HYUNDAI
HEAVY INDUSTRIES CO.,LTD.

WARNING

THE INSTALLATION SHALL BE MADE BY QUALIFIED INSTALLATION PERSONNEL AND SHOULD CONFORM TO ALL NATIONAL AND LOCAL CODES

Error Code and Warning (Hi5a)

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1 Overview

1. Overview

Errors are classified into general errors and handling errors. General errors are to call user's attentions, and handling errors indicates that operator made a mistake or trouble.

Hi5 controller, with its built-in self-diagnostic function, displays the details of errors on LCD screen of Teach pendant. Thus, you may check error code, and confirm it in the error code Table for troubleshooting.

In case of troubleshooting, read carefully 『troubleshooting cases』 & 『Instructions in Parts Replacement』, and be fully understood on your working details before getting down to work. In addition, fully inform us of the followings when contacting with our A/S office.

① Robot type name on robot specification plate and controller type of specification plate

② Happened date

③ Symptoms & error code

④ Details conducted by user's company

⑤ Software version of robot controller (Main, I/O, DSP, T/P)

⑥ Environment conditions in the occurrence of errors (power failure, collision with Jig, etc.)

2 System Error

Code	Message	Cause	Remedy
E0001	Power down detection	A power was cut after motor ON or CB (Circuit Breaker) was OFF.	Just to store a power outage to the error list, Any action is not demanded.
E0002	Hardware limit switch operating	Limit Switch was actuated at the end of work range for each axis.	On the motor from system menu (press motor on button while holding the Enable switch), and move it back to operation area by using jog key. Refer to the troubleshooting method.
E0003	Brake power overload	Fuse was cut off due to overcurrent at AC220V power line to create brake power.	Refer to the troubleshooting method.
E0004	Arm interference limit switch operation	Limit Switch for preventing Arm Interference was actuated.	On the motor from system menu (press motor on button while holding the Enable switch), and move it back to operation area by using jog key. Refer to the troubleshooting method.
E0005	DSP version not exists in Flash ROM of Main board	It happens when stored performing code does not exist even though DSP performing code, which has been stored to flash ROM of main board, is being dispatched to servo board in power on.	Please make version up DSP with system version up function (R286).
E0006	Collision sensor is operating.	Collision sensor has worked.	Please check whether tool of robot end-effector was deformed. Please start after removing all error causes.
E0007	Stick detection	Sticking of welds signal is detected in completion of welding sequence.	1) Check the sticking of welds signal. 2) Remove the cause of weld stick.
E0008	Motor temperature rise (Hard-wiring)	Excessive rising of motor temperature was sensed through temperature sensor wired to each axis of robot.	Refer to the troubleshooting method.
E0009	#n Verify error after DSP version download	Data dispatching performing code through HPI port of servo board is wrong.	1) Please check whether servo board is mounted. 2) Please check DIP switch of servo board referring to trouble shooting.
E0010	AMP recovery discharge resistance overheating	The temperature of the recovery discharge resistance exceeds the standard. The overheating detection sensor malfunctions.	Refer to the troubleshooting method.

Code	Message	Cause	Remedy
E0011	AMP overvoltage (P-N)	In the case of excess establish value of the motor voltage (P-N)	Inspect an AC input power on the control board (used for rated power). Check the connection of the recovery discharge resistance.
E0012	Brake power error	Brake voltage is lowered.	Refer to the troubleshooting method.
E0013	PWM error!! Contact error of sequence line.	Due to contact failure of PWM off line between AMP and system board, PWM command is not inserted to drive unit.	Please check CNSG cable of drive unit. Please make an inquiry to HHI if the error happens again even after the above article has been managed.
E0014	Instant contact of safety switch (EM,OTR,TS etc.)	Instant contact of safety switch (emergency halt, motor overheat, limit switch etc) has happend.	1) Check the Emergency Switch. If the error still occurs after the remedy set above, please contact our company.
E0015	Teaching pendant operation error	Communication halt between teaching pendant and main board was sensed.	1. Does the error occur after T/P version up? => Ignore. 2. Does the error occur after execution is carried out again after T/P experiences an error? => Contact the company for inquiries about the T/P error. 3. A case not mentioned above? => T/P has a problem, or communication is defective. Contact the company for inquiries.
E0017	Conveyor pulse line error	There is no input for the conveyor pulse.	1) Check up the conveyor encoder power. 2) Check up the connections of conveyor encoder pulse line. 3) Please replace conveyer I/F board.
E0018	Arc board connection error	There is a trouble on connecting with arc board.	Please check communication path and power supply line between arc board and main board.
E0019	Exceeded conveyor pulse permitted frequency	Bigger value than fixed allowable frequency on conveyer pulse number was input.	1) Check the allowable frequency setting. 2) Check if noise signal exists in the pulse line
E0020	Conveyor I/F board connection error	There problems in the connection to Conveyor I/F board.	Please check power supply lines and communication lines between Conveyor I/F board and the main board.

Code	Message	Cause	Remedy
E0021	Exceeded conveyor permitted speed	Conveyor permission speed is high	1) Please check the fixed value of conveyer allowable speed. 2) Check if noise signal exists in pulse line.
E0022	Communication error between internal modules	The error on communication between main board and each inner module has happened.	Refer to the troubleshooting method.
E0031	Mode switch broken	Mode switch of operating panel (OP) has failed or connected status is strange.	Check the mode switch or connected line status.
E0032	IO board for a user Communication error	Communication trouble between user IO board and main board has happened.	Refer to the measures to be taken for the related items.
E0033	AMP under-voltage error	PN voltage of servo AMP became low.	Please check input power of recovery discharging status and servo AMP.
E0034	AMP over-current error	F1 or F2 was cut off owing to surge voltage at servo AMP.	Please check power connecting status inside and outside of controller.
E0035	Hardware limit (Additional axis)	Limit switch, which is installed at end of operation area of auxiliary axis (running axis etc), operated.	On the motor from system menu (press motor on button while holding the Enable switch), and move it back to operation area by using jog key. Refer to error repair manual-E0002.
E0036	Hardware limit (Expanded 16 axes)	Limit switch, which is installed at end of operation area of expansion, operated.	On the motor from system menu (press motor on button while holding the Enable switch), and move it back to operation area by using jog key. Refer to error repair manual-E0002.
E0037	Control power overload	Fuse was disconnected because power line of control power AC220V has been overloaded.	After removing the cause of fuse disconnection, please replace the fuse.
E0038	Motor power overload (Motors Power)	CP was tripped owing to over-current at RST line of motor power.	After removing the cause of CP trip, please return CP switch.
E0039	SMPS power overload (SMPS Power)	Fuse was disconnected because power line of SMPS power AC48V has been overloaded.	After removing the cause of fuse disconnection, please replace the fuse.
E0041	(Additional axis) Motor temperature rise (Hard-wiring)	The motor temperature of an additional axis rises excessively.	Please refer to troubleshooting E0008.

Code	Message	Cause	Remedy
E0042	General guard switch connection error	Error happened on connection of general safety guard.	Please check the connecting status of general safety guard or line.
E0043	Safety plug connection error	Connecting error of safety plug (auto guard) switch at automatic mode happened.	Please check the safety plug switch or connecting status line.
E0044	Lift axis belt disconnect sensor is operating	The belt of the elevation axis-motor driving part was cut off, or a sensor cable within the robot was cut off.	Replace the belt of the motor driving part or check the sensor cable inside the robot.
E0045	Change requested to remote auto mode	Despite the manual mode of the controller, a change from remote mode to automatic mode is requested.	Change the controller's mode to automatic mode.
E0046	Changed manual mode from remote auto mode	The controller's mode was changed from remote automatic mode to manual mode.	Try to operate the controller after changing the remote mode to manual mode.
E0047	Motion processing time exceed	Robot motion calculation has not been completed within the reference time.	Where too much allocation time for the embedded PLC is set, ask our engineers for a reduction of the allocation time.
E0048	Remote mode (system) signal has not been input.	1) Motor on has been attempted from a remote mode while remote mode (system) signal is not entered 2) Mode switch has been controlled in remote mode while remote mode (system) signal is not entered.	Examine the remote mode (system) signal from the Private input signal monitoring, and make sure the signal is being entered.
E0049	External start is possible after joystick mode release!	External start of LCD examining Robot is possible after joystick mode release.	1) Release joystick mode 2) If external start is not possible even after the release of joystick mode, please check if the joystick signal is normal
E0050	Light Curtain detection signal is entered	Light Curtain detection signal has been input.	Check the connection status of Light Curtain detection signal.
E0051	Extended brake Board Communication problems	The communication abnormality between the expansion brake and the main boards has been detected.	Refer to the measures of the relevant item.

Code	Message	Cause	Remedy
E0052	PRM board communication error	The communication abnormality between PRM and main boards has been detected.	1) Reinject the controller power before inspecting. 2) Check CAN1 cable on PRM BD592 board.
E0053	PRM PN overcurrent generated	PRM recovery capacity exceeds its limit or PRM PN current exceeds error limits.	Slow down the robot's regeneration speed and check for the error.
E0054	PRM 3-phase overcurrent generated	PRM recovery capacity exceeds its limit or PRM 3-phase current exceeds error limits.	Slow down the robot's regeneration speed and check for the error.
E0055	PRM IPM fault signal detection	A fault signal is detected at PRM IPM.	1) Check the PRM FAN. 2) Slow down the robot's regeneration speed and check for the error.
E0101	Number of servo boards insufficient	The number of motors to control is larger than the number of controllable motors on servo board	1) Check the total number of control axes. 2) Add the servo board.
E0102	Robot type mismatch	The robot type is not supported.	Check up setup robot type.
E0103	(0 axis)Encoder error: Exceeded communication processing time	The encoder data are not received within the time for processing the communication.	Refer to the troubleshooting method.
E0104	(0 axis) Encoder error: Incomplete data frame	Data are received, but not in a designated type.	Refer to the troubleshooting method.
E0105	(0 axis) Encoder error: Encoder disconnection	Communication is impossible because the encoder is open-circuited.	Refer to the troubleshooting method.
E0106	(0 axis) Encoder error: Received data error	Data are received, but not in a designated type.	Refer to the troubleshooting method.
E0107	(0 axis) Encoder error: Bit sequence error	Data are received, but not in a designated type.	Refer to the troubleshooting method.
E0108	(0 axis) Encoder error: Encoder reset required	Encoder data gets out of the range to apply the offset function.	Refer to the troubleshooting method.

Code	Message	Cause	Remedy
E0112	(0 axis) IPM fault signal detection	A fault signal occurs to the IPM of the axis.	1) Check the motor driven parts. 2) Check the robot for the motion. 3) Check the controller's cooling fan. 4) Refer to the troubleshooting method.
E0113	(0 axis) Over-current	Over-current flows through the Motor or amplifier.	Refer to the troubleshooting method.
E0114	(0 axis) Decrease control voltage for operating device	The control power +15V supplied to the servo driving gear have dropped.	Refer to the troubleshooting method.
E0115	(0 axis) Received command code error	The servo board, which receives the command code from the main board, is incorrect.	Refer to the troubleshooting method.
E0117	(0 axis) Position deviation set value exceeded	Position Error exceeded the set value.	Refer to the troubleshooting method.
E0118	(0 axis) Speed deviation set value exceeded	Speed Error exceeded the set value.	Refer to the troubleshooting method.
E0119	(0 axis) Overload	The motor is overloaded, which makes it exceed the setting.	Refer to the troubleshooting method.
E0122	Servo ON limit time exceeded	When executing Servo On or releasing power saving mode, Servo On was not executed within the set time.	Refer to the troubleshooting method.
E0123	Servo OFF limit time exceeded	When executing Servo Off or releasing power saving mode, Servo Off was not executed within the set time.	1) Replace the servo board. 2) Contact with our service department.
E0124	Servo error clear limit time exceeded	Motor ON was not available because of servo error	Clear the servo error
E0125	Target location reach time exceeded	The current value fails to reach a target location within 10 seconds.	Refer to the troubleshooting method.
E0126	Operation outside the work space is tried	The operation of the robot is attempted outside the work space.	Check if the robot has reached the targeted work location.
E0127	MSHP operation error	MSHP doesn't work.	Refer to the troubleshooting method.

Code	Message	Cause	Remedy
E0131	(0 axis) Bit jump (Normal operation) error	In normal Speed Mode (playback), the speed exceeds High Speed Detection Level (Bit Jump High Level -BJH).	1) Check the connection of CNEC for servo board. 2) Check the connection of CNR4. 3) Check whether BJH is set to 1.5 times of the maximum speed.
E0132	(0 axis) Bit jump (Low speed operation) error	In Low Speed Mode (Jog, Step forward/ backward, Allocation input signals, Teach mode), The speed exceeds Low Speed Detecting Level (Bit Jump Low Level-BJL).	1) Check the connection of CNEC for servo board. 2) Check the connection of CNR4. 3) Check whether BJL is set to 1.5 times of the maximum speed.
E0133	(0 axis) Command value error	The location command transmitted to the servo board has an error.	Refer to the troubleshooting method.
E0134	(0 axis) Maximum speed exceeded	The location command transmitted to the servo board exceeds the maximum speed.	Refer to the troubleshooting method.
E0135	(0 axis) PWM OFF at servo on	PWM error!! Loose contact on sequence line. PWM command is not being input to drive unit due to loose contact on PWM off line between AMP and sequence board	Examine the CNSG cable of drive unit. If the error persists, please contact to our office
E0136	Servo AMP control voltage reduction	Control voltage +15V reduction. Error on a recovery control SMPS in drive unit	Refer to the troubleshooting method.
E0137	(0 axis) Improper encoder pulse setting	In the servo parameters, Encoder Pulse Setting Value ('PULS') is unusable.	Check 'PULS' of servo parameters.
E0138	Previous location recovery time limit exceeded	Previous location recovery time limit exceeded	1) Check the servo loop gain settings. 2) Check encoder power voltage. 3) Check encoder wiring.
E0139	Filter change time limit exceeded	Communication from the main board to servo board was unable.	1) Check the insertion of main board and servo board. 2) Replace the main board or servo board.
E0140	MSPR operation error	The operation of the MSPR relay for the main power supply has failed.	Check up the MSPR relay and the CNPC cable on drive unit.
E0150	Fault by CPU exception	A CPU fault has occurred, which stops the controller abnormally.	Back up all the files from the controller and send them to us.

Code	Message	Cause	Remedy
E0151	Step command cannot be executed	Robot can't work. because of unprofitable step information	Please contact with our service department.
E0154	(0 gun) Maximum tip consumption exceeded	Total tip consumption detected by gun search exceeded the maximum tip consumption to be set at servo gun parameter.	1) Check maximum tip consumption at servo gun parameter 2) Replace tips.
E0155	(0 gun) Maximum moving tip consumption exceeded	Moving tip consumption detected by gun search exceeded the maximum moving tip consumption to be set at servo gun parameter.	1) Check up maximum moving tip consumption which was set in servo gun parameter setting 2) Replace tips.
E0156	(0 gun) Maximum fixed tip consumption exceeded	Fixed tip consumption detected by gun search exceeded the maximum moving tip consumption to be set at servo gun parameter.	1) Check up maximum fixed tip consumption which was set in servo gun parameter setting 2) Replace tips.
E0157	(0 axis)Twist deviation too high	This error occurs in the synchronizing 2 axes function of gantry robots. Torsion angle to travelling axis was larger than set parameter of the synchronizing 2 axes function	Adjust torsion parameter of the synchronizing 2 axes function of servo parameter.
E0158	Twist recovery time limit exceeded	This error occurs in the synchronizing 2 axes function of gantry robots. Returning torsion angle to travelling axis exceeded set 5 seconds after motor on.	1) Check if there is any obstacle in the traveling axis. 2) Check encoder power voltage and wiring. 3) Replace motors.
E0159	(0 axis) Axis speed limit exceeded	The axis rotates rapidly during the calibration operation.	1) Reduce the speed of step recording. 2) Modify the subject step position.
E0160	(0 axis) Collision detected	Disturbance torque is over excess collision detection level.	1) If collision is occurred, remove the problems 2) Adjust collision detection level
E0161	(0 axis) Impact detected	Disturbance torque ratio is over excess impact detection level.	1) If collision is occurred, remove the problems. 2) Adjust impact detection level.
E0162	(0 axis) current sensor error	The AMP current feedback has an excessively high offset value.	1) Check the +/-15V power of the complex power source unit. 2) Change the servo board. 3) Change the AMP.

Code	Message	Cause	Remedy
E0163	Axis slippage during power outage function	In power saving mode it happens that the brake is slipped.	Replace system I/O board
E0164	Dynamic brake error	An error happened to dynamic brake of AMP.	1) Please check CNBS cable linked to AMP at servo board. 2) Please replace AMP.
E0165	(0 axis) Keeping Servo lock is not possible.	Current supply to motor is impossible.	The wiring for the motor, the AMP, the servo board, and the CNBS cable between AMP and servo board should be checked.
E0170	Stop time (5 seconds) exceeded	To decrease speed and stop on working exceed 5 seconds after stop signal input	Decrease sum of times within 5 seconds after converting acceleration time and reduction ratio of acceleration and deceleration parameter into time Refer to acceleration and deceleration parameter of operation manual
E0171	Gun open time (5 seconds) exceeded	Opening time was exceeded 5 seconds after pressurization of spot welding or gun-search function.	1) The gun should not be deposited and/or any interference should be presented to the welding object. 2) Check the moving gun to ensure that no welding and/or interference occur.
E0172	(0 axis) Endless rotation location error	The difference between the backed up encoder value and the initial value, which is read in the endless axis, is more than 0x20000.	1) Compensate the encoder offset value of endless axis again. 2) Reset the encoder offset value of endless axis and compensates it.
E0173	Endless rotation overflow	The endless step recording location exceeds the usage range for the encoder.	Use R350 code to reset the endless rotation manually and adjust the step position.
E0174	1st DSP reset error	Initialization response of DSP1 in first board was not received	1) Check up insertion the servo board. 2) Examine if the DS1, DS2, S1 switch of servo Board is working 3) Replace the servo board
E0175	2nd DSP reset error	Initialization response of DSP2 in first board was not received	1) Check up insertion the servo board. 2) Examine if the DS1, DS2, S1 switch of servo Board is working 3) Replace the servo board

Code	Message	Cause	Remedy
E0176	3rd DSP reset error	Initialization response of DSP1 in second board was not received	1) Check up insertion the servo board. 2) Examine if the DS1, DS2, S1 switch of servo Board is working 3) Replace the servo board
E0177	4th DSP reset error	Initialization response of DSP2 in second board was not received	1) Check up insertion the servo board. 2) Examine if the DS1, DS2, S1 switch of servo Board is working 3) Replace the servo board
E0178	1st DSP version too low	The ROM version of DSP1 in first board is so low that set robot can't use.	Please contact with our service department.
E0179	2nd DSP version too low	The ROM version of DSP2 in first board is so low that set robot can't use.	Please contact with our service department.
E0180	3rd DSP version too low	The ROM version of DSP1 in second servo board is so low that set robot can't use.	Please contact with our service department.
E0181	4th DSP version too low	The ROM version of DSP2 in second servo board is so low that set robot can't use.	Please contact with our service department.
E0182	1st DSP communication error	Communication between main CPU board and the DSP1 of the first servo board was not work.	1) Check up insertion the servo board. 2) Replace the servo board.
E0183	2nd DSP communication error	Communication between main CPU board and the DSP2 of the first servo board was not work.	1) Check up insertion the servo board. 2) Replace the servo board.
E0184	3rd DSP communication error	Communication between main CPU board and the DSP1 of the second servo board was not work.	1) Check up insertion the servo board. 2) Replace the servo board.
E0185	4th DSP communication error	Communication between main CPU board and the DSP2 of the second servo board was not work.	1) Check up insertion the servo board. 2) Replace the servo board.
E0186	1st DSP detected main watchdog	Watch dog error of main board was detected in the DSP1 of the first servo board.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board
E0187	2nd DSP detected main watchdog	Watch dog error of main board was detected in the DSP2 of the first servo board.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board

Code	Message	Cause	Remedy
E0188	3rd DSP detected main watchdog	Watch dog error of main board was detected in the DSP1 of the second servo board.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board
E0189	4th DSP detected main watchdog	Watch dog error of main board was detected in the DSP2 of the second servo board.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board
E0190	(0 axis) Unidentified servo error during initialize	An unidentified error code is received from the servo board while receiving the initial absolute position data of the encoder.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board
E0191	(0 axis) Unidentified servo error	An unidentified error code is received from the servo board during the operation.	1) Check up insertion the main or servo board. 2) Replace the main board or servo board
E0192	Error in specifying the additional axis drive unit number.	The drive number of auxiliary axis has assigned as same number	Check up the number of BD, DSP, AXIS of auxiliary parameter set up assigned as same number
E0193	(0 axis) Endless unsupported encoder type	In terms of the encoder type of the endless axis rotation, the number of pulse per rotation is incorrectly indicated.	Verify from the menu that the PULS values in servo parameter/motor, which is the encoder type, are 1024, 2048, 4096, and 8192.
E0194	Exceeded permitted load weight	Load weight is over 120% of normal capacitance	1) Check the weight value in the tool data. 2) Reduce tool load weight.
E0195	the same DSP is not specified for the synchronized axis.	In order to execute the synchronized control, the axis must be composed to control the two synchronized axes at the same DSP.	Modify the system composition to a DSP that can control the two synchronized axes. When a synchronized axis is added to the robot having less than 5 axes, 1 DSP may be composed to perform the synchronized control. However, for the robot having more than 6 axes, an additional servo board needs to be used if synchronized axis is further added.
E0196	Error in Servo brake of System Board	The servo brake signal is not disabled at the servo when the motor is turned ON.	Check if the motor cannot be turned ON because of any initialization error or encoder error. Inspect the board and connection cables as signals are input through BD542 board, AMP, and BD530 board.

Code	Message	Cause	Remedy
E0197	Error in Servo brake of Expand System Board	The servo brake signal is not disabled at the servo when the motor is turned ON.	Check if the motor cannot be turned ON because of any initialization error or encoder error. Inspect the board and connection cables as signals are input through BD542 board, AMP, extension system board BD53E, and BD530 board.
E0198	Motor command position deviation set value exceeded	The difference between the motor command and the current position exceeded the position deviation level.	Check whether there is excessive physical interference with the robot's main body.
E0200	(0 axis) Maximum speed exceeded during collaborative operation	A command, which exceeds the maximum speed of the robot, is input during the collaborative operation.	On the standard position of a slave robot for the collaborative operation, change the position of the robot, adjust the position for collaboration or recording, or reduce the recording speed.
E0201	Cooperative operation start error	An error occurs to the transmission of synchronized signals between cooperative robots, which are communicated in different modes.	Check communication status. Adjust the mode status of robots in same, and run.
E0203	Cooperative robot error – Emergency stop	The corresponding robot motor is turned OFF during the cooperative operation and stops.	After resolving the causes of the counter robot, perform the restart while the motor on.
E0204	Robot 0 Cooperation control communication disconnection	The communication with a subject robot is disconnected during the cooperation jog and play.	Ensure that the connection between the communication cable and the communication card is normal. HiNet may be utilized to detect any malfunctioning parts.
E0205	HiNet communication error of system	HiNet communication for cooperation control is not working.	Ensure that the connection between the communication cable and the communication card is normal. HiNet may be utilized to detect any malfunctioning parts.
E0210	Servo tool servo on time limit is exceeded	The initialization of connecting the servo tool has failed.	DSP version should be 4.13 or higher. Check if the ATC connection is normal and the encoder power is applied.
E0211	Servo tool servo on time limit is exceeded	The servo on the servo tool was not turned on within the time limit.	

Code	Message	Cause	Remedy
E0212	Servo tool filter clear time is exceeded.	Filter clearing has failed while attempting to access the servo tool.	Communication between Main board and Servo board is bad. Check the connection status or another try after changing board.
E0213	Servo tool servo off time limit is exceeded	The servo was not turned OFF within the time limit during the detachment process of the servo tool.	Check if ATC is connect well. Or another try after changing servo board.
E0214	Servo tool encoder power connection failure	The encoder power connection has failed while connecting the servo tool axis.	Check if the encoder power control system at the servo tool axis is normal. Replace the subject part in case of any failure.
E0215	Servo tool encoder power disconnection failure	The encoder power disconnection has failed while disconnecting the servo tool axis.	Check if the encoder power control system at the servo tool axis is normal. Replace the subject part in case of any failure.
E0216	Servo tool encoder data not normal	The encoder data received is not normal while connecting the servo tool axis.	Check if the battery of the connected encoder is discharged. Then, reset the encoder and retry. After resetting, the encoder offset must be calibrated.
E0217	Synchronized axis acceleration/deceler ation parameter error	The parameters for the maximum speed, the acceleration time period, or the deceleration ratio of the two synchronized axes must be identical in order to control synchronization. Each axis is set with different parameters.	Please set speed increasing and decreasing parameter of motive axis to be same by checking speed increasing and decreasing parameter of robot parameter.
E0218	(0 axis)Overload detected.	Overload of the Axis is detected. Current has lasted over rated current to harm the motor of axis.	Check if rated current is set correctly, and check servo gun mechanism. Don't take pressurization over rated current for a long time.
E0219	Unselected station SMOV is not possible	You could not execute positioner sync. command(SMOV) without selecting station in a SELSTN command	Choose a correct station for use in SELSTN command. Set the same station number for SMOV command as the station number of SELSTN.
E0220	0 axis)Encoder noise inflow	Robot current position is not the same as encoder data. There is noise in encoder pulse.	Check encoder voltage, connection of lines and frame grounds at controller and robot.
E0221	(0 axis)Absolute value encoder data receipt failure	Failure to receive absolute value for the encoder data from the encoder that checks the encoder noise status.	Check the encoder voltage, the connection between cables, controller, and robot grounding status.

Code	Message	Cause	Remedy
E0222	Same cube simultaneous entry detected	Robot's TCP enter the cube area on which other robot is working. You can't playback in status of deadlock.	In the manual mode, use a jog to move the robot beyond the cube area. Modify the program to avoid the deadlock during playback.
E0223	(0 axis)Encoder disconnection or communication failure	An error occurs while receiving a location data from the serial encoder.	The voltage of the encoder, the connected state of the cable, and the grounding work for the controller and the robot should be checked.
E0224	(0 axis) Encoder state error	Errors are received from the encoder because of overflow, over speed, internal condenser voltage, LED errors, etc.	Even after the error resetting is run from the encoder reset function, if the error keeps occurring, the encoder (Motor) should be replaced.
E0225	0 axis) Soft limit encoder usage range exceeded	The current soft limit range of the axis exceeds the range which can be used by encoder.	In case that machine integer file is loaded on controller newly, please make initialization in accordance with the order of encoder offset calibration, axis integer setting and soft limit setting after encoder reset of the corresponding axis. If not, please set at an appropriate position by checking the limit.
E0226	0 axis) Exceeded encoder permitted range	Robot axis can't reach the position which exceeds the limit of encoder usable range.	In the manual mode, convert to the axis coordinate system. In the system setting, manipulate the jog into the encoder zero point. If the allowable range of the encoder is beyond the normal range, reset the encoder and initialize the subject axis again.
E0227	Cooperation control synchronization sequence error	During the cooperation control, a different command sequence occurs between the master robot and the slave robot.	Check the cooperation control network connection. Confirm that the slave robot is not operating under the power saving mode. If so, disable the power save on the slave robot.
E0228	Step target exceeds the operation range	A target position of the current step or the following step exceeds the operation range on the robot.	Find the error step by step go process. Check the all shift registers. And change the step target position.
E0229	0 axis) Encoder overheating detected	The internal temperature inside the encoder reaches the allowable limit.	Check the motor temperature and change the robot speed.
E0230	Encoder not normal during servo gun connection	Errors received from the connected servo gun due to overflow, over speed, internal condenser voltage, LED errors, etc.	Reset the encoder in encoder reset menu after connecting the encoder power with R359. If it is still in error state, the encoder(motor) should be changed

Code	Message	Cause	Remedy
E0231	Encoder disconnected/Communication failure during servo gun connection	An error occurs when receiving the location data from the serial encoder at the servo gun for connection.	Check encoder voltage, connection of lines and frame grounds at controller and robot.
E0232	0 axis) Encoder battery exchange, reset required	Because encoder battery may be disconnected or voltage drop, the encoder alarm is occurred.	Check encoder battery voltage, connection cables, and change the battery and reset the encoder.
E0233	The target step position is interpreted into a collision position.	The target step position is determined at the collision location, which is either announced or calculated.	Change step position. It is required to program the step to be capable of avoiding collision in cases where the step is programmed for calculation.
E0234	0 axis)Average speed limit exceeded	The robot is being operated while exceeding average speed limitations.	If the robot is operated while exceeding average speeds set in each axis of the robot, the life of the robot may decline rapidly. Low operating robot speeds must be secured.
E0235	Re-Start failure, Be careful of trajectory when restarting!	The robot will restart after stopping or when step reversing occurs.	Be cautious as the newly calculated locus may be different from the precious one. In order to maintain a same route, please re-start the program from first step.
E0236	Motion plan fail	Robot is immobilized as motion planning has failed	Please contact to the laboratory. Please change the speed or location of steps as temporary solution
E0237	Detection of the interference with the robot 0) arm area	The arm interference detection function is being activated. Through the HiNET, the interference with the robot 0) is detected.	Deactivate the ARM interference detection function to avoid the robot. Then, reactivate the ARM interference detection function.
E0238	Sensor speed tracking is impossible.	The velocity of the sensor (Press) during the synchronization is too fast to follow	The travelling distance of the robot should be programmed in a way to be equal as much as possible when compared with the travelling distance of the sensor(Press)
E0239	The sensor position for the step does not increase sequentially	When the sensor synchronization is to be applied, the position of the sensor registered in the step should go up as the step goes up.	Through the Quick-Open, the position of the sensor of the step should be checked and adjusted in a way to allow it to increase sequentially.

Code	Message	Cause	Remedy
E0241	The main board's CmdManagerISR exceeded the allowed time.	It is an error that would occur when CmdManagerISR is not finished within the allowed time.	Make backup files for all files in the controller, and send them to the company.
E0242	The main board's MainISR exceeded the allowed time.	It is an error that would occur when MainISR is not finished within the allowed time.	1) Check whether there is a very high value set for PLC execution time in the control environment setting. 2) Make backup files for all files in the controller, and send them to the company.
E0243	The CPU fault was detected on the mainboard.	The CPU fault has happened during the main board's arithmetic operation. During such, the operation cannot go along.	Back up and send all files to us.
E0244	The corresponding robot's ARM interference setting is not ready.	An error occurs at the corresponding robot's ARM interference prevention condition or at the cooperation control status.	Check the corresponding robot's ARM interference prevention condition and/or cooperation control status.
E0245	Inappropriate step setting for spline calibration.	The distance between the involved and previous steps is too narrow.	Enlarge the distance between the involved and previous steps.
E0246	Inappropriate step setting for spline calibration.	The involved step's front and rear position or their direction is almost in the opposite.	Adjust the involved step's front and rear direction so as not to be in the exact opposite.
E0247	Path cannot be restored.	The distance deviating from the path deviation point surpassed the set distance limit for the path restoration. System -> Control Parameter -> Control environment setting -> Auto Mode Distance Limit for Path Restoration.	Convert to the manual mode to conduct the path restoration. Enter the allowable distance of the path restoration as set and rerun.
E0248	Operation with other path (not the existing path) expected	Unexpected step corrections or S/W errors are the causes.	Make sure to restart on a manual path. When S/W is questioned as an error, back up the control files and give notice to HHI.
E0249	A larger torque setting is applied to the subject axis reducer.	The device may have an impact or vibration, or the encoder data may have an error.	Reduce the speed of the subject step to identify the reason. Please contact our customer service center regarding any other concerns.

Code	Message	Cause	Remedy
E0251	0 axis) AXISCTRL CUR Permitted Distance Exceeded	After executing AXISCTRL CUR function, the distance traveling from the standard position exceeds the allowable limit.	Exit the AXISCTRL CUR function.
E0252	The tolerance of the roller hemming squeeze is above the error limits.	The roller hemming speed is too fast to control the squeeze in real time.	Reduce the roller hemming speed or make TOL_E value large.
E0253	The roller hemming squeeze is above 2.5kN.	The roller hemming speed is too fast to control the squeeze in real time.	Reduce the roller hemming speed or check if there is error in the teaching path.
E0254	Collision detection	High possibility to collide against peripheral devices.	If the error occurs frequently by not colliding against the outside, deactivate the collision detection function temporarily and contact our customer service center.
E0255	Violates SafeSpace	Robot's safety area is compromised.	Move the robot to the safety area as set by a user.
E0256	Exceeds the output limit torque detection time	Torque saturation occurs during the error detection.	Check the 3-phase input voltage. (Based on 220V, tolerance range 10%) Initialize the servo parameter of the robot parameter.
E0257	Accel./Decel. torque insufficient	Cause 1: Mechanic data error; Cause 2: Torque coefficient was entered too low	If both the causes 1 and 2 are normal, please contact our customer service center.
E0258	Network (EN2) setting error	EN2 network settings (IP address, subnet mask, and gateway) are incorrect.	Refer to the manual and set EN2 network again.
E0259	Force sensor communication failed	Cables are disconnected or the power of Net Box is deactivated.	Check the cable between the sensor, the controller, and the power connection of Net Box.
E0260	Force control disabled	Force control usage is deactivated.	Activate the use of function at [Force control] – [Configuration setting].
E0261	Motion error that is not defined	The robot will be stopped because of a motion error that is not defined.	Contact the company's A/S department for inquiry.

3 Operation Error

Code	Message	Cause	Remedy
E1001	Selected program does not exist	The subject program is not presented in the controller.	Check the program number and select.
E1002	Selected step does not exist	A step number larger than the total steps of the current program is selected.	Check the step number and select.
E1003	Number of files exceeds 703	The number of files in the controller is limited up to 703.	Delete unnecessary files and make it.
E1004	Number of axes for program and machine constant are different	The selected program has a different number of robot axes as registered in the mechanical constant.	Please verify if the robot type in the program is different or the number of additional axes is selected for other robot program. .
E1005	Main unit of program and machine constant are different	The selected program is different from the robot type registered at machine constant.	You seem to select different type of robot. Please check.
E1006	File storage capacity is insufficient	The capacity of file memory is deficient.	Delete unnecessary files and make it.
E1007	Brake slip: Exceed 50mm	It happens when the slippage of a brake by pressing during stud welding is over 50mm.	1) Checkup the pressure. 2) Checkup the slippage of the motor of every axis and change the motor with which slippage is bigger than any others'
E1008	Brake slip count exceeded	Number of brake slip excess by compression of stud welding exceeded detecting number of installed deviation error.	1) Checkup the pressure. 2) Checkup the slippage of the motor of every axis and change the motor with which slippage is bigger than any others'
E1009	Simultaneous access to file is limited.	You cannot copy same file, external -> internal and internal -> external, simultaneously. (RS-232C, Ethernet, SRAM card)	Wait a while until other people's copying is completed. And try again.
E1010	Number of teaching step is insufficient	Insufficient recoded steps to tune conveyer angle automatically or to define user coordinate.	1) Conveyor angle automatic setting: requires 2 steps (straight line) and 3 steps (circle) 2) User coordinate system setting: requires 3 steps
E1011	Recorded dots are too close	Recoded position is so close that calculation is impossible to tune conveyer angle automatically	For a straight line conveyor, record 2 points in about 1-m distance.

Code	Message	Cause	Remedy
E1012	Recorded dots exist on a straight line	3 steps are located on a straight line in the program created to set a user coordinate system or the coordinate system data cannot be calculated.	Refer to the manual. Make the 3 points locate on the same surface but not on the straight line.
E1013	Selected function does not exist	The selected function was not exist	Check the function number of the step.
E1014	File handle assign failure	More than 4 copying operating are tried via several channels. (RS-232C, Ethernet, SRAM card)	Wait a while until other people's copying is completed. And try again
E1015	Protected program cannot be edited	Protected program cannot be edited by step unit.	Please execute it after releasing the protection of the file.
E1016	Function that cannot be edited individually	You tried to edit the function of no modifiable parameter.	Check the function to edit.
E1017	Selected program does not have any data	You tried to delete or edit unmade program.	Check the selected program.
E1018	Program does not have applicable step data	The step for the corresponding program number does not exist.	Check the step number.
E1021	Welding condition signal is not assigned	Number of welding condition output was bigger than the assigned number	Check assigned welding condition signals in System/ Control parameter/ I/O signal
E1023	Checksum error on selected step	Check Sum of the taught step was changed.	Delete the selected step and add it.
E1024	Palletized program is changed	Program cannot be modified to restart during palletizing.	Initialize the palletizing counter and reset the counter value for use.
E1025	Pose/Shift variable and machine constant axis number don't match.	The number of axes for pose/shift variable does not match the number of axes set in ROBOT.MCH file, which was created at system initialization.	Set the number of axes in pose/shift variable file or pose/shift constant identical to the system setting.
E1026	Automatic constant setting requires 4 steps or more	The number of steps to record automatic constant setting program must be 4 or more.	Make 6 steps at least to estimate auto setup constants and try to make variety position
E1027	Program is damaged	Recoded auto step constants are broken because of failure of the backup battery.	Initialize the memory by assistant of A/S member in HHI.

Code	Message	Cause	Remedy
E1028	Tool number for automatic constant setting is different	The number of tool to estimate auto setup constants is different from the number of estimated tool	Consist tool number.
E1029	Robot that does not support automatic constant setting	Estimation of auto set up constants is do on only 6 axes manipulator.	1) Checkup robot type on SERVICE / SYSTEM CHECKING/ SYSTEM VERSION/ ROBOT TYPE. 2) Measure directly and enter the setting value.
E1030	Additional axis is operating	Auxiliary axes should not move to estimate auto set up constants	Create the setting program by moving the 6 standard robot axes.
E1031	Teaching position is not good	Positions registered in the automatic constant setting program are similar to each other, which results in an error to the automatic constant setting function.	Register the positions differently as much as possible. Particularly, conduct teaching so that the wrist axis changes significantly at each step.
E1032	Axis constant calibration value is too high	Compensation values of processing auto set up constants is so big that operating robot makes a danger.	1) Check if the correct robot type is selected. 2) Move the robot to the standard PIN position and set the axis constant. Then, retry the automatic constant setting function. 3) Create a new automatic constant setting program so that the tolerance between the step positions will be minimized.
E1033	Automatic constant setting error	The calculation for automatic integer setting is wrong.	Please contact with our service department.
E1034	Collision sensor is operating.	Collision happened.	1) Check if the shape of the tool is ok. 2) Get the robot started again if there is no cause of the error more. 3) If collision was happed, checkup collision signals logic in System/users.
E1035	More workpieces entered than the permitted number	If conveyer parameter in SYSTEM/ APPLICATION PARAMETER/ CONVEYER is set to APPROACH OBJECTS = PERMISSION, robot approach objects is permitted in conveyer synchronized operation. sum of approached objects is more then 10	Stop the system, clear process, run again.

Code	Message	Cause	Remedy
E1036	Electricity connection wait time exceeded	Welding completion signal is not inputted within waiting time of WI in SYSTEM/ APPLICATION PARAMETER/ SPOT&STUD/ DATA FOR SERVO GUN WELDDING (CONDITION, SEQUENCE) / WELDING SEQUENCE in welding by servo gun	Check the connection wiring diagram of the current application signal/welding requirement, signal/welding completion signal, and other related facilities. If an error occurs, refer to WI (welding completion) handling of system/application parameters/spot & stud/servo gun welding data (condition and sequence) / and common data to stand by until the WI signal is input or to stop the robot.
E1038	Position in which tip consumption cannot be calibrated	In recording the position by compensating for electrode wear, the robot position is not available to calibrate the electrode wear.	Ensure that the robot position is located within the operation area for calibrating the detected electrode wear.
E1039	Synchronized axis twist deviation exceeded permitted value	When operating the travel axis robot to synchronize 2 axes, the distortion of mechanical positions of the two axes exceeds the allowable distance set in the 2-axes synchronized servo parameters.	1) Set the same gain to each axis. 2) Increase Kp gain of delayed axis.
E1040	Robot does not support interpolation ON	Robot of synchronized traveling 2 axes cannot use interpolation (linear, circular).	Edit interpolation off on the step, run the robot.
E1041	Number of axes for same positioner group exceeded	Number of axes in positioner group exceeds 2	Set the value equal or less than 2 on the group in SYSTEM/ INITIALIZATION/ POSITIONER GROUP
E1042	Reference point recorded within program	Reference point (REFP) was not recorded in the program for the positioner calibration.	Record reference point(REFP) in the step for calibration program
E1043	Cannot be calibrated: Location correction required	Floating point calculation error occurs in calibration processing.	Adjust the step recording position for the calibration program. For an accurate calibration, conduct teaching with 30 degrees or more for the angle between the points.
E1044	Motor turned ON without calibrating encoder offset	No calibrate encoder offsets after selection of the robot type in SYSTEM/ INITIALIZE, not to try MOTOR ON.	Calibrate encoder offsets after selection of the robot type in SYSTEM/ INITIALIZE and try to operate MOTOR ON.
E1045	Number of times/Palletized counter not entered	When setting frequency or palletize count to external signal after selected register doesn't input setting count before 800ms.	Input count number to external signal after selected register before 800ms.

Code	Message	Cause	Remedy
E1046	Servo gun opening by external signal	During the servo gun moving by external signal, the auto-run signal was inputted.	After the servo gun moving is over, operate the auto-run.
E1047	FIFO register exceeding 20	System/user configuration, FIFO function (1) the number of applications is set <20> or more than 20 programs are being attempted for registration.	Check reserved program count at service/ register/ FIFO register.
E1048	Welding gun connection number selection signal is abnormal	The value for the gun connection number at manual/automatic connection of a welding gun by an external input signal is incorrectly selected.	Check external input signal for Gun connection No.
E1049	(0 axis) Cannot be executed while the servo tool is connected	The servo tool was already connected to the system when attempt for connection.	Check the servo tool for the connection state.
E1050	(0 axis) Execution is impossible while the servo tool is disconnected	The servo tool was already disconnected from the system when attempting to disconnect.	Check the servo tool for the connection state.
E1051	Spot gun change environment inappropriate	It is a case that CUNCHNG command or manual gun connection or disconnection was performed at no spot gun changing conditions.	Please reinstall the controller into spot gun changing conditions.
E1052	Gun change manual execution time exceeded	After gun connection on/off was manually execute, within 5 second this function doesn't complete.	Please contact with our service department.
E1056	(0 axis) Improper Servo Tool Change environment	The subject command is executed at configuration rather than the servo tool change environment.	Reset the controller to the servo tool change configuration.
E1057	Duplicate specification of the same additional axis	The additional axis referred to by factors registered in the command statement is repeatedly specified.	Check the command statement.
E1101	(0 axis)Soft limit exceeded	It is a case that each axes encoder data of robot has arrived at installed soft limit on teaching or automatic operation.	Please move the robot within the installed range.
E1102	Motor on when entering axis	The motor is turned ON while the axis operation key is being	Don't hold the key of AXIS OPERATION in the operation of

Code	Message	Cause	Remedy
	operation key	pressed.	MOTOR ON.
E1105	Trying to jump to step that does not exist	Number of steps to run Is bigger than the total number of all steps	Check the final step number of the program.
E1106	Trying to jump to function that does not exist	Number of functions to run is bigger than the total number of all functions.	Check the final function number of the program.
E1107	Retract step number is inappropriate	There is no step to go back at timer conditional shift function and many others.	Check the final step number of the program.
E1108	Retract condition is generated	Condition is improper in conditional function execution.	Check the received data status of the program.
E1109	In position impossible to process interpolation ON	Interpolation was tried in pose where the interpolation was impossible.	Change the pose by single axis movement and operate.
E1110	Moving outside the work space is tried	You tried to move tool-end to the position where it can't reach.	Check whether the work piece and the robot were located properly.
E1111	Arm angle is too big	The H axis Arm and V axis Arm got into interference state.	Operate the robot to avoid interference.
E1112	Arm angle is too small	The H axis Arm and V axis Arm got into interference state.	Operate the robot to avoid interference.
E1113	Step to jump does not exist	There is no target step at the step jump function during the automatic operation.	Check the parameter of the made program.
E1114	Call step that does not exist	There is no target step at the step call function during the automatic operation.	Check the parameter of the made program.
E1115	Cannot call step without return for 9 times or more	Step-call was executed than 9 times without return.	Don't execute step-call than 9 times without return.
E1116	Cannot return without calling the step	The step-return function is presented without the step-call function.	Use step-return and step-return together.
E1117	Return program and current program are different	The number of the program to step-return is different from the number of the program in executing.	Check if there is any step called before returning the step in the program.

Code	Message	Cause	Remedy
E1118	Step to return does not exist	There is no target step of step-return function at playback.	Check the parameter of the made program.
E1119	Program to jump does not exist	There is no target program of program-jump function at playback	Check whether the program exists and the parameter of the made program.
E1120	Number of axes of program to jump is different	The number of axes in the target program is different from the number of robot axes at the program jump function during the automatic operation.	Check the program to jump for.
E1121	Program to call does not exist	There is no target program of the program call function during the automatic operation.	Check whether the program exists and the parameter of the made program.
E1122	Number of axes of program to call is different	The number of axes in the target program is different from the number of robot axes at the program call function during the automatic operation.	Check the program to call.
E1123	Cannot call program without return for 9 times or more	Program-call is executed than 9 times without return.	Don't execute step-call than 9 times without return.
E1124	Program to return does not exist	There is no target program in the program return function during the automatic operation.	Check whether the program exists and the parameter of the made program.
E1125	Number of axes of program to return is different	The number of axes in the target program is different from the number of robot axes at the program return function during the automatic operation.	Check whether the program exists and the parameter of the made program.
E1126	Inappropriate circular arc calibration	The recorded steps are too close to each other or are located on a straight line that cannot create a circular arc.	Adjust the locations of steps to create a circular arc.
E1127	Undefined Playback Error.		
E1128	Output (DO) signal cannot be executed	DO signal, which cannot be output, is defined during the automatic operation.	Check the number for the output signal.
E1129	Undefined speed unit	You tried to playback with other unit except for [%] and mm/sec.	Check the condition of the present step.

Code	Message	Cause	Remedy
E1130	END command does not exist	The program, which does not contain END command is running.	Add the END command in the program.
E1133	Function cannot be executed	Nonexecutable function is defined during the automatic operation.	Check the parameter of the made program.
E1135	END relay output error	END Relay Time exceeds 15 sec. Usually, because the END Relay Time is less than 10 sec in Constant Setting Mode, this error doesn't occur.	Constant Parameter is abnormal. Check the constant file.
E1136	Playback protected program	1) The automatic operation cannot be done from step 0. 2) Step advancing/reversing is not permitted.	Please perform after releasing automatic operation protection of the program.
E1139	GI signal number is inappropriate	The timer condition's GI signal number is incorrect during the automatic operation.	Check the parameter of the made program and change it.
E1140	Port number is inappropriate	A port for T/P was set in Shift Data Request Function.	Set port designation as general in Shift Data Request Function.
E1141	Serial port #1 usage in inappropriate	Use of serial port (RS232C) was wrong.	Check the use for serial port in SYSTEM/ CONTROL PARAMETER in Conditioner Setting.
E1142	Shift data request is duplicated	Shift Data Request Function was executed again, before Shift Data was input, in executing the function.	1) Check whether Shift Data Function is used delicately. 2) Check the connection for the external sensor.
E1143	Add function jump end function	The function jump is executed without the close function during the automatic operation.	Check the parameter of the made program.
E1144	Add function jump function	The close function is executed without the function jump during the automatic operation.	Check the parameter of the function jump.
E1145	Range of function jump exceeded	The function jump exceeds the calculated jump range.	Check the parameter of the function jump.
E1146	Palletized function exceeded 4	There are palletizing functions more than 5 in the program to be executed.	Reduce the number of palletizing function used.
E1147	Palletized start and end are not aligned	There is END only without palletize start.	Check the contents of the made program.

Code	Message	Cause	Remedy
E1148	Palletized function already executed	The palletizing start command is made while the palletizing function is being executed.	Check the contents of the made program.
E1149	Start the robot, after palletizing function terminates	You selected other program in executing palletizing functions and start from step 0.	Reset the palletizing function and start.
E1150	Cannot be used during palletize	P reset was executed in executing palletizing functions.	End the palletizing function and execute.
E1151	Function to jump does not exist	There is no function number to jump in executing palletizing functions.	Check the parameter of the made program and change it.
E1152	Search function use is inappropriate	Search On and Off are mismatched.	Check the parameter of the made program and change it.
E1153	Reference location data record mode setting is required	When executed search function without setting standard position for search.	Set search reference position data record to 'ON' in condition setting, and record in 1-Cycle Playback, execute.
E1154	Only possible in 1 cycle of automatic mode	You can record standard position data for search in 1 Cycle at AUTO Mode. Excepting for this case, error occurs.	Set the automatic mode for 1 cycle at the condition setting and execute operation.
E1155	Search range exceeded	Robot Interrupt doesn't occur despite search range exceeds setting value.	Check the searching object and search range setting of condition setting.
E1156	3 points for coordinate transformation are in a straight line	Transformation calculation can't be made because 3 taught points are on the same line in the coordinate transfer function.	Check the teaching points.
E1157	Data not entered to shift register	In On-line Shift or On-line Coordinate Transformation Function, if the function is executed even when data are not input through RS232C port, this error occurs.	Modify the program to input data through RS232C before On-line Shift or On-line Coordinate Transformation.
E1158	Set step for coordinate transformation does not exist	The standard step number at the coordinate transformation function parameter does not have an existing step.	Check the parameter for the Coordinates Transformation in the program.
E1159	Coordinate transformed position cannot be	The coordinate transformed position result is out of the operation range of the robot.	Modify the recorded position of step.

Code	Message	Cause	Remedy
	set		
E1161	Position impossible for interpolation process	The robot operates at a position, which is not available for interpolation process.	Change the robot position and conduct teaching.
E1162	3 points for coordinate transformation are too close	Transformation calculation can't be made because 3 taught points are too close each other in the coordinate transfer function.	Check the teaching points.
E1163	Shift results show deviation from the work space	Shift position is out of work range.	Check the shift amount and inspect the work process to ensure that the robot works within the work range.
E1164	Coordinate system setting based on XYZ shift is inaccurate	Setting of the standard coordinate system was not corrective in XYX shift function.	Check the parameter for the XYZ shift function in the program.
E1165	Coordinate system setting based on search is inaccurate	The standard coordinate system setting in the search function is incorrect.	Check the parameter for the search function in the program.
E1166	Coordinate system setting based on palletize is inaccurate	The standard coordinate system setting in the palletizing function is incorrect.	Check the parameter for the palletize function in the program.
E1167	Search target location deviated from work space	Search range got out of work range.	Reduce search range in condition setting.
E1168	Search function is only valid in linear interpolation state	The step for search is not a linear interpolation.	Adjust the step for the linear interpolation.
E1169	Error of step content during automatic operation process	Error in step data which were fetched to execute a program.	Delete the step and make the step again.
E1171	Work space of coordinate transformed result is deviated	In transformation of the coordinate between online and offline transformed data was out of robot operation space.	Change the robot pose, robot installation or location of the work piece and try it again.
E1189	WCR not detected at the start of welding	Fail to generate arc at start point.(The number of retrial was exceeded)	Check the power supply to the welder system.

Code	Message	Cause	Remedy
E1190	The command is not supported	A command, which is not suitable for the current setting, is used.	Modify the command and/or change the setting.
E1192	Arc sensing error (Current range exceeded).	The detected welding current exceeds the current range. In other words, irregular margin difference has been exceeded during the detection time period.	1) Check the welding current detection circuit. 2) In case that it is an end point, set the current irregular handling to the end point. 3) If it is not an end point, adjust the current irregular margin difference and time.
E1193	Arc sensing error (Current detection too unstable)	While the arc sensing functions with the curve fitting algorithm, this is out of the Allowed error weaving cycle because of unstable welding current.	1) Check the feedback circuit of welding current. 2) Set a slightly smaller value of the bead detecting curve value toward the '-' direction. 3) When you use bead detecting function, please install as "bead detecting existence = valid".
E1194	Arc sensing error (Left/Right sensing range exceeded)	Left and right tracing amounts, which have been calculated, could not be estimated during a certain cycle.	Adjust the left/right electric current coefficients or the maximum calibration distance.
E1195	Arc sensing error (Top/Bottom sensing range exceeded)	Top and bottom tracing amounts, which have been calculated, could not be estimated during a certain cycle.	Adjust the top/bottom electric current coefficients or the maximum calibration distance for a sample.
E1196	Shift limit exceeded	Shift level exceeded the installed shift limit value.	Decrease shift length or reassign shift limit.
E1197	Arc interpolation usage step is inappropriate	2 steps at least are required for completing circular interpolation	Add steps
E1198	No access step for weaving coordinate system	Cannot execute a weaving motion without approach step or 'REFP 2'	Add approach step or 'REFP 2'.
E1199	Currently set step cannot be read	Fails in motion planning during the retry or restart function.	Add another step after the arc closing step.
E1200	Previous step cannot be read	Fails in motion planning during the retry or restart function.	Add another step after the arc starting step.
E1201	General error	Internal error.	Contact our company if error continues.

Code	Message	Cause	Remedy
E1202	Robot language syntax error	It is general syntax error.	Check the syntax.
E1203	Length of label limit is exceeded	An identifier's length is longer than 8 characters.	Decrease the identifier's length to be equal or fewer than 8 characters.
E1204	Number of component is not correct	The number of components in POSE constants or SHIFT constants is not correct.	Check the number of components in pose nr Shift constants. The Shift constant equals the number of standard axes plus additional axes. The Pose constant equals the standard axes plus additional axes plus 1 (config.).
E1205	Parenthesis is incorrectly used	In arithmetic expression, function, or pose/shift constant, there is no parenthesis at its required position.	Check whether the parenthesis is used properly.
E1206	The variable type specifier is wrongly used	A postposition of V variable has been used badly.	Use '%', '!', or '$' as postposition.
E1207	'[' missed	A number or '[' is missing in the variable.	Check if any number is missing in the variable. In addition, '[' and ']' must be coupled for use.
E1208	']' missed	']' is missing in the variable.	Check if [' and ']' are used together in the variable number.
E1209	Variable number range exceeded	An index value exceeds its limit.	Make the index doesn't exceed the variable type's index limit.
E1210	Variable number is incorrectly used	The syntax of a constant or expression used as variable index is wrong.	Check the syntax of variable index.
E1211	Blank must be classified	A space is missing between the command statement and the parameter.	Put a space between the command statement and the parameter.
E1212	Shift calculation is incorrect	Syntax of shift calculation was wrong or shift parameter was not described properly.	Check syntax of shift calculation or shift parameter.
E1213	Problems in specifying interpolation.	The syntax of an interpolation in MOVE statement is wrong.	Use 'P', 'L', or 'C' as interpolation.
E1214	',' missed	',' was missed in command statement or function statement.	Check the separation with ',' properly.

Code	Message	Cause	Remedy
E1215	Post type is incorrect	In MOVE statement, the pose expression is not proper.	Check the pose statement syntax. In case of hidden-pose MOVE, check the syntax of speed.
E1216	Speed designation is incorrect	In MOVE statement, speed is not proper.	Check the syntax of speed. S={Speed}
E1217	'=' missed	There is no '=' at its required position.	Check whether a '=' is used properly in assignment or statements.
E1218	Unit is incorrect	In MOVE statement, the syntax of speed unit is wrong.	Use 'cm/min', 'mm/sec', 'sec', or '%' as speed unit. It must be small letters.
E1219	Problems in specifying precision.	In MOVE statement, the syntax of accuracy is wrong.	Check the syntax of accuracy.
E1220	Problems in specifying tool numbers.	In MOVE statement, the syntax of tool is wrong.	Check the syntax of tool.
E1221	Output option is too high	In MOVE statement, there are more than 5 output options	Make output options don't be duplicated.
E1222	Value range exceeded	In certain statement, some parameter values exceeded their limit.	Make parameter values don't exceed their limit.
E1223	Problems in specifying input and output directions	Output direction of PRINT, or input direction of INPUT is wrong	Use '#0', '#1' or '#2' as input/output direction.
E1224	Step number range exceeded	Step No. value exceeds its limit.	Use the value of 0 - 999 as step No.
E1225	Line number is out of the range	Line No. value exceeds its limit.	Use the value of 1-9999 as line No.
E1226	Problems in specifying addresses	The syntax of address is wrong, or it's attempted to branch to an address not existed.	Check the syntax of address, and whether the address actually exists.
E1227	Failed to obtain hidden pose	Failure to obtain a hidden pose from the step due to damages on the work file.	Delete the step, record new step.
E1228	Errors in specifying components	Pose or shift components are incorrectly used.	Check the syntax of pose element or shift element. (Refer to the operational manual.)

Code	Message	Cause	Remedy
E1229	String constant syntax error	The syntax of string constant is wrong.	Check the syntax of string constant.
E1230	Errors in specifying program numbers.	The syntax of program No. is wrong.	Check the syntax of program No. Program No. must be a constant, not variable or arithmetic expression.
E1231	Errors in specifying voltage.	The syntax of voltage parameter value is wrong, or the value exceeds its limit.	Check the syntax of voltage parameter value, and the value is within its limit.
E1232	Errors in specifying current.	The syntax of current parameter value is wrong, or the value exceeds its limit.	Check the syntax of current parameter value, and the value is within its limit.
E1233	Errors in specifying time.	The syntax of time parameter value is wrong, or the value exceeds its limit.	Check the syntax of time parameter value, and the value is within its limit.
E1234	Errors in specifying files.	The syntax of file No. parameter value is wrong, or the value exceeds its limit.	Check the syntax of file No. parameter value, and the value is within its limit.
E1235	Division error	Divided by zero in arithmetic expression.	Make the result of expression used as divisors don't be zero in any case.
E1236	Expression error	Fault occurred in arithmetic calculation.	Check whether the expression is valid form. Infinity value shouldn't occurred.
E1237	Checksum Error	Check sum of the encoder value of the step was wrong.	Delete the subject step and rerecord it.
E1238	Job header error	The string syntax of working header was wrong.	Refer to other working file, edit the string syntax of working header.
E1239	Version of job type is different	Because of upper version file, loading would not execute.	Increase the version of the controller, revise the working file as present version.
E1240	Number of address is too high	On GOTO statement, there are too many addresses.	Use address parameters not more 10ea.
E1241	Code number error	In M code or I code statement, the code no. not existed is used.	Use valid code no. (Refer to the operation manual.)
E1242	Assignment failed	Because the left side of substitute is read only variable, substitution was not possible.	Check the error in working file, use substitution variables.
E1243	Jig number to synchronize error	In SMOV statement. the syntax or the extend of the parameter of	Use the parameter of jig number in 0 to 3 by SMOV statement syntax

Code	Message	Cause	Remedy
		the jig number was wrong.	
E1244	Jig not registered	Jig number was inputted without a registration of jig.	Execute jig registration first.
E1245	Block stack exceeded	Too many GOSUB statements of the robot language were executed without return or GOSUB statements were repeated because of incorrect flow control.	Reduce inner block number about GOSUB. Or repair the mismatched flow control.
E1246	Problems in specifying coordinate system	Grammar designating coordinate system of integer for pose or shift is wrong.	Please find the wrong points on grammar, and correct them.
E1247	There are too many factors.	The number of PARAM factors exceeded the limit (10 factors).	Reduce the number of the PARAM factors within the limit (10 factors).
E1248	There is an inconsistency in the number of parameters.	The number of parameters of the command sentence does not comply with the syntax.	Correct the number of parameters after checking the syntax of the command sentence, or make the number of the parameters of the Call sentence match with the PARAM sentence.
E1249	Block table error	Error happened during execution of controlling sentence of robot language.	Please contact with our service department.
E1250	Error with the block inclusive structure	Containing structure of flow controlling sentence such as IF/ELSEIF/ELSE/ENDIF, FOR/EXIT FOR/NEXT etc in robot language is wrong.	Please find out wrong commanding sentence order or containing structure among flow controlling sentences, and revised it in accordance with purpose.
E1251	Address registration error	The number of addresses exceeds the limit (1,000 rows and 100 labels) or the addresses are repeated.	Check if addresses are repeated and the number of addresses exceeds the limit. Then, adjust the program.
E1252	Read non-initialized variable value	An attempt is made to read a variable, which is not corresponding to any pose or shift variable value.	Adjust the job so that an effective value can be entered for a variable. Or copy and paste a pose/shift file in which valid values are saved to the main board.
E1253	The type of the identifier is not legitimate.	The type of the ID variable name violates the rule.	Use 12 or less alphabetical or numerical characters or underbars only after “g” or “l.” Start with an alphabetical character.

Code	Message	Cause	Remedy
E1254	Identifier not defined	Variable name not registered in the ID variable table.	Before using an ID variable, define first by using a variable dialogue box or a DIM or PARAM sentence.
E1255	Overlapped definition of a variable	The same ID variable name registered already	In the ID variable dialogue box, search and check whether there is the same ID variable name registered already. If the ID variable name is already in use, use a different variable name.
E1256	Entering occurred through other coordinate system than the base coordinate system.	The reference pose for this command is defined in the coordinate system other than the base coordinate system.	Set the point record location referred to use a command to the base coordinate system.
E1257	The points between points are too close	The distance between points, which is used to calculate the position, is too close to each other.	Set the distance of points referred to using a command wider.
E1258	3 points are on the straight line	The points used to calculate the position are located on a straight line.	Set the location of points referred to using a command not to locate on a straight line.
E1259	Two straight lines are in parallel	The two lines used to calculate a cross point are parallel and therefore a cross point cannot be measured.	Set the two straight lines created by points referred to using a command not to be parallel.
E1260	Location movement condition is incorrect	The robot movement location cannot be measured for a retry or a rerun function.	The arc welding distance and the accessing step must be calibrated steps.
E1261	Reference point number is incorrect	Reference point number can get its value of 1 to 4.	Correct the Reference point number. (Refer to the operational manual.)
E1262	Wire stick detecting	The welding wire is deposited to the base material (exceeded the maximum number of automatic deactivation of deposition).	1) Check the welder power supply. 2) Remove wire stick to the workpiece.
E1263	Weaving condition cannot be read	Cannot find the weaving condition file.	Move the cursor to the WEAVON statement, press [QuickOpen] to create the weaving condition file.
E1264	Welding start condition cannot be read	Cannot find the welding start condition file.	Move the cursor to the ARCON statement, press [QuickOpen] to create the file.

Code	Message	Cause	Remedy
E1265	Welding end condition cannot be read	Cannot find the welding end condition file.	Move the cursor to the ARCOF statement, press [QuickOpen] to create the file.
E1266	Welding supplementary condition cannot be read	Cannot find the welding supplementary condition.	Place a cursor at ARCON (or ARCOF) command and press QuickOpen key. Then, press reference conditions using F key to create a file.
E1267	Welder characteristic condition cannot be read	Cannot find the welding unique characteristic file.	Move the cursor to the ARCON or ARCOF statement, press [QuickOpen].Then press [PF2] Welder' to create the file.
E1268	Weaving process point (REFP3) must be redefined	In steady weaving reference point(REFP3) was not exist or in normal weaving it was occurred to coincide direction to reference point with the direction to the object point.	1) In case of steady weaving(1) Record REFP3 point.(2) There was not agreed between start step and object step(try to copy the step) 2) In case of normal weaving(1) Adjust the REFP3 position.
E1269	Weaving wall point (REFP1) must be redefined	The distance between the welding line and the reference point (REFP1) is less than 0.1mm.	Modify the location of the reference point (REFP).
E1270	Weaving wall point and process point are in a straight line	The weaving advancing direction and the wall direction (Z-axis of the perpendicular coordinate system if there is no REFP1) are in a straight line.	Use [shift]+[reference point] keys to add the reference point (REFP1), or adjust the location.
E1271	Weaving access point (REFP2) must be redefined	The weaving wall direction and the access point (the previous step or REFP2) are in a straight line.	Use [shift]+[reference point] keys to add the reference point (REFP1) or adjust the location of the previous step.
E1272	Weaving range is too small	The weaving range width is less than 0.1mm.	Place a cursor at WEAVON command and press QuickOpen key to make the weaving range width wider.
E1273	Number of weaving sequence is too small	Number of sequence is equal to or less than 1 in user-defined pattern.	Enter weaving sequence more than 2.
E1274	Number of restart times within same welding section exceeded	The number of restart times by the arc being turned OFF in the same welding section exceeds the number in restart times setting.	1) Check the welder power source 2) Adjust the 'ARC OFF DETECT TIME' in welder conditions

Code	Message	Cause	Remedy
E1275	Gas pressure is insufficient	Shield gas pressure is low.	1) Charge the shield gas. 2) In order to ignore the signal, set the subject input signal for arc welding as ‘invalid’.
E1276	Welding wire is insufficient	Welding wire is run short of.	1) Replace welding wire. 2) In order to ignore the signal, set the subject input signal for arc welding as ‘invalid’.
E1277	Overlap location of arc welding seam cannot be calculated	The overlap location cannot be calculated by restart conditions within the circular arc welding area.	Increase overlap length or use the overlap prohibition option.
E1278	Retrial location of arc welding seam cannot be calculated	The overlap location cannot be calculated by retry conditions within the circular arc welding area.	Rerun it. If the same error continues, set the moving distance slightly larger than before or use QuickOpen key to change the operation mode in the welding time condition file.
E1280	Voltage check of welding condition is not done [completed]	After modifying the power (individual/member) in the welder specification, the output voltage was not identified in the welding start condition file or welding exit condition file.	Check the output voltage in the welding start condition file and the welding exit condition file and set ‘voltage check = complete’.
E1281	Welder error signal is entered	Welder error signal is detected.	1) Check the welding power device. 2) In order to ignore the signal, set the subject input signal for arc welding as ‘invalid’.
E1282	When analog arc setting, ARCOF ASF# command cannot use	The error occurs for the analog arc setting or when ARCOF ASF# command is used.	Change ARCOF command to ‘ARCOF AEF#=_’ or 'ARCOF C=_, V=_'.
E1283	Arc board for arc welding is required	Option board was not installed. So, the arc welding does not support.	Please check whether arc board is loaded.
E1285	Serial port2 setting missed	the object of serial port in 'SYSTEM/CONTROL PARAMETER/SERIAL PORT' was not 'Se ns'	Set the object of serial port in 'SYSTEM/CONTROL PARAMETER/SERIAL PORT' as 'SENS' to use the serial port as sense.
E1286	Voltage output method and power control mode mismatch	Voltage output mode was not correspond to voltage control mode in welder character file.	In individual power control mode voltage out was selected as 'voltage', in one source or pulse voltage output was selected as '%'.

Code	Message	Cause	Remedy
E1287	The positioner group number cannot be specified	In execution of 'SMOV' no defined station was appointed.	Adjust selected station in 'SYSTEM/INITIALIZATION/POSITIONER GROUP CONFIGURATION'
E1288	Positioner calibration not executed	In execution of 'SMOV' it was selected that the station was not calibrated.	Do the calibration of the station in 'SYSTEM/ AUTO CONSTANT SETUP/ POSITIONER CALIBRATION'
E1289	Arc Off detection	When WCR signal was not inputted in set time, arc off signal was detected in arc welding. Arc off detection time was adjusted in welding character file.	1) Adjust the WCR signal and the arc off detection time. 2) In order to ignore the signal, set 'arc OFF' as 'ignore' in the restart conditions of the additional welding condition file.
E1290	Start point not detected	When detecting a start point with the laser vision sensor, no start point is presented within the detection range.	Modify the detection range or the recording point.
E1291	Laser vision sensor not responding	The laser vision sensor connected in serial does not transmit the data.	1) Check the serial port usage setting. 2) Check the laser vision sensor. 3) Check the communication cable.
E1292	Adjust start point search distance	The searching criteria match at the searching start point while a laser vision sensor detects the start point. When the searching is approached from outside, the start point appears at the searching start point, or when the searching is approached from inside, the start point does not appear at the searching start point.	Modify the search distance or Modify the start point.
E1293	Laser vision sensor error.	An error is transmitted from the laser vision sensor. Refer to the history screen for more information.	Refer to the error number in HISTORY frame and the sensor manuals. 1: PC setup comms error - serial connection fault to PC 2: Sensor camera fault - no video from the sensor head 3: Sensor link fault - no comms to sensor head. Camera cable faulty? 4: No sensor connection - no video or comms. Sensor not plugged in? 5: Sensor at wrong temp - too hot or too cold 6: Sensor power failing - 24v supply

Code	Message	Cause	Remedy
			to sensor head out of range. Camera cable faulty? 7: Lasers disabled - check the laser enable key switch, and the laser warning lamps 8: No sensor calibration - sensor calibration data faulty. Try a different sensor head 9: Seam out of range - no stripe in picture 10: Analysis could not see the seam. Hit data ok, but analysis failed, only in search 11: Not used in this interface 12: Seam has not been setup. Incorrect seam number? 13: No seam in image in tracking 14: Esc pressed in tools program while robot communicating with the sensor 15: Control unit memory corrupt, reformat and reload memory from backup. 16: Reading system data fail 17: Error reading seam from FLASH memory - corrupted? 18: Error reading seam from FLASH memory - corrupted? 19: Fault in the analogue I/O circuitry(POST) 20: Error in video acquisition hardware 21: Error in the on timer hardware 22: FLASH memory dead - needs replacing 23: Data FLASH memory full 24: FLASH memory bad sector - warning only 25: Error in the error log 26: Power to the I/O on the SAPEII board missing 27: ESTOP active - check the ESTOP link or connections 28: Within 5 degrees of the temperature limits
E1294	Laser sensor condition cannot be read	Cannot read the laser sensor condition file.	Move cursor on the LVSON/ CHGLVS command and, press [QuickOpen]. If not be solved, backup all file and execute the system format

Code	Message	Cause	Remedy
E1295	Arc sensing only supports weaving shape=simple harmonic motion.	When the mode of weaving condition is not the single, it's detect	Set the mode of weaving condition to the single.
E1296	Assign welding current input port	The welding current input port was not set for arc sensing.	Assign the 13: welding current input port at Arc application parameter (System>4:2:).
E1297	License keys not mach.	This function requires the license key.	Please purchase its function at HYUNDAI ROBOT marketer.
E1298	Location detection result by LVS does not exist	There is no detection data from the laser sensor for location calculation.	If no issue is detected on the joint appearance, adjust the allowable change amount in the laser sensor condition. At the end point, adjust the distance to detect the end point.
E1299	Start point detection only supports linear interpolation	The movement for mobile searching function only supports linear interpolation. The error occurs if it is not linear interpolation.	After recording the LVSON command, modify the calibration of the following step for linear calibration.
E1302	Error with the sensor synchronization step interpolation setting	During conveyor tracking, interpolation off step was executed.	Change interpolation of step.
E1303	Sensor synchronization function is not in use	The command was attempted while the sensor synchronization function is not available.	Check if the sensor synchronization function can be used.
E1304	Signal input during the sensor activation	When the sensor synchronization mode is set for test or demonstration, signals are being input while the sensor is working within the synchronization range.	Check the signal status during the sensor operation.
E1305	Sensor synchronization is not on	It is a case that corresponding command is performed at off status of sensor sync.	Please check the sensor sync status.
E1306	Gun search reference location not recorded	The mechanic constant file, the gun search standard location should be recorded. If not, an error will occur when the gun search function or spot welding function is playing without the gun search standard location records.	Attach a new electrode which has not been consumed and record a gun search standard location.

Code	Message	Cause	Remedy
E1307	Gun search is not completed normally	Playing of spot welding function was occurred without termination of gun search normally or gun search 2 was executed without execution of gun search 1.	Do the work after detection of tip consumption with execution gun search 1 and 2.
E1308	Problems in specifying tool numbers for steps	The tool number corresponding to the gun number is incorrectly indicated during the steps as registered in the SPOT or GUNSEA related commands.	Check the tool number corresponding to the gun number at system/application parameters/spot welding/gun number, tool number, and gun type setting.
E1310	Set squeeze force exceeded current limit range	Current limit (IP) of the servo amp was exceeding to current limit of calculation by commanding pressure.	Reduce the squeeze force setting or enlarge the servo gun operating motor capacity.
E1311	Set squeeze force exceeded overload detection level	Command pressure was exceeded over load detection level.	Predict the overload error and reduce the squeeze force setting.
E1312	Gun squeeze target location calculation result area deviation	Out of robot work space was occurred when pressure position (Object position) of servo gun calculation.	Change the pose of robot, record the position.
E1313	Set squeeze force range exceeded	The pressure in the welding condition data of spot welding parameter (M72) was exceeded configured pressure extend of pressure table of servo gun parameter.	Reduce the squeeze force setting.
E1314	Squeeze force alignment detection time exceeded	The detected consumption of an electrode is larger than the maximum electrode consumption set in the servo gun parameter.	Replace the electrode, or if necessary adjust the maximum electrode consumption of the servo gun parameter.
E1315	Gun number using servo gun is incorrect	The gun number used was not set for the servo gun.	Check the work is with whether servo gun in addition axis configuration
E1316	Robot search function or conveyor is running	When gun search function was executed, the function of robot searching or conveyer was running	Do not use robot search function or conveyer function in gun search operation.
E1317	Loading selected program from HRview	When a program was downloaded by HRview, (Run) command was executed.	Run the program after loading the work program from HRView.
E1318	Addition result is overflow	While executing the count register addition/subtraction, the	Max value of county register is 255, check the program.

Code	Message	Cause	Remedy
		addition result exceeds 255.	
E1319	Subtraction result is negative	While executing the count register addition/subtraction, the subtraction result has a negative value.	Check the program
E1320	Sensor is not operating during gun search	During the servo gun search function operation, or while searching the fixed tip consumption of robot equalizer function, the robot reaches the target location detecting the consumption by the sensor, but the sensor does not work.	1) Check if the sensor is working while the electrode is approaching at the sensor. 2) Check the connection wire diagram and/or connector. 3) Check if the point of contact at the sensor is appropriate.
E1321	Pallet number is not the same	In case of palletizing on the same pallet, palletize commands including PAL and PALEND should have the same pallet number. If a different pallet number is defined to commands, the error occurs.	1) Check the pallet number on palletize commands, such as TIERST, PALPU, PAL, PALEND, and PALRST for the same palletizing work. 2) Input same pallet number on the pallet
E1322	Pattern register not used	Palletizing pattern registers were inputted to palletize. If invalid pattern register in 16 pattern registers was used, this error was occurred	1) Check pattern register number that was set up. 2) Check used/unused items of palletize pattern register.
E1323	Equalizer-less gun configuration error	The condition to be executed robot equalizer function was not enough.	Set the purpose in System/Initialization/Purpose setting as “spot” and select EQ’less for GUN1, pneumatic GUN 2, etc.
E1324	Palletizing job environment setting error	An error occurs because the palletize function is attempted for use at GUN2 without a proper setting in System/Initialization/Purpose setting.	Set GUN2 as 'palletize' in 'SYSTEM/ INITIALIZATION/USAGE SETTING'.
E1325	Palletized pickup function usage error	If PALPU (Picking up shift) is not located between PAL and PALEND in the program, an error occurs. In order to use the picking up shift amount of PALPU, the shift amount created in the PAL must be presented. PALPU must be located between PAL and PALEND in the program at all times. .	PALPU put on between PAL and PALEN D in the program.

Code	Message	Cause	Remedy
E1326	Gun search 2 environment is inappropriate	Gun search 1 only is set to calibrate the gun consumption. If Gun search 2 is attempted for use, an error occurs.	Set the configuration for both Gun Search 1 and 2 to calibrate the gun consumption. Set 0 for the moving tip consumption/total consumption (%) in the servo gun parameter setting.
E1331	Reserved program exe. is possible at remote mode	Reserved program exe. function has been attempted while currently mode is not a remote mode	Check the current mode
E1332	Check program strobe signal usage	You tried to start in case of system/ user parameter menu's FIFO function (2) Program is <Ext-Sel> & (1) Application No. is <20EA> or <1EA> & program strobe signal use <DSBL>.	Confirm the setting of program strobe signal use at system/ user parameter menu.
E1333	Selected program does not exist	Reserved program is not exist on the internal memory when execute FIFO register's reserved program.	Confirm selected program on the internal memory.
E1334	Excessive free fall! Start after setting the step.	When motor off for return to previous position is enable, fall length excess limit for error detect. If error isn't occurring in the case of robot restart because of stopped step is out of normal trace this error inform to user warning.	1) In spite of restart at current position interference isn't occur start after set again current step. 2) If interference expects when step execute at current position, exchange robot position at manual mode. 3) If error detect length is unsuitable, adjust limit for error detect at system/ 2: control parameter/5: return to the previous position menu.
E1335	Continuous play not available during the FIFO function	When execute program at FIFO Function, in case of cycle type of the condition set menu is continue input start.	When apply FIFO Function, please use after select 1cycle type of the condition setting menu.
E1336	Unregistered user coordinate system.	The user coordinate system is not registered.	Select a program arbitrarily and record zero point, X direction, and XY surface. Then, register a user coordinate system in System>Control parameters>Coordinate registration>User coordinate. If you wish to use the coordinate system within the teaching program, refer to MKUCRD command.
E1337	Failure in executing the SOFT command during the	When execute SOFT instruction While setting time (5sec) command and current encoder's difference is over 384Bit	Please set to 0 Accuracy for step before SOFT instruction.

Code	Message	Cause	Remedy
	specified time.		
E1338	Soft floating error detection distance exceeded	When SOFT instruction executed, position difference is over error detection level (distance).	Adjust error detection level (distance).
E1339	Insufficient number of CMOV steps prior to the ARCON command.	CMOV steps are insufficient to calculate retry or rerun during the cooperation control arc welding.	Add CMOV steps suitable for re-try settings between COWORK and ARCON commands. (2 more steps for re-enter, 1 or more steps for others)
E1340	Robot Cooperation control is inappropriate (WD, common coordinate)	The control setting is inappropriate to execute COWORK command.	Verify communication status, common coordinate was set, same between manual cooperation role and COWORK's role of robot.
E1341	Cooperative playback wait time exceeded	The cooperative robot is ready for cooperation within the standby time period set after COWORK command.	Considerate wait time of COWORK must be set, considering the other robots. Or you can set the time as 0, waiting until agreement.
E1342	Robot cooperative state, common coordinate system invalid	COWORK cannot be executed as in validity of cooperative control, or as no common coordinate.	Set <Enable> for cooperative control in System setting/control parameter/cooperative control parameter and define the common coordinate system.
E1343	COWORK function execution is not aligned	Duplicated COWORK is used, or program encounter END without COWORK END	COWORK function is programmed with pairing COWORK and COWORK END. Duplicated COWORK is used, or program encounter END without COWORK END
E1344	COWORK parameter(M/S, robot number) error	COWORK's partner robot number is wrong set as my robot number.	The robot number cannot be set the same as the number set in COWORK M(S), S(M)= robot number. Please change the robot number.
E1345	Slave robot is already in cooperative state.	The slave robot’s cooperation operation is running in COWORK END location or stopped.	Do not change the steps arbitrarily in order to ensure normal cooperation between the master and the slave robot.
E1346	P* Limit on number of repeated times (10 times) exceeded	You can't repeat steps including P* over 10 times. (for limit of calculation load)	Insert the hidden pose MOVE within the previous 10 steps.

Code	Message	Cause	Remedy
E1347	Coordinate system that does not support shift calculation.	You can only add <Base/Robot/Tool/User coordinate system shift> to <Base/Robot/Encoder/User coordinate pose>. The shift operation of other coordinate system is not permitted. Shift of base or tool coordinate system can be added, and shift calculation for other coordination is not permitted.	Check the pose or shift variable/ constant and convert it to permitted coordinate system.[Quick Open]
E1348	Servo gun connection completion wait time exceeded	For marked time gun connection doesn't complete.	If connection complete at automatic tool changer, send spot gun connection complete signal to controller. GUNCHNG ON, commend execute after connection between gun and ATC.(automatic tool changer)
E1349	Servo gun cannot be separated within time limit (5 seconds)	After GUNCHNG OFF instruction executes, within 5sec spot gun doesn't disconnect.	Please contact with our service department.
E1350	The user coordinates are not specified.	Don't set user-coordinate number in the [Condi Set].	Please input user coordinate number with T/P, or execute 'SELUCRD' command with teaching program.
E1351	As the same number, interrupt is defined as duplicate	For pre-defined interrupt number redefine without delete.	Define not used interrupt number or after execution interrupt delete.
E1352	First execute the interrupt definition.	Private interrupt enable instruction executes without defined number interrupt execution.	After pre-execution for interrupt define instruction executes private interrupt enable instruction.
E1353	Exceeded the permitted trajectory deviation distance.	The trajectory deviation distance by tracking exceeds the allowable value.	Modify the teaching location, or adjust the allowable trajectory deviation distance.
E1354	Exceeded the permitted trajectory deviation angle.	The trajectory deviation angle by tracking exceeds the allowable value.	Modify the teaching location or adjust the allowable trajectory angle distance.
E1355	Cooperative robot error - Stop	Partner robots aren't ready to cooperate. One of them is stop status.	Check the running status mode. If you want to rerun after stopping playback of cooperation, you will run Master ahead after running Slave.

Code	Message	Cause	Remedy
E1356	HiNet connection error– Duplicate robot number	Cooperation control is impossible because duplicated robot number can't be identified the robot	Inspect robot number of robot connected in HiNet, and change overlapped robot number. After this action, you must repower the controller.
E1357	Coolant condition error signal input	Coolant cycle error signals are received.	Check the cooling system. If there is no error, check the setting of input signal port in controller. And restart welding step after removing error state.
E1358	Interrupt activated in continuous path.	When Interrupt Define or Enable instruction executes, continuous path function has been executed.	Cannot use interrupt & continuous path function at the same time
E1359	Continuous path set in interrupt activation.	When continuous path set, Interrupt function already executes.	Cannot use interrupt & continuous path function at the same time
E1360	Control constant file is damaged.	Structure of control integer file was damaged.	Initialize the memory by assistant of A/S member in HHI.
E1361	Machine constant file is damaged.	Structure of machine integer file was damaged.	Initialize the memory by assistant of A/S member in HHI.
E1362	Control constant file is write prohibited.	Data cannot be recorded at file of control integer.	Please change the file property of control integer.
E1363	Machine constant file is write prohibited.	Data cannot be recorded at file of machine integer.	Please change the file property of machine integer.
E1364	Master duplicate setting condition.	The number of controllers which are set as masters of manual mode is more than 2EA.	Set only one master using R351 code or F key to convert the manual cooperative condition.
E1365	Cooperative state preparation is not ready.	A master of manual mode is not selected.	Select a master for cooperative robots of manual mode.
E1366	Master number of slave is weird.	The master number selected by the slave is not coincident with the master number.	The remedy is still being researched.
E1367	Shift not supported from CMOV	Shift functions are applied to CMOV, the coordinate system is not supported.	The robot coordinate system should be applied when shift functions such as online shift, XYZ shift, and variable shift are applied to CMOV.
E1368	Master for coordinate transformation is	The coordinate of step data is the master end effector coordinate, but the master robot is not	Set the master robot's manual coordinate status as master for the current step.

Code	Message	Cause	Remedy
	not set	selected.	
E1369	Master No, ID of CMOV is inappropriate.	The master number from COWORK S, M=#1,ID=#2 is not coincident with the master number from CMOV R#1#2.	Record CMOV as to have the same master as the #1 and #2 set in COWORK.
E1370	H axis, V axis motion limit	Combination angle of H axis and V axis reached the limit	You should move H axis or V axis within the limit
E1371	No signal input during the conveyor operation	Conveyor run signal isn't input.	Check signal input state.
E1372	WCR not turned Off within time limit.	WCR did not fall in limit time.	1) Check signal input state. 2) In the job mode, check whether the crater handling time in the welder job setting is within 5 seconds.
E1373	ARCON C=.. prohibited from use during digital welding.	This ARC command is not valid in digital welding.	You should use [ARCON ASF#=] command.
E1374	Press the welder remote button.	When analog active is selected remote button must be pushed.	Push the 4th button (rem) in Measured screen. If rem is disappeared, mode is remote.
E1375	CAN port of the welder is not working	When a digital welding machine is selected any CAN message is received for some time.	Check CAN cable and power of the digital welding machine.
E1376	Welder (E00): Welding setting program does not exist.	no welding parameters available for selected wire material-wire diameter-gas combination (no reasonable combination)	Select other wire material-wire diameter-gas combination.
E1377	Welder (E01): Welder power supply overheated.	thermal sensor of power unit measures a too high temperature	let machine cool down in standby
E1378	Welder (E02): Main power over-voltage error.	main voltage too high (24V supply > 36V)	check mains voltage and control transformer
E1379	Welder (E03): Welding current is too high.	welding current is too high	check pc-board LSW

Code	Message	Cause	Remedy
E1380	Welder (E04): Air cooling system error.	temperature sensor of the power unit detects that the unit heats up too fast	Check cooling fan and air circulation.
E1381	Welder (E05): Water cooling system error.	Flow rate of the coolant is too low. (0.3 l/min) pump is not working.	Check the connector of the flow meter, coolant amount, and flow rate. Inspect the DP-MAPRO fuse S17 (2.5A).
E1382	Welder (E06):2nd power over-voltage error.	Master detects output voltage is too high(112V or more)	exchange power unit
E1383	Welder (E07): EEProm chksum error.	No welding program stored or error during reading from memory	transfer welding programs to machine again
E1384	Welder (E08): Wire supply device error.	Power consumption of wire feed motor too high no tachometer signal no CAN-Bus connection between MAPRO and DMR(feeder motor and control board)	Please remove obstacles that disturb spin by blowing out the torch device with compressed air. Please check the wire feed device. Please check the wire connection between feeder motor and DMR.
E1385	Welder (E09): Current/Voltage measurement error.	Measuring difference between Master and Process	Inspect the wire connection between the welder current sensor board (pc-board LSW) and the welder current output socket board (pc-board DK-UFK).
E1386	Welder (E10): Torch socket/cable error.	Short circuit of torch control cables or between torch switch wires and welding potential	Check torch control cables and torch interface.
E1387	Welder (E11): Remote device connection error.	Short circuit between remote control cables	Check the cable connection between the remote controller and the remote controller sockets.
E1388	Welder (E12): Process not responding	Process is not responding to Master.	Turn the power of the welder off and turn it on again. Replace pc-board DP-MAPRO if necessary.
E1389	Welder (E13): Temperature sensor error.	Temperature sensor is defective.	Check resistor value and wiring of the sensor.
E1390	Welder (E14): Supply voltage is too low.	Supply voltage is too low. (<17V)	Check the main input voltage and adjust the electric transformer.
E1391	Welder (E14): Supply voltage is too low.	It is an error (E15) of undesignated welder.	If the trouble is repeated, please contact to A/S staff of HHI.

Code	Message	Cause	Remedy
E1392	Welder (E16): 1st power over-current protection	Power consumption of power unit 1 is too high.	Exchange power unit.
E1393	Welder (E17): Unidentified welder error number	Undefined welder error. (E17)	If the trouble is repeated, please contact to A/S staff of HHI.
E1394	Welder (E18): 2nd power overload protection	Safety shutdown to protect electrical components temperature sensor is disconnected	Let machine cool down in standby check temperature sensor
E1395	Welder (E19): Unidentified welder error number	Undefined welder error. (E19)	If the trouble is repeated, please contact to A/S staff of HHI.
E1396	Welder (E20): Output voltage is too high	The output voltage detected at the process is too high.	Exchange power unit.
E1397	Welder (E21): Output current/voltage measurement error	external output current/voltage or measure-difference between Master and Process	Exchange power unit.
E1398	Welder (E22): Main power voltage is too low	The main power voltage detected at the power unit is too low.	Check mains power and rectifier.
E1399	Welder (E23): Main power voltage is too high	The main power voltage detected at the power unit is too high.	Check mains power's voltage.
E1400	Welder (E24): 2nd power over-current protection	Power consumption of power unit 2 is too high.	Exchange power unit.
E1401	Welder (E25): DK-DCDRV jumper setting error	An error occurs in setting the pc-board DK-DCDRV (the primary voltage adjustment board) jumper.	check jumper J1, J2 on pc-board DK-DCDRV
E1402	Welder (E26): Unidentified welder error number	undefined welder error (E26)	If the trouble is repeated, please contact to A/S staff of HHI.
E1403	Welder (E27): Welding program does not exist (DSP)	welding programs faulty or not available	Select other wire material - wire diameter - gas combination transfer welding programs to machine again.

Code	Message	Cause	Remedy
E1404	Welder (E28): Unidentified welder error number	undefined welder error (E28)	If the trouble is repeated, please contact to A/S staff of HHI.
E1405	Welder (E29): Unidentified welder error number	RS232C port in welder is fault	If the trouble is repeated, please contact to A/S staff of HHI.
E1406	Welder(E30):2nd power voltage is too low	The main voltage detected at the power unit 2 is too low.	Check mains power and rectifier.
E1407	Welder(E31):Master is not responding	Master is not responding to Process	Turn the welder OFF and then ON again. Replace the pc-board DP-MAPRO as necessary.
E1408	The gas output exceeded the specified time.	When welding finished, GAS ACTIVE signal is not disabled within assigned time.	Check the CAN communication cable and welding machine.
E1409	0 gun)Gun search reference location record failure!	If gun search standard position recode performs GUNSEA sentence at ON status, standard position is stored at file. The error happened at this time.	Please check the file.
E1410	Gun types of multi-gun are different.	Different gun types were used in the command statement for a simultaneous welding of multiguns.	Check the gun number type.
E1411	Welder of multi gun cannot be mutually used.	During the simultaneous multi-gun welding, the No. of the welder matching the gun No. has overlapped.	Check the welder setting of the corresponding gun number.
E1412	Stop point deviated from the trajectory during welding.	The stored welding stop point deviates more than 2 cm from the welding trajectory.	Move the robot at welding stop pose by Jog, and start execution
E1413	Interpolation is OFF for arc welding entry/processing step.	Entrance/progressing step for arc welding is interpolation OFF.	Please set the entrance / progressing step for arc welding into linear or arc interpolation.
E1414	ARCON cannot be used for step 0.	ARCON command is recorded at program step 0.	ARCON command should be recorded other steps beside command 0.

Code	Message	Cause	Remedy
E1415	Arc welder is not operating.	Communication ready for arc welding machine is not input.	1) Please check communication cable connected to welding machine. (A07-->X7) 2) Please check performing status of inner PLC. (X7 --> DI111)
E1416	Limit exceeded during arc welding.	Restricted value installed at condition file is exceeded during arc welding.	1) Please check welding tip or supply system. 2) Please adjust the restricted value of welding condition file.
E1417	Robot has escaped from the operation-limiting cubic	The robot is soon to pass a designated operation limitation area.	Check the operating limitation cubic and move the robot to the inside of the operation limitation area.
E1418	Robot has collided with a mirror axis	The robot holder is soon to collide with a mirror.	Check the mirror position setting value and move the robot so as not to collide with the mirror.
E1419	Collision with the main body of robot	The robot is soon to collide with the main body.	Check the collision detection area of the main body and move the robot so as not to collide with the main body.
E1420	Robot link has collided with an operation limiting area.	The robot link is soon to pass the operation limitation area designated by the user.	Check the operation limitation cubic and move the robot to the inside of the operation area.
E1421	Controller setting is not supported for arc welding.	Arc command has been executed while arc-welding function is disabled in the controller setting	Select appropriate setting between analog, digital from the dialog ‘System→Initialization→controller setting’
E1422	There's no response from Panasonic welder.	Communication error to Panasonic welder 1) Welder’s power may be off 2) Error on communication cable 3) Error on 24 V power supply of communication cable 4) Error on controller’s serial communication setting	1) Check welder’s power. 2) Check the communication status between controller and welder 3) Check power terminal (socket) of cable 4) Check if controller’s serial communication setting is for Panasonic
E1423	3 consecutive commands have been transmitted to Panasonic welder, but no response was received from the welder.	Communication error to Panasonic welder Panasonic.	1) The power of the welder should be checked. 2) The connected state of the communication cable between the controller and the welder should be checked. 3) The power terminal of the cable should be checked. 4) 6=ON of the DSW1 within the Panasonic should be checked.

Code	Message	Cause	Remedy
E1424	Error in Panasonic welder (B03) Detect undefined error (4).	The undefined error has been detected.	1) Change the welder. 2) If the same error occurs, contact with our service department.
E1425	Error in Panasonic welder (B04) Detect communication problem.	The communication abnormality between the welder and the feeder unit has been detected.	1) Check the welder and the feeder unit for their connection. 2) Check the fuses of welding power. 3) Change the intermediate parts of the feeder unit and the controller.
E1426	Error in Panasonic welder (B05) Detect governor problem.	The error that occurs in the welder with special specifications has been detected.	1) Change the welder. 2) If the same error occurs, contact with our service department.
E1427	Error in Panasonic (B06) Detect Encoder problem.	Wire supply motor is not spinning normally, or disconnection of encoder signal is expected. Try to spin the motor and if it spins (even a little), encoder damage or disconnection on wiring is suspected	Replace feeder unit
E1428	Error in Panasonic (B07) Detect mortor problem.	Detected the wire supply motor's spinning without the spin command. If the motor is actually spinning, error on PCB of wire supply device is suspected	Replace feeder unit
E1429	Error in Panasonic (B08) Detect the 2nd over volatage.	Because of the error on the 2nd circuit, the voltage exceeding the maximum rating was applied.	Turn off the power switch and remove the cause of error and overvoltage.
E1430	Error in Panasonic (B11) Detect the 2nd over current.	Current that exceeds the maximum rated voltage flows because of short-circuit occurred on secondary side circuit	Turn off the power switch and remove the cause of short-circuit and over-current Turn off the power switch and remove the cause of short-circuit and over-current
E1431	Error in Panasonic (B10) Detect temperature rise problem.	Internal temperature of welder has increased over the rated value	1) Turn off the power until the internal temperature goes down 2) Remove the cause of increased internal temperature (exceeded rated operation, blockage of ventilation system of front and side)
E1432	Error in Panasonic (B11) Detect the 1st over voltage.	Input voltage exceeds the allowed range	Turn off the power switch and adjust the input voltage to be within +10% range of rated voltage
E1433	Error in Panasonic (B12) Detect the 1st low voltage.	Input voltage is lower than the allowed range	Turn off the power switch and adjust the input voltage to be within -10% range of rated voltage

Code	Message	Cause	Remedy
E1434	Error in Panasonic (B13) Detect torch switch problem.	Welding has started within 3 seconds from the power on. Welding is only possible after 3 seconds for safety reason	Turn off the power switch and try it again
E1435	Error in Panasonic (B14) Detect CT offset problem.	Output current or output voltage is detected when the power switch turned on. Product malfunction or a current, voltage may be supplied to welder's secondary side from external area.	1) Check if power is supplied to welder's secondary side 2) Replace the welder
E1436	Error in Panasonic (B15) Detect VT offset problem.	Output current or output voltage is detected when the power switch turned on. Product malfunction or a current, voltage may be supplied to welder's secondary side from external area.	1) Check if power is supplied to welder's secondary side 2) Replace the welder
E1437	Error in Panasonic (B16) Detect cooling circuit problem.	An error is detected in the welder cooling circuit,	Replace the welder
E1438	Error in Panasonic (B17) Detect gas depression problem.	An abnormal gas reduction is detected at the welder.	1) Check the connection and the remaining amount of welding gas. 2) Replace the welder
E1439	Error in Panasonic (B18) Detect emergency stop problem.	Emergency stop signal is being input to Jig terminal.	Turn off the power switch and examine the cause of emergency stop signal of Jig terminal.
E1440	Error in Panasonic (B19) Detect external input1 problem.	The signal connected to EXT1 inside the welder is being input. (Negative logic)	Check the STOP1 terminal's collision sensor or the terminal connection inside the welder.
E1441	Error in Panasonic (B20) Detect external input2 problem.	The signal connected to EXT2 inside the welder is being input. (Negative logic)	Check the STOP2 terminal's terminal connection inside the welder.
E1442	Error in Panasonic (B21) Detect memory problem.	An error is detected at the memory inside the welder.	1) Turn the welder OFF and ON again. 2) Replace the welder
E1443	Error in Panasonic (B22) Detect CPU problem.	An error is detected at the CPU inside the welder.	1) Turn the welder OFF and ON again. 2) Replace the welder

Code	Message	Cause	Remedy
E1444	Error in Panasonic (B23) Detect Arc start problem.	Arc start did not activated within 4 seconds from the input of welding activation signal	Check if the voltage detection line is disconnected, loose contact.
E1445	Panasonic welder does not support the setting	Synergic welding setting that Panasonic welder does not support is selected	Select synergic welding setting that Panasonic welder supports.
E1446	Robot link bumping into the operation limit	Robot link exceeds the limited value and going to crash	Move the Robot link into the operation area or adjust the operation limit setting.
E1447	There is no license of arc sensing function	No license for arc-sensing function	Contact our office to obtain a license.
E1448	There is no license of LVS function.	There is no license to use LVS function.	Contact our office to obtain a license
E1449	There is no license of cooperation control (CWORK) commend.	There is no license to use cooperation control (CWORK) command.	Contact our office to obtain a license
E1450	There is no license of automatic calibration (ATDC) function.	There is no license to use automatic calibration (ATDC) function.	Contact our office to obtain a license
E1451	There is no license of embedded DeviceNet function.	There is no license to use embedded DeviceNet function.	Contact our office to obtain a license
E1452	Servo hand environment setting error.	Servo hand related command has been executed while the status is not Servo hand environment.	Check the setting status.
E1453	Gun type setting error	Spot welding related command is executed by independent drive. Gun type for the gun number is not set to stationary	Use it after set the gun type to stationary
E1454	(0axis) Control status error	When an error occurs, while executing a command relating to the spot welding as recorded in the program, when the axis control for the corresponding gun number is turned OFF, while executing a command related to the spot welding by an independent operation, or when the axis control for the	Adjust the control status of corresponding axis when a spot welding related command is executed.

Code	Message	Cause	Remedy
		corresponding gun number is turned ON.	
E1455	(0 axis)Independent operation is not completed	AXISCTRL ON command try to control the designated axis, and the axis is already in independent drive	Adjust the location so that the AXISCTRL ON command can be executed after the termination of the axis's independent drive
E1456	Program XXXX.JOB doesn't exist.	Started while the selected number's job program does not exist	Select the correct program (or copy it correctly) and start
E1457	Running failure because external stop input is in progress.	Outer stop signal has entered at the time of start. (Check from the T/P input signal monitoring window)	Outer stop input signal must be off. Set outer stop as 0 from the assigned input signal to disable the outer stop.
E1458	Door switch signal input is in progress! Running failure.	Door switch signal has entered at the time of start	Start after the door is closed. Or check if the signal connection is normal
E1459	External program selection input signal is unstable	Assignment value for input signal of program selection has changed momentarily when remote mode started. (Check from the T/P input signal monitoring window)	Please adjust the I/O sequence so that the start signal is entered after the program number signal has entered. Or check if the signal connection is normal
E1460	Program Strobe signal is not entered	Program Strobe signal has not been activated when the remote mode started	Please adjust the I/O sequence so that the external start is activated after the program Strobe signal has entered. Or check if the signal connection is normal
E1461	Input for program selection signal is 0.	0 has entered as program selection signal value when the remote mode started	Please adjust the I/O sequence so that the external start is activated after the program selection signal value has entered. Or check if the signal connection is normal
E1462	Plasma welder is not responding.	Communication error occurred between the Hi5 controller and Plasma welder	1) Check the connection status of communication line between the controller and welder 2)Check the status of controller communication setting from 'System>>2:Control Parameter>>3:Serial Port' 3) Check the status of communication with the 'Communication testing' function from the dialog

Code	Message	Cause	Remedy
E1463	Plasma welder error (E01) pilot arc not ignited	Pilot ARC ignition has not started within 2 seconds from the activation of Pilot.	Check the cause of trouble and fix it. Release the error status of welder, and try to initiate the Pilot.
E1464	Plasma welder error (E02) main arc not ignited	Main ARC ignition has not started within 2 seconds from the activation of Main ARC	Check the cause of trouble and fix it. Release the error status of welder, and try to initiate the Main ARC while Pilot ARC is initiated.
E1465	Plasma welder error (E03) device overheating	Trance, reactor, semiconductor is overheated due to an operation over-load	Wait for the internal temperature of power supply unit cools down by the internal fan, and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1466	Plasma welder error (E04) 1st over-current	Error is detected from the IGBT of welder's main	Check the cause and fix it. Restart and try to run the operation. If the problem persists, stop the operation and please contact to the welder's manufacturer.
E1467	Plasma welder error (E06) shield gas pressure drop	Pressure of Shield gas has reduced to below 0.15MPa	Check the pressure of Shield gas. If the gas valve is closed, open it and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1468	Plasma welder error (E07) pilot gas pressure drop	1) Pressure of Pilot gas has reduced to below 0.15MPa. 2) Pilot gas flux has decreased below 0.08L/min while welding operation	1) Check the pressure of Pilot gas. If the gas valve is closed, open it and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation 2) Check the cause to fix the error, and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1469	Plasma welder error (E08) insufficient coolant water flux	Insufficient flux of coolant	Check the cause (Blockage of Torch waterway, reduced pump performance, flux sensor malfunction) to fix the error, and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation Meanwhile, check if the flow switch moves on the acrylic panel on the side of the welder.

Code	Message	Cause	Remedy
E1470	Plasma welder error (E09) emergency stop	Emergency stop signal is entered	After the release of emergency stop, release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1471	Plasma welder error (E11) chiller error	Error occurred from the Chiller's embedded coolant circulating system, or when unit cooler is connected	Check the Chiller's embedded coolant circulating system to fix the problem and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1472	Plasma welder error (E20) input over-voltage	Power voltage over 240V has entered	Check the power voltage to fix the problem and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1473	Plasma welder error (E21) input under-voltage	Power voltage under 180V has entered	Check the power voltage to fix the problem and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1474	Plasma welder error (E81) over-voltage input	400V voltage has entered at 200V setting status, or 200V voltage has entered at 400V setting status	Check the power voltage to fix the problem and release the error status of welder. Once the error code that displayed at the front of welder is gone, continue with the operation
E1475	Plasma welder error (E85) start failure	Power activation has failed	Restart and try to run the operation. If the problem persists, please contact to the welder's manufacturer
E1476	Plasma welder error (E94) memory error	Error occurred on a memory that stores the parameter	Restart and try to run the operation. If the problem persists, please contact to the welder's manufacturer
E1477	Please operate it with Motor ON state.	Attempted while the motor is not On	Check the motor on status and try it
E1478	Please operate it with automatic mode.	Attempted while it is not on auto mode	Check the auto mode status and try it
E1479	All subtasks are being used	The maximum number of subtasks is limited to 3. An order that exceeds the level is requested.	Please contact with our service department.
E1480	There is an axis being used by	The axis that is required to move to a subtask has been travelling	Check the control of the moving axis. Please contact with our service

Code	Message	Cause	Remedy
	another task	already.	department.
E1481	Commands related to servo program is already in executing.	Servo gun related command cannot be executed at the same time	Please contact with our service department.
E1482	The relevant subtask is being used.	The subtask that is required to be run is being used already.	Please contact with our service department.
E1483	Setting of the coordinate system and unit of step doesn't match.	The unit set in the recently executed step does not support the base and the user's coordinate system. The system with the driving axis supports the base and the user's coordinate system with only the unit including the driving system.	Change the unit number to the number including all the driving axes. In other ways, when the robot coordinate system is used, change the step's coordinate system to the robot or axis coordinate system.
E1484	Error in unit setting - Unable to use synchronous feature	The unit without all the driving axes cannot use the functions of the stationary tool interpolation, positioner synchronization, and conveyor synchronization.	Change the unit number to the number including all the driving axes.
E1485	(0 axis) Servo Tool has broken off.	It tried to move while the servo tool has been separated.	Check the servo tool for the connection state.
E1486	Specifying Change target is wrong.	When the servo tool changes, the additional axis number to the changed subject is not defined.	Identify the setting of the changed subject on the System/Applicable Parameter/Servo Tool Change/Servo Tool Constant Setting screen.
E1487	Problems in specifying additional axes.	The used additional axis number has been set wrongly.	Identify the axis specifications and the composition on the System/Initialization/Additional Axis configuration setting screen.
E1488	A step in which the Z1 and Z2 axes of the link-type LCD robot are not identical.	The Z1 and Z2 positions of the registered step are different.	Set the same positions for Z1 and Z2 of the registered step.
E1490	Cannot run in the subtask.	The functions run only by the main task cannot be executed by the subtask.	Among robot functions listed in the subtask, exclude the functions that can be executed only by the main task.
E1491	This type of ARCON command	It is a command whose format is not supported by the Arc Control	Use the ARCON command whose format matches that of the present

Code	Message	Cause	Remedy
	is not supported.	Setting of the controller.	welder. Ex) ARCON ASF#=1
E1492	The distance between steps is too small. WEAVING can't be executed	Recorded distance between steps is too short to run the weaving.	Widen the distance between steps that run the weaving function.
E1493	The measured panel thickness is outside the normal range.	After the pressurization and fitting processes, the measured panel thickness was over the limit of the standard thickness.	Check whether any of the panels has been left out. Perform the gun search and the gun search reference position record.
E1494	Error detection is transmitted from the welder to the controller.	The error number detected at the welder is transmitted.	1) Power at the voltage of 80% of the rated voltage or lower is supplied for 3 seconds -> Check the power supply. 2) Power at the voltage of 120% of the rated voltage or higher is supplied for 3 seconds -> Check the power supply. 3) The data of the welding condition exceed the normal range -> Replace the welder, and contact the welder maker for inquiry. 4) Only the inner memory battery is below 2.6 V -> Replace the welder and contact the welder maker for inquiries. 5) In water cooling mode, the flow switch input is opened -> Check the flow switch. 6) The temperature switch input is opened -> Check the temperature switch and the ventilation. 7) 400 [A] or higher current is detected for 0.25 seconds continuously -> Check the stick-out distance and the earth ground status. 8) The motor runs for 0.5 seconds continuously at the speed of 80% of the command value or lower. 9) There is no detection of problems with the drive and no detection of output voltage F/B. 10) Detection of welding current is present, and there is no detection of output voltage F/B -> Check the connection state of the current F/B connection cable.

Code	Message	Cause	Remedy
E1495	0 gun) Cannot be executed while in the servo clamping state!	The command cannot be executed while in the servo clamping state.	Check the servo clamping state.
E1496	Height sensing conditions cannot be read	Failure to read the height-sensing conditions of the file.	Place a cursor at HSensON command and press [QuickOpen] key to create a file. If this action still cannot resolve the issue, back up the previous file and initialize the system.
E1497	Height sensing cannot be executed	The height sensing cannot be executed while executing the weaving function.	Use only one type of function, either weaving function or height sensing.
E1498	Effective poses are less than 3	In order to carry out TONL (online coordinate conversion) SFT/3POS/NPOS, 3 or more effective poses are required.	Check the poses used for the standard position and the measurement position.
E1499	Allowable deviation is exceeded.	The calculated deviation during TONL (online coordinate conversion) SFT/3POS/NPOS exceeds the allowable deviation.	Check the poses used for the standard position and the measurement position.
E1501	The air pressure of the coating robot is low.	The pressure inside the robot space is lower than the reference pressure.	Turn off the power, and turn it on again.
E1504	The embedded PLC program exceeded the allowable size.	The embedded PLC program size exceeded the allowable range.	Reduce the embedded PLC program size.
E1505	Cannot execute the positioner calibration.	There is a problem with the setting that is needed for executing the positioner calibration.	1) Check whether the distance between the steps in the calibration program is too short. 2) Check the positioner group number.

4 Warning

Code	Message	Cause	Remedy
W0001	Backup memory damaged.	It occurs when damage is found in all kinds of files.	Initialize the internal memory, and load all kinds of files backed up in a diskette. If the issue continues, replace the mainboard.
W0002	Internal temperature is rising. Be careful.	It occurs when the controller temperature is above 65.	Refer to the troubleshooting method.
W0003	Delete the program because it is damaged.	Program to execute is damaged.	Delete the program, and reload a Backup program.
W0004	Emergency stop key is entered.	It occurs when [Motor ON] in an emergency.	Release emergency stop and execute
W0005	Backup battery voltage is low.	Backup battery voltage connected to Main board BATCN connector is below the standard.	Replace the backup battery.
W0009	Brake slip (Set value exceeded)	It happens when brake slip by compression during stud welding exceeds the installed value.	Please check the axis having the largest slip at brake slip count. Replace the motor where axis has the largest slip.
W0010	Fieldbus power supply error	Fieldbus power is not supplied.	In case of DeviceNet, check if +24V of power supply line is correctly connected, and measure the voltage with multimeter. Take necessary actions to correctly supply +24V power to DeviceNet cable.
W0011	Fieldbus network connection error	Fieldbus network connection is not normal.	Check if field bus connector is taken off. Check if field bus network cables are all in comply with each field bus regulation.
W0012	Fieldbus IDLE state (PLC STOP)	Master stops I/O operating.	If PLC is in a program mode, change it to RUN mode.
W0013	Fieldbus module is not detected.	Field bus module is not sensed.	If you want not to use filedbus, please install field bus use invalid.
W0014	Fieldbus setting error	Parameter setting for field bus master is not identical with that of slave.	Check if parameter setting is correctly done for filed bus master and slave. If any errors, then correct them

Code	Message	Cause	Remedy
W0015	Fieldbus general error	Fieldbus has an error.	Check if there is any error in fieldbus setting an fieldbus master setting, and cabling.
W0016	GE or DE signal usage number is inappropriate	The specified values for GE or DE variable are incorrect. The values are out of range.	1) The number is not corresponding to the cooperation robot. 2) GE: Min.=(robot #-1)*4+1, Max.=(robot #-1)*4+4 3) DE: Min.=(robot #-1)*32+1, Max.=(robot #-1)*32+32
W0017	External emergency stop is entered.	It happens when [motor ON] is done at the status that external emergency halt is inserted.	Please check the status and manage at monitoring of Private input signal.
W0018	Embedded fieldbus #n node connection is cut off.	Occurs if the response is lost after a normal operation	Check the cable status.
W0019	Input size of embedded fieldbus #n node does not match.	Occurs if the input size of corresponding node has been changed	Check the input module of corresponding node, or execute [Re scan] function
W0020	Output size of embedded fieldbus #n node does not match.	Occurs if the output size of corresponding node has been changed	Check the output module of corresponding node, or execute [Re scan] function
W0021	IO size of embedded fieldbus #n node is too large.	Occurs if the I/O size of each node exceeds 16 bytes	Distribute input/output by adding a Fieldbus adaptor
W0022	Embedded fieldbus #n node is not responding.	Occurs if there is no response after the power on	Check the cable status of corresponding node
W0023	Master Mac (0) of embedded fieldbus is colliding.	Occurs if one of the node has Mac as same as Master Mac(0)	Turn off the power and change the Mac of a node with Mac=0
W0024	The period of usage for temporary license key of option function is expired.	The temporary license for the subject optional function has expired.	Contact our company to purchase a license for the subject function.
W0025	Only (%d) days for free usage of temporary license key of option function are remained.	The temporary license for the subject optional function will expire soon.	Contact our company to purchase a license for the subject function.
W0026	Grease lubrication is required! System characteristic	Warning is generated depending on the distance set for filling the grease and the	After the grease is supplemented, all the values at the grease filling scheduling setting menu of the

Code	Message	Cause	Remedy
	data/moving distance check.	date for it.	robot parameter of T/P should be initialized. * For information: W0018 at V30.09-84~V30.09-88.
W0027	The field bus master setting is CC-Link v1.0	The CC-Link master does not match with the CC-Link version.	Check the CC-Link master and the controller CC-Link version.
W0028	This is robot-fan failure.	A failure occurs to the robot fan (R-FAN).	The activity state of the robot fan (R-FAN) should be checked.
W0030	PRM PN over-voltage occur	The PRM PN voltage was over the warning limit.	1) Check the PRM input 3-phase voltage. 2) Check the PRM input PN voltage.
W0031	PRM PN under-voltage occur	The PRM PN voltage was under the warning limit.	1) Check the PRM input 3-phase voltage. 2) Check the PRM input PN voltage. 3) Check PRM NFBRST and NFBPN status.
W0032	PRM 3-phase over-voltage occur	The PRM-3 phase voltage was over the warning limit.	Check the PRM input 3-phase voltage.
W0033	PRM 3-phase under-voltage occur	The PRM-3 phase voltage was under the warning limit.	1) Check the PRM input 3-phase voltage. 2) Check PRM NFBRST and NFBPN status.
W0034	PRM 3-phase voltage frequency error	PRM-3 phase voltage frequency was over the warning limit.	1) Check the PRM input 3-phase voltage. 2) Check PRM NFBRST and NFBPN status.
W0035	PRM ADC offset value error	PRM ADC Offset value was over the warning limit.	Re-inject the controller power and inspect.
W0036	PRM 3-phase voltage offset value error	PRM-3 phase voltage Offset value was over the warning limit.	Check the PRM input 3-phase voltage.
W0037	PRM heat sink or reactor temperature rise	The temperature of PRM heat sinking plane or reactor was over the warning limit.	Check the PRM fan.
W0038	PRM regenerative current error	Abnormality of PRM's regenerative current has been detected.	Reinject the controller power and inspect.
W0039	PRM control power (+15V/-15V) error	PRM control power supply (+15V/-15V) is not normal.	1) Check the POW LED on the PRM BD591 board. 2) Check the CNP24 (24V) on the

Code	Message	Cause	Remedy
			PRM BD591 board.
W0040	PRM load capacity error	PRM load capacity was over the warning limit.	Reduce the robot play speed and check the warning.
W0041	PRM NFB Trip	PRM NFB Trip occurred.	Check PRM NFBRST and NFBPN status.
W0042	PRM PN current warning standard exceeded	An exceeding PRM recovery capacity, PRM PN current exceeds error limits.	Reduce the robot play speed and check the warning.
W0043	PRM 3-phase current warning standard exceeded	An exceeding PRM recovery capacity, PRM 3-phase current exceeds error limits.	Reduce the robot play speed and check the warning.
W0051	High loads mode is 'Disable', which may cause early breakdown of the robot.	The high loads mode has been set as 'invalid'.	Only when the user accepts the robot's early breakdown, set the high load mode as 'invalid'.
W0052	Loads data of the subject tool is not defined (therefore, operating in high loads mode)	The robot has started to move without the setting of the involved tool load data. The robot operates in a high load mode.	Execute the load estimation of the involved tool or directly perform the setting by means of CAD data.
W0053	Loads data of the subject tool is not defined.	It has been executed without the setting of the involved tool load data.	Execute the load estimation of the involved tool or directly perform the setting by means of CAD data.
W0054	Setting of the duplicated use of the CAN port.	CAN port is used to set in two or more applications.	Do not use a CAN port for two or more applications. Change the setting accordingly.
W0055	Impossible to use the embedded fieldbus #n node.	The previous node, which has an IP size larger than 16 bytes (128 points), already occupied the FN object of #n node.	Use a different node #.
W0104	(0 axis)Encoder battery voltage is low	Encoder battery voltage is too low.	Follow the controller MANUAL to check the encoder battery in corresponding axis. Check the Battery connection of corresponding axis encoder.
W0105	(0 gun)Total tip exceeds consumption for exchange.	It occurs when total tip consumption detected with gun search is in excess of tip exchange consumption set in servo gun parameter.	Inspect the moving tip and fixed tip consumption, and replace the tip.

Code	Message	Cause	Remedy
W0106	(0 gun)Moving tip exceeds consumption for exchange	It occurs when moving tip consumption detected with gun search is in excess of tip exchange wear set in servo gun parameter.	Check the consumption of the moving tip and exchange the tip if necessary.
W0107	(0 gun) Fixed tip exceeds consumption for exchange	It occurs when fixed tip consumption detected with gun search is in excess of moving tip exchange consumption set in servo gun parameter.	Check the consumption of the fixed tip and exchange the tip if necessary.
W0108	Actual squeeze force during jog operation exceeded the set value	It occurs when actual value of pressure is in excess of set value in manual pressurizing. Here operate the servo gun axis in the opposite direction.	Check if force is sufficiently set for the axis you intend to operate. Make contact with servo gun manufacturer because mechanical problem is anticipated in servo gun.
W0109	Unselected servo gun cannot be operated manually	The servo gun you intend to operate is different from the selected servo gun number.	Servo gun should be operated by manual jog after being selected. Select the servo gun you intend to operate with R210 code before operating.
W0110	Condition is set up not to detect squeeze force	This occurs when the pressurization force level of the servo gun parameter menu or the pressurization force error detection delay time is not set.	Check whether the pressurization force level of the servo gun parameter menu or the pressurization force error detection delay time.
W0111	Previous location recovery error detection distance exceeded	This warning occurs when the returning distance simultaneously with motor ON input is larger than the set value of error detecting distance in case of enable returning function in [Motor ON].	Please expand error detecting distance of previous position recovery. Please make recovery function for previous position invalid. Please contact to A/S of HHI.
W0112	Previous location recovery distance exceeded	This occurs when the returning distance simultaneously with motor ON input is larger than the set value in case of enable returning function in [Motor ON].	Set the returning distance setting to be larger than the existing set value.
W0116	Impossible to maintain weaving movement used previously.	It happens weaving movement, which is made when WEAVON command is performed, cannot be maintained.	1) Please start again from step having WEAVON command. 2) If welding, after starting from command that WEAVON command is recorded by OFF status and moving to the point where weld is cut off, please change into weld ON status and make progress on.

Code	Message	Cause	Remedy
W0117	(0 axis) Manual operation in a posture of high speed	Robot is in a posture of high speed while manually operated in rectangular coordinate system or tool coordinate system.	Change the robot's posture by manipulating with articulation coordinate before operating it manually.
W0118	1st Servo CPU version is old	The robot may be used, but it has problems in the use of some functions due to the old CPU version of 1st servo in the 1st servo board.	You may use the existing functions as they are, but for the use of new functions, please make contact with our A/S to update the version.
W0119	2nd Servo CPU version is old	The robot may be used, but it has problems in the use of some functions due to the old CPU version of 2nd servo in the 1st servo board.	You may use the existing functions as they are, but for the use of new functions, please make contact with our A/S to update the version.
W0120	3rd Servo CPU version is old	The robot may be used, but it has problems in the use of some functions due to the old CPU version of 1st servo in the 2nd servo board.	You may use the existing functions as they are, but for the use of new functions, please make contact with our A/S to update the version.
W0121	4th Servo CPU version is old	The robot may be used, but it has problems in the use of some functions due to the old CPU version of 2nd servo in the 2nd servo board.	You may use the existing functions as they are, but for the use of new functions, please make contact with our A/S to update the version.
W0123	Stop request of opponent robot	Stop instruction is received from the partner robot during cowork control operation. In this case, the above message is output, and the robot stops.	Start running a master to resume a program after starting the robot on the part of slave.
W0124	Slave robot jog is inoperable	It is set as salve in the condition of manual cowork control. The robot set as slave is impossible to operate separately.	To operate each robot individually in a manual mode, change the condition of manual cowork. To change the condition of manual cowork, users need to use F key or R351 code.
W0125	Abnormal position of connected servo gun	The position of servo gun attached by GUNCHNG ON instruction or instruction for manual gun connection is different from the one remained in its memory when separating.	It is normal if it occurs when servo gun is initially connected. If it occurs other than the initial connection, check the followings. It may occur if an incorrect servo gun is selected. Thus, check this out. And check if encoder battery of servo gun is sufficient.

Code	Message	Cause	Remedy
W0131	Cooperative jog is inoperable –Duplicate master robot	Among robots connected to HiNet are more than two robots set as Master in their manual cowork.	Only one Master for manual cowork is possible to set. Change the setting.
W0132	Cooperative jog is inoperable –Slave not selected	Jog operation is attempted for Master robot without setting the Slave robot to be available to cowork.	Check if Slave robot is selected, and get it ready to be available to cowork before operating (Jog Off/Enabling Switch On).
W0133	Jog setting of slave side changed -Stop	A robot changed its manual cowork is detected among the coworking Slave robots Master during cowork jog operation with robot.	Double check the cowork condition of Slave before operating.
W0134	Master tool coordinate system is not selected	It occurs when attempting to operate jog for Slave robot in a CMOV recording mode (R351,3).Master robot is not specified. Or it may occur when using forwarding function of CMOV step. The currently set number of Master is different from the recorded Master	Set a correct master robot for manual cowork Master.
W0137	Manual operation in a high-speed tool end	During the manual operation of cartesian coordinate and a tool coordinate, the speed of the tool end of the robot exceeded safety speed limits.	Check if axis B is near 0 deg. An axial coordinate must be operated in a manual manner when axis B is near 0 deg.
W0138	The remaining rated life of reduction gear is less than 10%	The remaining rated life of the decelerator of the corresponding axis is calculated into a value of less than 10% of the initial specification value.	Under current operational conditions, the user is requested to prepare a replacement of the decelerator with reference to the expected life of the decelerator of the corresponding axis.
W0139	The mass of the tool exceeds the allowable tolerance	The mass of the current tool is much lower than the real mass. Over-demanding motions are expected.	Check the mass/mass center value, gravity direction, or standard position of the subject tool.
W0140	The expected life span of the reduction gear: less than 40,000 hours	Based on current operating condition, the expected life span of reduction gear for the axis is less than 40,000 hours. Early break of reduction gear is predicted	Check if the physical property of the current tool is set correctly. If the tool properties are correct, please consult with an HHI engineer.

Code	Message	Cause	Remedy
W0141	Tool (0) Allowable inertia exceeded. High load mode is used.	As the tool's inertia exceeds the value allowed for the wrist axis, the performance and life-span of the robot is lowered.	While, in principle, the adjustment should be made in a way that the tool's inertia is lowered, if it is impossible to make an adjustment, the high-load mode needs to be made valid and used.
W0142	0 axis) Average load rate error during task.	The average load factor set for the detection of warning is exceeded.	If the axis of the robot that generates the warning is excessively running, the load for the tool should be reduced and its velocity should be lowered. If the error occurs to the robot that has operated normally in the same conditions, the apparatus should be checked.
W0143	0 axis) Encoder data error. Check.	Due to the abnormality of the serial encoder, "skipping" phenomenon occurs to the position data.	While the servo board compensates for the "skipping" phenomenon of the position data, it is recommended to replace the motor after making inquiries to our A.S department in order to prevent those problems from keeping combing back.
W0144	Safety restarting mode operation	If it is restarted, the position of the step will be changed, allowing it to run in a safe velocity.	If the travelling should be made in the registered velocity, not the safe velocity, the motor should be turned off, before the re-starting should be made.
W0145	0 axis) Encoder communication abnormal. Check required.	The encoder communication failures have occurred more than 6 times consecutively.	The encoder line and DSP board of the axis should be checked.
W0146	0 axis) Encoder temperature is abnormal. Inspection is required	The temperature of the encoder at the axis where the warning occurs is above 85℃	The load factor of the axis should be checked. In case of the axis fitted with the fan, the checking of the fan should be also carried out together. Make inquiries to our A.S department.
W0147	Stop as interference between the robot (0) and the arm is expected.	As the interference with the Arm is expected if the robot runs continuously, the stopping occurs due to the Arm interference detection function.	The conditions for the step should be changed in order to prevent the interference with the Arm.
W0149	The remaining usage time limit of the arc welding tip is below 10%	The use time limit of 90% and over has been consumed for the welding tip.	Change the welding tip and initialize the tip use time.

Code	Message	Cause	Remedy
W0150	The usage time limit of the arc welding tip is exceeded.	The use time of the welding tip has surpassed the set time.	Change the welding tip and initialize the tip use time.
W0151	FN output is impossible when the embedded PLC is on and SP11 of off	If the built-in PLC is used while the SP11 off, the FN signal cannot be output.	Turn off the built-in PLC. When the built-in PLC is used, turn on the SP11 On additionally.
W0152	The measured panel thickness is outside the normal range.	After the pressurization and fitting processes, the measured panel thickness was over the limit of the standard thickness.	Check whether any of the panels has been left out. Perform the gun search and the gun search reference position record.
W0153	The motor current detected exceeds the allowable range by the reducer.	The tool load and/or additional weights are not accurate. The electric current value increases as the motor temperature goes up.	Check the tool load and additional weights. If everything is in normal range, contact our customer service center.
W0154	The tolerance of the roller hemming squeeze is above the warning limits.	The roller hemming speed is too fast to control the squeeze in real time.	Reduce the roller hemming speed or make TOL_W value larger.
W0155	Output torque is outside the normal range	Torque saturation occurs during the warning detection time period.	Inspect the 3-phase input voltage (based on 220V, tolerance range 10%) Initialize the servo parameter of the robot parameters.
W0156	Sensing tracking distance exceeds the limit.	The distance tracking along the height sensing exceeds the limit.	Check if the sensing function works normally. If the limit is set too low, change the setting higher.
W0157	The welder internal synergic change is in progress.	The welder could not receive the command because the welder synergic setting is changed.	Remain on standby for up to 6 seconds until the communication with the welder is normalized. If the synergic setting in the welding condition is not changed, the standby time will be minimized.
W0158	There is a problem with the synergic or welding mode in the welding condition.	The synergic setting or the welding mode is not supported by the welder.	Change to a synergic setting and a welding mode that can be supported by the welder. In case of some welders, the synergic setting will vary depending on the welding mode.

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