for all child schedules.
 4. If the alarm still occurs, contact your local FANUC representative.

FORC-275 Phase matching timeout (F:%d^1)

Cause: Insertion time exceeded the upper limit during the phase match insertion.

- Remedy:**
1. Make the value of "Phase Match Ang. Vel" in Basic data larger than the present value.
 2. Make the value of "Phase Match Torque" in Performance data larger than the present value.
 3. Phase match insertion works well in a range of approximately 20 degrees. Make sure that the phases of the workpiece and the object match in this rotation.
 4. Check that the clearance of the workpiece and the object might be too small.

FORC-276 Num.Reg. number error

Cause: "End Register Number" of Force Control End by Register function is invalid.

Remedy: The value of "End Register Number" shall be 1 and more to max number of register or less.

FORC-277 ContactP.is close to SensorOrg

Cause: The ContactP.is too close to the hand-side flange of the sensor.

Remedy: Extend the distance between the 3-Axis ContactP. and the center of 3-axis FS flange in the z direction(which is written on the body of FS) to 17mm or bigger.

FORC-278 Overrun error (F:%d^1)

Cause: The workpiece was inserted longer than the specified length.

- Remedy:**
1. Check that the distance between the approach point and the Insertion finishing point is appropriate.
 2. Check that the value of "Insert Depth(Design)" in Basic data is appropriate.
 3. Make the value of "Individual diff.(+)" in Basic data larger than the present value.

FORC-279 Contouring aborted

Cause: During contouring, an error or emergency stop occurred or the program was terminated forcibly. Alternatively, a jog operation was performed during contouring.

- Remedy:**
1. If an error occurs, correct the cause of the error then restart after returning to the contouring start point.
 2. If an emergency stop occurs, make a reset then restart after returning to the contouring start point.
 3. If a jog operation is executed, restart after returning to the contouring start point.

FORC-280 Cntr. Prohibited Combi. Err.

Cause: Prohibited combination is executed.

Remedy: Do not execute the contouring with prohibited combination.

Prohibited combination:

- "Pushing Dir Auto Chg" and "Successive Execution of Force Control Instructions (Customization Function)"
- "Chk Push Chg Trav Vel" and "Deact.PushDirMotion" or "Change Push. Force" or "Monit Push Dir Depth"
- "Monit Min Push F" and "Deact.PushDirMotion" or "Change Push. Force" or "Monit Push Dir Depth"
- "Monit Push Dir Depth" and "Deact.PushDirMotion" or "Successive Execution of Force Control Instructions (Customization Function)" or "Chk Push Chg Trav Vel" or "Monit Min Push F"
- "The function of Changing a target pushing direction(FCNCHCFR)" and "Successive Execution of Force Control Instructions (Customization Function)"
- "Face Match" function and (3 Axis Force Sensor or "Control frame" is set to "User Frm Fixed" or "Change Push. Force" or "Pushing Dir Auto Chg" or "Monit Push Dir Depth" or "Auto.Follow" or "The function of Changing a target pushing direction(FCNCHCFR)" or "The function of Changing a contact point(FCNCH3CTP)")
- "Auto.Follow" and ("Control frame is Tool Frame" or "Control frame is User Frm Fixed" or "Successive Execution of Force Control Instructions (Customization Function)" or "User Frame Compensation" or "Min. Error Dir." or "Chk Overload Chg Trav Vel" or "Overload F. Detect" or "Deact.PushDirMotion" or "Change Push. Force" or "Pushing Dir Auto Chg" or "Chk Push Chg Trav Vel" or "Monit Min Push F" or "Monit Push Dir Depth" or "2 Direction Push" or "Face Match" or "The function of Changing target pushing force(FCNCHPFN)" or "The function of Changing a target pushing direction(FCNCHCFR)" or "The function of Changing a contact point(FCNCH3CTP)" or "The function of Changing a force control gain(FCNCHFCG)")

FORC-281 Contouring start (F:%d^1)

Cause: Contouring started.

Remedy: This message does not indicate an error but indicates the start of contouring.

FORC-282 Contouring end (F:%d^1)

Cause: Contouring ended.

Remedy: This message does not indicate an error but indicates the end of contouring.

FORC-283 Contouring limit error (F:%d^1)

Cause: During contouring, the tool moved away from a taught path excessively.

- Remedy:**
1. Check if the workpiece or tool is secured at the correct position.
 2. Check if the workpiece and tool are apart from each other excessively at teach points.
 3. Increase the value of "Push Dist. Limit" on the basic screen.

FORC-284 Contour.Push.F.Inadequate.Err.

Cause: While executing "Monit Min Push F" function, pushing force has been less than a designated value for "Monit Time" in a row.

Remedy: Check taught points, the TP Program, the target force, Force Control Gain, etc.

FORC-285 Auto tuning is impossible

Cause: With the contouring function, the automatic force control gain tuning function cannot be executed.

Remedy: Modify the force control gain manually. For the method of setting, see subsection of "FORCE CONTROL GAIN (IMPEDANCE PARAMETERS)" in "R-30iB/ R-30iB Mate CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)". Increase the master frequency from about 0.5 Hz in steps of 0.25 Hz for LRMate, M-10iA or M-20iA

series robot. Increase the master frequency from about 0.1 Hz in steps of 0.1 Hz for M-710iC, R-1000iA, R-2000iB or R-2000iC series robot. If even a slight vibration is observed, do not increase the gain any more.

FORC-286 Cntr. UF Fixed Combi. Err.

Cause: "Control frame" is set to "User Frm Fixed" that sets the origin of control frame to the origin of the user frame with the prohibited combination.

Remedy: Change the setting that is prohibited as the prohibited combination. Or change "Control frame" in Basic data except "User Frm Fixed".

Prohibited combination:

- "Chk Overload Chg Trav Vel Sw" is ON and "Monitoring Force" is "travel"
- "Overload F. Detect Sw" is ON and "Monitoring Force" is "travel"
- "Change Push. Force Sw" is ON
- "Pushing Dir Auto Chg" is valid
- "Monit Push Dir Depth Sw" is ON

FORC-287 Contour.Dep.Mon.Func.Err.

Cause: "Monit Push Dir Depth" function issues an alarm.

Remedy: If the depth exceeds "End Depth" without contact, check the settings.

FORC-288 Cntr.Dep.Mon.Rept.CountOver

Cause: The repeat counter exceeds "Max Repeat Count" when executing "Monit Push Dir Depth" function.

Remedy: Check taught points, the TP Program, "Max Repeat Count", etc.

FORC-289 Cntr.AutoPush.DirChange Err.

Cause: "Pushing Dir Auto Chg" function issues an alarm.

Remedy: The pushing direction must be $\pm X$ or $\pm Y$.

The Control Frame must be User Frame.

At the beginning of a contouring, a pushing direction must not be parallel to a traveling direction.

Do not restart the contouring when executing "Pushing Dir Auto Chg" function with "Chk Push Chg Trav Vel" function or "Monit Push Dir Depth" function.

FORC-290 Cntr.Param. Changed at Start

Cause: At the start of Contouring, parameters for Contouring were changed.

Remedy: This message does not indicate an error but indicates the start of contouring with parameters changed by the changing parameters functions. These functions are addressed under the subsection of "Other functions of the Contouring Function" in "R-30iB CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)".

FORC-291 Contour.Param.Change.Err.

Cause: The values for changing parameters during a contouring are inappropriate.

Remedy: 1. Check that the values for changing are appropriate.
2. Check whether the functions those cannot be used together are valid or not.

FORC-292 2 Dir. Push Func. error

Cause: The values for "2 Dir Push Func" are inappropriate.

Remedy: 1. When "Chk Push Chg Trav Vel Sw" is "Dir 2" or "Dir 1&2", make "2 Dir Push Func" valid.
2. When "Monit Min Push F Sw" is "Dir 2" or "Dir 1&2", make "2 Dir Push Func" valid.
3. When "2 Dir Push Func" is valid, make the value of "Contouring Force 2" 0.01 N or larger.
4. When "2 Dir Push Func" is valid, "Pushing Dir Auto Chg" is valid and control frame is user frame, make the pushing direction $\pm Z$.
5. When "2 Dir Push Func" is valid, make "Pushing Direction" in Basic data different direction from "Pushing Direction 2".

FORC-293 Cntr.FaceMatch Set. error

Cause: Setting values for "Face Match" of "Contour" are inappropriate.

Remedy: Set the value of "Dist.Of ContactP. from Axis" to the value that is greater than or equal to 0 and less than or equal to 2000 mm or set the value of "FaceMatch Max Rotation Velocity" to the value that is greater than or equal to 0 and less than or equal to 5 deg/s.

FORC-294 Auto.Cntr. Set. error

Cause: Setting values for "Auto.Follow" of "Contour" are inappropriate.

Remedy: 1. If "Aprch.Dir.Ang InptNumReg No. " is 0, set "Pushing Dir." in Basic data to $\pm Z$.
2. If "Aprch.Dir.Ang InptNumReg No. " is not 0, set the value of the designated Numerical Register to the value that is greater than or equal to 360 and less than or equal to -360.

FORC-295 Cntr.TPP Auto.Gen. Set. error

Cause: Setting values for "TPProgramAuto.Gen." are inappropriate.

Remedy: Check the parameters in TPProgramAuto.Gen.Param. designated by "TPProgramAuto.Gen.Param.No." and set it appropriately.

FORC-296 F. Ctrl during Contouring

Cause: During contouring, another type of force control instruction such as shaft insertion was executed.

Remedy: Contouring and another type of force control instruction such as shaft insertion cannot be executed simultaneously.
Remove all other types of force control instructions.

FORC-297 Contouring option is not ordered

Cause: The software option required for the contouring function is not incorporated into the controller.

Remedy: Install the software option (Force control contouring). Contact the FANUC service center.

FORC-298 Change Moving Vel. Set. error

Cause: The values of "Chk Overload Chg Trav Vel" or "Chk Push Chg Trav Vel" are inappropriate.

Remedy: Set the value of "Min. Force" smaller than value of "Max. Force" or Set the value of "Min. Force Rate" smaller value of "Max. Force Rate".

FORC-299 I/O or Num.Reg. number error

Cause: The values for Contouring are inappropriate.

Remedy: 1. Change the register number of function which is valid in contouring.
2. The register number shall be 1 and more to max number of register or less.
3. If "Auto.Follow" is used and "End Pos. Designate" is set to "Pos.Reg.", check X, Y in the designated position register.

FORC-300 Change Push. Force Set. error

Cause: The values of "Change Push. Force" are inappropriate.

Remedy: Set the value of "Min. Speed" smaller than value of "Max. Speed".

FORC-301 Illegal physical ITP (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-316 Illegal F/C axis number (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-320 Unfinished master (F:%d^1)

Cause: Robot is not mastered yet.

Remedy: Master the robot, then turn the controller OFF then ON again.

FORC-324 Illegal joint singular (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-326 Illegal F/S range (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-329 Not Supported Robot

Cause: "Face Match" can be executed only with LRMate200iD, M-710iC/20L.

“Auto.Follow” can be executed only with LRMate200iD series, M-10iA series, M-10iD series, CR-7iA series, CR-14iA/L, CR-15iA.

Remedy: “Face Match” can be executed only with LRMate200iD, M-710iC/20L.

“Auto.Follow” can be executed only with LRMate200iD series, M-10iA series, M-10iD series, CR-7iA series, CR-14iA/L, CR-15iA.

FORC-330 Auto.Follow Dist.From Strt.CtP err

Cause: Reached the moving upper limit (Dist.From Strt.CtP) during a contouring with “Auto.Follow”.

Remedy: 1. Check the setting values of Move UpperLim. (Dist.From Strt.CtP).
2. If you do not want to issue this alarm, set the value that includes 1 to “NrmlEnd for MoveUpperLim”.

FORC-331 Auto.Follow Not Contact err

Cause: Not in contact situation occurs successively during a contouring with “Auto.Follow”.

Remedy: 1. Check that gravity compensation is valid and at the beginning of the contouring the robot is not in contact with surroundings.
2. Change the starting point. Change the force control gain.
3. Under present circumstances, the robot can not follow the work-piece appropriately.

FORC-332 Auto.Follow Continuing err

Cause: The robot could not follow the work-piece appropriately during a contouring with “Auto.Follow”.

Remedy: 1. Check that gravity compensation is valid and at the beginning of the contouring the robot is not in contact with surroundings.
2. Change the starting point. Change the force control gain.
3. Under present circumstances, the robot can not follow the work-piece appropriately.

FORC-333 Cntr.TPP.Gen. GetPointNum Over

Cause: The number of getting position exceeds the upper limit during a contouring with “TPProgramAuto.Gen.”.

Remedy: 1. Check the parameters in TPProgramAuto.Gen.Param. designated by “TPProgramAuto.Gen.Param.No.” and set the parameters appropriately.
2. Lessen the total contouring distance given by the teaching points.

FORC-334 Cntr. Generate TPProgram

Cause: TP Program has been generated successfully with “TPProgramAuto.Gen.”.

Remedy: This message does not indicate an error.

FORC-335 Auto.Follow Total Move Dist err

Cause: Reached the moving upper limit (Total Move Dist) during a contouring with “Auto.Follow”.

Remedy: 1. Check the setting values of Move UpperLim. (Total Move Dist.).
2. If you do not want to issue this alarm, set the value that includes 2 to “NrmlEnd for MoveUpperLim”.

FORC-336 Auto.Follow Total Move Time err

Cause: Reached the moving upper limit (Total Move Time) during a contouring with “Auto.Follow”.

Remedy: 1. Check the setting values of Move UpperLim. (Total Move Time).
2. If you do not want to issue this alarm, set the value that includes 3 to “NrmlEnd for MoveUpperLim”.

FORC-420 Search Retry Limit (F:%d^1)

Cause: The upper limit of the number of search operations is exceeded. This alarm is issued in "Search", "Phase Search", "Hole Search", and "Clutch Search".

Remedy: 1. Check whether the workpiece is abnormal.
2. If the robot does not perform search operation though no position or phase match has occurred, and this error occurs in a short time, the "Target Force" or "Target Torque" parameter value may be too small. Increase the parameter value in steps of about 20 percent until the robot operates.
3. When a corresponding workpiece into which another workpiece is to be inserted is not secured, the corresponding workpiece may move together with the inserted workpiece (interaction) during search operation. Observe the workpieces, and if interaction is confirmed, decrease the "Push Force" value (for "Search", "Hole Search", and "Clutch Search") or the "Phase Mach Push Force" value (for "Phase Search") until interaction is

- eliminated. If interaction is still confirmed after the parameter value has been decreased, this problem cannot be eliminated by parameter tuning. Secure the workpiece into which the other workpiece is to be inserted.
4. If the hand does not have enough grasping force, the workpiece into which another workpiece is to be inserted may move together with the workpiece to be inserted, which can disable position or phase matching. Observe the workpieces, and if interaction is confirmed, modify the hand so that it can grasp the workpiece securely.
 5. If the search instruction does not terminate though search operation has been performed normally, the "Search End Depth" value (for "Search", "Hole Search", and "Clutch Search") or the "Phase Match End Depth" value (for "Phase Search") may be too large. Enter a correct value.
 6. Check the "Retry Count" on the search performance screen. When the tact is not tight, increase the retry count. Increasing the retry count decreases the frequency of occurrence of this error.

FORC-421 Search Range over (F:%d^1)

Cause: Search does not terminate even when the parameter-set "Size of Search Range" plus "Search Range Margin" has been exceeded. This alarm is issued in "Search", "Phase Search", "Hole Search", and "Clutch Search".

- Remedy:**
1. Check whether the range to be searched and the "Size of Search Range" parameter match.
 2. The velocity in the insertion direction may be too high. For "Search", "Hole Search", and "Clutch Search": Decrease "Search Frequency". For "Phase Search": Decrease "PhaseMatch Ang. Vel".
 3. When the upper limit of the search range has been reached, search operation may terminate normally by reversing the advance direction instead of alarm issuance. If the cycle time is not tight, reverse the advance direction. Set "Reverse Switch" to ON.

FORC-422 Search Frc/Vel wrong (F:%d^1)

Cause: The target force (torque) or target velocity (angle velocity) for search operation is set to 0. This alarm is issued in "Search", "Phase Search", "Hole Search", and "Clutch Search".

- Remedy:** If the target force (torque) or target velocity (angle velocity) for search operation is 0, search operation cannot be performed. Set a non-zero value.

The target force (torque) or target velocity (angle velocity) parameter is as follows:

For "Search" and "Clutch Search": On [the search basic screen](#), "Target Force" (when the search direction is X, Y, or Z) or "Target Torque" (when the search direction is W, P, or R), or "Target Velocity" (when the search direction is X, Y, or Z) or "Target Angular Velocity" (when the search direction is W, P, or R)

For "Phase Search": On [the basic screen](#), "Phase Match Torque" or "PhaseMatch Ang. Vel"

For "Hole Search": On [the search basic screen](#), "Target Force" or "Target Velocity"

FORC-423 Search Vel order error (F:%d^1)

Cause: The "Velocity Order" parameter value is illegal. This alarm is issued in "Search", "Hole Search", and "Clutch Search".

- Remedy:** For each search direction, set a different integer. For example, set the direction with the highest velocity to 1, the direction with the next-highest velocity to 2, and so forth. Set 0 for those directions in which search operation is not performed. The "Velocity Order" parameter is displayed on [the search basic screen](#).

FORC-425 Search range param. error (F:%d^1)

Cause: There is an illegal relationship between parameters "Size of Search Range" and "Clearance & Chamfer". This alarm is issued in "Search", "Hole Search", and "Clutch Search".

- Remedy:** Set the parameters so that "Size of Search Range" ≥ "Clearance & Chamfer" on [the search basic screen](#).

FORC-426 Search velocity Calc. error (F:%d^1)

Cause: The value of the "Search Frequency", "Size of Search Range", or "Clearance & Chamfer" parameter is illegal. This alarm is issued in "Search", "Hole Search", and "Clutch Search".

- Remedy:** On [the basic screen](#), set "Search Frequency" to a non-zero value.
On [the search basic screen](#), set "Size of Search Range" and "Clearance & Chamfer" to non-zero values.

FORC-427 Search reverse SW invalid (F:%d^1)

Cause: The "Reverse Switch" parameter setting is illegal. This alarm is issued in "Search", "Hole Search", and "Clutch Search".

- Remedy:** When search operation is performed in more than one direction, the reverse switches for all directions except the direction with the largest value set as the velocity order (the direction of the slowest operation) must be set to ON. If this switch is OFF, set it to ON. "Reverse Switch" is displayed on [the search performance screen](#).

FORC-428 Search velocity MAX error (F:%d^1) (In case of 7DF1 or earlier)

Cause: The absolute value of the automatically calculated velocity or angular velocity is too large. This alarm is issued in "Search", "Hole Search", "Clutch Search", and "Phase Search".

Remedy:

1. Decrease "Search Frequency" on the basic screen.
2. Decrease "Size of Search Range" on the search basic screen.
3. Decrease "Clearance & Chamfer" on the search basic screen.
4. In case of "Search", "Hole Search", and "Clutch Search", decrease the absolute value of "Target Velocity" or "Target Angular Velocity" on the search basic screen. In case of "Phase Search", decrease the absolute value of "PhaseMatch Ang. Vel" on the basic screen.

FORC-428 Search velocity MAX error (F:%d^1) (In case of 7DF3 or later)

Cause: The absolute value of velocity or angular velocity is too large. This alarm is issued in "Search", "Hole Search", "Clutch Search", and "Phase Search".

Remedy: In case of "Search", "Hole Search", and "Clutch Search", decrease the absolute value of "Target Velocity" or "Target Angular Velocity" on the search basic screen. In case of "Phase Search", decrease the absolute value of "PhaseMatch Ang. Vel" on the basic screen.

FORC-452 Illegal cool down rate (F:%d^1)

Cause: Settling rate is out of range.

Remedy: Set the value of 0 – 100 to "Settling Rate" in Performance data.

FORC-453 Illegal tool weight get time (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-454 4D Graphics is not ordered

Cause: 4D Graphics option (R764) is not ordered.

Remedy: Order 4D Graphics option.

FORC-455 No folder is found

Cause: There are no folders that are designated in 4D graphic Force display screen in the selected device. Refer to subsection, "Force Sensor 4D Graphic function" in "R-30iB/R-30iB Mate CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)".

Remedy:

1. Check if the device that is designated in 4D graphic Force display screen is inserted to a slot of a Robot controller.
2. Check the device whether it contains folders or not.

FORC-456 No file is found

Cause: There are no files that are designated in 4D graphic Force display screen in the selected folder. Refer to subsection, "Force Sensor 4D Graphic function" in "R-30iB/R-30iB Mate CONTROLLER Force Sensor OPERATOR'S MANUAL (B-83424EN)".

Remedy:

1. Check if the device that is designated in 4D graphic Force display screen is inserted to a slot of a Robot controller.
2. Check the device whether it contains folders that are designated in 4D graphic Force display screen in the selected device.
3. Check if there are files whose extension is DT in the folders that are designated in 4D graphic Force display screen.

FORC-457 No appropriate data

Cause: The file does not contain appropriate data.

Remedy:

1. Check the DT file whether it is created by Force Data Log function.
2. Execute Force Data Log function and make data file again.

FORC-458 display data overflow

Cause: The number of displayed data for "Force Sensor 4D Graphic function" exceeds limit.

Remedy: Increase "Display Interval" in 4D graphic Force display screen.

FORC-459 Too many folders or files

Cause: There are too many folders in device or too many files in folder for "Force Sensor 4D Graphic function".

Remedy: 1. If there are more than 101 folders in the device that is designated in 4D graphic Force display screen, decrease the number of folders to less than 101.
2. If there are more than 1001 files whose extension is DT in the folders that are designated in 4D graphic Force display screen, decrease the number of files to less than 1001.

FORC-479 Illegal vision user comp. data (F:%d^1)

Cause: Vision compensated user frame is wrong.

Remedy: Acquire the offset data with vision again.

FORC-481 Illegal insertion direction (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-484 Illegal pushing force (F:%d^1)

Cause: The value of "Pushing Force" is smaller than the lower limit.

Remedy: If the force schedule is other than [Contour], make the absolute value of "Insert Force" or "Pushing Force" in Basic data 0.3 N or larger.
If the force schedule is [Contour], make the absolute value of "Contouring Force" in Basic data 0.01 N or larger.

FORC-485 Setting torque error failed (F:%d^1)

Cause: Failed to acquire the torque error data.

Remedy: 1. Check the distance between the approach position and the contact position is too long. (5mm is appropriate.)
2. Make the value of "Approach Velocity" in Basic data faster than the present value.

FORC-487 Setting end cond. failed(USE) (F:%d^1)

Cause: Insertion direction acquired by the end condition acquisition is wrong.

Remedy: Execute the end condition acquisition again.

FORC-489 Illegal pushing depth (F:%d^1)

Cause: The value of "Individual Diff (-)" in Basic data is less than 0 or bigger than the value of "Insert Depth(Design)" in Basic data.

Remedy: Make the value of "Individual Diff (-)" positive and smaller than the value of "Insert depth(design)".

FORC-490 Illegal rotation angle max (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-491 Illegal decelerate time (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-492 Illegal decel depth rate (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-493 Illegal rotation direction (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-494 Illegal initial Fd (F:%d^1)

Cause: The sign of "Initial Insert Force" in Performance data is different from the sign of "Insert Force".

Remedy: Make the sign of "Initial Insert Force" in Performance data same as the sign of "Insert Force" in Basic data.

FORC-495 Illegal velocity adjust gain (F:%d^1)

Cause: "Velocity Adjust Gain" in Performance data is not appropriate.

Remedy: Set the value of 0 – 3 to "Velocity Adjust Gain" in Performance data.

FORC-496 Illegal starting rate (F:%d^1)

Cause: "Starting Rate" in Performance data is not appropriate.

Remedy: Make the value of "Starting Rate" in Performance data larger than 12.5.

FORC-497 Illegal ending rate (F:%d^1)

Cause: "Ending Rate" in Performance data is not appropriate.

Remedy: Make the value of "Ending Rate" in Performance data smaller than 95.

FORC-498 Illegal rotation velocity (F:%d^1)

Cause: "Rotation Velocity" in Basic data is not appropriate.

Remedy: In the case that the rotation axis matches the J6 axis, make the value of "Rotation Velocity" in Basic data smaller than 200 deg/s.

Otherwise, make the value of "Rotation Velocity" in Basic data smaller than 5 deg/s.

FORC-500 Illegal reduction ratio (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-502 Illegal overrun length (F:%d^1)

Cause: The value of "Individual Diff.(+)" in Basic data is not appropriate.

Remedy: Set the value of 0 – 10000 to "Individual Diff.(+)" in Basic data.

FORC-542 Rotate angle limit (F:%d^1)

Cause: Rotation angle exceeded the upper limit during the phase match insertion.

Remedy: 1. Make the value of "Phase Match Push Force" in Basic data larger than the present value.
2. Check that the clearance of the workpiece and the object might be too small.

FORC-546 No custom cont. exe. (F:%d^1)

Cause: Force control instructions for which no parent-child relationship was set were executed successively.

Remedy: 1. When specification of the parent-child relationship was neglected
Before execution, specify the first force control instruction as the parent in a force control parameter of the force control instruction executed second (set the schedule data number of the first force control instruction in parameter 3, "Customize Parent Number", on the performance screen).
2. When two force control instructions are executed independently of each other
When the individual force control instructions are executed independently, it is necessary to make a movement to the position at which force control starts (the approach point) before the second force control instruction is executed. Teach the approach point.

FORC-547 Customize no parent (F:%d^1)

Cause: Immediately before execution of a child force control instruction, the force control instruction specified as the parent was not executed.

Remedy: Immediately after executing the force control instruction specified as the parent, execute the child force control instruction. Do not execute another force control instruction between the parent and child force control instructions.

FORC-549 Customize parent err (F:%d^1)

Cause: When the parent force control terminated with an error, the child force control that does not perform retry (draw) operation was executed.

Remedy: 1. When performing assembly operation by executing more than one force control instruction successively, the child force control for insertion cannot be executed unless the parent force control terminates normally (the child force control for retry operation can be executed). Check the error that occurred during the parent force control, make modifications so that the error will no longer occur, then reexecute.
2. When child force control is executed to perform retry operation, the user frame and tool frame of the child force control must be the same as those of the parent, and the specified insertion direction must be opposite to that of the parent. Check the frames and insertion direction on the basic screen.

FORC-550 Customize intr. err0 (F:%d^1)

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-631 Force sensor is abnormal

Cause: Force sensor is abnormal.

Remedy: Check the following items:

1. Robot is mastered.
2. Force sensor calibration data is loaded.
3. Force sensor cable is connected.

FORC-632 Can't get variables

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-633 Can't set variables

Cause: Software internal error

Remedy: Contact the FANUC service center and report the error status.

FORC-634 Can't use WCG in case of fixed FS

Cause: In case of fixed force sensor, "Tool Weight and Center of Gravity Calculation Function" can't be executed.

Remedy: In case of fixed force sensor, "Tool Weight and Center of Gravity Calculation" function can't be executed. If the force sensor is attached to a robot wrist, change the attachment type from FIXED to HAND in "Force Sensor Arrangement Setting Function", then execute "Tool Weight and Center of Gravity Calculation Function".

FORC-635 Can't use WCG with this robot

Cause: In case of M-1iA/0.5A, "Tool Weight and Center of Gravity Calculation" function can't be executed.

Remedy: Don't execute "Tool Weight and Center of Gravity Calculation Function", for M-1iA/0.5A.

FORC-641 Recording positions failed

Cause: Recording positions failed. The real cause is the alarm just below this one in alarm history.

Remedy: Please check the alarm history and then retry again.

FORC-642 Too many recorded positions

Cause: Too many recorded positions.

Remedy: Please reduce total recording time, or increase the monitoring interval".

FORC-643 No enough recorded positions

Cause: Recording positions not finished, or NOT enough recorded positions.

Remedy: Please finish recording, or increase total recording time.

FORC-644 No enough edge points

Cause: iRVision Debur. Line Output vision process has not been executed or NOT enough edge points detected.

Remedy:

1. Please finish running iRVision Debur. Line Output vision process.
2. Please check the setting of iRVision Debur. Line Output vision process.

FORC-645 Too many edge points detected

Cause: Too many edge points detected by iRVision Debur. Line Output vision process.

Remedy:

1. Please check maximum available number of edge points.
2. Please check the setting of iRVision Debur. Line Output vision process.

FORC-646 Update initial data failed

Cause: Failed to update initial data. The real cause is the alarm just below this one in alarm history.

Remedy: Please check the alarm history and retry.

FORC-647 Generating TP program failed

Cause: Generating TP program failed. The real cause is the alarm just below this one in alarm history.

Remedy: Please check the alarm history and retry.

FORC-648 Too many teach points

Cause: Too many teach points.

Remedy: Please increase values of parameters Distance Threshold, Angle Threshold or Orient Change Thres.

FORC-649 Parameter setting error

Cause: Parameter setting not initialized or it is not correct. The real cause is the alarm just below this one in alarm history.

Remedy: Please check the alarm history and retry.

FORC-650 NOT for robot with Ext axes

Cause: Robots with extended axes are NOT supported.

Remedy: Please change to robot without extended axes to use this function.

FORC-651 Cannot find matched edge line

Cause: Cannot find an edge line detected by iRVision Debur. Line Output vision process matches to that in the initial data.

Remedy: Please check the setting of iRVision Debur. Line Output vision process.

FORC-652 Contour Schedule error

Cause: The setting of the specified contouring schedule data is wrong.

Remedy: Please set the specified contouring schedule correctly. If you manually set the specified schedule from UNUSED to CONTOURING, please reset it to UNUSED and try again.

FORC-653 Invalid data file

Cause: The data file is missing or it is invalid.

Remedy: Please check the data file.

FORC-654 Target not found

Cause: Some targets are not found.

Remedy: Please find all targets firstly.

FORC-655 Target distance too small

Cause: Target distance is too small.

Remedy: Please confirm all target distance are greater than 15mm when teaching targets.

FORC-656 Target matching error

Cause: The detected target distance does not match the taught target distance.

Remedy: Please confirm that there is no wrong detection of target.

FORC-657 PTPINIT not executed

Cause: PTPINIT has not been executed.

Remedy: Please execute PTPINIT firstly.

FORC-658 Edge point not reachable

Cause: Some edge positions are not reachable.

Remedy: Please adjust the workpiece position, start point of edge, or TCP and then try again.

FORC-659 Approach point setting error

Cause: Approach point setting of the edge is wrong.

Remedy: On the ROBOGUIDE edge property page, enable the parameter Add approach point, and set Acr to a minus value and then try again.

FORC-660 Part name too long

Cause: Part name is too long.

Remedy: Please set the part name to be no longer than 18 characters and try again.

FORC-661 Edge points location error

Cause: All edge point in the data file are not in the same plane.

Remedy: Please teach the edge in the same plane and then generate data files again.

FORC-662 Edge points orient error

Cause: The orientation of some edge points in the data file are wrong.

Remedy: Please teach the orientation of the edge points correctly and then generate data files again.

FORC-663 Edge line overlapped

Cause: The edge line in the data file overlapped.

Remedy: Please do not overlap the edge while teaching it and then generate data files again.

FORC-664 Edge shape at start point mismatch.

Cause: The actual workpiece shape and the shape on the CAD drawing differ significantly near the edge start point. This problem tends to occur when setting the start point close to the corner.

Remedy: Use ROBOGUIDE to delete the specified edge, and set the edge data start point again to a position far away from the corners. Generate the data file again.

FORC-665 "%s".TP is generated

Cause: TP program is generated.

Remedy: It is not an alarm but a message.

FORC-666 Auto retreat setting error

Cause: Auto retreat setting error.

Remedy: Please confirm the auto retreat setting and then try again.

FORC-667 Edge is far away from targets

Cause: Edge is far away from targets.

Remedy: Please adjust the target position and then generate data files again.

FORC-668 Target distance too large

Cause: Target distance is too large.

Remedy: Please confirm all target distance are smaller than one meter.

FORC-669 Part ID not assigned

Cause: Part ID not assigned.

Remedy: Please assign the part ID and then try again.

FORC-681 H/G Inside motion area error.

Cause: In the hand guidance operation, two or more Cartesian Position Limits with Inside motion area are enabled.

Remedy: Please enable only one Cartesian Position Limit with inside motion area in the hand guidance operation.

FORC-682 H/G Outside motion area error.

Cause: In the hand guidance operation, two or more Cartesian Position Limits with Outside motion area are enabled.

Remedy: Please enable only one Cartesian Position Limit with outside motion area in the hand guidance operation.

FORC-683 H/G Timeout error.

Cause: Hand guidance timeout error.

Remedy: Please finish a hand guidance operation within two minutes.

FORC-684 H/G Position Config changed.

Cause: During the direct teaching process, the position configuration has been changed.

Remedy: During the direct teaching process, please do not change the position configuration between Flip and Non-flip, or between Up and Down, or between Back and Front.

FORC-685 H/G initial setting error.

Cause: Hand guidance initial setting error.

Remedy: Please check the hand guidance initial setting screen.

1. To use the custom button, please set as follows.

- (a) Lever Mounted -> Yes.
- (b) Custom Switch Output -> Enable.
- (c) Output To -> a correct DO/RO/F.

2. To use Hand Open/Close SW, please set as follows.
 - (a) Hand Open/Close SW -> Enable.
 - (b) Open Program/Close Program -> Correct programs.

FORC-686 H/G I/O Signal setting Error.

Cause: Hand guidance I/O Signal setting error.

Remedy: Please check the hand guidance I/O Signal setting in the Cartesian Pos. Limit Detail screen.

FORC-687 H/G Too many recorded positions.

Cause: Too many recorded positions.

Remedy: Please reduce total recording time, or increase the Distance Threshold or Orient Change Threshold, and do the Direct Teaching again.

FORC-688 H/G Too many teach points.

Cause: Too many TP program teach points.

Remedy: Please reduce total recording time, or increase the Distance Threshold or Orient Change Threshold, and do the Direct Teaching again.

FORC-689 H/G System is in error Status.

Cause: System is in error status, therefore the hand guidance can not be started.

Remedy: Please clear the error by pushing RESET button, and then try the hand guidance again.

FORC-690 H/G ENBL input is OFF.

Cause: ENBL input is OFF, therefore the hand guidance can not be started.

Remedy: Please set the ENBL input to ON and try the hand guidance again.

FORC-691 H/G HOLD input if ON.

Cause: HOLD input is ON, therefore the hand guidance can not be started.

Remedy: Please set the HOLD input to OFF and try the hand guidance again.

FORC-692 H/G Force Sensor Initial Force Error

Cause: The initial force of hand guidance force sensor is not set.

Remedy: Stop the robot for more than 10 seconds, and then try hand guidance again.

FORC-693 H/G Hand Guidance is running.

Cause: H/G Hand Guidance is running.

Remedy: Please end the hand guidance and then try again.

FORC-694 H/G Hand Guidance out of motion area.

Cause: Robot is out of hand guidance motion area.

Remedy: Jog the robot into the hand guidance motion area, and then try again.

FORC-695 H/G Hand Guidance stopped.

Cause: Hand guidance motion has been stopped.

Remedy: Please set the Contact stop status of the Collaborative robot to SAFE, then try again.

FORC-696 H/G Cartesian Position Limit

Cause: Robot is out of hand guidance cartesian position limit.

Remedy: Jog the robot into the hand guidance cartesian limit, and then try again.

FORC-697 H/G Joint Position Limit

Cause: Robot is out of hand guidance joint position limit.

Remedy: Jog the robot into the hand guidance joint limit, and then try again.

FORC-698 H/G In singularity

Cause: Robot is near singularity position.

Remedy: Jog the robot out of singularity position, and then try again.

FORC-699 Tracking is running.

Cause: Tracking is running.

Remedy: Stop all tracking conveyors, and then try hand guidance again.

FORC-700 Tracking is started during hand guidance.

Cause: Tracking is started during hand guidance.

Remedy: Stop all tracking conveyors, and then try hand guidance again.

FORC-701 SHG battery low.

Cause: Small hand guidance unit's battery remaining is low.

Remedy: Please recharge the unit as soon as possible.

FORC-702 SHG battery zero.

Cause: Small hand guidance unit's battery remaining is almost zero.

Remedy: Please recharge the unit before using it.

FORC-703 SHG data communication error

Cause: Small hand guidance data communication error.

Remedy: Please check the connection with the small hand guidance if there is noise nearby, and then try again.

FORC-704 SHG USB adapter disconnected

Cause: Small hand guidance USB adapter is not connected.

Remedy: Please insert the small hand guidance USB adapter to the iPendant, and then try again.

FORC-1000

Cause: This alarm does not actually occur, however, it may appear in the alarm number on the Force Ctrl Ex-hist screen.

Remedy: When any of the following conditions is met during execution of the FORCE statement, 1000 will be displayed.

- An emergency stop occurred.
- The HOLD button was pressed.
- The HOLD signal was received.
- In T1/T2 mode, the deadman switch was released or pushed in.
- In T1/T2 mode, the shift key was released.

Execute the FORCE statement so that any of the above can be avoided.

4.6.6 FPLN Alarm Code

FPLN-001 Invalid UTOOL ornt in FPLIn

Cause: Faceplate Linear mode only support utool approach vector parallel to faceplate approach vector for a 4/5 axes robot.

Remedy: Remove FPLIN motion modifier or use only utool which's approach vector is parallel to faceplate approach vector.

FPLN-002 Option Not supported

Cause: Motion modifier not supported.

Remedy: Remove FPLIN motion modifier or remove the conflicted option.

FPLN-003 Application tool Not supported

Cause: This Application tool does not support FPLIN.

Remedy: Remove FPLIN motion modifier.

FPLN-004 No FPLIN global variables

Cause: FPLIN global variable was not allocated.

Remedy: Check to see if there is enough memory.

FPLN-005 Semi Hot not support

Cause: Pause line is a FPLIN motion.

Remedy: Can not org-path-resume for this line.

FPLN-006 INC move not support

Cause: INC Motion not supported.

Remedy: Remove FPLIN motion modifier or use offset motion modifier instead.

4.6.7 FRSY Alarm Code

FRSY-001 FROM disk is full

Cause: The FROM disk does not have enough available memory to perform the specified command.

Remedy: Delete all unnecessary files and then purge the device. If the device is still full, then backup the files to an off-line device and reformat the device.

FRSY-002 Device not formatted

Cause: The device is not formatted.

Remedy: Format the device before using it.

FRSY-003 Invalid parameter

Cause: An invalid parameter is detected.

Remedy: Verify all the parameters for the requested command are correct.

FRSY-004 RAM disk must be mounted

Cause: Copying a file to the FROM disk requires that the RAM disk be mounted with enough memory available to temporarily contain the file.

Remedy: Mount the RAM disk before specifying the command.

FRSY-005 Device not mounted

Cause: The device is not mounted.

Remedy: Mount the device before using it.

FRSY-006 Device is already mounted

Cause: The device is already mounted.

Remedy: This is a notification. You do not have to do anything for this warning message.

FRSY-007 Invalid device name

Cause: The specified device is not valid.

Remedy: Verify the device name.

FRSY-008 File already exists

Cause: The specified file already exists.

Remedy: Delete the file first or specify overwrite if available with the command.

FRSY-009 Too many files opened

Cause: The maximum number of files is already open. Therefore the requested command cannot be performed.

Remedy: Either close one or more of the files or set \$OPEN_FILES to a larger number and perform a cold start.

FRSY-010 Invalid file position

Cause: An invalid file position is specified. The position is beyond the end of the file or a negative position.

Remedy: Check the file position.

FRSY-011 Directory full

Cause: No more files are allowed on the device.

Remedy: Delete any unnecessary files or dismount and remount MF: device which will increase the maximum number of files allowed.

FRSY-012 Invalid file access mode

Cause: The requested command cannot be performed because the file is not opened with the proper access mode. This error is also caused by trying to update or append to an existing file on the FROM disk or to an existing compressed file on the RAM disk. Update and append are only allowed with uncompressed files on the RAM disk.

Remedy: Open the file with the proper access mode.

FRSY-013 Device is too fragmented

Cause: The file cannot be created on the device because not enough consecutive blocks are available.

Remedy: Delete all unnecessary files and then purge the device. For more information on purging, refer to the PURGE_DEV Built-in in the KAREL Reference Manual. If the device is still full, then backup the files to an off-line device and reformat the device.

FRSY-014 File not found

Cause: The specified file is not found.

Remedy: Verify the file name and the specified or default device is correct.

FRSY-015 Invalid file name

Cause: The file name contains an invalid character or is blank.

Remedy: Verify the file name is correct.

FRSY-016 Invalid file type

Cause: The file type contains an invalid character.

Remedy: Verify the file type is correct.

FRSY-017 File not open

Cause: The file is not open.

Remedy: Open the file before accessing.

FRSY-018 File is already opened

Cause: The requested command cannot be performed because the file is already opened.

Remedy: Close the file before specifying the command.

FRSY-019 Command is not supported

Cause: The specified command is not supported for the device.

Remedy: This is a notification. You do not have to do anything for this warning message.

FRSY-020 RAM disk is full

Cause: The RAM disk does not have enough available memory to perform the specified command. Note that copying a file to the FROM disk requires that the RAM disk be mounted with enough memory available to temporarily contain the file.

Remedy: Delete all unnecessary files and then purge the device. For more information on purging, refer to the PURGE_DEV Built-in in the KAREL Reference Manual. If the device is still full, then back up the files to an off-line device and reformat the device after setting \$FILE_MAXSEC to a larger number.

FRSY-021 End of file

Cause: The end of the file is detected.

Remedy: This is a notification. You do not have to do anything for this warning message.

FRSY-022 File ID exceeded maximum

Cause: The file identification number has reached the maximum number for the device.

Remedy: You must backup all your files, reformat the device, and restore the files. Refer to the *File System* chapter in the KAREL Reference Manual for more information.

FRSY-023 No blocks were purged

Cause: No blocks were purged for one of the following reasons:

1. No garbage blocks exist.

2. No spare blocks exist because the FROM disk is full.

Remedy: If you require more blocks, you must back up all your files, reformat the device, and restore the files. Refer to the *File System* chapter in the KAREL Reference Manual for more information.

FRSY-024 Purge is disabled

Cause: You are not allowed to purge the FROM disk because purge is disabled.

Remedy: Set \$PURGE_ENBL to TRUE and retry the purge operation. You may wish to set \$PURGE_ENBL to FALSE before running a program or application which requires fast cycle time.

FRSY-026 CRC check failed

Cause: One or more files on the FROM disk are corrupted. This may occur if the FROM is wearing out.

Remedy: You should backup all your files, reformat the device, and restore the files. Refer to the *File System* chapter in the KAREL Reference Manual for more information. If the problem persists, the FROM might need to be replaced.

FRSY-028 %d out of %d bad FROM blocks

Cause: The FROM disk is wearing out.

Remedy: The system will continue to operate as long as enough blocks are available. When too many blocks become bad, the FROM will need to be replaced.

4.6.8 FXTL Alarm Code

FXTL-001 File parsing error

Cause: A file parsing error has occurred. An error exists in one of the model files.

Remedy: Correct the model file and copy it to the controller.

FXTL-002 Not enough values on line

Cause: Not enough values on line. There are not enough values on a line in one of the model files.

Remedy: Correct the model file and copy it to the controller.

FXTL-003 Numeric conversion error

Cause: A numeric conversion error has occurred. A value on a line in a model file is not a valid numeric value.

Remedy: Correct the model file and copy it to the controller.

FXTL-004 Output buffer too small

Cause: The output buffer is too small. A file output line exceeds the size of the buffer.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

FXTL-005 Internal library error

Cause: An unexpected internal library error has occurred.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

FXTL-006 Invalid unit number

Cause: An invalid unit number was specified in a command or within a model file.

Remedy: Specify a unit number that is valid for the particular tray.

FXTL-007 Invalid CPU number

Cause: An invalid CPU number was specified in the mapping assignment.

Remedy: Specify a CPU number that is valid for this controller configuration. The range is 0 - 2, depending on the hardware.

FXTL-008 Invalid motion group

Cause: Invalid motion group. An invalid motion group was specified in the mapping assignment.

Remedy: Specify a motion group that is valid for this controller configuration. The range is 1 - 6, depending on the hardware.

FXTL-009 Loop number out of range

Cause: Loop number out of range. A LOOP number in a model program is out of range.

Remedy: Correct the model file and copy it to the controller. A valid loop number range is 1 - 20.

FXTL-010 Too many sensor offsets

Cause: There are too many offsets or no offsets specified on a SENSOR_READ line.

Remedy: Correct the model file and copy it to the controller. The maximum number of offsets is 20.

FXTL-011 Maximum payload exceeded

Cause: A payload was specified that exceeds the maximum for the particular unit.

Remedy: Correct the model file and copy it to the controller.

FXTL-012 Invalid sensor slot

Cause: An invalid sensor slot was specified in an OFFSET line in a model file.

Remedy: Correct the model file and copy it to the controller. Slot numbers must be in the range of 1 - 20.

FXTL-013 Invalid model name

Cause: An invalid model name was specified in a MODEL line in a model file.

Remedy: Correct the model file and copy it to the controller. Model names can be up to 18 characters long.

FXTL-014 Invalid model number

Cause: An invalid model number was specified in a MODEL_NUM line in a model file.

Remedy: Correct the model file and copy it to the controller. Model numbers must be in the range of 1 - 99.

FXTL-015 No NEWMODEL file: T%d

Cause: A NEWMODEL.PTS file was not found in the tray's root directory or could not be opened.

Remedy: Correct the model file and copy it to the controller.

FXTL-016 Invalid NEWMODEL file: T%d

Cause: An invalid index file exists: T%d. An entry in the NEWMODEL.PTS file could not be processed.

Remedy: Correct the model file and copy it to the controller.

FXTL-017 Memory allocation error

Cause: Memory for the tray data structures could not be allocated.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

FXTL-018 File open error

Cause: A file specified in the NEWMODEL.PTS file could not be found and/or opened.

Remedy: Correct the model files and copy them to the controller.

FXTL-019 No cell data file: T%d

Cause: No cell data file exists: T%d. A cell data file was not found in the tray's root directory or could not be opened.

Remedy: Correct the model file and copy it to the controller.

FXTL-020 No model program file: T%d

Cause: No model program file exists: T%d. A model program file that was specified in the NEWMODEL.PTS file was not found in the tray's root directory or could not be opened.

Remedy: Correct the model file and copy it to the controller.

FXTL-021 Invalid model file set

Cause: There was an error during processing the set of model files for the tray.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-022 Invalid positioner variant

Cause: An invalid mechanical unit type was specified in a command or within a model file.

Remedy: Specify a supported variant type.

FXTL-023 Error in cell data file: T%d

Cause: An error was found in the cell data file for the tray.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-024 Invalid keyword in file

Cause: An unrecognized keyword was found when reading one of the model files.

Remedy: Correct the model file and copy it to the controller.

FXTL-025 No unit mapping file: T%d

Cause: The unit cpu/group mapping file was not found in the tray's root directory or could not be opened.

Remedy: Correct or create the file.

FXTL-026 Invalid unit mapping file: T%d

Cause: The unit cpu/group mapping file contains incorrect entries and could not be opened.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-027 Wrong number of units in prog

Cause: A model program has the wrong number of units vs. the number specified in the cell data file.

Remedy: Correct the model file and copy it to the controller.

FXTL-028 Error in program file: T%d

Cause: A model program file has incorrect or invalid lines and could not be processed.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-029 Invalid model assignment: T%d

Cause: Model numbers must all be specified or all set to the defaults.

Remedy: Correct the model files and copy them to the controller.

FXTL-030 Duplicate model numbers: T%d

Cause: More than one model program has the same model number specified.

Remedy: Correct the model files and copy them to the controller.

FXTL-031 Missing MOVE subkeys

Cause: A POSITIONER_MOVE statement was not followed by any move command subkeys.

Remedy: Correct the model files and copy them to the controller.

FXTL-032 Duplicate BUILD_BEGIN or END

Cause: More than one BUILD_BEGIN or BUILD_END line was found in a model file.

Remedy: Correct the model files and copy them to the controller.

FXTL-033 Duplicate LOOP number

Cause: More than one LOOP_BEGIN/END statement specifies the same loop number.

Remedy: Correct the model files and copy them to the controller.

FXTL-034 Invalid POSITIONER_MOVE subkey

Cause: A subkey following a POSITIONER_MOVE is invalid or in the wrong place.

Remedy: Correct the model files and copy them to the controller.

FXTL-035 Unmatched BUILD_BEGIN or loop

Cause: A BUILD_BEGIN did not have a BUILD_END, a LOOP_BEGIN did not have a LOOP_END, or there was some other error in matching looping statements.

Remedy: Correct the model files and copy them to the controller.

FXTL-036 Error writing model file: T%d

Cause: An error occurred while creating or writing a new version of one of the model files.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-037 Tray has unmapped units: T%d

Cause: The tray has one or more units that have not been mapped to a CPU and motion group.

Remedy: Assign or correct the unit mappings and restart.

FXTL-038 Tray has mapping conflict: T%d

Cause: The tray has one or more units that are mapped to the same CPU and the motion group as another unit on the controller.

Remedy: Assign or correct the unit mappings, and restart.

FXTL-039 Unit not mapped: T%d U%d

Cause: The specified unit has not been mapped to a CPU and motion group.

Remedy: Assign or correct the unit mappings and restart.

FXTL-040 Mapping conflict: T%d U%d

Cause: The specified units have the same CPU and group mapping.

Remedy: Assign or correct the unit mappings and restart.

FXTL-041 Unit mapping error(s)

Cause: There were errors in the assignment of positioners to specific CPUs and motion groups. The specified units have the same CPU and group mapping.

Remedy: Check the error log for more specific details, then assign or correct the unit mappings and restart.

FXTL-042 Tray verification failed: T%d

Cause: Verification of the tray model files failed due to an error in the files or in the system configuration.

Remedy: Check the error log for more specific details, then make the required corrections.

FXTL-043 Prog conversion process error

Cause: An error occurred in the process of converting the model programs to their internal TPP form.

Remedy: Check the error log for the specific details.

FXTL-044 Variant type mismatch: T%d U%d

Cause: The mechanical variant type specified in the cell data does not match the actual positioner for the specified tray and unit.

Remedy: Correct the model files or the physical unit configuration.

FXTL-045 Tray has variant mismatch

Cause: The tray has one or more mismatches of mechanical variants specified in the cell data file vs. the actual configuration.

Remedy: Check the error log for more specific details, then make the required corrections.

FXTL-046 Error writing TPP file

Cause: An error occurred while creating or writing a new TPP file for a model program for a particular unit.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-047 Invalid tray number

Cause: An invalid unit number was specified in a command.

Remedy: Specify a tray number that is valid for the particular configuration. The valid range is 1 - 2.

FXTL-048 Invalid program number: T%d P%d

Cause: An invalid program number was specified in a command or by the PLC.

Remedy: Specify a program number that is valid for the configuration.

FXTL-049 Program conversion err: T%d P%d

Cause: An error occurred while converting the model program to the internal TPP format.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-050 No CPU RIPE communications

Cause: No CPU RIPE communications exist. There are no internal network communication connections with one or more of the CPU boards in the controller cabinet.

Remedy: Verify that the internal network connections and the Ethernet switch are correctly connected and powered on. Turn off the controller and then turn it on again.

FXTL-051 Program conversion timed out

Cause: Program conversion timed out. A request to convert a model program to a TP program has taken too long to complete.

Remedy: Turn off the controller and then turn it on again. If the problem persists, document the events that led to the error and contact your FANUC Representative.

FXTL-052 Program file transfer failed

Cause: A TP program converted from a model program failed to be copied to its destination location.

Remedy: Check the error log and listing for more details about the specific error.

FXTL-054 Invalid move command

Cause: The model move command has specified a program or step number that does not exist.

Remedy: Correct the command data or the model program files and retry the operation.

FXTL-055 Not all units enabled

Cause: One or more units on the tray that are required for the model move are not enabled.

Remedy: Enable all units and retry the operation.

FXTL-056 Tray not in valid state

Cause: The tray is not in a valid position in order to do a legal model step move.

Remedy: Check the positions of the units. Use the model move OVERRIDE option if the move can be safely performed.

FXTL-057 Move command out of sequence

Cause: The requested model move is out of sequence according to the model program.

Remedy: Correct the command data or use the OVERRIDE option to force the move.

FXTL-058 Move command rejected: T%d

Cause: The requested model move has been rejected. The move was not initiated.

Remedy: Check the error log for more details on the exact cause.

FXTL-059 Tray is busy

Cause: The command is rejected because the tray or one or units on the tray are busy completing a previous operation that cannot be interrupted.

Remedy: Wait for the tray to finish the previous operation, and retry the operation again.

FXTL-060 Not all units verified

Cause: One or more units on the tray that are required for the model move do not have the proper programs loaded and verified.

Remedy: Initiate a full initialization or data verification for the tray.

FXTL-061 Tray is in AUTO mode

Cause: The PLC interface has put the tray into AUTO mode and the requested operation can not be executed.

Remedy: Use the PLC to put the tray into MANUAL mode, and retry the operation.

FXTL-062 PLC CR not cleared: T%d

Cause: The PLC did not clear the CR bit within the allowable time after the controller accepted the command.

Remedy: Check and correct the PLC program.

FXTL-063 Invalid axis number

Cause: An invalid axis number was specified in a command.

Remedy: Specify an axis number that is valid for the particular positioner.

FXTL-064 Unit is bypassed

Cause: The specified positioner has been disabled or bypassed.

Remedy: Undo the bypass or change the unit number.

FXTL-065 Tray %d in HOLD state

Cause: The tray is in a HOLD state because the PLC NOHLD bit is OFF.

Remedy: Clear the HOLD condition from the PLC, and retry.

FXTL-066 Invalid group number

Cause: An invalid positioner group number was specified in a GROUP statement.

Remedy: Specify a valid group number in the range from 1 - 20.

FXTL-067 Duplicate group number

Cause: A duplicate positioner group number was specified in a GROUP statement.

Remedy: Edit the file so that each GROUP specifies a unique number in the range from 1 - 20.

FXTL-068 Invalid PLC command: T%d

Cause: The PLC sent a command that is invalid or not supported.

Remedy: Correct the PLC logic to send only valid command codes.

FXTL-069 Invalid PLC data value: T%d

Cause: A data value sent by the PLC is not valid, such as the unit number, program number, or step number.

Remedy: Correct the PLC logic to send only valid command values.

FXTL-070 Tray %d ESR not possible

Cause: Error state recovery is not possible for this tray at this time. The previous commanded state cannot be determined.

Remedy: Put the tray into a valid state by using the model move override feature, and proceed from there.

FXTL-071 Invalid I/O configuration

Cause: There is an invalid value assigned for the rack and/or slot number for the fieldbus I/O device for the tray.

Remedy: Assign the correct rack and slot for the fieldbus interface that is actually installed and configured on the controller.

FXTL-072 Invalid program step number

Cause: An invalid program step number was specified. The step number is out of range or is not a valid step for the specified operation.

Remedy: Use the correct step number for the specified program.

FXTL-073 Error %s line %d

Cause: A model file processing error occurred in the file as shown at the specified line number.

Remedy: Check the other entries in the alarm log for the type of error that was detected, then correct the file, copy it to the model file directory, and retry the operation.

FXTL-074 Step number sequence error

Cause: A step number in the model file is out of sequence. Steps must be numbered sequentially with no missing numbers.

Remedy: Correct the model file by fixing or renumbering the cell step lines.

FXTL-075 Invalid program number

Cause: An invalid program number was specified.

Remedy: Specify a program number that is valid for the configuration.

FXTL-076 Shim value out of range

Cause: A shim was calculated or specified that is out of range of the limits specified for this unit.

Remedy: Specify a smaller shim value, change the limits in the celldata.pts file, or use the TEACH function to change the nominal position value for this step.

FXTL-077 Rotational shim not allowed

Cause: A forward/backward shim search cannot be done for a rotational shim.

Remedy: Do not do a shim search if the current shim has a rotational component.

FXTL-078 Cannot shim IDLE move

Cause: A position that was specified as IDLE in the model points file cannot be directly shimmed.

Remedy: Shim the previous actual move step and the IDLE position will also get the new position data. A move step has the JOINT, LINEAR, or MOVE keyword.

FXTL-079 Sub-CPU did not start

Cause: One or more of the sub-CPU's did not start up or was not detected on the internal network. The tray(s) that depend on the positioners on that CPU could not be auto data-verified.

Remedy: Determine the reason for the CPU startup failure, or try cycling power on the controller.

FXTL-080 Tray %d ready to run

Cause: The model files for the specified tray have been successfully converted and the tray is ready for manual or PLC operations.

Remedy: None.

FXTL-081 PATH_END without PATH_BEGIN

Cause: A PATH_END statement was found without a matching PATH_BEGIN statement.

Remedy: Make sure that PATH_BEGIN and PATH_END are used in matching pairs in the proper sequence.

FXTL-082 PATH_BEGIN without PATH_END

Cause: A PATH_BEGIN statement was found without a matching PATH_END statement.

Remedy: Make sure that PATH_BEGIN and PATH_END are used in matching pairs in the proper sequence.

FXTL-083 Not enough steps in PATH

Cause: There must be at least three POSITIONER_MOVE statements between a PATH_BEGIN and a PATH_END statement.

Remedy: Make sure that there are the correct number of steps within a path-move block.

FXTL-084 Path command rejected: T%d

Cause: The requested path move has been rejected. The move was not initiated.

Remedy: Check the error log for more details on the exact cause.

FXTL-085 Requested step is not a path

Cause: The requested step is not a valid step for a path move.

Remedy: A path move can only be made to the last step or first step within the path block. Modify the program or change the command accordingly.

FXTL-086 Current position not in path

Cause: The units are not at a valid position or are not at a valid step for doing a path move.

Remedy: All units on the tray must be at a move step that is within the defined path move block. Move the tray to a valid position using a model move or model move with override and then issue the path move command.

FXTL-087 Vision command rejected: T%d

Cause: The requested vision or sensor command has been rejected.

Remedy: Check the error log for more details on the exact cause.

FXTL-088 Vision app not running

Cause: A vision or sensor operation was commanded, but there is no vision or sensor application running. The command cannot be executed.

Remedy: Take action to start the vision or sensor application when the controller starts.

FXTL-089 Vision operation failed: T%d

Cause: The requested vision or sensor operation failed.

Remedy: Check the error log for more details on the exact cause.

FXTL-090 Vision application timed out

Cause: The vision or sensor user application did not respond to the command in the allowed time.

Remedy: Make sure that the program is running and is correctly written.

FXTL-091 Vision offset out of range

Cause: A vision or sensor offset was specified that is out of range of the limits specified for this unit.

Remedy: Correct the vision offset value, change the limits in the celldata.pts file, or use the TEACH function to change the nominal position value for this step.

FXTL-092 Move requires override

Cause: A model move for a single unit or a group of units requires the override flag (MMO) to be set.

Remedy: Issue an override (MMO) command before trying the move command again.

FXTL-093 Invalid speed specified

Cause: An invalid value was specified in a LIN_SPEED, JNT_SPEED, DEF_LIN_SPEED, or DEF_JNT_SPEED statement. Linear speed must be from 10-180 (mm/sec) and joint speed must be from 10-100 (percent).

Remedy: Correct the statement and retry.

FXTL-151 Press Shift key.

Cause: The shift key is not pressed.

Remedy: Press the shift key.

FXTL-152 No unit assigned.

Cause: No unit has been assigned.

Remedy: Use this menu to map a unit number with a physical unit.

FXTL-153 Unit(%d) invalid mapping.

Cause: The unit has invalid mapping.

Remedy: Check the hardware to make sure the mapping is correct.

FXTL-154 No tray is defined.

Cause: No tray has been defined.

Remedy: Perform a data verify first.

FXTL-155 Invalid step number.

Cause: The Step number is not valid.

Remedy: Perform a data verify first, then select the valid step number.

FXTL-156 Program is undefined.

Cause: Not all units are in the correct position for a model move. The Tray cannot determine which program it is in.

Remedy: Go to the model move menu and move the tray to a model move position.

FXTL-157 Cannot copy file to same dev

Cause: You cannot copy a file back to its device.

Remedy: Select a different device for the file copy operation.

FXTL-158 No unit in the Tray.

Cause: No unit in the Tray. No unit is defined for the tray.

Remedy: Check the unit mapping and Unit enable menu. Then check the celldata.pts and do a data verify.

FXTL-159 Program has no step.

Cause: The program has no motion step.

Remedy: Check the model file offline and copy the file to the controller. Then do a data verify.

FXTL-160 Zero mastering required.

Cause: Non-Zero mastering has been applied. Zero mastering must be performed before running model move.

Remedy: Move all axes to their zero mastering position. Perform a Zero Mastering before running model move.

FXTL-161 Cannot read/write shim log.

Cause: Cannot open shim log file in FR: directory.

Remedy: Check memory status to make sure space is available for a shim log file.

FXTL-162 Shim cannot be restored.

Cause: Cannot restore this shim in the shim log because it is no longer valid due to TEACH.

Remedy: None.

FXTL-163 Invalid shim log entry.

Cause: An error has occurred in reading the shim log file.

Remedy: The shim log file has been corrupted. Load the shim log file from a backup, or delete the log from FR:.

FXTL-164 Invalid shim data.

Cause: Invalid shim data. Cannot display the shim item.

Remedy: Select a valid item on the shim log.

FXTL-165 Zero shim data.

Cause: New shim data is all zero. No shim is applied.

Remedy: Enter non-zero shim data.

FXTL-166 Cannot switch program.

Cause: Cannot change model program.

Remedy: Move the units to the first or last step of the model program before switching.

FXTL-167 No unit selected.

Cause: The cursor is not on a unit.

Remedy: Move the cursor to a unit, then press the ENTER key.

FXTL-168 Jog keys are disabled.

Cause: The jog keys are disabled in C-flex axis jog or frame jog menu.

Remedy: Exit from the C-flex axis jog or C-flex frame jog menu to enable jog keys.

FXTL-169 Jog keys are enabled.

Cause: The jog keys are enabled.

Remedy: None.

FXTL-170 Teach Pendant is disabled.

Cause: The teach pendant is disabled.

Remedy: Turn on the teach pendant.

FXTL-171 Invalid shim move.

Cause: Invalid shim move has occurred. You cannot execute a shim move due to mismatch of tray number, program number, or step number with the current tray state.

Remedy: Use Model Move to move the units to the shim step before shimming the particular step.

FXTL-201 Inverse kinematic error.

Cause: Inverse Kinematic Error. The calibrated inverse kinematics does not converge to a solution. The unit is close or at a singular position.

Remedy: Jog the robot or teach the position away from the singular position.

FXTL-202 Invalid wrist type.

Cause: The wrist type is not supported.

Remedy: Turn off/on the controller to get correct wrist type.

FXTL-203 Invalid motion group.

Cause: The motion group is either not available or it is not a C-flex unit.

Remedy: Make sure the group number is valid.

FXTL-204 Invalid program name.

Cause: The program is not in the model program list.

Remedy: Make sure to do a data verify before running the program.

FXTL-205 Invalid TP position type.

Cause: The teach pendant program has an invalid position data type.

Remedy: Make sure to do a data verify before running the program.

FXTL-206 Singular position.

Cause: The robot is close to a singularity point where there is no solution for the inverse kinematics.

Remedy: Jog the unit away from singular position and continue the operation.

FXTL-207 Invalid TOOL vector.

Cause: Invalid TOOL vector exists.

Remedy: Make sure the tool vector is defined.

4.7 H

4.7.1 HOST Alarm Code

HOST-001 End of directory reached

Cause: Your's listing has reached the end of the directory. You do not have to do anything for this warning message.

Remedy: This is a notification.

HOST-002 File already exists

Cause: The file name you are trying to create or copy to already exists on this device.

Remedy: Delete the file on this device or choose a different file name.

HOST-003 File does not exist

Cause: The file you are trying to open or copy does not exist on this device.

Remedy: Open or copy a file that exists on the device.

HOST-004 Illegal command received

Cause: The requested operation is not supported.

Remedy: Use only supported operations, or check command syntax.

HOST-005 Disk is full

Cause: The disk file capacity has been reached.

Remedy: Delete some unneeded files or use a disk with sufficient free space.

HOST-006 End of file reached

Cause: The end of the file was reached while reading.

Remedy: Do not attempt to read beyond the end of a file.

HOST-008 Only one file may be opened

Cause: An attempt was made to open more than one file.

Remedy: Do not attempt to open more than one file at a time.

HOST-009 ZDT Client not loaded

Cause: ZDT Client option is not loaded or demo option expired.

Remedy: You may not use ZDT features without the option.
Please purchase and load the ZDT option.

HOST-010 ZDT Client disabled

Cause: ZDT is disabled.

Remedy: Use the SETUP ZDT Client menu to enable feature.
You will have to cycle power to enable the first time.

HOST-011 ZDT To Addr not set

Cause: An attempt was made to send a ZDT email when To Addr is not set.

Remedy: Use the SETUP ZDT client menu to set the To Addr.

HOST-012 ZDT Alert Addr not set

Cause: An attempt was made to send a ZDT alert when Alert Addr is not set.

Remedy: Use the SETUP ZDT client menu to set the Alert Addr.

HOST-013 ZDT message throttled

Cause: ZDT message was not sent because too many messages per minute are being sent by a particular task.

Remedy: If possible, configure the messages so they are sent at longer intervals.

HOST-014 ZDT message too large

Cause: ZDT message was not sent because the size is too large.

Remedy: Try increasing \$RCMCFG.\$SIZE_THROT.

HOST-015 ZDT TD is low

Cause: TD: is running low (less than 10%).

Remedy: Try again later or try increasing \$FILESETUP.\$FILE_TD_SEC and recycle power.

HOST-016 ZDT URL Invalid

Cause: HTTP URL is not valid.

Remedy: Please check URL. Example- <http://zdtserver/ZDTData/RCM/post/>

HOST-017 ZDT Web Server Unresponsive

Cause: Web server did not respond to PING request.

Remedy: Please check web server IP/name is valid.

HOST-018 ZDT Web Server Error %d

Cause: Web server reported error.

Remedy: Please check error number for details.

106	HTTP queue full
282	Timeout : Data Collector or Web Server did not respond to PING request robot send
Others	All other errors are standard error. All standard errors are defined in this manual. Change the number to hexadecimal numeral and the facility code is xx of 0x00xx0000 (See Table 2.2.2(a)). Error code number is xxxx of 0x0000xxxx. HTTP status codes are displayed sometimes.

HOST-019 ZDT Busy

Cause: ZDT is busy processing other requests.

Remedy: Please wait and try later.

HOST-020 ZDT Maximum message count

Cause: The concurrent limit for this message type has been reached.

Remedy: Increase the maximum concurrency count for this message type in the ZDT configuration file.

HOST-021 ZDT Maximum message memory used

Cause: The maximum amount of memory dedicated for sending ZDT messages has been reached.

Remedy: Reduce the number of messages being sent or increase the amount of memory allocated to the ZDT messaging task.

HOST-022 ZDT Maximum message size exceeded

Cause: The supplied message exceeds the maximum allowed size for an individual message.

Remedy: Eliminate unnecessary information in your message or split it into multiple message types.

HOST-023 ZDT Unknown message identifier

Cause: The messaging library was unable to instantiate a message of the supplied type or an inconsistency was found between the calling arguments and the message's type information.

Remedy: Verify the supplied message's program and variable name are spelled correctly, the program containing the message was loaded and the supplied message type's size is correct.

HOST-024 ZDT Maximum attachments exceeded

Cause: The maximum number of file attachments has exceeded the systems allowable limit.

Remedy: Reduce the number of file attachments being sent or stagger the timing of when the file attachments are sent.

HOST-025 ZDT No msg create from higher task

Cause: Messages cannot be created from a task with priority higher than memory manager.

Remedy: Preallocate messages if continue calling create from a task higher than memory manager.

HOST-026 ZDT Fields count mismatch src %d dst %d

Cause: Field count in source and destination mismatch.

Remedy: Create same number of fields in destination as SOURCE array size.

HOST-027 ZDT Dynamic data load error: %s

Cause: Field sizes mismatch in source and destination.

Remedy: Please correct definition of destinations to match source types.

HOST-028 ZDT URL parse error %d

Cause: URL parsing error.

Remedy: Please check the sub-error code and correct url.

100	Method is not valid
101	URL doesn't have "http://"
102	URL not in format "http://.../"
103	Host name too long
104	No host name found
105	XML can't be parsed. Make sure host name resolvable by DNS

HOST-029 ZDT messaging is not authorized

Cause: Data Collector/Server did not send correct authorization code.

Remedy: Please use a FANUC Data Collector for your server.

HOST-030 ZDT [Use XML Config] disabled

Cause: Use XML Config is disabled.

Remedy: Use the SETUP ZDT Client menu to enable [Use XML Config]. You don't need to reload RCMCFG.XML.

HOST-100 Communications error

Cause: The protocol format was invalid.

Remedy: Verify protocol field in the setup menu and retry the operation.

HOST-101 Directory read error

Cause: The directory information is corrupted and unreadable.

Remedy: Clean the disk drive, try another disk or reformat the disk.

HOST-102 Block check error

Cause: The checksum data is bad. Data is corrupted on the disk and can not be read.

Remedy: Try another disk, or reformat the disk.

HOST-103 Seek error

Cause: There is a bad sector or track on the disk.

Remedy: Clean the disk drive, try another disk, or reformat the disk.

HOST-104 Disk timeout

Cause: The drive did not respond to a command.

Remedy: Check the cable to the drive and make sure drive power is on.

HOST-105 Write protection violation

Cause: The disk has write protection enabled.

Remedy: Remove write protection from the disk or use a disk that is not write protected.

HOST-106 \$PROTOENT entry not found

Cause: Protocol Entry structure (\$PROTOENT) is invalid. It should be reset to default values.

Remedy: Return Protocol Entry structure to initial values from Operator's manual.

HOST-107 \$SERVENT entry not found

Cause: Server Entry structure (\$SERVENT) is invalid. It should be reset to default values.

Remedy: Return Server Entry structure to initial values from Operator's manual.

HOST-108 Internet address not found

Cause: Either the robot controller's Internet Address is invalid, or the robot controller is trying to access a remote Internet Address or Host Name that is invalid or doesn't exist.

Remedy: Correct the invalid Internet Address. The robot's Internet Address can be configured in the Setup Host Comm TCP/IP Protocol Menu.

HOST-109 Host name not found

Cause: Host Name needs to be set.

Remedy: Set Host Name and Internet Address in the Host Comm TCP/IP Protocol Setup Menu.

HOST-110 Node not found

Cause: The Remote Node Name needs to be set 9.

Remedy: Set Remote Node Name in the Host Comm TCP/IP Protocol Setup Menu.

HOST-111 Cycle power to use Ethernet

Cause: ER-1 or ER-2 Ethernet hardware is already running and can not be restarted without cycling power.

Remedy: Turn off and then turn on the controller.

HOST-112 PANIC: %s

Cause: The TCP/IP Stack has encountered a situation that may result in corruption or disruption in normal network activity.

Remedy: Copy ETHERNET.DG file from MD: and save it. Note the PANIC string. Cycle power to the controller and contact the Support hotline and provide them with that information.

HOST-113 PROXY: %s bind error

Cause: The robot controller Proxy was not able to bind a TCP network socket.

Remedy: This alarm generally implies that either the Proxy or the TCP/IP interface is not set up correctly. Verify network connectivity to the robot controller using the ping utility (on the robot, and also on the local PC). Check for abnormal activity with all installed Internet options. Obtain the ethernet.dg file from the MD: device, document the events that led to the error, and call your local FANUC representative.

HOST-114 PROXY: %s socket error

Cause: A new TCP/IP socket cannot be allocated because all system resources are in use.

Remedy: Check for abnormal activity with all installed Internet options. Obtain the ethernet.dg file from the MD: device and contact the FANUC Hotline.

HOST-115 PROXY: %s listen error

Cause: The robot controller Proxy was not able to listen on a TCP network socket.

Remedy: This alarm generally implies that either the Proxy or the TCP/IP interface is not set up correctly. Verify network connectivity to the robot controller using the ping utility (on the robot, and also on the local PC). Check for abnormal activity with all installed Internet options. Obtain the ethernet.dg file from the MD: device, document the events that led to the error, and call your local FANUC representative.

HOST-116 PROXY: Remote proxy error

Cause: The External Proxy Server is not configured with a valid Hostname or IP Address.

Remedy: Configure the External Proxy Server with a valid Hostname or IP Address. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-117 PROXY: PMON error

Cause: The Ethernet address needs to be set.

Remedy: Set the Ethernet address in Configuration Menu.

HOST-126 Invalid Ethernet address

Cause: The Ethernet address needs to be set.

Remedy: Set the Ethernet address in Configuration Menu.

HOST-127 Ethernet firmware not loaded

Cause: The Ethernet Board firmware is not loaded.

Remedy: Load the Ethernet Board firmware in BMON.

HOST-128 Ethernet hardware not installed

Cause: The Ethernet Board needs to be reinitialized.

Remedy: Install or reseal the Ethernet Board.

HOST-129 Receiver error

Cause: Data received from external device is invalid. Most likely caused by electrical noise on receivers.

Remedy: The error can be cleared by Stopping and Starting the Tag in Host Comm Setup Menu.

HOST-130 Buffer alignment wrong

Cause: A buffer was passed to the Serial Port Driver which can not be accessed.

Remedy: Ensure program can run on this version of controller. You might need to retranslate your program.

HOST-131 Wrong state

Cause: The Host Comm system can not execute the requested command in the present operating mode.

Remedy: Stop and Start the Host Comm Tag in the Host Comm Setup Menu to reset the operating mode.

HOST-132 Can't allocate memory

Cause: The Host Comm system can not allocate memory buffers for receiving or transmitting messages.

Remedy: Either add more memory to the controller or reduce the number of simultaneous connections.

HOST-133 Wrong setup conditions

Cause: The Host Comm system is receiving messages but can not decode them.

Remedy: Correct port settings: data rate, data size, stop bits, etc to match external device.

HOST-134 BCC or CRC error

Cause: The Host Comm system is receiving checksum errors on all messages.

Remedy: Ensure that the external device is using the same protocol.

HOST-135 Timeout

Cause: There has not been any network activity on the Comm Tag for a period specified by Inactivity Timeout. The Comm Tag has been stopped as a result.

Remedy: Restart the Comm Tag.

HOST-136 Device not ready

Cause: The remote device is connected but is not responding to requests.

Remedy: Check cabling between the devices and/or insure the device is powered.

HOST-137 Request cancelled

Cause: The remote device indicates the operation was successfully terminated.

Remedy: The cancel command was successful.

HOST-138 Request aborted

Cause: The remote device did not indicate operation was terminated.

Remedy: The command might have been completed before the cancel command was received.

HOST-139 Invalid function

Cause: The Host Comm Protocol does not support the requested function.

Remedy: Check the Host Comm Protocol to ensure the function is supported.

HOST-140 Device offline

Cause: The remote device is connected but it is not online.

Remedy: Set the remote device online.

HOST-141 Protocol Start/Stop error

Cause: The Host Comm Protocol could not be started (Mounted) or stopped (dismounted) on the selected comm tag.

Remedy: Either use another Comm Tag or Stop and Undefine the selected Comm Tag under Menus-Setup-HostComm-Show.

HOST-142 Connection error

Cause: The Host Comm Protocol could not establish communication with the remote device. Possible software mismatch.

Remedy: Ensure both local and remote are using compatible software versions.

HOST-143 Comm port cannot be closed

Cause: The selected hardware port defined for the Comm Tag could not be closed.

Remedy: Power the controller OFF and then ON and try again. If the error occurs again a cabling or hardware problem might exist with the port.

HOST-144 Comm Tag error

Cause: The Comm Tag either does not have a protocol defined or if required does not have a port assigned.

Remedy: DEFINE a protocol to the Comm Tag or assign a port.

HOST-145 Permission denied

Cause: You attempted to write to protected file or to read protected file.

Remedy: Please access file once more after canceling the protection of device.

HOST-146 Bad address for Comm Tag

Cause: A bad address has been detected.

Remedy: Verify the tag has a supported protocol then UNDEFINE and DEFINE the Comm Tag.

HOST-147 Block device required

Cause: The selected protocol requires a device port.

Remedy: First ensure the Port has No Use from Port Init Setup. Then assign it to the selected Comm Tag.

HOST-148 Mount device busy

Cause: Either the Comm Tag is STARTED or it is presently in use.

Remedy: Either STOP the Comm Tag or select another Tag.

HOST-149 No such device

Cause: The passed Device Type is not a Comm Tag type (Cx or Sx).

Remedy: Only Comm Tags can be used with this command.

HOST-150 Invalid argument

Cause: The system does not support selected protocol.

Remedy: Either select another protocol or install the selected protocol.

HOST-151 No more Ethernet buffers.

Cause: The System has run out of buffers to communicate with the Ethernet Remote PCB.

Remedy: Reduce the number of simultaneous connections as there is not enough memory.

HOST-158 FTP: no connection available

Cause: An error occurred in the networking software.

Remedy: Consult your network administrator. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

HOST-159 FTP: login failed

Cause: The Comm Tag does not have a valid username and password.

Remedy: Enter a valid username and password for the Comm Tag.

HOST-160 FTP: tag dismount request ignored

Cause: An error occurred in the networking software.

Remedy: Consult your network administrator. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

HOST-161 FTP: need remote host name

Cause: The Comm Tag does not have a remote host defined.

Remedy: Enter a remote host name in SETUP TAGS menu Current Remote and Startup Remote fields.

HOST-162 FTP: Error on Ethernet Init.

Cause: The Ethernet PCB isn't initialized properly.

Remedy: Ensure both Ethernet PCB firmware and Main PCB Ethernet tasks are activated.

HOST-163 EXMG: Invalid Buffer Size

Cause: Invalid buffer size in call.

Remedy: Ensure correct buffer size.

HOST-164 EXMG: Read Pending

Cause: Attempt to write before read.

Remedy: Make a read call after write before making a new write call.

HOST-165 EXMG: Internal Error

Cause: Error in Explicit Messaging Task.

Remedy: Unrecoverable - Contact Help Desk.

HOST-166 EXMG: Write Pending

Cause: Attempt to read before write.

Remedy: A write should precede read.

HOST-167 EXMG: Connection Error

Cause: Explicit Messaging Connection broken.

Remedy: Check cable and remote device. Close connection and open again.

HOST-168 EXMG: Invalid Channel

Cause: Invalid Channel specified. Channel may not be online.

Remedy: Make sure the channel specified is online or specify the correct channel.

HOST-169 EXMG: Invalid Path

Cause: Invalid Path Specified.

Remedy: Verify Path format specified EM:/DNET/1/10/40 DNET-Protocol, 1-Channel,10-MAC Id 40-buffer size Also verify values are legal.

HOST-170 EXMG: Invalid Name

Cause: Invalid Name specified.

Remedy: Verify Explicit Messaging mapping system variables are correctly set and the values are legal.

HOST-171 EXMG: Message Truncated

Cause: Connection Buffer size small.

Remedy: Reopen connection with correct buffer size.

HOST-172 DNS: Host Not Found

Cause: Domain Name Does Not exist.

Remedy: Make sure your host name and local domain name are correct. Your DNS server may not have the. current host listed.

HOST-173 DNS: Server Failure

Cause: Problem with DNS server.

Remedy: Verify that you DNS server is running. Check with your DNS administrator to verify that the server is working properly.

HOST-174 DNS: Format or Recovery Error

Cause: DNS Recovery Error .

Remedy: Verify that the host name and local domain name and formatted correctly. Verify that your server supports recursive queries. Verify that your server grants access to your robot.

HOST-175 DNS: Server Has No Address

Cause: Server has no IP address listed.

Remedy: Your host name is valid and is recognized by the DNS server. The server has no IP address for the host queried on.
Have your DNS administrator provide the server with an IP address for the host queried on.

HOST-176 DNS: Configuration Error

Cause: DNS is not properly configured.

Remedy: Go to the DNS configuration menu and verify that the server IP address and local domain name are correct.

HOST-177 Router Name Not Defined

Cause: No router name has been defined. The router name has been set to the robot name.

Remedy: If your network has a router, then define a router in the TCP/IP set up menu.

HOST-178 Router Address Not Defined

Cause: The router does not have an address listed in the local host table.

Remedy: If your network has a router, then define an address for it in the TCPIP SETUP screen.

HOST-179 IP Address mis-configuration

Cause: The entered IP address is invalid.

Remedy: Reconfigure the Ethernet interfaces such that each interface is on a different subnet, or only configure a single interface. See “2.4.1 Caution for Setting IP Address” in “Ethernet Function OPERATOR’S MANUAL(B-82974)”.

HOST-180 NETMEM: buffer is not created

Cause: Internal software problem. Network memory service request occurs before any memory is not created.

Remedy: Network memory should be created before accessing.

HOST-181 NETMEM: time out

Cause: Timeout occurred at getting memory access right.

Remedy: Network may overload if this error occurs frequently.

HOST-182 NETMEM: BD error

Cause: Internal software problem. Specified network memory buffer descriptor was not correct.

Remedy: Verify that correct buffer descriptor is specified.

HOST-183 NETMEM: buffer is auto ack mode

Cause: Internal software problem. Network memory update request issued to automatic acknowledge transmit memory.

Remedy: Verify that correct buffer descriptor is specified.

HOST-184 NETMEM: transmit BD error

Cause: Internal software problem. Specified buffer descriptor is not for transmit buffer.

Remedy: Verify that correct buffer descriptor is specified.

HOST-185 NETMEM: receive BD error

Cause: Internal software problem. Specified buffer descriptor is not for receive buffer.

Remedy: Verify that correct buffer descriptor is specified.

HOST-186 NETMEM: send socket open fail

Cause: UDP open for datagram sending was failed.

Remedy: Confirm that UDP port was consumed by another network application.

HOST-187 NETMEM: receive socket open fail

Cause: UDP open for datagram receiving was failed.

Remedy: Verify that there is RLSYNC entry in \$SERVENT system variable. Verify that port number for RLSYNC is correct.

HOST-188 PPP init on port %d fails

Cause: invalid port/insufficient memory.

Remedy: Verify that a correct port number is specified.

HOST-189 Invalid port number

Cause: invalid port/insufficient memory.

Remedy: Verify that a correct port number is specified.

HOST-190 Invalid baud rate

Cause: invalid port/insufficient memory.

Remedy: Verify that a correct port number is specified.

HOST-191 Invalid device type

Cause: invalid port/insufficient memory.

Remedy: Verify that a correct port number is specified.

HOST-192 PPP channel already initialized

Cause: invalid port/insufficient memory.

Remedy: Verify that a correct port number is specified.

HOST-193 TLNT:Login to %s

Cause: login made to a device using telnet.

Remedy: This is not an error.

HOST-194 TLNT:Logout of %s

Cause: logout made out of device using telnet.

Remedy: This is not an error.

HOST-195 TLNT:rejected conn request

Cause: TELNET connection attempt rejected. Please look at cause code for further information.

Remedy: Correct the cause of failure and try again.

HOST-196 TLNT:%s already connected

Cause: the device is already connected.

Remedy: ensure the device is not connected and try again.

HOST-197 TLNT:invalid login id

Cause: invalid login id supplied.

Remedy: ensure the login id is valid and try again.

HOST-198 TLNT:invalid password %s

Cause: invalid password supplied.

Remedy: ensure the password is valid and try again.

HOST-199 TLNT:timeout on %s

Cause: the inactivity timer for the device expired.

Remedy: log in again or increase the timer value for the device from the TELNET screens.

HOST-200 TLNT:FSAC no access lvl for %s

Cause: the FSAC security feature is enabled and the client PC doesn't have sufficient privileges.

Remedy: make an entry for the PC in the FSAC table.

HOST-201 TLNT:no access lvl for %s

Cause: Insufficient access level.

Remedy: check the access level for the device from the TELNET screens.

HOST-202 TLNT:invalid port for %s

Cause: valid port not configured for device.

Remedy: configure a valid port for device from Port Init screens first.

HOST-203 TLNT:from %s

Cause: connection from remote host detected.

Remedy: not an error.

HOST-204 SM: Remote Client Name is invalid

Cause: The host name in the Client tag is not set correctly. If DNS is enabled, DNS server did not resolve the name.

Remedy: Change the host name to be a valid name in the client tags.

HOST-205 SM: Tag Already Mounted

Cause: A request to mount a tag which was already mounted was received.

Remedy: Do not try to remount a tag without dismounting it.

HOST-206 SM: Bad Port Number

Cause: The system variable \$server_port in the Client tag or the host tag was invalid.

Remedy: Set the \$hosts_cfg[n].\$server_port sysvar for the server tag or \$hostc_cfg[n].\$server_port for the client to a valid number.

HOST-207 SM: Tag is not mounted

Cause: The requested tag is not mounted.

Remedy: Mount the tag before using it.

HOST-208 SM: Not Yet Connected

Cause: The requested tag is not yet connected to the remote host/device.

Remedy: Use MSG_CONNECT to connect the tag before opening it.

HOST-209 SM: Connection Aborted

Cause: The connection was aborted by remote host.

Remedy: Check the remote host and reconnect to it.

HOST-210 SM: Connection Timed Out

Cause: Connection was timed out by remote.

Remedy: Reconnect to remote host.

HOST-211 SM: Connection Write Buffer is full

Cause: Write buffer is full. The remote host may not be responding or the network is down.

Remedy: Check remote host and network connection.

HOST-212 SM: Write Direction shut down by Peer

Cause: Write direction was shutdown by remote.

Remedy: Check remote and reconnect to remote host.

HOST-213 SM: Read Direction shut down by Peer

Cause: Read direction was shutdown by remote.

Remedy: Check remote and reconnect to remote host.

HOST-214 SM: Connection is Pending

Cause: Remote host has not yet connected.

Remedy: Wait for remote to connect.

HOST-215 SM: Connection is in use

Cause: The requested tag is in use.

Remedy: Stop using the remote tag. If necessary close any open file to the tag and disconnect the tag by using MSG_DISCO.

HOST-216 SM: Invalid Socket

Cause: A request was received for a socket which is invalid.

Remedy: Re-establish the connection.

HOST-217 SM: Socket Error

Cause: A socket error was returned by the tcpip library.

Remedy: Retry the operation. All sockets may be use. Free some resources by closing some connections to telnet, ftp or socket mesg. If that is not feasible, the same error may occur again.

HOST-218 DTP: Connect %s

Cause: A diagnostic TP session was connected in interactive mode. Input is allowed.

Remedy: not an error.

HOST-219 DTP: Monitor %s

Cause: A diagnostic TP session was connected in monitor mode. Input is not allowed.

Remedy: not an error.

HOST-220 DTP: Disconnect %s

Cause: A diagnostic TP session was disconnected.

Remedy: not an error.

HOST-221 DTP: ident %s

Cause: connection from remote browser detected

Remedy: not an error.

HOST-222 DHCP: server %s

Cause: response from DHCP server detected.

Remedy: not an error.

HOST-223 DHCP: using IP %s

Cause: A response from the DHCP server was detected.

Remedy: None.

HOST-224 DHCP: No response from server

Cause: No response exists from the DHCP server.

Remedy: Check your cable and server configuration, and retry the operation.

HOST-225 DHCP: duplicate IP %s

Cause: The DHCP server returned an IP address which is already in use.

Remedy: Check the DHCP server configuration. Identify the device that is using the same IP address that the DHCP server assigned to the robot controller. This is strictly a DHCP server configuration/IP address management problem.

HOST-226 DHCP: Lease time expired

Cause: The DHCP lease time expired and the robot could not renew the DHCP lease on the robot controller's IP address.

Remedy: Check the Ethernet cables and make sure the robot controller is still connected to the Ethernet network. Check that the DHCP server is online. Check the DHCP server configuration and verify it is able to assign IP address to the robot controller.

HOST-227 DHCP: shutting down ethernet

Cause: The Ethernet interface was shut down.

Remedy: The lease might have expired. Check the cabling/server configuration and start DHCP again from the DHCP screens.

HOST-228 DHCP: invalid reply from server

Cause: this may be normal protocol operation.

Remedy: not an error.

HOST-229 DHCP: request rejected by server

Cause: Normal protocol operation has occurred.

Remedy: None.

HOST-230 DHCP: renewal attempt failed

Cause: The robot tried to renew IP address, but the renew attempt failed.

Remedy: Check the network cabling and DHCP server setup.

HOST-231 Initializing

Cause: The DHCP operation is initialized.

Remedy: None.

HOST-232 In progress

Cause: The DHCP operation is in progress.

Remedy: No action is required.

HOST-233 Failed

Cause: The DHCP operation failed.

Remedy: Check the network cabling for defects, or the DHCP server setup for possible errors.

HOST-234 Success

Cause: The DHCP operation succeeded.

Remedy: This is a status message. No remedy is required.

HOST-235 Disabled

Cause: The DHCP operation is disabled.

Remedy: This is a status message. No remedy is required.

HOST-236 FTP: servers not auto-started

Cause: After loading the FTP option, the FTP servers could not be automatically started.

Remedy: Start the FTP servers from the Hostcomm Server SETUP screen.

HOST-237 FTP: server tags not available

Cause: The system was unable to start the FTP servers because no free server tags were found.

Remedy: Start FTP servers manually.

HOST-239 KCL option not loaded

Cause: A web page tried to issue a KCL command, but KCL is not loaded on the robot controller.

Remedy: Load the KCL option on the robot controller at Controlled Start.

HOST-240 EMAIL: Email send failed

Cause: An SMTP server failure has occurred.

Remedy: Check and verify your SMTP configuration. On an *iPendant*, this is done using the DRC menus. Otherwise, see the \$SMTP_CTRL system variable. It is likely that \$SMTP_CTRL.\$SERVER was not set with the IP address of an SMTP server.

HOST-241 EMAIL: Email send successful

Cause: An SMTP message was delivered.

Remedy: This warning can be disabled from the DRC menus: Data Services Setup. The warning can also be disabled by setting the system variable \$SMTP_CTRL.\$POST_DLVR to FALSE.

HOST-242 SNTP: NTP server unreachable

Cause: No packets were received from NTP server.

Remedy: Check to make sure the NTP server IP address is correct. If it is not, correct the address and try the operation again.

HOST-243 ACD: duplicate IP %s

Cause: The Address Conflict Detection has detected a duplicate IP address on the network.

Remedy: Change the configured IP address to an IP address not on the network. If using DHCP, consult your network administrator.

HOST-244 Ethernet Throttle

Cause: Important robot operations might be effected by the high level of traffic on the Ethernet network.

Remedy: Contact your system administrator to fix the network problem.

HOST-245 Illegal Hostname

Cause: The robot name configured for the TCP/IP interface is illegal.

Remedy: Change the robot Hostname in the Host Comm TCP/IP screen to a legal name. A legal Hostname is a text string of characters drawn from the alphabet (A-Z, a-z), digits (0-9), and minus sign (-). No blank or space characters are permitted as part of a name, nor is the underscore character (_). The first character must be an alpha character. The last character must not be a minus sign.

HOST-246 Illegal Hosttable Entry %d %d

Cause: A Hosttable entry is configured with an illegal name. If n1 = 1, the illegal name is in the local host table. If n1 = 2, the illegal name is in the shared host table. n2 indicates the entry number of the name in the respective table.

Remedy: Change the robot Hosttable entry in the Host Comm TCP/IP screen to a legal name. A legal Hostname is a text string of characters drawn from the alphabet (A-Z, a-z), digits (0-9), and minus sign (-). No blank or space characters are permitted as part of a name, nor is the underscore character (_). The first character must be an alpha character. The last character must not be a minus sign.

HOST-260 GigE: Invalid Handle

Cause: The camera handle was not found.

Remedy: Be sure the camera is initialized.

HOST-261 GigE: Access Denied

Cause: Could not get access rights to camera. Some other device might be using it.

Remedy: Be sure the robot can get exclusive rights to the camera.

HOST-262 GigE: Cam parms not set

Cause: The parameter setting failed.

Remedy: See PIPC:GIGE_LOG.DT.

HOST-263 GigE: Invalid Argument

Cause: Internal GigE Error.

Remedy: See PIPC:GIGE_LOG.DT.

HOST-264 GigE: Camera Not Supported

Cause: A configuration error has occurred.

Remedy: See PIPC:GIGE_LOG.DT.

HOST-265 GigE: Image XFER Error

Cause: Failed to send image data from the camera to the robot controller. Hardware problem like external noise or defects of camera cable(e.g. cable disconnection) can cause this error.

Remedy: When you use the GigE camera, check the connection around camera, Ethernet cable and hub. When the digital camera is used, check that the connection of the devices such as camera, cable, CCU, MUX is correct. Also, check that these devices themselves go well.

HOST-266 GigE: Invalid IP Address

Cause: The camera IP address is not on same subnet as the robot.

Remedy: The camera and the robot should be on same subnet.

HOST-267 GigE: Camera Mismatch

Cause: The Mac address does not match camera. The camera might have been swapped.

Remedy: Set up a new camera.

HOST-268 GigE: Fail to add Camera

Cause: Could not add camera definition.

Remedy: See PIPC:GIGE_LOG.DT. There might be too many .CAM files.

HOST-279 GigE: Command Failed

Cause: The GigE command to the camera failed.

Remedy: See PIPC:GIGE_LOG.DT.

HOST-280 SMB: Invalid response from PC

Cause: The PC responded to a robot PC Share request in a way the robot couldn't understand.

Remedy: Verify your PC is running a supported platform. Supported operating systems include Windows XP, Windows Vista, and Linux running Samba 3.2. If problems persist on supported platforms, document the events that led to the error, and call your local FANUC representative.

HOST-281 SMB: Time-out waiting for PC

Cause: The robot timed-out while waiting for the PC to respond to a PC Share request.

Remedy: Verify the PC is properly connected to the network, and can be pinged on the network. Verify the PC Share client tag is properly configured, and the PC has properly shared the location/directory being accessed. The default timeout value can be changed in System Variables. If the PC is too slow for the default timeout, set a more reasonable timeout value in seconds in \$SMB_CLNT[X].\$RSPTMOUT, and power-cycle the controller. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-282 SMB: No share configured

Cause: The requested file operation can not be performed unless the client tag is configured with a share.

Remedy: Configure the client tag with a shared drive to perform the requested file operation. Make sure the shared drive is properly configured on the remote PC. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-283 SMB: Netbios configuration error

Cause: NetBios name resolution is not properly configured.

Remedy: Either configure a valid WINS server, or enable broadcast name resolution. Both settings can be configured in the PC Share protocol page in the HOST COMM screen. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-284 SMB: Secure Signature from PC failed

Cause: The Secure Signature failed on a network message sent from the PC to the robot controller.

Remedy: The PC server has message signing enabled. This forces the robot controller to perform Secure Signatures to verify communication integrity. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-285 SMB: DOS error: File not found

Cause: The PC server was unable to find the requested file.

Remedy: Verify the Remote Path/Share field is properly configured in the client tag setup screen. Verify the requested file exists on the remote PC server by performing a directory listing from the robot controller FILE menu. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-286 SMB: DOS error: Path not found

Cause: The PC server was unable to find the requested path.

Remedy: Verify the Remote Path/Share field is properly configured in the client tag setup screen. Verify the requested path exists on the remote PC server by performing a directory listing from the robot controller FILE menu. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-287 SMB: DOS error: Too many open files

Cause: The PC server was unable to open the requested file, because the robot controller has too many files opened to the remote PC.

Remedy: Close some files that the robot controller has opened on the PC Share client tag associated with the remote PC. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-288 SMB: DOS error: Access denied

Cause: The PC server denied the robot controller access to a file, share, or directory path.

Remedy: Verify your username and re-enter your password in the robot controller client tag setup screens. Verify permissions have been properly set on the shared folder on the remote PC. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-289 SMB: DOS error: Requested share does not exist

Cause: The PC server cannot find the Share requested by the robot controller.

Remedy: Verify on the remote PC that a folder has been properly shared. Verify that the share name is configured in the robot controller client tag setup screen. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-299 SMB: DOS Error %d from PC

Cause: The PC responded to a PC share request with a DOS File Error.

Remedy: First, check for an alarm cause code for more information on the specific DOS error. If no alarm cause code exists, note the DOS error code. Lookup the DOS error code in the PC Share manual. If the problem persists, document the events that led to the error, and call your local FANUC representative.

HOST-300 Can't connect to CNC(%s)

Cause: Robot cannot connect to CNC.

Remedy: Check the communication setup.

HOST-301 Not Connected(Tag=%s)

Cause: The CNC is not connected.

Remedy: Connect the CNC to the robot controller.

HOST-302 CNC doesn't Connected

Cause: The CNC is not connected.

Remedy: Connect the CNC to the robot controller.

HOST-303 Not supported CNC

Cause: The CNC is not supported.

Remedy: Change the CNC to a supported type.

HOST-304 Cycle power to change CNC No.

Cause: The CNC No. was changed.

Remedy: Cycle power on the robot controller to activate the change.

HOST-305 Start Comm. with CNC No.%d

Cause: Starting the communication with the specified CNC.

Remedy: This is for notification only.

HOST-306 Input I/O number for CNC No.

Cause: The I/O number entered is not for the selected CNC.

Remedy: Enter the proper I/O number for the selected CNC.

HOST-307 CNC No. is duplicated

Cause: You entered a duplicate CNC no.

Remedy: Enter a CNC no. which is not already in use.

HOST-308 Add CNC to be connected

Cause: The CNC number is greater than the maximum number allowed.

Remedy: Control Start and set the maximum number of connected CNCs allowed.

HOST-309 Please set CNC No.%d

Cause: The CNC No. is not set.

Remedy: Enter the CNC No.

HOST-310 TP disable

Cause: You press the OPR enable button but TP is disable.

Remedy: Set TP enable.

HOST-311 Interlock Mode signal is off

Cause: You press the OPR enable button but interlock signal is off.

Remedy: Set the interlock signal ON.

HOST-312 Operation isn't available

Cause: You try to jog machine tool but operation isn't available.

Remedy: Set the operation available.

HOST-313 Do M.Tool Operation enable

Cause: You try to jog machine tool but Machine Tool Operation in Setup Machine I/F isn't available.

Remedy: Set the Machine Tool Operation available.

HOST-330 CNC Path is invalid

Cause: Accessed not to exist path with CNC custom macro variable access function.

Remedy: Check the path number of the custom macro access instruction occurred the alarm.

HOST-331 IP Address mis-configuration

Cause: Accessed invalid IP address with CNC custom macro variable access function.

Remedy: 1. Check the IP address of the custom macro access instruction occurred the alarm.
2. Check the Host name of the custom macro access instruction occurred the alarm.

HOST-332 CUSTOM MACRO ID is invalid

Cause: Accessed the custom macro variable number that cannot be access with CNC custom macro variable access function.

Remedy: Check the custom macro variable number of the custom macro access instruction occurred the alarm.

HOST-333 Input CUSTOM MACRO value is invalid

Cause: Tried to write the value cannot be used as custom macro variable with CNC custom macro variable access function.

Remedy: Check the input value of the custom macro access instruction occurred the alarm.

HOST-334 Output Register is invalid

Cause: Tried to write to the invalid numeric register with CNC custom macro variable access function.

Remedy: Check the numeric register number of the custom macro access instruction occurred the alarm.

HOST-335 Failed to read CUSTOM MACRO Variable

Cause: Failed to execute "Read Custom Macro Variable" instruction.

Remedy: Check the alarm occurred at the same time.

HOST-336 Failed to write CUSTOM MACRO Variable

Cause: Failed to execute "Write Custom Macro Variable" instruction.

Remedy: Check the alarm occurred at the same time.

HOST-337 Read CUSTOM MACRO Value is out of range

Cause: The value of the custom macro variable loaded with CNC custom macro variable access function is greater than maximum or less than the minimum value of a single precision floating point number

Remedy: Change it to the value that can be handle by a single precision floating point number

HOST-338 Time out

Cause: Accessed to the CNC with CNC Custom Macro variable access function, but robot could not get response.

Remedy: Check the setting for connection to CNC and try again.

HOST-339 Accessing CUSTOM MACRO VAR of same CNC

Cause: Accessed to the same CNC with multiple Custom macro variable access instructions at the same time.

Remedy: Don't access to the same CNC with multiple Custom macro variable access instructions at the same time.

HOST-380 Syser 0x%x,0x%x

Cause: This is a system error.

Remedy: Power-down and up the controller. If the problem occurs again, write down the number in the message, record the software version and any significant events leading up to this problem and contact your local FANUC representative. There may be other error messages that shows the cause of this alarm. Open active alarm screen and report all to FANUC. Open alarm history screen and select the alarms and press DETAIL to see all message displayed in two lines. Report all message to track the problem.

HOST-390 RSI: ONLYSEND in RSI configuration XML should be TRUE

Cause: ONLYSEND in RSI configuration XML is other than TRUE.

Remedy: Change ONLYSEND to TRUE.

HOST-391 RSI: 1st argument in RSI_WRXML_I is not supported

Cause: 1st argument in RSI_WRXML_I is not supported.

Remedy: Change 1st argument in RSI_WRXML_I to supported one.

HOST-392 RSI: 2nd argument in RSI_WRXML_I should be 1 character

Cause: 2nd argument in RSI_WRXML_I is not 1 character.

Remedy: Change 2nd argument in RSI_WRXML_I to 1 character.

HOST-400 PC needs reset HSSB board %d

Cause: HSSB board is not reset from PC.

Remedy: Reset HSSB board from PC.

HOST-401 HSSB board is not found

Cause: HSSB board is not found in option board slot of robot.

Remedy: Insert HSSB board.

HOST-410 TLIF_READ timeout in KAREL for Tool Interface function

Cause: KAREL built-in function TLIF_READ for Tool Interface function is timed out.

Remedy: This warning is just for information. Data received until timeout is read and the size is returned to 2nd argument of TLIF_READ. You may have to greater the timeout value, which is 1st argument of TLIF_READ.

HOST-411 Requested size from TLIF_READ is larger than \$TLIF.\$RCV_BUF_SZ in KAREL

Cause: Requested size of KAREL built-in function TLIF_READ for Tool Interface function is greater than \$TLIF.\$RCV_BUF_SZ.

Remedy: Greater \$TLIF.\$RCV_BUF_SZ or decrease request size, which is 2nd argument of TLIF_READ.

HOST-412 Internal error for Tool Interface function %s

Cause: This is caused by HOST-425.

Remedy: Do the same remedy as HOST-425.

HOST-413 Receive buffer overflow for Tool Interface function

Cause: Receive buffer for KAREL built-in function TLIF_READ in Tool Interface function is overflowed.

Remedy: Greater \$TLIF.\$RCV_BUF_SZ or decrease the size of receive data.

HOST-414 1st argument of TLIF_WRITE in KAREL is invalid for Tool I/F function

Cause: 1st argument of TLIF_WRITE for KAREL built-in function in Tool Interface function isn't initialized or less than 1.

Remedy: Fix 1st argument, which means send length, of TLIF_WRITE.

HOST-415 1st argument of TLIF_WRITE in KAREL is greater than 2nd argument size

Cause: 1st argument of TLIF_WRITE for KAREL built-in function in Tool Interface function is greater than 2nd argument size.

Remedy: Fix 1st argument, which means send length, or fix the array length of the 2nd argument, which is an array of BYTE for send data, in TLIF_WRITE.

HOST-416 2nd argument of TLIF_READ is uninit or less than 1 in KAREL

Cause: 2nd argument of TLIF_READ for KAREL built-in function in Tool Interface function isn't initialized or less than 1.

Remedy: Fix 2nd argument, which means size of read data, of TLIF_READ.

HOST-417 2nd argument of TLIF_READ in KAREL is greater than 3rd argument size

Cause: 2nd argument of TLIF_READ for KAREL built-in function in Tool Interface function is greater than 3rd argument size.

Remedy: Fix 2nd argument, which means size of read data, or fix the array length of the 3rd argument, which is array of BYTE where read data is set, in TLIF_READ.

HOST-418 1st argument of TLIF_READ is uninit or less than -1 in KAREL for Tool

Cause: 1st argument of TLIF_READ for KAREL built-in function in Tool Interface function isn't initialized or less than -1.

Remedy: Fix 1st argument, which means timeout of TLIF_READ.

HOST-419 2nd argument of TLIF_CRC16 is illegal in KAREL for Tool I/F function

Cause: 2nd argument of TLIF_CRC16 for KAREL built-in function in Tool Interface function is uninit or less than 1 or larger than 32767.

Remedy: Fix 2nd argument, which means length of the data, of TLIF_CRC16.

HOST-420 2nd argument of TLIF_CRC16 in KAREL is greater than 1st argument size

Cause: 2nd argument of TLIF_CRC16 for KAREL built-in function in Tool Interface function is greater than the array length of the 1st argument.

Remedy: Fix 2nd argument, which means length of the data, or fix 1st argument array length of BYTE of TLIF_CRC16.

HOST-421 3rd argument size of TLIF_CRC16 in KAREL for Tool I/F is smaller than 2

Cause: 3rd argument size of TLIF_CRC16 for KAREL built-in function in Tool Interface function is smaller than 2.

Remedy: Fix 3rd argument array size of BYTE larger than 1 in TLIF_CRC16.

HOST-422 2nd argument of TLIF_READ is less than 1 in KAREL for Tool I/F function

Cause: 2nd argument of TLIF_READ for KAREL built-in function in Tool Interface function is less than 1.

Remedy: Fix 2nd argument, which means size of read, in TLIF_READ.

HOST-423 Send buffer overflow by TLIF_WRITE in KAREL for Tool Interface function

Cause: Send buffer for TLIF_WRITE for KAREL built-in function in Tool Interface function is overflowed.

Remedy: Greater \$TLIF.\$SND_BUF_SZ or make more interval of calling TLIF_WRITE.

HOST-424 IO is not updated during \$TLIF.\$IO_TIMEOUT[ms] for Tool I/F function

Cause: IOs for Tool Interface function are not updated during \$TLIF.\$IO_TIMEOUT [ms].

Remedy: Greater \$TLIF.\$IO_TIMEOUT or check cables for Tool Interface function.

HOST-425 Tool Interface communication error (%d)

Cause: Tool answer may later than \$TLIF.\$TLANS_TMOUT [ms] or communication error happens.

Remedy: Greater \$TLIF.\$TLANS_TMOUT or faster the answer of tool or check cables for Tool Interface function.
Pay attention that I/O update is done after tool answers by RS485 if robot controller send data to tool by RS485.
If tool answers later, I/O update becomes later.

HOST-426 Tool Interface board major version error. Board = %d, Controller = %d

Cause: Tool Interface board version is old.

Remedy: Contact FANUC service representative and tell this alarm message and version number in this alarm.

HOST-427 ROBOGUIDE doesn't support KAREL built-in for Tool Interface function

Cause: ROBOGUIDE doesn't support KAREL built-in for Serial Communication of Tool Interface Communication Function.

Remedy: This is just for notification.

4.7.2 HRTL Alarm Code

HRTL-001 Not owner

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-002 File/Comm Tag does not exist

Cause: Either the file or the Comm Tag could not be found.

Remedy: Either retype the file name or DEFINE the Comm Tag. Please refer to the section of Defining and Starting FTP on a Device in the manual of Ethernet Controller Backup and Restore- FTP Setup and Operations.

HRTL-003 No such process

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-004 Interrupted system call

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-005 I/O error

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-006 No protocol or device dest

Cause: The Comm Tag either does not have a protocol defined or if required does not have a port assigned.

Remedy: DEFINE a protocol to the Comm Tag or assign a port.

HRTL-007 Arg list too long

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-008 Exec format error

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-009 Bad file number

Cause: The file number passed does not match with any open files.

Remedy: Copy the conditions which caused this to occur.

HRTL-010 No children

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-011 No more processes

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-012 Not enough core

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-013 Access permission denied

Cause: Access Ethernet socket table permission denied.

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-014 Invalid Comm Tag

Cause: A bad address has been detected.

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-015 Port device required

Cause: The selected protocol requires a device port.

Remedy: First ensure the Port has No Use from Port Init Setup. Then assign it to the selected Comm Tag.

HRTL-016 Comm Tag already defined

Cause: Either the Comm Tag is STARTED or it's presently in use.

Remedy: Either STOP the Comm Tag or select another Tag. Please refer to the section of Defining and Starting FTP on a Device in the manual of Ethernet Controller Backup and Restore- FTP Setup and Operations.

HRTL-017 File exists

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-018 Cross-device link

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-019 Invalid device type

Cause: The passed Device Type is not a Comm Tag type (Cx or Sx).

Remedy: Only Comm Tags can be used with this command.

HRTL-020 Not a directory

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-021 Is a directory

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-022 Invalid argument

Cause: System does not support selected protocol.

Remedy: Either select another protocol or install the selected protocol.

HRTL-023 File table overflow

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-024 Too many open files

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-025 Not a typewriter

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-026 Text file busy

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-027 File too large

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-028 No space left on device

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-029 Illegal seek

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-030 Read-only file system

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-031 Too many links

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-032 Broken pipe

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-035 Operation would block

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-036 Operation now in progress

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-037 Operation now in progress

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-038 Socket operation on non-socket

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-039 Destination address required

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-040 Message size too long

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-041 Protocol wrong type

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-042 Protocol not available

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-043 Protocol not supported

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-044 Socket type not supported

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-045 Operation not supported

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-047 Address family not supported

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-048 Address already in use

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-049 Can't assign requested address

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-050 Network is down

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-051 Network is unreachable

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-052 Connection dropped on reset

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-053 Software caused connect abort

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-054 Connection reset by peer

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-055 No buffer space available

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-056 Socket is already connected

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-057 Socket is not connected

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-058 Can't send, socket is shutdown

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-060 Ethernet Connection timed out

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-061 Ethernet Connection refused

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-063 Protocol family not supported

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-064 Host is down

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-065 Host is unreachable

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-066 No urgent data

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-067 No out of bound data

Cause: An error occurred in the Ethernet networking software (TCP/IP).

Remedy: Consult your network administrator or call the FANUC Service Hotline for assistance.

HRTL-068 Device is already attached

Cause: Device is already in use.

Remedy: Free Device for use.

HRTL-069 Device Function Code invalid

Cause: Device does not support command.

Remedy: Check usage against device.

HRTL-070 Cannot detach with open files

Cause: Device in use.

Remedy: Wait for command complete then retry.

HRTL-071 Device is already allocated

Cause: Device is already allocated.

Remedy: Wait until Device free then retry.

HRTL-072 Device doesn't support attach

Cause: Device does not support attaching.

Remedy: Check usage against device.

HRTL-073 End of device list reached

Cause: Device limit reached.

Remedy: Check that device is valid.

HRTL-074 Device is not supported

Cause: Device not available.

Remedy: Check device installation.

HRTL-075 Compressed File too small

Cause: File Header indicates more data than found in file.

Remedy: Delete file and try to get copy from original source.

4.8 I

4.8.1 IB-S Alarm Code

IB-S-001 Slave system error(%d)

Cause: System internal error.

Remedy: Notify FANUC.

IB-S-002 Slave board not installed

Cause: Slave PCB is not installed.

Remedy: Slave PCB is installed.

IB-S-003 Slave PCB abnormal(%d)

Cause: Slave board is defective.

Remedy: Please exchange Slave board.

IB-S-004 Slave No Data Exchange

Cause: Slave data exchange is stopped.

Remedy: Please check Cable and Master status.

IB-S-005 Slave watch dog error

Cause: Slave detects watch dog error.

Remedy: Please check other device status.

IB-S-006 Can not find IBS Group

Cause: The group specified by InterBus group switching TP instruction is not found at all.

Remedy: Check the network configuration. Please set the group to the TP instruction again in EDIT screen.

IB-S-007 IBS Config change Timeout

Cause: The group specified by InterBus group switching TP instruction can't be enabled or disabled.

Remedy: Check the network configuration to see if the group to be switched is properly configured. If the group can't be enabled, check the device to be enabled is firmly connected to the network.

IB-S-008 Slave Length code error

Cause: The slave length code setting is invalid.

Remedy: Please modify the slave length code setting.

IB-S-009 %s I/O Overmapping no.:%d

Cause: The offset or byte number of slave configuration is invalid.

Remedy: Please modify the offset or byte number of slave configuration setting.

IB-S-010 Please power OFF/ON for Master

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-011 Master system error(%d)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-012 Master board not installed

Cause: Slave PCB is not installed.

Remedy: Slave PCB is installed.

IB-S-013 Master PCB abnormal(%d)

Cause: Slave board is defective.

Remedy: Please exchange Slave board.

IB-S-014 Master No Data Exchange

Cause: Slave data exchange is stopped.

Remedy: Please check Cable and Master status.

IB-S-015 Module error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-016 Module reconfiguration

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-017 Defect W1-interface

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-018 Defect W2-interface

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-019 %d: %d.%d %s

Cause: An error has occurred with the specified slave device.

Remedy: Refer to the Cause and Remedy of the cause code (displayed immediately below this error code on the teach pendant).

IB-S-020 All clear done

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-021 External periphery error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-022 Defective Datacycle & Rescan

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-023 Transmission Quality Down

Cause: Transmission Quality Down.

Remedy: Check the slave device or the cable.

IB-S-030 Device missing in last scan

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-031 Device reports other ID

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-032 Device reports other length

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-033 Further device Interface 1

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-034 Further device Interface 2

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-035 Device missing in last scan

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-036 Device peripheral error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-037 Device reconfiguration req

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-038 Dev detect checksum error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-040 Defective Interface1(local)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-041 DefectiveInterface2(remote)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-042 No report ID & length code

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-043 Interrupt IBS connection

Cause: System internal error.

Remedy: Document the events that led to the error, and call your local FANUC representative.

IB-S-044 Interrupt IBS local before

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-045 Interrupt IBS local behind

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-046 Connect force stopped

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-052 Unknown process data handshake

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-056 No device table found

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-057 IBS controller is defective

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-070 Double address configured

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-071 Device data set len fault

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-072 Process data cfg len fault

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-073 Additional table len fault

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-074 PCP data length fault

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-075 Whole size length fault

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-076 Add table inconsistent

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-077 Max Output offset overstep

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-078 Max Input offset overstep

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-079 Max Offset overstep > 255

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-080 Module count or offset er

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-081 Out Mod No <> out ofs

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-082 In Mod No <> in ofs

Cause: System internal error.

Remedy: Notify FANUC.

IB-S-083 Real out len <> cfg len

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-084 Real in len <> cfg len

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-085 Overlapped output data

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-086 Overlapped input data

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-087 Out Dev define In module

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-088 In Dev define Out module

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-089 Out Dev define In module

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-090 In Dev define Out module

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-091 Installation depth error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-092 Length code is unknown

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-093 Remove non exist device

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-094 Device is active

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-095 Config is differ from msg

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-101 Not match Configuration list

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-102 Too many device are connected

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-103 Configuration change (ID-scan)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-104 Multi data cycle error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-105 InterBus Timeout process cycle

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-106 Device missing in setup config

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-107 Configuration change (runtime)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-108 No connection to InterBus-S

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-150 Sequence error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-170 No warm start command

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-171 Too many modules configured

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-172 More module are connected

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-173 Less module are connected

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-174 Non supported length code

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-175 Wrong length code

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-176 Wrong ident code

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-177 Wrong segment level

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-178 Master Watch dog error

Cause: Slave detects watch dog error.

Remedy: Please check other device status.

IB-S-200 Slave No data Exchange

Cause: Slave data exchange is stopped.

Remedy: Please check cable and master status.

IB-S-201 Slave board not installed

Cause: Slave board is not installed.

Remedy: Install a slave board.

IB-S-202 Too many board installed

Cause: More than one slave board is installed.

Remedy: Keep only one slave board and remove other slave boards.

IB-S-203 Init Error %d

Cause: Consult Phoenix Contact for more information.

Remedy: Consult Phoenix Contact for more information.

IB-S-204 Runtime Error %d

Cause: Consult Phoenix Contact for more information.

Remedy: Consult Phoenix Contact for more information.

IB-S-205 Please power off for Slave

Cause: Setting is modified and power off is required.

Remedy: Power off/on the controller to activate new setting.

IB-S-206 Firmware Updating Mode

Cause: Controller started in firmware updating mode.

Remedy: Firmware should be updated only in firmware updating mode. Update the firmware if it is needed. Power off/on the controller to return normal mode.

IB-S-207 Firmware update successful

Cause: Firmware is updated successfully.

Remedy: Power off/on the controller to return normal mode.

IB-S-208 Firmware update failed %d

Cause: Error occurs during firmware update.

Remedy: Write down the number displayed in the error message. Please consult Phoenix Contact.

IB-S-209 Firmware file error %d

Cause: Error occurs in accessing the firmware file.

Remedy: Please check if the firmware file is broken.

IB-S-210 No firmware

Cause: The name of the firmware file is wrong.

Remedy: The name of the firmware file is supposed to start by IBS. Please check if you use the correct firmware for the slave board.

IB-S-211 System Error %d %d

Cause: Internal Error.

Remedy: Write down the numbers displayed in the error message. Contact your local FANUC representative to report the problem.

IB-S-212 Slave PCB abnormal

Cause: Slave board is defective.

Remedy: Please exchange slave board.

IB-S-213 Error code %x

Cause: Additional information of the error message displayed together.

Remedy: Write down the number displayed in the error message. Please see the remedy of the error message displayed together.

IB-S-214 PCP Init Error %d

Cause: Error is PCP initialization.

Remedy: The number displayed in the error message is the error code returned by the firmware. Please consult Phoenix Contact about the error.

IB-S-215 PCP Init Stopped %d

Cause: PCP initialization is stopped by the wrong parameter.

Remedy: Please check the PCP setting. For example, the number of elements.

IB-S-216 DIO size to UOP not enough

Cause: The DIO size is too small to use UOP.

Remedy: Increase DIO size if you want to use UOP.

IB-S-220 HOST watchdog failed, timeout

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-221 HOST not acknowledge process

Cause: System internal error

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-224 Error in IBS Controller comm

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-260 bit len is set with byte len

Cause: BIT LENGTH is set with BYTE LENGTH.

Remedy: Search slave which has non-zero BIT LENGTH and BYTE LENGTH. in config detail screen Then set 0 to all of BIT LENGTH or all of BYTE LENGTH

IB-S-263 InterBus has no I/O assignment

Cause: InterBus I/O assignment is cleared.

Remedy: Create InterBus I/O assignment if it is supposed to be created manually. Cycle power is required to release the alarm.

IB-S-264 Set system pointer failed

Cause: Internal Error.

Remedy: Contact your local FANUC representative to report the problem.

IB-S-300 XXXX:Bus error

Cause: Data transfer stops because of a bus error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-301 0BE2:Max. number was exceeded

Cause: The maximum number of InterBus words or devices have been exceeded.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-302 0BE6:Too many faulty data cycle

Cause: The error occurs due to installation errors or a defective InterBus device.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-303 0BE7:Configuration not activated

Cause: The configuration could not be activated. The error occurs due to installation errors or a defective InterBus device.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-304 0BEA:Control_Device_Function

Cause: The Control_Device_Function service (0714 hex) could not be executed.

Remedy: Repeat the service if the controller board is still in the state RUN or ACTIVE. If diagnostics is active, you must wait for the result. The bus error will show the error location.

IB-S-305 0BF4:CRC error in segment

Cause: Transmission error (CRC error) on the data forward path of the incoming bus interface (IN) of the indicated InterBus device.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-306 0BF5:Error at interface (In)

Cause: Transmission error (CRC error) on the data return path of the incoming bus interface (IN) of the indicated InterBus device.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-307 XXXX:Bus error occurred

Cause: Bus error is indicated by the firmware with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-308 XXXX:Device is missing

Cause: An InterBus device is missing.

Remedy: Compare the active configuration with the connected bus configuration, taking any disabled bus segments into account.

IB-S-309 XXXX:Multiple errors in segment

Cause: Transmission errors.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-310 XXXX:Multiple timeouts in segment

Cause: Transmission errors.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-311 XXXX:CRC error (In)

Cause: Transmission errors.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-312 XXXX:Defective interface (In)

Cause: Cable break on the data forward path of the incoming bus interface (IN) of the indicated InterBus device.

Remedy: Check the cables, connectors and InterBus connections for interruptions and repair them, if necessary.

IB-S-313 XXXX:Error at interface (In)

Cause: Transmission errors.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-314 XXXX:Interrupted interface (In)

Cause: Cable break on the data forward path of the incoming bus interface (IN) of the indicated InterBus device.

Remedy: Check the cables, connectors and InterBus connections for interruptions and repair them, if necessary.

IB-S-315 XXXX:Transmission error

Cause: Missing or defective bridge (loose contact, cold junction) in the outgoing interface of the preceding bus device.

Remedy: Check the segment of the specified InterBus device for interruptions in the connector.

IB-S-316 XXXX:Error in segment

Cause: Transmission errors.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-317 XXXX:Wrong length code

Cause: The length code of the specified InterBus device is not identical to the entry in the configuration frame.

Remedy: Check InterBus configuration.

IB-S-318 XXXX:Wrong ID code

Cause: The ID code of the specified InterBus device is not identical to the entry in the configuration frame.

Remedy: Check InterBus configuration.

IB-S-319 XXXX:Data register error

Cause: The number of data registers of the specified InterBus device is not identical to the length code entered in the configuration frame.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-320 XXXX:Invalid ID code

Cause: The specified InterBus device has an invalid ID code.

Remedy: Check InterBus configuration.

IB-S-321 XXXX:Remote device in local bus

Cause: The specified InterBus device has the ID code of a remote bus device, but is located in a local bus.

Remedy: Check InterBus configuration.

IB-S-322 XXXX:Device not possible

Cause: The specified InterBus device has a SUP1 1 slave chip.

Remedy: Replace the device with a device which has a SUP1 3 chip.

IB-S-323 XXXX:Defective interface (Out1)

Cause: Data transmission is interrupted at the outgoing remote bus interface of the specified InterBus device.

Remedy: Check the connector. Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-324 XXXX:Defective interface (Out2)

Cause: Data transmission is interrupted at the outgoing remote bus interface of the specified InterBus device.

Remedy: Check the connector. Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-325 XXXX:Interrupted interf. (Out1)

Cause: The SUP1 3 protocol chip detected a CRC or MAU error.

Remedy: Replace the InterBus device.

IB-S-326 XXXX:Interrupted interf. (Out2)

Cause: The SUP1 3 protocol chip detected a CRC or MAU error.

Remedy: Replace the InterBus device.

IB-S-327 XXXX:I/O timeout

Cause: I/O timeout.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-328 XXXX:Reset of device

Cause: The specified InterBus device is insufficiently supplied with power or is defective.

Remedy: Check this InterBus device.

IB-S-329 XXXX:Device not initialized yet

Cause: The controller board tried to switch the bus into the state The controller board tried to switch the bus into the state could initialize the protocol chip, or The InterBus device is defective.

Remedy: Wait until the InterBus device initializes the protocol chip, or replace the InterBus device.

IB-S-330 XXXX:Invalid mode at device

Cause: Error of an InterBus device.

Remedy: Replace the device.

IB-S-331 XXXX:Wrong data length

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-332 XXXX:Wrong ID code (PCP)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-333 XXXX:Inadmissible width (PCP)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-334 XXXX:Dynamic PCP cannot be used

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-335 XXXX:State conflict (On)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-336 XXXX:State conflict (Off)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Please see manual IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-337 XXXX:Operation not possible

Cause: Error of an InterBus device.

Remedy: Replace the device.

IB-S-338 XXXX:Multiple errors (Out1)

Cause: Multiple errors at the outgoing bus interface (OUT1) of the specified InterBus device.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-339 XXXX:Multiple timeout (Out1)

Cause: A defective bus cable is connected to this bus interface, of the following InterBus device or of a device in any following local bus.

Remedy: Check your InterBus network. Refer to 11.2 of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-340 XXXX:Further device at bus

Cause: An unexpected device was detected at the outgoing bus interface (OUT1) of the specified InterBus device.

Remedy: Check InterBus configuration.

IB-S-341 XXXX:Data register error (Out1)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-342 XXXX:Defective interface (Out1)

Cause: The InterBus device connected to the outgoing interface (OUT1) of the specified InterBus device carried out a voltage reset or is defective.

Remedy: Check this InterBus device.

IB-S-343 XXXX:Further local bus device

Cause: An InterBus device with the ID code of a local bus device was found at the outgoing remote bus interface (OUT1) of the specified InterBus.

Remedy: Check InterBus configuration.

IB-S-344 XXXX:Invalid ID code (Out1)

Cause: The InterBus device connected to the outgoing remote bus interface (OUT1) of the specified InterBus device has an invalid ID code.

Remedy: Replace this device.

IB-S-345 XXXX:Too many devices at local bus

Cause: The local bus connected directly to the controller board consists of more InterBus devices than have been entered in the active configuration.

Remedy: Check this local bus.

IB-S-346 XXXX:Multiple errors (Out2)

Cause: An InterBus cable is connected to the outgoing bus interface (OUT2) without any further InterBus devices.

Remedy: Check this local/remote bus.

IB-S-347 XXXX:Multiple timeouts (Out2)

Cause: Error in the local/remote bus of the specified InterBus device.

Remedy: Check this local/remote bus.

IB-S-348 XXXX:Further device at (Out2)

Cause: An InterBus device is connected that has not been entered in the active configuration.

Remedy: Check your InterBus network at the specified error location.

IB-S-349 XXXX:Data register error (Out2)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-350 XXXX:Too many devices activated

Cause: The InterBus device connected to the branching bus interface (OUT2) of the specified InterBus device caused a reset or is defective.

Remedy: Check this InterBus device.

IB-S-351 XXXX>Error in local bus

Cause: Error in the local bus of the specified InterBus device.

Remedy: Check this local bus.

IB-S-352 XXXX:Too many devices in local bus

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-353 XXXX:Invalid ID code (Out2)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-354 8040>Error on channel

Cause: The specified InterBus device indicates a single-channel error.

Remedy: Check the channel of the specified InterBus device.

IB-S-355 8060:Short circuit at output

Cause: The specified InterBus device is indicating a short circuit at the output.

Remedy: Check the output protective circuit of the specified InterBus device.

IB-S-356 8080:Initiator supply error

Cause: The specified InterBus device indicates an initiator supply error in one or more groups.

Remedy: Check the group(s) of the specified InterBus device.

IB-S-357 80A0:Power supply error

Cause: The specified InterBus device indicates a voltage supply error in one or more groups.

Remedy: Check the group(s) of the specified InterBus device.

IB-S-358 80B1:Configuration error

Cause: The specified InterBus device indicates a configuration error.

Remedy: Check the parameters of the specified InterBus device.

IB-S-359 80B2:Peripheral electronic error

Cause: The specified InterBus device indicates an error in the I/O electronics.

Remedy: Check the sensors and actuators connected to the specified InterBus device.

IB-S-360 80B4:Temperature excess

Cause: The specified InterBus device indicates that the temperature has been exceeded.

Remedy: Check the sensors and actuators connected to the specified InterBus device.

IB-S-361 8400:Loop error (Out2)

Cause: There is an error in the lower-level installation local bus.

Remedy: Check the modules connected to the specified InterBus device.

IB-S-362 0CA0:Isolated disconnection error

Cause: The controller board could not start up the bus configuration.

Remedy: Only use devices with SUP1 3.

IB-S-380 0BDF:Look for Failure

Cause: A bus error occurred.

Remedy: Wait until the search for the error has been completed. The system coupler will inform you of the result.

IB-S-381 0BB1:Peripheral warning

Cause: The specified InterBus device indicates a peripheral fault.

Remedy: Check the specified InterBus device.

IB-S-382 XXXX:Control Fault

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-383 XXXX:User Fault

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-384 XXXX:User Fault (%s)

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-390 0902:Controller Board Error

Cause: Hardware or firmware error on the system coupler.

Remedy: Replace the controller board.

IB-S-391 0903:Board has not enough memory

Cause: Insufficient memory on the system coupler.

Remedy: Use the Reset_Controller_Board service (0956 hex) to execute a warm start of the controller board, and try again.

IB-S-392 0FA4:Board checksum error

Cause: A checksum error was detected on the parameterization memory.

Remedy: Format the parameterization memory.

IB-S-393 XXXX:Board system error

Cause: The firmware indicates this error with the firmware error code XXXX.

Remedy: Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code.

IB-S-394 XXXX:is reported by firmware

Cause: Firmware error code XXXX is reported by firmware.

Remedy: This is indication of miscellaneous error. Refer to IBS SYS FW G4 UM from Phoenix Contact for the firmware error code, if required.

IB-S-395 0A02: Can't execute service

Cause: You sent a service which is not permitted in the current state of the system coupler.

Remedy: Set the controller board to the required state before calling the desired service.

IB-S-396 Board status is READY

Cause: IB-S-395 may occur with one of these alarms.

Remedy: Information of current board status.

IB-S-397 Board status is ACTIVE

Cause: IB-S-395 may occur with one of these alarms.

Remedy: Information of current board status.

IB-S-398 Board status is RUN

Cause: IB-S-395 may occur with one of these alarms.

Remedy: Information of current board status.

IB-S-399 Board status is Bus Fail

Cause: IB-S-395 may occur with one of these alarms.

Remedy: Information of current board status.

IB-S-400 0928:Service called w/o Rights

Cause: You called an exclusive service without authorization.

Remedy: Release exclusive right held by others (CMD tool and so on) and try again.

IB-S-401 0A08:Firmw.command busy now

Cause: The firmware cannot process two services at the same time.

Remedy: Wait for the service called previously to be completed, and then try again.

IB-S-402 0AFC:Board error reported

Cause: A hardware error occurred on the controller board.

Remedy: Replace the controller board.

IB-S-403 XXXX:Firmware error reported

Cause: A firmware error occurred on the controller board.

Remedy: Replace the controller board.

IB-S-404 0BD2:Bus warning time elapsed

Cause: No data cycle could be transmitted within the bus warning time No data cycle could be transmitted within the bus warning time.

Remedy: Check your system, or increase the bus warning time with the Set_Value service (0750 hex).

IB-S-405 XXXX:Wrong Variable ID

Cause: Invalid or non-defined value is used.

Remedy: Check the Variable_ID parameter.

IB-S-420 0A20:1st Seg. Unswitchable

Cause: The first physical InterBus device cannot be switched off.

Remedy: This is information notification.

IB-S-421 0A28:Can't enable multiple Alt.Group

Cause: You tried to activate alternative groups at the same time.

Remedy: This is information notification.

IB-S-422 0A2A:Dev dependency conflict

Cause: Error in group switching for mutual dependent InterBus devices.

Remedy: Check group configuration.

IB-S-423 0933:Can't take Exclusive Rights

Cause: The request for exclusive rights was denied. Someone else still has the exclusive rights.

Remedy: Use the Change_Exclusive_Rights_Request service (014F hex) to enable the exclusive rights only when no one else already has these rights.

IB-S-424 Peripheral warning exists

Cause: This message is displayed when the operator presses the reset button, but the peripheral fault still exists on one or more devices. This error message is displayed with error location.

Remedy: Resolve peripheral fault, and press the reset button.

IB-S-425 Peripheral warning cleared

Cause: This message indicates all peripheral faults are cleared.

Remedy: This is information notification.

IB-S-447 Seg.%d at outgoing remote bus

Cause: The error reported with this alarm is located in the InterBus network.

Remedy: Use this information of error location to resolve the reported error.

IB-S-448 Seg.%d at outgoing local bus

Cause: The error reported with this alarm is located in the InterBus network.

Remedy: Use this information of error location to resolve the reported error.

IB-S-449 %d.%d device not found

Cause: The error reported with this alarm is located in the InterBus network.

Remedy: Use this information of error location to resolve the reported error.

IB-S-450 %d.%d (Device Name)

Cause: The error reported with this alarm is located in the InterBus network.

Remedy: Use this information of error location to resolve the reported error.

IB-S-451 Additional Info XXXX

Cause: Additional Information for the error reported with this alarm is provided.

Remedy: Use this information to resolve the reported error.

IB-S-452 Slave No data Exchange

Cause: The system coupler's slave part is not transferring process data.

Remedy: Start the data transfer of the InterBus network that the system coupler's slave part is connected to. If it is in the system setup phase and the robot should move without slave data transfer, enable the Error 1shot setting. Refer to 5.2.2 for TP mode and refer to 6.2.2 for CMD mode of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-453 Bus Fault is indicated

Cause: A bus fault is indicated by the firmware.

Remedy: Wait until the firmware send the error report.

IB-S-454 CMD mode is selected

Cause: This message is displayed when the Use CMD setting is changed to Enable.

Remedy: Power off/on is required to activate the change of Use CMD.

IB-S-455 TP mode is selected

Cause: This message is displayed when the Use CMD setting is changed to Disable.

Remedy: Power off/on is required to activate the change of Use CMD.

IB-S-456 Device %d is inserted

Cause: This message is displayed when a device is inserted into the Configured device List/Detail setup screen in TP mode to inform the operator.

Remedy: This is information notification.

IB-S-457 Device %d is deleted

Cause: This message is displayed when a device is deleted in the Configured device List/Detail setup screen in TP mode to inform the operator.

Remedy: This is information notification.

IB-S-458 Please power OFF/ON for Master

Cause: This message is displayed when Read In is performed in the Configured device List setup screen.

Remedy: After the Read In operation, power off/on is required to start the data transfer.

IB-S-459 Too many device

Cause: This message is displayed when more than 128 devices are present in the current configuration.

Remedy: Decrease the number of devices in the configuration and parameterize the system coupler again.

IB-S-461 Can't swich at READY state

Cause: This message is displayed when the alternative group is switched at the state READY of the system coupler's master part.

Remedy: Let the state of the system coupler be ACTIVE or RUN. For example, perform Start Data Transfer or Parameterization execute.

IB-S-462 Parameterization is performed

Cause: This message informs the operator that Parameterization execute is performed.

Remedy: This is information notification.

IB-S-463 Load SVC successful

Cause: This message inform the operator that SVC file has been loaded successfully and stored to the controller as PXC_SVC.DT.

Remedy: This is information notification.

IB-S-464 Clear parm mem is performed

Cause: This message informs the operator that Clear parameterization memory is performed.

Remedy: This is information notification.

IB-S-465 Load Config is performed

Cause: This message informs the operator that Load Configuration is performed.

Remedy: This is information notification.

IB-S-466 Board not ready

Cause: The system coupler is not ready to operate.

Remedy: Replace the system coupler.

IB-S-467 BackUp %d board files (Device Name)

Cause: This message shows the result of Backup board files operations in the Control setup screen in CMD mode. The number of stored files is displayed with the selected device name (e.g. MC: or UT1). If the number is 0, the operation has failed. Check if the device name is correct or parameterization memory holds any files.

Remedy: This is information notification.

IB-S-468 Slave external power off

Cause: This message indicates that the external power supply of the system coupler's slave part has been lost.

Remedy: Check if the external power supply of the system coupler's slave part is correctly plugged in and that 24V are provided.

IB-S-469 Slave not Init/Ready

Cause: The system coupler is not initialized or is not in the state READY.

Remedy: Check the external power supply of the system coupler's slave part. If the external power supply is OK, power off/on the controller and check if the alarm is released. If this error message is still present, check the hardware of the system coupler's slave part.

IB-S-470 Slave DIP setting mismatch

Cause: This alarm message indicates that the baud rate setting of the DIP switch does not correspond to the baud rate setting held in the robot controller when the DIP 10 of the system coupler's slave part is set to ON.

Remedy: Select one of the following solutions.

1. Change DIP 10 of the system coupler's slave part to OFF.
2. Change DIP 9 according to the baud rate setting of the robot controller.

IB-S-471 Firmware version mismatch

Cause: The first two numbers of the firmware version number are different from the supported firmware version.

Remedy: Update the firmware to the supported version. The supported firmware version is written in \$IBPX_PRM.\$FIRM_VAR. Refer to 11.2.2 to update firmware.

IB-S-472 Please power OFF/ON for Slave

Cause: Slave configuration is changed.

Remedy: Power off/on the controller.

IB-S-473 Parameterization not finished

Cause: Start Data Transfer is performed when the parameterization of the system coupler has not completed.

Remedy: Perform the parameterization before Start Data Transfer. Check whether the former parameterization have failed because of an error. Solve any errors related to the parameterization in order to complete the parameterization.

IB-S-474 "Use CMD" setting mismatch

Cause: The Use CMD setting has been changed by loading IBPXC.SV. The commands related to the parameterization or the started data commands related to the parameterization or the started data.

Remedy: Power off/on the controller.

IB-S-475 PCI board not installed

Cause: PCI motherboard is not installed.

Remedy: Power off the controller and install the PCI motherboard.

IB-S-476 newmem %d failed

Cause: System error.

Remedy: Write down the error code with the number and Call your local FANUC representative.

IB-S-477 mktsk %d failed %d

Cause: System error.

Remedy: Write down the error code with the number and Call your local FANUC representative.

IB-S-478 Slave Parameterization invalid

Cause: This message indicates that the slave parameterization has not been performed. This message is posted when the robot controller does not have a configuration when powered up in TP mode.

Remedy: Create configuration and perform Parameterization Execute.

IB-S-479 Firmware Updating Mode

Cause: The system starts up in a firmware updating mode.

Remedy: Power off/on the controller.

IB-S-480 Sysfail Reset Failed

Cause: Initialization of the system coupler has failed.

Remedy: Check that the system coupler is firmly attached to the PCI motherboard. Check if the PCI motherboard is firmly inserted into robot controller backplane. Check the hardware of the system coupler. Call your local FANUC representative.

IB-S-481 MPM1 Ready Bit OFF

Cause: Initialization of MPM failed.

Remedy: Check that the system coupler is firmly attached to the PCI motherboard. Check if the PCI motherboard is firmly inserted into robot controller backplane. Check the hardware of the system coupler. Call your local FANUC representative.

IB-S-482 Alternative Recovery Disabled

Cause: This message indicates that the alternative recovery function is disabled because the configuration has been changed by the operation. This alarm message will be also displayed when IBPXC.SV is loaded.

Remedy: If configuration has been changed, perform Parameterization execute. If IBPXC.SV has been loaded, power the system off/on and If IBPXC.SV has been loaded, power the system off/on and

IB-S-483 Execute param. for Baud-Rate

Cause: This error message will be posted with IB-S-484 when the baud rate setting is changed in TP mode. This error message informs the operator that Parameterization execute is required to download a new baud rate setting to the system coupler before switching it off.

Remedy: Perform Parameterization execute. Please refer to the description of IB-S-484 to activate a new baud rate setting.

IB-S-484 Slave : Power off, Discon. 24V

Cause: This error message will be posted with IB-S-483 when the baud rate setting is changed in TP mode. Please refer to the description of IB-S-484 first. This error message informs the operator that the robot controller must be turned off and that the external power supply of the system coupler's slave part must be disconnected for several seconds to activate a new baud rate. Please note that new baud rate settings must be downloaded first.

Remedy: Turn off the robot controller and disconnect the external power supply of the system coupler's slave part. Turn on the robot controller again and connect the external power supply after several seconds.

IB-S-485 Power off or Execute param.

Cause: This error message indicates that the settings have been changed and that the operator must turn off the robot controller or perform Parameterization execute to activate the new settings.

Remedy: Turn off the robot controller or perform Parameterization execute.

IB-S-486 Power OFF/ON is necessary

Cause: This error message indicates that the settings have been changed and that the operator must turn off the system to activate the new settings.

Remedy: Turn off the robot controller.

IB-S-487 Trying to reset Bus Fault

Cause: This alarm message will be posted when the reset button is pressed to reset a bus fault to prevent the robot from moving until the bus fault has been cleared.

Remedy: This message will be automatically cleared when the bus fault has been cleared. If the bus fault still exists, other error messages will be displayed.

IB-S-488 Master is not running

Cause: This alarm message will be posted when the system coupler's master part is not transferring process data and the parameterization has completed once since start up.

Remedy: Perform Start Data Transfer or Parameterization execute.

IB-S-489 Update Dev. Name by Load Conf.

Cause: When the device name is changed in CMD mode, this message informs the operator that Load Configuration must be performed to activate the new device name.

Remedy: Perform Load Configuration.

IB-S-490 Parameterization by SVC failed

Cause: This message indicates that the parameterization based on the SVC file has failed.

Remedy: Check for other error codes that are posted with IB-S-490 to find a cause and remedy.

IB-S-491 SVC file is not loaded

Cause: This message will be posted when turning on the system and the SVC file has not been loaded to the robot controller yet. The parameterization will not be performed when this error message is displayed.

Remedy: Load the SVC file according to procedure 6-1 (refer to 6.3.1 for more details) of InterBus function for Phoenix Contact PCI board operator's manual.

IB-S-492 Alternative is not recovered

Cause: 1. The firmware reports an error for a group switching service sent by an alternative recovery function.

2. One of the following conditions is true.

- The configuration has been modified since the last parameterization.
- The list of the alternative groups, when last turned off, does not match the list of the current alternative groups.
- IBPXC.SV has been loaded before the system was turned off.

Remedy: 1. Check which error is reported by the firmware.
2. Enable the alternative groups manually.

IB-S-493 Firmware reply XXXX timeout

Cause: The robot controller waits for the confirmation of the firmware service XXXX, but it results in a timeout.

Remedy: Wait a few seconds and try again. In case the error has not been cleared, call your local FANUC representative.

IB-S-494 Slave err1shot is disabled

Cause: This message indicates that the Error one shot setting of slave is disabled when the ALL_CLR operation for configuration is being is disabled when the ALL_CLR operation for configuration is being.

Remedy: This is information notification.

IB-S-495 Failed to enable byte swap

Cause: DI/DO byte swap has been enabled but the length or the offset are not multiples of 16. Therefore DI/DO byte swap is disabled.

Remedy: If DI/DO byte swap should be enabled, set the length and the offset to multiples of 16 and then enable DI/DO byte swap.

IB-S-496 len/ofs not multiple of 16

Cause: DI/DO byte swap has been enabled but the length or the offset are not multiples of 16. Therefore DI/DO byte swap is disabled.

Remedy: If DI/DO byte swap should be enabled, set the length and the offset to multiples of 16 and then enable DI/DO byte swap.

IB-S-497 Failed to change len/ofs

Cause: The new value of the length or the offset are not multiples of 16 when DI/DO byte swap is enabled. Therefore the change of the length or the offset has not been performed.

Remedy: If the length or offset should be modified to a different number than multiples of 16, disable DI/DO byte swap.

IB-S-498 len/ofs must be multiple of 16

Cause: The new value of the length or the offset are not multiples of 16 when DI/DO byte swap is enabled. Therefore the change of the length or the offset has not been performed.

Remedy: If the length or offset should be modified to a different number than multiples of 16, disable DI/DO byte swap.

IB-S-500 Analog I/O setting is invalid

Cause: Analog I/O settings are configured, but the analog I/O option software is not installed.

Remedy: Delete all analog I/O settings.

IB-S-501 Welding I/O setting is invalid

Cause: Welding I/O settings are configured, but the tool is not ArcTool.

Remedy: Delete all welding I/O settings.

IB-S-502 AI/AO needs analog I/O option

Cause: Operator tries to modify analog I/O settings when the analog option is not installed.

Remedy: Delete all analog I/O settings.

IB-S-503 Welding I/O needs Arc Tool

Cause: Operator tries to modify welding I/O settings when tool is not ArcTool.

Remedy: Delete all welding I/O settings.

IB-S-504 Restore Alternative manually

Cause: Alternative is not recovered automatically and therefore data transfer is not started.

Remedy: Activate connected alternative group by manual and start data transfer.

IB-S-505 Loading IBPXC.SV (need 1 minute)

Cause: IBPXC.SV is being loaded by operation in InterBus setup screen.

Remedy: Just wait for 1 minute without any operations.

IB-S-506 Failed to optimize I/O transfer

Cause: Failed to optimize I/O transfer of CMD mode. Data transfer is not optimized.

Remedy: Check InterBus configuration. Check alarm history to see why the configuration failed.

IB-S-507 Bad PDD Type(%x) at %d.%d

Cause: Illegal type of PDD Type, which is not byte nor bit, thus the PDD is ignored.

Remedy: Check InterBus configuration.

IB-S-510 Print: Internal error (%s)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

IB-S-511 Printing of config. devices

Cause: Start printing in program IbPrnCf.

Remedy: This is information notification.

IB-S-512 Printing finished

Cause: End printing in program IbPrnCf.

Remedy: This is information notification.

IB-S-520 DevName: Internal error (%s)

Cause: Internal error in program IbPrnCf.

Remedy: Call your local FANUC representative.

IB-S-521 Port already assigned

Cause: phy_port_no is already assigned.

Remedy: Call your local FANUC representative.

IB-S-522 Port is invalid

Cause: phy_port_no is invalid.

Remedy: Call your local FANUC representative.

IB-S-523 Set assignment failed

Cause: setting phy_port_no failed.

Remedy: Call your local FANUC representative.

IB-S-530 Save: Internal error (%s)

Cause: An internal error in program to save the device name list occurred. Refer to the error code in the lower error.

Remedy: Check the help for the error code in the next line. Write down the error code with the number and call your local FANUC representative.

IB-S-531 Start saving DevName List

Cause: The program to save the device name list starts.

Remedy: This is information notification.

IB-S-532 Saving DevName List finished

Cause: The program to save the device name list finished.

Remedy: This is information notification.

IB-S-534 Save: System error (%s)

Cause: System error occurred in program IbSaveDn.

Remedy: Call your local FANUC representative.

IB-S-535 Load: Internal error (%s)

Cause: An internal error in program to load the device name list occurred. Refer to the error code in the lower error line.

Remedy: Check the help of the error code in the next line. Write down the error code with the number and call your local FANUC representative.

IB-S-536 Start loading DevName List

Cause: The program to load the device name list starts.

Remedy: This is information notification.

IB-S-537 Loading DevName List finished

Cause: The program to load the device name list finished.

Remedy: This is information notification.

IB-S-538 No Integer in Line (%s)

Cause: In line (%s) of the file DevNamL.dt is an integer value expected, but value in this line is not an integer value.

Remedy: Check the value after : in file DevNamL.dt. The type of this value must be an integer value.

IB-S-539 Load: System error (%s)

Cause: A system error in program to load the device name list occurred. Refer to the error code in the lower error line.

Remedy: Check the help of the error code in the next line. Write down the error code with the number and call your local FANUC representative.

IB-S-550 Internal error (%d)

Cause: System error occurred while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-551 Can't open InterBus Archive

Cause: Can't open InterBus Archive in the selected device.

Remedy: Check the selected device is inserted.

IB-S-552 Get_Directory failed

Cause: Firmware service Get_Directory failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-553 File_Open %s failed

Cause: Firmware service File_Open failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-554 File_Read %s failed

Cause: Firmware service File_Read failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-555 File_Write %s failed

Cause: Firmware service File_Write failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-556 File_Close %s failed

Cause: Firmware service File_Close failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-557 Archive version (%x) unsupported

Cause: The version of InterBus Archive format is out of the supported range.

Remedy: Call your local FANUC representative.

IB-S-558 Clear_Param_Mem failed

Cause: Clear_Parameterization_Memory failed while load/save of InterBus Archive.

Remedy: Call your local FANUC representative.

IB-S-559 %d files saved as ibbdfil.iba

Cause: Save of InterBus Archive is successful.

Remedy: This is information notification.

IB-S-560 %d files loaded by ibbdfil.iba

Cause: Load of InterBus Archive is successful.

Remedy: This is information notification.

IB-S-561 No file to backup/restore

Cause: There is no board file to backup or restore.

Remedy: This is information notification.

IB-S-562 File size in archive is wrong

Cause: The total of file size in archive exceeds the archive file size.

Remedy: Call your local FANUC representative.

IB-S-563 ibbdfil.iba is truncated %d

Cause: Can't read archive header or file header.

Remedy: Call your local FANUC representative.

IB-S-564 File name must be MS DOS format

Cause: File name must be MS DOS format : name(1-8), extension(0-3).

Remedy: Change the file name.

IB-S-565 Can't backup %s

Cause: Show the name of file that can't be backup.

Remedy: Call your local FANUC representative.

IB-S-566 Can't restore %s

Cause: Show the name of file that can't be restored.

Remedy: Call your local FANUC representative.

IB-S-567 Too many files in ibbdfil.iba

Cause: The number of file in ibbdfil.iba exceeds the max file of param. mem.

Remedy: Reduce the number of files and backup board files again because ibbdfil.iba might be broken.

IB-S-568 File list is too small

Cause: The number of file to backup/restore exceeds the size of file list.

Remedy: Reduce the number of files and backup board files again because ibbdfil.iba might be broken.

IB-S-569 Can't get right. Try again.

Cause: Can't get right for file operation.

Remedy: Wait for a while, and try again.

IB-S-570 Too many PCI board found

Cause: Too many PCI board is found.

Remedy: Remove excessive PCI board.

IB-S-571 Failed to backup ibbdfil.iba

Cause: Failed to backup ibbdfil.iba that contains board files.

Remedy: Check if the selected device is inserted and formatted.

IB-S-572 Set Master-Only HW. setting

Cause: Master-Only board is found but hardware type setting is disabled.

Remedy: Set \$IBPX_HW.\$HW_TYPE = 1 and cycle power.

IB-S-573 Remove Master-Only HW. setting

Cause: System coupler board is found but hardware type setting is enabled.

Remedy: Set \$IBPX_HW.\$HW_TYPE = 0 and cycle power.

IB-S-574 Use CMD for Master-Only

Cause: Use CMD is disabled but Master-Only board is found.

Remedy: Enable Use CMD setting and cycle power.

IB-S-575 SVC type mismatch

Cause: The SVC file stored in the controller does not match the type of current InterBus board.

Remedy: Load SVC file again.

IB-S-576 ibbdfil.iba type mismatch

Cause: The IBA file being restored to the controller does not match the type of current InterBus board.

Remedy: Check IBA file is for the installed InterBus board.

4.8.2 ICRZ Alarm Code

ICRZ-001 Wait for right robot

Cause: Host robot is being held and waits for the right robot to clear the RailZone.

Remedy: Wait for right robot to move away.

ICRZ-002 Wait for left robot

Cause: Host robot is being held and waits for the left robot to clear the RailZone.

Remedy: Wait for left robot to move away.

ICRZ-003 Unhold robot

Cause: Host robot is being un-held after toggling the mode switch.

ICRZ-004 Right robot zone cleared

Cause: Host robot is being un-held when right robot zone is cleared.

ICRZ-005 Left robot zone cleared

Cause: Host robot is being un-held when left robot zone is cleared.

ICRZ-006 Dead lock condition

Cause: Two neighbor robots are moving towards each other to cause interference.

Remedy: Unlock the robots and jog robots away from deadlock zone.

ICRZ-007 Zone disable while robot held

Cause: Zone check is disabled while robot is being held.

Remedy: Enable the zone check.

ICRZ-008 GOUT is not set for right robot

Cause: GOUT is not set properly for right robot. The host rail robot can't send data to right robot.

Remedy: Set GOUT for right robot.

ICRZ-009 GOUT is not set for left robot

Cause: GOUT is not set properly for left robot. The host rail robot can't send data to left robot.

Remedy: Set GOUT for left robot.

ICRZ-010 GIN is not set for right robot

Cause: GIN is not set properly for right robot. The host rail robot can't receive data from right robot.

Remedy: Set GIN for right robot.

ICRZ-011 GIN is not set for left robot

Cause: GIN is not set properly for left robot. The host rail robot can't receive data from left robot.

Remedy: Set GIN for left robot.

ICRZ-012 Right robot is not set

Cause: Host checks right robot but right robot is not defined.

Remedy: Set and enable right robot.

ICRZ-013 Left robot is not set

Cause: Host checks left robot but left robot is not defined.

Remedy: Set and enable left robot.

ICRZ-014 Upper Barrier Limit

Cause: Reach upper rail barrier limit.

Remedy: Change rail motion range as necessart.

ICRZ-015 Lower Barrier Limit

Cause: Reach lower rail barrier limit.

Remedy: Change rail motion range as necessary.

4.8.3 IFPN Alarm Code

IFPN is facility code for Interface panel function (J741).

IFPN-001 Pos %d wrong output signal(push button:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Output signal of push button of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-002 Pos %d wrong output signal(push button lamp:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Output signal of push button lamp of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-003 Pos %d wrong status signal(push button lamp:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Status signal of push button lamp of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check if I/O type and index.

IFPN-004 Pos %d wrong signal(left/up)(2 contact point switch:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Signal (Left/Up) of 2 contact point switch of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-005 Pos %d wrong signal(right/down)(2 contact point switch:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Signal (right/Down) of 2 contact point switch of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-006 Pos %d wrong signal(lamp:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Signal of lamp of Interface panel function cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-007 Pos %d wrong signal(%d)(digital switch:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Signal of digital switch of Interface panel function cannot be read. If the number in "signal ()" is N, the Nth signal cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-008 Pos %d wrong signal(%d)(digital lamp:page%d,row%d,col%d)

Cause: This is alarm of Interface Panel function. Signal of digital lamp of Interface panel function cannot be read. If the number in “signal ()” is N, the Nth signal cannot be read. Position number, page number, row and column of the button when alarm was posted are displayed.

Remedy: Please check I/O type and index.

IFPN-009 Press shift key

Cause: This is alarm of Interface Panel function. Button of Interface panel function was pressed without pressing shift key.

Remedy: Press the button while holding shift key.

IFPN-010 Enable Interface panel

Cause: This is alarm of Interface Panel function. Button of Interface panel function was pressed but panel was disabled. Enable switch of Interface panel was OFF.

Remedy: Turn on enable switch of Interface panel before pressing button on the panel.

IFPN-011 Out of range(%d - %d)

Cause: This is alarm of Interface Panel function. Input value was out of range. The maximum and minimum values are displayed.

Remedy: Confirm input value and valid range. Input valid value again.

IFPN-012 I/F panel is displayed

Cause: This is alarm of Interface Panel function. Requested operation cannot be performed now. Interface panel is displayed by another pane.

Remedy: Stop display of panel by another screen on all panes, including remote display by PC. Then try again.

IFPN-013 The button is configured in another pane

Cause: This is alarm of Interface Panel function. Another pane is displaying detail screen or operation condition screen of the button that you tried to display or change setup.

Remedy: Exit from detail screen or operation condition screen of the button on all panes, including remote display by PC. Then try again.

IFPN-014 Button type setup screen is displayed

Cause: This is alarm of Interface Panel function. Requested operation cannot be performed now. Button type setup screen is displayed by another pane.

Remedy: Exit from button type setup screen on all panes, including remote display by PC. Then try again.

IFPN-015 Not enough memory

Cause: This is alarm of Interface Panel function. Software for Interface panel function could not get enough memory to display Interface panel.

Remedy: Reduce usage of temporary memory by other functions or use DRAM of larger size.

IFPN-016 Max value decided by the number of signals is %d

Cause: This is alarm of Interface Panel function. The number you input or increment of number is not allowed. The value exceeds maximum value decided by specified number of signals for the button.

Remedy: Input number that can be represented by specified number of signals.

IFPN-017 Detail setup screen is displayed

Cause: This is alarm of Interface Panel function. Another pane is displaying detail setup screen or operation condition screen of the button you tried to display or setup. You cannot perform the operation you tried.

Remedy: Exit from Interface panel detail setup screen or operation condition screen on all panes, including remote display by PC. Then try again.

IFPN-018 TP Estop is pressed

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. It is because check of dead man switch is specified and TP Estop is pressed

Remedy: Turn off TP Estop switch and try again.

IFPN-019 TP is disabled

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. It is because check of TP enable switch or Deadman switch is specified and TP is disabled.

Remedy: Turn on TP enable switch and try again.

IFPN-020 Deadman switch is not gripped properly

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. It is because check of Deadman switch is specified and it is not gripped properly.

Remedy: Grip Deadman switch properly and try again.

IFPN-021 Pos %d specified condition signal that cannot be read

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. It is because check of signal is specified and the signal cannot be read.

Remedy: Check type and index of operation condition signal.

IFPN-022 Condition signal is OFF

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. Check of signal is specified and value to allow operation is ON. However, the signal was OFF when the button is pressed.

Remedy: Turn on operation condition signal and try again.

IFPN-023 Condition signal is ON

Cause: This is alarm of Interface Panel function. Button of Interface panel function cannot be pressed. Check of signal is specified and value to allow operation is OFF. However, the signal was ON when the button is pressed.

Remedy: Turn on operation condition signal and try again.

4.8.4 INTP Alarm Code

INTP-001 Cannot lock the motion grp

Cause: Motion control for the specified group cannot be locked.

Remedy: Check the teach pendant enable switch and other running programs to determine who has motion control.

INTP-002 Program manager internal error

Cause: Internal system error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-003 Invalid request

Cause: Internal system error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-004 Cannot ATTACH with TP enabled

Cause: The ATTACH statement requires the teach pendant to be disabled.

Remedy: Disable the teach pendant.

INTP-005 Cannot release motion control

Cause: Motion control cannot be released.

Remedy: Abort the running or paused program.

INTP-100 (%s^4, %d^5) Internal error (PXnn)

Cause: Internal system error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-101 (%s^4, %d^5) Internal error (system)

Cause: An internal system error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-102 (%s^4, %d^5) Code format is invalid

Cause: Program data is corrupted.

Remedy: For TPE programs, if possible, reload program from back-up device. If a back-up is not available, it may be necessary to re-create the particular routine. For KAREL programs, re-translate and re-load the program.

INTP-103 (%s^4, %d^5) Program error

Cause: An error occurred while the program was running.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-104 (%s^4, %d^5) Single step failed

Cause: Single step cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-105 (%s^4, %d^5) Run request failed

Cause: Program cannot be started.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-106 (%s^4, %d^5) Continue request failed

Cause: Program cannot be resumed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-107 (%s^4, %d^5) Pause request failed

Cause: An error occurred when program execution was held.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-108 (%s^4, %d^5) Abort request failed

Cause: An error occurred when program execution was aborted.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-109 (%s^4, %d^5) BWD motion request failed

Cause: Backward motion cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-110 (%s^4, %d^5) Get task status request failed

Cause: The specified task attribute is not found or is not read accessible.

Remedy: Check the attribute.

INTP-111 (%s^4, %d^5) Skip statement request failed

Cause: The currently executing line cannot be changed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-112 Cannot call interrupt routine

Cause: The interrupt routine cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-113 (%s^4, %d^5) Stop motion request failed

Cause: An error occurred when motion was stopped.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-114 (%s^4, %d^5) Cancel motion request failed

Cause: An error occurred when motion was canceled.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-115 (%s^4, %d^5) Resume motion request failed

Cause: An error occurred when motion was resumed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-116 (%s^4, %d^5) Hold motion request failed

Cause: An error occurred when motion was held.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-117 (%s^4, %d^5) Unhold motion request failed

Cause: An error occurred when motion was unheld.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-118 (%s^4, %d^5) Walk back data request failed

Cause: An error occurred trying to obtain the execution history.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-119 (%s^4, %d^5) Get trace data request failed

Cause: An error occurred trying to obtain the trace data.

Remedy: Refer to the error cause code. Press MENU and select ALARM to display the Alarm Log screen.

INTP-120 (%s^4, %d^5) Unwait action request failed

Cause: An error occurred trying to continue program execution.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-121 (%s^4, %d^5) Release inquiry request failed

Cause: An error occurred trying to obtain motion information for the RELEASE statement.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-122 (%s^4, %d^5) Process motion data failed

Cause: An error occurred during process motion.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-123 (%s^4, %d^5) Process application data failed

Cause: An error occurred during process application.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-124 (%s^4, %d^5) Invalid ITR routine

Cause: The specified interrupt routine is not a valid type.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-125 Failed to convert position

Cause: The conversion of one position type to another failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-126 Vision built-in return failed

Cause: The vision built-in failed to return.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-127 Power fail detected

Cause: Power failure was detected.

Remedy: Resume the program after hot start is complete.

INTP-128 Pos reg is locked

Cause: Pos register is locked.

Remedy: Wait a moment.

INTP-129 Cannot use motion group

Cause: Try to lock motion group even though this program cannot use motion group.

Remedy: Clear motion group mask in program detail screen.

INTP-130 (%s^4, %d^5) Exec status recovery failed

Cause: Failed to recover execution status.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-131 Number of stop exceeds limit

Cause: Too many stop data is created at one time.

Remedy: Decrease number of stop data.

INTP-132 Unlocked groups specified

Cause: The specified motion groups are already unlocked.

Remedy: Change the specific of motion group.

INTP-133 Motion is already released

Cause: Some specified motion groups are already unlocked.

Remedy: Change the specific of motion group. Lock the motion group.

INTP-134 Over automatic start Max counter

Cause: The automatic start was done the defined times but the alarm was not fixed. And the automatic start count of auto error recovery function is over the defined maximum count.

Remedy: Please fix the alarm by manual.

INTP-135 Recovery DO OFF in auto start mode

Cause: The error recovery DO status is OFF in the automatic start feature So the resume program cannot be executed automatically.

Remedy: Please check the condition of error recovery DO status.

INTP-136 Can not use motion group for dry run function

Cause: \$PAUSE_PROG should specify a program that has NO motion group.

Remedy: Please set another program with no motion group.

INTP-137 Program specified by \$PAUSE_PROG doesn't exist.

Cause: The program which is specified by \$PAUSE_PROG doesn't exist.

Remedy: Please check \$PAUSE_PROG.

INTP-138 Program specified by \$RESM_DRYPROG doesn't exist.

Cause: The program which is specified by \$RESUME_PROG doesn't exist.

Remedy: Please check \$RESUME_PROG.

INTP-139 (%s^4, %d^5) Local variable request failed

Cause: An error occurred trying to access the local variable(s).

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-140 (%s^4, %d^5) Start pre-planned motion failed

Cause: Error occurred just before sending start motion packed for pre-planned motion.

Remedy: This is internal error. Perform cold start.

INTP-146 Run request failed

Cause: The program cannot be started. The action program of Monitor instruction failed to start. Refer to the error cause in the alarm detail screen of ALARM/HIST.

Remedy: Perform remedy according to the cause.

INTP-147 Internal error (system)

Cause: Internal system error. Refer to the error cause in the alarm detail screen of ALARM/HIST. Not enough memory pool and/or other illegal system condition.

Remedy: Cycle power. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-148 Motion group mismatch between Main and Sub

Cause: Sub program has the motion group that Main program doesn't have.

Remedy: Change motiongroup of Sub program to same motion group of Main program or less than.

INTP-149 String for argument is too long

Cause: String for argument is too long.

Remedy: Pass more short string for argument.

INTP-200 (%s^4, %d^5) Unimplemented TP instruction

Cause: The teach pendant program instruction is not available.

Remedy: Check the appropriate option is loaded.

INTP-201 (%s^4, %d^5) Untaught element encountered

Cause: The instruction is not taught.

Remedy: Teach the instruction.

INTP-202 (%s^4, %d^5) Syntax error

Cause: Instruction syntax error.

Remedy: Reteach the instruction.

INTP-203 (%s^4, %d^5) Variable type mismatch

Cause: The variable type is not correct.

Remedy: Check the variable type.

INTP-204 (%s^4, %d^5) Invalid value for index

Cause: The index value is invalid.

Remedy: Check the index value.

INTP-205 (%s^4, %d^5) Analog port access error

Cause: Analog I/O is not functioning properly.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-206 (%s^4, %d^5) Digital port access error

Cause: Digital I/O is not functioning properly.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-207 (%s^4, %d^5) Group I/O port access error

Cause: Group I/O is not functioning properly.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-208 (%s^4, %d^5) Divide by 0

Cause: Division by 0 was executed.

Remedy: Check the value.

INTP-209 (%s^4, %d^5) SELECT is needed

Cause: A CASE instruction was executed before a SELECT instruction.

Remedy: Add a SELECT instruction before the CASE instruction.

INTP-210 (%s^4, %d^5) Start TIMER failed

Cause: The program timer cannot be started.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-211 (%s^4, %d^5) Delete TIMER failed

Cause: The program timer cannot be stopped.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-212 (%s^4, %d^5) Invalid value for OVERRIDE

Cause: The indicated value cannot be used for the OVERRIDE instruction.

Remedy: Check the value.

INTP-213 %s^7 (%s^4, %d^5) UALM[%d^9]

Cause: A user alarm occurred.

Remedy: Refer to the user alarm code. Use MENU to display the Alarm Log screen.

INTP-214 (%s^4, %d^5) Specified group not locked

Cause: The position register or frame setup instructions were executed in a program without a motion group.

Remedy: Set up the motion group in the program DETAIL screen.

INTP-215 (%s^4, %d^5) Group mismatch

Cause: The position data is invalid.

Remedy: Check the position data.

INTP-216 (%s^4, %d^5) Invalid value for group number

Cause: The indicated value is invalid for the motion group number.

Remedy: Check the value.

INTP-217 (%s^4, %d^5) SKIP CONDITION needed

Cause: The SKIP instruction was executed before a SKIP CONDITION instruction.

Remedy: Add a SKIP CONDITION instruction.

INTP-218 (%s^4, %d^5) Skip failed

Cause: The SKIP instruction or SKIP CONDITION instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-219 (%s^4, %d^5) Pause task failed

Cause: The PAUSE instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-220 (%s^4, %d^5) Abort task failed

Cause: The ABORT instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-221 (%s^4, %d^5) Application failed

Cause: The application instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-222 (%s^4, %d^5) Call program failed

Cause: The program CALL instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-223 (%s^4, %d^5) Delay time failed

Cause: The WAIT instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-224 (%s^4, %d^5) Jump label failed

Cause: The BRANCH instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-225 (%s^4, %d^5) Motion statement failed

Cause: The MOTION instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-226 (%s^4, %d^5) Read position register failed

Cause: The position register cannot be read.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-227 (%s^4, %d^5) Write position register failed

Cause: The position register cannot be written.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-228 (%s^4, %d^5) Read register failed

Cause: The register cannot be read.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-229 (%s^4, %d^5) Write register failed

Cause: The register cannot be written.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-230 (%s^4, %d^5) Wait condition failed

Cause: A condition WAIT instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-231 (%s^4, %d^5) Read next line failed

Cause: The next line cannot be read.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-232 (%s^4, %d^5) Invalid frame number

Cause: The frame number is invalid.

Remedy: Check the frame number.

INTP-233 (%s^4, %d^5) Read frame value failed

Cause: The specified frame cannot be read.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-234 (%s^4, %d^5) Write frame value failed

Cause: The specified frame cannot be written.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-235 (%s^4, %d^5) Read pos item failed

Cause: The position variable cannot be read.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-236 (%s^4, %d^5) Write pos item failed

Cause: The position variable cannot be written.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-237 (%s^4, %d^5) No more motion for BWD

Cause: Backward execution cannot be executed any more because the current program line is at the top.

Remedy: Do not use backward execution at this point.

INTP-238 (%s^4, %d^5) BWD execution completed

Cause: Backward execution was completed.

Remedy: Do not use backward execution from this point.

INTP-239 (%s^4, %d^5) Cannot execute backwards

Cause: This instruction cannot be executed backwards.

Remedy: Set the cursor to the following line.

INTP-240 (%s^4, %d^5) Incompatible data type

Cause: The specified data type in the PARAMETER instruction is invalid for the parameter type.

Remedy: Check the data type.

INTP-241 (%s^4, %d^5) Unsupported parameter

Cause: This type of parameter cannot be used.

Remedy: Check the parameter type.

INTP-242 (%s^4, %d^5) Offset value is needed

Cause: An OFFSET instruction was executed before an OFFSET CONDITION instruction. A position register was not taught in the OFFSET PR[] instruction.

Remedy: Add an OFFSET CONDITION instruction before the OFFSET instruction. Teach the position register.

INTP-243 (%s^4, %d^5) Def grp is not specified

Cause: This program has no motion group defined. The MOTION instruction cannot be executed.

Remedy: Remove the MOTION instruction or set up the motion group in the program DETAIL screen.

INTP-244 (%s^4, %d^5) Invalid line number

Cause: The input line number is incorrect.

Remedy: Check the line number.

INTP-245 (%s^4, %d^5) RCV stmt failed

Cause: The RECEIVE R[] instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-246 (%s^4, %d^5) SEMAPHORE stmt failed

Cause: The SEMAPHORE instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-247 (%s^4, %d^5) Pre exec failed

Cause: Pre-execution system of motion or application has some trouble and system pauses the program execution for safety.

Remedy: Press RESET to clear the error and continue the program. If this error continues to occur, perform a cold start by turning off the robot, then while pressing SHIFT and RESET on the teach pendant, turn the robot back on. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

INTP-248 (%s^4, %d^5) MACRO failed

Cause: The MACRO instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-249 Macro is not set correctly

Cause: The MACRO setup was invalid.

Remedy: Check the MACRO setup. For more information on setting up macros, Refer to the application tool Operator's Manual.

INTP-250 (%s^4, %d^5) Invalid uframe number

Cause: The user frame number is invalid.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-251 (%s^4, %d^5) Invalid utool number

Cause: The tool frame number is invalid.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-252 User frame number mismatch

Cause: The user frame number in the positional data is not the same as the currently selected user frame number.

Remedy: Check the user frame number.

INTP-253 Tool frame number mismatch

Cause: The tool frame number in the positional data is not the same as the currently selected tool frame number.

Remedy: Check the tool frame number.

INTP-254 (%s^4, %d^5) Parameter not found

Cause: The specified parameter name cannot be found.

Remedy: Check the parameter name.

INTP-255 (%s^4, %d^5) CAL_MATRIX failed

Cause: The CAL_MATRIX instruction cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-256 (%s^4, %d^5) No data for CAL_MATRIX

Cause: The origin 3 points or destination 3 points are not taught.

Remedy: Teach the origin 3 points or destination 3 points.

INTP-257 (%s^4, %d^5) Invalid delay time

Cause: The wait time value is negative or exceeds the maximum value of 2147483.647 sec.

Remedy: Input a correct value.

INTP-258 (%s^4, %d^5) Weld port access error

Cause: The weld is not functioning properly.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-259 (%s^4, %d^5) Invalid position type

Cause: The data type of the position register was taught using joint type.

Remedy: Change position register data to Cartesian.

INTP-260 (%s^4, %d^5) Invalid torque limit value

Cause: Invalid torque value.

Remedy: Input a correct value.

INTP-261 (%s^4, %d^5) Array subscript missing

Cause: A subscript is missing from a TPE PARAMETER statement that specifies an array.

Remedy: Correct the PARAMETER statement to include the subscript of the desired array element.

INTP-262 (%s^4, %d^5) Field name missing

Cause: A field name is required in a PARAMETER statement that specifies a structure.

Remedy: Correct the PARAMETER statement to include the name of the desired field.

INTP-263 (%s^4, %d^5) Invalid register type

Cause: The register type is not valid.

Remedy: Check the register type.

INTP-265 (%s^4, %d^5) Invalid value for speed value

Cause: The indicated value cannot be used for the AF instruction.

Remedy: Check the value.

INTP-266 (%s^4, %d^5) Mnemonic in interrupt is failed

Cause: A MOVE statement was executed in an interrupt routine while a motion in the interrupted program was still in progress.

Remedy: One (or both) of the following should correct this problem: 1. Add CANCEL or STOP condition handler action before the call to the interrupt routine in the condition handler. 2. Add a DELAY 500 statement before the first move in the interrupt routine to allow the motion to complete.

INTP-267 (%s^4, %d^5) RUN stmt failed

Cause: Specified program is already running.

Remedy: Abort specified program.

INTP-268 (%s^4, %d^5) This statement only one in each line

Cause: This statement can exist in one in each line.

Remedy: Delete the extra statement.

INTP-269 (%s^4, %d^5) Skip statement only one in each line

Cause: Skip statement can exist in one in each line.

Remedy: Delete the extra skip statement.

INTP-270 (%s^4, %d^5) Different group cannot BWD

Cause: During backward execution, a move is encountered that has a different group number from the previous motion statement.

Remedy: Use FWD execution carefully.

INTP-271 (%s^4, %d^5) Excessive torque limit value

Cause: Torque limit value exceeds maximum value. Torque limit value was modified to the maximum value.

Remedy: Set torque limit value less than or equal to the maximum value.

INTP-272 (%s^4, %d^5) Unsupported operator

Cause: This operator is not supported.

Remedy: Check the operator Refer to the application tool Operator's Manual for more information.

INTP-273 (%s^4, %d^5) Too many conditions

Cause: The number of the condition exceeds the maximum number.

Remedy: Reduce the number of condition.

INTP-274 (%s^4, %d^5) CH program error

Cause: This monitor statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-275 Invalid sub type of CH program

Cause: The sub type of specified ch program cannot be used.

Remedy: Check the sub type of this CH program.

INTP-276 (%s^4, %d^5) Invalid combination of motion option

Cause: The motion option instructions (SKIP, TIME BEFORE/AFTER, and application instruction) cannot be taught together.

Remedy: Delete the motion option instruction.

INTP-277 (%s^4, %d^5) Internal MACRO EPT data mismatch

Cause: The EPT index in macro table doesn't point the program name defined in macro table. That is, the EPT index in macro table is incorrect.

Remedy: Please set the correct EPT index for the program name defined in macro table.

INTP-278 %s^7

Cause: The DI monitor alarm for auto error recovery function occurs.

Remedy: This alarm is defined by the customer. Therefore the customer knows the remedy for this alarm.

INTP-279 (%s^4, %d^5) Application instruction mismatch

Cause: The application instruction was executed. But this application instruction doesn't match to the application process data of this program.

Remedy: Please change the application process data of this program to the adequate application for this application instruction.

INTP-280 (%s^4, %d^5) Application data mismatch

Cause: The application data of called program is different from that of the original program.

Remedy: Please change the structure of program.

INTP-281 No application data

Cause: This program doesn't have the application data.

Remedy: Please define the application data in the program detail screen.

INTP-283 (%s^4, %d^5) Stack over flow for fast fault recovery

Cause: Stack over flow to record the fast fault recovery nesting data.

Remedy: Reduce the nesting of the program.

INTP-284 No detection of fast fault recovery

Cause: The point for the fast fault recover cannot detected.

Remedy: Reduce the nesting of the program.

INTP-285 Karel program cannot entry in fast fault recovery

Cause: The fast entry cannot be performed in the karel program.

Remedy: Use TP program.

INTP-286 MAINT program isn't defined in fast fault recovery

Cause: MAINT program is not defined in fast fault recovery.

Remedy: Use TP program.

INTP-287 Fail to execute MAINT program

Cause: It failed to execute MAINT program.

Remedy: Confirm the MAINT program name is correct or MAINT program exist in actual.

INTP-288 (%s^4, %d^5) Parameter does not exist

Cause: The parameter designated by AR register does not exist.

Remedy: Please confirm the index of AR register and the parameter in CALL/MACRO command in main program.

INTP-289 Can't save ffast point at program change

Cause: When fast fault is enabled, the program was paused at the part of program change.

Remedy: Check whether the CONT termination exists at end of sub-program If exist, please change it to FINE. This is the limitation of the fast fault recovery function.

INTP-290 Fast fault recovery position is not saved

Cause: During fast fault recovery sequence, any alarm occurs. So the fast fault recovery position is not saved.

Remedy: Check whether the CONT termination exists at end of sub-program If exist, please change it to FINE. This is the limitation of the fast fault recovery function.

INTP-291 (%s^4, %d^5) Index for AR is not correct

Cause: The parameter designated by AR register does not exist. But this error does not occur at present.

Remedy: Please confirm the index of AR register and the parameter in CALL/MACRO command in main program.

INTP-292 Number of DB/TB exceed limit

Cause: Number of Distance Before (DB) /Time Before (TB) motion option executed at one time exceed limit.

Remedy: Please change the program not to execute too many DB/TB motion option at one time. Or please change the limit value (\$dbnumlim) bigger and cycle power.

INTP-293 (%s,%d)DB too small(away)(%dmm).

Cause: A Distance Before condition was not established.

Remedy: Change the program so that the TCP moves into the trigger region or increase the size of trigger region in order for the Distance Before condition to take effect.

INTP-294 TPE parameter error

Cause: The parameter designed in CALL/MACRO instruction is not correct. This error is internal error.

Remedy: Document the events that led to the error and call your local FANUC representative.

INTP-295 (%s,%d)DB too small(away)(%dmm).

Cause: A Distance Before condition was not established.

Remedy: Change the program so that the TCP moves into the trigger region or increase the size of trigger region in order for the Distance Before condition to take effect.

INTP-296 (%s,%d) \$SCR_GRP[%d].\$M_POS_ENB is FALSE.

Cause: Distance Before doesn't work if \$SCR_GRP[].\$M_POS_ENB is FALSE.

Remedy: Please set \$SCR_GRP[].\$M_POS_ENB to TRUE.

INTP-297 (%s,%d)DB too small(done)(%dmm)

Cause: Motion completed before trigger of DB condition.

Remedy: Please change distance value.

INTP-300 (%s^4, %d^5) Unimplemented P-code

Cause: KAREL program error. This KAREL statement cannot be executed.

Remedy: Check the KAREL translator software version.

INTP-301 (%s^4, %d^5) Stack underflow

Cause: KAREL program error. Execution entered into a FOR loop by the GOTO statement.

Remedy: A GOTO statement cannot be used to enter or exit a FOR loop. Check the label of the GOTO statement.

INTP-302 (%s^4, %d^5) Stack overflow

- Cause:**
1. A program calls itself without limitation.
 2. Multiple CALL instructions are used many times.
 3. Stack size is insufficient due to the calling of KAREL programs. Too many local variables were declared or too many routines were called.
 4. If you used iRPickTool, the trigger distance was too short and the vision detection was executed too often. Or you enabled the unused sensor.
 5. Stack size is insufficient due to the setting of the number of local registers.

- Remedy:**
1. If a program calls itself, add a condition to stop it on the way.
 2. If multiple CALL instruction are used, reduce the number of times.
 3. Please increase the stack size of main caller program on the program detail screen.
Please change it from 500 to 800 or from 800 to 1000.
Please change it up to 1000 because increasing the stack size increases the memory used when the program is executed.
 4. For KAREL programs, refer to the KAREL Reference Manual, Stack Usage and the %STACKSIZE Translator Directive.
 5. If you used iRPickTool, lengthen the trigger distance when using the vision or disable the unused sensor.

INTP-303 (%s^4, %d^5) Specified value exceeds limit

Cause: KAREL program error. The specified value exceeds the maximum limit.

Remedy: Check the value.

INTP-304 (%s^4, %d^5) Array length mismatch

Cause: KAREL program error. The dimensions of the arrays are not the same.

Remedy: Check the dimensions of the arrays.

INTP-305 (%s^4, %d^5) Error related condition handler

Cause: KAREL program error. A condition handler error occurred.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-306 (%s^4, %d^5) Attach request failed

Cause: KAREL program error. The ATTACH statement failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-307 (%s^4, %d^5) Detach request failed

Cause: KAREL program error. The DETACH statement failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-308 (%s^4, %d^5) No case match is encountered

Cause: KAREL program error. The CASE statement does not match any branches.

Remedy: Check the CASE value and branches.

INTP-309 (%s^4, %d^5) Undefined WITHCH parameter

Cause: KAREL program error. The specified parameter cannot be used in the with clause of the condition handler.

Remedy: Check the parameter.

INTP-310 (%s^4, %d^5) Invalid subscript for array

Cause: KAREL program error. The index of the array is invalid.

Remedy: Check the length of the array and index value.

INTP-311 (%s^4, %d^5) Uninitialized data is used

Cause: KAREL program error. Untaught or uninitialized data was used.

Remedy: Teach or initialize the data before using it.

INTP-312 (%s^4, %d^5) Invalid joint number

Cause: KAREL program error. The wrong axis number was used.

Remedy: Check the axis number and the data value.

INTP-313 (%s^4, %d^5) Motion statement failed

Cause: KAREL program error. The MOTION statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-314 (%s^4, %d^5) Return program failed

Cause: KAREL program error. Execution cannot be returned from the routine.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-315 (%s^4, %d^5) Built-in execution failed

Cause: KAREL program error. A built-in routine error occurred.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-316 (%s^4, %d^5) Call program failed

Cause: KAREL program error. The routine cannot be called.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen. Verify the routine is loaded.

INTP-317 (%s^4, %d^5) Invalid condition specified

Cause: KAREL program error. The specified condition was invalid.

Remedy: Check the condition.

INTP-318 (%s^4, %d^5) Invalid action specified

Cause: KAREL program error. The specified action was invalid.

Remedy: Check the action.

INTP-319 (%s^4, %d^5) Invalid type code

Cause: KAREL program error. The data type was invalid.

Remedy: Check the data type.

INTP-320 (%s^4, %d^5) Undefined built-in

Cause: KAREL program error. The built-in routine is not defined.

Remedy: Check the appropriate option is loaded.

INTP-321 (%s^4, %d^5) END stmt of a func rtn

Cause: KAREL program error. The END statement was executed in a function routine instead of a RETURN statement.

Remedy: Add a RETURN statement to the function routine.

INTP-322 (%s^4, %d^5) Invalid arg val for builtin

Cause: KAREL program error. The argument value of a built-in routine was wrong.

Remedy: Check the argument value.

INTP-323 (%s^4, %d^5) Value overflow

Cause: KAREL program error. The data value for the variable was too large.

Remedy: Check the variable's type and data value.

INTP-324 (%s^4, %d^5) Invalid open mode string

Cause: KAREL program error. The usage string in the OPEN FILE statement was invalid.

Remedy: Check the usage string in the OPEN FILE statement.

INTP-325 (%s^4, %d^5) Invalid file string

Cause: KAREL program error. The file string in the OPEN FILE statement was invalid.

Remedy: Check the file string. If no device is specified, the default device is used.

INTP-326 (%s^4, %d^5) File var is already used

Cause: KAREL program error. The FILE variable is already being used.

Remedy: Close the file before reusing the FILE variable or add a new FILE variable.

INTP-327 (%s^4, %d^5) Open file failed

Cause: KAREL program error. The file could not be opened.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-328 (%s^4, %d^5) File is not opened

Cause: KAREL program error. The specified file was not opened before operation.

Remedy: Open the file before operation.

INTP-329 (%s^4, %d^5) Write variable failed

Cause: KAREL program error. The value cannot be written to the variable.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-330 (%s^4, %d^5) Write file failed

Cause: KAREL program error. Writing to the file failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-331 (%s^4, %d^5) Read variable failed

Cause: KAREL program error. Reading the variable failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-332 (%s^4, %d^5) Read data is too short

Cause: KAREL program error. Data read from the file is too short.

Remedy: Make sure the data in the file is valid.

INTP-333 (%s^4, %d^5) Invalid ASCII string for read

Cause: KAREL program error. The string read from the file is wrong.

Remedy: Check the data of the file.

INTP-334 (%s^4, %d^5) Read file failed

Cause: KAREL program error. Reading from the file failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-335 (%s^4, %d^5) Cannot open pre-defined file

Cause: KAREL program error. A file pre-defined by the system cannot be opened.

Remedy: Use the file defined by the system without opening it.

INTP-336 (%s^4, %d^5) Cannot close pre-defined file

Cause: KAREL program error. A file pre-defined by the system cannot be closed.

Remedy: Do not try to close it.

INTP-337 (%s^4, %d^5) Invalid routine type

Cause: KAREL program error. This routine cannot be used.

Remedy: Make sure you have the correct routine type and name.

INTP-338 (%s^4, %d^5) Close file failed

Cause: KAREL program error. Closing the file failed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-339 (%s^4, %d^5) Invalid program name

Cause: KAREL program error. The program name is invalid.

Remedy: Make sure you have the correct program name.

INTP-340 (%s^4, %d^5) Invalid variable name

Cause: KAREL program error. The variable name is invalid.

Remedy: Make sure you have the correct variable name.

INTP-341 (%s^4, %d^5) Variable not found

Cause: KAREL program error. The variable cannot be found.

Remedy: Verify the program name and variable name.

INTP-342 (%s^4, %d^5) Incompatible variable

Cause: KAREL program error. The data type defined by the BYNAME function and the variable type are mismatched.

Remedy: Make sure you have the correct data type and variable type.

INTP-343 (%s^4, %d^5) Reference stack overflow

Cause: KAREL program error. Too many variables are passed using the BYNAME function.

Remedy: Decrease the number of BYNAME functions.

INTP-344 (%s^4, %d^5) Readahead buffer overflow

Cause: KAREL program error. The buffer to read ahead from the device overflowed.

Remedy: Increase the buffer size.

INTP-345 (%s^4, %d^5) Pause task failed

Cause: KAREL program error. The PAUSE statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-346 (%s^4, %d^5) Abort task failed

Cause: KAREL program error. The ABORT statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-347 (%s^4, %d^5) Read I/O value failed

Cause: KAREL program error. The digital input signal cannot be input.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-348 (%s^4, %d^5) Write I/O value failed

Cause: KAREL program error. The digital output signal cannot be output.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-349 (%s^4, %d^5) Hold motion failed

Cause: KAREL program error. The HOLD statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-350 (%s^4, %d^5) Unhold motion failed

Cause: KAREL program error. The UNHOLD statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-351 (%s^4, %d^5) Stop motion failed

Cause: KAREL program error. The STOP statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-352 (%s^4, %d^5) Cancel motion failed

Cause: KAREL program error. The CANCEL statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-353 (%s^4, %d^5) Resume motion failed

Cause: KAREL program error. The RESUME statement cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-354 (%s^4, %d^5) Break point failed

Cause: KAREL program error. The break point function cannot be executed.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-355 (%s^4, %d^5) AMR is not found

Cause: KAREL program error. The AMR operated by the RETURN_AMR built-in routine was not found.

Remedy: Check program operation.

INTP-356 (%s^4, %d^5) AMR is not processed yet

Cause: KAREL program error. The RETURN_AMR built-in routine cannot be used for an unoperated AMR.

Remedy: Operate the AMR using the WAIT_AMR built-in routine.

INTP-357 (%s^4, %d^5) WAIT_AMR is cancelled

Cause: KAREL program error. The execution of the WAIT_AMR built-in routine was cancelled.

Remedy: The program executing the WAIT_AMR must be restarted.

INTP-358 (%s^4, %d^5) Timeout at read request

Cause: KAREL program error. The READ statement timed out.

Remedy: Check the device being read.

INTP-359 (%s^4, %d^5) Read request is nested

Cause: KAREL program error. Another READ statement was executed while a READ statement was waiting for input.

Remedy: Remove nested reads.

INTP-360 (%s^4, %d^5) Vector is 0

Cause: KAREL program error. The vector value was invalid.

Remedy: Check the vector value.

INTP-361 (%s^4, %d^5) FRAME:P2 is same as P1

Cause: KAREL program error. The X-axis direction cannot be calculated in the FRAME built-in routine because P1 and P2 are the same point.

Remedy: Teach P1 and P2 as different points.

INTP-362 (%s^4, %d^5) FRAME:P3 is same as P1

Cause: KAREL program error. The X-Y plane cannot be calculated in the FRAME built-in routine because P1 and P3 are the same point.

Remedy: Teach P1 and P3 as different points.

INTP-363 (%s^4, %d^5) FRAME:P3 exists on line P2-P1

Cause: KAREL program error. The X-Y plane cannot be calculated in the FRAME built-in routine because P3 is located in the X-axis direction.

Remedy: Teach P3 out of the X-axis direction.

INTP-364 (%s^4, %d^5) String too short for data

Cause: KAREL program error. The target string was too short.

Remedy: Increase the target string size.

INTP-365 (%s^4, %d^5) Predefined window not opened

Cause: KAREL program error. A FILE pre-defined by the system is not opened.

Remedy: Check the use of this file.

INTP-366 (%s^4, %d^5) I/O status is not cleared

Cause: KAREL program error. The last file operation failed.

Remedy: Reset the error using the CLR_IO_STAT built-in routine.

INTP-367 (%s^4, %d^5) Bad base in format

Cause: KAREL program error. I/O mode operates only from binary to hexadecimal.

Remedy: Check the specified mode.

INTP-368 (%s^4, %d^5) Cannot use specified program

Cause: KAREL program error. The specified program cannot be used.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-369 (%s^4, %d^5) Timeout at WAIT_AMR

Cause: KAREL program error. The WAIT_AMR built-in routine timed out.

Remedy: If an AMR was expected within the time-out value check logic in the task that should have posted the AMR.

INTP-370 (%s^4, %d^5) Vision CPU not plugged in

Cause: KAREL program error. The vision CPU board is not plugged in.

Remedy: Plug in the vision CPU board.

INTP-371 (%s^4, %d^5) Vision built-in overflow

Cause: KAREL program error. The operation overflowed in the vision built-in routine.

Remedy: Modify program so fewer vision builtins are executing at the same time.

INTP-372 (%s^4, %d^5) Undefined vision built-in

Cause: KAREL program error. The vision built-in routine is not defined.

Remedy: Check the appropriate option is loaded.

INTP-373 (%s^4, %d^5) Undefined vision parameter type

Cause: KAREL program error. The parameter to the vision built-in routine is invalid.

Remedy: Check the parameter of the vision built-in routine.

INTP-374 (%s^4, %d^5) Undefined vision return type

Cause: KAREL program error. The return value from the vision built-in routine is invalid.

Remedy: Check the return value from the vision built-in routine.

INTP-375 (%s^4, %d^5) System var passed using BYNAME

Cause: KAREL program error. System variables cannot be passed using the BYNAME function.

Remedy: Pass without using BYNAME or use GET_VAR and SET_VAR instead.

INTP-376 (%s^4, %d^5) Motion in ISR failed

Cause: A MOVE statement was executed in an interrupt routine while a motion in the interrupted program was still in progress.

Remedy: One (or both) of the following should correct this problem: 1. Add CANCEL or STOP condition handler action before the call to the interrupt routine in the condition handler. 2. Add a DELAY 500 statement before the first move in the interrupt routine to allow the motion to complete.

INTP-377 (%s^4, %d^5) Local COND recovery failed

Cause: This local condition can't be recovered.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

INTP-378 (%s^4, %d^5) Local variable is used

Cause: Local variable or parameter is used for the condition.

Remedy: Use global variable to recover local condition.

INTP-379 Bad condition handler number

Cause: An invalid condition handler number was used in a condition handler definition, or an ENABLE, DISABLE, or PURGE statement or action.

Remedy: Correct the condition handler number. Condition handler numbers must be in the range 1-1000.

INTP-380 Bad program number

Cause: An invalid program number has been specified in an ABORT PROGRAM, PAUSE PROGRAM, or CONTINUE PROGRAM condition or action.

Remedy: Use a valid program number. Program numbers must be in the range 1..\$SCR,\$MAXNUMTASK + 2.

INTP-381 (%s^4, %d^5) Invalid Delay Time

Cause: An invalid delay time has been specified in DELAY statement.

Remedy: Use a valid delay time. Delay time must be in the range 0..86400000 .

INTP-382 (%s^4, %d^5) Invalid bit field value

Cause: An invalid value has been specified in bit field.

Remedy: Use a valid value for the bit field.

INTP-383 (%s^4, %d^5) Path node out of range

Cause: The specified path node is out of range.

Remedy: Check the path node.

INTP-384 (%s^4, %d^5) Invalid value for CNT

Cause: The indicated value cannot be used for the CNT instruction.

Remedy: Check the value.

INTP-400 (%s^4, %d^5) Number of motions exceeded

Cause: Too many motions are executed at the same time.

Remedy: Decrease the number of motions executed at the same time. Execute the next motion after the completion of the last motion.

INTP-401 (%s^4, %d^5) Not On Top Of Stack

Cause: Paused motion exists after the motion was resumed.

Remedy: Resume the motion that was previously paused.

INTP-410 Motion Optim. not loaded

Cause: Loading/Running optimized program without OPTM loaded.

Remedy: Refer to the error cause code. Check program and options.

INTP-420 (%s^4, %d^5) OFIX is not available

Cause: OFIX is not available.

Remedy: Please check motion type and options.

INTP-421 (%s^4, %d^5) Stitch disable(S/S)

Cause: Single step mode is enable.

Remedy: Please disable single step.

INTP-422 (%s^4, %d^5) Stitch enable signal off

Cause: Stitch enable signal is off.

Remedy: Please turn on stitch enable signal.

INTP-423 (%s^4, %d^5) Eq.condition signal error

Cause: Equipment condition signal is abnormal.

Remedy: Please check Equipment condition signal.

INTP-424 (%s^4, %d^5) Stitch speed error

Cause: Setting of Stitch speed is illegal.

Remedy: Please check stitch speed.

INTP-425 (%s^4, %d^5) Illegal motion type(J)

Cause: Please check motion type. The motion statement is JOINT motion.

Remedy: Change the motion statement to LINEAR motion.

INTP-426 (%s^4, %d^5) Another prog is in stitching

Cause: Another program is in stitch mode.

Remedy: Please force abort another program if it is executing stitch or it paused in stitch area.

INTP-427 (%s^4, %d^5) Stitch disable(T1 mode)

Cause: Master/Slave/SlaveAlone program cannot call KAREL program.

Remedy: Master/Slave/SlaveAlone program cannot call KAREL program.

INTP-428 (%s^4, %d^5) Cannot use converted AI/O

Cause: Analog I/O with conversion data can not use in condition program.

Remedy: 1. Delete AI/O instructions in the condition program.
2. Disable Analog I/O conversion function.

INTP-429 (%s^4, %d^5) Use mixed logic condition

Cause: When analog I/O conversion function is used, mixed logic has to be used for WAIT condition.

Remedy: Use mixed logic instruction for WAIT condition

INTP-430 (%s^4, %d^5) Dry Run needs other groups

Cause: The program does not have all motion groups. All motion groups are required for Dry Run.

Remedy: Enable all motion groups for the program. If some groups should not be affected by Dry Run, set \$DRYRUN.\$GRP_MASK to indicate which motion groups should be affected. 1 = affect this group; 0 = do not affect this group.

INTP-431 (%s^4, %d^5) Dry Run on Incremental motion

Cause: Dry Run cannot start in an incremental motion statement.

Remedy: Exit the incremental motion statement by moving the cursor to another line, or do backward execution.

INTP-432 (%s^4, %d^5) Dry Run on Circular motion

Cause: Dry Run cannot start in a circular motion statement.

Remedy: Exit the circular motion by moving the cursor to another line, or perform backward execution.

INTP-433 (%s^4, %d^5) Dry Run in P-SPS

Cause: Dry Run is activated on interruption routine. Dry Run can not start from an interruption routine.

Remedy: Perform a backward execution to exit the interrupt routine.

INTP-434 Please do BWD to exit P-SPS

Cause: This is used as a cause code for INTP-433, to recommend backward execution.

Remedy: None.

INTP-435 Dry Run execution error

Cause: An error occurred in Dry Run execution.

Remedy: Refer to additional errors for more information.

INTP-436 (%s^4, %d^5) Invalid item for output

Cause: The item specified in left side of assignment statement is not available for output.

Remedy: Do not use the item for output.

INTP-437 (%s^4, %d^5) Marker nesting too deep

Cause: Depth of Marker nesting is greater than 10.

Remedy: Reduce the nesting level of Marker.

INTP-438 (%s^4, %d^5) Undefined Marker

Cause: The Marker being read is not defined by any expression.

Remedy: Define the Marker expression.

INTP-439 (%s^4, %d^5) Marker conflict

Cause: Multiple tasks are attempting to execute the same Marker at the same time.

Remedy: Check recursive references to Markers.

INTP-440 (%s^4) Stopped by TC_ONLINE

Cause: Program is paused by TC_ONLINE, because the result of the defined expression is FALSE.

Remedy: Check TC_ONLINE expression.

INTP-441 Please stop Background Logic

Cause: The setting of Background Logic cannot be changed when the Background Logic is running.

Remedy: Stop the Background Logic.

INTP-442 (%s^4, %d^5) Background program is changed

Cause: The Background Logic that was running at power down was changed before this COLD start. This Background Logic is stopped.

Remedy: Execute the Background Logic manually.

INTP-443 (%s^4, %d^5) Invalid item for Mixed Logic

Cause: There is an operator or data that cannot be used in Mixed Logic. Mixed Logic statements are those that have parentheses.

Remedy: Use the operator or data in a normal Logic instruction.

INTP-444 (%s^4, %d^5) Invalid item for Fast mode

Cause: There is an operator or data that cannot be used in Fast mode Background Logic. Fast Mode Background Logic can have only I/O ports and logical operators.

Remedy: Remove the operator or data, or execute this program in Normal mode Background Logic.

INTP-445 (%s^4, %d^5) Indirection in Fast mode

Cause: There is an indirection of index, (ex. DI[R[1]]), in Fast mode Background Logic. Fast mode Background Logic cannot use indirection.

Remedy: Remove the indirection, or execute this program in Normal mode Background Logic.

INTP-446 (%s^4, %d^5) Too many parentheses

Cause: The parentheses nesting is too deep. The maximum number of nesting is 11.

Remedy: Divide the expression into two lines.

INTP-447 (%s^4, %d^5) Parentheses mismatch

Cause: The combination of parentheses is wrong.

Remedy: Check the parentheses pairs.

INTP-448 Fast mode programs too big

Cause: Total size of Fast mode programs is greater than 4000 steps. 4000 steps are approx. 4000 operands.

Remedy: Set execution mode of some Background programs to Normal.

INTP-449 (%s^4, %d^5) Marker recursion

Cause: There is a recursive reference of a Marker.

Remedy: Check recursive reference of Marker.

INTP-450 (%s^4, %d^5) Cannot call KAREL program

Cause: Master/Slave/SlaveAlone program cannot call KAREL program.

Remedy: Master/Slave/SlaveAlone program cannot call KAREL program.

INTP-451 (%s^4, %d^5) Cannot call Motion program

Cause: Master/Slave/SlaveAlone program cannot call Normal program which has motion group.

Remedy: Master/Slave/SlaveAlone program can call Normal program which does not have motion group.

INTP-452 (%s^4, %d^5) Robot link type mismatch

Cause: Master/Slave/SlaveAlone program can call different type of program.

Remedy: Master/Slave/SlaveAlone program can call only same type of program.

INTP-453 (%s^4, %d^5) Not in remote

Cause: Slave program cannot be execute without remote status.

Remedy: Satisfy the remote condition.

INTP-454 (%s^4, %d^5) Illegal return occurred

Cause: Program type is different between caller program and called program.

Remedy: Satisfy the remote condition.

INTP-455 (%s^4, %d^5) Group mismatch(Link pattern)

Cause: Master program does not have the same motion group which is specified by the link pattern of robot link data.

Remedy: Master program must have the same motion group which is specified by the link pattern of robot link data.

INTP-456 (%s^4, %d^5) Group mismatch(Slave group)

Cause: Slave program does not have the same motion group which is specified by the slave group of robot link data.

Remedy: Slave program must have the same motion group which is specified by the slave group of robot link data.

INTP-457 (%s^4, %d^5) Master tool number mismatch

Cause: Current tool frame number of master robot is different from the master tool No of robot link data of the slave program.

Remedy: Current tool frame number of master robot and the master tool No of robot link data of the slave program must be same number.

INTP-458 (%s^4, %d^5) Robot is still moving

Cause: Since robot is still moving, it is impossible to synchronize.

Remedy: After robot stops completely, continue the program again.

INTP-459 (%s^4, %d^5) Slave cannot JOINT motion

Cause: The motion statement of slave program is JOINT motion.

Remedy: Change the motion statement of slave program to LINEAR motion.

INTP-460 (%s^4, %d^5) Cannot use JOINT pos for Slave

Cause: The position data of slave program is JOINT type.

Remedy: Change the position data of slave program to LINEAR type.

INTP-461 (%s^4, %d^5) Master TP is enabled

Cause: Master program is executed by TP.

Remedy: Slave program is paused, when master program is executed by TP.

INTP-462 (%s^4, %d^5) Cannot start Robot Link

Cause: Master program is executed by TP.

Remedy: Slave program is paused, when master program is executed by TP.

INTP-463 (%s^4, %d^5) Motion group is Master

Cause: The motion group of specified program becomes to be master.

Remedy: Change the robot to normal from master. Then, please try to execute again.

INTP-464 (%s^4, %d^5) Motion group is Slave

Cause: The motion group of specified program becomes to be slave.

Remedy: Change the robot to normal from slave. Then, please try to execute again.

INTP-465 (%s^4, %d^5) Tracking error

Cause: Tracking of slave program is failed.

Remedy: Change the robot to normal from slave. Then, please try to execute again.

INTP-466 (%s^4, %d^5) Robot link not calibrated

Cause: Robot link calibration has not been done yet.

Remedy: Calibrate the robot link.

INTP-467 (%s^4, %d^5) Cannot use INC for Slave

Cause: The slave program cannot use Incremental instruction.

Remedy: Remove the Incremental instruction.

INTP-468 (%s^4, %d^5) Cannot use OFFSET for Slave

Cause: The slave program cannot use Offset instruction.

Remedy: Remove the Offset instruction.

INTP-469 (%s^4, %d^5) BWD is failed for Master

Cause: Synchronize of Master is failed for BWD.

Remedy: Change the Slave robot to be synchronize waiting state.

INTP-470 (%s^4, %d^5) Not support BWD for Slave

Cause: BWD of Slave program is not supported.

Remedy: BWD of Slave program is not supported.

INTP-471 (%s^4, %d^5) Robot is Master(Manual)

Cause: Current status of the robot is Master(Manual).

Remedy: When robot is Master(Manual), you cannot use external program execution. To use external program execution, please change the status to Master(Alone) at the manual operation screen.

INTP-472 (%s^4, %d^5) Robot is Slave(Manual)

Cause: Current status of the robot is Slave(Manual).

Remedy: When robot is Slave(Manual), you cannot execute other Slave program. To execute other Slave program execution, please hold the program to exit Slave(Manual) status.

INTP-473 (%s^4, %d^5) Synchro ID is ZERO

Cause: The synchro ID of the specified program is zero.

Remedy: Synchro ID 0 is not available number. Please set another synchro ID.

INTP-474 (%s^4, %d^5) Synchro ID mismatch

Cause: The program whose synchro ID is different from current synchro ID is executed.

Remedy: Please change the synchro ID to fit the current synchro ID.

INTP-475 (%s^4, %d^5) Cannot single step

Cause: Need two motion lines.

Remedy: Add a motion line.

INTP-476 (%s^4, %d^5) BWD is failed

Cause: BWD is failed.

Remedy: BWD is failed.

INTP-477 (%s^4, %d^5) Cannot run Slave directly

Cause: Slave program cannot be executed directly.

Remedy: Slave program must be called by normal program.

INTP-478 This group can not be MASTER

Cause: This motion group is not specified as master in SETUP.

Remedy: Use another group as master or change SETUP.

INTP-479 Bad Hostname or Address(MASTER)

Cause: HOSTNAME, IP Address or group number about MASTER is not correct.

Remedy: Confirm RobotLink and HOST Comm TCP/IP SETUP.

INTP-480 Bad Hostname or Address(SLAVE)

Cause: HOSTNAME, IP Address or group number about SLAVE is not correct.

Remedy: Confirm RobotLink and HOST Comm TCP/IP SETUP.

INTP-481 Bad Synchronization ID

Cause: Synchronization ID in program is invalid.

Remedy: Modify Synchronization ID at Program List Screen.

INTP-482 Bad Link Pattern Number

Cause: Link Pattern Number in program is invalid.

Remedy: Modify Link Pattern Number at Program List Screen.

INTP-483 Bad Master Number

Cause: Master Number in program is invalid.

Remedy: Modify Master Number at Program List Screen.

INTP-484 Bad Group number (MASTER)

Cause: Specified group number about MASTER is invalid.

Remedy: Confirm group number setup about MASTER.

INTP-485 Bad Group number (SLAVE)

Cause: Specified group number about SLAVE is invalid.

Remedy: Confirm group number setup about SLAVE.

INTP-486 SLAVE is not calibrated

Cause: Specified SLAVE is not calibrated.

Remedy: Calibrate SLAVE robot.

INTP-487 No Valid SLAVE in Link Pattern

Cause: No valid SLAVE is specified in Link Pattern data.

Remedy: Confirm Link Pattern at RobotLink SETUP screen.

INTP-488 RLINK communication timeout

Cause: At comm-buffer init, comm-processor is too busy.

Remedy: Increase \$RK_SYSCFG.\$RMGR_PHTOUT by 100.

INTP-489 Bad Hostname or Address, Group

Cause: Hostname or IP Address, Group number setup is invalid.

Remedy: Check HOST Comm TCP/IP and RobotLink SETUP.

INTP-490 Timeout for link start

Cause: Timeout for Robot Link start.

Remedy: Check another robot and robot link program.

INTP-491 Linked robot or comm stopped

Cause: Robot link communication stopped.

Remedy: Check another robot is paused or communication status.

INTP-492 Master program stopped

Cause: Detect Master HELD input signal.

Remedy: Check master robot status.

INTP-493 Slave program stopped

Cause: Detect slave HELD input signal.

Remedy: Check slave robot status.

INTP-494 Proc_sync Sched number not set

Cause: Schedule number for PROC_SYNC is not initialized.

Remedy: Use SYNC_SCHED instruction prior to using INPOS, PROC_STRT or PROC_SYNC instructions.

INTP-495 NO Proc_END after PROC_STRT

Cause: PROC_END statement is not found after PROC_START.

Remedy: Use PROC_END instruction after a PROC_START instruction or use PROC_SYNC instruction.

INTP-530 (%s^4, %d^5) PS is not available

Cause: PS statement is not available for this system.

Remedy: Please check robot type.

INTP-531 (%s^4, %d^5) PS motion limit

Cause: Number of PS motions has reached the limit.

Remedy: Please modify program.

INTP-532 (%s^4, %d^5) PS item limit

Cause: Number of PS items per one motion has reached the limit.

Remedy: Please modify program.

INTP-533 PS(%s^4,%d^5-%d^9)Invalid PS

Cause: PS logic statement is not valid.

Remedy: Please confirm PS logic statement.

INTP-534 PS(%s^4,%d^5-%d^9)time is not available

Cause: PS time is not available for this motion type.

Remedy: Set time value to 0 or change motion type or speed unit.

INTP-535 PS(%s,%d-%d)Undone PS exists

Cause: Untriggered PS logic exists.

Remedy: Please confirm PS trigger condition.

INTP-536 PS error (0x%X)

Cause: PS system error.

Remedy: Please record the detail of the last operation which caused this alarm. Then please cycle power to recover.

INTP-537 PS Failed to get cur pos(G:%d)

Cause: Failed to get the current TCP.

Remedy: Please confirm calibration and mastering.

INTP-538 PS(%s,%d-%d)Error PS exists

Cause: PS item which caused the error still exists at paused status.

Remedy: Do BWD motion to clear the remaining PS items.

INTP-539 PS(%s,%d-%d,%dmm)Already in area

Cause: PS item triggered immediately after motion start.

Remedy: Please check and modify PS trigger condition.

INTP-540 PS(%s,%d-%d,%dmm)Already in area

Cause: PS item triggered immediately after motion start.

Remedy: Please check and modify PS trigger condition.

INTP-541 PS(%s,%d-%d,%dmm)Forced trigger

Cause: PS item was not triggered.

Remedy: Please check and modify PS trigger condition.

INTP-542 PS(%s,%d-%d,%dmm)No trigger

Cause: PS item was not triggered.

Remedy: Please check and modify PS trigger condition.

INTP-543 PS(%s,%d-%d)Cancel pending PS

Cause: Paused PS item was canceled at resume by BWD, single step or cursor change.

Remedy: If you want to continue program execution, please confirm canceled PS contents.

INTP-544 PS(%s,%d-%d)Time value limit

Cause: PS time value is too large against distance value.

Remedy: Please reduce time value or enlarge distance value.

INTP-545 (%s^4, %d^5) PS motion limit

Cause: Number of PS motions has reached the limit.

Remedy: Please modify program.

INTP-546 PS memory error (%d)

Cause: An error related to internal memory inconsistency. The capacity of the memory may be insufficient or the memory may be corrupted.

Remedy: Please cycle power. If the error still occurs, document the events that led to the error and contact your local FANUC representative.

INTP-550 (%s^4, %d^5) ACC value out of range

Cause: The taught value for ACC instruction is out of range.

Remedy: Please check the value for ACC instruction.

INTP-551 (%s^4, %d^5) Invalid value for ACC

Cause: The taught value cannot be used for ACC instruction.

Remedy: Please check the value for ACC instruction.

INTP-559 Cannot use motion group in action program

Cause: Program that has motion group is used as action program.

Remedy: Clear motion group mask of action program in program detail screen.

INTP-560 DB was deleted

Cause: The Distance Before for this line was deleted.

Remedy: Do not change line for restart or do not enable dryrun.

INTP-561 DB was deleted

Cause: The Distance Before for this line was deleted.

Remedy: Do not change the line for restart, or do not enable dryrun.

INTP-562 Non kinematics in DB group

Cause: Attempt to perform distance before with non-kinematics robot.

Remedy: Please use time before instruction instead of distance before instruction.

INTP-570 IBGN internal error

Cause: Internal error.

Remedy: Please do COLD start.

INTP-571 IBGN file format error(%d^9)

Cause: File format for IBGN is not correct.

Remedy: After check and modify the contents of the file, then try again.

INTP-572 IBGN file cannot open

Cause: IBGN file cannot open.

Remedy: Check file and then try again.

INTP-573 IBGN rtcp and usual tool mixed

Cause: During IBGN recording, remote tcp motion and usual motion cannot used together.

Remedy: Modify program and try again.

INTP-574 No motion statement executed before RECORD start

Cause: No motion statement executed before RECORD start[] instruction.

Remedy: Execute at least one motion statement before RECORD start[].

INTP-575 IBGN ITP time does not match

Cause: ITP time in ASCII file is not same as this system.

Remedy: Check whether ASCII file is correct.

INTP-576 IBGN TCP data does not match

Cause: ITP time in ASCII file is not same as this system.

Remedy: Check whether ASCII file is correct.

INTP-577 IBGN Program can not be restarted

Cause: Program can not be restarted because Constant Joint Path is disabled.

Remedy: Enable Constant Joint Path function.

INTP-578 IBGN RECORD interrupted

Cause: Program is paused. Recording is stopped.

Remedy: To start recording, start your program again from the beginning.

INTP-579 IBGN RECORD doesn't work in single step mode

Cause: RECORD start instruction doesn't work in single step mode.

Remedy: Disable single step. There is no point data in buffer. Check IBGN**.IBG file.

INTP-580 IBGN Buffer is empty

Cause: There is no point data in buffer.

Remedy: Check IBGN**.IBG file.

INTP-581 IBGN Cannot execute backwards

Cause: The program can not be executed using BWD.

Remedy: None.

INTP-582 IBGN RECORD buffer is full

Cause: Buffer for recording is full. Record stopped here.

Remedy: Please shorten time to record.

INTP-583 IBGN program call/return during RECORD

Cause: Program call or return from program occurred during recording.

Remedy: Teach RECORD start and end in a program and don't use CALL.

INTP-584 IBGN tool changed during RECORD

Cause: Tool changed during recording.

Remedy: Don't change tool between IBGN RECORD START and IBGN RECORD END.

INTP-585 IBGN user frame changed during RECORD

Cause: User frame changed during recording.

Remedy: Don't change user frame between IBGN RECORD START and IBGN RECORD END.

INTP-586 IBGN jmp label during RECORD

Cause: Jmp label occurred during recording.

Remedy: Don't change user frame between IBGN RECORD START and IBGN RECORD END.

INTP-587 IBGN illegal speed unit(%s,%d)

Cause: Illegal speed unit for IBGN record.

Remedy: If Joint, use %. If linear/circle, use mm/sec, cm/min or inch/min. Buffer for executing is full. Check the number of point in IBGN file. Teaching of IBGN instruction is not correct. Check whether IBGN END instruction is exist. Check whether IBGN END instruction is taught before IBGN instruction. File transfer by FTP protocol failed. Check setting for communication.

INTP-588 IBGN Buffer is full

Cause: Buffer for executing is full.

Remedy: Check the number of point in IBGN file.

INTP-589 IBGN teach error

Cause: Teaching of IBGN instruction is not correct.

Remedy: Check whether IBGN END instruction is exist. Check whether IBGN END instruction is taught before IBGN instruction.

INTP-590 IBGN File transfer failed

Cause: File transfer by FTP protocol failed.

Remedy: Check setting for communication.

INTP-591 IBGN FWD execution cannot be done

Cause: When BWD execution is paused, FWD execution cannot be done until BWD execution finished.

Remedy: After BWD execution is finished, perform FWD execution.

INTP-592 IBGN RECORD index mismatch(%d, %d)

Cause: Index of IBGN REC END[] is different from IBGN REC START[]. Record of the 1st index was in progress when end instruction of the 2nd index was executed.

Remedy: Use proper index.

INTP-593 IBGN file cannot read

Cause: IBGN file cannot read because previous IBGN command does not finish.

Remedy: Please do COLD start.

INTP-594 IBGN record file is being copied

Cause: IBGN record file is being copied.

Remedy: Wait for a while and resume program.

INTP-595 Updating IBGN exe file

Cause: Someone is updating IBGN file. Now IBGN file cannot be saved.

Remedy: Wait for a while and try again.

INTP-596 Saving IBGN exe file

Cause: Someone is saving IBGN file. Now IBGN file cannot be updated.

Remedy: Wait for a while and try again.

INTP-597 IBGN exe file is in use

Cause: IBGN START[] instruction is using one of IBGN file. Now IBGN file cannot be updated.

Remedy: Wait for a while and try again.

INTP-598 IBGN no record data

Cause: There is no successful record data of specified index.

Remedy: Please make sure record is successful. Access record file before another record stars. If index is wrong, record file isn't found.

INTP-599 IBGN Now recording

Cause: Another IBGN RECORD instruction is recording.

Remedy: Execute an IBGN RECORD END instruction, then start another IBGN record instruction.

INTP-600 IBGN RECORD file index error

Cause: Record file of Specified index isn't available now. Robot doesn't have record data of specified index.

Remedy: Access record file before another recording starts.

INTP-601 IBGN more than 256 characters in a line

Cause: SENSPS file or IBGN file contains a line that has more than 255 characters.

Remedy: Check ASCII file and fix it.

INTP-602 ARC:Accupath enabled

Cause: A motion cannot be used if Accupath is enabled.

Remedy: Disable Accupath.

INTP-603 (%s^4, %d^5)ARC:path change

Cause: The path of A motion without cursor is changed.

Remedy: Enable single step to resume.

INTP-604 (%s^4, %d^5)ARC:Cannot use this instruction

Cause: This instruction is not allowed between A motion statements.

Remedy: Delete this instruction.

INTP-605 (%s^4, %d^5)ARC:Offset increment in A motion

Cause: Offset is used with \$SCR.\$ofstincval in A motion.

Remedy: Please set \$SCR.\$ofstincval = 0.

INTP-606 (%s^4, %d^5)ARC:No motion statement

Cause: Motion statement is not found.

Remedy: Internal error.

INTP-607 (%s^4, %d^5)ARC:Syntax error

Cause: Syntax error is found by A motion processing.

Remedy: Internal error.

INTP-608 (%s^4, %d^5)ARC:It is not A

Cause: The specified line is not A motion.

Remedy: Internal error.

INTP-609 ARC:A needs 3 point (%d)**INTP-610 ARC:Motion type changed****INTP-611 (%s^4, %d^5)ARC:Group mismatch**

Cause: The specified group is not processed.

Remedy: Internal error.

INTP-612 (%s^4, %d^5)ARC:PR[R[]] in A motion

Cause: position register of A motion must not be indirect.

Remedy: Delete indirection.

INTP-613 (%s^4, %d^5)ARC:Position conflict

Cause: Destination position data conflict internally.

Remedy: Internal error. It may be caused by motion option.

INTP-614 (%s^4, %d^5)ARC:Palletizing in A motion

Cause: Palletizing is not allowed for A motion.

Remedy: Please delete palletizing.

INTP-615 (%s^4, %d^5)ARC:Call nesting is too deep

Cause: The call nesting between A motion statements is too deep.

Remedy: Please check recursive call.

INTP-616 (%s^4, %d^5)ARC:Sub program has motion line

Cause: Sub program called between A motion statement has motion statement.

Remedy: Don't call the program that has motion statement between A motion statements.

INTP-617 (%s^4, %d^5)ARC:JMP between A motion

Cause: There is JMP statement between A motion statements.

Remedy: Please delete JMP statement.

INTP-618 (%s^4, %d^5)ARC:END between A motions

Cause: There is END statement between A motion statements.

Remedy: Please delete END statement.

INTP-619 (%s^4, %d^5)ARC:PR is set between A motion

Cause: There is assignment statement to PR between A motion statements.

Remedy: Please delete assignment statement to PR.

INTP-620 (%s^4, %d^5)ARC:LBL between A motion

Cause: There is a LBL statement between A motion statements.

Remedy: Delete the LBL statement.

INTP-621 (%s^4, %d^5)ARC:INC in A motion

Cause: There is an INC instruction in A motion statement.

Remedy: Delete the INC instruction.

INTP-622 (%s^4, %d^5)ARC:SKIP in A motion

Cause: There is SKIP instruction in A motion statement.

Remedy: Delete the SKIP instruction.

INTP-623 (%s^4, %d^5)ARC:UFRAME/UTOOL between A motion

Cause: UFRAME data, UFRAME number, UTOOL data, UTOOL number must not be changed between A motion statements.

Remedy: Don't change UFRAME and UTOOL.

INTP-624 (%s^4, %d^5)ARC:ABORT between A motion

Cause: There is an ABORT statement between A motion statements.

Remedy: Please delete ABORT statement.

INTP-625 (%s^4, %d^5)ARC:OFFSET cond between A motion

Cause: There is OFFSET / TOOL OFFSET condition statement between A motion statements.

Remedy: Please delete OFFSET / TOOL OFFSET condition statement.

INTP-626 (%s^4, %d^5)ARC:KAREL call between A motion

Cause: KAREL program is called between A motion statements.

Remedy: Please delete KAREL call.

INTP-627 (%s^4, %d^5)ARC:Inconsistent position

Cause: Position data is changed in a sequence of A motion statements.

Remedy: Please find the reason why the position data is changed.

INTP-628 (%s^4, %d^5)ARC:Inconsistent line sequence

Cause: Line order of execution is changed in a sequence of A motion statements.

Remedy: Please find the reason why the line order is changed.

INTP-629 (%s^4, %d^5)ARC:UFRAME/UTOOL is changed

Cause: UFRAME/UTOOL is changed in a sequence of A motion statements.

Remedy: Please find the reason why FRAME/UTOOL is changed.

INTP-630 (%s^4, %d^5)ARC:Logic error

Cause: Specified line violate restriction of logic between A motion.

Remedy: Please refer to cause code.

INTP-631 (%s^4, %d^5)ARC:RTCP mismatch

Cause: If A motion uses RTCP, related motion lines must use RTCP, too, and vice versa.

Remedy: Cause code shows which line is inconsistent. Teach or delete RTCP.

INTP-632 (%s^4, %d^5)Illegal time

Cause: Illegal value is specified as time of TB.

Remedy: Set proper time.

INTP-633 (%s^4, %d^5)Illegal distance

Cause: Illegal value is specified as distance of DB.

Remedy: Set proper distance.

INTP-634 (%s^4, %d^5)ARC:COORD mismatch

Cause: If a motion uses COORD, related motion lines must use COORD, too, and vice versa.

Remedy: The cause code shows which line is inconsistent. Teach or delete COORD.

INTP-635 Instruction number is wrong

Cause: The specified RESUME/MAINT instruction number cannot be used.

Remedy: Use another RESUME/MAINT instruction number. If the error still occurs, document the events that led to the error and contact your local FANUC representative.

INTP-636 There're multiple RESUME/MAINT

Cause: There are two RESUME/MAINT instructions in one teach pendant program.

Remedy: Only one RESUME/MAINT instruction can be used in one teach pendant program.

INTP-637 Please install J605

Cause: The Multi Robot Control (J605) option (required for all Multi-Arm systems) is not installed.

Remedy: Multi Robot Control (J605) is necessary to use the instruction. Make sure this option is installed and try the operation again.

INTP-638 This program can't execute by RUN

Cause: The program where the RESUME/MAINT instruction exists can not execute by RUN.

Remedy: Remove the RESUME/MAINT instruction from this program.

INTP-639 Other program are using RESUME/MAINT

Cause: Another program is using the RESUME/MAINT instruction.

Remedy: Remove the RESUME/MAINT instruction from this program.

INTP-640 (%s^4, %d^5)MONITOR/MON. END cannot be used

Cause: MONITOR/MON. END cannot be used when J893 is installed.

Remedy: Delete MONITOR/MON.END from TP program.

INTP-641 (%s^4, %d^5)\$DISTBF_VER must be set as 2

Cause: DB can only be used if \$DISTBF_VER is 2 when J893 is installed.

Remedy: Set \$DISTBF_VER to 2.

INTP-642 (%s^4, %d^5)\$TIMEBF_VER must be set as 2

Cause: TB/TA can only be used if \$TIMEBF_VER is 2 when J893 is installed.

Remedy: Set \$TIMEBF_VER to 2.

INTP-643 (%s,%d)DB was triggered by go-away.

Cause: The RESUME/MAINT instruction cannot be used in RESUME/MAINT program.

Remedy: Remove the RESUME/MAINT instruction from this program.

INTP-644 RESUME/MAINT cannot be used here

Cause: The specified RESUME/MAINT instruction number cannot be used. The relation between RESUME/MAINT instruction number and the program number is wrong.

Remedy: Use another RESUME/MAINT instruction number.

INTP-645 Instruction number is wrong

Cause: Because the PNSTROBE pulse signal is input, resume program or fast fault recovery cannot be executed.

Remedy: Do not input the PNSTROBE pulse signal while resume program or fast fault recovery are being executed.

INTP-646 PNSTROBE signal is input

Cause: Because the maintenance DO is OFF, the fast fault recovery sequence cannot be executed.

Remedy: Confirm the setup of fast fault recovery.

INTP-647 Maintenance DO is OFF

Cause: The Error Recovery option (J664) is not installed.

Remedy: The Error Recovery Option (J664) is necessary to use the instruction.

INTP-648 Please install J664

Cause: The fast fault recovery sequence cannot be executed.

Remedy: Reset the alarm. If the error still occurs, document the events that led to the error and contact your local FANUC representative.

INTP-649 FFR sequence can't be executed

Cause: The fast fault recovery sequence cannot be executed.

Remedy: Reset the alarm and try the operation again.

INTP-650 DB was lost by power failure recovery.

Cause: A power failure was detected before Distance Before was triggered. The power failure occurred after the motion ended successfully. DB is not recovered. The action of DB cannot be executed.

Remedy: Run the program from appropriate line again.

INTP-653 J983: System variables not found

Cause: System variables not found.

Remedy: Please call your local FANUC representative.

INTP-654 J983: DO for program run is invalid

Cause: Specified DO is invalid.

Remedy: Assign and specify DO appropriately.

INTP-655 J983: DO for program end is invalid

Cause: Specified DO is invalid.

Remedy: Assign and specify DO appropriately.

INTP-656 J983: DO for program abort is invalid

Cause: Specified DO is invalid.

Remedy: Assign and specify DO appropriately.

INTP-657 Option software not installed.

Cause: Option software not installed.

Remedy: Install J611.

INTP-658 Invalid group value.

Cause: Invalid group value.

Remedy: Input a correct value.

INTP-659 Axis not exist or is robot axis.

Cause: Axis not exist or is robot axis.

Remedy: Input a correct value.

INTP-660 Invalid torque limit value.

Cause: Invalid torque limit value.

Remedy: Input a correct value.

INTP-662 Excessive torque limit value (G:I A:j).

Cause: Torque limit value exceeds maximum value. Torque limit value was modified to the maximum value.

Remedy: Set torque limit value less than or equal to the maximum value.

INTP-664 (%s^4, %d^5) Org path resume not available

Cause: To do Dry Run of this type, Original Path Resume must be enable.

Remedy: Please set Original Path Resume enable.

INTP-665 (%s^4, %d^5) RUN stmt failed in background program

Cause: RUN statement in background program is failed. Program with motion group cannot run by background logic. Or, the program is executing at other task.

Remedy: Please set motion group 0. Please don't execute same program in the same time.

INTP-666 (%s^4) TC_ONLINE result is FALSE

Cause: Result of TC_ONLINE is FALSE.

Remedy: Check TC_ONLINE expression.

INTP-667 TC_ONLINE result is FALSE

Cause: Program is cannot started by TC_ONLINE, because the result of the defined expression is FALSE.

Remedy: Check TC_ONLINE expression.

INTP-668 %s

Cause: Please read error message.

Remedy: Please read error message.

INTP-669 Need FOR for ENDFOR in line %d

Cause: ENDFOR is more than FOR.

Remedy: Teach FOR before the line number displayed.

INTP-670 Need ENDFOR for FOR in line %d

Cause: FOR is more than ENDFOR.

Remedy: Teach ENDFOR after the line number displayed.

INTP-671 Too many FOR

Cause: FOR statements are continuously instructed more than 10.

Remedy: Delete FOR statement till their continuous number is less or equal to 10.

INTP-672 (%s^4, %d^5) Value type is not integer

Cause: Not integer type is used in FOR/ENDFOR statement.

Remedy: Only integer type can be used in FOR/ENDFOR statement.

INTP-673 IBGN FOR/ENDFOR during RECORD

Cause: FOR/ENDFOR statement occurred during recording.

Remedy: During recording don't use FOR/ENDFOR statement.

INTP-674 (%s^4, %d^5) Invalid Argument

Cause: FOR/ENDFOR statement occurred during recording.

Remedy: During recording don't use FOR/ENDFOR statement.

INTP-675 Jog override has been enabled

Cause: Try to jog robot under Prog override mode that \$mcr.\$actoverride = 1.

Remedy: Jog override mode has been already enabled. Please do the jog operation again.

INTP-676 Prog override has been enabled

Cause: Try to run a program under Jog override mode that \$mcr.\$actoverride = 2.

Remedy: Program override mode has been already enabled. Please run the program again.

INTP-677 (%s^4, %d^5)IBGN invalid index

Cause: Value of argument is invalid. This value isn't supported in IBGN REC instruction.

Remedy: Fix value of argument.

INTP-678 IBGN There is no RECORD data

Cause: You tried to trans without record data.

Remedy: Try again after you save record data.

INTP-679 (%s^4, %d^5) Background program is aborted

Cause: Program that started by background logic is aborted.

Remedy: This program is started from first line by next execution.

INTP-680 STOP.L (%s^4, %d^5) LVC: GP No. in acc_frm mismatch**INTP-680 STOP.L (%s^4, %d^5) APC: GP No. in acc_frm mismatch**

Cause: Group number set in sensor frame is different from robot group which is in learning.

Remedy: Please choose the correct sensor frame number whose group number is the same as learning group.

INTP-683 STOP.L (%s^4, %d^5) LVC: LVC_START in block

Cause: A LVC_START instruction is started while another LVC_START or APC_START instruction is executed.

Remedy: Delete one of LVC_START or APC_START instructions.

INTP-684 STOP.L LVC cannot be used while Vision is running

Cause: Vision is running.

Remedy: Learning is allowed only when Vision is not running.

INTP-685 (%s^4, %d^5)TIMER[%d^9] has already been started

Cause: This timer already been started.

Remedy: Use other timer index.

INTP-686 (%s^4, %d^5)This task cannot stop TIMER[%d^9]

Cause: This timer can not stopped by this task.

Remedy: Stop this timer by task that it was starttd.

INTP-687 STOP.L LVC: NORMAL_MOTION_END is missing

Cause: NORMAL_MOTION_END is missing after NORMAL_MOTION_START.

Remedy: Teach NORMAL_MOTION_END.

INTP-688 STOP.L LVC: duplicated NORMAL_MOTION_START

Cause: NORMAL_MOTION_START is duplicated.

Remedy: Delete NORMAL_MOTION_START.

INTP-689 STOP.L (%s^4, %d^5) LVC: Invalid SENSOR Frame**INTP-689 STOP.L (%s^4, %d^5) APC: Invalid SENSOR Frame**

Cause: Group number set in sensor frame is different from robot group which is in learning. The setup of ACC SENSOR Frame is not correct. SENSOR frame number is 0 or all the values of X, Y, Z, W, P, and R is 0 in the configured SENSOR frame.

Remedy: Please check ACC SENSOR Frame setup.

INTP-695 STOP.L ATR_ZIP attribute is not set

Cause: Internal Error.

Remedy: Please contact your local FANUC representative.

INTP-696 STOP.L Illegal operation for ZIP file

Cause: Internal error.

Remedy: Please contact your local FANUC representative.

INTP-697 STOP.L (%s^4, %d^5) LVC: Wireless Sensor CONFMOD**INTP-697 STOP.L (%s^4, %d^5) APC: Wireless Sensor CONFMOD**

Cause: LVC_START, APC_START, and Sensor frame automatic setting function cannot be executed while Wireless Confirm Mode is TRUE.

Remedy: Please change Wireless Confirm Mode to FALSE, and execute LVC_START, APC_START, or Sensor frame automatic setting function.

INTP-698 WARN LVC: Numerous wireless data lost**INTP-698 WARN APC: Numerous wireless data lost**

Cause: Data lost due to unstable wireless communication.

- Remedy:**
1. Put a sensor and a USB receiver as close as possible to each other.
 2. Set a sensor and a USB receiver with good visibility (such as a USB receiver can be seen from a sensor).
 3. Avoid setting sensor and USB receiver in the environment as follows.
 - Put a sensor in the center of metallic part or enclosed by metal
 - Put the teach pendant with USB receiver on a metal such as a controller, or hang on the hook on the controller.
 - Put a metal obstacle such as a fence between communication path sensor and a USB receiver.
 4. Avoid using Wi-Fi communication in 2.4GHz band (especially a large amount of data communication such as watching movie) and microwave near a sensor and a USB receiver.

INTP-699 STOP.L LVC: Cannot learn in this environment**INTP-699 STOP.L APC: Cannot learn in this environment**

Cause: Data lost three times in a row due to unstable wireless communication.

- Remedy:**
1. Put a sensor and a USB receiver as close as possible to each other.
 2. Set a sensor and a USB receiver with good visibility (such as a USB receiver can be seen from a sensor).
 3. Avoid setting sensor and USB receiver in the environment as follows.
 - Put a sensor in the center of metallic part or enclosed by metal
 - Put the teach pendant with USB receiver on a metal such as a controller, or hang on the hook on the controller.
 - Put a metal obstacle such as a fence between communication path sensor and a USB receiver.
 4. Avoid using Wi-Fi communication in 2.4GHz band (especially a large amount of data communication such as watching movie) and microwave near a sensor and a USB receiver.

INTP-701 STOP.L (%s^4, %d^5)DCS Target Position Check Error

Cause: DCS Target Position Check detected that the current target position is out of a safe zone.

Remedy: Check the target position.

INTP-725 STOP.L (%s^4, %d^5) APC: APC_START in block

Cause: An APC_START instruction is started while another LVC_START or APC_START instruction is executed.

Remedy: Delete one of LVC_START or APC_START instructions.

INTP-726 STOP.L (%s^4, %d^5) OFFSET is unavailable

Cause: Offset instruction, tool offset instruction or vision offset instruction is used with an instruction which can't be used together, for example INC, and so on.

Remedy: Delete offset instruction.

INTP-727 PAUSE.L (%s^4, %d^5)VIA:Unusable instruction together

Cause: Unusable instruction with VIA instruction exists.

Remedy: Delete the instruction.

INTP-728 PAUSE.L (%s^4, %d^5)VIA:Neither Joint nor Linear motion

Cause: Neither Joint nor Linear motion has VIA instruction.

Remedy: Use Joint or Linear motion.

INTP-729 PAUSE.L (%s^4, %d^5)VIA:RT_LD, AP_LD are for Linear motion

Cause: RT_LD or AP_LD is not used with Linear motion.

Remedy: Use Linear motion.

INTP-731 STOP.L (%s^4, %d^5) SPLIN:path change

Cause: Cannot resume because the current motion information has changed during pause. The current motion information may be lost when pausing due to some alarms, so this alarm may occur when the alarm is cleared and when it is resumed.

Remedy: Move cursor to another line and jog the robot to a safe place to start from that line before continuing.

INTP-732 STOP.L (%s^4, %d^5) SPLIN:Cannot use this instruction

Cause: This instruction is not allowed between S motion statements.

Remedy: Delete this instruction.

INTP-733 STOP.L (%s^4, %d^5) SPLIN:Offset increment in S motion

Cause: Offset increment is used in S motion.

Remedy: Disable offset increment.

INTP-734 STOP.L (%s^4, %d^5) SPLIN:No motion statement

Cause: Internal error

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

INTP-735 STOP.L (%s^4, %d^5) SPLIN:Syntax error

Cause: Internal error

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

INTP-736 STOP.L (%s^4, %d^5) SPLIN:It is not S

Cause: Internal error

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

INTP-737 STOP.L SPLIN:S needs 3 points (%d)

Cause: At least 3 motion lines with S motion type are needed to define a spline path.

Remedy: Add more S motion lines, or change to a different motion type (for example, L).

INTP-738 STOP.L SPLIN:Motion type changed

Cause: The motion type of S motion line was changed to a different motion type before resume.

Remedy: Change the motion type back to S, or move the cursor to a different line to restart, or abort the program.

INTP-739 STOP.L (%s^4, %d^5) SPLIN:Group mismatch

Cause: Internal error

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

INTP-740 STOP.L (%s^4, %d^5) SPLIN:PR[R[]] in S motion

Cause: position register of S motion must not be indirect.

Remedy: Delete indirection

INTP-741 STOP.L (%s^4, %d^5) SPLIN:Position conflict

Cause: Internal error

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

INTP-742 STOP.L (%s^4, %d^5) SPLIN:Palletizing in S motion

Cause: Palletizing is not allowed for S motion.

Remedy: Please delete palletizing.

INTP-743 STOP.L (%s^4, %d^5) SPLIN:Call nesting is too deep

Cause: The call nesting between S motion statements is too deep.

Remedy: Please check recursive call.

INTP-744 STOP.L (%s^4, %d^5) SPLIN:Sub program has motion line

Cause: Sub program called between S motion statement has motion statement.

Remedy: Don't call the program that has motion statement between S motion statements.

INTP-745 STOP.L (%s^4, %d^5) SPLIN:JMP between S motion

Cause: There is JMP statement between S motion statements.

Remedy: Please delete JMP statement.

INTP-746 STOP.L (%s^4, %d^5) SPLIN:END between S motions

Cause: There is END statement between S motion statements.

Remedy: Please delete END statement.

INTP-747 STOP.L (%s^4, %d^5) SPLIN:PR is set between S motion

Cause: There is assignment statement to PR between S motion statements.

Remedy: Please delete assignment statement to PR.

INTP-748 STOP.L (%s^4, %d^5) SPLIN:LBL between S motion

Cause: There is LBL statement between S motion statements.

Remedy: Please delete LBL statement.

INTP-749 STOP.L (%s^4, %d^5) SPLIN:INC in S motion

Cause: There is INC instruction in S motion statement.

Remedy: Please delete INC instruction.

INTP-750 STOP.L (%s^4, %d^5) SPLIN:SKIP in S motion

Cause: There is SKIP instruction in S motion statement.

Remedy: Please delete SKIP instruction.

INTP-751 STOP.L (%s^4, %d^5) SPLIN:UFRAME/UTOOL between S motion

Cause: UFRAME data, UFRAME number, UTOOL data, UTOOL number must not be changed between S motion statements.

Remedy: Don't change UFRAME and UTOOL.

INTP-752 STOP.L (%s^4, %d^5) SPLIN:ABORT between S motion

Cause: There is ABORT statement between S motion statements.

Remedy: Please delete ABORT statement.

INTP-753 STOP.L (%s^4, %d^5) SPLIN:OFFSET cond between S motion

Cause: There is OFFSET / TOOL OFFSET condition statement between S motion statements.

Remedy: Please delete OFFSET / TOOL OFFSET condition statement.

INTP-754 STOP.L (%s^4, %d^5) SPLIN:KAREL call between S motion

Cause: KAREL program was called between S motion statements.

Remedy: Please delete KAREL call.

INTP-755 STOP.L (%s^4, %d^5) SPLIN:Inconsistent position

Cause: Position data was changed in a sequence of S motion statements.

Remedy: Please find the reason why the position data was changed.

INTP-756 STOP.L (%s^4, %d^5) SPLIN:Inconsistent line sequence

Cause: Line order of execution was changed in a sequence of S motion statements.

Remedy: Please find the reason why the line order was changed.

INTP-757 STOP.L (%s^4, %d^5) SPLIN:UFRAME/UTOOL is changed

Cause: UFRAME/UTOOL was changed in a sequence of S motion statements.

Remedy: Please find the reason why FRAME/UTOOL was changed.

INTP-758 STOP.L (%s^4, %d^5) SPLIN:Logic error

Cause: Specified line violate restriction of logic between S motion.

Remedy: Please refer to cause code.

INTP-759 STOP.L (%s^4, %d^5) SPLIN:RTCP mismatch

Cause: If S motion uses RTCP, related motion lines must use RTCP, too.

Remedy: Cause code shows which line is inconsistent. Teach or delete RTCP.

INTP-760 STOP.L (%s^4, %d^5) SPLIN:COORD mismatch

Cause: If S motion uses COORD, related motion lines must use COORD, too.

Remedy: Cause code shows which line is inconsistent. Teach or delete COORD.

4.8.5 IRPK Alarm Code

NOTE

Regarding the IRPK alarm, even if the severity of each alarm is WARN, if it happens during the program running, it behaves as the PAUSE or ABORT alarm.

IRPK-001 WARN Same robot already in conveyor

Cause: The robot is already selected on another conveyor station.

Remedy: The robot selected on another conveyor station can't be selected redundantly in one conveyor.

IRPK-002 WARN Interface is not supported

Cause: Internal Error.

Remedy: Contact your local FANUC representative.

IRPK-003 WARN Empty object

Cause: Internal Error.

Remedy: Contact your local FANUC representative.

IRPK-005 WARN Can't find selected object

Cause: Internal Error.

Remedy: Please logout from the page of iRPickTool and login again. If the problem persists, please contact your local FANUC representative.

IRPK-006 WARN Empty name

Cause: Name is empty.

Remedy: Input a valid name.

IRPK-011 WARN This sensor task is not running

Cause: Production status is gotten or cleared when this sensor task is not running.

Remedy: Please run sensor task.

IRPK-013 WARN Indexer conveyor is not set up

Cause: Indexer conveyor (servo conveyor) is not set up.

Remedy: Please check that indexer conveyor (servo conveyor) is installed.

IRPK-014 WARN Sensor is already running

Cause: Wizard has been executed while sensor is running.

Remedy: Please stop sensor and start wizard again.

IRPK-015 WARN Invalid scale factor

Cause: Encoder scale factor is uninitialized or near 0.0.

Remedy: Please set encoder scale factor correctly.

IRPK-016 WARN The custodian was moved to another controller

Cause: The custodian to edit iRPickTool data was moved to another controller because the login to iRPickTool is done from another controller.

Remedy: N/A (This is just a message)

IRPK-017 WARN Conveyor station is not set up

Cause: Conveyor station is not set up. This alarm can occur when a guide of sensor such as the reference position setting guide is performed with meeting one of the following conditions.

- Use the Real Time Operating System (ROS) Interface Protocol over Ethernet feature (also called Robot Ring, RIPE or ROSIP) and meet one of the following conditions.
 - There is no conveyor station corresponding to the sensor. "Conveyor station corresponding to the sensor" is a conveyor station which meets all the following conditions (1) and (2). (1) The conveyor station belongs to the same conveyor as the sensor. (2) The controller corresponding to the robot which is selected in the conveyor station is the same as the controller to which the sensor is connected.
 - The guide is performed from the controller to which the sensor is not connected.
 - IP address is changed.
- In a system with extended axes such as servo conveyor, a group of extended axes is selected by GROUP key.

Remedy: Please set up conveyor station. When you perform a guide of sensor such as the reference position setting guide, please note the following points.

- When you use RIPE, please note the following points.
 - Add the conveyor station corresponding to the sensor.
 - Perform the guide from the controller to which the sensor is connected.
 - After changing IP address, set RIPE again. If not using RIPE anymore, contact your local FANUC representative.
- In a system with extended axes such as servo conveyor, select a group of robots by GROUP key before performing the guide.

IRPK-018 WARN Sensor controller is off-line

Cause: Controller with sensor is offline.

Remedy: Please power on the controller.

IRPK-020 WARN Sensor is not set up

Cause: Sensor is not set up.

Remedy: Please set up sensor.

IRPK-021 WARN There is no conveyor station under sensor in tree view

Cause: There is no conveyor station where found parts should be pushed on conveyor.

Remedy: Please locate conveyor station under sensor on tree view.

IRPK-022 WARN Servo conveyor is not set up

Cause: Servo conveyor is not set up.

Remedy: Please set up servo conveyor.

IRPK-023 WARN An internal error has occurred in iRPickTool

Cause: Internal error.

Remedy: Contact your local FANUC representative.

IRPK-024 WARN All available objects of this type are used up

Cause: All available objects of this type are used up.

Remedy: Please increase the maximum number of objects of this type on the Object Configuration page.

IRPK-025 WARN Invalid object type

Cause: Internal error.

Remedy: Logout from the page of iRPickTool and login again. If the problem persists, please contact your local FANUC representative.

IRPK-026 WARN Can't delete the robot which is selected on a station

Cause: The robot object has child operation objects.

Remedy: Select another robot on the conveyor station or the fixed station.

IRPK-028 WARN Failed to read the grandchild object

Cause: Internal error.

Remedy: Contact your local FANUC representative.

IRPK-029 WARN The controller selected on the robot object is invalid

Cause: The controller selected on the robot object is invalid.

Remedy: Please select the correct controller on the robot object.

IRPK-030 WARN Conveyor is not set up

Cause: Conveyor data used in sensor is not set up.

Remedy: Please set up conveyor.

IRPK-032 WARN Double GETQUE from the robot

Cause: GETQUE specified the same conveyor station is executed twice at almost the same time in multitask.

Remedy: Modify your teach pendant programs so that GETQUE is not executed at almost the same time in multitask.

IRPK-033 WARN SetTrigger is timeout

Cause: SetTrigger has timed out.

Remedy: Adjust the waittime.

IRPK-034 WARN Invalid fixed station specified

Cause: Invalid fixed station is specified.

Remedy: Please specify a valid fixed station.

IRPK-035 WARN Invalid conveyor station specified

Cause: Invalid conveyor station is specified.

Remedy: Please specify a valid conveyor station.

IRPK-036 WARN Invalid sensor specified

Cause: Invalid sensor is specified.

Remedy: Please specify a valid sensor.

IRPK-037 WARN Invalid conveyor specified

Cause: Invalid conveyor is specified.

Remedy: Please specify a valid conveyor.

IRPK-038 WARN Invalid tray specified

Cause: Invalid tray is specified.

Remedy: Please specify a valid tray.

IRPK-039 WARN Invalid robot specified

Cause: Invalid robot is specified.

Remedy: Please specify a valid robot.

IRPK-040 WARN Invalid gripper specified

Cause: Invalid gripper is specified.

Remedy: Please specify a valid gripper.

IRPK-041 WARN Invalid zone specified

Cause: Invalid zone is specified.

Remedy: Please specify a valid zone.

IRPK-042 WARN Invalid recipe specified

Cause: Invalid recipe is specified.

Remedy: Please specify a valid recipe.

IRPK-043 WARN Invalid track schedule specified

Cause: Invalid tracking schedule is specified.

Remedy: Please specify a valid tracking schedule.

IRPK-044 WARN Invalid indexer specified

Cause: Invalid indexer is specified.

Remedy: Please specify a valid indexer.

IRPK-045 WARN Invalid group specified

Cause: Invalid group is specified.

Remedy: Please specify a valid group.

IRPK-046 WARN Invalid part specified

Cause: Invalid part is specified.

Remedy: Please specify a valid part.

IRPK-047 WARN Part with invalid model ID is pushed into queue

Cause: Part with invalid model ID is pushed into the queue.

Remedy: Add the model ID in the conveyor configuration.

IRPK-048 WARN Unknown function code

Cause: Part queue manager received unknown request.

Remedy: Contact your local FANUC representative.

IRPK-049 WARN Invalid ACK Value in ACKQUE

Cause: Invalid ACK value.

Remedy: Modify call to ACKQUE in your program to pass a correct ACK status.

IRPK-050 WARN ACKQUE before GETQUE

Cause: ACKQUE is called before a part is allocated in GETQUE.

Remedy: Modify your teach pendant program to call ACKQUE after a part is allocated by GETQUE.

IRPK-051 WARN No ACKQUE after the last GETQUE

Cause: ACKQUE is not called before the next GETQUE.

Remedy: Modify your teach pendant program to call ACKQUE after GETQUE.

IRPK-052 WARN Conveyor station is disabled

Cause: The GETQUE request is canceled because the conveyor station is disabled.

Remedy: Do not call next GETQUE until the conveyor station is re-enabled.

IRPK-053 WARN There is no part meeting the specified condition

Cause: There is no part meeting the specified condition.

Remedy: Please confirm the specified condition.

IRPK-054 WARN Invalid model ID is specified

Cause: Invalid model ID is specified.

Remedy: Specify the model ID for that you want to change a load balance in PKCVSETLBD.PC.

IRPK-055 WARN Specified load balance quota is over range

Cause: Specified load balance quota is over range.

Remedy: Specify load balance in the 0 to 255 range.

IRPK-056 WARN Conveyor station is too narrow

Cause: Specified conveyor station is too narrow.

Remedy: Set up proper boundaries of conveyor station.

IRPK-057 WARN Specified value in argument is invalid

Cause: Specified value in argument is invalid.

Remedy: Specify valid value in argument.

IRPK-058 WARN Only the last zone of multiple zones can be deleted

Cause: There is only one zone or the selected zone is not the last one.

Remedy: Please delete the last zone when there are plural zones.

IRPK-059 WARN HDI is not set up

Cause: HDI is not set up.

Remedy: Please check that HDI option is installed. Or, please set up HDI.

IRPK-060 WARN No conveyor station in the conveyor

Cause: No conveyor station is added in the conveyor, so the required operation cannot be performed.

Remedy: Add one or more conveyor stations in the conveyor.

IRPK-061 WARN No more cells can be added to the tray

Cause: No more cells can be added to the tray because the limit of 160 maximum is reached.

Remedy: Delete unused cells in the tray pattern.

IRPK-062 WARN The points are too close together to calculate the frame

Cause: The points are too close together to calculate the frame or the position.

Remedy: Touch points that are further apart.

IRPK-063 WARN Encoder count of this robot is different from that of another robot

Cause: The encoder count of this robot is different from one of other robots. Or incorrect Encoder Number is selected.

Remedy: Select correct Encoder Number, stop the conveyor and turn all robots off and then on again.

IRPK-064 WARN Queue is cleared

Cause: GETQUE has been cancelled since the queue is cleared.

Remedy: Modify your teach pendant program not to call CLRQUE during waiting GETQUE.

IRPK-065 WARN Missing my conveyor station

Cause: Missing my conveyor station.

Remedy: Please train the conveyor data.

IRPK-066 WARN Conveyor data is not trained

Cause: Conveyor data used in vision program is not trained.

Remedy: Please train the conveyor data.

IRPK-067 WARN No conveyor is selected

Cause: Conveyor data is not selected in calibration data.

Remedy: Please select the conveyor data.

IRPK-068 WARN SETTRIG before GETQNTRG

Cause: SETTRIG is called before a part is allocated in GETQNTRG.

Remedy: Modify your TP program to call SETTRIG after a part is allocated by GETQNTRG.

IRPK-069 WARN The object name '%s^1' is already in use

Cause: The specified name is already in use.

Remedy: Specify another name.

IRPK-070 WARN The name has been truncated to '%s^1'

Cause: The specified object name is too long and therefore truncated to a valid length.

Remedy: If truncating the object name poses a problem, specify a shorter object name.

IRPK-071 WARN Conveyor speed cannot be obtained

Cause: Speed of the specified conveyor cannot be obtained.

Remedy: Please select the appropriate encoder number in the conveyor station setup.

IRPK-072 WARN The action of sensor is for virtual robot

Cause: The action of sensor is for virtual robot.

Remedy: Please change the action appropriately.

IRPK-073 WARN Login timed out

Cause: Login of iRPickTool timed out.

Remedy: Don't power off all controllers where RIPE is used during the login. Please retry login and if the problem persists, please contact your local FANUC representative.

IRPK-074 WARN Failed to synchronize data

Cause: Failed to synchronize the data of iRPickTool.

Remedy: Please do [F6: SYNC DATA] again. If the problem persists, please contact your local FANUC representative.

IRPK-075 WARN This operation is allowed when program is aborted

Cause: There is a controller that is running a TP program.

Remedy: Abort the TP programs in all controllers where RIPE is used and retry the operation.

IRPK-076 WARN There are already all robots which can be added to tree view

Cause: You tried to add new robot to tree view even though all available robots are used up.

Remedy: You need not add any more robots.

IRPK-077 WARN There is already a robot with the selected controller and group number

Cause: There is already the robot of the selected controller and group number.

Remedy: Please select the unique controller and group number.

IRPK-078 WARN Login Failed

Cause: There might be a controller that is powered on or off during logging in.

Remedy: Confirm that the all controllers have finished the boot and retry log in to iRPickTool. If the problem persists, please contact your local FANUC representative.

IRPK-079 WARN Need to synchronize data

Cause: There is a controller which has different setup data of iRPickTool from this controller. This alarm can occur when KAREL programs for setting parameters (PKCVSETLBD.PC, PKCVSETTRNAM.PC, PKCVENBLB.PC, PKCVENBSC.PC, PKSNENBSSENS.PC, PKSNSETVPMAM.PC, PKSNSETVTOFS.PC, PKSNSETMTOFS.PC, PKCSSETDSLIN.PC and PKTRSETCLPOS.PC) are called.

- If parameter changes by the listed KAREL programs for setting parameters have not completed when PKWCSTART or PKWCHECK is called, this alarm occurs.
- If the listed KAREL programs for setting parameters are called in multiple controllers, this alarm can occur when PKWCSTART or PKWCHECK is called.

Remedy: Login to the controller that has the correct setup data and click [F6: SYNC DATA] on the setup page of iRPickTool. The setup data is synchronized. When you call the listed KAREL programs for setting parameters, please note the following points.

- Call the listed KAREL programs for setting parameters before PKWCSTART or PKWCHECK
- Insert WAIT instruction before PKWCSTART or PKWCHECK in all controllers in order to wait for the completion of the parameter changes in all controllers. Set the wait time to 5 seconds or so. If this alarm occurs even when the wait time is 5 sec, increase the time so that this alarm does not occur.
- If you call the multiple listed KAREL programs for setting parameters, call them in one controller. The listed KAREL programs can set the parameters of sensors or conveyor stations for other controllers also.

IRPK-080 WARN Can't use Action of '%s^1' with load balance for each model ID

Cause: Sensor action cannot be used with load balance for each model ID.

Remedy: Please specify the load balance for all model IDs in the parent conveyor setup page.

IRPK-081 WARN UPDATE TREE is necessary because data has been changed in runtime

Cause: Data has been changed in runtime.

Remedy: Please perform UPDATE TREE in workcell setup page.

IRPK-082 WARN Can't update configuration because there is a data difference

Cause: Can't update configuration because there is a data difference among controllers. This alarm occurs when KAREL programs for setting parameters (PKCVSETLBD.PC, PKCVSETTRNAM.PC, PKCVENBLB.PC, PKCVENBSC.PC, PKSNNBSENS.PC, PKSNNSETVPNAM.PC, PKSNNSETVTOFS.PC, PKSNNSETMTOFS.PC, PKCSSETDSLIN.PC and PKTRSETCLPOS.PC) are recalled after they are called with the connection among controllers via the Real Time Operating System (ROS) Interface Protocol over Ethernet feature (also called Robot Ring, RIPE or ROSIP) lost. In addition, this alarm can occur when the listed KAREL programs for setting parameters are called in multiple controllers at almost the same time.

Remedy: Check whether the connection among controllers is lost when the listed KAREL programs for setting parameters are called. In addition, if you call the multiple listed KAREL programs for setting parameters, call them in one controller. In order to clear this alarm, please synchronize the data for all robots by [SYNC DATA] on the setup page of iRPickTool.

IRPK-083 WARN Another recipe process is running

Cause: Another recipe process is already running.

Remedy: Please try again after the running recipe process finishes.

IRPK-084 WARN Recipe operation time out

Cause: Recipe operation of iRPickTool timed out. If the software series is 7DC3 and Plug & Play is used, this alarm occurs when the position register for the perch position or the reference position is uninitialized.

Remedy: If the software series is 7DC3, Plug & Play is used and the position register for the perch position or the reference position is uninitialized, please retry again after initializing the position register and power cycling. Otherwise, please retry after a while and if the problem persists, please contact your local FANUC representative.

IRPK-085 WARN Not supported in circular tracking

Cause: You attempted to use the not supported function in the circular tracking.

Remedy: Don't use this function in the circular tracking.

IRPK-086 WARN Buffer is not enabled

Cause: Buffer is disabled in this fixed station.

Remedy: Enable buffer in this fixed station.

IRPK-087 WARN This is dedicated instruction for pre-grouping

Cause: You attempted to use this instruction for an other function than the pre-grouping function.

Remedy: Use this instruction only for the pre-grouping function.

IRPK-088 WARN There is an invalid pre-grouping setting

Cause: Some pre-grouping settings may be invalid. In particular, this alarm can occur if PKCSGENVRTRY.PC is called when each cell is too close relative to [Part Parameter]. In this situation, the part to be placed for arrangement is judged to collide with the part on a conveyor.

Remedy: Check the settings of the pre-grouping and correct them. In particular, check whether each cell is too close relative to [Part Parameter].

IRPK-089 WARN Sensor cannot be used in conveyor used for pre-grouping

Cause: You attempted to use a sensor object under the conveyor object used for the pre-grouping.

Remedy: Don't add a sensor object and under the conveyor object used for pre-grouping.
Delete the sensor object in the conveyor object used for pre-grouping.

IRPK-090 PAUSE Reference cell is not set up

Cause: Reference cell is not set up.

Remedy: Set the reference cell of tray.

IRPK-091 PAUSE Data for newer version software is used

Cause: There are some controllers which do not support some functions.

Remedy: Software update is necessary.

IRPK-092 PAUSE Shift released while running

Cause: The shift was released while the program is executing.

Remedy: Hold the shift to resume execution.

IRPK-093 PAUSE Group mismatch

Cause: Group is mismatched.

Remedy: Check the selected and current group number.

IRPK-094 PAUSE Conveyor mismatch

Cause: Conveyor is mismatched.

Remedy: Check the selected and current conveyor.

IRPK-095 WARN Multiple Snap Tool cannot be used in visual tracking

Cause: Both Snap Tool and Depth Snap Tool are added to Single-View Visual Tracking which selects the camera data of 3D Vision Sensor.

Remedy: Remove either Snap Tool or Depth Snap Tool.

IRPK-096 WARN Different input port can not be set in the same tracking schedule

Cause: This has the same cause as IRPK-100.

Remedy: Refer to the remedy of IRPK-100.

IRPK-097 WARN Can't use the program which has motion groups

Cause: A program which is specified in [Run program] of trigger action has motion groups.

Remedy: Set "*" to the motion group of the program to release motion groups.

IRPK-098 WARN There are invalid clearance check settings

Cause: Some settings of the sensor that uses clearance check may be invalid. For example, the possible causes are as below:

1. Sensor objects that uses clearance check are adjacent.
2. The combination of "Trigger Condition" and "Trigger Action" of the sensor is not one of the following:
 - "Distance" and "Find part by vision"
 - "DI" and "RG put part in queue"
3. Either "Part Parameter" or "Clearance Parameter" of the sensor is not entered.

Remedy: Please change the settings of the sensor that uses clearance check. For example, please perform the following:

1. Prevent sensor objects that uses clearance check from being adjacent.
2. Set the combination of "Trigger Condition" and "Trigger Action" of the sensor to one of the following:
 - "Distance" and "Find part by vision"
 - "DI" and "RG put part in queue"
3. Enter all the "Part Parameter" and "Clearance Parameter" of the sensor. (Perform the clearance guide when "Part Type" is "Rectangle".)

IRPK-099 WARN Cannot be used because Clearance Check is used

Cause: This cannot be used when Clearance Check is enabled.

Remedy: Please disable Clearance Check.

IRPK-100 WARN Each sensor using ACCUTRIG must use different encoder number

Cause: Multiple sensors using DI/RI are connected to the same controller and a conveyor station corresponding to each sensor use the same encoder number.

"Conveyor station corresponding to the sensor" is a conveyor station which meets all the following conditions.

- The conveyor station belongs to the same conveyor as the sensor.
- The controller corresponding to the robot which is selected in the conveyor station is the same as the controller to which the sensor is connected.

Remedy: Change the controller to which the sensor is connected. Or add a Pulsecoder and use the different encoder number in the conveyor station corresponding to each sensor. Or consider a system configuration that the sensor does not use DI/RI. For details of the cause and remedy, refer to "Restriction concerning sensors that can be operated simultaneously" of "iRPickTool OPERATOR'S MANUAL (B-83924EN)".

IRPK-101 WARN An internal error has occurred in iRPickTool

Cause: Internal error.

Remedy: Contact your local FANUC representative.

IRPK-102 WARN iRPickTool Diagnostics is not supported

Cause: Internal error.

Remedy: Contact your local FANUC representative.

IRPK-103 WARN Cannot be used while the function is enabled by PKENBSPFUNC('%d')

Cause: This cannot be used when the function is enabled by PKENBSPFUNC('%d').

Remedy: Please disable the function by PKDSBSPFUNC('%d').

IRPK-104 WARN PKENBSPFUNC enable / disable does not match on all robot controllers

Cause: PKENBSPFUNC enable / disable does not match on all robot controllers.

Remedy: Call PKENBSPFUNC on all robot controllers or PKDSBSPFUNC on all robot controllers.

IRPK-201 WARN %s

Cause: A message can display while running a KAREL program.

Remedy: Confirm the displayed message and refer to the description of the KAREL program in "iRPickTool OPERATOR'S MANUAL (B-83924EN)". If this doesn't resolve the issue, contact your local FANUC representative.

IRPK-202 WARN Error running task %s

Cause: There was an error running the named task.

Remedy: See the associated cause code posted with this error.

IRPK-203 WARN Error getting %s

Cause: An error was encountered while getting the value of a KAREL or system variable.

Remedy: Check the associated cause code. Make sure that the variable exists, and is spelled correctly.

IRPK-204 WARN Error setting %s

Cause: An error was encountered while setting the value of a KAREL or system variable.

Remedy: Check the associated cause code. Make sure that the variable exists, and is spelled correctly.

IRPK-205 WARN Error simulating DI %s

Cause: An error occurred while trying to simulate an I/O Input port.

Remedy: Make sure that all the I/O inputs are configured correctly and assigned to a valid input port.

IRPK-206 WARN Option required: %s

Cause: An option which was required was not installed.

Remedy: Install the specified option.

IRPK-207 WARN Profiler recording On

Cause: A notification that data recording for collecting profiler data with PickPRO - duty, cycle time, power consumption or life estimation has started.

Remedy: N/A (This is just a message)

IRPK-208 WARN Profiler recording Off

Cause: A notification that data recording for collecting profiler data with PickPRO - duty, cycle time, power consumption or life estimation has ended.

Remedy: N/A (This is just a message)

IRPK-209 WARN Profiler Invalid data

Cause: Invalid data was received for Profiler recording.

Remedy: Specify a valid value for duration, parts or cycles to record profiler data.

IRPK-210 WARN A controller is off-line

Cause: Sending or receiving data between one or more controllers failed because the those controllers were offline (Ethernet).

Remedy: Check the Ethernet cables and connections and ensure the controllers are on-line.

IRPK-211 WARN Invalid Recipe

Cause: An invalid Recipe id or name was encountered.

Remedy: Specify a valid recipe id (1-99) or a valid name.

IRPK-212 WARN Invalid Conveyor

Cause: An invalid conveyor id or name was encountered.

Remedy: Specify a valid conveyor id (1-32) or a valid name.

IRPK-213 WARN Invalid Tray

Cause: An invalid tray id or name was encountered.

Remedy: Specify a valid tray id (1-16) or a valid name.

IRPK-214 WARN Invalid Conveyor Station

Cause: An invalid Conveyor station id or name was encountered.

Remedy: Specify a valid conveyor station id (1-84) or a valid name.

IRPK-215 WARN Invalid Sensor

Cause: An invalid sensor id or name was encountered.

Remedy: Specify a valid sensor id (1-32) or a valid name.

IRPK-216 WARN Invalid Fixed Station

Cause: An invalid Fixed station id or name was encountered.

Remedy: Specify a valid fixed station id (1-84) or a valid name.

IRPK-217 WARN Invalid Robot

Cause: An invalid robot id or name was encountered.

Remedy: Specify a valid robot id (1-32) or a valid name.

IRPK-218 WARN Invalid Gripper

Cause: An invalid gripper id or name was encountered.

Remedy: Specify a valid gripper id (1-32) or a valid name.

IRPK-219 WARN Invalid Gripper Zone

Cause: An invalid gripper zone id was encountered.

Remedy: Specify a valid gripper zone id (1-20)

IRPK-220 WARN Invalid Gripper Zn Activation I/O

Cause: An invalid Activation I/O for a gripper zone was encountered.

Remedy: Specify a valid and configured I/O port for the gripper zone activation.

IRPK-221 WARN Invalid Gripper Zn PartPresence I/O

Cause: An invalid Part presence I/O for a gripper zone was encountered.

Remedy: Specify a valid and configured I/O port for the gripper zone part presence.

IRPK-222 WARN Invalid Motion Group

Cause: An invalid motion group number was encountered.

Remedy: Specify a valid motion group (1-8)

IRPK-223 WARN Gripper zone utool is NILPOS

Cause: The UTOOL for a gripper zone is NILPOS.

Remedy: This is only a warning. It is not typical that the gripper zone utool is nilpos. Ensure the zone utool is correct.

IRPK-224 WARN Invalid Track Schedule

Cause: The tracking schedule is invalid.

Remedy: Specify a valid tracking schedule (1-8) for the conveyor station.

IRPK-225 WARN Invalid RIPE Id

Cause: The RIPE index for a robot is invalid.

Remedy: Specify a valid RIPE id based on RIPE setup for the Robot. If RIPE setup was not done, it must be setup first.

IRPK-226 WARN Invalid Operation

Cause: An invalid operation was encountered.

Remedy: A valid operation is Pick=1 or Drop=2. Make sure that the operation argument in your TP program calls is correct and ensure that the proper operation is selected in the iRPickTool Setup UI.

IRPK-227 WARN Invalid pick or drop quantity

Cause: An invalid pick or drop quantity was encountered.

Remedy: A valid pick or drop quantity should match with the number of zones used in the gripper. Its valid range is 1-20.

IRPK-228 WARN Invalid I/O type

Cause: An invalid I/O type was encountered.

Remedy: Specify a valid I/O type such as DO or RO based on the definitions in klotyps.kl.

IRPK-229 WARN Invalid value for I/O

Cause: An invalid I/O value was encountered.

Remedy: Specify a valid I/O value such as ON=1, OFF=2 or PULSE=3.

IRPK-230 WARN Invalid I/O port number

Cause: An invalid I/O port number was encountered.

Remedy: Specify a valid I/O port number.

IRPK-231 WARN Invalid pulse time for I/O

Cause: An invalid pulse time was specified for I/O.

Remedy: Specify a valid integer I/O pulse time (ms).

IRPK-232 WARN Invalid Position Register

Cause: An invalid position register number was encountered.

Remedy: Specify a position register value that is available in the DATA Position Registers menu.

IRPK-233 WARN Invalid Numeric Register

Cause: An invalid numeric register number was encountered.

Remedy: Specify a numeric register value that is available in the DATA Numeric Registers menu.

IRPK-234 WARN Invalid Vision Register

Cause: An invalid vision register number was encountered.

Remedy: Specify a vision register value that is available in the DATA Vision Registers menu.

IRPK-235 WARN Invalid String Register

Cause: An invalid string register number was encountered.

Remedy: Specify a string register value that is available in the DATA String

IRPK-236 WARN Invalid Name for iRPickTool Object

Cause: An invalid name was encountered for an iRPickTool object such as conveyor, fixed station, sensor, etc.

Remedy: Specify a valid name in the User interface for the object. Also verify the String Register that has a valid string.

IRPK-237 WARN Remote I/O check timeout out

Cause: A validation of I/O port that exists in another controller failed (timed out).

Remedy: This check is performed over RIPE. Check if all controllers are on-line or if the CPU load on the other controller is high.

IRPK-238 WARN Argument data type not INTEGER

Cause: The parameter passed to TP program was expected to be an integer but is not.

Remedy: Specify a valid integer value for the appropriate argument of the call statement.

IRPK-239 WARN Argument data type not REAL

Cause: The parameter passed to TP program was expected to be a REAL but is not.

Remedy: Specify a valid REAL value for the appropriate argument of the call statement.

IRPK-240 WARN Invalid Gripper zone utool

Cause: The UTOOL for a gripper zone is invalid.

Remedy: Ensure the zone utool is initialized and is correct.

IRPK-241 WARN Invalid Uframe number

Cause: The Uframe number for a Fixed Station is invalid.

Remedy: Ensure a Valid Uframe number is specified in the Fixed Station menu and also in the PKFSGETUF call in the fixed stn TP program.

IRPK-242 WARN Value is uninitialized

Cause: An uninit value was encountered while executing a routine or a program.

Remedy: You should not generally see this error. Try to trace the execution history of the program to find an input value that is that is uninitialized. Else, contact your local FANUC representative.

IRPK-243 WARN Error resizing var: %s

Cause: A reallocation or resizing of a KAREL or system variable failed.

Remedy: You should not generally see this error. iRPickTool attempts to keep memory size optimal using only as many indexes of an array as possible. If it failed, contact your local FANUC representative.

IRPK-244 WARN Invalid encoder number

Cause: An invalid encoder id was encountered.

Remedy: Specify a valid I/O encoder number in the tracking schedule.

IRPK-245 WARN Enc Sync Fail.Stop Cnv Repower

Cause: There is problem to sync this encoder.

Remedy: Stop the conveyor and turn all robots off and then on again.

IRPK-246 WARN CV %d encoder sync master

Cause: This conveyor encoder is synced.

Remedy: This is just a message to indicate encoder has been synced

IRPK-247 WARN CV %d encoder sync failed

Cause: There is problem to sync this Ethernet Encoder.

Remedy: Stop the conveyor and turn all robots off and then on again.

IRPK-248 WARN No iRPickTool variables

Cause: QMGR global variable does not exist.

Remedy: System was not setup correctly.

IRPK-249 WARN No iRPickTool sysvars

Cause: Can not find reference system variable.

Remedy: Reload system and re-perform setup.

IRPK-250 WARN Error getting Pos Reg %s

Cause: An error occurred while getting data from the indicated position register.

Remedy: Check the data type in the position and make sure it is cartesian type. Check if all controllers are on-line because an attempt to get a Pos Reg from a different controller could have been made.

IRPK-251 WARN Error setting Pos Reg %s

Cause: An error occurred while setting data to the indicated position register.

Remedy: From related error messages, check the source of the position data. Check if all controllers are on-line because an attempt to set a Pos Reg in a different controller could have been made.

IRPK-252 WARN Error getting CONFIG data

Cause: An error occurred while getting CONFIG data of the indicated position register.

Remedy: From related error messages, check the source of the position data. Check if all controllers are on-line because an attempt to get a Pos Reg in a different controller could have been made.

IRPK-253 WARN Invalid iRPickTool Object type

Cause: A routine was called with an invalid iRPickTool object type such as CStn, FStn, conveyor, etc.

Remedy: Check that all setup was done correctly. Each robot must have a pick and drop stn. Each conveyor must have at least one sensor and one Conveyor station.

IRPK-254 WARN Invalid Part

Cause: An invalid part id or name was encountered.

Remedy: Specify a valid part id for the Conveyor or Fixed Station where the part is used. Also, make sure that the part has a valid name.

IRPK-255 WARN PP Check failed for zone %s

Cause: Part presence check failed for gripper zone. The part was either not detected during pick or was detected after a place operation.

Remedy: Check why the part is not getting picked or placed during pick and place operations. Also check part presence sensors and if there is a problem with vacuum or activation system

IRPK-256 WARN Insufficient gripper zones to pick or drop

Cause: There are not enough gripper zones to pick or place the specified quantity of parts.

Remedy: Add zones to the gripper in the Gripper menu or reduce the quantity of parts to pick or place.

IRPK-257 WARN Creating recipe %s

Cause: A new recipe is being created.

Remedy: N/A(This is just a message)

IRPK-258 WARN Created %s

Cause: A new recipe was successfully created.

Remedy: N/A(This is just a message)

IRPK-259 WARN Saving recipe %s

Cause: The active recipe is being saved.

Remedy: N/A(This is just a message)

IRPK-260 WARN Recipe %s saved

Cause: The active recipe was successfully saved.

Remedy: N/A(This is just a message)

IRPK-261 WARN Recipe %s loaded

Cause: A recipe was successfully loaded.

Remedy: N/A(This is just a message)

IRPK-262 WARN Recipe %s renamed

Cause: A recipe was successfully renamed.

Remedy: N/A(This is just a message)

IRPK-263 WARN Deleting recipe %s

Cause: A recipe is being deleted.

Remedy: N/A(This is just a message)

IRPK-264 WARN Recipe %s deleted

Cause: A recipe was successfully deleted.

Remedy: N/A(This is just a message)

IRPK-265 WARN Exporting recipes to %s

Cause: Recipes are being exported to the default file device.

Remedy: N/A(This is just a message)

IRPK-266 WARN Recipes exported to %s

Cause: Recipe export to the default file device completed successfully.

Remedy: N/A(This is just a message)

IRPK-267 WARN Importing recipes from %s

Cause: Recipes are being imported from the default file device.

Remedy: N/A(This is just a message)

IRPK-268 WARN Recipes imported from %s

Cause: Recipe import from the default file device completed successfully.

Remedy: N/A(This is just a message)

IRPK-269 WARN Switching to recipe %s

Cause: An attempt to switch recipes is being made.

Remedy: N/A(This is just a message)

IRPK-270 WARN Restoring recipe %s

Cause: An attempt to restore the active recipe is being made.

Remedy: N/A(This is just a message)

IRPK-271 WARN No recipes exist to Export

Cause: A recipe Export was attempted but there are no saved or created recipes to export.

Remedy: First create at least one recipe.

IRPK-272 WARN No recipes exist to Import

Cause: A recipe Import was attempted but there are no recipes on the default file device.

Remedy: Check that the IRPICKTOOL directory with the individual RECIPEx directories exists in the default file device.

IRPK-273 WARN Recipe operation failed %s

Cause: A recipe operation failed.

Remedy: This was an unusual error. Contact your local FANUC representative for this error and the status number that is included in this message.

IRPK-274 WARN Active recipe cannot be deleted

Cause: An attempt was made to delete the active recipe.

Remedy: You are not allowed to delete the active recipe. You can switch to a different recipe and then delete this recipe.

IRPK-275 WARN Invalid device for Recipe Import or Export

Cause: An attempt was made to import recipes from or export recipes to an invalid file device.

Remedy: The valid devices for import and export are MC:, UD1:, UT1: and RD:.

IRPK-276 WARN PLC Recipe Change started

Cause: A notification that the controller received a DI signal to initiate a recipe change.

Remedy: N/A(This is just a message)

IRPK-277 WARN Unsaved data changes exist

Cause: An attempt to switch recipes was made when there were recent changes to setup data that have not yet been saved to the current recipe.

Remedy: You must either Save the recent changes to the current recipe or Restore last saved data before switching recipes.

IRPK-278 WARN Object expansion required. Recipes not read. See alarm log for details

Cause: The existing object sizes are inadequate to initialize the recipe that you are trying to load or import.

Remedy: This error is posted with other error messages that indicate which objects require expansion. Check the error log and then use the Object Config menu in the Workcell to expand the sizes of the required objects.

IRPK-279 WARN Expand robot size to %s

Cause: The size of the robot object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the robot object.

IRPK-280 WARN Expand tray size to %s

Cause: The size of the tray object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the tray object.

IRPK-281 WARN Expand gripper size to %s

Cause: The size of the gripper object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the gripper object.

IRPK-282 WARN Expand zone size to %s

Cause: The size of the zone object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the zone object.

IRPK-283 WARN Expand sensor size to %s

Cause: The size of the sensor object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the sensor object.

IRPK-284 WARN Expand CStn size to %s

Cause: The size of the Conveyor Station object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the Conveyor Station object.

IRPK-285 WARN Expand FStn size to %s

Cause: The size of the Fixed Station object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the Fixed Station object.

IRPK-286 WARN Expand Conveyor size to %s

Cause: The size of the conveyor object is inadequate to initialize the recipe that you are trying to load.

Remedy: Use the Object Config menu in the Workcell to expand the size of the conveyor object.

IRPK-287 WARN Cycle power to take effect

Cause: You changed setup data that requires cycle power of the controller to take effect.

Remedy: Cycle the power on the controller.

IRPK-288 WARN No recipes exist to Move

Cause: A recipe Move was attempted but there are no recipes in the recipe controller.

Remedy: Check that the IRPICKTOOL directory with the individual RECIPEx directories exist in the recipe controller from which you wish to move the recipe to another controller.

IRPK-289 WARN Robot mismatch

Cause: A recipe load was disallowed due to saved robot id not matching with the actual assigned RIPE Id for it now. This could happen if you changed the RIPE ring size by adding new members after you saved the recipe.

Remedy: The only way to recover the original recipe is to edit the PKROBxx.xml file which has the RIPE mismatch.

IRPK-290 WARN RIPE mismatch

Cause: A recipe load was disallowed because the actual controllers have RIPE setup but the recipe does not or vice versa.

Remedy: This is an invalid unsupported configuration. You should abandon using the old recipe. Create a new recipe instead.

IRPK-291 WARN Program with group mask zero in run

Cause: A non-motion program that has a group mask of zero was run.

Remedy: This is only a warning message. When this is posted, it means that Dynamic load balance function is not available. Dynamic load balance works only with production programs that have a non-zero group mask. For example, if you run PNS0001.tp with group mask zero from which you RUN your actual production program AMAIN.TP which has a group mask of 1, then you will see this message. To avoid the error, you can change PNS0001.tp to have group mask of 1 and then CALL AMAIN.TP instead of RUN AMAIN.TP.

IRPK-292 WARN Invalid layer of tray

Cause: A layer number which does not exist in the specified tray has been encountered.

Remedy: Check the KAREL macro call in which the invalid layer number was specified and correct it.

IRPK-293 WARN Only some controllers support Plug & Play

Cause: Not all controllers contain the Plug & Play option.

Remedy: Ensure that all controllers in the workcell have Plug & Play option.
You cannot have this option in only some controllers.

IRPK-294 WARN PLC Recipe Operation failed

Cause: PLC initiated recipe operation failed due to timeout or other reasons.
Timeout means that the robot did not receive the expected signal - a GI or DI on time from the PLC.

Remedy: PLC should respond to the controller's signal requests within 30 seconds.
Refer to the program PK_PLC_RECIPE_OPERATION.TP for a detailed understanding of the handshake process.

IRPK-295 WARN PLC Recipe Operation started

Cause: A notification that the controller received a DI signal to initiate a recipe operation.

Remedy: N/A (This is just a message.)

IRPK-296 WARN Invalid Approach Position

Cause: X, Y, W, P, or R of [Approach Offset] in operation setup is not zero.

Remedy: When using PKCSFIXAPRZ.PC or PKFSFIXAPRZ.PC, set X, Y, W, P, and R of [Approach Offset] to zero.

4.8.6 ISD Alarm Code

ISD-000 %s

Cause: This error is displayed when the ISD system encounters a problem that it is unable to solve internally.

Remedy: Write down the exact error number and message displayed. Write down exactly what your robot was doing at the time of the failure. Make sure you include: Program name, line number, the robot's location in the workcell, any cell I/O or other communication activity. This fault is usually fixed when you perform a COLD start. If that does not work, contact your supervisor or call the FANUC Hot Line.

ISD-001 High pressure (disp-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the dispensing material. This condition is usually caused by one or more of the following:

- The dispenser line (gun nozzle, hose, etc.) is clogged.
- The dispensing rate is too high.
- The high pressure limit value is too low.
- The high pressure time out value is too short.

Remedy: Perform the following operations:

1. Make sure no clogs exist in the dispensing tubing.
2. Make sure the dispensing flow rate is not too high.
3. Make sure the high pressure limit value is appropriate.

ISD-002 Low pressure (disp-%s) (ISD%d)

Cause: This error is posted when the system detects low pressure in the dispensing material. This condition is usually caused by one or more of the following:

- The dispenser line (gun nozzle, hose, and so forth) was removed.
- The dispensing rate is too low.
- The low pressure limit value was set too high.
- The low pressure time out value was set too short.

Remedy: Check the following items:

- Make sure that the dispensing line is ok.
- Make sure that the dispensing flow rate is not too low.
- Make sure that the low pressure limit value is appropriate.

ISD-003 High pressure (sup-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the material supply line. This condition is usually caused by one or more of the following:

- The supply pressure was set too high.
- The high pressure limit value was set too low.
- The high pressure time out value was set too short.

Remedy: Check the following items:

- Make sure that the pressure is appropriate at the supply pump.
- Make sure that the high pressure limit value is appropriate.

- Make sure that the high pressure time out value is appropriate.

ISD-004 Low pressure (sup-%s) (ISD%d)

Cause: This error is posted when the system detects low pressure in the material supply. This condition is usually caused by one or more of the following:

- The supply line (hose, and so forth) was removed.
- A low pressure limit value was set too high.
- A low pressure time out value was set too short.

Remedy: Check the following items:

- Make sure that the supply line is ok.
- Make sure that the low pressure limit value is appropriate.
- Make sure that the low pressure time out value is appropriate.

ISD-005 Meter empty (ISD%d)

Cause: This warning is posted when the meter has reached its stroke limit during dispensing. After this occurs, the system automatically reverses the meter direction, and resumes dispensing. However, the quality of the dispensed bead might not be acceptable, because of the transition during meter direction reversal.

Remedy: Perform the following operations:

1. Modify your program and use the provided macros to reposition the meter before you start dispensing for the seam.
2. Lower the flow rate so that it can cover the entire seam without meter direction.

ISD-006 Motor velocity limit (ISD%d)

Cause: The motor velocity has reached its maximum limit.

Remedy: Lower the flow rate to within the acceptable motor velocity limit.

ISD-007 Meter OverTravel A (ISD%d)

Cause: This error is posted when the meter has tripped the overtravel limit switch.

Remedy: Continuously press and hold the SHIFT and RESET keys on the teach pendant at the same time while you jog the meter away from overtravel position. Be sure to keep the SHIFT key pressed during this operation so that overtravel condition can be bypassed until it is cleared.

ISD-008 Meter OverTravel B (ISD%d)

Cause: The meter has tripped the overtravel limit switch.

Remedy: Press and hold the SHIFT key and then press the RESET button on the teach pendant. While you are still pressing the SHIFT key, jog the meter away from overtravel position. Be sure to keep the shift button pressed during the above operation so that overtravel condition can be bypassed until it is cleared.

ISD-009 Meter stroke limit (ISD%d)

Cause: The meter has reached its stroke limit during prepressuring. This typically occurs when the meter has traveled in the reverse direction to decrease pressure.

Remedy:

1. Make sure supply pressure is not too high.
2. Slightly increase the \$isd_config[]\$.repos_ofst value.

ISD-010 Meter axis error (ISD%d)

Cause: The digital servo system for the process axis has detected an error.

Remedy: None.

ISD-011 Incorrect I/O assignment (ISD%d)

Cause: The index value or I/O port type is incorrectly assigned.

Remedy: If you want to use this I/O port, set the port index and I/O type to the correct values. Verify that a valid value is shown on the I/O menu for this I/O port instead. If you do not wish to use this I/O point, set the index number to zero.

ISD-012 ISD servo not ready (ISD%d)

Cause: This error is posted when the ISD servo is not ready.

Remedy: Usually, this error occurs when the servo power is turned off because of a strapped OT sensor, the machine is locked or an EMERGENCY STOP has occurred. Determine the cause and turn on the power.

ISD-013 SS[] used while reposition (ISD%d)

Cause: This error is posted when the SS[] instruction is executed while the meter is doing the reposition operation.

Remedy: Insert the check repos macro in the program so that the program waits for a reposition to complete before starting the dispensing operation.

ISD-014 Stroke limit while depressure (ISD%d)

Cause: The meter has reached its stroke limit while trying to decrease the pressure during prepressurization.

Remedy:

1. Make sure supply pressure is not too high.
2. Increase the \$isd_config[eq].\$repos_ofst value.

ISD-015 Max prepressure distance (ISD%d)

Cause: The meter has traveled its maximum distance allowed for prepressurization.

Remedy:

1. Increase the \$isd_config[eq].\$maxprp_strk value to allow for a longer travel distance.
2. Check for a material leak in the dispensing line.

ISD-016 Transducer analog input error (ISD%d)

Cause: The analog input tick of pressure transducer has exceeded the max value of the specific I/O module. This error maybe caused by disconnection of the transducer.

Remedy: Check the wiring of the pressure transducers.

ISD-017 Reload Tmout/Low Supp Prs (ISD%d)

Cause: The material pressure did not build up within the specified time (in SETUP/ISD menu) after the meter has moved to the reload position.

Remedy:

1. Check for material supply system to the meter.
2. Set a larger value in Reload time out item in SETUP/ISD menu. The units are in msec.

ISD-018 High pressure (disp-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the second dispensing material. This condition is usually caused by one or more of the following: A dispenser line (gun nozzle, hose, for example) is clogged.

Remedy: Check the following:

- Make sure that there is no clog in the dispensing tubing.
- Make sure dispensing flow rate is not too high.
- Make sure high pressure limit value is appropriate.

ISD-019 Low pressure (disp-%s) (ISD%d)

Cause: This error is posted when the system detects inadequate pressure in the second dispensing material. This condition is usually caused by one or more of the following:

- The dispenser line (gun nozzle, hose, etc.) has been removed.

Remedy:

- Make sure dispensing line is ok.
- Make sure the dispensing flow rate is not too low.
- Make sure the low pressure limit value is appropriate.
- Make sure the low pressure time out value is appropriate.

ISD-020 High pressure (sup-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the second material supply. This condition is usually caused by one or more of the following:

- The supply pressure was set too high.
- The high pressure limit value was set too low.
- The high pressure time out value was set too short.

Remedy:

- Make sure the pressure is appropriate at the supply pump.
- Make sure the high pressure limit value is appropriate.
- Make sure the high pressure time out value is appropriate.

ISD-021 Low pressure (sup-%s) (ISD%d)

Cause: This error is posted when the system detects inadequate pressure in the second material supply. This condition is usually caused by one or more of the following:

- The supply line (hose, etc.) has been removed.
- The low pressure limit value was set too high.
- The low pressure time out value was set too short.

Remedy:

- Make sure the supply line is ok.
- Make sure the low pressure limit value is appropriate.
- Make sure the low pressure time out value is appropriate.

ISD-022 Premature switching req (ISD%d)

Cause: This warning is posted when the inactive meter could not finish reloading before the active meter reaches the **Pre-Near-Empty** position. This is where the sub-meter should start adjusting the pressure value for meter switching. This condition is usually caused by one or more of the following:

- The supply pressure was not high enough.
- The Pre-Near-Empty location is set too early.
- The PLC did not send RELOAD_OK early enough.

Remedy:

- Make sure the material supply pressure is high enough.
- Make sure Pre-Near-Empty location is set properly.
- Make sure PLC sends RELOAD_OK on time.

ISD-023 Meter switching fault (ISD%d)

Cause: This warning is posted when the inactive meter could not finish reloading before the active meter reaches the **Near-Empty** position. This is where the sub-meter should start dispensing for meter switching. This condition is usually caused by one or more of the following:

- The supply pressure was not high enough.
- The Near-Empty location is set too early.
- The PLC did not send the RELOAD_OK early enough.

Remedy:

- Make sure material supply pressure is high enough.
- Make sure the Near-Empty location is set properly.
- Make sure the PLC sends the RELOAD_OK on time.

ISD-024 Both meter empty (ISD%d)

Cause: This warning is posted when both meters are within the Near-Empty area when the meters are switched. This condition is usually caused by one or more of the following:

- The supply pressure was not high enough.
- The Near-Empty location is set too early.
- The PLC did not send the RELOAD_OK early enough.

Remedy:

- Make sure the material supply pressure is high enough.
- Make sure the Near-Empty location is set properly.
- Make sure the PLC sends the RELOAD_OK on time.

ISD-025 Reload sequence fault (ISD%d)

Cause: This warning is posted when the previous reload did not finish when the meter was switched. This condition is usually caused by one or more of the following:

- The supply pressure was not high enough.
- The Near-Empty location is set too early.
- The PLC did not send RELOAD_OK early enough.
- The RELOAD_OK signal was not cleared early enough.

Remedy:

- Make sure the material supply pressure is high enough.
- Make sure Near-Empty location is set properly.
- Make sure PLC sends RELOAD_OK on time.
- Make sure the RELOAD_OK is cleared on time.

ISD-026 Dual ISD number mismatch

Cause: The number of Dual ISD dispenser does NOT match the number specified within the SEAL Config menu.

Remedy: Display NumCFG menu under SEAL Config menu, and make sure the number of Dual ISD is correctly specified.

ISD-027 Use SealConfig/NumCFG to correct

Cause: The number of the Dual ISD dispenser does NOT match the number specified within the SEAL Config menu.

Remedy: Display the NumCFG menu under SEAL Config menu, and make sure the number of Dual ISD is correctly specified.

ISD-028 Disp pressure diff too high (ISD%d)

Cause: This error is displayed when the system detects an excessive pressure difference between the two dispensing materials. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is clogged.
2. The dispensing rate is too high.
3. The high pressure limit value was set too low.
4. The high pressure time out value was set too short.

Remedy: Check the following:

1. Make sure that no clogs exist in the dispensing tubing.
2. Make sure that the dispensing flow rate is not set too high.
3. Make sure that the high pressure limit value is appropriate.
4. Make sure that the high pressure time out value is appropriate.

ISD-029 Disp pressure diff too low (ISD%d)

Cause: This error is posted when the system detects too low of a pressure difference between the two dispensing materials. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is removed.
2. The dispensing rate is too low.
3. The low pressure limit value was set too high.
4. The low pressure time out value was set too short.

Remedy: Check the following:

1. Make sure dispensing line is ok.
2. Make sure that the dispensing flow rate is not set too low.
3. Make sure that the low pressure limit value is appropriate.
4. Make sure low pressure time out value is appropriate.

ISD-030 Disp pressure diff too high warn(ISD%d)

Cause: This error is posted when the system detects an excessive pressure difference between the two dispensing materials. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is clogged.
2. The dispensing rate is too high.
3. The high pressure limit value was set too low.
4. The high pressure time out value was set too short.

Remedy: Make sure there is no clog in the dispensing tubing. Make sure that the dispensing flow rate is not too high. Make sure high pressure limit value is appropriate. Make sure the high pressure time out value is appropriate.

ISD-031 High pressure warn(disp-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the dispensing material. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is clogged.
2. The dispensing rate is too high.
3. The high pressure limit value was set too low.
4. The high pressure time out value was set too short.

Remedy: Please make sure there is no clog in the dispensing tubing. Make sure dispensing flow rate is not too high. Make sure high pressure limit value is appropriate. Make sure high pressure time out value is appropriate.

ISD-032 Low pressure warn(disp-%s) (ISD%d)

Cause: This error is posted when the system detects too low pressure in the dispensing material. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is removed.

2. The dispensing rate is too low.
3. The low pressure limit value was set too high.
4. The low pressure time out value was set too short.

Remedy: Make sure the dispensing line is ok. Make sure the dispensing flow rate is not too low. Make sure the low pressure limit value is appropriate. Make sure the low pressure time out value is appropriate.

ISD-033 High pressure warn(disp-%s) (ISD%d)

Cause: This error is posted when the system detects excessive pressure in the second dispensing material. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is clogged.
2. The dispensing rate is too high.
3. The high pressure limit value was set too low.
4. The high pressure time out value was set too short.

Remedy: Check the following:

- Make sure there is no clog in the dispensing tubing.
- Make sure dispensing flow rate is not too high.
- Make sure high pressure limit value is appropriate.
- Make sure high pressure time out value is appropriate.

ISD-034 Low pressure warn(disp-%s) (ISD%d)

Cause: This error is posted when the system detects too low pressure in the second dispensing material. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is removed.
2. The dispensing rate is too low.
3. The low pressure limit value was set too high.
4. The low pressure time out value was set too short.

Remedy: Check the following:

- Make sure the dispensing line is ok.
- Make sure dispensing flow rate is not too low.
- Make sure low pressure limit value is appropriate.
- Make sure low pressure time out value is appropriate.

ISD-035 Can not goto dispense mode (ISD%d)

Cause: This error is posted when the system detects too low pressure in the second dispensing material. This condition is usually caused by one or more of the following:

1. The dispenser line (gun nozzle, hose, etc.) is removed.
2. The dispensing rate is too low.
3. The low pressure limit value was set too high.
4. The low pressure time out value was set too short.

Remedy: Check the following:

1. Make sure the dispensing line is ok.
2. Make sure the dispensing flow rate is not too low.
3. Make sure the low pressure limit value is appropriate.
4. Make sure the low pressure time out value is appropriate.

ISD-040 Meter recovery time out (ISD%d)

Cause: The minimum recovery pressure was not reached within the specified time in the ISD SETUP menu.

Remedy: If the gap between the rods is not closed increase the recovery time, or increase the recovery speed. If the gap is closed, check the pressure transducers, or check for leaks in the system.

ISD-041 Enter gap recovery (ISD%d)

Cause: Dispense pressure is below the minimum recovery pressure.

Remedy: None.

ISD-042 Exit gap recovery (ISD%d)

Cause: Dispense pressure increased above the minimum recovery pressure after dropping below the minimum value.

Remedy: None.

ISD-050 %s

Cause: This error is caused when the Integral Pneumatic System (IPS) encounters a problem that it is unable to solve internally.

Remedy: This fault is usually fixed when you perform a COLD start. If the error is not cleared, contact your supervisor or call the FANUC Hot Line with the following information:

- The exact error number and message shown.
- Information documenting exactly what the robot was doing at the time of the failure.
- Program name, line number, robot's location in the workcell, any cell I/O or other communication activity.

ISD-051 Velocity command excessive (IPS%d)

Cause: The commanded velocity for the indicated pneumatic servo axis is too high.

Remedy: The commanded velocity is limited to \$IPS_CONFIG[n].\$CMDSPD_MIN or \$IPS_CONFIG[n].\$CMDSPD_MAX, where n is the number specified in the alarm. Modify your application instruction or data to reduce the velocity demand on the pneumatic servo axis.

ISD-052 Excessive positional error (IPS%d)

Cause: A sudden change in load, inadequate air supply, malfunctioning servo-valve or poor servo tuning caused an excessive error in the pneumatic servo position. This warning is posted when the positional error (in mm.) of that axis exceeds \$IPS_CONFIG[n].\$POSERR_MAX1, where n is the number specified in the alarm.

Remedy: Verify that adequate air supply is available. See if air pressure dips considerably during meter operation: this indicates that the air cylinder is starved for air.

ISD-053 Excessive error during stop (IPS%d)

Cause: A sudden change in load, inadequate air supply, malfunctioning servo-valve or poor servo tuning caused excessive error in the pneumatic servo position. This alarm is posted when the positional error (in mm.) of that axis, when stationary, exceeds \$IPS_CONFIG[n].\$POSERR_MAX2, where n is the number specified in the alarm.

Remedy: Press RESET to continue the operation. Verify that adequate air supply is available. See if the air pressure dips considerably during meter operation. This indicates that the air cylinder is starved for air.

ISD-054 Excessive error during move (IPS%d)

Cause: A sudden change in load or poor servo tuning caused an excessive error in the pneumatic servo position. This alarm is posted when the positional error (in mm.) of that axis exceeds \$IPS_CONFIG[n].\$POSERR_MAX2, where n is the number specified in the alarm.

Remedy: Press RESET to continue the operation. Verify that adequate air supply is available. See if the air pressure dips considerably during meter operation. This indicates that the air cylinder is starved for air.

ISD-055 Servo Enab o/p not assigned (IPS%d)

Cause: A digital output that is used to provide power to the servo valve for the specified axis number has not been assigned.

Remedy:

1. Perform a Controlled start and display the IPS Config screen.
2. Set up the servo enable digital output port number and type.
3. Perform a Cold Start.

ISD-056 Analog output not assigned (IPS%d)

Cause: The analog output required to control the servo valve for the specified axis number has not been assigned.

Remedy:

1. Perform a Controlled start and display the IPS Config screen.
2. Assign the servo control output port number and type.
3. Perform a Cold Start.

ISD-057 Press. sw. inp not assigned (IPS%d)

Cause: The digital input required to detect air pressure loss to pneumatic servo valve(s) has not been assigned.

Remedy:

1. Perform a Controlled start and display the IPS Config screen.
2. Assign the input port number and type for the Air Pressure Check item.
3. Perform a Cold start.

ISD-058 Low air supply pressure (IPS%d)

Cause: The pressure switch monitoring the air supply to pneumatic servo valves is switched off because the air supply is too low.

Remedy: If the gauge indicates adequate pressure, verify that the Air Supply Pressure digital input is not simulated. Also verify that the air pressure transducer settings are correct and operational.

ISD-059 Servo not ready: ext. e-stop(IPS%d)

Cause: The specified pneumatic servo is unable to reset because of an external condition such as an Emergency Stop. This external condition is forcing the digital servo ready input to stay off.

Remedy: Verify that when RESET is pressed, the digital output configured as servo enable comes on briefly. Determine and rectify the external condition (e-stop, blown fuse) causing the problem and then press RESET again. Check whether the servo enable digital output turns on. Verify that the servo ready digital input and the servo enable digital output are properly set up and assigned. Increase the value of \$IPS_SETUP.\$SRDY_TMOUT (number of scans that the pneumatic servo system waits before checking the servo ready digital input, after RESET is pressed) if required.

ISD-060 Meter hyd. inp not assigned (IPS%d)

Cause: Meter hydraulic running input signal is not assigned.

Remedy: Assign Meter hydraulic running input signal to a valid port.

ISD-061 Meter hydraulic not running (IPS%d)

Cause: Meter hydraulic running input signal is OFF.

Remedy: Make sure meter hydraulics are turned ON and the input signal is ON.

ISD-062 Input pwr. inp not assigned (IPS%d)

Cause: Input power input signal is not assigned. Checked only on Power up.

Remedy: Assign the Input power input signal to a valid port.

ISD-063 Input power is off (IPS%d)

Cause: Input power signal is OFF. Checked only on power up.

Remedy: Make sure that the input power to the hydraulics is turned ON before powering up the controller.

ISD-064 Ctrl. pwr. inp not assigned (IPS%d)

Cause: Control power output signal is not assigned. Checked only on Power up.

Remedy: Assign the control power output signal to a valid port.

ISD-065 Gun hyd. input not assigned (IPS%d)

Cause: Gun hydraulics running input signal is not assigned.

Remedy: Assign gun hydraulics running signal to a valid port.

ISD-066 Mtr. can't run w/o gun hyd. (IPS%d)

Cause: Meter hydraulics can not run if gun hydraulics are not running.

Remedy: Start the gun hydraulics first and then start meter hydraulics.

ISD-067 Gun hydraulic low pressure (IPS%d)

Cause: Gun hydraulics not low input signal is OFF.

Remedy: Make sure gun hydraulics pressure is normal.

ISD-068 Gun hydraulic high pressure (IPS%d)

Cause: Gun hydraulics not high signal is OFF.

Remedy: Make sure gun hydraulics pressure is normal.

ISD-069 Gun hydraulic over heated (IPS%d)

Cause: Gun hydraulics overload input signal is ON.

Remedy: Check gun hydraulics unit.

ISD-070 Meter hydraulic over heated (IPS%d)

Cause: Meter hydraulics overload input signal is ON.

Remedy: Check meter hydraulics unit.

ISD-071 Local dispenser stop (IPS%d)

Cause: Local dispense stop input signal is ON.

Remedy: Check dispenser stop button on the dispenser's panel.

ISD-072 System dispenser stop (IPS%d)

Cause: System dispense stop input signal is OFF.

Remedy: Check system dispense stop buttons / logic.

ISD-073 Fire dispenser stop (IPS%d)

Cause: Fire dispenser stop input signal is OFF.

Remedy: Check fire dispenser stop logic.

ISD-074 Spare dispenser stop (IPS%d)

Cause: Spare dispenser stop input signal is OFF.

Remedy: Check spare dispenser stop logic.

ISD-080 %s high flow warn (ISD%d)

Cause: The software has detected a high flow level for the ISO/POLY material.

Remedy: The ISO/POLY flow rate has exceeded the "ISO/POLY Max Warn Flow" level for a period of time greater than the "Flow Lo/Hi Time Out" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-081 %s high flow (ISD%d)

Cause: The software has detected an excessively high flow level for the ISO/POLY material. This case is more severe than ISD-080, and may result in serious material application defects.

Remedy: The ISO/POLY flow rate has exceeded the "ISO/POLY Max Fault Flow" level for a period of time greater than the "Flow Lo/Hi Time Out" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-082 %s low flow warn (ISD%d)

Cause: The software has detected a low flow level for the ISO/POLY material.

Remedy: The ISO/POLY flow rate is less than the "ISO/POLY Min Warn Flow" level for a period of time greater than the "Flow Lo/Hi Time Out" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-083 %s low flow (ISD%d)

Cause: The software has detected an excessively low flow level for the ISO/POLY material. This case is more severe than ISD-082, and may result in serious material application defects.

Remedy: The ISO/POLY flow rate was less than the "ISO/POLY Min Fault Flow" level for a period of time greater than the "Flow Lo/Hi Time Out" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-084 %s ratio high warn (ISD%d)

Cause: The software has detected a high ratio for the ISO/POLY mixture.

Remedy: The deviation of the ISO/POLY ratio is greater than the "ISO/POLY Max Warn Ratio" level for a period of time greater than the "ISO/POLY Hi Ratio Wrn T/O" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-085 %s ratio high (ISD%d)

Cause: The software has detected an excessively high ratio for the ISO/POLY mixture. This is more severe than ISD-084, and may result in serious material application defects.

Remedy: The deviation of the ISO/POLY ratio is greater than the "ISO/POLY Max Fault Ratio" level for a period of time greater than the "ISO/POLY Hi Ratio Flt T/O" duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-086 %s ratio low warn (ISD%d)

Cause: The software has detected a low ratio for the ISO/POLY mixture.

Remedy: The deviation of the ISO/POLY ratio is greater than the “ISO/POLY Min Warn Ratio” level for a period of time greater than the “ISO/POLY Lo Ratio Wrn T/O” duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

ISD-087 %s ratio low (ISD%d)

Cause: The software has detected an excessively low ratio for the ISO/POLY mixture. This is more severe than ISD-086, and may result in serious material application defects.

Remedy: The deviation of the ISO/POLY ratio is greater than the “ISO/POLY Min Fault Ratio” level for a period of time greater than the “ISO/POLY Lo Ratio Flt T/O” duration. Verify that the dispense equipment (pressure regulators, flow meters and spray modules, etc.) is functioning correctly. Verify that the settings on the Dispenser Setup screen are reasonable.

4.8.7 ISDT Alarm Code

ISDT-007 Servo not READY (G:%d A:%d)

Cause: Attempt to start process axes when servo is not ready.

Remedy: Reset process axes. Or confirm other alarms that occurred at the same time and remove cause of them.

ISDT-015 XXXX fault (A:%d)

Cause: Something is wrong with process axis. Above-mentioned “XXXX” indicates the type of process axis.

Remedy: Refer to remedy for co-occurring servo alarm.

4.9 J

4.9.1 JOG Alarm Code

JOG-001 Overtravel Violation

Cause: A robot overtravel has occurred.

Remedy: Use the MANUAL FCTNS OT release menu in to find out which axis is in an overtravel condition. Release overtravel by holding the SHIFT key and pressing the RESET key. At this time the servo power will be turned on. If the SHIFT key is released, the servo power will be turned off again. You can only use JOINT to jog the axis out of overtravel. If you want to jog the overtraveled axis further into the overtravel direction, you have to release the axis by moving the cursor to the axis direction you want, then press release function key in the OT release menu. At this point you can jog the axis to that direction.

JOG-002 Robot not Calibrated

Cause: Robot has not been calibrated.

Remedy: Set the system variable \$MASTER_ENB to 1. Select SYSTEM then Master/Cal, to display the Master/Cal menu. Select a method for calibrating the robot. If the robot can not be calibrated, mastering is required. If the robot has been master before, set the system variable \$DMR_GRP[].\$master_done to TRUE then calibrate the robot again. For more information on mastering and calibrating the robot, refer to the application tool Operator's Manual.

JOG-003 No Motion Control

Cause: Other program has motion control

Remedy: Abort the program that has motion control by pressing FCTN key then selecting ABORT.

JOG-004 Illegal linear jogging

Cause: You cannot do more than one rotational jog at a time.

Remedy: Only press one rotational jog key at a time.

JOG-005 Can not clear hold flag

Cause: The system call to clear hold flag failed. Error.

Remedy: Perform a cycle start.

JOG-006 Subgroup does not exist

Cause: No extended axis exist in this group with which to jog.

Remedy: This is a notification. You do not have to do anything for this warning message.

JOG-007 Press shift key to jog

Cause: The SHIFT key is not pressed.

Remedy: You must press the SHIFT key when jogging the robot. Release the jog key then hold the SHIFT key and press the jog key to jog.

JOG-008 Turn on TP to jog

Cause: Teach pendant is not enable.

Remedy: Hold the DEADMAN and turn on the teach pendant before jogging the robot.

JOG-009 Hold deadman to jog

Cause: The DEADMAN switch is not pressed.

Remedy: Press the DEADMAN switch, then press the RESET key to clear the error.

JOG-010 Jog pressed before shift

Cause: The jog key was pressed before the shift key was pressed.

Remedy: Release the jog key. Then,hold the SHIFT key then press the jog key.

JOG-011 Utool changed while jogging

Cause: The selected tool frame changed while jogging.

Remedy: Release the SHIFT key and the JOG key. The new TOOL frame will take effect automatically. To start jogging, hold down the SHIFT key and press the JOG key.

JOG-012 manual brake enabled

Cause: The manual brake enabled.

Remedy: Engage all the brakes by pressing EMERGENCY STOP button, then press the RESET key. To start jogging, press the shift and the jog key.

JOG-013 Stroke limit (G:%d A:%s^7)

Cause: Robot axis reaches its specified stroke limit.

Remedy: The robot already reach the stroke limit and cannot jog in the current direction any more. Extend the axis limit if it does not exceed the robot and software specifications.

JOG-014 Vertical fixture position

Cause: Robot reaches its vertical fixture position.

Remedy: To continue jogging, release the JOG key then press it again.

JOG-015 Horizontal fixture position

Cause: Robot reaches its horizontal fixture position.

Remedy: To continue jogging, release the JOG key then press it again.

JOG-016 Softfloat time out(G:%d)

Cause: Follow-up time is over when softfloat is ON.

Remedy: Make the system variable \$SFLT_FUPTIM larger.

JOG-020 Can not PATH JOG now

Cause: PATH JOG has selected, but robot is not currently on a taught path, or tool Z direction is same teaching path, so Y direction can not be determined. Can not PATH JOG.

Remedy: Use shift-FWD to execute program path, or specify another jog frame.

JOG-021 Multi key is pressed

Cause: Use of multiple jog keys is not supported in PATH JOG.

Remedy: Use only one jog key at a time.

JOG-022 Disabled in JOINT path

Cause: PATH jog is disabled in JOINT path.

Remedy: PATH jog is available in LINEAR and CERCULAR path.

JOG-023 Available only in PAUSE

Cause: PATH jog is available only in PAUSE status.

Remedy: PATH jog is available only in PAUSE status.

JOG-024 Currently this key is invalid

Cause: This key is invalid at current jog mode.

Remedy: Change jog mode.

JOG-025 J4 is not zero

Cause: J4 angle is not zero.

Remedy: Move J4 to zero position.

JOG-026 J4 is zero

Cause: J4 angle is zero. J4 joint jog is disabled.

Remedy: Now OFIX jog is available.

JOG-027 Reverse direction from J4=0

Cause: This direction is reverse direction from J4 = 0.

Remedy: Press opposite jog key.

JOG-028 OFIX TCP config limit

Cause: Stroke limit with this TCP configuration.

Remedy: Confirm TCP's XYZ location.

JOG-029 OFIX jog error

Cause: OFIX jog internal error.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

JOG-030 Can't jog as OFIX

Cause: OFIX jog is not available.

Remedy: Check cause code.

JOG-031 Multi-robot needs coord jog

Cause: A locked multi-robot system requires you to use coordinated jogging. Refer to the Coordinated Motion Setup and Operations Manual for information on coordinated motion setup and jogging.

Remedy: Use coordinated jogging, or unlock the multi-robot system. Refer to the Coordinated Motion Setup and Operations Manual for more information.

JOG-032 Coord not supported in TJOG

Cause: The selected coordinate system (COORD) is not supported in Dual Arm Tracking Jog.

Remedy: Select a supported Tracking Jog COORD: Joint, Jgfrm, World, Tool, or User.

JOG-033 Can't WRIST JOINT JOG now

Cause: Wrist joint mode is not available in coordinated jog.

Remedy: Disable coordinated jog.

JOG-034 JOG Disable by Application

Cause: JOG has been disabled by \$SCR.\$TPMOTNENABL setting.

Remedy: Please set \$SCR.\$TPMOTNENABL to 0 or 2 in accordance with Operations Manual.

JOG-061 Can't use MPG Jog

- Cause:**
1. Use MPG jog when tracking jog is enable.
 2. Use MPG jog when incremental jog is enable.
 3. Use MPG jog when override is "FINE" or "VFINE".
 4. Use MPG jog when jog coordinate system is other than "WORLD", "USER", "TOOL", "JOINT".

- Remedy:**
1. Disable the tracking jog.
 2. Disable the incremental jog.
 3. Set the override other than "FINE" and "VFINE"
 4. Set the jog coordinate system is "WORLD", "USER", "TOOL" or "JOINT".

JOG-063 Turn MPG to OFF

Cause: The TP jog was executed when the manual pulse generator was selected as jog device.

Remedy: If you want jog with TP, switch MPG enable switch to OFF.

JOG-064 MPG AXIS is invalid

Cause: The state of Axis select signal of the manual pulse generator is invalid.

Remedy: Check the wiring related to the manual pulse generator.

JOG-065 Tablet MPG Jog is running

Cause: TP jog or DI jog was executed while using MPG jog.

Remedy: Don't use TP jog and DI jog while using MPG jog.

4.10 K

4.10.1 KALM Alarm Code

NOTE

KALM alarm is for User Specified Alarm Post included System Design Tool. This alarm code is for USER ONLY. If FANUC software detects some abnormal status in the robot controller, KALM alarm code is never displayed. In case that KALM is displayed, verify your robot system, and exercise proper care.

KALM-001 – KALM-200 are for global alarm.

KALM-201 – KALM-300 are for local alarm.

Please refer to the Section "USER SPECIFIED ALARM POST" of "R-30iB CONTROLLER System Design Tool OPERATOR'S MANUAL"(B-83274EN).

4.11 L

4.11.1 LANG Alarm Code

LANG-004 File is not open

Cause: (1) The wrong port is set to the port you want to use. (2) The device may be out of order.

Remedy: (1) Set the correct port. (2) Check the device if it works fine.

LANG-005 Program type is different

Cause: Only able to process teach pendant programs.

Remedy: Select a TPE program.

LANG-006 Invalid or corrupted TP file

Cause: A when loading .TP file, invalid data was found. This may occur if a .TP file has become corrupted or if some other type of file e.g., a .PE file, has been copied or renamed to a .TP file.

Remedy: Generate (using SAVE, with \$ASCII_SAVE = FALSE) and load a valid .TP file. Note: An existing TP program in the controller might have been corrupted as a result of your attempt to load the invalid file. You might have to reteach the teach pendant program, before you save it as a .TP file.

LANG-014 Program already exists

Cause: The program that is being loaded already exists in the system.

Remedy: Before you load the program, delete the program already in the system.

LANG-015 Can not write file

Cause: Failure when writing data to the floppy.

Remedy: Check the connection of the device.

LANG-016 Can not read file

Cause: Failure when reading data from the floppy.

Remedy: Check the connection of the device.

LANG-017 File format is incorrect

Cause: The data you are trying to save to a file is either abnormal or broken, therefore the file cannot be loaded.

Remedy: The file cannot be loaded with the data as it is. The data must be normal to load the file.

LANG-018 Group mask value is incorrect

Cause: When printing the program, there was an illegal position that did not match the group mask of the program.

Remedy: Reteach the position data so that the group number matches the group mask of the program.

LANG-050 %s contains %s, program/file names must match

Cause: The file name and the program name are not the same. Their names must match.

Remedy: Rename the file to be same as the program name.

LANG-051 Wrong daughter program name

Cause: The daughter program name is not matched with the parent program name.

Remedy: Please verify the daughter program name.

LANG-052 Cannot load daughter program(%d)

Cause: The loading of the daughter program failed.

Remedy: Please check the contents of the specified file.

LANG-053 Cannot process daughter program

Cause: The save/load/print operation cannot be processed to a daughter program directly.

Remedy: Specify the parent program.

LANG-054 Can't load(Reversed repr. disabled)

Cause: The program that cannot be loaded needs J858 option. You might load wrong program to the robot where J858 is not ordered.

Remedy: Please confirm if you are not loading wrong program. Please confirm J858 is ordered in the robot.

LANG-055 Can't print(Reversed repr. disabled)

Cause: The program that cannot be printed needs J858 option.

Remedy: Please confirm J858 is ordered in the robot.

LANG-056 Print Reversed repr. failed(P:%d,G:%d)

Cause: The positions of program whose handle_part is ON are printed by reversed representation when J858 is ordered, but the print is failed because conversion to reversed representation of a position is failed.

Remedy: Please correct position data and try again.

LANG-057 Group number too big

Cause: This program was created on a robot which supports groups that are not available on this robot.

Remedy: You must upgrade to a later software version.

LANG-058 Requires extended frame option

Cause: This program was created on a robot which had the extended frame option.

Remedy: You must load the extended frame option and try the program again.

LANG-075 Invalid attribute syntax

Cause: The ASCII Input encountered an error in the attribute section.

Remedy: Fix the /ATTR section of the .LS file.

LANG-076 Invalid application syntax

Cause: The ASCII Input encountered a syntax error in the application section.

Remedy: Fix the /APPL section of the .LS file.

LANG-077 Invalid mnemonic syntax

Cause: The ASCII Input encountered an error in the mnemonic section.

Remedy: Fix the /MN section of the .LS file.

LANG-078 Invalid position syntax

Cause: The ASCII Input encountered an error in the position section.

Remedy: Fix the /POS section of the .LS file.

LANG-079 Invalid section

Cause: The ASCII Input encountered an invalid section in the program.

Remedy: Fix the invalid section in the .LS file.

LANG-080 Invalid filename

Cause: The ASCII Input encountered an invalid filename.

Remedy: Verify the program name matches the name of the .LS file.

LANG-081 Invalid application header

Cause: The ASCII Input encountered an error in the application section.

Remedy: Fix the /APPL section of the .LS file.

LANG-090 Buffer is too small

Cause: The ASCII Input encountered a program line with too many characters.

Remedy: Shorten the line in the /MN section of the .LS file.

LANG-091 Can't print optimize data

Cause: Optimize data exists in the program and this cannot be printed.

Remedy: Special handling may occur for programs which contain optimized data.

LANG-094 File already exists

Cause: The specified file already exists in the floppy.

Remedy: Before you write the new file to the floppy, delete the file that already exists on the floppy.

LANG-095 File does not exist

Cause: The specified file does not exist in the device.

Remedy: Check the file name or content of the device.

LANG-096 Disk is full

Cause: The floppy disk has reached its limit and is full.

Remedy: Either use a new floppy disk or delete an unnecessary file in order to make room for saving to the floppy.

LANG-097 Only one file may be opened

Cause: An attempt was made to open more than one file.

Remedy: Do not attempt to open more than one file at a time.

LANG-098 Disk timeout

Cause: It could not access the disk.

Remedy: Check if the correct device is set to port and it turns on.

LANG-099 Write protection violation

Cause: The disk has write protection.

Remedy: Remove the write protection.

LANG-100 Device error

Cause: Could not access the device.

Remedy: Connect the correct device to the correct port.

4.11.2 LECO Alarm Code

LECO-001 Error (%d^1)

Cause: The error which number is in () generates in welding power supply.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-017 Action db failed (%d^1,%d^2,%d^3)

Cause: A message was sent to another part of the system through the digital communications link (ArcLink) but no response was received. This often occurs when a part of the system is turned OFF or disconnected.

Remedy: Verify all devices in the system are properly powered. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-018 Attribute error (%d^1,%d^2)

Cause: Internal attribute read/write failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-019 Failure to restore non-volatile attributes

Cause: Machine settings that are saved during power down could not be restored because the data is corrupt. The two backup copies of the machine settings are not complete or do not contain valid data. Default values have been restored. Calibration of system needs to be verified.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-020 Primary non-volatile section failure

Cause: Machine settings that are saved during power down could not be restored because the data is corrupt. The first of two copies did not verify correctly.

Remedy: Cycle power on system.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-021 Secondary non-volatile section failure

Cause: Machine settings that are saved during power down could not be restored because the data is corrupt. The second of two copies did not verify correctly.

Remedy: Cycle power on system.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-022 Non-volatile attributes restore fault (%d^1,%d^2,%d^3)

Cause: Machine settings that are saved during power down could not be restored because the data does not match the current configuration. This can be caused if the software in the machine has been updated.

Remedy: Cycle power on system.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

LECO-023 Serial port watchdog timeout

Cause: The serial port (RS-232) communications between a PC and The machine failed because the PC did not respond in a reasonable amount of time.

Remedy: Verify all connections between PC and device.

If using a USB to serial cable, verify it is a recommended cable.

LECO-024 ArcLink mapping failed (%d^1)

Cause: The machine could not properly configure the devices that are attached to it. This configuration problem could be caused by the type of devices that are connected to the machine or a required device that is not connected. Consult the Operators Manual for proper device configuration.

Remedy: Refer to the operator manual for proper configuration of the dip switches.

Verify all devices in the system are properly powered.

LECO-033 Sequencer fault (%d^1,%d^2,%d^3,%d^4)

Cause: A component of the system encountered an error during the welding sequence and caused the system to stop. The component with the error could be a wire drive, a user interface, or some other part of the system.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-034 Sequencer weld cycle data fault (%d^1,%d^2,%d^3,%d^4)

Cause: The machine could not properly update the welding settings in the devices connected to it. This could include variables such as wire feed speed.

Remedy: Check other objects in the system to verify that they are ready to weld.

Verify that no other operations are being executed while the system is trying to weld.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-035 Error updating active state (%d^1,%d^2,%d^3)

Cause: During the welding sequence, an attempt to change the settings on a component of the system has failed. The component could be a wire drive, a user interface, or some other part of the system.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute

Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-036 Error changing mode data (%d^1,%d^2,%d^3)

Cause: During the welding sequence, an attempt to change the welding mode has failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-037 Write config mem (%d^1,%d^2)

Cause: This Event Code (write configuration memory with state memory action) should only occur if a mistake was made during development; contact FANUC for more information.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-040 Output locked out in Weld Controller

Cause: Output has been disabled and cannot be enabled by any process until the cause of the lock has been removed.

Remedy: Make sure the user interface or wire feeder shutdown is not engaged.

LECO-049 Primary over current (%s^1,%s^2)

Cause: The input current to the machine exceeded the safe limit. This is normally caused by low input voltage or a missing phase (with 3 phase input power) but it could be caused by a faulty switch board, output diode, or main transformer.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-050 Cap A under voltage (Cap A volts, Cap B volts)

Cause: The voltage on one of the two input capacitor banks (bank A) has fallen below the normal operating limit. This is normally caused by low input voltage or a missing phase (with 3 phase input power) but it could be caused by a faulty switch board, main capacitor, contactor, or V-to-F feedback signal.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-051 Cap B under voltage (Cap A volts, Cap B volts)

Cause: The voltage on one of the two input capacitor banks (bank B) has fallen below the normal operating limit. This is normally caused by low input voltage or a missing phase (with 3 phase input power) but it could be caused by a faulty switch board, main capacitor, contactor, or V-to-F feedback signal.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-052 Cap A over voltage (Cap A volts, Cap B volts)

Cause: The voltage on one of the two input capacitor banks (bank A) has exceeded the high voltage limit. This is normally caused by high input voltage but it could be caused by a faulty switch board, main capacitor, contactor, or V-to-F feedback signal.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-053 Cap B over voltage (Cap A volts, Cap B volts)

Cause: The voltage on one of the two input capacitor banks (bank B) has exceeded the high voltage limit. This is normally caused by high input voltage but it could be caused by a faulty switch board, main capacitor, contactor, or V-to-F feedback signal.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-054 Thermostat tripped (%s^1,%s^2)

Cause: The machine has shutdown because it has overheated. This will normally occur because the output duty cycle has been exceeded but it could be caused by insufficient air flow through the machine, a faulty fan, or a faulty thermostat.

Remedy: Verify the welding procedure does not exceed the duty cycle limits of the machine. Check the setup for proper air flow around and through the system. Check that the system has been properly maintained, including removal of accumulated dust and dirt from the intake and outlet louvers and the cooling channels in the machine. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-055 Soft start failed (%s^1,%s^2)

Cause: During the start up sequence, the capacitor banks failed to reach an expected minimum voltage. This can be caused by a faulty contactor or low input voltage; this error is typically accompanied by other errors that should also be reviewed.

Remedy: Check the input power (voltage and frequency). Verify the primary reconnect is properly configured for the input voltage. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-056 Momentary AC dropout

Cause: The AC input voltage momentarily dropped too low for safe operation.

Remedy: Check input line voltage and make sure it is within the specified operating range per the user manual of welding power supply. Make sure molex connections between the input board and control board are correct and connected.

LECO-057 Misc HW fault (%s^1,%s^2)

Cause: This alarm (miscellaneous hardware fault) should not occur in the field; contact FANUC for more information.

Remedy: Problem may be the result of a sudden primary over current associated with main transformer saturation. See LECO-49 for additional information.

LECO-065 Secondary over current (%s^1,%s^2)

Cause: A high level of output current (long average) has caused an overload. This is commonly seen if the wrong output stud is used on an STT machine or if there is a missing phase (with 3 phase input power). When this fault occurs, the output current will be reduced to 100A and a welding condition referred to as "noodle welding" may occur.

Remedy: For process related issues, verify the welding procedure does not exceed the output limits of the machine. Verify the stick out, wire size, and gas are correct for the process that is selected. Check the weld circuit for short circuits and other leakage paths. Verify all three legs of the input power are present at the input contactor. When the contactor closes, be sure all three legs are present on the output side as well (toward the rectifier). Machines equipped with an STT output stud use a lower secondary output limit to protect the STT circuitry. If the machine is equipped with an STT output stud, consider using the standard output stud for more demanding applications.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you

cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-066 Power down 42 (%s^1,%s^2)

Cause: A GFCI trip event occurred. This event is detected when current from the welding arc is transmitted to the machine ground.

Remedy: Verify that the work cables are properly attached to the welding fixture
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-067 Cap balance error (%s^1,%s^2)

Cause: The voltage difference between the two input capacitor banks has exceeded the safe limit. This will normally occur when the power is turned ON (if the machine has not been used for a long period) or if there is a missing phase (with 3 phase input power) but it could also be caused by a faulty switch board, main capacitor, or main transformer.

Remedy: Check input line voltage.
Check reconnect links and cables.
AC/DC Systems: Check for shorts in the welding circuit. Make sure feedhead is properly isolated.

LECO-068 CPU dropped Heart Beat (%s^1,%s^2)

Cause: The machine detected an internal processing error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-069 Output voltage high (%d^1,%d^2,%d^3)

Cause: The machine detected that the welding voltage was too high. Verify the correct input voltage selection has been made on the main reconnect switch.

Remedy: Verify input line voltage.

LECO-070 Secondary over current (%s^1,%s^2)

Cause: A high level of output current (short average) has caused an overload. This is commonly seen when there is a short in the welding circuit outside of the machine. It can also be caused if the wrong output stud is used on an STT machine or if there is a missing phase (with 3 phase input power) and this can also occur when starting high current welding processes.

Remedy: Verify that the welding circuit does not have a short in it.
Verify stick out, wire size, and gas are correct for the process that is selected.
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-071 Misc HW fault (cap fault or hb) (%s^1,%s^2)

Cause: The machine experienced a hardware fault.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-072 Misc HW fault high (main opened) (%s^1,%s^2)

Cause: The machine experienced a hardware fault that has opened the main power input contactor. This alarm normally occurs with other alarms.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-073 Single phase (%s^1,%s^2)

Cause: Single phase input power has been detected so the machine may operate at a reduced output level. Refer to the instruction manual of the machine for more information on single phase operation.

Remedy: Verify all fuses are good.

Verify all three legs of the input power are present at the input contactor. When the contactor closes, be sure all three legs are present on the output side as well (toward the rectifier).

If single phase operation is intentional, and secondary over current errors are a problem, verify the welding procedure does not exceed the reduced output limits of the machine. Check the weld circuit for short circuits and other leakage paths.

LECO-082 DSP load high (%d^1,%d^2)

Cause: Digital Signal Processor (DSP) in the system is no longer responding to heartbeat request from the main processor.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-083 Voltage sense loss (%s^1,%s^2)

Cause: The machine has detected an unusually high output setting for the low value seen on the voltage feedback signal. This normally occurs when a voltage sense lead has been disconnected from the welding circuit or if it connected to the opposite polarity.

Remedy: Verify the 67 voltage sense circuit is enabled and connected

Verify the 21 voltage sense circuit is enabled and connected

LECO-084 Secondary overcurrent fault

Cause: A high level of output current (long average) has caused an overload. This is commonly seen if the wrong output stud is used on an STT machine or if there is a missing phase (with 3 phase input power) or short circuit at weld power cable of the cable in the mechanical unit. When this fault occurs, the machine output will be turned OFF.

Remedy: For process related issues, verify the welding procedure does not exceed the output limits of the machine. Verify the stick out, wire size, and gas are correct for the process that is selected. Check the weld circuit for short circuits and other leakage paths.

Verify all three legs of the input power are present at the input contactor. When the contactor closes, be sure all three legs are present on the output side as well (toward the rectifier).

Machines equipped with an STT output stud use a lower secondary output limit to protect the STT circuitry. If the machine is equipped with an STT output stud, consider using the standard output stud for more demanding applications.

Check whether the weld power cable of the cable in the mechanical unit short-circuits. If there are some short circuits, please replace the cable in the mechanical unit.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-085 Comm with DSP failed

Cause: The machine experienced an internal error. This can sometimes occur because of hi-frequency noise or power line noise.

Remedy: If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-086 Comm with chopper failed (%s^1,%s^2)

Cause: There were too many communication errors between the main control board and the chopper board. This can sometimes occur because of hi-frequency noise or power line noise.

Remedy: Check the communication cable between the 2 boards.

Isolate the machine from any hi-frequency noise.

If there is a failure every time the trigger is pulled, replace the chopper board.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation

such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-087 FGEN error (%s^1,%s^2)

Cause: The machine detected an internal processing error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-088 Primary input power bd not ready

Cause: The machine detected a primary power problem.

Remedy: Identify and fix the primary power problem.

If the error happens every time power is applied and there are no primary power problems, replace the input control board.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-098 Seq. weld cycle data retry (%d^1,%d^2)

Cause: Weld settings could not be updated properly while the system was welding. This normally occurs when a device is not operating properly or it is busy handling other operations such as external communications.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-129 Wire drive motor overload (%d^1,%d^2)

Cause: The wire feeder drive motor has been overloaded. This can be caused by a wire tangle or a high resistance from pulling wire off of the spool or drum.

Remedy: Check Drive tension.

Check drive rolls alignment and gears.

Check Wire feed ability and control cables are not run along current carrying conduit.

If the system is in a constant current welding mode and the feeder is operating at its upper limit then configure the to run at a faster gear ratio. Change the voltage sensing locating to be closer to the arc.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-130 Wire drive motor overcurrent (%d^1,%d^2)

Cause: The wire feeder drive motor has been overloaded by exceeding the current limit. This can be caused by a wire tangle or a high resistance from pulling wire off of the spool or drum.

Remedy: Check Wire feed ability.

LECO-131 Shutdown 1 (%d^1,%d^2)

Cause: Shutdown circuit #1 on the wire drive external I/O connector is open. This open circuit generates an error in order to stop the machine.

Remedy: Verify the circuit "Shutdown1 Input" is closed.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-132 Shutdown 2, water fault (%d^1,%d^2)

Cause: Shutdown circuit #2 (typically a water cooler fault) on the wire drive external I/O connector is open. This open circuit generates an error in order to stop the machine.

Remedy: Verify the circuit "Shutdown2 Input (Water Fault)" is closed.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-133 Failed to find arcobject (%d^1,%d^2)

Cause: Trigger input on the wire drive external I/O connector has been disabled. The trigger command cannot be communicated because the configuration, or status, of the system is preventing its delivery.

Remedy: Make sure that the dip switches on the Ethernet board are properly set.

Verify all ArcLink Connections are correctly configured.

Check for blinking error codes on any component in the system.

Verify the dip switch settings on all of the circuit boards in the system.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-135 Wire drive no UIF (%d^1)

Cause: Required configuration could not be found in the machine. Verify the configuration and the status of the devices connected to the machine.

Remedy: Verify all ArcLink Connections are correctly configured.

Verify the dip switch settings on all of the circuit boards in the system.

LECO-136 Wire drive send trigger fail (%d^1,%d^2,%d^3)

Cause: The trigger input circuit on the wire drive external I/O connector could not start the welding sequence. The normally occurs when the system is busy handling other requests or operations.

Remedy: Decode event log to determine why trigger could not be sent. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-145 Failed to update the polarity attribute (%d^1,%d^2)

Cause: Sense Lead polarity could not be updated properly.

Remedy: Verify the control board status.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-146 No flow in the water cooler

Cause: There is no flow in the water cooler connected to the Speedtec 500S after 3 seconds of welding.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-149 Spool/Pull motor overload fault code (%d^1,%d^2)

Cause: The Spool Gun motor has been overloaded by exceeding the current limit. This can be caused by a wire tangle or a high resistance from pulling wire off of the spool.

Remedy: Check Spool gun brake or wire feeding for binding.

Verify push motor is pushing properly.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you

cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-356 Error sending email (%d^1)

Cause: The machine could not properly send an email. Verify the correct settings are entered into the email system and that there is a mail server on the Ethernet network.

Remedy: Use Production Monitoring software to verify E-mail configuration.
Verify Ethernet connection.

LECO-357 Error access email mem (dir %d^1, image %d^2)

Cause: Email settings could not be properly restored. All email settings need to be verified.

Remedy: Use Production Monitoring software to verify E-mail configuration.
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-769 PM save counters failed

Cause: Production Monitoring weld totals could not be saved when the machine was turned OFF. The values for the weld totals displayed in the Weld Totals tab of the application and the information included in the summary email report may be incomplete.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-770 PM save weld cfg failed

Cause: Production Monitoring weld profiles configuration could not be saved when the machine was turned OFF.

Remedy: Verify the configuration of Production Monitoring weld profiles.
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-771 PM save sys cfg failed

Cause: Production Monitoring system configuration could not be saved when the machine was turned OFF.

Remedy: Verify the configuration of Production Monitoring.
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-772 PM read counters failed

Cause: Production Monitoring weld totals could not be restored when the machine was turned ON. The values for the weld totals displayed in the Weld Totals tab of the application and the information included in the summary email report may be incomplete.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-773 PM read weld cfg failed

Cause: Production Monitoring weld profiles configuration could not be restored when the machine was turned ON.

Remedy: Verify the configuration of Production Monitoring weld profiles.
If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-774 PM read sys cfg failed

Cause: Production Monitoring system configuration could not be restored when the machine was turned ON.

Remedy: Verify the configuration of Production Monitoring.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-775 PM failed reading attribute (er:%d^1,dest:%d^2,id:%d^3)

Cause: Production Monitoring could not determine the weld profile it should use for a weld. Some data may not be recorded in the correct weld profile.

Remedy: Verify other devices in the system are working properly.

If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-849 PM I fault (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output current is outside the Production Monitoring weld profile limits. The output current was less than the Current Low Limit or was greater than the Current High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.

Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-850 PM V fault (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output voltage is outside the Production Monitoring weld profile limits. The output voltage was less than the Voltage Low Limit or was greater than the Voltage High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.

Verify the voltage limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until Voltage Limit" in the General Settings section.

Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-851 PM W fault (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The wire feed speed (WFS) is outside the Production Monitoring weld profile limits. The wire feed speed was less than the WFS Low Limit or was greater than the WFS High Limit.

Remedy: Verify the welding setting for wire feed speed is correct.

Verify the wire feed limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until WFS Limit" in the General Settings section.

Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-852 PM WeldScore fault (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: Production Monitoring limit occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

LECO-853 PM T fault (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The welding time (arc time) is outside the Production Monitoring weld profile limits. The welding time was less than the Time Low Limit or was greater than the Time High Limit.

Remedy: Verify the weld was made at the proper travel speed and for the correct amount of time.

Verify the time limits for the weld profile.

LECO-864 PM WeldScore alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: Production Monitoring limit occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute

Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-865 PM I alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output current is outside the Production Monitoring weld profile limits. The output current was less than the Current Low Limit or was greater than the Current High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.
Verify the current limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until Current Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-866 PM V alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output voltage is outside the Production Monitoring weld profile limits. The output voltage was less than the Voltage Low Limit or was greater than the Voltage High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.
Verify the voltage limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until Voltage Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-867 PM W alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The wire feed speed (WFS) is outside the Production Monitoring weld profile limits. The wire feed speed was less than the WFS Low Limit or was greater than the WFS High Limit.

Remedy: Verify the welding setting for wire feed speed is correct.
Verify the wire feed limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until WFS Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-869 PM T alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The welding time (arc time) is outside the Production Monitoring weld profile limits. The welding time was less than the Time Low Limit or was greater than the Time High Limit.

Remedy: Verify the weld was made at the proper travel speed and for the correct amount of time.
Verify the time limits for the weld profile.

LECO-881 Weld profile runt occurred (t:%d^1,wp:%d^2)

Cause: Production Monitoring could not perform limit checking on a weld because the welding time (arc time) was too short. The welding time was less than the combined time for the Start Delay and End Delay.

Remedy: Verify the duration of the weld is greater than the combination of the start delay and end delay.
Verify the time limits for the weld profile.

LECO-882 Consumable low (weight:%s^1)

Cause: The wire package weight has dropped below the Production Monitoring "Warning Package Weight" limit. The supply of wire should be checked and replaced if necessary. The welding time was less than the combined time for the Start Delay and End Delay.

Remedy: Replenish the wire package and reset the current wire weight.
Verify the following setup items have been correctly entered: Initial Package Weight, Warning Package Weight, Wire Diameter, and Metal Density.

LECO-897 PM I latched alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output current is outside the Production Monitoring weld profile limits. The output current was less than the Current Low Limit or was greater than the Current High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.
Verify the current limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until Current Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-898 PM V latched alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The output voltage is outside the Production Monitoring weld profile limits. The output voltage was less than the Voltage Low Limit or was greater than the Voltage High Limit.

Remedy: Verify welding set points, changes in setup, and work piece position. Setup includes but is not limited to: gas flow, wire type and size, stick out, welding cable length, spatter buildup, and tip wear.
Verify the voltage limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until Voltage Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-899 PM W latched alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The wire feed speed (WFS) is outside the Production Monitoring weld profile limits. The wire feed speed was less than the WFS Low Limit or was greater than the WFS High Limit.

Remedy: Verify the welding setting for wire feed speed is correct.
Verify the wire feed limits for the weld profile are a reasonable range for the application. This would also include "Seconds Until WFS Limit" in the General Settings section.
Verify the start delay and end delay are properly configured to remove the start and end of the weld.

LECO-900 PM WeldScore latched alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: Production Monitoring limit occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LECO-901 PM T latched alarm (hi:%d^1,lo:%d^2,wp:%d^3)

Cause: The welding time (arc time) is outside the Production Monitoring weld profile limits. The welding time was less than the Time Low Limit or was greater than the Time High Limit.

Remedy: Verify the weld was made at the proper travel speed and for the correct amount of time.
Verify the time limits for the weld profile.

4.11.3 LNTK Alarm Code

LNTK-000 STOP Unknown error (LN00)

Cause: System internal error.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-001 STOP No global variables

Cause: The Line Track global variables have NOT been properly loaded.

Remedy: Check the Line Tracking Operator's manual for the proper setup procedure for the Line Track system.

LNTK-002 STOP Motion data missing

Cause: The Line Track internal motion data was NOT found.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-003 STOP Error allocating data memory

Cause: The Line track internal memory allocation failed.

Remedy: Check Memory usage and Line Track installation.

LNTK-004 STOP No system variables

Cause: The Line Track system variables (eg. \$LNSCH[], \$LNSNRSCH[]) were not found.

Remedy: Check the Line Tracking Operator's manual for the proper setup procedure for the Line Track system.

LNTK-005 STOP Illegal schedule number

Cause: An invalid Line Track schedule (track or frame) number was used within a program instruction (eg. TRK[59]) or program header data (eg. FRAME = 59).

Remedy: Check all schedule numbers (TRK[] or FRAME usages) used within the specified program to verify that they are within the allowable range specified for the \$LNSCH[] system variable.

LNTK-006 STOP Illegal tracking type

Cause: An invalid tracking type was specified within the tracking schedule (i.e. \$LNSCH[]) associated with the specified program.

Remedy: Check the value of \$LNSCH[i].\$TRK_TYPE (where 'i' is the FRAME number specified within the DETAIL screen for the specified program) to make sure that it is one of the valid values listed under the description for this system variable.

LNTK-007 STOP Illegal encoder number

Cause: An invalid sensor(encoder) number was used within the specified tracking program instruction or within the program's associated schedule \$LNSCH[i].\$TRK_ENC_NUM value (where 'i' is the FRAME number used within the DETAIL screen for the specified program).

Remedy: Check the value of the specified program instruction's LINE[] parameter and the program's associated schedule \$LNSCH[i].\$TRK_ENC_NUM value to make sure that it is one of the valid values listed under the description for the \$ENC_STAT[] system variable.

LNTK-008 STOP Invalid nominal position

Cause: An invalid or uninitialized nominal tracking frame position was used within the tracking schedule (i.e. \$LNSCH[]) associated with the specified program.

Remedy: Check the value of \$LNSCH[i].\$TRK_FRAME (where 'i' is the FRAME number specified within the DETAIL screen for the specified program) to make sure that it is a properly initialized, valid position.

LNTK-009 STOP Illegal position type

Cause: The position type or representation used within the specified program is not valid. (LINE and CIRC tracking programs MUST store all positions in Cartesian representation. Joint representation is not allowed.)

Remedy: Check the KAREL or TPE user manual for valid position types. Check the position representation used to store the positions within the tracking program to make sure that Cartesian representation is being used.

LNTK-010 STOP Illegal encoder schedule num

Cause: An invalid sensor(encoder) schedule number was used within the specified tracking program instruction's SCH[] parameter.

Remedy: Check the \$LNSNRSCH[] system variable description for the range of valid sensor schedule numbers.

LNTK-011 STOP Illegal boundary set number

Cause: An illegal value was used within the specified tracking program instruction or within the program's associated schedule \$LNSCH[i].\$SEL_BOUND value (where 'i' is the FRAME number used within the DETAIL screen for the specified program).

Remedy: Check the value of the specified program instruction's BOUND[] parameter and the program's associated schedule \$LNSCH[i].\$SEL_BOUND value to make sure that they are one of the valid values listed under the description for this system variable.

LNTK-012 STOP Invalid input position

Cause: An invalid or uninitialized position was used within the specified tracking program instruction.

Remedy: Check the position (or position register) value for the specified tracking program instruction to make sure that it is a properly initialized, valid position.

LNTK-013 STOP Invalid trigger input value

Cause: An invalid or uninitialized value was used for the specified tracking program instruction's trigger value.

Remedy: Check the value of the program register used by the specified tracking program instruction.

LNTK-014 STOP Encoder/sensor not enabled

Cause: The tracking sensor(encoder) associated with the specified program (specified by \$LNSCH[i].\$TRK_ENC_NUM, where 'i' is the FRAME number used within the DETAIL screen for the specified program) must be enabled to perform this program instruction.

Remedy: Use the LINE enable instruction to enable the proper tracking sensor(encoder).

LNTK-015 STOP Invalid encoder trigger value

Cause: An invalid or uninitialized sensor(encoder) trigger value was found in the tracking schedule used with the program.

Remedy: Make sure that this value is properly set prior to either teaching path positions, or issuing programmed robot motion instructions. When using iRPickTool, make sure to select the same tracking schedule number for the conveyor station and tracking program.

LNTK-016 STOP Invalid input time

Cause: An invalid or uninitialized prediction time was used within the specified tracking program instruction.

Remedy: Check the prediction time being used for proper initialization.

LNTK-017 STOP Invalid input pointer

Cause: An invalid internal position input pointer was specified.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-018 STOP Invalid teach distance

Cause: An invalid or uninitialized teach distance value (specified by \$LNSCH[i].\$TEACH_DIST, where 'i' is the FRAME number used within the DETAIL screen for the specified program) was found.

Remedy: Make sure that this value is properly set prior to either teaching path positions, or issuing programmed robot motion instructions.

LNTK-019 STOP Invalid scale factor

Cause: An invalid or uninitialized scale factor value (specified by \$LNSCH[i].\$SCALE, where 'i' is the FRAME number used within the DETAIL screen for the specified program) was found.

Remedy: Make sure that this value is properly set prior to either teaching path positions, or issuing programmed robot motion instructions. NOTE: This value may NOT be equal to 0.0.

LNTK-020 STOP Invalid extreme position

Cause: An invalid or uninitialized extreme position value (specified by \$LNSCH[i].\$TCP_EXTRM, where 'i' is the FRAME number used within the DETAIL screen for the specified program) was found.

Remedy: Make sure that this value is properly set prior to either teaching path positions, or issuing programmed robot motion instructions. NOTE: A value of 1,000,000 (1.0e6) may be set to disable TCP extreme position checking.

LNTK-021 STOP Invalid track axis number

Cause: An invalid or uninitialized track axis number (specified by \$LNSCH[i].\$TRK_AXIS_NUM, where 'i' is the FRAME number used within the DETAIL screen for the specified program) was found.

Remedy: Make sure that this value is properly set to one of the valid values listed under the description for this system variable.

LNTK-022 STOP No tracking hardware

Cause: No tracking sensor hardware interface or improperly initialized system variables.

Remedy: Check tracking hardware setup and the values of \$SCR.\$ENC_TYPE and \$SCR.\$ENC_AXIS.

LNTK-023 STOP Bad tracking hardware

Cause: Bad tracking sensor hardware interface.

Remedy: Check all sensor hardware, cables, and connections.

LNTK-024 STOP Illegal encoder average

Cause: Illegal encoder average number.

Remedy: Use a valid encoder average number.

LNTK-025 STOP Illegal encoder multiplier

Cause: Illegal encoder multiplier number.

Remedy: Use a valid encoder multiplier number.

LNTK-026 STOP Encoder not enabled

Cause: Tracking encoder is not enabled.

Remedy: Enable the tracking encoder before reading its COUNT or RATE within the program.

LNTK-027 STOP Invalid data on LNTK stack

Cause: Invalid data was found on the tracking stack.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-028 STOP LNTK stack underflow

Cause: The tracking stack attempted to read more data than was present.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-029 STOP LNTK stack overflow

Cause: Too many tracking subprocesses are present. There is a limit to the number of tracking processes that can be called from other programs.

Remedy: Check to ensure sub-processes are not being called erroneously. Consider rewriting procedures so that fewer sub-processes are used.

LNTK-030 STOP Stack / header mismatch

Cause: The schedule number on the tracking stack did not match the schedule of the program it corresponds to.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-031 STOP UFRAME must be zero

Cause: User frames cannot be used when tracking.

Remedy: Set \$MNUFRAMENUM[] to zero.

LNTK-032 STOP Conveyor resync failed

Cause: The conveyor was not resynchronized properly.

Remedy: Make sure the Tracking Schedule is properly initialized, the encoder is active, and all hardware is functioning properly.

LNTK-033 STOP Failed to send a packet

Cause: Failed to send a packet including trigger value.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-034 STOP Failed to make a packet

Cause: Failed to make a packet including trigger value.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-035 STOP Invalid INTR function pointer

Cause: An invalid internal function pointer was encountered.

Remedy: Perform a COLD start of the system. (Cycle power.) Notify FANUC if problem persists.

LNTK-036 STOP Invalid tracking group

Cause: Group number on the tracking schedule is invalid.

Remedy: Line Tracking support only robot. Set group number of robot on the tracking schedule.

LNTK-037 STOP Rotation diff exceeds limit

Cause: Run time part Rotation diff exceeds limit.

Remedy: Reteach the tracking uframe for this application.

LNTK-038 STOP CIRCLE tracking not supported

Cause: CIRCLE tracking not supported.

Remedy: Can not use tracking uframe for circular tracking.

LNTK-039 STOP Use track uframe is not YES

Cause: Use track uframe is not YES.

Remedy: Set \$Insch[].\$use_trk_ufm is set to TRUE so that the instruction can function.

LNTK-040 WARN No line tracking task found

Cause: No line tracking task found.

Remedy: Internal Error. Notify FANUC for this condition.

LNTK-041 STOP Encoder is moved in T1 mode.

Cause: The 250 mm/s speed limitation of T1 mode cannot be guaranteed for tracking motion. Therefore, robot motion is not allowed in T1 mode as long as the conveyor is moving.

Remedy:

- To execute tracking motion in T1 mode, make sure the conveyor is stopped.
- To execute tracking motion with a moving conveyor, put the controller in T2 or AUTO mode.

LNTK-042 WARN Skip outbound move LN:%d

Cause: The robot can not reach the destination before it gets out of the specified boundary. Skip this motion to prevent pausing of program execution.

Remedy: Program at a faster speed or extend the boundary.

LNTK-043 STOP Multiple group not supported

Cause: Tracking programs do not support multiple group motion.

Remedy: Change the program to a single group program.

LNTK-044 WARN Invalid DOUT %d^3 in Sched %d^2

Cause: The Digital output specified in the indicated schedule is not a valid DOUT.

Remedy: Change the variable for Outbound DOUT to represent a valid, correctly mapped digital output.

LNTK-045 WARN Gp %d^2 near downstrm bound %d^3

Cause: The robot is approaching the downstream boundary that is currently in use.

Remedy: This is a warning to indicate that a Track Destination Gone error could be imminent. It can be avoided by stopping the conveyor, changing the boundary or touching up the path to improve cycle time.

LNTK-046 STOP Cont_Turn permit key Not on

Cause: Continuous turn option is loaded without turn on permission key.

Remedy: Continuous turn greoup can not be line tracking group. \$scr.\$update_map1 bit 0x400000 needs to turn on.

LNTK-047 STOP Limit Checking verification fail

Cause: Change Fee is needed to avoid limit error. However new fee verification fail. Typically it is because boundary setting cause new fee delay tracking move that robot will go to un-reachalbe position such as dead zone.

Remedy: Re-teach the position or adjust tracking boundar.

LNTK-048 STOP Tracking environment mismatch

Cause: Try to run a tracking move in a none-tracking environment or try to run a none-tracking move in a tracking environment.

Remedy: Abort the program. Then make the move.

LNTK-049 WARN FEE Change to avoid limit LN:%d

Cause: System change robot last axis moving direction for this motion line to avoid limit error.

Remedy: This is a warning to indicate that System change robot last axis moving direction for this motion line to avoid limit error.

LNTK-050 STOP No Cont_Turn in tracking group

Cause: Line tracking group also is continuous turn gorup.

Remedy: Line tracking group can not support continuous turn in same group.

LNTK-051 STOP \$LNCFG.\$SLC_PT_TRIG not set

Cause: Use accutrig without setting \$lncfg.\$slc_pt_trig.

Remedy: Set \$lncfg.\$slc_pt_trig to true then cycle power.

LNTK-053 STOP Ethernet Encoder NOT ready

Cause: Ethernet Encoder is not ready either because of Master Encoder DAL or did not get master encoder value for the time out period.

Remedy: If it is master DAL alarm, correct master DAL alarm If not getting master encoder value: Check Ethernet Cable for this controller and master. Sometimes it maybe due to timeout value too small.

LNTK-054 STOP Not a line tracking encoder

Cause: Line Tracking does not support Encoder number above 8.

Remedy: Change Tracking schedule to use encoder 1-8.

LNTK-055 STOP Ethernet Master DAL (Enc:%d)

Cause: Ethernet Master Encoder has DAL Alarm.

Remedy: Fix Master's DAL alarm.

LNTK-056 STOP Ethernet Enc Timeout (Enc:%d)

Cause: Ethernet Master Encoder did not update slave for a timeout period.

Remedy: Ethernet Master Encoder controller maybe offline. Bring master controller on line.

LNTK-057 STOP Encoder is moved use 100% ovr

Cause: When conveyor is moved, robot is moved with less than 100% OVR.

Remedy: When conveyor is moved, please move a robot with 100% OVR.

LNTK-058 STOP Insch Indexer scale mismatch

Cause: Indexer setup and tracking schedule scale factor setup mismatch.

Remedy: Please check the Indexer setup and teach the scale factor on SETUP tracking menu.

LNTK-059 STOP Ethernet Master DTER(Enc:%d)

Cause: Master Encoder of Ethernet Encoder has DTERR.

Remedy: See the description for the SRVO-068 DTERR alarm.

LNTK-060 STOP float Register value too big

Cause: The value of the register is used by an instruction of Line Tracking is invalid.

Remedy: Please check the value of the register.

LNTK-061 STOP Not a valid trkcd group mask

Cause: This tracking program group mask is not valid.

Remedy: Please set the group mask of TP program according to \$CD_PARAM.\$MH_ROB_GMSK.

LNTK-062 STOP Leader follower out of Synch

Cause: The relative position between Leader robot and follower robot is out of tolerance.

Remedy: Please jog follower robot so that relative position to leader is within tolerance.

LNTK-063 STOP COORD is needed in TRKCD prog

Cause: All the motion line inside TP program of Line Tracking with Coordinated Motion needs to be COORD instruction.

Remedy: Please add COORD instruction to every motion line of TP program of Line Tracking with Coordinated Motion

LNTK-065 STOP COORD needed in TRKCD trans

Cause: The motion after TP program of Line Tracking with Coordinated Motion needs to be COORD instruction.

Remedy: Please add COORD instruction to the motion after TP program of Line Tracking with Coordinated Motion.

LNTK-067 STOP Diag axis not supported

Cause: Diagonal linear axis can not supported for Rail Tracking.

Remedy: Change linear axis type to other than diagonal axis

LNTK-070 STOP Conveyor move upstream

Cause: Conveyor moves upstream.

Remedy: If conveyor is actually moving down stream, then please check the line tracking scale factor. If application need to support upstream conveyor motion, then disable this checking by turn off bit16 of \$LNCFG.\$COMP_SW2

LNTK-071 STOP Can only record in Left pane

Cause: It is not possible to record tracking position in right pane.

Remedy: Edit and record tracking position in left pane.

LNTK-072 STOP Wrong Uframe used in TRKCD prg

Cause: Follower user frame number is not set correctly.

Remedy: Set follower user frame number as dynamic user frame number specified in Coord setup menu.

LNTK-073 STOP FLOAT TO LONG overflow

Cause: This is internal error.

Remedy: Cold start the controller. If the problem persists, just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

LNTK-074 STOP ADV_TRK Detach_prof v exceed

Cause: This is internal error.

Remedy: Cold start the controller. If the problem persists, just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

LNTK-075 WARN Circular Boundary not used

Cause: z axis of circular tracking frame is not parallel to z axis of world frame. Circular boundary can not be used for this circular tracking.

Remedy: If you use Circular boundary, please make z axis of circular tracking frame and z axis of world frame parallel. If you do not use Circular boundary, please set \$LNCFG_GRP[group_number].\$WRK_RAD_ENB to FALSE in order to disable circular boundary function.

LNTK-076 STOP Inc motion is not supported

Cause: Incremental motion is not supported for Line Tracking, Circular Tracking and Rail Tracking.

Remedy: Incremental motion instruction is not supported.

4.11.4 LRNR Alarm Code

LRNR-000 STOP Path Deviation Excess

Cause: The TCP trace collected during learning is too far away from geometric data or taught points.

Remedy: Make sure geometric information such as diameter/width/length, center position, utool/uframe are correct.

LRNR-001 STOP Too many motion options

Cause: TP line has too many motion modifiers so LRN TP instruction cannot be added.

Remedy: Remove unnecessary motion modifiers.

LRNR-002 WARN Learning Iteration %d ...

Cause: The display shows learning progress. The argument represents the learning iteration.

Remedy: Informational message, no action required.

LRNR-003 STOP Invalid learning data L:%d

Cause: LRN data in this line number stored invalid data required large position/orientation offsets. L is line number.

Remedy: Program may have changed after learning. Re-learn this program.

LRNR-004 STOP TCP trace mismatched

Cause: TCP trace collected during learning is invalid.

Remedy: Stop other TCP trace display such as 4D graphics TCP trace.

LRNR-005 STOP Fixed J1 not reachable L:%d

Cause: Current orientation cannot be used for 5-axis motion. L is line number.

Remedy: Rotate tool in tool frame R (about approach vector) and regenerate TP program or touch TP points.

LRNR-006 WARN Cannot record pos with LRN

Cause: Current TP line has LRN data existed so cannot touchup this position.

Remedy: Remove LRN motion modifier and re-learn this program if touchup is necessary.

LRNR-007 STOP Pos type not supported L:%d

Cause: Position representation type is not supported in this line. L is line number.

Remedy: Change the position representation type to Cartesian.

LRNR-008 STOP Motn option not supported L:%d

Cause: Other motion options such INC or WJNT added to the motion line with LRN existed. L is line number.

Remedy: Remove unsupported motion modifiers such as INC or WJNT.

LRNR-009 STOP Not enough memory for learning

Cause: Not enough memory for data collection during learning.

Remedy: Use larger DRAM or try to use learn portion of TP program one at a time.

LRNR-010 WARN Cannot apply learning data

Cause: The learned data stored in LRN doesn't match with the original TP program.

Remedy: Re-learn TP program if program has been changed.

LRNR-011 STOP TP point not on circle L%d

Cause: The TP point is not on the circle. Cannot add more TP lines. L is line number.

Remedy: Make sure either geometric data is correct or TP program taught correctly.

LRNR-012 STOP Cannot auto add lines L%d

Cause: The existing TP lines are not CIR lines. Cannot add more TP lines. L is line number.

Remedy: Use CIR TP lines to use Auto Add Lines functions.

LRNR-013 STOP Program modified %s

Cause: The target program has been modified. The argument represents the program name.

Remedy: Please use related view (i + FCTN) to start LPC one more time.

4.11.5 LSR Alarm Code

LSR -001 Internal error (%s)

Cause: Internal error is occurred.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

LSR -002 Laser ENBL/DSBL state is DSBL

Cause: Laser Enable/Disable state is Disable.

Remedy: No laser command is output.
This is not an alarm, it's just a message.

LSR -003 Resume processing disabled

Cause: The laser was not output when restarting during laser processing because "Process disable for restart" on Laser Setup screen is enabled.

Remedy: This is not an alarm, it's just a message.

LSR -004 %s wait timeout

Cause: The input signal displayed in %s did not turn on.

Remedy: Check the status of the output source device.
If you can change the wait time, check if the wait time is appropriate.

LSR -005 Processing speed is too large

Cause: Processing speed of the LS instruction is too high.

Remedy: Change the processing speed to an appropriate value.

LSR -006 Received Laser Error

Cause: “Laser Error” input has turned on.

Remedy: Take measures on the laser oscillator side so that “Laser Error” input is turned off. After taking measures, reset the error.

LSR -007 Received Laser Warning

Cause: “Laser Warning” input has turned on.

Remedy: Take measures on the laser oscillator side so that “Laser Warning” input is turned off.

LSR -008 Received Chiller Error

Cause: “Chiller Error” input has turned on.

Remedy: Take measures on the chiller side so that “Chiller Error” input is turned off. After taking measures, reset the error.

LSR -009 Received Chiller Warning

Cause: “Chiller Warning” input has turned on.

Remedy: Take measures on the chiller side so that “Chiller Warning” input is turned off.

LSR -010 Guide laser OFF automatically

Cause: The guide laser turned off automatically to save the life of guide laser.

Remedy: Adjust the “Guide laser auto OFF timer” on laser setup screen.

LSR -011 %s mismatch

Cause: The status of the input signal and output signal displayed on %s do not match.

Remedy: Check the status of the equipment that is outputting the signal.

LSR -012 %s is ON

Cause: The input signal displayed in %s did not turn off.

Remedy: Check the status of the equipment that is outputting the signal.

LSR -013 %s is OFF

Cause: The input signal displayed in %s did not turn on.

Remedy: Check the status of the equipment that is outputting the signal.

LSR -014 %s

Cause: Refer to message in string.

Remedy: Refer to remedy for message in string.

LSR -015 Power On DI is OFF

Cause: “Power On” input is off.

Remedy: Turn on “Power On” input.

LSR -016 Laser ENBL/DSBL state is ENBL

Cause: Laser Enable/Disable state is Enable.

Remedy: This is not an alarm, it's just a message.

LSR -017 Out of range (%s)

Cause: The value specified for the argument of the LS instruction is incorrect.

Remedy: Refer to the character string displayed in %s and specify a value suitable for the argument of the LS instruction.

LSR -018 Laser instruction error

Cause: Processing schedules of the laser instruction are inappropriate.

Remedy: Specify a value suitable for the argument of the laser instruction.

LSR -019 This head number is invalid

Cause: Specified laser precessing head number is invalid.

Remedy: Specify the correct laser precessing head number.

LSR -020 %s cannot ON

Cause: The output signal displayed in %s could not be turned on.

Remedy: Refer to cause code.

LSR -021 %s cannot OFF

Cause: The output signal displayed in %s could not be turned off.

Remedy: Refer to cause code.

4.11.6 LSTP Alarm Code

LSTP-001 STOP.G Motion grp %d is active

Cause: You have requested that a motion group enter local stop mode while motion is still active for the requested group.

Remedy:

1. Press [RESET] key.
2. Ensure that the requested group does not have motion activity before you request that the motion group enter local stop mode.
3. When you request to enter local stop mode from program, please set a motion group mask with ‘ * ’ for the group that is requested to enter local stop mode.

LSTP-002 SERVO2 Brake on error in grp %d

Cause: When you requested to enter local stop mode, the brake was not engaged after the brake on timer has expired.

Remedy:

1. Press [RESET] key.
2. Check that the brake control is enabled. If \$PARAM_GROUP[group].\$SV_OFF_ENB[axis] = FALSE, the brake control is disabled. Then set \$PARAM_GROUP[group].\$SV_OFF_ENB[axis] = TRUE and cycle power.
3. Check whether the setting of brake number is correct. If it is incorrect, the brake is not engaged.

LSTP-004 SERVO2 Error setting DO ON (G:%d)

Cause: The request to turn on power supply from the robot controller to the local stop unit was not output. (The DO signal was not set to ON.) Number in the bracket shows the group number.

Remedy:

1. Press [RESET] key.
2. Verify that the DO signal port type and port number assignment for the specified motion group is correct.

LSTP-005 SERVO2 Error setting DO OFF (G:%d)

Cause: The request to turn off power supply from the robot controller to the local stop unit was not output. (The DO signal was not set to OFF.) Number in the bracket shows the group number.

Remedy:

1. Press [RESET] key.
2. Verify that the DO signal port type and port number assignment for the specified motion group is correct.

LSTP-006 SERVO2 DI1 ON timer expired (G:%d)

Cause: The request to turn off power supply from the robot controller to the local stop unit was output (the DO signal was set to OFF), but the DI1 signal from the local stop unit was not turned on, and the DI1 ON signal timer has expired. Number in the bracket shows the group number.

Remedy:

1. Verify that the DI/DO signal port type and port number assignment for the specified motion group is correct.
2. Verify that the DI1 turns on right after the alarm. If the DI1 is ON, set \$LS_CONFIG.\$SDI_ON_LAG and \$LS_CONFIG.\$SDI_OFF_LAG with proper value. If the DI1 is OFF, do not change the above system variables.
3. LSTP-012 occurs simultaneously. Perform a power cycle to release this alarm.
4. Check the hardware wiring is correct.
5. The local stop unit may be faulty. Replace it or document the events that led to the error, and contact your local FANUC representative.

LSTP-007 SERVO2 DI1 OFF timer expired (G:%d)

Cause: The request to turn on power supply from the robot controller to the local stop unit was output (the DO signal was set to ON), but the DI1 signal from the local stop unit was not turned off, and the DI1 OFF signal timer has expired. Number in the bracket shows the group number.

Remedy:

1. Verify that the DI/DO signal port type and port number assignment for the specified motion group is correct.
2. Verify that the DI1 turns off right after the alarm. If the DI1 is OFF, set \$LS_CONFIG.\$SDI_ON_LAG and \$LS_CONFIG.\$SDI_OFF_LAG with proper value. If the DI1 is ON, do not change the above system variables.
3. LSTP-012 occurs simultaneously. Perform a power cycle to release this alarm.
4. Check the hardware wiring is correct.
5. The local stop unit may be faulty. Replace it or document the events that led to the error, and contact your local FANUC representative.

LSTP-008 SERVO2 DI1 OFF in HDWR_ENBL (G:%d)

Cause: The DI1 signal from the local stop unit to the robot controller is OFF while local stop is enabled for the specified motion group. It is mismatched between the request and the status of the hardware. Number in the bracket shows the group number.

Remedy:

1. Verify that the DI/DO signal port type and port number assignment for the specified motion group is correct.
2. If you directly control the DO from the software to the local stop unit, the LSTP-008 might be occurred. Use DI2 when you request to the local stop unit.
3. LSTP-012 occurs simultaneously. Perform a power cycle to release this alarm.
4. Check the hardware wiring is correct.
5. The local stop unit may be faulty. Replace it or document the events that led to the error, and contact your local FANUC representative.

LSTP-009 SERVO2 DI1 ON in HDWR_DSBL (G:%d)

Cause: The DI1 signal from the local stop unit to the robot controller is ON while local stop is disabled for the specified motion group. It is mismatched between the request and the status of the hardware. Number in the bracket shows the group number.

Remedy:

1. Verify that the DI/DO signal port type and port number assignment for the specified motion group is correct.
2. If you directly control the DO from the software to the local stop unit, the LSTP-008 might be occurred. Use DI2 when you request to the local stop unit.
3. LSTP-012 occurs simultaneously. Perform a power cycle to release this alarm.
4. Check the hardware wiring is correct.
5. The local stop unit may be faulty. Replace it or document the events that led to the error, and contact your local FANUC representative.

LSTP-010 STOP.G Motion grp %d entering LSTOP

Cause: The motion command was received while the specified group is entering the local stop mode.

Remedy:

1. Press [RESET] key.
2. Set the DI2 signal to ON to disable the local stop if you want to send a motion command to this motion group.

LSTP-011 STOP.G Motion grp %d is in LSTOP

Cause: The motion command was received while the specified group is in the local stop mode.

Remedy:

1. Press [RESET] key.
2. Set the DI2 signal to ON to disable the local stop if you want to send a motion command to this motion group.

LSTP-012 SERVO2 LSU %d is in HDWR FAIL mode

Cause: The local stop unit is in hardware failure mode concerning the DI1 from the local stop unit to the robot controller. LSTP-006 to 009 occurs simultaneously.

Remedy: Refer to the LSTP-006~009 remedy. Perform a power cycle to release this alarm.

LSTP-013 STOP.G Motion grp %d Torque active

Cause: You have requested that a motion group enter local stop mode while motion is still active for the requested group.

Remedy:

1. Press [RESET] key.
2. Ensure that the requested group does not have motion activity before you request that the motion group enter local stop mode.

LSTP-014 WARN Motion grp %d Torque warning

Cause: You have requested that a motion group enter local stop mode while motion is still active for the requested group.

Remedy:

1. This is a warning message. A real alarm will be posted after the timer has expired.
2. Ensure that the requested group does not have motion activity before you request that the motion group enter local stop mode.

LSTP-015 SERVO2 Brake setting error %d (G:%d)**Cause:**

1. Servo off (brake control) of the local stop group is disabled.
 2. The brake number of the local stop group is zero.
 3. The brake number of the local stop group is used in other group.
- Number in the bracket shows the group number.

Remedy:

1. Enable servo off (brake control) for the local stop group.
2. Set correct brake number for the local stop group.
3. Set independent brake number for the local stop group.

4.12 M

4.12.1 MACR Alarm Code

MACR-001 Can't assign to MACRO command

Cause: The conditions for assigning macros are not correct.

Remedy: Check if there is a double definition or if the index is over the range.

MACR-003 Can't assign motn_prog to UK

Cause: It is not possible to assign a program with MOTION lock group to the User Key(UK) button.

Remedy: Remove the motion lock group from the program.

MACR-004 Can't execute motn_prog by UK

Cause: It is not possible to execute a program with MOTION lock group with the User Key(UK) button.

Remedy: Remove the motion lock group from the program.

MACR-005 Please enable teach pendant

Cause: It is not possible to execute a program when the teach pendant is disabled.

Remedy: Enable the teach pendant.

MACR-006 Please disable teach pendant

Cause: It is not possible to execute a program when the teach pendant is enabled.

Remedy: Disable the teach pendant.

MACR-007 The same macro type exists

Cause: The macro assign type already exists.

Remedy: Change the assign type to another.

MACR-008 Remote-cond isn't satisfied

Cause: This assign type is only enabled at REMOTE condition.

Remedy: Create REMOTE condition.

MACR-009 The index is out of range

Cause: This assign index is out of range.

Remedy: Change the assign index.

MACR-010 This SOP button is disabled

Cause: This SOP button is not enabled for macro execution.

Remedy: Change the value of the \$MACRSOPENBL system variable.

MACR-011 This UOP button is disabled

Cause: This UOP signal is not enabled for macro execution.

Remedy: Change the value of the \$MACRSOPENBL system variable.

MACR-012 Number of DI+RI is over

Cause: The number of RI+DI is over the maximum number. You can assign RI and DI to macro assign type, but the total number of assignments possible is restricted by the system variable \$MACROMAXDRI. \$MACROMAXDRI must be set to 5 and never be changed. When the total number of assignments is over \$MACROMAXDRI, this alarm occurs.

Remedy: First deassign the other RI or DI assignments. Then assign the new macro as RI or DI.

MACR-013 MACRO execution failed

Cause: Cannot execute this MACRO.

Remedy: Refer to the error cause code. Use to display the Alarm Log screen.

MACR-016 The macro is not completed

Cause: The macro aborted while executing.

Remedy: The macro will begin executing from the first line at the next execution.

4.12.2 MARL Alarm Code

MARL-000 Data modification disallowed

Cause: User tried to change data that was in use by robot.

Remedy: This is a warning message. In order to change data, in this case, you must first ABORT ALL.

MARL-001 Data in use by Robot

Cause: User tried to change data that was in use by robot.

Remedy: This is a warning message. In order to change data, in this case, you must first ABORT ALL.

MARL-002 GET_VAR failed %s

Cause: KAREL GET_VAR built-in did not return a successful status.

Remedy: Check if the variable exists or is initialized. If the variable does not exist or is uninitialized, try to figure out why. Call FANUC for assistance with the number posted with the error.

MARL-003 SET_VAR failed %s

Cause: KAREL SET_VAR built-in did not return a successful status.

Remedy: Check if the variable exists or is initialized. If the variable does not exist or is uninitialized, try to figure out why. Call FANUC for assistance with the number posted with the error.

MARL-004 Could not save .VR file %s

Cause: Error occurred while saving a .VR file.

Remedy: Check if the disk drive is connected or if there is a problem with the cable. Check if the floppy disk is formatted and if it is a double density diskette. Check if the diskette is full.

MARL-005 Could not load file %s

Cause: Error occurred while loading a .VR file.

Remedy: Check if the disk drive is connected or if there is a problem with the cable. Check if the floppy disk is formatted and if it is a double density diskette. Check if the diskette is full.

MARL-006 Could not create file %s

Cause: Error occurred while creating the file MRDTxxx.vr.

Remedy: Check RAM memory from the STATUS Memory menu. Perhaps there isn't enough memory to create the data file. If the memory looks ok, contact your local FANUC representative with the number associated with the message.

MARL-007 Error creating new variables

Cause: Error occurred while creating a variable.

Remedy: This message is an informational message and is always posted with another message.

MARL-008 Error reading data %s

Cause: Error occurred while reading the data which the user entered.

Remedy: This is a warning message. Try again. If you keep getting this message contact your local FANUC representative with the number in the error string.

MARL-009 Cannot use MODIFY

Cause: User is trying to modify a file which does not exist in the controller RAM.

Remedy: This is a warning message. Either create a new file or if you forgot, the load the file first.

MARL-010 File not loaded or created: %s

Cause: File does not exist in the controller RAM.

Remedy: This is a warning message.

MARL-011 Cannot resume program

Cause: Either operator panel E-STOP, teach pendant E-STOP is ON or teach pendant is enabled.

Remedy: This is a warning message and is posted with another message which will tell you exactly why the program cannot be resumed.

MARL-012 Operator Panel E-stop ON

Cause: Program cannot run with operator panel E-STOP.

Remedy: Release Operator panel E-stop, press reset and push cycle start to continue.

MARL-013 Teach pendant E-stop ON

Cause: Program cannot run with teach pendant E-STOP.

Remedy: Release teach pendant E-stop, press reset and push cycle start to continue.

MARL-014 Teach pendant is enabled

Cause: Program cannot run with teach pendant enabled.

Remedy: Disable teach pendant, press reset, and push cycle start to continue.

MARL-015 Program not selected

Cause: No program was selected from the SELECT menu prior to pressing CYCLE START.

Remedy: Select a program and then press CYCLE START.

MARL-016 %s already running

Cause: An attempt was made to run a program that was already running.

Remedy: No action necessary. This is only a warning message.

MARL-017 Register not defined %s

Cause: Register not defined or out of range.

Remedy: Check if the register is defined, if it is between 1-32.

MARL-018 Reg %s could not be set

Cause: Register operation failed.

Remedy: Check if the register is defined, if it is between 1-32 and if it has the right value. ABORT ALL and retry.

MARL-019 MRTool aborted

Cause: User switched to another screen without pressing DONE in the cycle start menu.

Remedy: This is a warning message. Do not switch screens before pressing DONE at the cycle start menu.

MARL-020 Product number not entered

Cause: User pressed DONE key without entering the product number in the cycle start menu.

Remedy: This is a warning message. Enter the product number and then press DONE.

MARL-021 %s exists. Not loaded

Cause: An attempt was made to copy a file which is already loaded on the controller.

Remedy: This is a warning message.

MARL-022 Loading error - %s

Cause: An error occurred while loading a file to the controller memory.

Remedy: This is a warning message. The file did not get loaded. Check if the communications cable is connected and that it is ok. Make sure the file you want to load exists on the floppy.

MARL-023 PosReg %s could not be set

Cause: Position Register operation failed.

Remedy: Check if the position value is defined and if it is valid. ABORT ALL and retry.

MARL-031 %s Semaphore timeout

Cause: This alarm indicates that there is a problem with the serial line used for the active gripper device.

Remedy: You must clear the serial line by changing it in the PORT I/O menu from No Use to Host Comm and then back to No Use. Follow these steps:

1. Select SETUP.
2. Press F1, [TYPE].
3. Select Port Init.

MARL-038 %s Invalid field value

Cause: This indicates that there is a problem with the serial line used for the active gripper device.

Remedy: You must clear the serial line by changing it in the PORT I/O menu from No Use to Host Comm and then back to No Use. Follow these steps:

1. Select SETUP.
2. Press F1, [TYPE].
3. Select Port Init.

MARL-046 %s Unknown AFD Error

Cause: An error has occurred. THIS NEEDS TO BE MORE SPECIFIC.

Remedy: Refer to *Pushcorp's FCU1000 Controller Manual* for detailed info on the error. If you are unable to resolve the error, contact the FANUC Hotline. The following errors might be assigned to MARL-046: 1001 "Unknown command" 1.

4.12.3 MASI Alarm Code

MASI-001 Internal Error (G: %d^2)

Cause: Internal error.

Remedy: Internal error. Please call customer service.

MASI-004 Out of memory

Cause: The system ran out of memory during initialization.

Remedy: Internal error. Please call customer service.

MASI-005 %s

Cause: Warning message. The cause is displayed in the message.

Remedy: Check system setup.

MASI-006 %s

Cause: STOP error message. The cause is displayed in the message.

Remedy: Check system setup.

MASI-010 MEMORY ALLOC ERROR

Cause: Internal error.

Remedy: Internal error. Please call customer service.

MASH-011 Pls Setup MASH

Cause: MASH has not been setup yet.

Remedy: Check and Set up RIPE and MASH.

MASH-013 Pls Set group mask in prog

Cause: The program that has WaitZone/SyncZone/EnterZone/ExitZone instructions does not have group mask set.

Remedy: Please set group mask in the TP program header or don't use the instructions in the program.

MASH-014 Invalid Device ID

Cause: The specified device ID in WaitZone/SyncZone is not valid.

Remedy: Please re-specify the device ID in the instruction or setup the system correctly.

MASH-015 Pls use different Device ID

Cause: The specified device ID has been used in the same WaitZone/SyncZone statement.

Remedy: Please re-specify valid device ID in the instruction.

MASH-018 Err in OSXSND

Cause: There is an error when sending pkt from one controller to different controller.

Remedy: Please check MASH and RIPE setup.

MASH-019 Err in OSSND

Cause: There is an error when sending pkt to the same controller.

Remedy: Please check MASH and RIPE setup.

MASH-020 No System Variables (G: %d^2)

Cause: System variables are not available.

Remedy: Internal error. Please call customer service.

MASH-021 No Data Structure (G: %d^2)

Cause: Internal Data structure is not available.

Remedy: Internal error. Please call customer service.

MASH-022 Stack Underflow (G: %d^2)

Cause: Internal error.

Remedy: Internal error. Please call customer service.

MASH-023 No Stack (G: %d^2)

Cause: Internal error.

Remedy: Internal error. Please call customer service.

MASH-024 Stack Overflow (G: %d^2)

Cause: Internal error.

Remedy: Internal error. Please call customer service.

MASH-026 Corrupt data (G: %d^2)

Cause: Internal error.

Remedy: Internal error. Please call customer service.

4.12.4 MCTL Alarm Code

MCTL-001 TP is enabled

Cause: Teach pendant is enabled, therefore motion control was not granted.

Remedy: Disable the teach pendant, and try the operation again.

MCTL-002 TP is disabled

Cause: The teach pendant is disabled, therefore motion control was not granted.

Remedy: Enable the teach pendant, and try the operation again.

MCTL-003 system is in error status

Cause: The system is in error status, therefore motion control was not granted.

Remedy: Clear the error by pressing RESET, and try the operation again.

MCTL-004 motion is in progress

Cause: Motion control was not granted because motion is still in progress.

Remedy: Wait until the robot comes to a complete stop.

MCTL-005 not in control of motion

Cause: Motion control was not granted because brakes were engaged.

Remedy: Make sure all brakes are released and try the operation again.

MCTL-006 TP has motion control

Cause: The teach pendant currently has the motion control, therefore motion control was not granted.

Remedy: Disable the teach pendant, and try the same operation again.

MCTL-007 PROG has motion control

Cause: The program has the motion control, therefore motion control was not granted.

Remedy: Pause or abort the program, and try the same operation again.

MCTL-008 Operator panel has motion control

Cause: Because the operator panel has the motion control, the motion control was not granted.

Remedy: Set the \$rmt_master system variable correctly, and try the operation again.

MCTL-009 Other has motion control

Cause: Other device has the motion control, and the motion control was not granted.

Remedy: Set the \$rmt_master system variable correctly, and try the operation again.

MCTL-010 Other than msrc is rel'ing

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MCTL-011 Due to error processing

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MCTL-012 subsystem code unknown

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MCTL-013 ENBL input is off

Cause: ENBL input on the UOP is off.

Remedy: Set ENBL input ON.

MCTL-014 Waiting for Servo ready

Cause: The motion control was not granted because servo was not up.

Remedy: Wait for a few seconds until servo is up and ready.

MCTL-015 Manual brake enabled

Cause: The motion control was not granted because manual brake control is enabled.

Remedy: Disable the manual brake control.

4.12.5 MEMO Alarm Code

MEMO-002 Specified program is in use

Cause: The specified program is being edited or executing.

Remedy: Abort the specified program. Or select it again after selecting another program.

MEMO-003 Specified program is in use

Cause: The specified program is being edit or executing.

Remedy: Abort the specified program. Or select it once more after selecting another program.

MEMO-004 Specified program is in use

Cause: The specified program is being edited or executing.

Remedy: Abort the specified program. Or select it once more after selecting another program.

MEMO-006 Protection error occurred

Cause: The specified program is protected by user.

Remedy: Cancel the protection of the specified program.

MEMO-007 Invalid break number

Cause: The specified break number does not exist.

Remedy: Specify the correct break number.

MEMO-008 Specified line no. not exist

Cause: The specified line number does not exist in the specified or default program.

Remedy: Specify a correct line number.

MEMO-010 Program name error

Cause: The specified program name is different form that of the P-code file.

Remedy: Specify the same program name.

MEMO-013 Program type is different

Cause: The specified program type is different from that of the object being processed.

Remedy: Specify the same program type.

MEMO-014 Specified label already exists

Cause: The specified label id already exists in the program.

Remedy: Specify another label number.

MEMO-015 Program already exists

Cause: The specified program already exists in the system.

Remedy: Specify another program name. Or delete the registered program.

MEMO-019 Too many programs

Cause: The number of the programs and routines exceeded the maximum possible number (3200).

Remedy: Delete unnecessary programs or routines.

MEMO-025 Label does not exist

Cause: Specified label does not exist.

Remedy: Set the index to an existing label.

MEMO-026 Line data is full

Cause: The number of line data exceeded the maximum possible line number (65535).

Remedy: Delete unnecessary line data.

MEMO-027 Specified line does not exist

Cause: The specified line data does not exist.

Remedy: Specify another line number.

MEMO-029 The line data can't be changed

Cause: The specified line data can't be changed. The size of modified data is different from that of original data when replacing it.

Remedy: Specify another line number or the data of same size.

MEMO-032 Specified program is in use

Cause: The specified program is being edited or executing.

Remedy: Abort the specified program. Or select it once more after selecting another program.

MEMO-034 The item can't be changed

Cause: The specified item is locked to change by system.

Remedy: Specify another item.

MEMO-038 Too many programs

Cause: The number of the programs exceeded the maximum number.

Remedy: Delete unnecessary programs.

MEMO-048 Break point data doesn't exist

Cause: The specified break point data does not exist.

Remedy: Specify another break point.

MEMO-050 Program does not exist

Cause: The specified program does not exist in the system.

Remedy: Specify another program or create the same program first.

MEMO-056 Program does not exist

Cause: The specified program does not exist in the system.

Remedy: Specify another program or create the same program first.

MEMO-061 No write access

Cause: The program must be opened with write access before attempting write operations.

Remedy: Open the program with write access before writing.

MEMO-065 Too many opened programs

Cause: Too many CALL instructions is used. The number of opened programs exceeded the maximum possible number(100).

Remedy: Abort the unnecessary programs. Or, remove unnecessary CALL instructions.

MEMO-068 Specified program is in use

Cause: 1. The specified program is editing or executing. 2. The specified program is entered to MACRO.

Remedy: 1. Abort the specified program. Or select it once more after select another program. 2. Remove the program form the MACRO entry.

MEMO-071 Position does not exist

Cause: The specified position data does not exist.

Remedy: Specify another position.

MEMO-072 Position data already exists

Cause: Position data already exists in the specified position you want to move.

Remedy: Specify another position. Or, delete the data in the specified position.

MEMO-073 Program does not exist

Cause: The specified program does not exist in the system.

Remedy: Specify another program or create the same program first.

MEMO-074 Program type is not TPE

Cause: The operation can be applied only to TPE programs.

Remedy: Select a TPE program.

MEMO-075 Program can't be used

Cause: The program must be opened before attempting read or write operations.

Remedy: Open the program before reading or writing.

MEMO-078 Program can't be used

Cause: The specified operation is not supported for this program type.

Remedy: Specify a program whose program type matches the operation.

MEMO-080 Protection error occurred

Cause: The specified program is protected by user.

Remedy: Cancel the protection of the specified program.

MEMO-081 Specified program is in use

Cause: The specified program is editing or executing.

Remedy: Abort the specified program. Or select it once more after select another program.

MEMO-088 Program does not exist

Cause: The specified position data does not exist.

Remedy: Specify another position.

MEMO-093 Specified program is in use

Cause: The specified program is editing or executing.

Remedy: Abort the specified program. Or select it once more after select another program.

MEMO-094 Parameters are different

Cause: A routine exists in memory with a different parameter definition than the routine in the PC file being loaded.

Remedy: Update the calling convention in the KAREL program being loaded or delete the obsolete routine from system memory.

MEMO-098 EOF occurs in file access

Cause: EOF occurs in file access. When P-code file was scanned, EOF occurs.

Remedy: The P-code data may be broken. Translate the specified KAREL program again. Then reload the P-code.

MEMO-099 Program name is wrong

Cause: The program name length is different from that of the P-code data.

Remedy: Check the program name of the specified program.

MEMO-103 Check sum error occurred

Cause: The specified data was broken. This is the internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MEMO-104 Program already exists

Cause: The specified program already exists in the system.

Remedy: Specify another program name. Or delete the registered program.

MEMO-112 Break data already exists

Cause: The specified break point data already exists in the program.

Remedy: Specify another break point.

MEMO-113 File access error

Cause: The port that has the program you want to load is not connected.

Remedy: Check the port setting and the connected device.

MEMO-114 Break point can't be removed

Cause: The break point data can not be overwritten. The program is protected by user or executing.

Remedy: Cancel the protection of the program. Or, abort the program.

MEMO-115 Break point can't be removed

Cause: The break point data can not be removed. The program is protected by user or executing.

Remedy: Cancel the protection of the program. Or, abort the program.

MEMO-119 Application data doesn't exist

Cause: The specified application data does not exist because the program does not correspond to the specified application.

Remedy: Specify another application data. Then create the program in the current system.

MEMO-120 Application data doesn't exist

Cause: The specified application data does not exist because the program does not correspond to the specified application.

Remedy: Specify another application data. Create the program in the current system again.

MEMO-123 Application data doesn't exist

Cause: The specified application data does not exist because the program does not correspond to the specified application.

Remedy: Specify another application data. Create the program in the current system again.

MEMO-124 Program version is too new

Cause: KAREL program version number is newer than that of the system.

Remedy: Translate the program with an older version of the Translator.

MEMO-125 Program version is too old

Cause: KAREL program version number is older than that of the system.

Remedy: Translate the program with a newer version of the Translator.

MEMO-126 No more available TPP memory

Cause: Lack of the TP Program memory which can be used.

Remedy: Delete unnecessary programs.

MEMO-127 Pos reference over 255 times

Cause: Reference of the same position exceeded the maximum count (256).

Remedy: Set new position ID for the referenced position.

MEMO-128 %s parameters are different

Cause: A routine exists in memory with a different parameter definition than the routine in the PC file being loaded.

Remedy: Update the calling convention in the KAREL program being loaded or delete the obsolete routine from system memory.

MEMO-130 Please power up again

Cause: The data of the system been broken.

Remedy: Please power up again.

MEMO-131 Please power up again

Cause: System data in CMOS has been broken.

Remedy: Turn power off and then back on.

MEMO-132 %s has been broken

Cause: Program data has been broken at the power fail recover.

Remedy: Delete the program and create it again. Press the RESET key to clear the error. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MEMO-133 Please power up again

Cause: System data in CMOS has been broken.

Remedy: Turn power off and then back on.

MEMO-134 TPE program %s already exists

Cause: The TPE program which has the same name already exists.

Remedy: Delete the teach pendant (TP) program. Then load the specified KAREL program again.

MEMO-135 Cannot create TPE program here

Cause: The TPE program cannot be created in this start mode.

Remedy: Select the function menu to change the start mode.

MEMO-136 Cannot load P-code here

Cause: The KAREL program cannot be loaded in this start mode.

Remedy: Select the function menu to change the start mode.

MEMO-137 Load at Control Start Only

Cause: Specified KAREL program cannot be loaded in this mode. Because the same name program has already been loaded at controlled start.

Remedy: Load the program at controlled start.

MEMO-138 Delete at Control Start Only

Cause: Specified program has already been loaded at controlled start. Because of this, you can only delete the program at controlled start.

Remedy: Delete the program at controlled start.

MEMO-144 Header size too big

Cause: The TPE header size specified is too big. Must be less than 256.

Remedy: Change size to range of 1-256. If necessary, use multiple header records.

MEMO-145 TPE cannot have KAREL routine

Cause: The routine of the specified program has been already referred by the KAREL program. Because of this, the specified program must be the KAREL program. The user cannot use the specified program name as a TPE program.

Remedy: Change the program name, or delete the KAREL program which refers the routine of the specified program.

MEMO-146 Invalid variable is used

Cause: Invalid variable is used in the specified KAREL program.

Remedy: Check the variable used in the specified KAREL program.

MEMO-147 Flash File access error(write)

Cause: The write access to the Flash File(F-ROM) failed. Some program may be lost.

Remedy: The Flash File(F-ROM) may be broken. Create or load the lost program again.

MEMO-148 Flash File access error(read)

Cause: The read access to the Flash File(F-ROM) failed. Some program may be lost.

Remedy: The Flash File(F-ROM) may be broken. Create or load the lost program again.

MEMO-149 Specified program is broken

Cause: Program data has been broken.

Remedy: Please power off and on. Then check the program data of the specified program.

MEMO-151 No more available memory(TEMP)

Cause: Lack of the temporary memory which can be used for the program.

Remedy: Delete unnecessary programs. Or, change the D-RAM module to the bigger one.

MEMO-152 Program %s is in use

Cause: The specified program is being edited or is executing.

Remedy: Perform one of the following:

- Abort the specified program or disable the teach pendant and press F3, CONTINUE.
- Press F4, SKIP to skip over this file.

MEMO-153 %s is not deleted

Cause: The unused program can not be deleted.

Remedy: Cycle power and try the operation again.

MEMO-154 Parent program still exists

Cause: When the parent program exists, the daughter program cannot be deleted.

Remedy: Delete the parent program before deleting the daughter program.

MEMO-155 Too many positions

Cause: The total number of positions exceeds the maximum number(32766).

Remedy: Delete the unused positions.

MEMO-156 Renumber program failed

Cause: The renumber operation failed.

Remedy: Cycle power and try the operation again.

MEMO-157 Cannot execute this program

Cause: The specified program is broken.

Remedy: Delete the program and create it again. Press RESET to clear the error. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MEMO-158 Type converted in %s

Cause: When loading the specified KAREL program the variable type definition required conversion. The program was loaded and converted as needed.

Remedy: If conversion was expected, then no action is required. If conversion was not expected, then maybe the loaded program was not the version of the program that was needed. Check for other versions of this program and load them as needed.

MEMO-159 Convert failed in %s

Cause: When loading the specified KAREL program the variable type definition required conversion. The variable reference could not be converted. Therefore, the program was not loaded as needed.

Remedy: See the diagnostic data file, FR:KRLCONV.LS, for more information about the specific variable and program involved. Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-160 Save failed for %s

Cause: When loading a KAREL program or dictionary, a backup copy could not be made to the specified file. The program or dictionary was loaded into memory.

Remedy: Check that there is space available on the specified device. If not, remove some unneeded files. Check the cause message for this alarm. It will provide the specific reason that the copy could not complete.

MEMO-161 Converting KAREL program %s to version %s

Cause: When loading the specified KAREL program the variable type definition required conversion to the specified version.

Remedy: If conversion was expected then no action is required. If conversion was not expected, then maybe the loaded program was not the version of the program that was needed. Check for other versions of this program and load them as needed.

MEMO-162 Line: %d Local variable mismatch not handled

Cause: The type definition for a local variable in a KAREL routine already exists but is of a different type than what you are attempting to load.

Remedy: Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-163 Line: %d Field mismatch not handled

Cause: The type definition for a field in a structure already exists but is of a different type than what you are attempting to load.

Remedy: Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-164 Line: %d Structure mismatch not handled

Cause: The type definition for a structure in a KAREL program already exists but is of a different type than what you are attempting to load.

Remedy: Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-165 Line: %d First field is different

Cause: The type definition for a structure in a KAREL program already exists but the first field is different than what you are attempting to load.

Remedy: Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-166 Path conversion failed

Cause: The type definition for a PATH in a KAREL program already exists but is of a different type than what you are attempting to load.

Remedy: Translate this program using a version of the translator that matches the version of the controller. Then try to load the program again.

MEMO-167 Restore failed for %s

Cause: Restore of a program failed. See error cause code for details.

Remedy: Consult cause code for more information.

MEMO-168 Backup failed for %s

Cause: A file backup was attempted uses the PROG_BACKUP() builtin. This specific program failed to backup because of the reason specified in the cause code.

Remedy: Refer to the remedy on the cause code.

MEMO-169 Clear failed for %s

Cause: The program that you attempted to clear with the PROG_CLEAR builtin failed.

Remedy: Refer to the remedy on the cause code. Typically the cause of the error is that the program is selected. In this case, unselect the program via the SELECT_TPE builtin before executing the PROG_CLEAR builtin.

MEMO-170 Program name too long

Cause: The program name must be shorter than eight characters when long program names are not enabled or configured.

Remedy: Load the longname option by setting \$LONGNAM_ENB=TRUE.

MEMO-171 FILE program cannot be modified

Cause: FILE programs are write protected unless they are in the editor. So you cannot modify attributes and other program data for this type of program storage.

Remedy: Move the program to another storage type temporarily or permanently. CMOS, SHADOW and SHADOW ONEMAND all support this type of modification.

MEMO-172 Extended storage feature not loaded

Cause: The operation requires extended storage option to be loaded.

Remedy: Load extended storage option or choose another operation.

MEMO-173 No more program name space

Cause: No more program space is available.

Remedy: Remove unnecessary programs. If you have less than 7500 programs document the events that led to the error, and contact your local FANUC representative.

MEMO-174 FILE path does not exist

Cause: The FROM path is not configured or points to a directory which does not exist.

Remedy: Fix the File path specification from the SELECT Config... screen.

MEMO-175 Cannot convert program data

Cause: An error has occurred converting a program from DRAM or FILE to executable TPP code.

Remedy: Your TPP program may be invalid. If the problem persists, please document the events that led to the error, and contact your local FANUC representative.

MEMO-176 FILE program file missing

Cause: A TP file in the file directory has been deleted or the resource containing TP FILE programs is unavailable.

Remedy: Check the TP FILE programs directory to make sure that it is accessible from the robot posting this error.

MEMO-177 Cannot load ON DEMAND program

Cause: The ON DEMAND program could not be loaded.

Remedy: If the problem persists please document the events that led to the error, and contact your local FANUC representative.

MEMO-178 No more available DRAM (SHADOW/FILE)

Cause: Lack of the memory which can be used.

Remedy: Delete unnecessary programs.

MEMO-183 Cannot delete FILE storage program

Cause: Programs whose storage is file cannot be deleted.

Remedy: Delete files from FILE storage area and repowe.

4.12.6 MENT Alarm Code

MENT-000 ME-NET system error

Cause: System internal error.

Remedy: Press RESET. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MENT-001 ME-NET PCB not installed

Cause: The ME-NET board is not installed.

Remedy: Install the ME-NET board.

MENT-002 ME-NET PCB abnormal

Cause: The ME-NET board is abnormal.

Remedy: Check ME-NET board.

MENT-003 Communication CPU ROM abnormal

Cause: Communication CPU ROM is abnormal.

Remedy: Check the ME-NET board.

MENT-004 Communication CPU RAM abnormal

Cause: Communication CPU RAM is abnormal.

Remedy: Check the ME-NET board.

MENT-005 Communication CPU LSI abnormal

Cause: Communication CPU RAM is abnormal.

Remedy: Check ME-NET board.

MENT-006 More than one taken occurred

Cause: More than one taken occurred.

Remedy: Check ME-NET board.

MENT-007 Duplicate address was detected

Cause: A duplicate address was detected.

Remedy: Check the ME-NET board.

MENT-008 My station Transmitter broke down

Cause: The station Transmitter broke down.

Remedy: Check the ME-NET board.

MENT-009 Taken not come around

Cause: Taken not come around.

Remedy: Check ME-NET board.

MENT-010 Type 3 buffer overflow

Cause: A Type 3 buffer overflow.

Remedy: Check ME-NET board.

MENT-011 Data-link TX length abnormal

Cause: The Data-link TX length is abnormal.

Remedy: Check the ME-NET's system variable.

MENT-012 Relay-link TX length abnormal

Cause: The Relay-link TX length is abnormal.

Remedy: Check ME-NET's system variable.

MENT-013 Register-link TX length abnormal

Cause: The register-link TX length is abnormal.

Remedy: Check ME-NET's system variable.

MENT-014 Relay-link RX offset abnormal

Cause: The Relay-link RX offset is abnormal.

Remedy: Check ME-NET's system variable.

MENT-015 Register-link RX offset abnormal

Cause: The register-link RX offset is abnormal.

Remedy: Check the ME-NET system variable.

MENT-016 RX frame ID abnormal

Cause: The RX frame ID is abnormal.

Remedy: Check ME-NET's system variable.

MENT-017 Communication CPU no response

Cause: Even if 60 seconds passes, a logical link was not able to be joined.

Remedy: Check the ME-NET board.

MENT-018 Frame length error

Cause: The construction of the media is defective.

Remedy: Improve the construction of the media.

MENT-019 Media defective

Cause: The construction of the media is defective.

Remedy: Improve the construction of the media.

4.12.7 MHND Alarm Code

MHND-001 Cannot resume program

Cause: Program cannot run because an error condition will not clear. When on the ALARM page, select this error and press HELP to see error detail.

Remedy: Fix the error condition, press reset.

MHND-002 Operator Panel E-stop ON

Cause: Program cannot run with operator panel E-STOP.

Remedy: Release Operator panel E-stop, press reset and push cycle start to continue.

MHND-003 Teach pendant E-stop ON

Cause: Program cannot run with teach pendant E-STOP.

Remedy: Release teach pendant E-stop, press reset and push cycle start to continue.

MHND-004 Teach pendant is enabled

Cause: Program cannot run with teach pendant enabled.

Remedy: Disable teach pendant, press reset, and push cycle start to continue.

MHND-005 System still in fault state

Cause: An error condition exists such that the robot cannot be reset.

Remedy: Fix the error condition, press reset.

MHND-006 Program not selected

Cause: To run a .tp program in local you must first select the program.

Remedy: Press SELECT key and choose a program to run. If trying to run M.H. Shell, the key switch must be in REMOTE.

MHND-007 UOP Ignored. Wrong Start Mode

Cause: A UOP signal was detected, but the controller is not set up to start using UOPs.

Remedy: UOP must be set as the start device or the UOP signal will be ignored.

MHND-008 SOP Ignored. Wrong Start Mode

Cause: A SOP signal was detected, but the controller is not set up to start using SOPs.

Remedy: SOP must be set as the start device or the SOP signal will be ignored.

MHND-009 Could not run task %s

Cause: While M.H. Shell was internally trying to run another program in multi-tasking mode, an error occurred.

Remedy: ABORT ALL and retry.

MHND-010 Cycle power to change registers

Cause: An old smaller POSREG.VR file was loaded onto the controller. The number of position registers was changed to fewer than what the current version of M.H. Shell needs.

Remedy: M.H. Shell logic has automatically set the number of position registers to the necessary size again. But a cold start is needed to increase the position register table size. Do a cold start.

MHND-011 Cycle power to change macros

Cause: An old smaller SYSMACRO.SV file was loaded onto the controller. The number of macros was changed to fewer than what the current version of M.H. Shell needs.

Remedy: M.H. Shell logic has automatically set the number of macros to the necessary size again. But it needs a cold start in order for the macro table size to be increased. Do a cold start.

MHND-012 TEMP DRAM memory is low

Cause: Temporary memory is getting too low to download more files.

Remedy: Warning only. Delete any unneeded data before downloading files.

MHND-013 Robot is not calibrated

Cause: The robot must be calibrated to run TP programs.

Remedy: Calibrate the robot.

MHND-014 Robot must be at home position

Cause: The At home check function is enabled but the robot is not at the home position when the start was received.

Remedy: Move the robot to the home position. Once the robot is at home, then you can re-issue the request.

MHND-015 HOME refpos not taught

Cause: The At home check function is enabled but the Home refpos has not been fully setup.

Remedy: Select SETUP, [TYPE], Ref Position. Make sure the selected Refpos is taught and enabled. Select SETUP, [TYPE], Shell config. Make sure the Which ReFpos is HOME position is setup under the Special Positions DETAILS. Then ABORT and retry.

MHND-016 REMOTE switch must be REMOTE

Cause: The REMOTE keyswitch is on LOCAL, and needs to be set to REMOTE.

Remedy: Turn the REMOTE keyswitch to REMOTE.

MHND-017 UOP is not the master device

Cause: The UOP is not the master device, which prevents the run request from executing.

Remedy: Go to the Variables menu under SYSTEM, and set \$RMT_MASTER=0.

MHND-018 Program %s not loaded

Cause: The program that you tried to run is not loaded on the controller.

Remedy: Load or create the program. If the program name shown in the error code is wrong, then check that the MENU, SETUP, Shell Config TP program ID method and DETAILS are correct.

MHND-019 Robot mode must be MANUAL

Cause: The robot mode is not MANUAL, so the operation requested cannot be performed.

Remedy: The manual mode din from the PLC is set OFF. It must be ON for manual mode operations.

MHND-020 Robot must be in AUTO mode

Cause: The robot must be in full automatic mode with the PLC before production operation can occur.

Remedy: The manual mode din from the PLC is set ON. It must be OFF for automatic control of production.

MHND-021 Robot is in MANUAL mode

Cause: On manual mode entry - Manual mode input from the PLC just turned ON. All PLC manual mode input functions are enabled.

Remedy: Status message only.

MHND-022 Robot is in AUTO mode

Cause: On manual mode exit - Manual mode input from the PLC just turned OFF. All PLC manual mode input functions are disabled. Normal auto mode execution is allowed.

Remedy: Status message only.

MHND-023 Robot is busy. Mode change pending.

Cause: Robot mode is being changed while the robot is busy.

Remedy: When the robot is idle, change the manual mode bit again to the desired state. NOTE: The system is watching for a change in input setting to change the robot mode.

MHND-024 Step mode must be disabled

Cause: Step mode is enabled, which prevents the run request from executing.

Remedy: Press the STEP hardkey to disable step mode.

MHND-025 UOP CYCLE START can only resume

Cause: A UOP CYCLE START input was detected but no paused program exists.

Remedy: None available. This error is only generated if your Cell interface has been specified using \$shell_cfg.\$cont_only=TRUE. If this is the case, then for safety reasons UOP CYCLE START is only used for resuming paused programs.

MHND-026 Illegal DIN program select received

Cause: A DIN program select was detected but either the keyswitch is not in remote or the selected program does not exist.

Remedy: Check the keyswitch settings. Check the program selected.

MHND-027 %s program select signal received

Cause: A program select was detected.

Remedy: Status message only.

MHND-028 Illegal PNS program select received

Cause: A PNS program select was detected but either the keyswitch is not in remote or the selected program does not exist.

Remedy: Check the keyswitch settings. Check the program selected.

MHND-029 Illegal GIN program select received

Cause: A GIN program select was detected but either the keyswitch is not in remote or the selected program does not exist.

Remedy: Check the keyswitch settings. Check the program selected.

MHND-030 Illegal RSR program select received

Cause: A RSR program select was detected but either the keyswitch is not in remote or the selected program does not exist.

Remedy: Check the keyswitch settings. Check the program selected.

MHND-031 Cycle interrupt disabled

Cause: The cycle interrupt option has been disabled.

Remedy: This is a status message only.

MHND-032 Cycle interrupt enabled

Cause: The cycle interrupt option has been enabled.

Remedy: This is a status message only.

MHND-033 DIN Ignored. Wrong Start Mode

Cause: A DIN signal was detected, but the controller is not set up to start using DINs.

Remedy: DIN must be set as the start device or the DIN signal will be ignored.

MHND-034 %s Job select setup error

Cause: The job selection setup was not completed properly. Selected I/O does not exist.

Remedy: Go to the MENU, SETUP, Shell Config menu and make sure the TP program ID method and details are setup correctly.

MHND-035 Start Ignored. Already running

Cause: A start signal was received but a TP program is already running. A second TP program will not be started at this time.

Remedy: Informative message only.

MHND-037 START Ignored. Menu Testing.

Cause: The menu test screen is displayed on the TP. A TP program cannot be started until a different screen is displayed.

Remedy: Display a different menu on the TP and give another start signal.

MHND-038 %s is not running.

Cause: MULTIO.TP is not running. It will be restarted.

Remedy: If MULTIO.TP does not automatically restart, check alarm log for errors.

MHND-039 Cycle power to change user alarms

Cause: The new number of user alarms will not take effect until after a cold start.

Remedy: Informative message only.

MHND-040 Cycle power to change no of tasks

Cause: The new number of tasks will not take effect until after a cold start.

Remedy: Informative message only.

MHND-041 Perm memory is low

Cause: CMOS memory is getting too low to create more variable files.

Remedy: Warning only. Delete any unneeded data.

MHND-100 %s

Cause: A customized pause error was detected.

Remedy: Follow instructions given.

MHND-101 Reg %s could not be set

Cause: Register operation failed.

Remedy: Check if the register is defined, if it is between 1-64 and if it has the right value. Must ABORT ALL and retry.

MHND-102 %s

Cause: General status messages.

Remedy: N/A

MHND-103 Register not defined %s

Cause: This is just a debug message.

Remedy: N/A

MHND-104 %s

Cause: General status messages.

Remedy: N/A

MHND-105 %s

Cause: General status messages.

Remedy: N/A

MHND-106 Controller has no UOPs assigned.

Cause: The controller has no UOPs installed. So you cannot select UOPs for job selection control.

Remedy: Check Hardware installation.

MHND-107 Macro Table is too small for menu option

Cause: The MACRO table must have at least 100 elements for the MENU UTILITY option to be installed properly.

Remedy: Increase the MACRO table size.

MHND-108 Aborting TP program

Cause: An error occurred in the TP program.

Remedy: Check the TP program.

MHND-120 Loading error - %s

Cause: There was a problem loading the specified file.

Remedy: Check the communication line and make sure that the file exists on the floppy.

MHND-121 %s exists. Not loaded

Cause: The specified file already exists on the controller.

Remedy: Delete the file from the controller before reloading.

MHND-122 CREATE_VAR failed %s

Cause: Data in a setup menu could not be created.

Remedy: Cold start the controller and retry.

MHND-123 File not loaded or created: %s

Cause: File does not exist in the controller RAM.

Remedy: This is a warning message.

MHND-124 GET_VAR failed %s

Cause: Data in a setup menu could not be set.

Remedy: Cold start the controller and retry.

MHND-125 SET_VAR failed %s

Cause: Data in a setup menu could not be set.

Remedy: Cold start the controller and retry.

MHND-127 IO_STATUS error occurred

Cause: An I/O error occurred during data transfer.

Remedy: Cold start the controller and retry.

MHND-128 Could not save .VR file %s

Cause: Error occurred while saving a .VR file.

Remedy: Cold start the controller and retry.

MHND-129 Could not load file %s

Cause: Error occurred while loading a .VR file.

Remedy: Cold start the controller and retry if you know you should be able to read the .vr file into M.H. Shell.

MHND-130 Could not access files

Cause: Error occurred while accessing the floppy disk.

Remedy: Make sure the communication is correct and retry.

MHND-133 Error using CLEAR built-in

Cause: An error occurred while clearing a variable file.

Remedy: Reset controller and try again.

MHND-134 File is in use by robot. Cannot transfer

Cause: The file you requested to transfer is being used by the robot. It is being used in production or is being edited using SETUP.

Remedy: First stop the robot. Then ABORT ALL. Then attempt to transfer.

MHND-135 Could not read %s

Cause: Could not read the .dt file - Data error.

Remedy: Check the communication status.

MHND-136 Could not clear file

Cause: If the file is being used in production it cannot be cleared.

Remedy: Wait until production is aborted and clear the file.

MHND-137 .VR file has not been created

Cause: During the transfer of data from the PC, the .VR data file could not be created.

Remedy: Check the available memory. If RAM is full, clear unneeded data and try again.

MHND-138 Could not create .vr file

Cause: An error occurred while creating the file.

Remedy: Cold start the controller and retry.

MHND-139 Error creating new variables

Cause: An error occurred while creating a new file.

Remedy: Check the available memory. If RAM is full, clear unneeded data and try again. Cold start the controller and retry.

MHND-160 Robot in use-Cannot TEST menu.

Cause: You cannot TEST a menu when the robot is executing a TP program.

Remedy: All menu changes should be made when the robot is idle. TEST the menu when the robot is idle.

MHND-161 Error: tp program not running

Cause: The List menu test attempted to run a TP program.

Remedy: Reset the controller and try again.

MHND-162 doing unpause in prompt box

Cause: Status debug message only.

Remedy: N/A

MHND-163 doing continue in prompt box

Cause: Status debug message only.

Remedy: N/A

MHND-164 %s Illegal type

Cause: A MACRO was called with a parameter that is illegal. The parameter has the wrong data type.

Remedy: Check the MACRO call in the TP program.

MHND-165 %s missing

Cause: A MACRO was called without a parameter that must be entered.

Remedy: Check the MACRO call in the TP program.

MHND-166 Status Menu does not exist

Cause: A Status Macro used a string name for a menu that does not exist.

Remedy: Check the MACRO call in the TP program.

MHND-200 PLC not reading alarm outputs

Cause: The PLC is not handshaking with the robot to send alarms to the PLC.

Remedy: Check PLC status. Clear the PLC alarms.

MHND-201 Error:too many entries in alarm table

Cause: At most 100 alarms can be entered into the PLC alarm table. Other alarms will be ignored.

Remedy: Extra alarms are ignored.

MHND-230 FAULT must be reset

Cause: A fault has occurred, so the operation requested cannot be performed.

Remedy: Clear the source of the fault, and press FAULT RESET.

MHND-231 Program already running or paused

Cause: A program is already running, so the operation requested cannot be performed.

Remedy: Re-issue the request when the current program is paused or aborted.

MHND-232 Teach pendant must be enabled

Cause: The teach pendant must be enabled when accessing this teach pendant hardkey.

Remedy: Enable the teach pendant.

MHND-233 TP hardkey macros are in use

Cause: One of the MH gripper macros is already in use. Only one macro can be used at a time.

Remedy: Wait until the current macro is finished.

MHND-234 Valve %s: Manual grip part

Cause: Information message only.

Remedy: N/A

MHND-235 Valve %s: Manual release

Cause: Information message only.

Remedy: N/A

MHND-236 Error: Valve is not setup.

Cause: The valve signal number (S#) can not be zero.

Remedy: Select MENU, I/O, MH Valves to setup the gripper signals.

MHND-237 Error: Clamp is not setup.

Cause: The clamp signal number (S#) can not be zero.

Remedy: Select MENU, I/O, MH Valves to setup the gripper signals.

MHND-238 Error: PartPres is not setup.

Cause: The part present signal number (S#) can not be zero.

Remedy: Select MENU, I/O, MH Valves to setup the gripper signals.

MHND-239 Error: Vacuum Made is not setup.

Cause: The vacuum made signal number (S#) can not be zero.

Remedy: Select MENU, I/O, MH Valves to setup the gripper signals.

MHND-240 %s missing

Cause: A MACRO was called without a parameter that must be entered.

Remedy: Check the MACRO call in the TP program.

MHND-241 %s Illegal type

Cause: A MACRO was called with a parameter that is illegal. The parameter has the wrong data type.

Remedy: Check the MACRO call in the TP program.

MHND-242 Parameter %s error

Cause: Send PC Macro data error.

Remedy: Check other alarm log errors for more details.

MHND-243 %s I/O error

Cause: I/O data error.

Remedy: Check other alarm log errors for more details.

MHND-244 Parameter %s ignored

Cause: A MACRO was called with too many parameters.

Remedy: Check the MACRO call in the TP program.

MHND-245 Valve %s is not a vacuum gripper

Cause: This MACRO requires a vacuum gripper.

Remedy: Check the MACRO call in the TP program.

MHND-246 Valve %s is not a clamp gripper

Cause: This MACRO required a clamp gripper.

Remedy: Check the MACRO call in the TP program.

MHND-247 Parm %s is not between 1-2

Cause: Parameter passed to MH macro is not between 1 and 2. The valve referenced must be a vacuum valve.

Remedy: Change parameter to an integer between 1 and 2.

MHND-248 TRYOUT MODE: %s reading part

Cause: In TRYOUT mode: The part present input does detect the signal.

Remedy: There must be no part present in tryout mode.

MHND-249 Must press SHIFT key too

Cause: The shift key must be pressed when accessing this teach pendant hardkey.

Remedy: Press the shift key.

MHND-250 Parm %s is not an integer

Cause: Parameter passed to MH macro is not an integer.

Remedy: Change parameter to an integer.

MHND-251 Parm %s is not between 1-16

Cause: Parameter passed to MH macro is not between 1 and 9.

Remedy: Change parameter to an integer between 1 and 9.

MHND-252 Valve %s is not setup

Cause: Valve selected by paramter has not been setup.

Remedy: Enter appropriate information through user screens.

MHND-253 No parameters passed to routine

Cause: No parameters have been passed to the routine.

Remedy: Place parameter in the list following the macro call.

MHND-254 %s not sensing part

Cause: The part present input does not detect the signal.

Remedy: Check if part is in range of the switch.

MHND-255 %s still reading part

Cause: The part present input sees the signal after dropoff.

Remedy: Ensure robot has dropped off the part.

MHND-256 Clamp %s state error

Cause: The specified clamp open signal failed.

Remedy: Check if all the clamp has is obstructed or the cylindicator is working properly.

MHND-257 Clamp %s state error

Cause: The specified clamp closed signal failed.

Remedy: Check if all the clamp has is obstructed or the cylindicator is working properly.

MHND-258 %s did not make vacuum

Cause: The vacuum switch is not detecting vacuum.

Remedy: Check all of the vacuum cups for a complete seal.

MHND-259 %s vacuum is not off

Cause: The vacuum switch is still detecting vacuum.

Remedy: Check if all the clamps have completely closed.

MHND-260 Parm %s is not between 1-12

Cause: Parameter passed to MH macro is not between 1 and 10.

Remedy: Change parameter to an integer between 1 and 10.

MHND-261 ERRORS: Check FR:GRERRORS.LS

Cause: File FR:HTVALVE contains errors.

Remedy: Fix data and try again to gripper CONFIG.

MHND-262 The Macro Table was updated.

Cause: The MACRO table was reloaded and is now too small. The table size has been reset.

Remedy: Must coldstart to physically increase the MACRO table size.

MHND-264 Check Clamp Enabled but delay=0.

Cause: Check Clamp Opened or Check Clamp Closed is enabled. An Operation Delay of 0 ms is not enough time to allow the clamps to operate.

Remedy: Either disable the Clamp Checks or set a reasonable Clamp Operation Delay.

4.12.8 MOTN Alarm Code

MOTN-000 Unknown error (MO00)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: The system may have been corrupted. This may have been caused by any of a number of reasons including: Incorrect loading and setup loading incompatible options, mixing software version when adding options and other memory corruption problems. The following is a list of possible remedies: 1. Perform a cold start. 2. Perform an init start and setup the robot again 3. Confirm that any options or additional software not on the original software distribution media is the same version number. If the main system software was supplied on several disks or memory cards, make sure that you are using a matched set. Also make sure that the installation manual being used is for this version of software. If any of the software version are not matched, a complete re-load with the correct software will be necessary. 4. Confirm that no incompatible or mutually exclusive option have been loaded. 5. Full software reload. 6. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-001 Internal error in osmkpkt

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-002 Internal error in ossndpkt

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-003 Internal error in oswrtmbx

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-004 Internal error in ossigflg

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-005 Internal error in osclrlflg

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-006 Internal error in osrcvpkt

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-007 Internal error in osredmbx

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-008 Internal error in oswaiflg

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-009 Normal Single Step / BWD stop

Cause: System executes normal Single Step or Backward motion stop.

Remedy: This is a normal condition. No action is required.

MOTN-010 Internal error in osathpkt

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-011 Internal error in osdltpkt

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-012 Invalid softpart MIR

Cause: Invalid softpart MIR.

Remedy: Make sure the correct basic motion softpart is installed.

MOTN-013 Invalid softpart SEG

Cause: Invalid softpart SEG.

Remedy: Make sure the correct basic motion softpart is installed.

MOTN-014 unknown error (MO14)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-015 unknown error (MO15)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-016 unknown error (MO16)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-017 Limit error (G:%d^2, A:%s^7)

Cause: Limit error.

Remedy: Reteach the position out of limits.

MOTN-018 Position not reachable (G:%d^2)

- Cause:**
1. Position is not reachable.
 2. Path of Cartesian motion was near J1 singularity (the wrist center is on J1 axis).
 3. Cartesian jog was done near J1 singularity.
 4. Position before offset, tool offset, or vision offset meets cause 1 or 2.
 5. Offset, tool offset, or vision offset which rotates the wrist axis 180 degrees was done.

- Remedy:**
1. Reteach the position to make it reachable.
 2. Reteach the position to avoid J1 singularity, or bypass J1 singularity using additional points, or change to Joint motion.
 3. Do Joint jog until the robot gets away from J1 singularity.
 4. Do remedy 1 or 2 for the position before offset. Do it for the positions before each offset if offsets are overlapped.
 5. Modify the offset amount which don't rotate the wrist axis 180 degrees.

MOTN-019 In singularity

- Cause:**
1. Path of Cartesian motion was near singularity.
 2. Cartesian jog was done near J1 singularity.

- Remedy:**
1. Reteach the position to avoid singularity, or change to Joint motion.
 2. Do Joint jog until the robot gets away from singularity.

MOTN-020 Wristjoint warning

Cause: Wrist joint warning.

Remedy: Wrist joint warning.

MOTN-021 No kinematics error

Cause: No kinematics.

Remedy: Use joint motion.

MOTN-022 Invalid limit number

Cause: Invalid limit number.

Remedy: Set limit number correctly.

MOTN-023 In singularity

- Cause:**
1. Path of Cartesian motion was near singularity.
 2. Cartesian jog was done near J1 singularity.
 3. Position before offset, tool offset, or vision offset is near singularity.

- Remedy:**
1. Reteach the position to avoid singularity, or change to Joint motion.
 2. Do Joint jog until the robot gets away from singularity.
 3. Do remedy 1 for the position before offset. Do it for the positions before each offset if offsets are overlapped.

MOTN-024 Kinematics not defined

Cause: Kinematics is not defined.

Remedy: Define Kinematics.

MOTN-025 unknown error (MO25)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-026 MMGR initialization error

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-027 PLAN initialization error

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-028 INTR initialization error

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-029 FLTR initialization error

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-030 Internal error in MMGR:PEND

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-031 Internal error in MMGR:ESEG

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-032 Internal error in MMGR:PRSD

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-033 Internal error in MMGR:GNL

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-034 Internal error in MMGR_MMR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-035 Internal error in MMGR_MIR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-036 Internal error in MMGR:MSTR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-037 Internal error in MMGR:MDON

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-038 Internal error in MMGR:CAN

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-039 Internal error in MMGR:FCAN

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-040 Internal error in MMGR:CAND

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-041 Internal error in MMGR:PSTR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-042 Internal in MSSR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-043 Internal error in MMGR:EPKT

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-044 Internal error in MMGR:ERR

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-045 Internal error in pro. start

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-046 Internal error in MMGR:LSTP

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-047 Internal error in MMGR:PRST

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-048 unknown error (MO48)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-049 Attempt to move w/o calibrated

Cause: Robot not calibrated.

Remedy: Calibrate the robot.

MOTN-050 Invlaid spdlim (G:%d^2 A:%s^7)**MOTN-051 Speed out of range (G:%d^2)****MOTN-052 Jntvellim out of range (G:%d^2)****MOTN-053 Internal planner error (G:%d^2)**

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-054 Uninitialized dest pos (G:%d^2)

Cause: Uninitialized destination position.

Remedy: Teach destination position.

MOTN-055 Uninitialized via pos (G:%d^2)

Cause: Uninitialized via position.

Remedy: Teach via position.

MOTN-056 Speed limits used (G:%d^2)

Cause: Speed limits used.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-057 Invalid mir (G:%d^2)

Cause: Invalid packet received by planner.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-058 Invalid cancel request (G:%d^2)

Cause: Invalid cancel request received by planner.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-059 Null segment received (G:%d^2)

Cause: Planner received null seg when not expecting one.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-060 Uninitialized base vec (G:%d^2)

Cause: Uninitialized base vector in relative moves.

Remedy: Initialize base vector.

MOTN-061 Uninitialized distance (G:%d^2)

Cause: Uninitialized distance in relative moves.

Remedy: Initialize distance.

MOTN-062 Invalid position type (G:%d^2)

Cause: Invalid position type received by planner.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-063 Position config change (G:%d^2)

Cause: Configuration mismatch.

Remedy: 1. Set the same configuration of the start position and the destination position.
2. Change the motion type to joint motion.
3. Use wrist joint motion instruction.
If the constant path function is disabled(\$CPCFG.\$CP_ENABLE=FALSE), change the motion type to joint motion, or change term type to FINE or CNT0.
If you use the continuous rotation function, the constant path function may be disabled.
4. When this alarm occurs even if you set the same configuration of the start position and the destination position and use wrist joint motion instruction, the configuration for wrist joint motion is mismatch between the start position and the destination position. Remove wrist joint motion instruction or change the motion type to joint motion

MOTN-064 Rs orientation error (G:%d^2)

Cause: RS orientation planning error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-065 AES orientation error (G:%d^2)

Cause: AES orientation planning error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-066 Degenerate circle (G:%d^2)

Cause: Degenerate circle.

Remedy: Reteach via and/or destination positions.

MOTN-067 Ata2 error in circle (G:%d^2)

Cause: Internal system error during circular planning.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-068 Invalid Prgoverride (G:%d^2)

Cause: Prgoverride is not within 0 to 100.

Remedy: Set \$prgoverride within 0 to 100.

MOTN-069 Error in mocmnd (G:%d^2)

Cause: Internal error: planner received invalid mocmnd.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-070 Error in motype (G:%d^2)

Cause: Internal error: planner received invalid motype.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-071 Error in termttype (G:%d^2)

Cause: Internal error: planner received invalid termttype.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-072 Error in segtermttype (G:%d^2)

Cause: Internal error: planner received invalid segtermttype.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-073 Error in orientype (G:%d^2)

Cause: Internal error: planner received invalid orientype.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-074 Error in speed (G:%d^2)

Cause: Speed is not within 0 to \$speedlim.

Remedy: Set speed within 0 to \$speedlim.

MOTN-075 Error in rotspeed (G:%d^2)

Cause: Rotspeed is not within 0 to \$rotspeedlim.

Remedy: Set Rotspeed within 0 to \$rotspeedlim.

MOTN-076 Error in contaxisvel (G:%d^2)

Cause: Contaxisvel is not within 0 to 100.

Remedy: Set contaxisvel to within 0 to 100.

MOTN-077 Error in seg_time (G:%d^2)

Cause: Seg_time is negative.

Remedy: Set seg_time positive.

MOTN-078 Error in accel_ovrd (G:%d^2)

Cause: Accel_ovrd greater than 500.

Remedy: Set accel_ovrd within 0 to 500.

MOTN-079 Error in accu_num (G:%d^2)

Cause: Internal error: planner received invalid accu_num.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-080 Via position required (G:%d^2)

Cause: Missing via position for circular motion.

Remedy: Teach via position.

MOTN-081 Extended position error (G:%d^2)

Cause: Internal error: planner received invalid extended position representation.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-082 Null mir pointer (G:%d^2)

Cause: NULL MIR pointer.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-083 Illegal SEG recvd (G:%d^2)

Cause: Internal error: planner received segment belonging to another group.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-084 Illegal CONSEG recvd (G:%d^2)

Cause: Not used.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-085 Error in gp_concurrent(G:%d^2)

Cause: Internal error: planner received invalid mmr.gp_concurrent.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-086 Not all CON_SEGs recvd(G:%d^2)

Cause: Group motion: not all segments are received.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-087 Utool change not allowed(G:%d^2)

Cause: \$utool is changed before move.

Remedy: Do not change \$utool for this move.

MOTN-088 Not cartesian move (G:%d^2)

Cause: Motype is not Cartesian.

Remedy: Must set motype to Cartesian.

MOTN-089 Segment not planned (G:%d^2)

Cause: Internal plan error:seg in list not all planned.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-090 MIR mismatch (G:%d^2)

Cause: Internal plan error:mir mismatch.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-091 Va orientation error (G:%d^2)

Cause: Internal plan error:atan2 error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-092 Extended not supported (G:%d^2)

Cause: Extended axes not supported.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-093 Internal PLAN blend err(G:%d^2)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-094 Blend corner too big (G:%d^2)

Cause: Not used.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-095 Can't blend corner line:%d^5

Cause: Warning, there is not enough distance to perform corner blending.

Remedy: If corner blending is still required for the line shown reteach pos further apart.

MOTN-096 Cart rate not equal(G:%d^2)

Cause: Intellitrak On: \$linear_rate and \$circ_rate must be equal.

Remedy: Set \$linear_rate equal to \$circ_rate. cycle power.

MOTN-097 INTR overrun %d^3 (G:%d^2)

Cause: Interpolator overrun.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-098 Circle angle too large

Cause: Taught points define an arc larger than half circle.

Remedy: If arc bigger than half circle is intended use two or more Circular instructions to teach the circle. If the intended arc is smaller than half circle then circle's via point is not between Circle's start and destination points. Check the taught points and make the necessary changes.

MOTN-099 INTR Fail to get MIRPKT (G:%d^2)

Cause: Internal interpolator error:failed to receive mir when expecting one.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-100 INTR Fail to get FDO (G:%d^2)

Cause: Internal interpolator error: failed to receive fdo when expecting one.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-101 MIR list is empty (G:%d^2)

Cause: Internal interpolator error: mir list is empty when it shouldn't be.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-102 SEG list is empty (G:%d^2)

Cause: Internal interpolator error: seg list is empty when it shouldn't be.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-103 Send ENB pkt fail (G:%d^2)

Cause: Internal interpolator error: error in sending ENB packet.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-104 Send DSB pkt fail (G:%d^2)

Cause: Internal interpolator error: error in sending DSB packet.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-105 Send TRG pkt fail (G:%d^2)

Cause: Internal interpolator error: error in sending TRG packet.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-106 Process motion done (G:%d^2)

Cause: Internal interpolator error: process motion had completed without being restarted.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-107 Bad filter type (G:%d^2)

Cause: Internal interpolator error: invalid filter type received.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-108 INTR seglist error (G:%d^2)

Cause: Internal interpolator error: error in seg list management.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-109 Internal INTR error (G:%d^2)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-110 Use FINE in last L (G:%d^2)

Cause: This motion instruction cannot be executed until the previous motion is completed.

Remedy: Use FINE in last motion Instruction. This alarm can occur when a robot with 5 axes or less switches tool numbers during line tracking while ignoring WPR of teaching positions. If this is displayed, please change to reachable WPR, or change tools after tracking is complete.

MOTN-111 Can't switch filter(G:%d^2)

Cause: Warning message to indicate that switch filter cannot take place.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-112 Increment move turn Mismatch

Cause: Incremental motion causes turn number mismatch.

Remedy: Change position to absolute position.

MOTN-113 Robot not calibrated

Cause: Robot not calibrated.

Remedy: Calibrate the robot.

MOTN-114 Servo is on (G:%d^2)

Cause: Servo is still on.

Remedy: Turn off servo.

MOTN-115 Invalid brake mask (G:%d^2)

Cause: Invalid brake mask.

Remedy: Check brake mask.

MOTN-116 Invalid solution (G:%d^2)

Cause: Invalid kinematics solution.

Remedy: Reteach position.

MOTN-117 Robot not mastered (G:%d^2)

Cause: Robot not mastered.

Remedy: Master the robot. Refer to the application tool Operator's Manual specific to your application.

MOTN-118 Robot in over travel (G:%d^2)

Cause: Robot in overtravel.

Remedy: Reset over travel jog the robot outside over travel position.

MOTN-119 Servo is off (G:%d^2)

Cause: Robot servo is on.

Remedy: Turn off servo.

MOTN-120 Invalid reference position (G:%d^2)

Cause: Invalid reference position.

Remedy: Check reference position.

MOTN-121 Invalid config. string (G:%d^2)

Cause: Invalid config string.

Remedy: Reteach your config string.

MOTN-122 Dfilter not empty (G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-123 Not enough node (G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-124 INTR:Bad Mirpkt req_code(G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-125 INTR got illegal pkt (G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-126 Can't init CH KPT (G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-127 Can't detach CH PKT (G:%d^2)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-128 Group mtn not supported(G:%d^2)

Cause: Group motion not supported.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-129 Local cond ptr conflict(G:%d^2)

Cause: Conflict in local condition list pointers.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-130 Non-empty local cond list(G:%d^2)

Cause: Local condition list attached to SEG is not NULL.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-131 In singularity

Cause: Position near by singularity.

Remedy: Reteach position that is near a singularity point.

MOTN-132 Group circ not supported(G:%d^2)

Cause: Group motion: circular motype for all groups not supported.

Remedy: Reteach motype.

MOTN-133 Time after limit used(G:%d^2)

Cause: Local condition time after value is too big. System will use time after limit This is just a warning.

Remedy: No corrective action required.

MOTN-134 Can not move path backward (G:%d^2)

Cause: Backward path/subpath motion is not supported.

Remedy: Remove backward command.

MOTN-135 Last motype can't be circular (G:%d^2)

Cause: Backward last node motype can not be circular.

Remedy: Change last node motype.

MOTN-136 Circular Points too close(L:%d^5)

Cause: Two of the circular taught points are too close to each other.

Remedy: Re-teach the points. Ideally circular points should be evenly spaced. Otherwise a small change in one point can drastically change the programmed circle.

MOTN-137 No circular softpart (G:%d^2)

Cause: The circular motion softpart is not loaded in the system.

Remedy: Load the circular softpart.

MOTN-138 No joint short motion SP (G:%d^2)

Cause: Joint short motion softpart is not loaded in the system.

Remedy: Load joint short motion softpart.

MOTN-139 No cart short motion SP (G:%d^2)

Cause: Cartesian short motion softpart is not loaded in the system.

Remedy: Load Cartesian short motion softpart.

MOTN-140 No KAREL motion softpart (G:%d^2)

Cause: The KAREL motion softpart is not loaded in the system.

Remedy: Load the KAREL motion softpart.

MOTN-141 No KAREL motion func. ptr (G:%d^2)

Cause: The KAREL motion function pointer is not initialized or does not exist.

Remedy: Check that the KAREL Motion softpart has been loaded, and restart the controller.

MOTN-142 No Group Motion SP (G:%d^2)

Cause: The Group Motion softpart is loaded and multi-group motion is specified.

Remedy: Check that the Group Motion softpart has been loaded, and restart the controller.

MOTN-143 No Motion Resume SP (G:%d^2)

Cause: The Motion Resume softpart is loaded and path resume motion is specified.

Remedy: Check that the Motion Resume softpart has been loaded, and restart the controller.

MOTN-144 No joint Turbo Move SP (G:%d^2)

Cause: Joint Turbo Move softpart is not loaded in the system.

Remedy: Load joint Turbo Move softpart.

MOTN-145 No cart Turbo Move SP (G:%d^2)

Cause: Cartesian Turbo Move softpart is not loaded in the system.

Remedy: Load cartesian Turbo Move softpart.

MOTN-146 INTR can't replan major axis(G:%d^2)

Cause: Mismatch in major axis turn number.

Remedy: Reteach position.

MOTN-147 L->J replan joint slowdown (G:%d^2)

Cause: Linear motions ignore turn numbers. Therefore, when a joint motion follows several linear motions, the turn number might be mismatched, causing the robot to slow down.

Remedy: Change the current motion's motype to linear or change the previous motion's motype to joint. If the problem persists, re-teach the path.

MOTN-148 Can't move concurrently (G:%d^2)

Cause: Two motion groups cannot synchronize with each other due to replanning of one group. This will cause slow down on both groups.

Remedy: If slow down is not acceptable, re-teach the path.

MOTN-149 CF:rotspeedlim exceeded line:%d^5

Cause: CF:rotspeedlim exceeded.

Remedy: Set \$cf_paramgp[].\$cf_framenum=1 or 2 and cycle power or reduce speed or use FINE in prev line.

MOTN-150 PM: XYZ data error (L:%d)

Cause: The distance move exceeded the tolerance.

Remedy: Check the position data(XYZ) in the IBGN file.

MOTN-151 PM: WPR data error (L:%d)

Cause: The rotation move exceeded the tolerance.

Remedy: Check the position data(WPR) in the IBGN file which is output to MC or PC by the External Path Modification function. When the rotation between interpolation data is over the limit set by system variable, \$PM_GRP[g].\$ROT_ERR_LIM, MOTN-151 alarm will be generated.

MOTN-152 PM: Can't current record data

Cause: The IBGN instruction could not record the interpolation data.

Remedy: Document the events that led to the error and call your local FANUC representative.

MOTN-153 PM: Joint move fast (L:%d)

Cause: The joint angle move exceeded the tolerance.

Remedy: The joint angle move might be too fast because it must move around a singularity point. Reteach the point and remove the singularity point.

MOTN-154 PM: I/O data error (L:%d)

Cause: The data cannot be output.

Remedy: The I/O data in ibgn.txt might be different from that in SENSPS.txt. Check the I/O data in SENSPS.txt and make sure that it matches igbn.txt.

MOTN-155 PM: No interpolation data

Cause: No interpolation data exists.

Remedy: Interpolated data does not exist. Check the interpolation data in ibgn.txt.

MOTN-156 PM: Config changed(L:%d)

Cause: The configuration changed.

Remedy: The configuration has been changed. Check the configuration in IBGN.txt.

MOTN-157 PM: Internal error(%d)

Cause: An internal error has occurred.

Remedy: Press RESET. If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

MOTN-158 PM: Original path invalid

Cause: The original path is invalid.

Remedy: Set the original path resume function to TRUE.

MOTN-159 PM: Joint data error (L:%d)

Cause: The joint data is invalid. The recorded data might be around singularity point and has changed configuration.

Remedy: Rerecord the data again except without the singularity, and the configuration's change point.

MOTN-161 (%s^4 L:%d^5) Can't look ahead

Cause: Could not get the next motion instruction. This can happen due to: - Using unlocked position registers - Using IF/SELECT statements - Control transfer to another program - Changing the setting for a system variable in the program.

Remedy: Use LOCK PREG instruction to lock position registers. Remove conditional branching (IF/SELECT) if possible. Consolidate programs if possible. Move the parameter instruction to a different line if possible.

MOTN-165 L%d %s Not support %s

Cause: There is a conflict with option used.

Remedy: Remove conflict options from motion line.

MOTN-166 L%d %s Requires %s

Cause: The option used requires another option, which is not available.

Remedy: The required option is not installed. Please remove problem option.

MOTN-169 Start4 Invalid (G:%d)

Cause: Internal Error.

Remedy: Please reset and resume again. Resume motion will not be on constant path. If the problem persists, just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-170 Load is close to capacity

Cause: The robot payload is close to capacity.

Remedy: Change the tool or hand to satisfy the payload condition.

MOTN-171 Overload

Cause: Overload.

Remedy: Change tool/hand to satisfy load condition.

MOTN-172 Another robot is re-linked

Cause: Another link robot was paused and restarted.

Remedy: Pause and restart all the link robot.

MOTN-173 Robot link configuration error

Cause: An incorrect configuration has occurred for a linked robot.

Remedy: Confirm setup data and program detail data. Confirm that the master and slave group numbers are set correctly in the Multi-Arm setup menu. Confirm that host names are set correctly.

MOTN-174 No motion control

Cause: The attempted operation requires motion control.

Remedy: Confirm motion control status and retry the operation.

MOTN-175 Failed to be MASTER

Cause: The setup or group mask in the program might be incorrect, or the robot is still moving.

Remedy: Confirm setup data and group mask in the program and retry the operation.

MOTN-176 Failed to be SLAVE

Cause: The setup or group mask in the program might be incorrect, or the robot is still moving.

Remedy: Confirm that the setup data and the group mask are correct in the program.

MOTN-177 Failed to end sync motion

Cause: The setup or group mask in program might be incorrect, or the robot is still moving.

Remedy: Confirm that the setup data and group mask are correct in the program.

MOTN-178 Link robot is HELD

Cause: The robot link program is held.

Remedy: Confirm each link robot's position and restart the program.

MOTN-179 Robot link internal error

Cause: Cartesian filter is used for robot link.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-180 Robot link Calib-data not found

Cause: The robot link calibration data is not correct.

Remedy: Confirm that the calibration setup is correct.

MOTN-181 Robot link Version mismatch

Cause: The robot link version is not compatible with the peer robot.

Remedy: Confirm that the software version is consistent between robots.

MOTN-182 Failed to get data from master

Cause: The slave robot failed to get the position data from the master robot.

Remedy: Confirm that communication status and setup data are correct.

MOTN-183 Invalid MNUTOOLNUM data array

Cause: The current UTOOL number is not correct.

Remedy: Confirm UTOOL number and retry the operation.

MOTN-184 Invalid MNUTOOL data array

Cause: The current UTOOL data is not correct.

Remedy: Confirm the UTOOL data and retry the operation.

MOTN-185 Protect of ACK BF to be sent

Cause: Failed to send ACK from slave.

Remedy: Confirm communication status and retry the operation.

MOTN-186 Protect of BCST BF to be sent

Cause: Failed to send broadcast from master.

Remedy: Confirm communication status and retry the operation.

MOTN-187 Protect of ACK BF to be read

Cause: Failed to read ACK from slave.

Remedy: Confirm communication status and retry the operation.

MOTN-188 Protect of BCST BF to be read

Cause: Failed to read broadcast from master.

Remedy: Confirm communication status and retry the operation.

MOTN-189 Slave motion remained

Cause: The slave robot is still moving.

Remedy: Confirm that the slave program is already stopped at link end.

MOTN-190 Slave cannot use JOINT pos

Cause: Joint position data is used for the slave program.

Remedy: Use XYZWPR data for the slave program.

MOTN-191 Slave cannot JOINT motion

Cause: Joint motion is not available for the slave program.

Remedy: Use Cartesian motion and retry the operation.

MOTN-192 UT of MASTER was changed

Cause: The UTOOL of the master robot is changed during link motion.

Remedy: Confirm that the master program is not to change the UTOOL.

MOTN-193 UT of SLAVE was changed

Cause: The UTOOL of the slave robot was changed during link motion.

Remedy: Confirm that the slave program is not to change the UTOOL.

MOTN-194 Machine Lock is ENABLED

Cause: Robot link is not available when machine lock status.

Remedy: Confirm the robot's position and disable machine lock.

MOTN-195 RLINK internal error %d^5

Cause: An internal error has occurred.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-197 CRC Collinear (L:%d^5)

Cause: Circular Start, Via and points are on the same straight line.

Remedy: Re-teach the points. Ideally circular points should be evenly spaced and not on the same straight line.

MOTN-198 CRC Start-Via too close(L:%d^5)

Cause: Circular Start and Via points are too close to each other.

Remedy: Re-teach the points. Ideally circular points should be evenly spaced. Otherwise a small change in one point can drastically change the programmed circle.

MOTN-199 CRC Via-Dest too close(L:%d^5)

Cause: Circular Via and Dest. points are too close to each other.

Remedy: Re-teach the points. Ideally circular points should be evenly spaced. Otherwise a small change in one point can drastically change the programmed circle.

MOTN-200 (%s^4, %d^5) Too long anticipate time

Cause: Specified TimeBefore (anticipation) value was too large.

Remedy:

1. Reteach the previous point to make motion segment longer.
2. Specify smaller TimeBefore value. (When sealing instruction is used with Dispense Function, specify smaller Ant-Time at schedule.)
3. Reduce motion speed.

MOTN-201 Not support AutoSA+TRCK

Cause: Singularity Avoidance does not support TRACKING motions. Singularity Avoidance is enabled for Tracking program. Or the program enabled Singularity Avoidance is executed after Tracking program.

Remedy: Please disable Singularity Avoidance of Tracking program header or don't use TRACKING function. When the program enabled Singularity Avoidance is executed after Tracking program, Please set "Continue track at prog end" to FALSE of Tracking program.

MOTN-202 Not support AutoSA+COORD

Cause: RA does not support COORD motions.

Remedy: Please disable Singularity Avoidance program header or don't use COORD option.

MOTN-203 Not support AutoSA+RTCP

Cause: RA does not support RTCP motions.

Remedy: Please disable Singularity Avoidance program header or don't use RTCP option.

MOTN-204 RA INTR error (G:%d^2)

Cause: RA checks consistency in data and detects error.

Remedy: Log debug data and report the problem.

MOTN-205 (%s^4, %d^5) Singularity

Cause: Motion passes through a singularity. This message is posted when the Singularity Avoidance option takes effect.

Remedy: No action is required. This message can be disabled using \$RA_PARAMGRP[.].\$WARNMESSENB = FALSE.

MOTN-206 (%s^4, %d^5) Singular Node

Cause: This is a notice posting only. This notice shows the specific node that was correct due to a singularity position.

Remedy: No action is required.

MOTN-207 WARN: An Axis Changes 180

Cause: An axis will rotate more than 180 deg.

Remedy: It's a warning message.

MOTN-208 Config Not Reached (L:%d)

Cause: The Singularity Avoidance function ignores the taught wrist configuration (flip/non-flip) to avoid a detected singularity. As a result, the taught configuration might not be reached. This warning message is posted under single-step-forward mode when the actual configuration is different from the taught one.

Remedy: Make the taught configuration reachable by touching up the point at the stop position when the warning message is posted under single-step-forward mode.

MOTN-209 Modify Singular Dest(L:%d)

Cause: This warning message indicates that the taught position at the specific line is inside a singularity zone. By default, the system modifies it in order to control the rotation of axis 4. If \$ra_parmgrp[.].\$use_strt_j4 = TRUE, the Auto Singularity Avoidance function will internally modify the destination position when it is inside a pre-defined singularity zone in the following way:

- The joint angle of Axis 4 is kept the same as the value of the previous position.
- The TCP location (x, y and z) of the position is the same as it was taught (no location error).
- The orientation (w, p and r) of the position is kept as close to the taught position as possible (minimal orientation error).

This warning message is posted only when the program motion is executed under T1/T2 mode and \$ra_parmgrp[.].\$warnmessenb = TRUE.

Remedy: If you do not want the system to modify the singularity point, set \$ra_parmgrp[.].\$use_strt_j4 = FALSE.

MOTN-210 Failed to resume program

Cause: Original Path Resume was used for Robot Link but the Resume condition was not satisfied.

Remedy: Abort and re-run the program.

MOTN-211 Dual ARC not allowed at T1

Cause: Dual ARC motion is not allowed in T1 mode.

Remedy: Switch to T2 or AUTO mode.

MOTN-212 Link is in held status (G:%d^2)

Cause: Jog motion of the robot in the status of Held or Link Incomplete is not allowed.

Remedy: Change status to MASTER or ALONE at MANUAL screen to jog the robot.

MOTN-213 Org path resume not available

Cause: Original path resume feature is not available under this configuration.

Remedy: Disable original path resume feature.

MOTN-214 Resume condition mismatch

Cause: Resume condition does not match among master and slaves.

Remedy: Check if original path resume is enabled, and match the resume condition for all robots.

MOTN-215 Single Step Complete (Rob#%d^2)

Cause: Single step motion stops at taught positions.

Remedy: Continue single stepping through the program.

MOTN-216 SSTEP HELD

Cause: Single step motion was held due to other robot stops.

Remedy: Continue single stepping through the program.

MOTN-217 SSTEP motion line only

Cause: Master or Slave single step on the statement.

Remedy: Set the step statement type to MOTION in TEST CYCLE SETUP.

MOTN-218 SSTEP motion line mismatch

Cause: Master and Slave must have same motion lines when \$sstep\$simul is TRUE.

Remedy: Match motion line numbers or disable \$sstep\$simul.

MOTN-219 RLINK Can't SSTEP with GTime

Cause: Single Step engaged during a Robot Link Global time move.

Remedy: Engage Single Step only before or after a Robot Link move with Global time.

MOTN-220 Group motion resume mismatch

Cause: This group motion does not have consistent resume flag.

Remedy:

1. Abort the program and continue from the same instruction line. Or perform backward execution on the same line, then continue the program.
2. When a motion instruction just before calling a program that has a different group mask is CNT term type, change term type from CNT to FINE. Or make the same group mask.
3. When a motion instruction just before returning a parent program that has a different group mask is CNT term type, change term type from CNT to FINE. Or make the same group mask.

MOTN-221 RLINK Broadcast data expected

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-222 RLINK Broadcast queue full

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-223 RLINK Broadcast queue empty

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-224 RLINK No output data

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-225 RLINK Turn number mismatch

Cause: The wrist turn number does not match the destination during robot link.

Remedy: Reteach the program to avoid a wrist turn number mismatch.

MOTN-226 RLINK Motor Speedlim

Cause: A motor speedlimit was encountered during robot link.

Remedy: Reduce the speed or reteach program to avoid motor speedlimit.

MOTN-227 RLINK start sync mismatch

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-228 RLINK Position number mismatch

Cause: Position numbers do not match during simultaneous robot link motion.

Remedy: Reteach programs so that the position numbers in each program correspond.

MOTN-229 RLINK Internal Error

Cause: An internal robot link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-230 T1 rotspeed limit (G:%d^2)

Cause: T1 mode rotation speed limit is used.

Remedy: Reduce speed or Use (deg/sec) or sec as speed unit.

MOTN-231 T1 speed limit (G:%d^2)

Cause: The speed has been reduced at T1 mode even though the command speed is not greater than \$SCR.\$SAFE_SPD.

Remedy: This is just a notification that the robot might move with a lower speed than in production mode even though the command speed is not greater than safe speed.

MOTN-232 RLINK FDO queue full

Cause: An internal Robot Link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-233 RLINK FDO queue empty

Cause: An internal Robot Link error has occurred.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

MOTN-234 RLINK Pri Grp Config mismatch

Cause: A Robot Link primary group configuration error has occurred.

Remedy: Match the Robot Link primary group configuration between the slave robot program header and the master robot link pattern.

MOTN-235 RLINK Simul Config mismatch

Cause: A Robot Link simultaneous motion configuration error has occurred.

Remedy: Match the Robot Link simultaneous motion configuration between the slave robot program header and the master robot link pattern.

MOTN-236 RLINK Can't reach relative spd

Cause: The Robot Link primary group can not reach the program relative speed.

Remedy: None.

MOTN-237 RLINK option not loaded

Cause: Robot Link option is not loaded or enabled.

Remedy: You may not use robot link features without the option Please purchase and load the robot link option.

MOTN-240 J4 is not zero

Cause: Given position's J4 angle is not zero.

Remedy: Confirm position data.

MOTN-241 OFIX stroke limit

Cause: Given position is out of stroke limit.

Remedy: Confirm position data.

MOTN-242 OFIX is disabled

Cause: Specified motion group is OFIX disabled.

Remedy: Confirm motion group and robot type.

MOTN-243 OFIX error

Cause: By error, OFIX motion is not available.

Remedy: Check cause code.

MOTN-244 OFIX Detect J4 is not 0

Cause: J4 angle is not 0 at start or destination.

Remedy: Confirm position data.

MOTN-245 OFIX Wrist config mismatch

Cause: Configuration mismatch between start and dest pos.

Remedy: Confirm position data.

MOTN-246 OFIX Invalid rail vector

Cause: This robot is not set up for OFIX.

Remedy: Confirm robot type.

MOTN-247 E-Effector is not vertical to rail

Cause: E-Effector angle is not vertical to rail axis.

Remedy: Confirm position data.

MOTN-248 OFIX Too large tool rotation

Cause: Tool rotation angle is too large for 1 motion.

Remedy: Reduce tool rotation angle.

MOTN-249 OFIX Too large tool spin

Cause: Tool spin angle is too large for 1 motion.

Remedy: Reduce tool spin angle.

MOTN-250 Use CNT0/FINE for L/C before OFIX

Cause: Linear or Circular motion just before OFIX must terminate motion with CNT0 or FINE.

Remedy: Change term type of previous motion.

MOTN-251 Can't use OFIX with this motion

Cause: Motion on this line is incompatible with OFIX.

Remedy: Modify motion type and options.

MOTN-252 OFIX: No plan data

Cause: Accupath or CJP may be used. OFIX does not work with these option.

Remedy: Confirm software option.

MOTN-253 OFIX: Motion type mismatch

Cause: OFIX can work with linear motion.

Remedy: Confirm motion type.

MOTN-254 OFIX: Detect large spin

Cause: Tool spin angle is too large.

Remedy: Confirm tool spin angle between start and destination.

MOTN-255 OFIX: Detect J4 is not 0

Cause: Detect J4 is not zero angle during interpolation.

Remedy: Confirm start and destination position are both J4 = 0 position.

MOTN-256 OFIX: TCP config limit

Cause: Reached to stroke limit within this TCP configuration.

Remedy: Change position data.

MOTN-257 Wrist start angle mismatch

Cause: Wrist axis turn number is differ from position data.

Remedy: Confirm position data turn number and actual turn number. Fix turn in config data.

MOTN-258 Not reached to dest rotation

Cause: OFIX motion does not reached to correct rotation angle.

Remedy: Confirm destination's wrist axis position data.

MOTN-259 Not reached to dest spin

Cause: OFIX motion does not reached to correct spin angle.

Remedy: Confirm destination's wrist axis position data.

MOTN-265 MPDT not finished(G:%d^2 A:%d^3)

Cause: There is an axis which needs to have Magnetic Phase Detection (MPDT) performed in that group, and the MPDT has not finished for that axis.

Remedy: Execute the Magnetic Phase Detection process for that axis.

MOTN-270 TB parameter error 1(G:%d^2)

Cause: The calculation of Turbo move on Joint motion has an error.

Remedy: Document the events that led to the error, and call your local FANUC representative.

MOTN-271 TB parameter error 2(G:%d^2)

Cause: The torque calculation of Turbo move due to the Turbo move parameter has an error.

Remedy: Document the events that led to the error, and call your local FANUC representative.

MOTN-272 TB parameter error 3(G:%d^2)

Cause: Calculation of Turbo move on Joint motion has an error that the iteration count is too high.

Remedy: Document the events that led to the error, and call your local FANUC representative.

MOTN-273 TB parameter error 4(G:%d^2)

Cause: The calculation of Turbo move on Joint motion has an error.

Remedy: Document the events that led to the error, and call your local FANUC representative.

MOTN-280 LD: exceed resume tolerance

Cause: The resume motion will exceed the Linear Distance tolerance.

Remedy: Backward execute the resume motion to the previous line, then continue the program.

MOTN-281 LD: Line tracking not allow

Cause: If Constant Path function is disabled, the linear distance function does not support the line tracking function.

Remedy: Enable Constant Path function or Remove the Linear distance instruction.

MOTN-282 LD: COORD motion not allow

Cause: The linear distance function does not support Coordinated motion.

Remedy: Remove the Linear distance instruction.

MOTN-283 LD: Continue motion not allow

Cause: The linear distance function does not support a Continuous motion type.

Remedy: Remove the Linear distance instruction.

MOTN-290 UTOOL not supported G:%d^2

Cause: The UTOOL specified is not supported for this robot.

Remedy: Set UTOOL properly for this robot.

MOTN-291 Can't convert to joint pos

Cause: In this point, the Cartesian position can not be converted to a joint position.

Remedy: Reteach the position.

MOTN-292 Encoder Limit (G:%d^2, A:%s^7)

Cause: The maximum encoder rotation limit of 4085 was exceeded.

Remedy: Reduce the gear ratio or reduce stroke of the axis. Or just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-293 Increase ITP time

Cause: The ITP time is too short for this robot.

Remedy: Increase the ITP time by at least 2ms and recycle power on the controller.

MOTN-298 CD:Use CNT Corner (G:%d,L:%d)

Cause: CNT is used internally at motion instruction with CD termtype.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-299 CD:Slow Down (G:%d,L:%d)

Cause: Slow Down at motion instruction with CD termtype.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-300 CD not support:Use CNT L:%d^5

Cause: Term type CD is not supported.

Remedy: Change termtype FINE or CNT.

MOTN-301 Path to resume is changed(G:%d^2)

Cause: Can't resume motion.

Remedy: Abort and run program.

MOTN-302 Corner speed slowdown L:%d^5

Cause: Corner speed slows down automatically because of robot constraint.

Remedy: If slow down is not acceptable, re-teach the path.

MOTN-303 Can't maintain CDist L:%d^5

Cause: Can't maintain corner distance because path is short or speed is high.

Remedy: Lengthen path or reduce speed.

MOTN-304 CS:Prog speed achieved L:%d^5

Cause: SPD value does not affect corner speed anymore.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-305 Can't maintain speed L:%d^5

Cause: Can't maintain program speed on the path because of robot constraint.

Remedy: This is just a notification. You do not have to do anything for this warning message.

MOTN-306 Can't replan (G:%d^2, A:%x^3 Hex)

Cause: Resume motion cannot reach stop position Can't resume original path.

Remedy: Abort program and rerun.

MOTN-307 Mismatch MMR (G:%d^2)

Cause: Internal system error. Can't resume original path.

Remedy: Abort program and rerun.

MOTN-308 FINE termtype used L:%d^5

Cause: Can't generate corner between two motion because of motion instruction. And CNT or CD is ignored.

Remedy: Use LOCK PREG instruction when PR[] is used for position or OFFSET instruction is used.

MOTN-309 Circular speed reduced L:%d^5

Cause: Circular speed is reduced because of robot constraint.

Remedy: Reduce program speed not to display.

MOTN-310 Pos. Cfg. change 2 (G:%d^2)

Cause: Configuration mismatch.

Remedy: Reteach the destination position so that its configuration string matches the start position's configuration string.

MOTN-318 unknown error (MO318)

Cause: Internal system error. This class of error should not be encountered by the user during normal operation.

Remedy: Refer to Remedy of MOTN-000.

MOTN-319 CRC large orient change (G:%d^2)

Cause: Small circle but large orientation change.

Remedy: Reteach circular points.

MOTN-320 Adj out of limit at line %s

Cause: An unreachable position is detected in the adjustment precheck.

Remedy: Check the alarm log to find out at which position motion error will occur, use CLR_Adj to clear the adj value.

MOTN-321 Posn unreachable at line %s

Cause: An unreachable position is detected in the adjustment precheck.

Remedy: Check the alarm log to find out at which position motion error will occur, use CLR_Adj to clear the adj value.

MOTN-322 Invalid Genoverride (G:%d^2)

Cause: General override is not within 0 to 100.

Remedy: Set general override within 0 to 100.

MOTN-323 Invalid Prgoverride (G:%d^2)

Cause: Prgoverride is not within 0 to 100.

Remedy: Set \$prgoverride within 0 to 100.

MOTN-330 MROT Limit Warn(G:%d^2, A:%s^7)

Cause: Axis limit is detected during the minimal rotation.

Remedy: Check the alarm log to find out which axis has the limit error, adjust taught points.

MOTN-331 CR not support:Use CNT L:%d^5

Cause: Term type CR is not supported.

Remedy: Change termtype FINE or CNT.

MOTN-340 Fast fault recovery

Cause: This is notification for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: N/A

MOTN-341 NO Z offset for INC motion

Cause: Z offset is specified for INCREMENTAL motion. Z offset can not be applied for INCRE motion. This is notification that Z offset was not applied for the motion.

Remedy: Please don't use incremental motion if you need Z offset.

MOTN-342 Override change not allowed

Cause: Change in teach pendant override setting while the program is running.

Remedy: Set Teach Pendant's override to the desired value and resume the program.

MOTN-343 Constant Path Low Override

Cause: The teach pendant override setting was too low to ensure a constant path.

Remedy: Increase override setting and resume the program.

MOTN-345 PS is not available

Cause: PS statement is not available with this motion type

Remedy: Please check program.

MOTN-351 Please disable COORD

Cause: The Coordinated Motion softpart does not support Circular ARC motions.

Remedy: Disable COORD or do not teach circular ARC motions.

MOTN-352 Please disable LineTrack

Cause: The Line Tracking softpart does not support Circular ARC motions.

Remedy: Disable Line Tracking or do not teach circular ARC motions.

MOTN-354 ARC Internal Error (G:%d^2)

Cause: Internal system error. This class of error should not be encountered during normal operation.

Remedy: Refer to the Remedy of MOTN-000.

MOTN-355 ARC: No 3 Poses (G:%d^2)

Cause: There is no third position data to plan an ARC motion.

Remedy: Make sure there are always three points available for circular ARC motion.

MOTN-356 ARC:180 deg SPIN change(G:%d^2)

Cause: The change in the SPIN angle from start to destination is 180 deg.

Remedy: Re-teach points such that the change in the SPIN angle from start to destination is less than 180 deg.

MOTN-357 ARC: can't resume (G:%d^2)

Cause: The resumed planned data is not the same as the original data.

Remedy: Press RESET or Abort the program.

MOTN-358 Strt-Prev too close (G:%d^2 L:%d^5)

Cause: The prev and start positions of this A motion are too close to each other.

Remedy: Re-touch up the taught point(s) of the immediate previous A motion line(s) OR jog robot away from current position.

MOTN-359 Strt-Next too close (G:%d^2 L:%d^5)

Cause: The Start and Next positions of this A motion are too close to each other.

Remedy: Re-touch up either the taught point of the previous A motion line or the taught point of the next A motion line.

MOTN-360 Dest-Prev too close (G:%d^2 L:%d^5)

Cause: The destination and previous positions of this A motion are too close to each other.

Remedy: Re-touch up either the taught point of the current A motion line or the taught point of the A motion line that is prior to the previous A motion line.

MOTN-361 Dest-Next too close (G:%d^2 L:%d^5)

Cause: The destination and next positions of this A motion are too close to each other.

Remedy: Re-touch up either the taught point of the current A motion line or the taught point of the next A motion line.

MOTN-362 Please disable arc blending

Cause: Blending of two arc segments is not supported.

Remedy: Set \$CRCFG.\$BLEND_ENB to FALSE.

MOTN-363 Please disable ToTrk

Cause: Motype A does not support tracking.

Remedy: Do not use motion type A.

MOTN-364 MT_ARC: not support the option

Cause: Motype A does not support the option.

Remedy: Do not use motion type A.

MOTN-365 Don't use motion type A

Cause: The softpart does not support motion type A.

Remedy: Do not use motion type A.

MOTN-366 MT_ARC: not support RPM

Cause: RPM does not support motion type A.

Remedy: Do not use motion type A.

MOTN-367 MT_ARC: colinear (L:%d^5)

Cause: Degenerate case for MT_ARC.

Remedy: This is just a notification message only. Re-taught points if necessary.

MOTN-368 CLAMP not support ARC

Cause: CLAMP function does not support ARC and CRC.

Remedy: Don't use ARC and CRC when CLAMP function is effective.

MOTN-369 CLAMP of CART cannot be calculated

Cause: CLAMP of CART cannot be calculated.

Remedy: Don't through the singular point in TP Cart motion.

MOTN-375 NotSupport KarelPath (G:%d^2)

Cause: The system does NOT support KAREL path motions.

Remedy: Do not run KAREL Path motions and use teach pendant programs instead.

MOTN-385 Weight is not attached

Cause: The weight is not attached.

Remedy:

1. Attach the weight.
2. Check the notifications screen in status.
3. Touch the notifications about attaching the weight and select "YES".

MOTN-390 %s is required for %s

Cause: The required motion option is not loaded.

Remedy: Verify motion options loaded in the controller and make sure the required option is also loaded.

MOTN-391 Motion option cfg file missing

Cause: Motion option configuration file is not loaded or cannot be read.

Remedy: Re-load correct motion option config file.

MOTN-392 Too many softparts

Cause: The number of softparts exceeds the limit of 32.

Remedy: Reload the system with less than 32 softparts.

MOTN-393 Can't set w/ Sm.Circ.Accuracy

Cause: When Small Circle Accuracy is ordered, you can't use this setting.

Remedy: Don't order Small Circle Accuracy, when you use this setting.

MOTN-394 Can't set with Servo Torch

Cause: When Servo Torch is ordered, you can't use this setting.

Remedy: Don't order Servo Torch, when you use this setting.

MOTN-400 No Coll. Guard Reg. Defined

Cause: No register has been defined for use with the Collision Guard Update macro.

Remedy: Use the Collision Guard SETUP screen to define a register for use with the macro.

MOTN-401 Coll. Guard Reg. Data Error

Cause: The data contained in the Collision Guard macro register is not an integer or is not in the range of 1 to 200.

Remedy: Enter the correct data into the Collision Guard macro register.

MOTN-402 HSCD: Update Servo Timeout

Cause: Servo system failed to acknowledge servo parameter update.

Remedy: Check that communication between servo and host is OK. HSCD does not support tabletop controller.

MOTN-403 Updating Servo (%s)

Cause: Servo system is updating servo parameters to match user-defined HSCD parameters.

Remedy: No action needed. This warning is only a reminder.

MOTN-404 Group %d^1 does not support HSCD

Cause: The COL ADJUST instruction was used in a teach pendant program, but the group mask contained a group that did not support High Sensitivity Collision Detection (HSCD).

Remedy: Do not attempt to change the sensitivity for a group that does not support HSCD.

MOTN-410 Jog frame No%d^2 is disable[P]

Cause: The selected UFRAME is disabled for jogging.

Remedy: Enable the affected UFRAME for jogging, or use a different UFRAME to jog.

MOTN-411 Fast fault recovery 1

Cause: This is notification of PX1 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-412 Fast fault recovery 2

Cause: This is notification of PX2 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: Document the events that led to the error and contact your local FANUC representative.

MOTN-413 Fast fault recovery 3

Cause: This is notification of PX3 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-414 Fast fault recovery 4

Cause: This is notification of PX4 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-415 Fast fault recovery 5

Cause: This is notification of PX5 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-416 Fast fault recovery 6

Cause: This is notification of PX6 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-417 Fast fault recovery 7

Cause: This is notification of PX7 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-418 Fast fault recovery 8

Cause: This is notification of PX8 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-419 Fast fault recovery 9

Cause: This is notification of PX9 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-420 Fast fault recovery 10

Cause: This is notification of PX10 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-421 Fast fault recovery 11

Cause: This is notification of PX11 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-422 Fast fault recovery 12

Cause: This is notification of PX12 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-423 Fast fault recovery 13

Cause: This is notification of PX13 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-424 Fast fault recovery 14

Cause: This is notification of PX14 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-425 Fast fault recovery 15

Cause: This is notification of PX15 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-426 Fast fault recovery 16

Cause: This is notification of PX16 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-431 Fast fault recovery 1

Cause: This is notification of instruction number 1 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is just notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-432 Fast fault recovery 2

Cause: This is notification of instruction number 2 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is just notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-433 Fast fault recovery 3

Cause: This is notification of instruction number 3 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is just notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-434 Fast fault recovery 4

Cause: This is notification of instruction number 4 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is just notification. Document the events that led to the error and contact your local FANUC representative.

MOTN-435 Fast fault recovery 5

Cause: This is a notification of instruction number 5 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: None.

MOTN-441 Resume Motion Error(G:%d A:%d)

Cause: On Resume motion, the robot moves to the position that is different from the previous stop position.

Remedy: Abort and re-run the program.

MOTN-442 Motion cmd Error excess(G:%d A:%d)

Cause: The robot moves to the position that is different from the destination point.

Remedy: Abort and re-run the program.

MOTN-443 Zero accel time used (G:%d)

Cause: Accel time is too short relative to ITP time.

Remedy: Increase accel time or reduce ITP time.

MOTN-444 No J2/J3 interaction (G:%d)

Cause: This group does not have J2/J3 interaction.

Remedy: No display required.

MOTN-501 Fast fault recovery 17

Cause: This is notification of PX17 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-502 Fast fault recovery 18

Cause: This is notification of PX18 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-503 Fast fault recovery 19

Cause: This is notification of PX19 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-504 Fast fault recovery 20

Cause: This is notification of PX20 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-505 Fast fault recovery 21

Cause: This is notification of PX21 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-506 Fast fault recovery 22

Cause: This is notification of PX22 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-507 Fast fault recovery 23

Cause: This is notification of PX23 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-508 Fast fault recovery 24

Cause: This is notification of PX24 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-509 Fast fault recovery 25

Cause: This is notification of PX25 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-510 Fast fault recovery 26

Cause: This is notification of PX26 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-511 Fast fault recovery 27

Cause: This is notification of PX27 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-512 Fast fault recovery 28

Cause: This is notification of PX28 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-513 Fast fault recovery 29

Cause: This is notification of PX29 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-514 Fast fault recovery 30

Cause: This is notification of PX30 for application process enabled in the fast fault recovery when the alarm position is found.

Remedy: This is an internal notification.

MOTN-520 J%dTqOver(G%d L%d, %s)

Cause: Reducer torque overs the threshold. Payload setting is wrong. or the value of acceleration override instruction(ACC) is too large.

Remedy: 1. Verify payload setting is correct.
2. Lessen acceleration(ACC) of motion that generates this warning.

MOTN-521 J2TqOver(G:%d ID:%d L:%d)

Cause: Load that is given to J2 axis exceeds threshold. Payload setting is wrong or the value of ACC is too large.

Remedy: 1. Verify payload setting is correct.
2. Lessen acceleration(ACC) of motion that generates this warning.

MOTN-522 Joint load excess(G%dJ%dL%d %s)

Cause: Load that is given to the joint between LinkA and LinkB exceeds threshold. Payload setting is wrong or the value of ACC is too large.

Remedy: 1. Verify payload setting is correct.
2. Lessen acceleration(ACC) of motion that generates this warning.

MOTN-524 STOP.G LVC: Full memory (M%d, %s, L%d, S%x)**MOTN-524 STOP.G APC: Full memory (M%d, %s, L%d, S%x)**

Cause: The LVC or APC data area on D-RAM is full, due to too much recorded motion data. M is the learning data ID. Second argument represents a program name that runs when MOTN-524 occurred and L represents line number of the program when MOTN-524 occurred. S represents type of LVC or APC data area.

Remedy: Memory for LVC data area is limited as follows:
- Standard motion lines are limited to about 600 lines. (Note: one spot-additional-instruction motion line is equivalent to 4 standard motion lines.)
- Total program execution time of LVC learning must be within 45 seconds.

Memory for APC data area is limited as follows:

- Standard motion lines are limited to about 1000 lines. (Note: one spot-additional-instruction motion line is equivalent to 4 standard motion lines.)
- Total program execution time of APC learning must be within 180 seconds.

Apply following procedure after knowing above causes:

- 1 Reduce the number of motion lines or logic instructions within LVC or APC region.
- 2 Split the LVC or APC region into two or more LVC or APC regions, using multiple LVC or APC data indices.

MOTN-525 STOP.G LVC: Out of DRAM memory (M%d, Id%d)

MOTN-525 STOP.G APC: Out of DRAM memory (M%d, Id%d)

Cause: LVC or APC failed to acquire D-RAM data area. M is the data ID, and Id represents error type.

(Id=1) Failed to acquire D-RAM for calculation data area.

(Id=2) Failed to acquire D-RAM for data translation when LVC_START or APC_START executed.

(Id=3) Failed to acquire D-RAM data area for writing to F-ROM.

(Id=4) Failed to acquire D-RAM data area for reading from F-ROM.

Remedy: 1. Make sure system has 64MB (or more) D-RAM installed. LVC or APC requires 64MB (or more) D-RAM.
2. If the problem could not be resolved, contact your local FANUC representative.

MOTN-526 WARN LVC: GunTchSpd over (L%d, V%d)

Cause: After LVC learning during SPOT motion, the contact speed after LVC learning exceeds the contact speed before LVC.

L is the line number at which MOTN-526 is posted, and V is the exceeded contact speed.

Remedy: Reduce the TUNE value of the LVC data, and repeat LVC learning.

MOTN-527 WARN LVC: Failure of getting memory1

MOTN-527 WARN APC: Failure of getting memory1

Cause: LVC or APC failed to acquire D-RAM for before-learning data area.

Remedy: 1. Make sure system has 64MB (or more) DRAM installed. LVC or APC requires 64MB (or more) D-RAM.
2. If the problem could not be resolved, contact your local FANUC representative.

MOTN-528 WARN LVC: Failure of getting memory2

MOTN-528 WARN APC: Failure of getting memory2

Cause: LVC or APC failed to acquire D-RAM for after-learning data area.

Remedy: 1. Make sure system has 64MB (or more) DRAM installed. LVC or APC requires 64MB (or more) D-RAM.
2. If the problem could not be resolved, contact your local FANUC representative.

MOTN-529 STOP.G LVC: This isn't allowed (L%d, Id%d)

MOTN-529 STOP.G APC: This isn't allowed (L%d, Id%d)

Cause: The taught line contains a motion instruction that is incompatible with LVC or APC. L is line number, and ID represents instruction ID that conflicts with LVC or APC instruction. Refer to ID meaning in the below table.

ID	Instruction
1	External path optimization
2	KAREL
3	Weaving
4	Line Tracking
5	Touch Sensor
6	Coordinated Motion
7	Continuous Turn
9	Skip instruction are taught after the motion except FINE or CNT0
10	LVC or APC instruction is taught doubly
11	Soft Float Function
12	Tracking related function
13	Skip instruction

Remedy: Remove either LVC or APC instruction or other instruction that is incompatible with LVC or APC.

MOTN-530 STOP.G LVC: axis besides an object moved (L*, G*, A*)

Cause: The axis not assumed to be in LVC group moved during LVC instructions execution. L is line number, G is group number, and A is axis number.

Remedy: Confirm if the axis not in the LVC group moved in the motion lines before and after the line number. If it moved, please modify the TP program in order that the axis will not move there.

MOTN-531 WARN LVC: Learning %d% (M%d)**MOTN-531 WARN APC: Learning %d% (M%d)**

Cause: LVC or APC learning has finished. M is the data ID number of the learning data.

Remedy: Informational message, no action required.

MOTN-532 STOP.G LVC: Internal error 2(M%d,Id%d)**MOTN-532 STOP.G APC: Internal error 2(M%d,Id%d)**

Cause: Internal error in LVC or APC calculation. M is the data ID number of the learning data, ID (=2-8) represents error type.

(ID =2) The travel time of LVC or APC "Block" (CNT0/FINE to CNT0/FINE) exceeded 15 sec.

(ID =3-8) Others

Remedy: (ID =2) Reduce the number of motion lines or logic instructions within the LVC or APC "Block".

(ID =3~5) Please contact your local FANUC representative.

MOTN-533 STOP.G LVC: Change override on LVC

Cause: Override was changed during LVC execution. LVC requires 100% override.

Remedy: Reset to clear alarm, and resume program. After resuming, normal motion takes place without LVC function.

MOTN-534 STOP.G LVC: Input SingleStep on LVC

Cause: STEP mode was entered during LVC execution. LVC does not work with single step.

Remedy: Reset to clear alarm, and resume program. After resuming, normal motion takes place without LVC function.

MOTN-537 STOP.G LVC: Changed motion (M%d, %s, L%d, P%d)**MOTN-537 STOP.G APC: Changed motion (M%d, %s, L%d, P%d)**

Cause: A motion line in the LVC or APC region was modified by re-teaching. M is learning data ID, %s is program name, L is line number, P represents cause of Motion changed. Refer to P number at the below table.

P value	Cause	P value	Cause
1	motion type	65536	MAXSPEED instruction
2	start position	131072	RT_LD value or AP_LD value
4	destination position	262144	CR value
8	via position(circle motion only)	524288	RTCP instruction
16	taught speed	1048576	Simultaneous EV instruction
32	termination type	2097152	Independent EV instruction
64	CNT value	4194304	move time
128	tool frame	8388608	move time of aux axis
256	user frame	16777216	filter length
512	override	33554432	filter type
1024	payload	67108864	\$MRR_GRP[g].\$PRGOVERRIDE
2048	ACC value	134217728	group number
4096	PATH instruction	268435456	Break
8192	WJNT instruction	536870912	NORMAL MOTION instruction
16384	INC instruction	1073741824	extended axis motion
32768	PSPD value		

Remedy: 1. Un-do changes to original value that reported as cause.
2. Start LVC or APC learning again.

MOTN-538 STOP.G LVC: Changed motion (M%d, %s, L%d, P%d)**MOTN-538 STOP.G APC: Changed motion (M%d, %s, L%d, P%d)**

Cause: Touch up was done in the motion lines between LVC or APC instructions. %s is program name, M is learning data ID, L is line number, P represents cause of motion changed. See the following table for the more detailed information of P number.

P	Instruction
1	Path changed
2	WAIT condition changed
4	Occurrence time of "SRVO-171 MotorSpd lim/DVC" alarm between LVC or APC instructions changed

Remedy: 1. Make the changes undone. Un-do changes to original value that reported as cause.
 2. Remove the learning data and re-learn again.
 3. (P4) Touch up program to remove DVC alarm.

MOTN-539 STOP.G LVC: Changed motion (M%d, %s, P%d)**MOTN-539 STOP.G APC: Changed motion (M%d, %s, P%d)**

Cause: Touch up was done in a motion line between LVC or APC instructions. M is learning data ID, %s is program name, P represents cause of motion changed. See the following table for the more detailed information of P number.

P	Instruction
1	Motion-line which is before LVC END or APC END deleted
2	WAIT condition changed

Remedy: 1. Make the changes undone. Un-do changes to original value that reported as cause.
 2. Remove the learning data and re-learn again.

MOTN-540 FATAL LVC: Internal error 1**MOTN-540 FATAL APC: Internal error 1**

Cause: Internal error in LVC or APC.

Remedy: Please contact your local FANUC representative.

MOTN-541 STOP.G LVC: Fatal error of memory (M%d,S%x)**MOTN-541 STOP.G APC: Fatal error of memory (M%d,S%x)**

Cause: Internal error in LVC or APC function. M is learning data ID number, S is section of LVC or APC data area.

Remedy: Please contact your local FANUC representative.

MOTN-542 STOP.G LVC: Full memory (M%d,S%x)**MOTN-542 STOP.G APC: Full memory (M%d,S%x)**

Cause: The LVC or APC data area on D-RAM is full, due to too much recorded motion data. M is the learning data ID. S represents type of LVC or APC data area.

Remedy: Memory for LVC data area is limited as follows:

- standard motion lines are limited to about 600 lines. (Note: one spot-additional-instruction motion line is equivalent to 4 standard motion lines.)

- Total program execution time of LVC learning must be within 45 seconds.

Memory for APC data area is limited as follows:

- standard motion lines are limited to about 1000 lines. (Note: one spot-additional-instruction motion line is equivalent to 4 standard motion lines.)

- Total program execution time of APC learning must be within 180 seconds.

Apply following procedure after knowing above causes:

1. Reduce the number of motion lines or logic instructions within LVC or APC region.

2. Split the LVC or APC region into two or more LVC or APC regions, using multiple LVC or APC data indices.

MOTN-543 STOP.G LVC: No learned data (M%d,S%x)

MOTN-543 STOP.G APC: No learned data (M%d,S%x)

Cause: No LVC or APC data found while trying to load LVC or APC data from storage. LVC or APC learning process may not be done correctly. M is LVC or APC data ID. S represents type of LVC or APC data area.

Remedy: 1. Re-do LVC or APC learning.
2. If could not recover, contact your local FANUC representative.

MOTN-544 STOP.G LVC: Learned data empty (M%d,S%x)

MOTN-544 STOP.G APC: Learned data empty (M%d,S%x)

Cause: No LVC or APC data found while trying to load LVC or APC data from storage. LVC or APC process may not be done correctly, or Motion line may be inserted just before LVC_END or APC_END line while LVC or APC learning percentage larger than 0%. M represents data ID number of learning data. S represents kinds of LVC or APC data area.

Remedy: 1. If you are in the middle of the learning process, un-do any program changes to return program to original state.
2. Do learning again.
3. If could not recover, contact your local FANUC representative.

MOTN-545 WARN LVC: Switched to normal motion (M%d, %s, L%d)

MOTN-545 WARN APC: Switched to normal motion (M%d, %s, L%d)

Cause: LVC or APC motion switched to normal motion because learned motion was changed. M represents data ID number of learning data. The second argument represents the program name. L is line number.

Remedy: Informational message, no action required.

MOTN-546 WARN LVC: Restart learned motion (M%d, %s, L%d)

MOTN-546 WARN APC: Restart learned motion (M%d, %s, L%d)

Cause: LVC or APC motion restarted. M represents data ID number of learning data. The second argument represents the program name. L is line number.

Remedy: Informational message, no action required.

MOTN-547 STOP.G LVC: Sync motion not supported(M%d,L%d)

MOTN-547 STOP.G APC: Sync motion not supported(M%d,L%d)

Cause: LVC or APC cannot support synchronous motion in case that a program has two or more robot groups. M represents data ID number of learning data. L is line number.

Remedy: In playback mode, please use the "RUN" instruction in TP program to make two or more robots to perform learning motion in the same time.

MOTN-548 STOP.G LVC: Group number mismatch(M%d,G%d,L%d)

MOTN-548 STOP.G APC: Group number mismatch(M%d,G%d,L%d)

Cause: Group number of the robot which is in learning is not match the setup in LVC or APC DATA setup screen. M represents data ID number of learning data. G is group number. L is line number.

Remedy: Please set the correct group number in LVC or APC DATA screen.

MOTN-549 STOP.G LVC: Multi data in learning(M%d,L%d)

MOTN-549 STOP.G APC: Multi data in learning(M%d,L%d)

Cause: Only one robot group can be in learning mode at the same time. M represents data ID number of learning data. L is line number.

Remedy: Please perform and finish learning one after another. If multitasking motion is necessary, you can comment out other LVC or APC instructions or disable other the LVC or APC data in LVC or APC DATA screen.

MOTN-550 WARN LVC: Switched to normal motion (M%d, %s, L%d)

MOTN-550 WARN APC: Switched to normal motion (M%d, %s, L%d)

Cause: LVC or APC motion switched to normal motion. M represents data ID number of learning data. The second argument represents the program name. L is line number.

Remedy: Informational message, no action required.

MOTN-551 SLTK: Global variable failure

Cause: System internal error.

Remedy: Increase RAM size.

MOTN-552 SLTK: Motn dt overflow (G:%d)

Cause: Motion command is too large.

Remedy: This alarm should post before SRVO-025. Please refer remedy of srvo-025.

MOTN-553 WARN LVC: Communication ready**MOTN-553 WARN APC: Communication ready**

Cause: Communication between wireless sensor and USB receiver is ready.

Remedy: Informational message, no action required.

MOTN-554 STOP.G LVC: Wireless data not enough**MOTN-554 STOP.G APC: Wireless data not enough**

Cause: The wireless sensor data is not recorded enough for LVC or APC during the learning.

Remedy: Re-learn again. If the problem could not be resolved, contact your local FANUC representative.

MOTN-555 STOP.G LVC: Sensor battery error**MOTN-555 STOP.G APC: Sensor battery error**

Cause: LVC or APC can't be executed because the wireless sensor battery is almost empty.

Remedy: Charge the sensor battery.

MOTN-556 STOP.G LVC: Wireless sensor timeout**MOTN-556 STOP.G APC: Wireless sensor timeout**

Cause: The wireless sensor has been failed to connect.

Remedy: 1. Push LED at the left to turn off the wireless sensor, then start sensor again.
2. Restart the robot.

MOTN-557 STOP.G LVC: USB receiver removed**MOTN-557 STOP.G APC: USB receiver removed**

Cause: The USB receiver has not been connected to the teach pendant.

Remedy: Disconnect/connect the USB receiver. The USB receiver is not available with tablet TP. Please connect iPendant in using wireless accelerometer.

MOTN-558 WARN LVC: Sensor battery is low**MOTN-558 WARN APC: Sensor battery is low**

Cause: The battery of wireless sensor is weakening.

Remedy: Charge the battery of wireless sensor.

MOTN-559 STOP.G LVC: Serial port timeout err**MOTN-559 STOP.G APC: Serial port timeout err**

Cause: The configuration of serial port is incorrect.

Remedy: Verify the configuration of serial port.

MOTN-560 Hspd.skip speed limit(G:%d^2)

Cause: The teaching speed with high-speed skip instruction exceeds the speed limit and speed limiting is automatically done.

Remedy: This is just a warning. No action is required.

MOTN-561 Touch skip NOT available(G:%d^2)

Cause: Touch skip is used with the robot that decelerated stops with high-speed skip or touch skip is used with normal skip instruction. Or, high-speed skip is used in CRX while the parameters are in the untuned state.

Remedy: 1. Touch skip cannot be used with the robot that decelerated stops with high-speed skip. Please change the skip condition.
2. Touch skip cannot be used with normal skip instruction. Please use high-speed skip instruction or change the skip condition.
3. If in CRX, please execute ROBOT MAINTENANCE at Control Start in order to set the latest tuned parameters. On a side note, high-speed skip brings rapid deceleration by rights and the latest parameters may cause changes in motion trajectory

MOTN-565 STOP.G Position Check Error (G:%d^2)

- Cause:** The user program is trying to move the arm where there should be no movement.
With 'Position Check' option, certain motions has to be 'zero-distance' motion, such as the first motion in a program or a sub-program, after returning from a sub-program, or after a JUMP label instruction. This error is posted if the motion instruction in the program has more than 5mm motion distance (default) for these cases.
- Remedy:** Make sure the correct sub-program is being called, and the positions are correctly taught for these motions.

MOTN-566 STOP.G Frame is not orthogonal

- Cause:** Axis of user frame (Remote TCP) or tool frame is not orthogonal. In alarm message, UT means tool frame, UF means user frame. For example, in TP program, if frame is set with non-orthogonal value by using position register, this alarm will occur when robot tries to move with this wrong frame.
- Remedy:** Confirm that TP program doesn't change content of frame. If frame is changed, please check orthogonality of the frame. To recover from this alarm, please set frame which is indicated in alarm message again. As a reference of procedure of setup frame, please refer to "3.9 SETTING COORDINATE SYSTEMS" in "3.SETTING UP THE ROBOT SYSTEM" in R-30iB/R-30iB Mate CONTROLLER OPERATOR'S MANUAL (Basic Operation). By re-setup of frame, the axes will be orthogonal.

MOTN-568 WARN GLC Moved out of station (%s, %d)

- Cause:** Motion "FINE or CNT below 5" which treats object detected by vision as target position cannot get into the motion area set in GLC fixed station setup menu. (%s, %d) shows (program name, ID of causes).
- Remedy:** Set the motion "FINE or CNT below 5" which treats object detected by vision as target position into the motion area set in GLC fixed station setup menu.

MOTN-569 WARN GLC Stn%d,Stn%d are overlapped

- Cause:** 2 motion areas set in the GLC fixed station setup menu are overlapped.
- Remedy:** Set the motion areas not to be overlapped.

MOTN-573 STOP.G GLC Out of DRAM memory (Id%d)

- Cause:** Failed in getting area for learned data from D-RAM. ID shows the type of area for learned data.
- Remedy:**
1. Confirm that D-RAM is 64MB or more. 64MB or more is necessary in this function.
 2. If MOTN-527 appears with a 64MB D-RAM available, too many options may be installed in that system. In that situation, in order to use this function, solution like selecting a 128MB D-RAM is necessary.

MOTN-574 STOP.G GLC This isn't allowed (L%d,Id%d)

- Cause:** A command that cannot be executed at the same time with GLC is taught. L is line number, Id is the ID of the command you would like to execute as the same time as learning.
- Remedy:** Disable GLC or delete the command that cannot be executed with GLC at the same time. As for the ID number refer to the table following.

ID	Command
2	The motion with both WCLIN instruction and FPLIN instruction.

MOTN-575 STOP.G GLC Memory Full (Id%x)

- Cause:** If much motion data is recorded in the learning, the area used for learned data in D-RAM is reduced. ID shows the type of area for learned data.
- Remedy:** Set zone size bigger, or set the learning area smaller using the following method.
GLC iRPick: Set the distance between upstream boundary and discard line of tracking smaller during learning.
GLC Handling: Set specified area smaller in the fixed station setup of GLC.

MOTN-576 STOP.G GLC System error (Id%d)

- Cause:** System configuration is not supported in GLC or errors occurred in the learning process.
ID shows the cause.
- Remedy:** Please contact your local FANUC representative.

ID	Causes
4,12,23	System and robot are not supported.

MOTN-577 WARN GLC Not stop in station No%d

Cause: The motion "FINE or CNT below 5" which treats object detected by vision as target position, did not enter to the motion area set in GLC fixed station setup menu.

Remedy: Disable the motion areas which are enabled but not in use.

Set the motion area in GLC fixed station setup menu to contain the motion "FINE or CNT below 5" which treats object detected by vision as target position.

MOTN-578 WARN GLC Analysis error (Id%d)

Cause: Failed in motion analysis. ID shows the cause.

Remedy: When MOTN-568,569,577 occurred before this alarm, take countermeasures according to those alarms.

MOTN-579 WARN GLC Unsupported command (%s, %d, %d)

Cause: Teaching is not supported in GLC handling. (%s, %d, %d) shows (program name, line number, ID of causes).

Remedy: Find the cause according to the following table and solve accordingly.

ID	Causes
1	There are too many position offset, tool offset and vision offset commands in a line.
2	The position is taught by position registers, and the values of position registers are the result of vision detection.
4	The type of positioning is neither FINE nor CNT.
5	Incremental command is used.
6	The type of vision offset is neither position offset nor gripping offset.
7	Palletizing command is used.
8	Position offset condition command is used.
9	Tool offset condition command is used.
10	Vision offset condition command is used.
11	Call of OFS_RJ3.PC exists.
12	Call of MERGE3D2.PC exists.
13	Call of STVS1.PC exists.
14	Call of ADJ_OFS.PC exists.
15	Type of position register is neither matrix type nor linear type.
16	Type of teaching position is neither linear type nor joint type.

MOTN-581 STOP.G LVC: Internal calc err (Er:%d)**MOTN-581 STOP.G APC: Internal calc err (Er:%d)**

Cause: Sensor frame automatic setting function failed to calculate the sensor frame.

Remedy: Apply the following procedure.

1. Verify sensor type (wired or wireless) is selected correctly. If not, correct it and retry sensor frame automatic setting function.
2. Verify whether the accelerometer is fixed firmly to an end-of-arm tool or servo gun. If not, fix the accelerometer firmly and retry sensor frame automatic setting function.
3. Set the sensor frame by six point method.

MOTN-582 STOP.G LVC: Set payload set**MOTN-582 STOP.G APC: Set payload set**

Cause: Sensor frame automatic setting function was executed with incorrect payload setting.

Remedy: Apply the following procedure and retry the sensor frame automatic setting function.

1. Display "Motion Performance" screen by pressing MENU key-"0 NEXT"-"6 SYSTEM"-F1[TYPE]-"Motion". Then press F5,[SETIND] and set active payload number to other than 0.
2. Display "Motion Performance" screen by pressing MENU key-"0 NEXT"-"6 SYSTEM"-F1,[TYPE]-"Motion". Then move the cursor to the active payload number and press F3,"DETAIL". Enter the correct value of weight, gravity center position of the load, and inertia about its gravity center.

MOTN-583 STOP.G LVC: Large calc err (Er:%d)**MOTN-583 STOP.G APC: Large calc err (Er:%d)**

Cause: In sensor frame automatic setting function, the accuracy of the calculated sensor frame is not sufficient.

Remedy: Apply the following procedure and retry sensor frame automatic setting function. If could not recover, set the sensor frame by six point method.

1. Verify whether the accelerometer is fixed firmly to an end-of-arm tool or servo gun.
2. Display "Motion Performance" screen by pressing MENU key-"0 NEXT"-"6 SYSTEM"-F1[TYPE]-"Motion". Verify the active payload number.
3. Display "Motion Performance" screen by pressing MENU key-"0 NEXT"-"6 SYSTEM"-F1,[TYPE]-"Motion". Then move the cursor to the active payload number and press F3,"DETAIL". Verify the value of weight, gravity center position of the load, and inertia about its gravity center.
4. Set the base position for sensor frame automatic setting function as close to the recommended posture as possible.

MOTN-584 STOP.G LVC: Changed override

MOTN-584 STOP.G APC: Changed override

Cause: The execution was interrupted because the override has been changed during the fast movement of sensor frame automatic setting function.

Remedy: Retry sensor frame automatic setting function. Please don't change the override during the fast movement.

MOTN-585 STOP.G LVC: Set calibration data

MOTN-585 STOP.G APC: Set calibration data

Cause: Calibration data for wireless accelerometer is wrong.

Remedy: Contact your local FANUC representative.

MOTN-586 WARN LVC: Need Learning %d more time(s)

MOTN-586 WARN APC: Need Learning %d more time(s)

Cause: Required learning iterations are insufficient to do this operation.

Remedy: Execute more learning instruction.

MOTN-587 STOP.G LVC: Reboot controller

MOTN-587 STOP.G APC: Reboot controller

Cause: The connect setting with the wireless sensor is not right.

Remedy: Restart the robot.

MOTN-588 STOP.G APC: Input SingleStep on APC

Cause: STEP mode was entered during APC execution. APC does not work with single step.

Remedy: Reset to clear alarm, and resume program. After resuming, normal motion takes place without APC function.

MOTN-590 WARN Debug size exceeded on record

Cause: Internal debug recorded exceeded max size.

Remedy: Collect motion debug and report.

MOTN-620 ABORT.G Wrist turn number mismatch (G:%d A:%d)

Cause: A wrist axis didn't reach to the taught turn number.

Remedy:

1. Add wrist joint motion instruction (Wjnt).
2. Reteach the motion instruction by dividing it into two or more motion instructions so that the posture change becomes small in one line.
3. Change the taught wrist turn number to the turn number to which it reached.

MOTN-622 WARN (%s^4, %d^5) Wrist configuration changed

Cause: Motion was done between different wrist configuration.

This occurs when "Wjnt when config changes" is enabled in system config menu and wrist configuration changed.

Remedy: No action is required.

MOTN-624 STOP.G Self-collision (G:%d)

Cause: The robot moves to the self-collision posture.

Remedy: Press reset and JOG to the collisionless posture.

When this alarm isn't cleared, try these procedures.

1. Do manual guided teaching (when mode selection is enabled, use "free").
2. With iPendant, press SHIFT and RESET, release RESET and do joint jog.
3. With the tabletTP, press "temporarily reset alarm" and do joint jog.

Note: With procedure 2 or 3, you can also move the robot to collide more. So, lower the override beforehand and confirm the jog direction carefully.

MOTN-630 STOP.G S requires Spline Motion option

Cause: S motion type requires Spline Motion option.

Remedy: Load Spline Motion option (R904) or use a different motion type.

MOTN-631 STOP.G SPL:High Curvature (G:%d^2)

Cause: Acceleration limit exceeded due to high curvature.

Remedy: Reduce program speed or touch up path to reduce curvature.

MOTN-632 WARN SPL:Speed Reduced (G:%d^2,L:%d^5)

Cause: Constant speed cannot be maintained. Automatically speed reduced due to high curvature.

Remedy: Reduce program speed or touch up path to reduce curvature.

MOTN-633 STOP.G SPL:VAJ Limit (G:%d^2,L:%d^5)

Cause: The speed is too fast to pass safely through the curved path.

Remedy: Reduce program speed or touch up path to reduce curvature.

MOTN-634 WARN SPL:Speed Changed (G:%d^2,L:%d^5)

Cause: Constant speed cannot be maintained. Speed reduced due to large orientation change or large motion in another group.

Remedy: Check the teaching positions.

MOTN-635 STOP.G SPL:Zero move (G:%d^2)

Cause: Adjacent program points are taught at the same location.

Remedy: Do not teach segments with zero move.

MOTN-636 STOP.G SPL:End not Reached (G:%d^2)

Cause: Internal system error. This class of error should not be encountered during normal operation. Robot cannot reach the end of Spline block.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-637 STOP.G SPL:Invalid Set of Points (G:%d^2)

Cause: Cannot move segments with direction reversal.

Remedy: Do not teach segments with direction reversal.

MOTN-638 STOP.G SPL:BWD during blend (G:%d^2)

Cause: S BWD moves linearly to previous point when in blending region. On-path motion.

Remedy: Move cursor to another line and jog the robot to a safe place to start from that line before continuing.

MOTN-639 STOP.G SPL:Enable CP to use S motion

Cause: CP option not enabled.

Remedy: Enable CP option and cold start.

MOTN-640 STOP.G SPL:resume requires OPR (G:%d^2,L:%d^5)

Cause: After Hold, S motion type cannot resume on path when Original Path Resume is disabled.

Remedy: Enable Original Path Resume, or move cursor to another line and jog the robot to a safe place to start from that line before continuing. It should be possible to still support STEP FWD and STEP BWD for the org_path_resume disabled case, as long as the robot moves all the way to the taught point without hold.

MOTN-641 STOP.G SPL:Internal PLAN error (G:%d^2)

Cause: Internal error in Spline planning. This class of error should not be encountered during normal operation.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-642 STOP.G SPL:Internal INTR error (G:%d^2)

Cause: Internal error in Spline execution. This class of error should not be encountered during normal operation.

Remedy: Just after the alarm occurred, please get a diagnostic log and image backup, document the events that led to the error, and call your local FANUC representative. If a diagnostic log is not available, please get image backup, document the events that led to the error, and call your local FANUC representative.

MOTN-643 STOP.G SPL:BWD not on path (G:%d^2,L:%d^5)

Cause: Robot cannot do backward motion on spline path.

Remedy: Move cursor to another line and jog the robot to a safe place to start from that line before continuing.

MOTN-644 STOP.G SPL:Path changed (G:%d^2,L:%d^5)

Cause: Spline path changed due to program edit.

Remedy: Move cursor to another line and jog the robot to a safe place to start from that line before continuing.

4.12.9 MUPS Alarm Code

MUPS-001 Use of M-PASS SP's bef. init

Cause: Multi-Pass variables not initialized.

Remedy: Controlled start, init multipass.

MUPS-002 Isolated offset destination

Cause: Isolated offset destination.

Remedy: Must have at least two points.

MUPS-003 Invalid motype with offset

Cause: Invalid motype with offset.

Remedy: Internal error: motion type is not Joint, Linear, or Circular. If this error persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

MUPS-004 Segment too short using OFFSET

Cause: Segment too short using OFFSET.

Remedy: Increase distance between points.

MUPS-005 Invalid OFFSET_MODE value

Cause: This is an internal error. This alarm will be posted when RPM instruction is not executed before the execution of MP Offset instruction.

Remedy: Check whether RPM instruction is executed before the execution of MP Offset instruction. If there are no problems about the execution, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

MUPS-006 BWD not allowed in M-PASS

Cause: BWD motion not supported.

Remedy: Multi-Pass does not support backward motion. Please do not use Shift-BWD in Multi-Pass.

MUPS-007 Illegal transition:nonCD<->CD

Cause: Illegal transition (nonCD->CD or CD->nonCD) happens.

Remedy: Add or remove motion option COORD.

MUPS-008 Invalid pass number

Cause: Pass number is not acceptable.

Remedy: Use correct pass number.

MUPS-009 Invalid Direction

Cause: Pass direction is not acceptable.

Remedy: Pass direction can only be 0: Normal or 1: Reverse. First pass direction must be 0.

MUPS-010 Invalid parameters

Cause: Pass number and direction are not acceptable.

Remedy: Check the pass number and direction.

MUPS-011 Pass number is out of sequence

Cause: Pass number is not in sequence.

Remedy: Use correct pass number.

MUPS-012 Last pass was incomplete

Cause: Last pass was not welded to completion.

MUPS-013 Invalid Leader OFFSET MODE

Cause: Leader Offset requires CD Move.

Remedy: Use coordinated motion.

4.13 o

4.13.1 OPTN Alarm Code

OPTN-000 Unknown error (OPTN)

Cause: System internal error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

OPTN-001 Too many options installed

Cause: The maximum number of software options/updates (50) is installed.

Remedy: None required. Options/updates will load but not be logged.

OPTN-002 Installed: '%s'

Cause: Installation of software option/update has finished successfully.

Remedy: This is just a notification. You do not have to do anything for this warning message.

OPTN-003 Skipped: '%s'

Cause: S/W option was skipped by installer.

Remedy: Some options cannot be overlaid, you may need to delete some options first.

OPTN-006 Not Installed: '%s'

Cause: The specified software option was not installed properly.

Remedy: Reinstall the option.

OPTN-007 Unauthorized: '%s'

Cause: Software option has not been authorized for this configuration.

Remedy: Call your local FANUC representative.

OPTN-008 Requires: `%s`

Cause: The required floppy disk was not used.

Remedy: Reinstall the option using the required floppy disk.

OPTN-009 Authorized: `%s`

Cause: Software option is now authorized for this configuration.

Remedy: This is a notification. No action is needed.

OPTN-010 Force COLD start

Cause: Setup Application has not been done.

Remedy: Setup Application prior to START (COLD).

OPTN-011 Cycle Power

Cause: Power down and then up is needed.

Remedy: Turn the controller off, and then back on.

OPTN-012 ID file is missing/corrupt

Cause: The LICENSE file, license.dat, is missing or corrupted.

Remedy: Do a full load from the original distribution media.

OPTN-013 Invalid PAC

Cause: The supplied PAC is not valid for this option.

Remedy: Obtain a valid PAC for this option.

OPTN-014 Dependency nesting too deep

Cause: The option nesting tree is too deep.

Remedy: Install sub-options first.

OPTN-015 Excludes: `%s`

Cause: This option is not compatible with an option that is already installed.

Remedy: You cannot have both options.

OPTN-016 Key file is missing/corrupt

Cause: The KEY file, keyfile.dat, is missing or corrupted.

Remedy: Do a full load from the original distribution media.

OPTN-017 No UPDATES on this media

Cause: The distribution media does not contain, update.tx, so there are no updates to install.

Remedy: None required.

OPTN-018 No %s additions on this media

Cause: The distribution media does not contain, custom.tx, so there are no customizations to install.

Remedy: None required.

OPTN-019 Versions mismatched

Cause: The distribution media contains updates or customizations, but has a different release version than this core.

Remedy: None required.

OPTN-020 Too many %s references

Cause: The maximum number of feature references in the .fd files is exceeded. These include: REQUIRE, INCLUDE, EXCLUDE.

Remedy: If the alarm includes: Increase KAREL constant: CONFIG CLIMIT REQUIRE DLIMIT OPTION OLIMIT Robot REQUIRE RLIMIT STANDARD SLIMIT.

OPTN-021 Check orderfil.dat fails: %s

Cause: One or more lines in orderfil.dat have Order Numbers for options that can not work for this Application Tool.

Remedy: Remove or correct the line that contains the specified Order Number.

OPTN-022 Demo option %s expires in %d days

Cause: The Demonstration version of the option provides 60 days of free operation. This message indicates that there are “%d” days that are left for this option to operate. Option operation will be restricted or eliminated after that. The Order No. of the specific option is provided in the Cause message.

Remedy: None is required. If use beyond the 60 days is required, then the option can be purchased and authorized for permanent operation.

OPTN-023 Max number of arms is exceeded.

Cause: The maximum number of robot arms allowed has been exceeded. The default max number of arms is 2.

Remedy: Load TQAP:Triple Quad Arm Package to increase the max number of robot arms to 4.

OPTN-024 Too many motion groups installed

Cause: The maximum number of motion groups is installed.

Remedy: None required. All of the setup for the Motion Group might not be complete.

OPTN-025 %s DEMO has expired

Cause: The 60-day use period of this DEMO option has expired.

Remedy: Choose Controlled Start for the controller and then choose MENU, S/W INSTALL, Option, then DEMOS. Please authorize this option. Refer to the Controller Software Installation Manual or contact your FANUC Representative for more information.

OPTN-026 Demo Authorized: '%s'

Cause: Software option is now demo authorized for this configuration.

Remedy: This is a notification. No action is needed.

OPTN-027 ID Mismatch : lic(%s) and act(%s)

Cause: Controller ID does not match license ID.

Remedy: Correct from Reserialize Page at CTRL Start.

OPTN-028 Invalid LAC

Cause: The supplied LAC is not valid for this controller.

Remedy: Correct from Reserialize Page at CTRL Start.

OPTN-029 LAC Updated

Cause: The supplied LAC is valid for this controller.

Remedy: This is a notification. No action is needed.

OPTN-030 Max number of retries exceeded.

Cause: A small number of retries is allowed to authorize an option or re-authorize a license file.

Remedy: Obtain a valid PAC or LAC, and enter the numbers accurately.

OPTN-031 The KAREL option is required

Cause: The KAREL option, R632, must be installed in order to load this file.

Remedy: Install the KAREL option.

OPTN-032 Extend not appropriate.

Cause: Extending the number of days to use a Demonstration options is not valid in this context.

OPTN-033 Image not backed up.

Cause: Controller Image should be backed up prior to installing options. This allows you to restore an image without the added options should you need to.

Remedy: Backup your controller image prior to installing additional options.

OPTN-034 BACKUP not appropriate.

Cause: The controller image cannot be backed up at this time. An AutoUpdate is needed to complete this option installation.

Remedy: Press AUTOUPDT to complete this option installation.

OPTN-035 Image already backed up.

Cause: The controller image is already backed up.

Remedy: Set \$OPT_STATE.\$STATE to 0 to re-allow Image Backups.

4.13.2 OS Alarm Code

OS-000 R E S E T

Cause: Power up RESET notification.

Remedy: None.

OS-001 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-002 System error - invalid function performed

Cause: The function performed by the user is not supported or is invalid.

Remedy: Consult the appropriate manual and verify the usage of the attempted operation. Try it again, if possible. If you try again and still get this error, record the events that led to the error and contact your FANUC tech representative.

OS-007 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-012 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-026 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-028 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-058 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-065 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-114 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-126 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

OS-144 System error %x, %x at %x

Cause: An unknown register dump occurred.

Remedy: 1) If the first two numbers are 10, 0, back up all the data and then replace the main board.
2) In other cases, contact the FANUC hotline and provide the following information for further investigation. o Record the entire error message(s) that occurred including any program running at the time of the system error. o Retrieve the following files from the File Menu: md:histe.ls md:histr.ls md:hists.ls md:histp.ls md:conslog.ls md:errall.ls o In addition for a system V5.22 or greater, do a diagnostic backup from the file menu to send to FANUC.

OS-145 Power off controller to reset

Cause: Usually a result of previous unrecoverable system error.

Remedy: Cycle power on the controller. If error message persists, then contact the FANUC hotline for further investigation.

OS-147 Assert MAIN %d %d %s

Cause: An assert occurred on the MAIN processor.

Remedy: Record and report the parameters following the 'Assert MAIN' text to the FANUC Help Hotline.

OS-148 Assert COMM %d %d %s

Cause: An assert occurred on the COMM processor.

Remedy: Record and report the parameters following the 'Assert MAIN' text to the FANUC Help Hotline.

OS-149 Assert VMAIN %d %d %s

Cause: An assert occurred on the VMAIN processor.

Remedy: Record and report the parameters following the 'Assert MAIN' text to the FANUC Help Hotline.

OS-150 Assert VCOMM %d %d %s

Cause: An assert occurred on the VCOMM processor.

Remedy: Record and report the parameters following the 'Assert MAIN' text to the FANUC Help Hotline.

OS-225 System error %x %x

Cause: A software internal error occurred.

Remedy: Cycle power on the controller. If error message persists, then record and report the parameters following the 'System error' text to the FANUC Help Hotline.

4.14 P

4.14.1 PALL Alarm Code

PALL-001 Length must be longer than width

Cause: The length dimension must always be greater than the width.

Remedy: If the specified length was less than the width, then the length is forced to the width dimension. If the specified width was greater than the length, then the width is forced to the length dimension. Specify the correct length or width.

PALL-002 Maximum layers = 40

Cause: A layer number greater than the maximum allowed layers was specified.

Remedy: Specify a layer number less than the allowed maximum.

PALL-003 Cannot Flip Lt or Wd for Unique

Cause: The length or width flip was specified for a unique matrix which is not allowed.

Remedy: Specify No flip or diagonal (length and width) flip for the unique matrix.

PALL-004 P1 has not been taught

Cause: Point P1 on the teaching aid was not taught.

Remedy: Teach P1 on the teaching aid.

PALL-005 Layer Barrier on last cyc only.

Cause: The layer barrier cannot be selected for anything but the last cycle of a layer.

Remedy: Select the layer barrier for the last cycle only.

PALL-006 Layer Barrier not enabled.

Cause: The user selected * or Layer barrier without enabling Configure all layers from the Optimal Path menu.

Remedy: Set Configure All Layers to TRUE in the Optimal Path menu before selecting * for the Sequence.

PALL-007 Layer Barrier invalid on top lyr

Cause: The layer barrier cannot be specified for the top layer.

Remedy: This is only a notification.

PALL-008 Unit cycle %s not defined.

Cause: The specified sequence number was not found.

Remedy: The sequence should include all the items in the layer.

PALL-009 Lyr bar invalid w/ slipsheet enb

Cause: You cannot break the layer barrier if you have a slip sheet between two layers.

Remedy: If you want a layer barrier, remove the slip sheet between the layers by removing the layer spacing between the layers.
Or do not use the layer barrier.

PALL-010 %s is not reachable

Cause: The position the robot is trying to go to is not reachable. If the proceeding error is: 'Error: Pallet=x Unit=y', it means that the robot was working with pallet x and box y when the error occurred.

Remedy: Verify that the value of \$UTOOL and/or \$MNUTOOL are correct. If the robot stopped while heading towards the pallet, then check the value of Pallet approach length and width in Optimal path setup. You might have specified large pallet offsets or you might need to specify a correct pallet offset in the Optimal path setup.

PALL-011 Position has not been taught

Cause: The position has not been taught.

Remedy: Teach the position.

PALL-012 MOVE-TO could not execute %s

Cause: Motion control was not obtained for robot motion.

Remedy: Check if another task is running, or if the teach pendant is enabled. The teach pendant should be disabled.

PALL-013 GET_VAR failed %s

Cause: Data in a SETUP menu could not be set.

Remedy: Cold start the controller, and retry the operation.

PALL-014 SET_VAR failed %s

Cause: Data in a SETUP menu could not be set.

Remedy: Cold start the controller, and retry the operation.

PALL-015 Could not create station file

Cause: An error occurred while creating an infeed or pallet station file.

Remedy: Cold start the controller, and retry the operation.

PALL-016 Sequence valid.

Cause: The data in the sequence screen is valid.

Remedy: None.

PALL-017 Cycle number %s invalid.

Cause: PalletTool allows initialization of palletizing data by allowing users to pass a cycle number to the CALL PMPROC DT(cycle_number) in some teach pendant programs. If the user passes an invalid cycle number which is less than or equal to zero, or higher than the maximum number of cycles which is 20, or a number higher than the number of cycles in the application, this error will result.

Remedy: Make sure to pass a valid cycle number to the call to PMPROC DT in the teach pendant program used.

PALL-018 Could not load .VR file

Cause: The .VR file does not exist, or an error occurred in communication.

Remedy: Check the communication line, and make sure that the file exists on the floppy.

PALL-019 Could not create unit load file

Cause: An error occurred while creating unitload file.

Remedy: Cold start the controller, and retry the operation.

PALL-020 Could not open .DT file for read

Cause: An error occurred while opening a .DT file.

Remedy: Cold start the controller, and retry the operation.

PALL-021 IO_STATUS error occurred

Cause: An I/O error occurred during the data transfer.

Remedy: Cold start the controller, and retry the operation.

PALL-022 Could not save .VR file %s

Cause: Error occurred while saving a .VR file.

Remedy: Cold start the controller, and retry the operation.

PALL-024 Could not load file %s

Cause:

1. An error occurred while loading a .VR file.
2. The gripper setup file from previous versions of PalletTool cannot be read. The number of grippers was increased and the structure of the data has change. The error: "VARS-014 Create type - xxxx failed" will be displayed.

Remedy: Cold start the controller and retry the operation if you know you should be able to read the .vr file into PalletTool.

PALL-028 Could not access files

Cause: An error occurred while accessing the floppy disk.

Remedy: Make sure the communication is correct, and retry the operation.

PALL-029 File transfer not done

Cause: The file transfer was not successful. Some data might not have been transferred.

Remedy: Cold start the controller, and retry the operation.

PALL-030 .DT file list is empty

Cause: No .DT files exist on the floppy.

Remedy: .DT files must exist on the floppy in order to perform the transfer.

PALL-031 Pallet Stn %s not found

Cause: The specified station number is not loaded.

Remedy: Load the station file, or create one.

PALL-032 Pallet stn %s not taught

Cause: The pallet station specified in PalletSystem setup has not been taught.

Remedy: Teach the pallet station specified in PalletSystem setup.

PALL-033 Load file %s not found

Cause: The unitload file is not loaded.

Remedy: Perform one of the following:

- Load the Unit load file.
- Transfer the .DT file.
- Create a new .DT file.

Retry the operation.

PALL-035 Invalid layer number %s

Cause: An invalid layer number was entered at cycle start or passed from the PLC. Or, PalletTool encountered an invalid layer number while doing its data processing.

Remedy: Make sure to enter a valid layer for each cycle at cycle start or in passing the data to the PLC.

PALL-036 Multi-case option not loaded.

Cause: The user is trying to select the multi-case gripper but the multi-case option is not installed.

Remedy: Install the Multi-case gripper option.

PALL-037 Fork/Bag option not loaded.

Cause: The user is trying to select fork gripper but the fork gripper option is not installed.

Remedy: Install the fork gripper option.

PALL-038 Infeed stn %s not taught

Cause: The infeed station specified in PalletSystem setup has not been taught.

Remedy: Teach the infeed station specified in the PalletSystem setup.

PALL-040 Unknown flip type %s

Cause: The specified flip type is unknown to PalletTool.

Remedy: Check the value of flip type in Unit load SETUP. It should be a known flip type.

PALL-041 Infeed stn %s not found

Cause: The specified infeed station is not taught or loaded.

Remedy: Teach or load the infeed station.

PALL-044 Unknown unit orientation

Cause: An orientation besides LT_ON_LT or WD_ON_LT for a box in a layer was encountered by PalletTool while either PalletTool PC or PalletPRO data was downloaded to the controller.

Remedy: Make sure to visit the screen in PalletTool PC or PalletPRO where unit orientation for each unit in a layer is defined and make sure that there are no blanks. If this does not resolve the problem while downloading, re-enter the proper orientation for each unit in PalletTool PC or PalletPRO even though the screen might show valid values.

PALL-045 Cannot change PC file data

Cause: The unitload data file was created using PalletMate PC.

Remedy: Data created using PalletMate PC cannot be changed in PalletTool. You must go back to the PC to make the changes, and then retransfer the file.

PALL-046 Could not run task %s

Cause: An error occurred while PalletTool was internally trying to run another program in multi-tasking mode.

Remedy: Perform an ABORT ALL, and retry the operation.

PALL-048 Error opening %s

Cause: An error occurred while PalletTool was trying to open a .TP program.

Remedy: Make sure that the .TP program is loaded, and retry the operation.

PALL-049 Set_pos_tpe %s

Cause: An error occurred while PalletTool was trying to set a position in a .TP program.

Remedy: Cold start the controller, and retry the operation.

PALL-050 Error closing %s

Cause: An error occurred while PalletTool was trying to open a .TP program.

Remedy: Cold start the controller, and retry the operation.

PALL-051 Slip sheet not supported

Cause: Slip sheet support is not provided.

Remedy: Disable slip sheet in the Pallet System menu.

PALL-052 Pattern not supported

Cause: Some patterns from older versions of PalletTool are no longer supported.

Remedy: Create a new unitload, and select a different pattern.

PALL-053 Gripper is not DOUBLE type

Cause: Depalletizing was chosen with a gripper other than single.

Remedy: Choose single gripper for depalletizing, and retry the operation.

PALL-054 Invalid parts requested %s

Cause: A request for picking up 0 part was received.

Remedy: Abort all and retry the operation.

PALL-055 Error in CNV_STR_CONF

Cause: Internal error occurred.

Remedy: Perform an ABORT ALL, and retry the operation.

PALL-057 Gripper type not supported: %s

Cause: The specified gripper is unknown to PalletTool.

Remedy: Check the value of the gripper-id in optimal path setup. The valid range is 1-9. A value of 10 is also allowed if the multi-case option is loaded. A value of 11 and 12 are also allowed if the fork option is loaded.

PALL-058 Cannot select PC pattern

Cause: A PalletMate PC pattern cannot be selected while creating or modifying a unitload.

Remedy: Single, Doubleside, DoubleTop, or Unique Other patterns can only be transferred from PalletMate PC.

PALL-059 Error using CLEAR built-in

Cause: An error occurred while clearing a variable file. If a .vr file was loaded into memory at Controlled start, it can only be cleared at Controlled start.

Remedy:

1. Wait until production is aborted and clear the unitload.
2. If the unitload was loaded at Controlled start, you will have to go to controlled start to clear it. At Controlled start, press MENU, select Clear UnitLd. You will only be able to clear unitloads that were loaded at Controlled start from the Controlled start menu.

PALL-063 Id is uninit in UL %s

Cause: Product-id is not set in the UL file.

Remedy: Set the product_id in the UL file from Unit load SETUP.

PALL-064 MOVE TO done

Cause: The motion to P1, P2 or P3 on the teaching aid was successful.

Remedy: None.

PALL-065 Invalid reg value %s

Cause: An invalid register value was encountered.

Remedy: From the DATA menu, verify that the register contains the correct value.

PALL-066 Reg %s could not be set

Cause: The register operation failed.

Remedy: Check if the register is defined, if it is between 1-64, and if it has the right value. You must perform an ABORT ALL and retry the operation.

PALL-067 Reg value not set %s

Cause: Could not set an internally calculated value V to the register R.

Remedy: From the DATA menu, verify that the register is defined, is in the range 1-64, and has the correct value. Must ABORT ALL and retry.

PALL-068 Infeed/Pallet for UL %s unknown

Cause: The infeed on which the unitload enters the workcell was not assigned in the PalletSystem menu.

Remedy: Make the infeed-unitload assignment in the PalletSystem SETUP menu. You must perform an ABORT ALL and retry the operation.

PALL-069 Invalid UL %s found

Cause: A valid unitload number was not found at the layer indicated for the mixed unitload.

Remedy: From the Mixed UnitLd menu, indicate valid unitload numbers for each unit layer. Perform an ABORT ALL and retry the operation.

PALL-071 Not all pallets assigned UL

Cause: Not all the pallets have been assigned a unitload in PalletSystem menu.

Remedy: This is only a warning message. Make sure in PalletSystem menu, that all the pallets have a corresponding unitload assigned.

PALL-072 Not all infeeds assigned UL

Cause: Not all of the infeeds have been assigned a unitload in the PalletSystem menu.

Remedy: Make sure that in the PalletSystem menu, all of the infeeds have a corresponding unitload assigned.

PALL-073 Station teaching completed

Cause: All the teaching aid points have been taught, and the teaching of the station is complete.

Remedy: None.

PALL-074 Perch position not taught

Cause: The perch position is uninitialized (has not been taught).

Remedy:

1. Select PM_MAIN from the SELECT screen.
2. Press DATA.
3. Jog the robot to the perch position.
4. Record the variable perch position.
5. Perform an ABORT ALL and retry the operation.

PALL-081 Moving to perch position..

Cause: This is a notification that the robot will move to the perch position.

Remedy: None.

PALL-082 Indexing pallet %s

Cause: This is a notification that the pallet is being indexed.

Remedy: None.

PALL-083 Placing slip sheet %s

Cause: This is a notification that the slip sheet is being placed.

Remedy: None.

PALL-085 Operator Panel E-stop ON

Cause: The program cannot run with the operator panel EMERGENCY STOP button pressed.

Remedy:

1. Release the operator panel EMERGENCY STOP button.
2. Press RESET.
3. Press CYCLE START.

PALL-086 Teach pendant E-stop ON

Cause: The program cannot run with the teach pendant EMERGENCY STOP button pressed.

Remedy:

1. Release the teach pendant EMERGENCY STOP button.
2. Press RESET.
3. Press CYCLE START.

PALL-087 Teach pendant is enabled

Cause: The program cannot run with teach pendant enabled.

Remedy:

1. Disable the teach pendant.
2. Press RESET.

3. Press CYCLE START.

PALL-088 Pal Stop must be disabled

Cause: PALLET STOP is already on. You can only have either CYCLE STOP or PALLET STOP on, not both.

Remedy: Disable PALLET STOP, then enable CYCLE STOP.

PALL-089 Cycle Stop must be disabled

Cause: CYCLE STOP is already on. You can only have either CYCLE STOP or PALLET STOP on, not both.

Remedy: Disable CYCLE STOP, then enable PALLET STOP.

PALL-091 Slip sheet stack door open

Cause: One of the slip sheet stack doors is open.

Remedy: Find out which slip sheet stack door is open, and close it. Press CYCLE START to resume.

PALL-101 File is in use by robot. Cannot transfer

Cause: The robot is attempting to transfer a unitload file that is being used by the robot. It is being used in production, or is being edited using the SETUP UNITLOAD or SETUP OPTIMAL PATH menus.

Remedy:

1. Stop the robot.
2. Perform an ABORT ALL.
3. Try the file transfer again.

PALL-105 Station not taught

Cause: Either (P1,P2), (P1, P3), (P2, P3), or (P1,P2,P3) were all taught at the same point.

Remedy: Use MODIFY under the Infeed Stn SETUP menu to reteach the frame points P1, P2 and P3 correctly.

PALL-106 Cannot switch in 1 Pallet Cell

Cause: There is only one pallet in the workcell.

Remedy: This is only a message. NOSWITCH is the only option allowed for one Pallet cell.

PALL-108 Part not present in tool %s

Cause: The robot did not get part presence or faulty part presence sensor.

Remedy: Check if the gripper is in contact with the part and determine why the part presence sensor is not turning on.

PALL-109 Part still present in tool %s

Cause: Part presence sensor is still detecting part or faulty sensor.

Remedy: Check if part presence is OFF and if not if the sensor is ok.

PALL-112 NOSWITCH illegal when pallets > 1

Cause: The number of pallets is greater than 1 (one) and the pallet switch was NOSWITCH. This is not allowed in PalletTool.

Remedy: This is only a message. By default, PalletTool forces PER_PICK. You can change this to other values except NOSWITCH.

PALL-113 Please enable teach pendant

Cause: The program cannot run if teach pendant is not enabled.

Remedy: This is for safety reasons. Enable the teach pendant, and press the Tool 1 or Tool 2 hardkey if necessary.

PALL-114 Must index pallet before changing product

Cause: A partial or completed pallet is present at the station where you want to change the product. If the existing pallet is not indexed, then the new product will crash with the existing pallet.

Remedy: Choose the Index pallet from the menu and index the existing pallet first.

PALL-115 Coldstart setup complete.

Cause: Part of the application setup of a robot is done at the first Cold start. This can take up to 20 seconds. The teach pendant Hints menu will be displayed before PalletTool has loaded all of its .tp programs and macros. NOTE: PalletTool needs an additional Cold start after the application setup Cold start to set up its macros completely.

Remedy: None.

PALL-117 Error creating new variables

Cause: An error occurred while creating a new file.

Remedy: Check the available memory. If RAM is full, clear unneeded data and try the operation again. If necessary, Cold start the controller, and retry the operation.

PALL-118 Cannot use MODIFY

Cause: The robot could not find the requested data.

Remedy: Teach or load the required data.

PALL-119 Stn file not loaded or created

Cause: The specified station is not taught or loaded.

Remedy: Teach or load the station.

PALL-121 Could not read %s

Cause: Could not read the unitload .dt file. A Data error exists.

Remedy: Check the MOTET communication and PTPC status.

PALL-122 Cannot go to DETAIL page

Cause: Not all the gripper information has been specified in the Pallet System setup.

Remedy: Display the Gripper MENU, and fill in the gripper information.

PALL-123 Data modification disallowed

Cause: The robot is in production. SETUP data cannot be changed during production.

Remedy: Wait until production is aborted and then make the changes.

PALL-124 Setting length = width

Cause: The data was not set up properly but was corrected automatically.

Remedy: Make sure the value is set as needed.

PALL-125 Setting width = length

Cause: The data was not set up properly, but was corrected automatically.

Remedy: Make sure the value is set as needed.

PALL-126 Setting layer = 1

Cause: The data was not set up properly, but was corrected automatically.

Remedy: Make sure the value is set as needed.

PALL-127 Flip not allowed

Cause: The data was not set up properly, but was corrected automatically.

Remedy: Make sure the value is set as needed.

PALL-128 Pallet Switch type changed

Cause: The data was not set up properly, but was corrected automatically.

Remedy: Make sure the value is set as needed.

PALL-131 Layer num outside range (1-40)

Cause: Layer count cannot be more than 40 or less than 1.

Remedy: Pick a legal layer, and retry the operation.

PALL-132 Cannot resume program

Cause: The program cannot run because an error condition will not clear. When on the ALARM page, select this error and press HELP to see the error detail.

Remedy: Fix the error condition, and press RESET.

PALL-133 Could not clear file

Cause: If the unitload is being used in production it cannot be cleared. If a unitload was loaded into memory at Controlled start, it can only be cleared at Controlled start.

Remedy:

1. Wait until production is aborted and clear the unitload.
2. If the unitload was loaded at Controlled start, you will have to go to controlled start to clear it. At a Controlled start, press MENU, select Clear UnitLd.
3. You will only be able to clear unitloads that were loaded at Controlled start from the Controlled start menu.

PALL-137 Unit load num out of range

Cause: Specified Unit load number was out of range.

Remedy: Specify a Unit load number in the range 1-999.

PALL-138 Only Pal OR Cycle stop allowed

Cause: PALLET STOP or CYCLE STOP is already on. You can only have either cycle stop, or pallet stop on, not both.

Remedy: Disable one before trying to enable the other.

PALL-139 %s :wrist angle correction failed

Cause: The routine that calculates the final destination position while moving from the current source position has failed. The preceding error should be : 'Error: Infeed=x Pallet=y Unit=x'. This means that the robot was working with infeed x, pallet y and box z when the error occurred.

Remedy: Check that all positions are in range.

PALL-140 Cycle power to increase registers

Cause: An old smaller NUMREG.VR or POSREG.VR file was loaded onto the controller. The number of registers or position registers was changed to fewer than what the current version of PalletTool needs.

Remedy: PalletTool logic has automatically set the number of registers to the necessary size again. But a Cold start is needed to increase the register or position register table size. Perform a Cold start.

PALL-141 Cycle power to increase macros

Cause: An old smaller SYSMACRO.SV file was loaded onto the controller. The number of macros was changed to fewer than what the current version of PalletTool needs.

Remedy: PalletTool logic has automatically set the number of macros to the necessary size again. But it needs a Cold start in order for the macro table size to be increased. Perform a Cold start.

PALL-142 Program not selected

Cause: To run a teach pendant program .tp in local mode, you must first select the program.

Remedy: Press the SELECT key and choose a program to run. If you are trying to run PalletTool, the keyswitch must be set to REMOTE. If there is no remote/local keyswitch on the controller you have, go to the MENU -> System -> Config page, and change the remote/local setting in that menu to Remote.

PALL-143 Data in use by Robot

Cause: The robot is in production. Set up data cannot be changed during production.

Remedy: Wait until production is aborted and then make the changes.

PALL-144 Visit layer spacing/flip menus

Cause: Number of layers in the unitload was changed.

Remedy: This is only a warning message to remind you to visit the layer flips and layer spacing menus to make sure that flips and spacing are correct for all the layers.

PALL-145 %s

Cause: This error is a general purpose text message posted by PalletTool during production runs for displaying status of an event or to show debug information to the user.

Remedy: None.

PALL-146 UOP Ignored. Wrong Start Mode

Cause: The operator selects which device can be used to start palletizing on the SETUP Pallet System menu. The start device can be set to SOP or UOP/PLC or PTPC.

Remedy: The UOP/PLC must be set as the start device or the UOP signal will be ignored.

PALL-147 SOP Ignored. Wrong Start Mode

Cause: The operator must select which device can be used to start palletizing on the SETUP Pallet System menu. The start device can be set to SOP or UOP/PLC or PTPC.

Remedy: The SOP must be set as the start device on the SETUP Pallet System menu or the SOP signal will be ignored.

PALL-148 Approach Posn out of range

Cause: The approach position the robot is trying to go to is not reachable. The preceding error should be : 'Error: Pallet=x Unit=y'. This means that the robot was working with pallet x and box y when the error occurred.

Remedy: Verify that the value of \$UTOOL and/or \$MNUTOOL are correct. If the robot stopped while heading towards the pallet, then check the value of Pallet approach length and width in Optimal path setup. You might have specified large pallet offsets or you may need to specify a correct pallet offset in the Optimal path setup.

PALL-149 Unit Posn out of range

Cause: The placement position the robot is trying to go to is not reachable.

Remedy: Verify that the value of \$UTOOL and/or \$MNUTOOL are correct. If the robot stopped while heading towards the pallet, then check the value of Pallet approach length and width in Optimal path setup. You may have specified large pallet offsets or you might need to specify a correct pallet offset in the Optimal path setup menu.

PALL-150 Loading error - %s

Cause: There was a problem loading the specified file.

Remedy: Check the communication line, and make sure that the file exists on the floppy.

PALL-151 %s exists. Not loaded

Cause: The specified file already exists on the controller.

Remedy: Delete the file from the controller before trying to reload it.

PALL-152 Warning-ignoring entry where CASE# was 0.

Cause: The gripper's setup information has an illegal (zero) case number.

Remedy: Edit the gripper data and specify a valid case number.

PALL-153 Initializing Data

Cause: Initializing data for production.

Remedy: None.

PALL-154 Error setting gripper data %s

Cause: The robot could not read or write the gripper data.

Remedy: Check the available memory. Remove unnecessary files, if possible. Try to reload a backup of the gripper data.

PALL-155 Register not defined %s

Cause: This is just a debug message.

Remedy: None.

PALL-156 Current pallet unknown

Cause: R[80] is not set up properly when SET UTOOL macros are used.

Remedy: Make sure R[80] contains the number of the desired pallet.

PALL-157 UTOOL unknown for tool %s

Cause: The UTOOL of the pallet requested in R[80] is not set up properly.

Remedy: Make sure all the stations are completely set up.

PALL-158 Last Utool not known

Cause: This is a warning message posted by PalletTool to help debug problems with unit placement on the pallet.

Remedy: None.

PALL-159 Can change UnitLd on palt %s only

Cause: During product changeovers through the Cycle Stop menu, you are first prompted to enter the pallet number where you want to bring the new unitload. This is followed by another menu where you can enter the unitload for that pallet

and also assign the infeed which brings the new unitload. If you enter this information for a pallet other than the one you chose first, you will get this error.

Remedy: Change the unitload number of the selected pallet.

PALL-160 PalletTool aborted

Cause: PalletTool production is aborted because of an error.

Remedy: Refer to other errors in the ALARM log for details.

PALL-161 'Not all cases have I/O defined

Cause: Each of the gripper's cases must have inputs and outputs defined for control.

Remedy: Complete the gripper information tables.

PALL-162 Recvd PLC signal for indexing pallet %s

Cause: This is a message to notify the user that PLC data for initiating product changeovers has been received.

Remedy: None.

PALL-163 Infeed I/O undefined-OKTOPICK.TP

Cause: The infeed I/O must be set up.

Remedy: Make sure the infeed I/O is set up properly:

1. Press MENU.
2. Select SETUP.
3. Select INFEED STN.
4. SET IO.

PALL-164 Gripper number not set in register

Cause: R[15] is not set up properly when gripper macros are used.

Remedy: Make sure R[15] contains the number of the desired gripper.

PALL-165 Invalid Gripper number set in register

Cause: R[15] is not set up properly when gripper macros are used. The Gripper numbers supported in PalletTool are:

- Single = 1
- Double icc = 3
- Triple case = 5
- Custom 1 = 6
- Custom 2 = 7
- Custom 3 = 8
- Custom 4 = 9
- Multi case = 10
- Fork pick = 11
- Bag push = 12

Remedy: Make sure R[15] contains the number of the desired gripper.

PALL-166 Upgrading %s variable file

Cause: Certain variable files can change with each release of PalletTool. Files saved with an older release are automatically updated as needed.

Remedy: None.

PALL-167 Variable file is older version

Cause: Certain variable files can change with each release of PalletTool. Files saved with an older release are automatically updated as needed.

Remedy: None.

PALL-168 Units/layer %s exceeds allowed maximum

Cause: One of the following has occurred:

1. The number of units in the unitload is less than the start unit entered.
2. The number of units is greater than the maximum allowed (50).

Remedy: Enter a valid number of layers.

PALL-169 Number of layers %s exceeds allowed maximum

Cause: One of the following has occurred:

- The number of units in the unitload is less than the start unit entered.
- The number of units is greater than the maximum allowed (50).

Remedy: Enter a valid number of layers.

PALL-170 Invalid pattern type in data file

Cause: An illegal matrix type was received from PalletTool PC.

Remedy: Check the MOTET communication and PTPC status.

PALL-171 System still in fault state

Cause: An error condition exists such that the robot cannot be reset.

Remedy: Fix the error condition, and press RESET.

PALL-172 Invalid infeed number from PLC %s

Cause: The PLC sent an invalid infeed number. The number must be greater than 0, and less than or equal to the 'number of infeeds' set up.

Remedy: Make sure a valid infeed number was sent by PLC. Check the PLC communication status.

PALL-173 Invalid Pallet number from PLC %s

Cause: PLC sent an invalid pallet number. The number must be greater than 0 and less than or equal to the 'number of pallets' set up.

Remedy: Make sure a valid pallet number was sent by the PLC. Check the PLC communication status.

PALL-174 Setup Application Completed

Cause: This indicates that PalletTool Controlled start setup is complete.

Remedy: None.

PALL-175 Can't use labels-out for triple gripper

Cause: Labels out is supported only for the single and double case gripper.

Remedy: None.

PALL-176 Cannot upgrade vr file

Cause: An error occurred while attempting to upgrade an older variable file to the current release format.

Remedy: Create a new variable file.

PALL-177 Single or Double pattern not supported

Cause: The selected unitload has the wrong matrix type (it is less than type 4). This very old data is no longer supported by PalletTool.

Remedy: Create a new unitload.

PALL-178 Data not calculated for UL %s

Cause: To run in production, you must calculate each unitload's optimal path data.

Remedy: Display the SETUP OPTIMAL PATH screen for this unitload, and press the CALC key.

PALL-179 GETINF.TP not setup correctly

Cause: GETINF.TP returned an infeed number which is assigned ul = 0. In other words, PalletTool received an invalid infeed number, most likely 0 from GETINF.TP.

Remedy: Check GETINF.TP for infeed/unitload data. Check production setup data. GETINF.TP is used to return an infeed number for the current cycle. You should modify this program if more than one infeed brought the same unitload to the workcell. In this case, you have to tell PalletTool which infeed to pickup a unit from when both the infeeds have units present. There is an error in the logic of GETINF.TP. Alternatively, you might have provided incorrect assignments at the Cycle Start menu.

PALL-180 Label data may need updating

Cause: The optimal path data was automatically updated.

Remedy: Check the labels out data for completeness.

PALL-181 Labels-out disabled

Cause: Labels out was selected for a gripper that is not supported.

Remedy: None.

PALL-182 Not allowed for this gripper type

Cause: Labels out is supported only for the single and double case gripper. --OR-- 'Place remaining boxes' is not allowed for single case grippers.

Remedy: None.

PALL-183 Cycle stop disabled

Cause: The CYCLE STOP option has been disabled.

Remedy: None.

PALL-184 Cycle stop enabled

Cause: The CYCLE STOP option has been enabled.

Remedy: None.

PALL-185 Pallet stop disabled

Cause: The PALLET STOP option has been disabled.

Remedy: None.

PALL-186 Pallet stop enabled

Cause: The PALLET STOP option has been enabled.

Remedy: None.

PALL-187 Active only during palletizing

Cause: CYCLE STOP and PALLET STOP functions are only available when the robot is palletizing.

Remedy: None.

PALL-188 Palletizing:STEP mode not allowed

Cause: The STEP key was pressed before entering or while in palletizing mode.

Remedy: None. The STEP mode is automatically cleared by the system.

PALL-189 Unit load data error.

Cause: Unit load gripper data has not been completely set up.

Remedy: Check the variable pick_ar_tc_n and pick_ar_tc_f in the unit load file. Also check the variables new_order_n and new_order_f. See the FANUC PalletTool Setup and Operations manual for details on accessing these variables.

PALL-190 .VR file has not been created

Cause: During the transfer of data from the PC, the .VR data file could not be created.

Remedy: Check the available memory. If RAM is full, clear the unneeded data and try again.

PALL-191 TEMP DRAM memory is low

Cause: Temporary memory is getting too low to download more unitload files.

Remedy: Delete any unneeded data before downloading more unitload files.

PALL-192 Cannot CALC; TEMP memory low

Cause: Temporary memory is too low to calculate a unitload.

Remedy: Delete any unneeded data and perform a Cold start before attempting to calculate the unit load.

PALL-193 File copy not done

Cause: The file was not copied. The file is either in use, or there's not enough memory to copy the file.

Remedy: Cold start the controller, and retry the operation.

PALL-194 Units missing in sequence.

Cause: All units must be picked up. Not all the units have been listed in the NEW column.

Remedy: Check that no units have been listed twice, change the NEW info, and VERIFY again.

PALL-195 All units not picked up.

Cause: The total number of PLACES must add up to the number of PICKs for each row of the config table.

Remedy: Make sure the sum of the PLACES adds up to the same number of PICKs.

PALL-196 Pick too big error: row %s

Cause: The PICK size cannot be bigger than the gripper's number of grips.

Remedy: Check the selected gripper's grip size, change the PICK info, and VERIFY again.

PALL-197 Illegal place sequence: row %s

Cause: The PLACE values must be placed into the PL1 column first, then PL2, then PL3. The total of the PLACES must add up to the number of PICKs for each row of the config table.

Remedy: Make sure the sum of the PLACES adds up to the number of PICKs, and are in the proper columns.

PALL-198 Other error: row %s

Cause: This is a general configuration table error.

Remedy: In the Sequence menu, you need to make sure that for the total number of picks, you clearly indicate how all the units are put down. Ex: Pick 3, place_1_1_1.

PALL-199 All units not listed in FlipConfig

Cause: All units must be picked up.

Remedy: Check that no units have been listed twice, change the NEW info, and VERIFY again.

PALL-200 All units not listed in NoFlip

Cause: All units must be picked up.

Remedy: Check that no units have been listed twice, change the NEW info, and VERIFY again.

PALL-201 Too many units picked up.

Cause: The total of the PLACES must add up to the number of PICKs for each row of the config table. And, the total number must add up to the number of units in a layer.

Remedy: Make sure the sum of the PLACES adds up to the number of PICKs.

PALL-202 Illegal. At perch or maintenance.

Cause: Part drop recovery: the selected option cannot be used when the robot is at perch or at the gripper maintenance position.

Remedy: Choose another option.

PALL-203 NO boxes are remaining.

Cause: Part drop recovery: the selected option must have boxes remaining in the gripper.

Remedy: Choose another option, or check the gripper sensors.

PALL-204 Illegal:boxes are remaining!

Cause: Part drop recovery: the selected option cannot have boxes remaining in the gripper.

Remedy: Choose another option, or check the gripper sensors.

PALL-205 Error - Processing UL data NOT done

Cause: There are errors in the unitload data that caused the CALC calculations failed.

Remedy: Correct the unit load errors, and try the CALC operation again.

PALL-206 Invalid Unit load req: ul %s

Cause: The requested unitload gripper type cannot be run on this controller. That is, a multi-case gripper unitload can only be run if the multi- case option is loaded on the controller.

Remedy: Choose another unitload.

PALL-207 Item %s : illegal data ignored

Cause: There is something wrong with the data that was entered.

Remedy: Retype the data, and try the operation again.

PALL-208 Item %s : duplicate data ignored

Cause: The item in error is a duplicate of another entry on the menu.

Remedy: Check the entered data. The duplicate will be ignored.

PALL-209 Cannot CALC; PTPC production running.

Cause: This unitload cannot be calculated during production when PalletTool PC is set as the data device.

Remedy: Try this operation again when you are not running production.

PALL-210 Xfer in process, cannot edit file

Cause: The same unitload as being transferred from PalletTool PC cannot be edited.

Remedy: Try the operation again when not transferring or running the unitload.

PALL-211 Unitload not replaced.

Cause: The controller could not read the .dt file. This is a data error. However, a unitload with the same name still exists on the robot.

Remedy: Check the MOTET communication and PTPC status.

PALL-212 DT file not read: %s

Cause: The unitload data file transferred from PalletTool PC was not read because there is not enough memory to save the unitload on the robot.

Remedy: Delete any unneeded data, and perform a Cold start.

PALL-213 Dropped part during recovery-abort

Cause: A part was dropped during part drop recovery. PalletTool does not support further recovery.

Remedy: Check why parts are being dropped. Continue normal restart of palletizing.

PALL-214 The tool pointer length is changed.

Cause: You have changed the length of the station teaching tool. All station positions must be taught using the SAME tool length.

Remedy: Make sure all station positions are taught with the same tool length.

PALL-215 Moving to maintenance position..

Cause: The robot is moving to the gripper maintenance position.

Remedy: None.

PALL-216 SlipSheet pos. must be cartesian representation

Cause: The slip sheet position registers have positions that are taught in JOINT representation. For the slip sheet logic to work properly, the positions must be taught in Cartesian representation.

Remedy: Change the position representation to CARTESIAN:

1. Press DATA.
2. Press F1, [TYPE].
3. Select Position Regs.
4. Select the register.
5. Select POSITION.
6. Press [REPRE].
7. Select Cartesian.

PALL-217 Position is not reachable

Cause: The position the robot is trying to go to is not reachable.

Remedy: Verify that the value of \$UTOOL and/or \$MNUTOOL are correct. If the robot stopped while heading towards the pallet, then check the value of Pallet approach length and width in the Optimal path SETUP menu. You might have specified large pallet offsets or you might need to specify a correct pallet offset in the Optimal path SETUP menu.

PALL-220 Message buffer to PC is full

Cause: More than 20 messages have not been read by PTPC. The communication is slow, or has stopped.

Remedy: Check the MOTET communication and PTPC status.

PALL-221 PTPC message type %s - illegal data received

Cause: Message received from PalletTool-PC/MOTET was not in the proper format. The PT-PTPC message types are:

- 1-start
- 2-cycle stop
- 3-pallet stop
- 4-status
- 5-go
- 6-abort
- 7-unit data
- 8-pallet data
- 9-part drop
- 10-hold
- 11-reset
- 12-change done
- 13-index
- 14-op.grip
- 15-cancel
- 16-unitload
- 17-setup
- 18-monitor grip
- 19-stop grip
- 20-alarms

Remedy: Check the MOTET communication and PTPC status.

PALL-222 PTPC command ignored, in wrong mode

Cause: PalletTool is not in the correct mode to act on this message.

Remedy: Try the operation again.

PALL-223 PTPC %s - ignored, robot busy

Cause: PalletTool is busy and cannot act on this message.

Remedy: Try the operation again.

PALL-224 Invalid infeed number from PTPC: %s

Cause: PTPC sent an invalid infeed number. The number must be greater than 0 and less than or equal to the 'number of infeeds' set up.

Remedy: Make sure a valid infeed number was sent by PTPC. Make sure that the robot has current setup data from PTPC. Check the MOTET communication and PTPC status.

PALL-225 Invalid Pallet number from PTPC: %s

Cause: PTPC sent an invalid pallet number. The number must be greater than 0 and less than or equal to the 'number of pallets' set up.

Remedy: Make sure a valid pallet number was sent by PTPC. Make sure that the robot has current setup data from PTPC. Check the MOTET communication and PTPC status.

PALL-226 Invalid Gripper number from PTPC: %s

Cause: PTPC sent an invalid gripper number. The Gripper numbers supported in PalletTool are:

- Single = 1
- Double icc = 3
- Triple case = 5
- Custom 1 = 6
- Custom 2 = 7
- Custom 3 = 8
- Custom 4 = 9
- Multi case = 10
- Fork pick = 11
- Bag push = 12

Remedy: Check the MOTET communication and PTPC status.

PALL-227 Wrong unitload recvd from PTPC: %s

Cause: PTPC sent the wrong unit load. The unitload that was expected is given in the error message.

Remedy: Check the MOTET communication and PTPC status.

PALL-228 Unitload not recvd from PTPC %s

Cause: PTPC did not send the requested unitload data.

Remedy: Check the MOTET communication and PTPC status.

PALL-229 Setup data not recvd from PTPC

Cause: PTPC did not send the requested setup data.

Remedy: Check the MOTET communication and PTPC status.

PALL-230 using unitload NOT from PTPC

Cause: PalletTool requested a unitload from PTPC that PTPC did not have. But PalletTool has a copy of the unitload which it will use.

Remedy: Make sure the right unitload is being used. Consider changing the control so that Unitload - Use data from: is set to ROBOT/PTPC.

PALL-231 PTPC: must be PAUSED or ABORTED

Cause: PalletTool is not in the correct mode to act on this message.

Remedy: Pause or abort the robot, and try the operation again.

PALL-235 Fork infeed positions not taught.

Cause: The conveyor infeed positions must be taught in order to use the fork or bag gripper.

Remedy: Teach the conveyor infeed positions.

PALL-236 Errors in infeed positions.

Cause: The conveyor infeed positions must be taught correctly in order to use the fork or bag gripper.

Remedy: Teach the conveyor infeed positions.

PALL-237 Fork not big enough to pick box

Cause: The boxes are too big for this fork gripper.

Remedy: Check the conveyor infeed positions and gripper UTOOL values.

PALL-240 Infeed %s end-of-batch signal received

Cause: MULTI_IO.TP logic received a signal to perform end of batch processing.

Remedy: None.

PALL-241 Infeed %s IGNORE end-of-batch signal

Cause: Previous end of batch signal processing is still in progress, or a CYCLE STOP or PALLET STOP is still in progress.

Remedy: None.

PALL-242 End-of-batch PLC - request infeed number

Cause: The robot is requesting pallet, unitload and infeed information from PLC.

Remedy: None.

PALL-243 End-of-batch PLC - wrong part ID method

Cause: Part ID select method must be set to PLC.

Remedy: Set the Part ID method to PLC:

1. Press MENU.
2. Select SETUP.
3. Select PalletSystem.
4. Set the Part ID method to PLC.

PALL-244 Wait for PLC index pallet %s

Cause: The end of batch is complete. The robot is waiting for the PLC to index the pallet.

Remedy: None.

PALL-245 End-of-batch processing error

Cause: The end of batch request was ignored.

Remedy: None.

PALL-246 End-of-batch none at infeed

Cause: Nothing exists at the infeed to pick up.

Remedy: None.

PALL-247 End-of-batch enough at infeed

Cause: During a product changeover with the End-of-Batch feature enabled, PalletTool expected fewer than needed boxes at infeed for that cycle. However, it detected more boxes than required.

Remedy: The end of batch feature works only when there are fewer boxes than needed for that cycle.

PALL-248 End-of-batch part drop - abort

Cause: The robot dropped a box during the end of batch logic.

Remedy: Replace the dropped box, and continue the operation.

PALL-252 Bag Gripper UTOOL not set

Cause: The bag gripper UTOOL is not set up in the Gripper SETUP menu.

Remedy: Set up the bag gripper UTOOL in the gripper SETUP menu. Without this data, you cannot teach the downstream pick position for the bag on the infeed.

4.14.2 PALT Alarm Code

PALT-001 Inadequate register value

Cause: The column/row/layer number is illegal.

Remedy: Confirm the palletizing register.

PALT-004 Increment value is ill

Cause: The increment value of the palletizing CONFIG screen is illegal.

Remedy: Correct the increment value.

PALT-010 Route pattern unfound

Cause: The route pattern is unfound.

Remedy: Check the route pattern in the palletizing route pattern screen.

PALT-024 Calculation error occurred

Cause: Palletizing data is incomplete.

Remedy: Verify that you have taught all the bottom points and route points.

PALT-026 Cannot read/write to PL[]

Cause: Cannot read/write to palletizing register.

Remedy: Check the palletizing register index.

PALT-030 Pallet number is over max

Cause: Do not teach more than 16 palletizing instructions.

Remedy: Do not teach more than 16 palletizing instructions in this program. Reteach the program.

PALT-031 Can not be set FREE or INTER

Cause: In FREE configuration, can not be set INTER over two directions.

Remedy: In FREE configuration, can be set INTER only one direction (ROW, COLUMN or LAYER).

PALT-033 This speed type isn't supported

Cause: The palletizing option does not support this speed type.

Remedy: Select the other motion statement.

PALT-034 Layer pattern num was 0.Changed to 1

Cause: The layer pattern number was 0. Because this is an illegal value, change the layer pattern number to 1.

Remedy: Delete the pallet instruction and teach it again.

PALT-035 Group 1 is not set up.

Cause: If Motion group 1 is not set up, The Palletizing option is not available.

Remedy: Set up Motion group 1.

PALT-036 Palletizing Internal Error

Cause: A palletizing internal error has occurred.

Remedy: This is the internal error.

PALT-037 Invalid command is executed

Cause: This command can not be executed in palletizing.

Remedy: Remove the invalid command.

4.14.3 PICK Alarm Code

PICK-002 GET_VAR failed %s

Cause: Data could not be obtained from the data source.

Remedy: Check the data source.

PICK-003 SET_VAR failed %s

Cause: Data could not be set in data source.

Remedy: Check the data source.

PICK-004 Data modification disallowed

Cause: The robot is in production. Setup data cannot be changed during production.

Remedy: Wait until production is aborted, and then make the changes.

PICK-005 No more groups installed

Cause: The user is attempting to change groups but there is only one installed group.

Remedy: None.

PICK-006 Robot Grp %s is already master

Cause: The user is attempting to set the master for more than one robot or robot group.

Remedy: The user should first set Master = FALSE for the robot for which Master is already set to TRUE.

PICK-007 Robot not assigned to network

Cause: The Host Comm setup is not done for this robot. The robot hostname and IP address are important for the part Queue manager to communicate with and between robots.

Remedy: From the Host Comm setup menu, assign a name and a valid IP address for this robot. Also, enter the names and IP addresses of all the other robots on the network.

PICK-008 Error communicating with Robs

Cause: An error occurred while this robot tried to get data from another robot over the robot ring or Ethernet.

Remedy: Check if all robots have a valid IP address and PickTool software. If ok, then document the events that led to the error and provide information on the program and line number where this error occurred to your local FANUC representative.

PICK-009 No robot is a master

Cause: No robot has been set as a master.

Remedy: Set one of the robots as master in the Setup menu. Also make sure that there is only one master.

PICK-010 More than 1 robot is a master

Cause: More than one robot has been set as master.

Remedy: Check the setup menus of all the robots and set only one of them as master.

PICK-011 Error reading LT boundary

Cause: An error occurred reading Line track boundary data.

Remedy: Check the line track setup menu and ensure that for the schedule you intend to use, and the boundary set you intend to use, proper values exist. Also check the PK robot setup menu to see if you have entered the proper values for the schedule and the boundary number.

PICK-012 Error reading LT enc scale

Cause: An error occurred reading the Line tracking encoder scale.

Remedy: Check the line track setup menu and ensure that for the schedule you intend to use, a proper value for encoder scale exists. If not, teach it. Also check the PK robot setup menu to see if you entered the proper line track schedule number.

PICK-013 Max num of robots exceeded

Cause: The maximum number of robots that Picktool can handle has been exceeded.

Remedy: PickTool can handle a maximum of 10 robot groups. Reduce the number of groups or robots to less than 10.

PICK-014 Error getting rob data %s

Cause: An error occurred while reading data from robot ROBOT_NAME in the robot ring.

Remedy: Look at the cause code with the error. Make sure that Ethernet is set up correctly with all the robots. Check the Host Comm menu on each robot and make sure that all members are listed on each controller. Make sure ROSIPCFG.XML in FRS: refers to all members in the Host Comm menu.

PICK-015 Move-TO could not execute

Cause: An error was encountered while trying to move to a taught position. It could be due to a motion limit error or an incorrectly taught point.

Remedy: Make sure to record the position correctly. Check the associated cause code if available.

PICK-016 Frame was not taught.

Cause: Without completing frame teaching of all 3 positions, you cannot proceed to the next step.

Remedy: Teach the frame positions correctly.

PICK-017 MOVE TO done

Cause: The robot completed a move-to operation.

Remedy: None.

PICK-018 Position has not been taught

Cause: The position has not been taught yet.

Remedy: The position must be taught.

PICK-019 Position is not reachable

Cause: The position the robot is trying to move to is not reachable.

Remedy: Verify that the value of \$UTOOL and/or \$MNUTOOL are correct.

PICK-020 Invalid Conveyor DO[]

Cause: The DOUT port number specified for the conveyor is invalid.

Remedy: Check if the I/O point is configured correctly.

PICK-021 The ID # of the robot unknown.

Cause: The ID# of the robot could not be determined.

Remedy: Check the PK Robot setup menu and make sure the ID exists, and is unique amongst the set of robots.

PICK-022 Total util of all robots < 100

Cause: The utilization percent for each robot does not add up to 100 percent. This prevents load balancing from working properly.

Remedy: In the PK Robot menu of each robot, specify percent utilization so that they add up to 100.

PICK-023 No PickTool QMGR variable

Cause: The Picktool QMGR task global variable does not exist. No dynamic load balancing can be done.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PICK-024 Not all Reference sysv exist

Cause: The Picktool QMGR task can not get all the relevant system variables.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PICK-025 Encoder not setup yet

Cause: The Encoder has not been set up yet.

Remedy: Set up the encoder correctly.

PICK-035 Invalid encoder number

Cause: An invalid Encoder setting of \$TRK_ENC_NUM is set in the \$LNSCH[] system variable.

Remedy: Correct the system variable setting.

PICK-036 Invalid motion group

Cause: An invalid motion group was specified.

Remedy: PickTool only supports up to 2 motion groups.

PICK-037 Robot is not calibrated

Cause: The robot is not calibrated.

Remedy: Follow the process of setting the master count for the robot.

PICK-038 DIN port is ON

Cause: The digital input port is already ON.

Remedy: Move the target upstream ahead of the DIN location.

PICK-039 Invalid \$LNSCH number

Cause: An invalid \$LNSCH number was specified.

Remedy: Change the line tracking schedule number to a validate one.

PICK-040 Not all positions are recorded

Cause: Not enough recorded positions.

Remedy: Record all three required positions.

PICK-041 Recorded points are too close

Cause: Positions are recorded too closed to each other.

Remedy: Make sure the recorded positions are at least 50 mm apart from each other.

PICK-042 \$LNSCH has not been setup

Cause: The Line Tracking Schedule has not been properly set up.

Remedy: Set up the line tracking schedule before setting up the track frame.

PICK-043 No duplicated update

Cause: The track frame has been updated before.

Remedy: None.

PICK-044 Please follow the steps

Cause: Some required steps have been skipped.

Remedy: Follow the setup wizard's steps.

PICK-045 Invalide reference position

Cause: The reference position is uninitialized.

Remedy: Go to controller of the reference robot, select PickTool track frame menu. Set the Calibration Type to Set Reference. Follow the wizard's procedure.

PICK-046 Set Track Frame first.

Cause: Set Reference requires track frame.

Remedy: The track frame should have been set up before it can be used for reference. Select another robot that has its track frame done before for reference. Then come back to this robot and add this robot to the line.

PICK-100 Error opening %s.

Cause: The specified file could not be opened to read or write data. The file might be missing or the file device might be full.

Remedy: Make sure that the file exists on the file device and/or that there is room to write the files to the file device.

PICK-103 Invalid PickTool object id.

Cause: PickTool was asked to perform a function with an invalid object Id. For example, read data for a LBG that does not exist. Or, an uninitialized id was passed to an internal routine.

Remedy: Make sure that a valid object id in the range of the array size of the system variable is used.

4.14.4 PLUG Alarm Code

PLUG-001 %s

Cause: An error has been posted by the Plugin software provided by the peripheral equipment manufacturer.

Remedy: Please refer to the information of the Plugin software provided by the peripheral equipment manufacturer.

PLUG-002 Please restart the controller

Cause: Controller power needs to be cycled.

Remedy: Please cycle power of the controller by manually turning off the controller power.

PLUG-003 Plugin installed (%s)! Restart controller

Cause: A plugin software has been successfully installed.

Remedy: You will need to re-start the controller by turning the power OFF and ON again.

PLUG-004 Plugin uninstalled (%s)! Restart controller

Cause: A plugin software has been successfully uninstalled.

Remedy: You will need to re-start the controller by turning the power OFF and ON again.

PLUG-005 Plugin Installer BUSY

Cause: The plugin installer is busy.

Remedy: Wait until ongoing activity finishes.

4.14.5 PMON Alarm Code

PMON-001 Failed to notify PC Monitor

Cause: The PC Monitor task could not be notified.

Remedy: Refer to the associated error code. OS -012 System error This error may be seen when attempting to monitor a variable or I/O point using the .StartMonitor method. It occurs when you have performed a restore from a controller that did not have the PCIF option installed. To fix this error, set system variable \$SCR.\$LPCOND_TIME to 40 and cycle power. This variable is set to zero on controllers that do not have the PCIF option installed. When set to zero, the task that performs monitoring is not started on power up.

PMON-002 Memory allocation failure

Cause: Not enough memory to create client connection.

Remedy: Perform COLD start of controller.

PMON-003 Connect to PMON server failed

Cause: Failure to connect to PMON Server.

Remedy: Check physical connections and check to see if PMON server is running on the PC.

PMON-004 PMON initialization failure

Cause: The PC Monitor task had an initialization failure.

Remedy: Refer to the associated error code.

PMON-005 PMON timer failure

Cause: The PC Monitor task had an internal timer failure.

Remedy: Refer to the associated error code.

PMON-006 PMON task status read failed

Cause: The PC Monitor task had an internal task status read failure. The accompanying cause code identifies the failure.

Remedy: Refer to cause code.

PMON-007 Lost connection to %s

Cause: The PC Monitor Server lost a connection with the named client.

Remedy: This is a warning and may be normal.

PMON-008 PMON curpos read failed

Cause: The PC Monitor task had an internal CURPOS read failure.

Remedy: Refer to the associated error code.

PMON-009 PMON monitor not found

Cause: The PC Monitor task had an internal monitoring failure. The requested monitor number was not found in the list of monitors.

Remedy: Somehow, PMON is out of sync with the PC. In some cases, this may be normal if the PC is attempting to clean up after an internal error.

4.14.6 PNT1 Alarm Code

PNT1-001 Unknown PAINTtool error

Cause: PaintTool has detected an unknown error.

Remedy: Refer to the teach pendant error log for the cause of the error.

PNT1-002 Press master reset

Cause: The system is in an error condition.

Remedy: Press RESET to clear the error.

PNT1-003 Reset failure

Cause: The reset procedure has failed.

Remedy: Correct the error, if any, and try the reset operation again.

PNT1-004 Robot Servos Disabled

Cause: The robot servo disconnect is on.

Remedy: Turn off the robot servo disconnect.

PNT1-005 Production mode is disabled

Cause: The production mode input is off.

Remedy: None.

PNT1-006 REMOTE switch must be REMOTE

Cause: The remote switch is in the LOCAL position.

Remedy: Place the remote switch in the REMOTE position.

PNT1-007 Machine lock is ON

Cause: The machine lock is on going into production.

Remedy: Disable the machine lock on the teach pendant before entering production.

PNT1-008 Robot motion is not enabled

Cause: The UOP enable input is OFF.

Remedy: The UOP enable input must be ON.

PNT1-009 Invalid job %s received

Cause: An invalid job number was received from the PLC.

Remedy: The PLC must initialize the robot with a valid job number.

PNT1-010 Invalid tutone %s received

Cause: An invalid tutone option was received from the PLC.

Remedy: The PLC must initialize the robot with a valid tutone option.

PNT1-011 Invalid repair %s received

Cause: An invalid repair option was received from the PLC.

Remedy: The PLC must initialize the robot with a valid repair option.

PNT1-012 Invalid color %s received

Cause: An invalid color number was received from the PLC.

Remedy: The PLC must initialize the robot with a valid color number.

PNT1-013 Job (%s) is not found

Cause: The teach pendant JOB program is not loaded, or was not created on the controller.

Remedy: A teach pendant JOB program must be created or loaded in the controller before attempting to run it in production.

PNT1-014 Invalid job %s in queue

Cause: An invalid job number was received from the PLC. Therefore, the robot cannot put the job into the job queue.

Remedy: At the PLC, initialize the robot with a valid job number in order to receive a job read acknowledge from the robot.

PNT1-015 Invalid color %s in queue

Cause: An invalid color number was received from the PLC. The robot cannot put the color into the color queue.

Remedy: The PLC must initialize the robot with a valid job number in order to receive a color read acknowledge from the robot.

PNT1-016 Job queue is full

Cause: The job queue is full.

Remedy: Remove unneeded job(s) from the job queue before attempting to add more jobs to the queue.

PNT1-017 Color queue is full

Cause: The color queue is full.

Remedy: Remove color(s) from the color queue before attempting to add more colors to the queue.

PNT1-018 Shell aborted or paused

Cause: Another task has detected that the main task has aborted or paused.

Remedy: Turn off the controller, then turn it on again.

PNT1-019 Wait for autoprocessing to finish

Cause: Autoprocessing of the last edited program is still in process.

Remedy: Wait for autoprocessing to complete before entering production mode.

PNT1-020 Invalid job type (%s) received

Cause: An invalid job type was received from the PLC.

Remedy: The PLC must initialize the robot with a valid job prefix.

PNT1-021 System is in error status

Cause: There is an alarm that must be cleared before Test Cycle can be run.

Remedy: Press RESET to clear all system alarms.

PNT1-022 Sync Que-Job passed window

Cause: The job is not run and the encoder counts indicate that the part is past the Start switch (plus tolerance). The robot deletes the job from the queue, posts this warning message and continues to operate in production.

Remedy: None.

PNT1-023 Sync Que-Job before window

Cause: The job is not run and the encoder counts indicate that the part has not made it to the Start switch (minus tolerance). The robot will hold onto that job for the next start signal, post this warning message, and will continue to operate in production.

Remedy: None.

PNT1-024 UOP's assigned but disabled!

Cause: The User Operator Panel (UOP) inputs are assigned, but have been disabled!

Remedy: If your system requires these UOP signals, you must enable these inputs on the Teach Pendant as follows:

1. Press MENU.
2. Select SYSTEM.
3. Press F1 [TYPE].
4. Select Config.
5. Move the cursor to Enable UI signals, and change them from FALSE to TRUE. If your system does not require these UOP signals, unassign these UOP signals in the I/O menu.

PNT1-034 Parm %s Value beyond limits

Cause: An attempt was made to set an applicator parameter output beyond its min/max value.

Remedy: Verify the specified parameter's min/max output setting.

PNT1-039 I/O setup verified OK

Cause: SETUP Applicators: The I/O information is correct and complete.

Remedy: None.

PNT1-040 Error attempting to setup I/O

Cause: SETUP Applicators: The I/O information for an applicator was changed and is in error.

Remedy: Check that the output type, output number, rack and slot number, first bit location, and number of bits are all specified correctly.

PNT1-045 Adj. colors table sizes to %s

Cause: The application is attempting to adjust the size of the color tables based on the configuration variable setting.

Remedy: None.

PNT1-046 Adj. color valves table size to %s

Cause: The application is attempting to adjust the size of the color valve table based on the configuration variable setting.

Remedy: None.

PNT1-047 Failed to adj. color table size

Cause: There is not enough memory available for the application to adjust the size of the color tables to the match requested setting.

Remedy: Use a smaller setting that is within the memory constraints of the controller.

PNT1-048 Failed to adj. color valve table size

Cause: There is not enough memory available for the application to adjust the size of the color valves table to match the requested setting.

Remedy: Use a smaller setting that is within the memory constraints of the controller.

PNT1-053 Invalid parameter indicator

Cause: An invalid parameter indicator value was sent from the PLC.

Remedy: Verify that the number of applicator control parameters set up in the robot matches the value sent from the PLC. This value should be between the range of 1 to 4.

PNT1-054 No channel/parameter indicated

Cause: The PLC sent a parameter indicator value of 0.

Remedy: Correct the parameter indicator value at the PLC.

PNT1-055 Manual inputs are enabled

Cause: On manual mode entry, all PLC manual mode input functions are enabled.

Remedy: None.

PNT1-056 Manual inputs are disabled

Cause: On manual mode exit, all PLC manual mode input functions are disabled.

Remedy: None.

PNT1-057 Manual enabled during motion

Cause: Manual mode is being initiated during robot motion.

Remedy: Robot motion must complete before it enters manual mode.

PNT1-058 Manual enabled in color cycle

Cause: Manual mode is being initiated during a color change cycle.

Remedy: The color change cycle must complete before the robot enters manual mode.

PNT1-059 TP Enabled in cycle

Cause: The teach pendant cannot be enabled when running a remote color change cycle.

Remedy: None.

PNT1-064 Tracking que exceeded

Cause: For continuous line systems, indicates that too many parts have passed the part detect switch within the current boundaries.

Remedy: Expand the robot boundaries, or lower the conveyor speed.

PNT1-065 Linetracking parameter undefined

Cause: For continuous line systems, a line tracking parameter is undefined and is required to run the system.

Remedy: Ensure that all tracking parameters have been set up on the SETUP Tracking menu.

PNT1-066 Railtrack parameter undefined

Cause: For continuous line systems, a rail tracking parameter is undefined and is required to run the system.

Remedy: Ensure that all tracking parameters have been set up on the SETUP Tracking menu.

PNT1-067 Invalid tracking frame

Cause: An attempt was made to use an invalid tracking frame number.

Remedy: The current software supports tracking frames 1-6. The tracking frame number must be greater than 0, and less than 7.

PNT1-068 Encoder count rollover

Cause: For continuous line systems, this warning indicates that the encoder counter has detected a rollover condition.

Remedy: None.

PNT1-069 Part Detect less than min dist

Cause: For continuous line systems, this warning indicates that the trigger distance is less than a pre-determined value. The part detect will be ignored by the robot controller.

Remedy: Reduce the minimum distance value to less than the job spacing distance, or replace the old part detect switch.

PNT1-070 Conveyor direction incorrect

Cause: For continuous line systems, the robot has determined the conveyor is running in the wrong direction. Part detects will be ignored by the robot.

Remedy: Swap the leads on the encoder repeater board so that the encoder counts positive pulses instead of negative.

PNT1-071 %s skipped-over max travel

Cause: For line tracking systems only: This is a warning that the part has tracked too far to be played back. The previous job or color change took too long to play. The robot will ignore this job/color.

Remedy: Decrease the cycle time of the job or decrease the color change cycle.

PNT1-072 Tracking encoder disconnected

Cause: The robot is detecting a problem with the tracking encoder cable.

Remedy: Check the encoder cable, and replace it if necessary.

PNT1-073 Right-Hand Rule only for this robot

Cause: The robot being used is not supported in PaintTool line tracking for a left hand arm type. The robot is not a P-Series robot.

Remedy: If the robot library (setup) does not offer a selection for right or left hand robots, then no remedy is required. If the robot has been set up as a left hand robot, change it to a right hand robot.

PNT1-074 DAL alarm(Track encoder:1)

Cause: The tracking encoder has been disconnected, or is faulty.

Remedy: Reconnect the tracking encoder or determine if the encoder connector is faulty. The robot controller power must be turned off, then turned on again before the system is allowed to reset.

PNT1-075 Extreme entry position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Entry Limit defined in the System parameter, \$LNCFG.\$ENTRY_XTRM.

Remedy: Adjust the Entry Limit (\$LNCFG.\$ENTRY_XTRM), or change the Tracking Boundary to be inside of this limit.

PNT1-076 Extreme exit position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Exit Limit defined in the System parameter, \$LNCFG.\$EXIT_XTRM.

Remedy: Adjust the Exit Limit (\$LNCFG.\$EXIT_XTRM) or change the Tracking Boundary to be inside of this limit.

PNT1-085 Posn unreachable at line %s

Cause: An unreachable position is detected in the adjustment precheck.

Remedy: Check the alarm log to find out at which position motion error will occur, use CLR_Adj to clear the adj value.

PNT1-086 PLC e-stop detected

Cause: An interlock signal fault or PLC E-stop was detected.

Remedy: Correct the source of the fault, and RESET the controller.

PNT1-087 Robot overtravel

Cause: The mechanical unit went beyond its normal travel limits and reached an overtravel limit switch.

Remedy: Follow the overtravel recovery procedure in Electrical Connection and Maintenance Manual.

PNT1-088 Release SOP e-stop

Cause: The operator panel (SOP) EMERGENCY STOP has been detected.

Remedy: Release the SOP EMERGENCY STOP, and press RESET to clear the E-STOP condition.

PNT1-089 Release TP e-stop

Cause: The teach pendant EMERGENCY STOP has been detected.

Remedy: Turn the teach pendant EMERGENCY STOP button, and press RESET to clear the EMERGENCY STOP condition.

PNT1-090 TP enabled during production

Cause: The teach pendant was enabled during production.

Remedy: The teach pendant cannot be enabled during production. Disable the teach pendant.

PNT1-091 Disable teach pendant

Cause: The teach pendant is enabled.

Remedy: Disable the teach pendant to continue the program.

PNT1-092 Stop error excess

Cause: Refer to SRVO-023 SERVO Stop error excess(G:x A:x) in the Error Code Manual.

Remedy: Refer to SRVO-023 SERVO Stop error excess(G:x A:x) in the Error Code Manual.

PNT1-093 Move error excess

Cause: Refer to SRVO-024 SERVO Move error excess(G:x A:x) in the Error Code Manual.

Remedy: Refer to SRVO-024 SERVO Move error excess(G:x A:x) in the Error Code Manual.

PNT1-094 DEADMAN switch RELEASED

Cause: The DEADMAN switch has been released during an operation. The operation has been discontinued.

Remedy: Press and hold the DEADMAN switch to restart the procedure.

PNT1-095 Fence open during production

Cause: The FENCE1 and FENCE2 circuits are open on the EMG control board.

Remedy: Determine the cause of the FENCE1 and FENCE2 open circuits, and correct the problem.

PNT1-096 UOP immediate stop detected

Cause: The IMSTP (immediate stop) UOP input was not asserted.

Remedy: If you are using UOP signals, clear the source of the fault. If you are not using UOP signals, press MENU, select I/O, and map all UOP signals to zero. Then cycle power on the controller.

PNT1-097 HOLD active

Cause: A HOLD signal, either from the UOP or the teach pendant, has been activated.

Remedy: Remove the HOLD condition, and press RESET.

PNT1-098 Track destination gone

Cause: Destination out of window error.

Remedy: The current cycle must be aborted, and then restarted.

PNT1-099 PC serial interface fault

Cause: The PLC interface serial link has failed.

Remedy: Check the LED status on PLC interface board.

PNT1-100 OVC alarm

Cause: This Alarm is echoed to the PLC when SRVO-046 SERVO OVC alarm (Group:%d Axis:%d) is posted. Refer to the Teach Pendant alarm screen for group and axis number. Refer to SRVO-046 for the cause.

Remedy: Refer to SRVO-046 for the remedy.

PNT1-101 Limit error

Cause: The taught position was outside the normal work envelope of the robot. One of the robot axes could not reach the position.

Remedy: Reteach the position. Refer to the MOTN-017 alarm that was triggered before this paint alarm for details on the specific group and axis number.

PNT1-102 Position not reachable

Cause: This alarm is echoed to the PLC when MOTN-018 STOP Position not reachable is posted. Refer to the MOTN-018 alarm for the cause.

Remedy: Refer to the MOTN-018 alarm for the remedy.

PNT1-103 Configuration mismatch

Cause: This is a pause condition. The configuration (Flip/No-Flip) cannot change during a Cartesian (linear or circular) motion.

Remedy: Either reteach the motions using the same configuration (Flip or No-Flip), or use a joint motion to change configurations before proceeding with Cartesian motion.

PNT1-104 Planner error

Cause: The planner encountered an error.

Remedy: Check the error message log for details.

PNT1-105 Uninitialized position

Cause: This is a system software error.

Remedy: Document the events that led to the error, record the software version number, and contact your local distributor or the FANUC hotline. You can try to clear the error by turning the controller off, and then on again.

PNT1-106 Brake fuse blown

Cause: This alarm is echoed to the PLC when SRVO-008 SERVO Brake fuse blown is posted. Refer to SRVO-008 for the cause.

Remedy: Refer to SRVO-008 for the remedy.

PNT1-107 Robot not mastered

Cause: This alarm is echoed to the PLC when SRVO-027 WARN Robot not mastered(Group:%d) is posted. Refer to the Teach Pendant alarm screen for the group number. Refer to the SRVO-027 alarm for the cause.

Remedy: Refer to the SRVO-027 alarm for the remedy.

PNT1-108 MCC alarm

Cause: The servo amplifier magnetic contactor (MCC) is welded closed.

Remedy: Refer to the troubleshooting section in the Controller Series Electrical Connection and Maintenance Manual.

PNT1-109 Discharge current alarm

Cause: This alarm is echoed to the PLC when a SRVO-043 SERVO DCAL alarm(Group:%d Axis:%d) alarm is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-043 for the cause.

Remedy: Refer to SRVO-043 for the remedy.

PNT1-110 High voltage alarm

Cause: This alarm is echoed to the PLC when a SRVO-044 SERVO HVAL alarm(Group:%d Axis:%d) alarm is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-044 for the cause.

Remedy: Refer to SRVO-044 for the remedy.

PNT1-111 High current alarm

Cause: This alarm is echoed to the PLC when a SRVO-045 SERVO HVAL alarm(Group:%d Axis:%d) alarm is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-045 for the cause.

Remedy: Refer to SRVO-045 for the remedy.

PNT1-112 Low voltage alarm

Cause: This alarm is echoed to the PLC when a SRVO-047 SERVO LVAL alarm(Group:%d Axis:%d) alarm is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-047 for the cause.

Remedy: Refer to SRVO-047 for the remedy.

PNT1-113 Servo amp overheat alarm

Cause: This alarm is echoed to the PLC when a SRVO-049 SERVO OHAL1 alarm (Grp:%d Ax:%d) is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-049 for the cause.

Remedy: Refer to SRVO-049 for the remedy.

PNT1-114 Collision alarm

Cause: This alarm is echoed to the PLC when a SRVO-050 SERVO Collision Detect alarm (G:%d A:%d) is posted. Refer to the Teach Pendant alarm screen for the group and axis number. Refer to SRVO-050 for the cause.

Remedy: Refer to SRVO-050 for the remedy.

PNT1-115 Pulsecoder battery discon alarm

Cause: This alarm is echoed to the PLC when a SRVO-062 SERVO BZAL alarm(Group:%d Axis:%d) alarm is posted. Refer to the teach pendant alarm screen for further information on the SRVO-062 alarm. Refer to the SRVO-062 alarm for the cause.

Remedy: Refer to the SRVO-062 alarm for the remedy.

PNT1-116 Pulsecoder alarm

Cause: This alarm is echoed to the PLC when a SRVO-061 SERVO CKAL alarm(Group:%d Axis:%d), SRVO-063 SERVO RCAL alarm(Group:%d Axis:%d), or SRVO-066 SERVO CSAL alarm (Group:%d Axis:%d) is posted. Refer to the teach pendant alarm screen for further information on the SRVO-061, SRVO-063, or SRVO-066 alarm. Refer to the SRVO-061, SRVO-063, or SRVO-066 alarm for the cause.

Remedy: Refer to the SRVO-061, SRVO-063, or SRVO-066 alarm for the remedy.

PNT1-117 Pulsecoder battery low alarm

Cause: This alarm is echoed to the PLC when a SRVO-065 WARN BLAL alarm(Group:%d Axis:%d) is posted. Refer to the teach pendant alarm screen for further information on the SRVO-065 alarm. Refer to the SRVO-065 alarm for the cause.

Remedy: Refer to the SRVO-065 alarm for the remedy.

PNT1-118 Motor overheat occurred

Cause: This alarm is echoed to the PLC when a SRVO-067 SERVO OHAL2 alarm (Grp:%d Ax:%d) alarm is posted. Refer to the teach pendant alarm screen for further information on the SRVO-067 alarm. Refer to the SRVO-067 alarm for the cause.

Remedy: Refer to the SRVO-067 alarm for the remedy.

PNT1-119 Pulsecoder communication error

Cause: This alarm is echoed to the PLC when a SRVO-068 SERVO DTERR alarm (Grp:%d Ax:%d), SRVO-069 SERVO CRCERR alarm (Grp:%d Ax:%d), or SRVO-070 SERVO STBERR alarm (Grp:%d Ax:%d) alarm is posted. Refer to the teach pendant alarm screen for further information on the SRVO-068, SRVO-069, or SRVO-070 alarm. Refer to the SRVO-068, SRVO-069, or SRVO-070 alarm for the cause.

Remedy: Refer to the SRVO-068, SRVO-069, or SRVO-070 alarm for the remedy.

PNT1-120 Pulsecoder position compare error

Cause: This alarm is echoed to the PLC when a SRVO-071 SERVO SPHAL alarm (Grp:%d Ax:%d) alarm is posted. Refer to the teach pendant alarm screen for further information on the SRVO-071 alarm. Refer to the SRVO-071 alarm for the cause.

Remedy: Refer to the SRVO-071 alarm for the remedy.

PNT1-121 Collision Detection (Hand Broke)

Cause: This alarm is echoed to the PLC when an SRVO-006 SERVO Hand broken alarm is posted. Refer to the SRVO-006 alarm for the cause.

Remedy: Refer to the SRVO-006 alarm for the remedy.

PNT1-122 TP disabled during Test Cycle

Cause: The teach pendant cannot be disabled during Test Cycle.

Remedy: Turn the teach pendant ON/OFF switch to ON, press the DEADMAN, and press RESET to clear the error.

PNT1-123 Battery Low

Cause: The battery in the PSU or encoder is low or zero.

Remedy: Replace the old battery with a new battery.

PNT1-124 CE switch must be in AUTO

Cause: The Selector Mode Switch is not in AUTO.

Remedy: Select AUTO mode from the Selector Mode Switch.

PNT1-125 Operation mode AUTO Selected

Cause: The Selector Mode Switch was set to AUTO.

Remedy: The system will pause when the MODE SELECT SWITCH is changed to a different mode. You must reset the system after a mode change.

PNT1-126 Operation mode T1 Selected

Cause: The Mode Select Switch is not in AUTO.

Remedy: The system will pause when the MODE SELECT SWITCH is change to a different mode. You must reset the system after a mode change.

PNT1-127 Operation mode T2 Selected

Cause: The MODE SELECT SWITCH was set to T2.

Remedy: The system will pause when the MODE SELECT SWITCH is change to a different mode. You must reset the system after a mode change.

PNT1-128 adj out of limit at line %s

Cause: A limit error was detected during the Adjust Precheck process on the specified line number.

Remedy: Check the alarm log to find the position in which the limit error will occur, then use CLR_ADJ to clear the adjustment value.

PNT1-129 I/O Hardware not installed

Cause: The I/O hardware that was selected is not physically installed.

Remedy: Make sure I/O hardware that is being selected is installed correctly.

PNT1-130 Data Error (see FR:derrors.ls)

Cause: The I/O Auto Configurator data file contains errors.

Remedy: Press MENU and select File. Display FR:derrors.ls for a description of the error with the corresponding line number.

PNT1-131 Servo Disconnect

Cause: This alarm is echoed to the PLC when a SRVO-194 SERVO Servo disconnect alarm is posted. Refer to the SRVO-194 alarm for the cause.

Remedy: Refer to the SRVO-194 alarm for the remedy.

PNT1-132 Chain 1 (+24v) abnormal

Cause: A single chain 1 (+24V) failure occurred.

Remedy: Repair the circuit of the chain 1 (+24V) on the hardware. Set the CHAIN FAILURE detection to TRUE on the SYSTEM/CONFIG screen. Then, press the RESET button on the teach pendant.

PNT1-133 Chain 2 (0v) abnormal

Cause: A single chain 2 (0V) failure occurred.

Remedy: Repair the circuit of the chain 2 (0V) on the hardware. Set the CHAIN FAILURE detection to TRUE on the SYSTEM/CONFIG screen. Then, press RESET on the teach pendant.

PNT1-134 NTED input

Cause: The Non-Teacher Enabling Device has been released.

Remedy: This alarm was triggered by the SRVO-232 SERVO NTED input alarm. See this alarm for the alarm remedy.

PNT1-135 TP OFF in T1,T2/Door open

Cause: One of the following has occurred:

1. The teach pendant was disabled when the mode switch was in T1 or T2.
2. The controller door is open.
3. The hardware connection is mis-wired.

Remedy: Turn the teach pendant Enable/Disable switch to ON. Close the controller door. Press RESET. If the reset is not effective, correct the hardware connection.

PNT1-136 Deadman switch released

Cause: The teach pendant DEADMAN switch is released.

Remedy: None.

PNT1-137 Short term Chain abnormal

Cause: This alarm is echoed to the PLC when a SRVO-235 SERVO Short term Chain abnormal alarm is posted. Refer to the SRVO-235 alarm for the cause.

Remedy: Refer to the SRVO-235 alarm for the remedy.

PNT1-138 Chain failure is repaired

Cause: A chain failure has been repaired.

Remedy: The status of the Chain Failure is changed to normal when the system checks the chain failure again, and you press RESET.

PNT1-139 Cannot reset chain failure

Cause: Reset chain failure detection cannot be executed.

Remedy: Repair the circuit of the chain 1 (+24V) on the hardware, press the E-STOP button on the teach pendant, and turn the teach pendant E-STOP button clockwise to release it. Then, press RESET.

PNT1-140 Brake Release Switch On

Cause: The Brake Release switch on the Standard Operator Panel is ON.

Remedy: Turn the Brake Release switch to the OFF position to engage the brakes.

PNT1-151 Col %s range err/preset %%override

Cause: The specified system color contained percent preset override data that was outside the pre-defined allowable range for percent overrides.

Remedy: None. The override percent value was automatically adjusted to the closest valid value.

PNT1-152 Data err :Col %s preset %%override

Cause: System color data has uninitialized percent preset override information. This happens when color data created on a previous version of the software is loaded onto the controller.

Remedy: If the error occurs each time the system color table data is accessed, it might be necessary to create new color table data on the controller.

PNT1-153 Eff. preset range err (%s)

Cause: The effective preset/estat values (after applying the preset %% override factor for a specified color, gun, and parameter number) are outside the allowable range for that parameter.

Remedy: Verify that the preset/estat value in the table is within the acceptable range for the parameter. Check the override percentages defined for that color. Examine the effective preset values to see they are within the allowable ranges for all parameters.

PNT1-154 Color %s data access error

Cause: The controller could not access data for the specified system color. The data might not have been created on this controller or might have been accidentally cleared.

Remedy: Create new system color data using the SETUP colors screen on the teach pendant.

PNT1-159 Illegal code in NEXT color %s

Cause: The system color number that is next in the queue is illegal.

Remedy: This error should never occur during normal PaintTool operation. The system color numbers are being checked when they are put into the queue.

PNT1-160 Illegal manual color %s received

Cause: For integral color change systems, the color valve selected by the PLC in manual mode has no data defined.

Remedy: Check the color valve number sent by the PLC. If it is correct, then define the color valve using the SETUP menus under VALVES.

PNT1-165 TP disabled - Calib. aborted

Cause: Calibration was aborted because the teach pendant was disabled during the process.

Remedy: Keep the teach pendant enabled during calibration. This will not be applicable to Control Reliable robot controllers, as the teach pendant can not be turned on in auto/manual mode. Calibration can not be performed from the teach pendant for Control Reliable robot controllers. Calibration must be done from the GUI.

PNT1-166 Linear Potentiometer Unstable

Cause: During Auto Calibration, the feedback from the linear potentiometer revealed large fluctuations in the canister position over a short period of time. If the linear potentiometer has been improperly installed or the magnet has been misaligned, it might cause this alarm.

Remedy: Change the applicator and repair the malfunctioning linear potentiometer. Retry calibration with a different applicator.

PNT1-167 Table not adapted, max err exceeded

Cause: While operating in hybrid mode, Accustat determined that a discrepancy between the actual paint used during the job and the expected paint usage was too high to adapt to it. This could be caused by:

- The color change valves are not operating properly.
- Color change solvent or air has been left in the canister.
- There might be a problem with the applicator.
- The regulator might not be opening/closing properly.
- The restrictor has changed in size.
- The maximum hybrid adaptation value has been set too low.

- The Hybrid Mode Gain is too high.
 - If the TPR is below the Low Confidence Min (cc), then the Low Confidence Gain might be too high.
- Remedy:** Determine the cause for the flow discrepancy. Check the following:
- Check the regulator, fluid or restrictors for a plugged or restricted passageway.
 - Verify that the Hybrid Mode Gain in the AccuStat color data is not too high (default is 20).
 - Verify that the Hybrid Mode Gain Factor is not set too high (default is 1.0).
 - Set up the Low Confidence Min (ccs) for low TPRs.
 - Make the Low Confidence Gain, lower to account for the less resolution at low flow rates.
 - Use other alarms that occur during this job to help debug the problem.
 - This alarm is a warning by default. No immediate action is necessary unless it has impacted the job appearance.
 - Perform an Auto Calibration on that color valve. If this alarm has faulted the robot the robot, then reset and continue the job.

PNT1-168 Dedock required, robot at dock

Cause: An attempt was made to move the robot while it was in the docking station. This alarm occurs when attempting to move the robot either in manual mode, or to the purge position, or to enable special moves without first moving it out of the docking station.

Remedy: Request to de-dock before initiating robot motion. The robot is at the docking station and must run dedock before other moves are enabled. Reset the robot, put the cell in manual mode, and run the de-dock move from the MCP.

PNT1-169 Docking station not retracted

Cause: The position and proximity switch are not functioning properly. This could be caused by one of the following:

- The docking station has not retracted fast enough.
- The Docking Cylinder Timeout is set too low.
- An obstruction, misalignment, or a faulty switch.

Remedy: Check the following:

- Check the position and the proximity switch.
- Repair the pneumatic or electric circuit if necessary.
- Adjust the pneumatic controls for the retract/extend.
- Increase the Docking Cylinder Timeout Value.
- Verify that the digital inputs and outputs have the proper state. By default: DIN[130, DSR] = ON; DIN[129, DSE] = OFF; DOUT[147, RDS] = ON; DOUT[146, EDS] = OFF.
- If the dock has retracted, and the I/O has been verified, then reset and continue the robot.

PNT1-170 Docking station not extended

Cause: The position and proximity switch are not functioning properly. This could be caused by one of the following:

- The docking station has not extended fast enough.
- The Docking Cylinder Timeout is set too low.
- An obstruction, misalignment, or a faulty switch.

Remedy: Check the following:

- Check the position and the proximity switch.
- Repair the pneumatic or electric circuit if necessary.
- Adjust the pneumatic controls for the retract/extend.
- Increase the Docking Cylinder Timeout Value.
- Verify that the digital inputs and outputs have the proper state. By default: DIN[129, DSE] = ON; DIN[130, DSR] = OFF; DOUT[147, RDS] = OFF; DOUT[146, EDS] = ON.
- If the dock has extended, and the I/O has been verified, then reset and continue the robot.

PNT1-171 Auto Calibration aborted

Cause: The Accustat auto calibration could not continue. This is normally the result of an operation time-out. The auto calibration can abort for several reasons. The function of this alarm is as follows: First, the Auto Calibration Aborted alarm will post if an error has occurred. The next alarm will contain the cause of the auto calibration to abort. **Cause 1:** While searching for the minimum or maximum flow rates in the calibration table, the calibration timed out by reaching the maximum number of attempts to establish the minimum or maximum flow rate output values. This can be a result of improper fluid restriction selection, non-attainable calibration table flow ranges, or a bad fluid regulator. The resulting alarms would be PNT1-251, Failed to find upper limit or PNT1-252, Failed to find lower limit. **Cause 2:** Calibration resulted in non-increasing command values in the calibration table data. The slope of the calibration table is negative. Increasing output values do not result in increased flow rate. The result error code will be PNT1-254

Non-increasing cal table. **Cause 3:** The calibration routine calculated output values that are above or below the maximum or minimum output values defined in the Applicator Parameters for the fluid regulator. The minimum output values in counts are low-res: 200, hi-res: 1600, and the maximum output values in counts are low-res: 1000, and hi-res: 8000. The restrictor size is not compatible with the desired flow rate range and the material attempting to be calibrated. The resulting error codes will be PNT1-255 Calculated output > max output or PNT1-256 Calculated output < min output. **Cause 4:** The calibration has been aborted by the user or has been interrupted by another fault such as an EMERGENCY STOP during calibration. Or, the robot failed to reach the proper location in order to calibrate. See other alarms to determine the cause of the fault.

Remedy: **Remedy 1:** Increase the number of Maximum Calibration Trys in the AccuStat setup. Verify restrictor, regulator and calibration flow rate range in the AccuStat Color Data for that valve. **Remedy 2:** Verify all equipment is operating properly. Check the linear potentiometer feedback (AIN[1, DISP], the regulator operation, and that the trigger is opening and closing properly. Verify attainable values have been set in the AccuStat Color Data for the requested minimum and maximum flow rates. **Remedy 3:** Verify that the fluid regulator is functioning properly. Change the fluid restrictor size to better accommodate the requested flow rate range. Change the requested flow rate range in the AccuStat Color Data setup. **Remedy 4:** Determine the cause of the fault to the robot. Check the alarm log to aid finding the cause of the fault. If the robot has not moved to the correct position, verify that the proper path has been taught.

PNT1-172 Failed to find Upper limit

Cause: Accustat could not reach the upper flow limit in the number of attempts set at the calibration screen. This can be caused by one of the following:

- The upper limit flow rate can not be achieved.
- The fluid restricter is too small.
- The flow rate or canister position feedback is unstable.

Remedy: Verify all equipment is working properly. Check the following:

- Check the Color Data upper limit.
- Check the applicator parameters to make sure that the App Parameter Max limit is not below the AccuStat Color Data upper limit.
- Increase Auto cal hi/low tolerance or Trys for hi/low from the AccuStat SETUP screen.
- Check the potentiometer feedback at the analog input (AIN[1]:DISP). It should change smoothly without jumps or pauses.
- Verify the air supply pressure to the robot. If the pressure drops below the normal operating range it will decrease the maximum flow rate.
- A larger paint restrictor may be required for the desired flow rate.
- Check the operation of the fluid regulator and pressure transducer.
- Try a different applicator.

PNT1-173 Failed to find Lower limit

Cause: Accustat could not reach the low flow limit in the number of attempts set at the calibration screen. This can be caused by:

- The low flow setting is too low to control.
- The flow rate or the canister position feedback is unstable.

Remedy: Verify that all equipment is working properly. Check the following:

- Check the low flow on the Accustat Color Data screen. It may be too low to control.
- Check the applicator parameters to make sure that the App Parameter Min limit is not above the AccuStat Color Data lower limit.
- Increase the Auto cal hi/low tolerance or Trys for high/low from the AccuStat setup screen.
- Check the potentiometer feedback at the analog input(AIN[1]:DISP). It should move smoothly without jumping or pausing.
- Try a smaller restrictor if it does not limit the high flow.
- Change Applicators.

PNT1-174 Beaker Timeout, Scale Cal Aborted

Cause: Not enough time has been allowed to empty the canister fully by the time specified in Beaker Fill Timeout. The canister did not empty due to the trigger or regulator not opening. Or, there has been a loss of canister position feedback.

Remedy: Check the following:

- Check the regulator and gun to be sure they are functioning properly.

- Increase the Beaker Fill Timeout on the AccuStat SETUP screen.
- Fix the trigger or regulator.
- Verify the canister position feedback (AIN[1, DISP]).

PNT1-175 (%s) Non-increasing cal table

Cause: One of the following events has occurred:

- After the calibration table has been shifted or a new calibration table created, a non-increasing table of flow command values was detected.
- Unstable flow rates are encountered.
- The canister position change is not proportional to the fluid regulator command.
- The canister position feedback is unstable.

Remedy: Check the following:

- Verify that the regulator is working properly.
- Verify the fluid restrictor is suitable for the desired flow rates.
- Check proper feedback from the linear potentiometer.
- If this occurs as a result of a table shift, calibrate the color valve in which the calibration table has become non-increasing.

PNT1-176 Calculated output > Max Output

Cause: The auto-calibration calculated the high flow output greater than the maximum output. The cal table was saved with a lower range of flow than requested.

Remedy: Look at the calibration results to determine if the maximum flow rate is acceptable. If you do not need a higher flow rate then no additional action is required. If you need a higher flow rate then try the following:

- Verify the range on the Accustat Color DATA screen.
- Verify the air supply pressure to the robot. If the pressure drops below the normal operating range it will decrease the maximum flow rate.
- A larger paint restrictor might be required for the desired flow rate.
- Check the operation of the fluid regulator and pressure transducer.
- Try a different applicator.

PNT1-177 Calculated output < Min Output

Cause: One of the following events has occurred:

- The calculated command counts are below the Applicator Parameter Minimum Output value (200 counts, or 1600 counts hi-res).
- The fluid restrictor is too large or the regulator is not working properly.

Remedy: Restrict fluid flow with a smaller restrictor. Or, check the Color Data Hi/Low flow range settings.

PNT1-178 Failed to reach setpoint

Cause: One of the following events has occurred:

- The Tolerance Band is too narrow (low), or the regulator is not working properly.
- The adaptive gain for that color might be too low, and the flow rate is not adapting fast enough.
- The potentiometer is not operating properly.
- The trigger delay might not be set properly, if trigger events are too close together.

Remedy: Check regulator operation and Adaptive Gain settings in the AccuStat Color Data for that color valve. Also, verify that the trigger delays are set up properly.

PNT1-179 Canister Fill Error

Cause: Prior to painting the job, the can is checked to see if enough paint has been put into the can (cylinder position counts $\geq$ TPR counts). This can occur if the waiting for can full condition is falsely satisfied. Possible causes are air in the canister due to faulty color change cycles, or unstable readings from the linear potentiometer. Many times this happens because the air has not been pushed out of the dump before the fill valve is opened.

Remedy: Make sure that paint has reached the docking station before starting the step to open the fill valve. Try increasing the amount of time of the step to fill the paint line before opening the fill valve. With air in the can, after the piston pressure has been reapplied the air will compress causing the cylinder position to fall below the fill counts.

PNT1-180 Auto Calibration Successful

Cause: The Auto Calibration for the selected color valve has completed successfully.

Remedy: None.

PNT1-181 Non-decreasing canister position

Cause: This alarm will be displayed if the gun has been on for the amount of time specified as Canister Check Time and the amount of change in cylinder position counts has not reached the Minimum Canister Change Counts. This can be caused by low flow rates, where it takes longer to see this minimum cylinder position change. It could be an indicator of trouble with the linear potentiometer or the feedback circuit.

Remedy: Lower the Minimum Canister Change Counts or increase the Canister Check Time. Check the feedback from the linear potentiometer or repair the low voltage wire for the canister feedback circuit.

PNT1-182 Canister Position Increasing

Cause: This alarm will be displayed if the piston moves during a color change cycle when it is held at the bottom of the can for cleaning, and the cleaning solvent and air pressure overcome the piston air pressure.

Remedy: Perform a scale calibration to insure that the calculated value for the Can Empty Check Counts is valid. Increase the Fill Error Tolerance. Verify that the piston pressure is not being restricted.

PNT1-183 Intermittent Connection Detected

Cause: A reading of 0 counts on the analog input (AIN[1,DISP]) causes the intermittent connection alarm. This is an indicator of potentiometer trouble during job playback, caused by an open/short circuit in cylinder position feedback. This alarm only occurs during a job or color change in auto mode. Regular, but not consistent, postings of this alarm indicate a poor electrical connection in the feedback circuit. The electrical connector at the quick disconnect (QD) plate, when damaged or worn, can cause this alarm. Induced noise in the feedback circuit from poor grounding leads to this temporary condition as well. Resistors inside the robot controller set the supply voltage to the linear potentiometer, and should be set at 10 Volts.

Remedy: Replace the electrical connector on the quick disconnect (QD) plate. Verify proper grounding of the feedback circuit. Replace the low voltage cable in the robot arm. Check the supply voltage to the linear potentiometer.

PNT1-184 Flow Error High, Valve: %s

Cause: If the percentage of paint left in the can exceeds the total paint required (TPR) by the Job Total Error Tolerance, then this alarm will post. If the paint usage exceeds the TPR by the Job Total Error Tolerance, then this alarm will be displayed. Most of the time, the can will run out of paint before the paint usage exceeds the TPR by this percentage. This indicates that the fluid flow has been restricted or the can has run out of paint.

Remedy: The paint needs to be calibrated or the adaptive gain for that color valve is too high. The regulator might not be actuating properly from not running a clean out cycle before the end of the shift. Often other error conditions will occur prior to this alarm. Check the alarm log to help detect other symptoms leading to this alarm.

PNT1-185 Applicator Disabled during job

Cause: If the applicator is disabled at the end of the job, then the table will not adapt in hybrid mode.

Remedy: None.

PNT1-186 Scale Calibration Aborted

Cause: The scale calibration sequence did not complete. This can be caused by a timeout or fill/empty error.

Remedy: Check the alarm log to see what conditions caused the calibration to abort. In most cases, the scale calibration can time out from one of the following alarms: PNT1-253 Beaker timeout, scale cal abort, PNT1-248, CC abort, can full timeout, PNT1-249 CC abort, can empty timeout. Verify all equipment is operating properly. Refer to the Cause/Remedy information for the other alarms for more information.

PNT1-187 Scale Calibration Successful

Cause: The scale calibration sequence has completed successfully.

Remedy: None.

PNT1-192 De-Docking program is undefined

Cause: No path data has been taught for DEDOCK.TP. Something has caused the position to become invalid.

Remedy: Teach the robot path for the de-docking operation. The de-dock path is a special position. After teaching, or touching up special position paths, you must turn the robot controller off and then on again in order for the changes to take effect.

PNT1-193 Docking program is undefined

Cause: No path data has been taught for DOCK.TP. Something has caused the position to become invalid.

Remedy: Teach the robot path for the docking operation. The dock path is a special position. After teaching, or touching up special position paths, you must turn the robot controller off and then on in order for the changes to take effect.

PNT1-194 Robot NOT at docking position

Cause: One of the following items has occurred:

- The request to enter the dock was given but the robot did not reach the docking position.
- The dock attempt did not complete and the docking station could not extend.
- The robot faulted on the way to the docking station.
- See the alarm history for information on other errors that might have occurred.
- The robot did not report it was at the docking station, because the dock special position was not taught.

Remedy: Check the path data and ensure the last position in DOCK.TP has a FINE position type. Verify that the DOCK.TP special position has been taught. The controller power must be cycled after special positions are taught. If the Dock path did not complete its execution, then determine why execution was halted. Reset the robot and continue the job. The robot should complete the motion automatically. If the robot does not complete the motion, then in manual mode, move the robot home. After the cell has been put into manual mode, the job must be reinitialized.

PNT1-200 Door held input lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued, activate the ignore part signal to disable scanning operations.

PNT1-201 Door detect sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued, activate the ignore part signal to disable scanning operations.

PNT1-202 Illegal Opener macro Called

Cause: This alarm can be posted for a robot or an opener program:

- A robot requested a second action from an opener with a **RqstRmtOpnrAct** macro before waiting for the opener to finish the previous action with a **WaitRmtOpnrDone** Macro.
- An opener sent a second complete status to a robot with an **OpnrRmtActCmp** macro before waiting for a second request with a **OpnrRmtWaitRqst** Macro.

Remedy: Edit the programs so the communication macros match. The robot program should alternate between requesting a remote opener action with **RqstRmtOpnrAct** and waiting for the remote opener to complete with **WaitRmtOpnrDone**. For each **RqstRmtOpnrAct** in the robot program the remote opener program needs a **OpnrRmtWaitRqst** macro. For each **WaitRmtOpnrDone** in the robot program the remote opener program needs a **OpnrRmtActCmp** macro.

PNT1-203 Robot in opener path

Cause: The opener move cannot be executed because the robot is in the opener path.

Remedy: Jog the robot so that it is clear of the opener, and then reissue the move.

PNT1-204 Opener in robot path

Cause: The robot move cannot be executed because the opener is in the robot path.

Remedy: Jog the opener so that it is clear of the robot, and then reissue the move.

PNT1-205 Opener Bypass is undefined

Cause: The opener bypass program has not been taught (recorded).

Remedy: Teach (record) the opener bypass program (OPNBYPAS.TP).

PNT1-206 Opener Special1 program is undefined

Cause: The special1 opener program has not been taught (recorded).

Remedy: Teach (record) the special1 opener program (OPNSPC1.TP).

PNT1-207 Opener Home program is undefined

Cause: The opener home program has not been taught (recorded).

Remedy: Teach (record) the opener home program (OPN1HOME.TP).

PNT1-213 Bad cur_color no. [%d]

Cause: The cur_color number is out of range.

Remedy: Check [PASHELL] cur_color to make sure it is between (1-MAX_VALVES(31)).

PNT1-214 Bad cal.tbl.(color[%d]-parm[%d])

Cause: The parameter calibration table does not increase.

Remedy: Check the color and parameter calibration tables.

PNT1-215 %s group mask(%d) != tracking schedule group(%d)

Cause: This teach pendant program group mask does not match the group (robot or opener) in the tracking schedule.

Remedy: Check each robot and opener process program to verify that the tracking schedule number is assigned to this group.

PNT1-216 No defined color (color=[%d])

Cause: The color that has been sent with the current job has not been defined.

Remedy: You must define this color in the SETUP Color Table before initializing the robot with this color.

PNT1-224 WAITCONV[] late for line %s

Cause: The first stroke that was late on the part for this job started at this line. The current speed of the conveyor is too fast for the speed of this Job and Color Group.

Remedy: Decrease the speed at which the conveyor is moving. Increase the Target Speed or Fan width, or both for the current Color Group. Decrease the Percent Overlap for the current Color Group.

PNT1-225 Data Monitor is disabled

Cause: The Data Monitor subsystem has been disabled because the limit on the data files set by the user has been reached.

Remedy: Enable Data Monitor Operation from the UTILITIES Data Monitor screen. On the SETUP Diagnostics screen, consider increasing Max Data Files Stored or setting Disable After Max Files to NO, if these settings caused Data Monitor to be disabled. Refer to the FANUC PaintTool Operator's Manual Advanced Functions chapter for more information.

PNT1-226 Maximum DMON Data Files exceeded

Cause: The limit on data files that can be stored by the Data Monitor subsystem has been reached.

Remedy: On the SETUP Diagnostics screen, consider increasing the maximum files stored by setting Max Data Files Stored to a larger number, or setting Disable After Max Files to NO. Refer to the FANUC PaintTool Operator's Manual, Advanced Functions chapter for more information on these items.

PNT1-227 DMON in progress, item locked

Cause: A Data Monitor session is in progress during an attempt to change the setup that could affect the current session.

Remedy: Wait until the end of the Data Monitor session. If in Automatic Sampling mode, this happens at the end of the job. If sampling in Asynchronous mode, stop the current session by setting SAMPLE NOW under SETUP Diagnostics to STOP.

PNT1-228 Asynchronous DataMonitor disabled

Cause: Asynchronous Data Monitoring has been disabled.

Remedy: To re-enable Asynchronous Data Monitoring, ensure that the UTILITIES Data Monitor, Data Monitor Operation item is enabled. Also set the Auto Sample Each Job item on the SETUP Diagnostics screen to NO.

PNT1-229 Asynchronous DataMonitor enabled

Cause: Asynchronous Data Monitor has been enabled.

Remedy: None.

PNT1-230 DMON file management disabled

Cause: File management features have been disabled because the Max Data Files item on the SETUP Diagnostics screen is set to 0. Stored data will be over-written by subsequent sampling sessions.

Remedy: No action required. To re-enable file management features, you can set Max Data Files to a non-zero value. Ensure that the destination data storage device has adequate space. Refer to the Advanced Functions chapter of the FANUC PaintTool Operator's Manual for more information.

PNT1-231 DMON file management enabled

Cause: File management features have been enabled because the Max Data Files Stored item on the SETUP Diagnostics screen has been set. The Data Monitor will store as many old data files as indicated.

Remedy: No action required if the destination data storage device has adequate space. To disable file management features, set Max Data Files Stored to 0. Refer to the Advanced Functions chapter in the FANUC PaintTool Operator's Manual for more information.

PNT1-232 Sample_start builtin exec failed

Cause: The KAREL built-in, SAMPLE_START, returned an unacceptable status.

Remedy: Contact your FANUC service representative.

PNT1-233 Sample_end builtin exec failed

Cause: The KAREL built-in SAMPLE_END returned an unacceptable status.

Remedy: Contact your FANUC service representative.

PNT1-241 %sGlss Breakage Detected

Cause: During production, one of the glass strands feeding through the chopper motor was detected to be broken by its corresponding microphone sensor.

Remedy: Jog the robot away from the fault location, and re-thread the glass strand through the chopper motor. Jog the robot near the fault location, and continue the cycle.

PNT1-242 %sCatalyst Flow Error

Cause: During production, the catalyst flow stopped which is causing only the resin to flow.

Remedy: This can be due to a faulty Kobold sensor, or mechanical problems with the catalyst pump.

PNT1-243 %s flow command warning

Cause: During production, an increase in command output was issued in order to maintain setpoint. This increase surpassed the Command Warning percentage value. An additional jump in command output might fault the robot.

Remedy: This problem might be due to a clogged gun tip, or old equipment. Clean the gun tip and check the lines and equipment.

PNT1-244 %s flow command alarm

Cause: During production, a significant increase in command output was issued in order to maintain setpoint. This increase surpassed the Command Alarm percentage value which faulted the robot.

Remedy: This problem might be due to a clogged gun tip, or old equipment. Clean the gun tip, and check the lines and equipment.

PNT1-245 %s0 res flow rate T.O.

Cause: All of the conditions were set for resin fluid to be flowing, however a zero flow rate was measured. This might be caused by:

- A broken applicator trigger
- A loss of resin fluid supply pressure
- A broken flow meter
- A broken cable (to the flow meter)
- A Zero fluid flow timeout value that is too short

Note: Accuchop automatically faults the robot when this alarm occurs.

Remedy: Check that the gun is properly triggering. If fluid was observed to be flowing, check and, if necessary, replace the fluid flow meter. If necessary, increase the Zero flow timeout parameter by about 25%.

PNT1-246 %sMax output has flow < setpoint

Cause: With a maximum control output, the flow rate was measured to be lower than the setpoint (requested flow). This can be caused by:

- The resin gun might be clogging.
- The resin or pilot air line might be pinched.
- The resin fluid pressure might have become too low.
- The I/P transducer might be broken.

Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Check the following:

- Check the gun tip and the whole gun for clogging.
- Check the resin lines for pinching, especially at places where they flex.
- Check the resin supply pressure.
- Check and replace, if necessary, the I/P transducer.

PNT1-247 %sMin output has flow > setpoint

Cause: With a minimum control output, the flow rate was measured to be higher than the flow rate setpoint. The resin fluid pressure might have become too high. The I/P transducer or fluid regulator might be stuck open. Or, there might be a fairly large fluid leak. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Calibrating the resin will establish a new cracking pressure (minimum control output) for a changed fluid pressure. Check the resin fluid regulator and I/P transducer, and replace them if necessary.

PNT1-248 %s0 gls feed rate T.O.

Cause: All of the conditions were set for glass to be feeding, however a zero feed rate was measured. This might be caused by:

- A broken applicator trigger
- A broken chopper motor sensor
- A broken cable (to chopper motor sensor)
- A Zero glass feed timeout value that is too short.

Note: Accuchop automatically faults the robot when this alarm occurs.

Remedy: If the glass is not feeding from the chopper motor, check the items listed above or the 32 point input module. If it occurs with very low feed rates, decrease the Normal gain modifier in Accuchop's Glass SETUP screen.

PNT1-249 %sMax output has feed < setpoint

Cause: With a maximum control output, the glass feed rate was measured to be lower than the setpoint (requested feed). The chopper motor might be clogging. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Check and clean the chopper motor if it is clogged. Check and replace the I/P transducer, if necessary.

PNT1-250 %sMin output has feed > setpoint

Cause: With a minimum control output, the glass feed rate was measured to be higher than the feed rate setpoint. The motor (glass) RPM might have become too high. The I/P transducer might be stuck open. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Calibrating the glass will establish a new cracking pressure (minimum control output). Check and replace the I/P transducer, if necessary.

PNT1-255 RDU Full - Proc Champ disabled

Cause: The report file generated by Process Champion has filled the RDU device to its capacity. This forces the system to disable Process Champion auto mode so that no further auto appending is performed on the file. The file has been copied to FR: and is deleted from RDU:.

Remedy: For R-J3 controller only. Re-enable Process Champion auto mode by setting the Set Process Champion Mode item, in the SETUP Production screen, to Auto. To prevent FR: from filling to capacity, remove the file from FR: to another device such as a PCMCIA card.

PNT1-258 HIGH SpeedDock TORQUE: %s

Cause: The torque value of the SpeedDock exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading, and resolve the problem.

PNT1-259 SpeedDock motor not ready

Cause: The servo power to the SpeedDock motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition or the machine is locked. Correct the condition, and reset the controller.

PNT1-262 Pusher at Dock %s

Cause: An attempt was made to extend or retract the pusher at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. Ensure that the pusher retracted or extended fully at SpeedDock side A or B. Ensure that sufficient air pressure is available for this operation, and that the air lines are connected.

PNT1-263 Valve at Dock %s

Cause: An attempt was made to extend or retract the valve at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. If it was an extended fault, ensure that the pusher extended fully at SpeedDock side A or B. If it was a retracted fault, ensure that the pusher retracted fully at SpeedDock side A or B and that the valve is not stuck in the extended state. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT1-266 SpeedDock EXTEND Error

Cause: An attempt was made to extend the SpeedDock docking mechanism at side A or B, and failed.

Remedy: Check the sensors at SpeedDock docking mechanism. Ensure that sufficient air pressure is available for this operation and that the air lines are connected securely.

PNT1-267 SpeedDock RETRACT Error

Cause: An attempt was made to retract the SpeedDock docking mechanism at side A or B, and failed.

Remedy: Check the sensors at the SpeedDock docking mechanism. Ensure that sufficient air pressure is available for this operation, and that the air lines are connected securely.

PNT1-270 Retract Hard Stop Error

Cause: An attempt was made to Retract the hard stop from its normal state, but the operation failed.

Remedy: Determine if the hard stop physically retracted. If so, check the functionality of the sensors. Ensure that the I/O is mapped correctly. If the hard stop did not retract, determine if the hard stop received the RETRACT output signal.

PNT1-271 Extend Hard Stop Error

Cause: An attempt was made to extend the hard stop to its normal state, but the operation failed.

Remedy: Determine if the hard stop physically extended. If so, check the functionality of the sensors. Ensure that the I/O is mapped correctly. If the hard stop did not extend, determine if the hard stop received the EXTEND output signal.

PNT1-272 Exit Srv pos in prog is undefined

Cause: The robot ENT_SRV program is not taught.

Remedy: Teach the ENT_SRV.TP program.

PNT1-273 Ent Srv pos in prog is undefined

Cause: The Robot EXIT_SRV program is not taught.

Remedy: Teach the EXIT_SRV.TP program.

PNT1-276 Error opening TPE program

Cause: This error should never occur during normal PaintTool operation.

Remedy: Contact your local FANUC representative service personnel.

PNT1-277 TPE Built-in error

Cause: An failed attempt was made to perform a software operation on a specific teach pendant program. This error should never occur during normal PaintTool operation.

Remedy: Contact your local FANUC representative service personnel.

PNT1-278 TPE find/read header error

Cause: This error should never occur during normal PaintTool operation. In the event that this alarm was posted, PaintTool was making an attempt to extract data from a specific teach pendant program, but failed.

Remedy: Ensure that the teach pendant program is installed on the controller, or contact your local FANUC representative.

PNT1-279 TPE error reading instruction

Cause: This error should never occur during normal PaintTool operation. In the event that this alarm was posted, PaintTool was making an attempt to extract positional data from a specific teach pendant program, but failed.

Remedy: Ensure that the teach pendant program is installed on the controller, or Contact your local FANUC representative service personnel.

PNT1-280 TPE wrong type of program:%s

Cause: This error should never occur during normal PaintTool operation. In the event that this alarm was posted, PaintTool was making an attempt to read data from a specific teach pendant program but failed because the teach pendant program does not exist, or the file type is not a teach pendant program.

Remedy: Ensure that the teach pendant program is installed on the controller, or contact your local FANUC representative.

PNT1-281 TPE error closing a program

Cause: This error should never occur during normal PaintTool operation. In the event that this alarm was posted, PaintTool was making an attempt to close an opened teach pendant program, but failed.

Remedy: Contact your local FANUC representative service personnel.

PNT1-282 Selected program not found

Cause: The job that is selected for DATA ZONE EDIT or TEST RUN does not exist.

Remedy: Generate the job or select a job that exists.

PNT1-283 out of(strt,end)ext1 at line%s

Cause: The EXT1 (extended axis) of the current position is out of range of the EXT1 start to EXT1 end values.

Remedy: This will not affect the X-Rail smoothing process. Choose another smoothing range if necessary.

PNT1-284 TPE's motion group must be 1

Cause: The motion group of teach pendant program must be 1 when using the X-Rail Manager.

Remedy: Choose another teach pendant program that uses motion group 1.

PNT1-285 TPE Header size mismatch

Cause: The teach pendant program header size is inadequate. The program might have been created on an older software version. Or, the program header information might not be stored correctly.

Remedy: Try selecting the program, then selecting DETAIL, then NEXT, then END. If this does not work, create a new teach pendant program, and paste the lines from the old program into it.

PNT1-286 Uninitialized TPE position in program %s

Cause: There was an uninitialized position found in the specified special move position. This could have occurred if a new position was recorded in one of the special move programs when the robot was not mastered or calibrated, causing an uninitialized position to be created. Executing a specific operation afterwards might cause this alarm to occur.

Remedy: Ensure the robot is mastered and calibrated. Re-teach the position in the special move program indicated by the alarm.

PNT1-326 %sRobot is bypassed

Cause: The robot not bypassed input is OFF.

Remedy: Turn on the robot not bypassed input.

PNT1-327 %sSHELL failed to run SUBSHELL

Cause: The subtask failed to run.

Remedy: Cold start the controller.

PNT1-328 %sE-STAT unit faulted

Cause: Detected a E-STAT unit fault.

Remedy: Clear E-STAT unit fault.

PNT1-329 %sAutomatic CLNOUT on prod_entry

Cause: An automatic move from the cleanin position on production entry is enabled.

Remedy: None.

PNT1-330 %sCannot create presets

Cause: When a job is created, the presets for the job are also created. In this case, the presets for the job could not be created.

Remedy: Check that the job name is of the form JOBXXXX, where XXXX is a number between 1 and 1024.

PNT1-331 %sCannot read presets data file

Cause: The preset data for the current job could not be found.

Remedy: Check for the existence of a file called PAPSXXXX, where XXXX is the job number. This file is created when the job is created. This error might occur if the job was incorrectly named or the file was deleted.

PNT1-332 %s not calibrated

Cause: The calibration status for each control parameter must be complete before it can be used in a program.

Remedy: Calibrate all control parameters used within the current program.

PNT1-333 %sFailed to continue robot task

Cause: An attempt to continue the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT1-334 %sFailed to pause robot task

Cause: An attempt to pause the robot motion task has failed. The robot motion task has aborted.

Remedy: The current cycle must be aborted.

PNT1-335 %sFailed to abort robot task

Cause: An attempt to abort the robot motion task has failed. The robot motion task might not have been running at the time an attempt was made to abort it.

Remedy: None.

PNT1-336 %sRobot task has faulted

Cause: The robot task has faulted, but was not detected by the main task.

Remedy: The current cycle must be aborted.

PNT1-337 %sFailed to run robot task

Cause: An attempt to run the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT1-345 %sRobot is bypassed

Cause: Robot Not Bypassed input is OFF.

Remedy: Robot Not Bypassed input must be ON.

PNT1-346 %sSHELL failed to run SUBSHELL

Cause: The subtask failed to run.

Remedy: Cold start the controller.

PNT1-347 %sE-STAT unit faulted

Cause: An E-STAT unit fault was detected.

Remedy: Clear the E-STAT unit fault.

PNT1-348 %sAutomatic CLNOUT on prod_entry

Cause: An automatic move from the cleanin position on production entry is enabled.

Remedy: None.

PNT1-349 %sCannot create presets

Cause: When a job is created, the presets for the job are also created. In this case, the presets for the job could not be created.

Remedy: Check that the job name is of the form JOBXXXX, where XXXX is a number between 1 and 1024.

PNT1-350 %sCannot read presets data file

Cause: The preset data for the current job could not be found.

Remedy: Check for the existence of a file PAPSXXXX, where XXXX is the job number. This file is created when the job is created. This message might be displayed if the job was incorrectly named, or if the file was deleted.

PNT1-351 %s not calibrated

Cause: The calibration status for each control parameter must be complete before it can be used in a program.

Remedy: Calibrate all control parameters used within the current program.

PNT1-352 %sFailed to continue robot task

Cause: An attempt to continue the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT1-353 %sFailed to pause robot task

Cause: An attempt to pause the robot motion task has failed. The robot motion task has aborted.

Remedy: The current cycle must be aborted.

PNT1-354 %sFailed to abort robot task

Cause: An attempt to abort the robot motion task has failed. The robot motion task might not have been running at the time an attempt was made to abort it.

Remedy: None.

PNT1-355 %sRobot task has faulted

Cause: The robot task has faulted, but was not detected by the main task.

Remedy: The current cycle must be aborted.

PNT1-356 %sFailed to run robot task

Cause: An attempt to run the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT1-364 %sHome program is undefined

Cause: The robot home program has not been taught.

Remedy: Teach the robot home program (HOME.TP).

PNT1-365 %sEnter cleaner program is undefined

Cause: The robot cleanin program has not been taught.

Remedy: Teach the robot cleanin program (CLNIN.TP).

PNT1-366 %sExit cleaner program is undefined

Cause: The robot cleanout program has not been taught.

Remedy: Teach the robot cleanout program (CLNOUT.TP).

PNT1-367 %sBypass program is undefined

Cause: The robot bypass program has not been taught.

Remedy: Teach the robot bypass program (BYPASS.TP).

PNT1-368 %sPurge program is undefined

Cause: The robot purge program has not been taught.

Remedy: Teach the robot purge program (PURGE.TP).

PNT1-369 %sMaster program is undefined

Cause: The robot master program has not been taught.

Remedy: Teach the robot master program (MASTER.TP).

PNT1-370 %sSpecial 1 program is undefined

Cause: The robot special1 program has not been taught.

Remedy: Teach the robot special1 program (SPECIAL1.TP).

PNT1-371 %sSpecial 2 program is undefined

Cause: The robot special2 program has not been taught.

Remedy: Teach the robot special2 program (SPECIAL2.TP).

PNT1-372 %sRobot not at home position

Cause: The robot is not at the Home position.

Remedy: Move the robot to the Home position.

PNT1-373 %sRobot at cleaner position

Cause: The robot is positioned at the cleaner.

Remedy: The robot must execute a cleanout move before continuing.

PNT1-374 %sRobot not at cleaner position

Cause: The robot is not positioned at the cleaner.

Remedy: The robot must be at the cleaner position before a move to exit the cleaner is executed.

PNT1-375 %sEnter Maintenance program is undefined

Cause: Robot maintenance in program is not taught.

Remedy: Teach robot maintenance in program (MNTIN.TP).

PNT1-376 %sExit Maintenance program is undefined

Cause: Robot maintenance out program is not taught.

Remedy: Teach robot maintenance out program (MNTOUT.TP).

PNT1-377 %sRobot not at maintenance position

Cause: Robot is not positioned at maintenance.

Remedy: Robot must be at the maintenance position before a move to exit maintenance is executed.

PNT1-382 %sHome program is undefined

Cause: Robot home program is not taught.

Remedy: Teach robot home program (HOME.TP).

PNT1-383 %sEnter cleaner program is undefined

Cause: Robot cleanin program is not taught.

Remedy: Teach robot cleanin program (CLNIN.TP).

PNT1-384 %sExit cleaner program is undefined

Cause: The robot cleanout program has not been taught.

Remedy: Teach the robot cleanout program (CLNOUT.TP).

PNT1-385 %sBypass program is undefined

Cause: Robot bypass program is not taught.

Remedy: Teach robot bypass program (BYPASS.TP).

PNT1-386 %sPurge program is undefined

Cause: Robot purge program is not taught.

Remedy: Teach robot purge program (PURGE.TP).

PNT1-387 %sMaster program is undefined

Cause: Robot master program is not taught.

Remedy: Teach robot master program (MASTER.TP).

PNT1-388 %sSpecial 1 program is undefined

Cause: Robot special1 program is not taught.

Remedy: Teach robot special1 program (SPECIAL1.TP).

PNT1-389 %sSpecial 2 program is undefined

Cause: Robot special2 program is not taught.

Remedy: Teach robot special2 program (SPECIAL1.TP).

PNT1-390 %sRobot not at home position

Cause: The robot is not at the Home position.

Remedy: Move the robot to the Home position.

PNT1-391 %sRobot at cleaner position

Cause: The robot is positioned at the cleaner.

Remedy: The robot must execute a cleanout move before continuing.

PNT1-392 %sRobot not at cleaner position

Cause: The robot is not positioned at the cleaner.

Remedy: The robot must be at the cleaner position before a move to exit the cleaner is executed.

PNT1-393 %sEnter Maintenance program is undefined

Cause: Robot maintenance in program is not taught.

Remedy: Teach robot maintenance in program (MNTIN.TP).

PNT1-394 %sExit Maintenance program is undefined

Cause: Robot maintenance out program is not taught.

Remedy: Teach robot maintenance out program (MNTOUT.TP).

PNT1-395 %sRobot not at maintenance position

Cause: Robot is not positioned at maintenance.

Remedy: Robot must be at the maintenance position before a move to exit maintenance is executed.

PNT1-400 %sApplicator enable is OFF

Cause: This message is displayed when the applicator valve enable input turns off. When this input is off, the GUN trigger outputs are blocked from turning on.

Remedy: None.

PNT1-401 %sApplicator enable is ON

Cause: This message is displayed when the applicator valve enable input turns on.

Remedy: None.

PNT1-406 %sApplicator enable is OFF

Cause: This message is displayed when the applicator valve enable input turns off. When this input is off, the GUN trigger outputs are blocked from turning on.

Remedy: None.

PNT1-407 %sApplicator enable is ON

Cause: This message is displayed when the applicator valve enable input turns on.

Remedy: None.

PNT1-412 %sError reading gun-on time for job

Cause: Some process or processes within a job might have something wrong with their headers.

Remedy: Display the DETAIL page for every process in the job. This should correct the problem.

PNT1-413 %sNo TPR calculated for job

Cause: The PGOT procedure was not performed on the processes used within the selected job (style). The TPR is equal to zero. No Preset Gun On Time for the job could be found. The job has not been test cycled.

Remedy: Perform the PGOT procedure on the desired job (style). Test cycle the job or allow it to correct itself by running the process in production, if enough paint has been loaded into the canister.

PNT1-414 %sTPR Mismatch (%s) PGOT Required

Cause: The previous job gun on time for the current job differs from the calculated preset gun on times used for the TPR calculation by more than the allowed tolerance. The Gun On Time stored in the job header does not correspond to the preset on times read from the job processes. This can be a result of process changes done on the fly. The robot will not have the proper amount of paint to run the job.

Remedy: Perform a PGOT test cycle on the job that caused the TPR mismatch alarm. If the robot has filled sufficiently for the job, then it will automatically correct the TPR when the job is completed. If the robot has faulted due to this alarm, then press RESET and continue the job. If this alarm commonly occurs due to on the fly process changes, then increase the Gun On Time Error Tolerance. Caution must be used in setting this value too high, because if the new gun on time is sufficiently higher than the old gun on time in the header, the TPR will be too low and the gun will run out of paint.

PNT1-415 %sTPR exceeds Can Volume

Cause: The calculated TPR exceeds the volume of the can. The TPR for that job is too large. When using Accustat, if the TPR for a job normally approaches the limit of the size of the canister, then the adaptive fill tolerance might attempt to add additional paint beyond the limit of the canister volume.

Remedy: Set up for a re-dock. Decrease the Adaptive Fill Gain parameter in the SETUP AccuStat screen. Reduce the size of the job if it is larger than 1550 ccs. This is the maximum volume of the AccuStat canister.

PNT1-420 %sError reading gun-on time for job

Cause: Some process or processes within a job might have something wrong with their headers.

Remedy: Display the DETAIL page for every process in the job. This should correct the problem.

PNT1-421 %sNo TPR calculated for job

Cause: The PGOT procedure was not performed on the processes used within the selected job (style). The TPR is equal to zero. No Preset Gun On Time for the job could be found. Also, the job has not been test cycled.

Remedy: Perform the PGOT procedure on the desired job (style). Test cycle the job or allow it to correct itself by running the process in production, if enough paint has been loaded into the canister.

PNT1-422 %sTPR Mismatch (%s) PGOT Required

Cause: The previous job gun on time for the current job differs from the calculated preset gun on times used for the TPR calculation by more than the allowed tolerance. The Gun On Time stored in the job header does not correspond to the preset on times read from the job processes. This can be a result of process changes done on the fly. When this occurs, the robot will not have the proper amount of paint to run the job.

Remedy: Perform a PGOT test cycle on the job that caused the TPR mismatch alarm. If the robot has filled sufficiently for the job, then it will automatically correct the TPR when the job is completed. If the robot has faulted due to this alarm, then press RESET and continue the job. If this alarm commonly occurs due to on the fly process changes, then increase the Gun On Time Error Tolerance. Caution must be used in setting this value too high, because if the new gun on time is sufficiently higher than the old gun on time in the header, the TPR will be too low and the gun will run out of paint.

PNT1-423 %sTPR exceeds Can Volume

Cause: The calculated TPR exceeds the can volume. The TPR for that job is too large. When using Accustat, if the TPR for a job normally approaches the limit of the size of the canister, then the adaptive fill tolerance might attempt to add additional paint beyond the limit of the canister volume.

Remedy: Set up for a re-dock. Decrease the Adaptive Fill Gain parameter in the AccuStat setup screen. Reduce the size of the job if it is larger than 1550 ccs which is the maximum volume of the AccuStat canister.

PNT1-428 %sApplicator test outputs are ON

Cause: Applicator test outputs are on. These are initiated by the PLC.

Remedy: None.

PNT1-429 %sApplicator test outputs are OFF

Cause: Applicator test outputs are off. This is terminated by the PLC.

Remedy: None.

PNT1-434 %sApplicator test outputs are ON

Cause: Applicator test outputs are on. This is initiated by the PLC.

Remedy: None.

PNT1-435 %sApplicator test outputs are OFF

Cause: Applicator test outputs are off. This is terminated by the PLC.

Remedy: None.

PNT1-440 %sWaiting for part in window

Cause: For continuous line systems only. This is a warning that the robot is waiting for a part to enter the tracking window. DO NOT ENTER THE ROBOT WORKSPACE; OTHERWISE YOU COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT.

Remedy: None.

PNT1-441 %sPart entered tracking window

Cause: For continuous line systems only. This is a warning that the part has entered the robot tracking window.

Remedy: None.

PNT1-446 %sWaiting for part in window

Cause: For continuous line systems only. This is a warning that the robot is waiting for a part to enter the tracking window.
DO NOT ENTER THE ROBOT WORKSPACE; OTHERWISE YOU COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT.

Remedy: None.

PNT1-447 %sPart entered tracking window

Cause: For continuous line systems only. This is a warning that the part has entered the robot tracking window.

Remedy: None.

PNT1-452 %sRobot not calibrated

Cause: The robot must be calibrated before proceeding. Only jogging in the joint coordinate system and the calibration motion itself can be executed before the robot is calibrated.

Remedy: Calibrate the robot.

PNT1-457 %sRobot not calibrated

Cause: The robot must be calibrated before proceeding. Only jogging in the joint coordinate system and the calibration motion itself can be executed before the robot is calibrated.

Remedy: Calibrate the robot.

PNT1-462 %sInvalid instruction argument

Cause: During program execution, a paint instruction was encountered with an out of range argument.

Remedy: Edit the current program and verify that all instruction arguments are valid.

PNT1-463 %sInvalid gun selection

Cause: The argument to the GUN SELECT instruction is outside of the range defined in the SETUP screen.

Remedy: Modify the offending GUN SELECT argument to be within the valid range.

PNT1-464 %sUnknown mnemonic instruction

Cause: An unknown instruction was encountered during program execution. This might happen if the program was copied from a different robot installation.

Remedy: Delete the offending instruction.

PNT1-465 %sCan't set output

Cause: A Function instruction was used but the Function Instruction Option is not loaded.

Remedy: Load the Function Instruction Option in order to run and set the output correctly.

PNT1-466 %sInvalid GunSelect position

Cause: A GunSelect instruction that would change the state of the gun(s) is not positioned as an option on a motion line. This instruction will not complete any operation. Such an instruction by itself on a line in a program can not properly control the timing of the changes in the gun outputs. Note that if the gun is not programmed to be ON then a Gunselect can be on a line by itself. Note also that this alarm might not occur in all cases.

Remedy: Move the Gunselect instruction onto a motion line, and delete the stand alone instruction line. If needed, add another motion line and record an appropriate position.

PNT1-471 %sInvalid instruction argument

Cause: During program execution, a paint instruction was encountered with an out of range argument.

Remedy: Edit the current program, and verify that all instruction arguments are valid.

PNT1-472 %sInvalid gun selection

Cause: The argument to the GUN SELECT instruction is outside of the range defined in the SETUP screen.

Remedy: Modify the offending GUN SELECT argument to be within the valid range.

PNT1-473 %sUnknown mnemonic instruction

Cause: An unknown instruction was encountered during program execution. This might happen if the program was copied from a different robot installation.

Remedy: Delete the offending instruction.

PNT1-474 %sCan't set output

Cause: A Function instruction is used while the Option is not loaded.

Remedy: Load the Function Instruction Option in order to run and set the output correctly.

PNT1-475 %sInvalid GunSelect position

Cause: A GunSelect instruction that would change the state of the gun(s) is not positioned as an option on a motion line. This instruction will not complete any operation. Such an instruction by itself on a line in a program can not properly control the timing of the changes in the gun outputs. Note that if the gun is not programmed to be ON then a Gunselect can be on a line by itself. Note that this alarm may not occur in all cases.

Remedy: Move the Gunselect instruction onto a motion line and delete the stand alone instruction line. If needed add another motion line and record an appropriate position.

PNT1-480 %s not defined

Cause: For integral color change systems only: A color change cycle cannot be executed. There are no steps defined for that color change cycle.

Remedy: Check the color change cycle for the current color and the next color. The cycle data must have at least one step defined.

PNT1-481 %sPushout cycle cancelled

Cause: For integral color change systems only: A color change pushout cycle was executing during production when it was aborted by an E-STOP. The paint line status is unknown.

Remedy: Reset the system and continue. The color change logic will automatically do a pushout cycle before the next color change.

PNT1-482 %sIllegal manual cycle received

Cause: For integral color change systems only: An illegal color change cycle number was sent by the PLC. Cycle numbers 1-8, and 21, 22, and 23 are legal cycle numbers for PaintTool version 1.30 and older.

Remedy: Make sure the PLC is sending a legal color change cycle number.

PNT1-483 %sColor cycle aborted

Cause: For integral color change systems only: A color change cycle was cancelled by an E-STOP.

Remedy: Reset the system. If in production mode, the color change cycle will be started over from the beginning.

PNT1-484 %sColor Valve + PrgSol both ON

Cause: For integral color change systems only: During the execution of a color change cycle, the color enable output and the Purge Solvent output are not allowed to be on at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Solvent outputs are never on at the same time.

PNT1-485 %sUsing default valve cycle data

Cause: For integral color change systems only: If there is no paint in the paint lines (current color = 0) and a color change cycle is executed, the color change cycle data for the first defined valve is used.

Remedy: None.

PNT1-486 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT1-487 %sApplication enable is OFF

Cause: This message is displayed when the application enable input turns off. When this input is off, the gun and color change outputs are blocked from turning on.

Remedy: None.

PNT1-488 %sAttempt to use illegal cycle number

Cause: This error should never occur during normal PaintTool operation.

Remedy: Contact your local FANUC representative service personnel.

PNT1-489 %sManual mode is locked at T.P.

Cause: The cell is attempting to perform manual operations while an operator is also performing manual operations at the teach pendant.

Remedy: Wait for the operator to finish with the teach pendant, then try again.

PNT1-490 %sManual mode is locked at CRT.

Cause: The cell is attempting to perform manual operations while an operator is also performing manual operations at the CRT.

Remedy: Wait for the operator to finish with the CRT, then try again.

PNT1-491 %sColor Valve + PrgAir both ON

Cause: For integral color change systems only: During the execution of a color change cycle, the color enable output and the Purge Air output are not allowed to be on at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Air outputs are never on at the same time.

PNT1-492 %sCC Waiting for arm to be home

Cause: For integral color change systems only: The color change task is waiting for the robot to be at the Home position before a color change cycle can be executed.

Remedy: Send the robot to the Home position.

PNT1-493 %sCC automatic cycles executing

Cause: For integral color change systems only: This indicates that a color change task is executing a color change cycle.

Remedy: None.

PNT1-494 %sColorEnb + PrgSol both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O, the color enable output and Purge Solvent output are not allowed to be on at the same time.

Remedy: Do not attempt to turn on the outputs at the same time.

PNT1-495 %sColorEnb + PrgAir both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O the color enable output and the Purge Air output are not allowed to be on at the same time.

Remedy: Do not attempt to turn on the outputs at the same time.

PNT1-496 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT1-497 %sNo system color for valve

Cause: Manual color change from teach pendant: Warning: the system changes the current system color to match the fill color valve. No system color uses the current valve. The wrong system color may be set - and the wrong preset data may be used in wet test cycle.

Remedy: Temporarily change the system color setup.

PNT1-498 %sApplication enable is ON

Cause: This message is displayed when the application enable input turns on. When this input is on, the GUN and color change outputs are allowed to turn on.

Remedy: None.

PNT1-499 %sInvalid Solv/Air State

Cause: An attempt to enable solvent valve was made without enabling a downstream valve.

Remedy: Verify that PD, Trigger, IWP or BWP enabled.

PNT1-500 %sPurge Solvent + Air Both ON

Cause: Purge Solvent and Purge Air Valves Both ON.

Remedy: Fix Color Change Cycle Data or Try Again.

PNT1-501 %sMore Than One Color Valve ON

Cause: Multiple Color Valves ON.

Remedy: Not Allowed.

PNT1-502 %sCC Event Timeout!

Cause: The Color Change Event programmed for the current color change step did not complete in the allocated time.

Remedy: Check the Color Change Event requests.

PNT1-503 %sCC Cycle does not end @ HOME!

Cause: The programmed Color Change Cycle does not send the robot to the HOME position at the completion of a cycle.

Remedy: The last Color Change Cycle must send the robot to the HOME position at completion.

PNT1-511 %s not defined

Cause: For integral color change systems, a color change cycle cannot be executed. There are no steps defined for that color change cycle.

Remedy: Check the color change cycle for the current color and the next color. The cycle data must have at least one step defined.

PNT1-512 %sPushout cycle cancelled

Cause: For integral color change systems only, a color change pushout cycle was executing during production when it was aborted by an E-STOP. The paint line status is unknown.

Remedy: Reset the system and continue. The color change logic will automatically do a pushout cycle before the next color change.

PNT1-513 %sIllegal manual cycle received

Cause: For integral color change systems only: An illegal color change cycle number was sent by the PLC. Cycle numbers 1-8, and 21, 22, and 23 are legal cycle numbers for PaintTool version 1.30 and older.

Remedy: Make sure the PLC is sending a legal color change cycle number.

PNT1-514 %sColor cycle aborted

Cause: For integral color change systems, a color change cycle was cancelled by an E-STOP.

Remedy: Reset the system. If in production mode, the color change cycle will be started over from the beginning.

PNT1-515 %sColor Valve + PrgSol both ON

Cause: For integral color change systems, during the execution of a color change cycle, the color enable output and the Purge Solvent output are not allowed to be on at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Solvent outputs are never on at the same time.

PNT1-516 %sUsing default valve cycle data

Cause: For integral color change systems, if there is no paint in the paint lines (current color = 0) and a color change cycle is executed, the color change cycle data for the first defined valve is used.

Remedy: None.

PNT1-517 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT1-518 %sApplication enable is OFF

Cause: This message is displayed when the application enable input turns off. When this input is off, the GUN and color change outputs are blocked from turning on.

Remedy: None.

PNT1-519 %sAttempt to use illegal cycle number

Cause: This error should never occur during normal PaintTool operation.

Remedy: Contact your local FANUC representative service personnel.

PNT1-520 %sManual mode is locked at T.P.

Cause: The cell is attempting to perform manual operations while an operator is also performing manual operations at the teach pendant.

Remedy: Wait for the operator to finish with the teach pendant. Then try again.

PNT1-521 %sManual mode is locked at CRT.

Cause: The cell is attempting to perform manual operations while an operator is also performing manual operations at the CRT.

Remedy: Wait for the operator to finish with the CRT. Then try again.

PNT1-522 %sColor Valve + PrgAir both ON

Cause: For integral color change systems, during the execution of a color change cycle, the color enable output and the purge air output are not allowed to be on at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and purge air outputs are never on at the same time.

PNT1-523 %sCC Waiting for arm to be home

Cause: For integral color change systems, the color change task is waiting for the robot to be at the Home position before a color change cycle can be executed.

Remedy: Send the robot to the Home position.

PNT1-524 %sCC automatic cycles executing

Cause: For integral color change systems, this is an indication of a color change task executing a color change cycle.

Remedy: None.

PNT1-525 %sColorEnb + PrgSol both ON

Cause: For integral color change systems, during the manual I/O testing of color change I/O, the color enable output and purge solvent output are not allowed to be on at the same time.

Remedy: Do not attempt to turn on the outputs at the same time.

PNT1-526 %sColorEnb + PrgAir both ON

Cause: For integral color change systems only, during the manual I/O testing of color change I/O, the color enable output and the purge air output are not allowed to be on at the same time.

Remedy: Do not attempt to turn on the outputs at the same time.

PNT1-527 %sSelected color valve not defined

Cause: For integral color change systems only, the color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menu under VALVES.

PNT1-528 %sNo system color for valve

Cause: WARNING: For manual color changes from teach pendant, the system changes the current system color to match the fill color valve. No system color uses the current valve. The wrong system color might be set - and the wrong preset data might be used in wet test cycle.

Remedy: Temporarily change the system color setup.

PNT1-529 %sApplication enable is ON

Cause: This message is displayed when the application enable input turns on. When this input is on, the GUN and color change outputs are allowed to turn on.

Remedy: None.

PNT1-530 %sInvalid Solv/Air State

Cause: An attempt to enable solvent valve was made without enabling a downstream valve.

Remedy: Verify that PD, Trigger, IWP or BWP enabled

PNT1-531 %sPurge Solvent + Air Both ON

Cause: Purge Solvent and Purge Air Valves Both ON.

Remedy: Fix Color Change Cycle Data or Try Again.

PNT1-532 %sMore Than One Color Valve ON

Cause: Multiple Color Valves ON.

Remedy: Not Allowed.

PNT1-533 %sCC Event Timeout!

Cause: The Color Change Event programmed for the current color change step did not complete in the allocated time.

Remedy: Check the Color Change Event requests.

PNT1-534 %sCC Cycle does not end @ HOME!

Cause: The programmed Color Change Cycle does not send the robot to the HOME position at the completion of the cycle.

Remedy: The last Color Change Cycle must send the robot to the HOME position at completion.

PNT1-542 %s abort, can fill timeout

Cause: The canister position counts did not reach the fill counts before the Color Change Timeout expired. If this occurs during a Scale Calibration, then the can was not filled before the Scale Cal Step Time expired. This condition can exist if no paint has entered the can, or a loss of canister position feedback from the linear potentiometer. The Color Change Timeout needs to be increased. The Full Can counts have not been properly calculated.

Remedy: Establish the cause of the timeout. Verify the canister position feedback is operating properly. Feedback can be verified by checking the analog input (AIN[1, DISP]). Check the paint supply system. Check the color change valve operation. Check the color valve, if it is a color change fault or the dock solvent if this occurs during a scale calibration. Increase the Color Change Timeout. If the gun has been changed then a scale calibration might be required. Reset, and attempt to continue if this occur during automatic mode. If the robot is stuck in the docking station then switch to manual mode and run a de-dock move to move the robot to Home. If this alarm occurs during a scale calibration then increase the Scale Cal Step Time (40 seconds by default). It could require more time depending on the material used to scale calibrate.

PNT1-543 %s abort, can empty timeout

Cause: The canister position counts did not reach the empty canister check counts before the Color Change Timeout expired. If this occurs during a Scale Calibration, then the can was not empty before the Scale Cal Step Time expired. This condition can exist when no paint has exited the can, or if a loss of canister position feedback from the linear potentiometer has occurred. The Color Change Timeout needs to be increased. The Empty Can counts have not been properly calculated.

Remedy: Establish the cause of the timeout. Verify that the canister position feedback is operating properly. Feedback can be verified by checking the analog input (AIN[1, DISP]). Check the color change valve operation. Check the dump valve if the paint has not exited the canister. Increase the Color Change Timeout. If the gun has been changed then a scale calibration might be required. Reset, and attempt to continue if this occurs during automatic mode. If the robot is stuck in the docking station then, switch to manual mode and run a de-dock move to move the robot to Home. If this alarm occurs during a scale calibration then increase the Scale Cal Step Time (40 seconds by default). It could require more time depending on the material used to scale calibrate.

PNT1-544 %s Canister Out Of Paint

Cause: The canister ran out of paint during the job.

Remedy: Check the following:

1. Verify that the TPR was calculated properly.
2. Verify the fill is completing successfully.
3. Check for other alarms that occurred during this job.
4. Make sure all equipment is operating properly, such as the trigger or regulator.
5. Check can empty timeout value (default = 1500 ms).
6. Perform Auto Calibration on that color if all parts are operating properly.
7. Increase the Flow Control Confidence parameter in the AccuStat SETUP screen to help prevent running out of paint.

PNT1-548 %s abort, can fill timeout

Cause: The canister position counts did not reach the fill counts before the Color Change Timeout expired. If this occurs during a Scale Calibration, then the can was not filled before the Scale Cal Step Time expired. This condition can exist if no paint has entered the can or a loss of canister position feedback from the linear potentiometer has occurred. The Color Change Timeout needs to be increased. The Full Can counts have not been properly calculated.

Remedy: Establish the cause of the timeout. Verify that the canister position feedback is operating properly. Feedback can be verified by checking the analog input (AIN[1, DISP]). Check the paint supply system. Check the color change valve operation. Check the color valve if it is a color change fault, or the dock solvent if this occurs during a scale calibration. Increase the Color Change Timeout. If the gun has been changed, then a scale calibration might be required. Reset, and attempt to continue if this occurs during automatic mode. If the robot is stuck in the docking station then switch to manual mode and run a de-dock move to move the robot to Home. If this alarm occurs during a scale calibration then increase the Scale Cal Step Time (40 seconds by default). It could require more time depending on the material used to scale calibrate.

PNT1-549 %s abort, can empty timeout

Cause: The canister position counts did not reach the empty canister check counts before the Color Change Timeout expired. If this occurs during a Scale Calibration, then the can was not empty before the Scale Cal Step Time expired. This condition can exist if no paint has exited the can, or a loss of canister position feedback from the linear potentiometer has occurred. The Color Change Timeout needs to be increased. The Empty Can counts have not been properly calculated.

Remedy: Establish the cause of the timeout. Verify that the canister position feedback is operating properly. Feedback can be verified by checking the analog input (AIN[1, DISP]). Check the color change valve operation. Check the dump valve if the paint has not exited the canister. Increase the Color Change Timeout. If the gun has been changed then a scale calibration might be required. Reset, and attempt to continue if this occurs during automatic mode. If the robot is stuck in the docking station then switch to manual mode and run a de-dock move to move the robot to Home. If this alarm occurs during a scale calibration then increase the Scale Cal Step Time (40 seconds by default). It could require more time depending on the material used to scale calibrate.

PNT1-550 %s Canister Out Of Paint

Cause: The canister ran out of paint during the job.

Remedy: Verify that the TPR was calculated properly. Verify the fill is completing successfully. Check for other alarms that occurred during this job. Make sure all equipment is operating properly, such as the trigger or regulator. Check the can empty timeout value (default = 1500 ms). Perform an Auto Calibration on that color if all parts are operating properly. Increase the Flow Control Confidence parameter in the AccuStat SETUP screen to help prevent running out of paint.

PNT1-554 %sCal. table adapted out tolerance

Cause: The fluid pressure or fluid viscosity for the current color has changed dramatically. This change has occurred since the last calibration of this color. The value exceeded the Adaptive tolerance parameter.

Remedy: Correct the fluid pressure or viscosity for the current color. If the pressure or viscosity was purposely changed, then the color can be calibrated to eliminate this alarm. The setting for the Adaptive tolerance can be increased if the variation shown by the calibration table for this color is acceptable.

PNT1-555 %sCal. table adapted in tolerance

Cause: This status warning indicates that the conditions which caused a table adapted out of tolerance alarm have been eliminated or disappeared.

Remedy: None.

PNT1-556 Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield (cc/min)/cnt for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: In some way, decrease the yield. Use smaller restricters in the gun if the high end flow rate can still be obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band, set the minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT1-557 %sFlow rate avg. error excessive

Cause: Checks for how far the flow rate is from the set point have been too high. Possible causes are:

- A sticking I/P transducer

- A bad fluid regulator
- Frequent fluid pressure changes
- A bad Accuflow Interface board

Remedy: Check and change the transducer, replace the fluid regulator, or service the surge suppression system on the fluid supply pump. If the alarm occurs on many or all colors, then increase the Max. error from setpoint parameter.

PNT1-558 %sCalibration successful

Cause: Used to notify the cell controller that a calibration has completed successfully.

Remedy: None.

PNT1-559 %sCalibration aborted

Cause: Accuflow calibration could not continue. This might be due to the fluid lines not being filled. Check for other alarms in the log.

Remedy: The best remedy might be found from the previous alarm in the log. This is usually the result of incorrect setup parameters, or incomplete hardware setup. If the flow hardware is operating correctly, set the color parameter for the pulsing pump supply to YES.

PNT1-560 %sCal. low flow rate reset

Cause: The low flow rate could not be reached during Accuflow calibration. A new low flow rate was established.

Remedy: Decrease the Gain modifier used for the color, if possible. The new low flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted.

PNT1-561 %sCal. max. flow rate reset

Cause: During Accuflow calibration, the expected maximum flow rate could not be reached at the maximum output. A new maximum flow was established.

Remedy: Try decreasing the Gain modifier used for the color. The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT1-562 %sCal. time out at max. flow

Cause: Accuflow timed out trying to reach the maximum flow rate. The possible causes are:

- A high gain
- A sticking I/P transducer
- A bad fluid regulator
- Frequent fluid pressure changes

Remedy: Try the following:

- Possibly decrease the Gain modifier used for the color.
- Retry the calibration.
- Check and change the transducer, if necessary.
- Replace the fluid regulator, or service the surge suppression system on the fluid supply pump.
- The calibration timeout parameter can be increased.

PNT1-563 %sCal. time out at low flow

Cause: Accuflow timed out trying to reach the lowest flow rate, typically 100 cc/min. Possible causes are:

- A high gain
- A sticking I/P transducer
- A bad fluid regulator
- Frequent fluid pressure changes

Remedy: Try the following:

- If possible, decrease the Gain modifier used for the color.
- Retry the calibration.
- Check and change the transducer, if necessary.
- Replace the fluid regulator, or service the surge suppression system on the fluid supply pump.
- The calibration timeout parameter can be increased.

PNT1-564 %sZero fluid flow rate detected

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured. This might be due to no fluid pressure or pilot air pressure. With a very low flow rate, the gain might be too high. One of the following items might be broken:

- Color Valve
- Color select board
- Gun trigger
- Flow meter
- Flow meter pickup
- Accuflow interface board
- The 32 point input module

Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: If fluid can be seen coming from the applicator, check the following:

- Flow meter
- Flow meter pickup
- Accuflow interface
- The 32 point input module

Otherwise check the other items listed as part of the cause. If it occurs with very low flow rates, decrease the Gain modifier.

PNT1-565 %sLower output did not lower flow

Cause: As Accuflow steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the commanded flow value. In this case, the flow did not decrease. This can be caused by low or pulsing fluid pressure, insufficient exhaust, or no quick exhaust on the fluid pilot air.

Remedy: Perform the following:

- Retry the calibration.
- Check that an adequate and stable flow rate is provided by the system for this color.
- Decreasing the leveling tries might help.
- Check that the fluid pilot regulator air line has adequate exhaust capability.
- Reevaluate the size of the restrictor in the gun.

PNT1-566 %sTime out during a cal. test

Cause: While measuring hysteresis, time up or time down, the Accuflow system timed out. This indicates the high or low flow rate could not be reached.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not, an increase in the Tolerance band might be required.

PNT1-567 %sMin. output has flow > setpoint

Cause: With a minimum control output the flow rate was measured to be higher than the setpoint (requested flow). The fluid pressure might have become too high. The I/P transducer or fluid regulator might be stuck open. There might be a fairly large fluid leak. Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Calibrating the color will establish a new cracking pressure (minimum control output) for a changed fluid pressure. Check and replace the fluid regulator and I/P transducer, if necessary. See the Fluid flow leak alarms for other options.

PNT1-568 %sMax. output has flow < setpoint

Cause: With a maximum control output, the flow rate was measured to be lower than the setpoint (requested flow). The gun might be clogging. A fluid or pilot air line might be pinched. The fluid pressure might have become too low. The I/P transducer might be broken. Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Check the following:

- Check the gun tip and the whole gun for clogging.
- Check the fluid lines for pinching, especially at places where they flex.
- Check the fluid supply pressure.
- Check and replace the I/P transducer, if necessary.

PNT1-569 %sFlow setpoint below globals

Cause: The requested fluid flow output command is below the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range.

PNT1-570 %sRequested flow above cal. table

Cause: The requested fluid flow output command is above the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range. Perform the necessary steps to increase the Max. Controllable Flow obtained during calibration. Recalibrate the color.

PNT1-571 %sSlow fluid flow leak detected

Cause: A small amount of fluid flow was detected when the gun was not turned on. This might be caused by a loose fitting, or a leaking dump valve.

Remedy: No immediate remedy is required. The paint system will continue to function properly. The various fluid lines and valves should be inspected and repaired.

PNT1-572 %sFast fluid flow leak detected

Cause: A large amount of fluid flow was detected when the gun was not turned on. This might be caused by the dump valve being stuck on or a broken fitting, or a broken paint line. Note that each time the fluid begins to leak fast, the color valve will be turned off. This will prevent the robot from spraying the part.

Remedy: The various fluid lines and valves should be inspected and repaired immediately. Check and repair the dump pilot valve and the dump valve, if necessary.

PNT1-573 %sFailed to reach setpoint

Cause: This might be caused by pulsing paint pressure or a broken I/P transducer. If it occurs on most colors then the Minimum set point (ms) might be too small for the specific installation setup, or one of the tolerance band settings might be too small for the yield of the system.

Remedy: Increase the Minimum set point (ms). If the FLUID transducer is noisy, change it. If this occurs on specific colors, check the surge suppression system's fluid supply system. If the calibration yield values are more than half of the minimum tolerance band, then increase the tolerance band.

PNT1-574 %sAccuflow softpart init failed

Cause: The Accuflow softpart is not running. The I/O assigned & used by the softpart is not available or the softpart did not load correctly. Additional info. is available during controller power up at the debug console (smon).

Remedy: Check and correct the assignments or hardware for the I/O used by Accuflow. Especially the I/O points: Set Point Reached, Flow Rate GIN, and flow diag. AOUT. Reload the Accuflow option, watch for alarms during the load. Document the events that led to the error, record the software version number and contact your local distributor or the Fanuc hotline.

PNT1-575 %s0 fluid flow rate timeout

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured for longer than the Zero flow timeout parameter. This might be caused by one of the following:

- A broken applicator trigger
- A loss of fluid supply pressure
- A broken fluid flow meter
- A broken cable (to the flow meter)
- A Zero flow timeout value that is too short.

Note: AccuFlow temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check that the gun is triggering properly. If you observe fluid to be flowing, check and possibly replace the fluid flow meter. Increase the Zero flow timeout parameter (by about 25%), if possible.

PNT1-576 %sMax. flow below mid point

Cause: This alarm occurs only during calibration. The flow rate measured at the maximum control, and one half of the maximum control output was nearly the same. Less than one half of the control output range is useable. The system might still function even though this alarm has occurred. This might be caused by low fluid pressure, a faulty transducer or regulator, or by having the wrong I/P transducer installed (100 psi range instead of 50 psi range).

Remedy: Increase the fluid pressure. Check that the transducer is functioning properly and that it has the correct pressure range. Change the range if appropriate. The system might operate, but performance can be improved with one of the above remedies.

PNT1-577 CH1:Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: Decrease the yield. Use smaller restricters in the gun if the high end flow rate can still be obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band, set the minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT1-583 %sCal. table adapted out tolerance

Cause: The fluid pressure or fluid viscosity for the current color has changed dramatically. This change has occurred since the last calibration of this color. The change was beyond the percentage value setting of the Adaptive tolerance parameter.

Remedy: Correct the fluid pressure or viscosity for the current color. If the pressure or viscosity was purposely changed, then the color can be calibrated to eliminate this alarm. The setting for the Adaptive tolerance can be increased if the variation shown by the calibration table for this color is acceptable.

PNT1-584 %sCal. table adapted in tolerance

Cause: This status warning indicates that the conditions which caused a table adapted out of tolerance alarm have been eliminated or disappeared.

Remedy: None.

PNT1-585 CH2: Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might occur if the restrictors in the gun are too large.

Remedy: Decrease the yield. Use smaller restrictors in the gun if the high end flow rate can still be obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band, set the minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT1-586 %sFlow rate average error high

Cause: Checks for how far the flow rate is from the set point have been too high. Possible causes are one of the following:

- A sticking I/P transducer
- A bad fluid regulator
- Frequent fluid pressure changes
- A bad Accuflow Interface board

Remedy: Check and change the transducer, replace the fluid regulator, or service the surge suppression system on the fluid supply pump. If the alarm occurs on many or all colors, then increase the Max. error from setpoint parameter.

PNT1-587 %sCalibration successful

Cause: Used to notify the cell controller that a calibration has completed successfully.

Remedy: None.

PNT1-588 %sCalibration aborted

Cause: Accuflow calibration could not continue. This might occur if the fluid lines have not been filled. Check for other alarms in the log.

Remedy: The best remedy might be found from the previous alarm in the log. This is usually the result of incorrect setup parameters, or incomplete hardware setup. If the flow hardware is operating correctly, set the color parameter for pulsing pump supply to YES.

PNT1-589 %sCal. low flow rate reset

Cause: During Accuflow calibration, the low flow rate could not be reached. A new low flow rate was established.

Remedy: Possibly decrease the Gain modifier used for the color. The new low flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted.

PNT1-590 %sCal. max. flow rate reset

Cause: During Accuflow calibration, the expected maximum flow rate could not be reached at the maximum output. A new maximum flow was established.

Remedy: Decrease the Gain modifier used for the color, if possible. The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT1-591 %sCal. time out at max. flow

Cause: Accuflow timed out trying to reach the maximum flow rate. Possible causes are:

- A high gain
- A sticking I/P transducer
- A bad fluid regulator
- Frequent fluid pressure changes

Remedy: Decrease the gain modifier used for the color, if possible. Then, retry the calibration. Check and change the transducer if necessary, replace the fluid regulator, or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can also be increased.

PNT1-592 %sCal. time out at low flow

Cause: Accuflow timed out trying to reach the lowset flow rate, typically 100 cc/min. Possible causes are one of the following:

- A high gain
- A sticking I/P transducer
- A bad fluid regulator
- Frequent fluid pressure changes

Remedy: Decrease the gain modifier used for the color, if possible. Then, retry the calibration. Check and change the transducer if necessary, replace the fluid regulator, or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can also be increased.

PNT1-593 %sZero fluid flow rate detected

Cause: All of the conditions were set for fluid to be flowing however, a zero flow rate was measured. This might be due to no fluid pressure or pilot air pressure. With a very low flow rate, the gain might be too high. One of the following items might be broken:

- Color Valve
- Color select board
- Gun trigger
- Flow meter
- Flow meter pickup
- Accuflow interface board
- The 32 point input module

Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: If fluid can be seen coming from the applicator, check the following:

- Flow meter
- Flow meter pickup
- Accuflow interface
- The 32 point input module

Otherwise check the other items listed above. If it occurs with very low flow rates, decrease the Gain modifier.

PNT1-594 %sLower output did not lower flow

Cause: As Accuflow steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the commanded flow value. In this case, the flow did not decrease. This can be caused by low or pulsing fluid pressure, insufficient exhaust, or no quick exhaust on the fluid pilot air.

Remedy: Retry the calibration. Check that an adequate and stable flow rate is provided by the system for this color. Decreasing the leveling tries might help. Check that the fluid pilot regulator air line has adequate exhaust capability. Reevaluate the size of the restrictor in the gun.

PNT1-595 %sTime out during a cal. test

Cause: While measuring hysteresis time up or time down, the Accuflow system timed out. This indicates that the high or low flow rate could not be reached.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not, an increase in the Tolerance band might be required.

PNT1-596 %sMin. output has flow > setpoint

Cause: With a minimum control output, the flow rate was measured to be higher than the setpoint (requested flow). The fluid pressure might have become too high. The I/P transducer or fluid regulator might be stuck open. There might be a fairly large fluid leak. Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Calibrating the color will establish a new cracking pressure (minimum control output) for a changed fluid pressure. Check and replace if necessary the fluid regulator and I/P transducer. See the Fluid flow leak alarms for other options.

PNT1-597 %sMax. output has flow < setpoint

Cause: With a maximum control output the flow rate was measured to be lower than the setpoint (requested flow). This can be caused by:

- A clogged gun
- A pinched fluid or pilot air line
- The fluid pressure becoming too low
- A broken I/P transducer

Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Check the following:

- Check the gun tip and the whole gun for clogging.
- Check the fluid lines for pinching, especially at places where they flex.
- Check the fluid supply pressure.
- Check and replace the I/P transducer if necessary.

PNT1-598 %sFlow setpoint below globals

Cause: The requested fluid flow output command is below the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range.

PNT1-599 %sRequested flow above cal. table

Cause: The requested fluid flow output command is above the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range. Perform the necessary steps to increase the Max. Controllable Flow obtained during calibration. Then, recalibrate the color.

PNT1-600 %sSlow fluid flow leak detected

Cause: A small amount of fluid flow was detected when the gun was not turned on. This might be caused by a loose fitting, or a leaking dump valve.

Remedy: No immediate remedy is required. The paint system will continue to function properly. The various fluid lines and valves should be inspected, and repaired if necessary.

PNT1-601 %sFast fluid flow leak detected

Cause: A large amount of fluid flow was detected when the gun was not turned on. This might be caused by the dump valve being stuck on, or a broken fitting, or a broken paint line. Note that each time the fluid begins to leak fast, the color valve will be turned off. This will prevent the robot from spraying the part.

Remedy: The various fluid lines and valves should be inspected and repaired immediately. Check and repair the dump pilot valve and the dump valve, if necessary.

PNT1-602 %sFailed to reach setpoint

Cause: This might be caused by pulsing paint pressure or a broken I/P transducer. If it occurs on most colors then there might be a small setting of the Minimum set point (ms) for the specific installation setup or one of the tolerance band settings might be too small for the yield of the system.

Remedy: Increase the Minimum set point (ms). If the FLUID transducer is noisy, change it. If this occurs on specific colors, check the surge suppression system's fluid supply system. If the calibration yield values are more than half of the minimum tolerance band, then increase the tolerance band.

PNT1-603 %sAccuflow softpart init Failed

Cause: The Accuflow softpart is not running. The I/O assigned and used by the softpart is not available, or the softpart did not load correctly. Additional information is available during controller power up at the debug console (smon).

Remedy: Check and correct the assignments or hardware for the I/O used by Accuflow, especially the I/O points: Set Point Reached, Flow Rate GIN, and flow diag. AOUT. Reload the Accuflow option. Watch for alarms during the load. Document the events that led to the error, record the software version number, and contact your local distributor, or the FANUC hotline.

PNT1-604 %s0 fluid flow rate timeout

Cause: All of the conditions were set for fluid to be flowing but a zero flow rate was measured for longer than the Zero flow timeout parameter. This might be caused by:

- A broken applicator trigger
- A loss of fluid supply pressure
- A broken fluid flow meter
- A broken cable (to the flow meter)
- A Zero flow timeout value that is too short

Note: AccuFlow temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check that the gun is properly triggering. If fluid was observed to be flowing, check and possibly replace the fluid flow meter. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT1-605 %sMax. flow below mid point

Cause: This alarm occurs only during calibration. The flow rate measured at the maximum control, and one half of the maximum control output, was nearly the same. Less than one half of the control output range is useable. The system might still function even though this alarm has occurred. This might be caused by low fluid pressure, a faulty transducer or regulator, or the wrong I/P transducer being installed (100 psi range instead of 50 psi range).

Remedy: Increase the fluid pressure. Check that the transducer is functioning properly and that it has the correct pressure range. Change it if appropriate. The system might operate, but performance can be improved with one of the above remedies.

PNT1-606 CH2:Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restrictors in the gun being too large.

Remedy: Decrease the yield. Use smaller restrictors in the gun if the high end flow rate can still be obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band, set the minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT1-612 %sCal. table adapted out,output up

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a larger output required to get the same flow rate. This can be caused by:

- A clogged air cap
- A clogged gun
- Pinched air lines
- Large losses of air supply pressure

Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warnings of possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check and perform the following:

- Check, clean, and possibly replace the air cap.
- Check for a large loss of air supply pressure.
- Check for pinched air lines or clogged air passages in the gun.
- Recalibrate to clear the alarm immediately.
- Increase the Adaptive tolerance parameter to allow larger changes without alarming.

PNT1-613 %sCal. table adapted in tolerance

Cause: Just a notification that the calibration table has returned to the normal operating range (as defined by the Adaptive tolerance).

Remedy: None.

PNT1-614 %sDyn. yield > %% tolerance band

Cause: As a particular flow rate set point is being output the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is above the value that the air system can provide.

Remedy: Decrease the yield. Use larger diameter air lines to supply air to the cap. Use a larger ratio booster (2:1 instead of 1:1) if the system can not supply the high flow rates provided. Use a smaller ratio booster. Otherwise, accept a larger tolerance band. Increase the Percent tolerance band (by about 50%).

PNT1-615 %sFlow rate avg. error excessive

Cause: Comparisons of how far the measured flow rate is from the setpoint had too large of a result. The size of the error between measured flow and the setpoint that will cause this alarm, and is controlled by the Max. error from setpoint parameter. Possible causes are:

- A clogged air cap
- A sticking I/P transducer
- A bad air booster
- Pinching air lines

Remedy: Check and perform the following:

- Check, clean, and possibly replace the air cap.
- Check for oscillating air pressure on the output of the I/P transducer.
- If found, replace the transducer.
- Check for a large loss of air supply pressure or pinched air lines.
- If the alarm occurs on both Fan Air and Atomizing Air or on many robots then possibly increase the Max. error from setpoint parameter.

PNT1-616 %sCalibration successful

Cause: Used to notify the cell controller that a calibration has been completed successfully.

Remedy: None.

PNT1-617 %sCalibration aborted

Cause: AccuAir calibration could not complete. This might be due to the air supply being off. Check for other alarms in the log. This might be due to incorrect setup parameters, or incomplete hardware setup.

Remedy: The best remedy might be found from the previous alarm in the log. Request proper air flow at the cap, and check that it occurs. Check that the Sensor scale and various other parameters are set properly. Increase the Calibration time out parameter.

PNT1-618 %sCal. low flow rate reset

Cause: This is a warning not a failure. During AccuAir calibration the low flow rate could not be properly reached. A new flow rate was established. The target flow rate is determined by the Table point no. 2 parameter.

Remedy: The new flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted. Increase the yield of the system by increasing air line diameters to the applicator. The Table point no. 2 parameter can be increased (by about 100%).

PNT1-619 %sCal. max. flow rate reset

Cause: This is a warning, not a failure. During AccuAir calibration, the expected maximum flow rate could not be reached at the maximum output. A new maximum flow rate was established.

Remedy: The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked, and accepted.

PNT1-620 %sCal. time out at max. flow

Cause: The AccuAir controls timed out trying to reach the maximum flow rate. Possible causes are:

- A high gain
- A sticking I/P transducer
- Too large of a yield for the current tolerance band, or the system response is too slow for the current setting of the Calibration time-out parameter.

Remedy: Perform the following:

- Retry the calibration.
- Try decreasing the Gain modifier parameter.
- Try increasing the Percent tolerance band parameter.
- Check and change the transducer if necessary.
- Try increasing the Calibration time-out parameter (by about 10 seconds).

PNT1-621 %sCal. time out at low flow

Cause: The AccuAir controls timed out trying to reach the minimum flow rate. This flow rate is the Table point no. 2 parameter. Possible causes are:

- A high gain
- A sticking I/P transducer
- Too large of a yield for the current tolerance band
- Or, the system response is too slow for the current setting of the Calibration time-out parameter.

Remedy: Perform the following:

- Retry the calibration.
- Try decreasing the Gain modifier parameter.
- Try increasing the Percent tolerance band parameter.
- Check and change the transducer if necessary.
- Try increasing the Calibration time-out parameter (by about 10 seconds).
- Try increasing the Table point no. 2 parameter (by about 100%).

PNT1-622 %s0 air flow rate detected

Cause: All of the conditions were set for air to be flowing, but a zero flow rate was measured. This might be caused by:

- A broken applicator trigger
- Pinched air lines
- A loss (or near loss) of air supply pressure
- A broken air flow sensor
- A broken cable (to the flow sensor)
- A Trigger delay that is too short

Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check and perform the following:

- Check, clean, and possibly replace the air cap.
- Check that the gun is properly triggering.
- If air was observed to be flowing, check and possibly replace the air flow sensor.
- Check for a pinched air line.
- Increase the Trigger delay parameter (by about 50%).

PNT1-623 %sLower output did not lower flow

Cause: As the AccuAir calibration steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the command flow value. In this case the flow did not decrease. This can be caused by:

- Insufficient exhaust
- No quick exhaust on the pilot air line
- Too large of a hysteresis in control equipment
- A system response that is too slow for the current setting of the Calibration step delay parameter.

Remedy: Check and perform the following:

- Retry the calibration.
- Check that the pilot air line to the booster has sufficient exhaust capability.
- Increase the Calibration step delay parameter (by about 100%).
- Try reducing the Leveling tries parameter.

PNT1-624 %sTime out during a cal. test

Cause: While measuring hysteresis time up or time down, the Closed loop system timed out. This indicates that the high or low flow rate can not be reached consistently.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not, an increase in the tolerance band might be required.

PNT1-625 %sMin. output has flow > setpoint

Cause: With a minimum control output, the flow rate was measured to be higher than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This might be caused by a leaking or broken air line between the flow sensor and the applicator. The I/P transducer might be stuck open. The air booster might be stuck open or leaking. This might be caused by a faulty air flow sensor (reading more flow than there really is). Note: AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check and perform the following:

- Check and repair the various air lines.
- Check and repair the air booster.
- Check and repair the I/P transducer.
- Increase the Max. control out (ms) parameter, if possible.

PNT1-626 %sMax. output has flow < setpoint

Cause: With a maximum control output, the flow rate was measured to be lower than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This is likely caused by a clogged air cap. This might also be caused by:

- Pinched air lines
- A broken I/P transducer
- A broken air flow sensor

Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean, and possibly replace the air cap. If air is observed to be flowing (when commanded), possibly replace the air flow sensor. Also check the following:

- Check for a pinched air line.

- Check and repair the I/P transducer.
- Increase the Max. control out (ms) parameter (by about 50%), if possible.

PNT1-627 %sFlow setpoint below globals

Cause: The requested air flow setpoint is below the range of the current parameter settings.

Remedy: Adjust the air flow setpoint to be within the range of controllable flows.

PNT1-628 %sRequested flow above cal. table

Cause: The requested air flow setpoint is above the calibrated range for Fan Air. The maximum value is shown as point number 10 in the calibration table.

Remedy: Adjust the air flow setpoint to be within the calibrated range of this parameter. Perform the necessary steps to increase the maximum flow obtained during calibration. This might involve increasing the diameter of the air lines supplying Fan air to the applicator, or changing the type of air booster being used.

PNT1-629 %sSlow air flow leak detected

Cause: A small amount of air flow was detected when the gun was not turned on. This might be caused by a leaking trigger valve, leaking air line, or any other air leak between the air flow sensor and the gun.

Remedy: No immediate remedy is required. The paint system will continue to function properly. The applicator and various air lines should be inspected, and repaired if necessary.

PNT1-630 %sFast air flow leak detected

Cause: A large amount of air flow was detected when the gun was not turned on. This might be caused by a leaking trigger valve, leaking air line, broken air line, broken applicator, or any other air leak between the air flow sensor and the gun.

Remedy: The applicator and the various air lines should be inspected and repaired immediately.

PNT1-631 %sFailed to reach setpoint

Cause: This is caused by a failure of the AccuAir system to reach the setpoint (within the tolerance band) within the time allowed. The time that the system is allowed to take to reach the setpoint is controlled by the Min. Setpoint reached (ms) parameter. This might be caused by a sticking transducer, a system that is too slow for the current setting of Min. Setpoint reached, or a system yield that is too large for the tolerance band setting.

Remedy: If the Fan Air control I/P transducer is noisy or broken, change it. If the calibration yield values are more than half of the Minimum Tolerance band, then increase this tolerance value. If the Flow delay parameter is large or this alarm is occurring on many robots, then increase the Minimum setpoint reached parameter.

PNT1-632 %s0 air flow rate timeout

Cause: All of the conditions were set for air to be flowing but a zero flow rate was measured for longer than the Zero flow timeout parameter. This might be caused by:

- A clogged air cap
- A broken applicator trigger
- Broken air lines
- A loss of air supply pressure
- A broken air flow sensor
- A broken cable (to the flow sensor)
- A Zero flow time-out value that is too short.

Note: AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check and perform the following:

- Check, clean, and possibly replace the air cap.
- Check that the gun is properly triggering.
- If air was observed to be flowing, check and possibly replace the air flow sensor.
- Check for a broken air line.
- Increase the Zero flow time-out parameter (by about 25%), if possible.

PNT1-633 %sWarning, learn item failed

Cause: While completing operations to measure the equipment delays, the equipment did not respond within the expected timeout.

Remedy: Retry the operation by setting the Equipment learn to Redo, and calibrate again. Check for other AccuAir alarms in the alarm log, then follow the remedies for those alarms. If there are no other alarms, follow the remedies for the Failed to reach setpoint alarm.

PNT1-634 %sDyn. yield > min tolerance band

Cause: As a particular flow rate set point is being output, the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is below the value that the air system can accurately provide.

Remedy: Decrease the yield. Use larger diameter air lines to supply air to the cap. Use a smaller ratio booster. Otherwise, accept a larger tolerance band. Increase the minimum tolerance (by about 50%).

PNT1-635 %sCal. table adapted out, down

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a smaller output required to get the same flow rate. This can be caused by: air leaks, a loose air cap, or a significant increase of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide an early warning of the possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check and perform the following:

- Check that the air cap is tight on the gun.
- Check, clean, and possibly replace the air cap.
- Check for leaks in air lines or at fittings.
- Check for cracks or breaks in the gun.
- Check for a large increase of air supply pressure.
- Recalibrate to clear the alarm immediately. Increase the Adaptive tolerance parameter to allow larger changes without causing another alarm.

PNT1-636 %sMax. flow is below midpt. output

Cause: During calibration, it was found that the maximum amount of flow occurred with the command output at only the middle (midpoint) of the range. This indicates that there is the incorrect equipment is installed or the equipment is faulty. This might also indicate a large air leak.

Remedy: Check that the I/P transducer is the right range. If not, replace it. Check that the booster has the correct ratio, typically 1 to 1. If the alarm log also has a leak alarm follow the remedies for that alarm. If this equipment must be used, reduce the Max. control value for this parameter by about 20%.

PNT1-637 %sLeak detect when zeroing meter

Cause: When attempting to zero (tare) the air flow meter automatically, the flow reading from it was large enough to indicate a possible leak.

Remedy: Complete the procedure to zero (tare) the air flow meter manually for this channel. With the air lines all reconnected and the air pressure on, if the display on the air flow meter reads more flow than the Fast leak flow parameter, then follow the cause and remedy for the Fast air flow leak detected alarm.

PNT1-638 Tare timeout

Cause: The automatic zero tare routine took too long to complete.

Remedy: None.

PNT1-643 %sCal. table adapted out,output up

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a larger output required to get the same flow rate. This can be caused by: a clogged air cap, clogged gun, pinched air lines or large losses of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warning of the possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check, clean, and possibly replace the air cap. Check for a large loss of air supply pressure. Check for pinched air lines or clogged air passages in the gun. Recalibrate to clear the alarm immediately. Increase the Adaptive tolerance parameter to allow larger changes without causing an alarm.

PNT1-644 %sCal. table adapted in tolerance

Cause: The calibration table has returned to the normal operating range as defined by the Adaptive tolerance.

Remedy: None.

PNT1-645 %sDyn. yield > %% tolerance band

Cause: As a particular flow rate set point is being output, the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is above the value that the air system can provide.

Remedy: Perform the following:

- Decrease the yield.
- Use larger diameter air lines to supply air to the cap.
- Use a larger ratio booster (2:1 instead of 1:1) if the system can not supply the high flow rates provided.
- Use a smaller ratio booster.
- Otherwise, accept a larger tolerance band. Increase the Percent tolerance band by about 50%.

PNT1-646 %sFlow rate avg. error excessive

Cause: Comparisons of how far the measured flow rate is from the setpoint had too large of a result. The size of the error between measured flow and setpoint that will cause this alarm is controlled by the Max. error from setpoint parameter. Possible causes are:

- A clogged air cap
- A sticking I/P transducer
- A bad air booster
- Pinched air lines

Remedy: Check, clean, and possibly replace the air cap. Check for oscillating air pressure on the output of the I/P transducer. If found, replace the transducer. Check for a large loss of air supply pressure or pinched air lines. If the alarm occurs on both Fan Air and Atomizing Air or many robots, then possibly increase the Max. error from setpoint parameter.

PNT1-647 %sCalibration successful

Cause: Used to notify the cell controller that a calibration has been completed successfully.

Remedy: None.

PNT1-648 %sCalibration aborted

Cause: AccuAir calibration could not complete. This might be due to the air supply being off. Check for other alarms in the log. This might be due to incorrect setup parameters, or incomplete hardware setup.

Remedy: The best remedy might be found from the previous alarm in the log. Request a proper air flow at the cap. Check that it occurs. Check that the Sensor scale and various other parameters are set properly. Increase the Calibration time-out parameter.

PNT1-649 %sCal. low flow rate reset

Cause: This is a warning not a failure. During AccuAir calibration the low flow rate could not be properly reached. A new flow was established. The target flow rate is determined by the Table point no. 2 parameter.

Remedy: The new flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted. Increase the yield of the system by increasing air line diameters to the applicator. The Table point no. 2 parameter can be increased (by about 100%).

PNT1-650 %sCal. max. flow rate reset

Cause: This is a warning, not a failure. During AccuAir calibration the expected maximum flow rate could not be reached at the maximum output. A new maximum flow rate was established.

Remedy: The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT1-651 %sCal. time out at max. flow

Cause: The AccuAir controls timed out trying to reach the maximum flow rate. Possible causes are:

- A high gain
- A sticking I/P transducer
- Too large of a yield for the current tolerance band
- The system response is too slow for the current setting of the Calibration time out parameter.

Remedy: Perform the following:

- Retry the calibration.
- Possibly decrease the Gain modifier parameter.
- Increase the Percent tolerance band parameter.
- Check and change the transducer, if necessary.

- Increase the Calibration time out parameter by about 10 seconds, if possible.

PNT1-652 %sCal. time out at low flow

Cause: The AccuAir controls timed out trying to reach the minimum flow rate. This flow rate is the Table point no. 2 parameter. Possible causes are:

- A high gain
- A sticking I/P transducer
- Too large of a yield for the current tolerance band
- Or, the system response is too slow for the current setting of the Calibration time-out parameter.

Remedy: Perform the following:

- Retry the calibration.
- Decrease the Gain modifier parameter, if possible.
- Increase the Percent tolerance band parameter.
- Check and change the transducer, if necessary.
- Increase the Calibration time out parameter by about 10 seconds, if possible.
- Possibly increase the Table point no. 2 parameter by about 100%.

PNT1-653 %s0 air flow rate detected

Cause: All of the conditions were set for air to be flowing, but a zero flow rate was measured. This might be caused by:

- A broken applicator trigger
- Pinched air lines
- A loss (or near loss) of air supply pressure
- A broken air flow sensor
- A broken cable (to the flow sensor)
- A Trigger delay that is too short

Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check the following:

- Check, clean, and possibly replace the air cap.
- Check that the gun is properly triggering.
- If air was observed to be flowing, check and possibly replace the air flow sensor.
- Check for a pinched air line.
- Increase the Trigger delay parameter by about 50%.

PNT1-654 %sLower output did not lower flow

Cause: As the AccuAir calibration steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the command flow value. In this case, the flow did not decrease. This can be caused by insufficient exhaust, no quick exhaust on the pilot air line, too large of a hysteresis in control equipment, or the system response is too slow for the current setting of the Calibration step delay parameter.

Remedy: Perform the following:

- Retry the calibration.
- Check that the pilot air line to the booster has sufficient exhaust capability.
- Increase the Calibration step delay parameter by about 100%.
- Try reducing the Leveling trys parameter.

PNT1-655 %sTime out during a cal. test

Cause: While measuring hysteresis time up or time down, the Closed loop system timed out. This indicates that the high or low flow rate can not be reached consistently.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently, if not an increase in the tolerance band might be required.

PNT1-656 %sMin. output has flow > setpoint

Cause: With a minimum control output, the flow rate was measured to be higher than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This might be caused by a leaking or broken air line between the flow sensor and the applicator. The I/P transducer might be stuck open. The air booster might be stuck open or might be leaking. This might be caused by a faulty air flow sensor (reading more flow than there really is).

Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check and perform the following:

- Check and repair the various air lines.

- Check and repair the air booster.
- Check and repair the I/P transducer.
- Possibly increase the Max. control out (ms) parameter.

PNT1-657 %sMax. output has flow < setpoint

Cause: With a maximum control output, the flow rate was measured to be lower than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This is likely caused by a clogged air cap. This might also be caused by: pinched air lines, a broken I/P transducer, or a broken air flow sensor. Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check and perform the following:

- Check, clean, and possibly replace the air cap.
- If air is observed to be flowing (when commanded), possibly replace the air flow sensor.
- Check for a pinched air line.
- Check and repair the I/P transducer.
- Possibly increase the Max. control out (ms) parameter by about 50%.

PNT1-658 %sFlow setpoint below globals

Cause: The requested air flow setpoint is below the range of the current parameter settings.

Remedy: Adjust the air flow setpoint to be within the range of controllable flows.

PNT1-659 %sRequested flow above cal. table

Cause: The requested air flow setpoint is above the calibrated range for Fan Air. The maximum value is shown as point number 10 in the calibration table.

Remedy: Adjust the air flow setpoint to be within the calibrated range of this parameter. Perform the necessary steps to increase the maximum flow obtained during calibration. This might involve increasing the diameter of the air lines, supplying Fan air to the applicator, or changing the type of air booster used.

PNT1-660 %sSlow air flow leak detected

Cause: A small amount of air flow was detected when the gun was not turned on. This might be caused by a leaking trigger valve, leaking air line, or any other air leak between the air flow sensor, and the gun.

Remedy: No immediate remedy is required. The paint system will continue to function properly. The applicator and various air lines should be inspected, and repaired if necessary.

PNT1-661 %sFast air flow leak detected

Cause: A large amount of air flow was detected when the gun was not turned on. This might be caused by a leaking trigger valve, leaking air line, broken air line, broken applicator, or any other air leak between the air flow sensor, and the gun.

Remedy: The applicator and the various air lines should be inspected and repaired immediately.

PNT1-662 %sFailed to reach setpoint

Cause: This is caused by a failure of the AccuAir system to reach the setpoint within the tolerance band during the allotted time. The time that the system is allowed to take to reach setpoint is controlled by the Min. Setpoint reached (ms) parameter. This failure might be caused by a sticking transducer, a system that is too slow for the current setting of Min. Setpoint reached, or a system yield that is too large for the tolerance band setting.

Remedy: If the Fan Air control I/P transducer is noisy or broken, change it. If the calibration yield values are more than half of the min. Tolerance band, then increase this tolerance value. If the Flow delay parameter is large, or this alarm is occurring on many robots, then increase the Minimum setpoint reached parameter.

PNT1-663 %s0 air flow rate timeout

Cause: All of the conditions were set for air to be flowing but a zero flow rate was measured for longer than the Zero flow timeout parameter. This might be caused by:

- A clogged air cap
- A broken applicator trigger
- Broken air lines
- A loss of air supply pressure
- A broken air flow sensor
- A broken cable to the flow sensor
- Or, a Zero flow time-out value that is too short.

Note: AccuAir temporarily and automatically changes to Open Loop when this alarm occurs.

Remedy: Check the following:

- Check, clean, and possibly replace the air cap.
- Check that the gun is properly triggering.
- If air was observed to be flowing, check and possibly replace the air flow sensor.
- Check for a broken air line.
- Increase the Zero flow timeout parameter by about 25%, if possible.

PNT1-664 %sWarning, learn item failed

Cause: While completing operations to measure the equipment delays, the equipment did not respond within the expected timeout.

Remedy: Retry the operation by setting the Equipment learn to Redo and calibrate again. Check for other AccuAir alarms in the alarm log, then follow the remedies for those alarms. If there are no other alarms, follow the remedies for the Failed to reach setpoint alarm.

PNT1-665 %sDyn. yield > min tolerance band

Cause: As a particular flow rate set point is being output, the yield (slpm/cnt) for that flow rate was larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is below the value that the air system can accurately provide.

Remedy: Perform the following:

- Decrease the yield.
- Use larger diameter air lines to supply air to the cap.
- Use a smaller ratio booster.
- Otherwise, accept a larger tolerance band.
- Increase the minimum tolerance by about 50%.

PNT1-666 %sCal. table adapted out, down

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a smaller output required to get the same flow rate. This can be caused by: air leaks, a loose air cap, or a significant increase of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warning of possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check that the air cap is tight on the gun. Check, clean, and possibly replace the air cap. Check for leaks in air lines or at fittings. Check for cracks or breaks in the gun. Check for a large increase of air supply pressure. Recalibrate to clear the alarm immediately. Increase the Adaptive tolerance parameter to allow larger changes without causing another alarm.

PNT1-667 %sMax. flow is below midpt. output

Cause: During calibration it was found that the maximum amount of flow occurred with the command output at only the middle (midpoint) of the range. This indicates that there is incorrect equipment installed, or the equipment is faulty. This might also indicate a large air leak.

Remedy: Check that the I/P transducer is within the correct right range. If not, replace it. Check that the booster has the correct ratio, typically 1 to 1. If the alarm log also has a leak alarm, follow the remedies for that alarm. If this equipment must be used, reduce the Max. control value for this parameter by about 20%.

PNT1-668 %sLeak detect when zeroing meter

Cause: When attempting to zero (tare) the air flow meter automatically, the flow reading from it was large enough to indicate a possible leak.

Remedy: Complete the procedure to zero (tare) the air flow meter manually for this channel. With the air lines all reconnected and air pressure on, if the display on the air flow meter reads more flow than the Fast leak flow parameter, follow the cause and remedy for the Fast air flow leak detected alarm.

PNT1-673 %sEstat controller warning

Cause: The external E-stat controller detected a warning.

Remedy: Check the status of the external E-stat controller.

PNT1-674 %sEstat controller fault

Cause: The external E-stat controller detected a fault.

Remedy: Check the status of the external E-stat controller.

PNT1-675 %sEstats disabled

Cause: The E-stat disconnect or enable switch is off.

Remedy: Turn on the E-stat disconnect or enable switch.

PNT1-676 %sEstat controller not in remote

Cause: The E-stat local/remote switch is set to local mode.

Remedy: Set the local/remote switch on the E-stat controller to remote mode.

PNT1-677 %sEstat HVON Failed

Cause: The robot sent the HVON signal to the E-stat controller, but did not get a HVON signal back from the E-stat unit.

Remedy: Check the status of the external E-stat controller.

PNT1-678 %sEstat setpoint not reached

Cause: The E-stat controller did not set the set point reached output in time.

Remedy: Check the voltage and set point reached light on the E-stat controller. It might be having trouble reaching the requested voltage. If not, adjust the set point reached timeout setting.

PNT1-679 %sEstat T.P. enable Timeout

Cause: The ESTAT enable for the teach pendant screen timed out.

Remedy: Request the ESTAT voltage again.

PNT1-686 %sEstat controller warning

Cause: The external E-stat controller detected a warning.

Remedy: Check the status of the external E-stat controller.

PNT1-687 %sEstat controller fault

Cause: The external E-stat controller detected a fault.

Remedy: Check the status of the external E-stat controller.

PNT1-688 %sEstats disabled

Cause: The E-stat disconnect or enable switch is off.

Remedy: Turn on the E-stat disconnect or enable switch.

PNT1-689 %sEstat controller not in remote

Cause: The E-stat local/remote switch is set to local mode.

Remedy: Turn the local/remote switch on the E-stat controller to remote mode.

PNT1-690 %sEstat HVON Failed

Cause: The robot sent the HVON signal to the E-stat controller but did not get an HVON signal back from the E-stat unit.

Remedy: Check the status of the external E-stat controller.

PNT1-691 %sEstat setpoint not reached

Cause: The E-stat controller did not set the set point reached output in time.

Remedy: Check the voltage and set point reached light on the E-stat controller. It might be having trouble reaching the requested voltage. If not, adjust the set point reached timeout setting.

PNT1-692 %sEstat T.P. enable Timeout

Cause: The estat enable for the teach pendant screen timed out.

Remedy: Request E-stat votage again.

PNT1-699 %sTurbine Startup Test Not Complete

Cause: The Bell Speed Control Startup Test for the turbine is not complete. This test must be performed before running the turbine.

Remedy: Check the Start Mode field on the Bell Speed SETUP menu to check the status of the Startup Test. Then, run the test if necessary.

PNT1-700 %sMax.dV/dT detected

Cause: A velocity change within a measured time has exceeded the maximum dV/dT setting for this turbine.

Remedy: Check the hardware to determine if the feedback signal from the turbine is consistent.

PNT1-701 %sMax. output has speed < setpoint

Cause: With a maximum control output the speed was measured to be lower than the setpoint (requested speed). This can occur if:

- The gun is clogged.
- The turbine air or turbine pilot air line is pinched.
- The turbine air pressure is too low.

Remedy: Check the turbine lines for pinching, especially at places where they flex. Check the turbine air supply pressure. Check and replace the I/P transducer, if necessary.

PNT1-702 %sRequested speed over valid range

Cause: The requested turbine speed output command is above the range that is considered valid. Adjust the turbine speed command that is used in the preset table so it is within an acceptable range.

Remedy: N/A

PNT1-703 %sFailed to reach setpoint

Cause: The turbine speed failed to come within the Tolerance Band setting within the time setting of Min. set point reached (ms) value. This can be caused by noise in the speed sensor signals, low air supply pressure or other failures. This may occur with the alarm Max. output has speed < setpoint. If the Max. output has speed < setpoint alarm is also in the alarm log follow the remedies for that alarm. Examine the displayed turbine speed and evaluate if it is bouncing a lot. If so decrease the PID gains. Possibly increase the Tolerance Band parameter by about 30% to 50%, for example from 1.8% to 2.3%. Increase the Min. set point reached value by about 30% to 50%.

Remedy: N/A

PNT1-704 %sZero turbine speed timeout

Cause: All of the conditions were set for the turbine to be spinning but a zero speed was measured for a set time period. This might be due to no turbine air pressure or pilot air pressure. One of the following items might be broken: the I/P transducer, speed sensor pickup, speed sensor interface. The Zero speed timeout might be set too short.

Remedy: If the turbine can be seen spinning, check the following: the speed sensor interface and speed sensor pickup. Otherwise, check the other items listed above. Possibly increase the Zero speed timeout by about 50%.

PNT1-705 %sTurbine over speed

Cause: While the turbine was operating the RPM level was above the Over speed limit. When this error occurs, braking will be applied to bring the turbine speed to within the acceptable operating range. Check and replace the I/P transducer if necessary. Possibly increase the Over speed limit value.

Remedy: N/A

PNT1-706 %sTurbine under speed fault

Cause: While the turbine was operating and the gun was on or enabled, the RPM level was below the Under speed limit. Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit value.

Remedy: N/A

PNT1-707 %sTurbine under speed warning

Cause: While the gun was off or disabled and the turbine was operating the RPM level was below the Under speed limit, Manual. Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit, Manual value.

Remedy: N/A

PNT1-708 %sSpeed avg. error excessive

Cause: Checks for how far the speed is from the set point have been too high. Possible causes are:

- A sticking I/P transducer
- Low supply air pressure
- Low pilot air pressure
- PID Gains that are too large.

Remedy: Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures. If either one is low, increase it. Possibly decrease the Max. error from setpoint parameter.

PNT1-709 %sBearing Air NOT OK

Cause: The digital input signal indicating the Bear Air is above the minimum pressure is not ON. Check the supply pressure to the Bearing Air or verify the digital input signal is working correctly.

Remedy: N/A

PNT1-710 %sCruise Speed not established

Cause: The Cruise Speed determined during the Bell Speed Startup Test could not be established.

Remedy: Redo the Bell Speed Startup Test to determine a new Cruise Speed, or check the turbine or regulator.

PNT1-716 %sTurbine Startup Test Not Complete

Cause: The Bell Speed Control Startup Test for the turbine is not complete. This test must be performed before running the turbine.

Remedy: Check the Start Mode field on the Bell Speed SETUP menu to check the status of the Startup Test. If it has not been performed, run the Bell Speed Control Startup Test.

PNT1-717 %sMax.dV/dT detected

Cause: A velocity change within a measured time has exceeded the maximum dV/dT setting for this turbine.

Remedy: Check the hardware to determine if the feedback signal from the turbine is consistent.

PNT1-718 %sMax. output has speed < setpoint

Cause: With a maximum control output the speed was measured to be lower than the setpoint (requested speed). The gun might be clogging. The turbine air or turbine pilot air line might be pinched. The turbine air pressure might have become too low.

Remedy: Check the turbine lines for pinching, especially at places where they flex. Check the turbine air supply pressure. Check and replace the I/P transducer if necessary.

PNT1-719 %sRequested speed over valid range

Cause: The requested turbine speed output command is above the range that is considered valid Adjust the turbine speed command that is used in the preset table so it is within an acceptable range.

Remedy: N/A

PNT1-720 %sFailed to reach setpoint

Cause: The turbine speed failed to come within the Tolerance Band setting within the time setting of Min. set point reached (ms) value. This can be caused by noise in the speed sensor signals, low air supply pressure or other failures. This might occur with the Max. output has speed < setpoint alarm.

Remedy: If the Max. output has speed < setpoint alarm is also in the alarm log, follow the remedies for that alarm. Examine the displayed turbine speed and evaluate if it is bouncing a lot. If so, decrease the PID gains. Possibly increase the Tolerance Band parameter by about 30% to 50%, for example from 1.8% to 2.3%. Increase the Min. set point reached value by about 30% to 50%.

PNT1-721 %sZero turbine speed timeout

Cause: All of the conditions were set for turbine to be spinning and a zero speed was measured for a set time period. This may be due to no turbine air pressure or pilot air pressure. One of the following items may be broken: the I/P transducer, speed sensor pickup, speed sensor interface. The Zero speed timeout may be set too short. If turbine can be seen spinning, check: speed sensor interface, speed sensor pickup. Otherwise check the other items listed above. Possibly increase the Zero speed timeout by about 50%.

Remedy: N/A

PNT1-722 %sTurbine over speed

Cause: While the turbine was operating the RPM level was above the Over speed limit . When this error occurs, braking will be applied to bring the turbine speed to within the acceptable operating range. Check and replace the I/P transducer if necessary. Possibly increase the Over speed limit value.

Remedy: N/A

PNT1-723 %sTurbine under speed fault

Cause: While the turbine was operating and the gun was on or enabled, the RPM level was below the Under speed limit . Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit value.

Remedy: N/A

PNT1-724 %sTurbine under speed warning

Cause: While the gun was off or disabled and the turbine was operating the RPM level was below the Under speed limit, Manual . Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit, Manual value.

Remedy: N/A

PNT1-725 %sSpeed avg. error excessive

Cause: Checks for how far the speed is from the set point have been too high. Possible causes are:

- A sticking I/P transducer
- Low supply air pressure
- Low pilot air pressure
- PID Gains that are too large.

Remedy: Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures. If either value is low, increase it. Possibly decrease the Max. error from setpoint parameter.

PNT1-726 %sBearing Air NOT OK

Cause: The digital input signal indicating the Bear Air is above the minimum pressure is not ON. Check the supply pressure to the Bearing Air or verify the digital input signal is working correctly.

Remedy: N/A

PNT1-727 %sCruise Speed not established

Cause: The Cruise Speed determined during the Bell Speed Startup Test could not be established.

Remedy: Redo the Bell Speed Startup Test to determine a new Cruise Speed, or check the turbine or regulator.

PNT1-733 %sPump 1 IN low pressure warning

Cause: Pump #1 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose, etc.) is removed or broken.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from paint kitchen.
- Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-734 %sPump 1 IN low pressure fault

Cause: Pump #1 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.

- The pilot line to resin color valve is removed or broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose, etc.) is removed or broken.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from paint kitchen.
- Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-735 %sPump 1 IN high pressure warning

Cause: Pump #1 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.
- Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the resin inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-736 %sPump 1 IN high pressure fault

Cause: Pump #1 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.
- Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-737 %sPump 1 OUT low pressure warning

Cause: Pump #1 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or broken.

- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose, etc.) is removed or broken.
- A broken coupling between the servo motor and pump.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-738 %sPump 1 OUT low pressure fault

Cause: Pump #1 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose, etc.) is removed or broken.
- A broken coupling between the servo motor and pump.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to the resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-739 %sPump 1 OUT high pressure warning

Cause: Pump #1 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- Obstructed line, trigger, or check valve.
- The pilot line to mix resin valve is removed or broken.
- The mix resin valve has failed.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger, or check valve are not obstructed.
- Check the pilot line to mix resin valve. Verify that the mix resin valve is not faulty.
- Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-740 %sPump 1 OUT high pressure fault

Cause: Pump #1 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not set up correctly.
- Obstructed line, trigger, or check valve.
- The pilot line to mix resin valve is removed or broken.
- The mix resin valve has failed.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger, or check valve are not obstructed.
- Check the pilot line to mix resin valve.
- Verify that the mix resin valve is not faulty.
- Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-741 %sPump 1 fluid flow rate > set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification. Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-742 %sPump 1 fluid flow rate < set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification. Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-743 %sPump 1 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #1 is detected. This condition is usually caused by one or more of the following:

- A loose mechanical coupling between the motor and pump.
- A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT1-744 %sPump 1 motor velocity limit

Cause: The motor velocity for pump #1 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #2 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT1-745 %sPump 1 motor servo not ready

Cause: The servo power to pump #1 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition or if the controller is machine locked. Correct the condition, and reset the controller.

PNT1-746 %sPump 1 totals differ > tolerance

Cause: The actual total flow out of pump #1 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification. Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump. Verify that pump #1 does not have excessive wear.

PNT1-753 %sPump 2 IN low pressure warning

Cause: Pump #2 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Perform the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to verify the hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-754 %sPump 2 IN low pressure fault

Cause: Pump #2 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-755 %sPump 2 IN high pressure warning

Cause: Pump #2 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.

- Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the resin inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-756 %sPump 2 IN high pressure fault

Cause: Pump #2 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.
- Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the hardener inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-757 %sPump 2 OUT low pressure warning

Cause: Pump #2 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.
- A coupling is broken between the servo motor and pump.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-758 %sPump 2 OUT low pressure fault

Cause: Pump #2 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.
- A broken coupling between the servo motor and pump.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.

- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-759 %sPump 2 OUT high pressure warning

Cause: Pump #2 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- A line, trigger, or check valve is obstructed.
- The pilot line to mix hardener valve is removed or broken.
- The mix hardener valve has failed.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger, or check valve are not obstructed.
- Check the pilot line to mix hardener valve.
- Verify that the mix hardener valve is not faulty.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-760 %sPump 2 OUT high pressure fault

Cause: Pump #2 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- A line, trigger, or check valve is obstructed.
- The pilot line to mix hardener valve is removed or broken.
- The mix hardener valve has failed.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger or check valve are not obstructed.
- Check the pilot line to mix hardener valve.
- Verify that the mix hardener valve is not faulty.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-761 %sPump 2 fluid flow rate > set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Perform the following:

- Perform a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev).
- Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-762 %sPump 2 fluid flow rate < set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Perform the following:

- Perform a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev).
- Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-763 %sPump 2 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #2 is detected. This condition is usually caused by one or more of the following:

- A loose mechanical coupling between the motor and pump.
- A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT1-764 %sPump 2 motor velocity limit

Cause: The motor velocity for pump #2 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #1 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT1-765 %sPump 2 motor servo not ready

Cause: The servo power to pump #2 is not ready. Usually, the servo not ready occurs when servo power is turned off during an E-stop condition, or if the machine is locked.

Remedy: Correct the condition, and reset the controller.

PNT1-766 %sPump 2 totals differ > tolerance

Cause: The actual total flow out of pump #2 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Check the following:

- Perform a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev).
- Verify that the correct KFT factor has been entered for the flow meter per the manufacturer's specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.
- Verify that pump #2 does not have excessive wear.

PNT1-767 %sCalibration aborted

Cause: The IPC auto calibration aborted.

Remedy: Ensure the pumps are operating correctly. Also ensure that the delay parameter is set to a sufficient amount.

PNT1-768 (%s) Non-increasing cal table

Cause: The IPC auto calibration aborted because the calibration table is not increasing with the commanded flow rate.

Remedy: Ensure the pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount.

PNT1-769 (%s) Zero PSI

Cause: The IPC auto calibration aborted. This can occur because zero PSI was detected while the IPC system was determining the maximum flow rate during the auto calibration. This can also occur while the IPC system was determining one of the calibration points.

Remedy: Ensure the pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount. If the setup parameter, 'Max speed cap:', was enabled, ensure that the parameter 'User speed cap:', was not set too high - the pressure will eventually plateau at higher speed commands. An alternate action is to disable 'Max speed cap:' and re-calibrate.

PNT1-770 (%s) Set Color Valve

Cause: An error occurred in setting the color valve.

Remedy: None.

PNT1-771 %s Res:Hrd ratio is 0.0:0.0

Cause: The color identified in the error message has a default ratio (0.0:0.0) defined. The IPC pumps can only run when a non-zero ratio is defined.

Remedy: Change the default ratio for this color in the SETUP Color DETAIL menu.

PNT1-778 %sPump 1 IN low pressure warning

Cause: Pump #1 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Check the resin inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-779 %sPump 1 IN low pressure fault

Cause: Pump #1 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so forth) is removed or broken.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Check the resin inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-780 %sPump 1 IN high pressure warning

Cause: Pump #1 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The resin inlet transducer has failed.

- The inlet regulator has failed.
- Remedy:** Check the following:
- Make sure the high pressure warning limit is appropriate.
 - Make sure the high pressure sensitivity is appropriate.
 - Make sure the supply pressure is appropriate.
 - Check the resin inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
 - Check the resin inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-781 %sPump 1 IN high pressure fault

Cause: Pump #1 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The resin inlet transducer has failed.
- The inlet regulator has failed.

- Remedy:** Check the following:
- Make sure the high pressure fault limit is appropriate.
 - Make sure the high pressure sensitivity is appropriate.
 - Make sure the supply pressure is appropriate.
 - Check the resin inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
 - Check the inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-782 %sPump 1 OUT low pressure warning

Cause: Pump #1 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or is broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or is broken.
- A coupling is broken between the servo motor and pump.
- The resin outlet transducer has failed.

- Remedy:** Check the following:
- Make sure the low pressure warning limit is appropriate.
 - Make sure the low pressure sensitivity is appropriate.
 - Check the pilot line to resin color that is being used.
 - Verify that the resin color valve being used is not faulty.
 - Make sure the supply pressure is appropriate.
 - Check the supply line from the paint kitchen.
 - Verify that the pump is rotating with the motor.
 - Check the resin outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-783 %sPump 1 OUT low pressure fault

Cause: Pump #1 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to resin color valve is removed or is broken.
- The resin color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or broken.

- A coupling is broken between the servo motor and pump.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to resin color that is being used.
- Verify that the resin color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the resin outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-784 %sPump 1 OUT high pressure warning

Cause: Pump #1 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- There is an obstructed line, trigger, or check valve.
- The pilot line to mix resin valve is removed or is broken.
- The mix resin valve has failed.
- The resin outlet transducer has failed.

Remedy:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger, or check valve are not obstructed.
- Check the pilot line to mix resin valve.
- Verify that the mix resin valve is not faulty.
- Check the resin outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-785 %sPump 1 OUT high pressure fault

Cause: Pump #1 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- There is an obstructed line, trigger, or check valve.
- The pilot line to mix resin valve is removed or is broken.
- The mix resin valve has failed.
- The resin outlet transducer has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the pump start/stop anticipates are appropriate.
- Make sure the lines, trigger, or check valve are not obstructed.
- Check the pilot line to mix resin valve.
- Verify that the mix resin valve is not faulty.
- Check the resin outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-786 %sPump 1 fluid flow rate > set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Check the following:

- Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev).
- Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-787 %sPump 1 fluid flow rate < set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Check the following:

- Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev).
- Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-788 %sPump 1 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #1 is detected. This condition is usually caused by one or more of the following:

- A loose mechanical coupling between the motor and pump.
- A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT1-789 %sPump 1 motor velocity limit

Cause: The motor velocity for pump #1 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #2 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT1-790 %sPump 1 motor servo not ready

Cause: The servo power to pump #1 is not ready. Usually, the servo not ready occurs when servo power is turned off such as during an E-stop condition, or if the machine is locked.

Remedy: Correct the condition, and reset the controller.

PNT1-791 %sPump 1 totals differ > tolerance

Cause: The actual total flow out of pump #1 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Check the following:

- Perform a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev).
- Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.
- Verify that pump #1 does not have excessive wear.

PNT1-798 %sPump 2 IN low pressure warning

Cause: Pump #2 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or is broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or is broken.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.

- Check the hardener inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-799 %sPump 2 IN low pressure fault

Cause: Pump #2 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or is broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or is broken.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Check the hardener inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-800 %sPump 2 IN high pressure warning

Cause: Pump #2 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure warning limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.
- Check the hardener inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the resin inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-801 %sPump 2 IN high pressure fault

Cause: Pump #2 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The supply pressure is set too high.
- The hardener inlet transducer has failed.
- The inlet regulator has failed.

Remedy: Check the following:

- Make sure the high pressure fault limit is appropriate.
- Make sure the high pressure sensitivity is appropriate.
- Make sure the supply pressure is appropriate.

- Check the hardener inlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.
- Check the hardener inlet regulator as follows: Through the Analog I/O menu, verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT1-802 %sPump 2 OUT low pressure warning

Cause: Pump #2 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure warn limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or is broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or is broken.
- A broken coupling between the servo motor and pump.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure warning limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-803 %sPump 2 OUT low pressure fault

Cause: Pump #2 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The low pressure fault limit is set too high.
- The low pressure sensitivity is set too short.
- The pilot line to hardener color valve is removed or is broken.
- The hardener color valve has failed.
- The supply pressure is too low.
- The supply line (hose and so on) is removed or is broken.
- A broken coupling between the servo motor and pump.
- The hardener outlet transducer has failed.

Remedy: Check the following:

- Make sure the low pressure fault limit is appropriate.
- Make sure the low pressure sensitivity is appropriate.
- Check the pilot line to hardener color that is being used.
- Verify that the hardener color valve being used is not faulty.
- Make sure the supply pressure is appropriate.
- Check the supply line from the paint kitchen.
- Verify that the pump is rotating with the motor.
- Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-804 %sPump 2 OUT high pressure warning

Cause: Pump #2 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure warn limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipates are not setup correctly.
- There is an obstructed line, trigger, or check valve.
- The pilot line to mix hardener valve is removed or is broken.
- The mix hardener valve has failed.

- The hardener outlet transducer has failed.
- Remedy:** Check the following:
- Make sure the high pressure warning limit is appropriate.
 - Make sure the high pressure sensitivity is appropriate.
 - Make sure the pump start/stop anticipates are appropriate.
 - Make sure the lines, trigger, or check valve are not obstructed.
 - Check the pilot line to mix hardener valve.
 - Verify that the mix hardener valve is not faulty.
 - Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-805 %sPump 2 OUT high pressure fault

Cause: Pump #2 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

- The high pressure fault limit is set too low.
- The high pressure sensitivity is set too short.
- The pump start/stop anticipate times are not set up correctly.
- There is an obstructed line, trigger, or check valve.
- The pilot line to mix hardener valve is removed or is broken.
- The mix hardener valve has failed.
- The hardener outlet transducer has failed.

- Remedy:** Check the following:
- Make sure the high pressure fault limit is appropriate.
 - Make sure the high pressure sensitivity is appropriate.
 - Make sure the pump start/stop anticipates are appropriate.
 - Make sure the lines, trigger, or check valve are not obstructed.
 - Check the pilot line to mix hardener valve.
 - Verify that the mix hardener valve is not faulty.
 - Check the hardener outlet transducer as follows: Through the Analog I/O menu, verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT1-806 %sPump 2 fluid flow rate > set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

- Remedy:** Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification. Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-807 %sPump 2 fluid flow rate < set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

- Remedy:** Check the following:
- Perform a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev).
 - Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturer's specification.
 - Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.

PNT1-808 %sPump 2 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #2 is detected. This condition is usually caused by one or more of the following:

- A loose mechanical coupling between the motor and pump.
- A broken line between the pump and trigger.

- Remedy:** Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is working correctly.

PNT1-809 %sPump 2 motor velocity limit

Cause: The motor velocity for pump #2 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #1 will be reduced to maintain a proper fluid ratio.

- Remedy:** Lower the flow rate to within the motor limit.

PNT1-810 %sPump 2 motor servo not ready

Cause: The servo power to pump #2 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off because of an E-stop condition or because the machine is locked. Correct the condition, and reset the controller.

PNT1-811 %sPump 2 totals differ > tolerance

Cause: The actual total flow out of pump #2 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Check the following:

- Perform a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev).
- Verify that the correct KFT factor has been entered for the flow meter per the manufacturer's specification.
- Check the operation of the inlet regulator to verify that no *blow by* is occurring across the pump.
- Verify that pump #2 does not have excessive wear.

PNT1-812 %sCalibration aborted

Cause: The IPC auto calibration aborted.

Remedy: Ensure pumps are operating correctly. Ensure that the delay parameter is set to a sufficient amount.

PNT1-813 (%s) Non-increasing cal table

Cause: The IPC auto calibration aborted because the calibration table is not increasing with the commanded flow rate.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount.

PNT1-814 (%s) Zero PSI

Cause: The IPC auto calibration aborted because zero PSI was detected while the IPC system was determining the maximum flow rate during the auto calibration or while the IPC system was determining one of the calibration points.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount. If the setup parameter, 'Max speed cap:', was enabled, ensure that the parameter 'User speed cap:', was not set to high - the pressure will eventually plateau at higher speed commands. Alternate action is to disable 'Max speed cap:' and re-calibrate.

PNT1-815 (%s) Set Color Valve

Cause: There was an error in setting the color valve.

Remedy: None.

PNT1-816 %s Res:Hrd ratio is 0.0:0.0

Cause: The color identified in the error message has a default ratio (0.0:0.0) defined. The IPC pumps can only run when a non-zero ratio is defined.

Remedy: Change the default ratio for this color in the SETUP Color DETAIL menu.

PNT1-823 %sHIGH ServoBell TORQUE

Cause: The torque value of the ServoBell exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading, and resolve the problem.

PNT1-824 %sServoBell motor not ready

Cause: The servo power to the ServoBell motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off because of an E-stop condition, or if the machine is locked. Correct the condition, and reset the controller.

PNT1-825 %sCalibration Aborted

Cause: The ServoBell auto calibration aborted.

Remedy: Slow down the Cal Empty Speed. Ensure that the trigger is not clogged and opens fully. Ensure that the software limit does not exceed 2 mm.

PNT1-826 %sCalibration Time Out

Cause: The ServoBell auto calibration aborted due to a time out when the system was trying to determine the empty can position.

Remedy: Ensure that all faults are cleared, and that the ServoBell motor is turning during the calibration process.

PNT1-827 %sCanister Calibration Successful

Cause: The ServoBell auto calibration completed successfully.

Remedy: None.

PNT1-828 %sBad Status from set_prax_spd

Cause: An attempt was made to move the ServoBell or the SpeedDock and a bad status from set_prax_spd was detected.

Remedy: Determine the cause of the bad status, then resolve the problem.

PNT1-829 %sHIGH SpeedDock TORQUE

Cause: The torque value of the SpeedDock exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve the problem.

PNT1-830 %sSpeedDock motor not ready

Cause: The servo power to the SpeedDock motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as an Emergency stop condition, and/or the machine locked. Correct the condition, and reset the controller.

PNT1-831 %s

Cause: An attempt was made to extend or retract the pusher at SpeedDock side A or B, but the attempt failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. Ensure that the pusher retracted or extended fully at SpeedDock side A or B. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT1-832 %s

Cause: An attempt was made to extend or retract the valve at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. If it was an extended fault, ensure that the pusher extended fully at the Speed Dock side A or B. If it was a retracted fault, ensure that the pusher retracted fully at SpeedDock side A or B and that the valve is not stuck in the extended state. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT1-833 %sHIGH ServoBell TORQUE

Cause: Torque value of the ServoBell exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve problem.

PNT1-834 %sServoBell motor not ready

Cause: The servo power to the ServoBell motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off because of an E-stop condition, or because the machine is locked. Correct the condition, and reset the controller.

PNT1-835 %sCalibration Aborted

Cause: The servo power to the ServoBell motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off because of an E-stop condition, or because the machine is locked. Correct the condition, and reset the controller.

PNT1-836 %sCalibration Time Out

Cause: The system timed out and the ServoBell auto calibration aborted when it was trying to determine the empty can position.

Remedy: Clear all faults, and verify that the ServoBell motor is turning during the calibration process.

PNT1-837 %sCanister Calibration Successful

Cause: The ServoBell auto calibration completed successfully.

Remedy: None.

PNT1-838 %sBad Status from set_prax_spd

Cause: An attempt was made to move the ServoBell or the SpeedDock and a bad status from set_prax_spd was detected.

Remedy: Determine the cause of the bad status, then resolve the problem.

PNT1-839 %sHIGH SpeedDock TORQUE

Cause: The torque value of the SpeedDock exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve the problem.

PNT1-840 %sSpeedDock motor not ready

Cause: The servo power to the SpeedDock motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as Emergency stop condition, and/or the machine is locked. Correct the condition, and reset the controller.

PNT1-841 %s

Cause: An attempt was made to extend or retract the pusher at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. Ensure that the pusher retracted or extended fully at the SpeedDock, side A or B. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT1-842 %s

Cause: An attempt was made to extend or retract the valve at the SpeedDock, side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. If it was an extended fault, ensure that the pusher extended fully at the Speed Dock, side A or B. If it was a retracted fault, ensure that the pusher retracted fully at the SpeedDock, side A or B and that the valve is not stuck in the extended state. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT1-843 %sOutput Press low warning

Cause: Output pressure dropped below the warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the output pressure warning value if it is set too low.

PNT1-844 %sOutput Press high warning

Cause: The output pressure exceeded the high warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the output pressure warning value if it is too low.

PNT1-845 %sManifold Press low warning

Cause: The output pressure exceeded the high warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the output pressure warning value if it is too low.

PNT1-846 %sManifold Press high warning

Cause: The manifold pressure exceeded the high warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the manifold pressure warning value if it is too low.

PNT1-847 %sOutput Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT1-848 %sOutput Press high alarm

Cause: Output pressure exceeded high alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT1-849 %sManifold Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT1-850 %sManifold Press high alarm

Cause: Manifold pressure exceeded high alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT1-851 %sCalibration successful

Cause: Calibration successful.

Remedy: None.

PNT1-852 %sCalibration aborted

Cause: Calibration aborted.

Remedy: Determine cause for calibration to abort and correct accordingly.

PNT1-853 %sNon-incr cal table

Cause: Calibration aborted due to the Output or Manifold pressure failing to increase as the command rate increased.

Remedy: Determine cause for the pressure not increasing and correct accordingly.

PNT1-854 %sZero Pressure

Cause: Calibration aborted due to zero Output or Manifold pressure detected after a flow command was issued.

Remedy: Determine cause for the zero pressure and correct accordingly.

PNT1-859 %sOutput Press low warning

Cause: Output pressure dropped below warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT1-860 %sOutput Press high warning

Cause: Output pressure exceeded high warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT1-861 %sManifold Press low warning

Cause: Manifold pressure dropped below warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT1-862 %sManifold Press high warning

Cause: Manifold pressure exceeded high warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT1-863 %sOutput Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT1-864 %sOutput Press high alarm

Cause: Output pressure exceeded high alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT1-865 %sManifold Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT1-866 %sManifold Press high alarm

Cause: Manifold pressure exceeded high alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT1-867 %sCalibration successful

Cause: The calibration was successful.

Remedy: None.

PNT1-868 %sCalibration aborted

Cause: Calibration aborted.

Remedy: Determine cause for calibration to abort and correct accordingly.

PNT1-869 %sNon-incr cal table

Cause: Calibration aborted due to the output or manifold pressure failing to increase as the command rate increased.

Remedy: Determine the cause for the pressure not increasing, and correct the problem.

PNT1-870 %sZero Pressure

Cause: The calibration aborted due to zero output or manifold pressure was detected after a flow command was issued.

Remedy: Determine the cause for the zero pressure, and correct the problem.

PNT1-875 %sBad preset index [%d]

Cause: The preset index is out of range (1-MAX_PRESET(20)).

Remedy: Check Preset[] index and Preset[R[]] index value.

PNT1-876 %sNo preset data (syscolor=[%s])

Cause: No preset data for error color was found.

Remedy: Check [PAPS1] or ([PAPS2] if Dualarm) preset_data for table entry.

PNT1-877 %sNo estat data (syscolor=[%s])

Cause: No estat data for error color was found.

Remedy: Check [PAPSSCHG] preset_data for table entry.

PNT1-882 %sBad preset index [%d]

Cause: The preset index is out of range (1-MAX_PRESET(20)).

Remedy: Check Preset[] index and Preset[R[]] index value.

PNT1-883 %sNo preset data (syscolor=[%s])

Cause: No preset data for error color was found.

Remedy: Check [PAPS1] or ([PAPS2] if Dualarm) preset_data for table entry.

PNT1-884 %sNo estat data (syscolor=[%s])

Cause: No estat data for error color was found.

Remedy: Check [PAPSSCHG] preset_data for table entry.

PNT1-889 Wrong valve state in EMPTY CAN event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Empty Can event in the color change cycle.

Remedy: To correct the problem, ensure that the pDump valve OR pPE + pTRIG valves are in the step before the Empty Can event.

PNT1-890 Wrong valve state in FAST FILL event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Fast Fill event in the color change cycle.

Remedy: To correct the problem, ensure that the pCI valve is enabled in the step before the Fast Fill event.

PNT1-891 Wrong valve state in CAN FULL event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Can Full event in the color change cycle.

Remedy: To correct the problem, ensure that the pCI valve is enabled in the step before the Can Full event.

PNT1-892 Wrong valve state in PRESET motion-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for a preset motion instruction.

Remedy: Ensure that the pCI valve is enabled in the same step as the preset instruction if retracting the canister. Ensure that the pDump valve OR pPE + pTRIG valves are enabled in the same step as the preset instruction if extending the canister.

PNT1-893 Canister Dir - retracting: %s

Cause: An attempt was made to retract the canister, but the valve state was incorrect. This could have been during a fill cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pCI valve should be ON.

PNT1-894 Low can Pressure after Fill: %s

Cause: A fill cycle was just completed, but the fluid pressure in the can was found to be lower than the minimum expected.

Remedy: Increase the Minimum Fill Torque in the setup screen, or ensure that the canister is full of fluid (check the in-coming fluid pressure).

PNT1-895 Canister Dir - extending: %s

Cause: An attempt was made to extend the canister but the state of the valves were incorrect. This could have been during a cleanout cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pDump valve should be ON, or the pPE + TRIG valves should be ON. Ensure that the pCI valve is OFF.

PNT1-896 Zero Flow Programmed: %s

Cause: Zero Flow was programmed in the color change.

Remedy: Ensure that a flow rate is set up in the CC preset data.

PNT1-897 %sHIGH Negative Canister TORQUE

Cause: The maximum compression force on the ball screw has been exceeded. When this occurs, it is usually when the ball screw is extending.

Remedy: Ensure that the canister speed is not too fast when spraying the job. Ensure that the pTrig and pCE valves are open during job execution. Ensure that the injector tip is not clogged. The nozzle tip tapers to a smaller diameter; ensure that the paint did not dry inside the nozzle, causing it to clog. Ensure that the pDUMP valve is operating correctly during the cleanout cycle. If the ball screw is worn out, then it needs to be replaced.

PNT1-898 %sHIGH Positive Canister TORQUE

Cause: The maximum tensile force on the ball screw has been exceeded. When this occurs, it is usually when the ball screw is retracting. There might be a vacuum in the canister which is causing excessive torque when the motor is retracting the canister's piston.

Remedy: Ensure that the retraction speed is not too fast during the fast fill cycle. Ensure that the pCI and pCC valves are open during the fill cycles.

PNT1-899 %sAir in Canister detected

Cause: The piston was retracted from the fluid after the Fill sequence and torque was still detected on the face of the piston. The torque should not exist if the canister is completely full of paint, therefore, compressed air could be mixed with the paint.

Remedy: Check the paint supply for the current color in the canister to verify air is not being introduced into the paint supply.

PNT1-900 %sLow Trigger Torque

Cause: The torque threshold on the canister motor did not reach the minimum torque threshold value during the fill through trigger step of the fill or refill cycle.

Remedy: Perform the following:

1. Check the paint supply for the current color in the canister.
2. Reduce the torque threshold value.
3. Reduce the fill through trigger timeout value.

PNT1-901 Wrong valve state in EMPTY CAN event%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Empty Can event in the color change cycle.

Remedy: To correct the problem, ensure that the pDump valve OR pPE + pTRIG valves are in the step before the Empty Can event.

PNT1-902 Wrong valve state in FAST FILL event%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Fast Fill event in the color change cycle.

Remedy: To correct the problem, ensure that the pCI valve is enabled in the step before the Fast Fill event.

PNT1-903 Wrong valve state in CAN FULL event%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Can Full event in the color change cycle.

Remedy: To correct the problem, ensure that the pCI valve is enabled in the step before the Can Full event.

PNT1-904 Wrong valve state in PRESET motion%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for a preset motion instruction.

Remedy: Ensure that the pCI valve is enabled in the same step as the preset instruction if retracting the canister. Ensure that the pDump valve OR pPE + pTRIG valves are enabled in the same step as the preset instruction if extending the canister.

PNT1-905 Canister Dir - retracting: %s

Cause: An attempt was made to retract the canister but the valve state was incorrect. This could have been during a fill cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pCI valve should be ON.

PNT1-906 Low can Pressure after Fill: %s

Cause: A fill cycle was just completed, but the fluid pressure in the can was found to be lower than the minimum expected.

Remedy: Increase the Minimum Fill Torque in the setup screen, or ensure that the canister is full of fluid (check the in-coming fluid pressure).

PNT1-907 Canister Dir - extending: %s

Cause: An attempt was made to extend the canister but the state of the valves were incorrect. This could have been during a cleanout cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pDump valve should be ON or the pPE + TRIG valves should be ON. Ensure that the pCI valve is OFF.

PNT1-908 Zero Flow Programmed: %s

Cause: Zero Flow was programmed in the color change preset data.

Remedy: Ensure that a flow rate is set up in the color change preset data.

PNT1-909 %sHIGH Negative Canister TORQUE

Cause: The maximum compression force on the ball screw has been exceeded. When this occurs, it usually when the ball screw is extending.

Remedy: Ensure that the canister speed is not too fast when spraying the job. Ensure that the pTrig and pCE valves are open during job execution. Ensure that the injector tip is not clogged. The nozzle tip tapers to a smaller diameter; ensure that the paint did not dry inside the nozzle, causing it to clog. Ensure that the pDUMP valve is operating correctly during the cleanout cycle. If the ball screw is worn out, then it needs to be replaced.

PNT1-910 %sHIGH Positive Canister TORQUE

Cause: The maximum tensile force on the ball screw has been exceeded. When this occurs, it usually when the ball screw is retracting. There might be a vacuum in the canister which is causing excessive torque when the motor is retracting the canister's piston.

Remedy: Ensure that the retraction speed is not too fast during the fast fill cycle. Ensure that the pCI and pCC valves are open during the fill cycles.

PNT1-911 %sAir in Canister detected

Cause: The piston was retracted from the fluid after the Fill sequence and torque was still detected on the face of the piston. The torque should not exist if the canister is completely full of paint, therefore, compressed air could be mixed with the paint.

Remedy: Check the paint supply for the current color in the canister to verify that air is not being introduced into the paint supply.

PNT1-912 %sLow Trigger Torque

Cause: The torque threshold on the canister motor did not reach the minimum torque threshold value during the fill through trigger step of the fill or refill cycle.

Remedy: Perform the following:

1. Check the paint supply for the current color in the canister.
2. Reduce the torque threshold value.
3. Reduce the fill through trigger timeout value.

4.14.7 PNT2 Alarm Code

PNT2-001 Unknown PAINTtool error

Cause: PaintTool has detected an unknown error.

Remedy: See the teach pendant error log for the cause of the error.

PNT2-002 Press master reset

Cause: The system is in an error condition.

Remedy: Press RESET to clear error.

PNT2-003 Reset failure

Cause: The RESET procedure has failed.

Remedy: Correct the error, if any, and try the RESET procedure again.

PNT2-004 Robot Servos Disabled

Cause: The servo disconnect on the robot is ON.

Remedy: Set the servo disconnect on the robot to OFF.

PNT2-005 Production mode is disabled

Cause: The production mode input is OFF.

Remedy: None.

PNT2-006 REMOTE switch must be REMOTE

Cause: Accustat could not reach the upper flow limit in the number of times set at the calibration screen. The upper limit flow rate can not be achieved. Fluid restrictor is too small. The flow rate or can position feedback is unstable.

Remedy: Verify all equipment is working properly. Check Color Data upper limit. Check applicator parameters to make sure that App Parameter Max limit is not below the AccuStat Color Data upper limit. Increase Auto cal hi/low tolerance or Trys for hi/low from the AccuStat setup screen. Check feedback.

PNT2-007 Machine lock is ON

Cause: The calculated command counts are below the Applicator Parameter Minimum Output value (200 counts, or 1600 counts hi-res). Fluid restrictor is too large or the regulator is not working properly.

Remedy: Restrict fluid flow with smaller restrictor. Check the Color Data Hi/Low flow range settings.

PNT2-008 Robot motion is not enabled

Cause: The Tolerance Band is too narrow (low), or the regulator is not working properly. The adaptive gain for that color might be too low, and the flow rate is not adapting fast enough. The potentiometer is not operating properly. The trigger delay might not be set properly if trigger events are too close together.

Remedy: Check regulator operation and Adaptive Gain settings in the AccuStat Color Data for that color valve. Verify the trigger delays are set up properly.

PNT2-009 %sFailed to pause robot task

Cause: An invalid job number was received from the PLC.

Remedy: The PLC must init robot with a valid job number.

PNT2-010 %sFailed to abort robot task

Cause: An invalid tutone option was received from the PLC.

Remedy: PLC must init robot with a valid tutone option.

PNT2-011 %sRobot task has faulted

Cause: An invalid repair option was received from the PLC.

Remedy: The PLC must init robot with a valid repair option.

PNT2-012 %sFailed to run robot task

Cause: An invalid color number was received from the PLC.

Remedy: PLC must init robot with a valid color number.

PNT2-013 %sInvalid job received

Cause: The production run program is not loaded.

Remedy: The program must be loaded before you can run it in production.

PNT2-014 Invalid job %s in queue

Cause: Prior to painting the job, the can is checked to see if enough paint has been put into the can (cylinder position counts $\geq$ TPR counts). This can happen if the waiting for can full condition is falsely satisfied. Possible causes are air in the canister due to faulty color change cycles or unstable readings from the linear potentiometer. Many times this happens because the air has not been pushed out of the dump before the fill valve is opened.

Remedy: Make sure that paint has reached the docking station before starting the step to open the fill valve. A fix could be increasing the amount of time of the step to fill the paint line before opening the fill valve. With air in the can, once the piston pressure has been reapplied the air will compress causing the cylinder position to fall below the fill counts.

PNT2-015 Invalid color %s in queue

Cause: The Color Valve selected for Auto Calibration has successfully completed the calibration sequence.

Remedy: None.

PNT2-016 Job queue is full

Cause: If the applicator is disabled at the end of the job, then the table will not adapt in hybrid mode.

Remedy: None.

PNT2-018 Shell aborted or paused

Cause: Another task has detected the main task aborted or paused.

Remedy: Cycle power on the controller.

PNT2-019 Wait for autoproccessing to finish

Cause: Autoproccessing of the last edited program is still in process.

Remedy: Wait for autoproccessing to complete before entering production mode.

PNT2-021 System is in error status

Cause: An invalid job type was received from the PLC.

Remedy: The PLC must init the robot with a valid job prefix.

PNT2-022 Sync Que-Job passed window

Cause: The job is not run and the encoder counts indicate that the part is past the Start switch (plus tolerance). The robot deletes the job from the queue, posts this warning message and continues to operate in production.

Remedy: None.

PNT2-023 Sync Que-Job before window

Cause: The job is not run and the encoder counts indicate that the part has not made it to the Start switch (minus tolerance). The robot holds onto that job for the next start signal, posts this warning message and continues to operate in production.

Remedy: None.

PNT2-024 UOP's assigned but disabled!

Cause: The User Operator Panel (UOP) inputs are assigned but have been disabled.

Remedy: If your system requires these UOP signals, you must enable these inputs on the Teach Pendant as follows:

1. Press MENU.
2. Select SYSTEM.
3. Press F1, [TYPE].
4. Select Config.
5. Move cursor to Enable UI signals and change from FALSE to TRUE. If your system does not require these UOP signals, unassign these UOP signals in the I/O menu.

PNT2-034 Parm %s Value beyond limits

Cause: An invalid job type was received from the PLC.

Remedy: The PLC must init the robot with a valid job prefix.

PNT2-039 I/O setup verified OK

Cause: The job is not run and the encoder counts indicate that the part is past the Start switch (plus tolerance). The robot deletes the job from the queue, posts this warning message and continues to operate in production.

Remedy: None.

PNT2-040 Error attempting to setup I/O

Cause: The I/O information for an applicator was changed and is in error.

Remedy: Check the output type, output number, rack and slot number, first bit location and number of bits.

PNT2-054 No channel/parameter indicated

Cause: The PLC sent a parameter indicator value of 0.

Remedy: Correct the problem at the PLC.

PNT2-055 Manual inputs are enabled

Cause: On manual mode entry, all PLC manual mode input functions are enabled.

Remedy: None.

PNT2-056 Manual inputs are disabled

Cause: On manual mode entry, all PLC manual mode input functions are enabled.

Remedy: None.

PNT2-057 Manual enabled during motion

Cause: Manual mode is being initiated while motion is occurring.

Remedy: Motion must complete before manual mode is entered.

PNT2-058 Manual enabled in color cycle

Cause: Manual mode is being initiated during a color change cycle.

Remedy: The color change cycle must complete before manual mode is entered.

PNT2-059 TP Enabled in cycle

Cause: The teach pendant cannot be enabled when running a remote Color Change cycle.

Remedy: None.

PNT2-064 %s not calibrated

Cause: For continuous line only. This indicates that too many parts have passed the part detect switch within the current boundaries.

Remedy: Expand the robot boundaries or lower the conveyor speed.

PNT2-065 Linetracking parameter undefined

Cause: For continuous line systems only. A line tracking parameter is undefined and is required to run the system.

Remedy: Ensure that all tracking parameters have been set up in tracking setup.

PNT2-066 Railtrack parameter undefined

Cause: For continuous line systems only. A rail tracking parameter is undefined and is required to run the system.

Remedy: Ensure that all tracking parameters have been set up in tracking setup.

PNT2-067 Invalid tracking frame

Cause: An attempt was made to use an invalid tracking frame number.

Remedy: The current software supports tracking frames 1-6. The tracking frame number must be greater than 0 and less than 7.

PNT2-068 Encoder count rollover

Cause: For continuous line systems only. This is a warning that the encoder counter has detected a rollover condition.

Remedy: None.

PNT2-069 %sFailed to run robot task

Cause: For continuous line systems only. This is a warning that the trigger distance is less than a pre-determined value. This part detect will be ignored by the robot controller.

Remedy: Reduce the minimum distance value to less than the job spacing distance, or replace the old switch.

PNT2-070 Conveyor direction incorrect

Cause: For continuous line systems only. The robot has determined that the conveyor is running in the wrong direction. Part detects will be ignored by the robot.

Remedy: Swap the leads on the encoder repeater board so that the encoder counts positive counts instead of negative.

PNT2-071 %Invalid tutone received

Cause: For line tracking systems only. This is a warning that the part has tracked too far to be played. This is because the previous job or color change took too long to play.

Remedy: None. The robot will ignore this job/color.

PNT2-075 Extreme entry position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Entry Limit defined in the *System* parameter, (\$LNCFG.\$ENTRY_XTRM).

Remedy: Adjust the Entry Limit or change the Tracking Boundary to be inside of this limit.

PNT2-076 Extreme exit position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Exit Limit defined in the *System* parameter, (\$LNCFG.\$EXIT_XTRM).

Remedy: Adjust the Exit Limit or change the Tracking Boundary to be inside of this limit.

PNT2-090 TP enabled during production

Cause: The teach pendant cannot be enabled during production.

Remedy: Disable the teach pendant.

PNT2-091 Disable teach pendant

Cause: The teach pendant is enabled.

Remedy: Disable the teach pendant to continue the program.

PNT2-092 Stop error excess

Cause: Refer to SRVO-023.

Remedy: Refer to SRVO-023.

PNT2-093 Move error excess

Cause: Refer to SRVO-024.

Remedy: Refer to SRVO-024.

PNT2-094 DEADMAN switch RELEASED

Cause: The DEADMAN switch has been released during an operation. The operation has been discontinued.

Remedy: Press the DEADMAN switch, and hold it down to restart the procedure.

PNT2-095 Fence open during production

Cause: FENCE1 and FENCE2 circuit open on EMG control board.

Remedy: Determine the cause of FENCE1 and FENCE2 open circuit and correct.

PNT2-096 UOP immediate stop detected

Cause: IMSTP (immediate stop) UOP input not asserted.

Remedy: If using UOP, clear source of fault. If not using UOP, select the I/O menus, zero UOP mapping, and cycle power on the controller.

PNT2-097 HOLD active

Cause: A HOLD signal, either from the UOP or the teach pendant, has been activated.

Remedy: Remove the HOLD condition.

PNT2-098 Track destination gone

Cause: A destination out of window error has occurred.

Remedy: Current cycle must be aborted. To prevent this from happening, reteach necessary positions, adjust the conveyor speed, or adjust boundaries.

PNT2-099 PC serial interface fault

Cause: The PC interface serial link has failed.

Remedy: Check the LED status on the PC interface board. Refer to the Maintenance for the possible cause.

PNT2-100 OVC alarm

Cause: The average current calculated by the servo software exceeded the specification.

Remedy: Refer to troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-101 Limit error

Cause: The taught position was outside the normal work envelope of the robot. One of the robot axes could not reach the position.

Remedy: Reteach the position.

PNT2-102 Position not reachable

Cause: There is no solution (conversion from a Cartesian position to joint angles) for the taught position.

Remedy: Reteach the position.

PNT2-103 Configuration mismatch

Cause: This is a pause condition. The configuration cannot change during a Cartesian (linear or circular) motion.

Remedy: Either reteach the motions using the same configuration or use a joint motion to change configurations before proceeding with Cartesian motion.

PNT2-104 Planner error

Cause: An error was encountered by the planner.

Remedy: Check the error message log for details.

PNT2-105 Unitialized position

Cause: This is a system software error.

Remedy: Document the events that led to the error, record the software version number and contact your local distributor or the FANUC technical representative. You can try to clear the error by powering the controller off and then on.

PNT2-106 Brake fuse blown

Cause: The brake fuse is blown on the EMG control pcb. The FALM light on the EMG control pcb should be lit.

Remedy: Refer to troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-107 Robot not mastered

Cause: The robot is not mastered.

Remedy: Refer to mastering section in the Electrical Connection and Maintenance Manual.

PNT2-108 MCC alarm

Cause: The servo amplifier magnetic contactor (MCC) is welded closed.

Remedy: Refer to troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-109 Discharge current alarm

Cause: The regenerative energy produced by the motor exceeded the specifications.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-110 High voltage alarm

Cause: The DC voltage on the main power circuit of the servo amplifier exceeded the specification.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-111 High current alarm

Cause: The current in the main power circuit of the servo amplifier exceeded the specification.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-112 Low voltage alarm

Cause: The DC voltage on the main power circuit of the servo amplifier is lower than the specification even though MCC is on.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-113 Servo amp overheat alarm

Cause: The servo amplifier overheated.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-114 Collision alarm

Cause: The servo software detected a disturbance torque that was too high, and tripped a collision detection alarm.

Remedy: Refer to troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-115 Pulsecoder battery discon alarm

Cause: The battery voltage for the Pulsecoder is zero volts.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-116 Pulsecoder alarm

Cause: A Pulsecoder alarm has occurred. Go to the ALARMS screen on the teach pendant to record the type of Pulsecoder alarm.

Remedy: Refer to troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-117 Pulsecoder battery low alarm

Cause: The Pulsecoder batteries are low.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-118 Motor overheat occurred

Cause: The Pulsecoder overheated.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-119 Pulsecoder communication error

Cause: The axis control pcb sent the request signal, but did not receive serial data from the Pulsecoder.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-120 Pulsecoder position compare error

Cause: The feedback velocity exceeds the specification.

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-121 Collision Detection (Hand Broke)

Cause:

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-126 Operation mode T1 Selected

Cause: The CE mode switch was placed into T1.

Remedy: A mode change on the CE mode switch will pause your system. You must reset your system after a mode change.

PNT2-127 Operation mode T2 Selected

Cause: The CE mode switch was placed into T2.

Remedy: A mode change on the CE mode switch will pause your system. You must reset your system after a mode change!!!

PNT2-128 adj out of limit at line %s

Cause: Prog Adj out of limit in adj precheck.

Remedy: Check the alarm log to find out at which position motion error will occur, use CLR_Adj to clear the adj value.

PNT2-129 I/O Hardware not installed

Cause: The I/O Hardware selected is physically not installed.

Remedy: Make sure I/O Hardware that is being selected is installed correctly.

PNT2-130 Data Error (see FR:derrors.ls)

Cause: The I/O Auto Configurator data file contains errors.

Remedy: Go to the File menu and display FR:derrors.ls for a description of the error with the corresponding line number.

PNT2-131 Servo Disconnect

Cause: The servo is disconnected.

Remedy: Connect the servo, and then press RESET.

PNT2-132 Chain 1 (+24v) abnormal

Cause: Single chain 1 (+24V) failure occurred.

Remedy: Repair the circuit of the chain 1 (+24V) on the hardware. Set the CHAIN FAILURE detection to TRUE on the SYSTEM/CONFIG screen, and push the RESET button on the teach pendant.

PNT2-133 Chain 2 (0v) abnormal

Cause: A single chain 2 (0V) failure occurred.

Remedy: Repair the circuit of the chain 2 (0V) on hardware Set CHAIN FAILURE detection to TRUE on SYSTEM/CONFIG screen. Press the RESET button on teach pendant.

PNT2-134 NTED input

Cause: The non Teacher Enabling Device is released.

Remedy: Press the Non Teacher Enabling Device, and then press RESET.

PNT2-135 TP OFF in T1,T2/Door open

Cause: The teach pendant is disabled when the mode switch is in T1 or T2 mode. Or, the controller door is opened or mis-wiring of hardware connection has occurred.

Remedy: Change the teach pendant Enable/Disable switch to ON, and close the controller door and press RESET. If the reset is not effective, correct hardware connection.

PNT2-136 Deadman switch released

Cause: The teach pendant DEADMAN switch is released.

Remedy: None.

PNT2-137 Short term Chain abnormal

Cause: A chain failure alarm is detected in the short term.

Remedy: If this error occurs with the DEADMAN switch release alarm, release the DEADMAN switch again and press the DEADMAN switch. Or, if this error occurs with another safety signal errors, reproduce the same safety error. And press reset If SRVO-230, 231 occurs, refer to the cause and Remedy of SRVO-230,231.

PNT2-151 Col %s range err/preset %%override

Cause: The specified system color contained percent preset override data which was outside the pre-defined allowable range for percent overrides.

Remedy: None. The override percent value was automatically adjusted to the closest valid value.

PNT2-152 Data err :Col %s preset %%override

Cause: System color data has uninitialized percent preset override information. This happens when color data created on previous version of software is loaded into the controller.

Remedy: If the error occurs each time the system color table data is accessed, it might be necessary to create new color table data on the controller.

PNT2-153 Eff. preset range err (%s)

Cause: The effective preset/estat values (after applying a preset percent override factor for the specified color, gun and parameter number) are outside the permissible range for that parameter.

Remedy: Verify that the preset/estat value in the table is within the acceptable range for the parameter. Check the override percentages defined for that color. Examine the effective preset values to see if the values are within ranges for all parameters.

PNT2-154 Color %s data access error

Cause: The system could not access data on the specified system color. Data might not have been created on this controller, or might have been accidentally cleared.

Remedy: Create new system color data using the SETUP colors screen on the teach pendant.

PNT2-159 Illegal code in NEXT color %s

Cause: The system color number that is next in the queue is illegal.

Remedy: This error should never occur during normal PaintTool operation. The system color numbers are being scanned when they are put into the queue.

PNT2-160 Illegal manual color %s received

Cause: For integral color change systems only: The color valve selected by the PLC in manual mode has no data defined.

Remedy: Check the color valve number sent by the PLC. If it is correct, then define the color valve using the SETUP menus under VALVES.

PNT2-165 TP disabled - Calib. aborted

Cause: Calibration was aborted because the teach pendant was disabled during the process.

Remedy: Keep the teach pendant enabled during calibration. This will not be applicable to Control Reliable robot controllers, as the teach pendant can not be turned on in auto/manual mode. Calibration must be done from the GUI. Calibration can not be performed from the teach pendant for Control Reliable robot controllers.

PNT2-166 Linear Potentiometer Unstable

Cause: During Auto Calibration, the feedback from the linear potentiometer revealed large fluctuations in canister position over a short period of time. If the linear potentiometer has been improperly installed or the magnet has been misaligned, it may be the cause of this alarm.

Remedy: Change the applicator and repair the malfunctioning linear potentiometer. Retry calibration with a different applicator.

PNT2-167 Table not adapted, max err exceeded

Cause: While operating in hybrid mode, Accustat determined that the discrepancy between actual paint used during the job and the expected paint usage was too high to adapt to it. The color change valves not operating properly. Color change solvent or air has been left in the canister. This is an indicator that there might be a problem with the applicator. The regulator might not be opening/closing properly. The restrictor has changed in size. The maximum hybrid adaptation value has been set too low. The Hybrid Mode Gain is too high. If the TPR is below the Low Confidence Min (cc), then the Low Confidence Gain may be too high.

Remedy: Determine cause for flow discrepancy. Check the regulator, fluid or restrictors for a plugged or restricted passageway. Verify that the Hybrid Mode Gain in the AccuStat color data is not too high (default is 20). Verify that the Hybrid Mode Gain Factor is not set too high (default is 1.0). Setup the Low Confidence Min (ccs) for low TPRs. Make the Low Confidence Gain, lower to account for the less resolution at low flow rates. Use other alarms that occur during this job to help debug the problem. This alarm is a warning by default. No immediate action is necessary unless it has impacted the job appearance. Perform an Auto Calibration on that color valve. If this alarm has faulted the robot the robot, then reset and continue the job.

PNT2-168 Dedock required, robot at dock

Cause: An attempt was made to move the robot while it was in the docking station. This alarm occurs when attempting to move the robot in manual mode, without first moving it out of the docking station. An attempt was made to move the robot to purge position or enable special moves, while the robot is in the docking station.

Remedy: Request to de-dock before initiating robot motion. The robot is at dock and must run dedock before other moves are enabled. Reset the robot, put the cell in manual mode, and run the de-dock move from the MCP.

PNT2-169 Docking station not retracted

Cause: The position and proximity switch are not functioning properly. The docking station has not retracted fast enough. The Docking Cylinder Timeout is set too low. Check for obstructions, misalignments and for faulty switch.

Remedy: Check the position and the proximity switch. Repair the pneumatic or electric circuit if necessary. Adjust the pneumatic controls for the retract/extend. Increase the Docking Cylinder Timeout Value. Verify that the digital inputs and outputs have the proper state. By default: DIN[130, DSR] = ON; DIN[129, DSE] = OFF; DOUT[147, RDS] = ON; DOUT[146, EDS] = OFF. If the dock has retracted, and the I/O has been verified, then reset and continue the robot.

PNT2-170 Docking station not extended

Cause: The position and proximity switch are not functioning properly. The docking station has not extended fast enough. The Docking Cylinder Timeout is set too low. Check for obstructions, misalignments and for a faulty switch.

Remedy: Check the position and the proximity switch. Repair the pneumatic or electric circuit if necessary. Adjust the pneumatic controls for the retract/extend. Increase the Docking Cylinder Timeout Value. Verify that the digital inputs and outputs have the proper state. By default: DIN[129, DSE] = ON; DIN[130, DSR] = OFF; DOUT[147, RDS] = OFF; DOUT[146, EDS] = ON. If the dock has extended, and the I/O has been verified, then reset and continue the robot operations.

PNT2-171 Auto Calibration aborted

Cause: The AccuStat auto calibration could not continue. This is normally the result of an operation time out. The auto calibration can abort for several reasons. The function of this alarm is as follows. First, the Auto Calibration Aborted alarm will post if an error has occurred. The next alarm will contain the cause of the auto calibration to abort. Cause 1: While searching for the minimum or maximum flow rates in the cal table, the calibration timed-out by reaching the maximum number of attempts to establish the minimum or maximum flow rate output values. This can be a result of improper fluid restriction selection, non-attainable cal table flow ranges, or a bad fluid regulator. The resulting alarms would be PNT1-251, Failed to find upper limit or PNT1-252, Failed to find lower limit. Cause 2: Calibration resulted in non-increasing command values in the calibration table data. The slope of the calibration table is negative. Increasing output values do not result in increased flow rate. The result error code will be PNT1-254 Non-increasing cal table. Cause 3: The calibration routine calculated output values that are above or below the maximum or minimum output values defined in the Applicator Parameters for the fluid regulator. The minimum output values in counts are (low-res: 200, hi-res: 1600) and the maximum output values in counts are (low-res: 1000, and hi-res: 8000). The restrictor size is not compatible with the desired flow rate range and the material attempting to be calibrated. The resulting error codes will be PNT1-255 Calculated output > max output or PNT1-256 Calculated output < min output. Cause 4: The calibration has been aborted by the user or has been interrupted by another fault. If the cell has been emergency stopped during the calibration. The robot failed to reach the proper location in order to calibrate. See other alarms to determine the cause of the fault.

Remedy: Remedy 1: Increase the number of Maximum Calibration Trys in the AccuStat setup. Verify restrictor, regulator and calibration flow rate range in the AccuStat Color Data for that valve. Remedy 2: Verify all equipment is operating properly. Check the linear potentiometer feedback (AIN[1, DISP], the regulator operation, and that trigger is opening and closing properly. Verify attainable values have been set in the AccuStat Color Data for the requested minimum and maximum flow rates. Remedy 3: Verify that the fluid regulator is functioning properly. Change the fluid restrictor size to better accommodate the requested flow rate range. Change the requested flow rate range in the AccuStat Color Data setup. Remedy 4: Determine the cause of the fault to the robot. Check the alarm log to aid finding the cause of the fault. If the robot has not moved to position, verify that the proper path has been taught.

PNT2-172 Failed to find Upper limit

Cause: AccuStat could not reach the upper flow limit in the number of times set at the calibration screen. The upper limit flow rate can not be achieved. Fluid restrictor is too small. The flow rate or can position feedback is unstable.

Remedy: Verify all equipment is working properly. Check Color Data upper limit. Check applicator parameters to make sure that App Parameter Max limit is not below the AccuStat Color Data upper limit. Increase Auto cal hi/low tolerance or Trys for hi/low from the AccuStat setup screen. Check feedback.

PNT2-173 Failed to find Lower limit

Cause: AccuStat could not reach the lower flow limit in the number of times set at the calibration screen. The lower limit flow rate can not be achieved. Fluid restrictor is too large. The flow rate or the canister position feedback is unstable.

Remedy: Verify all equipment is working properly. Check Color Data lower limit. Check applicator parameters to make sure that App Parameter Min limit is not above the AccuStat Color Data lower limit. Increase Auto cal hi/low tolerance or Trys for high/low from the AccuStat setup screen. Check feedback.

PNT2-174 Beaker Timeout, Scale Cal Aborted

Cause: Not enough time has been allowed to fully empty the canister, by the Beaker Fill Timeout. The canister did not empty due to the trigger or regulator not opening. There has been a loss of canister position feedback.

Remedy: Check the regulator and gun to be sure they are functioning properly. Increase Beaker Fill Timeout from AccuStat setup screen. Fix the trigger or regulator. Verify canister position feedback (AIN[1, DISP]).

PNT2-175 (%s) Non-increasing cal table

Cause: After the calibration table has been shifted or a new calibration table created, a non-increasing table of flow command values is detected. Unstable flow rates were encountered. The canister position change is not proportional to fluid regulator command. The canister position feedback is unstable.

Remedy: Verify regulator is working properly. Verify fluid restrictor is suitable for the desired flow rates. Check proper feedback from the linear potentiometer. If this occurs as a result of a table shift, calibrate the color valve in which the cal table has become non-increasing.

PNT2-176 Calculated output > Max Output

Cause: The calculated command counts are above the Applicator Parameter Maximum Output value (1000 counts, or 8000 counts hires). Fluid restrictor is too small or the regulator is not working properly.

Remedy: Determine what is limiting the flow rate. Check the Color Data Hi/Low flow range settings. PNT1- 256, Calculated output < min output.

PNT2-177 Calculated output < Min Output

Cause: The calculated command counts are below the Applicator Parameter Minimum Output value (200 counts, or 1600 counts hi-res). Fluid restrictor is too large or the regulator is not working properly.

Remedy: Restrict fluid flow with smaller restrictor. Check the Color Data Hi/Low flow range settings.

PNT2-178 Failed to reach setpoint

Cause: The Tolerance Band is too narrow (low), or the regulator is not working properly. The adaptive gain for that color might be too low, and the flow rate is not adapting fast enough. The potentiometer is not operating properly. The trigger delay might not be set properly if trigger events are too close together.

Remedy: Check regulator operation and Adaptive Gain settings in the AccuStat Color Data for that color valve. Verify the trigger delays are set up properly.

PNT2-179 Canister Fill Error

Cause: Prior to painting the job, the can is checked to see if enough paint has been put into the can (cylinder position counts $\geq$ TPR counts). This can happen if the waiting for can full condition is falsely satisfied. Possible causes are air in the canister due to faulty color change cycles or unstable readings from the linear potentiometer. Many times this happens because the air has not been pushed out of the dump before the fill valve is opened.

Remedy: Make sure that paint has reached the docking station before starting the step to open the fill valve. A fix could be increasing the amount of time of the step to fill the paint line before opening the fill valve. With air in the can, once the piston pressure has been reapplied the air will compress causing the cylinder position to fall below the fill counts.

PNT2-180 Auto Calibration Successful

Cause: The Color Valve selected for Auto Calibration has successfully completed the calibration sequence.

Remedy: None.

PNT2-181 Non-decreasing canister position

Cause: If the gun has been on for the amount of time specified as Canister Check Time and the amount of change in cylinder position counts has not reached the Minimum Canister Change Counts, this alarm will post. This can be caused by low flow rates, where it takes longer to see this minimum cylinder position change. This could be an indicator of trouble with the linear potentiometer or the feedback circuit.

Remedy: Lower the Minimum Canister Change Counts or increase the Canister Check Time. Check the feedback from the linear potentiometer or repair the low voltage wire for the canister feedback circuit.

PNT2-182 Canister Position Increasing

Cause: This is caused by the piston moving during a color change when the piston is held at the bottom of the can for cleaning. In the event that the cleaning solvent and air pressure overcome the piston air pressure, then this alarm will occur.

Remedy: Perform a scale calibration to insure that the calculated value for the Can Empty Check Counts is valid. Increase the Fill Error Tolerance. Verify that the piston pressure is not being restricted.

PNT2-183 Intermittent Connection Detected

Cause: A reading of 0 counts on the analog input (AIN[1,DISP]) causes the alarm, intermittent connection. This is an indicator of potentiometer trouble during job playback, caused by an open/short circuit in cylinder position feedback. This alarm only occurs during a job or color change in auto mode. Regular, but not consistent postings of this alarm indicates a poor electrical connection in the feedback circuit. The electrical connector at the quick disconnect plate, when damaged or worn, can cause this alarm. Induced noise in the feedback circuit from poor grounding leads to this temporary condition as well. Resistors inside the robot controller set the supply voltage to the linear potentiometer and it should be 10 Volts.

Remedy: Replace the electrical connector on the quick disconnect plate. Verify proper grounding of the feedback circuit. Replace the low voltage cable in the robot arm. Check the supply voltage to the linear potentiometer.

PNT2-184 Flow Error High, Valve: %s

Cause: If the percentage of paint left in the can exceeds the TPR by the Job Total Error Tolerance, then this alarm will post. If the paint usage exceeds the TPR by the Job Total Error Tolerance, then also this alarm will post. Most of the time, the can will run out of paint before the paint usage exceeds the TPR by this percentage. This indicates that the fluid flow has been restricted or the can has run out of paint.

Remedy: The paint needs to be calibrated or the adaptive gain for that color valve is too high. The regulator may not be actuating properly from not running a clean out cycle before the end of the shift. Often other error conditions will occur prior to this alarm. Check the alarm log to help detect other symptoms leading to this alarm.

PNT2-185 Applicator Disabled during job

Cause: If the applicator is disabled at the end of the job, then the table will not adapt in hybrid mode.

Remedy: None.

PNT2-186 Scale Calibration Aborted

Cause: The scale calibration sequence did not complete. This can be caused by a timeout or fill/empty error.

Remedy: Check the alarm log to see what conditions caused the calibration to abort. In most cases, the scale cal can timeout from one of the following alarms: PNT1-253 Beaker timeout, scale cal abort, PNT1-248, CC abort, can full timeout, PNT1-249 CC abort, can empty timeout. Verify all equipment is operating properly.

PNT2-187 Scale Calibration Successful

Cause: The scale calibration sequence has completed successfully.

Remedy: None.

PNT2-192 De-Docking program is undefined

Cause: No path data has been taught for DEDOCK.TP. Something has caused the position to become invalid.

Remedy: Teach the robot path for the de-docking operation. The de-dock path is a special position. After teaching, or touching up special position paths, the power on the robot controller must be cycled for the changes to take effect.

PNT2-193 Docking program is undefined

Cause: No path data has been taught for DOCK.TP. Something has caused the position to become invalid.

Remedy: Teach the robot path for the docking operation. The dock path is a special position. After teaching, or touching up special position paths, the power on the robot controller must be cycled for the changes to take effect.

PNT2-194 Robot NOT at docking position

Cause: The request to enter the dock was given but the robot did not reach the docking position. Dock attempt did not complete and the docking station could not extend. Robot faulted on the way to the docking station, see other faults. The robot did not report it was at the docking station, because the dock special position was not taught.

Remedy: Remedy : Check the path data and ensure the last position in DOCK.TP has a FINE position type. Verify that the DOCK.TP special position has been taught. The controller power must be cycled after special positions are taught. If the Dock path did not complete execution, then determine why execution was halted. Reset the robot and continue the job. The robot should complete the motion automatically. If the robot does not complete the motion, then in manual mode, move the robot home. After the cell has been put into manual mode the job must be reinitialized.

PNT2-200 Door 1 held input lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued, activate the ignore part signal to disable scanning operations.

PNT2-201 Door detect 1 sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued, activate ignore part signal to disable scanning operations.

PNT2-202 Illegal Opener macro Called

Cause: Two Cross-Conveyor Request macros have been called without waiting for the 1st Request macro.

Remedy: Delete one of the Request macros or add a Wait macro between these macros.

PNT2-203 Robot in opener path

Cause: Opener move cannot be executed as the robot is in the opener path.

Remedy: Jog the robot so that it is clear of the opener, and then reissue the move.

PNT2-204 Opener in robot path

Cause: The robot move cannot be executed as the opener is in the robot path.

Remedy: Jog the opener so that it is clear of the robot, and then reissue the move.

PNT2-205 Opener Bypass is undefined

Cause: The opener bypass program is not taught.

Remedy: Teach the opener bypass program (OPNBYPAS.TP).

PNT2-206 Opener Special1 program is undefined

Cause: The opener special1 program is not taught.

Remedy: Teach the opener special1 program (OPNSPC1.TP).

PNT2-207 Opener Home program is undefined

Cause: The opener home program is not taught.

Remedy: Teach the opener home program (OPNIHOME.TP).

PNT2-213 Bad cur_color no. [%d]

Cause: The cur_color number is out of range.

Remedy: Check the [PASHELL] cur_color between (1-MAX_VALVES(31)).

PNT2-214 Bad cal.tbl.(color[%d]-parm[%d])

Cause: Parameter cal. table does not increase.

Remedy: Check the color and parameter calibration tables.

PNT2-215 %s group mask(%d) != tracking schedule group(%d)

Cause: This teach pendant program group mask does not match group (robot or opener) in tracking schedule.

Remedy: Check each robot and opener PROCESS to verify that the tracking schedule number is assigned to this group.

PNT2-216 No defined color (color=[%d])

Cause: The color that has been sent with the current job has not been defined.

Remedy: You must define this color in the SETUP Color Table before initing the robot with this color.

PNT2-224 WAITCONV[] late for line %s

Cause: The first stroke that was late on the part for this job started at this line. The current speed of the conveyor is too fast for the speed, of this Job and Color Group.

Remedy: Decrease the speed at which the conveyor is moving. Increase the Target Speed or Fan width or both for the current Color Group. Decrease the Percent Overlap for the current Color Group.

PNT2-225 Data Monitor is disabled

Cause: The Data Monitor subsystem has been disabled, by user choice or automatically because limit on data files set by the user has been reached.

Remedy: Enable Data Monitor Operation from the Utilities-Data Monitor screen. On the Setup-Diagnostics screen, consider increasing Max Data Files Stored or setting Disable After Max Files to NO, if these settings caused Data Monitor to be disabled. See the FANUC PaintTool Operator's Manual, Advanced Functions chapter for more information.

PNT2-226 Maximum DMON Data Files exceeded

Cause: The limit on data files that might be stored by the Data Monitor subsystem has been reached.

Remedy: On the Setup-Diagnostics screen, consider increasing Max Data Files Stored or setting Disable After Max Files to NO. See the FANUC PaintTool Operator's Manual, Advanced Functions chapter for more information on these items.

PNT2-227 DMON in progress, item locked

Cause: The Data Monitor session is in progress and user tried to change setup that could affect current session.

Remedy: Wait till the end of the Data Monitor session. If you are in Automatic Sampling mode, this happens at job end. If sampling in Asynchronous mode, set SAMPLE NOW, under Setup-Diagnostics to STOP, to stop the current session.

PNT2-228 Asynchronous DataMonitor disabled

Cause: Asynchronous Data Monitoring has been disabled.

Remedy: To re-enable, ensure that UTILITIES-Data Monitor-Data Monitor Operation is enabled. Set SETUP-Diagnostics-Auto Sample Each Job to NO.

PNT2-230 DMON file management disabled

Cause: File management features have been disabled because the user set SETUP:Diagnostics Max Data Files Stored to 0. Stored data will be over-written by subsequent sampling sessions.

Remedy: No action required. To re-enable, you can set Max Data Files to a non-zero value. Ensure that the destination data storage device has adequate space. See the FANUC PaintTool Operator's manual, Advanced Functions chapter for more information.

PNT2-231 DMON file management enabled

Cause: File management features have been enabled because the user set the SETUP:Diagnostics Max Data Files Stored value. Data Monitor will store as many old data files as indicated.

Remedy: No action required if the destination data storage device has adequate space. To disable, set the value to 0. Refer to the FANUC PaintTool Operator's manual, Advanced Functions chapter for more information.

PNT2-232 Sample_start builtin exec failed

Cause: The KAREL built-in SAMPLE_START returned a bad status.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-233 Sample_end builtin exec failed

Cause: The KAREL built-in SAMPLE_END returned a bad status.

Remedy: Document the events that led to the error and contact your local FANUC representative.

PNT2-241 %sGlss Breakage Detected

Cause: During production, one of the glass strands feeding through the chopper motor was detected broken by its corresponding microphone sensor.

Remedy: Jog the robot away from the fault location and re-thread the glass strand through the chopper motor. Jog the robot near the fault location and continue the cycle.

PNT2-242 %sCatalyst Flow Error

Cause: During production, the catalyst flow stopped which is causing only the resin to flow.

Remedy: This can be due to a faulty Kobold sensor or mechanical problems to the catalyst pump.

PNT2-243 %s flow command warning

Cause: During production, an increase in command output was issued in order to maintain setpoint. This increase surpassed the Command Warning percentage value. An additional jump in command output might fault the robot.

Remedy: This problem might be due to a clogged gun tip or old equipment. Clean the gun tip, check the lines, and/or equipment.

PNT2-244 %s flow command alarm

Cause: During production, a significant increase in command output was issued in order to maintain setpoint. This increase surpassed the Command Alarm percentage value which faulted the robot.

Remedy: This problem might be due to a clogged gun tip or old equipment. Clean the gun tip, check the lines, and/or equipment.

PNT2-245 %s0 res flow rate T.O.

Cause: All of the conditions were set for resin fluid to be flowing and a zero flow rate was measured. This might be caused by:

- A broken applicator trigger
- A loss of resin fluid supply pressure
- A broken flow meter
- A broken cable (to the flow meter)
- A Zero fluid flow timeout value that is too short. Note, Accuchop automatically faults the robot when this alarm occurs.

Remedy: Check that the gun is properly triggering. If fluid was observed to be flowing, check and possibly replace the fluid flow meter. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT2-246 %sMax output has flow < setpoint

Cause: With a maximum control output, the flow rate was measured to be lower than the setpoint (requested flow). The resin gun may be clogging. The resin or pilot air line might be pinched. The resin fluid pressure might have become too low. The I/P transducer might be broken. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Check the gun tip and the whole gun for clogging. Check the resin lines for pinching, especially at places where they flex. Check the resin supply pressure. Check and replace the I/P transducer if necessary.

PNT2-247 %sMin output has flow > setpoint

Cause: With a minimum control output the flow rate was measured to be higher than the flow rate setpoint. The resin fluid pressure might have become too high. The I/P transducer or fluid regulator might be stuck open. There may be a fairly large fluid leak. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Calibrating the resin will establish a new cracking pressure (minimum control output) for a changed fluid pressure. Check and replace the resin fluid regulator and I/P transducer if necessary.

PNT2-248 %s0 gls feed rate T.O.

Cause: All of the conditions were set for glass to be feeding and a zero feed rate was measured. This might be caused by:

- A broken applicator trigger.
- A broken chopper motor sensor.
- A broken cable (to chopper motor sensor), or a Zero glass feed timeout value that is too short. Note, Accuchop automatically faults the robot when this alarm occurs.

Remedy: If the glass is not feeding from the chopper motor, check the items listed above or the 32 point input module. If it occurs with very low feed rates, decrease the Normal gain modifier in Accuchop's Glass Setup screen.

PNT2-249 %sMax output has feed < setpoint

Cause: With a maximum control output, the glass feed rate was measured to be lower than the setpoint (requested feed). The chopper motor might be clogging. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Check and clean the chopper motor if it is clogged. Check and replace the I/P transducer if necessary .

PNT2-250 %sMin output has feed > setpoint

Cause: With a minimum control output, the glass feed rate was measured to be higher than the feed rate setpoint. The motor (glass) RPM might have become too high. The I/P transducer might be stuck open. Note: Accuchop automatically faults the robot and enters into Open Loop when this failure occurs.

Remedy: Calibrating the glass will establish a new cracking pressure (minimum control output). Check and replace the I/P transducer if necessary.

PNT2-255 RDU Full - Proc Champ disabled

Cause: The report file generated by Process Champion has filled the RDU device to its capacity. This forces the system to disable Process Champion auto mode so that no further auto appending is performed on the file. The file has been copied to FR: and is deleted from RDU:.

Remedy: For RJ3 controllers only. Re-enable Process Champion auto mode by setting the 'Set Process Champion Mode' item, in the SETUP Production screen, to Auto. To prevent FR: from filling to capacity, remove the file from FR: to another device, ie PCMCIA card.

PNT2-270 Retract Hard Stop Error

Cause: An attempt was made to Retract the hard stop from its normal state, but the operation failed.

Remedy: Determine if the hard stop physically retracted. If so, check the functionality of the sensors. Ensure that the I/O is mapped correctly. If the hard stop did not retract, determine if the hard stop received the RETRACT output signal.

PNT2-271 Extend Hard Stop Error

Cause: An attempt was made to Extend the hard stop to its normal state, but the operation failed.

Remedy: Determine if the hard stop physically extended. If so, check the functionality of the sensors. Ensure that the I/O is mapped correctly. If the hard stop did not extend, determine if the hard stop received the EXTEND output signal.

PNT2-272 Exit Srv pos in prog is undefined

Cause: Robot ENT_SRV program is not taught.

Remedy: Teach the robot ENT_SRV.TP program.

PNT2-273 Ent Srv pos in prog is undefined

Cause: The robot EXIT_SRV program is not taught.

Remedy: Teach the robot EXIT_SRV.TP program.

PNT2-276 Error opening TPE program

Cause: This error should never occur during normal PaintTool operations. In the event that this alarm was posted, PaintTool was making an attempt to open a specific teach pendant program, but failed.

Remedy: Ensure that the teach pendant program is loaded in the controller. If the alarm still occurs, document the events that led to the error, and contact your local FANUC representative.

PNT2-277 TPE Built-in error

Cause: This error should never occur during normal PaintTool operation.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-278 %sColor Valve + PrgAir both ON

Cause: This error should never occur during normal PaintTool operation.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-279 TPE error reading instruction

Cause: This error should never occur during normal PaintTool operation.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-280 TPE wrong type of program:%s

Cause: This error should never occur during normal PaintTool operation.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-281 TPE error closing a program

Cause: This error should never occur during normal PaintTool operation.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

PNT2-282 Selected program not found

Cause: A job that is selected for DATA ZONE EDIT or TEST RUN does not exist.

Remedy: Generate the job or select a job that does exist.

PNT2-283 out of(strt,end)ext1 at line%s

Cause: The ext1 of current position exceed out of range of start EXT1 to end EXT1.

Remedy: This will not affect the xrail smoothing process. Choose another smoothing range if necessary.

PNT2-284 TPE's motion group must be 1

Cause: The teach pendant motion group must be 1 when using Xrail Manager.

Remedy: Choose another teach pendant program which uses 1 for the motion Group.

PNT2-285 TPE Header size mismatch

Cause: The teach pendant program header size is inadequate. The program might have been created on an older version. Header information might not be correctly stored.

Remedy: Try 'SELECT'ing the program, go to 'DETAILS','NEXT','END'. If this does not work, create a new teach pendant program and paste the lines from the old program into it.

PNT2-286 Uninitialized TPE position in program %s

Cause: There was an uninitialized position found in the specified special move position. This could have occurred if a new position was recorded in one of the special move programs when the robot wasn't mastered or calibrated, causing an uninitialized position to be created. Executing a specific operation afterwards might cause this alarm to occur.

Remedy: Ensure the robot is mastered and calibrated. Re-teach the position in the special move program, indicated by the alarm.

PNT2-292 Macro motion group unknown

Cause: The macro could not identify as to which robot called the macro.

Remedy: Make sure the macro is running in production with the controller in remote.

PNT2-293 Communication error %s

Cause: The Ethernet communication with another controller failed.

Remedy: Verify the Ethernet communication. Make sure all controllers are turned on and connected.

PNT2-294 Arm config error %s

Cause: Another controller is configured for the same arm IDs as this Controller.

Remedy: Verify robot library setup and controller number for all arms on all controllers at a Controlled start.

PNT2-326 %sRobot is bypassed

Cause: The robot not bypassed input is OFF.

Remedy: The robot not bypassed input must be ON.

PNT2-327 %sSHELL failed to run SUBSHELL

Cause: The subtask failed to run.

Remedy: Cold start the controller.

PNT2-328 %sE-STAT unit faulted

Cause: An E-STAT unit fault was detected.

Remedy: Clear the E-STAT unit fault.

PNT2-329 %sAutomatic CLNOUT on prod_entry

Cause: Automatic move from the cleanin position on production entry is enabled.

Remedy: None.

PNT2-330 %sCannot create presets

Cause: When a job is created, the presets for the job are also created. In this case, the presets for the job could not be created.

Remedy: Check that the job name is of the form JOBXXXX, where XXXX is a number between 1 and 1024.

PNT2-331 %sCannot read presets data file

Cause: The preset data for the current job could not be found.

Remedy: Check for the existence of a file PAPSXXXX, where XXXX is the job number. This file is created when the job is created. If the job was incorrectly named, or the file was deleted, this message might result.

PNT2-332 %s not calibrated

Cause: The calibration status for each control parameter must be complete before it can be used in a program.

Remedy: Calibrate all control parameters used within the current program.

PNT2-333 %sFailed to continue robot task

Cause: An attempt to continue the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT2-334 %sFailed to pause robot task

Cause: An attempt to pause the robot motion task has failed. The robot motion task presumably has aborted.

Remedy: The current cycle must be aborted.

PNT2-335 %sFailed to abort robot task

Cause: An attempt to abort the robot motion task has failed. The robot motion task might not have been running at the time an attempt was made to abort it.

Remedy: None.

PNT2-336 %sRobot task has faulted

Cause: The robot task has faulted, but was not detected by the main task.

Remedy: The current cycle must be aborted.

PNT2-337 %sFailed to run robot task

Cause: An attempt to run the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT2-338 %sInvalid job received

Cause: Multi exposure exceeded the limit. The number of exposures will be modified at execution.

Remedy: Exposure times calculated for the multi-exposure function exceeded the limit of the exposure time available with the camera. The number of exposures will be different from your setting. Changing the number of exposures or exposure time is recommended.

PNT2-339 %sInvalid tutone received

Cause: An invalid tutone option was received from the PLC.

Remedy: The PLC must init robot with a valid tutone option.

PNT2-340 %sInvalid repair received

Cause: An invalid repair option was received from the PLC.

Remedy: The PLC must init robot with a valid repair option.

PNT2-341 %sInvalid color received

Cause: An invalid color number was received from the PLC.

Remedy: The PLC must init the robot with a valid color number.

PNT2-342 %sJob is not found

Cause: The production run program is not loaded.

Remedy: The program must be loaded before attempting to run it in production.

PNT2-345 %sRobot is bypassed

Cause: The robot not bypass input is OFF.

Remedy: The robot not bypass input must be ON.

PNT2-346 %sSHELL failed to run SUBSHELL

Cause: The subtask failed to run.

Remedy: Cold start the controller.

PNT2-347 %sE-STAT unit faulted

Cause: An E-STAT unit fault was detected.

Remedy: Clear the E-STAT unit fault.

PNT2-348 %sAutomatic CLNOUT on prod_entry

Cause: Automatic move from the cleanin position on production entry is enabled.

Remedy: None.

PNT2-349 %sCannot create presets

Cause: When a job is created, the presets for the job are also created. In this case, the presets for the job could not be created.

Remedy: Check that the job name is of the form JOBXXXX, where XXXX is a number between 1 and 1024.

PNT2-350 %sCannot read presets data file

Cause: The preset data for the current job could not be found.

Remedy: Check for the existence of a file PAPSXXXX, where XXXX is the job number. This file is created when the job is created. If the job was incorrectly named, or the file was deleted, this message might result.

PNT2-351 %s not calibrated

Cause: The calibration status for each control parameter must be complete before it can be used in a program.

Remedy: Calibrate all control parameters used within the current program.

PNT2-352 %sFailed to continue robot task

Cause: An attempt to continue the robot motion task has failed.

Remedy: Current cycle must be aborted.

PNT2-353 %sFailed to pause robot task

Cause: An attempt to pause the robot motion task has failed. The robot motion task presumably has aborted.

Remedy: The current cycle must be aborted.

PNT2-354 %sFailed to abort robot task

Cause: An attempt to abort the robot motion task has failed. The robot motion task might not have been running at the time an attempt was made to abort it.

Remedy: None.

PNT2-355 %sRobot task has faulted

Cause: The robot task has faulted, but was not detected by the main task.

Remedy: The current cycle must be aborted.

PNT2-356 %sFailed to run robot task

Cause: An attempt to run the robot motion task has failed.

Remedy: The current cycle must be aborted.

PNT2-358 %sInvalid tutone received

Cause: An invalid tutone option was received from the PLC.

Remedy: The PLC must init the robot with a valid tutone option.

PNT2-359 %sInvalid repair received

Cause: An invalid repair option was received from the PLC.

Remedy: The PLC must init the robot with a valid repair option.

PNT2-360 %sInvalid color received

Cause: An invalid color number was received from the PLC.

Remedy: The PLC must init the robot with a valid color number.

PNT2-361 %sJob is not found

Cause: The production run program is not loaded.

Remedy: The program must be loaded before you attempt to run it in production.

PNT2-364 %sHome program is undefined

Cause: The robot home program is not taught.

Remedy: Teach the robot home program (HOME.TP).

PNT2-365 %sEnter cleaner program is undefined

Cause: The robot cleanin program is not taught.

Remedy: Teach the robot cleanin program (CLNIN.TP).

PNT2-366 %sExit cleaner program is undefined

Cause: The robot cleanout program is not taught.

Remedy: Teach the robot cleanout program (CLNOT.TP).

PNT2-367 %sBypass program is undefined

Cause: The robot bypass program is not taught.

Remedy: Teach the robot bypass program (BYPASS.TP).

PNT2-368 %sPurge program is undefined

Cause: The robot purge program is not taught.

Remedy: Teach the robot purge program (PURGE.TP).

PNT2-369 %sMaster program is undefined

Cause: The robot master program is not taught.

Remedy: Teach the robot master program (MASTER.TP).

PNT2-370 %sSpecial 1 program is undefined

Cause: The robot special1 program is not taught.

Remedy: Teach the robot special1 program (SPECIAL1.TP).

PNT2-371 %sSpecial 2 program is undefined

Cause: The robot special2 program is not taught.

Remedy: Teach the robot special2 program (SPECIAL1.TP).

PNT2-372 %sRobot not at home position

Cause: The robot is not at the HOME position.

Remedy: The robot must be moved to the HOME position.

PNT2-373 %sRobot at cleaner position

Cause: The robot is positioned at the cleaner.

Remedy: Must execute a cleanout move before continuing.

PNT2-374 %sRobot not at cleaner position

Cause: The robot is not positioned at the CLEANER position.

Remedy: The robot must be at the CLEANER position before a move to exit cleaner position is executed.

PNT2-375 %sEnter Maintenance program is undefined

Cause: The robot MAINTENANCE IN program is not taught.

Remedy: Teach the robot MAINTENANCE IN program (MNTIN.TP).

PNT2-376 %sExit Maintenance program is undefined

Cause: The robot MAINTENANCE OUT program is not taught.

Remedy: Teach the robot MAINTENANCE OUT program (MNTOUT.TP).

PNT2-377 %sRobot not at maintenance position

Cause: The robot is not positioned at the maintenance position.

Remedy: The robot must be at the maintenance position before a move to exit maintenance is executed.

PNT2-382 %sHome program is undefined

Cause: The robot HOME program is not taught.

Remedy: Teach the robot HOME program (HOME.TP).

PNT2-383 %sEnter cleaner program is undefined

Cause: The robot CLEANIN program is not taught.

Remedy: Teach the robot CLEANIN program (CLNIN.TP).

PNT2-384 %sExit cleaner program is undefined

Cause: The robot CLEANOUT program is not taught.

Remedy: Teach the robot CLEANOUT program (CLNOUT.TP).

PNT2-385 %sBypass program is undefined

Cause: The robot bypass program is not taught.

Remedy: Teach the robot bypass program (BYPASS.TP).

PNT2-386 %sPurge program is undefined

Cause: The robot purge program is not taught.

Remedy: Teach the robot purge program (PURGE.TP).

PNT2-387 %sMaster program is undefined

Cause: The robot master program is not taught.

Remedy: Teach the robot master program (MASTER.TP).

PNT2-388 %sSpecial 1 program is undefined

Cause: The robot special1 program is not taught.

Remedy: Teach the robot special1 program (SPECIAL1.TP).

PNT2-389 %sSpecial 2 program is undefined

Cause: The robot special2 program is not taught.

Remedy: Teach the robot special2 program (SPECIAL1.TP).

PNT2-390 %sRobot not at home position

Cause: The robot is not at the HOME position.

Remedy: Robot must be moved to the HOME position.

PNT2-391 %sRobot at cleaner position

Cause: The robot is at the CLEANER position.

Remedy: You must execute a CLEANOUT move before continuing.

PNT2-392 %sRobot not at cleaner position

Cause: The robot is not at the CLEANER position.

Remedy: The robot must be at cleaner position before a move to exit cleaner is executed.

PNT2-393 %sEnter Maintenance program is undefined

Cause: The robot MAINTENANCE IN program is not taught.

Remedy: Teach the robot MAINTENANCE IN program (MNTIN.TP).

PNT2-394 %sExit Maintenance program is undefined

Cause: The robot maintenance out program has not been taught.

Remedy: Teach the robot maintenance out program (MNTOUT.TP).

PNT2-395 %sRobot not at maintenance position

Cause: The robot is not positioned at the maintenance position.

Remedy: The robot must be at the maintenance position before a move to exit maintenance is executed.

PNT2-400 %sApplicator enable is OFF

Cause: This message is displayed when the applicator valve enable input turns OFF. When this input is OFF, the GUN trigger output are blocked from turning ON.

Remedy: None.

PNT2-401 %sApplicator enable is ON

Cause: This message is displayed when the applicator valve enable input turns ON.

Remedy: None.

PNT2-406 %sApplicator enable is OFF

Cause: This message is displayed when the applicator valve enable input turns OFF. When this input is OFF, the GUN trigger output are blocked from turning ON.

Remedy: None.

PNT2-407 %sApplicator enable is ON

Cause: This message is displayed when the applicator valve enable input turns ON.

Remedy: None.

PNT2-412 %sError reading gun-on time for job

Cause: Some process(s) within a job may have something wrong with its header.

Remedy: Go to the DETAIL page for every process in the job. This should correct the problem.

PNT2-420 %sError reading gun-on time for job

Cause: Some process(es) within a job might have something wrong with the header.

Remedy: Go to the DETAIL page for every process in the job. This should correct the problem.

PNT2-428 %sApplicator test outputs are ON

Cause: Applicator test outputs are ON. This is initiated by the PLC.

Remedy: None.

PNT2-429 %sApplicator test outputs are OFF

Cause: Applicator test outputs are OFF and have been terminated by the PLC.

Remedy: None.

PNT2-434 %sApplicator test outputs are ON

Cause: The applicator test outputs are ON as initiated by the PLC.

Remedy: None.

PNT2-441 %sPart entered tracking window

Cause: For continuous line systems only. This is a warning that the part has entered the robot tracking window.

Remedy: None.

PNT2-446 %sWaiting for part in window

Cause: For continuous line systems only. This is a warning that the robot is waiting for a part to enter the tracking window.
DO NOT ENTER THE ROBOT WORKSPACE.

Remedy: None.

PNT2-447 %sPart entered tracking window

Cause: For continuous line systems only. This is a warning that the part has entered the robot tracking window.

Remedy: None.

PNT2-452 %sRobot not calibrated

Cause: The robot must be calibrated before proceeding. Only jogging in the joint coordinate system and the calibration motion itself can be executed before the robot is calibrated.

Remedy: Calibrate the robot.

PNT2-457 %sRobot not calibrated

Cause: The robot must be calibrated before proceeding. Only jogging in the joint coordinate system and the calibration motion itself can be executed before the robot is calibrated.

Remedy: Calibrate the robot.

PNT2-462 %sInvalid instruction argument

Cause: During program execution, a paint instruction was encountered with an out of range argument.

Remedy: Edit the current program and verify that all instruction arguments are valid.

PNT2-463 %sInvalid gun selection

Cause: The argument to the GUN SELECT instruction is outside of the range defined in the SETUP screen.

Remedy: Modify the offending GUN SELECT argument to be within the valid range.

PNT2-464 %sUnknown mnemonic instruction

Cause: An unknown instruction was encountered during program execution. This might happen if the program was copied from a different installation.

Remedy: Delete the offending instruction.

PNT2-465 %sCan't set output

Cause: A Function instruction is used but the Option is not loaded.

Remedy: Load the Function Instruction Option in order to run and set the output correctly.

PNT2-466 %sInvalid GunSelect position

Cause: A GunSelect instruction that would change the state of the gun(s) is not positioned as an option on a motion line. This instruction will not complete any operation. Such an instruction by itself on a line in a program can not properly control the timing of the changes in the gun outputs. Note that if the gun is not programmed to be ON then a Gunselect can be on a line by itself. Note that this alarm might not occur in all cases.

Remedy: Move the Gunselect instruction onto a motion line and delete the stand alone instruction line. If needed, add another motion line and record an appropriate position.

PNT2-471 %sInvalid instruction argument

Cause: During program execution, a paint instruction was encountered with an out of range argument.

Remedy: Edit the current program and verify that all instruction arguments are valid.

PNT2-472 %sInvalid gun selection

Cause: The argument to the GUN SELECT instruction is outside of the range defined in the SETUP screen.

Remedy: Modify the offending GUN SELECT argument to be within the valid range.

PNT2-473 %sUnknown mnemonic instruction

Cause: An unknown instruction was encountered during program execution. This might happen if the program was copied from a different installation.

Remedy: Delete the offending instruction.

PNT2-480 %s not defined

Cause: For integral color change systems only: A color change cycle cannot be executed. There are no steps defined for that color change cycle.

Remedy: Check the color change cycle for the current color and the next color. The cycle data must have at least one step defined.

PNT2-481 %sPushout cycle cancelled

Cause: For integral color change systems only: A color change pushout cycle was executing during production when it was aborted by an E-STOP. The paint line status is unknown.

Remedy: Reset the system and continue. The color change logic will automatically do a pushout cycle before the next color change.

PNT2-482 %sIllegal manual cycle received

Cause: For integral color change systems only: An illegal color change cycle number was sent by the PLC. Cycle numbers 1-8, and 21, 22, and 23 are legal cycle numbers for PaintTool version 1.30 and older.

Remedy: Make sure the PLC is sending a legal color change cycle number.

PNT2-483 %sColor cycle aborted

Cause: For integral color change systems only: A color change cycle was cancelled by an E-STOP.

Remedy: Reset the system. If it is in production mode, the color change cycle will be started over from the beginning.

PNT2-484 %sColor Valve + PrgSol both ON

Cause: For integral color change systems only: During the execution of a color change cycle, the color enable output and the Purge Solvent output are not allowed to be ON at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Solvent outputs are never ON at the same time.

PNT2-491 %sColor Valve + PrgAir both ON

Cause: For integral color change systems only: During the execution of a color change cycle, the color enable output and the Purge Air output are not allowed to be ON at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Air outputs are never ON at the same time.

PNT2-492 %sCC Waiting for arm to be home

Cause: For integral color change systems only: The color change task is waiting for the robot to be at the home position before a color change cycle can be executed.

Remedy: Send the robot to the HOME position.

PNT2-493 %sCC automatic cycles executing

Cause: For integral color change systems only: This is an indication of a color change task executing a color change cycle.

Remedy: None.

PNT2-494 %sColorEnb + PrgSol both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O the color enable output and Purge Solvent output are not allowed to be ON at the same time.

Remedy: Do not attempt to turn ON the outputs at the same time.

PNT2-495 %sColorEnb + PrgAir both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O the color enable output and the Purge Air output are not allowed to be ON at the same time.

Remedy: Do not attempt to turn ON the outputs at the same time.

PNT2-496 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT2-497 %sNo system color for valve

Cause: Manual color change from teach pendant: Warning: the system changes the current system color to match the fill color valve. No system color uses the current valve. The wrong system color might be set - and the wrong preset data might be used in the wet test cycle.

Remedy: Temporarily change the system color setup.

PNT2-498 %sApplication enable is ON

Cause: This message is displayed when the application enable input turns ON. When this input is ON, the GUN and color change outputs are allowed to turn ON.

Remedy: None.

PNT2-499 %sInvalid Solv/Air State

Cause: An attempt to enable the solvent valve was made without enabling a downstream valve.

Remedy: Verify that PD, Trigger, IWP or BWP are enabled.

PNT2-500 %sPurge Solvent + Air Both ON

Cause: The Purge Solvent and Purge Air Valves are both ON.

Remedy: Fix the Color Change Cycle Data or try again.

PNT2-501 %sMore Than One Color Valve ON

Cause: Multiple Color Valves are ON.

Remedy: This operation is not allowed.

PNT2-502 %sCC Event Timeout!

Cause: The Color Change Event programmed for the current color change step did not complete in the allocated time.

Remedy: Check the Color Change Event requests.

PNT2-503 %sCC Cycle does not end @ HOME!

Cause: The programmed Color Change Cycle does not send the robot to the HOME position at the completion of cycle.

Remedy: The last Color Change Cycle must send the robot to the HOME position at completion.

PNT2-514 %sColor cycle aborted

Cause: For integral color change systems only: A color change cycle was cancelled by an E-STOP.

Remedy: Reset the system. If in production mode, the color change cycle will be started over from the beginning.

PNT2-515 %sColor Valve + PrgSol both ON

Cause: For integral color change systems only: During the execution of a color change cycle, the color enable output and the Purge Solvent output are not allowed to be ON at the same time. If the color change cycles attempt to do this, the cycle is aborted. (This is to prevent contamination of the paint lines.)

Remedy: Check the cycle data table and make sure the color enable and Purge Solvent outputs are never ON at the same time.

PNT2-516 %sUsing default valve cycle data

Cause: For integral color change systems only: If there is no paint in the paint lines (current color = 0) and a color change cycle is executed, the color change cycle data for the first defined valve is used.

Remedy: None.

PNT2-517 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT2-518 %sApplication enable is OFF

Cause: This message is displayed when the application enable input turns OFF. When this input is OFF, the GUN and color change outputs are blocked from turning ON.

Remedy: None.

PNT2-523 %sCC Waiting for arm to be home

Cause: For integral color change systems only: The color change task is waiting for the robot to be at the home position before a color change cycle can be executed.

Remedy: Send the robot to the HOME position.

PNT2-524 %sCC automatic cycles executing

Cause: For integral color change systems only: An indication of the color change task executing a color change cycle.

Remedy: None.

PNT2-525 %sColorEnb + PrgSol both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O the color enable output and the Purge Solvent output are not allowed to be ON at the same time.

Remedy: Do not attempt to turn ON the outputs at the same time.

PNT2-526 %sColorEnb + PrgAir both ON

Cause: For integral color change systems only: During the manual I/O testing of color change I/O the color enable output and the Purge Air output are not allowed to be ON at the same time.

Remedy: Do not attempt to turn ON the outputs at the same time.

PNT2-527 %sSelected color valve not defined

Cause: For integral color change systems only: The color valve selected has no data defined.

Remedy: Define the color valve using the SETUP menus under VALVES.

PNT2-528 %sNo system color for valve

Cause: Manual color change from teach pendant. Warning: the system changes the current system color to match the fill color valve. No system color uses the current valve. The wrong system color might be set - and the wrong preset data might be used in the wet test cycle.

Remedy: Temporarily change the system color setup.

PNT2-529 %sApplication enable is ON

Cause: This message is displayed when the application enable input turns ON. When this input is ON, the GUN and color change outputs are allowed to turn ON.

Remedy: None.

PNT2-530 %sInvalid Solv/Air State

Cause: An attempt to enable the solvent valve was made without enabling a downstream valve.

Remedy: Verify that PD, Trigger, IWP or BWP are enabled.

PNT2-531 %sPurge Solvent + Air Both ON

Cause: Purge Solvent and Purge Air Valves are both ON.

Remedy: Fix the Color Change Cycle Data or try the operation again.

PNT2-532 %sMore Than One Color Valve ON

Cause: Multiple color valves are ON.

Remedy: This is not allowed. Make sure that only one color valve is on at a time, and try the operation again.

PNT2-533 %sCC Event Timeout!

Cause: The Color Change Event programmed for the current color change step did not complete in the allocated time.

Remedy: Check the Color Change Event requests.

PNT2-534 %sCC Cycle does not end @ HOME!

Cause: The programmed Color Change Cycle does not send the robot to the HOME position at the completion of cycle.

Remedy: The last Color Change Cycle must send the robot to the HOME position at completion.

PNT2-535 %sIPC Interlock check failed!

Cause: The IPC interlock check failed, the (pTRIG and pPE) or pDUMP valves must be opened to run the pump.

Remedy: If this alarm is posted during a Color Change cycle, check the CC cycle to verify the above valves are programmed on. If this alarm occurs during Manual Functions, make sure the above valves are on before trying to request the pump to run.

PNT2-554 %sCal. table adapted out tolerance

Cause: The fluid pressure or fluid viscosity for the current color has changed dramatically. This change has occurred since the last calibration of this color. The change was beyond the percentage value setting of the Adaptive tolerance parameter.

Remedy: Correct the fluid pressure or viscosity for the current color. If the pressure or viscosity was purposely changed then the color can be calibrated to eliminate this alarm. The setting for the Adaptive tolerance can be increased if the variation shown by the calibration table for this color is acceptable.

PNT2-555 %sCal. table adapted in tolerance

Cause: This status warning indicates that the the conditions which caused a table adapted out of tolerance alarm have been eliminated or disappeared.

Remedy: None.

PNT2-556 Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: Decrease the yield. Use smaller restricters in the gun if the high end flow rate can still obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band, set the minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT2-557 %s Res:Hrd ratio is 0.0:0.0

Cause: Checks for how far the flow rate is from the set point have been too high. Possible causes are:

1. Sticking I/P transducer.
2. A bad fluid regulator frequent fluid pressure changes.
3. Bad Accuflow Interface board.

Remedy: Check and change the transducer, replace the fluid regulator or service the surge suppression system on the fluid supply pump. If the alarm occurs on many or all colors then increase the Max. error from setpoint parameter.

PNT2-558 %sCalibration successful

Cause: This is used to notify the cell controller that a calibration has completed successfully.

Remedy: None.

PNT2-559 %sCalibration aborted

Cause: Accuflow calibration could not continue. This might be due to the fluid lines not being filled. Check for other alarms in the log.

Remedy: The best remedy might be found from the previous alarm in the log. This is usually the result of incorrect setup parameters, or incomplete hardware setup. If the flow hardware is operating correctly, set the color parameter for pulsing pump supply to YES.

PNT2-560 %sCal. low flow rate reset

Cause: During Accuflow calibration the low flow rate could not be reached. A new low flow rate was established.

Remedy: Possibly decrease the Gain modifier used for the color. The new low flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted.

PNT2-561 %sCal. max. flow rate reset

Cause: During Accuflow calibration, the expected maximum flow rate could not be reached at the maximum output. A new maximum flow was established.

Remedy: Possibly decrease the Gain modifier used for the color. The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT2-562 %sCal. time out at max. flow

Cause: Accuflow timed out trying to reach the maximum flow rate. Possible causes are: a high gain, a sticking I/P transducer, a bad fluid regulator or frequent fluid pressure changes.

Remedy: Possibly decrease the Gain modifier used for the color. Retry the calibration. Check and change the transducer if necessary, and replace the fluid regulator or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can be increased.

PNT2-563 %sCal. time out at low flow

Cause: Accuflow timed out trying to reach the lowset flow rate, typically 100 cc/min. Possible causes are: a high gain, a sticking I/P transducer, a bad fluid regulator or frequent fluid pressure changes.

Remedy: Possibly decrease the Gain modifier used for the color. Retry the calibration. Check and change the transducer if necessary, replace the fluid regulator or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can be increased.

PNT2-564 %sZero fluid flow rate detected

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured. This might be due to no fluid pressure or pilot air pressure. With a very low flow rate the gain might be too high. One of the following items might be broken:

- Color Valve
- Color select board
- Gun trigger
- Flow meter
- Flow meter pickup
- Accuflow interface board
- The 32 point input module

Note: Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: If fluid can be seen coming from the applicator, check the following:

- Flow meter
- Flow meter pickup
- Accuflow interface
- The 32 point input module

Otherwise, check the other items listed above. If it occurs with very low flow rates, decrease the Gain modifier.

PNT2-565 %sLower output did not lower flow

Cause: As Accuflow steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the commanded flow value. In this case, the flow did not decrease. This can be caused by low or pulsing fluid pressure, insufficient exhaust or no quick exhaust on the fluid pilot air.

Remedy: Retry the calibration. Check that an adequate and stable flow rate is provided by the system for this color. Decreasing the leveling trys might help. Check that the fluid pilot regulator air line has adequate exhaust capability. Re-evaluate the size of the restrictor in the gun.

PNT2-566 %sTime out during a cal. test

Cause: While measuring hysteresis, time up, or time down the Accuflow system timed out. This indicates the high or low flow rate could not be reached.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not an increase in the Tolerance band might be required.

PNT2-567 %sMin. output has flow > setpoint

Cause: With a minimum control output the flow rate was measured to be higher than the setpoint (requested flow). The fluid pressure might have become too high. The I/P transducer or fluid regulator might be stuck open. There might be a fairly large fluid leak. Note, Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Calibrating the color will establish a new cracking pressure (minimum control output) for a changed fluid pressure. Check and replace if necessary the fluid regulator and I/P transducer. See the Fluid flow leak alarms for other options.

PNT2-568 %sMax. output has flow < setpoint

Cause: With a maximum control output the flow rate was measured to be lower than the setpoint (requested flow). The gun might be clogging. A fluid or pilot air line might be pinched. The fluid pressure might have become too low. The I/P transducer might be broken. Note, Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: Check the gun tip and the whole gun for clogging. Check the fluid lines for pinching, especially at places where they flex. Check the fluid supply pressure. Check and replace if necessary the I/P transducer.

PNT2-569 %sFlow setpoint below globals

Cause: The requested fluid flow output command is below the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range.

PNT2-570 %sRequested flow above cal. table

Cause: The requested fluid flow output command is above the calibrated range of the color.

Remedy: Adjust the fluid flow output command in the preset argument to be within the calibrated range. Perform the necessary steps to increase the Max. Controllable Flow obtained during calibration. Recalibrate the color.

PNT2-571 %sSlow fluid flow leak detected

Cause: A small amount of fluid flow was detected when the gun was not turned on. This might be caused by a loose fitting, leaking dump valve, etc.

Remedy: No immediate remedy is required. The paint system will continue to function properly. The various fluid lines and valves should be inspected and repaired.

PNT2-572 %sFast fluid flow leak detected

Cause: A large amount of fluid flow was detected when the gun was not turned on. This might be caused by the dump valve being stuck on or a broken fitting, broken paint line, etc. Note that each time the fluid begins to leak fast the color valve will be turned off. This will prevent the robot from spraying the part.

Remedy: The various fluid lines and valves should be inspected and repaired immediately. Check the dump pilot valve and the dump valve and repair them if necessary.

PNT2-573 %sFailed to reach setpoint

Cause: This might be caused by pulsing paint pressure or a broken I/P transducer. If it occurs on most colors then there might be a small setting of the Minimum set point (ms) for the specific installation setup or one of the tolerance band settings might be too small for the yield of the system.

Remedy: Increase the Minimum set point (ms). If the FLUID transducer is noisy change it. If this occurs on specific colors, check the surge suppression system fluid supply system. If the calibration yield values are more than half of the min. tolerance band then increase the tolerance band.

PNT2-574 %sAccuflow softpart init failed

Cause:

Remedy: Refer to the troubleshooting section in the Electrical Connection and Maintenance Manual.

PNT2-575 %s0 fluid flow rate timeout

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured for longer than the Zero flow timeout parameter. This may be caused by: a broken applicator trigger, a loss of fluid supply pressure, a broken fluid flow meter, a broken cable (to the flow meter), or a Zero flow timeout value that is too short. Note, AccuFlow temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check that the gun is properly triggering. If fluid was observed to be flowing, check and possibly replace the fluid flow meter. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT2-576 %sMax. flow below mid point

Cause: This alarm occurs only during calibration. The flowrate measured at the maximum control and one half of the maximum control output was nearly the same. Less than one half of the control output range is useable. The system might still function even though this alarm has occurred. This may be caused by low fluid pressure, a faulty transducer or regulator or the wrong I/P transducer being installed (100 psi range instead of 50 psi range).

Remedy: Increase the fluid pressure. Check that the transducer is functioning properly and that it has the correct pressure range, change it if appropriate. The system might operate, but performance can be improved with one of the above remedies.

PNT2-577 CH1:Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: In some way decrease the yield. Use smaller restricters in the gun if the high end flow rate can still be obtained. Otherwise accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band set minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT2-583 %sCal. table adapted out tolerance

Cause: The fluid pressure or fluid viscosity for the current color has changed dramatically. This change has occurred since the last calibration of this color. The change was beyond the percentage value setting of the Adaptive tolerance parameter.

Remedy: Correct the fluid pressure or viscosity for the current color. If the pressure or viscosity was purposely changed then the color can be calibrated to eliminate this alarm. The setting for the Adaptive tolerance can be increased if the variation shown by the calibration table for this color is acceptable.

PNT2-584 %sCal. table adapted in tolerance

Cause: This status warning indicates that the conditions which caused a table adapted out of tolerance alarm have been eliminated or disappeared.

Remedy: None.

PNT2-585 CH2: Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: In some way decrease the yield. Use smaller restricters in the gun if the high end flow rate can still be obtained. Otherwise, accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band set minimum tolerance band equal to the yield for that color. Otherwise, increase the Percent tolerance band.

PNT2-586 %sFlow rate average error high

Cause: Checks for how far the flow rate is from the set point have been too high. Possible causes are: sticking I/P transducer, bad fluid regulator frequent fluid pressure changes or a bad Accuflow Interface board.

Remedy: Check and change the transducer, replace the fluid regulator or service the surge suppression system on the fluid supply pump. If the alarm occurs on many or all colors then increase the Max. error from setpoint parameter.

PNT2-587 %sCalibration successful

Cause: Used to notify the cell controller that a calibration has completed successfully.

Remedy: None.

PNT2-588 %sCalibration aborted

Cause: Accuflow calibration could not continue. This might be due to the fluid lines not being filled. Check for other alarms in the log.

Remedy: The best remedy might be found from observing the previous alarm in the log. This is usually the result of incorrect setup parameters, or incomplete hardware setup. If the flow hardware is operating correctly, set the color parameter for pulsing pump supply to YES.

PNT2-589 %sCal. low flow rate reset

Cause: During Accuflow calibration the low flow rate could not be reached. A new low flow rate was established.

Remedy: Possibly decrease the Gain modifier used for the color. The new low flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted.

PNT2-590 %sCal. max. flow rate reset

Cause: During Accuflow calibration, the expected maximum flow rate could not be reached at the maximum output. A new maximum flow was established.

Remedy: Possibly decrease the Gain modifier used for the color. The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT2-591 %sCal. time out at max. flow

Cause: Accuflow timed out trying to reach the maximum flow rate. Possible causes are: a high gain, a sticking I/P transducer, a bad fluid regulator or frequent fluid pressure changes.

Remedy: Possibly decrease the Gain modifier used for the color. Retry the calibration. Check and change the transducer if necessary, replace the fluid regulator or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can be increased.

PNT2-592 %sCal. time out at low flow

Cause: Accuflow timed out trying to reach the lowset flow rate, typically 100 cc/min. Possible causes are: a high gain, a sticking I/P transducer, a bad fluid regulator or frequent fluid pressure changes.

Remedy: Possibly decrease the Gain modifier used for the color. Retry the calibration. Check and change the transducer if necessary, replace the fluid regulator or service the surge suppression system on the fluid supply pump. The calibration timeout parameter can be increased.

PNT2-593 %sZero fluid flow rate detected

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured. This might be due to no fluid pressure or pilot air pressure. With a very low flow rate the gain might be too high. One of the following items might be broken: Color Valve, Color select board, gun trigger, flow meter, flow meter pickup, Accuflow interface board, or the 32 point input module. Note, Accuflow automatically changes to Open Loop when this failure occurs.

Remedy: If fluid can be seen coming from the applicator, check the following: flow meter, flow meter pickup, Accuflow interface and the 32 point input module. Otherwise, check the other items listed above. If it occurs with very low flow rates, decrease the Gain modifier.

PNT2-594 %sLower output did not lower flow

Cause: As Accuflow steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the commanded flow value. In this case, the flow did not decrease. This can be caused by low or pulsing fluid pressure, insufficient exhaust or no quick exhaust on the fluid pilot air.

Remedy: Retry the calibration. Check that an adequate and stable flow rate is provided by the system for this color. Decreasing the leveling trys may help. Check that fluid pilot regulator air line has adequate exhaust capability. Reevaluate the size of the restrictor in the gun.

PNT2-595 %sTime out during a cal. test

Cause: While measuring hysteresis, time up, or time down the Accuflow system timed out. This indicates the high or low flow rate could not be reached.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not an increase in the Tolerance band might be required.

PNT2-596 %sMin. output has flow > setpoint

Cause: The position and proximity switch are not functioning properly. The docking station has not retracted fast enough. The Docking Cylinder Timeout is set too low. Check for obstructions, misalignments and for faulty switch.

Remedy: Check the position and the proximity switch. Repair the pneumatic or electric circuit if necessary. Adjust the pneumatic controls for the retract/extend. Increase the Docking Cylinder Timeout Value. Verify that the digital inputs and outputs have the proper state. By default: DIN[130, DSR] = ON; DIN[129, DSE] = OFF; DOUT[147, RDS] = ON; DOUT[146, EDS] = OFF. If the dock has retracted, and the I/O has been verified, then reset and continue the robot.

PNT2-597 %sMax. output has flow < setpoint

Cause: The position and proximity switch are not functioning properly. The docking station has not extended fast enough. The Docking Cylinder Timeout is set too low. Check for obstructions, misalignments and for a faulty switch.

Remedy: Check the position and the proximity switch. Repair the pneumatic or electric circuit if necessary. Adjust the pneumatic controls for the retract/extend. Increase the Docking Cylinder Timeout Value. Verify that the digital inputs and outputs have the proper state. By default: DIN[129, DSE] = ON; DIN[130, DSR] = OFF; DOUT[147, RDS] = OFF; DOUT[146, EDS] = ON. If the dock has extended, and the I/O has been verified, then reset and continue the robot operations.

PNT2-598 %sFlow setpoint below globals

Cause: The Accustat auto calibration could not continue. This is normally the result of an operation time out. The auto calibration can abort for several reasons. The function of this alarm is as follows. First, the Auto Calibration Aborted alarm will post if an error has occurred. The next alarm will contain the cause of the auto calibration to abort. Cause 1: While searching for the minimum or maximum flow rates in the cal table, the calibration timed-out by reaching the maximum number of attempts to establish the minimum or maximum flow rate output values. This can be a result of improper fluid restriction selection, non-attainable cal table flow ranges, or a bad fluid regulator. The resulting alarms would be PNT1-251, Failed to find upper limit or PNT1-252, Failed to find lower limit. Cause 2: Calibration resulted in non-increasing command values in the calibration table data. The slope of the calibration table is negative. Increasing output values do not result in increased flow rate. The result error code will be PNT1-254 Non-increasing cal table. Cause 3: The calibration routine calculated output values that are above or below the maximum or minimum

output values defined in the Applicator Parameters for the fluid regulator. The minimum output values in counts are (low-res: 200, hi-res: 1600) and the maximum output values in counts are (low-res: 1000, and hi-res: 8000). The restrictor size is not compatible with the desired flow rate range and the material attempting to be calibrated. The resulting error codes will be PNT1-255 Calculated output > max output or PNT1-256 Calculated output < min output. Cause 4: The calibration has been aborted by the user or has been interrupted by another fault. If the cell has been emergency stopped during the calibration. The robot failed to reach the proper location in order to calibrate. See other alarms to determine the cause of the fault.

Remedy: Remedy 1: Increase the number of Maximum Calibration Trys in the AccuStat setup. Verify restrictor, regulator and calibration flow rate range in the AccuStat Color Data for that valve. Remedy 2: Verify all equipment is operating properly. Check the linear potentiometer feedback (AIN[1, DISP], the regulator operation, and that trigger is opening and closing properly. Verify attainable values have been set in the AccuStat Color Data for the requested minimum and maximum flow rates. Remedy 3: Verify that the fluid regulator is functioning properly. Change the fluid restrictor size to better accommodate the requested flow rate range. Change the requested flow rate range in the AccuStat Color Data setup. Remedy 4: Determine the cause of the fault to the robot. Check the alarm log to aid finding the cause of the fault. If the robot has not moved to position, verify that the proper path has been taught.

PNT2-599 %sRequested flow above cal. table

Cause: Accustat could not reach the upper flow limit in the number of times set at the calibration screen. The upper limit flow rate can not be achieved. Fluid restrictor is too small. The flow rate or can position feedback is unstable.

Remedy: Verify all equipment is working properly. Check Color Data upper limit. Check applicator parameters to make sure that App Parameter Max limit is not below the AccuStat Color Data upper limit. Increase Auto cal hi/low tolerance or Trys for hi/low from the AccuStat setup screen. Check feedback.

PNT2-600 %sSlow fluid flow leak detected

Cause: The calculated command counts are below the Applicator Parameter Minimum Output value (200 counts, or 1600 counts hi-res). Fluid restrictor is too large or the regulator is not working properly.

Remedy: Restrict fluid flow with smaller restrictor. Check the Color Data Hi/Low flow range settings.

PNT2-601 %sFast fluid flow leak detected

Cause: The Tolerance Band is too narrow (low), or the regulator is not working properly. The adaptive gain for that color might be too low, and the flow rate is not adapting fast enough. The potentiometer is not operating properly. The trigger delay might not be set properly if trigger events are too close together.

Remedy: Check regulator operation and Adaptive Gain settings in the AccuStat Color Data for that color valve. Verify the trigger delays are set up properly.

PNT2-602 %sFailed to reach setpoint

Cause: Prior to painting the job, the can is checked to see if enough paint has been put into the can (cylinder position counts >= TPR counts). This can happen if the waiting for can full condition is falsely satisfied. Possible causes are air in the canister due to faulty color change cycles or unstable readings from the linear potentiometer. Many times this happens because the air has not been pushed out of the dump before the fill valve is opened.

Remedy: Make sure that paint has reached the docking station before starting the step to open the fill valve. A fix could be increasing the amount of time of the step to fill the paint line before opening the fill valve. With air in the can, once the piston pressure has been reapplied the air will compress causing the cylinder position to fall below the fill counts.

PNT2-603 %sAccuflow softpart init Failed

Cause: The Accuflow softpart is not running. The I/O assigned and used by the softpart is not available or the softpart did not load correctly. Additional information is available during controller power up at the debug console (smon).

Remedy: Check and correct the assignments or hardware for the I/O used by Accuflow. Especially the I/O points: Set Point Reached, Flow Rate GIN & flow diag. AOUT. Reload the Accuflow option, watch for alarms during the load. Document the events that led to the error, record the software version number and contact your local FANUC representative.

PNT2-604 %s0 fluid flow rate timeout

Cause: All of the conditions were set for fluid to be flowing and a zero flow rate was measured for longer than the Zero flow timeout parameter. This may be caused by: a broken applicator trigger, a loss of fluid supply pressure, a broken fluid flow meter, a broken cable (to the flow meter), or a Zero flow timeout value that is too short. Note, AccuFlow temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check that the gun is properly triggering. If fluid was observed to be flowing, check and possibly replace the fluid flow meter. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT2-605 %sMax. flow below mid point

Cause: This alarm occurs only during calibration. The flowrate measured at the maximum control and one half of the maximum control output was nearly the same. Less than one half of the control output range is useable. The system may still function even though this alarm has occurred. This might be caused by low fluid pressure, a faulty transducer or regulator or the wrong I/P transducer being installed (100 psi range instead of 50 psi range).

Remedy: Increase the fluid pressure. Check that the transducer is functioning properly and that it has the correct pressure range, change it if appropriate. The system might operate, but performance can be improved with one of the above remedies.

PNT2-606 CH2:Dyn. yield > tolerance band (%s)

Cause: As a particular flow rate set point is being output, the yield ((cc/min)/cnt) for that flow rate was larger than the tolerance band for it. It is not likely that the set point will be reached. This might be due to the restricters in the gun being too large.

Remedy: In some way decrease the yield. Use smaller restricters in the gun if the high end flow rate can still be obtained. Otherwise accept a larger tolerance band. If the value given in the alarm is equal to the Minimum tolerance band set minimum tolerance band equal to the yield for that color. Otherwise increase the Percent tolerance band.

PNT2-612 %sCal. table adapted out,output up

Cause: The Color Valve selected for Auto Calibration has successfully completed the calibration sequence.

Remedy: None.

PNT2-613 %sCal. table adapted in tolerance

Cause: If the applicator is disabled at the end of the job, then the table will not adapt in hybrid mode.

Remedy: None.

PNT2-614 %sDyn. yield > %% tolerance band

Cause: The scale calibration sequence did not complete. This can be caused by a timeout or fill/empty error.

Remedy: Check the alarm log to see what conditions caused the calibration to abort. In most cases, the scale cal can timeout from one of the following alarms: PNT1-253 Beaker timeout, scale cal abort, PNT1-248, CC abort, can full timeout, PNT1-249 CC abort, can empty timeout. Verify all equipment is operating properly.

PNT2-615 %sFlow rate avg. error excessive

Cause: The scale calibration sequence has completed successfully.

Remedy: None.

PNT2-616 %sCalibration successful

Cause: No path data has been taught for DOCK.TP. Something has caused the position to become invalid.

Remedy: Teach the robot path for the docking operation. The dock path is a special position. After teaching, or touching up special position paths, the power on the robot controller must be cycled for the changes to take effect.

PNT2-617 %sCalibration aborted

Cause: The request to enter the dock was given but the robot did not reach the docking position. Dock attempt did not complete and the docking station could not extend. Robot faulted on the way to the docking station, see other faults. The robot did not report it was at the docking station, because the dock special position was not taught.

Remedy: Remedy : Check the path data and ensure the last position in DOCK.TP has a FINE position type. Verify that the DOCK.TP special position has been taught. The controller power must be cycled after special positions are taught. If the Dock path did not complete execution, then determine why execution was halted. Reset the robot and continue the job. The robot should complete the motion automatically. If the robot does not complete the motion, then in manual mode, move the robot home. After the cell has been put into manual mode the job must be reinitialized.

PNT2-618 %sCal. low flow rate reset

Cause: This is a warning and not a failure. During AccuAir calibration the low flow rate could not be properly reached. A new flow was established. The target flow rate is determined by the Table point no. 2 parameter.

Remedy: The new flow rate is shown as point 2 in the calibration table. This value can be visually checked and accepted. Increase the yield of the system by increasing air line diameters to the applicator. The Table point no. 2 parameter can be increased (by about 100%).

PNT2-619 %sCal. max. flow rate reset

Cause: This is a warning, not a failure. During AccuAir calibration the expected maximum flow rate could not be reached at the maximum output. A new maximum flow rate was established.

Remedy: The new maximum flow rate is shown as point 10 in the calibration table. This value can be visually checked and accepted.

PNT2-620 %sCal. time out at max. flow

Cause: The AccuAir controls timed out trying to reach the maximum flow rate. Possible causes are: a high gain, a sticking I/P transducer, too large of a yield for the current tolerance band or the system response is too slow for the current setting of the Calibration time out parameter.

Remedy: Retry the calibration. Possibly decrease the Gain modifier parameter. Possibly increase the Percent tolerance band parameter. Check and change the transducer if necessary. Possibly increase the Calibration time out parameter (by about 10 seconds).

PNT2-621 %sCal. time out at low flow

Cause: The AccuAir controls timed out trying to reach the minimum flow rate. This flow rate is the Table point no. 2 parameter. Possible causes are: a high gain, a sticking I/P transducer, too large of a yield for the current tolerance band or the system response is too slow for the current setting of the Calibration time out parameter.

Remedy: Retry the calibration. Possibly decrease the Gain modifier parameter. Possibly increase the Percent tolerance band parameter. Check and change the transducer if necessary. Possibly increase the Calibration time out parameter (by about 10 seconds). Possibly increase the Table point no. 2 parameter (by about 100%).

PNT2-622 %s0 air flow rate detected

Cause: All of the conditions were set for air to be flowing and a zero flow rate was measured. This might be caused by: a broken applicator trigger, pinched air lines, a loss (or near loss) of air supply pressure, a broken air flow sensor, a broken cable (to the flow sensor), or a Trigger delay that is too short. Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean and possibly replace the air cap. Check that the gun is properly triggering. If air was observed to be flowing check and possibly replace the air flow sensor. Check for a pinched air line. Increase the Trigger delay parameter (by about 50%).

PNT2-623 %sLower output did not lower flow

Cause: As the AccuAir calibration steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the command flow value. In this case the flow did not decrease. This can be caused by insufficient exhaust, no quick exhaust on the pilot air line, too large of a hysteresis in control equipment, or the system response is too slow for the current setting of the Calibration step delay parameter.

Remedy: Retry the calibration. Check that the pilot air line to the booster has sufficient exhaust capability. Increase the Calibration step delay parameter (by about 100%). Reducing the Leveling tries parameter might help.

PNT2-624 %sTime out during a cal. test

Cause: While measuring hysteresis time up or time down, the Closed loop system timed out. This indicates that the high or low flow rate can not be reached consistently.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently. If not, an increase in the tolerance band might be required.

PNT2-625 %sMin. output has flow > setpoint

Cause: With a minimum control output, the flow rate was measured to be higher than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This might be caused by a leaking or broken air line between the flow sensor and the applicator. The I/P transducer might be stuck open. The air booster might be stuck open or leaking. This might be caused by a faulty air flow sensor (reading more flow than there really is). Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check and repair the various air lines. Check and repair the air booster. Check and repair the I/P transducer. Possibly increase the Max. control out (ms) parameter.

PNT2-626 %sMax. output has flow < setpoint

Cause: With a maximum control output the flow rate was measured to be lower than the setpoint (requested flow). The Max. control out (ms) parameter affects the sensitivity of this alarm. This is likely caused by a clogged air cap. This might be caused by: pinched air lines, a broken I/P transducer or a broken air flow sensor. Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean and possibly replace the air cap. If air is observed to be flowing (when commanded), possibly replace the air flow sensor. Check for a pinched air line. Check and repair the I/P transducer. Possibly increase the Max. control out (ms) parameter (by about 50%).

PNT2-627 %sFlow setpoint below globals

Cause: The requested air flow setpoint is below the range of the current parameter settings.

Remedy: Adjust the air flow setpoint to be within the range of controllable flows.

PNT2-628 %sRequested flow above cal. table

Cause: The requested air flow setpoint is above the calibrated range for Fan Air. The maximum value is shown as point number 10 in the calibration table.

Remedy: Adjust the air flow setpoint to be within the calibrated range of this parameter. Perform the necessary steps to increase the maximum flow obtained during calibration. This might involve increasing the diameter of the air lines supplying Fan air to the applicator or changing the type of air booster used.

PNT2-631 %sFailed to reach setpoint

Cause: This is caused by a failure of the AccuAir system to reach the setpoint (within the tolerance band) within the time allowed. The time that the system is allowed to take to reach setpoint is controlled by the Min. Setpoint reached (ms) parameter. This might be caused by a sticking transducer, a system that is too slow for the current setting of Min. Setpoint reached or a system yield that is too large for the tolerance band setting.

Remedy: If the Fan Air control I/P transducer is noisy or broken change it. If the calibration yield values are more than half of the min. Tolerance band then increase this tolerance value. If the Flow delay parameter is large or this alarm is occurring on many robots then increase the Minimum setpoint reached parameter.

PNT2-632 %s0 air flow rate timeout

Cause: All of the conditions were set for air to be flowing and a zero flow rate was measured for longer than the Zero flow timeout parameter. This may be caused by: a clogged air cap, a broken applicator trigger, broken air lines, a loss of air supply pressure, a broken air flow sensor, a broken cable (to the flow sensor), or a Zero flow timeout value that is too short. Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean and possibly replace the air cap. Check that the gun is properly triggering. If air was observed to be flowing, check and possibly replace the air flow sensor. Check for a broken air line. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT2-633 %sWarning, learn item failed

Cause: While completing operations to measure the equipment delays, the equipment did not respond within the expected timeout.

Remedy: Retry the operation by setting the Equipment learn to Redo and calibrate again. Check for other AccuAir alarms in the alarm log then follow the remedies for those alarms. If there are no other alarms follow the remedies for the Failed to reach setpoint alarm.

PNT2-634 %sDyn. yield > min tolerance band

Cause: As a particular flow rate set point is being output the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is below the value that the air system can accurately provide.

Remedy: Decrease the yield. Use larger diameter air lines to supply air to the cap. Use a smaller ratio booster. Otherwise, accept a larger tolerance band. Increase the minimum tolerance (by about 50%).

PNT2-635 %sCal. table adapted out, down

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a smaller output required to get the same flow rate. This can be caused by: air leaks, a loose air cap or a significant increase of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warning of the possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check that the air cap is tight on the gun. Check, clean and possibly replace the air cap. Check for leaks in air lines or at fittings. Check for cracks or breaks in the gun. Check for a large increase of air supply pressure. Recalibrate to immediately clear the alarm. Increase the Adaptive tolerance parameter to allow larger changes without causing an alarm.

PNT2-636 %sMax. flow is below midpt. output

Cause: During calibration it was found that the maximum amount of flow occurred with the command output at only the middle (midpoint) of the range. This indicates that there the incorrect equipment is installed or the equipment is faulty. This might also indicate a large air leak.

Remedy: Check that the I/P transducer is the right range, if not replace it. Check that the booster has the correct ratio, typically 1 to 1. If the alarm log also has a leak alarm follow the remedies for that alarm. If this equipment must be used reduce the Max. control value for this parameter by about 20%.

PNT2-637 %sLeak detect when zeroing meter

Cause: An attempt to set an applicator parameter output was made which was beyond its min/max value.

Remedy: Verify the parameter min/max output setting.

PNT2-643 %sCal. table adapted out,output up

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a larger output required to get the same flow rate. This can be caused by: a clogged air cap, clogged gun, pinched air lines or large losses of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warning of the possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check, clean and possibly replace the air cap. Check for a large loss of air supply pressure. Check for pinched air lines or clogged air passages in the gun. Recalibrate to immediately clear the alarm. Increase the Adaptive tolerance parameter to allow larger changes without alarming.

PNT2-644 %sCal. table adapted in tolerance

Cause: Just a notification that the calibration table has returned to the normal operating range (as defined by the Adaptive tolerance).

Remedy: None.

PNT2-645 %sDyn. yield > %% tolerance band

Cause: As a particular flow rate set point is being output the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is above the value that the air system can provide.

Remedy: Decrease the yield. Use larger diameter air lines to supply air to the cap. Use a larger ratio booster (2:1 instead of 1:1) booster (if the system can not supply the high flow rates provided). Use a smaller ratio booster. Otherwise accept a larger tolerance band. Increase the Percent tolerance band (by about 50%).

PNT2-654 %sLower output did not lower flow

Cause: As the AccuAir calibration steps down through the 10 points in the calibration table, it expects a lower flow for each decrease in the command flow value. In this case the flow did not decrease. This can be caused by insufficient exhaust, no quick exhaust on the pilot air line, too large of a hysteresis in control equipment, or the system response is too slow for the current setting of the Calibration step delay parameter.

Remedy: Retry the calibration. Check that the pilot air line to the booster has sufficient exhaust capability. Increase the Calibration step delay parameter (by about 100%). Reducing the Leveling tries parameter might help.

PNT2-655 %sTime out during a cal. test

Cause: While measuring hysteresis, time up or time down the Closed loop system timed out. This indicates that the high or low flow rate can not be reached consistently.

Remedy: Retry the calibration. Check that the high flow rate can be reached consistently, if not an increase in the tolerance band might be required.

PNT2-656 %sMin. output has flow > setpoint

Cause: With a minimum control output the flow rate was measured to be higher than the setpoint (requested flow). The Max. control out (ms) parameter effects the sensitivity of this alarm. This might be caused by a leaking or broken air line between the flow sensor and the applicator. The I/P transducer might be stuck open. The air booster may be stuck open

or leaking. This might be caused by a faulty air flow sensor (reading more flow than there really is). Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check and repair the various air lines. Check and repair the air booster. Check and repair the I/P transducer. Possibly increase the Max. control out (ms) parameter.

PNT2-657 %sMax. output has flow < setpoint

Cause: With a maximum control output the flow rate was measured to be lower than the setpoint (requested flow). The Max. control out (ms) parameter effects the sensitivity of this alarm. This is likely caused by a clogged air cap. This may be caused by: pinched air lines, a broken I/P transducer or a broken air flow sensor. Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean and possibly replace the air cap. If air is observed to be flowing (when commanded), possibly replace the air flow sensor. Check for a pinched air line. Check and repair the I/P transducer. Possibly increase the Max. control out (ms) parameter (by about 50%).

PNT2-658 %sFlow setpoint below globals

Cause: The requested air flow setpoint is below the range of the current parameter settings.

Remedy: Adjust the air flow setpoint to be within the range of controllable flows.

PNT2-659 %sRequested flow above cal. table

Cause: The requested air flow setpoint is above the calibrated range for Fan Air. The maximum value is shown as point number 10 in the calibration table.

Remedy: Adjust the air flow setpoint to be within the calibrated range of this parameter. Perform the necessary steps to increase the maximum flow obtained during calibration. This might involve increasing the diameter of the air lines supplying Fan air to the applicator or changing the type of air booster used.

PNT2-660 %sSlow air flow leak detected

Cause: A small amount of air flow was detected when the gun was not turned on. This might be caused by a leaking trigger valve, leaking air line, or any other air leak between the air flow sensor and the gun.

Remedy: No immediate remedy is required, the paint system will continue to function properly. The applicator and various air lines should be inspected and repaired.

PNT2-661 %sFast air flow leak detected

Cause: A large amount of air flow was detected when the gun was not turned on. This may be caused by a leaking trigger valve, leaking air line, broken air line, broken applicator, or any other air leak between the air flow sensor and the gun.

Remedy: The the applicator and the various air lines should be inspected and repaired immediately.

PNT2-662 %sFailed to reach setpoint

Cause: This is caused by a failure of the AccuAir system to reach the setpoint (within the tolerance band) within the time allowed. The time that the system is allowed to take to reach setpoint is controlled by the Min. Setpoint reached (ms) parameter. This may be caused by a sticking transducer, a system that is too slow for the current setting of Min. Setpoint reached or a system yield that is too large for the tolerance band setting.

Remedy: If the Fan Air control I/P transducer is noisy or broken change it. If the calibration yield values are more than half of the min. Tolerance band then increase this tolerance value. If the Flow delay parameter is large or this alarm is occurring on many robots then increase the Minimum setpoint reached parameter.

PNT2-663 %s0 air flow rate timeout

Cause: All of the conditions were set for air to be flowing and a zero flow rate was measured for longer than the Zero flow timeout parameter. This may be caused by: a clogged air cap, a broken applicator trigger, broken air lines, a loss of air supply pressure, a broken air flow sensor, a broken cable (to the flow sensor), or a Zero flow timeout value that is too short. Note, AccuAir temporarily automatically changes to Open Loop when this alarm occurs.

Remedy: Check, clean and possibly replace the air cap. Check that the gun is properly triggering. If air was observed to be flowing, check and possibly replace the air flow sensor. Check for a broken air line. Possibly increase the Zero flow timeout parameter (by about 25%).

PNT2-664 %sWarning, learn item failed

Cause: While completing operations to measure the equipment delays, the equipment did not respond within the expected timeout.

Remedy: Retry the operation by setting the Equipment learn to Redo and calibrate again. Check for other AccuAir alarms in the alarm log then follow the remedies for those alarms. If there are no other alarms follow the remedies for the Failed to reach setpoint alarm.

PNT2-665 %sDyn. yield > min tolerance band

Cause: As a particular flow rate set point is being output the yield (slpm/cnt) for that flow rate was approximately larger than the percent tolerance. It is not likely that the set point will be reached within the specified tolerances. This might be caused by the use of a flow rate setpoint that is below the value that the air system can accurately provide.

Remedy: In some way decrease the yield. Use larger diameter air lines to supply air to the cap. Use a smaller ratio booster. Otherwise accept a larger tolerance band. Increase the minimum tolerance (by about 50%).

PNT2-666 %sCal. table adapted out, down

Cause: The relationship of the output command to the flow rate obtained has changed significantly since the last calibration. There is now a smaller output required to get the same flow rate. This can be caused by: air leaks, a loose air cap or a significant increase of air supply pressure. Note that the system continues to close the loop and generally maintain requested flow rates even after this alarm if there are no other alarms occurring. This alarm can provide early warning of the possible failures. This alarm is controlled by the Adaptive tolerance parameter.

Remedy: Check that the air cap is tight on the gun. Check, clean and possibly replace the air cap. Check for leaks in air lines or at fittings. Check for cracks or breaks in the gun. Check for a large increase of air supply pressure. Recalibrate to immediately clear the alarm. Increase the Adaptive tolerance parameter to allow larger changes without alarming.

PNT2-667 %sMax. flow is below midpt. output

Cause: During calibration it was found that the maximum amount of flow occurred with the command output at only the middle (midpoint) of the range. This indicates that there is wrong equipment installed or the equipment is faulty. This might also indicate a large air leak.

Remedy: Check that the I/P transducer is the right range, if not replace it. Check that the booster has the correct ratio, typically 1 to 1. If the alarm log also has a leak alarm follow the remedies for that alarm. If this equipment must be used reduce the Max. control value for this parameter by about 20%.

PNT2-668 %sLeak detect when zeroing meter

Cause: When attempting to zero (tare) the air flow meter automatically, the flow reading from it was large enough to indicate a possible leak.

Remedy: Complete the procedure to manually zero (tare) the air flow meter for this channel. With the air lines all reconnected and air pressure on, if the display on the air flow meter reads more flow than the Fast leak flow parameter then follow the cause and remedy for the Fast air flow leak detected alarm.

PNT2-673 %sEstat controller warning

Cause: The external E-stat controller detected a warning.

Remedy: Check the status of the external e-stat controller.

PNT2-674 %sEstat controller fault

Cause: The external E-stat controller detected a fault.

Remedy: Check the status of the external E-stat controller.

PNT2-675 %sEstats disabled

Cause: The E-stat disconnect or enable switch is off.

Remedy: Turn on the E-stat disconnect or enable switch.

PNT2-676 %sEstat controller not in remote

Cause: The E-stat local/remote switch is set to local mode.

Remedy: Put the E-stat controller in remote mode.

PNT2-677 %sEstat HVON Failed

Cause: The robot sent the HVON signal to the E-stat controller, but did not get a HVON signal back from the E-stat unit.

Remedy: Check the status of the external E-stat controller.

PNT2-678 %sEstat setpoint not reached

Cause: The E-stat controller did not set the set point reached output in time.

Remedy: Check the voltage and set point reached light on the E-stat controller. It might be having trouble reaching the requested voltage. If not, adjust the set point reached timeout setting.

PNT2-679 %sEstat T.P. enable Timeout

Cause: The estat enable for the teach pendant screen timed out.

Remedy: Request the E-stat voltage again.

PNT2-686 %sEstat controller warning

Cause: The external E-stat controller detected a warning.

Remedy: Check the status of the external E-stat controller.

PNT2-687 %sEstat controller fault

Cause: The external E-stat controller detected a fault.

Remedy: Check the status of the external E-stat controller.

PNT2-688 %sEstats disabled

Cause: The E-stat disconnect or enable switch is off.

Remedy: Turn on the E-stat disconnect or enable switch.

PNT2-689 %sEstat controller not in remote

Cause: The E-stat local/remote switch is set to local mode.

Remedy: Put the E-stat controller in remote mode.

PNT2-690 %sEstat HVON Failed

Cause: The robot sent the HVON signal to the E-stat controller, but did not get a HVON signal back from the E-stat unit.

Remedy: Check the status of the external E-stat controller.

PNT2-691 %sEstat setpoint not reached

Cause: The E-stat controller did not set the set point reached output in time.

Remedy: Check the voltage and set point reached light on the E-stat controller. It might be having trouble reaching the requested voltage. If not, adjust the set point reached timeout setting.

PNT2-692 %sEstat T.P. enable Timeout

Cause: The E-stat enable for the teach pendant screen timed out.

Remedy: Request the E-stat voltage again.

PNT2-699 %sTurbine Startup Test Not Complete

Cause: The Bell Speed Control Startup Test for the turbine is not complete, this test must be performed before running the turbine.

Remedy: Check the Start Mode field on the Bell Speed SETUP menu to check the status of the Startup Test.

PNT2-702 %sRequested speed over valid range

Cause: The requested turbine speed output command is above the range that is considered valid.

Remedy: Adjust the turbine speed command that is used in the preset table so it is within an acceptable range.

PNT2-706 %sTurbine under speed fault

Cause: While the turbine was operating and the gun was on or enabled, the RPM level was below the Under speed limit.

Remedy: Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit value.

PNT2-710 %sCruise Speed not established

Cause: The Cruise Speed determined during the Bell Speed Startup Test could not be established.

Remedy: Redo the Bell Speed Startup Test to determine a new Cruise Speed or check the turbine or regulator.

PNT2-716 %sTurbine Startup Test Not Complete

Cause: The Bell Speed Control Startup Test for the turbine is not complete, this test must be performed before running the turbine.

Remedy: Check the Start Mode field on the Bell Speed SETUP menu to check the status of the Startup Test.

PNT2-717 %sMax.dV/dT detected

Cause: A velocity change within a measured time has exceeded the maximum dV/dT setting for this turbine.

Remedy: Check the hardware to determine if the feedback signal from the turbine is consistent.

PNT2-718 %sMax. output has speed < setpoint

Cause: With a maximum control output the speed was measured to be lower than the setpoint (requested speed). The gun might be clogging. The turbine air or turbine pilot air line might be pinched. The turbine air pressure might have become too low.

Remedy: Check the turbine lines for pinching, especially at places where they flex. Check the turbine air supply pressure. Check and replace if necessary the I/P transducer.

PNT2-719 %sRequested speed over valid range

Cause: The requested turbine speed output command is above the range that is considered valid.

Remedy: Adjust the turbine speed command that is used in the preset table so it is within an acceptable range.

PNT2-722 %sTurbine over speed

Cause: While the turbine was operating the RPM level was above the Over speed limit . When this error occurs, braking will be applied to bring the turbine speed to within the acceptable operating range.

Remedy: Check and replace the I/P transducer if necessary. Possibly increase the Over speed limit value.

PNT2-723 %sTurbine under speed fault

Cause: While the turbine was operating and the gun was on or enabled, the RPM level was below the Under speed limit.

Remedy: Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit value.

PNT2-724 %sTurbine under speed warning

Cause: While the gun was off or disabled and the turbine was operating the RPM level was below the Under speed limit, Manual.

Remedy: Check and replace the I/P transducer if necessary. Check the supply and pilot air pressures, if either one is low, increase it. Possibly decrease the Under speed limit, Manual value.

PNT2-727 %sCruise Speed not established

Cause: The Cruise Speed determined during the Bell Speed Startup Test could not be established.

Remedy: Redo the Bell Speed Startup Test to determine a new Cruise Speed or check the turbine or regulator.

PNT2-733 %sPump 1 IN low pressure warning

Cause: Pump #1 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The resin inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-734 %sPump 1 IN low pressure fault

Cause: Pump #1 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.

3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The resin inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-739 %sPump 1 OUT high pressure warning

Cause: Pump #1 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not set up correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix resin valve is removed or broken.
6. The mix resin valve has failed.
7. The resin outlet transducer has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix resin valve. Verify that the mix resin valve is not faulty. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-740 %sPump 1 OUT high pressure fault

Cause: Pump #1 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix resin valve is removed or broken.
6. The mix resin valve has failed.
7. The resin outlet transducer has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix resin valve. Verify that the mix resin valve is not faulty. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-742 %sPump 1 fluid flow rate < set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-743 %sPump 1 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #1 is detected. This condition is usually caused by one or more of the following:

1. A loose mechanical coupling between the motor and pump.
2. A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from the pump to trigger is ok.

PNT2-744 %sPump 1 motor velocity limit

Cause: The motor velocity for pump #1 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #2 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT2-745 %sPump 1 motor servo not ready

Cause: The servo power to pump #1 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-746 %sPump 1 totals differ > tolerance

Cause: The actual total flow out of pump #1 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Do a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump. Verify that pump #1 does not have excessive wear.

PNT2-753 %sPump 2 IN low pressure warning

Cause: Pump #2 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The hardener inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-754 %sPump 2 IN low pressure fault

Cause: Pump #2 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The hardener inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure fault limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-755 %sPump 2 IN high pressure warning

Cause: Pump #2 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.

2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The hardener inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the resin inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-756 %sPump 2 IN high pressure fault

Cause: Pump #2 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The hardener inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the hardener inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-757 %sPump 2 OUT low pressure warning

Cause: Pump #2 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The hardener outlet transducer has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-758 %sPump 2 OUT low pressure fault

Cause: Pump #2 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The hardener outlet transducer has failed.

Remedy: Make sure the low pressure fault limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-759 %sPump 2 OUT high pressure warning

Cause: Pump #2 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix hardener valve is removed or broken.
6. The mix hardener valve has failed.
7. The hardener outlet transducer has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix hardener valve. Verify that the mix hardener valve is not faulty. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-760 %sPump 2 OUT high pressure fault

Cause: Pump #2 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix hardener valve is removed or broken.
6. The mix hardener valve has failed.
7. The hardener outlet transducer has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix hardener valve. Verify that the mix hardener valve is not faulty. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-761 %sPump 2 fluid flow rate > set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-762 %sPump 2 fluid flow rate < set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-763 %sPump 2 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #2 is detected. This condition is usually caused by one or more of the following:

1. A loose mechanical coupling between the motor and pump.
2. A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT2-764 %sPump 2 motor velocity limit

Cause: The motor velocity for pump #2 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #1 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT2-765 %sPump 2 motor servo not ready

Cause: The servo power to pump #2 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-766 %sPump 2 totals differ > tolerance

Cause: The actual total flow out of pump #2 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump. Verify that pump #2 does not have excessive wear.

PNT2-767 %sCalibration aborted

Cause: The IPC auto calibration aborted.

Remedy: Ensure pumps are operating correctly. Ensure that the delay parameter is set to a sufficient amount.

PNT2-768 (%s) Non-increasing cal table

Cause: The IPC auto calibration aborted because the calibration table is not increasing with the commanded flow rate.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount.

PNT2-769 (%s) Zero PSI

Cause: The IPC auto calibration aborted because zero PSI was detected while the IPC system was determining the maximum flow rate during the auto calibration or while the IPC system was determining one of the calibration points.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount. If the setup parameter, Max speed cap., was enabled, ensure that the parameter User speed cap., was not set to high - the pressure will eventually plateau at higher speed commands. Alternate action is to disable Max speed cap. and re-calibrate.

PNT2-771 %s Res:Hrd ratio is 0.0:0.0

Cause: The color identified in the error message has a default ratio (0.0:0.0) defined. The IPC pumps can only run when a non-zero ratio is defined.

Remedy: Change the default ratio for this color in the Setup Color Detail menu.

PNT2-778 %sPump 1 IN low pressure warning

Cause: Pump #1 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The resin inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-779 %sPump 1 IN low pressure fault

Cause: Pump #1 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.

3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The resin inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-780 %sPump 1 IN high pressure warning

Cause: Pump #1 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The resin inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the resin inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-781 %sPump 1 IN high pressure fault

Cause: Pump #1 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The resin inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the resin inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-782 %sPump 1 OUT low pressure warning

Cause: Pump #1 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The resin outlet transducer has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-783 %sPump 1 OUT low pressure fault

Cause: Pump #1 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to resin color valve is removed or broken.
4. The resin color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The resin outlet transducer has failed.

Remedy: Make sure the low pressure fault limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to resin color that is being used. Verify that the resin color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-784 %sPump 1 OUT high pressure warning

Cause: Pump #1 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix resin valve is removed or broken.
6. The mix resin valve has failed.
7. The resin outlet transducer has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix resin valve. Verify that the mix resin valve is not faulty. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-785 %sPump 1 OUT high pressure fault

Cause: Pump #1 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix resin valve is removed or broken.
6. The mix resin valve has failed.
7. The resin outlet transducer has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix resin valve. Verify that the mix resin valve is not faulty. Check the resin outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-786 %sPump 1 fluid flow rate > set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-787 %sPump 1 fluid flow rate < set point

Cause: The actual flow rate out of pump #1 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-788 %sPump 1 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #1 is detected. This condition is usually caused by one or more of the following:

1. A loose mechanical coupling between the motor and pump.
2. A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT2-789 %sPump 1 motor velocity limit

Cause: The motor velocity for pump #1 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #2 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT2-790 %sPump 1 motor servo not ready

Cause: The servo power to pump #1 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-791 %sPump 1 totals differ > tolerance

Cause: The actual total flow out of pump #1 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Do a fluid flow test on pump #1 with a beaker and verify that the beaker amount matches the pump #1 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump. Verify that pump #1 does not have excessive wear.

PNT2-798 %sPump 2 IN low pressure warning

Cause: Pump #2 inlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. The hardener inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure warning limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-799 %sPump 2 IN low pressure fault

Cause: Pump #2 inlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.

7. The hardener inlet transducer has failed.
8. The inlet regulator has failed.

Remedy: Make sure the low pressure fault limit is appropriate. Make sure the low pressure sensitivity is appropriate. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-800 %sPump 2 IN high pressure warning

Cause: Pump #2 inlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The hardener inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the resin inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-801 %sPump 2 IN high pressure fault

Cause: Pump #2 inlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The supply pressure is set too high.
4. The hardener inlet transducer has failed.
5. The inlet regulator has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the supply pressure is appropriate. Check the hardener inlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle. Check the hardener inlet regulator as follows: Through the Analog I/O menu verify the command 200-1000 cnts (0-100 psi) spanning by verifying the output psi at the transducer test port.

PNT2-802 %sPump 2 OUT low pressure warning

Cause: Pump #2 outlet pressure has been below the low warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure warn limit is set too high.
2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The hardener outlet transducer has failed.

Remedy: Make sure the low pressure warning limit is set to an appropriate value. Make sure the low pressure sensitivity is set to an appropriate value. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-803 %sPump 2 OUT low pressure fault

Cause: Pump #2 outlet pressure has been below the low fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The low pressure fault limit is set too high.

2. The low pressure sensitivity is set too short.
3. The pilot line to hardener color valve is removed or broken.
4. The hardener color valve has failed.
5. The supply pressure is too low.
6. The supply line (hose, etc.) is removed or broken.
7. A broken coupling between the servo motor and pump.
8. The hardener outlet transducer has failed.

Remedy: Make sure the low pressure fault limit is set to an appropriate value. Make sure the low pressure sensitivity is set to an appropriate value. Check the pilot line to hardener color that is being used. Verify that the hardener color valve being used is not faulty. Make sure the supply pressure is appropriate. Check the supply line from paint kitchen. Verify that the pump is rotating with motor. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-804 %sPump 2 OUT high pressure warning

Cause: Pump #2 outlet pressure has been above the high warning limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure warn limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix hardener valve is removed or broken.
6. The mix hardener valve has failed.
7. The hardener outlet transducer has failed.

Remedy: Make sure the high pressure warning limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix hardener valve. Verify that the mix hardener valve is not faulty. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-805 %sPump 2 OUT high pressure fault

Cause: Pump #2 outlet pressure has been above the high fault limit for a user configurable period of time. This condition is usually caused by one or more of the following:

1. The high pressure fault limit is set too low.
2. The high pressure sensitivity is set too short.
3. The pump start/stop anticipates not setup correctly.
4. Obstructed line, trigger or check valve.
5. The pilot line to mix hardener valve is removed or broken.
6. The mix hardener valve has failed.
7. The hardener outlet transducer has failed.

Remedy: Make sure the high pressure fault limit is appropriate. Make sure the high pressure sensitivity is appropriate. Make sure the pump start/stop anticipates are appropriate. Make sure the lines, trigger or check valve are not obstructed. Check the pilot line to mix hardener valve. Verify that the mix hardener valve is not faulty. Check the hardener outlet transducer as follows: Through the Analog I/O menu verify the transducer is spanning from near 200 cnts (0 psi) to 600+ cnts (50-80 psi) during a color change cycle.

PNT2-806 %sPump 2 fluid flow rate > set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously greater than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-807 %sPump 2 fluid flow rate < set point

Cause: The actual flow rate out of pump #2 as measured by the fluid flow meter has been continuously less than a set point window (a percentage) for a user configurable period of time.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the fluid flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump.

PNT2-808 %sPump 2 zero fluid flow rate detected

Cause: Zero fluid flow out of pump #2 is detected. This condition is usually caused by one or more of the following:

1. A loose mechanical coupling between the motor and pump.
2. A broken line between the pump and trigger.

Remedy: Check the mechanical coupling between the motor and the pump. Make sure the line from pump to trigger is ok.

PNT2-809 %sPump 2 motor velocity limit

Cause: The motor velocity for pump #2 has exceeded its operating limit. The motor speed will be reduced to be within operating limit. The motor speed for pump #1 will be reduced to maintain a proper fluid ratio.

Remedy: Lower the flow rate to within the motor limit.

PNT2-810 %sPump 2 motor servo not ready

Cause: The servo power to pump #2 is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-811 %sPump 2 totals differ > tolerance

Cause: The actual total flow out of pump #2 as measured by the fluid flow meter has a value that is different than the commanded total flow. This difference is larger than the total flow tolerance.

Remedy: Do a fluid flow test on pump #2 with a beaker and verify that the beaker amount matches the pump #2 size (cc/rev). Verify that the correct KFT factor has been entered for the flow meter per the manufacturers specification. Check the operation of the inlet regulator to verify that no (blow by) is occurring across the pump. Verify that pump #2 does not have excessive wear.

PNT2-812 %sCalibration aborted

Cause: The IPC auto calibration aborted.

Remedy: Ensure pumps are operating correctly. Ensure that the delay parameter is set to a sufficient amount.

PNT2-813 (%s) Non-increasing cal table

Cause: The IPC auto calibration aborted because the calibration table is not increasing with the commanded flow rate.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount.

PNT2-814 (%s) Zero PSI

Cause: The IPC auto calibration aborted because zero PSI was detected while the IPC system was determining the maximum flow rate during the auto calibration or while the IPC system was determining one of the calibration points.

Remedy: Ensure pumps are operating correctly. Ensure that the speed command delay (used to allow the motor RPM to settle) is set to a sufficient amount. If the setup parameter, Max speed cap., was enabled, ensure that the parameter User speed cap., was not set to high - the pressure will eventually plateau at higher speed commands. Alternate action is to disable Max speed cap. and re-calibrate.

PNT2-816 %s Res:Hrd ratio is 0.0:0.0

Cause: The color identified in the error message has a default ratio (0.0:0.0) defined. The IPC pumps can only run when a non-zero ratio is defined.

Remedy: Change the default ratio for this color in the Setup Color Detail menu.

PNT2-823 %sHIGH ServoBell TORQUE

Cause: Torque value of the ServoBell exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve the problem.

PNT2-824 %sServoBell motor not ready

Cause: The servo power to the ServoBell motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-825 %sCalibration Aborted

Cause: The ServoBell auto calibration aborted.

Remedy: Slow down the Cal Empty Speed. Ensure that the trigger is not clogged and opens fully. Ensure that the software limit does not exceed 2 mm.

PNT2-826 %sCalibration Time Out

Cause: The ServoBell auto calibration aborted due to a time out when the system was trying to determine the empty can position.

Remedy: Ensure all faults are cleared. Ensure that the ServoBell motor is turning during the calibration process.

PNT2-827 %sCanister Calibration Successful

Cause: The ServoBell auto calibration completed successfully.

Remedy: None.

PNT2-828 %sBad Status from set_prax_spd

Cause: An attempt was made to move the ServoBell or the SpeedDock and a bad status from set_prax_spd was detected.

Remedy: Determine the cause of the bad status, then resolve the problem.

PNT2-829 %sHIGH SpeedDock TORQUE

Cause: Torque value of the SpeedDock exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve the problem.

PNT2-830 %sSpeedDock motor not ready

Cause: The servo power to the SpeedDock motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-831 %s

Cause: An attempt was made to extend or retract the pusher at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. Ensure that the pusher retracted or extended fully at SpeedDock side A or B. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT2-832 %s

Cause: An attempt was made to extend or retract the valve at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. If it was an extended fault, ensure that the pusher extended fully at Speed Dock side A or B. If it was a retracted fault, ensure that the pusher retracted fully at SpeedDock side A or B and that the valve is not stuck in the extended state. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT2-833 %sHIGH ServoBell TORQUE

Cause: Torque value of the ServoBell exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve problem.

PNT2-834 %sServoBell motor not ready

Cause: The servo power to the ServoBell motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-835 %sCalibration Aborted

Cause: The ServoBell auto calibration aborted.

Remedy: Slow down the Cal Empty Speed. Ensure that the trigger is not clogged and opens fully. Ensure that the software limit does not exceed 2 mm.

PNT2-836 %sCalibration Time Out

Cause: The ServoBell auto calibration aborted due to a time out when the system was trying to determine the empty can position.

Remedy: Ensure all faults are cleared. Ensure that the ServoBell motor is turning during the calibration process.

PNT2-837 %sCanister Calibration Successful

Cause: The ServoBell auto calibration completed successfully.

Remedy: None.

PNT2-838 %sBad Status from set_prax_spd

Cause: An attempt was made to move the ServoBell or the SpeedDock and a bad status from set_prax_spd was detected.

Remedy: Determine the cause of the bad status, then resolve the problem.

PNT2-839 %sHIGH SpeedDock TORQUE

Cause: The torque value of the SpeedDock exceeded the maximum safety limit.

Remedy: Determine the cause of the high torque reading and resolve the problem.

PNT2-840 %sSpeedDock motor not ready

Cause: The servo power to the SpeedDock motor is not ready.

Remedy: Usually, the servo not ready occurs when servo power is turned off for some reason, such as E-stop condition, and/or machine locked. Correct the condition and reset the controller.

PNT2-841 %s

Cause: An attempt was made to extend or retract the pusher at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. Ensure that the pusher retracted or extended fully at SpeedDock side A or B. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT2-842 %s

Cause: An attempt was made to extend or retract the valve at SpeedDock side A or B, but failed.

Remedy: Check the retract or extend sensor at SpeedDock side A or B. If it was an extended fault, ensure that the pusher extended fully at Speed Dock side A or B. If it was a retracted fault, ensure that the pusher retracted fully at SpeedDock side A or B and that the valve is not stuck in the extended state. Ensure that sufficient air pressure is available for this operation and that the air lines are connected.

PNT2-843 %sOutput Press low warning

Cause: Output pressure dropped below the warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT2-844 %sOutput Press high warning

Cause: Output pressure exceeded high warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT2-845 %sManifold Press low warning

Cause: Manifold pressure dropped below warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT2-846 %sManifold Press high warning

Cause: Manifold pressure exceeded high warning level.

Remedy: Correct problem if warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT2-847 %sOutput Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT2-848 %sOutput Press high alarm

Cause: Output pressure exceeded high alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT2-849 %sManifold Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT2-850 %sManifold Press high alarm

Cause: Manifold pressure exceeded the high alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT2-851 %sCalibration successful

Cause: Calibration successful.

Remedy: None.

PNT2-852 %sCalibration aborted

Cause: Calibration aborted.

Remedy: Determine cause for calibration to abort, correct the problem, and retry the operation.

PNT2-853 %sNon-incr cal table

Cause: Calibration aborted due to the Output or Manifold pressure failing to increase as the command rate increased.

Remedy: Determine cause for the pressure not increasing, correct the problem, and retry the operation.

PNT2-854 %sZero Pressure

Cause: Calibration aborted due to zero Output or Manifold pressure detected after a flow command was issued.

Remedy: Determine cause for the zero pressure, correct the problem, and retry the operation.

PNT2-859 %sOutput Press low warning

Cause: Output pressure dropped below the warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT2-860 %sOutput Press high warning

Cause: The output pressure exceeded the high warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the Output pressure warning value if it is too low.

PNT2-861 %sManifold Press low warning

Cause: The manifold pressure dropped below the warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT2-862 %sManifold Press high warning

Cause: The manifold pressure exceeded the high warning level.

Remedy: Correct the problem if the warning occurs repeatedly, or adjust the Manifold pressure warning value if it is too low.

PNT2-863 %sOutput Press low alarm

Cause: Output pressure dropped below alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT2-864 %sOutput Press high alarm

Cause: The output pressure exceeded the high alarm level.

Remedy: Correct the problem immediately, or adjust the Output pressure alarm value if it is too low.

PNT2-865 %sManifold Press low alarm

Cause: The output pressure dropped below the alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT2-866 %sManifold Press high alarm

Cause: The manifold pressure exceeded the high alarm level.

Remedy: Correct the problem immediately, or adjust the Manifold pressure alarm value if it is too low.

PNT2-867 %sCalibration successful

Cause: Calibration successful.

Remedy: None.

PNT2-868 %sCalibration aborted

Cause: Calibration aborted.

Remedy: Determine cause for calibration to abort, correct the problem, and try the operation again.

PNT2-869 %sNon-incr cal table

Cause: Calibration aborted due to the Output or Manifold pressure failing to increase as the command rate increased.

Remedy: Determine cause for the pressure not increasing, correct the problem, and try the operation again.

PNT2-870 %sZero Pressure

Cause: Calibration aborted due to zero Output or Manifold pressure detected after a flow command was issued.

Remedy: Determine cause for the zero pressure, correct the problem, and try the operation again.

PNT2-875 %sBad preset index [%d]

Cause: The preset index is out of range (1-MAX_PRESET(20)).

Remedy: Check Preset[] index and Preset[R[]] index value.

PNT2-876 %sNo preset data (syscolor=[%s])

Cause: No preset data for the error color was found.

Remedy: Check [PAPS1] or ([PAPS2] if Dualarm) preset_data for table entry.

PNT2-877 %sNo estat data (syscolor=[%s])

Cause: No estat data for error color was found.

Remedy: Check [PAPSSCHG] preset_data for table entry.

PNT2-882 %sBad preset index [%d]

Cause: The preset index is out of range (1-MAX_PRESET(20)).

Remedy: Check Preset[] index and Preset[R[]] index value.

PNT2-883 %sNo preset data (syscolor=[%s])

Cause: No preset data for error color was found.

Remedy: Check [PAPS1] or ([PAPS2] if Dualarm) preset_data for table entry.

PNT2-884 %sNo estat data (syscolor=[%s])

Cause: No estat data for error color was found.

Remedy: Check [PAPSSCHG] preset_data for table entry.

PNT2-889 Wrong valve state in EMPTY CAN event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Empty Can event in the color change cycle.

Remedy: Ensure that the pDump valve OR pPE + pTRIG valves are in the step before the Empty Can event to correct the problem.

PNT2-890 Wrong valve state in FAST FILL event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Fast Fill event in the color change cycle.

Remedy: Ensure that the pCI valve is enabled in the step before the Fast Fill event to correct the problem.

PNT2-891 Wrong valve state in CAN FULL event-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Can Full event in the color change cycle.

Remedy: Ensure that the pCI valve is enabled in the step before the Can Full event to correct the problem.

PNT2-892 Wrong valve state in PRESET motion-%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for a preset motion instruction.

Remedy: Ensure that the pCI valve is enabled in the same step as the preset instruction if retracting the canister. Ensure that the pDump valve OR pPE + pTRIG valves are enabled in the same step as the preset instruction if extending the canister.

PNT2-893 Canister Dir - retracting: %s

Cause: An attempt was made to retract the canister but the valve state was incorrect. This could have been during a fill cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. pCI valve should be ON.

PNT2-894 Low can Pressure after Fill: %s

Cause: A fill cycle was just completed, but the fluid pressure in the can was found to be lower than the minimum expected.

Remedy: Increase the Minimum Fill Torque in the setup screen, or ensure that the canister is full of fluid (check the in-coming fluid pressure).

PNT2-895 Canister Dir - extending: %s

Cause: An attempt was made to extend the canister but the state of the valves were incorrect. This could have been during a cleanout cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pDump valve should be ON or the pPE + TRIG valves should be on. Ensure that the pCI valve is OFF.

PNT2-896 Zero Flow Programmed: %s

Cause: Zero Flow was programmed in CC.

Remedy: Ensure that a flow rate is setup in the CC preset data.

PNT2-897 %sHIGH Negative Canister TORQUE

Cause: The maximum compression force on the ball screw has been exceeded. When this occurs, it is usually when the ball screw is extending.

Remedy: Ensure that the canister speed is not too fast when spraying the job. Ensure that the pTrig and pCE valves are open during job execution. Ensure that the injector tip is not clogged. The nozzle tip tapers to a smaller diameter; ensure that the paint did not dry inside the nozzle, causing it to clog. Ensure that the pDUMP valve is operating correctly during the cleanout cycle. If the ball screw is worn out, then it needs to be replaced.

PNT2-898 %sHIGH Positive Canister TORQUE

Cause: The maximum tensile force on the ball screw has been exceeded. When this occurs, its usually when the ball screw is retracting. There may be a vacuum in the canister which is causing excessive torque when the motor is retracting the canister's piston.

Remedy: Ensure that the retraction speed is not too fast during the fast fill cycle. Ensure that the pCI and pCC valves are open during the fill cycles.

PNT2-899 %sAir in Canister detected

Cause: The piston was retracted from the fluid after the Fill sequence and torque was still detected on the face of the piston. The torque should not exist if the canister is completely full of paint, therefore, compressed air could me mixed with the paint.

Remedy: Check the paint supply for the current color in the canister to verify air in not being introduced into paint supply.

PNT2-900 %sLow Trigger Torque

Cause: The torque threshold on the canister motor did not reach the minimum torque threshold value during the fill through trigger step of the fill or refill cycle.

Remedy: Check the paint supply for the current color in the canister or reduce the torque threshold value or the fill through trigger timeout value.

PNT2-901 Wrong valve state in EMPTY CAN event%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Empty Can event in the color change cycle.

Remedy: Ensure that the pDump valve OR pPE + pTRIG valves are in the step before the Empty Can event to correct the problem.

PNT2-902 Wrong valve state in FAST FILL event%s

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Fast Fill event in the color change cycle.

Remedy: Ensure that the pCI valve is enabled in the step before the Fast Fill event to correct the problem.

PNT2-903 Wrong valve state in CAN FULL event%

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for the Can Full event in the color change cycle.

Remedy: Ensure that the pCI valve is enabled in the step before the Can Full event to correct the problem.

PNT2-904 Wrong valve state in PRESET motion%

Cause: The wrong valve state was programmed in the color change cycle. The valve interlocking requirements have not been satisfied for a preset motion instruction.

Remedy: Ensure that the pCI valve is enabled in the same step as the preset instruction if retracting the canister. Ensure that the pDump valve OR pPE + pTRIG valves are enabled in the same step as the preset instruction if extending the canister.

PNT2-905 Canister Dir - retracting: %s

Cause: An attempt was made to retract the canister but the valve state was incorrect. This could have been during a fill cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. pCI valve should be ON.

PNT2-906 Low can Pressure after Fill: %s

Cause: A fill cycle was just completed, but the fluid pressure in the can was found to be lower than the minimum expected.

Remedy: Increase the Minimum Fill Torque in the setup screen, or ensure that the canister is full of fluid (check the in-coming fluid pressure).

PNT2-907 Canister Dir - extending: %s

Cause: An attempt was made to extend the canister but the state of the valves were incorrect. This could have been during a cleanout cycle or other commanded motion on the process axis.

Remedy: Ensure that the correct CC control valves are in the proper state. The pDump valve should be ON or the pPE + TRIG valves should be on. Ensure that the pCI valve is OFF.

PNT2-908 Zero Flow Programmed: %s

Cause: Zero Flow was programmed in CC.

Remedy: Ensure that a flow rate is setup in the CC preset data.

PNT2-909 %sHIGH Negative Canister TORQUE

Cause: The maximum compression force on the ball screw has been exceeded. When this occurs, it is usually when the ball screw is extending.

Remedy: Ensure that the canister speed is not too fast when spraying the job. Ensure that the pTrig and pCE valves are open during job execution. Ensure that the injector tip is not clogged. The nozzle tip tapers to a smaller diameter; ensure that the paint did not dry inside the nozzle, causing it to clog. Ensure that the pDUMP valve is operating correctly during the cleanout cycle. If the ball screw is worn out, then it needs to be replaced.

PNT2-910 %sHIGH Positive Canister TORQUE

Cause: The maximum tensile force on the ball screw has been exceeded. When this occurs, it is usually when the ball screw is retracting. There may be a vacuum in the canister which is causing excessive torque when the motor is retracting the canister's piston.

Remedy: Ensure that the retraction speed is not too fast during the fast fill cycle. Ensure that the pCI and pCC valves are open during the fill cycles.

PNT2-911 %sAir in Canister detected

Cause: The piston was retracted from the fluid after the Fill sequence and torque was still detected on the face of the piston. The torque should not exist if the canister is completely full of paint, therefore, compressed air could be mixed with the paint.

Remedy: Check the paint supply for the current color in the canister to verify air is not being introduced into paint supply.

PNT2-912 %sLow Trigger Torque

Cause: The torque threshold on the canister motor did not reach the minimum torque threshold value during the fill through trigger step of the fill or refill cycle.

Remedy: Check the paint supply for the current color in the canister or reduce the torque threshold value or the fill through trigger timeout value.

PNT2-913 %sIllegal macro argument

Cause: The macro argument selected an invalid arm ID.

Remedy: Verify the robot program calling the macro does not identify itself in the macro argument. Make sure arguments are in the following list: Robots: R1,R2,R3,R4,R5,R6,R7,R8 Door Openers: D1,D2,D3,D4,D5,D6 Hood/Deck Openers: H1,H2,H3,H4,H5,H6

PNT2-914 %sMacro waiting for aborted robot

Cause: The robot program is waiting for program on another robot that is already aborted.

Remedy: Cancel the robot and send it home.

PNT2-915 %sMacro not acknowledged

Cause: The previous macro was not acknowledged.

Remedy: Change the teach pendant program so that this waits on the other robot between release macros.

PNT2-917 %sIllegal macro argument

Cause: The macro argument selected an invalid arm ID.

Remedy: Verify the robot program calling the macro does not identify itself in the macro argument. Make sure arguments are in the following list: Robots: R1,R2,R3,R4,R5,R6,R7,R8 Door Openers: D1,D2,D3,D4,D5,D6 Hood/Deck Openers: H1,H2,H3,H4,H5,H6

PNT2-918 %sMacro waiting for aborted robot

Cause: The robot program is waiting for a program on another robot that is already aborted.

Remedy: Cancel the robot and send it to the home position.

PNT2-919 %sMacro not acknowledged

Cause: The previous macro was not acknowledged.

Remedy: Change the teach pendant program so that this waits on the other robot between release macros.

PNT2-921 %Check if SERVOTOOL END instr. exists

Cause: A TP process/job is missing the instruction to disable softfloat for the specified group.

Remedy: Ensure to disable softfloat in a TP program that is associated with the same job that enabled softfloat.

PNT2-922 %sHood/Deck Opener Lost Part

Cause: The orientation of both hooks are not within the specified tolerance for a successful handoff operation.

Remedy: Ensure the handoff tolerance is not too tight. Determine as to why the hook(s) are not physically correct for the hand off to occur.

PNT2-923 %sHood/Deck Opener Lost Part

Cause: The Hood/Deck opener lost the part while softfloat was enabled, resulting in the hook to rotate to the Part lost position.

Remedy: Determine if the TP program needs to disable softfloat prior to this location. If programming is correct, to continue, reposition the part on the hook and issue a continue on the opener. A cancel can be initiated to cancel the job, which automatically disables Softfloat.

PNT2-926 %Check if SERVOTOOL END instr. exists

Cause: A teach pendant process/job is missing the instruction to disable softfloat for the specified group.

Remedy: Ensure to disable softfloat in a teach pendant program that is associated with the same job that enabled softfloat.

PNT2-927 %sHood/Deck Opener Lost Part

Cause: The orientation of both hooks are not within the specified tolerance for a successful handoff operation.

Remedy: Ensure the handoff tolerance is not too tight. Determine as to why the hook(s) are not physically correct for the hand off to occur.

PNT2-928 %sHood/Deck Opener Lost Part

Cause: The Hood/Deck opener lost the part while softfloat was enabled, resulting in the hook to rotate to the Part lost position.

Remedy: Determine if the TP program needs to disable softfloat prior to this location. If programming is correct, to continue, reposition the part on the hook and issue a continue on the opener. A cancel can be initiated to cancel the job, which automatically disables Softfloat.

PNT2-931 %sDoor held input 1 lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-932 %sDoor held input 2 lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-933 %sDoor detect 1 sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued activate the ignore part signal to disable scanning operations.

PNT2-934 %sDoor detect 2 sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-937 %sDoor held input 1 lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-938 %sDoor held input 2 lost

Cause: The door held input was lost during part held scanning.

Remedy: Check the input as soon as possible. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-939 %sDoor detect 1 sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued activate ignore part signal to disable scanning operations.

PNT2-940 %sDoor detect 2 sensor malfunction

Cause: The door held sensor was damaged or is malfunctioning.

Remedy: Check the sensor and fix it. If the job can still be continued activate the ignore part signal to disable scanning operations.

4.14.8 PRIO Alarm Code

PRIO-001 Illegal port type code

Cause: The port type code specified is invalid. This error code can be returned by several of the Digital I/O-related builtins (e.g., SET_PORT_ASG) when an invalid port type code is supplied.

Remedy: Use one the port types defined in IOSETUP.KL.

PRIO-002 Illegal port number

Cause: The port number is invalid or not presently assigned. Port numbers must be in the range of 1-32767. However, operator panel (SOP) port numbers can be zero. In most cases (e.g., DOUT[n] = Off and calls to the SET_PORT_SIM builtin), the specified port already must be assigned.

Remedy: Correct the port number.

PRIO-003 No memory available

Cause: Memory required for this operation is not available.

Remedy: Delete unneeded KAREL programs and/or variables to free memory.

PRIO-004 Too few ports on module

Cause: There are not enough ports on the specified board or module to make the specified assignments. This error code can be returned from the SET_PORT_ASG built-in.

Remedy: Correct either the first port number or the number of ports.

PRIO-005 bad port number

Cause: The specified port number in an assignment is invalid. Port numbers must be in the range of 1 - 32767.

Remedy: Correct the port number so that it is within the valid range.

PRIO-006 bad port number

Cause: The specified port number in an assignment (e.g., DIN[1] = ON) is invalid. The port number must be in the range of 1 - 32767.

Remedy: Correct the port number so that it is within the valid range.

PRIO-007 No match in SET_PORT_ASG de-assign

Cause: This error code is returned by the KAREL built-in SET_PORT_ASG when it is used as a de-assign request (with a physical port type of zero) and the logical ports specified are not presently assigned.

Remedy: Correct the port number.

PRIO-008 physical ports not found

Cause: The physical port to which ports are being assigned in a SET_PORT_ASSIGN built-in call does not exist.

Remedy: Correct the rack number, slot number, port type, or port number.

PRIO-009 number of ports invalid

Cause: The number of ports in a SET_PORT_ASG call is invalid. This must be in the range of 1 - 128 for digital port types (e.g., DIN), 1-16 for groups, and 1 for analog port types.

Remedy: Correct the number of ports, so that it is within the valid range.

PRIO-010 bad physical port number

Cause: An invalid physical port number is specified in a call to the KAREL built-in SET_PORT_ASG. This must be greater than 0.

Remedy: Correct the physical port number, so that it is greater than 0.

PRIO-011 Assignment overlaps existing one

Cause: The port numbers in a SET_PORT_ASG call overlap existing assignments.

Remedy: Correct the first port number or number of ports or delete existing assignment using the Digital I/O CONFIG screen or a SET_PORT_ASG call with physical port type zero.

PRIO-012 Bad board address

Cause: The rack and/or slot number specified in a call of the KAREL built-in SET_PORT_ASG is invalid or refers to an unused rack/slot number.

Remedy: Correct the rack and/or slot number.

PRIO-013 No analog input sequence for bd

Cause: An attempt was made to delete an analog input sequence that has not been defined.

Remedy: Check the rack and/or slot number and that an analog input sequence has previously been defined.

PRIO-014 Analog input sequence too long

Cause: The specified analog input sequence is too long; sequences must have from 1 to 15 ports numbers.

Remedy: Supply a sequence of an appropriate length.

PRIO-017 I/O point not simulated

Cause: Attempt to set the state of an input port that is not simulated.

Remedy: Use the I/O menu or the SET_PORT_SIM KAREL built-in to set the port simulated or do not set the port.

PRIO-020 I/O Link comm error %x, %x, %x, %x (hex)

Cause: Indicates that an error has been detected in communication between the MAIN CPU PCB and the process I/O board, Model-A I/O racks, or Model-B I/O interface units. The most common causes of this are the following: o Power to a

remote I/O rack or Model-B I/O interface unit is interrupted. o The cable between the MAIN CPU PCB and the process I/O board, racks, or Model-B interface units has been disconnected or is faulty. o Electrical interference between the I/O cables and other cables. This can be eliminated by physically separating the I/O cables from other wiring. In very electrically noisy environments, it might be necessary to use optical isolators with these cables.

Remedy: Check the cabling between the MAIN CPU PCB (JB-18 connector) and the process I/O board and/or model A or B interface modules. Check power to the remote Model A I/O racks and model B I/O interface modules. If corrections to these do not correct the problem, check the four numbers displayed in this error message. The first value must be interpreted bit-wise. If a bit is 1, the corresponding condition has been detected: Bit 0: (CFER) A CRC or framing error has been detected by the SLC-2 chip on the MAIN CPU PCB. This is most frequently the result of the problems listed above. Otherwise, it might indicate faulty SLC-2 chip, wiring between this and the JB-1B connector on the main PCB, or faulty process I/O, model-A I/O rack, or model-B interface unit. Bit 1: (CALM) An error has been detected by a slave SLC-2 (process I/O board, Model-A rack, or Model B interface unit). More information is provided by the second number displayed with the PRIO-020 error. Bit 2: (CMER) A communication error has been detected by a slave SLC-2. The potential causes are similar to those for a CFER. Bit 3: (IPRER): Internal parity error accessing SLC-2 internal RAM. This indicates a faulty SLC-2 chip. In this case, the third and fourth numbers displayed with the PRIO-020 error is the address and data for which the error was detected. This indicates a faulty SLC-2 chip. Bit 4: (OPRER): Parity error accessing external RAM by the SLC-2 chip. This might indicate bad DRAM or CMOS memory on the MAIN CPU PCB. Bit 5: (ALMI): Indicates an alarm signaled from outside the SLC-2. Check the controller Alarm Log for other errors reported. Bit 6: (BSY): Auto scan is running. This might be either 0 or 1 and does not indicate an error. Bit 7: (CEND): Auto-scan cycle has completed. This might be either 0 or 1 and does not indicate an error. The second number displayed is significant only if the CMER bit above is one. Bits 0-4: Indicate the position in the I/O Link chain of the slave unit in which error was detected. A value of 1 indicates the unit connected directly to the I/O LINK connector. Bit 5 (CFER): Indicates a CRC or framing error detected by the slave SLC-2. The causes are similar to those for a CFER error detected by the MAIN CPU SLC-2. Bit 6 (ALMI): Indicates an error asserted outside the slave SLC-2. This may indicate a problem with process I/O board, model-B I/O rack, or model-B interface unit hardware. Bit 7 (SYALM): Indicates a watchdog alarm or parity error detected by the slave SLC-2. This may indicate a problem with the process I/O board, model-A rack, or model-B interface unit.

PRIO-021 Unknown I/O hardware

Cause: An unknown device is connected to the I/O Link connector. This device is not recognized by the current controller software version.

Remedy: Replace the device with a device that is compatible with the current software or install a version of software that recognizes the device.

PRIO-022 Too much I/O data on I/O link

Cause: The devices connected to the I/O Link exceed the I/O link capacity. A total of 64 bytes of data each are available for input and output devices connected to the I/O link. Process I/O boards typically use 16 bytes of input and 16 bytes of output each. Digital modules generally use one byte for each 8 ports. Analog modules generally use two bytes per port.

Remedy: Disconnect some devices.

PRIO-023 No ports of this type

Cause: There are no ports of the type (e.g., GIN) specified in an I/O statement or built-in call.

Remedy: Change the port type, add I/O hardware with the required type of ports, or define ports (e.g., GIN or GOUT) of the specified type.

PRIO-033 PLC interface init. fault %d

Cause: The PLC interface board is bad or not installed.

Remedy: Check that the PLC interface board is properly installed. Check the LED status on PLC interface board.

PRIO-034 PLC interface general fault %d

Cause: The PLC interface board is faulted.

Remedy: Check the LED status on the PLC interface board.

PRIO-035 PLC interface serial fault %d

Cause: The serial link to a PLC has failed.

Remedy: Check the LED status on PLC interface board.

PRIO-037 Not supported for spec. port type

Cause: The operation is not supported for the specified port type.

Remedy: Check the specified port type.

PRIO-051 I/O Link i slave comm error %x, %x (hex)

Cause: Communication error for I/O Link i slave is detected.

Remedy: Check connection and reset alarm or cycle power.

PRIO-052 I/O Link i slave hardware mismatch %x, %x (hex)

Cause: Configuration is not for I/O Link i slave.

Remedy: Check whether CPU card and Main board are the hardware for I/O Link i slave.

PRIO-053 I/O Link slave comm error %x, %x (hex)

Cause: Communication error for I/O Link slave is detected.

Remedy: Check connection and reset alarm or cycle power.

PRIO-063 Bad I/O asg: rack %d slot %d

Cause: One or more assignments to the process I/O board or module at the specified rack and slot was invalid when the controller was turned on.

Remedy: Check the connections and power to the board or rack and that the module(s) are firmly installed. If the board or module has been permanently removed, moved to a different Model A slot or had its switch settings changed (model B), use the CONFIG option on the Digital I/O menu to delete or update the assignment(s).

PRIO-064 %s:I/O common is changed

Cause: I/O common is changed after power-on.

Remedy: Check the common of displayed terminal. Check if the common is not connected to 0V nor 24V too.
(Note: This alarm has been added since 7DC3/32.)

PRIO-070 PLC interface option not loaded

Cause: An A-B RIO or Genius Network board is installed but the PLC software option is not installed.

Remedy: Install the PLC I/O (A-B/GENIUS) software option.

PRIO-072 Too many pulses active

Cause: The maximum of number of concurrent pulse output statements is 255.

Remedy: Modify program logic to ensure that not over 255 pulses are active at one time.

PRIO-076 PLC I/O hardware not installed

Cause: A PLC I/O board is not installed in the backplane.

Remedy: Install a PLC I/O board into the backplane.

PRIO-081 I/O is not initialized

Cause: This indicates that an severe error has occurred during I/O initialization at controller power-up. Other messages in the log will indicate the specific problems.

Remedy: Check other error messages displayed on the TP alarm screen. The conditions indicated by these messages need to be corrected and the controller powered down and up before the robot can be used.

PRIO-083 Digital I/O is not recovered

Cause: Digital output port states are not recovered when semi-hot start is enabled because I/O device configuration or assignments have changed. All outputs will be reset to OFF.

Remedy: Cold start the application.

PRIO-089 PMC is not supported on this hardware

Cause: PMC function is not supported on this main board.

Remedy: Change main board or remove PMC function. If you need clear this alarm, please turn off K900.2 . PMC does not run at power up, and this alarm does not occur until you order to run PMC program.

PRIO-090 SNPX communication error

Cause: Error occurs at SNPX communication.

Remedy: Please refer cause code.

PRIO-091 E-Stop PCB comm error %x, %x, %x (hex)

Cause: Indicates that an error has been detected in communication between the MAIN PCB and Emergency stop PCB.

Remedy:

- Check the cabling between the MAIN PCB and Emergency stop PCB.
- Replace the cable between MAIN PCB and Emergency stop PCB.
- Replace Emergency stop PCB.
- Replace the MAIN PCB.

PRIO-092 Sensor comm error %x, %x (hex)

Cause: This indicates that an error has been detected in communication circuit for Force sensor or Acceleration sensor on MAIN PCB.

Remedy: Replace the MAIN PCB.

PRIO-093 Fuse blown Rack:%d Slot:%d

Cause: Fuse on process I/O board is blown.

Remedy: Please replace the fuse.

PRIO-094 Overload Rack:%d Slot:%d DO:%d-%d

Cause: The specified DO may be grounded.

Remedy: Please check the connection of the specified DO.

PRIO-095 Overload %s

Cause: The DO of the specified connector might be grounded.

Remedy: Check the connection of the DO of the specified connector.

PRIO-096 SNPX Connection is full<%s>

Cause: The number of connections has reached the set value.

Remedy: Do any one of the following: Wait until a connection becomes vacant, Change the set value, or cycle power and begin the beginning connection.

PRIO-097 SNPX time out<%s>

Cause: No reply was received from the computer to which the displayed IP Address is set.

Remedy: Check the connection to the computer to which the displayed IP Address is set.

PRIO-098 PMC communication error

Cause: Failed to PMC Ethernet communication.

Remedy: Please try to connect again.

PRIO-099 Port initialization error

Cause: The port is initialized at PMC programmer.

Remedy: When use PMC Ethernet communication, disable PMC programmer in SETUP Port Init screen.

PRIO-100 Model B comm fault %srack:%d slot:%d

Cause: Communication between the Model B interface unit and DI/DO units, or between DI/DO units, is lost.

Remedy: Check the power and cabling from Model B interface unit and DI/DO unit, or between DI/DO units.

PRIO-102 Cycle power to restart PLC I/O

Cause: The PLC Interface hardware (A-B RIO or Genius Network PCB) is already running and can not be restarted without cycling power.

Remedy: Turn off and then turn on the controller.

PRIO-104 Device is off-line

Cause: An attempt has been made to access to a port assigned to a device or board which is offline. This might be the result of an error or device having been set offline manually.

Remedy: For DeviceNet ports, troubleshoot as follows: Check the status of the DeviceNet board using the Digital I/O DeviceNet screen. If the status field for the board is OFF, set it ONLINE. If the status is ERROR, check the following:

- 1.) The daughter board is installed on the Interface board.

- 2.) There is power on the network.

If these do not indicate a problem, set the board ONLINE. If the board is ONLINE, check the DEV LST screen entry for the indicated device. If the status field for the device is OFF, set it ONLINE. If the status is ERROR, check the following:

- 1) The device is physically present on the network.
- 2) The baud rate is set correctly.
- 3) There are not devices with duplicate MAC-Id's on the network.
- 4) The device with the required MAC-Id is the device type indicated in the DEV LST screen.

PRIO-106 Device with port is off-line

Cause: An attempt was made to access a port assigned to a device which is offline. For DeviceNet ports, troubleshoot as follows: This might be caused by an error or the device being manually set offline.

Remedy: First, determine the port type and number being accessed. Then use the appropriate Digital I/O CONFIG screen to determine the DeviceNet board and device MAC-Id to which the port is assigned. Check the status of the DeviceNet board using the Digital I/O DeviceNet screen. If the status field for the board is OFF, set it ONLINE. If the status is ERROR, check the following:

- 1.) The daughter board is installed on the Interface board.
- 2.) There is power on the network.

After the problem is corrected, use the Digital I/O DeviceNet DEV LST screen to set the board ONLINE. If the board is ONLINE, check the DEV LST screen entry for the indicated device. If the status field for the device is OFF, set it ONLINE. If the status is ERROR, check the following:

- 1) The device is physically present on the network.
- 2) The baud rate is set correctly.
- 3) There are no devices with duplicate MAC-Id's on the network.
- 4) The device with the required MAC-Id is the device type indicated in the DEV LST screen.

Once the problem is corrected, use the DEV LST screen to set the device ONLINE.

PRIO-119 Too many DIGITAL I/O ports

Cause: There are too many DIGITAL I/O ports.

Remedy: Disconnect some DIGITAL I/O devices.

PRIO-121 Stop PMC program

Cause: You can not do this operation when PMC program is running.

Remedy: Please stop PMC program execution.

PRIO-125 I/O Link initialization error

Cause: The I/O Link is in an error state at the end of initialization.

Remedy: Please replace the device. If it is not remedied, please replace the cable. If not either, please replace the main board.

PRIO-126 PMC%d:No PMC program

Cause: PMC program does not exit.

Remedy: Download PMC program.

PRIO-127 PMC file load error

Cause: PMC program format is incorrect.

Remedy: Download PMC program again.

PRIO-128 T,C,K and D data may be lost

Cause: Saving of keep relay (K), Timer (T), Counter (C) and Data table (D) at last power down is failed. Current data of them may be old value.

Remedy: Load PARAM.PMC file.

PRIO-129 PMC%d:SUB%d is not supported

Cause: Illegal function command is found in PMC program.

Remedy: Please check PMC program.

PRIO-130 PMC is not available

Cause: 1. PMC function is not supported on this main board.

2. Integrated PMC option (J760) is not installed.

Remedy: 1. Change main board or remove PMC function.
2. Please install Integrated PMC option.

PRI0-131 PMC file name error

Cause: 1. File name must be LADDER*.PMC or PARAM*.PMC. The other file name is used for save or load. 2. Device name to access is too long.

Remedy: 1. Change file name to LADDER*.PMC for PMC program, PARAM*.PMC for PMC parameter file. 2. Make device name string short.

PRI0-132 PMC operation is locked

Cause: One of the following is locked by another task. PMC program edit, DI/O port simulation change, PMC program backup.

Remedy: Please try again later, or use the other method.

PRI0-133 PMC:PMC program size is too big

Cause: Step of PMC program is too big.

Remedy: Please check PMC program step size.

PRI0-134 Invalid PMC addr %s%d.%d

Cause: The specified PMC address is not valid for PMC.

Remedy: Please check the address in the PMC program.

PRI0-135 PMC address is not assigned

Cause: Specified PMC address is not assigned to any device.

Remedy: Please check address in PMC program.

PRI0-136 PMC%d:BYTE access to %s%d.%d

Cause: Specified PMC address can not be used as byte address.

Remedy: Please check address in PMC program.

PRI0-137 BIT access to %s%d.%d

Cause: Specified PMC address can not be used as bit address.

Remedy: Please check address in PMC program.

PRI0-138 %s%d is used in SUB%d

Cause: Specified address can not be used in specified function command. - F0-F255 and G0-G255 can not be used except MOVW. - Odd address of F0-F255 and G0-G255 can not be used in MOVW.

Remedy: Please check address in PMC program.

PRI0-139 Invalid CNC addr %x.%x(hex)

Cause: Specified CNC address is invalid.

Remedy: Please check PMC program if any invalid address is used.

PRI0-140 Can't display all PMC errors

Cause: There are more than 10 errors in PMC program. And error display is stopped. There may be more errors.

Remedy: Check the other PMC errors.

PRI0-141 PMC%d:Invalid PMC program

Cause: PMC program data is invalid.

Remedy: Check PMC program, and load again.

PRI0-142 Need E-STOP or CTRL start

Cause: To write PMC program to flash file, E-SOP must be pressed or start mode is controlled start.

Remedy: Press E-STOP or do controlled start.

PRI0-143 Writing PMC program to ROM

Cause: You can not clear alarm status during writing PMC program program to ROM.

Remedy: Press wait until writing PMC program is completed.

PRIO-144 Failed to run PMC program

Cause: Failed to run PMC program.

Remedy: Find the previous error message of PMC in Alarm Hist screen. Refer an item of the error message in this manual and implement the remedy.

If \$ER_NOHIS is not 0, warning is not display in Alarm Hist screen. Please set \$ER_NOHIS 0 and find related error message in the screen.

PRIO-145 Purging flash file, please wait

Cause: Purging flash file now. It takes a few minutes. Don't cut power until 'Flash file purge is completed' is displayed.

Remedy: It is message only.

PRIO-146 Flash file purge is completed

Cause: Purge of flash file is completed.

Remedy: It is message only.

PRIO-147 DIO config file too new

Cause: The DIO configuration file (.IO) file loaded is in a format that is too new to load on this controller.

Remedy: Save the DIO configuration on a compatible version and load this file.

PRIO-148 DIO config file too old

Cause: The DIO configuration file (.IO) file loaded is in a format that is too old to load on this controller.

Remedy: Save the DIO configuration on a compatible version and load this file.

PRIO-149 Invalid assignment recorded

Cause: An invalid port assignment has been recorded.

Remedy: No action is necessary; the invalid assignment will not be in effect until it is corrected or the DIO configuration is changed.

PRIO-150 CNET Card Init Error Bd %d

Cause: The ControlNet card failed to initialize. Possible problems can be the following. * The board system variable for firmware is invalid. Correct the value or restore the system variables. * The board firmware is not supported. Restore system variables. If necessary reload the controller. * The card or the motherboard is defective.

Remedy: Look at possible causes. Remedies are mentioned therein.

PRIO-151 CNET Internal Error 0x%x

Cause: ControlNet option encountered an internal error. The number is the system error in hexadecimal.

Remedy: Please look up the error to find the root cause.

PRIO-152 CNET Invalid Scan Config Bd %d

Cause: The configuration loaded on the CNET daughterboard is invalid.

Remedy: Reload the configuration from the config tool. For adapter mode, verify that all parameters are correct. Verify that EDS files used for the config tool are valid. Verify that the configuration of the scan- list is valid in the config tool.

PRIO-153 CNET Conn. Ownership Conflict

Cause: The target connection is already owned by some other device.

Remedy: Verify all connections to the target device from all scanners on the network. Inputs to a device cannot be multicast.

PRIO-154 CNET Duplicate Mac ID Bd %d

Cause: Duplicate MAC-ID detected.

Remedy: Check MAC-IDs of all devices on the network.

PRIO-155 CNET Network Error Bd %d

Cause: The CNET card is not attached to the network.

Remedy: Check wiring to the card. Check for duplicate MAC-ID. Ensure that there is at least one other device on the network.

PRIO-156 CNET Er %s Bd %d MAC %d

Cause: The connection for the device Mac listed encountered an error. The Er number is the ControlNet error code.

Remedy: Refer to cause code if listed. If not, refer to the ControlNet error code in this manual or the ControlNet specification.

PRIO-157 CNET Err Loading BIN file Bd %d

Cause: The firmware for the card could not be loaded.

Remedy: Refer to cause code. Verify Board sys vars to check for validity of values.

PRIO-158 CNET File Not Found

Cause: The firmware file was not found.

Remedy: Verify Board sysvars \$CN_BD_INFO[%d] are set correctly.

PRIO-159 CNET Cycle pwr to restart scan

Cause: Scan list was modified. ControlNet interface is stopped.

Remedy: Cycle power to the controller for the changes to take affect.

PRIO-160 CNET Connections Broken Bd %d

Cause: All connections to the card are broken. No I/O is exchanged and all ports are Offline. This happens when a network configuration is being performed or the Scan list is being changed.

Remedy: Finish the change. When the network is completed, the connections will be restored. If scan list is changed, the power will have cycled for the interface to the restarted.

PRIO-161 CNET Network Change Occuring

Cause: A config tool is performing a network change.

Remedy: Finish the change. When the network is completed, the connections will be restored. If scan list is changed, the power will have cycled for the interface to the restarted.

PRIO-162 CNET Connections Restored Bd %d

Cause: The CNET interface has restored the connections.

Remedy: This is a caution message to the user.

PRIO-163 CNET Network Change Complete

Cause: The config tool has completed the network change.

Remedy: This is a caution message to the user.

PRIO-164 CNET Scan list modified Bd %d

Cause: A config tool has modified the scan list of the interface card.

Remedy: At this point, a network config needs to performed using a network config tool such as RSNetworkx.

PRIO-165 CNET Connection Not Found

Cause: The interface could not establish a connection as it was not found.

Remedy: Verify the scan-list configuration and match it with the target device. Verify the connection paths. The connection path expected by the scan- list can be found in the EDS file for the target device. The connection path supported by the target device can be found in its documentation. Verify that the target device and the EDS file used by the Scanner config match.

PRIO-166 CNET Invalid Connection Type

Cause: Invalid connection type in scanlist.

Remedy: Use correct EDS file in the scan-list config tool and reload the scan-list.

PRIO-167 CNET Vend ID/Prod. Code Mismatch

Cause: The vendor ID of the device in the scan-list and that of the actual device do not match.

Remedy: Use correct EDS file and reconfigure the scan-list of the CNET interface on the system.

PRIO-168 CNET Invalid Connection Size

Cause: The connection size of the device in the scanlist does not match the target device.

Remedy: Verify correct size and reload the scan-list using the config tool.

PRI0-169 CNET Device Not Configured

Cause: The connection has not been scheduled.

Remedy: Run a network configuration tool such as RSNetworkx and configure the network.

PRI0-170 CNET Product Type Mismatch

Cause: The Product Type of the device in the scan-list and that of the actual device do not match.

Remedy: Use correct EDS file and reconfigure the scan-list of the CNET interface on the system.

PRI0-171 CNET Maj/Min Revision Mismatch

Cause: The Major/Minor revision of the device in the scan-list and that of the actual device do not match.

Remedy: Use correct EDS file and reconfigure the scan-list of the CNET interface on the system.

PRI0-172 CNET Target App Out of Conn.

Cause: The target device does not have enough connections.

Remedy: Close some connections to target device.

PRI0-173 CNET Needs Network Config.

Cause: The connection has not been scheduled.

Remedy: Run a network configuration tool such as RSNetworkx and configure the network.

PRI0-174 CNET Connection Lost

Cause: The connection to the remote device is lost.

Remedy: Check network connections. Check to see that the remote device is online. Check the status of the remote device.

PRI0-175 CNET Bad Device State

Cause: The device is not in correct state to respond to this connection request.

Remedy: Run a network configuration tool such as RSNetworkx and configure the network. Check if any other scanner has existing connection to the device.

PRI0-176 CNET Connection Request Failed

Cause: Remote device refused the connection. This could be due to an invalid connection path.

Remedy: Verify that the correct EDS file is being used for the device. Check the target device configuration.

PRI0-177 CNET Invalid configuration

Cause: The Card has an invalid scan-list configuration.

Remedy: Check the configuration on the scanner config tool. Verify correct EDS files are used. Verify Input and Output sizes to devices.

PRI0-178 Blk scns lost; %d %d %d

Cause: A group of consecutive scans were lost; if n1=1, scans were lost on the main processor; if n1 = 2, scans were lost on the communications processor; n2 = number of lost scans; if n2 is less than 5, this may not be a serious problem; n3 = total scans since pwr up since power-up. Generally indicates overloading of the indicated processor.

Remedy: Review software configuration to determine how loading can be reduced.

PRI0-179 Run scns lost; %d %d %d

Cause: A group of scans were lost within a run of 100 scans. If n1=1, scans were lost on the main processor; if n1 = 2, scans were lost on the communications processor; n2 = number of lost scans; if n2 is less than 20, this may not be a serious problem; n3 = total scans since pwr up since power-up. Generally indicates overloading of the indicated processor.

Remedy: Review software configuration to determine how loading can be reduced.

PRI0-180 CNET Sys Err %d %d 0x%x

Cause: An element could not be added to the system I/O scan. When this error is posted, ControlNet I/O is not Operational. Possible causes are: * Invalid Configuration of scanner scan list * Too many I/O points for any given CNET device * Too many I/O points in the whole system.

Remedy: Verify all I/O is valid. Check all CNET devices and ensure the sizes are reasonable. Max I/O is limited by that allowed for the system.

PRIO-181 CNET Conn. Req. Timeout

Cause: Target device did not respond to the connection request.

Remedy: Verify that the target device is online and the status is OK. Verify that correct EDS file was used for the Scan-list configuration in the scanner configuration tool.

PRIO-182 CNET CCO Change Aborted

Cause: Network change was aborted. Connections will be restored and I/O will be exchanged.

Remedy: This is a caution message.

PRIO-183 Unknown port type name

Cause: Unrecognized port type name supplied to tpptnptc.

Remedy: Supply name from element tp_daio_tp_names_c in tpdai*.utx.

PRIO-184 CNET Connection Idle

Cause: The target (adapter) connection is idle. A scanner has not connected yet. All the ports corresponding to this device will be offline.

Remedy: Check the remote scanner configuration. Check the sizes and other configuration parameters such as vendor ID, product code, product type, revision and connection path and verify they are correct. Verify that the scanner is online.

PRIO-185 CNET Config Er %d %d

Cause: There is an error with the Scan-list configuration.

Remedy: Refer to the cause code.

PRIO-186 CNET Invalid Header size

Cause: The input header size in case of scanner mode or the output header size in case of adapter is invalid.

Remedy: Enter a valid header size. The valid header is less than or equal to the total connection size. The total connection size is a sum of the I/O size and the header size.

PRIO-187 CNET Invalid Num of Slots

Cause: The number of slots for the device in the scan is invalid.

Remedy: Verify the configuration in the scanner config tool and reload the configuration. Verify that the EDS files are valid.

PRIO-188 Sim. Skip output not defined

Cause: There is no output defined for the Simulated Input Skip feature and a WAIT instruction containing a skipped input is being executed.

Remedy: Define the Simulated Input Skip output using the System Config menu.

PRIO-189 (%s^4, %d^5) WAIT will time out

Cause: The input used in this WAIT instruction is simulated and is designated as Skip When Simulated. This WAIT instruction will timeout and program execution will proceed with the next line.

Remedy: None. This is only a warning to indicate that a Simulated Input Skip will occur.

PRIO-191 AB-RIO Board Init Error

Cause: There was a problem initializing the AB-RIO hardware. The PRIO-191 alarm code will include a cause code with the reason.

Remedy:

- No Board : check that board is installed and dip switches are set properly.
- Failed to load/start/clear FW (firmware) : firmware file is missing or corrupt or possibly a problem with the hardware.

PRIO-192 AB-RIO No Board Found

Cause: There was a problem initializing the AB-RIO hardware. The PRIO-191 alarm code will include a cause code with the reason.

Remedy:

- No Board : check that board is installed and dip switches are set properly.
- Failed to load/start/clear FW (firmware) : firmware file is missing or corrupt or possibly a problem with the hardware.

PRIO-193 AB-RIO Failed to Load FW

Cause: There was a problem initializing the AB-RIO hardware. The PRIO-191 alarm code will include a cause code with the reason.

Remedy:

- No Board : check that board is installed and dip switches are set properly.
- Failed to load/start/clear FW (firmware) : firmware file is missing or corrupt or possibly a problem with the hardware.

PRIO-194 AB-RIO Failed to Start FW

Cause: There was a problem initializing the AB-RIO hardware. The PRIO-191 alarm code will include a cause code with the reason.

Remedy:

- No Board : check that board is installed and dip switches are set properly.
- Failed to load/start/clear FW (firmware) : firmware file is missing or corrupt or possibly a problem with the hardware.

PRIO-195 AB-RIO Failed to Clear Config

Cause: There was a problem initializing the AB-RIO hardware. The PRIO-191 alarm code will include a cause code with the reason.

Remedy:

- No Board : check that board is installed and dip switches are set properly.
- Failed to load/start/clear FW (firmware) : firmware file is missing or corrupt or possibly a problem with the hardware.

PRIO-196 AB-RIO Config Error, Slot %d

Cause: There was a problem with a rack configuration. The slot will indicate which rack configuration. The problem might be one of the following:

1. The rack number is not between 0 & 31.
2. The rack size or ending rack boundary is larger than the 128 I/O (full rack) maximum (eg. start group at 4 and a size of more than half a rack).

Remedy: Correct the rack configuration on the AB-RIO user interface.

PRIO-197 AB-RIO Slot %d Idle

Cause: The I/O connection associated with this slot is not actively exchanging I/O. Note that the alarm severity (STOP or WARN) is affected by the error severity setting on the AB-RIO configuration screen. The last state setting on this screen affects the state of the inputs.

Remedy: Check the wiring, baud rate, and PLC configuration.

PRIO-198 AB-RIO Slot %d in Test/Prog

Cause: The plc is in test mode, program mode, or the connection might be inhibited in the PLC. Note that the alarm severity (STOP or WARN) is affected by the error severity setting on the AB-RIO configuration screen. The last state setting on this screen affects the state of the inputs.

Remedy: Check that the PLC is in run mode and that the connection is not inhibited in the PLC setup.

PRIO-200 FIPIO System Error %d

Cause: An internal error has occurred.

Remedy: Note the number in the error message and contact the FANUC service representative.

PRIO-201 FIPIO PCB not installed

Cause: The FIPIO PC104 board is not mounted on the PC104 motherboard or the PC104 motherboard is not mounted into the option slot on the backplane.

Remedy: Mount the FIPIO PC104 board on the PC104 motherboard and install the PC104 motherboard into the option slot on the backplane.

PRIO-202 FIPIO PCB Abnormal

Cause: FIPIO Circuit board is faulty.

Remedy: Replace the FIPIO circuit board.

PRIO-203 FIPIO Duplicate FIP Address

Cause: Other device occupies the node address.

Remedy: Remove the device using the same address or change address from the FIPIO setup screen and cycle power on the controller.

PRIO-204 FIPIO Send Buffer Error

Cause: An error occurred while sending data.

Remedy: Cycle power on the controller. Please contact the FANUC service representative if the problem persists.

PRIO-205 FIPIO Receive Buffer Error

Cause: An error occurred while receiving data.

Remedy: Cycle power on the controller. Please contact the FANUC service representative if the problem persists.

PRIO-206 FIPIO Physical Reset

Cause: The physical FIPIO node has been reset by PLC.

Remedy: To resume communication, press reset button on teach pendant or operation panel.

PRIO-207 FIPIO BadPrm; CMD %x,%x

Cause: Error message from FIPIO PC104 agent board.

Remedy: Check whether the robot controller and PLC are wired correctly and try to cold start the robot controller. Please contact the FANUC service representative if the problem persists. Note the numeric value(n) displayed with the error. This data will be needed to further diagnose the problem.

PRIO-208 FIPIO NRDY; CMD %d LNG %d

Cause: Bad communication status of FIPIO PC104.

Remedy: Check board address of FIPIO PC104 board. The value must be equal to \$FIPIOVAR.\$IO_ADDRESS that is displayed as decimal number, not hexadecimal. By default, the address is 0x330 (=816 in decimal). If the values are not the same, change \$FIPIOVAR.\$IO_ADDRESS or address of FIPIO PC104 board to the same value. Next, make sure FIPIO PC104 board and PC104 motherboard are installed correctly. If all of above are correct and this alarm occurs continuously when the robot controller and PLC are properly connected, please contact the FANUC service representative. Note the numeric values displayed with the error. This data will be needed to further diagnose the problem.

PRIO-209 FIPIO Connection Broken

Cause: 1) Operating mode has been changed to IDLE or STOP by PLC. 2) Cable between the robot controller and PLC is disconnected or faulty.

Remedy: 1) Set operation mode to RUN by PLC 2) Check whether the robot controller and PLC is wired correctly.

PRIO-210 FIPIO Cnf/Adj not available

Cause: N/A

Remedy: N/A

PRIO-211 FIPIO Bad Cnf/Adj status

Cause: N/A

Remedy: N/A

PRIO-212 FIPIO Connection TimeOut

Cause: The robot controller and PLC is not connected when the robot controller is turned on. When cable between the robot controller and PLC is disconnected after the initial connection is made, PRIO-209 STOP FIPIO Connection Broken error will occur instead of this error.

Remedy: Check whether the robot controller and PLC are properly connected before the robot controller is turned on.

PRIO-213 FIPIO Connection Established

Cause: Logical connection between the robot controller and PLC is established.

Remedy: This is only a warning message for the operator. This message is displayed when \$FIPIOVAR.\$POST_WARN system variable is 1 (default:0).

PRIO-214 FIPIO Connection Recovered

Cause: The operation mode has changed from IDLE or SECU to ACTIVE.

Remedy: This is only warning message for the operator. This message is displayed when \$FIPIOVAR.\$POST_WARN system variable is 1 (default:0).

PRIO-230 EtherNet/IP Adapter Error (%d)

Cause: The robot EtherNet/IP Adapter Connection running on the robot is enabled and has an error. Refer to additional cause code text for further details.

Remedy: Alarm severity can be modified on the EtherNet/IP adapter configuration screen on a per connection basis, and last state behavior can be modified with \$EIP_CFG.\$KEEP_IO_ADP. Refer to the EtherNet/IP Operator's Manual for more information.

PRIO-231 EtherNet/IP Adapter Idle

Cause: The robot EtherNet/IP Adapter connection is enabled but no remote scanner has connected to it. Note that it is normal to see this message when the controller first is turned on since the remote scanner (eg. PLC) might not connect to the robot immediately after the robot has been turned on. The PLC will retry the connection again so normally the connection is made shortly after power up.

Remedy: Configure the remote scanner (eg. PLC) to connect to the robot. Press RESET to clear alarm. An alarm will be reposted if the connection is still idle.

PRIO-232 EtherNet/IP Not Initialized

Cause: The robot EtherNet/IP Adapter was not able to initialize.

Remedy: This alarm generally implies that the Ethernet or TCP/IP interface is not set up correctly. For example, if no IP address is defined, then EtherNet/IP cannot initialize. Verify network connectivity using the ping utility (on the robot and also on the local PC). If the problem persists, document the events that led to the alarm, and call your local FANUC representative.

PRIO-233 EtherNet/IP Scn Not in Run Mode

Cause: A remote EtherNet/IP scanner is connected to the robot adapter in IDLE or program mode. No I/O data will be committed.

Remedy: Put the remote scanner in run mode, and retry the operation.

PRIO-234 EtherNet/IP EDA Read Error:%s

Cause: This is EDA alarms for implicit connection.

Remedy: Please look up error code in the following table.

PRIO-235 EtherNet/IP EDA Write Error:%s

Cause: This is EDA alarms for implicit connection.

Remedy: Please look up error code in the following table.

Error Code (PRIO-234, 235)	Description
0x0400	Null Pointer
0x0401	Bad Register Index
0x0402	Bad Position Representation
0x0403	Variable Read Error
0x0404	Variable not accessible
0x0405	Export Error
0x0406	Bad KAREL/SYSTEM variable name
0x0407	Configuration exceeds allowed data limit per connection

PRIO-280 FL-net%d System Error(%d)

Cause: An internal error occurred in FL-net variety %d.

Remedy: Please contact the FANUC service. Note the numeric value displayed with the error. This data will be needed to further diagnose the problem.

PRIO-281 FL-net%d PCB not installed

Cause: The FL-net board is not properly mounted on the controller in FL-net variety %d.

Remedy: If you want to use the FL-net function, insert the FL-net board properly. If you do not want to the FL-net function, clear the common memory and I/O settings for all nodes. This alarm is displayed when the I/O setting is configured for at least one node.

PRI0-282 FL-net%d PCB Abnormal(%d)

Cause: The FL-net board does not function correctly in FL-net variety %d.

Remedy: The FL-net board must be replaced. Please contact the FANUC service representative. Note the numeric value displayed with the error. This data will be needed when contacting service.

PRI0-283 FL-net%d IP Address Incorrect

Cause: The specified IP address of my node does not belong to the class C in FL-net variety %d.

Remedy: Specify the IP address of my node such that it belongs to the class C.

PRI0-284 FL-net%d Token Interval Error

Cause: A time-out occurred in transmission from my node in FL-net variety %d.

Remedy: Increase the value of the token monitoring time on the setting screen or decrease the amount of data to be transmitted from my node so that no time-out occurs in transmission from my node. Alternatively, another device may be causing a slow response on the network. Check whether my node is affected by such a device.

PRI0-285 FL-net%d Init Error

Cause: An error was detected in the FL-net connection sequence in FL-net variety %d.

Remedy: Check whether all settings are correct. If this error continues to occur after verifying that all settings are correct, save the setting data in FLNET.SV and send the file to a FANUC service representative.

PRI0-286 FL-net%d Wait Frame Status

Cause: My node is in the frame reception wait state because there are no other nodes in the network or my node can recognize any other nodes in FL-net variety %d.

Remedy: To start communication, add another node to the network. If my node does not recognize the other node, check whether the robot and remote communication devices are connected to the network properly and are configured correctly.

PRI0-287 FL-net%d My Node Duplicate No.

Cause: Some other node has the same node number as my node in FL-net variety %d.

Remedy: Change the node number of my node or the node which has the same node number. To change the node number of my node, enter the least significant digit of the IP address on the my node setting screen. After changing the node number, cycle power on the robot controller.

PRI0-288 FL-net%d My Node Leave network

Cause: My node was disconnected from the network. The cause may be loss of power or connection. In additional, my node may be disconnected from the network due to another error which has occurred in FL-net variety %d.

Remedy: Turn the power on and check whether my node can participate in the network and check whether the cables are connected properly. Also check whether another error message has been posted. If another error message is posted, remove the cause of that error and try again.

PRI0-289 FL-net%d My Node Enter network

Cause: My node has connected to the network in FL-net variety %d.

Remedy: This only a warning message to alert the operator.

PRI0-290 FL-net%d My Node Duplicate Adr

Cause: The setting of common memory of another node overlaps the common memory area setting of my node in FL-net variety %d.

Remedy: Change the common memory area setting for my node or the other node whose the common memory area overlaps my node.

PRI0-291 FL-net%d Node %d Leave network

Cause: The node with the node number displayed in the message was disconnected from the network in FL-net variety %d.

Remedy: Check the node which was disconnected from the network by confirming the device settings and cable connection. Also check whether another error message is posted. If another error message is posted, remove the cause of that error.

Please note that you can set the severity of this error to WARN or STOP for each node in the item for the error severity on the detailed participating node setting screen.

PRI0-292 FL-net%d Node %d Enter network

Cause: The node having the node number displayed in the message has connected to the network in FL-net variety %d.

Remedy: This is only a warning message indicating the change in status to the operator.

PRI0-293 FL-net%d Dupuplicate Area Adr %d

Cause: The common memory area of a node overlaps that of the node with the node number displayed in the message in FL-net variety %d.

Remedy: Change the setting of the common memory area to eliminate the overlap.

PRI0-294 FL-net%d Multiple PCBs detected

Cause: Multiple FL-net boards are inserted into the controller in FL-net variety %d.

Remedy: Remove additional FL-net boards. Only one can be inserted into the controller.

PRI0-295 FL-net%d register is too large

Cause: FL-net sending register is too large or too small to change to integer in FL-net variety %d.

Remedy: Change the register to smaller or larger value.

PRI0-296 FL-net%d board can't use

Cause: Setting is to use internal port for FL-net in FL-net variety %d.

Remedy: Please use internal port or set to use board.

PRI0-297 FL-net%d rcv reg is too large

Cause: FL-net receive register is too large in FL-net variety %d.

Remedy: Set FL-net receive register under 200.

PRI0-320 CC-LK System error(ID=%x)(%d)

Cause: An internal system error occurred.

Remedy: Contact your local FANUC representative's service site. The ID number in the brackets is necessary to track the problems.

PRI0-321 CC-LK Board not installed

Cause: No CC-Link Remote Device Station PCB is installed.

Remedy: Install the CC-Link Remote Device Station PCB.

PRI0-322 CC-LK St.No out of range(%d)

Cause: A station number out of the range (1 to 64) is occupied.

Remedy: Change the Station No. or Number of Stations on the CC-Link SETUP screen.

PRI0-323 CC-LK CRC error(%d)

Cause: A CRC error was detected.

Remedy: Confirm the connection of CC-Link cable and terminal registers, and countermeasures to noise. Set the Baud rate to match the Master station's baud rate. Confirm the maximum cable length in Installation Manual published by CC-Link Partner Association

PRI0-324 CC-LK Data link error(%d)

Cause: This Remote Device station left the data link. The CC-Link cable were disconnected or the Master station was turned off.

Remedy: Confirm the connection of CC-Link cable and the status of the Master station. Please note that if you turn on the Remote Device station while the CC-Link cable is disconnected or the Master station is off, this alarm will NOT be posted.

PRI0-325 CC-LK Seq. CPU stopped(%d)

Cause: The sequencer CPU stopped.

Remedy: Confirm the status of the sequencer. Please note that this alarm is detected correctly only while the Remote Device station is exchanging data with the Master station.

PRI0-326 CC-LK Seq. CPU abnormal(%d)

Cause: The sequencer CPU is abnormal.

Remedy: Confirm the status of the sequencer. Please note that this alarm is detected correctly only while the Remote Device station is exchanging data with the Master station.

PRI0-327 CC-LK Reg index error(%d)

Cause: A non-existent register was used.

Remedy: Change Number of Registers or Reg start index on the CC-Link SETUP screen.

PRI0-328 CC-LK AO/R too many(%d)

Cause: Too many AOs or Registers were assigned to RWr.

Remedy: Change the Number of AOs and Number of Registers on the CC-Link SETUP screen.

PRI0-329 CC-LK AI/R too many(%d)

Cause: Too many AIs and Registers were assigned to RWw.

Remedy: Change Number of AIs and Number of Registers on the CC-Link SETUP screen.

PRI0-330 CC-LK PNTtoUOP not enough(%d)

Cause: The number of points of RX/Ry to be assigned to UOP are not enough.

Remedy: Change the Number of Stations on the CC-Link SETUP screen.

PRI0-331 CC-LK Reg data invalid(%d)

Cause: A numerical value set to a remote register was not a 16 bit integer.

Remedy: CC-Link function of robot supports only unsigned or signed 16 bit word data. Do not enter another type of value into a remote register.

You can send float value, which is larger than -32769 and smaller than 65536, if \$CCLINKRD[board No.].\$AUTO_REGCHG is set to not 0. The value is sent with integer by cutting off the floating part.

Severity of this alarm can be changed to warning if \$CCLINKRD[board No.].\$REG_ER_WARN is set to not 0.

PRI0-332 CC-LK no comm. to master(%d)

Cause: Channel carrier detection error.

Remedy: Confirm the connection of CC-Link cable and terminal registers, and noise suppression. Set Baud rate to match the Master station's baud rate.

PRI0-333 CC-LK comm task failed

Cause: An internal system error has occurred.

Remedy: Contact a FANUC service representative.

PRI0-334 CC-LK too many boards found

Cause: A) Three or more CC-Link daughter boards are installed. B) Three or more CC-Link Remote Device Station PCB are installed.

Remedy: Robot controller supports only two CC-Link communication boards. Turn off the controller and remove the excess board(s).

PRI0-335 CC-LK different board types

Cause: Two different types of CC-Link Remote Device Station PCBs are installed.

Remedy: The type of CC-Link Remote Device Station PCBs must be the same. Turn off the controller and remove all CC-Link boards of another type.

PRI0-350 EtherNet/IP Scanner Error (%d)

Cause: The EtherNet/IP Scanner Connection running on the robot is enabled and has an error. Refer to additional cause code text for further details.

Remedy: Alarm severity can be modified using the EtherNet/IP advanced scanner configuration screen on a per connection basis, and last state behavior can be modified with \$EIP_CFG.\$KEEP_IO_SCN. Refer to the EtherNet/IP Operator's Manual for more information.

PRI0-351 EtherNet/IP Cannot Open Socket

Cause: The robot EtherNet/IP scanner was not able to open a TCP or UDP network socket.

Remedy: This alarm generally implies that the Ethernet or TCP/IP interface is not set up correctly. For example, if no IP address is defined, then the EtherNet/IP cannot initialize. Verify network connectivity using the ping utility (on the robot and also on the local PC). If the problem persists, document the events that led to the alarm, and call your local FANUC representative.

PRI0-352 EtherNet/IP Cannot Bind Socket

Cause: The robot EtherNet/IP scanner was not able to bind a TCP or a UDP network socket.

Remedy: This alarm generally implies that the Ethernet or TCP/IP interface is not set up correctly. For example, if no IP address is defined, then the EtherNet/IP cannot initialize. Verify network connectivity using the ping utility (on the robot, and also on the local PC). If the problem persists, document the events that led to the alarm, and call your local FANUC representative.

PRI0-353 EtherNet/IP Send Error

Cause: The robot EtherNet/IP scanner was not able to send information on a TCP or UDP network socket.

Remedy: This alarm generally implies that the Ethernet or TCP/IP interface is not set up correctly. For example, if no IP address is defined, then the EtherNet/IP cannot initialize. Verify network connectivity using the ping utility (on the robot and also on the local PC). If the problem persists, document the events that led to the alarm, and call your local FANUC representative.

PRI0-354 EtherNet/IP Cannot Resolve Name

Cause: The robot EtherNet/IP scanner could not resolve the configured remote adapter hostname.

Remedy: Verify the Name/IP Address entered in the Scanner Configuration Screen is valid. Try to ping the address from the main EtherNet/IP screen. If using DNS, verify that DNS is properly configured. If using the robot Host Name tables (LOCAL and/or SHARED), verify the tables are properly configured. Press RESET to restart the robot scanner connection.

PRI0-355 EtherNet/IP Connect Error

Cause: The robot EtherNet/IP scanner was not able to connect to the adapter device on a TCP network socket.

Remedy: Verify the robot controller and the remote adapter device are both connected to the same network. Check the remote adapter device and verify it is running properly. Ping the remote adapter device from the robot. Press RESET to restart the robot scanner connection. If the problem persists, document the events that led to the alarm, and call your local FANUC representative.

PRI0-356 EtherNet/IP List Serv Failed

Cause: The robot EtherNet/IP Scanner did not receive a List Services Reply message from the remote adapter.

Remedy: Verify the robot controller and the remote adapter device are both connected to the same network. Check the remote adapter device and verify it is running properly and verify that EtherNet/IP is enabled on the adapter. Ping the remote adapter device from the robot. Press RESET to restart the robot scanner connection.

PRI0-357 EtherNet/IP Reg Sess Failed

Cause: The robot EtherNet/IP scanner did not receive a Register Session Reply message from the remote adapter.

Remedy: Check the remote adapter device and verify that EtherNet/IP is enabled. Press RESET to restart the robot scanner connection.

PRI0-358 EtherNet/IP FwdOpen Fail (0x%x)

Cause: The robot EtherNet/IP scanner either did not receive a ForwardOpen Reply message from the remote adapter, or the robot scanner received a ForwardOpen Reply message from the remote adapter indicating a failure to establish an I/O connection.

Remedy: Verify the scanner settings in the robot's Scanner Configuration screen are correct--review the manual of the remote adapter device for the correct settings. Verify that the remote adapter does not currently have a duplicate explicit owner connection (another scanner device already connected to the same assembly instances). Check the remote adapter device and verify that EtherNet/IP is enabled, and that the device is accessible on the network. Take note of the hexadecimal code in the robot alarm text and lookup the error in the robot scanner manual. Press RESET to restart the robot scanner connection. The figure in the error message specifies the extended status of the error returned by the target device in hexadecimal format. The table below describes the extended status error codes.

GENERAL STATUS	EXTENDED STATUS	DESCRIPTION
0x01	0x0100	Connection in Use or Duplicate Forward Open.
0x01	0x0103	Transport Class and Trigger combination not supported.

GENERAL STATUS	EXTENDED STATUS	DESCRIPTION
0x01	0x0106	Ownership Conflict.
0x01	0x0107	Connection not found at target application.
0x01	0x0108	Invalid Connection Type. Indicates a problem with either the Connection Type or Priority of the Connection.
0x01	0x0109	Invalid Connection Size.
0x01	0x0110	Device not configured.
0x01	0x0111	RPI not supported. Might also indicate problem with connection timeout multiplier or production inhibit time.
0x01	0x0113	Connection Manager cannot support any more connections.
0x01	0x0114	Either the Vendor Id or the Product Code in the key segment did not match the device.
0x01	0x0115	Product Type in the key segment did not match the device.
0x01	0x0116	Major or Minor Revision information in the key segment did not match the device.
0x01	0x0117	Invalid Connection Point.
0x01	0x0118	Invalid Configuration Format.
0x01	0x0119	Connection request fails since there is no controlling connection currently open.
0x01	0x011A	Target Application cannot support any more connections.
0x01	0x011B	RPI is smaller than the Production Inhibit Time.
0x01	0x0203	Connection cannot be closed since the connection has timed out.
0x01	0x0204	Unconnected Send timed out waiting for a response.
0x01	0x0205	Parameter Error in Unconnected Send Service.
0x01	0x0206	Message too large for Unconnected message service.
0x01	0x0207	Unconnected acknowledge without reply.
0x01	0x0301	No buffer memory available.
0x01	0x0302	Network Bandwidth not available for data.
0x01	0x0303	No screeners available.
0x01	0x0304	Not Configured to send real-time data.
0x01	0x0311	Port specified in Port Segment Not Available.
0x01	0x0312	Link Address specified in Port Segment Not Available.
0x01	0x0315	Invalid Segment Type or Segment Value in Path.
0x01	0x0316	Error in close path.
0x01	0x0317	Scheduling not specified
0x01	0x0318	Link Address to Self Invalid.
0x01	0x0319	Resources on Secondary Unavailable.
0x01	0x031A	Connection already established.
0x01	0x031B	Direct connection already established.
0x01	0x031C	Miscellaneous.
0x01	0x031D	Redundant connection mismatch.
0x01	0x031E	No more consumer resources available in the producing module.
0x01	0x031F	No connection resources exist for target path.
0x01	0x320 — 0x7FF	Vendor specific.

PRIO-359 EtherNet/IP I/O Timeout Error

Cause: The robot EtherNet/IP Scanner timed-out while waiting for an I/O update message from the remote adapter.

Remedy: Press RESET to restart the scanner connection. Check the remote adapter to verify it is functioning properly.

PRIO-360 EtherNet/IP Adp Not in Run Mode

Cause: The EtherNet/IP adapter to which the robot scanner is connected is in IDLE mode. No input data will be committed.

Remedy: Put the adapter in RUN mode.

PRI0-368 EtherNet/IP Could Not Go Online (%s)

Cause: An unexpected system level error has occurred.

Remedy: Document the events that led to the error, and call your local FANUC representative.

PRI0-369 EtherNet/IP System Error

Cause: An unexpected system level error has occurred.

Remedy: Document the events that led to the error, and call your local FANUC representative.

PRI0-402 TOYOPUC RUN is OFF

Cause: TOYOPUC is stopped by user operation or error eruption

Description: This alarm arise with STOP severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_VAR.\$RUN_SEV

0 : STOP

1 : PAUSE

2 : WARN

3 : Don't arise this alarm

PRI0-413 TOYOPUC reg. index error %d

Cause: Register number set to \$PC3J_REX_I[*].\$MST_R or \$PC3J_REX_O[*].\$MST_R are out of range. Set register number is showed at last.

PRI0-414 TOYOPUC reg. setting error %d

Cause: When setting \$PC3J_REX_I[*].\$ATR or \$PC3J_REX_O[*].\$ATR equal or more than 3, * should be even number. And these system variables can be set only 0 to 6. Error generating * number is showed at last.

PRI0-415 TOYOPUC rext. Lack of registers %d/%d

Cause: When unit system interface (register link extension exists), the number of register should be more than \$PC3J_REXT.\$MIN_REG_NUM (default 400).

PRI0-416 TOYOPUC IF circuit mismatch

Cause: L75F(DI[864]) "New controller (R-30iB)" is set to OFF.

Description: This alarm arise with STOP severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_VAR.\$NEW_CON_SEV

0 : STOP

1 : PAUSE

2 : WARN

3 : Don't arise this alarm

PRI0-450 TOYOPUC Watchdog timeout

Cause: Changing of watch dog signal from TOYOPUC is stopped.

Remedy: Remove the reason of stopping TOYOPUC ladder program, and start ladder program.

Description: This alarm arise with STOP severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_REG.\$WDOG_SEV1

0 : STOP

1 : PAUSE

2 : WARN

3 : Don't arise this alarm

PRI0-451 TOYOPUC Watchdog monitor failed

Cause: Watch dog monitor is stopped by system error.

Description: When watch dog monitor is stopped, error is arised whose severity is same with "PRI0-450 TOYOPUC Watchdog timeout".

This alarm arise with STOP severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_REG.\$WDOG_SEV1 but arise with STOP severity if critical error is happened.

- 0 : STOP
- 1 : PAUSE
- 2 : WARN
- 3 : Don't arise this alarm

PRIO-470 TOYOPUC Replace 24V Power Supply

Cause: The time for replacing the 24-V power supply has come.

Description: This alarm arise with WARN severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_VAR.\$POWER1_SEV

- 0 : STOP
- 1 : PAUSE
- 2 : WARN
- 3 : Don't arise this alarm

PRIO-471 TOYOPUC 24V Power Voltage Low

Cause: A voltage drop of the 24-V power supply was detected.

Description: This alarm arise with WARN severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_VAR.\$POWER2_SEV

- 0 : STOP
- 1 : PAUSE
- 2 : WARN
- 3 : Don't arise this alarm

PRIO-472 J893 and controller mismatch

Cause: Special controller is necessary to use J893.

Description: This alarm arise with STOP severity in default setting.

Setting: Severity etc. of this alarm can be changed with \$PC3J_VAR.\$UNIT_SEV

- 0 : STOP
- 1 : PAUSE
- 2 : WARN
- 3 : Don't arise this alarm

PRIO-480 TOYOPUC system error %08x

Cause: A system error occurred.

Remedy: Contact the FANUC service center with the error code.

PRIO-490 Modbus TCP Server Error

Cause: The Modbus TCP Server running on the robot is enabled and has an error. Refer to additional cause code text for further details.

Remedy: Alarm severity and last state behavior can be modified using the Modbus TCP Slave configuration screen. Refer to the Modbus Setup and Operations Manual for more information.

PRIO-493 Modbus Socket Error

Cause: The Modbus TCP Server was not able to open and use a TCP network socket.

Remedy: This alarm generally implies that the Ethernet or TCP/IP interface is not set up correctly. For example, if no IP address is defined, then the TCP/IP stack cannot initialize. Verify network connectivity using the ping utility (on the robot, and also on the local PC).

PRIO-494 Modbus Active Close

Cause: A Modbus TCP master device is trying to establish a connection with the robot Modbus slave, but the server is already using all available connections. This is a warning alarm and will only be posted the first time this happens after each power-cycle. Per the Modbus TCP protocol, when a new connection request arrives and there are no unused connections, the oldest connection will be closed, and the new connection request will be accepted.

Remedy: Increase the number of connections using the Modbus TCP screen.

PRIO-495 Modbus Timeout

Cause: The Modbus TCP server timed-out while waiting for an I/O message from a Modbus TCP client.

Remedy: Check the Modbus TCP client to verify it is functioning properly. Adjust the robot Modbus TCP timeout if necessary.

PRIO-499 Modbus System Error

Cause: Modbus TCP System Error. A general system failure has occurred.

Remedy: Turn off the controller, then turn it on again. If the error still occurs, document the events that led to the error and contact your local FANUC representative.

PRIO-520 PMC:Invalid Override setting

Cause: Setting of Override is invalid. Override can be set for only tree nummber of PMC.

Remedy: Reduce number of PMCs setting Overide.

PRIO-521 PMC:Invalid sequence numbers

Cause: Setting of Sequence number is invalid.

Remedy: Check Sequence number.

PRIO-522 PMC:Invalid memory types

Cause: Setting of Memory Type is invalid.

Remedy: Check Memory Type.

PRIO-523 PMC%d:memory types are mismatch

Cause: Setting of Memory Type is invalid.

Remedy: Check Memory Type.

PRIO-524 PMC:Invalid execution rates

Cause: Setting of Execution Rates is invalid.

Remedy: Check Execution Rates.

PRIO-525 PMC%d:PARAM%d.PMC was not loaded

Cause: PARAM*.PMC was not loaded. PMC adress values are not replaced.

Remedy: Please confirm setting of max PMC-path number.

PRIO-526 PMC%d:Keep data was not restored

Cause: Keep data was not restored.

Remedy:

PRIO-527 PMC:E relay data was not restored

Cause: E relay data was not restored.

Remedy:

PRIO-528 PMC%d:Step Sequence cannot be used

Cause: Step Sequence program cannot be used. It can be used only PMC1.

Remedy: Please load this PMC program as PMC1.

PRIO-529 PMC:PMC interface setting is invaled

Cause: PMC interface adress(M,N) setting is invalid.

Remedy: Please change setting of PMC interface on PMC Setting screen.

PRIO-530 PMC%d:Function Block cannot be use

Cause: Multi-Path PMC Option(J763) is not orderd. To use some function, J763 is needed.

Remedy: Please delete functions for J763.

PRIO-531 PMC%d:Invalid statements exist

Cause: Some function statements can not be used.

Remedy: Please delete invvaid functions from PMC prograrms.

PRIO-532 PMC%d:Int.I/O[%d] setting is overlaped with other IO assignment

Cause: IO index setting is overlaped with other device. IO index of Int.I/O can not be used the same index.

Remedy: Please change setting of Int.I/O.

PRIO-533 PMC%d:Int.I/O[%d] IO is invalid

Cause: IO index setting of Int.I/O is invalid.

Remedy: Please change setting of Int.I/O.

PRIO-534 PMC%d:Int.I/O[%d] size is invalid

Cause: PMC address setting of Int.I/O is invalid. PMC address must be set as 2 byte alignment.

Remedy: Please change setting of Int.I/O.

PRIO-535 PMC%d:Int.I/O[%d] address is invalid

Cause: PMC address setting of Int.I/O is invalid.

Remedy: Please change setting of Int.I/O.

PRIO-536 PMC%d:Number of Int.I/O is limit

Cause: Number of Int.I/O setting is limit.

Remedy: Please change setting of Int.I/O.

PRIO-537 PMC:%s[%d] value cannot be copied(Int.I/O[%d])

Cause: Error of Int.I/O Copy Mode. Register is not integer.

Remedy: Please change setting or change register value.

PRIO-538 PMC:Cycle power to change setting

Cause: PMC Setting is changed.

Remedy: Please cycle power to change PMC setting.

PRIO-539 PMC:Temporary Memory is lack

Cause: Temporary Memory to use PMC is lack.

Remedy: Please change PMC memory area size or use large memory.

PRIO-540 PMC%d:PMC programs are deleted at cycle power

Cause: Setting of max PMC path number is changed. PMC program will be deleted at next cycle time.

Remedy: Please set back max PMC path number not to delete PMC programs.

PRIO-541 PMC:LADDER%d.PMC was deleted

Cause: PMC program was deleted, because setting of max path PMC number is changed.

Remedy:

PRIO-542 PMC No ext. I/O rack:%d slot:%d

Cause: The device that set to External I/O of PMC is not found.

Remedy: Please check setting of PMC External I/O. Check the connections of I/O modules.

PRIO-543 PMC:Can not use Ext. I/O assignment

Cause: Internal X,Y address assignment and External I/O assignment can not be used together.

Remedy: Please delete setting of PMC External I/O. Or please delete Internal I/O setting of X and Y address.

PRIO-544 PMC:Can not use memory common mode

Cause: Internal X,Y address assignment and setting of memory common mode can not be used together.

Remedy: Please change setting of memory type. Or please delete Internal I/O setting of X and Y address.

PRIO-545 PMC:Override cannot set this address

Cause: PMC address assigned to Internal I/O cannot set as Override.

Remedy: Please use simulate value of I/O screen.

PRIO-546 Invalid DCS PMC program

Cause: Safety PMC program has invalid address or function code.

Remedy: Please check Safety PMC program.

PRIO-547 Can not run/stop Safety PMC

Cause: PMC execution state can not be changed.

Remedy: This is just notification.

PRIO-548 PMC system error (%x,%x)

Cause: System error occurred in the system. Headwear seems be failed.

Remedy: Please contact your local FANUC representative. Report the error message.

PRIO-600 PNIO board not installed

Cause: PCI motherboard with PROFINET board is not installed.

Remedy: Check motherboard or PROFINET board are inserted firmly.

PRIO-601 PNIO watchdog alarm

Cause: PROFINET software on the robot controller is not working.

Remedy: Cycle power the robot controller. Please contact your local FANUC representative if this error occurs repeatedly.

PRIO-602 PNIO system error(ID=%x)(%d)

Cause: System error.

Remedy: Please contact your local FANUC representative. Report the value in the error message.

PRIO-603 %s

Cause: An internal system error has occurred.

Remedy: Please contact your local FANUC representative. Report the error message.

PRIO-604 PNIO SYSTEM error

Cause: System error.

Remedy: Open alarm history screen because this error may show up together with another error message. Please contact your local FANUC representative and report the error message. When PROFINET Safety is used, PRIO-604 may show up with PRIO-603 “PROFIsafe hard fail”, “CRC check error” or “status check error”. Then, first of all, check whether the configuration of safety PLC and the setting of robot controller matches. Check the size of safety input/output in DCS PROFINET Safety screen, configure the safety PLC again, and cycle power the robot controller. If the problem persists, the error is probably due to a hardware problem. Please contact your local FANUC representative.

PRIO-605 PNIO(D) open error %04x

Cause: Failed to start PROFINET I/O Device function. This error message may show up during remote configuration by PC configuration tool. This error message may show up when the robot controller is used only as I/O Device and its IP address is supposed to be set by I/O Controller (such as PLC), but the I/O Controller has not started.

Remedy: The value in the error message is error code from PROFINET board. The value might be one of the followings.

Error Code	Meaning	Remedy
0x0309	Wrong calling sequence	Wait for a while, or press reset. Then the robot controller tries to start I/O Device again.
0x030D	Config in update PROFINET board might be stopped by PC configuration tool for remote configuration.	If the robot controller is used only as I/O Device, start the I/O Controller which is supposed to set the IP address. Finish remote configuration and start PROFINET board by PC configuration tool, and then press reset. Then the robot controller tries to start I/O Device again.
0x030E	No communication to PROFINET board PROFINET board might be stopped by PC configuration tool for remote configuration.	Finish remote configuration and start PROFINET board by PC configuration tool, and then press reset. Then the robot controller tries to start I/O Device again.

If the value is not in the list, or if the error is not resolved, write down the value in the error message and contact your local FANUC representative and report the value.

PRIO-606 PNIO(D) abort indication %x

Cause: PROFINET I/O communication is aborted by I/O Controller.

Remedy: This is just notification.

PRIO-607 PNIO(D) offline indication %x

Cause: PROFINET I/O communication is stopped by I/O Controller.

Remedy: This is just notification.

PRIO-608 PNIO(D) mismatch slot %d %d

Cause: Reported module with slot number and subslot number does not match the configuration of project file downloaded to I/O Controller.

Remedy: Check the setting in the setup module detail screen. Check the project file.

PRIO-609 PNIO: Need reset for restart

Cause: PROFINET board is stopped by PC configuration tool when I/O Controller is enabled.

Remedy: Start PROFINET board by PC configuration tool and then press reset.

PRIO-610 PNIO(C) open error %04x

Cause: Failed to start PROFINET I/O Controller function. This error message may show up when PROFINET board is stopped by PC configuration tool.

Remedy: The value in the error message is error code from PROFINET board. The value might be one of the followings.

Error Code	Meaning	Remedy
0x0304	No configuration is available	Download XDB project file to PROFINET board in controlled start.
0x0309	Wrong calling sequence	Press reset. Then the robot controller tries to start I/O Controller again.
0x030D	Config in update PROFINET board might be stopped by PC configuration tool for remote configuration.	Finish remote configuration and start PROFINET board by PC configuration tool, and then press reset. Then the robot controller tries to start I/O Controller again.
0x030E	No communication to PROFINET board	Finish remote configuration and start PROFINET board by PC configuration tool, and then press reset. Then the robot controller tries to start I/O Controller again.

If the value is not in the list, or if the error is not resolved, write down the value in the error message and contact your local FANUC representative and report the value.

PRIO-611 PNIO(C) alarm indication %x

Cause: Alarm is indicated by PROFINET board.

Remedy: This is just notification.

PRIO-612 PNIO(C) offline indication

Cause: Operating mode is changed to offline.

Remedy: This is just notification.

PRIO-613 PNIO(C) clear indication

Cause: Operating mode is changed to clear.

Remedy: This is just notification.

PRIO-614 PNIO watchdog start failed

Cause: System error.

Remedy: Please contact your local FANUC representative. Report the error message.

PRIO-615 PNIO: can't find the station

Cause: Specified station number is not found when the switching TP instruction is executed.

Remedy: Check the station number.

PRIO-616 PNIO: attach/detach Timeout

Cause: Then switching TP instruction has timed out.

Remedy: Check if the target station is connected well.

PRIO-617 PNIO(D) mod plug failed %x %x

Cause: I/O Device function failed because the specified module is wrong.

Remedy: Check the module specified by two numbers, the former is slot number, the latter is subslot number.

PRIO-618 PNIO(D) submod plug failed %x %x

Cause: I/O Device function failed because the specified submodule is wrong.

Remedy: Check the module specified by two numbers, the former is slot number, the latter is subslot number.

PRIO-619 PNIO(C) mismatch st %d slot %d %d

Cause: The stored configuration of the module that is specified by station number, slot number and subslot number does not match the current configuration when the start mode is OPERATION.

Remedy: Check the parameters of the module that is specified by station number, slot number and subslot number.

PRIO-620 PNIO(C) station %d deactivated

Cause: The device whose "Show error when deactivated" setting is ON is deactivated.

Remedy: Check the station specified by the station number, and activate it.

PRIO-621 PNIO(D) device is not running

Cause: The start up of I/O Device has not completed or was terminated by an error.

Remedy: Disable I/O Device if I/O Device function is not used in setup general screen. If I/O Device function is used, check if any error related to I/O Device is present. Check if I/O Controller that is supposed to communicate with the robot controller is running. This error can be released when the setting of I/O Device is correct and communication to the I/O Controller establishes.

PRIO-622 PNIO(C) controller is not running

Cause: The start up of I/O Controller has not completed or was terminated by an error.

Remedy: Disable I/O Controller if I/O Controller function is not used. If I/O Controller function is used, check if any error related to I/O Controller is present. This error can be released when the setting of I/O Controller is correct and communication to the I/O Devices establishes.

PRIO-623 PNIO(C) not in operation mode

Cause: The start up of I/O Controller has completed but the start up mode is not OPERATION.

Remedy: Change the start mode to OPERATION, and cycle power on the robot controller.

PRIO-624 PNIO(C) mod number mismatch

Cause: The number of modules in the stored configuration is different from the current configuration when the start mode is OPERATION.

Remedy: Check if the project downloaded to PROFINET board matches the current configuration, and if the configuration was read in by the robot controller in READ IN mode.

PRIO-625 PNIO(C) read in complete

Cause: PROFINET network configuration has been read in successfully when start mode is READ IN.

Remedy: This is just notification of completion of read in. Check PROFINET I/O Controller communication and I/O data exchange before changing start mode to OPERATION.

PRIO-626 PNIO: please power OFF/ON

Cause: PROFINET setting of the robot controller was changed and cycling power is required to enable the change.

Remedy: Cycle the power of the robot controller.

PRIO-627 PNIO: set to operation mode

Cause: Start mode is changed to operation mode.

Remedy: This is just notification of completion of mode change.

PRIO-628 PNIO(C) group is not recovered

Cause: The device switching status cannot be recovered.

Remedy: Restore each device by configuration screen or TP instruction.

PRIO-629 Restore group manually

Cause: The device switching status cannot be recovered.

Remedy: Restore each device by configuration screen or TP instruction.

PRIO-630 PNIO(C) mod data out of area

Cause: The data of a PROFINET I/O module is not placed inside of the area specified by the start address and the size for any type of I/O, or it is placed across the border of some of the areas. In this case, the data is not allocated to any I/O.

Remedy: If the data need to be allocated to I/O of the robot controller, change the configuration in the robot controller, NCM/PC or STEP7 according to the information with PRIO-631 or PRIO-632. Please note that the data of a PROFINET I/O module can be allocated to only a single type of I/O (digital, analog, arc welding). It must be placed within the area specified by the start address and the size for a type of I/O and it must not be placed across the border of any areas, otherwise it is not allocated to any I/O. In such case, PRIO-630 appears at start up with PRIO-631 or PRIO-632 to inform which data is not allocated.

PRIO-631 IN: address (%d - %d)

Cause: PRIO-631 appears with PRIO-630 to inform which data is not allocated.

Remedy: The first number is the start address of the input data from a PROFINET I/O module to the robot. The second number is the last address of the data. Check the configuration in the robot controller.

PRIO-632 OUT: address (%d - %d)

Cause: PRIO-632 appears with PRIO-630 to inform which data is not allocated.

Remedy: The first number is the start address of the output data from the robot to a PROFINET I/O module. The second number is the last address of the data. Check the configuration in the robot controller.

PRIO-633 PNIO: Updating Firmware

Cause: Firmware update of PROFINET board has started.

Remedy: Wait until firmware update is completed. Never turn off the robot controller during the download, otherwise the firmware might be erased and PROFINET board is not operational until it is recovered. In such case, please refer to PRIO-635 for the procedure of recovery.

PRIO-634 PNIO: FW. updated

Cause: Firmware update of PROFINET board has completed successfully.

Remedy: Cold start the robot controller.

PRIO-635 PNIO: FW. update failed

Cause: Firmware update of PROFINET board has failed.

Remedy: Download can be retried. In case the firmware is erased. Set \$PNIO_DL.\$NO_FIRM_ST to 1, controlled start the controller, and write the firmware that is known to work well.

PRIO-636 PNIO: XDB downloaded

Cause: XDB project file is downloaded to PROFINET board.

Remedy: This is just an information.

PRIO-637 PNIO: Can't open file

Cause: The specified file can't be opened.

Remedy: Make sure the file name with device path (such as MC:) is correct.

PRIO-638 PNIO: Not enough memory

Cause: There is not enough memory in COMM processor for this operation.

Remedy: Please contact your local FANUC representative.

PRIO-639 PNIO: Unsupported feature

Cause: Configuration of unsupported feature is found.

Remedy: Please see the cause code to know what is not supported. Change the configuration by remote configuration tool.

PRIO-640 IOPS=bad:api %x,st %d, %d,%d

Cause: I/O producer status of the specified module of PROFINET I/O has turned to BAD. The figures in the message are API number, station number, slot number, and subslot number.

Remedy: Check the specified module.

PRIO-641 IOPS=good:api %x,st %d, %d,%d

Cause: I/O producer status of the specified module of PROFINET I/O has turned to GOOD. The figures in the message are API number, station number, slot number, and subslot number.

Remedy: This is only notification of recovery.

PRIO-642 Alarm %x:api %x,st %d, %d,%d

Cause: An alarm indication of PROFINET I/O has come. The figures in the message are alarm type, API number, station number, slot number, and subslot number.

Remedy: Check the alarm data of the specified module.

PRIO-643 PNIO(C) station %d activated

Cause: The device specified by the alarm message is activated.

Remedy: This is just notification.

PRIO-644 PNIO msg too long ch=%d(%d/%d)

Cause: The length of a PROFINET message from PROFINET board exceeds the limit.

Remedy: Check if the limit parameter is adequate. Locate the event that causes this alarm, and contact your local FANUC representative.

PRIO-645 PNIO: many unread alarm ind.

Cause: The number of unread alarm indication gets too large. Alarm indication interface function is enabled but probably there is no KAREL program that reads it out. Alarm indication should be read out because it uses memory while it is kept unread.

Remedy: Disable alarm indication interface function by setting bit2,3 of \$PNIO_CFG2.\$USHORT4 to 0. For example, if \$PNIO_CFG2.\$USHORT is 63 (0x3F), set 51 (0x33). Cycle power is needed to apply the change. Or create a KAREL program that reads out alarm indication. Please refer to Appendix A of PROFINET I/O Operator's manual for more details.

PRIO-646 IOCS=bad:api %x,st %d, %d,%d

Cause: I/O consumer status of the specified module of PROFINET I/O has turned to BAD. The figures in the message are API number, station number, slot number, and subslot number.

Remedy: Check the specified module.

PRIO-647 Check the specified module.

Cause: I/O consumer status of the specified module of PROFINET I/O has turned to GOOD. The figures in the message are API number, station number, slot number, and subslot number.

Remedy: This is only notification of recovery.

PRIO-648 PNIO(C) Too many devices

Cause: Too many devices exist in PROFINET project.

Remedy: Decrease the number of stations, I/O modules and interface modules.

PRIO-649 PNIO Need Firmware %s

Cause: Firmware version is too old to perform the operation.

Remedy: Update the firmware of PROFINET board to the displayed version, or later.

PRIO-650 Too many I/O comments

Cause: Too many I/O comments were set.

Remedy: Delete some unnecessary I/O comments.

PRIO-651 %s

Cause: This is a user alarm. The message strings is set in \$PNIO_DIAG2.\$ALM_MSG1.

Remedy: This is an information.

PRIO-652 PNIO(C) station %d deactivated

Cause: The device with the specified station number is deactivated.

Remedy: This is just a notification.

PRI0-653 PNIO(C) alarm storm, st %d

Cause: Alarm storm is detected. A device has been faulty and keeps on sending many alarms and diagnostics.

Remedy: Find out and fix the faulty device. Then release alarm storm status by TP screen or by system variable.

PRI0-654 PNIO(C) alarm storm cleared

Cause: Alarm storm status has been released.

Remedy: This is just a notification.

PRI0-655 PNIO: XDB backup started

Cause: Backup of XDB file from PROFINET board has started.

Remedy: Wait until backup finishes. Don't turn off the controller during backup.

PRI0-656 PNIO: XDB backup finished

Cause: Backup of XDB file from PROFINET board has completed successfully.

Remedy: This is just a notification.

PRI0-657 PNIO: XDB backup failed

Cause: Backup of XDB file from PROFINET board failed.

Remedy: This is just a notification.

PRI0-658 PNIO: FW. backup started

Cause: Backup of firmware from PROFINET board has started.

Remedy: Wait until backup finishes. Don't turn off the controller during backup.

PRI0-659 PNIO: FW. backup finished

Cause: Backup of firmware from PROFINET board completed successfully.

Remedy: This is just a notification.

PRI0-660 PNIO: FW. backup failed

Cause: Backup of firmware from PROFINET board failed.

Remedy: This is just a notification.

PRI0-661 XDB segment error

Cause: XDB backup failed because of a segment of data was dropped.

Remedy: This is an additional information.

PRI0-662 PNIO: Backup is running

Cause: PROFINET communication is suspended because backup operation is running.

Remedy: Wait until backup operation finishes.

PRI0-663 PNIO: Needs more free memory

Cause: There is not enough memory in COMM processor for backup operation.

Remedy: Put underbar character before device path, for example, _UD1: in order to perform backup in memory saving mode, however, it will take much longer time to finish than normal mode.

PRI0-664 PNIO(D): Bad module setting

Cause: There is a bad setting in I/O Device module setting. For example, slot number = 0 can't be used with V2.6 firmware.

Remedy: Check the cause code for what is bad setting. In the example case, open I/O Device module list/detail screen.

Renumber the slot number of the modules from slot 1. Then cycle power the controller.

PRI0-665 PNIO: unconfirmed FW. %d.%d.%d.%d.%d

Cause: The version of the firmware currently installed on the PROFINET board is not equal to that of tested firmware.

Remedy: This is an information of firmware version mismatch. It doesn't necessarily mean any problem is present. It is up to operator how to react this. For example, the operator may download the tested version. On the other hand, when there is a problem, this error message shows that firmware version mismatch might cause the problem.

PRI0-667 PNIO(C): XDB backup mismatch

Cause: XDB backup file in the specified device path doesn't match the configuration on PROFINET board.

Remedy: Check if configuration is on PROFINET board. If there is no configuration, downloading XDB might be required. If there is configuration, the XDB backup file in the specified device path might be old. It is up to the operator to download XDB backup file to PROFINET board, or to update XDB backup file.

PRI0-668 PNIO(C): XDB backup check failed

Cause: The operation of comparing XDB backup file in the specified device path fails.

Remedy: This is a system error. The cause code is the error status.

PRI0-669 PNIO(C): XDB backup not found

Cause: There is no XDB backup file in the specified device path.

Remedy: Confirm the device path. Create the backup file if required.

PRI0-670 PNIO(C): No Config on board

Cause: There is no configuration on PROFINET board.

Remedy: Download configuration to PROFINET board if I/O Controller function is used.

PRI0-671 PNIO(C): Config check failed

Cause: It isn't possible to check if configuration is present on PROFINET board. Possible causes: config in update, no communication with firmware.

Remedy: This is an information.

PRI0-672 PNIO: Special Setting found

Cause: The setting displayed in the cause code has the value with special meaning.

Remedy: Please see the cause code for which setting is special. In some cases, setting is changed for specific purpose. It is up to operator to decide the setting is correct or not. If the value is correct, just ignore the alarm.

PRI0-673 PNIO: Safety disabled

Cause: PROFINET Safety is installed but can't be enabled for some reason. For example, the firmware version of PROFINET board doesn't meet the requirement. The slot number for safety module doesn't match that defined in GSD file.

Remedy: Check the firmware version on PROFINET board by looking \$PNIO_DIAG.\$FW_VERSION. Refer to PROFINET I/O function operator's manual for the required firmware version and the GSD file for it. Download the required firmware to PROFINET board, and confirm the GSD is used in configuration tool. Check the slot number of safety module.

PRI0-674 PNIO: Download FW. %s

Cause: The firmware on PROFINET board can't be used with the current setting of robot. This may be because of replacement of PROFINET board.

Remedy: Download the firmware of the displayed version to PROFINET board.

PRI0-675 PNIO: Old backup is loaded

Cause: Backup file of PROFINET I/O function is loaded. Old identification information and configuration are found.

Remedy: This is an information.

PRI0-676 PNIO(D): DeviceID set to 0x%x

Cause: Identification number of PROFINET I/O Device is set to the specified number.

Remedy: This is an information. The I/O Controller that connects to the robot I/O Device may need to be configured again by the GSD file with the device identification number.

PRI0-677 No SignOff signal assignment

Cause: SignOff function is enabled, but there is no assignment for SignOff signal.

Remedy: Assign SignOff signal, or disable SignOff function.

PRI0-678 PROFIEnergy enable

Cause: I/O Device starts with PROFIEnergy enabled.

Remedy: This is just a notification.

PRI0-679 PROFIEnergy disabled

Cause: I/O Device starts with PROFIEnergy disabled.

Remedy: This is just a notification.

PRI0-680 PNPE: Start_Pause 0x%x

Cause: User application has acknowledged Start_Pause with the displayed PE_Mode.

Remedy: This is just a notification.

PRI0-681 PNPE: End_Pause

Cause: User application has acknowledged End_Pause.

Remedy: This is just a notification.

PRI0-682 PNIO(C) controller closed

Cause: I/O Controller has been closed.

Remedy: This is just a notification.

PRI0-683 PNIO(D) device closed

Cause: I/O Device has been closed.

Remedy: This is just a notification.

PRI0-684 PNIO(D) mod %d incomplete

Cause: Defective module setting is found around the displayed number in the module list of I/O Device. The module list should be filled with complete module setting. No intermediate empty or incomplete setting is permitted.

Remedy: Check module list of I/O Device, and remove all intermediate empty or incomplete setting.

PRI0-685 PROFIsafe F_iPar_CRC Error %x

Cause: PROFIsafe is stopped due to F_iPar_CRC check.

Remedy: If F_iPar_CRC check is enabled, F_iPar_CRC must be present in F-Parameter sent from Safety PLC, and it must be equal to that calculated by robot based on current DCS parameters, otherwise PROFIsafe is stopped. If F_iPar_CRC check is disabled, F_iPar_CRC must not be present in F-Parameter sent from Safety PLC, otherwise PROFIsafe is stopped. F_iPar_CRC check enable/disable should be used by default setting because robot GSDML file determines if F_iPar_CRC is present in F-Parameter sent from PLC.

PRI0-686 PNIO(D) Too many submodules

Cause: The number of I-device submodule exceeds the limit.

Remedy: Decrease the transfer area of I-Device in configuration tool.

PRI0-687 PNIO(D) mod data out of area

Cause: The number of I/O for I-Device is not enough for mapping the data of the submodule.

Remedy: Increase the number of I/O for I-Device, or decrease the length of I-Device data.

PRI0-688 More than 1 safe mod %d %d

Cause: More than 1 submodules have the subslot ID of safety submodule.

Remedy: Only 1 safety submodule is permissible at the beginning of I-Device transfer area. Change the subslot ID of the specified submodule other than 0x1001 - 0x1008.

PRI0-689 PNIO : to STOP mode (SUSPEND)

Cause: The mode of PROFINET has changed to STOP mode (former SUSPEND mode).

Remedy: This is just an information.

PRI0-690 PNIO(%s) Close Start

Cause: PROFINET interface is closing. It might be because of configuration error.

Remedy: Check alarm history to see if any error in I/O controller or I-Device.

PRI0-691 PNIO(%s) Stop Request

Cause: Stop of PROFINET interface is requested, for example by manual operation.

Remedy: This is just an information.

PRI0-692 PNIO(%s) Restart Request

Cause: Restart of PROFINET interface is requested, for example by manual operation.

Remedy: This is just an information.

PRI0-693 PNIO: FW. reset started

Cause: Reset of the firmware on the PROFINET board started.

Remedy: This is just an information.

PRI0-694 PNIO: FW. reset finished

Cause: Reset of the firmware on the PROFINET board finished.

Remedy: This is just an information.

PRI0-695 PNIO: STOP before operation

Cause: Requested Operation requires PROFINET to be stopped.

Remedy: Stop PROFINET before operation.

PRI0-700 WARN CC-IE Board not installed

Cause: No CC-Link IE board is installed.

Remedy: Install CC-Link IE board.

PRI0-701 STOP.G CC-IE Sys err (%d,%xh)

Cause: Internal system error occurred.

Remedy: When size is changed in master, this alarm may happen. Cycle power the controller. If this alarm happens even after cycle power, contact your local FANUC representative. The ID number in the brackets is required to track the problem.

PRI0-702 STOP.G CC-IE off line

Cause: CC-Link IE become off line.

Remedy: Check CC-Link IE settings and cable. If you changed RX, RY, RWr, RWw size to larger in master, robot setting should be changed to the larger size and robot should be cycling power.

PRI0-703 STOP.G CC-IE R[%d] data invalid

Cause: A outlying numerical value is set to a remote register.

Remedy: Reset, this alarm is only 1 shot. If register is changed, judgement for this alarm is done again. CC-Link IE function of robot supports unsigned or signed 16bits word data. Do not enter another type of value to remote register. You can send float value, which is larger than -32769 and smaller than 65536, if \$CCIE.\$AUTO_REGCHG is set to 1. The value are sent with integer by cutting off the floating part. Severity of this alarm can be changed to warning if \$CCIE.\$REG_ER_WARN is set to 1.

PRI0-704 WARN CC-IE I/O data size is changed

Cause: Cyclic data size has been reduced by the master.

Remedy: Only notification for user.

PRI0-710 AI/O Conv. data is invalid

Cause: Analog I/O conversion setting, \$AIO_CNV, is invalid.

Remedy: Check and change Analog I/O conversion setting, \$AIO_CNV

PRI0-711 AI/O value is out of range

Cause: Value of AI/O is out of range. This AI/O port is used Analog I/O conversion function. And range is defined in \$AIO_CNV.

Remedy: Check AI/O value. Check Analog I/O conversion setting, \$AIO_CNV.

PRI0-800 WARN EtherCAT Board not installed

Cause: No EtherCAT PCB is installed.

Remedy: Install EtherCAT PCB.

PRI0-801 STOP EtherCAT off line

Cause: EtherCAT becomes off line.

Remedy: Check EtherCAT settings and cable.

PRIO-802 STOP EtherCAT input size different

Cause: EtherCAT input size is different from master.

Remedy: Check EtherCAT settings.

PRIO-803 STOP EtherCAT output size different

Cause: EtherCAT output size is different from master.

Remedy: Check EtherCAT settings.

PRIO-804 STOP EtherCAT Com Soft Update Mode

Cause: Mode switch on EtherCAT board is communication software update mode.

Remedy: Change mode switch on EtherCAT board to 0 to change normal mode and cycle power.

PRIO-805 STOP EtherCAT EEPROM Update Mode

Cause: Mode switch on EtherCAT board is EEPROM update mode.

Remedy: Change mode switch on EtherCAT board to 0 to change normal mode and cycle power.

PRIO-806 STOP EtherCAT Update file not found

Cause: EtherCAT update file is not found.

Remedy: Check system variables \$BOOT2 \$BOOT3 \$ECAT_SOFT \$EEPROM_IMG under \$ECAT and check the file.

PRIO-807 STOP EtherCAT Update finished

Cause: Update for EtherCAT communication software or EEPROM is finished.

Remedy: Change mode switch on EtherCAT board to 0 to change normal mode and cycle power.

PRIO-808 STOP EtherCAT comm. error %x

Cause: EtherCAT communication error occurs.

Remedy: Please contact your local FANUC representative. Report the number displayed.

PRIO-809 STOP EtherCAT system error %x

Cause: EtherCAT system error occurs.

Remedy: Please contact your local FANUC representative. Report the number displayed.

PRIO-810 WARN %s

Cause: See the message displayed.

Remedy: This alarm displays the detail of alarm.

PRIO-811 STOP EtherCAT Com Soft mismatch

Cause: EtherCAT communication software on EtherCAT slave board is older or newer than the robot software.

Remedy: Update EtherCAT communication software and EEPROM image by the procedure written in EtherCAT operation manual.

PRIO-812 WARN Required %s, Current %s

Cause: This message shows up together with PRIO-811 to inform the required and the current version of EtherCAT communication software.

Remedy: Update EtherCAT communication software and EEPROM image by the procedure written in EtherCAT operation manual.

4.14.9 PROC Alarm Code

PROC-000 Allocated memory full

Cause: The memory size allocated in \$PRCREP.\$maxmem_siz.

Remedy: Delete old programs not used anymore to clear old logged data, or clear all log data to start fresh logging.

PROC-001 Memory too LOW for logging

Cause: There is not enough FROM or DRAM to log any new process data.

Remedy: Delete old programs not used anymore to clear old logged data, or clear all log data to start fresh logging.

PROC-002 Process Data remotely cleared

Cause: This is a notification that process data was remotely cleared.

Remedy: No remedy required.

PROC-003 Process Data cleared from TP

Cause: This is a notification that process data was cleared from the TP.

Remedy: No remedy required.

PROC-004 %s out of tol for PROG %s, PROCESS ID=%d

Cause: Alarm monitoring for specified item is enabled, and logged value is not within upper and lower tolerances.

Remedy: Check your process to verify it is within tolerance. Adjust upper and lower tolerances as needed.

PROC-005 Upp=%1f, Low=%1f, Act=%1f

Cause: This is the CAUSE code for PROC-005. This shows the limits and the actual value.

Remedy: Check your process to verify it is within tolerance. Adjust upper and lower tolerances as needed.

PROC-006 Internal Error

Cause: Software internal error.

Remedy: Delete old programs not used anymore to clear old logged data, or clear all log data to start fresh logging.

4.14.10 PROF Alarm Code

PROF-000 System error(%d)

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

PROF-001 PROFIBUS PCB not installed

Cause: PROFIBUS is not installed.

Remedy: Please install PROFIBUS PCB.

PROF-002 PROFIBUS PCB abnormal(%d)

Cause: PROFIBUS PCB is abnormal.

Remedy: Please exchange PROFIBUS PCB.

PROF-003 Slave Config data error

Cause: Configuration data is abnormal.

Remedy: Please change configuration data on Master.

PROF-004 Slave Param data error

Cause: Parameter data is abnormal.

Remedy: Please change parameter data on Master.

PROF-005 Master Slave Param error(%d)

Cause: Slave Parameter sets are abnormal.

Remedy: Please change Slave Parameter sets on the Master.

PROF-006 Another Master Lock(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-007 Parameter Fault(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-008 Invalid Slave Response(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-009 Slave not supported(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-010 Config Fault(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-011 Slave not ready(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-012 Slave not existent(%d)

Cause: Setting of slave is abnormal.

Remedy: Please change slave setting.

PROF-013 CMI error(code = %d)

Cause: Master firmware is abnormal.

Remedy: Please exchange PROFIBUS PCB

PROF-014 DP error(code = %d)

Cause: Master firmware is abnormal.

Remedy: Please exchange PROFIBUS PCB

PROF-015 DP sub error(code = %d)

Cause: Master firmware is abnormal.

Remedy: Please exchange PROFIBUS PCB

PROF-016 Slave communicatin stop

Cause: PROFIBUS PCB is abnormal.

Remedy: Exchange the PROFIBUS PCB.

PROF-017 Slave disconnected

Cause: Slave is disconnected.

Remedy: Please connect cable to Slave.

PROF-018 Exist specific diag(%d)

Cause: A status message exists in the slave specific diagnostic area in the received diagnostic data.

Remedy: Please investigate the specific diagnostic data.

PROF-019 Multi-boards are not supported

Cause: Multiple Profibus boards are not supported.

Remedy: Please set only one Profibus board.

4.14.11 PROG Alarm Code

PROG-001 Invalid pointer is specified

Cause: This indicates an internal system error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

PROG-002 Invalid task name is specified

Cause: The task name specified is invalid.

Remedy: Check the task name.

PROG-003 Invalid prog name is specified

Cause: The program name specified is invalid.

Remedy: Check the program name.

PROG-005 Program is not found

Cause: The specified program cannot be found.

Remedy: Check the program name.

PROG-006 Line is not found

Cause: The specified line number cannot be found.

Remedy: Check the line number.

PROG-007 Program is already running

Cause: The specified program is already being executed.

Remedy: Check the program name.

PROG-008 In a rtn when creating a task

Cause: Execution cannot be started in sub-routine program.

Remedy: Check the line number.

PROG-009 Line not same rtn as paused at

Cause: Resumption was attempted at a different line from the paused line.

Remedy: Check the line number.

PROG-010 Not same prg as paused

Cause: Resumption was attempted in a different program from the paused one.

Remedy: Check the program name.

PROG-011 Cannot get the motion control

Cause: Motion control cannot be obtained.

Remedy: Check the teach pendant enable switch and other running programs to determine who has motion control.

PROG-012 All groups not on the top

Cause: There is paused motion later than motion that was attempted to resume.

Remedy: Resume the motion paused the last time.

PROG-013 Motion is stopped by program

Cause: This motion was paused by the MOTION PAUSE instruction. Only the RESUME MOTION program instruction can resume the motion.

Remedy: Use RESUME MOTION instruction in the program.

PROG-014 Max task number exceed

Cause: The number of programs you attempted to start exceeded the maximum number.

Remedy: Abort dispensable programs or perform a CTRL start and select PROGRAM INIT option to increase the number of tasks allowed.

PROG-015 Cannot execute backwards

Cause: Backward execution cannot be used.

Remedy: Do not use backward execution at this point. If this alarm occurs in SPOT instruction of servo gun, move cursor to previous line and execute backward.

PROG-016 Task is not found

Cause: The specified task is not running or paused.

Remedy: Check the task name. The task name is always the name of the program that was run. The task name will not change even if the running program calls a routine from a different program.

PROG-017 Task is not running

Cause: The specified task is not running.

Remedy: Check the task name.

PROG-018 Motion stack overflowed

Cause: Too many programs are paused.

Remedy: Resume or abort some programs.

PROG-019 Ignore pause request

Cause: The request to pause the program was ignored.

Remedy: Change the NOPAUSE task attribute or use the KCL PAUSE command with the FORCE option.

PROG-020 Task is already aborted

Cause: The specified program was already aborted.

Remedy: Check the program name.

PROG-021 Ignore abort request

Cause: The request to abort the program was ignored.

Remedy: Change the NOABORT task attribute or use the KCL ABORT command with the FORCE option.

PROG-023 Task is not paused

Cause: The specified program is not paused.

Remedy: Pause the program.

PROG-024 Not have motion history

Cause: The motion path record is lost.

Remedy: Do not attempt backwards execution at this time.

PROG-025 Cannot execute backwards

Cause: Backward execution cannot be used.

Remedy: Do not use backwards execution here.

PROG-026 No more motion history

Cause: Backward execution cannot be used any more. The current line is on top of the memorized path.

Remedy: Do not use backwards execution here.

PROG-027 Invalid task number

Cause: The task number specified is invalid.

Remedy: Check the task number.

PROG-029 Buffer size is not enough

Cause: This indicates an internal system error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

PROG-030 Attribute is not found

Cause: The specified task attribute is not found.

Remedy: Check the attribute.

PROG-031 Attribute is write protected

Cause: The specified task attribute is write protected.

Remedy: Do not try to change the attribute.

PROG-032 Invalid value for attribute

Cause: The value for the specified attribute is invalid.

Remedy: Check the attribute value.

PROG-034 Routine not found

Cause: The specified routine cannot be found.

Remedy: Check the routine name and verify it is loaded.

PROG-035 Not locked the specified group

Cause: Motion control for the specified group cannot be locked.

Remedy: Check the teach pendant enable switch and other running programs to determine who has motion control.

PROG-036 The length of trace array is 0

Cause: Not enough memory or the task attribute is not set correctly.

Remedy: Set the trace buffer length using the KCL SET TASK TRACELEN command.

PROG-037 No data in the trace array

Cause: There is no execution record in memory.

Remedy: Turn on tracing using the KCL SET TRACE ON command.

PROG-039 locked, but not get mctl

Cause: Motion control for the specified group was reserved, but it cannot be obtained.

Remedy: Check the teach pendant enable switch and other running programs to determine who has motion control.

PROG-040 Already locked by other task

Cause: Motion control for the specified group was already reserved by another program.

Remedy: Check the other running programs to determine who has motion control.

PROG-041 mctl denied because released

Cause: Motion control is released. The teach pendant currently has motion control. The robot cannot be started until motion control is obtained.

Remedy: Disable the teach pendant.

PROG-042 Already released

Cause: Motion control was already released.

Remedy: If you had expected that the task may have already released the group, this may not be an error. Otherwise, check UNLOCK_GROUP usage.

PROG-043 Already released by you

Cause: Motion control was already released by request of this program.

Remedy: If you had expected that the task may have already released the group, this may not be an error. Otherwise, check UNLOCK_GROUP usage.

PROG-044 Arm has not been released yet

Cause: Motion control was not released yet.

Remedy: If you had expected that the task may have already locked the group, this may not be an error. Otherwise, check LOCK_GROUP usage.

PROG-045 Other than requestor released

Cause: Motion control was already released by the request of another program.

Remedy: If you had expected that another task may have already released the group, this may not be an error. Otherwise, check UNLOCK_GROUP usage.

PROG-046 TP is enabled while running (%s^7)

Cause: The teach pendant was enabled while the program is executing.

Remedy: Disable the teach pendant and resume the program.

PROG-047 TP is disabled while running (%s^7)

Cause: The teach pendant was disabled while the program is executing.

Remedy: Enable the teach pendant and use shift-FWD to resume execution.

PROG-048 Shift released while running (%s^7)

Cause: The shift key was released while the program is executing.

Remedy: Hold the shift key and press the FWD key to resume execution.

PROG-049 Cannot release, robot moving

Cause: Motion control cannot be released because the robot is moving.

Remedy: Check the status of robot motion.

PROG-050 Abort still in progress

Cause: The program is in the process of being aborted.

Remedy: Wait a second. If this error continues to occur, perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

PROG-051 Cannot skip the return stmt

Cause: The specified lines to which a move was attempted exceed the number of lines in the program.

Remedy: Check the line number.

PROG-052 Process is aborted while executing

Cause: The user application task was forced to abort while the application is executing. The AMR may not have been completely processed.

Remedy: This requires no special action for the user.

PROG-053 User AX is not running

Cause: The user application task was not executed.

Remedy: Start the user application task before executing the application.

PROG-054 FWD released while running (%s^7)

Cause: FWD key was released while the program is executing.

Remedy: Hold the FWD key with shift key to resume execution.

PROG-055 BWD released while running (%s^7)

Cause: BWD key was released while the program is executing.

Remedy: Hold the BWD key with shift key to resume execution.

PROG-056 Motion data out is enable

Cause: Motion data output function is enable instead of machine lock id disable.

Remedy: Please disable motion data output in test cycle menu.

PROG-057 Power Fail Recover memory is cleared

Cause: The backup of the execution memory failed. Then, the system restarted automatically.

Remedy: Cycle power to the controller.

PROG-058 Pause[P]

Cause: Pausing when using M-TP. This error happens only when using the M-TP(J897) option.

Remedy: Push the OK button, restart the program, or push servo-ON button on M-TP to reset this warning.

PROG-059 Abnormal communication[P]

Cause: Abnormal communication with the M-TP. This error happens only when using the M-TP(J897) option.

Remedy: Power OFF and ON the controller.

PROG-060 Don't set FANUC's uframe[P]

Cause: An attempt was made to set FANUC's uframe. This error happens only when using the M-TP(J897) option.

Remedy: Don't set FANUC's uframe when using the M-TP.

PROG-061 Set GD[%s][P]

Cause: GD variable which is used by SHIFT-ON command is not set. This error happens only when using the M-TP(J897) option.

Remedy: Set the GD variable.

PROG-062 Using in SHIFT-ON[P]

Cause: Cause of the PROG-61 Error. This error happens only when using the M-TP(J897) option.

Remedy: Set the GD variable.

PROG-063 Robot is moving by JOG

Cause: This error happens only when using PROGRAM/JOG OVERRIDE function(J579). PROGRAM was executed during jog operation is executed.

Remedy: Stop jog operation is executed.

4.14.12 PTPG Alarm Code

PTPG-000 Paint Plug-In internal error

Cause: This error is caused when a internal problem has occurred within the Paint Plug In software. This fault is almost always caused by style paths which do things which were not anticipated when this software was written. The reasons for this could be: 1. The path is too fast 2. The instructions (PPS and PPE) are too close together 3. The delay and timing values specified in your Paint Plug In Setup are too large or do not make sense. 4. Your robot's CPU has failed.

Remedy: Write down the exact error number and message shown. Write down exactly what your robot was doing at the time of the failure. Make sure you include: Program name, line number, robot's location in the work cell, any cell I/O or other communication activity, and exactly what the robot was doing right before the fault occurred. This fault is usually fixed by doing a COLD start. If that does not work, contact your supervisor or call the FANUC Hot Line.

PTPG-001 %s

Cause: This error is caused when a internal problem has occurred within the Paint Plug In software. This fault is almost always caused by style paths which do things which were not anticipated when this software was written. The reasons for this could be: 1. The path is too fast 2. The instructions (PPS and PPE) are too close together 3. The delay and timing values specified in your Paint Plug In Setup are too large or do not make sense. 4. Your robot's CPU has failed.

Remedy: Write down the exact error number and message shown. Write down exactly what your robot was doing at the time of the failure. Make sure you include: Program name, line number, robot's location in the work cell, any cell I/O or other communication activity, and exactly what the robot was doing right before the fault occurred. This fault is usually fixed by doing a COLD start. If that does not work, contact your supervisor or call the FANUC Hot Line.

PTPG-002 Karel Application Task Failure

Cause: A critical task required to run the Paint Plug In software is missing or not running.

Remedy: Contact your FANUC representative.

PTPG-003 Missing %s TP program

Cause: A TP Event Instruction was called (PPS[x] or PPE), but the corresponding TP program or sub-program was not loaded. This caused the Paint Plug-In to abort the job.

Remedy: Ensure the missing TP program is loaded.

PTPG-004 Critical IO is invalid

Cause: This error is usually caused by a system failure.

Remedy: Check TPE instructions. Cycle power on controller.

PTPG-005 Index incorrect

Cause: The schedule index value of the current instruction execution is invalid.

Remedy: Check the index value of instruction.

PTPG-006 Job %s aborted

Cause: The current Job has been aborted due to a fatal error.

Remedy: Correct the cause of this error, which is usually posted immediately before this error is posted.

PTPG-007 %s:Invalid Group Mask

Cause: The Group Mask attribute in the TP header of the specified program is set.

Remedy: Ensure that the Group mask is NOT set for the specified program.

PTPG-008 %s:Unknown Paint Event

Cause: The Paint Plug-In detected an unknown Paint Event, which caused the system to fault.

Remedy: Determine the cause for this unknown event to execute.

PTPG-009 %s:Event TP Prog Timeout

Cause: An Event TP program did not complete processing within the specified time.

Remedy: Ensure that the TP program instruction is correct.

PTPG-010 No PPE Instruction

Cause: The Paint Plug-In detected a Paint Start(PPS[]) TP instruction without a matching Paint End (PPE) instruction.

Remedy: Ensure that a PPE instruction is included at the end of the job.

PTPG-011 %s No PPS Instruction before PPE

Cause: The Paint Plug-In detected a Paint End (PPE) instruction without a Paint Start (PPS).

Remedy: Ensure that a PPS instruction is included before a PPE instruction.

4.14.13 PWD Alarm Code

PWD-001 Login (%s) %s

Cause: A user with Install level access logged in.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-002 Logout (%s) %s

Cause: A user with Install level access logged out.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-007 Password Timeout (%s)

Cause: A user was logged out because of a password timeout.

Remedy: Log in, if required. Adjust the timeout value if it is too short.

PWD-008 Create program %s.TP

Cause: A teach pendant program was created.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-009 Delete program %s.TP

Cause: A teach pendant program was deleted.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-010 Rename %s.TP as %s.TP

Cause: A teach pendant program was renamed.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-011 Set %s.TP subtype from %s to %s

Cause: A teach pendant program subtype was changed. For example, a .TP program was changed to a Macro (.MR).

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-012 Set %s.TP comment

Cause: A teach pendant program comment was edited.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-013 Set %s.TP group mask

Cause: The group mask of a teach pendant program was changed.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-014 Set %s.TP write protect on

Cause: Write protection was enabled for the program. This helps prevent mistaken edits of the program.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-015 Set %s.TP write protect off

Cause: Write protection was disabled for the program. The program can be edited.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-016 Set %s.TP ignore pause on

Cause: The ignore pause feature was enabled for the program.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-017 Set %s.TP ignore pause off

Cause: The ignore pause feature was disabled for the program.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-018 Write line %d, %s.TP

Cause: A teach pendant program line was edited.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-019 Delete line %d, %s.TP

Cause: A teach pendant program line was deleted.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-020 Write pos %d, %s.TP

Cause: A teach pendant program position was recorded.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-021 Delete pos %d, %s.TP

Cause: A teach pendant program position was deleted.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-022 Renumber pos %d as %d, %s.TP

Cause: A teach pendant program position number was changed.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-023 Set application data %s.TP

Cause: For some tool products, a teach pendant program may contain application related data. This message indicates the data has changed.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-024 Delete application data %s.TP

Cause: For some tool products, a teach pendant program may contain application related data. This message indicates some data was deleted.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-025 Load %s

Cause: The named file was loaded.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-026 Load %s as Program %s

Cause: The named file was loaded. The program name may differ from the file name.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-027 Edit %s Sch %d %s

Cause: A schedule was edited. Press HELP for more information.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-028 Copy %s Sch %d to %d

Cause: The data in a schedule was copied to another schedule.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-029 Clear %s Sch %d

Cause: The schedule was cleared, meaning the values were set to zero.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-030 (%s to %s)%s

Cause: This message is used to provide detailed information for PWD-027. For example: PWD -027 Edit Weld Sch 1 Voltage PWD -030 (24.0 to 25.0) Volts

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-031 QUICK MENUS forced

Cause: The Operator password level does not have access to the FULL MENUS. Either a timeout occurred or a user logged out.

Remedy: Press the MENU hardkey and select SETUP PASSWORDS. Log in with either the Install, Setup, or Program password level. Press the TP FCTN hardkey and select QUICK/FULL MENUS to return to FULL MENUS.

PWD-032 Login (%s) %s from SMON

Cause: A user with Install level access logged in from SMON.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-033 Login (%s) %s from KCL

Cause: A user with Install level access logged in from KCL.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-034 Login (%s) %s from Teach Pendant

Cause: A user with Install level access logged in from Teach Pendant.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-035 Login (%s) %s from CRT/Keyboard

Cause: A user with Install level access logged in from CRT/Keyboard.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-036 Logout (%s) %s from SMON

Cause: A user with Install level access logged out from SMON.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-037 Logout (%s) %s from KCL

Cause: A user with Install level access logged out from SMON.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-038 Logout (%s) %s from Teach Pendant

Cause: A user with Install level access logged out from SMON.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-039 Logout (%s) %s from CRT/Keyboard

Cause: A user with Install level access logged out from SMON.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-050 Pwd Timeout (%s) from SMON

Cause: A user was logged out because of a password timeout from SMON.

Remedy: Log in, if required. Adjust the timeout value if it is too short.

PWD-051 Pwd Timeout (%s) from KCL

Cause: A user was logged out because of a password timeout from KCL.

Remedy: Log in, if required. Adjust the timeout value if it is too short.

PWD-052 Pwd Timeout (%s) from Teach Pendant

Cause: A user was logged out because of a password timeout from Teach Pendant.

Remedy: Log in, if required. Adjust the timeout value if it is too short.

PWD-053 Pwd Timeout (%s) from CRT/Keyboard

Cause: A user was logged out because of a password timeout from CRT/Keyboard.

Remedy: Log in, if required. Adjust the timeout value if it is too short.

PWD-054 Login (%s) %s from Internet

Cause: A user with Install level access logged in from the Internet.

Remedy: This is a status message you can use to track operations performed by the users.

PWD-055 Logout (%s) %s from Internet

Cause: A user with Install level access logged out from the Internet.

Remedy: This is a status message you can use to track operations performed by the users.

PWD-060 Pwd Timeout (%s) from Internet

Cause: A user was logged out because of a password timeout from the Internet.

Remedy: Log in if required. Lengthen the timeout value from the SETUP Passwords menu if it is too short.

PWD-061 FULL MENUS forced

Cause: As a result of a user login, the pendant is using Full Menus instead of Quick Menus.

Remedy: This is a status message you can use to track operations performed by the users.

PWD-062 Login from USB device is cancelled

Cause: You cannot login to this device.

Remedy: Check the cause code.

PWD-063 User (%s) already logged in

Cause: Another user is already logged in to this device.

Remedy: Log out the other user.

PWD-064 User (%s) time extended

Cause: The user password timeout has been extended.

Remedy: No action required.

PWD-065 Password USB device inserted

Cause: A password USB device has been inserted.

Remedy: This is a status message you can use to track operations performed by the users.

PWD-066 Bad password data

Cause: There are 2 causes for this alarm. The first is that the password USB device has incorrect username and password. This will be the cause code for PWD-062 Login from USB device is cancelled. The second is that a password configuration file, FRS:PASSWORD.DT, is invalid.

Remedy: For the first cause, check the password USB device. Your INSTALL user may have to add your username and password using the SETUP Passwords menu. For the second cause, the INSTALL user should IMPORT a correct password configuration file using the SETUP Passwords menu. This file will replace FRS:PASSWORD.DT. It becomes a binary file for protection. It is possible that an invalid configuration file was restored because someone tried to break into the password system.

PWD-067 Edit operation not allowed

Cause: You attempted to perform an operation that was password protected.

Remedy: You must log in using the SETUP Passwords menu. If the operation is still not allowed, you might need to contact the user at your site with INSTALL level permissions to change your level.

PWD-068 Menu access is not allowed

Cause: You attempted to display a menu that was password protected.

Remedy: You must log in using the SETUP Passwords menu. If the operation is still not allowed, you might need to contact the user at your site with INSTALL level permissions to change your level.

PWD-069 Operation password protected

Cause: You attempted to perform an operation that was password protected.

Remedy: You must log in using the SETUP Passwords menu. If the operation is still not allowed, you might need to contact the user at your site with INSTALL level permissions to change your level.

PWD-070 Passwords disabled

Cause: Passwords have been disabled.

Remedy: To enable passwords, go to the SETUP Passwords menu, press LOGIN and reenter the INSTALL user password.

PWD-071 Protected in TP disable

Cause: This operation is protected in TP disable by password auto login function.

Remedy: Enable TP.

PWD-072 Protected in AUTO mode

Cause: This operation is protected in AUTO mode by password auto login function.

Remedy: Change to T1 or T2 mode.

PWD-073 Auto login (%s) %s

Cause: Auto login is executed.

Remedy: None.

PWD-074 Auto logout (%s) %s

Cause: Auto logout is executed.

Remedy: None.

PWD-075 Set %s.TP Storage to %d

Cause: A teach pendant storage attribute was changed.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-076 Protected by \$AUTOLOGIN

Cause: Operation is prohibited by system variable \$AUTOLOGIN.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-077 USB login (%s)

Cause: User %s login using USB device password function.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-089 Edit E x WP y1 z1 Sch y2 z2

Cause: Parameter z2 of weld procedure y1 / weld schedule y2 in weld equipment x is edited.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-090 Copy E x WP y1 z Sch y2 to y3

Cause: Weld schedule y2 of weld procedure y1 in weld equipment x is copied to weld schedule y3.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-091 Clear E x WP y1 z Sch y2

Cause: Weld schedule y2 of weld procedure y1 in weld equipment x is cleared (initialized).

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-092 Create E x WP y

Cause: Weld procedure y in weld equipment x is created.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-093 Copy E x WP y1 to y2

Cause: Weld procedure y1 in weld equipment x is copied to weld procedure y2.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-094 Delete E x WP y

Cause: Weld procedure y in weld equipment x is deleted.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-095 Accept E x WP y1 z1 Sch y2 z2

Cause: The edit contents for parameter z2 of weld procedure y1 / weld schedule y2 in weld equipment x is accepted by user who has over SETUP level.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-096 Reject E x WP y1 z1 Sch y2 z2

Cause: The edit contents for parameter z2 of weld procedure y1 / weld schedule y2 in weld equipment x is rejected by user who has over SETUP level.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-097 Edit E x WP y z

Cause: The edit contents of z is performed to weld procedure y in weld equipment x.

Remedy: This is a status message you can use for tracking operations performed by the users.

PWD-098 Invalid password

Cause: Password is invaiild.

Remedy: Input correct password.

4.15 Q

4.15.1 QMGR Alarm Code

QMGR-001 Queue is full

Cause: An attempt was made to add entry to a queue when the queue was full.

Remedy: Use GET_QUEUE to remove entries or use a larger value for queue size in the INIT_QUEUE call.

QMGR-002 Queue is empty

Cause: An Attempt to use GET_QUEUE when there is no entry in the queue. This is the normal result when no entries have been added or all have been removed by previous calls.

Remedy: No remedy is required.

QMGR-003 Bad sequence no

Cause: A bad sequence_no value is used in an INSERT_QUEUE or DELETE_QUEUE call. The value may be less than 1 or greater than the sequence number of the last entry in the queue.

Remedy: Correct the value.

QMGR-004 Bad n_skip value

Cause: n_skip parameter in COPY_QUEUE call is less than zero.

Remedy: Use zero or a positive value.

4.16 R

4.16.1 RIPE Alarm Code

RIPE-001 Time is resynchronized

Cause: System network timing has been lost. The system has automatically been reestablished.

Remedy: If this continues to happen, the physical Network wiring configuration and setup should be checked for errors. Usually this is just a result of a re-power of one of the controllers.

RIPE-002 FRS:ROSIPCFG.XML not found

Cause: System network timing has been lost but the system has automatically reestablished timing.

Remedy: If this continues to happen, the configuration and setup should be checked for errors.

RIPE-003 FRS:ROSIPCFG.XML has %d warnings

Cause: The syntax of ROSIPCFG.XML is not correct.

Remedy: Consult TD:RIPINIT.TXT for detailed warnings and correct them.

RIPE-004 Tracking error

Cause: An internal error has occurred.

Remedy: Document the events that led to the error, and call your local FANUC representative.

RIPE-005 %s bad configuration

Cause: The rosipcfg.xml is different among the controllers in the RING.

Remedy: Make sure that all controllers have identical rosipcfg.xml files.

RIPE-006 Bad destination CPU ID

Cause: An internal error has occurred.

Remedy: Document the events that led to the error, and call your local FANUC representative.

RIPE-007 %s is offline

Cause: This is a notification that a robot has gone offline. This is posted whenever a member robot is turned off or unplugged.

Remedy: None.

RIPE-008 %s is online

Cause: This is a notification that a robot has gone offline. This is posted whenever a member robot is turned on or plugged in.

Remedy: None.

RIPE-009 Member data is updated

Cause: Information about a member is updated. This is only posted in a system which is not automatically synchronized.

Remedy: None.

RIPE-010 %s has been reset

Cause: The indicated robot has had its protocol reset. This might be the cause of some other error.

Remedy: None.

RIPE-011 This robot is not in the ring

Cause: The IP address of this robot is not found anywhere in FRS:ROSIPCFG.XML.

Remedy: The configuration must include the correct IP addresses.

RIPE-012 Initial time synchronization

Cause: An initial tick time synchronization has occurred. This message is posted after all robots are powered up.

Remedy: None.

RIPE-013 Robot not found in ring data

Cause: A robot specified in a destination is not part of the ring defined in ROSIPCFG.XML.

Remedy: The configuration must include information on all robots in the ring.

RIPE-014 Packet is too large

Cause: The system has attempted to send a packet which is too large. The limit is 1472 bytes.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

RIPE-015 Packet cannot round trip

Cause: A packet sent to all robots cannot be a round trip packet.

Remedy: Document the events that led to the error, and call your local FANUC representative.

RIPE-016 Robot time not synchronized

Cause: A call was made to get network tick before the system ticks are synchronized.

Remedy: Wait for the synchronized message before requesting tick value.

4.16.2 ROUT Alarm Code

ROUT-022 Bad index in ORD

Cause: Incorrect number is specified for ORD builtin routine.

Remedy: Specify a number less than the string length.

ROUT-023 Bad index in SUBSTR

Cause: Incorrect number is specified for SUBSTR builtin routine.

Remedy: Specify a number less than the string length.

ROUT-024 SUBSTR length less than 0

Cause: Negative number is specified for length argument for SUBSTR builtin routine.

Remedy: Specify a positive number.

ROUT-025 Illegal semaphore number

Cause: Incorrect number is specified for semaphore id.

Remedy: Specify a number between 1 and 32.

ROUT-026 Illegal group number

Cause: Invalid group number is specified.

Remedy: Specify existing group number.

ROUT-027 String size not big enough

Cause: Specified string variable does not have enough room to hold the return data.

Remedy: specify larger size string variable.

ROUT-028 Illegal file attribute number

Cause: Incorrect file attribute id was specified.

Remedy: Specify correct file attribute id.

ROUT-029 Illegal file attribute value

Cause: Incorrect file attribute value was specified.

Remedy: Specify correct attribute value.

ROUT-030 Non existent register number

Cause: A non-existent register number is specified.

Remedy: Specify a correct register number.

ROUT-031 Illegal register type

Cause: Incorrect register type is specified.

Remedy: Specify the correct register type for the attempted operation.

ROUT-032 Position type mismatch

Cause: Position type is not correct for the operation.

Remedy: Specify correct position type.

ROUT-033 Illegal attribute type

Cause: Illegal attribute id was specified.

Remedy: Specify correct attribute id.

ROUT-034 Not a TPE program

Cause: A non-tpe is specified.

Remedy: Specify a program name other than a Karel program.

ROUT-035 Value is out of range

Cause: The specified value is out of range.

Remedy: Specify a value within the range.

ROUT-036 Illegal port id value

Cause: Incorrect port id was used.

Remedy: Specify correct port id.

ROUT-037 Bad TPE header size

Cause: Value used in SET_HEAD_TPE for bfr_size is invalid.

Remedy: Use buffer size in the range 1-255.

ROUT-038 Uninitialized TPE position

Cause: Attempt to access position data or type from TPE program when the position has not been recorded.

Remedy: Record position data using the TPP TOUCHUP function.

ROUT-039 Executing motion exists

Cause: Cannot unlock group while motion is executing.

Remedy: Wait until executing motion has completed.

ROUT-040 Stopped motion exists

Cause: Cannot unlock group while stopped motion exists.

Remedy: Resume stopped motion and wait until motion has completed or cancel stopped motion.

ROUT-041 Dym. disp. var. not static

Cause: Variable displayed for dynamic display is not a static variable. Parameter may be a local or constant. Neither of these is permitted as the displayed variable in INI_DYN_DIS calls.

Remedy: Copy constant or local variable to static variable and use this in INI_DYN_DIS* call.

ROUT-042 TPE parameters do not exist

Cause: The parameter designated by param_no does not exist.

Remedy: Confirm the param_no and the parameter in CALL/MACRO command in main TPE program.

ROUT-043 TPE parameter %s wrong data type

Cause: The parameter data type does not match the CALL/MACRO argument data type.

Remedy: Confirm the parameter data type in CALL/MACRO command in main TPE program.

ROUT-044 Tag name too long

Cause: Tag name supplied in MSG_CONNECT, MSG_DISCO, or MSG_PING call was too long.

Remedy: Use tag name not over 12 characters.

ROUT-045 Dictionary name too long

Cause: Dictionary name supplied in built-in call is too long.

Remedy: Use name of 4 or less characters.

ROUT-046 Option array not initialized

Cause: Call to apnd_mtn_opt, write_xyzwpr, or write_joint with option array not initialized.

Remedy: Initialize the array by calling INIT_MTN_OPT.

ROUT-047 Stream buffer full

Cause: Stream instruction program buffer is full.

Remedy: Wait for stream program execution to complete more instructions, then retry.

ROUT-048 Stream not active

Cause: The streaming program is not currently running.

Remedy: Issue the function on an active stream program.

ROUT-049 Invalid motion options

Cause: The motion option data supplied in the motion write routine call is not valid, or does not match the specified motion type.

Remedy: Initialize and fill the motion options correctly.

ROUT-050 SET comment builtin string too long

Cause: A string containing over 16 characters passed as comment argument in a SET comment built-in call. Argument truncated to 16 characters.

Remedy: Use comment string of 16 or fewer characters.

4.16.3 RPC Alarm Code

RPC-001 Can't encode arguments

Cause: The client could not encode its arguments in a remote procedure call.

Remedy: Check the cause code.

RPC-002 Can't decode result

Cause: The client could not decode the results of a remote procedure call.

Remedy: Check the cause code.

RPC-003 Unable to send

Cause: The client could not send the data for a remote procedure call.

Remedy: Check the cause code.

RPC-004 Unable to receive

Cause: The client could not receive a reply from a remote procedure call.

Remedy: Check the cause code.

RPC-005 Call timed out

Cause: The client timed out while waiting for a reply from a remote procedure call.

Remedy: Check the server connection.

RPC-006 Incompatible versions of RPC

Cause: The server received an older version of the RPC protocol.

Remedy: Update the client software to use the same version of the RPC protocol.

RPC-007 Authentication error

Cause: The client or server received an unauthorized remote procedure call.

Remedy: Check the cause code.

RPC-008 Program unavailable

Cause: The server received a remote procedure call for a program which it does not support.

Remedy: Update the server software.

RPC-009 Program/version mismatch

Cause: The server received a remote procedure call which uses the wrong version of a program.

Remedy: Update the client or server software.

RPC-010 Procedure unavailable

Cause: The server received a remote procedure call for a procedure which it does not support.

Remedy: Update the server software.

RPC-011 Server can't decode arguments

Cause: The server could not decode the arguments of a remote procedure call.

Remedy: Check the client software.

RPC-013 Unknown host

Cause: The client could not determine the server for the remote procedure call.

Remedy: Check the system variables which configure the offline RPC server.

RPC-016 Remote procedure call failed

Cause: The remote procedure call failed.

Remedy: Check the cause code.

RPC-018 Low = %d, High = %d

Cause: The server received a remote procedure call which uses the wrong version of a program. The versions supported are shown.

Remedy: Update the client or server software.

RPC-019 PC Interface option not loaded

Cause: This operation requires the PC Interface option to be loaded on the controller.

Remedy: Install the PC Interface software option on the controller. RPM Alarm Code

4.16.4 RPM Alarm Code

RPM-001 n_buffers invalid

Cause: The value for \$RPM_CONFIG.\$N_BUFFERS is invalid.

Remedy: Set \$RPM_CONFIG.\$N_BUFFERS in the range 1-100.

RPM-002 record_size invalid

Cause: The value for \$RPM_CONFIG.\$DATA_SIZE is invalid.

Remedy: Set \$RPM_CONFIG.\$DATA_SIZE in the range 4-32.

RPM-005 memory allocation failed

Cause: There is not enough cmos memory for this rpm segment.

Remedy: Increase the cmos memory by deleting unused TPE Or increase pitch value so that rpm do not need so much cmos space.

RPM-009 segment not in buffer

Cause: Attempt to playback a segment that is not recorded in the specified buffer.

Remedy: Check that RECORD is active for this segment and using the correct buffer number.

RPM-013 invalid buffer no

Cause: Buffer number specified is invalid.

Remedy: Use a buffer number in the range 1-\$RPM_CONFIG.\$N_BUFFERS.

RPM-014 record not stored

Cause: This segment was not recorded.

Remedy: Re-record the whole path.

RPM-020 read record not stored

Cause: There is no rpm data is stored in this segment.

Remedy: Check the position number Or re-record again.

RPM-026 Pitch value too small.

Cause: Pitch value is too small.

Remedy: Time pitch value have to equal or greater than 100.

RPM-027 Illegal arc instruction.

Cause: Stand alone arc start used.

Remedy: Use motion attached arc start instruction.

RPM-028 Segment too short

Cause: The segment for RPM is either zero length move or too short.

Remedy: Zero length RPM motion is not allow.

RPM-039 Incompatible RPM data:nonCD/CD

Cause: RPM data has coordinated motion but TPE doesn't have. Or RPM data has non-coordinated motion but TPE has.

Remedy: Use same coordinated motion type (CD or non-CD) to both TAST and RPM program.

RPM-050 Max segment limit

Cause: Reach max segments in recording.

Remedy: Check segment length and increate the segment length.

RPM-051 Stationary trk disabled

Cause: Stationary track is disabled.

Remedy: Enable stationary trk function.

4.16.5 RTCP Alarm Code

RTCP-001 Wrist Joint is not allow

Cause: Wrist joint orient type resume is not allow in RTCP motion.

Remedy: Change \$MCR_GRP[*].\$RSM_ORIENT to 1 (OR_RS_WORLD).

RTCP-002 VRTCP not calibrated

Cause: Invalid UTool for VRTCP.

Remedy: Change UTool No. for VRTCP.

RTCP-003 VRTCP Invalid UTool No.

Cause: Some VRTCPs have same Leader GP No.

Remedy: Use different Leader GP No.

RTCP-004 VRTCP overlapped Leader Group

Cause: Some VRTCPs have same Remote TCP No.

Remedy: Use different Remote TCP No.

RTCP-005 VRTCP overlapped RTCP No.

Cause: Conversion failure from pulse to angle.

Remedy: Do COLD start.

RTCP-006 VRTCP pulse to angle conv.

Cause: A conversion failure occurred from pulse to angle.

Remedy: Perform a Cold start.

RTCP-007 DRTCP use FINE for transition

Cause: DRTCP use FINE as term type for a DRTCP transition.

Remedy: Change the termination type to FINE for the transition line.

RTCP-008 DRTCP Joint pos not allow

Cause: Data recorded can not be a joint representation type for a DRTCP line. That includes the transition line.

Remedy: Re-Record the position with Cartesian type.

RTCP-009 DRTCP Joint move not allow

Cause: DRTCP coordinate jog does not allow joint jog.

Remedy: Use a Cartesian move instead.

RTCP-010 DRTCP INC move not allow

Cause: DRTCP does not allow incremental instruction.

Remedy: Use absolute recording position.

RTCP-011 DRTCP Internal Error 1

Cause: DRTCP internal error 1.

Remedy: Perform a Cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

RTCP-012 DRTCP Internal Error 2

Cause: DRTCP internal error 2

Remedy: Perform a Cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

RTCP-013 DRTCP Internal Error 3

Cause: DRTCP internal error 3

Remedy: Perform a Cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

RTCP-014 RTCP not supported with COORD

Cause: Program with RTCP option was executed while COORD option is loaded on controller. RTCP cannot be used when COORD is loaded.

Remedy: Remove RTCP option from TP program.

RTCP-015 Option+RTCP not supported

Cause: This option (Weave, Touch sensing, TAST, RPM..) is enabled with a RTCP Motion RTCP cannot be used when this option is enabled.

Remedy: Remove the RTCP option from the teach pendant program.

RTCP-017 DRTCP C move not allow

Cause: DRTCP does not allow Circular Motion.

Remedy: Use Arc motion.

4.17 s

4.17.1 SCIO Alarm Code

SCIO-003 Cannot teach any more.

Cause: You cannot add the instruction to the same line. The size of mnemonic code exceeds maximum size of one line data.

Remedy: Please reduce the instruction like a parameter string.

SCIO-016 Prog uses un-installed option.

Cause: The TPP program being loaded uses an option which is not installed on the controller where the program is being loaded (target controller).

Remedy: Determine what options are installed on the controller on which the program was saved (source controller) and are not installed on the target controller. Then, on the source controller, check which of these is used in the program. Assuming the option(s) are authorized for the target controller, install the necessary options. If some of these options are not authorized, it may be necessary to remove uses of the unauthorized option uses and re-save the program on the source controller.

SCIO-020 LBL[%d] exists in line %d:

Cause: This label number exists in another line.

Remedy: Select another label number.

SCIO-030 JOINT motion in slave program

Cause: Robot Link slave program and slave alone program can not use JOINT motion statement.

Remedy: Record this line as LINER or CIRCULAR motion statement.

SCIO-031 JOINT position in slave program

Cause: Robot Link slave program and slave alone program can not use JOINT position representation.

Remedy: Record this line as CARTESIAN position representation.

SCIO-032 Master UT mismatch

Cause: Current Tool frame number of Master robot is different from Master Tool Number specified in Program detail menu.

Remedy: Change Tool frame number of Master Robot or change master tool number in Program detail menu.

SCIO-033 Slave can have only one motion line

Cause: Robot link Slave program can have only one motion line.

Remedy: Please teach only one line in slave program.

SCIO-034 Illegal fn code of TUI FN instruction

Cause: An illegal FN code is found in the TUI FN instruction.

Remedy: The program might be broken. The system software might be older than where the program is made. Delete the program and make a new one.

SCIO-036 Too many items in mixed logic line

Cause: Too many items are taught in mixed logic line.

Remedy: Please delete some items in this line.

SCIO-037 Invalid item in mixed logic line

Cause: Invalid item is taught in mixed logic line.

Remedy: Please delete invalid item in this line.

4.17.2 SDTL Alarm Code

NOTE

SDTL is for System Design Tool (J738), Robot Setup Assistance (J737), Trigonometric Function (J736) and Plugin function.

SDTL-001 [STSTEPON] Single Step ON

Cause: Switch Single Step KAREL program (STSTEPON.PC) was executed, then single step turns ON.

Remedy: This alarm is reference only. No action is required.

SDTL-002 [STSTEPOF] Single Step OFF

Cause: Switch Single Step KAREL program (STSTEPOF.PC) was executed, then single step turns OFF.

Remedy: This alarm is reference only. No action is required.

SDTL-003 No English dictionary

Cause: Set English KAREL program (STLANGEG.PC) was executed, however, it could not set English dictionary.

Remedy: Add the order of English dictionary.

SDTL-004 No Japanese dictionary

Cause: Set Japanese KAREL program (STLANGJP.PC) was executed, however, it could not set Japanese dictionary.

Remedy: Add the order of Japanese dictionary.

SDTL-005 Changed to English

Cause: Set English KAREL program (STLANGEG.PC) was successfully executed. Dictionary switched to English.

Remedy: This message is reference only. No action is required.

SDTL-006 Changed to Japanese

Cause: Set Japanese KAREL program (STLANGJP.PC) was successfully executed. Dictionary switched to Japanese.

Remedy: This message is reference only. No action is required.

SDTL-007 Invalid file list

Cause: TPP Memory Assist (EXT_DEL.PC, EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, file list is invalid format.

Remedy: Refer to cause code.

SDTL-008 :¥ not found

Cause: There is no :¥ in the parameter, then external device is not recognized. This is cause code of SDTL-007.

Remedy: Insert :¥ after external device like MC:¥.

SDTL-009 Too long name

Cause: The parameter is too long. This is cause code of SDTL-007.

Remedy: Set string parameter length to under 24.

SDTL-010 No name

Cause: Specified parameter is NULL. This is cause code of SDTL-007.

Remedy: Input the parameter correctly.

SDTL-011 TPE parameter %s wrong data type

Cause: TPP Memory Assist (EXT_DEL.PC, EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, the type of specified parameter was wrong.

Remedy: Refer to cause code.

SDTL-012 Not STRING

Cause: The parameter type is not string. This is cause code of SDTL-011.

Remedy: Input string to the parameter.

SDTL-013 Not INTEGER

Cause: The parameter type is not integer. This is cause code of SDTL-011.

Remedy: Input integer to the parameter.

SDTL-014 Not REAL

Cause: The parameter type is not real. This is cause code of SDTL-011.

Remedy: Input real to the parameter.

SDTL-015 %s not found

Cause: TP Program Memory Assist (EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, specified TP program in the file list was not found.

Remedy: Confirm if TP program exist or not.

SDTL-016 Failed to save %s

Cause: TP Program Memory Assist (EXT_SAVE.PC) was executed, however, specified TP program in the file list was not saved.

Remedy: Refer to cause code.

SDTL-017 Failed to load %s

Cause: TP Program Memory Assist (EXT_LOAD.PC) was executed, however, specified TP program in the file list was not loaded.

Remedy: Refer to cause code.

SDTL-018 Failed to delete %s

Cause: TP Program Memory Assist (EXT_DEL.PC) was executed, however, specified TP program in the file list was not deleted.

Remedy: Refer to cause code.

SDTL-019 %s not found

Cause: TP Program Memory Assist (EXT_DEL.PC, EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, specified file list was not found.

Remedy: Refer to cause code.

SDTL-020 File reading error

Cause: TP Program Memory Assist (EXT_DEL.PC, EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, specified file list could not read.

Remedy: Refer to cause code.

SDTL-021 TPE parameter not exist

Cause: TP Program Memory Assist (EXT_DEL.PC, EXT_SAVE.PC, EXT_LOAD.PC) was executed, however, specified parameter could not be got.

Remedy: Confirm whether the parameter is correct.

SDTL-029 Failed to set to register

Cause: Check Real Position (GTCURCUR.PC), Get Max Current (GTMAXCUR.PC), Get Real Position (GTRELPOS.PC) or Set Current Position to Register (STPOSREG.PC) could not set value to register specified by argument.

Remedy: Refer to the Cause code and Remedy for the cause code.

SDTL-030 Failed to set to position register

Cause: Set Current Position to Position Register (STPOSREG.PC) could not set value to position register.

Remedy: Refer to cause code and remove cause of it.

SDTL-031 Failed to get the robot position

Cause: Get Real Position (GTRELPOS.PC) could not get current position of the robot.

Remedy: Refer to cause code and remove cause of it. If cause code is not displayed, gear ratio of extended axis might be wrong.

SDTL-032 Failed to get max current

Cause: Get Max Current (GTMAXCUR.PC) cannot get the maximum current.

Remedy: Refer to cause code and remove cause of it.

SDTL-033 Failed converting to REAL value

Cause: Set Current Position to Register (STPOSREG.PC) could not perform conversion to real value.

Remedy: Refer to cause code and remove cause of it.

SDTL-034 STOP.G Failed to get TPE parameter %s

Cause: Check Real Position (GTCURCUR.PC), Get Max Current (GTMAXCUR.PC), Get Real Position (GTRELPOS.PC), Set Current Position to Register (STPOSREG.PC), Set Current Position to String Register (STPOSREG.PC), COPY ERROR FILE (ERFILECP.PC), WRITE PROTECTION ON (STWRPRT.PC) or WRITE PROTECTION OFF (CRWRPRT.PC) could not get parameter.

Remedy: Refer to cause code and remove cause of it.

SDTL-035 TPE parameter %s wrong data type

Cause: Check Real Position (GTCURCUR.PC), Get Max Current (GTMAXCUR.PC), Get Real Position (GTRELPOS.PC), Set Current Position to Register (STPOSREG.PC) or Set Current Position to String Register (STPOSPRG.PC) could not get parameter.

Remedy: Refer to cause code and remove cause of it.

SDTL-036 Not STRING

Cause: Specified parameter is not string. This alarm is cause code of SDTL-035.

Remedy: Input string as argument.

SDTL-037 Not INTEGER

Cause: Specified parameter is not integer. This alarm is cause code of SDTL-035.

Remedy: Input integer as argument.

SDTL-038 Not REAL

Cause: Specified parameter is not real number. This alarm is cause code of SDTL-035.

Remedy: Input real number as argument.

SDTL-039 TPE parameter %s is out of range

Cause: Specified parameter of Check Real Position (GTCURCUR.PC), Get Max Current (GTMAXCUR.PC), Get Real Position (GTRELPOS.PC), Set Current Position to Register (STPOSREG.PC) and Set Current Position to String Register (STPOSPRG.PC) was out of range.

Remedy: Input correct parameter.

SDTL-040 TPE parameter %s wrong data type

Cause: Specified parameter of Get Number of Collision Detect (GTDCDCNT.PC) is wrong data type.

Remedy: Input correct parameter.

SDTL-041 Not INTEGER

Cause: Specified parameter is not integer. This alarm is cause code of SDTL-040.

Remedy: Input integer to the parameter of GTDCDCNT.PC.

SDTL-042 Illegal group number

Cause: Illegal parameter was specified to the first parameter of Get Number of Collision Detect (GTDCDCNT.PC) as the group.

Remedy: Input correct group number to the first parameter.

SDTL-043 Illegal axis number

Cause: Illegal parameter was specified as the second parameter of Get Number of Collision Detect (GTDCDCNT.PC) as the axis.

Remedy: Input correct axis number to the second parameter.

SDTL-044 String size not big enough

Cause: Too big size of string is going to set in Set String to System Variable (STSYSSTR.PC). A part of string of second parameter is set to the system variable specified as first parameter.

Remedy: The capacity length to set string is vary with system variables. Set the shorter string.

SDTL-045 Variable type is not compatible

Cause: The type of system variable is different from the parameter to be set in Set String to System Variable (STSYSSTR.PC).

Remedy: Set the correct type of string.

SDTL-046 Illegal variable

Cause: Incorrect system variable is set as the first parameter in Set String to System Variable (STSYSSTR.PC).

Remedy: Set the correct system variable. Verify that miss spelling, inputting space, nonexistence variable is set and so on.

SDTL-047 TPE parameter %s wrong data type

Cause: Specified parameter of Set String to System Variable (STSYSSTR.PC) is wrong data type.

Remedy: Set correct string or string register index to the parameter.

SDTL-048 Wrong data type(Line %s)

Cause: Execution of X_DYNDAT causes this error. Wrong data type (identifier) is specified in CSV file.

Remedy: Displayed line of specified file has problem. String at which X_DYNDAT detected error is displayed, too. Even if the string is valid identifier for X_DTCOPY, it may not be supported by X_DYNDAT. Actually most of valid identifier of X_DTCOPY are not supported by X_DYNDAT. Please specify identifier that is supported by X_DYNDAT.

SDTL-049 Illegal terminator(Line %s)

Cause: Execution of X_DYNDAT causes this error. Terminator(!!!) is expected at the end of a line of CSV file but it was not found.

Remedy: Check displayed line of CSV file. Confirm data format and add terminator according to data format.

SDTL-050 Illegal index(Line %s)

Cause: Execution of X_DYNDAT causes this error. Wrong index is specified in CSV file.

Remedy: Check displayed line of CSV file. String at which X_DYNDAT detected error is displayed, too. Check the string, data type and its data format. If index is out of range, specify proper value.

SDTL-051 Illegal group(Line %s)

Cause: Execution of X_DYNDAT causes this error. Wrong formatted data is found where group number should be specified.

Remedy: Check displayed line of CSV file. String at which X_DYNDAT detected error is displayed, too. Check the string, data type and its data format.

SDTL-052 Illegal data(Line %s)

Cause: Execution of X_DYNDAT causes this error. Unexpected data is found at displayed line of specified CSV file.

Remedy: Check displayed line of CSV file. Check data type and its data format.

SDTL-053 Illegal config(Line %s)

Cause: Execution of X_DYNDAT causes this error. Position register of Cartesian data type needs configuration data. Wrong data is specified in CSV file.

Remedy: Check displayed line of CSV file. String at which X_DYNDAT detected error is displayed, too. Specify configuration data properly.

SDTL-054 Out of range(Line %s)

Cause: Execution of X_DYNDAT causes this error. Integer value in CSV file was out of range.

Remedy: Check displayed line of CSV file. Wrong value, minimum value and maximum value are displayed, too. Write proper data in CSV file.

SDTL-055 Empty field does not exist(Line %s)

Cause: Execution of X_DYNDAT causes this error. CSV file doesn't have empty field (field that doesn't have character) where it is expected. If data for an identifier is composed of 2 or more lines, the 2nd or later lines must start with empty field.

Remedy: Check displayed line of CSV file. String at which X_DYNDAT detected error is displayed, too. Check data type and its data format. Input data in proper format.

SDTL-056 Converted to real of out of range(Line %s)

Cause: Execution of X_DYNDAT causes this error. Very large (or small) value is specified as real value of register. It was interpreted as value of out of range. Data should be larger than -1.0E16 and less than 1.0E16. Scientific notation cannot be used in CSV file.

Remedy: Make absolute value smaller.

SDTL-057 Index of SR is wrong(%s)

Cause: Execution of X_DYNDAT without argument causes this error. In this case, path of CSV file is decided by string register. Index of string register is decided by KAREL variable, [X_DYNDAT]IDEFSRIDX (KAREL variable IDEFSRIDX of KAREL program X_DYNDAT). String register of specified index doesn't exist.

Remedy: Check value of [X_DYNDAT]IDEFSRIDX. Change its value to valid index of string register.

SDTL-058 Cannot open specified file(%s)

Cause: Execution of X_DYNDAT causes this error. %s shows specified path of CSV file. If X_DYNDAT is used without argument, string register used to decide file path is displayed, too. Following table shows examples. In all cases, specified file could not be opened.

Example of error	Comment
SDTL-058 Cannot open specified file (MC:¥CP_0100.CSV)	X_DYNDAT was executed by CALL instruction. The 1st argument corresponded to 'MC:¥CP_0100.CSV'.
SDTL-058 Cannot open specified file ()	X_DYNDAT was executed by CALL instruction. The 1st argument corresponded to "(null string). If CALL X_DYNDAT(SR[3]) is executed and SR[3] is "(null string), this can happen.
SDTL-058 Cannot open specified file (SR[1]:MC:¥CP_0100.CSV)	X_DYNDAT was directly RUN or called without argument. Because KAREL variable IDEFSRIDX of X_DYNDAT was 1, value of SR[1] was used as file path of CSV file. SR[1] was 'MC:¥CP_0100.CSV'.
SDTL-058 Cannot open specified file (SR[1]:)	This is similar to the case above, but SR[1] was "(null string).

Please refer to cause code, too. For example, if error is posted like following, please check if specified file exists or not.

SDTL-058 Cannot open specified file (MC:¥CP_0100.CSV)
FILE-014 File not found.

Remedy: Check displayed file path. Check if specified file exists. Please refer to cause code, too.

SDTL-060 :¥ not found (%s)

Cause: String of file path doesn't include :¥. %s shows specified file path.

Remedy: Include :¥ in file path string.

SDTL-061 Illegal file path (%s)

Cause: Specified file path is not proper. %s shows specified file path.

Remedy: Correct file string path.

SDTL-062 Last char is not ¥ (%s)

Cause: The last character of file path string is not ¥. %s shows specified file path.

Remedy: Correct file path string.

SDTL-063 Failed to copy (%s)

Cause: File copy failed. %s shows destination file name.

Remedy: Check whether specified file device and sub directory can be used. Please refer to cause code, too.

SDTL-064 TP Program does not exist (%s)

Cause: Specified TP program does not exist on the controller. %s shows specified TP program name.

Remedy: Please specify program that exists on controller.

SDTL-065 Program name is not specified %s

Cause: Program name was not specified. If string register is specified, information of the string register is displayed. SR[1] for example.

Remedy: Check argument. If integer value is used, value of SR[the integer] is used as program name.

SDTL-066 * cannot be used (%s)

Cause: Program name for STWRPRT and CRWRPRT contains "*". You cannot use the character to specify program name.

Remedy: Correct program name.

SDTL-067 Failed to turn write protect on(%s)

Cause: Write protection could not be turned on. %s shows program name. If string register is specified, information of the string register is also displayed.

Remedy: Displayed program is used. Try again in a state that displayed program is not used. Please refer to cause code, too.

SDTL-068 Index of SR is wrong(%s)

Cause: Index of string register is wrong. %s shows specified index is displayed.

Remedy: Specify string register that exist on the controller. KAREL variable can be used to specify index. If it is the case, KAREL variable should be modified to proper value. For example, when STWRPRT or CRWRPRT was called without parameter, IDEFSRIDX of each program is used. The value should be checked.

SDTL-069 Failed to turn write protect off(%s)

Cause: Write protection could not be turned off. %s shows program name. If string register is specified, information of the string register is also displayed.

Remedy: Displayed program is used. Try again in a state that displayed program is not used. Please refer to cause code, too.

SDTL-070 Specified program is not TP(%s)

Cause: Specified program is not TP program.

Remedy: Specify TP program.

SDTL-071 Torque Limit Function not installed

Cause: Torque Limit Function Option (J611) is not ordered. It is necessary to execute Check Servo Hand Current (CKSVHCUR.PC).

Remedy: Contact your FANUC representative to add Torque Limit Function Option (J611).

SDTL-072 Torque Limit disabled

Cause: Torque limit function of specified group or axis is disabled.

Remedy: See the chapter of "Torque Limit Function" of FANUC Robot series R-30iB CONTROLLER Optional Function OPERATOR'S MANUAL and the Subsection 10.3.1.1 "Torque Limit" of FANUC Robot series R-30iB System Design Tool OPERATOR'S MANUAL (B-83274EN). Enable the torque limit of specified group and axis.

SDTL-073 Group %s not mastered

Cause: Specified group is not mastered in Get Servo Hand Real Position (GTRELPOS.PC).

Remedy: Perform the mastering from the calibration screen [6 SYSTEM Master/Cal].

SDTL-074 Illegal group (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. The 1st argument is group number. Specified group doesn't exist. %s shows specified group number.

Remedy: Check the 1st argument of STPAYLOD. Specify motion group that exists on the controller.

SDTL-075 Illegal Payload schedule number (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. The 2nd argument is payload schedule number. Specified payload schedule number doesn't exist. %s shows specified schedule number.

Remedy: Check the 2nd argument of STPAYLOD. Specify payload schedule number that exists on the controller.

SDTL-076 Payload is out of range (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Payload that is set in specified register is out of range. Index of register that is used to specify payload is displayed. Its value, which should be payload, is displayed, too. Suppose R[5] is specified and its value is -10.5. SDTL-076 is displayed as "Payload is out of range (5, -10.500)".

Remedy: Check index of register and value of the register. Set proper payload.

SDTL-077 Payload center position is out of range (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Payload center is out of range. It is specified by register. %s shows followings.

- X, Y or Z

- Index of register that is used to specify payload center.

- Specified value by the register.

Suppose the 3rd argument of STPAYLOD is 101. Center of gravity of payload is specified by R [102]. If its value is -20.5, SCTL-077 is displayed as "Payload center position is out of range (X, 105, -20.500)"

Remedy: Check index of register and value of the register. Set proper value.

SDTL-078 Payload inertia is out of range (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Inertia of payload is out of range. It is specified by register. %s shows followings.

- X, Y or Z
- Index of register that is used to specify inertia.
- Specified value by the register.

Suppose the 3rd argument of STPAYLOD is 101. Inertia of payload about X axis is specified by R [105]. If its value is -20.5, SCTL-078 is displayed as "Payload inertia is out of range (X, 105, -20.500)"

Remedy: Check index of register and value of the register. Set proper value.

SDTL-079 TPE parameter %s wrong data type

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Data type of shown parameter is wrong.

Remedy: Use argument of proper data type.

SDTL-080 Failed to get TPE parameter %s

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. The Nth TPE parameter does not exist. N is shown in %s. It is 1, 2 or 3.

Remedy: STPAYLOD needs 3 argument. Teach required argument.

SDTL-081 Register for payload does not exist (%s)

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Register for payload does not exist.

Remedy: The 3rd argument of STPAYLOD is index of register for payload. Set proper value.

SDTL-082 Register for payload center (%s) does not exist.

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Register for payload center does not exist. %s shows coordinate (X or Y or Z) and index of the register. Suppose the 3rd argument of STPAYLOD is 200. Center of gravity of payload is specified by R [201]. If R[201] doesn't exist, "SDTL-082 Register for payload center (X, 201) does not exist" can be displayed.

Remedy: Set proper value to the 3rd argument so that required registers exist. Suppose the 3rd argument of STPAYLOD is n. Center of gravity of payload is specified by following registers.

R [n+1]: Position of center of gravity, X [cm]

R [n+2]: Position of center of gravity, Y [cm]

R [n+3]: Position of center of gravity, Z [cm]

SDTL-083 Register for payload inertia (%s) does not exist.

Cause: This alarm is displayed by execution of KAREL program, STPAYLOD. Register for payload inertia does not exist. %s shows coordinate (X or Y or Z) and register number. Suppose the 3rd argument of STPAYLOD is 197. Inertia about X axis is specified by R [201]. If R [201] doesn't exist, "SDTL-083 Register for payload inertia (X, 201) does not exist" can be displayed.

Remedy: Set proper value to the 3rd argument so that registers for inertia exist. Suppose the 3rd argument of STPAYLOD is n. Inertia of payload is specified by following registers.

R [n+4]: Inertia about X [cm]

R [n+5]: Inertia about Y [cm]

R [n+6]: Inertia about Z [cm]

SDTL-095 Set comment completed by X_SETCMT

Cause: This is displayed when execution of X_SETCMT is completed. It indicates to set comment is normally done.

Remedy: No action is required.

SDTL-096 Failed to set comment by X_SETCMT

Cause: This is displayed when execution of X_SETCMT is completed. It shows comment setting was failed.

Remedy: Refer to USER screen displayed message while X_SETCMT is executing because the causes are displayed. Remove the causes. In many cases incorrect format is described to specified CSV file. Please confirm whether described format complies with the System Design Tool manual.

SDTL-097 Parameter is required by X_SETCMT

Cause: Execution of X_SETCMT causes this alarm. X_SETCMT must have a parameter, however, no parameter is specified.

Remedy: Specify the string or string register number (integer) as the parameter.

Example:

Use the string parameter such as CALL X_SETCMT ('MC:¥CP_0000.CSV'). Or set the string parameter such as SR[1] = 'MC:¥CP_0000.CSV' and specified string register number like CALL X_SETCMT(1).

SDTL-098 Real number is specified to X_SETCMT

Cause: Execution of X_SETCMT causes this alarm. Real number is specified as the parameter.

Remedy: Specify the string or string register number (integer) as the parameter.

Example:

Use the string parameter such as CALL X_SETCMT ('MC:¥CP_0000.CSV'). Or set the string register such as SR[1] = 'MC:¥CP_0000.CSV' and specified string register number like CALL X_SETCMT(1).

SDTL-099 No specified SR[] of X_SETCMT

Cause: Execution of X_SETCMT causes this alarm. The number of string register specified as the parameter is not exist.

Remedy: Specify the existing string register number.

Example:

Set the string register such as SR[1] = 'MC:¥CP_0000.CSV' and specified string register number like CALL X_SETCMT(1).

SDTL-100 Failed to open file by X_SETCMT

Cause: Execution of X_SETCMT causes this alarm. Specified CSV file to set comment can not be opened.

Remedy: Confirm the path and file name specified as parameter is correct. If the integer is specified as the parameter, confirm the path and file name specified in string register is correct.

Example:

Use the string parameter such as CALL X_SETCMT ('MC:¥CP_0000.CSV'). Or set the string register such as SR[1] = 'MC:¥CP_0000.CSV' and specified string register number like CALL X_SETCMT(1).

SDTL-101 Too many Plugins defined

Cause: Number of plugins exceeded its maximum.

Remedy: Uninstall plugins that are not needed.

SDTL-102 Operation canceled

Cause: Current operation has been canceled by the operator.

Remedy: Do the operation again.

SDTL-103 Non-conforming Program Name

Cause: The Content of the Plugin file is invalid. (The name of the TP or KAREL program is not according to the rule, that it has to start with "IPL_(PluginID)_".

Remedy: Please contact the provider of the plugin software.

SDTL-104 Invalid Plugin software (%s)

Cause: The Content of the Plugin file is invalid.

Remedy: Please contact the provider of the plugin software.

SDTL-105 Unsupported Robot type

Cause: This robot type is not supported for this plugin.

Remedy: This plugin is incompatible with the robot type, and cannot be loaded to this robot. Contact the provider of the plugin software to obtain the correct plugin software for the robot type.

SDTL-106 Option (%s) is required

Cause: This plugin requires the specified option.

Remedy: This plugin cannot function without the specified feature (option). Please load the specified option before installing the plugin.

SDTL-111 Error Getting menu data

Cause: The Content of the Plugin file is invalid. (Invalid file path of the menu info file)

Remedy: Please contact the provider of the plugin software.

SDTL-112 Menu data syntax Error

Cause: The Content of the Plugin file is invalid. (Invalid syntax of the menu info file)

Remedy: Please contact the provider of the plugin software.

SDTL-113 System Error

Cause: System error getting Screen ID system variable.

Remedy: Contact the FANUC representative.

SDTL-114 System Error

Cause: System error setting Screen ID system variable

Remedy: Contact the FANUC representative.

SDTL-120 SSET Command Failed (%s)

Cause: SSET command failed.

Remedy: Make sure the specified item and value were correct and valid.

SDTL-121 Invalid value (%s) specified

Cause: Invalid value was used for setting the item.

Remedy: Make sure the specified value was correct and valid.

SDTL-122 Invalid item (%s) specified

Cause: Invalid item was used for setting the system.

Remedy: Make sure the specified item was spelled correct.
Also make sure the required option exists in the system.

SDTL-123 Invalid index (%s) specified

Cause: The specified index was out of range or invalid.

Remedy: Make sure the specified index was correct.

SDTL-124 EtherNet/IP is Online (%s)

Cause: The Ethernet IP port was ONLINE, and could not perform the operation.

Remedy: Make sure the specified Ethernet port is OFFLINE.

4.17.3 SEAL Alarm Code

SEAL-000 Dispensetool internal error

Cause: This error is caused when Dispense tool encounters a problem it is unable to solve internally. This fault is almost always caused by style paths which do things which were not anticipated when this software was written. The reasons for this could be:

1. The sealing path is too fast.
2. The sealing instructions (SS and SE) are too close together.
3. The delay and timing values specified in your sealing schedules are too large or do not make sense.
4. Your robot's CPU has failed.

Remedy: Turn the power off and on again. If the alarm is still issued, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SEAL-001 %s

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-002 Flow rate update failed

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-003 Digital I/O update failed

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-004 Dispensetool error at %d

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-005 Dispensetool error at %s

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-006 Memory request failed

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-007 Condition handler failed

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-008 System call failed

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-009 Data missing: %s

Cause: See SEAL-000.

Remedy: See SEAL-000.

SEAL-021 Gun on/off too late: Sch %d

Cause: In the Schedule number listed, the Gun On signal has been set up to turn on or off too long after the node the SS[] or SE is attached to. Currently, if this signal is set up to turn on or off greater than 100ms after the node, this warning will be posted and the signal will fore 100ms after the node. These are the formulas used to determine when the gun will be turned on or off relative to the node for seal schedule 'n': For SS[n]: Time_Before = EQUIPMENT_DELAY -

GUNON_DELAY For SE: $\text{Time\_Before} = \text{EQUIPMENT\_DELAY} - \text{GUNOFF\_DELAY}$ Note that a NEGATIVE Time_Before means AFTER the node.

Remedy: There is no real danger in this condition. You should be aware that if you try to turn the gun on or off after 100ms AFTER the node, the signal will always be fired 100ms after the node and this warning will be posted. To correct this problem, make the equipment_delay more positive or the gunon/gunoff delay more negative, to move the firing of the signal up earlier.

SEAL-022 Meter on too late: Sch %d

Cause: In the Schedule number listed, the Start Meter signal has been set up to turn on or off too long after the node the SS[] or SE is attached to. Currently, if this signal is set up to turn on or off greater than 100ms after the node, this warning will be posted and the signal will fire 100ms after the node. These are the formulas used to determine when this signal will be turned on or off relative to the node for seal schedule 'n': For SS[n]: $\text{Time\_Before} = \text{PRE\_PRESSURE\_DELAY} + \text{EQUIPMENT\_DELAY} - \text{GUNON\_DELAY}$ For SE[n]: $\text{Time\_Before} = \text{DE\_PRESSURE\_DELAY} + \text{EQUIPMENT\_DELAY} - \text{GUNOFF\_DELAY}$ Note that a NEGATIVE Time_Before means AFTER the node.

Remedy: There is no real danger in this condition. You should be aware that if you try to turn this signal on or off after 100ms AFTER the node, the signal will always be fired 100ms after the node and this warning will be posted. To correct this problem, make the pre/de_pressure_delay or equipment_delay more positive or the gunon/gunoff delay more negative, to move the firing of the signal up earlier.

SEAL-023 Air on/off too late: Sch %d

Cause: In the Schedule number listed, the Atomizing Air signal has been set up to turn on or off too long after the node the SS[] or SE is attached to. Currently, if this signal is set up to turn on or off greater than 100ms after the node, this warning will be posted and the signal will fire 100ms after the node. These are the formulas used to determine when this signal will be turned on or off relative to the node for seal schedule 'n': For SS[n]: $\text{Time\_Before} = \text{ATOMIZING\_ON\_DELAY} + \text{EQUIPMENT\_DELAY} - \text{GUNON\_DELAY}$ For SE[n]: $\text{Time\_Before} = \text{ATOMIZING\_OFF\_DELAY} + \text{EQUIPMENT\_DELAY} - \text{GUNOFF\_DELAY}$ Note that a NEGATIVE Time_Before means AFTER the node.

Remedy: There is no real danger in this condition. You should be aware that if you try to turn this signal on or off after 100ms AFTER the node, the signal will always be fired 100ms after the node and this warning will be posted. To correct this problem, make the atomizing_on/off/_delay or equipment_delay more positive or the gunon/gunoff delay more negative, to move the firing of the signal up earlier.

SEAL-024 Error in motion triggering

Cause: The high performance I/O triggering system (Motion Trigger) has returned a bad status. When this occurs, the redundant triggering system will take over, but the quality of the SSs and SEs will be poor. This condition is usually caused by one or more of the following: 1. A Gun On output is assigned to a output point which is nonzero and does not exist. 2. A Start Meter output is assigned to a output point which is nonzero and does not exist. 3. A Atomizing Air output is assigned to a output point which is nonzero and does not exist. 4. There is a problem with the software setup of the I/O system. 5. There is a problem with the hardware setup of the I/O system.

Remedy: Go to the Equipment Output menu and verify that all the Gun on, Start Meter, and Atomizing Air outputs are correctly defined or their indexes are set to zero. If the VALUE of a output port is '****', then the index number must be set to zero and the robot must be cold started. You must cold start the robot after changing anything on this menu.

SEAL-031 %s

Cause: Site-specific alarm caused by changes made for customer.

Remedy: Please consult FANUC regarding specific changes made for your site.

SEAL-032 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-033 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-034 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-035 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-036 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-037 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-038 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-039 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-040 %s

Cause: See SEAL-031.

Remedy: See SEAL-031.

SEAL-041 Seal not ready

Cause: The system ready signal(DI) turns off when the sealant is dispensed.

Remedy: Check the system ready signal of the sealing equipment or disable the system ready signal.

SEAL-042 Part ID mismatch detected

Cause: Transmitted and received part IDs to dispensing equipments do not match.

Remedy: Check wiring of group I/O line for part ID and part ID acknowledge signals. Check dispensing equipment for proper operation.

SEAL-043 High pressure

Cause: The pressure signal is above its upper limit for set time when the sealant is dispensed.

Remedy: Check the pressure signal of the sealing equipment, disable to check the high pressure signal, or set the time high pressure timeout to a larger value.

SEAL-044 Low pressure (E%d)

Cause: The pressure signal is below its lower limit for set time when the sealant is dispensed.

Remedy: Check the pressure signal of the sealing equipment, disable to check the low pressure signal, or set the time low pressure timeout to a larger value.

SEAL-045 High pressure (E%d)

Cause: The pressure signal is above its upper limit for set time when the sealant is dispensed.

Remedy: Check the pressure signal of the sealing equipment, disable to check the high pressure signal, or set the time high pressure timeout to a larger value.

SEAL-046 Seal not start

Cause: The gun full open signal(DI) has been on for the set time since sealing start.

Remedy: Check the gun full open signal of the sealing equipment, disable the check for this feature, or set the timeout for a longer period.

SEAL-047 Seal interrupt

Cause: The gun full open signal(DI) has been on for the set time since sealing start.

Remedy: Check the gun full open signal of the sealing equipment, disable the check for this feature, or set the timeout for a longer period.

SEAL-048 Dispenser mode mismatch (E%d)

Cause: Dispenser switch position does not match equipment set up.

Remedy: Check key switch on the dispensing equipment and equipment setup.

SEAL-049 Calibrations not complete (E%d)

Cause: One or more calibration procedures are not complete.

Remedy: Visit equipment SETUP menu and complete all calibration procedures.

SEAL-050 Shot meter not full (E%d)

Cause: The dispenser should be full at this point, and is not.

Remedy: Check that the dispenser is full for this operation.

SEAL-051 Both Drums are empty (E%d)

Cause: Both drums are empty.

Remedy: Check sealant supply drums to be sure they are properly filled.

SEAL-052 Same fault posted repeatedly (E%d)

Cause: Same fault occurs repeatedly.

Remedy: Check dispensing equipment and clear the reported fault.

SEAL-053 Robot is in dry run mode

Cause: Dry run parameter is ON.

Remedy: Set DRY RUN parameter to OFF and run calibration again.

SEAL-054 Robot lock mode is ON

Cause: Robot lock parameter is ON.

Remedy: Set ROBOT LOCK parameter to OFF and run calibration again.

SEAL-055 Part ID out of range

Cause: The Part ID in the JOB header is out of the allowed range for this robot.

Remedy: Make sure the Part ID in the JOB header is between 0 and the maximum Part ID allowed on this equipment.

SEAL-056 Dispenser not ready (E%s)

Cause: Dispenser ready input signal from dispenser is OFF.

Remedy: Check dispenser manual for further information.

SEAL-057 Dispenser fault (E%s)

Cause: A fault was detected at the dispensing controller.

Remedy: Perform the standard dispenser fault recovery procedure. See the dispensing controller's manual for more information.

SEAL-058 Flow rate fault (E%s)

Cause: The dispenser has detected a abnormally low or high material flow rate. This could be caused by a plugged gun.

Remedy: See the dispensing equipment manual for more information. You could try cleaning and purging the gun.

SEAL-059 Not calibrated warning (E%s)

Cause: One or more calibration procedures are not complete.

Remedy: Visit equipment SETUP menu and complete all calibration procedures.

SEAL-060 High pressure (E%d)

Cause: The high pressure signal(DI) has been on for the configured time during sealing.

Remedy: Check the sealing equipment high pressure signal, disable the check for the high pressure signal, or set the timeout value for a longer period.

SEAL-061 Seal not ready

Cause: The system ready signal(DI) turns off when sealant is being dispensed.

Remedy: Check the sealing equipment ready signal or disable the check of the equipment ready signal.

SEAL-062 Reload fault (E%d)

Cause: There is a reload problem with the meter.

Remedy: Check the shot meter.

SEAL-063 High pressure

Cause: The high pressure signal(DI) has been on for the configured time during sealing.

Remedy: Check the sealing equipment high pressure signal, disable the check for the high pressure signal, or set the timeout value for a longer period.

SEAL-064 Not at purge position

Cause: Robot is not at purge position.

Remedy: Make sure the robot returns to purge position at the end of each cycle.

SEAL-065 Maximum purge count reached

Cause: The Auto Purge feature has determined that the robot should purge now, but the maximum number of purges it is allowed to perform in a row (as set in the equipment setup menu) has been reached.

Remedy: Increase the maximum number of purges allowed or remove the disposable mixing tip from the gun, to prepare it for long term inactivity.

SEAL-066 Seal not start

Cause: The gun full open signal(DI) has been on for the set time since sealing start.

Remedy: Check the gun full open signal of the sealing equipment, disable the check for this feature, or set the timeout for a longer period.

SEAL-067 Seal interrupt

Cause: Gun full open signal(DI) has been on for too long while dispensing.

Remedy: Check the gun full open signal of sealing equipment, disable the checking of this alarm, or set the timeout value to a longer time.

SEAL-068 Flow command excessive%

Cause: Flow command output voltage is larger than the maximum output.

Remedy: Decrease the motion speed or increase the maximum output.

SEAL-069 Dispenser malfunction (E%d)

Cause: The dispensing equipment controller has detected a fault in its hardware.

Remedy: Perform maintenance and debug procedures as described in the dispensing equipment manual.

SEAL-070 Gun malfunction (E%d)

Cause: A dispensing gun malfunction has been detected by the dispensing controller.

Remedy: Perform dispensing gun maintenance and debug procedures.

SEAL-071 Gun full open too long (E%d)

Cause: A low pressure condition has been detected by the dispensing controller.

Remedy: Check the pressure sensors at all points in the system. Perform standard system debug and maintenance procedures.

SEAL-072 High nozzle pressure (E%d)

Cause: A high pressure condition has been detected in the dispensing gun nozzle. In specific, nozzle pressure signal is greater than (NOZZLE SENSOR RATING/100) * 5 volts for over one second.

Remedy: Reduce system pressure if it is permissible. Select a nozzle pressure transducer with a wider operating range.

SEAL-073 High dispensed volume (E%d)

Cause: The volume of material dispensed on the previous job was above the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-074 Low dispensed volume (E%d)

Cause: The volume of material dispensed on the previous job was below the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-075 Flow meter fault (E%d)

Cause: A error was detected in the flow meter readings.

Remedy: Verify that the flowmeter is operating correctly.

SEAL-076 Bead defect detected (E%d)

Cause: An incorrect bead condition was detected.

Remedy: Perform dispensing gun maintenance procedures.

SEAL-077 Sealer equipment fault (E%d)

Cause: An unknown error code was received from the dispensing controller.

Remedy: Check the dispensing controller for an error condition. Also check the communication link between the dispensing controller and robot controller.

SEAL-078 Dispenser comm fault (E%d)

Cause: An error was encountered reading fault data from the dispenser.

Remedy: Check the communications link between the dispenser and robot.

SEAL-079 Dispenser E-stop (E%d)

Cause: An Emergency Stop condition was detected at the dispensing controller.

Remedy: Clear the fault and perform the proper Emergency Stop recovery procedure.

SEAL-080 Dispenser fault (E%d)

Cause: A fault was detected at the dispensing controller.

Remedy: Perform the standard dispenser fault recovery procedure. See the dispensing controller's manual for more information.

SEAL-081 Volume comp at maximum (E%d)

Cause: Interim value for volume has exceeded maximum interim limit.

Remedy: Re-learn part or increase maximum limit.

SEAL-082 Drum A empty (E%d)

Cause: The first of the two drums is empty.

Remedy: This is a warning to the operator that the drum might need service.

SEAL-083 Drum B empty (E%d)

Cause: The second of the two drums is empty.

Remedy: This is a warning to the operator that the drum might need service.

SEAL-084 Reload timed out (E%d)

Cause: Reload of shot meter took longer than the specified time.

Remedy: Check your dispensing equipment for faults, to make sure time out is long enough.

SEAL-085 Calibration aborted

Cause: Calibration aborted due to user request or possible fault.

Remedy: If unknown cause -- see next most recent alarm for help.

SEAL-086 Volume strobe timeout (E%d)

Cause: Volume present signal not received from Pro-Flo unit.

Remedy: Run calibration again - check Pro-Flo unit for malfunction.

SEAL-087 Volume above limit (E%d)

Cause: The volume of material dispensed on the previous job was above the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-088 Material cal timeout (E%d)

Cause: Material cal complete signal not received from Pro-Flo unit.

Remedy: Check Pro-Flo for malfunction or increase dispense time.

SEAL-089 Volume below limit (E%d)

Cause: The volume of material dispensed on the previous job was below the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-090 Nozzle over pressure (E%d)

Cause: The problem is either the nozzle pressure is greater than setpoint for more than time limit or the upstream hose is ruptured and is leaking material.

Remedy: Use on-board diagnostics on the dispensing controller to verify that the nozzle pressure sensor is in order, replace sensor as required. Check for clog in gun or nozzle tip. If the problem is ruptured hose, replace hose.

SEAL-091 Matl weight input = 0 (E%d)

Cause: User input was zero for material weight.

Remedy: Run calibration again - do not enter zero for material weight.

SEAL-092 Specific gravity = 0 (E%d)

Cause: User input was zero for specific gravity.

Remedy: Assign a nonzero value for specific gravity. Run cal again. -

SEAL-093 Volume read is zero (E%d)

Cause: Zero volume was detected from Pro-Flo analog signals.

Remedy: Check Pro-Flo for malfunction.

SEAL-094 Dispense time is zero (E%d)

Cause: User input was zero for dispense time.

Remedy: Assign a nonzero value for dispense time. Run cal again. -

SEAL-095 Nozzle worn out (E%d)

Cause: Nozzle pressure has dropped below setpoint value for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the nozzle pressure sensor is in order, replace sensor as required.

SEAL-096 Matl press entered=0 (E%d)

Cause: User input was zero for material pressure.

Remedy: Check why material pressure is zero during calibration.

SEAL-097 Pressure read is zero (E%d)

Cause: No change in analog signal from pressure transducer.

Remedy: Check pressure transducer and ensure varying pressures during calibration.

SEAL-098 Upstream over pressure (E%d)

Cause: Upstream pressure is greater than setpoint for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the upstream pressure sensor is in order, replace sensor as required. Check for clog in gun or nozzle tip.

SEAL-099 Air pressure entered=0 (E%d)

Cause: User input was zero for air pressure.

Remedy: Check why air pressure is zero during calibration.

SEAL-100 NO scale factor/bias (E%d)

Cause: The Scale factor or bias is zero.

Remedy: Perform the calibration procedures.

SEAL-101 Volume strobe timeout (E%d)

Cause: The volume timer expired.

Remedy: Check dispensing equipment for faults, or give the time out variable more time.

SEAL-102 Press calib incomplete (E%d)

Cause: Pressure calibration has not been completed.

Remedy: Perform pressure calibration before running this calibration.

SEAL-103 Dispenser not in AUTO (E%d)

Cause: Dispenser Auto Mode signal to the robot has dropped.

Remedy: Make sure dispenser mode selection is set to AUTO or MANUAL as needed.

SEAL-104 Analog cal incomplete (E%d)

Cause: Analog voltage calibration has not been completed.

Remedy: Perform analog calibration before running this calibration.

SEAL-105 Dispenser not ON (E%d)

Cause: The Dispenser On signal (from the dispenser to the robot) has dropped.

Remedy: Turn on the dispenser.

SEAL-106 Upstream under press (E%d)

Cause: Upstream pressure has dropped below setpoint value for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the upstream pressure sensor is in order, replace sensor as required.

SEAL-107 Matl calib incomplete (E%d)

Cause: Material learn calibration has not been completed.

Remedy: Perform material calibration before running this calibration.

SEAL-108 Material timeout = 0 (E%d)

Cause: Material learn timeout value is zero.

Remedy: Set timeout to nonzero value before running this calibration.

SEAL-109 Low press>=high press (E%d)

Cause: Low pressure atomizing air input was greater or equal to high pressure.

Remedy: Check atomizing air equipment.

SEAL-110 System/drive not ready (E%d)

Cause: System and Drive Ready signal (from the dispenser to the robot) has dropped.

Remedy: Perform standard dispenser maintenance procedures.

SEAL-111 Negative volume read (E%d)

Cause: Volume read was negative.

Remedy: Check dispensing equipment and run calibration again.

SEAL-112 Vol sig cal incomplete (E%d)

Cause: Volume signal calibration has not been completed.

Remedy: Perform volume signal calibration.

SEAL-113 I/O config incomplete (E%d)

Cause: At least one I/O signal assignment is zero.

Remedy: Set proper I/O ports for all necessary dispenser I/O.

SEAL-114 Dispenser not ready (E%d)

Cause: Dispenser ready input signal from dispenser is OFF.

Remedy: Check dispenser manual for further information.

SEAL-115 Too low material flow (E%d)

Cause: The dispenser has detected a abnormally low or high material flow rate. This could be caused by a plugged gun.

Remedy: See the dispensing equipment manual for more information. You could try cleaning and purging the gun.

SEAL-116 Flow command too low

Cause: Flow command output voltage is lower than the minimum output.

Remedy: Increase the motion speed or decrease the minimum output.

SEAL-117 System/drive not ready (E%d)

Cause: System and Drive Ready signal (from the dispenser to the robot) has dropped.

Remedy: Perform standard dispenser maintenance procedures.

SEAL-118 Dispenser not in AUTO (E%d)

Cause: Dispenser Auto Mode signal to the robot has dropped.

Remedy: Make sure dispenser mode selection is set to AUTO or MANUAL as needed

SEAL-119 Low pressure (E%d)

Cause: A low pressure warning has been detected by the dispensing controller.

Remedy: Check system pressure. Check the pressure sensors in the system. Perform standard system debug and maintenance procedures.

SEAL-120 Dispenser not ON (E%d)

Cause: The Dispenser On signal (from the dispenser to the robot) has dropped.

Remedy: Turn on the dispenser.

SEAL-121 Dispense signal fault (E%d)

Cause: The Dispensing signal (from the dispenser to the robot) should be high during dispensing, but it is not.

Remedy: Perform dispenser maintenance procedures to determine why dispensing is not occurring as it should. Also verify that the dispensing schedule data is correct, and that the dispenser I/O to/from the robot has been mapped correctly.

SEAL-122 Sealing task already active

Cause: You tried to run a JOB or PROC TPP while another JOB or PROC TPP is already running in another task.

Remedy: Only one sealing task may be running at any time. This means that only one JOB or PROC may be running at any time. You must abort the JOB or PROC which is already running before starting a new one.

SEAL-123 Job aborted

Cause: The current Job has been aborted due to a fatal error.

Remedy: Correct the cause of this error, which is usually posted immediately after this one.

SEAL-124 Critical IO is invalid

Cause: This error is usually caused by an IO point which is required by Dispense tool being set to an invalid index number or type.

Remedy: Make sure that all inputs and outputs on the Dispense IO screen are set to valid IO points (the VALUE is not shown as *****) or the index number has been is set to 0. Cold start the robot controller after making any changes to this screen.

SEAL-129 Index incorrect

Cause: The index value of seal start instruction is invalid.

Remedy: Check the index value of this SS instruction.

SEAL-131 SS/SE timing invalid

Cause: This error is caused by timing problems with Sealing commands (SS or SE). Timing problems could occur if the robot does not have enough time to plan for a sealing instruction before the robot passes that point in the path. For example: If the user is using a sealing schedule with a gunon delay of 1000ms and a gunoff delay of -1000ms and the robot executes the seam in 1500ms, the Dispense tool will detect the logic problem and post this fault. A path which has many sealing instructions very close to each other (closer than 30mm at 500mm/sec) is likely to have this problem.

Remedy: Make sure there is adequate time for each SS and SE to execute. You may do this by making sure you have only the minimum number of points in your path that you require. Dispense tool works best with as few points as possible. Also, make sure none of your schedules have gunon, gunoff, or equipment delays beyond that which is needed (usually between -100ms and +100ms is adequate). NOTE: Whenever a SEAL-131 occurs, the robot MUST be cold started to recover.

SEAL-132 Seam segment too short

Cause: There was not enough time between a SS and the next SS or SE for the flow rate computations to be done.

Remedy: Step through your sealing PROCess program, making sure there is at least a centimeter between the points attached to each sealing instruction. Increase the distance between sealing instructions, delete one of the sealing instructions, or slow the robot down.

SEAL-144 Joint motion

Cause: Robot moved with joint motion during sealing.

Remedy: Change motion type from joint to linear or circular.

SEAL-147 Equipment does not exist

Cause: This equipment is not exist.

Remedy: Check the equipment number in the program detail display.

SEAL-148 No SE Instruction

Cause: SE instruction is not exist.

Remedy: Add an SE instruction.

SEAL-149 No equipment number set

Cause: Equipment is not set on this program.

Remedy: Set the equipment number in the program detail display.

SEAL-150 Equipment is already busy

Cause: Other program is using this equipment now.

Remedy: Change the equipment number or check interlock of each program.

SEAL-151 TPP not created correctly

Cause: The teach pendant program was not created properly.

Remedy: Check the program header to determine whether the teach pendant program is either a JOB or a PROCESS type, and to ensure the application data header is created correctly.

SEAL-152 I/O not correctly assigned

Cause: The index value or type of this I/O port is incorrectly assigned.

Remedy: If you wish to use this I/O port, set the port index and I/O type to the correct values. Verify that a valid value is shown on the I/O menu for this I/O port instead of If you do not wish to use this I/O point, set the index number to zero.

SEAL-153 Program is running

Cause: You can not set volume set point while a program is running.

Remedy: Volume set points must be established after program execution.

SEAL-155 No SS Instruction before SE

Cause: There is no SS instruction before SE.

Remedy: Check SS instruction on this program.

SEAL-156 MOV_ TPP execution failure

Cause: Unsuccessful execution of a MOV_ type program.

Remedy: Ensure MOV_ program is executable. Reset holds and emergency stops.

SEAL-157 Seal schedule data is zero

Cause: Desired volume or bead width for first sealing schedule was zero.

Remedy: Enter a valid setting for desired volume or bead width.

SEAL-159 UTOOL #1 is not taught

Cause: Current utool is zero - has not been taught.

Remedy: Teach utool before running this calibration.

SEAL-160 REFPOS is not taught

Cause: Current REFPOS has not been taught - is zero.

Remedy: Teach REFPOS before running OFFSET calibration.

SEAL-161 OFFSET out of range

Cause: Difference between REFPOS and OFFSET positions was too large.

Remedy: Check for damaged tool, change tip and run calibration again.

SEAL-162 OFFSET config mismatch

Cause: Difference exists between REFPOS and OFFSET position configurations.

Remedy: Run calibration again while maintaining REFPOS configuration.

SEAL-163 File is not closed

Cause: File to be executed is not closed.

Remedy: Perform cold start or temporarily SELECT a different file.

SEAL-164 File does not exist

Cause: File to be executed does not exist.

Remedy: Create and teach the file.

SEAL-170 Invalid tool position

Cause: Commanded tool position is not valid.

Remedy: Check supply air to the tool Check proximity sensors on the tool.

SEAL-171 Gripper not opened (GP%s)

Cause: All grippers are not opened.

Remedy: Check to see if release mechanism is working.

SEAL-172 Gripper not closed (GP%s)

Cause: All grippers on this valve are not closed.

Remedy: Check to see if clamping mechanism is working.

SEAL-173 Part not present (GP%s)

Cause: Sensors not reporting part present.

Remedy: Check sensor correct operation.

SEAL-174 Part Present (GP%s)

Cause: Sensors reporting part present.

Remedy: Check sensor correct operation.

SEAL-175 Un-assigned Bit mask

Cause: Variable \$stlstop[1].valve is not assigned.

Remedy: Go to Tool Setup and setup gripper configuration.

SEAL-177 EOAT timed out: Flip

Cause: The Four Position End of Arm tool was moved, but the FLIP sensor reports that the tool is not in the correct FLIP/UNFLIP position (could be ON or OFF) after the timeout period set on the tool setup menu expired.

Remedy: Check air supply to the four position tool. Check proximity sensors on the four position tool. If the tool is slow, increase the timeout delay on the tool setup screen to allow enough time for the tool to complete motion.

SEAL-178 EOAT timed out: Unflip

Cause: The Four Position End of Arm tool was moved, but the UNFLIP sensor reports that the tool is not in the correct UNFLIP/FLIP position (could be ON or OFF) after the timeout period set on the tool setup menu expired.

Remedy: Check air supply to the four position tool. Check proximity sensors on the four position tool. If the tool is slow, increase the timeout delay on the tool setup screen to allow enough time for the tool to complete motion.

SEAL-179 EOAT timed out: Extend

Cause: The Four Position End of Arm tool was moved, but the EXTEND sensor reports that the tool is not in the correct EXTEND/RETRACT position (could be ON or OFF) after the timeout period set on the tool setup menu expired.

Remedy: Check air supply to the four position tool. Check proximity sensors on the four position tool. If the tool is slow, increase the timeout delay on the tool setup screen to allow enough time for the tool to complete motion.

SEAL-180 EOAT timed out: Retract

Cause: The Four Position End of Arm tool was moved, but the RETRACT sensor reports that the tool is not in the correct RETRACT/EXTEND position (could be ON or OFF) after the timeout period set on the tool setup menu expired.

Remedy: Check air supply to the four position tool. Check proximity sensors on the four position tool. If the tool is slow, increase the timeout delay on the tool setup screen to allow enough time for the tool to complete motion.

SEAL-182 Invalid kinematic solution

Cause: Current robot position invalid.

Remedy: Run calibration again.

SEAL-183 Tool offset internal error

Cause: Internal tool offset calibration error.

Remedy: Contact your local FANUC representative Hotline.

SEAL-200 Dispenser malfunction (E%s)

Cause: The dispensing equipment controller has detected a fault in its hardware.

Remedy: Perform maintenance and debug procedures as described in the dispensing equipment manual.

SEAL-201 Gun malfunction (E%s)

Cause: A dispensing gun malfunction has been detected by the dispensing controller.

Remedy: Perform dispensing gun maintenance and debug procedures.

SEAL-202 Gun full open too long (E%s)

Cause: A low pressure condition has been detected by the dispensing controller.

Remedy: Check the pressure sensors at all points in the system. Perform standard system debug and maintenance procedures.

SEAL-203 High nozzle pressure (E%s)

Cause: A high pressure condition has been detected in the dispensing gun nozzle. In specific, nozzle pressure signal is greater than $(\text{NOZZLE SENSOR RATING}/100) * 5$ volts for over one second.

Remedy: Reduce system pressure if it is permissible. Select a nozzle pressure transducer with a wider operating range.

SEAL-204 High dispensed volume (E%s)

Cause: The volume of material dispensed on the previous job was above the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-205 Low dispensed volume (E%s)

Cause: The volume of material dispensed on the previous job was below the preset limit.

Remedy: Verify that the volume limits are correct for the specified job.

SEAL-206 Flow meter fault (E%s)

Cause: A error was detected in the flow meter readings.

Remedy: Verify that the flowmeter is operating correctly.

SEAL-207 Bead defect detected (E%s)

Cause: An incorrect bead condition was detected.

Remedy: Perform dispensing gun maintenance procedures.

SEAL-208 Volume comp at max (E%s)

Cause: Interim value for volume has exceeded maximum interim limit.

Remedy: Re-learn part or increase maximum limit.

SEAL-209 Nozzle over pressure (E%s)

Cause: The problem is either the nozzle pressure is greater than setpoint for more than time limit or the upstream hose is ruptured and is leaking material.

Remedy: Use on-board diagnostics on the dispensing controller to verify that the nozzle pressure sensor is in order, replace sensor as required. Check for clog in gun or nozzle tip. If the problem is ruptured hose, replace hose.

SEAL-210 Nozzle under press (E%s)

Cause: Nozzle pressure has dropped below setpoint value for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the nozzle pressure sensor is in order, replace sensor as required.

SEAL-211 Upstream over press (E%s)

Cause: Upstream pressure is greater than setpoint for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the upstream pressure sensor is in order, replace sensor as required. Check for clog in gun or nozzle tip.

SEAL-212 Upstream under press (E%s)

Cause: Upstream pressure has dropped below setpoint value for more than time limit.

Remedy: Use on-board diagnostics on the dispenser controller to verify that the upstream pressure sensor is in order, replace sensor as required.

SEAL-213 Sealer equipment fault (E%s)

Cause: An unknown error code was received from the dispensing controller.

Remedy: Check the dispensing controller for an error condition. Also check the communication link between the dispensing controller and robot controller.

SEAL-214 No material flow (E%s)

Cause: The dispenser has detected an abnormally low or high material flow rate. This could be caused by a plugged gun.

Remedy: See the dispensing equipment manual for more information. You could try cleaning and purging the gun.

SEAL-215 Reload timed out (E%s)

Cause: Reload of shot meter took longer than the specified time.

Remedy: Check your dispensing equipment for faults, to make sure time out is long enough.

SEAL-216 Reload fault occurred (E%s)

Cause: There is a reload problem with the meter.

Remedy: Check the shot meter.

SEAL-217 NO scale factor/bias (E%s)

Cause: The Scale factor or bias is zero.

Remedy: Perform the calibration procedures.

SEAL-218 Same fault posted (E%s)

Cause: Same fault occurs repeatedly.

Remedy: Check dispensing equipment and clear the reported fault.

SEAL-219 Volume strobe timeout (E%s)

Cause: The volume timer expired.

Remedy: Check dispensing equipment for faults, or give the time out variable more time.

SEAL-220 Volume out of range (E%s)

Cause: The volume dispensed in the last job was out of the normal volumetric range of material dispensed for this job. This could be caused by terminating the job early, causing much less material to be dispensed. This could also be caused by problems with the material, such as using material which has exceeded its shelf life.

Remedy: This warning is normal if it was caused by terminating a job early. If this error happens during normal production, examine the quality of the dispensed job and verify that the dispenser and material are in good condition.

SEAL-221 Bubble detected (E%d)

Cause: A significant bubble was dispensed with the material during the job. This is usually caused by improper loading of new material. NOTE: This will often cause poor quality sealing. Examine the finished part for any gaps in the sealant bead.

Remedy: Make sure any new material is loaded properly into the supply pump. Make sure all excess air has been drained off before using any new material.

SEAL-222 Dispenser not ON (E%s)

Cause: The Dispenser On signal (from the dispenser to the robot) has dropped.

Remedy: Turn on the dispenser.

SEAL-223 Dispenser not in AUTO (E%s)

Cause: Dispenser Auto Mode signal to the robot has dropped.

Remedy: Make sure dispenser mode selection is set to AUTO or MANUAL as needed.

SEAL-224 System/drive not ready (E%s)

Cause: System and Drive Ready signal (from the dispenser to the robot) has dropped.

Remedy: Perform standard dispenser maintenance procedures.

SEAL-225 Low pressure warning (E%s)

Cause: A low pressure warning has been detected by the dispensing controller.

Remedy: Check system pressure. Check the pressure sensors in the system. Perform standard system debug and maintenance procedures.

SEAL-226 High pressure warning (E%s)

Cause: The pressure signal is above its upper limit for set time when the sealant is dispensed.

Remedy: Check the pressure signal of the sealing equipment, disable to check the high pressure signal, or set the time high pressure timeout to a larger value.

SEAL-227 Low pressure fault (E%s)

Cause: A low pressure warning has been detected by the dispensing controller.

Remedy: Check system pressure. Check the pressure sensors in the system. Perform standard system debug and maintenance procedures.

SEAL-228 High pressure fault (E%s)

Cause: See SEAL-226.

Remedy: See SEAL-226.

SEAL-229 Calibration incomplete (E%s)

Cause: One or more calibration procedures are not complete.

Remedy: Visit equipment SETUP menu and complete all calibration procedures.

SEAL-230 High Dispensed Volume (E%d)

Cause: High Dispensed Volume.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-231 Low Dispensed Volume (E%d)

Cause: Low Dispensed Volume.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-232 High Material Supply Pressure (E%d)

Cause: High Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-233 Low Material Supply Pressure (E%d)

Cause: Low Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-234 No Material Supply Pressure (E%d)

Cause: No Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-235 Nozzle Clog or Down Stream Blockage (E%d)

Cause: Nozzle Clog or Down Stream Blockage.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-236 Gun Cable Failure (E%d)

Cause: Gun Cable Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-237 Flowmeter/Booster Pump Failure (E%d)

Cause: Flowmeter/Booster Pump Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-238 Nozzle Pressure Transducer Failure (E%d)

Cause: Nozzle Pressure Transducer Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-239 Flowmeter cable Failure (E%d)

Cause: Flowmeter cable Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-240 Upstream Pressure Transducer Failed (E%d)

Cause: Upstream Pressure Transducer Failed.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-241 Upstream Pressure Transducer Cable Failed (E%d)

Cause: Upstream Pressure Transducer Cable Failed.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-242 Robot Signal Out of Sequence (E%d)

Cause: Robot Signal Out of Sequence.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-243 Gun Failure (E%d)

Cause: Gun Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-244 Bead Defect Detected (E%d)

Cause: Bead Defect Detected.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-245 Joint Motion While Dispensing

Cause: Joint motion is used between SS and SE instructions.

Remedy: Use Linear or Circular motion between SS and SE instructions.

SEAL-246 Style ID communication timeout (E%s)

Cause: Style ID was sent, but timeout occurred waiting for Dispenser.

Remedy: Determine the reason why Dispenser did not set In Process bit.

SEAL-250 High Dispensed Volume (E%s)

Cause: High Dispensed Volume.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-251 Low Dispensed Volume (E%s)

Cause: Low Dispensed Volume.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-252 High Material Supply Pressure (E%s)

Cause: High Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-253 Low Material Supply Pressure (E%s)

Cause: Low Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-254 No Material Supply Pressure (E%s)

Cause: No Material Supply Pressure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-255 Nozzle Clog or Down Stream Blockage (E%s)

Cause: Nozzle Clog or Down Stream Blockage.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-256 Gun Cable Failure (E%s)

Cause: Gun Cable Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-257 Flowmeter/Booster Pump Failure (E%s)

Cause: Flowmeter/Booster Pump Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-258 Nozzle Pressure Transducer Failure (E%s)

Cause: Nozzle Pressure Transducer Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-259 Flowmeter cable Failure (E%s)

Cause: Flowmeter cable Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-260 Upstream Pressure Transducer Failed (E%s)

Cause: Upstream Pressure Transducer Failed.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-261 Upstream Pressure Transducer Cable Failed (E%s)

Cause: Upstream Pressure Transducer Cable Failed.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-262 Dispense IO Sequence error (E%s)

Cause: Robot Signal Out of Sequence.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-263 Gun Failure (E%s)

Cause: Gun Failure.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-264 Bead Defect Detected (E%s)

Cause: Bead Defect Detected.

Remedy: Refer to Nordson Pro-Flo II dispenser equipment user document.

SEAL-265 Major Dispenser Fault on (E%s)

Cause: A Major Fault was detected on the dispensing equipment.

Remedy: Refer to dispensing equipment for fault details.

SEAL-266 Minor Dispenser Fault on (E%s)

Cause: A Minor Fault was detected on the dispensing equipment.

Remedy: Refer to dispensing equipment for fault details.

SEAL-267 Volume dispensed out of range (E%s)

Cause: Volume OK signal NOT received from dispensing equipment.

Remedy: Refer to dispensing equipment for fault details.

SEAL-268 Flow rate is zero (E%d)

Cause: This error is reported when the process mode is wet and the computed flow rate is equal to zero.

Remedy: Refer to dispensing equipment for fault details.

SEAL-269 Flow command below minimum (E%d)

Cause: This error is reported when the computed flow rate command is less than the minimum flow rate specified by the user during the equipment setup.

Remedy: Refer to dispensing equipment for fault details.

SEAL-270 Flow command above maximum (E%d)

Cause: This error is reported when the computed flow rate command is great than the user specified (or calibrated) maximum flow rate, which is specified under the equipment setup.

Remedy: Refer to dispensing equipment for fault details.

SEAL-271 Channel 2 analog is zero (E%d)

Cause: This error is reported when the process mode is wet and the computed Channel 2 analog command is equal to zero.

Remedy: Refer to dispensing equipment for fault details.

SEAL-272 Channel 2 analog is below set point (E%d)

Cause: This error is reported when the computed Channel 2 analog command is less than the minimum Channel 2 analog output specified by the user during the equipment setup.

Remedy: Refer to dispensing equipment for fault details.

SEAL-273 Channel 2 analog is above set point (E%d)

Cause: This error is reported when the computed Channel 2 analog is great than the user specified (or calibrated) maximum Channel 2 analog output, which is specified under the equipment setup.

Remedy: Refer to dispensing equipment for fault details.

SEAL-274 Dispenser not pressurized (E%s)

Cause: Dispenser is not pressurized.

Remedy: Refer to dispensing equipment for fault details.

SEAL-275 Dispenser meter not full (E%s)

Cause: Dispenser meter is not full.

Remedy: Refer to dispensing equipment for fault details.

SEAL-276 Dispense meter not pressurized (E%s)

Cause: Dispense meter is not pressurized.

Remedy: Refer to dispensing equipment for fault details.

SEAL-277 Drum empty (E%s)

Cause: Drum is empty.

Remedy: Refer to dispensing equipment for fault details.

SEAL-278 Auto purge requested (E%s)

Cause: Auto purge is requested

Remedy: Refer to dispensing equipment for fault details.

SEAL-279 primer check passed (E%s)

Cause: Primer check passed (E%s).

Remedy: Refer to dispensing equipment for fault details.

SEAL-280 Primer check failed (E%s)

Cause: Primer check failed.

Remedy: Refer to dispensing equipment for fault details.

SEAL-281 Felt not advanced (E%s)

Cause: Felt not advanced.

Remedy: Refer to dispensing equipment for fault details.

SEAL-282 Meter Empty (E%d, Mtr %s)

Cause: This warning is posted when the system detects that the meter has reached to its stroke limit during dispensing. After this condition, the system automatically switches to the other meter, and continue dispensing.

Remedy: 1. Reposition the meter prior to start dispensing for the seam. 2. Lower the flow rate so that it can cover the entire seam.

SEAL-283 Both Meters Empty

Cause: This warning is posted when the system detects that both meters have reached to their stroke limit during dispensing. This situation occurs if the material supply pressure is too low. After this condition, the system automatically stops dispensing, but the robot keeps moving. Use Error table to change the severity to PAUSE if you want to pause the program with this warning.

Remedy: 1. Increase the material supply pressure. 2. Lower the flow rate.

SEAL-284 Plugged Tip Detected (E%d)

Cause: The system has detected that the material flow has been blocked.

Remedy: 1. Check and clean the gun tip.

SEAL-285 Premature Reload Term (E%d)

Cause: One meter could not complete reloading before the other meter has come to near-empty zone.

Remedy: 1. Increase the material supply pressure. 2. Lower the flow rate.

SEAL-287 Cmd prs NOT achieved (E%d)

Cause: The material pressure did not reach the specified pressure within the specified time.

Remedy: 1. Check the IPD air supply pressure. 2. Increase the pressure tolerance (\$ipd_config[].press_tol).

SEAL-288 Application setup not done

Cause: The application specific TPPs and macros have not been loaded.

Remedy: Perform a controlled start, then select SETUP APPLICATION under the FCTN menu while the application disk is in the drive.

SEAL-289 Macro table already full

Cause: Dispense tool has attempted to install additional macros, but the macro table (under menu SETUP:Macros) was already full.

Remedy: Reduce number of macros needed and remove them from the macro table or contact your local FANUC representative and request a update to expand macro table size.

SEAL-290 Invalid call to SL__INST

Cause: SL__INST has been called, but there was no valid macro index number in register 32.

Remedy: Do not run SL__INST as a program, only call SL__INST from a macro after setting a valid macro index number up in register 32.

SEAL-291 No start sealing input defined

Cause: The PNS Ack Verified input, which is needed with the current communication configuration, has not been defined.

Remedy: Set up a PNS Ack Verified in the Cell Input I/O menu and restart the robot.

SEAL-292 Max Error table entry exceeded

Cause: In setting up the Default error table the maximum number of error table entries (\$ERRSEV_NUM) was exceeded.

Remedy: Go into controlled start, Press MENU-0, then choose PROGRAM SETUP. Change the Error Severity Table entry to be a larger number in order to contain all default errors, and press FCTN-START (COLD). After Cold Start, go back into the Error Table setup screen and manually enter in those error that were not setup correctly.

SEAL-293 No SLSHELL has been loaded!!!

Cause: The dispense shell is not loaded.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SEAL-294 Style bit is out of range (E%s)

Cause: The style bit in your JOB program is either less than 0 or great than the maximum style bit value.

Remedy: Set up a bigger maximum style bit or change the style bit in your JOB header.

SEAL-295 I/O not assigned Eq%s

Cause: The key dispenser input such as dispenser ready is not assigned.

Remedy: You must set the port index and the type of the dispenser input to the correct values. Verify that a valid value is shown on the I/O menu for the I/O port instead of "****".

SEAL-296 Configurable error table empty

Cause: The Dispense tool configurable error table is empty.

Remedy: No action is required, but user should be aware that configurable fault reporting will not function at full capacity.

SEAL-297 Dispenser meter near empty (E%s)

Cause: This warning is posted when the system detects that the meter near empty signal is asserted during dispensing.

Remedy: 1. Reload the meter prior to start dispensing for the seam. 2. Lower the flow rate so that it can cover the entire seam.

SEAL-298 %s option has not been loaded

Cause: The option required to setup this equipment has not been loaded.

Remedy: Please load the required option, and then try to set this equipment type.

SEAL-299 Enc Belt slip (E%d, Mtr %s)

Cause: System has detected that the encoder to meter belt linkage is slipping.

Remedy: Tighten the belt tension.

SEAL-300 %s I/O not mapped correctly

Cause: Specified I/O point has not been assigned.

Remedy: Assign specified I/O point before attempting calibration.

SEAL-301 OK to reload timeout (E%d)

Cause: Timed out waiting for the OK to reload signal from the Cell controller.

Remedy: Make sure that the Input signal for OK to Reload is mapped and is coming on in response to the Reload Request signal.

SEAL-302 ISD not configured (ISD%d)

Cause: IPD mastering and/or calibrations have not been completed. IPD cannot leave SHUTOFF mode unless they are completed.

Remedy: Complete IPD mastering and calibrations.

SEAL-303 Unable to go FULL resume dist

Cause: Robot was unable to go back the full resume distance because the last taught point was reached before full distance was traversed. Gap may result.

Remedy: 1. Shorten the resume distance. 2. Re-teach points so that there is more distance between points.

SEAL-304 Force FFR Process Recov items

Cause: Fast Fault Recovery has ended and process specific recovery options must be displayed.

Remedy: Choose a process specific recovery option.

SEAL-305 Dispense complete timeout (E%s)

Cause: Fast Fault Recovery has ended and process specific recovery options must be displayed.

Remedy: Choose a process specific recovery option.

SEAL-306 Visit ISD config menu first

Cause: The ISD configuration has not been completed. You cannot map to an ISD dispenser until ALL ISDs have been configured.

Remedy: Visit the ISD config menu, and configure all defined ISDs.

SEAL-307 Unsupported eq. type (E%s)

Cause: The equipment you have selected is not supported.

Remedy: At Control Start, select a supported equipment type from the menu.

SEAL-308 Fault Reset Timeout (E%s)

Cause: The dispenser was unable to clear the fault.

Remedy: Check the dispenser controller, and clear the cause of the dispenser fault.

SEAL-309 IN_PROCESS ON before Job

Cause: The IN_PROCESS dispenser signal is ON before the styleID communication starts.

Remedy: Check the dispenser controller, and make sure that the dispenser is performing the I/O handshaking correctly.

SEAL-310 IN_PROCESS OFF before DispComp

Cause: The IN_PROCESS dispenser signal is OFF before the DispenseComplete communication starts.

Remedy: Check the dispenser controller, and make sure that the dispenser is performing the I/O handshaking correctly.

SEAL-311 VOL_OK ON before DispComp

Cause: The VolumeOK dispenser signal is ON before the DispenseComplete communication starts.

Remedy: Check the dispenser controller, and make sure that the dispenser is performing the I/O handshaking correctly.

SEAL-312 Err while Flo Meas. Bypassed (E%s)

Cause: This is a message to indicate the error ignored while the Flow measurement bypass input is ON.

Remedy: None. 非表示

SEAL-313 VOL_OK ON before sending style ID

Cause: VolumeOK dispenser signal is ON before sending the style ID to the dispense controller.

Remedy: Consult the dispenser controller, and make sure that the dispenser does the I/O handshaking correctly.

SEAL-314 Rmt Strt/Purge req. timeout (E%s)

Cause: The dispense ready signal was not received within the Remote Start/Purge request time.

Remedy: Consult the dispenser controller, and clear the cause of the dispenser fault.

SEAL-315 Flow meter disabled (E%s)

Cause: Flow meter has been disabled via setup menu item.

Remedy: Enable setup menu item.

SEAL-316 Adaption disabled (E%s)

Cause: Real-time adaption has been disabled via setup menu item.

Remedy: Enable setup menu item.

SEAL-317 %s

Cause: Parameter checking has determined that the value is too high or low.

Remedy: Check variable indicated for source of the problem.

SEAL-318 Bubble detected (E%s)

Cause: A significant bubble was dispensed with the material during the job. This is usually caused by improper loading of new material. NOTE: This will often cause poor quality sealing. Examine the finished part for any gaps in the sealant bead.

Remedy: Make sure any new material is loaded properly into the supply pump. Make sure all excess air has been drained off before using any new material.

SEAL-325 Override less than 100%%

Cause: General override is less than 100% when the system executes SS with TCPP flow type in wet and non-step mode. This alarm is posted for NEMO Pump only.

Remedy: Set the general override to 100%.

SEAL-326 Line Tracking not allowed.

Cause: Line Tracking is NOT allowed with Dispensing in SpotTool+.

Remedy: Use Select->Detail menu to disable tracking (schedule = 0) to disable Tracking for this program.

SEAL-359 Disp shutoff: OP E-stop (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to an operator panel emergency stop.

Remedy: Clear the operator panel emergency stop and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-360 Disp shutoff: TP E-stop (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to a teach pendant emergency stop.

Remedy: Clear the teach pendant emergency stop and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-361 Disp shutoff: Servo off (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to a servo disconnect input.

Remedy: Reset the servo disconnect and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-362 Disp shutoff: NTED (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to a Non Teacher Enabling Device (NTED) input.

Remedy: Reset the Non Teacher Enabling Device (NTED) and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-363 Disp shutoff: Deadman release (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the deadman switch being released while the teach pendant is enabled.

Remedy: Press the deadman switch and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-364 Disp shutoff: Fence open (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the fence input.

Remedy: Reset the fence input and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-365 Disp shutoff: Hand broken (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the hand broken input.

Remedy: Reset the hand broken input and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-366 Disp shutoff: Ext E-stop (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to an external emergency stop.

Remedy: Clear the external emergency stop and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-367 Disp shutoff: IMSTP (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the user operator panel (UOP) IMSTP signal.

Remedy: Reset the operator panel (UOP) IMSTP input and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-368 Disp shutoff: robot faulted (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the controller being faulted.

Remedy: Clear the cause of the fault and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

SEAL-369 Disp shutoff: robot held (E%s)

Cause: Outputs and / or parameters associated with the dispensing equipment number indicated have been shut off due to the controller being held.

Remedy: Clear the cause of the hold condition and reset the robot. Also refer to the alarm history for any other errors that may be present. This alarm can be disabled by restarting the controller in Controlled Start mode, entering Seal Config screen, and setting the item "DfltDisp-dispense shutoff" to "DISABLE".

4.17.4 SENS Alarm Code

SENS-000 Unknown error

Cause: System internal error.

Remedy: Notify FANUC.

SENS-001 Hardware error occurred

Cause: During data reception, parity, overrun and framing errors occurred.

Remedy: Check that the communication setting between the robot and sensor sides is not wrong.

SENS-002 DSR off when transmission

Cause: An attempt was made for data transmission, but DSR signal at the sensor side is in OFF-state.

Remedy: Check that the specification and disconnection of cable connecting the robot and sensor.

SENS-003 Undefined TCC received

Cause: The undefined TCC was received from the sensor.

Remedy: Check the data sent from the sensor.

SENS-004 Invalid software parity

Cause: BCC of the received data from the sensor is wrong.

Remedy: Check the data sent from the sensor.

SENS-005 Invalid data format

Cause: The format of the received data is wrong.

Remedy: Check the data sent from the sensor.

SENS-006 Response time over

Cause: The answer from the sensor is not received within the allowable time.

Remedy: Check that the sensor side does not stop due to an error, for example.

SENS-007 Interval time over

Cause: The interval of characters sent from the sensor exceeded the allowable time.

Remedy: Check that the sensor side does not stop due to an error, for example.

SENS-008 Calculate matrix error

Cause: Calculating transform matrix is impossible.

Remedy: Check the compensation data sent from the sensor.

4.17.5 SHAP Alarm Code

SHAP-000 KW ovrd reg. is out of range.

Cause: The value of Kerf Width is not in a valid range.

Remedy: Set the kerf width in a range of 0 to 4.99. If a range > 4.99 is needed, use the KWMINMAX.TP program.

SHAP-001 Speed ovrd reg. out of range.

Cause: The value in the register for TRAVEL SPEED override is not in a valid range.

Remedy: Set the travel speed in the speed override register to a value less than 2000.

SHAP-002 Values cannot be duplicated.

Cause: The registers for each shape function such as kerf width override, speed override, and so forth in the Shape Setup menu must be unique. If you try to use the same register twice, this error will occur.

Remedy: Insure that each register is not used more than one time.

SHAP-003 Corner radius is too large.

Cause: The scheduled corner radius is larger than the computed working radius of the scheduled diameter.

Remedy: Reduce the scheduled corner radius or increase the scheduled diameter.

SHAP-004 Slot Len. must be > than wid.

Cause: The scheduled width for the slot is larger than the scheduled length for the slot.

Remedy: Make the slot width smaller than the length or make the slot length larger than the width.

SHAP-005 Shape Template was modified!!

Cause: The Shape Template FOR A CUT MACRO (ex: CUT_CIR.TP) has been modified and is no longer valid for this operation.

Remedy: Undo the modifications if you can or if you have a back up copy of this shape macro, reload it.

SHAP-006 Invalid schedule number used.

Cause: The passed in schedule number for the shape in the teach pendant program is out of range.

Remedy: Set the value in the range of 1 to 100.

SHAP-007 Error Opening Cut Shape Macro

Cause: The shape program requested could not be opened or the shape cut program was modified and an expected line is missing.

Remedy: The shape program might have been deleted. If you have a back up copy of this shape macro, reload it.

SHAP-008 Error Writing to Shape Macro.

Cause: Could not update the shape macro with values in the shape schedule.

Remedy: If you have a back up copy of this shape macro, reload it.

SHAP-009 Blend-in distance too large.

Cause: The blend-in distance is too large for the specified shape.

Remedy: Decrease the blend-in distance.

SHAP-010 Length must be > Major dia.

Cause: The length for the key shape must be larger than Major diameter of the key shape.

Remedy: Increase the length of the key shape or decrease the size of the major diameter.

SHAP-011 Maj dia must be > Min dia.

Cause: The key shape major diameter, must be larger than the key shape minor diameter.

Remedy: Increase the size of the key shape major diameter or decrease the size of the key shape minor diameter.

SHAP-012 Program name must be set first.

Cause: The shape shift utility was executed without the name of the program entered correctly.

Remedy: Select a valid program for the shift function.

SHAP-013 Position num must be set first.

Cause: The shape shift utility was executed without the position number entered correctly.

Remedy: Select a valid position for the shift function.

SHAP-014 Shift must be cleared first.

Cause: Program name column was modified or position num column was modified.

Remedy: Clear the shape shift schedule.

SHAP-016 Position doesn't exist in prog.

Cause: The selected position does not exist in the selected program.

Remedy: Verify that you have the correct program selected and verify the position number is correct.

SHAP-017 Posn [REPRE] must be cartesian.

Cause: The position type of the position register being used, has been changed to joint representation.

Remedy: Change the position type back to Cartesian.

SHAP-021 Center posn PR[1] uninitialised

Cause: The center position for the Custom shape, has not been taught in the 'Center Position' position register.

Remedy: Record the center position for the custom shape in the position register.

SHAP-022 %s - Joint moves not allowed

Cause: The Custom Shape cut program has joint motions which are not allowed.

Remedy: Change the joint move to a linear move.

SHAP-031 Macro %s not set

Cause: The macro table was not set correctly.

Remedy: The controller will try to set up the macro table again at the next Controlled start. It is possible that the macro table needed to be expanded and that can only be done by restarting the controller in Controlled start mode.

SHAP-040 Program is not of circular type

Cause: The program is not of a circular type. The program is either a non-shape generated program or the program is of a shape other than circular.

Remedy: Select a program that was generated as a circular type.

SHAP-041 Program is not of slot type

Cause: The program is not of a slot type. The program is either a non-shape generated program or the program is of a shape other than slot.

Remedy: Select a program that was generated as a slot type.

SHAP-042 Program is not of hexagon type

Cause: Program is not of hexagon type. The program is either a non-shape generated program or the program is of a shape other than hexagon.

Remedy: Select a program that was generated as a hexagon type.

SHAP-043 Program is not of rectangle type

Cause: The program is not of a rectangle type. The program is either a non-shape generated program or the program is of a shape other than a rectangle.

Remedy: Select a program that was generated as a rectangle type.

SHAP-044 Program is not of key type

Cause: The program is not of a key type. The program is either a non-shape generated program or the program is of a shape other than a key.

Remedy: Select a program that was generated as a key type.

SHAP-045 Program is not of pommel type

Cause: the program is not of a pommel type. The program is either a non-shape generated program or the program is of a shape other than pommel.

Remedy: Select a program that was generated as a pommel type.

SHAP-046 Program is not of custom type

Cause: The program is not of a custom type. The program is either a non-shape generated program or the program is of a shape other than custom.

Remedy: Select a program that was generated as a custom type.

SHAP-047 Diameter must be > 0

Cause: The diameter must be > 0. The value for the diameter is 0 and a shape can not be generated with this setting.

Remedy: Set the value higher than 0.

SHAP-048 Diameter must be > KW

Cause: The diameter must be > kerf width (KW). The diameter is smaller than the current kerf width and this size of shape can not be done.

Remedy: Set the value larger than the kerf width.

SHAP-049 Length must be > 0

Cause: The length must be > 0. The value for length is 0 and a shape can not be generated with this setting.

Remedy: Set the value higher than 0.

SHAP-050 Width must be > 0

Cause: The width must be > 0. The value for width is 0 and a shape can not be generated with this setting.

Remedy: Set the value higher than 0.

SHAP-051 Width must be > KW

Cause: The width must be > kerf width (KW) The width is smaller than the current kerf width and this size of shape can not be done.

Remedy: Set the value larger than the kerf width.

SHAP-052 NumPts must be multiple of 2

Cause: NumPts must be a multiple of 2. In order for the proper number of circular points to be generated, this value needs to be in multiples of 2.

Remedy: Set the numbers of points to be in multiples of 2.

SHAP-053 EZ Normal is not loaded

Cause: Easy Normal is not loaded. The optional Easy Normal feature, is not loaded on this system.

Remedy: Load the optional Easy Normal feature.

SHAP-054 Program is write protected

Cause: The program is write protected. The program selected is write protected and can not be used.

Remedy: Turn off protection if you want to use this program.

SHAP-055 Not supported for custom

Cause: Not supported for custom. Move to the center position is not supported for a custom shape.

Remedy: Go to the created program and use step mode to get to the first position.

SHAP-056 The motion system is not ready

Cause: The motion system is not ready. To test the program, the motion system must be reset and ready to run.

Remedy: Reset the motion system so that the program can be executed.

SHAP-057 Edge distance must be < diameter/2 + KW

Cause: Edge distance must be < diameter/2 + kerf width (KW). The edge distance is larger than the diameter of the circle divided by 2 plus the kerf width.

Remedy: Make sure the edge distance does not exceed the diameter/2 + kerf width (KW).

SHAP-058 Single step is not supported

Cause: Single step is not support for test mode.

Remedy: Turn off single step or go to program SELECT and select your program for normal execution with single step on.

SHAP-059 Multi-grp prog not supported

Cause: Multi-group template programs are not supported.

Remedy: Create a new template with only one group mask or perform a Group Mask Exchange on the existing program.

SHAP-060 Kinematics not defined

Cause: Robot does not have kinematics. ShapeGen cannot be used.

Remedy: A different robot must be used.

SHAP-061 Motn Ln exceeds limit

Cause: Motion lines in template exceed limit. Max allowed: 64 lines.

Remedy: Reduce the motion line in ShapeGen template.

SHAP-062 Pos Reg not support

Cause: Position Register is not supported in custom shape.

Remedy: Use Position directly.

SHAP-063 This is not a shape program

Cause: This is not a shape program.

Remedy: Select shape program.

SHAP-064 Input value error of open length

Cause: Input value of open length is invalid.

Remedy: Specify a value between 0 and the line length (inclusive) for the opening length.

SHAP-065 Processing speed value is out of range

Cause: Processing speed value is out of range.

Remedy: Correct processing speed.

SHAP-066 Saw tooth Len. must be longer than pitch

Cause: Saw tooth Len. must be longer than pitch.

Remedy: Correct the value of Saw tooth Len. or Pitch.

SHAP-067 Pitch x number of turns x 2 exceeds width.

Cause: Pitch x number of turns x 2 exceeds the value of width.

Remedy: Correct the value of Pitch or number of turns or width.

4.17.6 SPOT Alarm Code

SPOT-000 Unknown error (SWG0)

Cause: An internal error has occurred.

Remedy: Cold start the controller.

SPOT-001 Backup not closed %s

Cause: The backup state spot welding instruction BU=* was used before a weld, but the backup state was in the open (BU=O) position at the time the instruction was executed. **Note:** BU=* indicates that the backup state remains unchanged from the last position. To use this command before a weld, the previous backup state must be BU=C (closed position).

Remedy: Make sure that the backup state is closed when using the BU=* command. Either change BU=* to BU=C, or insert a BACKUP=CLOSE statement before this statement.

SPOT-002 Iso contactor fault %s

Cause: The isolation contactor on the specified weld controller is in a fault condition. If no program is running, then this message is posted if either the Iso contactor output is high or the Iso contactor input is high. If a program is running or a manual weld is being executed then the output, if defined, must be high and the input, if defined, must be high too.

Remedy: Verify the contactor state. Make sure that the correct contactor instruction has been programmed in the teach pendant program. Verify the input status and configuration in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

SPOT-003 Water saver OK fault %s

Cause: The water saver input is low.

Remedy: Verify the water flow and water saver operation. Verify the input configuration and status from the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-004 Water flow OK fault %s

Cause: The water flow OK input is low.

Remedy: Verify the water flow and sensor operation. Verify the input configuration and status from the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-005 X-former OK fault %s

Cause: The transformer OK input is low.

Remedy: Verify the weld transformer status. Verify the input configuration and status from the Spot Equip screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-006 Weld enable mismatch %s

Cause: The weld enable status from the weld controller does not match the weld enable status on the robot.

Remedy: Check the Weld Enable status from the Soft Panel menu and compare it with the weld controller Weld Enable status. These must be the same. The Soft Panel can be accessed using the teach pendant.

1. Press MENU.
2. Select Soft Panel.
3. Press F2, Applic.

Verify I/O configuration and status from the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-007 Weld in process timeout %s

Cause: The robot timed out waiting for the Weld in Process input from the weld controller.

Remedy: Check the weld controller for reason for the alarm. Check the Weld I/O menu, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

If the input is going high, try increasing the timeout by increasing the Weld in process time-out signal setting. This signal can be set from the Spot Config menu at Controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-008 Weld complete timeout %s

Cause: The robot timed out waiting for the Weld Complete input from the weld controller.

Remedy: Check the weld controller for the reason for the alarm. Check the Weld I/O menu, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].

3. Select Weld Interface.

If the Weld Complete input is sent from a sequencer, check the sequence is configured so that the input is turned on within the designated time. Also check if the order of the Weld Initiate output and the Weld Complete input is not reversed.

If the input is going high, try increasing the timeout by increasing the Weld complete time-out signal setting. This signal can be set from the Spot Config menu at controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-009 Got weld complete early %s

Cause: The Weld Complete input was detected before the Weld in Process input was received.

Remedy: Check the length of the weld controller's Weld complete output. Verify the input configuration in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

SPOT-010 Major alarm detected %s

Cause: A Major Alarm was received.

Remedy: Check the weld controller for the reason for the alarm. Verify the input configuration and status in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

Verify that the correct configuration is being used within the Spot Config menu. This menu can be accessed at controlled start.

SPOT-011 Minor alarm detected %s

Cause: A Minor Alarm was received.

Remedy: Check the weld controller for reason of alarm. Verify the input configuration and status in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1,[TYPE].
3. Select Weld Interface.

Verify that the correct configuration is being used within the Spot Config menu. This menu can be accessed at Controlled start.

SPOT-012 Bad schedule (S=*) %s

Cause: An invalid weld schedule was programmed in the teach pendant program.

Remedy: Check the S= value of the current line of the teach pendant program. The smallest schedule number allowed is 0. For digital weld controllers, the largest schedule number allowed depends on the width of the Weld Schedule group output. If this GOUT is 4 I/O points wide, then the maximum schedule is 15. If the GOUT is 5 I/O points wide, then the maximum schedule is 31. For serial weld controllers, the maximum schedule is 32. Re-program the S= value in the teach pendant program.

SPOT-013 Undefined pressure (P=*)

Cause: The valve pressure spot welding instruction P=* was encountered in a teach pendant program, but no previous pressure value had been assigned. **Note:** P=* indicates that the valve pressure remains unchanged from the last value.

Remedy: Be sure to include a direct pressure value instead of using *.

SPOT-014 BACKUP CLOSE DETECT timed out %s

Cause: The robot timed out waiting for the backup close detect input. This input indicates that the gun has reached the backup close position.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O menu and verify signal status, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

If the input is going high, try increasing the timeout by increasing the Backup close detect signal setting. This signal can be set from the Spot Config menu at Controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-015 GUN CLOSE DETECT timed out %s

Cause: The robot timed out waiting for the gun close detect input. This input indicates that the gun has closed.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O menu, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

If the input is going high, try increasing the timeout by increasing the Gun close detect signal setting. This signal can be set from the Spot Config menu at Controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-016 BACKUP OPEN DETECT timed out %s

Cause: The robot timed out waiting for the Backup Open Detect input. This input indicates that the gun has reached the backup open position.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O menu, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

If the input is going high, try increasing the timeout by increasing the Backup open detect signal setting. This signal can be set from the Spot Config menu at Controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-017 GUN OPEN DETECT timed out %s

Cause: The robot timed out waiting for the gun open detect input. This input indicates that the gun has opened.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O menu, as well as the equipment I/O wiring. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

If the input is going high, try increasing the timeout by increasing the Gun open detect signal setting. This signal can be set from the Spot Config menu at Controlled start. The default value is 2000 ms, or 2 seconds.

SPOT-018 Serial comm error %s

Cause: A serial communications error was detected.

Remedy: Ensure that all cables to the serial port are properly connected, and that the weld controller is powered on. The error code that is appended to this error message is the status of attempted read/write operation.

SPOT-019 Serial polling timeout

Cause: A timeout occurred while polling the serial weld controller for status information.

Remedy: Ensure that all cables to the serial port are properly connected, and that the weld controller is powered on. Retry the command.

SPOT-020 Not in safe starting position

Cause: The robot has been jogged away from the position where the teach pendant was enabled.

Remedy: Move the robot back to the position where the teach pendant was enabled, abort the program, or continue (in linear motion) from position where the robot is currently positioned.

SPOT-021 GUN CLOSE DETECT input is on %s

Cause: The Gun Close Detect input is high at the same time that the Gun open detect input is to be checked.

Remedy: Check the gun operation and sensor states. Verify the input status and configuration from the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-022 GUN OPEN DETECT input is on %s

Cause: The Gun Open Detect input is high at the same time that the Gun Close Detect input is to be checked.

Remedy: Check the gun operation and sensor states. Verify the input status and configuration from the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-023 BU CLOSE DETECT is on %s

Cause: The Gun Open Detect input is high at the same time that the Gun Close Detect input is to be checked.

Remedy: Check the gun operation and sensor states. Verify the input status and configuration from the Spot Equip I/O screen.

Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-024 BU OPEN DETECT is on %s

Cause: The Gun Open Detect input is high at the same time that the Gun Close Detect input is to be checked.

Remedy: Check the gun operation and sensor states. Verify the input status and configuration from the Spot Equip I/O screen.

Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-025 Bad pressure (P=*) %s

Cause: An invalid binary valve pressure was programmed in the teach pendant program.

Remedy: In the teach pendant program, check the valve pressure spot welding instruction P= value. **Note:** The smallest valve pressure allowed is 0. For digital weld controllers, the largest pressure number allowed depends on the width of the Valve Pressure group output. If this GOUT is 4 I/O points wide, then the maximum pressure is 15. If the GOUT is 5 I/O points wide, then the maximum pressure is 31. For serial weld controllers, the maximum pressure is 15.

Re-program the P= value in the teach pendant program.

SPOT-026 Reset welder timeout %s

Cause: The robot timed out waiting for the weld controller to reset a major fault.

Remedy: Check the weld controller for reason of alarm. Verify the input status and configuration in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

Verify the setup within the Spot Config menu. This menu can be accessed at Controlled start.

SPOT-027 Serial sequence not started

Cause: A system failure has caused internal synchronization problems. Serial interface task with welder did not correctly initiate.

Remedy: Cold start the controller.

SPOT-028 Serial initialization failed

Cause: Serial port specification is invalid.

Remedy: Make sure that the port exists.

SPOT-029 Serial option not loaded

Cause: Incorrect options loaded for serial weld control.

Remedy: Make sure serial options properly loaded.

SPOT-030 Gun contactor fault %s

Cause: The specified gun contactor is in a fault condition. If a program is running, or a manual weld is being executed, then the output, if defined, must be high, and the input, if defined, must be high too.

Remedy: Verify the contactor state. Make sure that the correct contactor instruction has been programmed in the teach pendant program. Verify the input status and configuration in the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

Verify the setup within the Spot Config menu. This menu can be accessed at Controlled start.

SPOT-031 Gun open fault %s

Cause: This error is only posted for set/reset type guns. The shot pin was not set correctly, so the gun could not be opened.

Remedy: Check the setting of the shot pin. Make sure the shot pin has been made before attempting to close the gun. Check the Equipment I/O and verify that the input is assigned correctly. Verify that the input is being made when the gun is opened. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-032 Gun close fault %s

Cause: The Gun Close Detect input was not received within the specified timeout period.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O and verify that the input is assigned correctly. Verify that the input is being made when the gun is closed. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-033 Backup open fault %s

Cause: The BU (backup) open detect input was not received within the specified timeout period.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O and verify that the input is assigned correctly. Verify the input is being made when the gun is opened. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-034 Backup close fault %s

Cause: The BU (backup) close detect input was not received within the specified timeout period.

Remedy: Check the gun operation and sensor states. Check the Equipment I/O and verify that the input is assigned correctly. Verify the input is being made when the gun is closed. Using the teach pendant.

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-035 Invalid equipment (%s defined)

Cause: An invalid equipment number was specified.

Remedy: The current number of equipment for which the system is configured is displayed in the error message. Only use the value one up to and including the number posted on the error line. If you need to increase the number of equipment, then perform a Controlled start, and type the new number of equipment in the Spot Config menu.

SPOT-036 Invalid weld controller (%s defined)

Cause: An invalid weld controller number was specified.

Remedy: The current number of weld controllers that the system is configured for is displayed in the error message. Only use the value one up to and including the number posted on the error line. If you need to increase the number of weld controllers, then perform a controlled start, and define the new number of weld controllers when prompted during the SETUP APPLICATION menu.

SPOT-037 No gun contactors defined

Cause: The Gun contactor teach pendant instruction was programmed, but no gun contactors are defined.

Remedy: Gun contactors are defined at Controlled start, from the Spot Config menu. If extra gun contactors are defined at Controlled start, then the Equipment I/O menu will allow you to define the I/O for the gun contactor. To perform a Controlled start:

1. Turn the controller off.
2. On the teach pendant, press and hold the PREV and NEXT keys. While you hold these keys, press the ON/OFF button on the controller.
3. Select controlled start, and press ENTER.

SPOT-038 Stud feeders low

Cause: The stud low detect prox switch in the feed hopper for the current Power unit has indicated that the hopper needs more studs.

Remedy: Refill the hopper, or, if it is not low, check the function of the prox.

SPOT-039 System air pressure below 85psi

Cause: The welder power unit air pressure detect switch has indicated that the system air has fallen below the minimum operating level of 85 psi.

Remedy: Increase system air pressure.

SPOT-040 Stud Welder Not Ready

Cause: The Ready Relay for the current stud welding power unit is off. This is caused by the unit having a fault that has not been reset.

Remedy: Reset the fault

SPOT-041 Tool not attached %s

Cause: A teach pendant instruction was programmed to use a tool change equipment, but that tool was not attached to the arm.

Remedy: Make sure that the proper tool is attached to the arm before attempting to use it. Tool changes are done with TPE macros. Make sure that a call to the correct macro is made before attempting the SPOT or BACKUP operation.

SPOT-042 Stud Welder Time Out Fault

Cause: The robot detected a Stud Welder Time Out Fault from the current controller during a weld. This fault occurs when the controller does not detect a completed weld or a bad weld after the timer times out. Usually means that the stud is welded to both the target and the gun.

Remedy: Once the robot is paused, carefully pry the gun and the stud apart, then reset fault on weld controller and resume the program.

SPOT-043 Stud Welder Weld Fault

Cause: The Stud Weld controller has signaled the robot that a weld fault has occurred. This indicates that insufficient current was passed during the weld, generally resulting in a poor quality weld.

Remedy: The stud checker will automatically verify the quality of the weld. If bad, check the position of the gun at the weld spot. Also check the schedule settings.

SPOT-044 Stud Welder Arc Voltage Fault

Cause: This fault is signaled by the Stud Weld controller if the voltage sensor reports too little arc voltage during the weld process. May result in a poor quality weld.

Remedy: The stud checker will automatically verify the quality of the weld. If bad, check the position of the gun at the weld spot to insure that the tip is the correct distance.

SPOT-045 No Current detected: %s

Cause: The robot did not see the current sensor input go high throughout the weld, indicating no current.

Remedy: Check the weld controller to verify that the schedule does include a heat setting. If so, verify operation of sensor.

SPOT-046 Weld auto retried %s time(s)

Cause: The Auto Retry Weld feature encountered a weld fault and retried the weld the indicated number of times. This warning is posted for every SPOT instruction encountered in which the weld was retried at least once.

Remedy: This is just a warning to let the operator know that a weld was retried, and to alert the operator that weld controller maintenance may be required.

SPOT-047 Collision Detection Alarm

Cause: A Collision Detection Alarm has been detected. The robot might have collided with an object, or a Tip Stick might have occurred.

Remedy: Carefully jog the robot away from the interfering objects, or free the weld gun from the Tip Stick. Verify that the Collision Guard option is not set too sensitive. Using the teach pendant:

1. Press MENU.
2. Select SETUP.
3. Press F1, [TYPE].
4. Select COL GUARD.

Verify that the payload settings are accurate and do not exceed the capacity of the mechanical unit. Check the payload settings by using the teach pendant:

1. Press MENU.
2. Press SYSTEM.
3. Press F1, [TYPE].
4. Select Motion.

SPOT-048 No Coll. Guard Reg. Defined

Cause: No register has been defined for use with the Collision Guard Update macro.

Remedy: Use the Collision Guard SETUP screen to define a register for use with the macro.

SPOT-049 Coll. Guard Reg. Data Error

Cause: The data contained in the Collision Guard macro register is not an integer or is not in the range of 1 to 200.

Remedy: Enter the correct data into the Collision Guard macro register.

SPOT-050 Bad Pressure (EP=*) %s

Cause: An invalid binary equalization pressure was programmed in the teach pendant program.

Remedy: In the teach pendant program, check the equalization pressure spot welding instruction EP= value. **Note:** The smallest valve pressure allowed is 0. For digital weld controllers, the largest pressure number allowed depends on the width of the Equalization Pressure group output. If this GOUT is 4 I/O points wide, then the maximum pressure is 15. If the GOUT is 5 I/O points wide, then the maximum pressure is 31. For serial weld controllers, the maximum pressure is 15. Re-program the EP= value in the teach pendant program.

SPOT-051 Undefined Pressure (EP=*) %s

Cause: The equalization pressure spot welding instruction EP=* was encountered in a teach pendant program, but no previous pressure value had been assigned. **Note:** EP=* indicates that the equalization pressure remains unchanged from the last value.

Remedy: Be sure to include a direct equalization pressure value instead of using *.

SPOT-052 Suspect Weld

Cause: A faulty stud weld has occurred. A pressure value has been used.

Remedy: Check the stud that generated the error and remove it if necessary. Select the appropriate recovery type by pressing F4, [CHOICE].

SPOT-053 Feeder Low - Gun1

Cause: The stud feeder for gun 1 is low on studs.

Remedy: Add more studs to the feeder for gun 1 at an appropriate time.

SPOT-054 Feeder Low - Gun2

Cause: The stud feeder for gun 2 is low on studs.

Remedy: Add more studs to the feeder for gun 2 at an appropriate time.

SPOT-055 Stud Controller Fault1

Cause: A weld controller fault has occurred on gun 1.

Remedy: Check the stud welding controller for the reason for this fault. Reset the fault, then choose the appropriate type of fault recovery.

SPOT-056 Weld Head Not Retracted-Gun1

Cause: Studwelding gun 1 has not been retracted.

Remedy: Press SHIFT-GUN to return the studwelding gun to its retracted position. Reset the fault, then choose the appropriate type of fault recovery. Verify input configuration and status in the Spot Equip I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Spot Equip.

SPOT-057 Weld Head Not Retracted-Gun2

Cause: Studwelding gun2 has not been retracted.

- Remedy:** Press SHIFT-GUN to return the studwelding gun to its retracted position. Reset the fault, then choose the appropriate type of fault recovery. Verify input configuration and status in the Spot Equip I/O screen. Using the teach pendant:
1. Press I/O.
 2. Press F1, [TYPE].
 3. Select Spot Equip.

SPOT-058 Studwelder - Air Pressure Low

Cause: The studwelding controller detected that the air pressure has fallen below the minimum operating level of 85 psi.

Remedy: Increase the system air pressure.

SPOT-059 Stud Controller Fault2

Cause: A weld controller fault has occurred on gun 2.

Remedy: Check the stud welding controller for the reason for this fault. Reset the fault, then choose the appropriate type of fault recovery.

SPOT-060 Robot Not At Home Position

Cause: The robot is not at a valid HOME position.

Remedy: Jog the robot to a valid HOME position taught in the Reference Position SETUP screen. Verify that the HOME position has been properly taught and enabled.

SPOT-061 Request Failed

Cause: A request was sent to the timer card, but no response was received.

Remedy: Retry the request. The timer card might be busy welding or performing network activities.

SPOT-062 Please retry function again

Cause: A request was sent to the timer card, but no response was received.

Remedy: Retry the request. The timer card might be busy welding or performing network activities.

SPOT-063 %s

Cause: A weld fault has happened on the weld controller.

Remedy: Please refer to manual for weld controller for detailed info on the fault.

SPOT-064 %s

Cause: A weld alert has happened on the weld controller.

Remedy: Please refer to manual for weld controller for detailed info on the alert.

SPOT-065 %s

Cause: A weld event has happened on the weld controller.

Remedy: This is logging information only. No remedy is required.

SPOT-066 Iwc NOT ready

Cause: Unable to perform operation due to IWC status.

Remedy: Refer to the specific IWC error status, and follow that remedy.

SPOT-067 No Shunt Trip output for WC:%s

Cause: The Shunt Trip output has not been defined.

Remedy: Define a DO[] for the Shunt Trip in the Weld Interface I/O screen. Using the teach pendant:

1. Press I/O.
2. Press F1, [TYPE].
3. Select Weld Interface.

SPOT-068 Weld done input not mapped %s

Cause: The weld done input has not been mapped.

Remedy: Define weld done IO.

SPOT-069 Studwelder Maintenance on

Cause: The maintenance input from the studwelder is on.

Remedy: Please check the studwelder for the cause of this input.

SPOT-070 Internal Error (system)

Cause: Internal system error.

Remedy: Document the events that led to the error and call your local FANUC representative.

SPOT-071 Equalization press condition > max gout

Cause: The number of bits required for the equalization pressure condition is larger than the width of the group output for equalization pressure.

Remedy: Reduce the equalization pressure condition, or increase the dimension of the group output.

SPOT-072 Equalization pressure IO error

Cause: The I/O assignment (mapping) for the equalization pressure output is invalid, OR the output is offline.

Remedy: Map the I/O properly, or put the I/O back online.

SPOT-073 Dresser speed not acheived.

Cause: The dresser did not achieve the requested dress speed in time.

Remedy: Check the dresser for mechanical issues.

SPOT-074 Tdress sched speed exceeds dresser speed.

Cause: The speed specified in the dresser schedule exceeds the speed limit of the dresser.

Remedy: Reduce the dresser speed in the dresser schedule.

SPOT-075 Max cutter counts exceeded.

Cause: The number of cuts the dresser has done has exceeded the cutter limit for the dresser.

Remedy: Change the cutter blade and reset the cutter count.

SPOT-076 Max tip dresses on Gun #%d exceeded.

Cause: The number of dresses on the tips has exceeded the dress limit for the tips.

Remedy: Change the caps and reset the dress count.

SPOT-077 Tdress min Torque not acheived.

Cause: The minimum torque required for dress determination was not achieved.

Remedy: Verify teach position of gun, and force in TIPDRESS is correct.

SPOT-078 Tdress max Torque exceeded.

Cause: The maximum torque required for valid dress determination was not exceeded.

Remedy: Verify teach position of gun, and force in TIPDRESS is correct.

SPOT-079 Bad Tip Dress Schedule.

Cause:

1. The Tip Dress schedule specified in the TIPDRESS instruction was greater than the number of available tip dress schedules.
2. In dual gun system, the Tip Dress schedule is enabled by two gun.

Remedy:

1. Edit the TIPDRESS instruction and verify the schedule value does not exceed \$SGTDCFG.\$NUM_SCHED.
2. In dual gun system, specify the 0 to Tip Dress schedule of either one of gun.

SPOT-080 Invalid process axis for dresser.

Cause: The process axis number for the dresser for the current gun is invalid.

Remedy: Verify that \$sgtdset[dresser_number].\$axis_num is greater than 0 and less than \$sgtdcfg.\$num_dresrs.

SPOT-081 Max free torque exceeded.

Cause: The free spinning torque of the dresser has exceeded the user specified maximum.

Remedy: Verify operation of the dresser. This alarm could mean that there is an issue with the dressers gearbox.

SPOT-082 Got weld inprocess early %s

Cause: The Weld In process input was detected before the Weld was initiated.

Remedy: Check the weld controller to make sure the weld inprocess input is turning off from the previous weld.

SPOT-083 Early/LATE Blade Contact (PT=%2.1f, BC=%2.1f)**Cause:**

1. Gun tips may have hit dresser blade earlier than expected.
2. Gun or dresser may be out-of-position slightly.
3. Tips may be out of alignment.
4. Gun zero position may not be correct. (In this case, tip wear may NOT be being performed.)

Remedy:

1. Re-teach the tip dressing position or adjust dresser position.
2. Confirm part thickness value and gun zero position are correct.
3. Increase early detection position tolerance (\$sgtdset[x].\$sctct_thrsh, default=3).

SPOT-084 Invalid dresser number.

Cause: The dresser number specified does not exist.

Remedy: Verify that the dresser number specified is greater than 0 and less than \$sgtdcfg.\$num_dressrs.

SPOT-085 Speed to low during dress. Check for motor stalling.

Cause: The dresser motor speed was too low during phase 1 of the dress.

Remedy: Verify that the dressing pressure schedule is correct and not too high. If the dressing pressure is too high, it can stall the dressing motor.

SPOT-086 Line Tracking not allowed.

Cause: Line Tracking is NOT allowed with Spotwelding.

Remedy: Use Select->Detail menu to disable tracking (schedule = 0) to disable Tracking for this program.

SPOT-091 91: XXXX**

Cause: The number of above-mentioned "***" indicate the fault code of weld controller. And, "XXXX" indicate an alarm message.

Remedy: Refer to Nadex DeviceNet weld controller manual for more information about fault code and alarm message.

SPOT-092 ELCB signal detection

Cause: Change of ELCB auxiliary contact was detected.

Remedy: Refer to Nadex DeviceNet weld controller manual for more information about ELCB auxiliary contact.

SPOT-270 Illegal equipment number

Cause: An illegal equipment number has been specified.

Remedy: Inspect the teach pendant program header and enter a valid equipment number.

SPOT-271 Illegal gun index

Cause: The gun index is invalid.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-272 Illegal PX index

Cause: The PX index is invalid.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-273 Illegal pressure profile state

Cause: The pressure profile state is invalid.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-274 Application handshake mismatch(%s)

Cause: Internal error: application status is inconsistent with task status. Application detected an error, but task did not pause.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-300 Weld sim Enabled

Cause: This is a warning to inform you that weld simulation has been enabled. This message is posted one time when weld simulate enable has changed from FALSE to TRUE. Note: weld simulate is a test mode function.

Remedy: Disable weld simulation, if weld mode simulation is not desired.

SPOT-301 Weld enabled during spot sim

Cause: This is a warning to inform you that weld enable mode has been activated while weld simulate mode is active. Weld simulate is only available when weld mode is disabled. Therefore, weld simulate will also be disabled.

Remedy: Set weld mode to disable, and re-enable weld simulate if you still want to use weld simulate; otherwise no action is needed.

SPOT-302 Weld sim Disabled

Cause: This warning informs you that weld simulation has been disabled. This message is posted one time, when \$spotconfig.\$sim_enb changes from TRUE to FALSE. Note: Weld simulate is a test mode function.

Remedy: Set weld mode to disable, and re-enable weld simulate if you still want to use weld simulate; otherwise, no action is needed.

SPOT-303 %s

Cause: This message is posted to identify a spot that executed while weld simulation was active. The message will look like: SPOT-303: SimWld (Programe,Line#). Note that this message is only posted if \$spotconfig.\$weld_sim = TRUE, and \$spotconfig.\$sim_warn = TRUE.

Remedy: Set \$spotconfig.\$sim_warn = FALSE, to simulate welds without the SPOT-303 warning. Set \$spotconfig.\$sim_enb = FALSE, to disable weld simulation, and the SPOT-303 warning.

SPOT-304 Stroke disabled during weld retry %s

Cause: The weld retry function is enabled, and \$spotconfig.\$stroke_enable changed from TRUE to FALSE during the retry process. In this case, a weld was started, but not completed. SPOT-304 is posted to provide an opportunity to complete the weld.

Remedy: If you want to complete the weld enable stroke, and press FAULT RESET to continue. If you do not want to complete the weld, press FAULT RESET to continue (stroke enable remains false).

SPOT-305 Process custo not found. Disabling.

Cause: This message indicates that the download of the program failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-306 Found duplicate model

Cause: At least two of the models contained the same Model ID.

Remedy: 1. Review the vision results using either the Runtime screen or Vision Setup screen. 2. Adjust the Vision Process as necessary.

SPOT-307 Gun Tip Test missing model

Cause: The Gun Tip base or tip model was not found by vision.

Remedy: 1. Verify that the enclosure LED is operational 2. Verify that the correct caps are on the weld gun 3. Adjust the Vision Process as necessary.

SPOT-308 Robot Tip Test missing model

Cause: The Robot Tip base or tip model was not found by vision.

Remedy: 1. Verify that the enclosure LED is operational 2. Verify that the correct caps are on the weld gun 3. Adjust the Vision Process as necessary.

SPOT-309 Tip Alignment missing model

Cause: One or more of the four models required to make an alignment check was missing.

Remedy: 1. Verify that the enclosure LED is operational 2. Verify that the correct caps are on the weld gun 3. Adjust the Vision Process as necessary.

SPOT-310 Gun Tip Wear exceeded

Cause: The Gun tip wear exceeded the user set threshold.

Remedy: 1. Change Cap and reset nominal condition. 2. Verify user set threshold.

SPOT-311 Gun Cap Changed Length Exceeded

Cause: The Gun Tip tip model displacement exceeded the user set threshold.

Remedy: 1. Review the vision results using either the Runtime screen or Vision Setup screen. 2. Verify the user set threshold 3. Adjust the Vision Process or equipment as necessary.

SPOT-312 Gun Shank Displaced

Cause: The Gun Tip base model displacement exceeded the user set threshold.

Remedy: 1. Review the vision results using either the Runtime screen or Vision Setup screen. 2. Verify the user set threshold. 3. Adjust the Vision Process or equipment as necessary.

SPOT-313 Gun Base Displacement Exceeded

Cause: Gun Cap Base Location has moved too far from nominal position.

Remedy: Gun Shank may have slipped or tool bent

SPOT-314 Robot Tip Wear exceeded

Cause: The Robot tip wear exceeded the user set threshold.

Remedy: 1. Change Cap and reset nominal condition. 2. Verify user set threshold.

SPOT-315 Robot Cap Changed Length Exceeded

Cause: The Robot Tip tip model displacement exceeded the user set threshold.

Remedy: 1. Review the vision results using either the Runtime screen or Vision Setup screen. 2. Verify the user set threshold. 3. Adjust the Vision Process or equipment as necessary.

SPOT-316 Robot Shank Displaced

Cause: The Robot Tip base model displacement exceeded the user set threshold.

Remedy: 1. Review the vision results using either the Runtime screen or Vision Setup screen. 2. Verify the user set threshold. 3. Adjust the Vision Process or equipment as necessary.

SPOT-317 Robot Base Displacement Exceeded

Cause: Robot Cap Base Location has moved too far from nominal position.

Remedy: Robot Shank may have slipped or tool bent.

SPOT-318 Tip Alignment exceeds Threshold

Cause: The tips were out of alignment.

Remedy: 1. Adjust equipment to realign weld caps. 2. Adjust the Vision Process as necessary.

SPOT-319 Gun Tip Dress failed

Cause: Gun tip did not match the tip dressed model.

Remedy: 1. Re-dress the weld caps. 2. Adjust the Vision Process as necessary.

SPOT-320 Robot Tip Dress failed

Cause: Robot tip did not match the tip dressed model.

Remedy: 1. Re-dress the weld caps. 2. Adjust the Vision Process as necessary.

SPOT-321 Gun Cap Change/Type failed

Cause: Gun Cap did not match the new cap model.

Remedy: 1. Change Gun Cap. 2. Verify that the correct cap type is on the weld gun. 3. Adjust the Vision Process as necessary.

SPOT-322 Robot Cap Change/Type failed

Cause: Robot Cap did not match the new cap model.

Remedy: 1. Change Robot Cap. 2. Verify that the correct cap type is on the weld gun. 3. Adjust the Vision Process as necessary.

SPOT-323 Test message for Recovery

Cause: This is a message for testing purposes only.

Remedy: Please contact your FANUC representative.

SPOT-324 Tip Inspection Continue

Cause: User chose to Continue from a tip inspection fault.

Remedy: NONE. Notification only.

SPOT-325 Tip Inspection Retry

Cause: User chose to Retry from a tip inspection fault.

Remedy: NONE. Notification only.

SPOT-326 Tip Inspection Abort

Cause: User chose to Abort from a tip inspection fault.

Remedy: NONE. Notification only.

SPOT-327 No Recovery Option Selected

Cause: User did NOT choose any recovery from a tip inspection fault.

Remedy: NONE. Notification only.

SPOT-328 Gun Slippage Exceeded

Cause: Gun Tip Dress Length is shorter than threshold.

Remedy: 1. Retry Tip Dress 2. Verify that tip dress works correctly. 3. Verify tip dress threshold.

SPOT-329 Robot Slippage Exceeded

Cause: Robot Tip Dress Length is shorter than threshold.

Remedy: 1. Retry Tip Dress 2. Verify that tip dress works correctly. 3. Verify tip dress threshold.

SPOT-330 Gun Relative Cap Wear Exceeded

Cause: Gun Tip Dress Length is longer than threshold.

Remedy: 1. Verify that tip dress time is not too long. 2. Verify tip dress threshold.

SPOT-331 Robot Relative Cap Wear Exceeded

Cause: Robot Tip Dress Length is longer than threshold.

Remedy: 1. Verify that tip dress time is not too long. 2. Verify tip dress threshold.

SPOT-332 Missing Nominal Length

Cause: At least one of tip model cannot be found. Robot Cap did not match the new cap model.

Remedy: 1. Verify that the enclosure LED is operational. 2. Verify that the correct caps are on the weld gun. 3. Adjust the Vision Process as necessary.

SPOT-333 Dress Length Test ignore

Cause: At least one of tip model cannot be found. Robot Cap did not match the new cap model.

Remedy: 1. Verify that the enclosure LED is operational. 2. Verify that the correct caps are on the weld gun. 3. Adjust the Vision Process as necessary.

SPOT-334 Stroke limit update not enabled

Cause: At least one of tip model cannot be found. Robot Cap did not match the new cap model.

Remedy: 1. Verify that the enclosure LED is operational. 2. Verify that the correct caps are on the weld gun. 3. Adjust the Vision Process as necessary.

SPOT-335 Gun Tip Trend Wear

Cause: The Gun Tip Trend value has exceeded the Max Trend Thresh

Remedy: Replace or dress cap

SPOT-336 Robot Tip Trend Wear

Cause: The Robot Tip Trend value has exceeded the Max Trend Thresh

Remedy: Replace or dress cap

SPOT-337 Tip Aignment Off Axis Distance Exceeds Threshold

Cause: Center Lines of caps are too far apart

Remedy: Replace or dress cap

SPOT-338 WTI Aborting - %s

Cause: A parameter is missing and cannot continue without it

Remedy: Fix secondary cause

SPOT-339 Gun Cap Surface Measurement

Cause: Measurement of Gun Cap Surface area is too much

Remedy: Adjust voltage or Redress

SPOT-340 Robot Cap Surface Measurement

Cause: Measurement of Robot Cap Surface area is too much

Remedy: Adjust voltage or Redress

SPOT-341 Gun Under Dressed

Cause: After Dress Operation the incremental change in Gun cap length (Tip-Base) is insufficient

Remedy: Redress Cap

SPOT-342 Robot Under Dressed

Cause: After Dress Operation the incremental change in Robot cap length (Tip-Base) is insufficient

Remedy: Redress Cap

SPOT-343 Gun Over Dressed

Cause: After Dress Operation the incremental change in Gun cap length (Tip-Base) is too much

Remedy: Adjust time or pressure for Redress

SPOT-344 Robot Over Dressed

Cause: After Dress Operation the incremental change in Robot cap length (Tip-Base) is too much

Remedy: Adjust time or pressure for Redress

SPOT-345 Caps Under Dressed

Cause: After Dress Operation the incremental change in total cap length (Tip-Tip) is too little

Remedy: Redress Cap

SPOT-346 Caps Over Dressed

Cause: After Dress Operation the incremental change in total cap length (Tip-Tip) is too much

Remedy: Adjust time or pressure for Redress

SPOT-350 IWC board not found

Cause: No IWC boards were found on the controller.

Remedy: If an IWC board was expected, this indicates that there is probably a serious hardware problem and that the board should be replaced. If an IWC board is not expected, then the IWC driver should be removed from the system configuration.

SPOT-351 IWC driver not running

Cause: The IWC driver is waiting for the PC/104 motherboard to complete its reset cycle.

Remedy: This is a system programming error. Document the events that led to the error, and call your local FANUC representative.

SPOT-352 Invalid IWC index

Cause: The specified IWC board is not installed.

Remedy: This is a system programming error. Document the events that led to the error, and call your local FANUC representative.

SPOT-353 IWC message in progress

Cause: A message cannot be sent to the IWC because a previous message transaction is still in progress.

Remedy: This is a system programming error. Document the events that led to the error, and call your local FANUC representative.

SPOT-354 Invalid IWC msg buffers

Cause: The buffers sent for a message transaction are not valid in number and/or length.

Remedy: This is a system programming error. Document the events that led to the error, and call your local FANUC representative.

SPOT-355 Invalid IWC function code

Cause: The function request to the IWC driver is invalid.

Remedy: This is a system programming error. Document the events that led to the error, and call your local FANUC representative.

SPOT-356 Checksum error, IWC msg send

Cause: The IWC reported a checksum error during a message send operation. This might indicate a problem with the board or driver software.

Remedy: Document the events that led to the error, and call your local FANUC representative.

SPOT-357 Invalid buffer, IWC msg send

Cause: The IWC reported an invalid buffer during a message send operation. This might indicate a problem with the board or driver software.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-358 Checksum error, IWC msg rcv

Cause: An invalid checksum was computed on a message segment received from the IWC board. This might indicate a problem with the board or driver software.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-359 Invalid buffer, IWC msg rcv

Cause: An invalid buffer tag was detected on a message segment received from the IWC board. This might indicate a problem with the board or driver software.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-360 IWC buffer too small

Cause: The buffer passed to the IWC driver was too small to hold the message received from the IWC.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-361 Ack timeout, IWC msg send

Cause: The IWC did not acknowledge a message segment that was sent to it.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-362 Timeout, IWC msg recv

Cause: The IWC did not send a response message within the allowable time limit.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-363 IWC motherboard error

Cause: The IWC driver was unable to communicate with the PC/104 motherboard driver.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-364 IWC has invalid DPRAM signature

Cause: An IWC board was detected, but the contents of the dual-port RAM area is not what is expected.

Remedy: Make sure that the correct type of IWC board is installed. If the problem persists, swap in a new board.

SPOT-365 Unsupported IWC version/rev level

Cause: An IWC board was detected, but the version and/or revision level of its dual-port RAM is not supported by the installed driver.

Remedy: Install an IWC with a compatible version level, or check to see if there is an updated version of the driver available.

SPOT-366 Unable to register IWC interrupt

Cause: The driver was unable to register an interrupt for the IWC board.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-367 Only 29 functions allowed in a schedule

Cause: The user tried to insert more than 29 functions into the schedule. Only 29 functions are allowed in a schedule.

Remedy: Do not insert more than 29 functions in a schedule.

SPOT-368 Imp. can only come before weld FCTN

Cause: The user tried to insert an impulse function(function 60) before a non-weld function.

Remedy: Insert the impulse function directly before a weld function.

SPOT-369 FCTN not supported by the timer

Cause: The user directly entered an invalid function number to be inserted.

Remedy: Choose another function from the choice list, or look up the function number of a valid function.

SPOT-370 Could not download schedule %d

Cause: The schedule failed 2 download tries to the timer.

Remedy: Try cycling controller power. If the error still exists, document the events that led to the error, and call your local FANUC representative.

SPOT-371 Could not download stepper %d

Cause: The stepper failed 2 download tries to the timer.

Remedy: Try cycling controller power. If the error still exists, document the events that led to the error, and call your local FANUC representative.

SPOT-372 Could not read sequence file %d

Cause: The sequence file could not be read from the FROM.

Remedy: Make sure the sequence exists on FROM.

SPOT-373 Could not download setup data

Cause: The setup data failed 2 download tries to the timer.

Remedy: Try cycling controller power. If the error still exists, document the events that led to the error, and call your local FANUC representative.

SPOT-374 Could not download Dynamic data

Cause: The dynamic data failed 2 download tries to the timer.

Remedy: Try cycling controller power. If the error still exists, document the events that led to the error, and call your local FANUC representative.

SPOT-375 Could not read stepper file %d

Cause: The stepper file could not be read from the FROM.

Remedy: Make sure the stepper exists on FROM.

SPOT-376 Could not read setup file %s

Cause: The setup file could not be read from the FROM.

Remedy: Make sure the setup file exists on FROM.

SPOT-377 Could not read file %s

Cause: The named file could not be read from the Device.

Remedy: Make sure the file exists on the Device.

SPOT-378 IWC ID jumpers incorrect

Cause: The ID jumpers on the IWC card(s) are not set so that the cards can be identified as card #1 and card #2.

Remedy: If there is one card in the system, its ID must be set to 1. If there are two cards, one must be set as card 1 and the other as card 2 according to the slots they are in.

SPOT-379 IWC slave busy

Cause: The IWC slave busy bit is set in the status word.

Remedy: Retry the operation after a short delay.

SPOT-380 Invalid IWC Firmware Version

Cause: The firmware versions on the timer card must be the same if there are 2 timers. Either the firmware version itself is different, or the revision level of the firmware is different.

Remedy: Make sure that the firmware version and revision level match for both cards. It could be viewed by plugging in one card at a time and viewing the revision level of each one.

SPOT-381 IWC(DG) system error(%d)

Cause: A communication problem with the timer board has occurred.

Remedy: Write down the number of the error and contact a Service Representative:

- 1, 2 or 13: The temporary pool area might be almost exhausted.
- 3: The timer board could not be initialized successfully.
- 4: A parameter could not be written to the timer board successfully.
- 5, 6, 7, 8 or 9: A parameter could not be read from the timer board.
- 12: A counter value could not be written to the timer board successfully.

SPOT-382 IWC(DG) illegal stepper number(%s)

Cause: An illegal value for the SN (Stepper Number) field in the reset stepper instruction was used for the Dengensha IWC.

Remedy: Change the instruction to use a value that is between 0 and 4.

SPOT-383 IWC(DG) illegal contactor status(%d)

Cause: Parameter in CONTACTOR instruction is invalid.

Remedy: Enter a correct parameter into the CONTACTOR instruction.

SPOT-384 IWC(DG) leak input (%d)

Cause: The Leak Input signal is on.

Remedy:

1. Remove the cause of the leak.
2. Refer to the Weld Interface I/O screen and verify that the Leak Input signal is OFF. Using the teach pendant:
 - a. Press I/O.
 - b. Press F1, [TYPE].
 - c. Select Spot Equip.
3. Perform a reset.

SPOT-385 IWC(DG) illegal counter specified(%s)

Cause: You have entered an illegal value for the SN= field in the RESET STEPPER instruction while using the IWC Dengensha Weld Controller.

Remedy: The system variable value must be between 0 and 2.

SPOT-386 Reset stepper timeout %s

Cause: The weld controller did not acknowledge the reset stepper command in the allotted time.

Remedy: Check that the weld controller is functioning correctly.

SPOT-387 IWC(DG) timer no response

Cause: No response was received from the welding timer board. The requested operation could not be executed.

Remedy: Turn the power off, then on again.

SPOT-388 IWC(DG) timer acc stat err(%d)

Cause: Because the access status of the welding timer board remains on, the requested operation cannot be performed.

Remedy: Turn the power off, then on again.

SPOT-389 IWC(DG) timer exe flag err(#)

Cause: Because a welding timer board execution flag remains on, the requested operation cannot be performed.

1. The SYSRDY signal is on.
2. The data read flag is on.
3. The data write flag is on.
4. The function name read flag is on.
5. The counter set/reset flag is on.
6. The welding flag is on.
7. The data command execution flag is on.

Remedy: Turn the power off, then on again.

SPOT-390 IWC(DG) timer bad response

Cause: An error occurred in the interface with the welding timer board.

Remedy: Contact a service representative. Check whether a software or hardware setting of the welding timer board was changed before the error occurred.

SPOT-391 IWC(DG) timer memory error

Cause: An error occurred in the hardware system saved in memory in the welding timer board.

Remedy: Turn the power off, then on again. The hardware data in timer board is initialized, so readjustment is required. For adjustment data, contact DENGENSHA MFG. CO., LTD..

SPOT-392 IWC(DG) timer not running

Cause: An error occurred because the welding timer board had not started.

Remedy: *systdy from the timer board is not turned off. Contact DENGENSHA MFG. CO., LTD..

SPOT-393 IWC(DG) timer support from Gun1 to Gun4

Cause: Gun number in RESET STEPPER instruction is invalid.

Remedy: Enter a correct gun number into the RESET STEPPER instruction.

SPOT-394 IWC(DG) drv sys error(%d)

Cause: A system error occurred during processing of communication with the timer board.

- Remedy:** Check the number at the end of the error message.
 Smaller than 500: Write down the number and contact a service representative.
 500 or greater: Check the I/O settings such as Shunt trip I/O output and stepper ready I/O output. Check whether a value outside the range is specified as the I/O type or number.

SPOT-395 IWC(DG) timer now in weld

- Cause:** An attempt was made to start welding during welding.
Remedy: The weld time-out period is not sufficiently long as compared with the welding time. Set a long value for “Weld complete time-out” in SETUP/Spot config as compared with the welding time.

SPOT-396 IWC(DG) timer com err %d(%x)

- Cause:** The system is unable to communicate with the timer board.
Remedy: Check alarms posted with this alarm and do their remedies. And inform it to a service representative.
 When the first number is 100 af following,
 SPOT-396 STOP IWC(DG) timer com err 100(Board id)
 Check your timer board [SEL] Dip switch T0 T1.
 For timer board 1, T0=0 T1=0.
 For timer board 2, T0=1 T1=0.

SPOT-397 Resume not allowed

- Cause:** An attempt was made to start welding during welding.
Remedy: The weld time-out period is not sufficiently long as compared with the welding time. Set a long value for “Weld complete time-out” in SETUP/Spot config as compared with the welding time.

SPOT-398 Choose recovery on Alarm recov menu.

- Cause:** Choose recovery on Alarm recov menu.
Remedy: None.

SPOT-399 IWC FIRMWARE UPGRADED

- Cause:** The IWC firmware has been upgraded on the timer card.
Remedy: None.

SPOT-401 WTC E01: Controller Failure

- Cause:** This is a fault from the WTC weld controller.
Remedy: Review the error code remedy information in the WTC weld controller manual.

SPOT-481 WTC IWC(DG) Can't read system_ready(%d)

- Cause:** A system error occurred.
Remedy: Turn off and back on the power. If the problem persists, check the mounting state of the internal timer board.

SPOT-482 IWC(DG) Failed to set Weld Current flag(%d)

- Cause:** A system error occurred.
Remedy: Turn the power off and back on. If the problem persists, check the mounting state of the internal timer board. Pull out the timer board and insert it again.

SPOT-483 IWC(DG) Board number duplicated(%d)

- Cause:** The board number of the internal timer board is overlapped.
Remedy: Check your timer board [SEL] Dip switch T0 T1.
 For timer board 1, T0=0 T1=0.
 For timer board 2, T0=1 T1=0.

SPOT-484 IWC(DG) MB Gun no out of range(%d)

- Cause:** When the monitor box is used, the series number from the timer board is incorrect.
Remedy: Contact a service representative with the value in parentheses, the version number of the robot software, and the version number of the timer software.

SPOT-485 IWC(DG) IWC(DG) DPRAM error (%d)

- Cause:** A system error occurred. An error occurred while writing to DPRAM. The timer board may be incorrectly installed.

Remedy: Pull out the timer board and insert it again. If the problem persists, a board number is indicated in parentheses after SPOT-485. At the same time, detailed information is indicated after SPOT-486. Write down these values and execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-486 IWC(DG) %x,%x,%x

Cause: This is a status message for SPOT-485.

Remedy: N/A

SPOT-487 IWC(DG) IWC(DG) shunt trip DO error(%d)

Cause: The shunt trip signal is improperly set. A board number is indicated in parentheses.

Remedy: Check if the Shunt trip signal number is correct on the SPOT Weld interface I/O output screen. Turn the power off, then on again after changing.

SPOT-488 IWC(DG) IWC(DG) stepper cmp DO error(%d)

Cause: The stepper completion output DO is improperly set.

Remedy: The improper setting number is indicated in parentheses. Check \$IWCPCFG.\$STPC_OT_IDX[]. Turn the power off, then on again after changing.

SPOT-489 IWC(DG) IWC(DG) DPRAM out DO error(%d,%d)

Cause: The DO of the DPRAM output function is improperly set.

Remedy: The first number in parentheses is the board number of the board on which an error occurred. The second number is the improper setting number. Change the setting with reference to the I/O alarm indicated together. Turn the power off, then on again after changing.

SPOT-490 IWC(DG) timer now in weld %d

Cause: An invalid weld controller number was specified.

Remedy: The current number of weld controllers that the system is configured for is displayed in the error message. Only use the value one up to and including the number posted on the error line. If you need to increase the number of weld controllers, then perform a controlled start, and define the new number of weld controllers when prompted during the SETUP APPLICATION menu.

SPOT-491 IWC(DG) No Weld detection DO error

Cause: DO index (\$IWCDGDBG[64]) for No Weld detection signal is except 0 and No Weld detection signal was fails to output.

Remedy: Check whether DO index (\$IWCDGDBG[64]) is assigned correctly. Turn the power off, then on again after changing.

SPOT-492 IWC(DG) PrmWriteErrWC%d S%d %d

Cause: The system was not able to write the parameter to the timer board. The first number indicates the weld controller number. The second number indicates the sequence number as follows.

S0: Common, S1-S255: Schedule, S256: Special function, S257-S260: GUN1-4.

The third number indicates the error code number.

Remedy: When error code is 2, the value of the parameter is outside the range. Inquire the value of the parameter of the weld controller maker. Set the system variable to a correct value according to the parameter.

WC1 S0:\$IWCDGCON[1].\$PARM[Parameter number]

WC1 S1-S255:\$IWCDGS[Schedule number].\$PARM[Parameter number]

WC1 S256:\$IWCDGCON[2].\$PARM[Parameter number]

WC1 S257-S260:\$IWCDGCON[3-6].\$PARM[Parameter number]

WC2 S0:\$IWCDGCON[7].\$PARM[Parameter number]

WC2 S1-S255:\$IWCDGS2[Schedule number].\$PARM[Parameter number]

WC2 S256:\$IWCDGCON[8].\$PARM[Parameter number]

WC2 S257-S260:\$IWCDGCON[9-12].\$PARM[Parameter number]

Call your FANUC technical service representative if error code is not 2.

SPOT-493 IWC(DG) NDNW system error(%d)

Cause: This is internal error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-494 NDNW no DSF file(%d)

Cause: DSF file of the displayed weld controller is not found.

Remedy: Acquire DSF file on the initial setting screen.

SPOT-495 NDNW different DSF

Cause: ID (attribute information) of DSF is not matching to ID of currently connected weld controller.

Remedy: Weld controller might have changed places into another mode. Confirm currently connected weld controller. Read DSF for currently connected weld controller in initial setting screen if you want to weld with currently connected weld controller.

SPOT-496 NDNW Device Net Disconnect

Cause: DeviceNet communication has been disconnected.

Remedy: Confirm that:

1. Look for the alarm of "DNET-xxx" in DeviceNet alarm screen, and refer to the cause and remedy for the alarm.
2. Confirm the board used for weld controller is not OFFLINE on board list screen of DeviceNet.
3. Confirm the device of node number of weld controller is not OFFLINE on device list screen of DeviceNet.

SPOT-497 NDNW DSF error

Cause: DSF is not correct.

Remedy: Read DSF for currently connected weld controller in initial setting screen.

SPOT-498 NDNW Device Net Disconnect

Cause: DeviceNet communication has been disconnected.

Remedy: Confirm that:

1. Look for the alarm of "DNET-xxx" in DeviceNet alarm screen, and refer to the cause and remedy for the alarm.
2. Confirm the board used for weld controller is not OFFLINE on board list screen of DeviceNet.
3. Confirm the device of node number of weld controller is not OFFLINE on device list screen of DeviceNet.

SPOT-499 Timer(%d) is not used

Cause: Timer number in spot configuration screen is not correct.

Remedy: Confirm timer number.

SPOT-500 NDNW request timeout(Board:%d,MAC:%d)

Cause: There was no response from weld controller.

Remedy: Make the DeviceNet communication between weld controller and robot a stable state. Board:%d and MAC:%d displayed here indicate the weld controller. Confirm the connection and the wiring for the connector.

SPOT-501 Service code error(Board:%d,MAC:%d,Code:0x%x,Ex:%d)

Cause: Specified service code is not correct.

Remedy: There is a possibility that weld controller of unsupported is connected. Call your FANUC technical service representative for more information about this.

SPOT-502 Attr. value is not supported(Board:%d,MAC:%d,C:%d,I:%d,A:%d,V:%d,Ex:%d)

Cause: Value of the specified attribute is not supported. Data is outside the range.

Remedy: There is a possibility that weld controller of unsupported is connected. Call your FANUC technical service representative for more information about this.

SPOT-503 Instance not supported(Board:%d,MAC:%d,C:%d,I:%d,Ex:%d)

Cause: Specified instance is not supported.

Remedy: There is a possibility that weld controller of unsupported is connected. Call your FANUC technical service representative for more information about this.

SPOT-504 Data is longer than size(Board:%d,MAC:%d,Ex:%d)

Cause: Data is longer than the specified sizes.

Remedy: There is a possibility that weld controller of unsupport is connected. Call your FANUC technical service representative for more information about this.

SPOT-505 Data is shorter than size(Board:%d,MAC:%d,Ex:%d)

Cause: Data has shortened more than the specified sizes.

Remedy: There is a possibility that weld controller of unsupport is connected. Call your FANUC technical service representative for more information about this.

SPOT-506 Set request for get only attribute(Board:%d,MAC:%d,C:%d,I:%d,A:%d,Ex:%d)

Cause: Parameter that cannot be set was set to weld controller.

Remedy: There is a possibility that weld controller of unsupport is connected. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-507 Buffer is not enough(Board:%d,MAC:%d,Ex:%d)

Cause: Memory to store the response data from weld controller is not in DeviceNet Explicit Message function of robot.

Remedy: There is a possibility that \$DN_BD_INFO_T[n].\$LAG_EM_BUF[m] (n=1-4, m=1-4) is not correctly set. Confirm the settings of DeviceNet. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-508 Attribute is not supported(Board:%d,MAC:%d,C:%d,I:%d,A:%d,Ex:%d)

Cause: Weld controller doesn't support the attribute that robot specified.

Remedy: There is a possibility that weld controller of unsupport is connected. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-509 Error returned(Board:%d,MAC:%d,Err:0x%x,Code:0x%x,C:%d,I:%d,A:%d)

Cause: Error notification response (0x94) returned from weld controller.

Remedy: There is a possibility that weld controller of unsupport is connected. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-510 NDNW resp.err(Board:%d,MAC:%d,RCode:0x%x,Code:0x%x,C:%d,I:%d,A:%d)

Cause: The service code from weld controller was an unknown value.

Remedy: There is a possibility that \$DN_BD_INFO_T[n].\$LAG_EM_BUF[m] (n=1-4, m=1-4) is not correctly set. Confirm the settings of DeviceNet. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-511 NDNW DNET internal error(0x%x, Board:%d,MAC:%d)

Cause: Error occurred when the Explicit Message function was used.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-512 NDNW DSF syntax error(timer:%d,line:%d,type:%d)

Cause: There is a problem in the DSF file.

Remedy: Re-acquire DSF file on the initial setting screen. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC

technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPOT-513 NDNW Failed to save(I:%d,A:%d)

Cause: The save of file failed.

Remedy: Refer to the cause code.

SPOT-514 NDNW Failed to load(I:%d,A:%d)

Cause: The load of file failed.

Remedy: Refer to the cause code.

SPOT-515 NDNW Failed to reset WC

Cause: Initialization failed.

Remedy: Refer to the cause code.

SPOT-516 NDNW Cannot create a file

Cause: File was not able to be made to the specified directory.

Remedy: Confirm the specified directory.

SPOT-517 NDNW Cannot locate a file

Cause: File to load doesn't exist in the specified directory.

Remedy: Display file screen, and display the directory where the file is preserved. Move to management information screen with the directory opened, and execute load.

SPOT-519 NDNW File has format error

Cause: Format of file to load is not correct.

Remedy: Confirm instance and attribute displayed in SPOT-513, and confirm format of file. Please confirm the format of DSF ID and date in file when instance and attribute are 0.

SPOT-520 NDNW Value is out of tolerance

Cause: The value described in file to load is beyond the limits of a set value in DSF.

Remedy: Confirm instance and attribute displayed in SPOT-513, and confirm value in file.

SPOT-521 There are 11 or more common classes(timer:%d)

Cause: Maximum number of common classes in this function(J925) is 10.

Remedy: This weld controller cannot be used.

SPOT-522 There are 13 or more series classes(timer:%d)

Cause: Maximum number of schedule classes in this function(J925) is 12.

Remedy: This weld controller cannot be used.

SPOT-523 There are 256 or more instances(timer:%d)

Cause: Maximum number of instance in this function(J925) is 255.

Remedy: This weld controller cannot be used.

SPOT-524 Attribute ID is out of range(timer:%d)

Cause: Maximum number of attribute ID in this function(J925) is 255.

Remedy: This weld controller cannot be used.

SPOT-525 There are 76 or more attribute(timer:%d)

Cause: Maximum number of class attribute in this function(J925) is 75.

Remedy: This weld controller cannot be used.

SPOT-526 NDNW system is not ready(timer:%d)

Cause: Preparation to display the screen is not complete.

Remedy: Read DSF when DSF reading is an incomplete end. Make the DeviceNet communication between weld controller and robot a stable state.

SPOT-527 NDNW DSF ID error(WC-Robot)

Cause: DSF ID of robot and weld controller is not the same.

Remedy: Renew DSF of robot.

SPOT-529 Weld Not ready %s

Cause: Weld ready signal in weld controller is OFF.

Remedy: Refer to Nadex DeviceNet weld controller manual for more information about weld ready signal.

SPOT-530 Eq%x,%s,Dur(%.1f,Exp:%.1f)

Cause: This alarm provides “cause” info for SPOT-531.

Remedy: Equip number, job type, observed job duration and expected job duration are displayed.

SPOT-531 WeldCount:%d < Expected:%d

Cause: Observed spot weld count for job that just ended is less than the weld count benchmark.

Remedy: Observed weld count and the Expected weld count (benchmark) are displayed.

4.17.7 SPRM Alarm Code

SPRM-000 Invalid destination speed.

Cause: Maximum speed for ramping is 500mm/sec.

Remedy: Change the command speed and destination speed within the speed limit.

SPRM-001 Internal system error.

Cause: Ramp internal system error.

Remedy: Power off to recover. If problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SPRM-002 Ramp is disabled.

Cause: Ramp is disabled for backward motion.

Remedy: Specification. Ramp does not support backward motion.

SPRM-003 No support for deg/sec

Cause: Ramp does not support deg/sec for its speed unit.

Remedy: Change speed unit to mm/sec cm/min or inch/min.

SPRM-004 No time base speed unit.

Cause: Ramp does not support time based speed unit(msec or sec).

Remedy: Change speed unit to mm/sec cm/min or inch/min.

SPRM-005 Ramp system loading error.

Cause: The ramp software is loaded incorrectly.

Remedy: Please reload the controller.

SPRM-006 Ramp disabled, Rotation motn

Cause: Ramp is disabled for rotation dominated motion.

Remedy: Current position has large orientation change. Please re-record the position with less orientation change to run the speed ramp motion.

SPRM-007 Ramp disabled. Short motion.

Cause: Ramp is disabled for short motion.

Remedy: The current motion travels in short distance, not enough for ramp motion to speed up. Please re-record the position with longer distance to order run the speed ramp motion.

SPRM-008 Max Speed is not supported.

Cause: Max Speed is not supported. Ramp does not support max speed for its speed unit.

Remedy: Change speed unit to mm/sec, cm/min, or inch/min.

SPRM-009 No Ramp resume in hot start.

Cause: Ramp resume is disabled when in hot start mode.

Remedy: Do not resume speed ramp in hot start mode.

4.17.8 SRIO Alarm Code

SRIO-001 S. PORT ILLEGAL FUNCTION CODE

Cause: Illegal function code was specified. System error.

Remedy: System error.

SRIO-002 SERIAL PORT NOT OPEN

Cause: Serial port is not opened.

Remedy: Open serial port before using it.

SRIO-003 SERIAL PORT ALREADY OPEN

Cause: Serial port has already been opened, and it was tried to be opened again.

Remedy: Do not try to open the serial port which has already be opened.

SRIO-004 SERIAL PORT NOT INITIALIZE

Cause: Serial port is not initialized.

Remedy: Initialize the serial port before using it.

SRIO-005 SERIAL PORT DSR OFF

Cause: Serial port DSR is off.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.
Check target device status.

SRIO-006 SERIAL PORT PARITY ERROR

Cause: Serial port parity error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-007 SERIAL PORT OVERRUN ERROR

Cause: Serial port overrun error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-008 SERIAL PORT FRAME ERROR

Cause: Serial port frame error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-009 S. PORT PARITY & OVERRUN

Cause: Serial port parity error and overrun error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-010 S. PORT PARITY & FRAME

Cause: Serial port parity error and frame error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-011 S. PORT OVERRUN & FRAME

Cause: Serial port overrun error and frame error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-012 S. PORT PRTY & OVRN & FRM

Cause: Serial port parity error, overrun error, and frame error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.

SRIO-013 S. PORT DSR OFF & HARDWARE ERR

Cause: Serial port DSR is off and hardware error occurred.

Remedy: Check if serial port setup is correct. Check if cable is broken. Check if there exists a noise source near controller.
Check target device status. Check the hardware.

SRIO-014 S. PORT ILLEGAL REQUEST COUNT

Cause: Serial port request count is illegal. System error.

Remedy: System error.

SRIO-015 SERIAL PORT CANCEL

Cause: Cancel current serial port setup. This code does not appear at normal time. System error.

Remedy: System error.

SRIO-016 S. PORT POWER FAILURE CANCEL

Cause: Initialize serial port at power failure recovery. This code does not appear at normal time. System error.

Remedy: System error.

4.17.9 SRVO Alarm Code

SRVO-001 SERVO Operator panel E-stop

Cause: The EMERGENCY STOP button on the operator panel was pressed.

Remedy:

1. Twist the operator panel EMERGENCY STOP button clockwise to release it, then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note:

1. If SRVO-001 is issued together with SRVO-213, a fuse may have blown. Take the same actions as for SRVO-213.
2. The state of the EMERGENCY STOP button on the operator panel cannot be determined while the EMERGENCY STOP button on the teach pendant is pressed. As a result, this alarm is not detected.

SRVO-002 SERVO Teach pendant E-stop

Cause: The EMERGENCY STOP button on the teach pendant was pressed.

Remedy:

1. Twist the teach pendant EMERGENCY STOP button clockwise to release it, then press [RESET] key.
2. If this alarm cannot be reset, replace the teach pendant.

SRVO-003 SERVO Deadman switch released

Cause: The deadman switch was not pressed when the teach pendant was enabled. Alternatively, the deadman switch was pressed strongly.

Remedy: Press the deadman switch to release it, then press [RESET] key. If the deadman switch is three position switch type, press the deadman switch to middle position to release it, then press [RESET] key. If this alarm cannot be reset, please take the following action.

1. Check the intermediate position of the deadman switch on the teach pendant.
2. Check that the mode switch on the operator's panel and the enable/disable switch on the teach pendant are at the correct positions.
3. Replace the teach pendant.
4. Check the mode switch connection and operation. If trouble is found, replace the mode switch.
5. Replace the emergency stop board.

SRVO-004 SERVO Fence open

Cause: The safety door or fence is open.

Remedy:

1. Close the safety fence after checking that a worker is not inside the safe fence, then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note: If SRVO-001 is issued together with SRVO-213, a fuse may have blown. Take the same actions as for SRVO-213.

SRVO-005 SERVO Robot overtravel

Cause: A hardware limit switch on an axis was tripped. Usually, the movement of the robot is prevented from exceeding a limit beyond the maximum range of movement (software limits) for each axis. However, when the robot is shipped, the overtravel state is set for transit.

Remedy:

1. Hold down [SHIFT] key, and press [RESET] key to reset the alarm.
2. Continue holding [SHIFT] key, and jog the robot to bring all axes into the movable range.
3. If this alarm cannot be reset, refer to the Controller Maintenance Manual for more information.

Note:

1. The direction of each axis jogging is limited until the alarm is released. It cannot jog to the direction where the axis moved when the alarm is occurred.
2. In the robot calibration incomplete status, you can release the above note1 limitation with the overtravel release screen [6 SYSTEM / OT release].

SRVO-006 SERVO Hand broken

Cause: The safety joint (if in use) might have been broken. Alternatively, the HBK signal on the robot connection cable might be a ground fault or a cable disconnection.

Remedy:

1. Hold down [SHIFT] key, and then press [RESET] key to clear the alarm.
2. While holding down the SHIFT key, jog the tool to the workplace. Replace the safety hand or check the safety joint cable. If the Hand broken signal is not in use, it can be disabled in the system config screen [6 SYSTEM / Config] / Hand broken setting. After these measures, hold down the SHIFT key, and press [RESET] key.
3. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

SRVO-007 SERVO External emergency stops

Cause: The external EMERGENCY STOP button was pressed.

Remedy:

1. If you are using the external emergency stop, clear the source of the fault, and then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note: If SRVO-001 is issued together with SRVO-213, a fuse may have blown. Take the same actions as for SRVO-213.

SRVO-009 PAUSE.G Pneumatic pressure alarm

Cause: An abnormal pneumatic pressure was detected in the system using pneumatic pressure signal. If any abnormal pneumatic pressure is not found, the most likely cause is the PPABN signal of a robot connection cable being at the 0 V level.

Remedy:

1. Repair the pneumatic pressure or check the cable, and then press [RESET] key.
2. If the pneumatic pressure signal is not in use, it can be disabled in the system config screen [6 SYSTEM / Config] / PPABN signal setting.
3. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

SRVO-010 SERVO Belt broken

Cause: The belt broken robot digital input is asserted in the system using belt broken signal.

Remedy:

1. If the belt is found to be defective in anyway, repair it and then press RESET.
2. When the belt is found to be normal, signal RDI[7] in the robot connection cable might be abnormal. Check the cable.

Note: In the robot series whose system variable \$PARAM_GROUP[group].\$BELT_ENABLE is TRUE, this alarm is detected.

SRVO-012 SERVO Power failure recovery

Cause: Normal power on (hot start).

Remedy: This is just a notification. You do not have to do anything for this warning message.

SRVO-014 SERVO Fan motor abnormal (%d), CPU STOP

Cause: When a fan motor stops on backplane unit, TP shows the following message. In one minutes from occurring of alarm, robot stops and cannot be operated from TP. The robot can be recovered by replacing a fan motor. Number in the bracket indicates which fan is abnormal.

(1): fan above the slot1

(2): fan above the slot2

(3): both fans

Remedy:

1. Check the fan motor and its cables. Replace them if necessary.
2. Replace the backplane unit.

Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.

3. Replace the main board, and restore the image backup.

Refer to the Controller Maintenance Manual for more information.

Note: Robot stops and Teach pendant freezes 1 minute after SRVO-014 occurs. CPU processing are all stopped for the purpose of preventing CPU malfunction because CPU temperature increases if the fan motor stops on backplane unit.

SRVO-015 SERVO System over heat

Cause: The temperature of the controller is higher than the specified value. In one minutes from occurring of alarm, robot stops and cannot be operated from TP.

Remedy:

1. If the ambient temperature is higher than specified (45°C), cool down the ambient temperature.
2. If the fan motor is not running, check it and its cables. Replace them if necessary.

Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.

3. Replace the main board, and restore the image backup. (The thermostat on the main board may be faulty.)

Refer to the Controller Maintenance Manual for more information.

Note: Robot stops and Teach pendant freezes 1 minute after SRVO-015 occurs. CPU processing are all stopped for the purpose of preventing CPU malfunction because CPU temperature increases by overheat.

SRVO-018 SERVO Brake abnormal (G:%d A:%d)

Cause: The brake current of the 6-axis amplifier which drives the group/axis shown in the alarm message exceeded the specification. This alarm is detected in each 6-axis amplifier and always posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier which detects abnormal brake current.

Remedy: There is possibility that the robot connection cable might short. Refer to the Controller Maintenance Manual for more information.

SRVO-021 SERVO SRDY off (Group:%d Axis:%d)

Cause: The ready signal of the servo amplifier corresponding to the displayed group and axis was turned off.

Remedy:

1. Check the alarm history. If other alarms occurred together with this alarm, refer to the Cause / Remedy of those alarms.
2. If this alarm occurred just after adding or modifying an auxiliary axis, check if the setting is correct. If you find a wrong setting, modify it. Especially, check if the settings of the FSSB line number, the hardware start axis, the amplifier number, and the amplifier type are correct.
3. Check the setting of the machine lock if you are using a multi group system.
 - If machine lock of all motion groups are released, go to 4 and the subsequent remedies.
 - If the robot (6-axis servo amplifier) is machine-locked, release its machine lock.
4. When using a robot disconnect switch, incorrect setting can cause SRVO-021 on the auxiliary axis. Please check the setting of \$ROBOT_ISOLC.
5. If the settings of 2 to 4 above are correct, there may be a problem with a hardware part. refer to the Controller Maintenance Manual for more information.

Example: This alarm may occur due to a failure of a disconnect switch unit.

Note:

1. When a group which is driven by a 6-axis servo amplifier is machine-locked, auxiliary servo amplifiers the power of which are feeded by the 6-axis servo amplifier turns into SRDY state.

SRVO-022 SERVO SRDY on (Group:%d Axis:%d)

Cause: SRDY was already on when an attempt was made to turn on the MCC with HRDY. Number in the bracket shows the group number and the axis number in the group. (HRDY is the signal sent from the host to the servo system to specify whether to turn the servo amplifier's MCC on or off. SRDY is the signal sent from the servo system to the host to indicate whether a servo amplifier's MCC is on or off.)

Remedy:

1. Replace the servo amplifier applicable to the alarm message.
2. Replace the servo card module or the auxiliary axis board applicable to the alarm message.

SRVO-023 SERVO Stop error excess (G:%d A:%d)

Cause: When the robot stopped, the servo positional error exceeded a specified value (\$PARAM_GROUP[group]. \$STOPERLIM[axis]). This alarm means that the robot cannot reach a taught point or cannot keep a taught posture. Number in the bracket shows the group number and the axis number in the group. You can confirm the servo positional error in PULSE screen [4 STATUS / AXIS / PULSE].

Probable causes:

1. Overload
2. External force to the robot
3. Disconnection or misconnection of the motor power cable or brake cable
4. Incorrect setup for the robot which has 2 axis brake option
5. Insufficient torque by low voltage of power supply
6. Brake failure (includes mis-setting of brake number for auxiliary axis)
7. Auxiliary brake unit failure for auxiliary axis
8. Amplifier failure
9. Motor failure
10. Motor power cable or brake cable failure
11. Balancer failure

Remedy:

1. Check whether the duty and applied load exceed the rating. If so, reduce the duty or applied load.
2. Check whether the robot is pushed or pulled by an external force. If so, remove the external force to the robot or modify the taught point.
3. Check whether the power line of the robot connection cable or the cable in the mechanical unit are down.
4. Check whether the motor power cable/connector and brake cable/connector are connected correctly. Especially, check whether the power cable/connectors are not connected to other motors.
5. Check whether the robot setup (setting of 2BK or 6BK) is correct, if the used robot has 2BK option.
6. Measure the supplied voltage. Then, check whether the voltage is matched to the controller specification.
7. Check whether the motor brake is released properly when RESET is pressed or the robot moves. First of all, check whether the setting of brake number is correct when this alarm occurs on an auxiliary axis.
8. When this alarm occurs on the auxiliary axis whose brake is controlled by the auxiliary brake unit, check the fuse on the auxiliary brake unit.
9. If this alarm cannot be reset, refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.
10. Check whether an abnormal noise occurs from inside the balancer. If abnormal noise occurs, the balancer spring may be broken. Please replace the balancer unit or contact the FANUC service representative to report a detailed situation when it occurs.

SRVO-024 SERVO Move error excess (G:%d A:%d)

Cause: When the robot moved, the servo positional error exceeded a specified value (\$PARAM_GROUP[group]. \$MOVER_OFFST[axis]). This alarm means that the excessive path deviation occurs. Number in the bracket shows the group number and the axis number in the group. You can confirm the servo positional error in PULSE screen [4 STATUS / AXIS / PULSE].

Probable cause: Same as described above (SRVO-023) or following rapid motion:

- Rapid motion using the ACC motion option.
- Rapid motion such as reverse motion which CNT is used.

- Linear motion occurs near singularity point where axes revolve in high speed.

Remedy: Perform the same action as that described for the previous item (SRVO-023). However, in this case, it does not relate to the brake option setting. If the cause is rapid motion, avoid the rapid motion so that motion gets milder.

SRVO-025 SERVO Motn dt overflow (G:%d A:%d)

Cause: The motion command is too large. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Perform a Cold start with the following procedure.
 - Turn off the robot.
 - On the teach pendant, press and hold [SHIFT] and [RESET] keys.
 - While still pressing [SHIFT] and [RESET] keys, turn on the robot.
2. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-026 WARN Motor speed limit (G:%d A:%d)

Cause: An attempt was made to exceed the maximum rated motor speed (\$PARAM_GROUP[group].\$MOT_SPD_LIM[axis]). The motor speed is clamped to its maximum rated value. Number in the bracket shows the group number and the axis number in the group.

Remedy: You can continue to use as it is because the motor speed is internally clamped to its maximum rated value. However it is recommended to relax the teaching speed so that SRVO-026 is not posted.

SRVO-027 WARN Robot not mastered (Group:%d)

Cause: An attempt was made to perform calibration, but mastering has not yet been completed. Number in the bracket shows the group number.

Remedy:

1. Perform mastering from the calibration screen [6 SYSTEM / Master/Cal].
2. With Dispense function, if you don't want to perform specified group's mastering, please change alarm severity of SRVO-027 to DEFAULT at Error Severity screen. (Dispense function changes the severity of this alarm to ABORT by default.)

SRVO-028 SERVO Compensation excess (G:%d A:%d)

Cause: The amount of compensation for the motion command exceeds the threshold. Number in the bracket shows the group number and the axis number in the group.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-030 SERVO Brake on hold (Group:%d)

Cause: When the Brake On Hold function is enabled, this alarm is issued whenever a hold signal is input. Number in the bracket shows the group number.

Remedy:

1. If you use this function, You do not have to do anything for this message.
2. If you do not use this function, disable Brake On Hold on the SETUP General screen [6 SETUP / General] and perform a power cycle.

SRVO-031 SERVO User servo alarm (Group:%d)

Cause: A user servo alarm was issued. This alarm is occurred when system variable \$MCR_GRP[group].\$SOFT_ALARM is set to TRUE. Number in the bracket shows the group number.

Remedy: Confirm why \$MCR_GRP[group].\$SOFT_ALARM is set to TRUE.

SRVO-033 WARN Robot not calibrated (Grp:%d)

Cause: An attempt was made to set a reference point for quick mastering, but calibration has not yet been completed. Number in the bracket shows the group number.

Remedy: Perform calibration by following the procedure below.

1. Turn on the power.

2. Execute CALIBRATION from the calibration screen [6 SYSTEM / Master/Cal].

SRVO-034 WARN Ref pos not set (Group:%d)

Cause: An attempt was made to perform quick mastering, but a required reference point has not yet been set. Number in the bracket shows the group number.

Remedy: Set a reference point for quick mastering from the calibration screen [6 SYSTEM / Master/Cal].

SRVO-035 WARN Joint speed limit (G:%d A:%d)

Cause: A value higher than the maximum axis speed was specified. Each actual axis speed is tied to the maximum speed. Number in the bracket shows the group number and the axis number in the group.

SRVO-036 SERVO Inpos time over (G:%d A:%d)

Cause: The in-position monitor time (\$PARAM_GROUP[group].\$IMPOS_TIME[axis]) has elapsed, but the robot cannot reach a taught point within the specified in-position (\$PARAM_GROUP[group].\$STOPTOL[axis]). Number in the bracket shows the group number and the axis number in the group.

Remedy: Perform the same action as that described for SRVO-023 Stop error excess.

SRVO-037 SERVO IMSTP input (Group:%d)

Cause: The *IMSTP signal, which is a peripheral device I/O signal, is OFF. Number in the bracket shows the group number.

Remedy: Turn on the *IMSTP signal.

SRVO-038 SERVO2 Pulse mismatch (G:%d A:%d)

Cause: A pulse count detected at power-on differs from the one recorded at the last power-off. Numbers in the bracket show the group number and the axis number in the group. This could be due to the following:

1. The motor (Pulse coder) was replaced, or the backup battery of Pulse coder data was replaced.
2. A file (SYSMAS.TSV) that had been saved at a different axis position was loaded.
3. The software brake setting is incorrect.
4. An incorrect brake type was set to the robot with two-axis brake option.
5. A file (SYSMAS.TSV) that had been saved on another robot was loaded.
6. The axis position was changed with a brake release unit while the controller power is off.
7. The axis fell while the controller power is off due to a brake trouble.
8. The controller power went down during high speed motion.
9. The robot connection cable was connected to another robot.

Remedy:

1. See the description for the SRVO-222 when this error occurs with SRVO-222.
2. For the above cause 3 and 4, confirm the setup or brake type setting and correct setting. For the above cause 5, re-load SYSMAS.TSV of the robot. Afterwards, PULSE RESET operation should be done. Refer to 3.1.4 Pulse coder Alarm Recovery for the PULSE RESET procedure.

Check whether the robot position on Teach Pendant is correct. If incorrect, re-mastering is required. If correct, move the cursor to \$DMR_GRP[group].\$MASTER_DONE on the system variable screen [6 SYSTEM / Variables], and select F4 TRUE. And then do calibrate on the MASTER/CAL screen [6 SYSTEM / Master/Cal], or cycle the power.

Note: The MASTER/CAL screen is not usually displayed. A person who has the operation qualification does.

SRVO-039 SERVO Motor speed excess (G:%d A:%d)

Cause: CMC cannot work because the calculated motor speed exceeded the specification. Number in the bracket shows the group number and the axis number in the group.

Remedy: Reduce the motion speed or disable CMC.

SRVO-041 SERVO MOFAL alarm (Grp:%d Ax:%d)

Cause: A value of the internal motion command is too big. Number in the bracket shows the group number and the axis number in the group.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

Note: You need to cycle power to release this alarm.

SRVO-043 SERVO DCAL alarm (Group:%d Axis:%d)

Cause: The energy produced by regenerative discharge is excessive on the 6-axis amplifier which drives the group/axis shown in the alarm message. As a result, all the generated energy cannot be dissipated as heat. This alarm is detected in each 6-axis amplifier and always posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier which detects excessive regenerative discharge.

Remedy:

1. This alarm may occur if the axis is subjected to frequent acceleration/deceleration or if the axis is vertical and generates a large amount of regenerative energy. If this alarm has occurred, relax the conditions.
2. If this alarm cannot be reset, refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-044 SERVO DCHVAL alarm (G:%d A:%d)
SRVO-044 SERVO DCHVAL (PS) alarm (G:%d A:%d)

Cause: The DC voltage (DC link voltage) of the main circuit power supply is abnormally high. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy: Refer to the Controller Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-045 SERVO HCAL alarm (Group:%d Axis:%d)

Cause: An excessively high current flowed through the main circuit of the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Turn off the controller power, and disconnect the power cable from the servo amplifier indicated by the alarm message. Also disconnect the brake cable to avoid the axis falling unexpectedly.

1. In the above condition, supply controller power again and check if this alarm occurs again. If this alarm occurs again, replace the servo amplifier.
2. About the power cable, check the insulation of their U, V, W and the GND lines each other. If there is a short-circuit, replace the power cable.
3. About the power cable, measure the resistance between their U and V, V and W, and W and U with an ohmmeter that has a very low resistance range. If the resistances at the three places are different from each other, the motor, the power cable is defective. Check each item in detail and replace it if necessary.

Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-046 SERVO OVC alarm (Group:%d Axis:%d)

Cause: The root-mean-square current value which is calculated internally by the servo system exceeds the maximum permissible value. This alarm is issued to protect the motor and amplifier from damage of thermal destruction. Number in the bracket shows the group number and the axis number in the group.

Probable cause:

1. Overload
2. Increased friction of the mechanical part due to a continuation of very slow motion.
3. External force to the robot
4. Disconnection of the brake cable
5. Insufficient torque by low voltage of power supply
6. Brake failure (includes mis-setting of brake number for auxiliary axis)
7. Auxiliary brake unit failure for auxiliary axis
8. Amplifier failure
9. Motor failure
10. Motor power cable or brake cable failure

Remedy:

1. Check whether the duty and applied load exceed the rating. If so, reduce the duty or applied load.
2. Insert a medium to high speed motion in the program so that the robot will not continue only very slow motion.
3. Check whether the robot is pushed or pulled by external force. If so, remove the external force to the robot or modify the taught point.
4. Check whether the brake cable/connector are connected correctly.
5. Measure the supplied voltage. Then, check whether the voltage is matched to the controller specification.

6. Check whether the motor brake is released properly when Reset or the robot moves. First of all, check whether the setting of brake number is correct when this alarm occurs on auxiliary axis.
7. When this alarm occurs on the auxiliary axis which brake is controlled by the auxiliary brake unit, check the fuse on the auxiliary brake unit.
8. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-047 SERVO LVAL alarm (Group:%d Axis:%d)

Cause: The control power supply voltage (+5V, etc.) to the servo amplifier (6-axis amplifier or *aiSV*) which drives the group/axis shown in the alarm message is excessively low. If this alarm is detected on the 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier which detects low voltage.

Remedy: There is possibly trouble with the servo amplifier and/or the power supply unit. Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-049 SERVO OHAL1 alarm (Grp:%d Ax:%d)

Cause: The thermostat in the transformer of the 6-axis amplifier which drives the group/axis shown in the alarm message worked. This alarm is detected in each 6-axis amplifier and always posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier which detects overheat.

Remedy:

1. Check whether the fan is stopped and also check whether the vent hole is clogged. If necessary, clean or replace them.
2. If SRVO-049 is issued when the robot operating condition is severe, check the robot operating condition then relax the condition when possible.
3. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-050 SERVO Collision Detect alarm (G:%d A:%d)

Cause: A collision was detected. (An excessively large disturbance torque was estimated by the servo software.) Number in the bracket shows the group number and the axis number in the group.

Probable causes are:

1. Collision (Tip stick) / External force to the robot
2. Overload / Heavy acceleration or following operation:
 - Rapid motion using the ACC motion option.
 - Rapid motion such as reverse motion which CNT is used.
 - Linear motion occurs near singularity point where axes revolve in high speed.
3. Increasing of the friction by low temperature
4. Insufficient torque by low voltage of power supply
5. Brake failure (includes mis-setting of brake number for auxiliary axis)
6. Auxiliary brake unit failure for auxiliary axis
7. Amplifier failure
8. The E-Stop unit failure
9. Motor failure
10. Motor power cable or brake cable failure
11. Reducer failure
12. Balancer failure

Remedy:

1. Check whether the robot has collided with an object. To release this alarm, press and hold the SHIFT and RESET keys. Release only RESET key. Still pressing the SHIFT key, and press any jog key to the axis away from the collision.
2. Check whether the payload (mass, center of gravity, and inertia) are set correctly.
3. Check whether the applied load exceed the rating. If so, reduce the applied load. If you use the ACC override more than 100, please reduce the value of ACC override. Check other rapid motion cases. If so, modify the motion. Allowable disturbance threshold level can be changed from Disturbance Torque screen [4 STATUS / Axis / DISTURB].

4. If this alarm occurs when the robot is used after long time interval or when the temperature is very low, run the robot with low speed for a while before running with normal speed.
5. Check whether the motor power cable/connector and brake cable/connector are connected correctly. Especially, check whether the power cable/connector are not connected to other motors.
6. Measure the supplied voltage. Then, check whether the voltage is matched to the controller specification.
7. Check whether the motor brake is released properly when RESET is pressed or the robot moves. First of all, check whether the setting of brake number is correct when this alarm occurs on auxiliary axis.
8. When this alarm occurs on the auxiliary axis which brake is controlled by the auxiliary brake unit, check the fuse on the auxiliary brake unit.
9. There might be a failure with the following parts. Replace it or contact your local FANUC representative.
 - Auxiliary brake unit (if it is used.)
 - Servo amplifier
 - Servo motor
 - Robot connection cable (power/brake line)
 - Mechanical unit cable (power/brake line)
 - Reducer
 - Balancer

SRVO-051 SERVO CUER alarm (Group:%d Axis:%d)

Cause: The offset of the current feedback value is excessively large. The Current detection circuit on the servo amplifier is abnormal. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-053 WARN Disturbance excess (G:%d A:%d)

Cause: Disturbance estimated in the software exceeds the threshold value. There is a possibility that SRVO-050 occurs when the robot runs leaving this warning. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check whether the payload (mass, center of gravity, and inertia) are set correctly.
2. Check whether the applied load exceed the rating. If so, reduce the applied load.
3. If this alarm occurs when the robot is used after long time interval or when the temperature is very low, run the robot with low speed for a while before running with normal speed.

SRVO-055 SERVO FSSB com error 1 (G:%d A:%d)

Cause: A communication error has occurred between the axis control card and the servo amplifier. (from the main board to the servo amplifier.) Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check the optical fiber cable between the axis control card on the main board and servo amplifier. Replace it if it is faulty.
2. Replace the axis control card on the main board.
3. Replace the servo amplifier.

Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-056 SERVO FSSB com error 2 (G:%d A:%d)

Cause: A communication error has occurred between the axis control card and servo amplifier. (from the servo amplifier to the main board.) Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. If encoder information for Line Tracking has already been set up, check that Encoder Type is set correctly on the Encoder Setup Screen. Refer to the Line Tracking OPERATOR'S MANUAL (B-83474EN) for more details. (This alarm may show up if you select "INCREMENTAL", "Serial ABS", or "Serial INC" when the tracking encoder is connected directly to Main CPU board (not via Line Tracking Interface Board).)
2. Check the optical fiber cable between the axis control card on the main board and servo amplifier. Replace it if it is faulty.
3. Replace the axis control card on the main board.
4. Replace the servo amplifier.

Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis

Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-057 SERVO FSSB disconnect (G:%d A:%d)

Cause: Communication was interrupted between the axis control card and the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: The troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-058 SYSTEM FSSB %d init error (%d)

Cause: FSSB initializing is failed. Communication was interrupted between the axis control card and the servo amplifier. The 1st parameter shows the FSSB line number that Communication was interrupted, and the 2nd parameter shows the diagnostic information.

Remedy: The troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual. When you contact your local FANUC representative, please inform the number in the alarm message accurately.

Note: You need to cycle power to release this alarm.

SRVO-059 SYSTEM Servo amp init error (G:%d A:%d DA:%d Inf:%d)

Cause: Servo amplifier, Line tracking I/F board, or Pulsecoder initializing has failed.

The 1st parameter G shows the group number.

The 2nd parameter A shows the axis number in the group.

The 3rd parameter DA shows the hardware axis number.

The 4th parameter Inf shows the diagnostic information.

Remedy:

1. Check the optical fiber cable between the axis control card on the main board and servo amplifier. Replace it if it is faulty.
2. If Line tracking I/F board is installed, check the optical fiber cable between the axis control card on the main board and Line tracking I/F board. Replace it if it is faulty.
3. If Line tracking I/F board is installed, check the optical fiber cable between the Line tracking I/F board and servo amplifier. Replace it if it is faulty.
4. Turn off the power and disconnect the Pulsecoder cable on the 6-axis servo amplifier. Then check whether this alarm occurs again. (Ignore the alarm SRVO-068 because of disconnecting the Pulsecoder cable.) If this alarm does not occur, the robot connection cable or the internal cable of the robot (Pulsecoder cable) may be short-circuited to the ground. Check the cables and replace it if necessary.
5. Check whether the LED (P5V and P3.3V) on the 6-axis servo amplifier is lit. If they are not lit, check whether the DC power (24V) is supplied to the 6-axis servo amplifier. If the DC power (24V) is supplied normally, replace the 6-axis servo amplifier.
6. Replace the servo amplifier.
7. If Line tracking I/F board is installed, Replace the Line tracking I/F board.
8. If SRVO-059 occurs on auxiliary axis, make sure that nothing is connected to JX8 on the auxiliary axis servo amplifier, e.g. SRVO-059 could occur when the Pulsecoder cable is mistakenly connected to JX8 instead of JF1. By right the Pulsecoder cable must be connected to JF1 on the auxiliary axis servo amplifier.
9. Replace the motor. After replacing, perform mastering.

Refer to the Controller Maintenance Manual for more information. When you contact your local FANUC representative, please inform the number in the alarm message accurately.

Note: You need to cycle power to release this alarm.

SRVO-061 SERVO2 CKAL alarm (Group:%d Axis:%d)

Cause: The clock for the rotation counter in the Pulsecoder is abnormal. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the motor. After replacing, perform mastering.

Note1: You need to cycle power to release this alarm.

Note2: If this alarm is shown along with a SRVO-068 DTERR alarm, SRVO-069 CRCERR alarm, or SRVO-070 STBERR alarm, actually this alarm might not be occurred. Then refer to the other three alarm remedies.

SRVO-062 SERVO BZAL alarm (Group:%d Axis:%d)

Cause: This alarm is issued when the battery for backing up the absolute position data of the Pulsecoder is not connected or is empty. If SRVO-062 occurred after replacing with a new battery, the battery cable inside the robot might have become disconnected. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Replace the battery in the battery box of the robot base.
2. Replace the motor with which an alarm has been issued.
3. Check that the robot internal cable for feeding power from the battery to the Pulsecoder is not disconnected or grounded. If a problem was found, replace the cable.

Refer to the Controller Maintenance Manual for more information.

- Get rid of the cause of the alarm, then cycle the power after doing PULSE RESET operation. Refer to 3.1.4 Pulsecoder Alarm Recovery for the PULSE RESET procedure.
- After the power cycle, "SRVO-075 Pulse not established" will occur. Refer to the section of SRVO-075.
- After that, mastering is required. Refer to "FANUC Robot series OPERATOR'S MANUAL (Basic Operation) (B-83284EN)" for procedure of mastering. If reference position has been set, you can recover by "Quick mastering" or "Quick mastering for single axis".

Note: The MASTER/CAL screen is not usually displayed.

SRVO-063 SERVO2 RCAL alarm (Group:%d Axis:%d)

Cause: The built-in rotation counter on the Pulsecoder is abnormal. A miscount of the rotation counter may have happened due to a problem with the Pulsecoder. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check whether the connection of the controller earth is good. Check the earth cable between the controller and the robot is securely connected to the grounding plate.
2. Reinforce the earth of the motor flange. (In case of auxiliary axis)
3. Replace the motor. After replacing, perform mastering.

Get rid of the cause of the alarm, then cycle power after doing PULSE RESET operation. Refer to 3.1.4 Pulsecoder Alarm Recovery for the PULSE RESET procedure.

Note: If this alarm is shown along with a SRVO-068 DTERR alarm, SRVO-069 CRCERR alarm, or SRVO-070 STBERR alarm, this alarm might not be actually occurring. Refer to these three alarm remedies instead.

SRVO-065 WARN BLAL alarm (Group:%d Axis:%d)

Cause: The battery voltage for the Pulsecoder has dropped below the allowable minimum. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the battery.

Note: When this alarm is issued, immediately replace the battery while the system power is turned on. If the BZAL alarm is issued because the battery is not replaced in time, position data will be lost, thus necessitating robot mastering.

SRVO-066 SERVO2 CSAL alarm (Group:%d Axis:%d)

Cause: The Pulsecoder ROM checksum data is abnormal. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the motor. After replacing, perform mastering.

Note1: You need to cycle power to release this alarm.

Note2: If this alarm is shown along with a SRVO-068 DTERR alarm, SRVO-069 CRCERR alarm, or SRVO-070 STBERR alarm, actually this alarm might not be occurred. Then refer to the other three alarm remedies.

SRVO-067 SERVO OHAL2 alarm (Grp:%d Ax:%d)

Cause: The temperature inside the Pulsecoder is abnormally high, causing the built-in thermostat to actuate. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. If a condition such as the duty cycle and load weight has exceeded the rating, relax the robot load condition to meet the allowable range.
2. When power is supplied to the motor after it has become sufficiently cool, if the alarm still occurs, replace the motor.

Note: You need to cycle power to release this alarm.

SRVO-068 SERVO DTERR alarm (Grp:%d Ax:%d)

Cause: The serial Pulsecoder does not return serial data in response to a request signal. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Make sure that the robot connection cable connector of 6-axis servo amplifier and the connector (motor side) are connected tightly.
2. Check that the shielding of the robot connection cable is grounded securely in the cabinet.
3. If abnormality was found at the tester check, replace the mechanical unit cable. (Remedy 3 of the TROUBLESHOOTING USING THE ALARM CODE in the controller maintenance manual)
4. Replace the motor. Mastering is required.
5. Replace the servo amplifier.
6. Replace the robot connection cable.

Refer to the Controller Maintenance Manual for more information.

Note 1: You need to cycle power to release this alarm.

Note 2: If the ground fault or intermittent ground fault occurred at battery line (6V) of the Pulsecoder cable in the mechanical unit, alarms such as DTERR (SRVO-068) can occur at the axis which is different from the above line of the broken Pulsecoder cable due to noise when ground fault occurred.

SRVO-069 SERVO2 CRCERR alarm (Grp:%d Ax:%d)

Cause: The serial data has disturbed during communication. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-068 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-070 SERVO2 STBERR alarm (Grp:%d Ax:%d)

Cause: The start and stop bits of the serial data are abnormal. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-068 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-071 SERVO SPHAL alarm (Grp:%d Ax:%d)

Cause: The excessively large feedback speed was detected. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check whether the connector of the cable between the Pulsecoder and the servo amplifier (if SRVO-071 occurs in robot axis, the robot connection cable) is plugged in correctly.
2. It might be mis-detection due to electrical noise. Check the shielding of the cable for the Pulsecoder is grounded securely.
3. On certain robot model, this alarm may occur at an event of robot collision at high speed. Please reset the alarm after making sure the robot is not abnormal.
4. If this alarm occurs in an auxiliary axis that uses Torque Limit function, check the motion of the axis when the torque limit value is reset to 100%. If the axis is moving rapidly at this timing, modify the program so that the command position of the axis moves to the position where the position error becomes nearly zero, and then the torque limit value is reset to 100%.
5. Replace the motor. Mastering is required.
6. Replace the servo amplifier.
7. Replace the robot connection cable.
8. Replace the internal cable of the robot (for the Pulsecoder).

Note: You need to cycle power to release this alarm.

SRVO-072 SERVO PMAL alarm (Group:%d Axis:%d)

Cause: The Pulsecoder might be faulty. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the Pulsecoder, then perform mastering.

Note1: You need to cycle power to release this alarm.

Note2: If this alarm is shown along with a SRVO-068 DTERR alarm, SRVO-069 CRCERR alarm, or SRVO-070 STBERR alarm, actually this alarm might not be occurred. Then refer to the other three alarm remedies.

SRVO-073 SERVO2 CMAL alarm (Group:%d Axis:%d)

Cause: It is likely that the Pulsecoder is abnormal or the Pulsecoder has malfunctioned due to noise. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check the controller earth is connected correctly. Check the earth cable between controller and robot connection cable is grounded securely.
2. Replace the motor, then perform mastering.
3. Replace the robot connection cable.
4. Replace the internal cable of the robot (for the Pulsecoder and the motor).

In case of Auxiliary Axis Option

1. Reinforce the earth of the flange of the motor that is indicated by the alarm message.
2. Replace the Pulsecoder that is indicated by the alarm message.

Refer to the Controller Maintenance Manual for more information.

Get rid of the cause of the alarm, then cycle power after doing PULSE RESET operation. Refer to 3.1.4 Pulsecoder Alarm Recovery for the PULSE RESET procedure.

Note: If this alarm is shown along with a SRVO-068 DTERR alarm, SRVO-069 CRCERR alarm, or SRVO-070 STBERR alarm, this alarm might not be actually occurring. Refer to these three alarm remedies instead.

SRVO-074 SERVO2 LDAL alarm (Group:%d Axis:%d)

Cause: The LED in the Pulsecoder is broken. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the Pulsecoder, then perform mastering.

Note: You need to cycle power to release this alarm.

SRVO-075 WARN Pulse not established (G:%d A:%d)

Cause: The absolute position of the Pulsecoder has not yet been established. This alarm appears normally after SRVO-062 BZAL alarm or SRVO-073 CMAL alarm. Number in the bracket shows the group number and the axis number in the group.

Remedy: Reset the alarm, and jog the axis on which the alarm has occurred until the same alarm does not occur again. (Jog one motor revolution). This alarm must be cleared before mastering.

SRVO-076 SERVO Tip Stick Detection (G:%d A:%d)

Cause: An excessive disturbance was calculated in the servo software at the beginning of motion. (An abnormal load was detected. The cause might be welding.) Number in the bracket shows the group number and the axis number in the group.

Remedy: Perform the same action as that described for SRVO-050 Collision Detect alarm.

Note: The threshold level for the tip stick detection cannot be changed from Disturbance Torque screen [4 STATUS / Axis / DISTURB].

SRVO-078 SERVO Servo param update (G:%d A:%d)

Cause: The servo parameter has been updated. Number in the bracket shows the group number and the axis number in the group.

Remedy: Press [RESET] key and continue.

SRVO-079 SERVO Stroke exceeded during press (G:%d A:%d)

Cause: The gun tip position during the pressuring operation (SPOT or PRESS_MOTN) exceeded the stroke limit for the gun. The squeezing operation stopped because the gun axis had over-extended. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check the master position and close stroke limit for the gun. If these values are incorrect, then update them. If these values are correct, then install new tips so that the gun can operate within the stroke limits, during pressuring.

SRVO-081 WARN EROFL alarm (Track enc:%d)

Cause: The pulse count for the line tracking encoder (incremental Pulsecoder) has overflowed. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Check whether the condition of the line tracking exceeds the limitation. If exceeds, reduce the encoder speed (conveyor speed).
2. Replace the incremental Pulsecoder for the line tracking.
3. Replace the line tracking cable.
4. Replace the line tracking I/F board.

Note: You need to cycle power to release this alarm.

SRVO-082 WARN DAL alarm (Track encoder:%d)

Cause: The line tracking Pulsecoder has not been connected. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Check the connection cable at each end (the line tracking I/F board and the Pulsecoder).
2. Check whether the shielding of the connection cable is connected securely to the grounding plate.
3. Replace the line tracking cable.
4. Replace the motor.
5. Replace the line tracking I/F board.

Note: You need to cycle power to release this alarm.

SRVO-083 WARN CKAL alarm (Track enc:%d)

Cause: The clock for the rotation counter in the Pulsecoder is abnormal. Number in the bracket shows the line tracking encoder number.

Remedy: Replace the motor.

Note1: You need to cycle power to release this alarm.

Note2: If this alarm is shown along with a SRVO-090 DTERR alarm, SRVO-091 CRCERR alarm, or SRVO-092 STBERR alarm, actually this alarm might not be occurred. Then refer to the other three alarm remedies.

SRVO-084 WARN BZAL alarm (Track enc:%d)

Cause: This alarm is issued when the battery for backing up the absolute position data for the absolute type Pulsecoder is not connected or is empty. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-062 BZAL alarm.

Note: You need to cycle power to release this alarm.

SRVO-085 WARN RCAL alarm (Track enc:%d)

Cause: The built-in rotation counter on the Pulsecoder is abnormal. A miscount of the rotation counter may have happened due to a problem with the Pulsecoder. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Reinforce the earth of the Pulsecoder flange.
2. Replace the motor.

Get rid of the cause of the alarm, then cycle power after doing PULSE RESET operation. Refer to 3.1.4 Pulsecoder Alarm Recovery for the PULSE RESET procedure.

Note: If this alarm is shown along with a SRVO-090 DTERR alarm, SRVO-091 CRCERR alarm, or SRVO-092 STBERR alarm, this alarm might not be actually occurring. Refer to these three alarm remedies instead.

SRVO-087 WARN BLAL alarm (Track enc:%d)

Cause: This alarm is issued when the battery voltage for backing up the absolute position data of the absolute type Pulsecoder has dropped below the allowable minimum. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-065 BLAL alarm.

SRVO-088 WARN CSAL alarm (Track enc:%d)

Cause: The Pulsecoder ROM checksum data is abnormal. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-066 CSAL alarm.

Note: You need to cycle power to release this alarm.

SRVO-089 WARN OHAL2 alarm (Track enc:%d)

Cause: The temperature inside the Pulsecoder is abnormally high, causing the built-in thermostat to actuate. Number in the bracket shows the line tracking encoder number.

Remedy: When power is supplied to the motor after it has become sufficiently cool, if the alarm still occurs, see the description for the SRVO-067 OHAL2 alarm.

Note: You need to cycle power to release this alarm.

SRVO-090 WARN DTERR alarm (Track enc:%d)

Cause: The serial Pulsecoder does not return serial data in response to a request signal. See the description for the SRVO-068 DTERR alarm. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Check the connection cable at each end (the line tracking I/F board and the Pulsecoder).
2. Check whether the shielding of the connection cable is connected securely to the grounding plate.
3. Replace the Pulsecoder.
4. Replace the line tracking cable.
5. Replace the line tracking I/F board.

Note: You need to cycle power to release this alarm.

SRVO-091 WARN CRCERR alarm (Track enc:%d)

Cause: An error occurred during communication between the Pulsecoder and the line tracking I/F board. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-090 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-092 WARN STBERR alarm (Track enc:%d)

Cause: An error occurred during communication between the Pulsecoder and the line tracking I/F board. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-090 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-093 WARN SPHAL alarm (Track enc:%d)

Cause: An excessive speed was detected with the line tracking encoder. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Check whether the condition of the line tracking exceeds the limitation. If exceeds, reduce the encoder speed (conveyor speed).
2. See the description of the SRVO-090 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-094 WARN PMAL alarm (Track enc:%d)

Cause: The Pulsecoder might be faulty. Number in the bracket shows the line tracking encoder number.

Remedy: Replace the motor.

Note1: You need to cycle power to release this alarm.

Note2: If this alarm is shown along with a SRVO-090 DTERR alarm, SRVO-091 CRCERR alarm, or SRVO-092 STBERR alarm, actually this alarm might not be occurred. Then refer to the other three alarm remedies.

SRVO-095 WARN CMAL alarm (Track enc:%d)

Cause: It is likely that the Pulsecoder is abnormal or the Pulsecoder has malfunctioned due to noise. Number in the bracket shows the line tracking encoder number.

Remedy:

1. Reinforce the earth of the Pulsecoder flange
2. Replace the motor.

Get rid of the cause of the alarm, then cycle power after doing PULSE RESET operation. Refer to 3.1.4 Pulsecoder Alarm Recovery for the PULSE RESET procedure.

Note: If this alarm is shown along with a SRVO-090 DTERR alarm, SRVO-091 CRCERR alarm, or SRVO-092 STBERR alarm, this alarm might not be actually occurring. Refer to these three alarm remedies instead.

SRVO-096 WARN LDAL alarm (Track enc:%d)

Cause: The LED in the Pulsecoder is broken. Number in the bracket shows the line tracking encoder number.

Remedy: See the description for the SRVO-074 LDAL alarm.

Note: You need to cycle power to release this alarm.

SRVO-097 WARN Pulse not established (Enc:%d)

Cause: The absolute position of the absolute type Pulsecoder has not yet been established. See the description for the SRVO-075 Pulse not established. Number in the bracket shows the line tracking encoder number.

Remedy: Rotate the Pulsecoder on which the alarm has occurred until the same alarm does not occur again. (Turn at least one revolution).

SRVO-098 PAUSE.G ACC sensor DTERR alarm

Cause: The acceleration sensor has not been connected. Otherwise, an error occurred during communication between the acceleration sensor and the main board.

Remedy:

1. Check connection of the connector of the connecting cable.
2. Check the shielding of the above cable is connected securely to the grounding plate.
3. Replace the above cable.
4. Replace the acceleration sensor.

Before executing the remedy 5, perform a complete controller back up as image to save all your programs and settings.

5. Replace the main board, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-099 PAUSE.G ACC sensor CRCERR alarm

Cause: Data changed during transfer from the acceleration sensor.

Remedy: See the description for the SRVO-098 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-100 PAUSE.G ACC sensor STBERR alarm

Cause: A stop bit error of the data from the acceleration sensor occurred.

Remedy: See the description for the SRVO-098 Remedy.

Note: You need to cycle power to release this alarm.

SRVO-101 SERVO Robot overtravel (Group:%d)

Cause: A hardware limit switch on an axis was tripped. Usually, the movement of the robot is prevented from exceeding a limit beyond the maximum range of movement (software limits) for each axis. However, when the robot is shipped, the overtravel state is set for transit. Number in the bracket shows the group number.

Remedy: See the description for the SRVO-005 Remedy.

SRVO-102 SERVO Hand broken (Group:%d)

Cause: The safety joint (if in use) might have been broken. Alternatively, the HBK signal on the robot connection cable might be a ground fault or a cable disconnection. Number in the bracket shows the group number.

Remedy: See the description for the SRVO-006 Remedy.

SRVO-103 PAUSE.G Air pressure alarm (G:%d)

Cause: An abnormal pneumatic pressure was detected in the system using pneumatic pressure signal. If any abnormal pneumatic pressure is not found, the most likely cause is the PPABN signal of a robot connection cable being at the 0 V level. Number in the bracket shows the group number.

Remedy: See the description for the SRVO-009 Remedy.

SRVO-105 SERVO Door open or E.Stop
SRVO-106 SERVO Door open/E.Stop (Robot:%d)

Cause: The controller door is opened or the emergency stop signals are detected for a short time period.
Number in the bracket shows the robot number, which is numbered in order of 6-axes amplifier connection.

Remedy:

1. Check the alarm history. If other alarms occurred together with this alarm, refer to the Cause / Remedy of those alarms.
2. Close the controller door, and press [RESET] key.
3. Refer to the Controller Maintenance Manual for more information.

SRVO-108 PAUSE.G ACC sensor livecode error

Cause: Communication on the acceleration sensor connected to the main board was interrupted. If a force sensor is used, the error may have occurred in communication of the force sensor.

Remedy:

1. If other alarm has occurred at the same time in the alarm history, take measures to reset the alarm.
 2. If force sensor related alarm has occurred at the same time in the alarm history, take measures to reset the alarm.
- Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.
3. Replace the main board, and restore the image backup.
 4. Replace the CPU card.
 5. If the alarm is still issued, document the events that led to the error, and contact your local FANUC representative.

SRVO-109 PAUSE.G ACC sensor ID mismatch %d

Cause:

When the parameter in the alarm message is 1, the acceleration sensor has not been connected.
When the parameter in the alarm message is 2, a sensor other than acceleration sensor is detected.

Remedy:

1. Check connection of the connector of the connecting cable.
 2. Check the shielding of the above cable is connected securely to the grounding plate.
 3. Replace the above cable.
 4. Replace the acceleration sensor.
- Before executing the remedy 5, perform a complete controller back up as image to save all your programs and settings.
5. Replace the main board, and restore the image backup.
- Note: You need to cycle power to release this alarm.

SRVO-110 PAUSE.G ACC sensor disabled %d (G:%d, A:%d)

Cause: The 1st parameter shows alarm diagnostic information as below. Number in the bracket shows the group number and the axis number in the group.

When the 1st parameter is 1, invalid number assigned for port number of tracking board.

When the 1st parameter is 2, the accelerometer sensor port number is disabled.

When the 1st parameter is 3, assigned port number of Accelerometer conflicted with another purpose, such as line tracking or secondary encoders.

When the 1st parameter is 4, setting of Accelerometer is incorrect.

Remedy: Contact your local FANUC representative.

SRVO-111 SERVO Softfloat time out (G:%d)

Cause: Follow-up processing was done in excess of the predetermined time and softfloat is turned OFF (in case of \$SFLT_ERRTYP=0). Number in the bracket shows the group number.

Remedy:

1. Check whether external force is not applied to the robot before the softfloat is turned on.
2. Check whether the robot does not move as posture greatly changes during softfloat.
3. If needed, make \$SFLT_FUPTIM larger.

SRVO-112 PAUSE.G Softfloat time out (G:%d)

Cause: Follow-up processing was done in excess of the predetermined time and softfloat is turned OFF (in case of \$SFLT_ERRTYP=1). Number in the bracket shows the group number.

Remedy: See the description for the SRVO-111 Softfloat time out.

SRVO-113 SERVO Cart. error excess (G:%d %s)

Cause: During the execution of Cartesian softfloat or Pushout softfloat, the servo positional error on the Cartesian coordinates exceeds the tolerance. The 1st parameter shows the group number. The 2nd parameter shows the Cartesian direction (X/Y/Z) where the servo positional error exceeds the tolerance in Cartesian softfloat case, and is “pushout” in Pushout softfloat case.

Remedy:

1. In Cartesian softfloat case
 - 1) Check whether the tolerance is proper. If not, change the following system variables and cycle power.
 X direction [mm] : \$PARAM_GROUP[group].\$CB_IX
 Y direction [mm] : \$PARAM_GROUP[group].\$CB_IY
 Z direction [mm] : \$PARAM_GROUP[group].\$CB_IZ
 - 2) If the tolerance has a proper value but SRVO-113 occurs, find and remove the cause of the position error becoming greater.
 - 3) In case that the tolerance has a proper value and the cause of SRVO-113 is valid, set the following system variable and cycle power if you want to disable SRVO-113 check.
 \$PARAM_GROUP[group].\$CB_MASS = 0 (Disabled)
2. In Pushout softfloat case
 - 1) Check that the settings of Soft direction and FREE axis are proper.
 - 2) Check that the speed of the workpiece during the execution of softfloat is not too high.
 - 3) Check that the external force during the execution of softfloat or at the start of softfloat is not too large.

SRVO-114 SERVO Singularity Detected

Cause: A singularity was detected during robot motion.

Remedy: Re-teach the program points, use WJNT, or use JOINT MOTYPE.

SRVO-115 SERVO Limit error (G:%d^2, A:%s^7)

Cause: The taught path passes outside of the axis limit. The 1st parameter shows the group number which alarm occurs. The 2nd parameter shows the axis in the group which alarm occurs.

Remedy: Re-teach program points, or use JOINT MOTYPE.

SRVO-116 SERVO Axis Limit Exceeded (G:%d A:%d)

Cause: One or more of the robot axes have exceeded an axis soft limit while executing SOFFLOAT. Number in the bracket shows the group number and the axis number in the group.

Remedy: Jog the robot within the limits to resume. Adjust the program or process to keep robot axes within limits, or increase the axis limits.

SRVO-117 SERVO Brake Number Conflict (Brk:%d G:%d)

Cause: Machine lock has been set on a group that is using the same brake number as a different group that is not machine locked. The 1st parameter Brk shows the brake number that conflict occurs. The 2nd parameter G shows the group number that has the same brake number that conflict occurs.

Remedy:

1. Set machine lock for all groups using the common brake.
2. Change brake connections so the same brake number is not used among the different groups.

SRVO-118 PAUSE.G SFIGET err %s

Cause: This error indicates that an error occurs during SFIGET execution.

Remedy: Perform an action according to the parameter that is displayed in the alarm message.

When the parameter in the alarm message is 5, the schedule number is not specified or abnormal schedule number other than 1~10 integral value is specified. Specify the correct softfloat schedule number with SFIGET.

When the parameter in the alarm message is 1,2,3,4, this error indicates that the software internal error occurs during SFIGET execution. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-119 PAUSE.G OVR not 100%

Cause: The override is not 100% when execute SFIGET program.

Remedy: Set override 100% and re-execute SFIGET program again.

SRVO-120 SERVO SFIVAL abnml (Scd:%d G:%d A:%d)

Cause: The difference between the integrator torque just before soft float execution starts and \$SFLT_GRPgroup[Schedule].\$SFLT_IVAL[axis] exceeded a specified value (\$SFLT_GRPgroup[Schedule].\$SFIVALLIM[axis]). Number in the bracket shows the softfloat schedule number, the group number, and the axis number in the group.

Remedy: Execute SFIGET program again, or make \$SFLT_GRPgroup[Schedule].\$SFIVALLIM[axis] larger.

SRVO-121 SERVO Excessive acc/dec time (G:%d)

Cause: Acceleration time is too long. Number in the bracket shows the group number.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-122 SERVO Bad last ang (internal) (G:%d)

Cause: The last angle update request does not match the current angle. Number in the bracket shows the group number.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-123 WARN Fan motor rev slow down (%d)

Cause: The rotation speed of fan motor on backplane unit is slow down. Number in the bracket shows which fan is abnormal.

- (1): fan above the slot1
- (2): fan above the slot2
- (3): both fans

Remedy:

1. Check the fan motor and its cables. Replace them if necessary.
2. Replace the backplane unit.

Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.

3. Replace the main board, and restore the image backup.

Refer to the Controller Maintenance Manual for more information.

Note: If SRVO-014 appears after SRVO-123, see the description for the SRVO-014.

SRVO-124 SERVO Check HardStop if Hit (G:%d A:%d)

Cause: If SRVO-024 Move Error excess alarm occurs and the group is not calibrated, this alarm is posted too. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-024.

SRVO-125 WARN Quick stop speed over (G:%d)

Cause: The speed during a quick stop (a type of stop invoked when a skip condition for high-speed skip is satisfied etc.) is too high. The number in the parentheses shows the group number.

Remedy: Reduce the speed when a quick stop is executed.

SRVO-126 SERVO Quick stop error (G:%d)

Cause: Another alarm has occurred during a quick stop (a type of stop invoked when a skip condition for high-speed skip is satisfied etc.). The number in the parentheses shows the group number.

Remedy: Refer to the remedy for the other alarm that has occurred at the same time. If SRVO-126 has occurred simultaneously with SRVO-024 or SRVO-050 at high-speed skip, reduce the teaching speed of the motion with high-speed skip instruction.

SRVO-127 SYSTEM Unsupported power supply software

Cause: Unsupported power supply software is loaded.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

Note: You need to cycle power to release this alarm.

SRVO-130 SERVO OHAL1(PS) alarm (G:%d A:%d)

Cause: Heat sink temperature of the main circuit of the Power Supply (α iPS) of the servo amplifier which drives the group/axis shown in the alarm message is abnormally high. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Check the rotation of the cooling fan of the Power Supply (α iPS).
2. Decrease the duty cycle of operation. (Decrease override.)
3. Replace the Power Supply (α iPS).

Note: You need to cycle power to release this alarm.

SRVO-131 SERVO LVAL alarm(G:%d A:%d)
SRVO-131 SERVO LVAL (PS) alarm(G:%d A:%d)

Cause: Control supply voltage in the Power Supply (α iPS) is abnormally low. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Replace the Power Supply (α iPS).
2. Replace the 6-axis amplifier.
3. Replace the Power Supply Unit.

Note: You need to cycle power to release this alarm.

SRVO-133 PAUSE.G FSAL(PS) alarm (G:%d A:%d)

Cause: The cooling fan for the Control circuit of the Power Supply (α iPS) of the servo amplifier which drives the group/axis shown in the alarm message stopped. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Check the status of the cooling fan. Replace it if it was abnormal.
2. Replace the Power Supply (α iPS).

Note: You need to cycle power to release this alarm.

SRVO-134 SERVO DCLVAL alarm (G:%d A:%d)
SRVO-134 SERVO DCLVAL (PS) alarm (G:%d A:%d)

Cause: The DC voltage (DC link voltage) of the main circuit power supply for the 6-axis amplifier is abnormally low. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. It is possible that an instant disconnection of power source causes this alarm. Check whether an instant disconnection occurred.
2. Verify that the input voltage to the controller is within the rated voltage. Verify that the transformer setting is correct.
3. Modify the program in order that robot and the auxiliary axis do not accelerate simultaneously in the system with the auxiliary axis.
4. In a system with an auxiliary axis, this alarm may occur if a reset signal is input at the same time as an emergency stop signal such as SVOFF or Fence open. Do not input a reset signal for 2 seconds after the emergency stop signal is input.
5. Replace the E-stop unit.
6. Replace the 6-axis amplifier.
7. Replace the Power Supply (α iPS).

Note: You need to cycle power to release this alarm.

SRVO-135 PAUSE.G FSAL alarm (G:%d A:%d)

Cause: The cooling fan for the control circuit on the auxiliary servo amplifier (α iSV) which drives the group/axis shown in the alarm message is stopped.

Remedy:

1. Replace the internal fan motor of the auxiliary servo amplifier (α iSV) of which axis is shown in the alarm message.
2. Replace the auxiliary servo amplifier (α iSV) of which axis is shown in the alarm message.

3. In a system with an auxiliary axis, this alarm may occur if a reset signal is input at the same time as an emergency stop signal such as SVOFF or Fence open. Do not input a reset signal for 2 seconds after the emergency stop signal is input.

Note: You need to cycle power to release this alarm.

SRVO-136 SERVO DCLVAL alarm (G:%d A:%d)

Cause: The DC voltage (DC link voltage) of the main circuit power supply on the auxiliary servo amplifier (α iSV) which drives the group/axis shown in the alarm message is abnormally low.

Remedy:

1. Check the wiring of the servo amplifier (α iSV) of which axis is shown in the alarm message.
2. Replace the servo amplifier (α iSV) of which axis is shown in the alarm message.

Note: You need to cycle power to release this alarm.

SRVO-138 SERVO SDAL alarm (G:%d A:%d)

Cause: A Pulsecoder signal error was detected by the software. The probable cause is noise or a failure (disconnection) in the Pulsecoder internal circuit. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. If a normal operation can be resumed by cycling power, it is likely that the cause is noise. Enhance the shielding of the Pulsecoder cable.
2. If a normal operation cannot be resumed by cycle power, the Pulsecoder is defective. Replace the motor, and perform mastering.

Note: You need to cycle power to release this alarm.

SRVO-156 SERVO IPMAL alarm (G:%d A:%d)

Cause: Abnormally high current flowed through the main circuit of the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-045.

Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-157 SERVO CHGAL alarm (G:%d A:%d) **SRVO-157 SERVO CHGAL (PS) alarm (G:%d A:%d)**

Cause: The capacitor on the servo amplifier was not charged properly within the specified time when the servo power turns on. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Probable causes:

1. Low voltage of power supply
2. Hardware failure

Remedy:

1. If auxiliary axis servo amplifier (α iSV) is installed, SRVO-157 could occur if \$SCR_GRP[group]. \$AXISORDER[axis] is changed manually. If you changed \$SCR_GRP[group]. \$AXISORDER[axis], restore the original value. If the original value is lost, document the events that led to the error, and contact your local FANUC representative. Then please inform the number in the alarm message accurately.
2. Check the input voltage to the controller when the servo power is turned on.
3. Check the input voltage to the controller is within the rated voltage and phase is not lack. And check the setting of the transformer is correct.
4. Check that the circuit breaker of the E-Stop unit is on and has not tripped.
5. Make sure that the servo amplifier CRRA12 and the emergency stop board CRRA12 connector are connected tightly. If power supply (α iPS) is used, make sure that the power supply (α iPS) CRRA12 connector is connected tightly.
6. In a system with an auxiliary axis, this alarm may occur if a reset signal is input at the same time as an emergency stop signal such as SVOFF or Fence open. Do not input a reset signal for 2 seconds after the emergency stop signal is input.
7. Replace the power supply (α iPS).
8. Replace the 6-axis amplifier.
9. Replace the E-stop unit.

Refer to the Controller Maintenance Manual for more information. When you contact your local FANUC representative, please inform the number in the alarm message accurately.

Note: You need to cycle power to release this alarm.

SRVO-170 SERVO Lack of DSP (ID:%d)

Cause: The number of DSPs on the axis card is lacking. Number in the bracket shows the alarm diagnostic information.

Remedy:

1. Check the software axis config (FSSB line number).
2. Replace the axis card with a card has enough DSPs for your system.
3. Add an auxiliary axis board.

SRVO-171 WARN MotorSpd lim/DVC (G:%d A:%d)

Cause: The motor speed was about to exceed the maximum limit (\$PARAM_GROUP[group].\$MOT_SPD_LIM[axis]). The motor speed was clamped to its maximum limit. Numbers in the bracket show the group number and the axis number in the group.

Remedy: The motor speed is internally clamped to its maximum limit. If the motion has a vibration, decrease the programmed speed so SRVO-171 does not occur since it might damage the mechanical part of the robot.

SRVO-179 WARN Motor torque limit (G:%d A:%d)

Cause: The torque of the axis has exceeded the limit. The motor moves with speed restraint. Number in the bracket shows the group number and the axis number in the group.

Remedy: You can continue to use as it is because the motor speed is internally limited. However it is recommended to relax the condition so that SRVO-179 is not posted.

SRVO-180 SYSTEM Control axis not exist

Cause: Controllable axis does not exist on any group.

Remedy: Execute auxiliary axis setting to add axis at controlled start.

Note: You need to cycle power to release this alarm.

SRVO-181 SYSTEM Up to 4 aux axes allowed in a group (G:%d)

Cause: 5 or more simultaneously movable auxiliary axes are detected on the group shown in the alarm message. Up to 4 auxiliary axes are allowed in a group.

Remedy: Delete the auxiliary axis at ROBOT MAINTENANCE menu to 4 or less.

Note: You need to cycle power to release this alarm.

SRVO-182 PAUSE.G Needed init. has not been done

Cause: This is an error internal to the system. A system variable or internal work memory has not been initialized normally.

Remedy:

1. Turn the power off and on again.
2. If the alarm is still issued, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-183 PAUSE.G ROBOT isn't ready

Cause: The servo is off.

Remedy: Remove the factor that turned servo off, and press [RESET] key.

SRVO-184 PAUSE.G Other task is processing

Cause: The data area that this instruction tried to use had been locked by another task.

Remedy:

1. If this alarm is occurred when the Payload Estimation is restarted, execute the Payload Estimation after it waits for a while.
2. Execute the Payload Estimation after power cycle.
3. If the alarm is still issued, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-185 PAUSE.G Data is for other group

Cause: This is an error internal to the system.

Remedy:

1. Execute the Payload Estimation after power cycle.
2. If the alarm is still issued, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-186 PAUSE.G Needed Data has not been got

Cause: This is an error internal to the system.

Remedy:

1. Execute the Payload Estimation after power cycle.
2. If the alarm is still issued, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-187 PAUSE.G Need specfing Mass

Cause: Estimating the load information of this type requires specifying the mass of the load.

Remedy: Specify the mass of the load before Payload Estimation.

SRVO-188 PAUSE.G Memory is lacking

Cause: The system could not allocate the enough memory area on the DRAM for Payload Estimation.

Remedy:

1. Execute the Payload Estimation after power cycle.
2. If the alarm is still issued, you need to update the memory size of DRAM. Document the events that led to the error, and contact your local FANUC representative.

SRVO-189 WARN I/O-Link livecode error

Cause: Communication on Pulsecoder connected to the main board was interrupted. If a force sensor is used, the error may have occurred in communication of the force sensor.

Remedy:

1. If other alarm has occurred at the same time in the alarm history, take measures to reset the alarm.
2. If force sensor related alarm has occurred at the same time in the alarm history, take measures to reset the alarm. Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.
3. Replace the main board, and restore the image backup.
4. Replace the CPU card.
5. If the alarm is still issued, document the events that led to the error, and contact your local FANUC representative.

SRVO-190 WARN Pulsecoder ID mismatch %d**Cause:**

1. The line tracking Pulsecoder has not been connected.
 2. A sensor other than the line tracking Pulsecoder is detected.
- Number in the bracket shows the alarm diagnostic information.

Remedy:

1. Check connection of the connector of the connecting cable.
2. Check the shielding of the above cable is connected securely to the grounding plate.
3. Replace the above cable.
4. Replace the motor.

Before executing the remedy 5, perform a complete controller back up as image to save all your programs and settings.

5. Replace the main board, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-191 SYSTEM Illegal Joint Speed (G:%d A:%d)

Cause: The motion command exceeded the specification. Number in the bracket shows the group number and the axis number in the group.

Remedy: This is an internal motion error. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

Note: You need to cycle power to release this alarm.

SRVO-198 PAUSE.G Alarm Detected

Cause: A deceleration stop has been started.

Remedy: After this alarm, an OVC or overheat alarm etc. is detected. See the remedy of those alarms for more information.

SRVO-199 PAUSE.G Controlled Stop

Cause: A Controlled Stop has been done.

Remedy: After this alarm, a Fence open or SVOFF input alarm is detected. See the remedy of those alarms for more information.

SRVO-204 SYSTEM External(SVEMG abnormal) E-stop

Cause: The external emergency stop push button was pressed, but the EMERGENCY STOP line was not disconnected.

Remedy: The troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-205 SYSTEM Fence open(SVEMG abnormal)

Cause: The fence circuit was opened, but the EMERGENCY STOP line was not disconnected.

Remedy: The troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-206 SYSTEM Deadman switch (SVEMG abnormal)

Cause: The teach pendant deadman switch was released while the teach pendant was enabled, but the EMERGENCY STOP line was not disconnected.

Remedy:

1. There might be a trouble with related parts. Refer to the Controller Maintenance Manual for more information.
2. If the hardware switch for Robot Isolation is attached to the controller, this alarm may occur due to incorrect setting of Robot Isolation. Please check the setting of \$ROBOT_ISOLC.

Note: You need to cycle power to release this alarm.

SRVO-207 SERVO TP switch abnormal or Door open

Cause: The EMERGENCY STOP line has been disconnected although there is no emergency stop factor.

Remedy:

1. Replace the teach pendant.
2. Replace the teach pendant cable.
3. Replace the operator's panel.
4. Replace the E-Stop unit.
5. Replace the servo amplifier.
6. If the alarm is still issued, document the events that led to the error, and contact your local FANUC representative.

SRVO-209 SERVO Robot-%d SVEMG abnormal

Cause:

1. An abnormality of the emergency stop line of robot 2 or greater was detected. Number in the message shows the robot number, which is numbered in order of 6-axes amplifier connection.
2. This alarm may occur when the amplifier type is set to 1 (6-axes servo amplifier) although the axis is driven by an auxiliary servo amplifier (α iSV).

Remedy:

1. Check the amplifier number and the amplifier type of the axis driven by an auxiliary servo amplifier (α iSV). If the amplifier type is set to 1 (6-axis servo amplifier), set it to 2 (auxiliary servo amplifier). If the amplifier number is wrongly set to the same number as another axis that is using a 6-axis servo amplifier, change the amplifier number and set the amplifier type to 2 (auxiliary servo amplifier).
2. Replace the E-Stop unit of the robot that is indicated by the alarm message.
3. Replace the servo amplifier of the robot that is indicated by the alarm message.

- If the alarm is still issued/occurs, document the events that led to the error, and contact your local FANUC representative.

SRVO-211 SERVO TP OFF in T1,T2

Cause: The teach pendant was disabled while the mode switch was set in the T1 or T2 position and robot 1 and 2 were disconnected. Alternatively, there is a failure in the hardware.

Remedy:

- Set the teach pendant enable/disable switch to enable, and press [RESET] key.
- If the alarm is still issued, document the events that led to the error, and contact your local FANUC representative.

**SRVO-213 SERVO E-STOP Board FUSE2 blown
SRVO-213 SERVO E-STOP Board FUSE2 blown %s**

Cause: A fuse (FUSE2) on the emergency stop board has blown, or no voltage is supplied to EXT24V.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). You can check the number of the safe I/O device in DCS Safe I/O device menu.

Remedy: Check whether the fuse (FUSE2) on the emergency stop board has blown, or check whether 24 V is applied between EXT24V and EXT0V of TBOP14(A-cabinet), TBOP10(B-cabinet). Refer to the Controller Maintenance Manual for more information.

(Note: With the software version 7DC3/43 or earlier, 7DC2/33 or earlier, 7DD0/16 or earlier of R-30iB Mate, and 7DF1/12 or earlier of R-30iB Mate Plus, R-30iB Compact Plus, when the fuse on the additional safety I/O board is blown, this message is wrongly displayed. If you are using the affected software version, please check the fuse on the additional safety I/O board. Then, take the measures described in SRVO-219 Safety I/O brd fuse1 blown.)

SRVO-214 SERVO 6ch amplifier fuse blown (R:%d)**Cause:**

- The fuse (FS2 or FS3) in the 6-axis servo amplifier has blown. Number in the bracket shows the number of 6-axis servo amplifier which detected the fuse blown.
- This alarm may occur when the amplifier type is set to 1 (6-axes servo amplifier) although the axis is driven by an auxiliary servo amplifier (α iSV).

Remedy:

- If the fuse is blown, eliminate the cause, and then replace the fuse.
- Check the amplifier number and the amplifier type of the axis driven by an auxiliary servo amplifier (α iSV). If the amplifier type is set to 1 (6-axis servo amplifier), set it to 2 (auxiliary servo amplifier). If the amplifier number is wrongly set to the same number as another axis that is using a 6-axis servo amplifier, change the amplifier number and set the amplifier type to 2 (auxiliary servo amplifier).
- Replace the 6-axis servo amplifier.

Refer to the Controller Maintenance Manual for more information.

SRVO-215 SERVO Brake Unit fuse blown (R:%d)**Cause:**

- The fuse on the brake unit is blown. Number in the bracket shows the number of 6-axis servo amplifier to which the brake unit is connected.
- If you use a local stop unit, the fuse on the local stop unit has blown.
- This alarm may occur when the amplifier type is set to 1 (6-axes servo amplifier) although the axis is driven by an auxiliary servo amplifier (α iSV).

Remedy:

- Replace the brake cable first because it might be defective. Then replace the fuse. Refer to the Auxiliary Axis Option Maintenance Manual for more information.
- Check the amplifier number and the amplifier type of the axis driven by an auxiliary servo amplifier (α iSV). If the amplifier type is set to 1 (6-axis servo amplifier), set it to 2 (auxiliary servo amplifier). If the amplifier number is wrongly set to the same number as another axis that is using a 6-axis servo amplifier, change the amplifier number and set the amplifier type to 2 (auxiliary servo amplifier).

SRVO-216 SERVO OVC (total) (%d)

Cause: The current flowing through the robot cable has exceeded its limit. Number in the bracket shows which amplifier number is abnormal.

Remedy:

1. Slow the motion of the robot where possible. Check the robot operation conditions. If the robot is used with a condition exceeding the duty or load weight robot rating, reduce the load condition value to the specification range.
2. Check the input voltage to the controller is within the rated voltage and no phase is lack. And check the setting of the transformer is correct.
3. Replace the 6-axis servo amplifier.

Refer to the Controller Maintenance Manual for more information.

SRVO-217	SERVO	E-STOP Board not found
SRVO-217	SERVO	E-STOP Board not found %s

Cause: The emergency stop board or additional Safe I/O device is not found when the controller power is turned on. When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Check whether fuse FUSE1 on the emergency stop board has blown. If the fuse has blown, check and correct the cause then replace the fuse.
2. Check the cable between emergency stop board and main board. Replace them if necessary.
3. Replace the E-Stop unit.
4. When the additional safety I/O board is connected, for the robot controller that the slave controller is connected such as M-2000iA, this alarm occurs. In this case, initialize the safety I/O device.
5. Check the cable between additional safe I/O device and emergency stop board. Replace them if necessary.
6. Replace the additional safe I/O device.
7. When controllers are not connected for multi-arm system, for example, there is only single controller for dual-arm system, this alarm occurs. In this case, connect the proper controllers.

Before executing the remedy 8, perform a complete controller back up as image to save all your programs and settings.

8. Replace the main board, and restore the image backup.

Refer to the Controller Maintenance Manual for more information.

SRVO-219	SERVO	Safety I/O brd fuse1 blown %s
SRVO-219	SERVO	Safety I/O brd fuse2 blown %s

Cause: A fuse on the additional Safe I/O board has blown. The number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy: Replace the the fuse on the additional Safe I/O board or the additional Safe I/O board. Refer to the Controller Maintenance Manual for more information.

SRVO-220	SERVO	SDI fuse blown

Cause: A fuse (FUSE1) for protecting the +24V output of the peripheral device interface on the main board has blown.

Remedy:

1. 24SDI and 0 V may be short-circuited. Check the peripheral device cable for any abnormality, and replace it if necessary.
2. Disconnet CRS40, and check whether the fuse (FUSE1) is still blown.

Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.

3. If the fuse (FUSE1) is still blown after the above remedy-2, replace the main board, and restore the image backup.
4. Replace the cable between the E-Stop unit and the servo amplifier.
5. Replace the cable between the main board and the E-Stop unit.
6. Replace the E-Stop unit.
7. Replace the servo amplifier.

Refer to the Controller Maintenance Manual for more information.

SRVO-221	SERVO	Lack of DSP (G:%d A:%d)

Cause: A controlled axis card corresponding to the set number of axes is not mounted. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check whether the set number of axes is valid. If the number is invalid, set the correct number.
2. Replace the axis control card with a card corresponding to the set number of axes.

SRVO-222 SERVO Lack of Amp (G:%d A:%d)

Cause: The servo amplifiers were not found at the power up sequence. Numbers in parentheses show the group number and the axis number in the group. (In software version 7DF1/14 or earlier, there is only one number in parentheses, and it means the amplifier number.)

Remedy:

1. When any LED on the servo amplifier does not light with the power supply of the controller turned on, the power is not supplied to the servo amplifier. Confirm whether there is neither disconnecting nor loosening in each connector on the servo amplifier and the E-Stop unit.
2. Turn off the power of the controller, disconnect the Pulsecoder cable JF1,JF2 from the servo amplifier and turn on the power of the controller again. If this alarm does not occur, the Pulsecoder cable may have ground fault. (The LED of the servo amplifier may display blinking '-' in this case.)
3. Check whether the servo amplifier for auxiliary axis for R-30iA is connected to R-30iB controller.
4. Check the software axis config (FSSB line number, hardware start axis number).
5. Replace the servo amplifier for auxiliary axis.
6. Replace the 6-axis servo amplifier.
7. Replace the optical fiber cable.
8. Replace the servo card or the auxiliary axis servo card.

SRVO-223 SERVO DSP dry run (%d,%d)

Cause: A servo DSP initialization failure occurred due to hardware failure or wrong software setting. Then, the software entered DSP dry run mode. The first number in the bracket shows the cause of the failure. The second number shows extra information.

Remedy: Perform an action according to the first number in the bracket that is displayed in the alarm message.

- 1: This is a warning due to \$SCR.\$STARTUP_CND=12.
 - 2,3,4,7: Replace a servo card.
 - 5: Invalid ATR setting. Software axis config (FSSB line number, hardware start axis number, amplifier number, and amplifier type) might be wrong.
 - 6: SRVO-180 (Control axis not exist) occurs simultaneously. Controllable axis does not exist on any group. Execute auxiliary axis setting to add axis at controlled start.
 - 8,10: SRVO-058 (FSSB init error) occurs simultaneously. Follow the remedy of SRVO-058.
 - 9: There is no amplifier that is connected to the servo card.
 - Check the hardware connection.
 - Check the optical fiber cable.
 - Check whether the servo amplifier power is supplied.
 - Check whether the fuse on the servo amplifier has blown.
 - Replace the optical fiber cable.
 - Replace the servo amplifier.
 - 11: Invalid axisorder setting. Non-existing axis number is specified. Software axis config (FSSB line number) might be wrong or auxiliary axis board is necessary.
 - 12: SRVO-059 (Servo amp init error) occurs simultaneously. Follow the remedy of SRVO-059.
 - 13,14,15: Document the events that led to the error, and contact your local FANUC representative.
 - 16: SRVO-181 (Up to 4 aux axes allowed in a group) occurs simultaneously. Follow the remedy of SRVO-181.
 - 17: Document the events that led to the error, and contact your local FANUC representative. (In software version 7DF1/14 or earlier, this alarm can occur also when software axis config is wrong. Check the software axis config (FSSB line number).)
- Note: You need to cycle power to release this alarm.

SRVO-224 PAUSE.G Slot changed (AuxBrd%d, %d>%d)

Cause: Hardware slot of the auxiliary axis board has been changed. The first number in the bracket shows the auxiliary axis board number (1,2). The second number shows the slot number before changed (8,9,11). The third number shows the slot number after changed (8,9,11).

Remedy: Please verify this change is valid. If this change is due to a simple mistake, please restore the hardware configuration to its original condition.

SRVO-225 SYSTEM Unsupported servo card (%d)

Cause: This servo card is not supported.

Remedy: R-30iB servo card is not supported for R-30iB Plus Controller.

Replace the servo card according to the number that is displayed in the alarm message.

1: Servo card, 2: Auxiliary axis board 1, 3: Auxiliary axis board 2

Note: Robot stops and Teach pendant freezes 1 minute after SRVO-225 occurs. CPU processing are all stopped for the purpose of preventing CPU malfunction because CPU temperature may increase if R-30iB servo card is used on R-30iB Plus Controller.

SRVO-226 SYSTEM Motor current setting mismatch (G:%d A:%d)

Cause: Mismatch between the motor current setting and the amplifier current is detected.

Remedy: Please change the motor current limit to a proper value.

SRVO-227 SERVO Amplifier fuse blown

Cause: The fuse (FUSE9) in the servo amplifier has blown.

Remedy:

1. Replace the FAN unit.

Before executing the remedy 2, perform a complete controller back up as image to save all your programs and settings.

2. Replace the servo amplifier board.
3. Replace the main board, and restore the image backup.
4. Replace the side board.

Refer to the Controller Maintenance Manual for more information.

SRVO-228 SERVO RI/O fuse blown

Cause: A fuse (FUSE4) for protecting the +24 V output of the end effector interface has blown.

Remedy:

1. RI/O or 24VR and 0 V may be short-circuited. Check the Robot connection cable and end effector cable for any abnormality, and replace it if necessary.

Before executing the remedy 2, perform a complete controller back up as image to save all your programs and settings.

2. Replace the main board, and restore the image backup.
3. Replace the Interface unit.

Refer to the Controller Maintenance Manual for more information.

SRVO-229 SERVO SDI fuse blown

Cause: A fuse (FUSE2) for protecting the +24 V output of the peripheral device interface on the main board has blown.

Remedy:

1. 24SDI and 0 V may be short-circuited. Check the peripheral device cable for any abnormality, and replace it if necessary.

Before executing the remedy 2, perform a complete controller back up as image to save all your programs and settings.

2. Replace the main board, and restore the image backup. Refer to the Controller Maintenance Manual for more information.

SRVO-230 SERVO Chain 1 abnormal %x,%x **SRVO-231 SERVO Chain 2 abnormal %x,%x** **SRVO-230 SERVO Chain 1 abnormal %x,%x %s** **SRVO-231 SERVO Chain 2 abnormal %x,%x %s**

Cause: A failure occurred in chain 1 (+24V) / chain2 (0V) of emergency stop circuit.

SRVO-230 is issued if such a mismatch that a contact connected on the chain 1 side is closed, and a contact on the chain 2 side is open occurs. SRVO-231 is issued if such a mismatch that a contact on the chain 1 side is open and a contact on the chain 2 side is closed occurs. If a chain error is detected, correct the cause of the alarm then reset the alarm according to the method described later.

The first number and second number in the alarm message show the alarm diagnostic information. When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Confirm the history of the alarm on the Alarm Log screen [4 Alarm / HIST]. If occurring with either 'Operator panel E-stop', 'Teach pendant E-stop' or 'Deadman switch released', the emergency stop button is released, and it presses again. For deadman switch, the deadman switch is gripped once and it released again. Chain abnormal state was released if occurring SRVO-236 'Chain failure is repaired'. Release the emergency stop button, deadman and press RESET.
 2. If this alarm cannot be reset, refer to the Controller Maintenance Manual for more information.
- After these measures, the release operation of chain abnormal state is necessary.

- a. Press the emergency stop button on the teach pendant or operator panel once and release it.
- b. Press F4 'RES_1CH' on the Alarm Active screen [4 Alarm / ACTIVE].
- c. Press [RESET] key.

SRVO-232 SERVO NTED input

Cause: The NTED (non-teacher enabling device) was detected.

Remedy:

1. Press the NTED (non-teacher enabling device), and then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

SRVO-233 SERVO TP OFF in T1,T2

Cause: The mode switch is set in the T1 or T2 position, and the teach pendant is disabled. There is also a failure in the hardware.

Remedy:

1. Enable the teach pendant in teaching operation. In other case the mode switch should be AUTO mode.
2. Replace the teach pendant.
3. Replace the teach pendant cable.
4. Replace the mode switch.
5. Replace the emergency stop board.
6. Replace the 6-axis servo amplifier.

Refer to the Controller Maintenance Manual for more information.

SRVO-235 SERVO Short term Chain abnormal

Cause: A temporary chain failure was detected. Probable cause of this alarm is a half release of DEADMAN switch or a half operation of emergency stop switch.

Remedy:

1. Press the emergency stop button on the teach pendant or the operator panel again. If occurring SRVO-236 Chain failure is repaired, release the emergency stop button and press RESET.
2. If this alarm cannot be reset, refer to the Controller Maintenance Manual for more information. After these measures, the release operation of chain abnormal state is necessary.
 - a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
 - b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
 - c. The reset button is pressed.

SRVO-236 WARN Chain failure is repaired

Cause: A chain failure was removed.

Remedy: This message shows that the chain failure had been removed when the system checked for the chain failure again. Press [RESET].

SRVO-237 WARN Cannot reset chain failure

Cause: An attempt to reset the chain failure failed.

Remedy: See the description for the SRVO-230, 231.

SRVO-244	SERVO	Chain 1 abnormal (Rbt:%d)
SRVO-245	SERVO	Chain 2 abnormal (Rbt:%d)
SRVO-246	SERVO	Chain 1 abnormal (EX_robot)
SRVO-247	SERVO	Chain 2 abnormal (EX_robot)
SRVO-244	SERVO	Chain 1 abnormal (Rbt:%d) %s
SRVO-245	SERVO	Chain 2 abnormal (Rbt:%d) %s
SRVO-246	SERVO	Chain 1 abnormal (EX_robot) %s
SRVO-247	SERVO	Chain 2 abnormal (EX_robot) %s

Cause: An abnormal chain occurred with the robot displayed in the bracket.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy: See the description for the SRVO-230, 231.

SRVO-248 SERVO Deadman switch status abnormal

Cause: The status of two DIs of DEADMAN switch do not match. (An abnormal chain of DEADMAN switch occurred.)

Remedy:

1. Release both deadman switches at once. If SRVO-236 Chain failure is repaired occurred, there is no hardware problem. This alarm could occur when deadman switch is pressed halfway. Press [RESET] key.
2. When SRVO-236 does not occur, please replace hardware in following order.
 - Teach pendant
 - Cable between teach pendant and the emergency stop board
 - The emergency stop board
 - Cable between the emergency stop board and the main board.
3. After measures, the release operation of chain abnormal state is necessary.
 - a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
 - b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
 - c. The reset button is pressed.

SRVO-251 SERVO DB relay abnormal (G:%d A:%d)

Cause: An abnormality was detected in the internal relay (DB relay) of the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-252 SERVO Current detect abnl (G:%d A:%d)

Cause: An abnormality was detected in the current detection circuit inside the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-253 SERVO Amp internal over heat (G:%d A:%d)

Cause: An overheat was detected inside the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-266 SERVO FENCE1 status abnormal**SRVO-267 SERVO FENCE2 status abnormal**

Cause: The fence circuit is abnormal. (An abnormal chain of FENCE signal occurred.)

Remedy: There is miswiring of the FENCE signal or the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. After these measures, the release operation of chain abnormal state is necessary.

- a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
- b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
- c. Press [RESET] key.

SRVO-268 SERVO SVOFF1 status abnormal**SRVO-269 SERVO SVOFF2 status abnormal**

Cause: The SVOFF circuit is abnormal. (An abnormal chain of SVOFF signal occurred.)

Remedy: There is miswiring of the SVOFF signal or the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. After these measures, the release operation of chain abnormal state is necessary.

- a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
- b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
- c. Press [RESET] key.

SRVO-270 SERVO EXEMG1 status abnormal**SRVO-271 SERVO EXEMG2 status abnormal**

Cause: The EXEMG circuit is abnormal. (An abnormal chain of EXEMG signal occurred.)

Remedy: There is miswiring of the EXEMG signal or the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. After these measures, the release operation of chain abnormal state is necessary.

- a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
- b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
- c. Press [RESET] key.

SRVO-274 SERVO NTED1 status abnormal
SRVO-275 SERVO NTED2 status abnormal

Cause: The NTED circuit is abnormal. (An abnormal chain of NTED signal occurred.)

Remedy: There is miswiring of the NTED signal or the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information. After these measures, the release operation of chain abnormal state is necessary.

- a. The emergency stop button on the teach pendant or operator panel is pressed once, and released.
- b. F4 'RES_1CH' is pressed on the Alarm Active screen [4 Alarm / ACTIVE].
- c. Press [RESET] key.

SRVO-276 SERVO Disable on T2 mode

Cause: The robot cannot operate in T2 mode.

Remedy: Set the mode switch to the T1 or AUTO position.

SRVO-277 SYSTEM Panel E-stop (SVEMG abnormal)

Cause: The emergency stop line was not disconnected although the emergency stop button on the operator's panel was pressed.

Remedy:

1. Release the operator panel EMERGENCY STOP button, then cycle controller power again.
2. When the operator panel EMERGENCY STOP button is pushed again, and this alarm occurs again, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note1: You need to cycle power to release this alarm.

Note2: This alarm might occur when the emergency stop button is pushed too slowly. In this case, the above remedy 2 is unnecessary.

SRVO-278 SYSTEM TP E-stop (SVEMG abnormal)

Cause: The EMERGENCY STOP button on the Teach Pendant was pressed, but the EMERGENCY STOP line was not disconnected.

Remedy:

1. Release the TP EMERGENCY STOP button, then the controller power cycle again.
2. When the TP EMERGENCY STOP button is pushed again, and this alarm occurs again, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

Note1: You need to cycle power to release this alarm.

Note2: This alarm might occur when the emergency stop button is pushed too slowly. In this case, the above remedy 2 is unnecessary.

SRVO-280 SERVO SVOFF input

Cause: The SVOFF (servo off signal) was input.

Remedy:

1. Find out what caused the SVOFF to be input, and remove the cause. Press RESET.
2. If this alarm cannot be reset, the troubles of related parts are thought. Refer to the Controller Maintenance Manual for more information.

SRVO-289 PAUSE.G Smooth Stop

Cause: A Smooth Stop has been done.

Remedy: After this alarm, a Fence open or SVOFF input alarm is detected. See the remedy of those alarms for more information.

SRVO-290 SERVO DClink HC alarm (G:%d A:%d)

Cause: The DC link current of the servo amplifier is abnormally high. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-045.

Note: You need to cycle power to release this alarm.

SRVO-291 SERVO IPM over heat (G:%d A:%d)

Cause: It was detected that the IPM element in the amplifier had overheated. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check whether the fan for cabinet ventilation is stopped and also check whether the vent hole is clogged. If necessary, clean or replace them.
2. If SRVO-291 is issued when the robot operating condition is severe, check the robot operating condition then relax the condition when possible.
3. If SRVO-291 is issued frequently, replace the servo amplifier.

Refer to the Controller Maintenance Manual for more information. About auxiliary axis, refer to the Auxiliary Axis Option Maintenance Manual.

Note: You need to cycle power to release this alarm.

SRVO-292 PAUSE.G EXT.FAN alarm (G:%d A:%d)

Cause: The external fan for the auxiliary servo amplifier (α iSV) which drives the group/axis shown in the alarm message is faulty.

Remedy: Replace the external fan for the auxiliary servo amplifier (α iSV) of which axis is shown in the alarm message. Refer to the Auxiliary Axis Option Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-293 SERVO HCAL (PS) alarm (G:%d A:%d)

Cause: The Power Supply (α iPS) or the servo amplifier (6-axis amplifier or α iSV) which drives the group/axis shown in the alarm message is faulty. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Replace the servo amplifier (6-axis amplifier or α iSV) of which axis is shown in the alarm message.
2. Replace the Power Supply (α iPS).

Note: You need to cycle power to release this alarm.

SRVO-294 PAUSE.G EXT.FAN(PS) alarm (G:%d A:%d)

Cause: The external fan for the Power Supply (α iPS) is faulty. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy: Replace the external fan for the Power Supply (α iPS).

SRVO-295 SERVO AMP com error (G:%d A:%d)

Cause: A communication error occurred in the 6-axis amplifier or between the Power Supply (α iPS) and the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Replace the 6-axis amplifier.
2. Replace the cable for communication the Power Supply (α iPS) and servo amplifier.
3. Replace the Power Supply (α iPS).
4. Replace the servo amplifier (α iSV).

Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-296 SERVO Excess regeneration1 (G:%d A:%d)

SRVO-296 SERVO Excess regeneration1 (PS) (G:%d A:%d)

Cause:

1. The cooling fan for the regenerative resistance of the Power Supply (α iPS) is abnormal.
2. The use condition is too hard for the regenerative resistance of the Power Supply (α iPS).

Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Check the fan for the regenerative resistor is working. If it stops, replace the fan.
2. Lower the teaching speed in the program.

3. Replace the Power Supply (α iPS).

Note: You need to cycle power to release this alarm.

SRVO-297	PAUSE.G	Improper input power (G:%d A:%d)
SRVO-297	PAUSE.G	Improper input power (PS) (G:%d A:%d)

Cause: The 6-axis servo amplifier or the power supply (α iPS) has detected the input voltage phase lack. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Check the input voltage of the controller whether phase is not lack.
2. Make sure that the 6-axis servo amplifier CRRA12 and emergency stop board CRRA12 connector are connected tightly. If the power supply (α iPS) is installed, make sure that the power supply (α iPS) CRRA12 connector is connected tightly.
3. Measure the secondary voltage between each phase at the main breaker, if phase loss is detected, replace the main breaker.
4. Measure the secondary voltage between each phase at the transformer, if phase loss is detected, replace the transformer.
5. Replace the E-stop unit.
6. Replace the 6-axis servo amplifier.
7. Replace the power supply (α iPS).

Refer to the Controller Maintenance Manual for more information.

Note: You need to cycle power to release this alarm.

SRVO-298	SYSTEM	SRVO velocity alm (G:%d A:%d)

Cause: The speed calculated in the servo software is abnormal. Number in the bracket shows the group number and the axis number in the group.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

Note: You need to cycle power to release this alarm.

SRVO-299	SERVO	Detect power failure
SRVO-299	SERVO	Detect power failure %s

Cause: Power failure was detected while robot (auxiliary axis) is moving, and robot (auxiliary axis) stopped. Number in the bracket shows the alarm diagnostic information.

Remedy: Press [RESET] key to release this alarm.

SRVO-300	SERVO	Hand broken/HBK disabled
SRVO-301	SERVO	Hand broken/HBK dsbl (G:%d)

Cause: When a hand-broken signal was detected, the HBK setting is disabled. Number in the bracket shows the group number.

Remedy:

1. Check whether the hand-broken signal circuit is connected to the robot. If the circuit is connected to the robot, enable the hand-broken setting.
2. Press [RESET] key to release this alarm.

Refer to the Controller Maintenance Manual for more information.

SRVO-302	SERVO	Set Hand broken to ENABLE
SRVO-303	SERVO	Set HBK to ENABLE (G:%d)

Cause: When the HBK setting is disabled, a hand-broken signal was closed (not hand broken). The HBK setting is incorrect. Number in the bracket shows the group number.

Remedy:

1. Check whether the hand-broken signal circuit is connected to the robot. If the circuit is connected to the robot or the hand-broken signal is shorted, enable the hand-broken setting.
2. Press [RESET] key to release this alarm.

Refer to the Controller Maintenance Manual for more information.

SRVO-305 SYSTEM Unit Change (G:%d, %s)**Cause:** The robot model was changed.**Remedy:** Turn off and on the controller power supply.**SRVO-306 WARN CPU ready Timeout (Rbt:%d)****Cause:** Displayed robot arm did not start up within a fixed time.**Remedy:** Please confirm the robot arm is displayed with warning message.**SRVO-307 WARN HBK close/HBK enabled (G:%d)****Cause:** The HBK setting is enabled because a hand-broken signal was closed (not hand broken).**Remedy:** You do not have to do anything for this warning message.**SRVO-310 SERVO ABC Unexpected Motion (G:%d)****Cause:** A current robot position that software calculates is abnormal. Number in the bracket shows the group number.**Remedy:**

1. Mastering data could be incorrect. Confirm whether incorrect backup data is restored or mastering has been executed at the wrong position. In that case, execute mastering.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-315 PAUSE.G MPDT failed (G:%d A:%d)**Cause:** Magnetic Phase Detection (MPDT) for 3rd party motor failed. Number in the bracket shows the group number and the axis number in the group. Probable causes are:

1. The motor power cable is disconnected.
2. The axis falls down by the gravity during performing of MPDT.
3. Other alarm occurs during performing of MPDT.
4. The motor cannot move due to large load or friction.

Remedy:

1. Check whether the motor power cable is connected correctly.
2. MPDT cannot be applied for gravity axis. If possible, change the posture.
3. Remove the reason of other alarms which occurred at same time.
4. Check whether the axis which requires to perform MPDT does not contact with any object.
5. Confirm that brake is not engaged.

SRVO-316 PAUSE.G MPDT time is up (G:%d A:%d)**Cause:** Magnetic Phase Detection (MPDT) process time is up. Number in the bracket shows the group number and the axis number in the group. Probable causes are:

1. The axis fell down because of gravity during performing of MPDT.
2. Other alarms occurred during performing of MPDT.

Remedy:

1. MPDT cannot be applied for gravity axis. If possible, change the posture.
2. Remove the reason of other alarm which occurred at the same time.

SRVO-317 PAUSE.G MPDT cannot start (Machine Lock)**Cause:** Magnetic Phase Detection (MPDT) process cannot start because machine lock is enabled for that group.**Remedy:** Disable machine lock for that group. Start Magnetic Phase Detection (MPDT) process again.**SRVO-318 PAUSE.G MPDT cannot start (SRDY Off)****Cause:** Magnetic Phase Detection (MPDT) process cannot start because servo ready (SRDY) is off.**Remedy:** Remove the reason of servo ready (SRDY) off and then press [RESET] key. Start Magnetic Phase Detection (MPDT) process again.**SRVO-323 WARN Torque limit (G:%d A:%d L:%d)****Cause:** Torque limit reached. Number in the bracket shows the group number, the axis number in the group, and the line number of the TP program.**Remedy:** Modify TP programd to be less aggressive.

SRVO-324 WARN Disturbance excess (G:%d A:%d L:%d)

Cause: Disturbance estimated in the software exceeds the threshold value. There is possibility that SRVO-050 occurs when the robot runs leaving this warning. Number in the bracket shows the group number, the axis number in the group, and the line number of the TP program.

Remedy:

1. Check whether the payload (mass, center of gravity, and inertia) are set correctly.
2. Check whether the applied load exceed the rating. If so, reduce the applied load.
3. If this alarm occurs when the robot is used after long time interval or when the temperature is very low, run the robot with low speed for a while before running with normal speed.

SRVO-325 SERVO Alarm %d

Cause: Varies by alarm number:

- Alarm 101: Fail to send command to MPC (DPRAM buffer full)
- Alarm 102: Fail to send command to DSP (DSP common buffer full)
- Alarm 103: Fail to send command to FLTR
- Alarm 105: Illegal axis number
- Alarm 106: CPMCWT was OFF when first command
- Alarm 107: NOCPMC is detected
- Alarm 108: ANACC is detected
- Alarm 109: Limit error is detected
- Alarm 255: Software internal error occurred.

Remedy: Please turn on servo again. If this alarm cannot be reset, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-326 SERVO Abnormal Mcmd (G:%d A:%d)

Cause: The different between motion command and machine pulse exceeded specified threshold. Number in the bracket shows the group number and the axis number in the group.

Remedy: Internal motion error. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-327 SERVO Cart error excess (G:%d,%s)

Cause: The servo positional error on the cartesian coordinates exceeds a specified value (\$PARAM2_GRP[group].\$CARTERRLIM). The first parameter which is shown in the alarm message shows the group number. The second parameter shows which cartesian direction (X/Y/Z/Euclidean distance) the servo positional error exceeds the threshold.

Remedy: Perform the same action as that described for SRVO-023 Stop error excess. However, in the case of power failure or emergency stop, it is probably caused by insufficient torque due to low voltage of power supply.

SRVO-328 SERVO Retry count err (G:%d A:%d Enc:%d)

Cause: The retry count of the encoder that the encoder number is shown in the alarm message exceeded a limit value of \$PLS_ER_LIM when \$PLS_ER_CHK=1. The first parameter which is shown in the bracket shows the group number of the hardware axis that the encoder is assigned. The second parameter shows the axis number in the group of the hardware axis that the encoder is assigned. The third parameter shows the encoder number.

Remedy: It is likely that the encoder has malfunctioned due to noise or the encoder is abnormal.

1. Check if there exists a noise source near the encoder.
2. Replace the encoder.
3. Replace the encoder cable.
4. Replace the Line tracking I/F board.
5. If the error is not cleared with the above remedies, see the description for the SRVO-090 DTERR alarm.

SRVO-329 SERVO FB comp cnt err (G:%d A:%d Enc:%d)

Cause: The position feedback compensation count of the encoder that the encoder number is shown in the alarm message exceeded a limit value of \$PLS_CMP_LIM when \$PLS_ER_CHK=1. The first parameter which is shown in the bracket shows the group number of the hardware axis that the encoder is assigned. The second parameter shows the

axis number in the group of the hardware axis that the encoder is assigned. The third parameter shows the encoder number.

Remedy: It is likely that the encoder has malfunctioned due to noise or the encoder is abnormal.

1. Check if there exists a noise source near the encoder.
2. Replace the encoder.
3. Replace the encoder cable.
4. Replace the Line tracking I/F board.
5. If the error is not cleared with the above remedies, see the description for the SRVO-090 DTERR alarm.

SRVO-330 SERVO Retry count err (G:%d A:%d)

Cause: The retry count of the Pulsecoder exceeded a limit value of \$PLS_ER_LIM when \$PLS_ER_CHK=1. The first parameter which is shown in the bracket shows the group number of the Pulsecoder. The second parameter shows the axis number in the group of the Pulsecoder.

Remedy: It is likely that the Pulsecoder has malfunctioned due to noise or the Pulsecoder is abnormal.

1. Check if there exists a noise source near the Pulsecoder.
2. Replace the motor.
3. Replace the Pulsecoder cable.
4. Replace the servo amplifier.
5. If the error is not cleared with the above remedies, see the description for the SRVO-068 DTERR alarm.

Note: Normally, this alarm does not occur after factory shipment.

SRVO-331 SERVO FB comp cnt err (G:%d A:%d)

Cause: The position feedback compensation count of the Pulsecoder exceeded a limit value of \$PLS_CMP_LIM when \$PLS_ER_CHK=1. The first parameter which is shown in the bracket shows the group number of the Pulsecoder. The second parameter shows the axis number in the group of the Pulsecoder.

Remedy: It is likely that the Pulsecoder has malfunctioned due to noise or the Pulsecoder is abnormal.

1. Check if there exists a noise source near the Pulsecoder.
2. Replace the motor.
3. Replace the Pulsecoder cable.
4. Replace the servo amplifier.
5. If the error is not cleared with the above remedies, see the description for the SRVO-068 DTERR alarm.

Note: Normally, this alarm does not occur after factory shipment.

SRVO-332 SERVO Power off to reset CMAL

Cause: Power off is required to reset the CMAL alarm.

Remedy: Turn off/on the controller, and then, perform the mastering.

SRVO-333 SERVO Power off to reset

Cause: Power off is required.

Remedy: Turn off/on the controller.

SRVO-334 SYSTEM I/O-Link internal error

Cause: A software internal error occurred.

Remedy:

1. Cycle power to release this alarm.
2. If this alarm cannot be reset, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-335 SERVO DCS OFFCHK alarm %x,%x SRVO-335 SERVO DCS OFFCHK alarm %x,%x %s

Cause: A failure was detected in the safety signal input circuit.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Replace the emergency stop board.
2. In case of B-cabinet, replace the optional safety I/O board.

Note: You need to cycle power to release this alarm.

SRVO-336 SERVO DCS RAMCHK alarm %x,%x

Cause: DRAM failure is detected.

Remedy:

1. Check the other alarms for more information.
2. Replace the CPU card.

Before executing the remedy 3, perform a complete controller back up as image to save all your programs and settings.

3. Replace the main board, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-337 SERVO DCS PRMCHK alarm %x,%x

Cause: DCS parameter error is detected.

- When controller power is cycled without pressing F4"OK" in the DCS apply menu, this alarm occurs.
- When an image restore is done and 'Yes' is selected for initialize DCS parameter, this alarm occurs.
- When an image restore is done and 'No' is selected for initialize DCS parameter, if the previous DCS parameters are different from what is in the image file, this alarm occurs.
- When "SYST-289 Cannot apply to DCS parameter" occurs at APPLY of DCS parameter, this alarm may occur after cycle power.
- When auto software update is done as an item in a DCS menu is changed, the alarm "SYST-212 Need to apply to DCS param" occurs, and the "Apply to DCS parameter" procedure is not done, this alarm occurs.

Remedy:

1. Do an APPLY of the DCS parameters.
2. Load backup files.
3. Replace the CPU card.

Before executing the remedy 4, 5, perform a complete controller back up as image to save all your programs and settings.

4. Replace the FROM/SRAM module, and restore the image backup.
5. Replace the main board, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-338 SERVO DCS FLOW alarm %x,%x

Cause: DCS process error is detected.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-339 SERVO DCS MISC alarm %x,%x

Cause: DCS process error is detected.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-340 SERVO DCS T1 TCP speed (G %d) %x,%x

Cause: The TCP speed exceeds 250mm/sec in T1 mode. When robot is moved by Shift+Reset operation to recover from alarm of Position check function, this alarm may occur even though T1 mode speed check function is disabled. Number in the bracket shows the group number.

Remedy: Make the override lower.

SRVO-341 SERVO DCS T1 flange speed (G %d) %x,%x

Cause: The flange speed exceeds 250mm/sec in T1 mode. When robot is moved by Shift+Reset operation to recover from alarm of Position check function, this alarm may occur even though T1 mode speed check function is disabled. Number in the bracket shows the group number.

Remedy: Make the override lower.

SRVO-344 SERVO DCS GRP alarm (G %d) %x,%x

Cause: A software internal error has occurred. Number in the bracket shows the group number.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-347 SERVO DCS AXS alarm (G %d, A%d) %x,%x

Cause: A software internal error has occurred. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

**SRVO-348 SERVO DCS MCC OFF alarm %x,%x
SRVO-348 SERVO DCS MCC OFF alarm %x,%x %s**

Cause: A command was issued to turn off the magnetic contactor, but the magnetic contactor was not turned off.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. If a signal is connected to the E-stop unit CRMA74, check whether there is a problem in the connection destination.
2. Check whether the FUSE4 on emergency stop board is blown.
3. Replace the E-stop unit.

Note: You need to cycle power to release this alarm.

**SRVO-349 SERVO DCS MCC ON alarm %x,%x
SRVO-349 SERVO DCS MCC ON alarm %x,%x %s**

Cause: A command was issued to turn on the magnetic contactor, but the magnetic contactor was not turned on.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Replace the E-Stop unit.
2. Replace the servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-350 SERVO DCS CPU alarm %x,%x

Cause: An error occurred in the RAM self test.

Remedy:

1. Replace the CPU card.

Before executing the remedy 2, perform a complete controller back up as image to save all your programs and settings.

2. Replace the main board, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-351 SERVO DCS CRC alarm %x,%x

Cause: An error occurred in the safety software CRC test.

Remedy:

Before executing the remedy 1, perform a complete controller back up as image to save all your programs and settings.

1. Replace the FROM/SRAM module, and restore the image backup.

Note: You need to cycle power to release this alarm.

SRVO-352 SERVO DCS COUNT1 alarm %x,%x

Cause: The safety software does not run with the proper timing.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-353 SERVO DCS COUNT2 alarm %x,%x

Cause: The safety software does not run with the proper timing.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-354 SERVO DCS DICLK alarm %x,%x

Cause: The safety software does not run with the proper timing.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-355 SERVO DCS ITP_TIME alarm %x,%x

Cause: The safety software does not run with the proper timing.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-356 SERVO DCS ITP_SCAN alarm %x,%x

Cause: The safety software does not run with the proper timing.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-357 SERVO DCS ENABLED alarm %x,%x

Cause:

1. Cartesian Position Check, Cartesian Speed Check or T1 Mode Speed Check is enabled for a motion group that does not exist.
2. Joint Position Check or Joint Speed Check is enabled for an axis that does not exist.
3. Joint Position Check or Joint Speed Check is enabled for an axis that is excluded.
4. Cartesian Position Check, Cartesian Speed Check or T1 Mode Speed Check is enabled for a motion group that has an excluded axis that is not an auxiliary extended axis.
5. Joint Position Check is enabled for an axis that is speed only.
6. Cartesian Position Check or Cartesian Speed Check is enabled for a motion group that has a speed only axis that is not an auxiliary extended axis.

Remedy: Disable Joint Position Check, Joint Speed Check, Cartesian Position Check, Cartesian Speed Check or T1 Mode Speed Check.

Note: You need to cycle power to release this alarm.

SRVO-358 SERVO DCS INVPRM alarm %x,%x

Cause: Invalid data is set in the DCS parameters.

Remedy: Check DCS setting. Load backup files that were saved when the parameters were correct.

Note: You need to cycle power to release this alarm.

SRVO-359 SERVO DCS SYSTEM alarm %x,%x

Cause:

1. When config Signature Date/Time is ACTUAL in DCS CIP Safety menu, System clock setting is invalid. (Valid year is 2004-2150.)
2. Invalid data is set in the DCS parameters.

Remedy:

1. Set Config Signature Date/Time to FIXED, or set correct date/time to system clock.
2. Check DCS setting. Load backup files that were saved when the parameters were correct.

Note: You need to cycle power to release this alarm.

SRVO-360 SERVO DCS CC_TCP alarm (G %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-361 SERVO DCS CC_FP alarm (G %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-362 SERVO DCS CC_TCPS alarm (G %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-363 SERVO DCS CC_FPS alarm (G %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-364 SERVO DCS PRMCRC alarm (G %d) %x,%x

Cause: This robot model is not supported. Number in the bracket shows the group number.

1. When the positioner is not a Basic Positioner with Known Kinematics, this alarm occurs.
2. When FANUC Positioner is used with coordinated motion and "unknown point calibration" has been executed, this alarm might occur by adding the option "DCS Position/Speed Check function".
3. When mount angle 2 of Top Mount Robot is not 0, this alarm occurs.
4. If this alarm occurs immediately after loading a backup, the flange type setting before loading the backup may differ from the flange type setting recorded in the loaded backup.

Remedy:

1. To use Position/Speed Check function, the positioner must be a Basic Positioner with Known Kinematics.
2. Execute Robot Maintenance for the FANUC Positioner group in Controlled Start. After executing Robot Maintenance, execute "known four point calibration" or "known direct calibration" in order to use coordinated motion. (If the software version is 7DC3/50, DF1/17 or later, "unknown point calibration" is also available for CD_pair calibration).
3. To use Position/Speed Check function, set mount angle 2 of Top Mount Robot to 0.
4. This alarm can be cleared by executing Robot Maintenance for the group in which the alarm has occurred in Controlled Start. After executing Robot Maintenance, perform a Cold Start and apply to DCS parameters. Confirm that the alarm no longer occurs, then load the backup again.

In the case of 1-3 above, this alarm can be cleared by setting \$DCS_CFG.\$EXCLUDE[Group number] to -1, but in this case, Position/Speed Check function cannot be used for this group. After setting \$DCS_CFG.\$EXCLUDE, you need to apply to DCS parameters and cycle power.

If the DCS Position/Speed Check function is not used, this alarm can also be cleared by re-installation without the "DCS Position/Speed Check function" option.

SRVO-365 SERVO DCS FB_CMP alarm (G %d, A %d) %x,%x

Cause: Difference between position command and position feedback exceeds position tolerance. The same cause as 'SRVO-023 Stop error excess' or 'SRVO-024 Move error excess' is expected. Number in the bracket shows the group number and the axis number in the group.

Remedy: See the description for the SRVO-023.

Check the setting data displayed in the DCS robot setup menu.

SRVO-366 SERVO DCS FB_INFO alarm (G %d, A %d) %x,%x

Cause: Invalid data is set in DCS parameter for axis number. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check the setting data displayed in the DCS robot setup menu.

Note: You need to cycle power to release this alarm.

SRVO-367 SERVO DCS CC_JPOS alarm (G %d, A %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-368 SERVO DCS CC_JSPD alarm (G %d, A %d) %x,%x

Cause: Results of 2 CPU are different. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-370 SERVO SVON1 status abnormal

SRVO-371 SERVO SVON2 status abnormal

SRVO-370 SERVO SVON1 status abnormal %s

SRVO-371 SERVO SVON2 status abnormal %s

Cause: A chain alarm was detected with the emergency stop board internal signal (SVON).

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy: Replace the emergency stop board.

Note1: For the procedure of recovery from this alarm, see the descriptions for the SRVO-230 and SRVO-231.

Note2: If this alarm is issued, do not reset the chain error alarm until the failure is identified and repaired. If robot use is continued with one of the duplicate circuits being faulty, safety may not be guaranteed when the other circuit fails.

SRVO-372	SERVO	OPEMG1 status abnormal
SRVO-373	SERVO	OPEMG2 status abnormal

Cause: A chain alarm was detected with the emergency stop switch on the operator's panel.

Remedy:

1. Replace the emergency stop board.
2. Replace the teach pendant cable.
3. Replace the teach pendant.
4. Replace the emergency stop button on the operator's panel.

Note1: For the procedure of recovery from this alarm, see the descriptions for the SRVO-230 and SRVO-231.

Note2: If this alarm is issued, do not reset the chain error alarm until the failure is identified and repaired. If robot use is continued with one of the duplicate circuits being faulty, safety may not be guaranteed when the other circuit fails.

SRVO-374	SERVO	MODE11 status abnormal
SRVO-375	SERVO	MODE12 status abnormal
SRVO-376	SERVO	MODE21 status abnormal
SRVO-377	SERVO	MODE22 status abnormal

Cause: A chain alarm was detected with the mode switch signal.

Remedy:

1. Check the mode switch and its cable. Replace them if a defect is found.
2. Replace the emergency stop board.

Note1: For the procedure of recovery from this alarm, see the descriptions for the SRVO-230 and SRVO-231.

Note2: If this alarm is issued, do not reset the chain error alarm until the failure is identified and repaired. If robot use is continued with one of the duplicate circuits being faulty, safety may not be guaranteed when the other circuit fails.

SRVO-378	SERVO	SFDI xx status abnormal
SRVO-378	SERVO	SFDI xx status abnormal %s

Cause: A chain alarm was detected with the SFDI signal. The 'xx' in the alarm message shows signal name such as 'SFDI11'. The detected status is that the displayed signal is open and the other signal for dual channel input is closed.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

In the system that has robot disable switch, when the alarm of the following signals occurs in the emergency stop board of 1st slave controller, it means the status abnormal of the robot disable switch.

SFDI112 : Robot 1 disable switch chain 1 status abnormal.
 SFDI212 : Robot 1 disable switch chain 2 status abnormal.
 SFDI113 : Robot 2 disable switch chain 1 status abnormal.
 SFDI213 : Robot 2 disable switch chain 2 status abnormal.
 SFDI114 : Robot 3 disable switch chain 1 status abnormal.
 SFDI214 : Robot 3 disable switch chain 2 status abnormal.
 SFDI115 : Robot 4 disable switch chain 1 status abnormal.
 SFDI215 : Robot 4 disable switch chain 2 status abnormal.

In the system with Teach Pendant Hot Swap function, the alarm of SFDI11 or SFDI21 can occur when Teach Pendant is connected / disconnected without pushing the disconnect switch, or in AUTO mode.

Remedy: In case that the SFDI that the alarm occurs is not robot disable switch :

1. Check whether the circuitry connected to the dual input signal (SFDI) is faulty.
2. Check whether the timing of the dual input signal (SFDI) satisfies the timing specification.
3. In case of B-cabinet, replace the optional safety I/O board.
4. Replace the emergency stop board.

In case that the SFDI that the alarm occurs is robot disable switch :

1. Replace robot disable switch.
2. Replace the cable between robot disable switch and emergency stop board.
3. Replace the emergency stop board.

In case that the alarm of SFDI11 or SFDI21 occurs in the system with Teach Pendant Hot Swap function:

1. If Teach Pendant is not connected / disconnected by the correct procedure of Teach Pendant How Swap function, recovery from this alarm by the procedure in the descriptions for the SRVO-230 and SRVO-231. Perform the correct procedure to connect /disconnect Teach Pendant.
2. If the alarm occurred even if Teach Pendant is connected /disconnected by the correct procedure, replace the emergency stop board and Teach Pendant Hot Swap hardware.

Note1: For the procedure of recovery from this alarm, see the descriptions for the SRVO-230 and SRVO-231.

Note2: If this alarm is issued, do not reset the chain error alarm until the failure is identified and repaired. If robot use is continued with one of the duplicate circuits being faulty, safety may not be guaranteed when the other circuit fails.

SRVO-386 SERVO Softfloat stroke lim (G:%d)

Cause: Certain axes reached stroke limit. Number in the bracket shows the group number.

Remedy: Use soft float with a wide margin.

SRVO-387 SERVO Softfloat impossible (G:%d)

Cause: The position or schedule is not proper. Number in the bracket shows the group number.

Remedy: Use soft float in the proper position and schedule.

SRVO-388 SERVO Softfloat singularity (G:%d)

Cause: Certain axes reached singularity. Number in the bracket shows the group number.

Remedy: Use soft float with a wide margin.

SRVO-389 WARN Start diag data recording.

Cause: Beginning to record diagnostic data.

Remedy: No remedy is required.

SRVO-390 WARN End diag data recording.

Cause: Diagnostic data recording is finished.

Remedy: No remedy is required.

SRVO-391 WARN Start diag data saving.

Cause: Beginning to save diagnostic data.

Remedy: No remedy is required.

SRVO-392 WARN End diag data saving.

Cause: Diagnostic data has been saved.

Remedy: No remedy is required.

SRVO-393 WARN Other diagnosis data is being recorded.

Cause: Other diagnostic data is being recorded.

Remedy: Wait until the recording is finished.

SRVO-394 WARN Reducer Abnormal (G %d, A %d)

Cause: iRDiagnosics - Robot Condition Detection Function has detected abnormality. Reducer may be degraded. Number in the bracket shows the group number and the axis number in the group.

Remedy: Check out the mechanical part of corresponding axis.

SRVO-397 WARN J2 Aggressive Motion(G:%d L:%d)

Cause: J2 motion is too aggressive. This warning means J2 motion has been slowed down.

Remedy: N/A.

SRVO-399 WARN TorsionCompException (ID:%d)

Cause: This is a message to notify that Torsion Compensation failed to execute. This message is shown by Tool Torsion Compensation option etc.

When ID is 0: robot is not mastered or not calibrated yet.

When ID is 1: an invalid schedule number is specified.

When ID is 2: an invalid tool number is specified in current schedule.

When ID is 3 or 4: direction is not defined.(in schedule to compensate along the direction defined by TCP velocity vector)

Remedy: When ID is 0: master and calibrate the robot.
 When ID is 1: specify valid schedule number.
 When ID is 2: specify valid tool number in current schedule.
 When ID is 3 or 4: in these schedules, start compensation while TCP is moving.

SRVO-401 SERVO CIP Safety comm. error %x,%x

Cause: CIP Safety communication error occurs.

Remedy: Check CIP Safety connection. Please set CIP Safety to bypass in DCS screen when safety PLC is not available but robot must move in standalone mode.

SRVO-402 SERVO DCS Cart. pos. limit (No.%d:%s, G %d, M %d) %02x

Cause: Cartesian Position Check function detected that a model is out of a safe zone.
 The first parameter : Cartesian Position Check No and comment.
 The second parameter (G) : Group number
 The third parameter (M) : User model number (0: Robot model)

Remedy: If the robot is actually out of the safe zone, press [SHIFT] key and [RESET] key, and jog the robot to the safe zone.

SRVO-403 SERVO DCS Cart. speed limit (No.%d:%s,G%d) %02x

Cause: Cartesian Speed Check function detected over speed.
 The first parameter : Cartesian Speed Check No and comment.
 The second parameter (G) : Group number

Remedy: Decrease robot speed.

SRVO-404 SERVO DCS Joint pos. limit (No.%d:%s, G %d, A %d) %02x

Cause: Joint Position Check function detected that an axis is out of a safe zone.
 The first parameter : Joint Position Check No and comment.
 The second parameter (G) : Group number
 The third parameter (A) : Axis number in the group

Remedy: If the robot is actually out of the safe zone, press [SHIFT] key and [RESET] key, and jog the robot to the safe zone.

SRVO-405 SERVO DCS Joint speed limit (No.%d:%s, G %d, A %d) %02x

Cause: Joint Speed Check function detected over speed.
 The first parameter : Joint Speed Check No and comment.
 The second parameter (G) : Group number
 The third parameter (A) : Axis number in the group

Remedy: Decrease Joint speed.

SRVO-406 SERVO DCS SSO SVOFF input %x,%x

Cause: SSO[1:C_SVOFF] is OFF.

Remedy: Check Safe I/O connect setting.

SRVO-407 SERVO DCS SSO Fence Open %x,%x

Cause: SSO[2:C_FENCE] is OFF.

Remedy: Check Safe I/O connect setting.

SRVO-408 SERVO DCS SSO Ext Emergency Stop %x,%x

Cause: SSO[3:C_EXEMG] is OFF.

Remedy: Check Safe I/O connect setting.

SRVO-409 SERVO DCS SSO Servo Disconnect %x,%x

Cause: SSO[4:C_SVOFF] is OFF.

Remedy: Check Safe I/O connect setting.

SRVO-410 SERVO DCS SSO NTED input %x,%x

Cause: SSO[5:C_NTED] is OFF.

Remedy: Check Safe I/O connect setting.

SRVO-411 SERVO DCS invalid mode %x,%x**Cause:** Invalid mode.**Remedy:** Select AUTO, T1 or T2.**SRVO-412 SERVO DCS COUNT3 alarm %x,%x****Cause:** DCS servo on process is stopped.**Remedy:** Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-413 SERVO DCS CC_SAFEIO alarm %x,%x**Cause:** Results of Safe I/O process by 2 CPU are different.

This alarm sometimes occur when the safety input signals on the emergency stop board and Safe I/O board such as External E-STOP or SFDI is changed repeatedly in the very short time.

Remedy: Check the connection of the safety input signals on emergency stop board and Safe I/O board.

Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-414 SERVO DCS WORK CRC alarm %x,%x**Cause:** DRAM failure is detected.**Remedy:** Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-415 SERVO DCS Invalid tool (G %d) %x,%x**Cause:**

1. Selected DCS tool frame number is not defined.
2. Verify I/O of DCS tool frame is not set in the selected DCS tool frame.
Number in the bracket shows the group number.

Remedy: Check DCS TCP setting.

Note: You need to cycle power to release this alarm.

SRVO-416 SERVO DCS Tool mismatch (G %d) %x,%x**Cause:** All Verify I/O of DCS tool frame are OFF or two or more Verify I/O are ON for more than 1sec. Number in the bracket shows the group number.**Remedy:** Check Verify I/O status.**SRVO-417 SERVO DCS APSP_C alarm (G %d) %x,%x****Cause:** Invalid DCS approach speed check parameter for Cartesian position check. Number in the bracket shows the group number.**Remedy:** Check DCS approach speed check parameter.

Note: You need to cycle power to release this alarm.

SRVO-418 SERVO DCS APSP_J alarm (G %d, A %d) %x,%x**Cause:** Invalid DCS approach speed check parameter for Joint position check. Number in the bracket shows the group number and the axis number in the group.**Remedy:** Check DCS approach speed check parameter.

Note: You need to cycle power to release this alarm.

SRVO-419 SERVO DCS PROFIsafe comm. error %x,%x**Cause:** PROFINET Safety communication error occurs.**Remedy:** Check PROFINET Safety connection. Please set PROFINET Safety to bypass in DCS screen when safety PLC is not available but robot must move in standalone mode.**SRVO-420 SERVO Safety FL-net comm. error %x,%x****Cause:** This alarm is occurred to set safety function by FL-net to safety side because DCS related alarm happens. Or Safety function by FL-net communication error occurs.**Remedy:** If DCS related alarm happens, it is the cause of this alarm. Remove the cause of the alarm and cycle power. If DCS related alarm doesn't happen, check Safety function by FL-net connection and settings.

SRVO-421 WARN Jnt phs not calibrated (G %d)

Cause: \$DMR_GRP[group].\$MASTER_DONE is not ready to be set to TRUE because Universal Joint phase calibration data is not set. Number in the bracket shows the group number.

Remedy: When you enter the mastering data via direct entry, enter Universal Joint phase calibration data and set \$DMR_M3_GRP[group].\$MASTER2_ENB = TRUE first. After that, set \$DMR_GRP[group].\$MASTER_DONE = TRUE.

SRVO-422 SERVO Shared TP E-Stop

Cause:

1. Emergency stop occurs on either controller in Shared Teach Pendant group.
2. Emergency stop occurs, because either controller in Shared Teach Pendant group is powered off.
3. Emergency stop occurs, because Safety function by FL-net does not work.
4. Emergency stop occurs, because configurations of Shared Teach Pendant function are disabled.

Remedy:

1. Release Teach Pendant, Operator Panel and External emergency stop on controllers in Shared Teach Pendant group.
2. Power on all controllers in Shared Teach Pendant group.
3. Check setting of Safety function by FL-net and Shared Teach Pendant function.
4. Check configurations of Shared Teach Pendant function.

SRVO-423 SERVO Shared TP: Disconnected state

Cause: This controller is disconnected from Shared Teach Pendant group because mode of all controllers in Shared Teach Pendant group. This robot cannot be operated.

Remedy: Change modes of all controllers in Shared Teach Pendant group to AUTO.

SRVO-424 SERVO Shared TP: Mode mismatch

Cause: Modes of all controllers in Shared Teach Pendant group are not matched. This robot cannot be operated.

Remedy: Change modes of all controllers in Shared Teach Pendant group to match.

SRVO-425 SERVO Shared TP: Configuration mismatch

Cause: Configurations of Shared Teach Pendant function are not matched among controllers in Shared Teach Pendant group.

Remedy: Check and change configurations of Shared Teach Pendant function.

SRVO-428 SERVO EQZ Motion too short (G:%d)

Cause: Length of EQ motion (distance between taught positions) was too short. Number in the bracket shows the group number.

Remedy: Modify your TP program to enhance the distance to the destination position of EQ motion. Typically you only need to increase the argument value to EQTCHPOS.

SRVO-429 WARN EQZ Bad robot posture (G:%d)

Cause: Because Equalization was infeasible at the desinated robot posture, motion was done in Ghost Run mode instead. Equalization requires that at least one axis among J1, J2 or J3 is sensitive to the reaction force from the part. This warning means there is no sensitive axis. Number in the bracket shows the group number.

Remedy: If possible, try to change the configuration (U/D, T/B) of the robot.

SRVO-430 PAUSE.G EQZ Not supported (G:%s)

Cause: Cannot start equalization because this robot does not support equalization. Number in the bracket shows the group number.

Remedy: Document the events that led to the error, and contact your local FANUC representative.

SRVO-431 SERVO EQZ Failed to start (%d)

Cause: Cannot start equalization for some reason.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-432 SERVO EQZ is aborted (%d)

Cause: Equalization was aborted for some reason, HOLD, E-STOP etc.

Remedy: Equalization is no longer effective in this motion. If you need to try the Equalization motion again, jog the robot away from the part, then restart from the line from the line before equalization motion.

SRVO-433 SERVO EQZ Dir not selected (G:%s)

Cause: Equalization Soft Direction is not selected. Number in the bracket shows the group number.

Remedy: Select Soft Direction via the setup screen.

SRVO-434 SERVO EQZ Bad robot posture (G:%d)

Cause: Equalization is infeasible at this robot posture. Equalization requires that at least one axis among J1, J2 or J3 is sensitive to the reaction force from the part. This alarm means there is no sensitive axis. Number in the bracket shows the group number.

Remedy: If possible, try to change the configuration (U/D, T/B) of the robot.

SRVO-435 SERVO EQZ Move Limit (G:%d)

Cause: Motion with equalization exceeded the Robot Move Limit. Number in the bracket shows the group number.

Remedy: This alarm indicates an overrun of the robot motion.

1. Check if the workpiece exists.
2. If this alarm is posted without an obvious overrun, increase Robot Move Limit via the setup menu.

SRVO-436 SERVO EQZ Stroke Limit (G:%d, A:%d)

Cause: Robot reached to its stroke range limit during Equalization motion. Number in the bracket shows the group number and the axis number in the group.

Remedy: If possible, try to change the configuration (F/N, U/D, T/B) and turn number of the robot.

SRVO-437 SERVO EQZ Singular (G:%d)

Cause: Robot wrist axis is near the singular point. In other words, J5 is near 0. Number in the bracket shows the group number.

Remedy: If possible, try to change the configuration (U/D, T/B) of the robot.

SRVO-438 SERVO EQZ Speed Excess (G:%d)

Cause: An instantaneous high speed motion was detected. One possible cause is that robot posture is bad (near SRVO-434 condition). Number in the bracket shows the group number.

Remedy: If possible, try to change the configuration (U/D, T/B) of the robot.

SRVO-439 SYSTEM EQZ Trq not restored (G %d A %d)

Cause: Ending process of Equalization motion was not normally done. Number in the bracket shows the group number and the axis number in the group.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

Note: Need power cycle to release this alarm.

SRVO-440 PAUSE.G EQZ Invalid argument

Cause: Some arguments to the KAREL is invalid.

Remedy: Correct the arguments to the KAREL.

SRVO-441 SERVO EQZ GunMntTyp not selected (G:%s)

Cause: Gun Mount Type is not selected. Number in the bracket shows the group number.

Remedy: Select Gun Mount Type via the setup screen.

SRVO-442 SERVO EQZ FUP time out (G:%d)

Cause: Robot kept moving when Equalization is about to end. Number in the bracket shows the group number.

Remedy: Check if the part is firmly fixed.

SRVO-443 PAUSE.G EQZ Pos not calculated

Cause: Destination position of Equalization motion is not calculated.

Remedy:

1. Check if EQTCHPOS is called before EQ start. If not called, add call EQTCHPOS before EQ start.
2. If EQTCHPOS causes SRVO-440 or other alarm, eliminate the cause of these alarms first.

SRVO-444 SERVO EQZ error (%s)

Cause: An error is detected during Equalization

Remedy:

When number in the bracket is 1: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

When number in the bracket is 2: Check if joint position when EQTCHPOS was called is within the motion stroke range.

SRVO-445 SERVO EQZ Can't use with softfloat (G:%d)

Cause: Both Equalization and Softfloat become enabled. Number in the bracket shows the group number.

Remedy: Modify program or setting so that both Equalization and Softfloat are not enabled at the same time.

SRVO-446 SERVO DCS LS Fence open %x,%x

Cause: In Auxiliary axis servo off (Local stop) function, the safe I/O assigned to the fence input is OFF when the auxiliary axis is not servo off condition. The value displayed in the message shows the No. of local stop that the alarm occurs. The value is hexadecimal, and each bit is corresponded to each item in DCS local stop menu (1:No.1, 2:No.2, 4:No.3: 8:No.4, 10:No.5, 20:No.6, 40:No.7, 80:No.8).

Remedy: Set the safe I/O assigned to the fence input to ON, or set the auxiliary axis servo to off.

SRVO-447 SERVO DCS LS STO-FB alarm %x,%x

Cause: In Auxiliary axis servo off (Local stop) function, mismatch of STO-OUT and STO-FB is detected. The value displayed in the message shows the No. of local stop that the alarm occurs. The value is hexadecimal, and each bit is corresponded to each item in DCS local stop menu (1:No.1, 2:No.2, 4:No.3: 8:No.4, 10:No.5, 20:No.6, 40:No.7, 80:No.8).

Remedy:

1. Check the setting of DCS local stop menu.
2. Check the system variable (\$LS_IOPORT[n].\$MO_GRP_NUM) and switch setting (SW1) of the servo amplifier (α SV). Refer to R-30iB Local Stop function with STO Maintenance and Order Manual (A-95028E) for more details. (This alarm occurs when the system variable (\$LS_IOPORT[n].\$MO_GRP_NUM) is set while the switch setting (SW1) of the servo amplifier (α SV) is "Not use".)
3. Check the connection between emergency stop board and servo amplifier (α SV).
4. Replace the cable between emergency stop board and servo amplifier (α SV).
5. Replace the emergency stop board.
6. Replace the servo amplifier (α SV).

Note: You need to cycle power to release this alarm.

SRVO-448 SERVO DCS PLSCHK alarm (SFDO%d)**SRVO-448 SERVO DCS PLSCHK alarm (SFDO%d) %s**

Cause: The monitored signal of safety output is not OFF even though OFF pulse is output. The signal name that the trouble is detected is displayed after the alarm message.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Check the cabling of safety output circuit.
2. In case of B-cabinet, replace the optional safety I/O board.
3. Replace the emergency stop board.

Note: You need to cycle power to release this alarm.

SRVO-449 SERVO DCS DCS DOMON alarm (SFDO%d)**SRVO-449 SERVO DCS DCS DOMON alarm (SFDO%d) %s**

Cause: The monitored signal of safety output is different from the output command. The signal name that the trouble is detected is displayed after the alarm message.

When two or more Safe I/O devices are connected, the number of the safe I/O device that the alarm occurs is displayed in the end of the message such as (1). The safe I/O device number is displayed in DCS Safe I/O device menu.

Remedy:

1. Check the cabling of safety output circuit.

2. In case of B-cabinet, replace the optional safety I/O board.

3. Replace the emergency stop board.

Note: You need to cycle power to release this alarm.

SRVO-450 SERVO Drvoff circuit fail (G:%d A:%d)

Remedy:

1. An error was found in the two drive off inputs on the servo amplifier (6-axis amplifier, α iSV) which drives the group/axis shown in the alarm message. If this alarm is detected on the 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.
2. If you use Auxiliary axis servo off (Local stop) function, the system variable (\$LS_IOPORT[n].\$MO_GRP_NUM) and switch setting (SW1) of the servo amplifier are mismatched.

Remedy:

1. If this alarm was detected on the 6-axis amplifier, check the connection and wiring of drive off inputs on the 6-axis amplifier (CRMB16).
2. If this alarm was detected on the auxiliary axis amplifier (α iSV), check the connection and wiring of drive off inputs on the auxiliary axis amplifier (JX8).
3. If you use Auxiliary axis servo off (Local stop) function, check the system variable (\$LS_IOPORT[n].\$MO_GRP_NUM) and switch setting (SW1) of the servo amplifier. Refer to R-30iB Local Stop function with STO Maintenance and Order Manual (A-95028E) for more details. (This alarm occurs when the switch setting (SW1) of the servo amplifier is "Use" while the system variable (\$LS_IOPORT[n].\$MO_GRP_NUM) is not set correctly.)
4. Replace the servo amplifier (6-axis servo amplifier, α iSV).
5. Replace the safety I/O board or the emergency stop board.

Note: You need to cycle power to release this alarm.

SRVO-451 SERVO Internal S-BUS fail (G:%d A:%d)

Cause: An error is found in the serial bus communication in the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-452 SERVO ROM data failure (G:%d A:%d)

Cause: An error is found in the ROM data in the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-453 SERVO Low volt driver (G:%d A:%d)

Cause: Driver supply voltage in the servo amplifier is low. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-454 SERVO CPU BUS failure (G:%d A:%d)

Cause: An error was found in CPU bus data in the amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-455 SERVO CPU watch dog (G:%d A:%d)

Cause: An error occurred in CPU operation in the amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-456 SERVO Ground fault (G:%d A:%d)

Cause: An error is found in the motor current detection data in the servo amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis servo amplifier, αiSV).

Note: You need to cycle power to release this alarm.

SRVO-457 SERVO Ground fault(PS) (G:%d A:%d)

Cause: Ground fault occurs in the motor power line. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier. Number in the bracket shows the group number and the axis number in the group.

Remedy:

1. Check the ground fault of the motor and the motor power cable.
2. Replace the Power Supply (αiPS).
3. Replace the servo amplifier (6-axis servo amplifier, αiSV).

Note: You need to cycle power to release this alarm.

SRVO-458 SERVO Soft thermal(PS) (G:%d A:%d)

Cause: The root-mean-square current value which is calculated internally by the Power Supply (αiPS) exceeds the maximum permissible value. This alarm is issued to protect the Power Supply (αiPS) from damage of thermal destruction. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Probable cause:

1. Overload
2. External force to the robot
3. Disconnection of the brake cable
4. Insufficient torque by low voltage of power supply
5. Brake failure (includes mis-setting of brake number for auxiliary axis)
6. Auxiliary brake unit failure for auxiliary axis
7. The Power Supply (αiPS) failure
8. The servo amplifier failure

Remedy:

1. Check whether the duty and applied load exceed the rating. If so, reduce the duty or applied load.
2. Check whether the robot is pushed or pulled by external force. If so, remove the external force to the robot or modify the taught point.
3. Check whether the brake cable/connector are connected correctly.
4. Measure the supplied voltage. Then, check whether the voltage is matched to the controller specification.
5. Check whether the motor brake is released properly when reset or the robot moves. First of all, check whether the setting of brake number is correct when this alarm occurs on auxiliary axis.
6. When this alarm occurs on the auxiliary axis which brake is controlled by the auxiliary brake unit, check the fuse on the auxiliary brake unit.
7. Replace the Power Supply (αiPS).
8. Replace the servo amplifier (6-axis servo amplifier, αiSV).

Note: You need to cycle power to release this alarm.

SRVO-459 SERVO Excess regeneration2 (G:%d A:%d)

SRVO-459 SERVO Excess regeneration2 (PS) (G:%d A:%d)

Cause: An error is found in the discharge circuit in the 6-axis servo amplifier. Number in the bracket shows the group number and the axis number in the group. This alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy: Replace the 6-axis servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-460 SERVO Illegal parameter (G:%d A:%d)

SRVO-460 SERVO Illegal parameter (PS) (G:%d A:%d)

Cause: An error is found in the setting of the parameters in the Power Supply (αiPS) or the 6-axis servo amplifier. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Replace the Power Supply (αiPS).
2. Replace the 6-axis servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-461 SERVO Hardware error (G:%d A:%d)
SRVO-461 SERVO Hardware error (PS) (G:%d A:%d)

Cause: An error is found in the circuit in the Power Supply (α PS) or the 6-axis servo amplifier. Number in the bracket shows the group number and the axis number in the group. For 6-axis amplifier, this alarm is posted on the 1st axis and 2nd axis or the 1st axis, 2nd axis and 3rd axis of the 6-axis amplifier.

Remedy:

1. Replace the Power Supply (α PS).
2. Replace the 6-axis servo amplifier.

Note: You need to cycle power to release this alarm.

SRVO-466 SERVO AMP abnormal %d (G:%d A:%d)

Cause: An error was found in the servo amplifier (6-axis amplifier, α iSV). Number in the bracket shows the group number and the axis number in the group.

Remedy: Replace the servo amplifier (6-axis amplifier, α iSV).

Note: You need to cycle power to release this alarm.

SRVO-468 SERVO TmpDetachedNode exists in FLSF

Cause: Temporary detached node exists in Safety function by FL-net.

Remedy: Change the detached node to ENTRY.

SRVO-469 SERVO DCS Safety PMC alarm %x,%x

Cause: Safety PMC program has invalid instructions or address.

Remedy: Check Safety PMC program.

Note: You need to cycle power to release this alarm.

SRVO-470 PAUSE.G Wireless sensor data error

Cause: Wireless data sequence number is wrong.

Remedy: Contact your local FANUC representative.

SRVO-471 SERVO I/O Link i slave (%d-%d) status abnormal

Cause: A mismatch of duplicate input signal for I/O Link i slave was detected over 1 second. Detected signal number is displayed by a range as (1-8). The range of detection is divided per 8 signals as (1-8), (9-16).

Remedy:

1. Check if a timing of duplicate output signal of master is matched.
2. Check if a connection of I/O Link cable is correct.
3. Replace the CPU card.
4. Replace the main board.

SRVO-472 SERVO A%d is moved in stop check

Cause: The suspended axis is moved when the contact stop status of Collaborative Robot is ESCP.

Remedy: Clear the external force to the collaborative robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-473 SERVO DCS CLLB CC_EXTF alarm

Cause: The result is different in 2 CPU for Collaborative Robot.

Remedy: Check the other alarms for more information.

Note: You need to cycle power to release this alarm.

SRVO-474 SERVO Escape speed lim exceed

Cause: The speed of movement by Push to Escape of Collaborative Robot exceeds the limit.

Remedy: Clear the external force to the collaborative robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-475 SERVO Escape direction alarm

Cause: The direction of movement by Push to Escape of Collaborative Robot exceeds is invalid.

Remedy: Clear the external force to the collaborative robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-476 SERVO CLLB alarm %x,%x

Cause: Internal error of the collaborative robot function.

Remedy: Restart the controller. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

When the number following this alarm is 40,000,000 with CRX series, try the remedy for SRVO-508.

SRVO-477 SERVO Calibration data error

Cause: The sensor calibration data of the collaborative robot are wrong.

Remedy: Copy "CLLB.CM" file from the CD-R which is appendix of the collaborative robot to a memory card or USB memory. Perform the same file with a teach pendant, set the sensor calibration parameter. After this change, perform "APPLY TO DCS PARAMETER". Refer to "1.3 Apply to DCS parameter" in "Dual Check Safety Function Operator's manual" (B-83184EN) for detail.

As this file is unique to each collaborative robot, do not use other robot's file. Check that the serial number which is printed on CD-R is same as the number which is written on collaborative robot sensor.

SRVO-478 SERVO Temperature difference too large

Cause: The force sensor temperature difference is too large.

Remedy: Please make sure that the environment temperature does not change greatly, and then restart the controller. If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

SRVO-479 SERVO Temperature changes too fast

Cause: The force sensor temperature changes too fast.

Remedy: Please make sure that the environment temperature does not change greatly, and then restart the controller. If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

SRVO-480 SERVO FORCE alarm %x, %x

Cause: Force sensor is abnormal.

Remedy: Please take the following actions.

- 1 Restart the controller.
- 2 Replace the force sensor cable.

If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

SRVO-481 SERVO Invalid payload number

Cause: Current payload number of Collaborative Robot is invalid. By default, the payload number is 0 (invalid setting).

Remedy: Set the payload number between 1 and 10.

SRVO-482 SERVO Robot is moved in stop check

Cause: Collaborative Robot moved when the contact stop status is STOP.

Remedy: Clear the external force to the collaborative robot. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-483 SERVO Input AUTO confirmation signal

Cause: Mode was changed to AUTO by TP mode select screen.

Remedy: Input AUTO confirmation signal by the switch outside of safeguard.

SRVO-484 SERVO Safe I/O consistency alarm %x,%x

Cause: In Safe I/O consistency check function, mismatch of Safe I/O is detected.

Remedy: Check status of safety I/O in DCS safe I/O consistency check screen.

SRVO-485 SERVO Hand Guidance overspeed

Cause: Operation speed by Hand Guidance exceeds limit.

Remedy: Check limit speed setting of Hand Guidance.

SRVO-486 SERVO Hand Guidance E-stop

Cause: The EMERGENCY STOP button on the Hand Guidance device was pressed.

Remedy: 1 Release EMERGENCY STOP on the Hand Guidance device, then press the [RESET] key.
2 Check setting and connection to Safety I/O board.

SRVO-487 SERVO Hand Guidance Deadman switch

Cause: The deadman switch on the Hand Guidance device was released.

Remedy: 1 Grip the deadman switch, then press the [RESET] key.
2 Enable Contact stop, when Collaborative robot is used..
3 Set Hand Guidance disable I/O to ON if you do not use Hand Guidance function.

SRVO-488 SERVO DCS Cart. Pos. speed limit (No.%d:%s,G%d,S%d) %02x

Cause: Cartesian Speed Check function detected over speed.

The first parameter : Cartesian Speed Check No and comment.

The second parameter (G) : Group number

The third parameter (S) : Cartesian Position speed check No.

Remedy: Decrease robot speed.

SRVO-489 SERVO Force sensor type error %x, %x

Cause: Force sensor type error.

Remedy: Please take the following actions.

1 Restart the controller.

If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

SRVO-490 SERVO FORCE alarm 2 %x, %x

Cause: Force sensor error.

Remedy: Please take the following actions.

1 Restart the controller.

2 Replace the force sensor cable.

If the error is not cleared, document the events that led to the error and contact your local FANUC representative.

SRVO-491 SERVO Collaborative stroke limit

Cause: Interference angle of Collaborative Robot exceeds the limit.

Remedy: Hold down SHIFT key and press RESET key in T1 mode, and Jog the robot to the motion range.

SRVO-492 SERVO Collaborative speed over

Cause: The speed of Collaborative robot exceeds the limit.

Remedy: Decrease robot speed.

SRVO-493 SERVO Contact Stop Distance limit

Cause: The stop distance of Contact stop of Collaborative Robot exceeds the limit.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-494 SERVO DCS DMA alarm %x,%x

Cause: Error occurred in the DMA self test.

Remedy: 1. Replace the CPU card.
2. Replace the Main board.

SRVO-496 SERVO Set initial forces

Cause: Initial forces for CR-15iA are not set.

Remedy: Execute the correct command file.

SRVO-497 SERVO Initial forces CRC error

Cause: The CRC value of Initial forces for CR-15iA is wrong.

Remedy: Execute the correct command file.

SRVO -498 SERVO MPG E-stop

Cause: The emergency stop button on the manual pulse generator is pressed.

- Remedy:**
1. Release the emergency stop button on the manual pulse generator.
 2. Perform initialization on the safety I / O device screen and apply DCS settings.
 3. Check the wiring of related parts.

SRVO -499 SERVO MPG Enabling switch

Cause: When the TP enable switch is OFF and the MPG enable switch is other than OFF, the enable switch of the manual pulse generator is not gripped or gripped strongly.

- Remedy:**
1. Grip the enable switch of the manual pulse generator to middle position.
 2. Perform initialization on the safety I / O device screen and apply DCS settings.
 3. Check the wiring of related parts.
 4. If you want to jog the robot with TP, switch the TP enable switch to ON and the MPG enable switch to OFF. Then, grip the Deadman switch of TP to middle position and press the [RESET] key.

SRVO-502 SERVO "Manual Guided Teaching FUP time out (G:%d)

Cause: Internal error of the collaborative robot function.

Remedy: Press RESET and restart Manual Guided Teaching.

SRVO -503 SERVO Sensor alarm %x,%x

Cause: An abnormality has occurred in a sensor inside the robot.

- Remedy:**
1. When the number following this alarm is 100, it may have been executed that the power supply is turned on, turned off, and then turned on again in a short time using the breaker. In this case, wait for at least 10 seconds after the controller's power is turned off before turning it on again.
 2. Check the robot connection cable for any abnormality, and replace it if necessary.
 3. Replace the side board.
 4. After performing a complete controller back-up to save all your programs and settings, replace the main board. If the alarm cannot be reset, document the events that led to the alarm and contact your FANUC technical representative.

SRVO-504 SERVO Sensor type error

Cause: An abnormality has occurred in a sensor inside the robot.

Remedy: Cycle the controller's power. If the alarm cannot be reset, document the events that led to the alarm and contact your FANUC technical representative.

SRVO-505 SERVO Sens Temp change too large

Cause: The temperature of a sensor inside the robot changes too fast.

Remedy: Please make sure that the ambient temperature does not change rapidly, and cycle the controller. If the alarm cannot be reset, document the events that led to the alarm and contact your FANUC technical representative.

SRVO-506 SERVO Speed Limit for manual guided teaching

Cause: The TCP speed exceeds the limit during Manual Guided Teaching.

Remedy: Press RESET and restart Manual Guided Teaching.

SRVO-507 SERVO Sensor variation error %x,%x

Cause: Internal error of the collaborative robot function.

Remedy: Restart the controller. If the error is not cleared, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-508 SERVO Collabo Sensor Large Value error

Cause: Internal error of the collaborative robot function.

Remedy:

1. When large force is applied to the robot, remove the cause of it and press RESET.
2. If this alarm is not cleared even when large force is not applied, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SRVO-601 SERVO TP/OP E-stop

Cause: The EMERGENCY STOP button on the teach pendant or the EMERGENCY STOP button on the operator panel was pressed.

Remedy:

1. Twist the teach pendant EMERGENCY STOP button and the operator panel EMERGENCY STOP button clockwise to release it, then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Please refer to remedy of SRVO-001 and SRVO-002.

Note:

1. This alarm occurs only when a Tablet TP is connected to R-30iB Plus controller.

SRVO-602 SERVO TP/External E-stop

Cause: The EMERGENCY STOP button on the teach pendant or the external EMERGENCY STOP button was pressed.

Remedy:

1. Twist the teach pendant EMERGENCY STOP button clockwise to release it and if you are using the external emergency stop, clear the source of the fault. Then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Please refer to remedy of SRVO-002 and SRVO-007.

Note:

1. This alarm occurs only when a Tablet TP is connected to R-30iB Mate Plus controller.

SRVO-603 SERVO Deadman switch/NTED released

Cause: The deadman switch was not pressed or was pressed strongly when the teach pendant was enabled. Alternatively, the NTED (non-teacher enabling device) was detected.

Remedy:

1. Press the deadman switch and the NTED (non-teacher enabling device), and then press [RESET] key. If the NTED is not connected, press only the deadman switch and then press [RESET] key. If the deadman switch is three position switch type, press the deadman switch to middle position to release it, then press [RESET] key.
2. If this alarm cannot be reset, the troubles of related parts are thought. Please refer to remedy of SRVO-003 and SRVO-232.

Note:

1. This alarm occurs only when a Tablet TP is connected to R-30iB Plus controller.

4.17.10 SSPC Alarm Code

SSPC-001 (G:%d) Waiting space gets clear

Cause: Special checking space is not clear. Wait for the special checking space to clear.

Remedy: N/A

SSPC-002 (GMSK:%d) Dead lock condition

Cause: More independent groups are within a common space.

Remedy: Jog the robot out of the common space.

SSPC-003 AccuPath not allowed

Cause: Space Check function is not compatible with AccuPath. AccuPath is not allowed.

Remedy: Not use AccuPath or disable space check function.

SSPC-004 CTV option not allowed

Cause: There is the function which can not be used with Space Check function.

Remedy: Disable space check function.

SSPC-005 Disabled while waiting

Cause: The space is disabled while waiting.

Remedy: None.

SSPC-006 (G:%d) Space is cleared

Cause: Space is cleared.

Remedy: Continues to move.

SSPC-007 (G:%d) Miss Space NUM

Cause: Common space is 0.

Remedy: Select a common space.

SSPC-011 APDT error %x

Cause: Internal Error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-012 Invalid element (%s:%d %d)

Cause: There is an invalid model element.

Remedy: Check the link type and link number of the model element.

SSPC-013 Invalid hand num (G:%d UT:%d)

Cause: The hand number related to the current tool number is invalid.

Remedy: Confirm the hand number.

SSPC-014 Common frame setting (G:%d)

Cause: There is no calibration data for the group.

Remedy: Perform the calibration between the group and the base frame group.

SSPC-015 Not calibrated (G:%d)

Cause: The group is not calibrated.

Remedy: Perform the calibration for the group.

SSPC-016 Invalid comb type (C:%d %s)

Cause: The model type in combination setting screen is invalid.

Remedy: Confirm the model type in the combination setting.

SSPC-017 Invalid comb index (C:%d %s)

Cause: The index number in combination setting screen is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-018 APDT is not supported (G:%d)

Cause: The group number specified in combination setting is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-019 (G:%d) is close to target

Cause: Interaction is detected.

Remedy: You can reset the alarm with SHIFT+RESET and can jog the robot to the out of the interacted area. This key operation disable the interaction check temporarily while the SHIFT key is being pressed.

SSPC-020 Invalid fixture obj (F:%d)

Cause: The taught group number of the fixture elements is invalid.

Remedy: Confirm the taught group number of the fixture elements.

SSPC-021 Too many settings

Cause: APDT setting is too many.

Remedy: Reduce the number of interaction element or combination setting.

SSPC-101 (G:%d) is close to target

Cause: Interaction is detected.

Remedy: You can reset the alarm with SHIFT+RESET and can jog the robot to the out of the interacted area. This key operation disable the interaction check temporarily while the SHIFT key is being pressed.

SSPC-102 (G:%d) is close to target(qstop)

Cause: Interaction is detected.

Remedy: You can reset the alarm with SHIFT+RESET and can jog the robot to the out of the interacted area. This key operation disable the interaction check temporarily while the SHIFT key is being pressed.

SSPC-103 (G:%d) is near to target

Cause: Interaction is detected.

Remedy: You can reset the alarm with SHIFT+RESET and can jog the robot to the out of the interacted area. This key operation disable the interaction check temporarily while the SHIFT key is being pressed.

SSPC-104 APDT error %x

Cause: Internal error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative. And report %x.

SSPC-105 Too many settings

Cause: APDT setting is too many.

Remedy: Reduce the number of interaction element or combination setting.

SSPC-106 Failed to get dist (%d,C:%d)

Cause: Failed to get distance.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-111 Invalid comb type (ST,C:%d,%s)

Cause: The model type in combination setting screen is invalid.

Remedy: Confirm the model type in the combination setting.

SSPC-112 Invalid comb index(ST,C:%d,%s)

Cause: The index number in combination setting screen is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-113 APDT isn't supported (ST,G:%d)

Cause: The group number specified in combination setting is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-114 Not calibrated (ST,G:%d)

Cause: The group is not calibrated.

Remedy: Perform the calibration for the group.

SSPC-115 Invalid utool number (ST,G:%d)

Cause: Invalid tool number.

Remedy: Confirm current tool number.

SSPC-116 Invalid hand num(ST,G:%d,UT:%d)

Cause: The hand number related to the current tool number is invalid.

Remedy: Confirm the hand number.

SSPC-117 Common frame setting (ST,G:%d)

Cause: There is no calibration data for the group.

Remedy: Perform the calibration between the group and the base frame group.

SSPC-118 Invalid element (ST,%s:%d,%d)

Cause: There is an invalid model element.

Remedy: Check the link type and link number of the model element.

SSPC-119 Can't get elem pos(ST,G:%d,%d)

Cause: Failed to get element position.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-120 Invalid fixture obj (ST,F:%d)

Cause: The taught group number of the fixture elements is invalid.

Remedy: Confirm the taught group number of the fixture elements.

SSPC-131 Invalid comb type (WT,C:%d,%s)

Cause: The model type in combination setting screen is invalid.

Remedy: Confirm the model type in the combination setting.

SSPC-132 Invalid comb index(WT,C:%d,%s)

Cause: The index number in combination setting screen is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-133 APDT isn't supported (WT,G:%d)

Cause: The group number specified in combination setting is invalid.

Remedy: Confirm the index number in the combination setting.

SSPC-134 Not calibrated (WT,G:%d)

Cause: The group is not calibrated.

Remedy: Perform the calibration for the group.

SSPC-135 Invalid utool number (WT,G:%d)

Cause: Invalid tool number.

Remedy: Confirm current tool number.

SSPC-136 Invalid hand num(WT,G:%d,UT:%d)

Cause: The hand number related to the current tool number is invalid.

Remedy: Confirm the hand number.

SSPC-137 Common frame setting (WT,G:%d)

Cause: There is no calibration data for the group.

Remedy: Perform the calibration between the group and the base frame group.

SSPC-138 Invalid element (WT,%s:%d,%d)

Cause: There is an invalid model element.

Remedy: Check the link type and link number of the model element.

SSPC-139 Can't get elem pos(WT,G:%d,%d)

Cause: Failed to get element position.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-140 Invalid fixture obj (WT,F:%d)

Cause: The taught group number of the fixture elements is invalid.

Remedy: Confirm the taught group number of the fixture elements.

SSPC-141 Referenced robot not calibrated

Cause: The referenced robot is not calibrated.

Remedy: Calibrate the referenced robot first, then calibrate the targeted robot later.

SSPC-142 Calib converted w.r.t. Zone Mgr

Cause: The calibration result has been converted with respect to the Zone Manager.

Remedy: This is a warning message. No action is required if it is an indirect calibration.

SSPC-151 App_STOP (ST,C:%d) is disabled

Cause: This combination is originally disabled on setup screen.

Remedy: If you want to use this one, enable this combination on setup screen.

SSPC-152 App_STOP (ST,C:%d) is disabled

Cause: This combination is originally disabled on setup screen.

Remedy: Enable this combination on setup screen.

SSPC-153 (WT,C:%d) is enabled by other

Cause: This combination is already enabled by another program.

Remedy: Disable this combination first.

SSPC-154 (ST,C:%d) is disabled by other

Cause: another program disabled this condition.

Remedy: Enable this combination by the program that use this one.

SSPC-155 Invalid host name (ST,C:%d)

Cause: Specified condition has invalid host name.

Remedy: Input correct host name.

SSPC-156 Invalid host name (WT,C:%d)

Cause: Specified condition has invalid host name.

Remedy: Input correct host name.

SSPC-157 Inrupt signal (WT,C:%d)

Cause: The approach wait interrupt signal is turned to ON.

Remedy: Turn off the interrupt signal.

SSPC-158 App_WAIT timeout (WT,C:%d)

Cause: Approach wait limit has passed.

Remedy: Restart again if opponent is far away enough.

SSPC-159 App_WAIT can't be used(WT,G:%d)

Cause: Approach wait cannot be used with: Tracking motion of slave of simultaneous robot link Continuous turn function.

Remedy: Don't use approach wait with these types of motion.

SSPC-160 App_STOP is TMP_DISed(ST,C:%d)

Cause: IASTOP[*] = TMP_DIS is executed.

Remedy: If you want to enable this combination, please enable it.

SSPC-161 App_STOP is enabled (ST,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to disable this combination, enable it by IASTOP instruction.

SSPC-162 App_WAIT is enabled (WT,C:%d)

Cause: IAWAIT[*] = ENABLE is executed.

Remedy: If you don't want to use this condition, please disable it.

SSPC-163 App_WAIT is disabled (WT,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to use this condition, enable it by IAWAIT instruction.

SSPC-164 (%s,%d) TMP_disabled (ST,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to use this condition, enable it by IAWAIT instruction.

SSPC-165 (%s,%d) enabled (ST,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to use this condition, enable it by IAWAIT instruction.

SSPC-166 (%s,%d) enabled (WT,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to use this condition, enable it by IAWAIT instruction.

SSPC-167 (%s,%d) disabled (WT,C:%d)

Cause: Resume from different line when a program is paused.

Remedy: If you want to use this condition, enable it by IAWAIT instruction.

SSPC-168 (%s,%d) invalid group number

Cause: The rate value specified to Approach_RATE[] instruction is invalid. It must be the value from 0% to 100%.

Remedy: Specify the correct rate value.

SSPC-169 (%s,%d) invalid rate value

Cause: Comm init error.

Remedy: Confirm hostname, IP address.

SSPC-181 Comm init error %d %s

Cause: Comm init error.

Remedy: Confirm hostname, IP address.

SSPC-182 Invalid hostname (%s)

Cause: Invalid hostname.

Remedy: Confirm hostname, IP address.

SSPC-183 Invalid address (%s)

Cause: Invalid IP address.

Remedy: Confirm hostname and IP address.

SSPC-184 Number of host exceed limit

Cause: Specified host is too many.

Remedy: Reduce target host.

SSPC-185 Number of element exceed limit

Cause: Enabled element is too many.

Remedy: Reduce enabled element.

SSPC-186 Invalid element (%s,%d,%d)

Cause: Invalid element.

Remedy: Confirm element contents.

SSPC-187 Receive invalid data %d %s

Cause: Receive invalid data.

Remedy: Confirm target host's setup.

SSPC-188 Invalid data for send %d

Cause: Invalid data exists to send.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-189 Timeout element (%s,%d,%d)

Cause: Target element is too old information.

Remedy: Confirm target host is working.

SSPC-190 No communication (%s)

Cause: Target is OFF or comm stopped.

Remedy: Check target host and communication line.

SSPC-191 Target elem not exist(ST,C:%d,%s)

Cause: Specified element does not exist.

Remedy: Confirm own setup and target setup.

SSPC-192 Target elem not exist(PA,C:%d,%s)

Cause: Specified element does not exist.

Remedy: Confirm own setup and target setup.

SSPC-193 IAL detect overload (%d)

Cause: APDT task is overload.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-194 IASV Buffer Overrun (%d)

Cause: Internal Error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SSPC-201 Interference Detected(G:%d)

Cause: Interference Detected for the group.

Remedy: Abort the program and jog away.

SSPC-202 Obstacle Detected(G:%d)

Cause: Collision Detected for the group.

Remedy: Abort the program and jog away.

SSPC-203 Check combination type mismatch

Cause: Check combination type mismatch.

Remedy: Change check combination type.

SSPC-204 Two points not form a line

Cause: Move the two points apart.

Remedy: N/A

SSPC-205 Three points not form a plane

Cause: Move the three points apart.

Remedy: N/A

SSPC-206 Four points not form a box

Cause: Move the four points apart.

Remedy: N/A

SSPC-207 Check combination not supported

Cause: Check the check combinations.

Remedy: N/A

SSPC-208 Unit vector formation error

Cause: Internal error.

Remedy: N/A

SSPC-209 Robot in too far(G:%d)

Cause: Robot goes into obstacle for more than 3 ITPs before resulting the priority issue. Internal error.

Remedy: N/A

SSPC-210 Comb check I/O Setting invalid

Cause: Collision Detected for the group.

Remedy: Abort the program and jog away.

SSPC-211 Obstacle Detected(G:%d^2)

Cause: A collision has been detected for the group.

Remedy: Abort the program and jog the robot away from the collision.

SSPC-212 Invalid Comb Pair Num(%d)

Cause: Invalid Combination Pair number.

Remedy: Enter a valid Combination Pair number.

SSPC-213 Invalid Critical Zone #(%d)

Cause: Invalid Critical Zone number.

Remedy: Enter a valid Critical Zone number. A valid Critical Zone number is a valid obstacle model number.

SSPC-214 Invalid Position Register(%d)

Cause: Invalid Position Register number, or invalid Position Register content. Only XYZWPR type in PR is supported, Joint representation is not supported.

Remedy: Enter a valid Position Register number, and a valid Position Register content.

SSPC-215 Invalid AutoZone Sched #(%d)

Cause: An invalid AutoZone Schedule number was specified.

Remedy: Enter a valid AutoZone Schedule id.

SSPC-216 Too many AutoZone buffers

Cause: Too many autozone buffers between AutoZone Start and AutoZone End.

Remedy: Reduce the number of motion lines between AutoZone Start and AutoZone End.

SSPC-217 (G:%d) Outside Virtual Sphere

Cause: Robot is outside the boundary of the sphere virtual fence.

Remedy: Disable the combination pair temporarily, jog the robot back inside the sphere virtual fence, and re-enable the combination pair.

SSPC-218 (G:%d) Outside Vir Cylinder

Cause: Robot is outside the boundary of the cylinder virtual fence.

Remedy: Disable the combination pair temporarily, jog the robot back inside the cylinder virtual fence, and re-enable the combination pair.

SSPC-219 (G:%d) Outside Vir Inf Plane

Cause: Robot is outside the boundary of the infinite plane virtual fence.

Remedy: Disable the combination pair temporarily, jog the robot back inside the infinite plane virtual fence, and re-enable the combination pair.

SSPC-220 (G:%d) No Fin Plane Vir Fence

Cause: Finite plane virtual fence is not supported.

Remedy: Use sphere, cylinder, box, or infinite plane for virtual fence support.

SSPC-221 (G:%d) Outside Virtual Box

Cause: Robot is outside the boundary of the box virtual fence.

Remedy: Disable the combination pair temporarily, jog the robot back inside the box virtual fence, and re-enable the combination pair.

SSPC-222 (Dev:%d) Comm Timeout

Cause: Communication time to the device has exceeded the specified maximum time allowed.

Remedy: Confirm that Ethernet setup and hardware communication to the device is configured correctly.

SSPC-223 Invalid ICMA Dev Id(%d)

Cause: The device id provided for Interference Check Karel routine is invalid.

Remedy: Confirm that both my device id and other device id for the Karel routine are valid.

SSPC-224 (G:%d) is close to %s

Cause: Interaction is detected.

Remedy: You can reset the alarm with SHIFT+RESET and can jog the robot out of the interacted area. This key operation disable the interaction check temporarily while the SHIFT key is being pressed.

SSPC-225 (G:%d) Both robots are inside

Cause: Both robots are inside the critical zone.

Remedy: Only one robot is allowed to stay inside the zone, move another robot to outside the zone, or correct the input in the Combination setup.

SSPC-226 %s %d robot bypassed

Cause: The robot(hostname %s, group %d) is configured to be bypassed.

Remedy: This is a warning message. No action is required if it is an indirect calibration.

SSPC-227 (G:%d) Stationary Fence Only

Cause: Support stationary virtual fence only.

Remedy: The virtual fence model should be taught with respect to the world frame of the taught group. Line Tracking Schedule number should be set to 0 in the fixture Element setup menu.

SSPC-228 Invalid Cen Plane Sched #(%d)

Cause: Invalid Central Plane Schedule number.

Remedy: Enter a valid Central Plane Schedule id..

SSPC-229 Invalid Cen Plane Gmask (%d)

Cause: Invalid Central Plane Group Mask.

Remedy: Central Plane Check TP instruction requires a valid group mask. Set the Group mask of the TP program to an appropriate robot group.

SSPC-230 Too few C Pairs/ Fixts(%d,%d)

Cause: Too few total number of combination pairs or fixtures. Central Plane Check starts at certain combination pairs and fixtures.

Remedy: Set \$IA_NUM_CHK to 60 and \$IA_NUM_FOBJ to 60, then Controlled Start and Cold Start to increase the combination pairs and fixtures.

SSPC-231 Invalid Line Track Frame (%d)

Cause: Invalid Line Tracking frame.

Remedy: Set a valid Line Tracking frame for the associated motion group.

SSPC-240 DSP not available

Cause: No IIC DSP is available. Dedicated DSP is required for IIC.

Remedy: Add a DSP to support IIC.

4.17.11 SVGN Alarm Code

SVGN-001 Serious Internal error

Cause: Internal Servo Gun error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-002 No sysvar pointer

Cause: This is an internal system error.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-004 Unable to Allocate Memory

Cause: A failure occurred while allocating memory.

Remedy: Check amount of memory being used by the system. Perform a cold start on the controller. If the problem still exists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-005 Wrong TPP inst. format

Cause: An internal servogun program error has occurred.

Remedy: Repower, perform a Controlled start, and then back to Cold start. This action re-generates the internal servogun program and may correct the problem. If the problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-008 Syntax error

Cause: Instruction syntax error. This instruction is for air gun spot.

Remedy: Reteach the instruction. Reteach servo gun SPOT instruction.

SVGN-009 Motion Group config. mismatch

Cause: The robot group and/or gun group are not enabled, in the group mask of this teach pendant program.

Remedy: Determine the robot group number and gun group number for this equipment, then re-create the program, with these groups enabled.

SVGN-010 Invalid SG group config.

Cause: An invalid servo gun group number (greater than total number of groups) has been assigned to this servogun (equipment).

Remedy: Check the group number assigned to this servogun (equipment).

SVGN-011 Can not execute instruction(s).

Cause: Incremental, offset or tool offset instructions can not execute with servo gun SPOT instruction at the same program line.

Remedy: Delete the incompatible motion option.

SVGN-012 Invalid value for index

Cause: The register index specified in the instruction is invalid.

Remedy: Check the index value.

SVGN-013 Pressure exceeds limit

Cause: The Pressure specified in the pressure schedule, or pressure instruction, exceeds the Max Pressure for the gun.

Remedy: Reduce the Pressure in the pressure schedule or program, or increase the Max Pressure item on the Servo Gun General SETUP screen. Confirm that the new pressure value does not exceed the mechanical limitation of the gun.

SVGN-015 Setup Configuration error

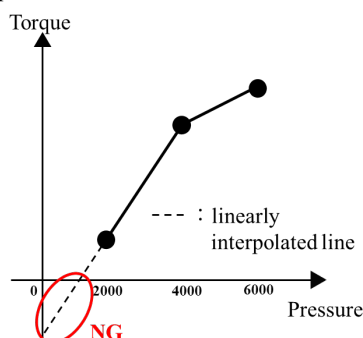
Cause: Pointer to gun, schedule, backup or distance data is invalid.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

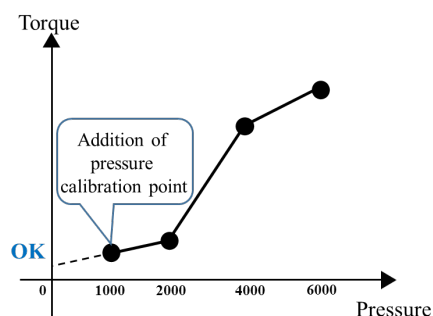
SVGN-016 Specified pressure too low

Cause: The pressure specified in the pressure schedule or pressure instruction is lower than the lowest reachable pressure on the calibration curve.

Remedy: Increase the Weld Pressure, set weld pressure = 0, or recalibrate pressure. Note 1: when weld pressure = 0, the minimum possible pressure (corresponds to the intercept of a linearly interpolated line) is used. SVGN-016 will not be posted even if the intercept of a linearly interpolated line does not contain a point where weld pressure = 0.. Note 2: add a calibration point at or below the specified pressure to ensure the gun can achieve the low pressure. Note 3: reducing the contact speed might make it possible to achieve lower pressures. Note 4: in R-30iB Plus and later, a pressure of 1000N is applied by default at the tip wear measurement. If this alarm occurs in the tip wear measurement, recalibrate pressure at 1000N too.



Alarm occurrence case



Addition of pressure calibration point

SVGN-017 Invalid pressure coefficient

Cause: Single-segment calibration method is enabled and prm_a1 is invalid (less than 0.0001 OR greater than 100.0).

Remedy: Change the calibration method to the multi-linear segment method if possible. Do this by setting the sysvars \$sgsyscfg.\$scal_model = 12 and \$sgsyscfg.\$frc2spd_cnv = 3, then perform the pressure calibration again.

SVGN-018 Illegal torque limit value

Cause: The torque value is illegal (less than \$sgsyscfg.\$minimum_trq OR greater than max rated torque). This alarm can occur at the following times: SPOT[], PRESS_MOTN[], or PRESS[]kgf execution.

Remedy: Confirm that the pressure calibration data is valid.

SVGN-019 Pressure shortage: Gun%d

Cause: Same as SVGN-020, but severity is WARN. Note: SVGN-019 can occur during autotuning or if \$sgsyscfg.\$pst_ertype = 1; SVGN-020 occurs otherwise.

Remedy: See remedy for SVGN-020.

SVGN-020 Pressure shortage%d: Gun%d

Cause: The SPOT, PRESS_MOTN or TIPDRESS, instruction failed because gun closure was not detected(1) or gun pressure was unstable(2). The number after pressure shortage (1 or 2) identifies the failure type. Scan the list below for the cause that most nearly matches the condition at hand, then refer to the remedy for that cause.

Shortage 1) The instruction completed - gun tip moved to the pushing depth position - without torque increasing to the gun close detection value (1/2 Std Overtorque Value).

- 1A) If gun moved to current close axis limit (ClosLim from SVGN-177) without achieving pressure, then axis limit is too small.
- 1B) Pushing depth parameter in pressure schedule is not large enough to overcome gun bending at target pressure plus tip wear amount since last measurement.
- 1C) Part thickness parameter (Thk from SVGN-177) is much larger than actual part thickness.
- 1D) Gun zero master position is incorrect (if tips are worn and user chooses to not use tip wear comp, then start with 1B).
- 1E) Gun close detection torque may be excessive (or larger than Max Motor torque) due to a large restriction in gun mechanism.
- 1F) Torque limit has been applied by PRESSURE instruction. Max Motor Torque on gun setup screen is limited.
- 1G) Due to no-rigid gun such as X gun, standard push depth value for tip wear measurement is not enough to achieve specified pressure.

Shortage 2) The torque for pressuring varied from the target value. There are (2) likely causes:

- 2A) Target pressure is at very low or high end of gun operating range (tips are likely touching part).
- 2B) Friction in gun mechanism has increased considerably since gun was autotuned (tips are likely NOT touching part).

If the above cause is not in current situation, gun would not drive correctly, due to failure of mechanical components on a servo gun.

Remedy:

Shortage 1)

- 1A) When tip wear compensation is used, close axis limit is adjusted to avoid over-stroking gun (ClosLim becomes smaller than StdLim when caps are worn). To extend axis limit, change tips, then run tip wear comp update program when using tip wear comp. Next, check the original close limit (StdLim) setting on servo gun setup screen and adjust if not correct.
- 1B) Increase pushing depth in pressure schedule (set \$sgsyscfg.\$sho_pshdpth=TRUE to see pushing depth parameter).
If this alarm is posted during pressure of tip wear measurement, increase \$sggun#.\$sgtwd.\$tw_pshmgn.
- 1C) Reduce part thickness in the pressure schedule so it is closer to actual part thickness.
- 1D) If using tip wear compensation, re-master the gun by running the tip wear compensation update program. Otherwise, refer to 1B or re-master the gun with new tips from the gun master screen.
- 1E) Adjust the gun mechanism to relieve the restriction. Re-tune the gun (autotune) and calibrate pressure after adjustment.
- 1F) Execute PRESSURE STANDARD instruction to release Torque limit. Or change Max Motor Torque on gun setup screen to correct value.
- 1G) Increase \$SGGUN#.\$SGTWD.\$TW_PSHMGN from 5.0 of default value to 8.0. If SVGN-20 still occurs, increase this parameter to 8.0.

Shortage 2)

- 2A) Re-tune the gun (autotune) then confirm pressure calibration. If problem persists, or if the alarm occurs during tip wear measurement, autotune with Initial Filter set to a value between 10-30. To see Initial Filter item, set \$sgsyscfg.\$sho_atn_cfg=TRUE then press enter on Auto Tune item from Gun Setup Utility before tuning.

- 2B) Re-tune the gun (autotune) to adjust the gun close detection limit, then confirm pressure calibration. If required, adjust the gun mechanism to relieve the cause of friction increase.

In case that there is possibility of mechanical components failure on servo gun, confirm to drive a servo gun correctly with manual operation like jog operation. If some alarms occur while the confirmation, remove issues by the alarm according to remedy of the alarm.

If pulse coder and/or pulse coder cable is replaced, recovery pulse count of gun axis according to reference on gun zero mastering on servo gun manual documentation.

If driving components such as motor, ball screw and gun arm is replaced, tune the gun axis according to reference on initial setup on servo gun manual documentation.

SVGN-021 Uninitialized BU condition

Cause: The BU schedule number (condition) is not initialized or is invalid.

Remedy: Set a valid backup schedule number (greater than or equal to 0, AND less than or equal to \$sgsyscfg.\$back_elm) into the instruction in the teach pendant program.

SVGN-022 Uninitialized Pres. condition

Cause: The pressure schedule number (condition) is not initialized or is invalid.

Remedy: Set a valid Pressure schedule number (greater than or equal to 1, AND less than or equal to \$sgsyscfg.\$sch_elm) into the instruction in the teach pendant program.

SVGN-023 Incomplete Pressure calibration

Cause: Incomplete pressure calibration.

Remedy: Go to the Servo Gun General SETUP screen, select Pressure calibration, and perform pressure calibration procedure.

SVGN-024 Incomplete Wear Down calibration

Cause: Tip Wear Compensation setup (calibration) is not complete.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-025 Illegal BU condition number

Cause: Invalid BU schedule (condition) number (greater than \$sgsyscfg.\$back_elm, or less than 0).

Remedy: Specify a backup condition number within the range above.

SVGN-026 Illegal P condition number

Cause: Invalid P schedule (condition) number (greater than \$sgsyscfg.\$sch_elm, or less than 1).

Remedy: Specify a pressure condition number within the range above.

SVGN-027 Untaught element encountered

Cause: Some program elements (like positional data for example) have not been recorded.

Remedy: Enter data for the missing program elements.

SVGN-028 Pos. type is JOINT

Cause: Position type is JOINT.

Remedy: Change position type to XYZWPR.

SVGN-029 Over max motor torque value

Cause: The motor torque required to achieve the pressure specified in the pressure schedule or pressure instruction exceeds the Max Torque value specified on the Servogun SETUP screen.

Remedy:

1. Reduce the Pressure value.
2. Check Pressure Calibration data.
3. Calibrate Pressure again if the data is incorrect.
4. Increase the Max Motor Torque value on the Servo Gun General SETUP screen, if possible. Note: motor torque value on the General SETUP screen can be regarded as a fractional percentage of the maximum allowable torque. The screen will not allow this value to be set larger than amp + motor rating.

SVGN-030 Tip Stick detection

Cause: Tip stick detection DI is ON.

Remedy: Jog the gun open or use a tool to separate the tip from the part, if the tip is stuck. If the tip is not stuck, then determine why the tip stick input is on.

SVGN-031 Tear Off is executing

Cause: When tear off function is executing, program cannot be started.

Remedy: Restart program after tear off function finished.

SVGN-032 Tip increased error(Gun)

Cause: The measured tip wear on the gun side (moving tip) indicates that the tip has grown by an amount greater than the Gun Increased Error(mm) setting.

Remedy: First confirm the condition of the tip. If the tip is not ok, then replace it, and perform tip wear measurement again. If a chip from tip dressing remains on the tip, remove this chip then re-measure the tip wear. If new tips were installed after the previous tip wear measurement, be sure the tip wear update program was run with the New Tips Parameter set to (1) in the Call instruction for the tip wear macro. If this parameter was not set correctly, then press fault reset and run the tip wear update program again with the New Tips Parameter set to (1). If the tip is OK and the new tip parameter was set correctly, then perform the tip wear measurement again. Observe the gun closely during this operation. Be sure the tips touch during the 1st step of the tip wear measurement and be sure the gun tip touches the fixture during the 2nd step (if used). If the gun tip does not close fully during either step, then the gun friction has probably increased. To compensate, run Autotuning then Pressure Calibration and perform the tip wear setup procedure again with new tips. Inspect the gun to find the reason for the increase in friction. If both steps of the measurement perform correctly then it might be necessary to increase the value of the Increase Error(mm) setting for the robot side tip. Do this on the Tip Wear Detection screen (SETUP-SERVO GUN-GENERAL SETUP).

SVGN-033 Tip increased error(Robot)

Cause: The measured tip wear on the robot side (stationary tip) indicates that the tip has grown by an amount greater than the Robot Increased Error(mm) setting.

Remedy: First confirm the condition of the tip. If the tip is not ok, then replace it, and perform tip wear measurement again. If a chip from tip dressing remains on the tip, remove this chip then re-measure the tip wear. If new tips were installed after the previous tip wear measurement, be sure the tip wear update program was run with the New Tips Parameter set to (1) in the Call instruction for the tip wear macro. If this parameter was not set correctly, then press fault reset and run the tip wear update program again with the New Tips Parameter set to (1). If the tip is OK and the new tip parameter was set correctly, then perform the tip wear measurement again. Observe the gun closely during this operation. Be sure the tips touch during the 1st step of the tip wear measurement and be sure the gun tip touches the fixture during the 2nd step (if used). If the gun tip does not close fully during either step, then the gun friction has probably increased. To compensate, run Autotuning then Pressure Calibration and perform the tip wear setup procedure again with new tips. Inspect the gun to find the reason for the increase in friction. If both steps of the measurement perform correctly then it might be necessary to increase the value of the Increase Error(mm) setting for the robot side tip. Do this on the Tip Wear Detection screen (SETUP-SERVO GUN-GENERAL SETUP).

SVGN-034 Excessive robot tip difference.

Cause: The Tip Wear difference between the robot tips on the dual gun exceeds the specified tolerance.

Remedy: Replace or dress the tips (and tip holder if necessary) and run the tip wear update program for each gun. Alternatively, increase the difference tolerance in the Tip Wear Detection screen. (Press MENU. Select SETUP. Select SERVO GUN. Select GENERAL SETUP.)

SVGN-035 Pressure enable time out

Cause: The pressure enable signal (input) did not turn on before the wait time expired.

Remedy: Determine why the pressure enable signal did not turn on. Or, increase the value of time out(\$SPOTEQSETUP[.PEN_TMOUT) if it is too short.

SVGN-036 Comp confirmation time out

Cause: The comp confirmation signal (input) did not turn on before the wait time expired.

Remedy: Check the reason that the comp confirmation signal is off. Or, increase the value of time out(\$SPOTEQSETUP[.NSE_TMOUT), if it is too short.

SVGN-037 Illegal pressure enable signal

Cause: The pressure enable signal number is illegal.

Remedy: Map the pressure enable input to a valid input index via (\$SPOTEQIO[].\$DI_PEN_I).

SVGN-038 Illegal comp confirmation signal

Cause: The comp confirmation signal number is illegal.

Remedy: Map the comp confirmation input to a valid input index via (\$SPOTEQIO[].\$DI_NSE_I).

SVGN-039 Thk:%s NOT intol(expect:%s).

Cause: Same as SVGN-040, but with a WARN severity.

Remedy: See SVGN-040.

SVGN-040 Thk:%s NOT intol(expect:%s).

Cause: The Measured part thickness deviates from the specified value more than the Under or Over thickness limit(mm). The part might be out-of-tolerance.

Remedy: Check the master position for the gun axis and make sure the tips touch at the zero position (+/- 0.1mm). Confirm that tip wear and gun sag compensation are enabled and that the compensation values are correct. Check the part or re-enter the part thickness in the pressure schedule. Alternatively, increase the Under and Over thickness limits in the Part Thickness check screen found on the Servo Gun General Setup screen. Resume the program, to retry the measurement. Perform thickness check calibration again, if the problem persists.

SVGN-041 No more available memory(PERM)

Cause: There is not enough permanent memory. It is impossible to allocate the system variable.

Remedy: Please increase the size of S-RAM module. Or, decrease the value of \$SGSYSCFG.\$M_GUN_NUM.

SVGN-042 Lack of \$SGGUN

Cause: The number of \$SGGUN is less than total number of axes in the servo gun group(s).

Remedy: Increase \$SGSYSCFG.\$M_GUN_NUM to the minimum value required to accommodate all servo gun axes. After changing this sysvar, go to control start, and then perform a Cold start, to make the change effective.

SVGN-043 AutoTuning Started.

Cause: Servo Gun autotuning has been started.

Remedy: None. This is a notice to log the event.

SVGN-044 AutoTune Successfully Complete

Cause: Auto tuning has been completed successfully.

Remedy: Cycle controller power in order to use servo gun.

SVGN-045 AutoTuning Failed.

Cause: Auto Tuning Could not be completed.

Remedy: See Section 2.5 SERVO GUN SETUP AND AUTOTUNING UTILITY of R-30iB CONTROLLER Servo Gun Function OPERATOR'S MANUAL (B-835264) ,and confirm setting and procedure. Also confirm overraid is not limited. After confirming, Restart Auto tuning on the tuning menu, and try the operation again.

SVGN-046 FAULTS must be reset.

Cause: The user executed autotuning while the system was faulted.

Remedy: Clear ALL FAULTS and start tuning again.

SVGN-047 Step mode must be disabled.

Cause: STEP mode is enabled.

Remedy: Disable STEP mode, and start tuning again.

SVGN-048 Machine lock must be disabled.

Cause: Machine Lock is enabled for the servo gun group.

Remedy: Disable Machine lock from the TEST CYCLE Menu, and start tuning again.

SVGN-049 Hold must be cleared.

Cause: Hold is active.

Remedy: Clear the HOLD, and start tuning again.

SVGN-050 Autuning: Re-power required

Cause: Cycling controller power is required to make some parameter changes effective.

Remedy: Cycle power before proceeding.

SVGN-051 Backup stroke is not selected.

Cause: SHIFT + backup (hardkey) was pressed but no Backup Schedule (stroke) was selected.

Remedy: Select a backup schedule by pressing the backup hardkey (without the SHIFT key).

SVGN-052 Motion group mismatch.

Cause: The motion group number of the user program for manual pressure or manual backup is not matched to the Servo Gun group.

Remedy: Change the motion group number of the program to match the Servo Gun.

SVGN-053 Backup stroke is not set.

Cause: The specified backup schedule (stroke) index is not valid.

Remedy: Set a valid backup schedule number.

SVGN-054 \$EQNUM is invalid number.

Cause: \$EQNUM is not use in the system.

Remedy: Set the valid equipment number to \$EQNUM.

SVGN-055 \$EQNUM is not Servo Gun.

Cause: The equipment specified by \$EQNUM is not assigned to the Servo Gun.

Remedy: Set the equipment number which is assigned to Servo Gun to \$EQNUM.

SVGN-056 \$GUNNUM is invalid number.

Cause: Specified number is not valid for \$GUNNUM.

Remedy: \$GUNNUM can be set only 1 or 2 which is corresponding to GUN1 or GUN2.

SVGN-057 Tip Wear Down Cal. is INCOMP.

Cause: Tip Wear Compensation setup is not complete.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-058 UT or UF is different.

Cause: The tool frame number or user frame number is different from the standard position.

Remedy: Change the frame number to same number of standard position.

SVGN-059 Cannot read specified PR[].

Cause: System cannot read the position register which is specified by \$PRINDEX.

Remedy: Check the number of \$PRINDEX.

SVGN-060 Pressure program is not set.

Cause: The pressure program name is not set correctly.

Remedy: Set correct program name in manual operation setup screen.

SVGN-061 Backup program is not set.

Cause: The backup program name is not set correctly.

Remedy: Set correct program name in manual operation setup screen.

SVGN-062 Pressure data is not selected.

Cause: The SHIFT + GUN hardkey was pressed, but no Pressure Schedule was selected.

Remedy: Select a pressure schedule by pressing the backup hardkey (without the SHIFT key).

SVGN-063 Pressure data is not set.

Cause: The GUN hardkey was pressed (to select pressure), but no Pressure Schedule was enabled.

Remedy: Enable Pressure Schedule(s) for Manual Operation by setting the Manual item to TRUE in the Pressure Schedule data table.

SVGN-064 Manual Weld Verif. Enabled

Cause: The manual Weld Verification feature was enabled.

Remedy: None.

SVGN-065 Manual Weld Verif. Disabled

Cause: Manual Weld Verification feature was disabled.

Remedy: None.

SVGN-066 Manual Weld Verif. Activated

Cause: The Manual Weld Verification feature was activated.

Remedy: None. Just a notification, to let user know he is in this mode and that groups may be disabled automatically.

SVGN-067 Manual Weld Verif. De-Activated

Cause: The Manual Weld Verification feature was de-activated.

Remedy: None. Just a notification to let the user know he is in this mode and that groups may be enabled automatically.

SVGN-068 Could not load program %s

Cause: The teach pendant program for tip wear measurement could not be loaded. See cause code for reason.

Remedy: Resume the program, to re-attempt the load. If the load is successful, then the tip wear measurement will continue.

SVGN-069 Pressure position is near close limit.

Cause: The actual position of the gun during pressuring (SPOT or PRESS_MOTN) is approaching the gun's close limit: the distance between the gun tip (position) and the close limit < \$SGSYSCFG.\$CLSLMWRNTOL.

Remedy: Check the master position and close stroke limit for the gun. If these values are incorrect, then update them. If these values are correct, then install new tips OR, reduce the value in \$SGSYSCFG.\$CLSLMWRNTOL (mm) to withhold this alarm until the gun tip is closer to the close stroke limit. Set \$SGSYSCFG.\$CLSLMWRNTOL (mm) = 0, to disable this alarm.

SVGN-070 Gun Change is DISABLED.

Cause: The gun change function is disabled.

Remedy: Enable the Gun change function.

SVGN-071 Machine lock is ENABLE.

Cause: Machine lock for robot axes is enabled at gun attach instruction.

Remedy: Release machine lock.

SVGN-072 Illegal assignment of gun axis.

Cause: Gun number assignment is wrong.

Remedy: Confirm Gun number assignment.

SVGN-073 Gun not detached (AXISORDER).

Cause: Gun is not detached. Some AXISORDER are not 0.

Remedy: GUN ATTACH instruction can be executed only when no gun is attached.

SVGN-074 Gun not detached.

Cause: Gun is not detached. Gun attach input signal is OFF.

Remedy: GUN ATTACH instruction can be executed only when no gun is attached.

SVGN-075 Gun not attached.

Cause: Gun is not attached. Gun attach input signal is ON.

Remedy: GUN DETACH instruction can be executed only when a gun is attached.

SVGN-076 Another process is executing.

Cause: Another program is executing GUN ATTACH or GUN DETACH instruction. \$CHG_PHASE is not 0 at executing the instruction.

Remedy: Wait until another program end GUN ATTACH/DETACH instruction.

SVGN-077 Gun identify signal is OFF.

Cause: Gun identify signal is OFF.

Remedy: Confirm the setting for Gun identify signal.

SVGN-078 Gun set signal is OFF.

Cause: Gun set signal is OFF.

Remedy: Confirm the setting for Gun set signal.

SVGN-079 Gun change canceled.

Cause: GUN ATTACH or GUN DETACH instruction is canceled while executing the instruction.

Remedy: Do COLD START the system.

SVGN-080 Gun change timeout.

Cause: GUN ATTACH or GUN DETACH instruction become timeout while executing the instruction.

Remedy: Confirm setting, and then retry. If this alarm is posted by GUN DETACH instruction, confirm if MCC in Gun change unit is broken. If dynamic break release function is used, confirm setting of dynamic break release function.

SVGN-081 Gun mastering data is lost.

Cause: Mastering data of the gun is lost by a pause while mastering.

Remedy: Do COLD START the system. Then master the gun by manual operation.

SVGN-082 Gun mastering is failed.

Cause: Gun mastering is failed by a pause while mastering.

Remedy: Continue to retry mastering.

SVGN-083 GUN ATTACH is failed (E%d)

Cause: GUN ATTACH instruction failed. Please see cause code.

Remedy: Please see cause code.

SVGN-084 GUN DETACH is failed (E%d)

Cause: GUN DETACH instruction failed. Please see cause code.

Remedy: Please see cause code.

SVGN-085 Robot not mastered(Gun axis).

Cause: The mastering of servo gun axis has not been performed yet. System variable \$master_done set FALSE.

Remedy: Please perform the mastering of the servo gun axis.

SVGN-086 Robot not calibrated(Gun axis).

Cause: The calibration of servo gun axis has not been performed yet. System variable \$calibrate set FALSE.

Remedy: Please calibrate the servo gun axis.

SVGN-087 Ref pos not set(Gun axis).

Cause: Reference position has not been set when quick mastering.

Remedy: Quick mastering may not be possible. Fixture or zero master.

SVGN-088 Another gun is attached.

Cause: The gun number specified by the GUN DETACH instruction is different than the currently attached gun.

Remedy: Verify the gun number of GUN DETACH instruction.

SVGN-089 Calibrate motion is failed.

Cause: While the calibrate motion, the detect condition was not triggered.

Remedy: Verify the detect condition in the gun change setup screen.

SVGN-090 PR[] index is not set.

Cause: The PR[] index for the calibrate motion is not set.

Remedy: Please set PR[] index for the calibrate motion in the gun change setup screen.

SVGN-091 Touch torque is not set.

Cause: The Touch torque for the calibrate motion is not set.

Remedy: Please set Touch torque for the calibrate motion in the gun change setup screen.

SVGN-092 Detect signal is not set.

Cause: The Detect signal for the calibrate motion is not set.

Remedy: Please set Detect signal for the calibrate motion in the gun change setup screen.

SVGN-093 Gun does not stop.

Cause: At the Gun Zero Master[] instruction, Servo gun axis does not stop.

Remedy: After servo gun axis stops, execute the Gun Zero Master[] instruction.

SVGN-094 GUN EXCHANGE failed (E%d)

Cause: At the Gun exchange[] instruction, the new gun could not be activated.

Remedy: Make sure that the each servogun has valid axisorder.

SVGN-095 Gun type is not opposable.

Cause: Opposable gun type is required for target gun.

Remedy: Set gun type as opposable, if appropriate.

SVGN-096 Gun close is disabled.

Cause: This operation cannot be performed while Gun Close (stroke enable) is disabled.

Remedy: Set the Gun operation to stroke (stroke enable) on the SoftPanel screen. Note: The SoftPanel screen can be accessed from the TEST CYCLE menu.

SVGN-097 Tip wear down misdetection.

Cause: The tips did not touch during the 1st step of tip wear measurement due to an increase in gun friction or the tips touched but they are now longer than the reference tips by an amount greater than the Mis-Detect Toler.(mm).

Remedy: If the tips are not fully closed when the alarm occurs, then the re-master operation failed during tip wear measurement. This usually happens because the gun friction has increased since the gun was last Autotuned. Autotune the gun again and/or inspect the cause of the friction increase. After this is complete, put new tips on the gun and perform the tip wear setup procedure again. If the tips are closed when the alarm occurs, then the tips are longer than allowed. The tips measured during tip wear setup are the reference tips. New tips can only be longer than the reference tips by an amount equal to the Mis-Detect Toler.(mm) specified in the Tip Wear Detection screen (within the Servo Gun SETUP screen). Either increase the Mis-Detect Toler.(mm) or replace the tips with shorter tips. If the tips seem to be the correct length, then perform the tip wear setup procedure again to establish new reference tips.

SVGN-098 Invalid inform signal(Gun).

Cause: The Digital Output assigned for notification of excessive Gun Tip Wear (amount) is invalid.

Remedy: Check the present setting of the Inform Signal for the Maximum Wear Check (gun) found on the Tip Wear Detection screen (within the Servo Gun SETUP screen). Change the DO number to one that is configured and unused. Check the Digital Output list (I/O-Type-DIGITAL-OUTPUTS) to find an available DO point to use.

SVGN-099 Invalid inform signal(Robot).

Cause: The Digital Output assigned for the notification of excessive Robot Tip Wear (amount) is invalid.

Remedy: Check the present setting of the Inform Signal for the Maximum Wear Check (robot) found on the Tip Wear Detection screen (within the Servo Gun SETUP screen). Change the DO number to one that is configured and unused. Check the Digital Output list (I/O-Type-DIGITAL-OUTPUTS) to find an available DO point to use.

SVGN-100 Invalid register number.

Cause: The specified register number is out of range.

Remedy: Set a register index > 0 and < max register number.

SVGN-101 Invalid position reg number.

Cause: The specified position register number is out of range.

Remedy: Set a valid position register number.

SVGN-102 Increased err. not set(Gun).

Cause: The increased error limit for Gun(movable) tip is set to 0.0mm.

Remedy: Set the Increased error to a value greater than 0.0mm if Increased Error checking is needed. This item is set on the Tip Wear Detection screen (within the Servo Gun SETUP screen).

SVGN-103 Increased err. not set(Robot).

Cause: Increased error limit for Robot(stationary) tip is set to 0.0mm.

Remedy: Set the Increased error to a value greater than 0.0mm if the Increased Error checking is needed. This item is set on the Tip Wear Detection screen (within the Servo Gun SETUP screen).

SVGN-104 Excessive load detected.

Cause: An excessive load is detected, during tip wear setup or tip wear update. The gun zero position might be incorrect.

Remedy: Remove any foreign object between the tips, and/or re-master the gun. Resume the tip wear setup or update operation. If the alarm still occurs, then the gun friction has increased since it was last Autotuned. Autotune the gun again and/or inspect the gun to determine the cause of the friction increase.

SVGN-105 Failed to reset Pulsecoder.

Cause: The Pulsecoder alarm was not reset.

Remedy: Reset the Pulsecoder alarm again.

SVGN-106 Tip wear uninitialized.

Cause: Tip Wear Compensation is uninitialized.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-107 Tip wear no load threshold.

Cause: The load threshold used to detect contact with the fixture for the second step of tip wear measurement has not been set.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-108 Tip wear no standard pulse.

Cause: The reference zero position (i.e. standard pulse) used for tip wear measurement has not been set.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-109 Tip wear no standard opening.

Cause: The reference open position (i.e. standard opening) used for the second step of tip wear measurement has not been set.

Remedy: Perform the Tip Wear Setup procedure. Consult the Servo Gun Manual for details on this procedure.

SVGN-110 Tip wear no detect DI index.

Cause: The Tip wear Detection Type is set to DI, but no DI index is specified.

Remedy: Confirm that DI detection is the desired type (LOAD detection is the default type). If so, then assign an available DI point to the tip wear detection sensor and set that index value into the Detect Signal item on the Tip Wear Detection Screen.

SVGN-111 Failed to touch fixture.

Cause: The gun tip reached the master position without detecting the fixture (i.e. tip wear plate) during the second step of tip wear measurement.

Remedy: Confirm that the zero position is correct, then confirm that a rigid fixture is between the tips during the second step of tip wear measurement.

SVGN-112 Incomplete Servo tuning.

Cause: Tip wear measurement or thickness check calibration started, but Servo tuning is incomplete.

Remedy: Complete servo auto-tuning. Go to the Gun Setup Utility (UTILITIES-GUN SETUP) and select the Auto Tune item. The Auto Tune program can be started after completing the previous steps in the utility.

SVGN-113 Gun must be open.

Cause: The tip wear setup or update program started with the gun closed.

Remedy: Open the tips, then execute the tip wear measurement program again. If the problem persists, master the gun, then execute the tip wear measurement program again.

SVGN-114 Tip wear misdetection.(FIX).

Cause: The moving tip did not touch the fixture during the second step of tip wear measurement due to an increase in gun friction, or the fixture and/or robot master position has changed since tip wear was initialized.

Remedy: If the moving tip is not pressing into the fixture when the alarm occurs, the fixture touch load (i.e. pressing force) was reached without actually touching the fixture. This usually happens because the gun friction has increased since the tip wear setup program was run. Increase the Margin of Load item in the Tip Wear Detection Screen to overcome the increase in friction. Doing this can affect the tip wear measurement, so the tip wear setup procedure should be performed again. Autotune the gun again and/or inspect the gun for the cause of the friction increase. If the moving tip is pressing into the fixture when the alarm occurs then the fixture position has moved relative to the robot master position, the robot master data has changed, or the points in the program TW_MV2PT.tp have changed. Perform the tip wear setup procedure again.

SVGN-115 MP detection failed.

Cause: Magnet Phase detection failed.

Remedy: Retry the operation. Make sure that there is some separation (at least a few mm), between the guntip/fixedtip and drive mechanism/open_hardstop.

SVGN-116 MP detection unavailable.

Cause: Magnet Phase detection is unavailable with the current calibration motion type.

Remedy: Change the calibration motion type(to 7 or 8) in the Gun change screen.

SVGN-117 Ref pos auto-setup failed.

Cause: The Gun closing motion to set the reference position failed.

Remedy: Confirm that the Touch torque(%) on the Gun SETUP screen is set appropriately.

SVGN-118 Max wear exceeded (Gun Tip).

Cause: The maximum tip wear amount has been exceeded on the gun tip.

Remedy: Replace the gun tip or re-run tip wear setup.

SVGN-119 Max wear exceeded (Rbt Tip).

Cause: The maximum tip wear amount has been exceeded on the robot tip.

Remedy: Replace the robot tip or re-run tip wear setup.

SVGN-120 Skipped max gun torque update: Gun%d.

Cause: Max gun torque was not updated due to an invalid parameter.

Remedy: See the cause code to identify the reason for the update failure. Correct the problem as described by the remedy for the alarm specified in the cause code.

SVGN-122 Pressure is not invertible.

Cause: The specified pressure cannot be used, it does not lie on the calibration curve (2nd order).

Remedy: Change the calibration method to the multi-linear segment method if possible. Do this by setting the system variables \$sgsyscfg.Scal_model = 12 and \$sgsyscfg.\$frc2spd_cnv = 3, then perform the pressure calibration again. Alternatively, perform pressure calibration again, or reduce max pressure.

SVGN-123 Over-torque protection disabled.

Cause: Overtorque protection has been disabled.

Remedy: This is a warning to notify the operator that overtorque protection is disabled. Enable overtorque protection, if desired.

SVGN-124 Max gun torque must be > floor.

Cause: The Max Gun Torque parameter in OverTorque Protection is less than the Standard OverTorque Value. The Max Gun Torque is the torque required to achieve the Max Pressure of the gun (according to the Pressure Calibration data). The Standard OverTorque Value is the lowest torque (i.e. floor) where an abnormal torque condition can be accurately observed due to gun friction.

Remedy: To eliminate this alarm either the Max Gun Torque must be increased or the Standard OverTorque Value needs to be lower. If OverTorque Protection is still enabled, there might be no action necessary. View the Parameter Summary in OverTorque Protection to judge whether the values are acceptable. The Max Gun Torque can be increased by increasing the Max Pressure on the Servo Gun General Setup Screen. If OverTorque Protection is presently disabled,

be sure to enable it after this. If the Pressure Calibration is not complete or the data is old, perform the Pressure Calibration again.

SVGN-125 Max gun torque must be < ceil.

Cause: The Max Gun Torque parameter in OverTorque Protection is set higher than the maximum torque of the servo motor.

Remedy: Make sure Pressure Calibration of the gun is complete and the data is entered correctly. Perform Pressure Calibration again if possible. Decrease The Max Gun Torque by decreasing the Max Pressure of the gun via the Servogun General SETUP Screen.

SVGN-126 Servo parameters exceed max gun torque.

Cause: Overtorque protection is enabled, but one or more of the parameters responsible for limiting torque exceeded the max gun torque.

Remedy: Disable, then re-enable overtorque protection, in order to re-write servo parameters. Alternatively, disable overtorque protection OR enable machine lock on the servogun group to disable this alarm.

SVGN-127 DSP max gun torque update timeout.

Cause: A timeout occurred waiting for acknowledgement of new overtorque parameters.

Remedy: Cycle power or toggle the overtorque protect enable. Write the parameters again.

SVGN-128 Invalid thickness value specified.

Cause: A string parameter or a value less than 0.0 was passed into the THK_VAL macro.

Remedy: Re-enter a parameter value greater than or equal to 0.0 into the thickness value macro.

SVGN-129 Invalid thickness tolerance specified.

Cause: A string parameter or a value less than 0.0 was specified for the THK_TOL macro.

Remedy: Re-enter a parameter value greater than or equal to 0.0 into the thickness tolerance macro.

SVGN-130 Invalid thickness severity specified.

Cause: A string parameter or a value other than 1 or 2 was specified for the THK_SEV (thickness severity) macro.

Remedy: Re-enter a parameter value of 1 or 2 into the THK_SEV (thickness severity) macro.

SVGN-131 Invalid gun index specified.

Cause: A string parameter or a value other than 1, 2, or 3 was specified for gun index in a THK_ macro.

Remedy: This parameter is optional but if it is specified, set it as follows: 1: Gun.A only 2: Gun.B only (dual gun case) 3: Gun.A+B (dual gun case).

SVGN-133 Encoder scale is NULL.

Cause: An encoder scale value of 0.0 was detected.

Remedy: Re-enter the gear ratio on the NOBOT Maintenance menu.

SVGN-134 Thickness Check Calibration Incomplete.

Cause: Thickness Check Calibration was never performed or did not complete successfully.

Remedy: Display the Gun Setup Utility screen (Press MENU, select UTILITIES, select GUN SETUP) and re-execute the Thickness Check Calibration.

SVGN-135 Thickness check cal err: bad torque

Cause: A thickness check calibration point has a torque value that is not greater than 0.0, or is not in ascending order.

Remedy: Go to the Gun Setup Utility Screen (UTILITIES-GUN SETUP) and re-execute the Thickness Check Calibration.

SVGN-136 Thickness check cal err: bad deflection

Cause: A thickness check calibration point has a deflection value that is not greater than 0.0, or is not in ascending order.

Remedy: Go to the Gun Setup Utility Screen (UTILITIES-GUN SETUP) and re-execute Thickness Check Calibration. If the error still occurs, re-master and re-execute Thickness Check Calibration.

SVGN-137 Invalid Number of Thickness Cal pts.

Cause: The number of Thickness Check calibration points is less than 2 or greater than 4.

Remedy: Display the system variable screen and enter a value of 2, 3, or 4 into \$sgthkset#.\$num_cal_pts, where # = gun number.

SVGN-138 Invalid tipwear ratio.

Cause: The tip wear ratio for one step wear measurement is invalid (less than 0.0 or greater than 1.0).

Remedy: Set the wear ratio in the Tip Wear measurement macro program to a value between 0 and 1. The macro program WR_UPDAT is used to perform the Tip Wear measurement with the 1-Step Method. Set the wear-ratio which is found as a parameter in a CALL instruction to the program TWKCALC2, or a similar name. Follow the program comments to find the proper parameter to adjust: CALL TWKCALC2(wear-ratio,AR[2]).

SVGN-139 Could not read tip stick detect input.

Cause: Tip stick detect input could not be read, due to an I/O error.

Remedy: Check the I/O mapping/configuration and I/O device status.

SVGN-140 Uninitialized start distance number.

Cause: The specified start distance number is not valid.

Remedy: Specify a start distance number greater than or equal to 1 and less than or equal to \$sgsyscfg.\$dst_elm.

SVGN-141 Uninitialized end distance number.

Cause: The specified end distance number is not valid.

Remedy: Specify an end distance number greater than or equal to 1 and less than or equal to \$sgsyscfg.\$dst_elm.

SVGN-142 Illegal decel option.

Cause: The decel rate option setting is incompatible with the speed calibration specification.

Remedy: Set \$sgsyscfg.\$frc2spd_cnv=3 OR contact your local FANUC representative for assistance. Note: \$sgsyscfg.\$frc2spd_cnv==3 is the default setting for this variable, so absolute speed calibration is a non-standard setting.

SVGN-143 Stoperlim:%.1fmm < PushDepth:%.1fmm.

Cause: Automaster operation is executing and position error due to push depth exceeds stoperlim. Stop error excess alarm may occur.

Remedy: Increase \$SGGUN#.\$SETUP.\$STOPERLIM or decrease pushing depth.

SVGN-144 Thickness check bias(%smm) overtol.

Cause: Gun deflection at 0N force exceeds \$SGTHKSET#.\$MAX_D0BIAS on open direction side. Gun deflection should be around 0mm at 0N force, so gun master position may be incorrect.

Remedy: 1. Remaster gun. If system is setup to do tip wear measurements, run the tip wear measurement program (wr_updat or tw_updat).
If not doing tip wear measurements, go to gun master screen and execute mastering with new tips.
2. Execute Thickness Check Calibration.
3. If problem persists, increase \$SGTHKSET#.\$MAX_D0BIAS (default = 1.0mm).

SVGN-146 Joint velocity limit too low.

Cause: The joint velocity limit must be greater than zero, for mm/sec pressure calibration speed specification.

Remedy: Update the joint velocity limit using one of the following methods:
1. Re-enter the gear ratio via the Servo Gun Axes item on the Maintenance menu, at Control start.
2. Directly enter the Max Joint Speed on the Axis Data screen of the Servo Gun Setup menu, at control start.

SVGN-147 Sync/speed min distance =%s.

Cause: The minimum gun opening distance required to achieve the specified contact speed for this Pressure Schedule is larger than the opening specified by the Start Distance schedule used in the SPOT or Press_Motion instruction. The correct contact speed might not have been achieved during execution of this instruction.

Remedy: Increase the Start Distances assigned to the Distance Schedule that is used when this alarm occurs. Go to the Distance Schedule data table (DATA-DISTANCE) and increase the gun and/or robot distances.

SVGN-148 Can't identify routine name.

Cause: The routine name corresponding to the standalone instruction cannot be identified. Refer to the cause code for the root cause.

Remedy: See remedy for cause error.

SVGN-149 CP enable is required.

Cause: CP mode is not enabled, but synchronize move to pressure position is enabled AND/OR linear distance is enabled.

Remedy: Enable CP mode (set \$cpcfg.\$cp_enable=TRUE) or contact your local FANUC representative for assistance.

SVGN-150 Synchronization enable is required.

Cause: The linear distance function is enabled, but synchronize move to pressure is not enabled.

Remedy: Enable synchronize move to pressure position (set \$sgsyscfg.\$sync_mv2prs=TRUE) OR disable linear distance (set \$sgsyscfg.\$lin_dst_enb=FALSE).

SVGN-151 Cannot add file to backup/restore list.

Cause: The Servogun sysvar file(s) could not be added to the backup/restore list.

Remedy: Document the events that led to the error and call your local FANUC representative.

SVGN-152 Invalid increase signal(Gun).

Cause: The Digital Output assigned to notify of increased error on the Gun Tip is invalid.

Remedy: Check the present value of \$sggun#.\$setup.\$tipincioidx (on the system variable screen). Change this value to the number of a DO that is configured and unused. Check the Digital Output list (I/O-Type-DIGITAL-OUTPUTS) to find an available DO point to use.

SVGN-153 Invalid increase signal(Robot).

Cause: The Digital Output assigned to notify of increased error on the Robot Tip is invalid.

Remedy: Check the present value of \$sggun#.\$setup.\$rbtincioidx (on the system variable screen). Change this value to the number of a DO that is configured and unused. Check the Digital Output list (I/O-Type-DIGITAL-OUTPUTS) to find an available DO point to use.

SVGN-154 Tipwear update cancelled.

Cause: Tip wear update did not complete, due to cancel or gun close error.

Refer to cause code for specific reason.

Remedy: Correct the condition identified in the cause code, then run tip wear update again.

SVGN-155 Cancel or ffr was selected.

Cause: Pressure shortage occurred during zero calibration and "Cancel tip wear update and exit" or "Initiate fast fault recovery" was chosen on the alarm recovery screen.

Remedy: Correct the issue that caused the pressure shortage, then run tip wear update again.

SVGN-156 Gun close NOT detected.

Cause: Gun close reference position was NOT recorded (for tip wear gun close check).

PRESS_MOTN[] instruction did not complete or was skipped, during zero calibration.

Remedy: Run tip wear update again.

SVGN-157 Gun not closed at end of zero calibration process.

Cause: Gun Zero Master[] instruction is not performed because gun axis is moved away from the contacting position before it is executed.

This alarm occurs following cases.

A: You abort program during PRESS_MOTION[] and open gun axis by jog or other ways, resume program. Gun Zero Master[] is executed at position not to contact.

B: During PRESS_MOTION[], gun axis fall down its own weight(open). Gun Zero Master[] is executed at position not to contact.

C: On PRESS_MOTION[], tip contacting is detected before actual contacting and gun axis moves by its own weight or manual operation. Gun Zero Master[] is executed at position not to contact.

Remedy: A: Run tip wear measurement again

B: Increase Mastering pressure or move gun to position that gun axis does not fall its own weight. Run tip wear measurement again.

C: Run tip wear measurement again. If this alarm occurs repetitively, do Auto tuning. Refer to Appendix "F1.1 Gun does not close completely with pressure motion" in operator's manual for Servo Gun Function.

SVGN-158 PAUSE.G Thk%s,Push(Exp%s,Aval%s,Max%s)mm.

Cause: This alarm provides information to identify the root cause of the pressure shortage alarm.

Parameters meanings are:

Thk: Thickness expected (value specified in pressure schedule)

Push.Exp: Pushing depth expected (larger of pushing depth in pressure schedule and speed depth)

Push.Aval: Pushing depth available (thk + current close stroke limit)

Push.Max: Pushing depth maximum (thk + standard close stroke limit)

Remedy: If thickness and/or pushing depth are incorrect, then adjust them.

If stroke limit has become too small, install new tips.

SVGN-159 PAUSE.G Pressure margin conversion error.

Cause: Pressure margin conversion for touchup process failed.

See cause code for reason.

Remedy: Refer to cause code's remedy.

SVGN-160 Invalid calibration point: bad torque.

Cause: A pressure calibration point has a torque value that is not greater than 0.0, or is not in ascending order.

Remedy: Perform Pressure Calibration again. Make sure that both torque and pressure increase at each successive calibration point.

SVGN-161 Invalid calibration point: bad speed.

Cause: A Speed value in the Pressure Calibration table is less than the min speed or greater than the max speed.

Remedy: Perform Pressure Calibration again. Make sure that the Speed for each point in the Pressure Calibration table is within the operating range of the gun.

SVGN-162 Invalid calibration point: bad pressure.

Cause: A pressure calibration point has a pressure (force) value that is not greater than 0.0, or is not in ascending order.

Remedy: Perform Pressure Calibration again. Make sure that both torque and pressure increase, at each successive calibration point.

SVGN-163 Invalid calibration model setting.

Cause: The calibration model setting (\$sgsyscfg.\$scal_model) is not supported. The following settings are supported: 3: Single linear segment pressure and speed model 12: Multiple linear segment pressure and speed model piece-wise pressure calibration.

Remedy: Change setting to one of the settings above, and reperform calibration if necessary.

SVGN-164 Invalid pressure/speed convert setting.

Cause: Pressure to speed conversion specification (\$sgsyscfg.\$frc2spd_cnv) is not supported. The following setting combinations are supported: \$sgsyscfg.\$scal_model = 3 and \$sgsyscfg.\$frc2spd_cnv = 0: Single linear segment, JNT%. \$sgsyscfg.\$scal_model = 3 and \$sgsyscfg.\$frc2spd_cnv = 3, Single linear segment, mm/sec converted at spot. \$sgsyscfg.\$scal_model = 12 and \$sgsyscfg.\$frc2spd_cnv = 3, Multiple linear segments, mm/sec converted at spot.

Remedy: Change setting to one of the settings above, and re-perform calibration if necessary. Note: \$sgsyscfg.\$frc2spd_cnv==3 is the default setting for this variable.

SVGN-165 Gun opened < equalizer trigger distance.

Cause: The open distance condition for equalization pressure trigger, was not met before the start of motion to pressure position, for the next spot. The equalization trigger state for the next spot might have been delayed, in this case.

Remedy: Increase the end and/or start distance value on the distance schedule screen, or decrease the open distance for the equalization pressure trigger AFTER the SPOT.

SVGN-166 Invalid equalizer trigger type.

Cause: The specified equalization pressure trigger type is not supported.

Remedy: Select a valid trigger on the Spot equipment SETUP screen.

SVGN-167 Invalid equalizer trigger event.

Cause: The specified equalization pressure trigger event is undefined.

Remedy: Go to the Spot Equipment SETUP screen, and select a valid trigger event.

SVGN-168 Push depth %s[mm] exceeds strokelimit

Cause: The pushing depth specified in the pressure schedule or the minimum pushing depth, exceed the stroke limit. The contact speed might be slightly lower than specified as a result of this alarm.

Remedy: Update one or more of the parameters used to specify pushing depth: \$sgsch#[]\$.push_depth and \$sggun.\$setup\$.push_margin. If these parameters cannot be reduced, then increase the stroke limit, if possible. Note that this is only a warning.

SVGN-169 PushDepth%s[mm]clampd, speed affected

Cause: The minimum push depth (internally calculated distance) required to decelerate from the contact speed exceeds the maximum possible pushing depth: part thickness + close stroke limit. The value of the minimum pushing depth (specified in the alarm message) was clamped to the maximum possible pushing depth.

Remedy: Decrease \$sggun#.\$setup\$.push_margin, or increase the close stroke limit. Although this alarm has a warn severity, this condition should be corrected since the minimum push depth has been clamped to a value that is small enough to affect contact speed and/or contact speed persistence. Note 1: SVGN-169, basically indicates that the close limit value is abnormal, since minimum push depth is typically less than 5mm. Note 2: part thickness is automatically added to the pushing depth value during tryout mode to compensate for the missing part.

SVGN-170 Incompatible PRESS_MOTN format.

Cause: The instruction format PRESS_MOTN[SD=P,SEL=(,)] cannot be used with the setting \$SGSYSDG.\$UGA_IDX4GB=FALSE. GunB must use GunA data, for this instruction.

Remedy: If you want to use the instruction format PRESS_MOTN[SD=P,SEL=(,)] then set \$SGSYSDG.\$UGA_IDX4GB=TRUE. If you do not want to use the instruction format PRESS_MOTN[SD=P,SEL=(,)] then change the instruction to PRESS_MOTN[SD=(,),P=(,)] (the setting of \$SGSYSDG.\$UGA_IDX4GB is ignored for the format PRESS_MOTN[SD=(,),P=(,)]).

SVGN-171 Requested torque > max gun torque.

Cause: The Pressure[]kgf or Pressure level Gun instruction was executed, and the requested torque > max gun torque (OTP torque limit mode).

Remedy: Perform autotuning or disable overtorque protection.

SVGN-172 Can not move gun during interrupt

Cause: A SPOT[] or PRESS_MOTN[] instruction was performed during an interrupt routine (Ex. TB,TA,DB,program monitor etc).

Remedy: Adjust the trigger timing of interrupt routine. Also, wait until the interrupt routine completes then run the servo gun instruction

SVGN-173 Timeout G%d A%d %x %d

Cause: A timeout occurred during Gun-attach or -detach at the start.
The causes are as follows.

1. Other alarms might occur at the start.
2. The servo gun is NOT connected correctly. For example Pulsecoder cable disconnection and defective amplifier.

Remedy: At first, confirm other alarms that occurred at the same time and remove cause of them.

Here is an example of alarms.

SRVO-058 FSSB %d init error (%d)

If this problem persists after taking the above action, check the connections of cables for servo gun.

SVGN-174 SPCALL error fcod:%x, stat:%x

Cause: An internal error has occurred.

Remedy: Document the events that led to the error and call your local FANUC representative.

SVGN-175 Position not recorded

Cause: GunTouchup(F3) or AutoTouchup(F4) was requested but touchup did not occur.

This alarm (SVGN-175) only indicates that touchup failure has occurred, SVGN-176 identifies cause of SVGN-175.

Note: SVGN-175 is not posted during program touchup.

Remedy: See SVGN-176. NOTE: SVGN-175 is an optional alarm (enabled by default).

Set \$SGSYSTCH.\$PTNOTRECALM = FALSE to disable SVGN-175.

SVGN-176 %s

Cause: Refer to message in string.

Remedy: Refer to remedy for message in string.

SVGN-177 Thk%smm,CloseLim%smm,StdLim%smm

Cause: This is information at pressure shortage.

Remedy: Incorrect thickness or/and gun close limit would cause a pressure shortage. If thickness or/and gun close limit is incorrect, gun tip can not go correct push depth for setpoint pressure. The Thk is value which is specified in pressure schedule. Check if thickness value in pressure schedule is correct for actual thickness. This CloseLim is present gun close limit, and the StdLim is gun close limit of no-wear down. If CloseLim is too shorter than StdLim, replace gun tip then perform wear down update program. If StdLim is already too short, set the correct standard limit in servo gun setup screen.

SVGN-178 Open/CloseLim=%s

Cause: This is information of standard stroke limit.

Remedy: Gun stroke limit is compensated by tip wear down. The standard value is stroke limit when TW_SETUP or WR_SETUP is performed an original value. This shorter standard stroke limit may cause pressure shortage. If the standard stroke limit is shorter than original value, set correct standard limit in servo gun setup screen.

SVGN-179 More than two groups

Cause: The program attempted the servogun command with more than 2 groups.

Remedy: The servogun option supports a maximum of 2 groups due to complex synchronization. Use a program with less than 3 groups in the group mask, or remove servogun command (SPOT or PRESS_MOTN) from the program.

SVGN-180 Pressure persist is canceled

Cause: Persisted pressure after HOLD is canceled.

Remedy: Pressure could not be persisted during BWD or ABORT. So persisted pressure is canceled. This is warning message for blowing out. Please check panel status if you are welding.

SVGN-181 Nominal thickness:%s MinAllowable:%s

Cause: The Measured part thickness is less than the under-thickness limit(mm). The part may be out-of-tolerance. NOTE: This message displays the nominal (expected/programmed) thickness and the under-thickness (MinAllowable) limit.

Remedy: See SVGN-040.

SVGN-182 Nominal thickness:%s MaxAllowable:%s

Cause: The Measured part thickness is greater than the over-thickness limit(mm). The part may be out-of-tolerance. NOTE: This message displays the nominal (expected/programmed) thickness and the over-thickness (MaxAllowable) limit.

Remedy: See SVGN-040.

SVGN-183 %s,%s,%s,%s

Cause: Gun touchup function has modified position of spot point.

This message is provided for informational purposes only, it is not a fault/problem.

Note: SVGN-183 is not posted during program touchup.

Remedy: The 4 parameters in SVGN-183 p1/p2/p3/ p4 provide details about the modified point.

p3: Corrected value is the difference between new recorded position and old recorded position.

Note: robot close direction is positive polarity, so if new position is shifted in robot open direction (relative to old position) corrected value will be negative.

p4: Thickness value is actual thickness measured during thickness check.

Note: If thickness check is disabled, nominal thickness (value in pressure schedule) is reported.

SVGN-184 Point touchup cancelled.

Cause: Spot point touchup was cancelled, because shift key was released and program edit screen was de-selected (new screen was selected).

Remedy: Execute point touchup again, and don't exit editor screen.

SVGN-185 Gun monitor buffer overflow

Cause: Data collected during search process exceeded storage buffer. Note: SVGN-185 only occurs during unpress (a process that is no longer used), so it is basically obsolete.

Remedy: Reduce unpress time by increasing speed (\$SGGUN#.\$TEACH.\$LWDT_CLOSPD) or decreasing observation time (\$SGGUN#.\$TEACH.\$LWDT_OBSLEN).

SVGN-186 Wdn:%smm->%smm

Cause: This indicates information for tip increased error. The left value indicates the last wear down. The right value indicates current measured wear down. Since the current measured wear down is incorrect, so increased alarm is posted. Difference of the right value from the left value becomes increased error amount.

Remedy: Please see remedy for SVGN-32 and/or SVGN-33. Note: If current measured wear down is nearly 0, update program might be performed without new tip flag.

SVGN-187 Do gun zero mastering with new tip

Cause: Tip wear setup was performed, without performing gun zero mastering.
The cause are as follows.

1. Tip wear setup might be performed with a worn tip.
2. Tip wear setup might be performed again after tip wear update was performed.

Remedy: Confirm that new tip is worn and then perform gun zero mastering or reset wear down amount. Then perform tip wear setup.

SVGN-188 Restart info incomplete:%d/%d/%d

Cause: An internal error has occurred. Execution restart information is incomplete.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-189 Tipwear overstroke protection is off

Cause: Tipwear had been setup, but a BZAL alarm occurred and tipwear zero reference (pls0) is not up to date. Pls0 must be updated after BZAL to maintain proper stroke limit (Overstroke protection is turned of after BZAL to avoid invalid strokelimit values).

Remedy: Go to gun master screen and execute recalibrate or master. Either action updates pls0, and turns overstroke protection on.

SVGN-190 Backup before search clamped:%smm

Cause: Open (search start) distance for upper panel detection exceeded gun stroke limit, so open distance was clamped to gun open limit.

Note: Gun open distance for upper panel search depends on touchup type:

if point touchup:

open distance = initial pos + search prep dist

if prog touchup:

open distance = thk.nom + thk.err.max + pos.err.max + search prep dist

SVGN-190 does not cause any problem if panel contact occurs AFTER search start. However, if panel contact occurs BEFORE search start, excessive push and/or touchup failure may result.

Remedy: If point touchup is being performed, close gun (jog) to reduce open distance. If program touchup is being performed, reduce one or more of the following parameters: upper panel detect distance, max thickness error, max pos error.

SVGN-191 Thickness Check Calib Updated.

Cause: Thickness Check Calibration was successful - parameters were updated.

Note: This alarm is merely status information, it is not a fault/problem.

Remedy: None. This is a message.

SVGN-192 Thickness Check Calib Not Updated.

Cause: Thickness Check Calibration parameters were not updated, thickness Check Calibration failed.

Note: If thickness Check Calibration had been done prior to present calibration attempt, the last parameter were restored.

Remedy: Please see cause code and other relevant alarms in alarm log. Correct issue that caused that calibration to pause/fail and retry Thickness Check Calib.

SVGN-193 Automastered:%.1fmm from old masterpos.

Cause: Automaster operation was successful, and mm distance between old and new master position is provided for reference.

Remedy: No remedy needed - this alarm is for information purposes only.

SVGN-194 Automaster failed.

Cause: Automaster operation failed. Refer to cause code for reason.

Remedy: Formulate remedy based on cause code.

SVGN-195 Masterct(old:%d,new:%d).

Cause: Automaster operation was successful, and master count values - old and new - are provided for reference.

Remedy: No remedy needed - this alarm is for information purposes only.

SVGN-196 TW recalibrated:%.1fmm from old pulse0.

Cause: Auto wear calibrate operation was successful, and mm distance between old and new pulse0 value is provided for reference.

Remedy: No remedy needed - this alarm is for information purposes only.

SVGN-197 TW recalibrate failed.

Cause: Auto wear calibrate operation failed. Refer to cause code for reason.

Remedy: No remedy needed - this alarm is for information purposes only.

SVGN-198 Pulse0ct(old:%d,new:%d).

Cause: Auto wear calibrate operation was successful, and master count values - old and new - are provided for reference.

Remedy: Refer to cause code for specific information.

SVGN-199 Automaster message.

Cause: Status information about automaster operation is being posted.

Remedy: Refer to cause code for specific information.

SVGN-200 FCTRL must be off for automaster.

Cause: Automaster was requested while gun was still in force control. Automaster cannot start until fctrl is cleared.

Remedy: Press fault reset and execute automaster again. (SVGN-200 alarm automatically resets force control).

SVGN-201 Gun index 1

Cause: The posted error occurred on GunA (gun index 1) of the dual gun.

Remedy: Correct the error on the gun number corresponding to GunA (gun index 1).

SVGN-202 Gun index 2

Cause: The posted error occurred on GunB (gun index 2) of the dual gun.

Remedy: Correct the error on the gun number corresponding to GunB (gun index 2).

SVGN-203 GunA, GunB contact speed is different

Cause: The contact speed used in this Pressure Schedule is different for Gun A and Gun B - but contact speed must match to achieve synchronized contact with the part.

Remedy: Set the contact speed of the Pressure Schedule to the same value for both guns. This is done by adjusting the pressure calibration data which determines the contact speed. The Speed at a given Pressure must be the same for both guns. It is recommended to use matching Pressure and Speed values for each calibration point for both guns. Then, find the unique torque% required to achieve the pressure for each gun. OR, just set the contact speed for all points in the Pressure Calibration table for both guns to the same value.

SVGN-204 GunA, GunB pushing depth is different

Cause: Pushing depth is different for GunA and GunB. Equal pushing depth is required, for synchronized move to pressure position.

Remedy: Set \$sgsch[[]].\$pushing depth, and \$sggun#.\$setup.\$push_margin to same value, for both guns.

SVGN-205 GunA, GunB creep distance is different

Cause: The creep distances are different for GunA and GunB. Equal creep distance is required to achieve synchronized contact with the part.

Remedy: Set the system variable \$sggun#.\$setup.\$screep_dst to the same value, for both guns on this dual-gun (# represents the gun number).

SVGN-206 GunA, GunB part thickness is different

Cause: The Part Thickness used in this Pressure Schedule is different for GunA and GunB. Equal thickness is required to achieve synchronized contact with the part.

Remedy: Set the part thickness to same value, for both guns.

SVGN-209 GunA, GunB joint velocity limits differ.

Cause: Joint velocity limits are different for gunA and gunB. The joint velocity limits must be equal to achieve synchronized contact with the part.

Remedy: Use the Gun Setup Utility to set the Maximum Speed (i.e. joint velocity limit) of both Gun A&B to the same value. Perform the following:

1. Press MENU.
2. Select UTILITIES.
3. Select GUN SETUP.
4. Press F6, DG_CHECK.
5. Press F4, SETSPD and reply YES to the prompt to set the speed to the same value.
6. Cycle Power to activate the change.

SVGN-210 GunA, GunB accel times differ

Cause: Acceleration Times are different for gunA and gunB. The acceleration times must be equal to achieve synchronized contact with the part.

Remedy: Use the Gun Setup Utility to set the Acceleration Times of both Gun A&B to the same value. Perform the following:

1. Press MENU.
2. Select UTILITIES.
3. Select GUN SETUP.
4. Press F6, DG_CHECK.
5. Press F5, SETACC and reply YES to the prompt to set the accel time to the same value.
6. Cycle Power to activate the change.

SVGN-211 Incomp weight calc in ATUN

Cause: Weight calculation in the autotuning is not completed. Therefore, pressure was not able to be compensated.

Remedy: Complete weight calculation of the autotuning screen.

SVGN-212 Incomp weight calc for X gun

Cause: Weight calculation for X gun is not completed. Therefore, pressure was not able to be compensated.

Remedy: Complete weight calculation by executing WT_MEAS.TP.

SVGN-213 Can't detect pressure posture

Cause: The pressurizing posture cannot be detected.

Remedy: The setting of the tool coordinate system is wrong. It is necessary to set the tool coordinate system to the servo gun tips of fixed side. Moreover, +Z tool coordinate axial direction should be the same as the gun open direction.

SVGN-214 Servo gun type is not set

Cause: Servo gun type is not set. Therefore, pressure was not able to be compensated.

Remedy: Confirm the weight compensation gun type of the Servo Gun General Setup screen.

SVGN-215 Incomp manual wt comp setup

Cause: Incomplete manual weight compensation setup was performed. Therefore, pressure was not able to be compensated.

Remedy: Go to the Servo Gun General Setup screen, select Manual weight compen. Complete compensation formula.

SVGN-216 Illegal wt compens val: Gun%d,P%d

Cause: The weight compensation value is too large. Therefore, pressure was not able to be compensated.

Remedy: Confirm the contents of the setup of the weight compensation function.

SVGN-217 Do press calib over again

Cause: There is mistake in the setting of weight compensation function at pressure calibration.

Remedy: Confirm the weight compensation gun type of the Servo Gun General Setup screen. Confirm the setting of tool coordinate system. Execute pressure calibration again.

SVGN-218 This press can't be compensated

Cause: Because this command pressure was lower than the value of WT compensation press low lim of Servo Gun General Setup screen, this command pressure was not able to be compensated.

Remedy: Confirm the value of WT compn press low lim of the Servo Gun General Setup screen.

SVGN-219 Angle is wrong

Cause: A set value of the angle is wrong.

Remedy: The interval between angle and angle at pressure calibration should be away by 70 degrees or more. Confirm the set value of the angle.

SVGN-220 Set value is wrong

Cause: A set value is wrong. The calculated weight has become negative.

Remedy: The interval between angle and angle at pressure calibration should be away by 70 degrees or more. Confirm the set value of the angle. The pressure or the command pressure might be wrong. Confirm the set values of the pressure and the command pressure.

SVGN-221 Incomp semi-auto wt comp setup

Cause: Incomplete semi-auto weight compensation setup has occurred. Therefore, the pressure was not able to be compensated.

Remedy: Go to the Servo Gun General Setup screen, and select the Semi-auto weight compensation. Complete semi-auto weight compensation setup.

SVGN-222 UT correct ang is out of range

Cause: The UT correct angle is out of range. Therefore, the position of the gun was not able to be calculated.

Remedy: Go to the Servo Gun General Setup screen. Set up the WT compen UT correct angle between 0 and 360.

SVGN-223 Max disturbance excess G%d

Cause: Max disturbance torque exceeds the tolerance.

Remedy: Check the pressure calibration.

SVGN-224 Average disturbance excess G%d

Cause: Average disturbance torque exceeds the tolerance.

Remedy: Check the pressure calibration.

SVGN-225 Min disturbance excess G%d

Cause: Min disturbance torque exceeds the tolerance.

Remedy: Check the pressure calibration.

SVGN-226 Servogun Diagnosis is failed.

Cause: Servogun diagnosis is failed.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-230 Manual weight setup err: Gun%d,P%d

Cause: A mistake is found in the setting of the manual weight compensation. Therefore, pressure was not able to be compensated.

Remedy: Go to the Servo Gun General Setup screen, select Manual weight compen. Confirm the setting of the manual weight compensation function.

SVGN-231 Can't detect pressure posture

Cause: Pressurizing posture cannot be detected.

Remedy: The setting of the tool coordinate system is wrong. It is necessary to set the tool coordinate system to the servo gun tips of fixed side. Moreover, +Z tool coordinate axial direction should be the same as the gun open direction.

SVGN-232 This gun cannot use AUTO

Cause: This gun cannot use the auto weight compensation type.

Remedy: Set the gun to another weight compensation type.

SVGN-233 This gun cannot use AUTO

Cause: This gun cannot use the auto weight compensation type.

Remedy: Set the gun to another weight compensation type.

SVGN-234 Recorded touchup log.

Cause: This message is posted if user presses F2(rec) fkey when prompt "Is tip on panel" is presented.

SVGN-234 is merely a status message, it is not a problem.

Remedy: n/a. Set \$SGSYSTCH.\$LOG_FLAG=FALSE and/or \$SGSYSTCH.\$MAN_LOG_ENB=FALSE, if you do not wish to record touchup log.

SVGN-235 Already Recorded touchup log.

Cause: User notification that touchup log already exists. This message is posted if F2(rec) fkey is pressed more than once, when tip on panel prompt is presented.

Remedy: Press F2(rec) fkey only once.

SVGN-236 [PauseMod]Det/Thk/Pos Err :Eq%d

Cause: Program execution paused because position and/or thickness is out of tolerance. This pause occurs when DET/THK/POS error pause severity is set to warn or alarm and one more of the following conditions exist:

- . SVGN-237 Position error:(Eq:%d,Ln:%d)
- . SVGN-239 Thickness error:(Eq:%d,Ln:%d)
- . SVGN-240 Up Panel Mis-Detect:(Eq:%d,Ln:%d)
- . SVGN-252 Panel detection was failed:(Eq:%d,Ln:%d)
- . SVGN-254 Low Panel Mis-detect:(Eq:%d,Ln:%d)
- . SVGN-260 Search motion is unsuccess.

Remedy: Set Det/Thk/Pos error pause Sev in the gun teach setup screen to DISABLE if you do not want robot to pause when the alarms above occur.

SVGN-237 Excessive position error:(Eq:%s)

Cause: Measured position error is greater than maximum allowable position error or less than min allowable position error."

Remedy: Confirm that:Max allowable Pos error (on gun teach setup screen) is large enough and/orMin allowable Pos error (on gun teach setup screen) is small enough If not, measured position error is made greater than min allowable position error and less than maximum allowable position error in the following ways.

1. Touch up correct position using jog or point touchup(not program touchup).
 2. Increase maximum allowable position error or decrease min allowable position error on gun teach setup screen.
- Note: if initial position error is too large, program touchup cannot touch up. Fanuc recommends using point touchup(not program touchup) at the initial touchup. If this problem persists after taking the above actions,
1. Confirm the position error offset in the spot program touchup setup screen. This alarm might be generated immediately after the position error offset is changed.
 2. Confirm the parameter to correct position for Xgun in the spot program touchup setup screen. This alarm might be generated immediately after the parameter to correct position for Xgun is changed.
 3. Confirm the tip wear amount is correct. Re-execute the tip wear measurement when the tip wear amount is not correct.
 4. Re-execute the thickness check calibration.

If this problem persists after taking the all actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-238 [PauseMod]SpotProgTouchDsb:Eq%d

Cause: Program execution paused because TCHDSB is attached to spot instruction, and SpotprogTouch_DSB pause severity = warn or alarm.

- Remedy:** If you do not want robot to pause, either:
- set SpotProgTouch_Dsb pause Sev in the gun teach setup screen to DISABLE OR
 - remove TCH_DSB from spot instruction.

SVGN-239 Thickness error:(Eq:%d,Ln:%d)

Cause: Measured thickness is out of tolerance. Note: SVGN-242 Act thick:x.x, Nom thick: y.y is posted as cause code for SVGN-239.

Remedy: Confirm that:

- Actual panel thickness is correct.
- nominal thickness is correct.
- OverThickness and UnderThickness tolerance values on gun teach setup screen are appropriate.
- Tip wear amount is correct. Re-execute the tip wear measurement when the tip wear amount is not correct.
- Re-execute the thickness check calibration.

If this problem persists after taking the all actions, perform the following actions:

- Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
- Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-240 Up Panel Mis-detect:(Eq:%d,Ln:%d)

Cause: Upper panel detection distance is larger (gun more open) than max detect distance.

Remedy: Confirm that:

- no obstruction exists between guntip and panel.
- ensure that panel is present on correct position.
- nominal thickness is correct.
- OverThickness tolerance (on gun teach setup screen) is large enough.
- the master position for the gun axis is correct and the tips touch at the zero.
- the tip wear amount is correct. Re-execute the tip wear measurement when the tip wear amount is not correct.

If this problem persists after taking the all actions, perform the following actions:

- Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
- Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-241 ActPosErr:%smm > MaxPosErr:%smm

Cause: Position error exceeds Max allowable pos error. SVGN-241 supplies the actual position error and maximum allowable position error for alarm SVGN-237.

Remedy: See SVGN-237.

SVGN-242 Act thick:%smm Nom thick:%smm

Cause: Thickness error exceeds OverThickness tolerance or UnderThickness tolerance. SVGN-242 supplies the actual thickness and nominal thickness for SVGN-239.

Remedy: See SVGN-239.

SVGN-243 ActDetDis:%smm MaxDetDis:%smm

Cause: Detect distance (observed) exceeds Max Detect distance. SVGN-243 supplies the actual detection distance and max detect distance for SVGN-240.

Remedy: See SVGN-240.

SVGN-244 Retry Thickness Check calibration

Cause: Thickness check calibration (0kgf) is incomplete. Thickness check calibration is required for touchup.

Remedy: Execute thickness check calibration on gun setup util.

SVGN-245 Gun not open to undeflect pos

Cause: Position register (PR) that stores undeflect (relax) position for gun/robot could not be set. Note that undeflect pos is starting point for thickness check, it removes deflection at lower panel detect end. Note that Refer to cause code for specific reason.

Remedy: Correct problem identified in cause code, and retry touchup.

SVGN-246 Machinelock required for PNLSIM.

Cause: Panel simulation is enabled, but machinelock is disabled on robot group or gun group. Machinelock must be ENABLED on both robot group and gun group, when panel simulation is enabled.

Remedy: Disable panel simulation(\$SGSYSTCH.\$SIM_PNL_ENB=FALSE) or ENABLE machinelock on robot group and gun group.

SVGN-247 Concurrent multiarm touchup unsupported.

Cause: Touchup is already in progress on an arm and touchup is being requested on another arm (at the same time). Touchup can only be performed on one arm at a time.

Remedy: Wait for touchup operation that is already in progress to complete, before starting touchup on another arm.

SVGN-248 Panel not detected.

Cause: Upper or lower panel search ended, but panel was not detected. I.E. gun speed never fell below speed threshold, during search. The following conditions can cause this problem:

1. missing panel
2. large gun friction
3. large pressure margin

Remedy: 1. ensure that panel is present.
2. increase \$sggun#.\$teach.\$pnldflctdst.
3. decrease pressure margin.

If problem persists, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-249 Panel Detection was failed.

Cause: Panel was not detected during second part of upper panel search. Internal condition for search termination was not met. This can occur if panel is soft.

Remedy: Retry touchup.

SVGN-250 Spot program touchup enabled !

Cause: A tp program started (or resumed) and spot program touchup function is enabled with execution mode = TOUCHUP. Touchup mode means that points will be evaluated AND positions will be modified.

Remedy: If verify (not touchup) mode is desired, change execution mode via Touchup setup screen:

1. if tp is disabled, set Execution mode for AUTO = VERIFY mode,
2. if tp is enabled, set Execution mode for TEACH = VERIFY mode,

If normal spot (not touchup or verify) operation is desired, disable program touchup via:

1. DIN, if tp is disabled.
2. Touchup mode setup screen, if tp is enabled.

SVGN-251 ActPosErr:%smm < MinPosErr:%smm

Cause: Position error (change between observed position and recorded position) is less than MinPosError. This message is posted to display magnitude of observed position error and minimum pos error, when SVGN-237 occurs. Note that min pos error is used in conjunction with max pos error to control when points are touched up. Points are only touched up if position error is $\geq$ min pos error and $\leq$ max pos error. Min pos error tolerance identifies when position change is small and/or insignificant.

Remedy: If position error is acceptable, decrease min pos error and execute touchup again. Set min pos error = 0.0, to disable min pos error check completely.

SVGN-252 Panel Detection failed.(%d)

Cause: Upper panel detection failed. The integer parameter () identifies the failure type:

type1: gun tip did not contact panel during search motion (internal condition to terminate search was not met).

type2: exact position of detection could not be found (no distinct transition in the data).

Remedy: type1: ensure that panel is present. If panel is not present, touch up new point by jog or point touchup.

type2: confirm strength of panel. Rough indication of strength is that deflection during search motion does not exceed 3mm.

SVGN-254 Low Panel Mis-detect:(Eq:%d,Ln:%d)

Cause: Measured thickness was too large at lower panel detection.

Remedy: Confirm that:

1. no obstruction exists between guntip and panel.
2. ensure that panel is present on correct position.
3. nominal thickness is correct.
4. OverThickness tolerance (on gun teach setup screen) is large enough.
5. the master position for the gun axis is correct and the tips touch at the zero.
6. the tip wear amount is correct. Re-execute the tip wear measurement when the tip wear amount is not correct.

If this problem persists after taking the all actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-255 Search motion is unsuccess.

Cause: Detection data for the second upper panel search is invalid.

Remedy: Retry spot program touchup. Confirm that gun tip contacts panel at upper panel detection. If this problem persists after taking the above actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-256 Invalid parameter in SPTCH_XXX

Cause: Register specified for SPTCH_OFS or SPTCH_RSD is invalid.

Note: SPTCH_OFS is attached to spot instruction to specify offset/adjustment value that is added to final offset for point modification. SPTCH_RSD is attached to spot instruction to specify offset distance for robot tip.

Remedy: Set a valid parameter for the instruction:

1. SPTCH_OFS: $\geq -2.0\text{mm}$ && $\leq 2.0\text{mm}$
2. SPTCH_RSD: $\geq 0.0\text{mm}$ && $\leq 20.0\text{mm}$

SVGN-257 Invalid register number

Cause: Parameter specified in SPTCH_OFS/SPTCH_RSD is out of range.

Remedy: Specify a valid register number in SPTCH_OFS or SPTCH_RSD instruction:

min: 1
max: posreg max (position registers item, on program limits setup screen)

SVGN-258 Spot prog touchup retry:(Num:%d)

Cause: Initial touchup attempt failed, but retries are enabled, and touchup will be attempted again.

Remedy: n/a - this message is provided for information purposes only.

Note: set maximum retry number = 0 on gun teach setup screen, to disable retries.

SVGN-259 Retry number > Max retry number

Cause: Initial touchup attempt and retries failed.

Remedy: Confirm strength of panel. Rough indication of strength is that deflection during search motion does not exceed 3mm. If panel is harder than this indication, retry spot program touchup.

If this problem persists after taking the above actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Chapter "20.19 Troubleshooting" in operator's manual for Servo Gun Function.

2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-260 Search motion is unsuccess.

Cause: Upper panel detection failed. Robot motion stopped before gun tip touched panel. Data for the detection is invalid.

Remedy: Retry search motion.

SVGN-261 Disturbance of gun is abnormal.

Cause: Gun torque command is erratic. This gun may have mechanical issues.

Remedy: Examine the servo gun. Confirm that there is no actuator damage or binding. If gun is ok, retry touchup function.

SVGN-262 Disturbance of gun is abnormal.

Cause: Gun torque command is erratic. This gun may have mechanical issues.

Remedy: Examine the servo gun. Confirm that there is no actuator damage or binding. If gun is ok, retry touchup function.

SVGN-263 Variation in disturbance is too much.

Cause: Gun torque command is erratic. This gun may have mechanical issues.

Remedy: Examine the servo gun. Confirm that there is no actuator damage or binding. If gun is ok, retry touchup function.

SVGN-264 Variation in disturbance is too much.

Cause: Gun torque command is erratic. This gun may have mechanical issues.

Remedy: Examine the servo gun. Confirm that there is no actuator damage or binding. If gun is ok, retry touchup function.

SVGN-265 Mech Comp Calib. succeeded

Cause: Mechanical calibration for point/program touchup function completed successfully.

Remedy: n/a - this is a status message for informational purposes.

SVGN-266 Comp Dist: %s mm (%s)

Cause: This message shows the compensation value for point/program touchup function. Value in () means Num of Successful calibration / Specified Num of calibrations.

Remedy: n/a - this is a status message for informational purposes.

SVGN-267 Mech Comp Calib. failed

Cause: Mechanical calibration for point/program touchup function failed. Compensation distance could not be found.

Remedy: Refer to SVGN-268 for cause.

SVGN-268 %s

Cause: This message identifies cause of gun mechanical compensation (calibration) failure. It is posted, along with SVGN-267.

input data is invalid - parameter specified in SGKTCHCL() is invalid.

The remedy depends on the parameter (p1-p5) that is identified:

Invalid gun number. Specify Gun number between 1 and \$SGSYSCFG.\$GUN_NUM.

Invalid thickness: Specify thickness value greater than or equal to 1.0.

Invalid Gun Open Distance: Specified gun tip open distance is not invalid.

Invalid Robot Open Distance: Specified robot tip open distance is not invalid.

Invalid Num of Calib: Calibration iterations (number) is invalid. Minimum=1

Check system status: Calibration cannot proceed due to system error or illegal condition.

- Any alarm occur, and/or HOLD is turn on.

- Enable single step and/or machine lock.

- Disable gun stroke (mode).

- Spot program touchup disabled.

ALL Calib. NOT SUCCESS: Calibration failed due to one of the following:

- Alarm or HOLD occurs during calibration.

- Misdetect error

- Thickness out of tolerance

- Position out of tolerance

Remedy: Invalid gun number. Correct gun number between 1 and \$SGSYSCFG.\$GUN_NUM.
 Invalid thickness: Corret thickness value greater than or equal to 1.0.
 Invalid Gun Open Distance: Correct gun tip open distance.
 Invalid Robot Open Distance: Correct robot tip open distance.
 Invalid Num of Calib: Correct calibration iterations (number).
 Check system status:Calibration cannot proceed due to system error or illegal condition.
 - Rest nny alarm occur, and/or HOLD.
 - Disable single step and/or machine lock.
 - Enable gun stroke (mode).
 - Enable Spot program touchup.
 ALL Calib. NOT SUCCESS: Calibration failed due to one of the following:
 - Reset alarm or HOLD.
 - Identify cause of misdetect error.
 - Correct thickness for fixture.
 - Correct position for fixture.

SVGN-269 Spot program touchup disabled

Cause: This indicates spot program touchup is disabled. Spot program touchup must be enabled to execute mechanical compensation calibration.

Remedy: Enable spot program touchup via TEST CYCLE or CELL INTERFACE I/O.

SVGN-270 Too large torque limit.(Upper)

Cause: Gun tip contacted upper panel surface before search motion started. Torque limit became unexpectedly-large during upper panel detection step1.

Remedy: Confirm that tip does not touch paned surface before touchup sequesnce starts.When touch up sequence starts, remove gun tip. Or increase value to SD if using spot touphcup
 If this problem persists after taking the above actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Chapter "20.19 Troubleshooting" in operator's manual for Servo Gun Function.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-271 Too large torque limit.(Lower)

Cause: Robot tip contacted lower panel surface before search motion started. Torque limit became unexpectedly-large during lower panel detection.

Remedy: Confirm that distance of panel contact is not larger than search start distance. Retry spot program touchup. If robot tip contacts lower panel surface before search start distance, increase start distance(SD) for robot tip and/or lower panel detection distance. Refer to Chapter "20.6 LOWER PANEL DETECTION DISTANCE CLAMP" or "20.13 SPTCH_RSD INSTRUCTION" in OPERATOR'S MANUAL of Servo Gun Function for more information about the lower panel detection distance.
 If this problem persists after taking the above actions, perform the following actions:

1. Acquire diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-272 Lower Det start pos was wrong.

Cause: Open distance of a gun axis was too short at start position of lower panel detection.

Remedy: Confirm that robot tip has enough clearance from panel surface at start position. If distance between robot tip and panel is too short, increase start distance(SD) for robot tip and/or lower panel detection distance. Refer to Chapter "20.6 LOWER PANEL DETECTION DISTANCE CLAMP" or "20.13 SPTCH_RSD INSTRUCTION" in OPERATOR'S MANUAL of Servo Gun Function for more information about the lower panel detection distance.
 Retry spot program touchup.
 If this problem persists after taking the above actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.

2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SVGN-273 Det was irregular stop.R:%d P:%d

Cause: A gun tip was contacted an upper panel surface on a free running section before search motion.

Remedy: R:1 means that error occurred during upper panel detection. Confirm that gun tip has enough clearance from upper panel surface at start position.If distance between the tip and the panel is too short, increase start distance(SD) for gun tip.

R:3 means that error occurred during lower panel detection. Confirm that robot tip has enough clearance from panel surface at start position and that there is no obstacle between the panel and the robot tip at start position. If distance between the tip and the panel is too short, increase start distance(SD) for robot tip and/or lower panel detection distance. Refer to Chapter "20.6 LOWER PANEL DETECTION DISTANCE CLAMP" or "20.13 SPTCH_RSD INSTRUCTION" in OPERATOR'S MANUAL of Servo Gun Function for more information about the lower panel detection distance. Retry spot program touchup.

If this problem persists after taking the above actions, perform the following actions:

1. Acquire diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

Note: This alarm is posted when the time to execute phases2,3 take longer than anticipated, during upper1 detection and lower detection.

R: Request number. R:1 is upper1 detection. R:3 is lower detection.

P: Phase number. P:2 is phase of acceleration. P3: is phase to collect data to calculate threshold.

If the tip touch panel during above phase, this alarm is posted. Please check whether the tip touch panel or the gun is closed(or grabbed panel) at position of search start.

SVGN-274 Speed threshold is too low

Cause: Threshold to detect panel contact became unexpectedly-low.

Remedy: If gun tip contacted panel surface at start position, increase start distance(SD) for gun tip. If robot tip contacted lower panel surface at start position, increase start distance(SD) for robot tip and/or lower panel detection distance. Refer to Chapter "20.6 LOWER PANEL DETECTION DISTANCE CLAMP" or "20.13 SPTCH_RSD INSTRUCTION" in OPERATOR'S MANUAL of Servo Gun Function for more information about the lower panel detection distance.Retry spot program touchup.

If this problem persists after taking the above actions, perform the following actions:

1. Acquire the diagnostic data. See the procedure for diagnostic data collection at Troubleshooting section.
2. Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative..

SVGN-275 Search starts@:%4.1fmm (%4.1f desired)

Cause: Search start distance was clamped due to gun open limit. SVGN-275 is posted as cause code for SVGN-190. Actual search start distance is displayed, along with desired (unclamped) search start distance.

Remedy: See SVGN-190.

SVGN-276 Search mode was not selected.

Cause: Search mode was not selected. So position detection was not done.

Remedy: Set \$SGSYSTCH.\$ACCUDET_ENB = TRUE, and then restart.

SVGN-278 Averaging speed is enabled.

Cause: Axis speed will be varied during search motion. So counter-measure is turned ENABLE automatically.

Remedy: If the gun has no abnormality, there is no remedy.

SVGN-279 Averaging speed is used.

Cause: Axis speed will be varied during search motion. So counter-measure is used automatically.

Remedy: If the gun has no abnormality, there is no remedy. Turn Use averaging speed ON manually if you want to disable this message.

SVGN-280 Excessive Wear down Comp (Gun).

Cause: Wear down amount of gun side is exceeded to max compensation tolerance. Cap tip may be worn out and/or shank may be shorter than original length. Gun axis will run over away mechanical stroke limit. And gun tip would interfere object/panel if gun tip clearance is small.

Remedy: Change tip to new tip. If shank is shorter than original length, change to new shank.

SVGN-281 Excessive Wear down Comp (Rbt).

Cause: Wear down amount of gun side is exceeded to max compensation tolerance. Cap tip may be worn out and/or shank may be shorter than original length. Gun axis will run over away mechanical stroke limit. And gun tip would interfere object/panel if gun tip clearance is small.

Remedy: Change tip to new tip. If shank is shorter than original length, change to new shank.

SVGN-282 Wear ratio updated:%s->%s

Cause: Wear ratio was updated. Displayed value means old wear ratio -> new wear ratio.

Remedy: This is just information. There is no remedy.

SVGN-283 Wear ratio(%s) Not updated

Cause: Wear ratio was updated. (However wear down was updated) System can not calculate when tips are not WORN.DOWN(= cap tip is increased). There are some causes.
 - Cap has been replaced. But new tip flag is OFF.
 - Cap wear has been hardly changing. Wear ratio could not be updated in too short cycle.
 See SVGN-284 to confirm wear down changing.

Remedy: Turn on new tip when tip is replaced in next time. Also Perform 2step after tip dressing several times.

SVGN-284 Gun:%s,Rbt:%s

Cause: This indicates wear down changing:
 The last 2step wear down -> Current 2step wear down. If The last 2step wear down is larger than current 2step wear down, tip would be replaced. If cap wear has been hardly changing, 2 step is performed with too short cycle.

Remedy: Turn on new tip when tip is replaced in next time. Also Perform 2step after tip dressing several times.

SVGN-285 Wear ratio Out of Tolerance

Cause: This indicates calculated wear down is exceeded user's tolerance.
 - Cap has been replaced. But new tip flag is OFF.
 - Cap wear has been hardly changing. Wear ratio could not be updated in too short cycle.

Remedy: Turn on new tip when tip is replaced in next time. Also Perform 2step after tip dressing several times. User's tolerance can be changed in TWD setup screen.

SVGN-286 Wear ratio:%s > Max:%s

Cause: This indicates calculated wear down and user's tolerance(Max).

Remedy: See SVGN-285.

SVGN-287 Wear ratio:%s < Min:%s

Cause: This indicates calculated wear down and user's tolerance(Min).

Remedy: See SVGN-285.

SVGN-288 New tip !! Use 2step TWD

Cause: 1step performed with new tip flag. Do not perform 1step with new tip flag when auto update wear ratio is enable.

Remedy: Perform 2step with new tip flag again.

SVGN-289 Update Wear ratio

Cause: Wear ratio has not been updated for long time.

Remedy: Please update wear ratio.

SVGN-290 Do press calib over again:G%d

Cause: There is mistake in the setting at pressure calibration.

Remedy: Execute pressure calibration again.

SVGN-291 Illegal temperature compens val:G%d

Cause: Temperature compensation value is too large. Therefore, pressure was not able to be compensated.

Remedy: Confirm the content of the setup of temperature compensation function.

SVGN-292 Invalid AI,GI conversion factor:G%d

Cause: Invalid AI,GI conversion factor setting is not correct.

Remedy: Confirm the AI,GI conversion factor setting.

SVGN-293 Temp info from motor isn't obtained:G%d

Cause: Temperature information cannot be obtained from this pulse corder.

Remedy: Examine the figure number for the pulse corder. Examine whether the pulse coda is breakdown.

SVGN-294 Temp exceed abnormal up lim:G%d

Cause: Temperature exceeded abnormal motor temperature upper limit value.

Remedy: Confirm the temperature sensor is not out of order.

SVGN-295 Temp below abnormal low lim:G%d

Cause: Temperature fell below abnormal motor temperature lower limit value.

Remedy: Confirm the temperature sensor is not out of order.

SVGN-296 Invalid temperature coefficient:G%d

Cause: Temperature coefficient setting is not correct.

Remedy: Confirm the temperature coefficient setting.

SVGN-297 Temp info from AI isn't obtained:G%d

Cause: Temperature information cannot be obtained from AI.

Remedy: Confirm the AI setting.

SVGN-298 Temp info from GI isn't obtained:G%d

Cause: Temperature information cannot be obtained from GI.

Remedy: Confirm the GI setting.

SVGN-299 Invalid thickness: t=**

Cause: Instruction for which invalid thickness was specified was executed.

Remedy: Confirm the thickness in the instruction.

SVGN-300 Early welding OFF at resuming

Cause: Program is paused when gun is closing with early welding. Early welding is disabled for resumed gun closing.

Remedy: This is just warning message. Early welding is disabled for the only resumed gun closing. In next spot line, early welding is enabled again. And, if program is executed with BWD, early welding is enabled for the SPOT.

SVGN-301 Early weld calibration INCOMP

Cause: Early weld calibration is incomplete. Early welding can not be enabled.

Remedy: Execute early weld calibration on gun setup utility screen.

SVGN-302 Welding in pressure shortage

Cause: When pressure did not reach target pressure, weld init would asserted in pressure shortage.

Remedy: Please refer to remedy of SVGN-020. Also, Execute early weld calibration again.

SVGN-303 Gun%d: Disabled early welding

Cause: In pressure of dual gun, either gun disable early welding. Weld init will assert when pressure of gun that disables early welding reaches target pressure.

Remedy: Enable/Disable early welding for both gun.

SVGN-304 Invalid early welding time

Cause: Invalid early welding time was specified. Early welding time is too large.

Remedy: Correct early welding time. Early welding time can not larger than torque up time of gun.

SVGN-305 OVR < 100%%, Early Welding Disabled

Cause: General override is not 100%. Early welding time can work correctly with OVR 100%.

Remedy: Set override 100%.

SVGN-306 Thickness Check Calib Retrying...

Cause: Retrying thickness check calibration.

Remedy: This message is provided for informational purposes only, it is not a fault.

SVGN-314 Thickness%d not read, deflect cal incomp.

Cause: Thickness could not be read because deflection calibration is incomplete. Number after thickness refers to type of thickness that could not be read 1=before weld, 2=after weld.

Remedy: Perform deflection calibration or set \$SGCFG[#eq].\$ THKRD_ARPRS=FALSE.

SVGN-315 Torque value not in deflect cal table.

Cause: Torque value for current pressure is not in deflection calibration table -deflection value is obtained via interpolation.

Remedy: Accuracy of deflection estimate may improve by the following procedure.

1. Go to pressure calibration screen and add present pressure to pressure calibration table
2. perform deflection calibration.

OR disable this alarm(SVGN-315), by setting \$SGCFG[#eq].\$DFLINTRPALM=0

SVGN-340 Prog:%s is write-protected.

Cause: Spot program touchup function could not modify program position, because file is write-protected.

Remedy: Disable write protection.

SVGN-341 Spot program touchup pending.

Cause: Spot program touchup has been enabled with execution mode = TOUCHUP mode during spot instruction execution, so spot program touchup will not start until next spot. Conditions leading to this message:

1. Start program with spot program touchup disabled.
2. Pause program during execution of spot instruction.
3. Enable spot program touchup (in TOUCHUP mode).
4. Resume (continue) program.

Remedy: Note: purpose of this warning is operator notification, this is not a fault condition. In order to execute program touchup immediately, either execute shift backward (to restart spot) or abort program.

SVGN-342 Spot program verification enabled !

Cause: A tp program started (or resumed) and spot program touchup function is enabled with execution mode = VERIFY.

Verify mode means that points will be evaluated but positions will NOT be modified.

Remedy: If touchup (not verify) mode is desired, change execution mode via Touchup setup screen:

- a. if tp is disabled, set Execution mode for AUTO = TOUCHUP mode,
- b. if tp is enabled, set Execution mode for TEACH = TOUCHUP mode,

If normal spot (not touchup or verify) operation is desired, disable program touchup via:

- a. DIN, if tp is enabled.
- b. Touchup mode setup screen, if tp is disabled.

SVGN-343 Spot program verification pending.

Cause: Spot program touchup has been enabled in VERIFY mode during spot instruction execution, so spot program touchup will not start until next spot. Conditions leading to this case are:

1. Start program with spot program touchup disabled.
2. Pause program during execution of spot instruction.
3. Enable spot program touchup (in VERIFY mode).
4. Resume (continue) program.

Remedy: Note: purpose of this warning is operator notification, this is not a fault condition. In order to execute program touchup immediately, either execute shift backward (to restart spot) or abort program.

SVGN-344 Torque calibration incomplete.

Cause: Touchup was requested with torque control type 2, but torque calibration is incomplete.

Remedy: Complete touchup torque calibration or change \$sggun#.\$tchup.\$updt_tq_typ=1 and \$sggun#.\$tchup.\$updt_tq_typ=1.

SVGN-345 Prog(%s): Read group msk failed.

Cause: Group mask could not read from specified program().Refer to cause code (SVGN-347) for reason.

Remedy: Lookup error code for SVGN-347 and take appropriate action.

SVGN-346 Prog(%s): Write group msk failed.

Cause: Group mask could not be written to specified program().Refer to cause code (SVGN-347) for reason.

Remedy: Lookup error code for SVGN-347 and take appropriate action.

SVGN-347 status:%s.

Cause: SVGN application alarm has occurred. This message merely reports the status (error) number that caused this problem.

Remedy: Lookup error code and take appropriate action.

SVGN-349 Thickness not recorded.

Cause: Thickness is not recorded.

Remedy: Refer to the error cause code.

SVGN-350 Pressure release aborted.

Cause: Fault occurred or shift key was released while pressure release progress was active.

Remedy: Correct reason for fault and/or do not release shift key during pressure release.

SVGN-370 Contact position is not correct

Cause: Gun tip contacted panel sooner than expected - either settings are incorrect or wrong panel is present. If correct panel is present, then confirm that following items are correct:

1. Thickness value
2. Gun Zero Master position
3. Gear ratio (tip displacement)

Remedy: 1. If thickness is incorrect, set proper thickness value in spot/pres_motn instruction.
2. If gun zero master is incorrect, go to servogun master screen and execute master or automaster.
3. If gear ratio is incorrect, go to gun setup util and set gun specs.

SVGN-371 Invalid Pressure Gain Tuning

Cause: Internal Servo Gun error.

Remedy: Record error and report to hotline.

SVGN-372 Uninitialized thickness: t=**

Cause: Thickness is not initialised at SPOT, PRESS_MOTN, TIPDRESS instructions.

Remedy: Set the part or dresser thickness to appropriate value.

SVGN-373 Gun open required for autotuning.

Cause: Gun is pressuring (closed past 0). Auto tune can not start because pressure control is active.

Remedy: Jog gun open to release pressure, then restart autotuning.

SVGN-374 Wear ratio update Locked.

Cause: 1 step measurement was performed with new tip. Wear ratio updating is loacked.

Remedy: To update wear ratio, 2 step measurement must be performed with new tip. This locking is released by 2 step measurment. SVGN-288 is posted as cause code,it needs twice 2 step measurement with current tip to update wear ratio. SVGN-375 is posted as cause code, next 2 step measurement update wear ratio.

SVGN-375 Next 2step TWD updates wear ratio.

Cause: 2 step measurement was performed after 1 step measurement has been performed with new tip.

Remedy: No remedy.

SVGN-376 Internal program error LBL:%d

Cause: Internal servogun program error.

Remedy: Repower, go to control start, and then back to cold start. Record the error and report to hotline, if the problem persists.

SVGN-377 Repower required for autocont fn

Cause: Repower required for auto continue function.

Remedy: Repower, go to control start, and then back to cold start.

SVGN-378 Thickness measurement cancelled.

Cause: (None)

Remedy: (None)

SVGN-379 Thickness table is empty.

Cause: Shift hardkey was pressed (to change manual pressure) but all values in thickness table are uninitialized.

Remedy: Set one (or more) values into the thickness table.

SVGN-380 Thickness table value/index is invalid.

Cause: Shift+Gun hardkey was pressed (to execute manual pressure operation) but thickness index and/or thickness value are invalid.

Remedy: Set one (or more) values into the thickness table and select a valid thickness by pressing Gun hardkey.

SVGN-381 Thick:%.1fmm, Press:%d%s, deflect:%.1fmm

Cause: This message is posted because thickness measurement was performed, and \$SGCFG[.].\$THKMESCFG.\$ALM4MESINFO = TRUE. This message merely provides a record of thickness measurement in the alarm log. It is not a fault/abnormal condition. Note: SVGN-176 is provided as cause code for this message to identify origin of thickness measurement request:
Editor, Manual weld screen, thickness table screen, or Pressure Calibration screen.

Remedy: Set \$SGCFG[.].\$THKMESCFG.\$ALM4MESINFO = FALSE to disable this message.

SVGN-382 Tip could not contact with specified speed

Cause: When tip contacted, the gun speed is not specified speed in pressure calibration. If Contact speed is not specified speed in pressure calibration, the calibrated pressure is not re-produced, there may be slight error. Basic cause is that tip opening distance before pressure is not enough long to achieve specified speed. There are some factor for this cause.

- Specified tip distance is small in SD condition.
- And/or there is error of teaching position.
- And/or mastering position is not correct.
- And/or thickness value is not correct.

Remedy: Confirm tip opening before pressure. And/or confirm teaching position, gun mastering, and thickness. If weld quality is no problem, this warning could be ignored.

SVGN-383 Extra group motion.

Cause: When extra groups are used in a robot + servogun program, motion of an extra group was detected during SPOT motion.

Remedy: Do not allow extra groups to move during SPOT motion.

SVGN-385 Prg tch mode swich err.

Cause: Spot program touchup mode had become ENABLE immediately before spot instruction is executed.

Remedy: Make the spot program touchup mode ENABLE earlier.

SVGN-386 Robot bkup clamped:%.1fmm(%.1fdesired).

Cause: Requested robot backup distance cannot be provided, due to gun open limit. Actual robot backup provided is noted in the alarm.

Remedy: 1. Increase gun open limit if possible.
2. Reduce robot backup distance.

SVGN-387 Increase sglogarr size to log data.

Cause: Tune log and/or press log are enabled, but sglogarr size <= 1. Tune log and press log data files are created only if sglogarr size > 1.

Remedy: If Log data is needed, set `$$SGSYSCFG.$$SGLOGARRSZ > 1`, and repower. Set size based on maximum sample duration. For example, a size of 1000 provides 1000*8ms or 8 seconds worth of data. If log data is NOT needed, set `$$SGLOGCFG.$$TUN_LOG_ENB=FALSE` and `$$SGLOGCFG.$$PRS_LOG_ENB=FALSE`.

SVGN-388 Speed noise(%1fmm/sec) > expected(%1f):%d.

Cause: Variation in speed during observation period (before detection), is larger than speed variation observed during calibration. Number at end of message indicates phase: 1=Upper panel detection, 2=Lower panel detection.

Root causes are:

1. Gun mechanical characteristics have changed or calibration is not up to date.
2. Current orientation is different than orientation used during calibration.
3. Open distance for current panel detection > open distance used during calibration.

Remedy: 1. Redo calibration.
2. if problem persists, increase value of `$$SGSYSTCH.$$P0SPDALMMGN`.

SVGN-389 Press noise(%1fkgf) > expected(%1f):%d.

Cause: Pressure variation during observation period (before detection), is larger than pressure variation observed during calibration. Number at end of message indicates phase: 1=Upper panel detection, 2=Lower panel detection.

Root causes are:

1. Gun mechanical characteristics have changed or calibration is not up to date.
2. Current orientation is different than orientation used during calibration.
3. Open distance at panel detection > open distance used during calibration.

Remedy: 1. Redo calibration.
2. if problem persists, increase value of `$$SGSYSTCH.$$P0TRQALMMGN`.

SVGN-390 Gun mode change detected while welding.

Cause: Stroke/No Stroke mode, or single step mode might have been changed while executing spot welding program.

Remedy: To prevent spot welding point being skipped, the robot paused. Confirm Stroke/No Stroke mode, or single step mode.

SVGN-392 This TW.TP is not supported.**

Cause: This TWD program is for R-J3iB controller. R-30iB controller does not supported this.

Remedy: Replace `TW***.TP` to `TWK***.PC` such as the following. Refer to FANUC Robot series R-30iB CONTROLLER Servo Gun Function OPERATOR'S MANUAL (B-83264EN).

`TW0THOLD => TWKTHOLD, TW1MTCLB => TWKZRCLB, TW1MTFIX => TWKFXTCH`
`TW2WDCLB => TWKZRCLB, TW2WDFIX => TWKFXTCH, TW3RSCLB => TWKRSCLB`

SVGN-413 Pressure Check Init Start

Cause: Pressure check calibration has been started.

Remedy: This message is provided for informational purposes only, it is not a fault.

SVGN-414 Pressure Check Init Complete

Cause: Pressure check calibration has been completed.

Remedy: This message is provided for informational purposes only, it is not a fault.

SVGN-415 Pressure Check Tolerance Exceed

Cause: Pressure error exceeds pressure check tolerance..

Remedy: Confirm gun condition. Re-perform pressure calibration.

SVGN-416 Pressure Adjustment Tol Exceed

Cause: Pressure error exceeds pressure adjustment tolerance..

Remedy: Confirm gun condition. Reperform pressure calibration.

SVGN-422 Incorrect Override

Cause: Override is not 100%..

Remedy: Set override to 100%.

SVGN-441 Pressure profile by DI time out

Cause: Specified DI is not asserted in time.

Remedy: Assert specified DI in time.

SVGN-450 Pressure profile by DI time out

Cause: Pressure profile step persisted longer than expected. The first number identifies the step that was active when timeout occurred. The second number identifies which watchdog timer detected this timeout. Profile step timeout can occur in two different cases.

Case1. wait for din is being used and \$sgppdcfg.\$di_timeout expired before input was asserted.

Case2. an internal error occurred

Remedy: Case1. Increase \$sgppdcfg.\$di_timeout or assert din sooner.

Case2. Contact your FANUC representative and report the situation the issue occurred. Include cause code info SVGN-467 that accompanies this alarm.

SVGN-467 Time (exp:%d,obs:%d) ct:%d

Cause: This is additional info for SVGN-450 alarm.

exp: duration programmed in pressure schedule

obs: duration observed when timeout occurred

Remedy: Refer to SVGN-450.

SVGN-470 Prs incre exceed abnl up lim:G%d

Cause: Pressure increase exceeded abnormal pressure increase upper limit value.

Remedy: Confirm the servo gun motor temperature.

SVGN-471 Prs decre below abnl low lim:G%d

Cause: Pressure decrease below abnormal pressure decrease lower limit value.

Remedy: Confirm the servo gun motor temperature.

SVGN-472 Mastering pressure was modified

Cause: Mastering pressure has been modified on tip wear detect setup screen.

Remedy: Perform the tip wear setup procedure again.

SVGN-473 Pressure Profile pressure value is invalid.

Cause: Specified pressure value in pressure profile is invalid.

Remedy: Specify a valid pressure value which is less than max pressure

SVGN-474 Pressure Profile I/O is invalid.

Cause: Specified index # for pressure profile I/O is invalid.

Remedy: Specify a valid configured I/O for the pressure profile I/O index

SVGN-486 Cap/Panel is missing: Gun%d.

Cause: Pressure shortage has occurred, and \$sgsyscfg.\$pst_ertyp message flag is enabled..

Remedy: Insert panel with appropriate thickness and/or update thickness value. If thickness is ok, then replace caps if they are worn. To disable this alarm, set \$sgsyscfg.\$pst_ertyp = 0.

Note: if this alarm is disabled, then SVGN-020 will be posted. SVGN-486 or SVGN-487 is posted in lieu of SVGN-020 when this alarm is enabled.

SVGN-487 Cap/Panel is missing: Gun%d.

Cause: Pressure shortage has occurred, and \$sgsyscfg.\$pst_ertyp message flag is enabled..

Remedy: Insert panel with appropriate thickness and/or update thickness value. If thickness is ok, then replace caps if they are worn. To disable this alarm, set \$sgsyscfg.\$pst_ertyp = 0.

Note: if this alarm is disabled, then SVGN-020 will be posted. SVGN-486 or SVGN-487 is posted in lieu of SVGN-020 when this alarm is enabled.

4.17.12 SYST Alarm Code

SYST-001 HOLD button is being pressed

Cause: You attempted an operation while the hold button (input) is pressed.

Remedy: Clear the hold button (input), and try the same operation.

SYST-002 HOLD is locked by program

Cause: Meaning: The condition that the robot is being held is locked by the program, and it could not be cleared. If a HOLD statement is executed in a Karel program, the held condition can only be cleared by the same program using the UNHOLD statement/action, or by aborting the program. If a motion is attempted in such condition, this error message is displayed.

Remedy: Wait until the UNHOLD statement is executed by the karel program, or abort the karel program.

SYST-003 TP is enabled

Cause: The attempted operation could not be done because the teach pendant is enabled.

Remedy: Disable the teach pendant, and try the same operation again.

SYST-004 SOP is enabled

Cause: The attempted operation could not be done because the System Operator Panel is enabled.

Remedy: Turn the REMOTE switch on the SOP to REMOTE side, and try the same operation again.

SYST-005 UOP is the master device

Cause: The attempted operation could not be done because the User Operator Panel is enabled.

Remedy: Set the remote/local operation mode to Local in the system configuration screen (if the operation is attempted from the SOP), or set the \$RMT_MASTER system variable correctly. Set the variable to one of the following values:

- 0:User Operator
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-006 KCL is the master device

Cause: The attempted operation could not be done because KCL is the master device.

Remedy: Set the remote/local operation mode to Local in the system configuration screen(if the operation is attempted from the SOP), or set the \$RMT_MASTER system variable correctly. Set the variable to one of the following values:

- 0:User Operator Panel
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-007 NETWORK is the master device

Cause: The attempted operation could not be done because the NETWORK command processor is the master device.

Remedy: Set the remote/local operation mode to Local in the system configuration screen (if the operation is attempted from the SOP), or set the \$RMT_MASTER system variable correctly.

- 0:User Operator Panel
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-008 Nothing is the master device

Cause: The system variable \$RMT_MASTER is set to disable all devices. Therefore, no remote device can issue motion.

Remedy: Set the remote/local operation mode to Local in the system configuration screen (if the operation is attempted from the SOP), or set the \$RMT_MASTER system variable correctly.

- 0:User Operator Panel
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-009 Safety Fence open

Cause: The attempted operation could not be done because the safety fence is open.

Remedy: Close the safety fence, and try the same operation again.

SYST-010 Max num task reached

Cause: The number of task has reached the maximum.

Remedy: Abort one of the running task.

SYST-011 Failed to run task

Cause: The system has failed to run the program.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

SYST-012 Not in remote

Cause: Remote condition is not satisfied.

Remedy: Turn the remote switch on.

SYST-013 Invalid program number

Cause: The specified PNS number is not in the range of 1 to 9999.

Remedy: Specify correct program number.

SYST-014 Program select failed

Cause: PNS operation has failed by some reason.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

SYST-015 Robot Service Request failed

Cause: RSR operation has failed by some reason.

Remedy: Refer to the error cause code. Use MENU to display the Alarm Log screen.

SYST-016 ENBL signal is off

Cause: ENBL signal in UOP is off.

Remedy: Set ENBL signal ON.

SYST-017 Single step operation effective

Cause: Single step operation is effective.

Remedy: Disable single step switch.

SYST-018 Continuing from different line

Cause: Attempt to continue program from different line from paused line.

Remedy: Respond YES or NO in the prompt box on at the teach pendant.

SYST-019 Program not selected

Cause: Program has not been selected.

Remedy: Select a program from the program select menu on the teach pendant, or using PNS.

SYST-020 Program not verified by PNS

Cause: The program specified by PNS is different from the currently selected program. This error occurs in Mate controllers only.

Remedy: Select a correct program from the program select menu on the teach pendant.

SYST-021 System not ready, press reset

Cause: An error has been detected by the system.

Remedy: Press RESET to clear error condition.

SYST-022 PNS not zero, cannot continue

Cause: The paused program cannot be continued if the PNS input ports are not zero. This error occurs in Mate controllers only.

Remedy: Set all PNS input ports to OFF.

SYST-023 Teach Pendant communication error

Cause: A communication cable is broken.

Remedy: Check the teach pendant cable. Replace the cable if necessary.

SYST-024 PNSTROBE is OFF. Cannot start exec

Cause: Because PNSTROBE is off, prod_start could not be processed.

Remedy: Set PNSTROBE input to ON.

SYST-025 Teach Pendant is different type

Cause: The type of teach pendant being connected, is different from the one that was disconnected.

Remedy: Connect the same type of teach pendant as disconnected.

SYST-026 System normal power up

Cause: System has executed normal power startup.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-027 HOT start failed (Error:%d)

Cause: HOT start has failed for one of the following reasons: 1. Power failed during system start up. 2. Flash ROM module was changed. 3. A run-time error occurred. 4. System internal error 1. 5. System internal error 2.

Remedy: COLD start is selected automatically.

SYST-028 (%s) Program timed out

Cause: \$PWR_HOT,\$PWR_SEMI program has been aborted by the system due to time out (40sec).

Remedy: Decrease program size so that it can be executed within the time out limit.

SYST-029 Robot was connected (Group:%d)

Cause: The connect/isolate key was turn to the connect side.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-030 Robot was isolated (Group:%d)

Cause: The connect/isolate key was turn to the isolate side.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-031 F-ROM parity

Cause: An error has occurred accessing F-ROM.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

SYST-032 ENBL signal from UOP is lost

Cause: ENBL input signal from UOP is lost.

Remedy: Determine and correct the cause of loss of this signal.

SYST-033 SFSPD signal from UOP is lost

Cause: SFSPD input signal from UOP is lost.

Remedy: Determine and correct the cause of loss of this signal.

SYST-034 HOLD signal from SOP/UOP is lost

Cause: HOLD input signal from SOP/UOP is lost.

Remedy: Determine and correct the cause of loss of this signal.

SYST-035 Low or No Battery Power on MAIN

Cause: Battery in PSU board is low in power.

Remedy: Replace the Old Battery with a new battery of same kind.

SYST-036 Semi power failure recovery

Cause: System did semi-hot start.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-037 Key switch broken

Cause: Improper input from Key switch.

Remedy: Please fix the CE Sign key switch.

SYST-038 Operation mode T1 Selected

Cause: Operation mode T1 Selected.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-039 Operation mode T2 Selected

Cause: Operation mode T2 Selected.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-040 Operation mode AUTO Selected

Cause: Operation mode AUTO Selected.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-041 Ovr Select could not ENABLED

Cause: DI index is invalid.

Remedy: Please set valid DI index.

SYST-042 DEADMAN defeated

Cause: The mode switch was changed from T1 or T2 mode to AUTO mode and the DEADMAN was already pressed. The DEADMAN must be released when switching to AUTO mode.

Remedy: Release the DEADMAN and press RESET.

SYST-043 TP disabled in T1/T2 mode

Cause: The mode selector is in T1 or T2 and the TP ON/OFF switch is in the OFF position.

Remedy: Turn the TP ON/OFF switch to ON. Press RESET.

SYST-044 (Abnormal) TP disabled in T1/T2 mode

Cause: The mode selector is in T1 or T2 and the TP ON/OFF switch is in the OFF position and SVON is ON. This is an abnormal condition.

Remedy: Call your local FANUC representative.

SYST-045 TP enabled in AUTO mode

Cause: The mode selector is in AUTO and the TP ON/OFF switch is in the ON position.

Remedy: Turn the TP ON/OFF switch to OFF. Press RESET.

SYST-046 Control Reliable/CE Mark config mismatch

Cause: Either 1.Control Reliable or CE Mark hardware exists but the CR or CE Mark option has not been loaded, or 2.The Control Reliable/CE Mark option has been loaded but the hardware is not available.

Remedy: If the Control Reliable/CE Mark option has not been loaded, load the Control Reliable/ CE Mark option. If it has been loaded then this is a system without the Control Reliable/ CE Mark hardware and the system must be totally reloaded WITHOUT the Control Reliable/CE Mark option.

SYST-047 Continuing from distant position

Cause: Attempt to continue program from distant position from stopped position.

Remedy: Respond ABORT or CONTINUE in the prompt box on at the teach pendant.

SYST-048 NECALC couldn't get work memory

Cause: OS couldn't give NECALC soft part enough memory.

Remedy: Please increase Controller's memory.

SYST-049 SFCALC couldn't get work memory

Cause: OS couldn't give SFCALC soft part enough memory.

Remedy: Please increase Controller's memory.

SYST-050 Invalid time in trigger request

Cause: Invalid time used in TG request.

Remedy: Time must be less than 6,000,000 us.

SYST-051 SYTG overrun: %d %d %x %d %d

Cause: Excessive time in trigger routines First number indicates event routine (1) or scan routine (2). Second number indicates individual overrun (1) or excessive cumulative CPU use (2). Third number: event number(hexadecimal) or scan routine address. Fourth number: limit (microseconds or 100ths of one pct). Fifth number: time used (microseconds or 100ths of one pct).

Remedy: Event or scan routine need to be made more efficient, scan rate reduced, or system variable values increased to permit more CPU usage.

SYST-052 Trigger slot already used: %d

Cause: Specified entry already used.

Remedy: Use cancel request to delete old entry.

SYST-053 Invalid fast_DIN no: %d

Cause: Specified Fast-DIN number is invalid.

Remedy: Use Valid Fast-DIN.

SYST-054 Event-ID already used: %d

Cause: Specified event ID already in use.

Remedy: Use unique event ID or cancel previous request.

SYST-055 Event-ID not found: %d

Cause: Specified event ID is not presently in use.

Remedy: Check event ID.

SYST-056 Scan routine list full

Cause: A call to syscnrtn was made when the scan list was full. A maximum of 10 scan routines, including the standard table scanning routine, may be active at one time.

Remedy: Either cancel scan routines that are no longer needed or combine scan routines.

SYST-057 Illegal interval

Cause: The interval parameter in a call to syscnrtn was greater than 1000000 (1 second).

Remedy: Use a value in the range 1-1000000.

SYST-058 Duplicate scan routine

Cause: syscnrtn was called specifying a routine and data_p that is already being scanned.

Remedy: Don't request the same rtn/data_p twice.

SYST-059 Scan routine not active

Cause: syncclsc was called with a routine and data_p that that does not match any active scans.

Remedy: Don't cancel a non-existent scan.

SYST-060 Duplicate cond/act table

Cause: syaddtbl called with pointer to table that is already in the scan list.

Remedy: Add table only once.

SYST-061 Scan table list full

Cause: syaddtbl called when all 10 condition/action table slots are already in use.

Remedy: Cancel tables that are no longer needed or combine tables.

SYST-062 Scan table not active

Cause: syncnlbt called with cond/act table that is not active.

Remedy: Check for duplicate syncnlbt call or wrong table pointer.

SYST-063 Scan time record seq error

Cause: System error: consecutive time interval start calls.

Remedy: Contact your local FANUC representative with information on events leading up to error.

SYST-064 Bad scan table data

Cause: System error: Invalid data in scan table The following can result in this error: Too many cond/action sets (max = 10)
Invalid condition code Invalid action code Too many actions (max = 3)

Remedy: Contact your local FANUC representative with information on events leading up to error.

SYST-065 SFCALC overrun

Cause: SFCALC task can't get enough MPU power.

Remedy: Please reduce some software options or disable some motion groups which had been enabled. When this alarm still occurs, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SYST-066 Teach Pendant communication error

Cause: Communication with the advanced Teach Pendant was interrupted.

Remedy: Too much communication may have caused the interrupt. Check the teach pendant cable. Replace the cable if necessary.

SYST-067 Panel HSSB disconnect

Cause: Panel HSSB communication is disconnected.

Remedy: Check panel HSSB hardware connection.

SYST-069 Program number out of range

Cause: The selected style number is zero or greater than the size of the style table.

Remedy: Select a valid style number, or adjust the size of the table.

SYST-070 No program name in table

Cause: There is no program name in the style table.

Remedy: Put a valid program name in the proper place in the style table.

SYST-071 Program not found

Cause: The selected style program does not exist on the controller.

Remedy: Create a program for the style, or put a valid program name in the style table.

SYST-072 Program not enabled

Cause: The selected style program is not enabled.

Remedy: Set the VALID field to YES in the style table.

SYST-073 Manual selection mismatch

Cause: The style input does not match the manually selected style.

Remedy: The PLC must send a style code that matches the manual selection.

SYST-074 Karel shell failed

Cause: Communications with the Karel shell extension failed.

Remedy: Cold start the controller.

SYST-075 Shell init failure

Cause: The shell was unable to start due to resource allocation failures.

Remedy: Cold start the controller.

SYST-076 Shell condition setup failure

Cause: The shell could not set up its required condition handlers.

Remedy: Cold start the controller.

SYST-077 Entered INTERLOCK mode

Cause: The controller is interlocked with the PLC.

Remedy: This is an informational message. There is no error.

SYST-078 Entered ISOLATE mode

Cause: The controller is isolated from PLC control.

Remedy: This is an informational message. There is no error.

SYST-079 Startup check failed

Cause: One or more of the pre-startup system checks failed.

Remedy: Look for a previous message that indicates exactly which check failed and take corrective action.

SYST-080 Fault must be reset

Cause: The system is in a faulted state.

Remedy: Reset the fault before trying the operation again.

SYST-081 Not at home position

Cause: The program can not start because the robot is not at the defined home position.

Remedy: Move the robot to the home position.

SYST-082 Not within resume tolerance

Cause: The program can not be resumed because the robot has been moved from the position on the path where it stopped.

Remedy: Jog the robot back to the correct position.

SYST-083 I/O is simulated

Cause: One or more I/O points are simulated.

Remedy: Unsimulate all I/O before trying to start the program.

SYST-084 I/O forced unsimulated

Cause: The system has forced all I/O to be unsimulated.

Remedy: This is an informational message.

SYST-085 Gen override not 100%

Cause: The general speed override is not 100%.

Remedy: Set the override to 100%.

SYST-086 Gen override forced to 100%

Cause: The system has forced the general speed override to 100%.

Remedy: This is an informational message.

SYST-087 Prog override not 100%

Cause: The program override is not 100%.

Remedy: Set the override to 100%.

SYST-088 Prog override forced to 100%

Cause: The system has forced the program speed override to 100%.

Remedy: This is an informational message.

SYST-089 Machine lock on

Cause: The machine lock is on, motion can not occur.

Remedy: Turn off the machine lock.

SYST-090 Machine lock forced off

Cause: The system has forced machine lock to the off state.

Remedy: This is an informational message.

SYST-091 Single step active

Cause: The program is in single-step mode.

Remedy: Take the system out of single-step mode.

SYST-092 Single step forced off

Cause: The system has forced single-stepping to be off.

Remedy: This is an informational message.

SYST-093 Process not ready

Cause: The program can not start because the process is not ready.

Remedy: Make the process equipment ready for running a program.

SYST-094 Process forced ready

Cause: The system has forced the process equipment to the ready state.

Remedy: This is an informational message.

SYST-095 Remote diagnose internal error

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-096 Designated task is not valid

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-097 Fail to initialize Modem

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-098 Card Modem is removed

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-099 Card Modem is not responded

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-100 DSR in Modem OFF

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-101 Connection is stopped

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-102 HDI not recorded

Cause: Internal Error in Remote Diagnose function.

Remedy: Internal error.

SYST-103 Not-home ignored

Cause: User bypassed not-home condition at program startup.

Remedy: None needed - warning only.

SYST-104 Resume tolerance ignored

Cause: User bypassed TCP position tolerance at program resume.

Remedy: None needed - warning only.

SYST-105 Simulated I/O ignored

Cause: User bypassed I/O simulated at program startup.

Remedy: None needed - warning only.

SYST-106 Gen override ignored

Cause: User bypassed general override < 100% at program startup.

Remedy: None needed - warning only.

SYST-107 Prog override ignored

Cause: User bypassed program override < 100% at program startup.

Remedy: None needed - warning only.

SYST-108 Machine lock ignored

Cause: User bypassed machine lock at program startup.

Remedy: None needed - warning only.

SYST-109 Single step ignored

Cause: User bypassed single-step condition at program startup.

Remedy: None needed - warning only.

SYST-110 Process ready ignored

Cause: User bypassed process not ready at program startup.

Remedy: None needed - warning only.

SYST-111 No home pos defined

Cause: No home position defined for motion group 1.

Remedy: Enable at least one reference position for group 1 as a home position, or disable the home position startup check.

SYST-112 No production start input defined

Cause: The production start input, which is required with the current program selection options, has not been defined.

Remedy: Set up a production start input in the Cell Input I/O menu and restart the robot.

SYST-113 No style input group defined

Cause: The style number input group, which is required with the current program selection options, has not been defined.

Remedy: Set up a style number input group in the Cell Input I/O and Group I/O menus and restart the robot.

SYST-114 No RSR input defined

Cause: One or more RSR inputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the RSR inputs in the Cell Input I/O menu and restart the robot.

SYST-115 No PNS select input defined

Cause: One or more PNS selection inputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the PNS selection inputs in the Cell Input I/O and Group I/O menus and restart the robot.

SYST-116 No RSR echo output defined

Cause: One or more RSR echo outputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the RSR echo outputs in the Cell Output I/O menu and restart the robot.

SYST-117 No PNS echo output defined

Cause: The PNS echo outputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the PNS echo outputs in the Cell Output I/O and Group I/O menus and restart the robot.

SYST-118 No PNS strobe input defined

Cause: The PNS strobe input, which is required with the current program selection options, has not been defined.

Remedy: Set up a PNS strobe input in the Cell Input I/O menu and restart the robot.

SYST-119 No echo strobe output defined

Cause: The acknowledgement strobe output, which is required with the current program selection options, has not been defined.

Remedy: Set up an acknowledgement strobe output in the Cell Output I/O menu and restart the robot.

SYST-120 No style option input defined

Cause: One or more style option inputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the style option inputs in the Cell Input I/O menu and restart the robot.

SYST-121 No decision input group defined

Cause: The decision code input group, which is required with the current program selection options, has not been defined.

Remedy: Set up a decision code input group in the Cell Input I/O and Group I/O menus and restart the robot.

SYST-122 No style output group defined

Cause: The echo/manual style output group, which is required with the current program selection options, has not been defined.

Remedy: Set up a style output group in the Cell Output I/O and Group I/O menus and restart the robot.

SYST-123 No option output defined

Cause: One or more style option outputs, which are required with the current program selection options, have not been defined.

Remedy: Set up the style option outputs in the Cell Output I/O menu and restart the robot.

SYST-124 No decision output group defined

Cause: The decision code output group, which is required with the current program selection options, has not been defined.

Remedy: Set up a decision code output group in the Cell Output I/O and Group I/O menus and restart the robot.

SYST-125 No in-cycle output defined

Cause: The in-cycle output, which is required with the current program selection options, has not been defined.

Remedy: Set up an in-cycle output in the Cell Output I/O menu and restart the robot.

SYST-126 No task-OK output defined

Cause: The task_OK output, which is required with the current program selection options, has not been defined.

Remedy: Set up a task-OK output in the Cell Output I/O menu and restart the robot.

SYST-127 No isolate output defined

Cause: The isolate mode output, which is required with the current program selection options, has not been defined.

Remedy: Set up an isolate mode output in the Cell Output I/O menu and restart the robot.

SYST-128 No interlock output defined

Cause: The interlock mode output, which is required with the current program selection options, has not been defined.

Remedy: Set up an interlock mode output in the Cell Output I/O menu and restart the robot.

SYST-129 No manual style output defined

Cause: The manual style request output, which is required with the current program selection options, has not been defined.

Remedy: Set up a manual style request output in the Cell Output I/O menu and restart the robot.

SYST-130 Program still running

Cause: The shell is already running an active program.

Remedy: Finish or abort the current program before requesting a new program selection.

SYST-131 Invalid manual style request

Cause: The manual style request cannot be done. There is also a secondary error posted that gives the reason.

Remedy: Examine the secondary error message.

SYST-132 Manual request timed out

Cause: The specified manual style was not requested by the PLC within the allowable time period.

Remedy: Determine why the PLC did not respond to the request, or increase the timeout value.

SYST-133 System trigger request early

Cause: A request for a system trigger function (scan routine, etc) was made before the tables for these are initialized.

Remedy: Defer any of these requests until late in the cold-start process.

SYST-134 Max. freq. exceeded ch.: %d

Cause: A frequency input connected to one of the HDI inputs momentarily or for an extended time had a frequency exceeding the setting for the maximum. The channel or input number is indicated in the alarm text.

Remedy: Reduce or eliminate the noise on the signal with additional grounding or shielding. If the frequency dip switch setting on the HDI Pulse Module is for the low range (640 Hz) and normal input frequencies will be above this, change the settings. Change the dip switch setting to the high range (1000 Hz) and the system variable \$FQINT_SETUP[n].\$FREQ_MAX_AL to 1020. If the frequency dip switch setting on the HDI Pulse Module is for the high range (1000 Hz) and normal input frequencies will always be below the low range change the setting to the low range. If the device providing the frequency (a flow meter for example) is providing frequencies above 1000 Hz, either change settings on the meter or change the type of meter so that the frequency provided is reduced. To disable this alarm, change the setting of the system variable \$FQINT_SETUP[n].\$FREQ_MAX_AL to 1200 if using the HDI Pulse Module or to 0 otherwise.

SYST-135 Invalid Clock, Please Reset

Cause: 1. The system clock has an invalid time. The clock may not have been set.
2. When config Signature Date/Time is ACTUAL in DCS CIP Safety menu, System clock setting is invalid. (Valid year is 2004-2150.)

Remedy: 1. Reset the system Clock using the SYSTEM Clock TP page.
2. Set Config Signature Date/Time to FIXED, or set correct date/time to system clock.

SYST-136 System Time was reset

Cause: The system clock was reset by either an Operator or by the SNTP protocol (if SNTP is enabled).

Remedy: Check the system Clock using the SYSTEM Clock teach pendant screen.

SYST-137 Device not found

Cause: The requested device is not installed on the motherboard.

Remedy: Request only valid devices.

SYST-138 Motherboard not installed

Cause: The specified motherboard is not installed.

Remedy: Specify only installed motherboards.

SYST-139 Invalid motherboard request

Cause: The specified motherboard index is not a valid value.

Remedy: This is a programming error. Specify only index 0 or 1.

SYST-140 Invalid IRQ specified

Cause: An invalid interrupt number was specified by the device driver.

Remedy: Specify an IRQ from 3 through 7 only.

SYST-141 BMON was updated

Cause: BMON was automatically updated because of a newer version.

Remedy: Check BMON version.

SYST-142 ABS time in sytmrev in past

Cause: The time specified for a timed event has already passed. The event will trigger immediately.

Remedy: Specify a later time for the event.

SYST-143 pkt_data_size too big

Cause: pkt_data_size parameter in syinpev_gen call is too big.

Remedy: Use size <= MAX_PKT_DATA in sytglib.h.

SYST-144 Bad DO specified by %s

Cause: Invalid or unassigned DOUT number specified in the indicated system variable.

Remedy: Set the system variable to zero (no port used) or to a valid port number and ensure that the indicated DOUT is assigned.

SYST-145 DO specified by %s OFFLINE

Cause: DOUT specified in the indicated system variable is Off-line.

Remedy: Set the device to which the DOUT is assigned On-line.

SYST-146 n_pkts invalid

Cause: n_pkts_parameter in syinpev_gen call is invalid.

Remedy: Use value in the range of 1 to 20, or zero if evnt_rtn_2 not used.

SYST-148 Dynamic Brake is Disabled

Cause: Dynamic Brake is disabled by dynamic brake release request signal (DI[\$DYN_BRK.\$DI_IDX]).

Remedy: If you would like to turn on servo, please turn off dynamic brake release request signal.

SYST-149 Dynamic Brake is Enabled

Cause: Dynamic Brake is enabled because dynamic brake release request is turned off.

Remedy: It is message only.

SYST-150 Cursor is not on line 1

Cause: The program is started except from the 1st line.

Remedy: Respond YES or NO in the prompt box on at the teach pendant.

SYST-151 Start again (%s, %d)

Cause: After the program is started except from the 1st line, respond YES in the prompt box on at the teach pendant.

Remedy: Start the same program again.

SYST-152 Cannot force DO's in AUTO mode

Cause: Attempt to force output signal while controller is in AUTO mode.

Remedy: Exit AUTO mode before doing this operation.

SYST-153 Cannot SIM/UNSIM DO's in AUTO mode

Cause: Attempt to force output signal while controller is in AUTO mode.

Remedy: Exit AUTO mode before doing this operation.

SYST-154 No start in ISOLATE/BYPASS mode

Cause: Production start received when controller is in ISOLATE or BYPASS mode.

Remedy: Put controller into AUTO or INTERLOCK mode before doing this operation.

SYST-155 ABC overrun

Cause: ARM Bending Control function cannot get enough MPU power.

Remedy: Reduce some software options or disable some motion groups which had previously been enabled, and then try the operation again. When this alarm still occurs, execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

SYST-156 Unknown hard ware

Cause: This PCB is not used on this controller.

Remedy: Mount the correct PCB.

SYST-157 CE/RIA software does not exist

Cause: CE/RIA software does not exist in this controller.

Remedy: Install CE/RIA option to this controller.

SYST-158 Robot cannot move in T2 mode

Cause: The mode selector is in T2. Robot cannot move in T2 mode.

Remedy: Change the mode switch to T1 or AUTO mode.

SYST-159 GO %d for Error Output not configured

Cause: GO dedicated for the Error Output feature is not configured.

Remedy: Configure GO dedicated for the Error Output feature.

SYST-160 Value output to GO %d out of limit

Cause: Value to be outputted to GO with Error Output feature is out of limit for this group output.

Remedy: Configure GO using more digital outputs.

SYST-161 Cannot start Remote diagnostic

Cause: Remote diagnostics are not started because the servo status is on.

Remedy: Turn off the servo then retry the remote diagnostics.

SYST-162 Servo On during Remote diagnostic

Cause: The servo is turned on during remote diagnostics.

Remedy: Turn off the servo before attempting remote diagnostics.

SYST-163 Cannot operate IO during Remote diagnostic

Cause: An attempt was made to operate I/O during remote diagnostics.

Remedy: Do not operate I/O during remote diagnostics.

SYST-164 Teach Pendant communication error

Cause: Communication with the teach pendant was interrupted.

Remedy: Too much communication may have caused the interrupt. Check that the teach pendant cable is working properly.
Replace the cable if necessary.

SYST-165 TP intermittent communication error

Cause: Intermittent errors occurred during communication with the teach pendant.

Remedy: Check to determine if there is any source of electrical noise. Check that the teach pendant is working properly.
Replace the teach pendant if necessary.

SYST-166 TP intermittent communication error

Cause: Intermittent errors occurred during communication with the teach pendant.

Remedy: Perform the following:

1. Check to determine if there is any source of electrical noise.
2. Check that the teach pendant is working properly.
3. Replace the teach pendant if necessary.

SYST-167 Motion initialization is disabled

Cause: Motion initialization is intentionally disabled.

Remedy: Check the setting of the system variable \$SCR.\$DSB_MOINIT.

SYST-168 Robot(G:%d) is isolated

Cause: An attempt was made to operate an isolated Robot.

Remedy: Do not operate an isolated Robot.

SYST-169 S/W Registration is temporary

Cause: S/W Registration is in effect. This alarm is posted when there are more than 28 days until registration expires.

Remedy: Display the S/W Registration screen:

1. Press MENU.
2. Select STATUS.
3. Contact your local FANUC representative to obtain an authorization key to extend the time.

SYST-170 S/W Reg. expires in %d days

Cause: S/W Registration is in effect. This alarm is posted when there are between 14 and 28 days until registration expires.

Remedy: Display the S/W Registration screen:

1. Press MENU.
2. Select STATUS.
3. Contact your local FANUC representative to obtain an authorization key to extend the time.

SYST-171 S/W Reg. expires in %d days

Cause: S/W Registration is in effect. This alarm is posted when there are between 1 and 14 days until registration expires.

Remedy: Display the S/W Registration screen:

1. Press MENU.
2. Select STATUS.

3. Contact your local FANUC representative to obtain an authorization key to extend the time.

SYST-172 S/W Registration has expired

Cause: S/W Registration is in effect. This alarm is posted when registration has expired. The robot cannot be operated in any automatic mode until registration is extended.

Remedy: Display the S/W Registration screen:

1. Press MENU.
2. Select STATUS.
3. Contact your local FANUC representative to obtain an authorization key to extend the time.

SYST-173 See S/W Reg Screen (STATUS)

Cause: S/W Registration is in effect. Display to the S/W Registration screen for more details.

Remedy: Display the S/W Registration screen:

1. Press MENU.
2. Select STATUS.
3. Contact your local FANUC representative to obtain an authorization key to extend the time.

SYST-174 S/W Reg. active, option missing

Cause: Software Registration is in effect but the Software Registration option is not loaded.

Remedy: Load the Software Registration Option.

SYST-175 System was updated

Cause: S/W Registration is in effect. The System was updated. This message is for reference only. No action is required.

Remedy: The System was updated. This message is for reference only. No action is required.

SYST-176 Software was updated

Cause: The system software is updated by the Auto Software update function.

Remedy: This is just a notification. Press RESET key.

SYST-177 RobotLink master is the master

Cause: The attempted operation could not be done because the robot is under control of the RobotLink Master robot.

Remedy: Set the remote/local operation mode to Local in the system configuration screen(if the operation is attempted from the SOP), or set the \$RMT_MASTER system variable correctly. Set the variable to one of the following values:

- 0:User Operator Panel
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-178 SHIFT-RESET Pressed

Cause: Shift key and reset key are pressed at the same time.

Remedy: It is message only.

SYST-179 SHIFT-RESET Released

Cause: Shift key or reset key are released after Shift and Reset key are pressed.

Remedy: It is message only.

SYST-188 book(%d) was not created

Cause: The book of operation logbook was not created.

Remedy: Reduce the number of books or \$LOG_BUFF[].\$SIZE to allocate book.

SYST-189 There is no book

Cause: There is no book of operation logbook.

Remedy: None.

SYST-190 HMI Mode - key unavailable

Cause: iPendant HMI Mode is enabled and this specific key is disabled.

Remedy: Enable the key in the iPendant Setup screen.

SYST-195 TP (on Rob#%d) enabled in T2 mode

Cause: More than one teach pendant is enabled while in T2 mode within the multi-arm ring.

Remedy: Disable the teach pendant which is not being used for the desired operation.

SYST-196 Enabled TP exists (H%x)

Cause: The desired operation could not be performed because teach pendants were enabled within the multi-arm ring.

Remedy: Disable the teach pendants which are not being used for the desired operation.

SYST-197 Multi-arm Watchdog alarm

Cause: The master robot did not receive a heartbeat message from the slave robots within the time specified by the \$rkmathconf.\$heartbt_tmo system variable.

Remedy: Check and repair any broken network connections.

SYST-198 Slave Robot Not Ready

Cause: Some slave robots are not ready to run a program.

Remedy: All slave robots have Auto/T1/T2 switch to be AUTO. \$RMT_MASTER system variable must be 4 (Robot Link). The variable settings can be:

- 0:User Operator Panel
- 1:CRT/KB
- 2:Host computer
- 3:Remote device none
- 4:RobotLink master

SYST-199 Def Prog NOT change (TP disbl)

Cause: The selected robot program could not be changed because the robot has been defined as a slave to a master robot, and the teach pendant is disabled.

Remedy: If you are selecting the program using a teach pendant, enable the teach pendant to select a different program name.

SYST-200 Only Master TP may FWD/BWD

Cause: Only the teach pendant on the master robot can perform the SHIFT-FWD/BWD operation for multi-arm programs.

Remedy: Use the teach pendant on the master robot to perform the SHIFT-FWD/BWD operation.

SYST-201 Master mismatch

Cause: The master robot number does not match with the one specified in the slave header.

Remedy: Verify the master robot number in the slave program header.

SYST-202 Incorrect \$rmt_master on Slave robot

Cause: One or more of the specified slave robots does not accept the command from the master robot because of \$rmt_master system variable value.

Remedy: Verify that the system variable \$RMT_MASTER is set to 4 on all slave robots.

SYST-203 Robot #%d has become online

Cause: This is a notification that a robot has been successfully added to the robot link network as a slave robot.

Remedy: None.

SYST-204 Multi Program start in progress

Cause: The program run sequence is still in progress.

Remedy: Wait until the previous request is taken care of before you continue.

SYST-205 NO action specified

Cause: The teach pendant FWD or BWD key was pressed without also pressing the SHIFT key.

Remedy: Press the SHIFT key in addition to pressing the FWD or BWD key.

SYST-206 Operation canceled by RESET key

Cause: The operation was canceled by pressing the RESET key.

Remedy: None.

SYST-207 Message posted at Rob#%d (%s)

Cause: An error message has been posted on another robot.

Remedy: Display the error history screen of the robot where the error was posted, and perform the remedy stated in the error message.

SYST-208 Feature NOT supported

Cause: The attempted operation is not supported. For example, you tried to run separate programs for dual-arm robots.

Remedy: Be sure to perform only the supported operations.

SYST-211 Comm processor Time-out error

Cause: The communications processor did not respond within the specified time-out limit.

Remedy: Turn off the controller and then turn it on again. If the alarm persists document the events that led to the error, and call your local FANUC representative.

SYST-212 Need to apply to DCS param

Cause: The setting parameter has been changed, and is now different from DCS parameter.

Remedy: Do an "APPLY" operation in DCS menu. Refer to "Dual Check Safety Function OPERATOR'S MANUAL"(B-83184EN), Section of 1.3, "Apply to DCS Parameter".

SYST-213 User power cycle

Cause: A user cycled power from the function menu.

Remedy: None

SYST-214 DCS ESTOP

Cause: A DCS ESTOP occurred. This occurs only when \$DCS_CFG.\$TEST_PARAM1 bit 0 is 1.

Remedy: Set \$DCS_CFG.\$TEST_PARAM1 to 0.

SYST-215 DCS CSTOP

Cause: A DCS ESTOP occurred. This occurs only when \$DCS_CFG.\$TEST_PARAM1 bit 0 is 1.

Remedy: Set \$DCS_CFG.\$TEST_PARAM1 to 0.

SYST-216 DCS DCSALM

Cause: A DCS DCSALM occurred. This occurs only when \$DCS_CFG.\$TEST_PARAM1 bit 0 is 1.

Remedy: Set \$DCS_CFG.\$TEST_PARAM1 to 0.

SYST-217 DCS is not available

Cause: DCS Function is not available in this hardware.

Remedy: 1. Delete DCS option.
2. Change the hardware to one that can be used for DCS function.

SYST-218 DCS Unavailable robot model G:%x Hex

Cause: "DCS Position/Speed Check Function" option is loaded, but this robot model is not supported. "i" is a hexadecimal value and each bit corresponds to a motion group.

Remedy: Delete DCS Position/Speed Check option.

This alarm can be cleared by setting \$DCS_CFG.\$EXCLUDE[Group number] to -1, but in this case, Position/Speed Check function cannot be used.

SYST-219 Need to apply DCS param (%d)

Cause: 1 : An image backup has been loaded, and now the setting parameter and DCS parameter are different.
2 : F4"OK" has not been pressed in the DCS apply menu.

Remedy: Do an "APPLY" operation in DCS menu.

SYST-220 Sync Time-out error

Cause: The process synchronization condition was not satisfied within the specified time-out limit.

Remedy: 1. Check the program logic (seq_id inconsistency, etc.).
2. Use a longer time-out limit (in the sync schedule).

SYST-221 Sync Schedule mismatch

Cause: The sync schedule does not match between robots.

Remedy:

1. Make sure same schedule number is used in the program between robots.
2. Make sure the schedule content (robot mask, etc.) is the same between robots.

SYST-222 Image backup succeeded

Cause: Image backup was successful.

Remedy: None.

SYST-223 Image backup failed(0x%x)

Cause: Image backup failed.

Remedy: 0x%x shows the cause of the failure. Find the definition in the list below. Remove the cause of the failure and try the backup again.

- 0x%x Cause and remedy 0x1 This isn't used. 0x2 Memory allocation failed. Call your local FANUC representative.
- 0x3 Information in FROM cannot be acquired. Call your local FANUC representative.
- 0x4 Make sure there is enough free space on the MC. Make sure a FLASH ATA card is inserted in the MC card slot.
- 0x5 Controller could not open FROM***.IMG. Destination device might be broken.
- 0x6 Controller could not read FROM. FROM module or main board FROM might be broken.
- 0x7 Controller could not write data to FROM***.IMG. Destination device might be broken.
- 0x8 Controller could not close FROM***.IMG. The following are possible causes:
 - There are already backup files on the destination device and they are write-protected.
 - MC was removed during backup.
 - Communication was disconnected during backup to TFTP server.
 - TFTP server is not running.
- 0x9 Make sure there is enough free space on MC. Make sure FLASH ATA card is inserted to MC card slot.
- 0xa Controller cannot open SRAM***.IMG. Destination device might be broken.
- 0xb Controller could not write data to SRAM***.IMG. Destination device might be broken.
- 0xc Controller could not close SRAM***.IMG. The following are possible causes:
 - There are already backup files on the destination device and they are write-protected.
 - MC was removed during backup.
 - Communication was disconnected during backup to TFTP server.
 - TFTP server is not running.
- 0xd File for internal use may be broken. Try the backup again.
- 0xe File for internal use may be broken. Try the backup again.
- 0xf After power was cycled by image backup function, a backup file was found on the MC. This happens if power is turned off during automatic image backup. Retry backup from file screen again.
- 0x20 Initialization of network failed. Confirm wiring and BOOTP server is running.

SYST-230 RCRON: Action successful

Cause: RCRON command was executed.

Remedy: This notification can be disabled by setting the system variable \$RCRON.\$POST_OK to FALSE.

SYST-231 RCRON: Action failed

Cause: RCRON command could not be executed. This is caused by either an incorrect crontab file or by the corresponding module not being loaded on the controller.

Remedy: Check md:crontab.dg for errors.

SYST-232 RCRON: Tick missed

Cause: RCRON was prevented from running on time.

Remedy: Too many RCRON jobs might be executing. Check md:crontab.dg and remove non-critical entries.

SYST-233 RCRON: No response from MAIN

Cause: A job on the MAIN processor was not completed on time.

Remedy: Too many RCRON jobs might be executing on MAIN. Check md:crontab.dg and remove non-critical entries.

SYST-239 Auto Software Update failed

Cause: Last software update failed.

Remedy: Restore backup in MC:¥00¥TEMP and retry the software update.

SYST-242 Invalid RPS code

Cause: The RPS code is an invalid BCD in BCD mode.

Remedy: Check the status of RPS1, RPS2, ... RPS128.

SYST-243 RPS failed(%s)

Cause: The program selection by RPS has failed.

Remedy: Refer to the cause code. Typically, the program does not exist.

SYST-244 Auto mode is required

Cause: This operation requires Auto mode.

Remedy: Change the mode switch to Auto.

SYST-245 Local mode is required

Cause: This operation requires Local mode.

Remedy: Change the mode to Local.

SYST-246 Teach mode is required

Cause: This operation requires Teach mode.

Remedy: Change the mode switch to Teach mode.

SYST-247 Master ON is required

Cause: This operation requires a Master ON situation.

Remedy: Ensure that the Master ON situation exists.

SYST-248 Alarm condition

Cause: This operation requires no alarm situation.

Remedy: Clear the alarm situation.

SYST-249 No system ready input

Cause: This operation requires the System Ready input.

Remedy: Check the status of the System Ready input.

SYST-250 No robot ready input

Cause: This operation requires the Robot Ready input.

Remedy: Check the status of the Robot Ready input.

SYST-251 No teach plug ON input

Cause: This operation requires the Teach Plug ON input.

Remedy: Check the status of the Teach Plug ON input.

SYST-252 Teach plug ON input

Cause: This operation requires no Teach Plug ON input.

Remedy: Check the status of the Teach Plug ON input.

SYST-253 No safe stop input

Cause: This operation requires the Safe Stop input.

Remedy: Check the status of the Safe Stop input.

SYST-254 Safe stop input

Cause: This operation requires no Safe Stop input.

Remedy: Check the status of the Safe Stop input.

SYST-255 No Teach OK input

Cause: This operation requires the Teach OK input.

Remedy: Check the status of the Teach OK input.

SYST-256 Servo OFF input

Cause: This operation requires the Servo OFF input.

Remedy: Check the status of the Servo OFF input.

SYST-257 No Ext. Hold Release input

Cause: This operation requires the External Hold Release input.

Remedy: Check the status of the External Hold Release input.

SYST-258 Operator panel hold

Cause: This operation requires that the HOLD/RUN switch on the Panel is set to RUN.

Remedy: Check the status of the HOLD/RUN switch on the Panel.

SYST-259 UI signals are disabled

Cause: This operation requires that UI signals are enabled.

Remedy: Check the setting of 'Enable UI signals' in the system config menu.

SYST-266 Please cycle power

Cause: Robot controller power must be cycled.

Remedy: Cycle power manually.

SYST-267 System is being initialized

Cause: It is internal information. System initialization is not finished.

Remedy: It is internal information. You don't need to do any operation.

SYST-268 Resume program(%s) execution

Cause: The program cannot be selected by PNSTROBE pulse signal while resume program is being executed.

Remedy:

1. Do not input the PNSTROBE pulse signal while resume program is being executed.
2. Input the PNSTROBE pulse signal after ending the resume program(program name) when you input the PNSTROBE pulse signal.

SYST-269 FFR sequence(%s) execution

Cause: The program cannot be selected by the PNSTROBE pulse signal while fast fault recovery sequence is being executed.

Remedy:

1. Do not input the PNSTROBE pulse signal while fast fault recovery sequence is being executed.
2. Input the PNSTROBE pulse signal after ending the FFR sequence(program name) when you input the PNSTROBE pulse signal.

SYST-270 Ref. Position maximum exceeded

Cause: Reference Positions were enabled beyond the maximum number.

Remedy: Do not exceed maximum enabled Reference Positions.

SYST-271 Lack of MC for saving

Cause: Lack of enough space in MC for saving diagnostic log data.

Remedy: Delete some unnecessary files or use memory card with sufficient free space.

SYST-272 Lack of USB for saving

Cause: Lack of enough space in USB for saving diagnostic log data.

Remedy: Delete some unnecessary files or use USB memory with sufficient free space.

SYST-273 Lack of FRA for saving

Cause: Lack of enough space in FRA for saving diagnostic log data.

Remedy: Delete some unnecessary files or get sufficient free space on FRA.

SYST-274 Diagnostic log done

Cause: Diagnostic log was done.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-275 Diagnostic log failed

Cause: Diagnostic log was failed. This is just a notification.

Remedy: Failed to execute the log. To get the data instead of diagnostic for workaround, save all backup and do image backup.

SYST-276 Now getting log...

Cause: Diagnostic log is executing to get the log.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-277 BMON update failed

Cause: An automatic update of BMON failed for some reason.

Remedy: Refer to the error cause code in the Alarm history for a specific reason. Manually update BMON at Configuration start according to the instruction in the Software Installation Manual.

SYST-278 DCS File is lost

Cause: By power failure, safety parameter file is lost.

Remedy: Please apply, verify and cycle power.

SYST-279 SCB memory allocation failed

Cause: SCB memory allocation failed.

Remedy: Please change value of \$TSCFG.\$SIZE smaller and cycle power.

SYST-280 Operating panel is Teach mode[P]

Cause: This error happens only when using M-TP(J897). Operating panel is Teaching mode.

Remedy: When using M-TP, set operation panel to Auto mode.

SYST-281 Teaching mode input is ON[P]

Cause: This error happens only when using M-TP(J897). When changing to Auto mode, Teach mode input is ON.

Remedy: When changing to Auto mode, set Teaching mode input to OFF.

SYST-282 Auto mode input is ON[P]

Cause: This error happens only when using M-TP(J897). When changing to Teach mode, Auto mode input is ON.

Remedy: When changing to Teaching mode, set Auto mode input to OFF.

SYST-287 Not enough memory to increase frames

Cause: There is not enough memory to support the number of requested frames.

Remedy: \$SCR.\$MAXNUMUFRAM and \$SCR.\$MAXNUMUTOOL have been reset to the number of frames that were able to be configured. However, this is an indicator that controller memory is at a critically low state. A review of option content should be made and controller memory increased if required.

SYST-288 Failed to write DCS parameter(%x)

Cause: Failed to write the DCS parameters.

Remedy: 1. Check free size of FROM.
2. Change FROM/SRAM module.

SYST-289 Cannot apply to DCS parameter(%x)

Cause: Failed to apply DCS parameters.

Remedy: If a DCS apply is in progress in another screen, please wait, and try again.

SYST-290 Cycle power to use new DCS parameter

Cause: Controller power has not been cycled after doing an apply of the DCS parameters.

Remedy: Cycle controller power, and test DCS function with the new DCS parameter setting.

SYST-291 Starting maintenance data

Cause: This is posted when "Maintenance data" is selected from F4[BACKUP] in FILE screen.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-292 Maintenance data done

Cause: This is posted when saving "Maintenance data" is completed from F4[BACKUP] in FILE screen.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-293 Please cycle power.

Cause: This is posted in some cases that changing the maximum of the task in the system of KAREL Use Support Function (J971).

Remedy: Execute cycle power.

SYST-294 Paused %s

Cause: This is posted when KAREL program that is set in the KAREL Config screen in KAREL Use Support Function (J971) is paused.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-295 Aborted %s

Cause: This is posted when KAREL program that is set in the KAREL Config screen in KAREL Use Support Function (J971) is aborted.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-296 Specified karel was paused

Cause: This is posted when KAREL program that is set in the KAREL Config screen in KAREL Use Support Function (J971) is paused.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-297 Specified karel was aborted

Cause: This is posted when KAREL program that is set in the KAREL Config screen in KAREL Use Support Function (J971) is aborted.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-298 Trigonometric Function not installed

Cause: Trigonometric Function option (J736) is not installed.

Remedy: Please contact your local FANUC representative. If this alarm is posted, trigonometric function is not executed. Take necessary action for your robot system.

SYST-299 Robot Setup Assistance not installed

Cause: Robot Setup Assistance option (J737) is not installed.

Remedy: Please contact your local FANUC representative. If this alarm is posted, robot setup assistance is not executed. Take necessary action for your robot system.

SYST-300 System Design Tool not installed

Cause: System Design Tool option (J738) is not installed.

Remedy: Please contact your local FANUC representative. If this alarm is posted, system design tool is not executed. Take necessary action for your robot system.

SYST-301 External mode select is not available

Cause: External mode select function (J569) is loaded, but External mode select is not available in this op panel.

Remedy: "Delete 'External mode select function or use op panel that has no mode switch.

SYST-302 Please power off

Cause: There has been SYSTEM severity alarm. It is impossible to reset this alarm without repower.

Remedy: Check SYSTEM severity alarm causing this alarm and power OFF/ON

SYST-304 Safety I/O device is not available

Cause: Multi-arm and DCS Safety I/O device can not be used in this hardware.

Remedy: Please change main board to use Multi-arm or Safety I/O device.

SYST-305 System startup in progress

Cause: System startup is in progress.

Remedy: Press reset after system startup is completed.

SYST-306 User info hasn't been registered

Cause: User information hasn't been registered yet.

Remedy: Refer to Customer registration screen of Status menu.

SYST-307 See customer register screen(STATUS)

Cause: User information hasn't been registered yet.

Remedy: Refer to Customer registration screen of Status menu.

SYST-308 DCS SHIFT+RESET requires T1 mode

Cause: Shift Reset is pressed in T2 or AUTO mode.

Remedy: To reset DCS alarm, select T1 mode and press Shift Reset.

SYST-309 SYSTEM Cycle power to apply axis SETUP

Cause: Controller power has not been cycled after applying axis SETUP.

Remedy: Cycle controller power to finish applying axis SETUP.

SYST-310 SYSTEM Failed to apply axis SETUP (%d)

Cause: Controller power was turned OFF before axis SETUP was completed.

Remedy: When number in the bracket is 1: Controller power was turned OFF before applying the axis SETUP started. Please try setting again.

When number in the bracket is 2, 3: Controller power was turned OFF while applying the axis SETUP. Please perform an init start to restore the setting and try setting again.

SYST-311 Shared TP: Multiple TP connection

Cause: Robot cannot be moved, because multiple Teach Pendants are connected in Shared Teach Pendant system.

Remedy: Remove extra Teach Pendants from controllers in Shared Teach Pendant system.

SYST-312 Shared TP: Shared TP: FL-net is disabled

Cause: Teach Pendant cannot log in to the controller, because FL-net is disabled.

Remedy: Check setting of FL-net. And change setting of Safety Function by FL-net to ENABLE.

SYST-313 Shared TP: Shared TP is disabled

Cause: Teach Pendant cannot log in to the controller, because Shared Teach Pendant is disabled.

Remedy: Change the DCS setting of Shared Teach Pendant function to ENABLE.

SYST-314 Shared TP: shared group config error

Cause: Setting of Shared Teach Pendant is disabled on the controller.

Remedy: Check setting of Shared Teach Pendant function.

SYST-315 Shared TP: bypassed robot

Cause: The Teach Pendant cannot log in to the controller, because this robot is bypassed.

Remedy: Change bypass setting to OFF by Shared Teach Pendant screen or Safety I/O.

SYST-316 WARN Applying axis SETUP

Cause: This message is posted if user presses "F5 (APPLY)" on the Quick Axis Setup (TOP) screen and then presses "F4 (OK)" on the Quick Axis Setup (Verify) screen.

Remedy: This is a confirmation message. You do not have to do anything for this warning message.

SYST-317 Disconnect TP in AUTO mode

Cause: TP DISCONNECT menu is selected in T1/T2 mode.

Remedy: Change mode AUTO to disconnect TP.

SYST-318 Need Hot Swap option

Cause: This menu cannot be used on this system.

Remedy: To use TP DISCONNECT, special hardware and Hot swap option (J647) are needed.

SYST-319 Program resumed automatically

Cause: Program is resumed automatically by Auto resume function of Collaborative Robot.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-320 Contact force exceeds limit %x,%x

Cause: Program is paused because the external force acting on Collaborative Robot is exceeds force limit.

Remedy: Clear the external force to the robot, confirm the safety, and execute the program. If the auto resume function is enabled, the program will be resumed automatically.

SYST-321 Contact force is not released

Cause: A program is executed even if the intensity of the external force acting on Collaborative Robot is still high.

Remedy: Clear the external force to the robot, confirm the safety, and execute the program.

SYST-322 Auto status check time out

Cause: The elapsed time from a previous reset is longer than the reset time limit on Collaborative Robot.

Remedy: Clear the external force to the robot for the external force reset. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Subsection of Auto Status Check.

SYST-323 Collaborative speed limit (TCP)

Cause: When the contact stop function is enabled on Collaborative Robot, the TCPspeed exceeds the collaborative speed limit.

Remedy: When the contact stop function is enabled, keep the low speed with such as enabling speed clamp or Override Select function. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Section of HIGH SPEED MODE.

When the alarm occurs in jogging, lower the override.

When the alarm occurs in Circular motion or Arc Circular motion, lower the program speed. SYST-324 Over Payload change distance (Payload number is changed)

Cause: The robot moved over the payload change distance when the external force is large. Or when the payload change distance of Collaborative Robot is disabled, the payload number has been changed.

Remedy: You can avoid to pause a program to change the payload number when the payload change distance is enabled. Insertion of WAIT 1s command is recommended when the external force is not applied before move over the payload change distance.

SYST-325 Payload error is detected %x,%x

Cause: The payload setting of Collaborative Robot is different from the actual payload.

Remedy: Verify the payload setting is same as the actual payload. The low accuracy of the payload setting causes this alarm.

- If the external force exceeds the payload error limit, the accuracy of payload[kg] might be low.
- If not, the payload[kg] or the accuracy of the position of the center of gravity might be low. From the external force just after the payload change, you can roughly see the error of the payload[kg].

SYST-326 Need to confirm payload

Cause: Payload confirmation operation of Collaborative Robot has not been performed after power on.

Remedy: Payload confirmation operation is necessary after power on. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Chapter of OPERATION AFTER POWER ON.

SYST-327 Inappropriate regular test program

Cause: Checking program for Collaborative Robot has a problem.

Remedy: Verify that each posture of the robot in the checking program must have a distance from each other.

Verify that the number of the positions of the checking program is less than 30.

Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Chapter of PERIODICAL CHECK.

SYST-328 Not move in STOP state

Cause: Jogging is initiated when Collaborative Robot is subejcted to external force.

Remedy: You can peform jogging with SHIFT+RESET. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Section of Contact Stop in Teach Mode.

SYST-329 Push to escape done %x,%x

Cause: Collaborative Robot escapes because the robot is pushed.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-330 Invalid Error Code Post Attempt

Cause: Detail information is written in internal data conslog.dg

Remedy: Contact your local FANUC service with information on events leading up to error.

SYST-331 Shared TP: config error(%s)

Cause: Setting of Shared Teach Pendant is disabled on the controller.

Remedy: Check setting of Shared Teach Pendant on the controller.

SYST-332 Shared TP: safety config mismatch(%s)

Cause: Safety configuration of Shared Teach Pendant is not matched between the controllers.

Remedy: Check safety configuration of Shared Teach Pendant on the controller.

SYST-333 Shared TP: bypass status mismatch(%s)

Cause: Bypass status is mismatched between the controllers.

Remedy: Set the same bypass status on Shared Teach Pendant setting screen of safety I/O.

SYST-334 Shared TP: address error(%s)

Cause: IP address in Shared TP settings is not matched. Same IP address has to be set in ROSIPCFG.XML, FL-net and Shared TP safety setting.

Remedy: Check IP address of these settings.

SYST-335 Shared TP: version mismatch(%s)

Cause: Software version is mismatched among controllers in Shared TP group

Remedy: Update software to user same software version.

SYST-336 Shared TP: TP is already connected

Cause: Teach Pendant cannot log in to the controller because another Teach Pendant is already wired to the controller.

Remedy: Disconnect Teach Pendant on the controller.

SYST-337 Shared TP: %s is offline

Cause: Shared Teach Pendant function cannot communicate to the controller. This controller seems to be power-down status.

Remedy: Power on the controller.

SYST-338 Shared TP: E-stop on %s

Cause: Emergency stop occurred on the controller in Shared group.

Remedy: Release E-stop button on the controller.

SYST-339 Shared TP: please cycle power for auto-config

Cause: Configuration of Shared Teach Pendant was changed. Cycle power is needed to enable new configuration.

Remedy: Please cycle power to enable new configuration.

SYST-340 Shared TP: auto-config error

Cause: Setting of Shared TP function for Auto configuration has wrong values.

Remedy: Check values of system variables for Auto configuration

SYST-341 %s is not available for export device

Cause: Device's name to export diagnostic data is different.

Remedy: Check system variables \$RSCH_LOG.\$EXP_DIR.

SYST-342 Now saving.(%d/%d). Please wait...

Cause: User attempt to execute program while hand guide operating..

Remedy: User program could not execute while hand guide enabled.

SYST-343 Enable Contact Stop function

Cause: Collaborative Robot cannot move in T2 or AUTO mode with Contact Stop Disable.

Remedy: Select T1 mode. Or enable the contact stop function.

SYST-344 Cannot execute program while hand guide operating

Cause: User attempt to execute program while hand guide operating..

Remedy: User program could not execute while hand guide enabled.

SYST-345 Hand guide enabled

Cause: This message just means hand guide is enabled.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-347 DCS Wrong Param

Cause: Some DCS parameters are something wrong.

Remedy: Please confirm the DCS Position speed check disabling I/O setting and DCS Tool frame. If you do not need this warning, please change the “SSI[13] Configuration check” in “Pos/Speed check setting” in DCSmenu.

SYST-348 Payload Monitor (Force) warning

Cause: Collaborative Robot Payload Monitor detects Force exceeds warning value set in the collaborative screen.

Remedy: Resolve the root cause of the external force. Or increase the warning value in the collaborative screen.

SYST-349 Payload Monitor (Moment) warning

Cause: Collaborative Robot Payload Monitor detects Moment exceeds warning value set in the collaborative screen.

Remedy: Resolve the root cause of the external moment. Or increase the warning value in the collaborative screen.

SYST-350 Force Monitor warning

Cause: Collaborative Robot Force Monitor detects Force exceeds warning value set in the collaborative screen.

Remedy: Resolve the root cause of the external force. Or increase the warning value in the collaborative screen.

SYST-351 Mode select function mismatch

Cause: Selected Mode Select function and this hardware status is not matched.

Remedy: For R-30iB Compact Controller, connect optional Switch Box and change mode select function setting to “Mode Switch” to use the Switch Box. Connect Short Plug and change mode select setting to “External Input” or “Teach Pendant” to use these settings. For other controller, External mode select function (J569) or TP mode select function (J768) is loaded, but these functions are not available in this op panel. Change op panel which is supported these functions.

SYST-352 Payload Record Start (No.%d, %dms)

Cause: On Variable Payload Compensation function of Collaborative Robot, Payload Record starts with displayed schedule number and time interval.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-353 Payload Record Finish (No.%d)

Cause: On Variable Payload Compensation function of Collaborative Robot, Payload Record finished normally.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-354 Payload Record Failed (No.%d, %d)

Cause: On Variable Payload Compensation function of Collaborative Robot, Payload Record failed.

Remedy: The value in the error message is error code. Follow the following remedy.

Error Code	Meaning	Remedy
1	Hold occurs.	Don't hold during recording.
2	Hold occurs during after second recording.	Don't hold during recording.
3	The program is aborted.	Don't abort the program during recording.
4	The program is aborted during after second recording.	Don't abort the program during recording.
5	Backward execution occurs.	Don't execute backward during recording.

Error Code	Meaning	Remedy
6	Backward execution occurs during after second recording.	Don't execute backward during recording.
7	FCMPSTRT is called.	Don't call other FCMPSTRT between FCMPSTRT and FCMPEND.
8	FCMPSTRT is called during after second recording.	Don't call other FCMPSTRT between FCMPSTRT and FCMPEND.
9	The recording data is abnormal.	Repower the controller. If the problem is not cleared, save the diagnostic log just after failure and send the files to FANUC sales person.
10	The recoding data is abnormal.	Repower the controller. If the problem is not cleared, save the diagnostic log just after failure and send the files to FANUC sales person.
11	Payload is Unrecorded during after second recordin	Execute with 1 st parameter 2 (RECORD(RECORD CLEAR))
12	The recording data is abnormal during after second recording.	Repower the controller. If the problem is not cleared, save the diagnostic log just after failure and send the files to FANUC sales person.
13	Cause Recording time exceeds.	Recording time limit is "Interval x 1000". Set the interval to longer value.

SYST-355 Payload is NOT recorded (No.%d)

Cause: On Variable Payload Compensation function of Collaborative Robot, unrecorded schedule is played.

Remedy: Execute in Record mode and record payload.

SYST-356 Payload Compensation is stopped (No.%d, %d)

Cause: On Variable Payload Compensation function of Collaborative Robot, Payload Play failed.

Remedy: The value in the error message is error code. Follow the following remedy.

Error Code	Meaning	Remedy
1	The program is aborted.	Don't abort the program during compensation.
2	Backward execution occurs.	Don't execute backward during compensation.
3	FCMPSTRT is called.	Don't call other FCMPSTRT between FCMPSTRT and FCMPEND.
4	The robot restarts on different motion path.	When the motion path is changed after resume, the compensation is stopped. If the original resume function is disabled, enable it. Don't change the program line
5	The recording data is abnormal.	Repower the controller. If the problem is not cleared, save the diagnostic log just after failure and send the files to FANUC sales person.

SYST-357 Payload Record Start (No.%d, %d time)

Cause: On Variable Payload Compensation function of Collaborative Robot, Payload Record starts with displayed schedule number after the second time.

Remedy: This is just a notification. You do not have to do anything for this warning message.

SYST-358 Payload change distance disabled

Cause: When the payload change distance of Collaborative Robot is disabled, the payload number has been changed.

Remedy: You can avoid to pause a program to change the payload number when the payload change distance is enabled.

SYST-359 Collaborative speed limit (Elbow)

Cause: When the contact stop function is enabled on Collaborative Robot, the elbow speed exceeds the collaborative speed limit.

Remedy: When the contact stop function is enabled, keep the low speed with such as enabling speed clamp or Override Select function.

When the alarm occurs in jogging, lower the override.

When the alarm occurs in Circular motion or Arc Circular motion, lower the program speed.

SYST-360 Payload Comp is disabled.

Cause: When the variable payload compensation is disabled, variable payload compensation is used

Remedy: When you use the variable payload compensation, enable “Payload Comp” in DCS collaborative robot screen. When “Alarm in Disable” is disabled, this alarm does not occur.

SYST-364 WARN Jog is disabled during Manual Guided Teaching.

Cause: Jog button is pressed during Manual Guided Teaching.

Remedy: Jog after Manual Guided Teaching is finished. With iPendant, change the mode to jog in JOG ASSIST screen.

SYST-365 SERVO Payload is changed during Manual Guided Teaching

Cause: Payload setting is changed during Manual Guided teaching.

Remedy: Press RESET, and restart Manual Guided Teaching.

SYST-366 SERVO Speed Limit for Manual Guided Teaching

Cause: The TCP speed exceeds the limit during Manual Guided Teaching.

Remedy: Press RESET, and restart Manual Guided Teaching.

SYST-367 WARN Contact force limit for Manual Guided teaching

Cause: External force is applied at the start of Manual Guided Teaching.

Remedy:

1. Remove the cause of external force.
2. If the external force cannot be removed, make “Teaching Weight” value smaller as possible and press the enabling switch and press RESET repeatedly to make the robot escape.
3. If no external force is applied, verify the payload setting is same as the actual payload and do the payload confirmation operation.

SYST-368 WARN Paused during Manual Guided teaching

Cause: TP program is paused during Manual Guided Teaching.

Remedy: Execute the TP program after Manual Guided Teaching is finished.

SYST-369 WARN Remove contact force to continue Manual Guided Teaching

Cause: Robot is stopped because external force is applied at the start of Manual Guided Teaching.

Remedy: Try the remedy for SYST-367.

SYST-373 Shared TP: Preparing to connect

Cause: The controller which you try to log in is preparing to connect.

Remedy: Please wait a few seconds and then log in to the controller again.

SYST-374 SERVO Need to confirm payload

Cause: Payload confirmation operation of Collaborative Robot has not been performed after power on.

Remedy: Payload confirmation operation is necessary after power on. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Chapter of OPERATION AFTER POWER ON.

SYST-375 WARN Retract after Contact is activated

Cause: Retract after Contact function is activated.

Remedy: This warning is only for notification. No remedy is needed. Refer to “Collaborative Robot Function OPERATOR’S MANUAL”(B-83744EN), Chapter of SPECIFICATION OF COLLABORATIVE FUNCTION.

SYST-379 Cycle power for new Target Pos. Check parameter

Cause: DCS Target Position Check parameter has been changed. In order to use the new parameter, you need to cycle controller power.

Remedy: Cycle controller power.

4.18 T

4.18.1 TANG Alarm Code

TANG-001 Reference position not found

Cause: Reference position can not be found.

Remedy: Record the reference position with TA_REF motion modifier.

TANG-002 Invalid reference position

Cause: Reference position is not valid.

Remedy: Re-teach the reference position with TA_REF motion modifier.

TANG-003 PR number not found

Cause: PR number can not be found.

Remedy: Specify the PR number in TA_REF PR[] motion modifier.

TANG-004 Invalid PR number(%d)

Cause: Position Register number is not valid.

Remedy: Enter a valid Position Register number in TA_REF PR[] motion modifier.

TANG-005 Uninitialized PR number(%d)

Cause: Position Register is uninitialized.

Remedy: Enter an initialized Position Register.

TANG-006 Not a robot arm gmask(%d)

Cause: Trying to use TA_REF in a TP program that does not include a robot arm motion group.

Remedy: Use TA_REF in a TP program that includes at least one robot arm motion group.

TANG-007 Reference axis recorded

Cause: A reference axis for the work angle calculation has been recorded.

Remedy: This is a warning message.

TANG-008 Uninitialized TA_REF ref frm

Cause: TA_REF reference frame is uninitialized.

Remedy: Move cursor to TA_REF, align the torch with the reference axis, then shift F3 to record reference frame.

TANG-009 Illegal interpolated point

Cause: Illegal robot interpolated point data is detected.

Remedy: Internal error, please call FANUC Robotics customer service.

TANG-010 Unit vector formation error

Cause: Unit vector formation error.

Remedy: Internal error, please call FANUC Robotics customer service.

TANG-011 Group number mismatch

Cause: MOVE_TO TP jog group does not match recorded reference position group.

Remedy: Change TP jog group to match recorded reference position group.

TANG-012 Exceed max TA_REF robot grps

Cause: TP instruction TA_REF is used in a TP program that has more than 2 robot groups.

Remedy: Use TA_REF PR[] in a TP program that has more than 2 robot groups.

TANG-013 TA_REF PR[] for COORD motion

Cause: TP instruction TA_REF is used in a coordinated motion.

Remedy: Use TA_REF PR[] in the coordinated motion. TA_REF records position of follower robot only, whereas TA_REF PR[] records positions of both leader and follower groups.

TANG-014 Travel angle limit

Cause: Jogging was stopped as the torch travel angle began to exceed the travel angle tolerance.

Remedy: This is a warning. Jogging can be continued.

TANG-015 Work angle limit

Cause: Jogging was stopped as the torch work angle began to exceed the work angle tolerance.

Remedy: This is a warning. Jogging can be continued.

TANG-016 Large travel angle chg %d dg

Cause: The difference between current travel angle and desired travel angle has exceeded the configured system variable \$TOR_ANG_CFG.\$MAX_TVL_DIF.

Remedy: Limit the travel angle difference, or increase the system variable \$tor_ang_cfg.\$max_tvl_dif.

TANG-017 Large work angle chg %d dg

Cause: The difference between current work angle and desired work angle has exceeded the configured system variable \$TOR_ANG_CFG.\$MAX_WRK_DIF.

Remedy: Limit the work angle difference, or increase the system variable \$TOR_ANG_CFG.\$MAX_WRK_DIF.

TANG-018 Cannot update while moving

Cause: The torch angles cannot be updated while the robot is moving.

Remedy: Wait for the robot motion to stop before using the update function.

TANG-019 Press SHIFT with the MOVE_TO key

Cause: The MOVE_TO function key was pressed without holding the SHIFT key.

Remedy: Press and hold the SHIFT key with the MOVE_TO key to move the robot torch to the target work and travel angles.

TANG-020 E%d WP%d S%d Wrk=%f Trv=%f

Cause: The UPDATE function key was pressed.

Remedy: The current torch work and travel angles were copied to the reported weld procedure weld schedule.

TANG-021 Ref Pos for COORD motion

Cause: The current reference position is not feasible for a coordinated motion.

Remedy: Add a TP instruction TA_REF PR[] to the current coordinated motion. TA_REF PR[] records positions of both the leader and the follower groups.

TANG-022 Ref Pos for non-COORD motion

Cause: The current reference position is not feasible for a non-coordinated motion.

Remedy: Add a TP instruction TA_REF to the current non-coordinated motion. TA_REF records position of non-coordinated robot only.

TANG-023 (G:%d) Ref Frame not ready

Cause: Torch Angle reference frame for the specified motion group is not ready.

Remedy: Execute a motion instruction in a TP program associated with the specified motion group to initialize Torch Angle reference frame.

4.18.2 TAST Alarm Code

TAST-000 unknown error (TAST00)

Cause: Internal system error.

Remedy: Cold start controller.

TAST-001 TAST global vars failure

Cause: The Through Arc Seam Tracking (TAST) variables are not loaded.

Remedy: Perform a controlled start to initialize motion softparts.

TAST-002 TAST error IO allocation

Cause: An IO memory allocation error has occurred.

Remedy: Perform a cold start of controller.

TAST-003 TAST IO initialization failed

Cause: An analog port number error has occurred.

Remedy: Check a connection of process IO board.

TAST-004 TAST IO start failed

Cause: IOSETRTN error has occurred.

Remedy: Perform a cold start of controller.

TAST-005 TAST time tick missing

Cause: Time tick missing in TAST IO memory.

Remedy: Change the value of weaving frequency to be lower or the value of comp timing on TAST data screen to be longer.

TAST-006 TAST memory dispose failure

Cause: An IO memory disposition error has occurred.

Remedy: Perform a cold start of controller.

TAST-007 TAST RPM saving failure

Cause: RPM data saving error has occurred.

Remedy: Check RPM softparts was loaded correctly. If same position IDs are used at same RPM record section, change position IDs to different one.

TAST-008 TAST incorrect schedule num

Cause: An invalid TAST schedule number was specified.

Remedy: Change the schedule number to be in range (1 - 20).

TAST-009 TAST weave freq is too low

Cause: An invalid weaving frequency was specified for TAST.

Remedy: Change the frequency value to be higher.

TAST-010 TAST software error (SRIF)

Cause: Internal system error (SRIF).

Remedy: Perform a cold start of controller.

TAST-011 TAST software error (PMPT)

Cause: Internal system error (PMPT)

Remedy: Perform a cold start of controller

TAST-012 TAST software error (INTP)

Cause: Internal system error (INTP).

Remedy: Perform a cold start of controller.

TAST-013 TAST software error

Cause: Internal system error.

Remedy: Perform a cold start of controller.

TAST-014 TAST weave freq is too high

Cause: Weaving frequency is too high for TAST.

Remedy: Change the value of weaving frequency to be lower.

TAST-015 Force Beyond High Limit

Cause: Measured force is beyond its limit.

Remedy: check the system or change the up limit.

TAST-016 Force Below Low Limit

Cause: Measured force is below its low limit.

Remedy: check the system or change the low limit.

TAST-017 Sensor is not calibrated

Cause: Sensor is not calibrated.

Remedy: Calibrate the sensor.

TAST-018 Exceed lateral tracking limit

Cause: Exceed TAST/AVC lateral tracking limit.

Remedy: Re-teach the welding path, or adjust L_tracking limit in TAST/AVC Schedule setup screen.

TAST-019 Exceed vertical tracking limit

Cause: Exceed TAST/AVC vertical tracking limit.

Remedy: Re-teach the welding path, or adjust V_tracking limit in TAST/AVC Schedule setup screen.

4.18.3 TCPP Alarm Code

TCPP-000 Unknown (TC00)

Cause: System internal error.

Remedy: Notify FANUC.

TCPP-001 No global variables

Cause: TCP Speed Prediction global variables are not loaded.

Remedy: Perform a controlled start and initialize motion softparts.

TCPP-002 No mmr pointer

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-003 No mir pointer

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-004 No sysvar pointer

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-005 No tcppir pointer

Cause: This is an internal system error.

Remedy: Perform a controlled start and initialize the motion softparts.

TCPP-006 Error allocating memory

Cause: A failure occurred while allocating memory.

Remedy: Check amount of memory being used by system.

TCPP-007 Error making TCPP mailbox

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-008 Error making TCPP spmktsk

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-009 Pnts too close before line:%d^5

Cause: The program positions prior to this line are too close together to allow proper speed prediction to be performed. It is also most likely that the robot can not perform at the programmed speed either.

Remedy: The positions being executed prior to the one specified should be moved further apart, or the programmed speed should be decreased.

TCPP-010 Error writing PLAN mailbox

Cause: This is an internal system error.

Remedy: Perform a cold start on the controller.

TCPP-011 Pred time skips first motion

Cause: The first motion segment time (time between first two taught points) is shorter than the prediction equipment delay time as specified by \$TCPPIR.\$TCDELAY.

Remedy: Extend time of first motion segment (increase distance or decrease speed) to allow TCP Speed Prediction to begin during the first motion segment.

TCPP-012 Invalid TCPP filter type

Cause: The motion was commanded using an invalid motion filter type.

Remedy: Check program setup to ensure proper program header data, motion types, and position data.

TCPP-013 Invalid TCPP start pos

Cause: The start position is not valid.

Remedy: Check the values for the current and previous positions.

TCPP-014 Invalid TCPP destination pos

Cause: The destination position is not valid.

Remedy: Check the values for the current and previous positions.

TCPP-015 Invalid time into segment

Cause: The time computed for the current segment exceeds the segment length.

Remedy: Check the value for the current position data.

TCPP-016 No cfseg data

Cause: The Cartesian Filter data is not valid.

Remedy: Check to make sure that the Cartesian Filter option has been properly loaded and initialized.

TCPP-017 Modone computation error

Cause: The internal Motion Done computation generated an error.

Remedy: No action is necessary, but the TCP Speed value will not be valid for several motions.

TCPP-018 Begin Error Mode at line:%d^5

Cause: The program positions beginning with this line have caused an error condition which makes further speed prediction invalid. The speed prediction task has therefore entered an error handling mode within which it discontinues speed prediction but provides the actual robot speed as an output reference with an affective equipment delay time of 0. (That is, with \$TCPPIR.\$TCDELAY = 0.)

Remedy: Check the error log to find speed limit errors which may be causing this TCPP error to occur. Check the program beginning with this line to determine if the robot can not function as programmed. Modify the program to avoid all such speed limit errors. In cases which list speed limit errors for the wrist axes, the error can often be eliminated by changing the motion command from using mm/sec speed commands to using deg/sec speed commands which better control motion with large wrist orientation changes.

TCPP-019 Speed Ovrld Mode at line:%d^5

Cause: A speed override occurred beginning with this line causing an error condition which makes further speed prediction invalid. The speed prediction task has therefore entered an error handling mode within which it discontinues speed prediction but provides the actual robot speed as an output reference.

Remedy: Normal prediction will resume automatically once the speed override has propagated through the system. No further action is required. The user should avoid this during production program execution and should be aware that it may invalidate live application testing since neither the robot nor the speed prediction task are performing as programmed.

TCPP-020 TCPP internal cartseg error

Cause: Internal error when searching cart segment.

Remedy: No action is necessary, but the TCP Speed value will not be valid.

TCPP-021 Allocate TCPP/VC memory error

Cause: Internal error when allocating memory to TCPP AccuPath segment.

Remedy: Check amount of memory being used by system. Perform a cold start on the controller.

TCPP-022 Invalid delay time specified

Cause: Internal error specified delay time for TCP extension is too big.

Remedy: System problem. Need to fix the problem by modifying code.

TCPP-070 Speed output failed (T_S[%d])

Cause: A failure occurred while writing I/O or a register.

Remedy: Check the program to determine whether both target type and index are valid.

TCPP-071 Min.speed >= Max.speed (T_S[%d])

Cause: The minimum speed is not less than maximum speed.

Remedy: Correct the speed values.

TCPP-072 Invalid index (T_S[%d])

Cause: The specified index of TCP_SPD[] is invalid.

Remedy: Correct the index.

TCPP-073 Unknown target type

Cause: The specified target type is invalid.

Remedy: Correct the target type.

4.18.4 TG Alarm Code

TG-000 unknown error (TG00)

Cause: Internal system error.

Remedy: Cold start controller.

TG-001 Error allocating data

Cause: Not enough memory.

Remedy: Check memory configuration to see if it meets the requirement.

TG-002 Illegal I/O Port

Cause: Illegal IO Port.

Remedy: Reassign IO port.

TG-003 Illegal I/O Port Type

Cause: Illegal IO Port Type.

Remedy: Reassign IO port type.

TG-004 Bad Command Value

Cause: Motion trigger has been told to set a I/O port to a value which that port cannot be set to.

Remedy: A digital port must always be set to 1 or 0. You must set the corresponding command_value to a 1 or 0.

TG-005 Bad Alternate Value

Cause: Motion trigger has been told to set a I/O port to a value which that port cannot be set to.

Remedy: A digital port must always be set to 1 or 0. You must set the corresponding command_value to a 1 or 0.

TG-006 Bad Time Before

Cause: Illegal Time Before.

Remedy: Time before must be greater than -0.1 seconds.

TG-007 Bad Schedule Number

Cause: schedule number out of range.

Remedy: Reassign to a valid schedule.

TG-008 Could not trigger I/O

Cause: An I/O port was not triggered when it was supposed to. This is usually caused by too many I/O events being set up to fire within too short a time frame.

Remedy: You must adjust your path so that it does not try to fire so many I/O events within a such a short time. Start by moving the last few motions before this error occurred further apart and/or slowing them down.

TG-009 Adjust Trig Sch:%d^2 Ev:%d^3 L:%d^5

Cause: This is a warning to indicate that the trigger time for the specified TG event was miscalculated, so the event was fired immediately. No user action is required.

Remedy: None.

TG-010 Pts Too Close %s^4 L:%d^5 Sch:%d^2 Ev:%d^3

Cause: This is a warning indicating that two taught points containing triggering events were too close to each other, such that the second point trigger time had to be adjust to prevent firing before the first point trigger.

Remedy: Modify the position of the node (line number and program number) indicated so that it is further away from the preceding position in the program.

TG-011 Cannot Allocate Memory

Cause: An internal error occurred while attempting to allocate memory.

Remedy: Document the events that led to the error, including an All File Backup from the time of the error if possible, and contact your local FANUC representative.

TG-012 Bad Num ISDT in Sch %d^2 Ev%d^3

Cause: A trigger schedule (system variable \$TGSCHED[num], where “num” is the schedule indicated in the alarm text) has an event defined with an invalid process axis number.

Remedy: Generally this alarm occurs when a process axis related option is loaded, but the process axes have not been properly setup. Go to controlled start and run the process axis setup from the MAINTENANCE menu.

TG-013 Invalid IO Port in Sch%d^2 Ev%d^3

Cause: In the trigger schedule number \$TGSCHED[num] indicated by the alarm text, the indicated event number has an invalid port type specified.

Remedy: Change \$TGSCHED[Sch].\$PORT_TYPE[Ev] to a valid port type. Note that Robot Digital Input and Group Input are not allowed. If you have not modified these variables since loading, then obtain a file backup and contact your local FANUC representative.

TG-014 Gun Queue is Full

Cause: The number of outstanding trigger events exceeds the maximum. This indicates either an excessive number of very short segments in a TP program with trigger instructions, or an internal error.

Remedy: Examine the TP programs running at the time of the error for a very large number of motion lines that have instructions with trigger events and that are very close together or the same point. If this condition is not found, obtain as much information as possible about the events leading up to the error as well as a file backup and easy debug (if available) and contact your local FANUC representative.

TG-015 Trigger Overrun

Cause: This alarm is not used.

Remedy: If this alarm appears, obtain a controller backup (image at least) and contact your local FANUC representative.

TG-016 Bad Time Before in Sch%d^2 Ev%d^3

Cause: The indicate trigger schedule event in \$TGSCHEd[Sch] has an invalid value for time before.

Remedy: The time before (or anticipator) value cannot be less than (i.e. more negative than) -100 msec. Check all anticipator values defined in the application to be sure none indicate a time after (i.e. negative time before) greater in magnitude than 100 msec.

TG-017 Invalid Schedule Number %d^2

Cause: An internal error occurred during processing of a TP instruction.

Remedy: Obtain a controller backup and easy debug (if available) and contact your local FANUC representative.

TG-018 Trigger Buffer is Full

Cause: There are too many outstanding trigger events that have not yet been fired. This indicates either an excessive number of short motion segments with trigger instructions, or else an internal error.

Remedy: Examine the TP programs executing at the time of the error to confirm that there are not a large number of short or zero length motion segments back-to-back with application instructions. If this condition does not exist, then obtain a controller backup (and easy debug if available) from the time of the error and contact your local FANUC representative.

TG-019 Internal Timing Data Error

Cause: This alarm is currently not used.

Remedy: If this alarm appears, obtain an image backup and contact your local FANUC representative.

TG-020 Error planning app instruction

Cause: This indicates an error occurred in the planning of an application TP instruction and is always accompanied by another TG-XXX alarm.

Remedy: Examine the alarm log for the other TG-XXX alarm that was posted at the same time and proceed according to the cause/remedy for that alarm.

4.18.5 THSR Alarm Code

THSR-001 Illegal instruction sequence

Cause: Trying to execute a touch sensing instruction out of sequence. For example, a Search Start instruction follows a Offset start instruction without Offset end in between.

Remedy: Please check the touch sensing instruction sequence, or abort the current program and start again.

THSR-002 Illegal schedule number

Cause: The input schedule number is beyond the allowable range.

Remedy: Choose a schedule number from 1 to 32.

THSR-003 Illegal work frame number

Cause: The input work frame number is beyond the allowable range.

Remedy: Choose a work frame number from 1 to 32.

THSR-004 Illegal output PR number

Cause: The input position register number is beyond the allowable range.

Remedy: Choose an appropriate position register number.

THSR-005 Illegal search PR number

Cause: The specified position register for search result is beyond the allowable range.

Remedy: Choose an appropriate position register number.

THSR-006 Search without search start

Cause: Search instruction without search start.

Remedy: Add search start instruction.

THSR-007 Invalid touch I/O assignment

Cause: The touch I/O assignment is incorrect.

Remedy: Please check touch I/O setup screen under the setup menu.

THSR-008 Arc enable detected

Cause: The arc weld circuitry is enable.

Remedy: Please disable arc welding circuitry before enabling touch sensing.

THSR-009 Teach pendant not enabled

Cause: The Teach pendant is disable.

Remedy: Enable the teach pendant.

THSR-010 Illegal motion state

Cause: The motion system is in error state.

Remedy: Hit the reset button to reset the controller.

THSR-011 Illegal sensor port number

Cause: The specified search port is beyond the allowable range.

Remedy: Change the port type and port number in the touch I/O sub-menu.

THSR-012 Illegal search pattern

Cause: The specified search pattern is not recognizable.

Remedy: Change the search pattern in the touch sensor schedule.

THSR-013 Illegal number of search

Cause: Number of searches is not coincident with the search pattern.

Remedy: Change the search pattern or add/delete search instructions.

THSR-014 Illegal search distance

Cause: This is a warning message. The specified search distance is beyond the allowable range. A default speed is used.

Remedy: Change the search speed in the touch sensor schedule.

THSR-015 Illegal search speed

Cause: The specified search speed is beyond the allowable range.

Remedy: Change the search speed in the touch sensor schedule.

THSR-016 Illegal return speed

Cause: The specified return speed is beyond the allowable range. A default speed is used.

Remedy: Change the return speed in the touch sensor schedule.

THSR-017 No contact with part

Cause: The search produces no contact with the part.

Remedy: Use touchup to teach a new search start position.

THSR-018 Too many searches

Cause: Too many searches for the specified search pattern.

Remedy: Delete unnecessary search instructions.

THSR-019 Mixing search types

Cause: NONE search type can not be mixed with directional search within one search pattern.

Remedy: Delete all searches with NONE type or delete coordinated searches.

THSR-020 Geometric computing error

Cause: The searches do not generate a satisfactory offset.

Remedy:

1. Check the search pattern and search instructions in the pattern.
2. If Fillet/Lap & 2D+Rotate type is used, the rotate shift for only one axis is allowed. Check whether the rotate shift for 2 axes are generated or not on the workpiece for search.
3. Remove the extra search instruction to one direction.
4. Use touchup to teach a new search start position.

THSR-021 Points are too close

Cause: The touched positions are too close to each other.

Remedy: Teach new search start positions.

THSR-022 Part is not mastered

Cause: Search instructions have no master data.

Remedy: Mastering the part first.

THSR-023 No search start

Cause: The search instruction does not have a search start.

Remedy: Add search start before search.

THSR-024 No offset start

Cause: The offset end instruction does not have an associated offset start instruction.

Remedy: Add offset start instruction.

THSR-025 Nested search start

Cause: The search start instruction is nested inside another search start instruction.

Remedy: Add a search_end instruction in appropriate place or delete extra search start.

THSR-026 Nested offset start

Cause: The offset start instruction is nested inside another offset start instruction.

Remedy: Add a offset_end instruction in appropriate place or delete extra offset start.

THSR-027 Preplan is not allowed

Cause: No preplan motion inside search start.

Remedy: It is normal to issue an stop error when preplan is on within search start.

THSR-028 Group number mismatch

Cause: The search motion has to be in group 1 motion.

Remedy: Use group 1 to record search motions.

THSR-029 No contact warning

Cause: The search produces no contact with the part.

Remedy: Use touchup to teach a new search start position.

THSR-030 Contact before search

Cause: Wire makes contact with part before search motion starts.

Remedy: Check part and wire, or teach a new search start position.

THSR-031 Illegal register number

Cause: The input register number is illegal, and it is reset by the software to the maximum available number.

Remedy: Check the input data.

THSR-032 Position type mismatch

Cause: The position type in the position register should be XYZWPR type. Joint representation is not allowed.

Remedy: Change the position representation to XYZWPR type.

THSR-033 Not enough points

Cause: Touch sensing system does not have enough points to compute the geometry.

Remedy: Record more points.

THSR-034 No bwd on search motion

Cause: Touch sensing does not allow backward execution on search motion.

Remedy: Do not Shift-BWD on search.

THSR-035 Error Allocating Data

Cause: Not enough memory.

Remedy: Remove unneeded loaded variables and programs.

THSR-036 Coord pair is not available

Cause: Coord motion is not installed or not calibrated.

Remedy: Install coord motion and calibrate cd pair.

THSR-037 Illegal motion ref. grp.

Cause: Simple search must have schd_ref_grp = 1.

Remedy: Modify reference grp.

THSR-038 Not matches to leader grp.

Cause: Touch frame or schedule reference grp mismatches leader grp.

Remedy: Modify reference grp.

THSR-039 Reference grp mismatch

Cause: None simple search requires frame Reference grp equal to schedule reference grp.

Remedy: Modify reference grp.

THSR-040 Search Distance Short

Cause: Search distance in touch schedule is too short.

Remedy: Increase search distance in touch schedule.

THSR-041 Invalid touch group mask

Cause: An invalid touch sensing group mask in the program detail, or the Search routine was not performed prior to Touch Offset.

Remedy: Check that the Touch Schedule and Robot Group Mask together with Reference Group should be equal to the group mask in the teach pendant program header. Also, the Search routine should be performed directly before the Touch Offset.

THSR-042 Maint Program not allowed

Cause: Touch Sensing does not support a Maintenance Program.

Remedy: Disable the Maintenance Program in the Error Recovery menu, or use Resume Program in teach pendant program for error recovery. To display the Error Recovery menu:

1. Press MENU.
2. Select SETUP.
3. Press F1, [TYPE].
4. Select Err recovery.

THSR-043 Calibration File not found

Cause: The touch sensing analog input calibration file was not found.

Remedy: Create an analog input calibration file called th_calib.dt. The calibration file needs to be stored in frs: via the SMON command.

```
SMON(ppc)> rep th_calib.dt
```

then turn off and then turn on the controller for the calibration file to take effect.

THSR-044 Invalid TH Calibration Data

Cause: The analog input calibration file has an invalid data format.

Remedy: Correct the data format in the analog input calibration file, including configuration data and lookup table.

THSR-045 Analog Input Not Calibrated

Cause: Analog input support has not been calibrated.

Remedy: Create an analog input calibration file with the correct data format.

THSR-046 Invalid Analog Input Data

Cause: The analog input data is not valid.

Remedy: Analog input data needs to be within a valid range. The valid range of analog input value is defined by MaxAnalogInput and MinAnalogInput specified in the same calibration file th_calib.dt.

THSR-047 Can Not Construct A Circle

Cause: The searches do not generate a satisfactory circle.

Remedy: Check the OD/ID search pattern and search instructions in the pattern. Or, use touchup to teach a new search start position.

THSR-048 Illegal Num of 1D Search Dir

Cause: An illegal number of 1D/1D+R search directions exists.

Remedy: Check the 1D/1D+R search pattern and search instructions in the pattern. The number of 1D/1D+R search directions should be exactly 1.

THSR-049 Illegal Num of 2D Search Dir

Cause: An illegal number of 2D/2D+R search directions exist.

Remedy: Check the 2D/2D+R search pattern and search instructions in the pattern. The number of 2D/2D+R search directions should be exactly 2.

THSR-050 Illegal Num of 3D Search Dir

Cause: An illegal number of 3D/3D+R search directions exists.

Remedy: Check the 3D/3D+R search pattern and search instructions in the pattern. The number of 3D/3D+R search directions should be exactly 3.

THSR-051 Err Compute Along 1st Srch Dir

Cause: An error occurred computing the offset along the first search direction.

Remedy: Check search instructions with the first search direction. The first search direction is specified in the first search instruction in the corresponding Search Start-End section. Check the search pattern and search instructions in the pattern. Or, use touchup to teach a new search start position.

THSR-052 Err Compute Along 2nd Srch Dir

Cause: Error computing the offset along the 2nd search direction.

Remedy: Check the search instructions with the 2nd search direction. The 2nd search direction is the first new search direction other than the 1st search direction in the corresponding Search Start-End section. Check the search pattern and search instructions in the pattern. Or, use touchup to teach a new search start position.

THSR-053 Err Compute Along 3rd Srch Dir

Cause: An error occurred computing the offset along the 3rd search direction.

Remedy: Check search instructions with the 3rd search direction. The 3rd search direction is the first new search direction other than the 1st and the 2nd search directions in the corresponding Search Start-End section. Check the search pattern and search instructions in the pattern. Or, use touchup to teach a new search start position.

THSR-054 Err Simple Search Master Flag

Cause: The master flag in the touch sense schedule is ON during simple search.

Remedy: Set the master flag in the touch sense schedule to OFF during simple search.

4.18.6 TJOG Alarm Code

TJOG-001 Invalid Tracking Jog Mode

Cause: An attempt was made to jog multiple arms at an invalid jog mode.

Remedy: Set \$track_mode to the correct value.

TJOG-002 Multiple Arm Hardware required

Cause: An attempt was made to start the tracking jog feature on a single arm controller.

Remedy: Start the tracking jog feature on a controller with multiple arm hardware.

TJOG-003 TJOG disabled in \$track_jog

Cause: An attempt was made to start the tracking jog feature when TJOG is disabled in \$track_jog.\$enable.

Remedy: Enable \$track_jog.\$enable before starting the tracking jog feature.

TJOG-004 G%d is not a robot arm group

Cause: Trying to start the tracking jog feature on a non-robot motion group.

Remedy: Change to a robot motion group before starting the tracking jog feature.

4.18.7 TMat Alarm Code

TMat-000 Offset is out of range

Cause: TorchMate has found that the offset of the torch from the original TCP is beyond the offset limits in the SETUP screen.

Remedy: Determine if the Torch needs to be replaced at this time. Replace it if necessary, or increase the offset limits in the TorchMate SETUP screen.

TMat-001 Sensor is ON before search

Cause: The wire is in contact with the touch plate or is grounded prior to executing the touch move; CAUSE 1: The wire stickout is too long; CAUSE 2: The starting position for the touch move is too close to the touch plate; CAUSE 3: The weld equipment touch circuit or user provided external touch circuit has shorted.

Remedy: Remedy1: Shorten the wire stickout before TorchMate execution by retracting the wire or clipping the wire.

Remedy2: Increase the value of the Start Search position in the TorchMate SETUP menu.

Remedy3: Contact the manufacturer for proper use of their touch sense circuit (ie. the welder may require a blocking diode) and inspect any touch circuit hardware for correct installation or for damaged components.

TMat-002 Sensor failed during search

Cause: Cause1: The TorchMate sensor circuit indicates the wire is in contact with the touch plate before the search move. (too much stickout-the search start distance is too small.)

Cause2: An electrical short exists in the touch circuit. (for example, some circuits require a blocking diode on the power supply.)

Remedy: Remedy1: Decrease the stickout, increase the search start distance, or replace the bent torch.

Remedy2: Contact the supplier of your weld equipment regarding the touch circuit requirements and auxiliary wiring. (if needed.)

TMat-003 Z offset is not mastered

Cause: This error indicates that Z compensation was disabled while mastering and enabled during TorchMate adjustment. TorchMate cannot compensate for Z offset if it is not mastered.

Remedy: Disable Z compensation in the TorchMate SETUP screen.

TMat-004 Program paused while mastering

Cause: Mastering was stopped by releasing the SHIFT key.

Remedy: Select the MASTER softkey to execute mastering. Press and hold the SHIFT key until mastering is complete.

TMat-005 WO[1] is not available for output

Cause: The TorchMate output signal has been assigned to the Weld Start output.

Remedy: Reassign the TorchMate output signal to the welder's touch sense circuit, or to an external circuit designed to provide the touch input when the wire contacts the touch plate.

TMat-006 Override must be 100 %%

Cause: The speed override must be 100% during both mastering and TorchMate Adjustment.

Remedy: Set the override to 100%, and execute mastering or TorchMate Adjust again.

TMat-007 Dry run is not allowed

Cause: TorchMate does not function if DRY RUN is turned on.

Remedy: Display the Test Cycle menu, and turn DRY RUN off.

TMat-008 TorchMate is not mastered

Cause: Cause1: TorchMate Adjustment was attempted before mastering.

Cause2: TorchMate Adjustment has Z offset enabled, but the mastering was done with Z offset disabled.

Cause3: TorchMate Adjustment has Z offset disabled, but the mastering was done with Z offset enabled.

Remedy: Calibrate the TCP correctly before using TorchMate Adjustment.

TMAT-009 No unassigned MACRO is available

Cause: The automatic setup of macros during installation cannot find an unused Macro number. No macro table entry will be automatically assigned to TM_ADJST, TM_ADJ2, TM_ADJ3.

Remedy: The Macro teach pendant program will be loaded on the controller. Remove an unused Macro from the Macro table, and assign TM_ADJST to that number if you require the TorchMate macro assignment in the Macro table.

TMAT-010 Cannot run TorchMate in T1 Mode

Cause: An attempt was made to run TorchMate adjust or mastering in T1 mode on a CE or Control reliable controller. This error applies to TorchMate and TorchMateII on R-J, R-J2, and early software releases on R-J3 controllers. This restriction does not apply to software releases on R-J3 and later controllers.

Remedy: On the affected controllers, change the Teach mode to T2 and rerun mastering or TorchMate adjustment.

TMAT-011 Multiple equipment is not defined

Cause: TorchMate mastering or TorchMate adjustment has been attempted on an undefined equipment.

Remedy: Set up multiple equipment prior to mastering or using TorchMate adjustment on this equipment.

TMAT-012 System Utool is not defined

Cause: The UTOOL that you are trying to adjust or master is not defined.

Remedy: Set up your UTOOL using the six-point method.

TMAT-013 %s is corrupt or does not exist

Cause: The UTOOL that you are trying to adjust or master is not defined.

Remedy: Execute Diagnostic log function [FNCT menu / Diagnostic log] before you do other operation such as power off or jogging, and get the image backup. And contact your FANUC technical representative. If you cannot execute Diagnostic log function, document the events that led to the error and get the image backup. And contact your FANUC representative.

TMAT-014 Abort program using G:%s

Cause: During TorchMate mastering, the MOVETO operation in the TorchMate SETUP screen, or TorchMate adjustment was attempted on a motion group currently held by a PAUSED or RUNNING program.

Remedy: Abort the PAUSED or RUNNING program prior to executing any of these functions.

TMAT-015 G:%s does not support TorchMate

Cause: TorchMate mastering or TorchMate adjustment was used on a motion group that is not associated with the robot(s) in your system. CAUSE 1: At mastering, the group is determined by the currently selected jog motion group as shown in the TP status line. You have selected for jogging a motion group associated to a positioner, nobot, or index device. CAUSE 2: TorchMate adjustment has macros for each robot group installed on your system. The currently executing program includes a TorchMate macro and does not include that correct robot motion group, or it does not contain a robot motion group at all.

Remedy: REMEDY 1: Select for jogging a motion group that is associated with the robot(s) in your system. REMEDY 2: Correct the programming error.

TMAT-016 Run TorchMate before edit

Cause: This indicates that the TorchMate Touchup Monitor has been turned on (Touchup monitor value is > 0.0 Hrs.), that the program contains a robot motion group(s), and that a TorchMate adjustment has not been done within the allotted time.

Remedy: This is cleared by pressing the ENTER key. It is recommended that you execute TorchMate adjust for the motion group(s) in this program prior to touching up any points.

TMAT-017 Collision! Run TorchMate

Cause: This indicates that the TorchMate collision monitor has been turned on and that it has detected that a collision detect alarm, a disturbance excess alarm, or a move/stop error excess alarm has occurred.

Remedy: This alarm causes a prompt box to be displayed. Press the ENTER key to clear the prompt box. Inspect the torch for collision damage. Run TorchMate adjust if necessary.

TMAT-018 DCS tool frame is not allowed

Cause: TorchMate cannot use for DCS tool frame.

Remedy: Do not perform TorchMate for DCS tool frame. If you want to use TorchMate for the current tool number, remove the setup of DCS tool frame for this tool number.

4.18.8 TOOL Alarm Code

TOOL-001 Tool Change is DISABLED.

Cause: When tool change was disabled on the servo tool initial setup screen, an attempt was made to execute a tool change instruction (TOOL ATTACH or TOOL DETACH).

Remedy: Perform a Controlled start, open the servo tool initial setup screen, then set the tool change function to ENABLE.

TOOL-002 Machine lock is ENABLED.

Cause: 1) A machine lock is applied to the robot axis when the TOOL ATTACH instruction or the TOOL DETACH instruction is executed. 2) A machine lock is applied to the servo tool axis when the TOOL DETACH instruction is executed.

Remedy: Release the machine lock applied to the robot axis or the servo tool axis.

TOOL-003 Illegal assignment of Tool axis.

Cause: The tool number assignments are wrong.

Remedy: Confirm the tool number assignment.

TOOL-004 Tool not detached (AXISORDER).

Cause: An attempt was made to execute the TOOL ATTACH instruction when a servo tool was not detached. System variable \$AXISORDER should have been changed to 0.

Remedy: If any tool is attached, the TOOL ATTACH instruction cannot be executed.

TOOL-005 Tool not detached.

Cause: An attempt was made to execute the TOOL ATTACH instruction when a servo tool was not detached. The servo tool attach confirmation signal is ON.

Remedy: If any tool is attached, the TOOL ATTACH instruction cannot be executed.

TOOL-006 Tool not attached.

Cause: While no servo tool was attached, an attempt was made to execute the TOOL DETACH instruction. The servo tool attach confirmation signal is OFF.

Remedy: Unless a tool is attached, the TOOL DETACH instruction cannot be executed.

TOOL-007 Another process is executing.

Cause: Another program is executing a TOOL ATTACH or TOOL DETACH instruction.

Remedy: After the TOOL ATTACH or TOOL DETACH instruction being executed by the other program is completed, rerun the program.

TOOL-008 Tool identify signal is OFF.

Cause: The servo tool identification signal is OFF.

Remedy: Check whether the tool number taught in the instruction and the actual tool match. Check whether the servo tool identification signal is set correctly.

TOOL-009 Tool set signal is OFF.

Cause: The servo tool mount signal is OFF.

Remedy: Check whether the tool is mounted correctly. Check whether the servo tool mount signal is set correctly.

TOOL-010 Tool Change canceled.

Cause: The TOOL ATTACH or TOOL DETACH instruction is canceled while executing the instruction.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TOOL-011 Tool Change timeout.

Cause: The TOOL ATTACH or TOOL DETACH instruction times out while executing the instruction.

Remedy: Perform a cold start:

1. Turn off the robot.
2. On the teach pendant, press and hold the SHIFT and RESET keys.
3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TOOL-012 Tool mastering data is lost.

Cause: Mastering data of a servo tool was lost because of an unexpected stop during mastering of the tool.

Remedy:

1. The tool pulse values and mastering data are lost. So, first move the tool by manual feed to cancel the "SRVO-075 Pulse not established" alarm. This alarm may not be occurring. If so, skip this step and proceed to the next step.
2. Next, carry out tool 0 position mastering and calibration manually.

TOOL-013 Tool mastering is failed.

Cause: Tool mastering failed.

Remedy: Continue to retry mastering.

TOOL-014 TOOL ATTACH is failed (G%d)

Cause: The TOOL ATTACH instruction failed. Refer to the cause code for details.

Remedy: Refer to the cause code for details.

TOOL-015 TOOL DETACH is failed (G%d)

Cause: The TOOL DETACH instruction failed.

Remedy: See the cause code for more information.

TOOL-016 Robot not mastered(Tool axis).

Cause: Mastering of the servo tool axis has not been performed.

Remedy: Perform mastering of the servo tool axis.

TOOL-017 Robot not calibrated(Tool axis).

Cause: The servo tool axis has not been calibrated.

Remedy: Calibrate the servo tool axis.

TOOL-018 Ref pos not set(Tool axis).

Cause: A reference position required for quick mastering is not set.

Remedy: Set the reference position.

TOOL-019 Another tool is attached.

Cause: The attached tool is not the tool specified in the TOOL ATTACH instruction.

Remedy: Check the tool number specified in the TOOL ATTACH instruction.

TOOL-020 Calibrate motion is failed.

Cause: The detection condition (touch torque or the detection signal) was not satisfied during calibration.

Remedy: Check the detection condition on the Tool Change SETUP screen.

REMEDY 1

1. The tool pulse values and mastering data are lost. So, move the tool by manual feed to cancel the "SRVO-075 Pulse not established" alarm.
2. Carry out tool 0 position mastering and calibration manually. The tool 0 position may be an approximate position.
3. Execute the detach instruction to temporarily detach the tool. Also, physically detach the tool from the robot. Otherwise, the tool will not be calibrated at the next attach operation.
4. Execute the attach instruction again to attach the tool. Calibration this time is carried out at the reference position to restore the position.

REMEDY 2

1. Directly change the system variable to detach the tool. To do this, set the following system variable to 0:

```
$SCR_GRP[servo tool operation group No. (normally, 2)].$AXISORDER[all 1 to 9] =
0
```

2. Turn the controller power OFF then back ON.
3. The robot starts up with the tool in a detached state. Move the robot by manual feed to physically attach the robot and tool.
4. Execute the attach instruction to attach the tool.

TOOL-021 PR[] index is not set.

Cause: For the calibration motion type 3 to 6, no position register number is set.

Remedy: Set the position register number on the Tool Change SETUP screen.

TOOL-022 Touch torque is not set.

Cause: For the calibration motion type 3 or 4, no touch torque is set.

Remedy: Set touch torque on the Tool Change SETUP screen.

TOOL-023 Detect signal is not set.

Cause: For the calibration motion type 5 or 6, no detection signal is set.

Remedy: Set the detection signal on the Tool Change SETUP screen.

TOOL-024 Tool does not stop.

Cause: At the calibration motion, Servo tool axis does not stop.

Remedy: After servo tool axis stops, execute calibration motion.

TOOL-025 Illegal AXISORDER.

Cause: \$SCR_GRP[].\$AXISORDER[] of the tool was set to an illegal value.

Remedy: Set \$SCR_GRP[].\$AXISORDER[] of the tool to zero, and turn off and on the controller.

TOOL-026 Battery type OFF.

Cause: The battery type of the multi-axis tool was set to OFF.

Remedy: Set the battery type of the multi-axis tool to ON.

TOOL-027 Timeout G%d A%d %x %d

Cause: A timeout occurred during Tool-attach or -detach at the start.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

TOOL-028 Internal error

Cause: System internal error.

Remedy: Document the events that led to the error, and call your FANUC technical service representative.

4.18.9 TPIF Alarm Code

TPIF-001 Mnemonic editor error (%s^1)

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-002 Operating system error (%s^1)

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-003 Window I/O error (%s^1)

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-004 Memory write error

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-005 Program is not selected

Cause: The program was not selected yet, when the program was displayed at the TEACH screen.

Remedy: Select a program in the SELECT screen.

TPIF-006 SELECT is not taught

Cause: This taught statement needed the SELECT statement before the current line.

Remedy: Teach the SELECT statement before the current line.

TPIF-007 Robot is not calibrated

Cause: The robot has not been calibrated properly.

Remedy: Calibrate the robot properly.

TPIF-008 Memory protect violation

Cause: The program is write protected.

Remedy: Release protection of the program on the SELECT screen.

TPIF-009 Cancel delete by application

Cause: Program is protected.

Remedy: Release protection of the program on the SELECT screen then delete the program.

TPIF-010 Cancel enter by application

Cause: Program is protected.

Remedy: Try edit after release protection by application.

TPIF-011 Item is not found

Cause: Item is not found below this line.

Remedy: Try another item or close search function.

TPIF-012 Kinematics solution is invalid

Cause: Cannot translate position data.

Remedy: Check the configuration of robot and \$MNUTool/\$MNUFRAM system variables.

TPIF-013 Other program is running

Cause: You cannot select a program when another program is running or paused.

Remedy: Select a program after aborting the program which is currently running or paused.

TPIF-014 Teach pendant is disabled

Cause: You cannot edit a program when the teach pendant is disabled.

Remedy: First enable the teach pendant, then edit the program.

TPIF-015 Bad position register index

Cause: Specified a invalid index of position register.

Remedy: Check the index of position register.

TPIF-016 Memory access failed (%s^1)

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-017 Memory read failed

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-018 Unspecified index value

Cause: Specified index value is invalid.

Remedy: Check specified index value.

TPIF-019 This item cannot be replaced

Cause: This item cannot be replaced.

Remedy: Try another item or close replace function.

TPIF-020 Mnaction search error

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-021 Mnteach software error

Cause: Illegal case occurred in software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-023 WJNT and RTCP are not compatible

Cause: Wjnt and RTCP are not compatible.

Remedy: Remove Wjnt or RTCP before adding the other.

TPIF-030 Program name is NULL

Cause: Program name is not set properly.

Remedy: Set a proper program name.

TPIF-031 Remove num from start of Program name

Cause: Start of program name is numeric.

Remedy: Remove numeric value from beginning of program name.

TPIF-032 Remove space from Program name

Cause: Space is included in program name.

Remedy: Remove space from program name.

TPIF-033 Remove comma from Program name

Cause: Comma is included in program name.

Remedy: Remove comma from program name.

TPIF-034 Remove dot from Program name

Cause: Dot is included in program name.

Remedy: Remove dot from program name.

TPIF-035 Remove minus from Program name

Cause: Minus is included in program name.

Remedy: Remove minus from program name.

TPIF-036 Not enough memory

Cause: There is not enough memory available.

Remedy: Delete unused program.

TPIF-037 Program must be selected by TP

Cause: Only the Teach Pendant default program can be edited on the CRT.

Remedy: Select the program on the Teach Pendant before editing on the CRT.

TPIF-038 Invalid char in program name

Cause: Invalid character in program name.

Fixed Program Name function is enabled and registered word is not used in the program name. Please refer "5.8.2 Fixed Program Name" in "R-30iB/ in R-30iB Mate CONTROLLER OPERATOR'S MANUAL (Basic Operation) (B-83284EN)".

Remedy: Remove invalid character from program name.

TPIF-040 Label already exists

Cause: Same label No. already exists.

Remedy: Change to different label No.

TPIF-041 MNUTOOLNUM number is invalid

Cause: Selected Tool frame number is invalid.

Remedy: Check selected Tool frame number for each group in FRAME screen. If Tool frame number is over maximum number, please change it the same or lower than maximum number.

TPIF-042 MNUFRAMENUM number is invalid

Cause: Selected User Frame Number is invalid.

Remedy: Check selected User frame number for each group in FRAME screen. If User frame number is over maximum number, please change it the same or lower than maximum number.

TPIF-043 External change is valid

Cause: You cannot change the robot (group), because the function that select robot by external DI is valid.

Remedy: Set system variable \$MULTI_ROBO.CHANGE_SDI to ZERO.

TPIF-044 Program is unsuitable for robot

Cause: The group mask of program differs from selected robot (group).

Remedy: Check selected robot (group) or check program attributes group mask.

TPIF-045 Pallet number is over max

Cause: Cannot teach more than 16 Palletizing instructions in one program.

Remedy: Teach another program.

TPIF-046 Motion option is over max

Cause: Too many motion options for default motion.

Remedy: Decrease motion options for default motion.

TPIF-047 Invalid program is selected

Cause: Program type is wrong.

Remedy: Select TPE program.

TPIF-048 Running program is not found

Cause: There is currently no program running that can be monitored.

Remedy: Run program before attempting to monitor.

TPIF-049 Port number is invalid

Cause: Port is not set for outside device.

Remedy: Set port for outside device.

TPIF-050 Macro does not exist

Cause: A program is not assigned to this macro command.

Remedy: Assign a program to this macro command.

TPIF-051 Program has been selected by PNS

Cause: When a program has been selected by PNS, you cannot select program from SELECT screen.

Remedy: Turn off the PNSTROBE signal.

TPIF-052 FWD/BWD is disabled

Cause: When the Disabled FWD function has been selected, you cannot execute the program by TP.

Remedy: Select the Disabled FWD in the function menu, then you can release from the Disable FWD.

TPIF-053 Not editing background program

Cause: The program has not been selected by BACKGROUND editing.

Remedy: Select the BACKGROUND program in the SELECT screen.

TPIF-054 Could not end editing

Cause: 1. There is not enough memory. 2. The background program is invalid.

Remedy: 1. Delete unnecessary programs. 2. Confirm the background program.

TPIF-055 Could not recovery original program

Cause: Failed recovering original program which has been selected by the BACKGROUND.

Remedy: End editing by the END_EDIT of [EDCMD] again before executing the original program which has been selected by the BACKGROUND.

TPIF-056 This program is used by the CRT

Cause: The program of BACKGROUND cannot be selected by the CRT and TP at the same time.

Remedy: End editing by the END_EDIT of [EDCMD] at the CRT.

TPIF-057 This program is used by the TP

Cause: The program of BACKGROUND cannot be selected by the CRT and TP at the same time.

Remedy: End editing by the END_EDIT of [EDCMD] at the TP.

TPIF-060 Can't record on cartesian (G:%d)

Cause: This current position is in singularity.

Remedy: You can record this position on joint type only by selecting the function key.

TPIF-061 Group[%s] has not recorded

Cause: This position data has not been changed to displayed groups because you selected the function key which did not record the position, when checking in singularity.

Remedy: Check this recorded position again before execution.

TPIF-062 AND operator was replaced to OR

Cause: All AND operators on this line were replaced with OR operators.

Remedy: You cannot mix AND and OR operator on a the same line. Verify that all logical operators on this line are the same before execution.

TPIF-063 OR operator was replaced to AND

Cause: All OR operator on this line were replaced by AND operators. You cannot mix AND OR operator on a the same line.

Remedy: Verify all logical operators on this line before execution.

TPIF-064 Too many AND/OR operator(Max.4)

Cause: Too many AND/OR operators (Max.4 on a single line).

Remedy: Teach the logical operation on another line.

TPIF-065 Arithmetic operator was unified to +- or */

Cause: Arithmetic operator on this line was changed to +- or */. Cannot mix arithmetic + and - operators with * and / operators on the same line.

Remedy: Verify all arithmetic operators on this line before execution.

TPIF-066 Too many arithmetic operator(Max.5)

Cause: Too many arithmetic operators (Max.5 on a single line).

Remedy: Teach the arithmetic operation on another line.

TPIF-067 Too many arguments (Max.30)

Cause: Too many arguments (Max.30 for a program or a macro).

Remedy: Check arguments of the program/macro.

TPIF-068 Too many items

Cause: This instruction contains too many items. You can add only a limited number of items to a line. It is limited by the fact that a single line can be only 255 bytes long. The number of items depends on how much memory each item takes.

Remedy: Split this long complex line into several simpler lines.

TPIF-069 Use background edit

Cause: You cannot foreground edit a program from the CRT or from the Internet. You can only edit using a background program.

Remedy: Select the BACKGROUND program in the SELECT screen.

TPIF-070 Cannot teach the instruction

Cause: Cannot teach the instruction.

Remedy: Check the sub type of the program.

TPIF-071 Cannot change sub type

Cause: Cannot change sub type.

Remedy: Check sub type of the program.

TPIF-072 Cannot change motion group

Cause: Cannot change motion group.

Remedy: Check sub type of the program.

TPIF-090 This program has motion group

Cause: The program specified in \$PWR_HOT, \$PWR_SEMI and \$PWR_NORMAL must not have motion group.

Remedy: Set * to all motion group in program detail screen on TP.

TPIF-091 PREG access error

Cause: An error occurred when accessing a position register.

Remedy: Refer to the error cause code on the ALARM log screen.

TPIF-092 Value %d expected %s

Cause: The value_array that was passed to a built-in was incorrectly specified. The error line shows the index into value_array where the error occurred and the type expected by the built-in.

Remedy: Make sure the value_array specifies the correct names for the variables and that the types expected are correct.

TPIF-093 USER menu must be selected

Cause: A KAREL program called a user interface built-in which required the USER menu to be displayed on the teach pendant or CRT.

Remedy: Use FORCE_SPMENU(tp_panel, SPI_TPUSER, 1) before calling the user interface built-in on the teach pendant. Use FORCE_SPMENU(crt_panel, SPI_TPUSER, 1) before calling the user interface built-in on the CRT.

TPIF-094 USER2 menu must be selected

Cause: A KAREL program called a user interface built-in which required the USER2 menu to be displayed on the teach pendant or CRT.

Remedy: Use FORCE_SPMENU(tp_panel, SPI_TPUSER2, 1) before calling the user interface built-in on the teach pendant. Use FORCE_SPMENU(crt_panel, SPI_TPUSER2, 1) before calling the user interface built-in on the CRT.

TPIF-095 Execution history table error

Cause: Software internal error

Remedy: Perform a controlled start (it isn't necessary to re-set the new item).

TPIF-097 Can't display running task's history

Cause: The execution history of the executing program cannot be displayed.

Remedy: Use this screen when the program is paused or aborted.

TPIF-098 %s was not run

Cause: The program of \$PWR_HOT, \$PWR_SEMI or \$PWR_NORMAL is not executed.

Remedy: Refer to the error cause code. Use the Alarm Log screen.

TPIF-099 This program is being edited

Cause: The program specified in \$PWR_HOT, \$PWR_SEMI and \$PWR_NORMAL is not executed, when the program is in editing.

Remedy: Select the other program.

TPIF-100 No vacant table space

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-101 No such menu

Cause: Illegal case occurred on software.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-102 E.STOP is asserted

Cause: FWD execution is selected while, E.STOP is asserted.

Remedy: Turn the E.STOP off. Then select FWD execution.

TPIF-103 Dead man is released

Cause: FWD execution is selected while, DEADMAN switch is released.

Remedy: Press and hold down the DEADMAN, then select FWD execution.

TPIF-104 Teach Pendant is disabled

Cause: FWD execution is selected while, TP is disabled.

Remedy: Enable the teach pendant. Then select FWD execution.

TPIF-105 Program is not selected

Cause: FWD execution is requested without selection of program.

Remedy: Select a program for execution then select FWD execution.

TPIF-106 Program is already running

Cause: FWD execution is requested when program is running.

Remedy: Abort the running program before requesting FWD execution.

TPIF-107 FWD/BWD is disabled

Cause: When the Disabled FWD function has been selected, you cannot execute the program by TP.

Remedy: Select the Disabled FWD in the function menu, then you can release from the Disable FWD.

TPIF-108 Form error, line %d, item %d

Cause: The Form Manager detected an error on the specified line with the specified item.

Remedy: Refer to the cause code on the ALARM log screen for the actual error.

TPIF-109 %v not specified correctly

Cause: The Form Manager detected an error when displaying a “%v” item.

Remedy: Refer to the *KAREL Reference Manual*, in the *Edit Data Item: Subwindow Enumeration using a Variable* section for more information.

TPIF-110 Screen used by other device

Cause: The screen you are attempting to use on the TP is currently displayed on CRT or the screen you are attempting to use on the CRT is currently displayed on TP.

Remedy: Exit from the screen on the other device.

TPIF-116 System variable error: %s

Cause: System variable name is invalid.

Remedy: Check the spelling and format of the name.

TPIF-117 Cannot backup to device: %s

Cause: The default device is not valid for backup.

Remedy: Select a valid device and try again.

TPIF-118 File error for %s

Cause: File error.

Remedy: Perform a cold start: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot. If the error is not cleared, document the events that led to the error and call your local FANUC representative.

TPIF-119 File compression failed

Cause: Failed creating compressed file.

Remedy: Check backup device.

TPIF-120 Device failure

Cause: Device failure.

Remedy: Check device and try again.

TPIF-121 Invalid copy. Use MOVE key.

Cause: Cannot COPY a file on a Memory device to the same Memory device.

Remedy: Use the MOVE key and try again.

TPIF-128 Verify logic of pasted line(s)

Cause: The reverse motion copy function does not support the following motion option instruction. 1. Application command 2. Skip, Quick Skip 3. Incremental 4. Continuous turn 5. Time before

Remedy: Check the above motion option instruction. And modify the copied statement correctly.

TPIF-129 Group motion inst. is pasted

Cause: The group motion instruction is copied. The reverse motion copy function does not supported group motion instruction.

Remedy: Check the group motion instruction. And modify the copied statement correctly.

TPIF-131 Please set application mask data

Cause: This program has no application mask.

Remedy: Please set the application mask in the program detail screen.

TPIF-132 Can't recover this operation

Cause: Because the data for UNDO can not be saved, this operation can not recover by UNDO function.

Remedy: Check the cause code. If the memory is full, please delete program or disable UNDO function.

TPIF-133 Can't recover this command

Cause: Palletizing command and Compliance control command can not be recovered by UNDO function.

Remedy: Check the cause code. If the memory is full, please delete program or disable UNDO function.

TPIF-134 CTRL Upgrade is Armed

Cause: CTRL Upgrade is Armed.

Remedy: This error is posted because CTRL Upgrade cannot be done while operating robot. Continue with CTRL Upgrade or ABORT.

TPIF-135 CTRL Upgrade is Started

Cause: CTRL Upgrade has Started.

Remedy: This error is posted because CTRL Upgrade is underway. Allow the process to complete. with CTRL Upgrade or ABORT.

TPIF-136 Restore ERR, see FRD:REST_LOG.LS

Cause: CTRL Upgrade Restore Failed.

Remedy: See FRD:REST_LOG.LS for a listing of files and status of attempt to load each. Retry failed files from file menu.

TPIF-137 TP: %s interactive login

Cause: A user has logged into the teach pendant menuing system.

Remedy: This is for information only. No action is required.

TPIF-138 TP: %s diagnostic login

Cause: A user has logged into the teach pendant diagnostic monitoring system.

Remedy: This is for information only. No action is required.

TPIF-139 TP: %s logged out

Cause: A user has logged off of the teach pendant menuing system.

Remedy: This is for information only. No action is required.

TPIF-140 Connection limit exceeded

Cause: An attempt to log into the teach pendant menuing system from an external web browser has failed because the connection limit has been reached.

Remedy: The system variable \$UI_CONFIG.\$NUM_CONNECT controls the number of external connections allowed. The maximum number of connections is five INCLUDING the teach pendant. Reconnect the external connections in your system so that no more than five exist.

TPIF-141 No memory for connection

Cause: A user has failed to log into the teach pendant menuing system because not enough RAM memory is available to make the connection. The system might still be usable because the connection requires a predefined amount of available memory to start up.

Remedy: Add RAM memory to your system. You can also lower the memory limit required for login by changing the system variable \$UI_CONFIG.\$MEM_LIMIT to a lower value.

TPIF-142 Menu limit exceeded

Cause: Too many user interface menus are active. The iPendant requires three menus which are always available for it to use. External browser connections require one menu for each window in use. Therefore, a browser connection might use a maximum of three menus - one for each of the three windows in triple window mode.

Remedy: Eliminate some active browser windows or increase the number of menus in \$UI_CONFIG.\$NUM_MENUS. The total maximum number of menus is eight.

TPIF-143 Connection error

Cause: An external connection to the teach pendant menus has failed.

Remedy: Restart the controller, and try again.

TPIF-145 Configuration change time out

Cause: A change to the iPendant window configuration has taken longer than expected. This can occur on startup or after you make a basic system configuration change. It might also occur in the presence of significant system activity. For example this error could occur if sysvars.sv is being backed up via the Network.

Remedy: When this error occurs, the display might not be what is expected. In this case, change back to Single mode, and try the operation again.

TPIF-146 TP firmware version is too new

Cause: The firmware version on your *iPendant* is incompatible with the system software loaded on your controller. In some cases this will cause the *iPendant* to execute in legacy mode. In this mode it only provides the functionality that is available on an old style teach pendant.

Remedy: You will need to update the firmware to execute all available *iPendant* functionality.

TPIF-147 TP firmware version is too old

Cause: The firmware version on your *iPendant* is too old to provide all functionality for your system software release. In some cases this will cause the *iPendant* to execute in legacy mode. In this mode it only provides the functionality that is available on an old style pendants.

Remedy: You will need to update firmware to have all functionality available.

TPIF-149 Must complete operation first

Cause: You cannot change the focus of the *iPendant* in the middle of an entry operation. The entry operation must be completed first.

Remedy: Finish the current operation by pressing ENTER, or abort the operation by pressing PREV.

TPIF-150 Look mode only, use TP to edit

Cause: No editing is permitted on the device you are using to access a teach pendant program.

Remedy: Select a valid pane for an edit operation. You can only edit teach pendant programs on the *iPendant* in single or Status/Single mode, or in the left hand pane in Double and Triple modes.

TPIF-151 Pane does not have focus

Cause: A popup menu was requested for the pane that does not have focus. This error only occurs in Double, Triple, or Status/Single Display Modes. For instance, if you connect to the *iPendant* menus from Internet Explorer, bring up a web page that has the ComboBox Control, switch focus to another pane, and then use the mouse to click on the ComboBox Control, you will get this error because the pane does not have focus.

Remedy: Press the DISP key to change the focus to the correct pane before requesting the popup menu.

TPIF-152 Read Only Mode Enabled

Cause: The keystroke that was just entered was not accepted by the system because the system does not allow edits. Typically remote operations will be *read-only* so no changes are allowed from this connection.

Remedy: Make the change from the *iPendant* instead. Your access to make changes will depend on your security setup. In some configurations there are security procedures on the *iPendant*.

TPIF-153 Edit operation not allowed

Cause: You are trying to edit a field that is write protected. This happens if you are editing from an external connection, or if your password privileges do not allow you to change this field.

Remedy: Perform this operation from the teach pendant, or log in.

TPIF-154 TP firmware Core/Plugins mismatch

Cause: The *iPendant* firmware consists of Teach Pendant Core Firmware and Browser Plugins. The Browser Plugins, also referred to as application code, can be updated independently of the Teach Pendant Core Firmware. However, the major versions must match. For example, Teach Pendant Core Firmware V6.22xx cannot be used with Browser Plugins V6.31xx. When this happens, the *iPendant* will detect the problem, post this error, and reconnect in legacy mode. The STATUS Version ID menu can be used to show the versions for the Browser Plugins and the Teach Pendant Core Firmware.

Remedy: Update the whole firmware for the *iPendant*.

TPIF-156 No type menus

Cause: The [TYPE] pullup menu cannot find any other menus to display. The current menu might be the only menu in this category.

Remedy: Press MENU to select another menu category.

TPIF-157 Menu cannot be displayed

Cause: The controller attempted to display a menu that can only be displayed by the *iPendant*.

Remedy: Another menu will be displayed instead and you can ignore this warning. If you want to display the menu and you have a monochrome teach pendant, contact your local FANUC representative for information on obtaining an *iPendant*.

TPIF-158 TP is already connected

Cause: You are attempting to connect a teach pendant to a robot that already has a teach pendant connected.

Remedy: To log in to a robot remotely with the *iPendant*, you must configure an *iPendant* ring. Press MENU to reconnect to the local robot. If you are attempting to log in to a robot remotely with Internet Explorer, verify that the port number is not specified so that the Web Server's default port of 80 will be used.

TPIF-159 iPendant Controls too new

Cause: You attempted to log in to a robot remotely with Internet Explorer and the *iPendant* Controls installed on your PC are not compatible with the robot's version.

Remedy: Install the version of the *iPendant* Controls that match the robot version. Refer to the application-specific Setup and Operations Manual, Advanced *iPendant* Functions Appendix, for information on installing the *iPendant* Controls.

TPIF-160 iPendant Controls too old

Cause: You attempted to log in to a robot remotely with Internet Explorer and the *iPendant* Controls installed on your PC are not compatible with the robot's version.

Remedy: Install the version of the *iPendant* Controls that match the robot version. Refer to the application-specific Setup and Operations Manual, Advanced *iPendant* Functions Appendix, for information on installing the *iPendant* Controls.

TPIF-161 Cannot change position ID

Cause: The position ID cannot be changed by setting the system variable.

Remedy: Set the system variable \$POS_EDIT.\$LOCK_POSNUM to FALSE to change the position ID.

TPIF-162 Can't enter P-SPS in PAUSED

Cause: The Edit screen cannot enter the daughter program while the program is paused outside of the daughter program.

Remedy: Abort the program to enter the P-SPS.

TPIF-163 Can't exit P-SPS in PAUSED

Cause: The Edit screen cannot exit the daughter program and enter the parent program while the program is paused inside of the daughter program.

Remedy: Abort the program to exit the daughter program.

TPIF-164 This program has no motion group

Cause: This program has no motion group defined. The MOTION instruction cannot be taught.

Remedy: Change the MOTION instruction or set up the motion group in the program DETAIL screen.

TPIF-165 Can't resume in P-SPS

Cause: An attempt is being made to resume the daughter program while the parent program is paused.

Remedy: Use BWD to return to the parent program, and then resume.

TPIF-166 FWD/BWD in left window only

Cause: When the focus is in the right hand window of the teach pendant, you cannot execute the program.

Remedy: Press DISP to change the focus to the left hand window. Use DISPLAY menu item EDIT <--> EDIT to swap the right hand program with the left hand program.

TPIF-167 Program already in background edit

Cause: The program you selected is already being edited in the background in another window.

Remedy: Select End_edit in the other window's background edit session.

TPIF-168 Cannot connect iPendant

Cause: You are attempting to connect an *iPendant* to a remote robot that will not accept your IP address.

Remedy: To connect an *iPendant* to a remote robot, you must configure an *iPendant* ring. Press MENU to reconnect to the local robot. If you are attempting to log in to a robot remotely with Internet Explorer, verify that the port number is not specified so that the Web Server's default port of 80 will be used.

TPIF-169 TP is enabled

Cause: You are attempting to connect an *i*Pendant to a remote robot that already has a teach pendant connected and enabled.

Remedy: Disable the remote robot's teach pendant. Press MENU to reconnect to the local robot.

TPIF-170 Can't start this program

Cause: This program cannot be started because the program name is not an allowed program name.

Remedy: Select the correct program, and start the program again.

TPIF-171 iPendant is not ready yet

Cause: The operation cannot be performed because the *i*Pendant system is not initialized.

Remedy: Wait until the *i*Pendant is initialized to do this operation. Typically, this is a force link call from a \$PWR_NORMAL program.

TPIF-172 Only available from pendant

Cause: The operation you selected is only available from the teach pendant.

Remedy: Perform this operation from the attached teach pendant.

TPIF-173 The pos. can't be handled part repr.

Cause: The position data is wrong. Refer to the cause code for details.

Remedy: Change the position data correctly, and press F5 DONE.

TPIF-174 New pos. can't be handled part repr.

Cause: The new position data is wrong. Refer to the cause code for details.

Remedy: Type the correct position data.

TPIF-175 Group was changed(Old:%d,Now:%d)

Cause: The shift key and the figure key were pushed at the same time when TP was enable.

Remedy: None.

TPIF-176 Illegal state(D1:%d, D2:%d)

Cause: The situation unexpected by the software occurred. The index value indicates the reason.

Remedy: Turn off controller power and turn it on again. If the problem persists, document the events that led to the error and contact your local FANUC representative.

TPIF-177 Machine Tool DEMO expired

Cause: The 60-day use period of the Machine Tool DEMO has expired.

Remedy: For more information, choose Controlled Start for the controller and then choose MENU, S/W INSTALL, Option, then DEMOS. Please authorize the M.Tool Options.Refer to the Controller Software Installation Manual or contact your FANUC Representative for more information.

TPIF-201 Next line exist.

Cause: You cannot record motion line using the record button if the next line exists.

Remedy: Move the cursor to the end of the program, and press the record button again.

TPIF-203 Format does not match to unified specification

Cause: Record status(TUI default motion) is not written in TUI motion format.

Remedy: Select TUIDFMTN.to and teach J P[] R[101]% FINE DB 0.0mm P-SPS as line 1. P-SPS contains no line.

TPIF-204 There is not specified source program number.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-205 There is not specified source step number.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-206 The number of steps of source program doesn't suffice.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-207 There is not specified destination program number.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-208 There is not specified destination step number.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-209 Because destination program is executing, cannot copy.

Cause: The destination program is executing.

Remedy: Stop the destination program.

TPIF-210 The number of steps to transfer is 0.

Cause: The number of steps to transfer is 0.

Remedy: Confirm the input value.

TPIF-211 Specify the copy range.

Cause: The copy range is not specified.

Remedy: Specify the copy range.

TPIF-212 The number of steps in the destination exceeds 9999.

Cause: The input value is not correct.

Remedy: Confirm the input value.

TPIF-213 Check GO/BACK from logic instruction

Cause: You cannot Check GO/Back from logic instruction.

Remedy: Move cursor to motion instruction and try again.

TPIF-214 Run/continue from logic instruction

Cause: You cannot run or continue from a logic instruction.

Remedy: Move the cursor to a motion instruction and try again.

TPIF-215 iPendant login unsuccessful

Cause: An error occurred trying to log in as an iPendant connection.

Remedy: If you are using Internet Explorer, verify the settings. The PC must have Microsoft™ Internet Explorer 5.5 or greater installed. The PC must have the iPendant Controls installed. The PC must be connected to a network, and be properly configured to allow a TCP/IP connection to and from the robot controller. If you are using a proxy server, make sure that your access to the robot does not go through the proxy server. Verify that cookies are enabled. If using a robot name instead of an IP address, verify that “_” is not in the robot name.

TPIF-216 Program does not have group %d

Cause: The operation failed because program to be edited/executed does not displayed group. If you press insert, overwrite, record, or touchup on the TUI TP, the program displayed by line editor does not have the displayed group.

Remedy: Use a program with the proper group mask.

TPIF-217 Unknown FN code

Cause: FN code of TUI FN instruction is unknown. If this is posted by the loaded program, the option might not be loaded or the program might be broken.

Remedy: Use the correct function code. If the loaded program or break of program is cause, remove the program or FN instruction.

TPIF-218 %s failed to load

Cause: The indicated program failed to load.

Remedy: Usually this error is posted when a program is write protected. Consult the cause code.

TPIF-219 Finish edit in full editor for check GO/BACK

Cause: Edit in TUI full editor is not finished yet. To do Check GO/BACK, edit must be completed first.

Remedy: Please go to TUI full editor and complete edit of program.

TPIF-220 This line is not motion statement

Cause: line selected or to be modified is not motion statement of unified specification format.

Remedy: Confirm contents of the line.

TPIF-221 Copy P-SPS to P-SPS

Cause: line including P-SPS is copied to P-SPS.

Remedy: Don't copy P-SPS to P-SPS. Please select lines to copy again.

TPIF-222 This feature requires the iPendant

Cause: This feature does not work on the monochrome teach pendant.

Remedy: Please use an iPendant.

TPIF-223 Save SLAVEDATA to MC

Cause: Special error for production support. Saving SLAVEDATA is successful.

Remedy: Continue production examination.

TPIF-224 Load SLAVEDATA G%d

Cause: Special error for production support. Loading SLAVEDATA is successful.

Remedy: Continue production examination.

TPIF-225 Not MC for save/load SLAVEDATA

Cause: Special error for production support. MC is not regard for save/load MC.

Remedy: Change MC to MC that has directory SLAVE.

TPIF-226 MC for save/load SLAVEDATA

Cause: Special error for production support. MC is regard for save/load MC.

Remedy: Change MC to MC that does not have directory SLAVE in root or delete directory SLAVE in root.

TPIF-227 Cannot jump to called program anymore

Cause: Editor can not jump to called program anymore. Number of programs to display has exceeded the limit.

Remedy: Please select the program in select screen.

TPIF-228 Jog override has been enabled

Cause: Program Override was active.

Remedy: Active Override moved to Jog Override.

TPIF-229 Prog override has been enabled

Cause: Jog Override was active.

Remedy: Active Override moved to Program Override.

TPIF-230 Menu Favorites editing disabled

Cause: Editing Menu Favorites has been disabled.

Remedy: Contact the engineer responsible for robot configuration to re-enable editing of Menu Favorites.

TPIF-231 User Views editing disabled

Cause: Editing User Views has been disabled.

Remedy: Contact the engineer responsible for robot configuration to re-enable editing of User Views.

TPIF-232 Coordinate Systems editing disabled

Cause: Editing Coordinate Systems has been disabled.

Remedy: Contact the engineer responsible for robot configuration to re-enable editing of Coordinate Systems.

TPIF-233 3D Graphics Initialize Failed

Cause: Offline PC must support OpenGL 2.0.

Remedy: Update your video card drivers to the latest version. NVIDIA or ATI graphics card is required for 3D graphics.

TPIF-234 Offset may be applied to PR[%d], grp #%d, uf#%d, ut#%d

Cause: Operator has changed the representation of a Position Register.

PR[] = Position Register number

grp = Group number

uf = User Frame number

ut = User Tool number

Remedy: This is a warning that the PR[] may be modified by a different UF or UT then it was recorded with. Make sure that all frame data is set the way you want, otherwise you could damage equipment.

TPIF-235 Cannot change editor while running

Cause: Editor can not jump to called program while any programs is running or paussing.

Remedy: Please stop running the program.

TPIF-236 Override step setting is invalid

Cause: Override step setting is invalid. In case \$OVRD_SETUP.\$OVERRIDE[]'s values or \$OVRD_SETUP.\$OVERRIDE_S[]'s values are invalid, Override key is pressed.

Remedy: Sort \$OVRD_SETUP.\$OVERRIDE[1-n] or \$OVRD_SETUP.\$OVERRIDE_S[1-n].

TPIF-237 The iPendant available internal memory is low.

Cause: The iPendant memory is low.

Remedy: Please cycle power on the controller.

TPIF-238 The iPendant detected an unhandled exception.

Cause: The iPendant detected an unhandle exception.

Remedy: Please cycle power on the controller.

TPIF-245 iPendant firmware update failed.

Cause: The iPendant firmware update failed, because required files could not be found.

Remedy: Check that the device has the correct files.

If FROM is 32MB and automatic update is done, no action is required.

TPIF-249 R843 Remote iPendant required.

Cause: This operation requires R843 Remote iPendant option.

Remedy: Contact your FANUC service representative.

TPIF-250 USB Camera system error (%d)

Cause: USB camera system error happens.

Remedy: Contact FANUC service representative. The ID number in the brackets is required to track the problems.

TPIF-251 CurVibTest:Please wait(FTP)

Cause: Release test at FANUC's factory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

TPIF-252 CurVibTest:FTP done

Cause: Release test at FANUC's factory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

TPIF-253 CurVibTest:FTP failed

Cause: Release test at FANUC's factory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

TPIF-254 CurVibTest:Server not found

Cause: Release test at FANUC's factory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

TPIF-255 log buffer overflow

Cause: Release test at FANUC's factory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

TPIF-256 USB reciever is not supported in this TP.

Cause: The firmware for the iPendant does not support wireless accelerometer for LVC or APC.

Remedy: Updating the firmware is necessary. If F-ROM size is 64MB or more, update by the following procedure. If F-ROM size is less than 64MB, Contact your local FANUC representative.

1. For safety, make sure that the E-stop button is pressed down, then power off the controller.
2. Confirm that MC card and USB memory are NOT inserted to the controller.
3. Power on the controller with pressing PREV and NEXT.
4. After displaying CONFIGURATION MENU, select [3.Controlled start] to perform Controlled Start.
5. After displaying Controlled Start Menu, press FCTN and select [1 START (COLD)] to perform Cold Start.
6. Updating the firmware starts. Updating the firmware takes several minutes. Never power off while updating.

4.18.10 TRAK Alarm Code

TRAK-000 Unknown error (TO00)

Cause: System internal error.

Remedy: Cycle start controller.

TRAK-001 Track jnt move not allowed

Cause: Illegal joint move error.

Remedy: Change to linear move.

TRAK-002 Track error allocating data

Cause: System internal error.

Remedy: Increase RAM size.

TRAK-003 Track global variable failure

Cause: System internal error.

Remedy: Increase RAM size.

TRAK-004 Track illegal schedule number

Cause: Schedule out of range error.

Remedy: Use legal schedule.

TRAK-005 G:%d^2 Track destination gone error

Cause: The position of the robot exceeded the down stream boundary during Tracking motion. The following can be considered as causes of this alarm.

1. The current position of the robot exceeded the down stream boundary at the start of the tracking motion. In this case, this alarm occurs at the same time as the start of the tracking motion.
2. The position of the robot exceeded the down stream boundary before the tracking motion is completed.

NOTE: In case of 2., if "Continue Track at prog end" is TRUE and the termtype of the last motion of Tracking program is CNT 1 to 100, There is a possibility that this alarm occurs after the cursor leave tracking program.

Remedy: Temporary measures :

If it is possible to move the conveyor in the upstream direction, please move the robot to enough upstream position from the downstream boundary with Jog and move the conveyor upstream by the same distance. Then please resume tracking motion.

If it is not possible to move the conveyor in the upstream direction, please overlook the target and end this tracking motion. If necessary, put the overlooked target on the conveyor so that the robot tracks it.

Fundamental measures :

1. The measure of cause 1. is as follows.

Please check the downstream boundary. if necessary, please adjust it.

Please modify TP program so that the start position of tracking motion become upper than the downstream boundary.

2. The following can be considered as causes of 2.. Please apply one or more in consideration of the system.
 - a. Please shift the downstream boundary in the downstream direction.
 - b. Please shift the upstream boundary in the upstream direction.
 - c. If Discard Line is available, please set it. If it is set, please shift it in the upstream direction. (Normally, the value of Discard Line is negative.)
 - d. Please enable Skip Outbound Move. If it is enabled, please increase margin time of Skip Outbound Move.
 - e. Please modify the TP program and shorten the time of tracking motion.
 - f. Please slow down the speed of the conveyor.
 - g. Please reduce the number of targets flowing on the conveyor per unit time.

TRAK-006 G:%d^2 Track destination gone warning

Cause: Destination out of window error.

Remedy: reteach destination.

TRAK-007 Unsupported function code

Cause: System internal error.

Remedy: No action required.

TRAK-008 Not support semi hot start

Cause: Semi hot start is not supported for this function.

Remedy: No action required.

TRAK-009 Track cart move not allowed

Cause: Illegal Cartesian move error.

Remedy: Change to joint move.

TRAK-010 Track no line track functn ptr

Cause: The Line Tracking function pointers do not exist.

Remedy: Reload the tracking softparts.

TRAK-011 Track no CIRC Wrist Joint

Cause: Wrist-joint motion is not supported for CIRCULAR motions during Line Tracking.

Remedy: Change motion type to non-wrist-joint motion.

TRAK-012 Track no Maintenance Program

Cause: The maintenance program is not supported for Tracking.

Remedy: Disable the Maintenance Program in Error Recovery menu, or use Resume Program for error recovery.

TRAK-013 Extreme entry position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Entry Limit defined in the System parameter, (\$LNCFG.\$ENTRY_XTRM).

Remedy: Adjust the Entry Limit or change the Tracking Boundary to be inside of this limit.

TRAK-014 Extreme exit position violation

Cause: The TCP (Line Tracking) or Extended Axis (Rail Tracking) has been commanded beyond the Exit Limit defined in the System parameter, (\$LNCFG.\$EXIT_XTRM).

Remedy: Adjust the Exit Limit or change the Tracking Boundary to be inside of this limit.

TRAK-015 Skip outbound motion LN:%d

Cause: The robot is already out of the boundary before its attempt to move to the programmed location. Skip this motion to prevent pausing of program execution.

Remedy: Program at faster speed or extend the boundary.

TRAK-016 Fail to record Stop Position

Cause: The offset used by stop_pos recording was not initialized.

Remedy: This error is the side effect of previous error in the log. Check and correct previous error. Then this error will not occur.

4.19 v

4.19.1 VARS Alarm Code

VARS-001 Corrupt variable file

Cause: An error has occurred trying to read specified file. This file is corrupt or the media is bad.

Remedy: Try a different file.

VARS-002 Open Error on File

Cause: The variable file does not exist on the device, director or media.

Remedy: Place correct media in drive or select the proper device/directory and try again.

VARS-003 %s array length updated

Cause: A variable being loaded from a variable file exists in memory. The array length reflects what was in the variable file.

Remedy: This is just a notification. You do not have to do anything for this warning message.

VARS-004 %s memory not updated

Cause: A variable being loaded from a variable file exists in memory. The variable file data cannot be loaded.

Remedy: Clear the program and load the variables first before loading program.

VARS-005 %s PC array length ignored

Cause: A variable being loaded from a variable file exists in memory. The array length reflects what was in the variable file.

Remedy: This is just a notification. You do not have to do anything for this warning message.

VARS-006 Unknown Variable Name

Cause: Referenced variable does not exist.

Remedy: Load PC file or VR file to create the variable.

VARS-007 Unknown Type Code

Cause: Referenced type code does not exist.

Remedy: Load PC file or VR file to create the type.

VARS-008 Type Name not found

Cause: Referenced type name does not exist.

Remedy: Load PC file or VR file to create the named type.

VARS-009 SV Load at CTRL Start Only

Cause: A variable load has been requested while controller is capable of motion.

Remedy: Create an error condition such as E-stop and load of variables is allowed.

VARS-010 Variable/field write-protected

Cause: The variable or field you are trying to access is write protected.

Remedy: This variable is not to be changed by customer for safety or other reasons. If you are trying to change \$SCR variables just change \$PARAM_GROUP and cold start.

VARS-011 No data defined for program

Cause: Referenced program name does not have variables.

Remedy: Load PC file or VR file to create the named program.

VARS-012 Create var - %s failed

Cause: Named variable could not be created.

Remedy: Refer to the error cause code. Use the Alarm Log screen to display the cause code.

VAR-013 Variable Already Exists

Cause: Referenced variable already exist in memory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

VAR-014 Create type - %s failed

Cause: Named type could not be create.

Remedy: Refer to the error cause code. Use the Alarm Log screen to display the cause code.

VAR-015 Too many vars/nodes/programs

Cause: The limit of variables types, programs or nodes has been reached.

Remedy: You must delete some programs or reorganize programs to make more room.

VAR-016 Axis configuration mismatch

Cause: The variables file you tried to load was created on a system with different axis configuration settings. For example, this alarm occurs if you try to load a variables file saved on a system with auxiliary axes added, after a software reinstallation but before an auxiliary axes setup. This alarm occurs also if you try to load a variables file with dual drive axes settings after an initial start.

Remedy: Check if the variables file was created on another controller. If the variables file was created on the same controller, load it after you set up the auxiliary axes and match the axis configuration. If you try to load a variables file with dual drive axes settings after an initial start, load it after the dual drive axes setup.

VAR-017 Sysvar version mismatch

Cause: The system variable file you are attempting to load is not compatible with the loaded software version.

Remedy: You must use the default system variable file supplied with your version of software.

VAR-018 Compatible Type Already Exists

Cause: Referenced type already exists in memory.

Remedy: This is just a notification. You do not have to do anything for this warning message.

VAR-019 Rename target exists

Cause: You are attempting to rename a program to a program which already exists.

Remedy: Use a different program name or delete the program and variables from existing program.

VAR-020 [%s]%s not fnd

Cause: Referenced variable is not found in the system.

Remedy: Load PC file or VR file to create the variable.

VAR-021 Memory allocation failure

Cause: There is no more permanent memory available in the system.

Remedy: You must delete unneeded programs, dictionaries or variables to make room.

VAR-022 Duplicate creation TYPE mismatch

Cause: Variable that is being created already exists but is of a different type than what you are attempting to load/create.

Remedy: Delete existing variable before creating it as a different type.

VAR-023 Array len creation mismatch

Cause: Variable that is being created already exists but has different dimensions than what you are attempting to load/create.

Remedy: Delete existing variable before creating it with conflicting dimensions.

VAR-024 Bad variable or register index

Cause: You are attempting to use an invalid index into an array or path.

Remedy: Use a valid index.

VAR-025 Vision reference error

Cause: Do not have vision hardware on this system so cannot load vision variables.

Remedy: Load these variables on an appropriate system.

VAR-026 File sequence error

Cause: The file which has been loaded is: A. Not a variable file B. A file on bad media C. A file not compatible with your current software.

Remedy: Try a different file or convert the current file to an updated version.

VAR-027 Variable used by other program

Cause: Variable is used by another program.

Remedy: Delete other program which references these variables.

VAR-028 Value out of range

Cause: Value that you entered is not a valid value. It is either too big or too small.

Remedy: Consult your application specific tool Operator's manual for valid values for the variable you are changing.

VAR-029 Requires PROGRAM password

Cause: The operation that you are attempting is password protected.

Remedy: You must go to the password setup screen and enter the PROGRAM password.

VAR-030 Requires SETUP password

Cause: The operation that you are attempting is password protected.

Remedy: You must go to the password setup screen and enter the SETUP password.

VAR-031 Requires INSTALL password

Cause: The operation that you are attempting is password protected.

Remedy: You must go to the password setup screen and enter the INSTALL password.

VAR-032 Variable size too big

Cause: The variable you are loading is larger than 65,535 bytes or has an array element larger than 32,767 bytes.

Remedy: Make the array size smaller or use a path data type for large arrayed variables Maximum path length is 2,007
Maximum node size is 32,767.

VAR-033 Maximum path length exceeded

Cause: A path can only contain 2,007 nodes.

Remedy: You must break up the large path into smaller paths.

VAR-034 Variable cannot be accessed

Cause: The CMOS variable that you attempted to delete was created This could also be because a KAREL program, Network or KCL was adding deleting or doing a node operation when access was attempted.

Remedy: Delete the variable in the same start mode that the variable was created. For example if a CMOS variable was created at CONTROLLED start it must be deleted at CONTROLLED start. If it is because of some access conflict the attempt the operation again when no other variable accesses are in progress.

VAR-036 CMOS memory is corrupt

Cause: CMOS memory has been destroyed.

Remedy: Controller initial start must be performed.

VAR-037 Position register is locked

Cause: Position register is locked by program operation.

Remedy: Wait until program is finished.

VAR-038 Cannot change CMOS/DRAM type

Cause: An existing variable is being created in a different memory area (CMOS vs DRAM).

Remedy: Delete the variable or change the memory type to be used.

VAR-039 Data set created

Cause: Permanent memory was successfully allocated.

Remedy: This is just a notification. You do not have to do anything for this message.

VAR-041 Invalid Node Number

Cause: Path insertion or delete of a node occurred with node number which exceeded the number of nodes in a path.

Remedy: Perform operation with a valid node number.

VAR-042 TEMP type invalid for CMOS create

Cause: The type definition for the variable being created is in temporary DRAM memory. This means variable cannot be remembered after power off.

Remedy: The program with the type definition for the variable you are creating must be loaded at controlled start. This implies the type definition is image.

VAR-043 Variable memory pool is invalid

Cause: The memory pool for this variable does not exist on the controller. An auxiliary board has probably been removed or replaced.

Remedy: Put the old board in back into the controller. If this board is not available then an INITIAL START is required.

VAR-044 Group number mismatch on load

Cause: The variable file has different number of groups defined than controller.

Remedy: You must configure the groups from controlled start setup before loading variable files.

VAR-045 Mismatch SV - %s System %s

Cause: The robot type referenced in the loaded SV file is different than the type that the controller is setup for.

Remedy: Setup the controller for the proper robot type and load system variables which were saved on a compatible robot.

VAR-046 Buffer size mismatch

Cause: When transferring a variable to a different computer the memory buffer size is too small.

Remedy: Allocate a larger buffer for the transfer.

VAR-047 Incompatible var file version

Cause: The variable file that you specified does not contain key information it is probably not a variable file.

Remedy: This file is not useful. You need to get the information from a different file.

VAR-048 Name is too big

Cause: The variable name specified in the request is too long.

Remedy: You must change the variable name to make it shorter.

VAR-049 Bad Element in a Structure

Cause: The ASCII value specified is invalid.

Remedy: Specify a valid ASCII value.

VAR-050 PC Revision mismatch %s

Cause: The version of the saved PC image and saved VR image are different. This is probably because power was removed in the middle of the operation.

Remedy: Load the PC file again.

VAR-051 Illegal operation

Cause: The requested operation is not supported on this processor.

Remedy: You must do this operation in a different context.

VAR-052 Variable %s converted

Cause: A system variable file created on an earlier version has been loaded. The specified variable changed since that early release so it has been converted. Some information in the system variable may have been lost.

Remedy: This is informational.

VAR-053 Input data pointer invalid

Cause: The variable data pointer specified is incorrect Or an invalid pointer was sent to the controller from a PC.

Remedy: This is an error in the application Check all pointers being sent from the PC using RPC calls.

VAR-054 Sysvars - %s loaded

Cause: A system variable file created on an earlier version has been loaded.

Remedy: This is informational.

VAR-055 Program name is not unique

Cause: Another program exists with the same program name in first eight Characters. Program name must be unique in the first eight characters.

Remedy: Change the name of the program.

VAR-056 No more system types available

Cause: All available system types are already being used on this controller.

Remedy: You cannot load any additional options on this controller. If you need a different set of options you must reinitialize the controller with the new set of options.

VAR-057 Using %s for save

Cause: There are too many user types defined to be saved in one file. Each file can hold up to 255 types. If more than 255 types are referenced, then it will use additional files. This error should only occur on internal system variable saves.

Remedy: When you load this file you must load all of the individual files created. During loading, the file names will have an index appended to them and you must find all of the files.

VAR-058 Remote version is not compatible

Cause: You attempted to access a controller that is using an incompatible software version.

Remedy: Update the target controller to the same version of software as the source controller.

VAR-059 Program name syntax is bad

Cause: The program name syntax is invalid.

Remedy: Make sure you use UNC compatible naming to access a network robot. For example: %robotnameprogram

VAR-060 Variable type is not compatible

Cause: The program name syntax is bad.

Remedy: Make sure you use UNC compatible naming conventions such as %robotnameprogram to access network robots.

VAR-061 No more user types available

Cause: All available user types are already being used on this controller.

Remedy: You cannot load any additional programs on this controller. You can delete programs and variables to free up types. Be sure that you are properly using the 'FROM' directive in your KAREL programs so that the same type is not defined in multiple programs.

VAR-062 No variable or program name

Cause: No name supplied for program/variable.

Remedy: Make sure you supply a name.

VAR-063 [%s]%s CMOS lost/reallocated

Cause: The CMOS memory for the named variable was corrupted. This named variable was reallocated as a result of the corruption.

Remedy: The named variable will be set to *Uninitialized* in the process and might need to be set back to a valid initial value. In general, the only way to recover is an initial start.

VAR-064 Change requires cycle power

Cause: A system variable was changed that requires a cycle power.

Remedy: Turn on the Teach Pendant. Press FCTN hardkey and select CYCLE POWER. Or you can also turn off and on the power.

VAR-065 Not allowed while program running

Cause: The operation that you are attempting is not allowed while program is running.

Remedy: Make the change after program is aborted.

VAR-107 Illegal array operation

Cause: The alarm will occur when you attempt to do a GET_VAR or SET_VAR but the array indices do not match. For example, the variable type is a one dimensional array but you specify two dimensions in the variable name string.

Remedy: Be sure that the array indices line up with the variable that you are attempting to access.

VAR-108 Bad register type

Cause: Illegal register type is used.

Remedy: Make sure the register type.

VAR-200 [%s] 0x%x corrupted

Cause: System variable data has been corrupted.

Remedy: Cycle Start the controller and try the operation again.

VAR-201 [%s] 0x%x bad end tag

Cause: System variable data has been corrupted.

Remedy: Cycle Start the controller and try the operation again.

VAR-202 [%s] (%d) Shadow error

Cause: An unexpected internal error has occurred.

Remedy: Document the events that led to the error and contact your local FANUC representative.

VAR-203 [%s] (%d) Interrupted file save

Cause: Power cycle interrupted the variable file backup.

Remedy: The system has attempted to recover. Cycle power to avoid problems.

VAR-204 Power off incomplete %d

Cause: Power off processing did not complete.

Remedy: If the problem persists, replace the hardware.

VAR-205 Shadow memory full

Cause: SHADOW memory is full.

Remedy: Move some variables to DRAM or mark variables NOTSCANNED.

VAR-206 %s will load at startup

Cause: The variable must be reallocated at system initialization.

Remedy: None.

VAR-207 %s loaded at startup

Cause: A file that deferred loading until startup has successfully loaded.

Remedy: None.

VAR-208 %s loaded failed

Cause: A file that deferred loading until startup has failed to load. See the cause code.

Remedy: Correct the problem in the file and try the operation again.

VAR-209 [%s] Shadow Disabled

Cause: A path node of a shadowed path has been modified but shadow is disabled.

Remedy: Save the PRV file via the SAVE_DRAM built-in to enable shadowing.

VAR-210 %s only one shadow path per program

Cause: A shadowed path already exists in this program.

Remedy: Move the shadow path to its own program.

VAR-211 %s Shadow paths exclude other shadow variables

Cause: A shadowed path and some other shadow variable cannot exist in the same program.

Remedy: Move the shadow path to its own program name.

VAR-212 Program is protected

Cause: The program is protected and cannot be cleared or reloaded.

Remedy: Unprotect the program from the application.

VAR-213 Variable is uninitialized

Cause: The variable is not initialized.

Remedy: Initialize the variable.

4.20 W

4.20.1 WEAV Alarm Code

WEAV-000 unknown error (WV00)

Cause: Internal system error.

Remedy: Cold start controller.

WEAV-001 Weave global variable failure

Cause: Weave variables not loaded.

Remedy: Controlled start, initialize motion softparts.

WEAV-002 Weave motion data missing

Cause: Internal system error.

Remedy: Cold start controller.

WEAV-003 Weave error allocating data

Cause: Not enough memory.

Remedy: Remove unneeded loaded variables and programs.

WEAV-004 Weave system variable failure

Cause: Weave system variables not loaded or initialized.

Remedy: Controlled start, init motion softparts.

WEAV-005 Weave pattern does not exist

Cause: Internal system error.

Remedy: Delete Program line.

WEAV-006 Weave illegal schedule number

Cause: Invalid weave schedule number.

Remedy: Change weave schedule to be in limits.

WEAV-007 Weave illegal frequency value

Cause: Frequency value invalid.

Remedy: Change frequency to be within limits.

WEAV-008 Weave illegal amplitude value

Cause: Weave amplitude value invalid.

Remedy: Change amplitude to be within limits.

WEAV-009 Weave illegal dwell value

Cause: Weave dwell value invalid.

Remedy: Change dwell to be within limits.

WEAV-010 Weave too many pre-exec WS

Cause: Several weave statements pre-executed.

Remedy: Warning only.

WEAV-011 Unsupported function code

Cause: Internal system error.

Remedy: Cold start controller.

WEAV-012 Multi-group stop dwell invalid

Cause: Stop dwell is specified but the program has multiple groups. Stop dwell is not supported for multiple groups. Moving dwell is executed.

Remedy: Change Weave setup to use Moving Dwell.

WEAV-013 Incorrect weaving vectors

Cause: Weaving vector can not be calculated because the direction of the weaving vector is not correct.

Remedy: Change the path direction or setting of UTOOL to plan the weaving vector correctly. Additionally, check whether Weave instruction is wrongly taught before the motion instruction which moves along TOOL Z direction (For example, the approach motion to the workpiece).

WEAV-014 Wrist Joint Limit

Cause: Wrist axes reaches to its limit.

Remedy: Change wrist configuration to allow wrist axes away from its limit.

WEAV-015 Wrist axes 5 closes to zero

Cause: Joint 5 is too close to zero.

Remedy: Change wrist configuration to avoid singularity.

WEAV-016 Unknown wrist configuration error

Cause: Unknown wrist configuration error.

Remedy: Change wrist configuration.

WEAV-017 Run_ang exceeds tol_ang

Cause: The angles of Weaving direction away from its best direction is larger than allowed tol_ang.

Remedy: Change the torch angle or increase the value of tol_ang.

WEAV-018 Invalid UTool

Cause: The current utool has null value.

Remedy: Use a valid utool.

WEAV-019 Total of phase is 0

Cause: The total of phase is 0.

Remedy: Set the value of total of phase.

WEAV-020 Component of all vectors are 0

Cause: The component of all unit vectors is 0.

Remedy: Set the value of component correctly.

WEAV-021 Weave illegal elevation value

Cause: Elevation value invalid.

Remedy: Change elevation to be within limits.

WEAV-022 Weave illegal azimuth value

Cause: Azimuth value invalid.

Remedy: Change azimuth to be within limits.

WEAV-023 Weave illegal center rise value

Cause: Center rise value invalid.

Remedy: Change center rise to be within limits.

WEAV-024 Weave illegal radius value

Cause: Radius value invalid.

Remedy: Change radius to be within limits.

WEAV-025 CP is enabled

Cause: CP is enabled.

Remedy: Disable CP motion.

WEAV-026 restrict axes (G:%d^2 A:%s^7)

Cause: This axis move is restricted in multigroup weaving motion.

Remedy: Do not move this axis in multi group weaving motion.

WEAV-027 WV Ramp disabld in backwrdrd exec

Cause: Weave ramping is not applied in backward execution.

Remedy: Warning only.

4.20.2 WNDW Alarm Code

WNDW-001 Invalid screen name format

Cause: Format of screen name in DEF_SCREEN, ACT_SCREEN, or ATT_WINDOW_S call is invalid.

Remedy: Screen names must be 1-4 alpha-characters. Supply a valid screen name.

WNDW-002 Invalid window name format

Cause: Format of window name in ATT_WINDOW_D, ATT_WINDOW_S, or DET_WINDOW call or an OPEN statement is invalid.

Remedy: Window names must be 1-4 alpha-characters. Supply a valid window name.

WNDW-003 Invalid keybd. name format

Cause: Invalid display device name in DEF_SCREEN or ATT_WINDOW_D call.

Remedy: Use TP for teach pendant screen or CRT for KCL screen.

WNDW-004 Invalid disp dev name format

Cause: Invalid format of display device name in DEF_SCREEN or ATT_WINDOW_D call.

Remedy: Device names must be 1-4 alpha- characters Supply a valid device name.

WNDW-005 Bad number of rows

Cause: Invalid n_rows in DEF_WINDOW call.

Remedy: n_rows value must be 1 to 50. Correct the value.

WNDW-006 Bad number of cols

Cause: Invalid n_cols in DEF_WINDOW call.

Remedy: n_cols value must be 1 to 132. Correct the value.

WNDW-007 Bad row number

Cause: Invalid value of row parameter in ATT_WINDOW_S, AT_WINDOW_D, or SET_CURSOR call.

Remedy: For ATWINDOW_S or AT_WINDOW_D calls, row must be in the range 1-(display_device_size-window_size+1)
Correct the row parameter value For SET_CURSOR calls, the value must be in the range 1-50.

WNDW-008 Bad col number

Cause: Invalid value of col parameter in ATT_WINDOW_S, AT_WINDOW_D, or SET_CURSOR call.

Remedy: For ATWINDOW_S or AT_WINDOW_D calls, col must be in the range 1-(display_device_size-window_size+1)
Correct the col parameter value For SET_CURSOR calls, the value must be in the range 1-132.

WNDW-011 Unk. disp dev name

Cause: Unknown display device name in DEF_SCREEN or ATT_WINDOW_D call.

Remedy: Use TP for teach pendant screen or CRT for KCL screen.

WNDW-012 Unk k/b dev name

Cause: Keyboard device specified in a PUSH_KEY_RD or POP_KEY_RD call or OPEN statement is invalid.

Remedy: Use 'TP' for teach pendant keys or 'CRT' for KCL keyboard.

WNDW-013 Duplicate screen name

Cause: Screen name specified in DEF_SCREEN call is already defined.

Remedy: If the screen is a system-defined, it cannot be redefined. If the existing screen definition is not being changed, this may not be a problem. Otherwise, it may be necessary to cold-start the controller to delete the existing definition: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot.

WNDW-014 Duplicate window name

Cause: Window name specified in DEF_WINDOW call is already defined.

Remedy: If the window is a system-defined window, it cannot be redefined. If the window is a system-defined, it cannot be redefined. If the existing window definition is not being changed, this may not be a problem. Otherwise, it may be necessary to cold-start the controller to delete the existing definition: 1. Turn off the robot. 2. On the teach pendant, press and hold the SHIFT and RESET keys. 3. While still pressing the SHIFT and RESET keys, turn on the robot.

WNDW-015 Unknown screen name

Cause: The screen name specified in a ATT_WINDOW_S, DET_WINDOW, or ACT_WINDOW call is not defined.

Remedy: Use the name of a defined screen.

WNDW-016 Unknown window name

Cause: The window name specified in a ATT_WINDOW_S, ATT_WINDOW_D, or DET_WINDOW call or an OPEN statement is not defined.

Remedy: Use the name of a defined window.

WNDW-017 Window already attchd to scrn

Cause: The window name specified in a ATT_WINDOW_S, ATT_WINDOW_D is ready attached to the specified screen.

Remedy: If the present attach is acceptable, this may not be a problem. Otherwise it will be necessary to call DET_WINDOW.

WNDW-018 Invalid file name string

Cause: The file name in an OPEN statement begins WD: or KB: but is not a valid format.

Remedy: The following forms are valid: WD:wnam KB:knam WD:wnam/knam KB:knam/wnam where wnam and knam are 1-4 alpha-numeric characters. Correct the format of the file name.

WNDW-019 Write to file w/o window

Cause: A write was issued to a file opened to a keyboard (KB:knam), but not a window.

Remedy: Either change the OPEN to specify a window or do not WRITE to the file.

WNDW-020 Bad buffer length on read

Cause: The buffer_size parameter in a INI_DYN_DISI INI_DYN_DISR, INI_DYN_DISS or READ_KB call is invalid.

Remedy: Specify a value in the range 10-128 for INI_DYN_DISx calls; for READ_KB calls, specify a range of 1-128, unless the accept mask is zero, when a buffer_size value of zero is permitted.

WNDW-021 Invalid timeout value

Cause: The time_out value in a READ_KB call is Invalid.

Remedy: The value must be less than 65535000. Use a valid value.

WNDW-022 Zero term char mask in read

Cause: The terminate character mask in a keyboard read is zero.

Remedy: Use a non-zero value for the terminate character mask.

WNDW-023 Initial data too long

Cause: The init_data value is longer than the buffer size parameter.

Remedy: Either increase the value of buffer_size or specify a shorter string for init_value.

WNDW-024 Attempt to read with no kb

Cause: A READ_KB call or READ statement was executed on a file that was OPENed to a window but not a keyboard.

Remedy: Either modify the OPEN FILE statement to specify a keyboard or do not use the file in a READ_KB call or READ statement.

WNDW-025 Echo window for read not act

Cause: A READ_KB call was executed where the specified file is opened to a window that is not attached to the active screen and the terminate mask included the no_window bit.

Remedy: This may be a normal result if the user intended READ_KB requests to fail if the required window is not displayed. Otherwise, either modify the terminate mask or use ATT_WINDOW_D or ATT_WINDOW_S to attach the required window.

WNDW-026 Read for same keys/kbd active

Cause: A READ_KB call was executed where the the keyboard for the specified file currently has another READ_KB call or READ statement that accepts some of the same classes of keys and the terminate mask included the kbd_busy bit.

Remedy: This may be a normal result if the user intended READ_KB requests to fail if the Keyboard is in use. Otherwise, modify the terminate mask, modify the accept mask of this or the conflicting read, or use a PUSH_KEY_RD call to suspend conflicting reads.

WNDW-027 Too many pushes active

Cause: The maximum depth of key read PUSH operations has been exceeded.

Remedy: Check for situations in which a PUSH_KEY may be executed and no POP_KEY is executed.

WNDW-028 Mis-match on push/pop seq

Cause: This indicates that the pop_index specified in a POP_KEY_RD call is not the expected value, indicating that call are being made out of order.

Remedy: Check the logic in use of PUSH_KEY_RD and POP_KEY_RD to ensure that the pop_index values are being supplied in the correct order. If more than one task is issuing PUSH_KEY_RD and POP_KEY_RD calls, extra care is required.

WNDW-030 Invalid time

Cause: The interval parameter in a INI_DYN_DISI, INI_DYN_DISR, or INI_DYN_DISS call is invalid.

Remedy: This must be in the range 1-32767 (ms).

WNDW-032 No match on var disp cnci

Cause: There is no currently active dynamic display for variable and window specified in a CNC_DYN_DISI, CNC_DYN_DISR, or CNC_DYN_DISS call.

Remedy: Check the variable and window names. Also check logic to see that dynamic display had been started and not already cancelled.

WNDW-033 Field width invalid

Cause: The field_width parameter in a call to one of the INI_DYN_DIS builtin routines is invalid.

Remedy: Value must be in the range of 0-255.

WNDW-065 window not attached to screen

Cause: The window specified in a DET_WINDOW call is not attached to the specified screen.

Remedy: This is only a warning. It can be ignored or avoided by not detaching windows that are not attached.

4.21 X

4.21.1 XMLF Alarm Code

XMLF-001 Tag too long

Cause: The XML tag string is too long.

Remedy: The XML tag limit is a maximum of 32 characters.

XMLF-002 Attribute too long

Cause: The attribute data is too long.

Remedy: Limit the length of the attribute data to 64 characters. If a very long attribute string is required use it as the body of the XML for example: <MYTAG> This is a string longer than 64 characters. In fact it could be many pages of text </MYTAG>. There is no limit to the length of the data in this case. A KAREL program can retrieve the data 127 characters at a time from the XML data as the string.

XMLF-003 Invalid use of / character

Cause: In general the “/” character cannot be used in a tag name. This is a special character.

Remedy: Do not use “/” in tag (or attribute) names. For example, <TAG> </TAG> is valid. However, <TA/G> </TA/G> is not.

XMLF-004 Invalid character in tag

Cause: Tag names cannot contain special characters such as &, <, >, /, “, or “.

Remedy: Do not use special characters in tag names.

XMLF-005 No value for attribute

Cause: There is no value string for an attribute. This error occurs if the attribute is not like the following example: name = “value”.

Remedy: Make sure all attributes are of the form name = “value”.

XMLF-006 End tag with no matching start

Cause: An end tag was found with no matching start tag.

Remedy: Start tags and end tags must always balance. That is, for every start tag there must be an end tag <?TAG> or <TAG name=“value”?>.

XMLF-007 Invalid character in attribute

Cause: An attribute contains an invalid character. Attributes cannot contain the characters <, >, /, “.

Remedy: Change the attribute. For example, <TAG ATT=“val”> is valid. However, <TAG ATT=“val/”> is not.

XMLF-008 Cannot find file

Cause: The specified file does not exist.

Remedy: Make sure the file you are trying to access exists on the device you are specifying.

XMLF-009 Tag nesting level too deep

Cause: The nesting of tags is limited to 32 levels deep. This error indicates that you have more than 32 tags within tags.

Remedy: Reformulate your XML file to reduce the complexity. Make sure that the file can be edited by a standard PC XML editor.

XMLF-010 Error in comment

Cause: The XML source has a badly formed comment.

Remedy: Follow the rules for XML comment delimiters. This means that the comment must begin with <!-- and end with -->.

XMLF-011 Unknown character &xxx;

Cause: The & is used to denote special characters. Only &, <, >, and " are supported as special characters.

Remedy: If the character is not supported as a special character, you can use the character directly.

XMLF-012 Tag not found

Cause: This is returned by the remove tag builtin xml_remtag in the case that the tag was not previously registered.

Remedy: Register the tags before you remove them.

XMLF-013 Unexpected end of file

Cause: The XML file ended before the starting tag was closed.

Remedy: Make sure that the last tag in the file closes the first tag in the file.

XMLF-014 Scan limit exceeded

Cause: The KAREL builtin xml_scan returned because it had scanned as many lines as possible in the time slot.

Remedy: Recall the builtin xml_scan to scan more lines.

XMLF-015 Function code return

Cause: This is returned by the KAREL builtin xml_scan when a registered tag has been found.

Remedy: This indicates that the builtin should process the returned tag.

XMLF-016 Tag %s %s

Cause: The iPendant detected a problem with an XML tag. Most likely an unknown or misspelled tag was used.

Remedy: Correct the XML content, and retry the operation.

XMLF-017 Attr %s %s

Cause: The iPendant detected a problem with an ATTRIBUTE / VALUE pair in the XML content.

Remedy: Correct the XML content, and retry the operation.

XMLF-018 User func %s

Cause: The iPendant detected a syntax error in the XML content.

Remedy: Correct the XML content, and retry the operation.

XMLF-019 Too many attributes

Cause: There are too many ATTRIBUTE/VALUE pairs with the XML tag.

Remedy: Reduce the number of ATTRIBUTE/VALUE pairs in the XML content and retry the operation.

ADDITIONAL INFORMATION

Modification of SRVO-135 and SRVO-136 alarm description
for FANUC Robot series R-30iB Plus/R-30iB Mate Plus /R-30iB Compact Plus CONTROLLER
Alarm Code List OPERATOR'S MANUAL

1.Type of applied technical documents

Name	FANUC Robot series R-30iB/R-30iB Mate/R-30iB Plus/R-30iB Mate Plus/R-30iB Compact Plus CONTROLLER Alarm Code List OPERATOR'S MANUAL
Spec.No./Ed.	B-83284EN-1/08

2.Summary of Change

Group	Name/Outline	New, Add, Correct, Delete	Applicable Date
Basic	Modification of SRVO-135 and SRVO-136 alarm description	Correct	Immediately
Optional Function			
Unit			
Maintenance Parts			
Notice			
Correction			
Another			

Title	Modification of SRVO-135 and SRVO-136 alarm description for FANUC Robot series R-30iB Plus/R-30iB Mate Plus /R-30iB Compact Plus CONTROLLER Alarm Code List OPERATOR'S MANUAL	Ed 1	Draw	B-83284EN-1/08-001	
		Date 2021. 12/15	FANUC CORPORATION		Sheet 1/2

The descriptions of SRVO-135 and SRVO-136 alarms were wrong. Below are the modifications.

Added lines are underlined.

Deleted lines are ~~crossed out (word)~~.

SRVO-135 PAUSE.G FSAL alarm (G:%d A:%d)

Cause: The cooling fan for the control circuit on the auxiliary servo amplifier (α iSV) which drives the group/axis shown in the alarm message is stopped.

Remedy:

1. Replace the internal fan motor of the auxiliary servo amplifier (α iSV) of which axis is shown in the alarm message.
2. Replace the auxiliary servo amplifier (α iSV) of which axis is shown in the alarm message.
- ~~3. In a system with an auxiliary axis, this alarm may occur if a reset signal is input at the same time as an emergency stop signal such as SVOFF or Fence open. Do not input a reset signal for 2 seconds after the emergency stop signal is input.~~

Note: You need to cycle power to release this alarm.

SRVO-136 SERVO DCLVAL alarm (G:%d A:%d)

Cause: The DC voltage (DC link voltage) of the main circuit power supply on the auxiliary servo amplifier (α iSV) which drives the group/axis shown in the alarm message is abnormally low.

Remedy:

1. Check the wiring of the servo amplifier (α iSV) of which axis is shown in the alarm message.
2. Replace the servo amplifier (α iSV) of which axis is shown in the alarm message.
3. In a system with an auxiliary axis, this alarm may occur if a reset signal is input at the same time as an emergency stop signal such as SVOFF or Fence open. Do not input a reset signal for 2 seconds after the emergency stop signal is input.

Note: You need to cycle power to release this alarm.

【Version history】

Ed	Date	Description
01	2021/12/15	The first edition registration

Title	Modification of SRVO-135 and SRVO-136 alarm description for FANUC Robot series R-30iB Plus/R-30iB Mate Plus /R-30iB Compact Plus CONTROLLER Alarm Code List OPERATOR'S MANUAL	Ed 1	Draw	B-83284EN-1/08-001	
		Date 2021. 12/15	FANUC CORPORATION		Sheet 2/2

INDEX

<A>

A	21
ABOUT MANUAL	1
ACAL Alarm Code	21
ALARM CODES	21
ALARM RECOVERY	15
APSH Alarm Code	31
ARC Alarm Code	43
ASBN Alarm Code	61
ATGP Alarm Code	68
ATZN Alarm Code	68

B	72
BBOX Alarm Code	72
BRCH Alarm Code	74

<C>

C	76
CALM Alarm Code	76
CD Alarm Code	79
Chain Failure Detection Error Recovery	19
CMND Alarm Code	81
CNTR Alarm Code	83
COND Alarm Code	84
COPT Alarm Code	85
CPMO Alarm Code	87
CVIS Alarm Code	94

<D>

D	152
DIAG Alarm Code	152
DICT Alarm Code	153
DJOG Alarm Code	156
DMDR Alarm Code	157
DMER Alarm Code	158
DNET Alarm Code	162
DPMO Alarm Code	172
DTBR Alarm Code	173
DX Alarm Code	174

<E>

E	175
ELOG Alarm Code	175
ERROR CODE PROPERTIES	4
Error Message Text	13

<F>

F	176
Facility Name and Code	8
FFL Alarm Code	176
FIG Alarm Code	183
FILE Alarm Code	185
FLPY Alarm Code	193
FORC Alarm Code	194

FPLN Alarm Code	218
FRSY Alarm Code	219
FXTL Alarm Code	221

<G>

GENERAL ALARM RECOVERY PROCEDURES	15

<H>

H	230
Hand Breakage Recovery	17
HOST Alarm Code	230
HRTL Alarm Code	248

<I>

I	253
IB-S Alarm Code	253
ICRZ Alarm Code	275
IFPN Alarm Code	276
INTP Alarm Code	278
IRPK Alarm Code	314
ISD Alarm Code	329
ISDT Alarm Code	338

<J>

J	338
JOG Alarm Code	338

<K>

K	341
KALM Alarm Code	341

<L>

L	341
LANG Alarm Code	341
LECO Alarm Code	344
LNTK Alarm Code	355
LRNR Alarm Code	361
LSR Alarm Code	362
LSTP Alarm Code	364

<M>

M	366
MACR Alarm Code	366
MARL Alarm Code	367
MASI Alarm Code	369
MCTL Alarm Code	370
MEMO Alarm Code	372
MENT Alarm Code	379
MHND Alarm Code	380
MOTN Alarm Code	388
MUPS Alarm Code	427

<O>

O	428
OPTN Alarm Code	428
OS Alarm Code	431

Overtravel Release	15	TOOL Alarm Code	835
OVERVIEW	3,4,15	TPIF Alarm Code.....	837
<P>		TRAK Alarm Code	852
P	432	<V>	
PALL Alarm Code	432	V	854
PALT Alarm Code	449	VARs Alarm Code	854
PICK Alarm Code	450	<W>	
PLUG Alarm Code.....	453	W.....	860
PMON Alarm Code.....	453	WEAV Alarm Code.....	860
PNT1 Alarm Code.....	454	WNDW Alarm Code.....	862
PNT2 Alarm Code.....	525	<X>	
PREFACE	1	X	864
PRIO Alarm Code	582	XMLF Alarm Code	864
PROC Alarm Code.....	614		
PROF Alarm Code	615		
PROG Alarm Code.....	616		
PTPG Alarm Code	621		
Pulsecoder Alarm Recovery	17		
PWD Alarm Code	622		
<Q>			
Q	627		
QMGR Alarm Code	627		
<R>			
R	627		
RIPE Alarm Code	627		
ROUT Alarm Code	629		
RPC Alarm Code.....	631		
RPM Alarm Code.....	632		
RTCP Alarm Code	633		
<S>			
S	634		
SAFETY PRECAUTIONS	s-1		
SCIO Alarm Code	634		
SDTL Alarm Code	635		
SEAL Alarm Code	645		
SENS Alarm Code	666		
Severity Descriptions	10		
SHAP Alarm Code.....	667		
SPOT Alarm Code	670		
SPRM Alarm Code.....	694		
SRIO Alarm Code	695		
SRVO Alarm Code.....	696		
SSPC Alarm Code.....	750		
SVGN Alarm Code	758		
SYST Alarm Code	793		
<T>			
T	821		
TANG Alarm Code	821		
TAST Alarm Code	823		
TCPP Alarm Code.....	824		
TG Alarm Code.....	826		
THSR Alarm Code.....	828		
TJOG Alarm Code	832		
TMAT Alarm Code	833		

REVISION RECORD

Edition	Date	Contents
08	Sep.,2021	• Addition of new alarm codes • Correction of errors
07	Dec.,2019	• Addition of new alarm codes • Correction of errors
06	Mar.,2018	• Addition of R-30iB Compact Plus • Correction of errors
05	Nov.,2017	• Addition of R-30iB Plus, R-30iB Mate Plus • Correction of errors
04	Aug.,2013	Addition of new software series 7DC2 (V8.20)
03	Mar.,2013	Addition of R-30iB Mate
02	Aug.,2012	Some errors in writing have been corrected.
01	May,2012	

B-83284EN-1/08



* B - 8 3 2 8 4 E N - 1 / 0 8 . 0 1 *