CHAPTER 2 - TABLE OF CONTENTS

2.1 OVERVIEW

This chapter contains the following information:

- Troubleshooting Flow Diagrams
- Normal Operating Procedure
- Error Code List
- Isolation Procedures

The troubleshooting approach used to isolate problems on the PPC™ System is shown in the Troubleshooting Flow Diagram (Page 2-4). Isolation of instrument problems must be performed following the sequence outlined in the Troubleshooting Flow Diagram since each step assumes previous steps are correct.

- Always begin by printing the system files, decontaminating when appropriate, and then verifying the reported problem. Perform the exact procedure that produced the error condition.
- If an error code is displayed, proceed to the Error Code List.
- If no error code is displayed, begin troubleshooting with step one of the Normal Operating Procedure.
- If an indication of incorrect operation is received while performing the Normal Operating Procedure, the resultant display directs the operator to an Isolation Procedure (IP) or to replace a component.
- If an Error Code is displayed while performing the Normal Operating Procedure, refer to the Error Code List. The Error Code List provides instructions for performing an IP or replacing a component.
- Always follow the directions in the IP. If an error occurs while performing a procedure specified by an IP, return to the IP for direction. DO NOT troubleshoot the new error code.
- Square bulleted items on an IP flowchart or procedure indicate system menu selections which the user performs sequentially. The user is directed to either PRESS or SELECT the item listed

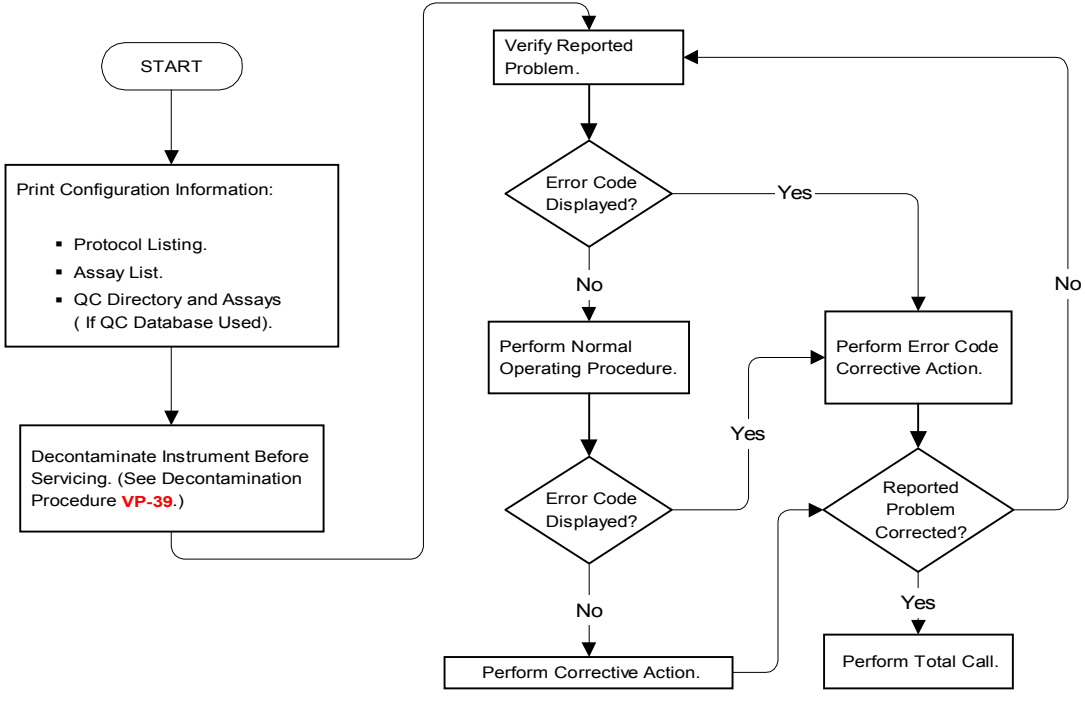
  Example:

  Print System Files 1, 2, 3, 4, 37, & 38.

  - SYSTEM
  - FILES
  - 1
  - PRINT

  Repeat for Files 2, 3, 4, 37, & 38.

2.2 GENERIC TROUBLESHOOTING FLOW DIAGRAM



2.3 NORMAL OPERATING PROCEDURE

PROCEDURE	CORRECT INDICATION	CORRECTIVE ACTION
1. POWER ON INSTRUMENT a. Turn power switch ON	Fans ON. CPU Bd red and green LEDs ON. Beeps sound. Keypad LEDs flash ON. Display goes black. Compressor initialized. **CPU BD** Green LED ON.	IP-43 INSTRUMENT POWER UP SEQUENCE.
	Abbott COMMANDER® Keyboard & Display Date/Time Stamp **Rev. XX** displayed. **Memory Test in Progress** displayed. **CPU BD** Green LED OFF. **CPU BD** Red LED flashes. **CPU BD** Green LED ON.	IP-43 INSTRUMENT POWER UP SEQUENCE.
	Welcome to Abbott Parallel **Processing Center** displayed. **INSERT TRAY** ––––> displayed. Mechanical assemblies home. Print outs completed.	IP-43 INSTRUMENT POWER UP SEQUENCE.

PROCEDURE	CORRECT INDICATION	CORRECTIVE ACTION
2. RUN ASSAY a. Begin first pass: (1) Insert tray	Bar Code Reader light ON. Bar Code Reader beeps. **Tech ID: XXX (Enter)** **# of Trays in Batch: XX** **Master Lot: XXX** **Assay # X Assay Name** **Tray XXXXXXX 1 of X** **Dispense XXµl NAME XX Sta #X** **READY? (YES/NO)** displayed.	IP-42 BAR CODE READER NOT READING
(2) Press YES	Gate Solenoid energized. Belts advance tray through Main Transport. Processing completed. Beeps sound. **REMOVE TRAY** displayed.	IP-43 INSTRUMENT POWER UP SEQUENCE.
(3) Remove tray	END 1st Pass. **INSERT TRAY** ——>** **DATE: xx/xx/xx TIME: XX:XX:XX** displayed.	

PROCEDURE	CORRECT INDICATION	CORRECTIVE ACTION
b. Begin second pass: (1) Press Blanks Key (2) Insert Blanks Tray	**INSERT TRAY ———>** **Insert Blanks Tray ———>** **Blanks Tray waiting** **Insert first tray of batch ———>** **Assay # X NAME** **Tray XXXXXX Blanks** **Wash/Dispense 300µl OPD Sta. #X** **Ready? (YES/NO)** displayed.	
(3) Press YES	**INSERT TRAY** ———> **Date XX/XX/XX Time: XX:XX:XX** displayed. Gate Solenoid energized. Belts advance tray through Main Transport. Processing is completed. Beeps sound. **REMOVE TRAY** displayed.	IP-43 INSTRUMENT POWER UP SEQUENCE.
(4) Remove tray	END 2nd Pass. **INSERT TRAY** ———> **DATE: xx/xx/xx TIME: XX:XX:XX** displayed.	

PROCEDURE	CORRECT INDICATION	CORRECTIVE ACTION
c. Begin third pass: (1) Insert Blanks Tray	**Assay #X NAME** **Tray XXXXXX Blanks** **Dispense 300µl in Sulfuric Sta. #5/Read** **Ready? (YES/NO)** displayed.	
(2) Press YES	Gate Solenoid energized. Belts advance tray through Main Transport. Processing completed. Beeps sound. **REMOVE TRAY** displayed.	IP-43 INSTRUMENT POWER UP SEQUENCE.
(3) Remove tray	**INSERT TRAY XXXXXX** ———> **Date: XX/XX/XX Time: XX:XX:XX** displayed.	
(4) Enter remaining trays at prompt	Results printed out. End of run.	

2.4 ERROR CODE LIST

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
0.1.0.0	RAM Test Failure	Memory Location cannot be written to or read.	Replace CPU Bd (RR-1.1).
0.2.0.0	No Valid Program	Possible corruption of software or Flash Memory Bd is bad.	IP-1. Re-download software.
0.2.01	Internal Status Checksum Failure	Control structure containing passwords and instrument status is tested with a checksum procedure from the cartridge/Flash Memory Bd before operation. If control data is corrupted, existing data and passwords are lost.	Replace CPU Bd (RR-1.1). IP-1.
0.2.0.2	Flash Memory Programming Fault	Possible corruption of software or Flash Memory Bd is bad.	Advisory. check Vpp on Memory Bd.
0.2.0.3	Program Checksum Error	Possible corruption of programming code contained in the EEPROM cartridge/Flash Memory Bd.	Replace EEPROM Memory Module Cartridge or Flash Memory Bd and re-download software.
0.2.0.4	Programming Code Corrupted	Possible corruption of software or Flash Memory Bd is bad.	Replace EPROM Memory Module Cartridge or Flash Memory Bd and re-download software.
1.1.1	Bit Bus Fault	Communication breakdown between the Main CPU and one or all of the Slave Controller Bds.	IP-2.
1.1.2	Transport Motor Controller Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	IP-3.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
1.1.3	Web Switch Did Not Close	Web Switch not actuated by tray web number 4 immediately after tray was gated through by the Wash Gate Solenoid.	IP-4.
1.1.4	Incompatible Transport Hardware, Transport Hardware Must Be Changed	Pre-production Transport Detected.	Replace Main Transport.
1.1.5	Transport Motor Time Out	Transport motor not finding home in allotted time.	IP-5.
1.1.6	Remove Tray From Exit	Exit Switch actuated prematurely. Web switch should be in open position between web three and web four of the reaction tray.	Verify Exit Switch and Web Switch alignments.
1.1.7	Web Switch Is Not Open	Web Switch is closed prior to the reaction tray being gated by the Wash Gate Solenoid.	IP-6.
1.1.8	Tray Exit Switch Defective	Exit Shroud Cover is installed incorrectly causing binding of the Exit Switch.	IP-7.
1.1.9	Wash Switch Is Defective	Error indicating Wash Switch is actuated prematurely or is faulty.	IP-8.
1.1.10	Tray Not Gated	The Wash Switch was not engaged after the tray was placed into the Main Transport.	Refer to Error Code 1.1.9.
1.2.1	Bit Bus Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.2.2	Wash Head Motor Controller Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.2.3	Check Air Lines	Insufficient air pressure to perform a wash procedure.	IP-9.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
1.2.4	Check For Low Water Level	Defective Level Sense Switch inside of Water Canister.	IP-10.
1.2.5	Wash Head Motor Time Out	Either the up or the down sensor of the Wash Limit Sensor Bd were interrupted at the incorrect time.	IP-11.
1.2.6	Check Tray And Wash Head	Wash Manifold was not in the proper DOWN position (gaskets making a seal on the reaction tray) before a wash cycle was about to start.	IP-12.
1.2.7	Wash Head Sensor Defective	Either the HOME (UP) or the DOWN sensor on the Wash Limit Sensor Bd were interrupted at the incorrect time.	Refer to Error Code 1.2.5.
1.2.8	Wash Switch Is Defective	The status of the Wash Switch is incorrect (not closed) after each row of the tray is moved under the wash station and before the wash is performed.	Refer to Error Code 1.1.9.
1.3.1	Bit Bus Fault	Communication breakdown between the Main CPU and Stepper Controller Bd B.	Refer to Error Code 1.1.1.
1.3.2	Dispense Boom Motor Time Out	The Home sensor was not interrupted at the correct time.	IP-13.
1.3.3	Pump Motor Time Out	The Home sensor was not interrupted at the correct time.	IP-46.
1.3.4	Bottle Select Motor Time Out	The Home sensor was not interrupted at the correct time.	IP-14.
1.3.5.1	Dispense Boom Motor Fault	Communication breakdown between the Main CPU and Stepper Controller Bd B.	Refer to Error Code 1.1.1.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
1.3.6.1	Pump Motor Fault	Communication breakdown between the Main CPU and Stepper Controller Bd B.	Refer to Error Code 1.1.1.
1.3.7.1	Bottle Select Motor Fault	Communication Bridgetown between the Main CPU and Stepper Controller Bd B.	Refer to Error Code 1.1.1.
1.3.11.1	Pump Sensor Is Defective	Pump Sensor is interrupted at the incorrect time.	IP-15.
1.3.12.1	Well Select Sensor Is Defective	Well Select Sensor is interrupted at the incorrect time.	IP-16.
1.3.13.1	Bottle Select Sensor Defective	Bottle Select Sensor in interrupted at the incorrect time.	IP-17.
1.4.1‘	Bit Bus Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.4.2	Filter Select Motor Controller Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.4.3	Filter Select Motor Time Out	Filter wheel is completely jammed, makes a grinding noise, or cannot find Home. Sensor Bd may be faulty.	IP-18.
1.4.4	Read Function Fault	Read system Power-Up diagnostics failed.	IP-19.
1.4.5	Check Read Head Limit 1	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.4.6	Check Read Head Limit 2	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.4.7	Check Read Head Limit 3	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
1.4.8	Check Reader Lamp Or Sensors	Intensity (as measured in counts) is below 600 counts on one or all of the five photo diodes on the Read A/D Bd.	IP-20.
1.4.9	Check Read Head Limit 4	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.4.10	Filter Select Home Sensor Failed	Defective Filter Home Sensor Bd.	IP-21.
1.5.1	Bit Bus Fault	Communication breakdown between the Main CPU and Stepper Controller Bd A.	Refer to Error Code 1.1.1.
1.5.2	Bit Bus Fault	Component failure or hardware reset error.	Refer to Error Code 1.1.1.
1.5.3	Tray Locked In Without Being Gated	PPC System has incorrectly allowed a removed tray to be pulled into the urge mechanism. Status of switches are incorrect.	Cycle power and remove tray. Verify alignments and proper operations of switches.
1.6.1	Bit Bus Fault	Component failure or hardware reset error.	Refer to Error Code 1.1.1.
1.6.2	Printer Out Of Paper/Off Line	Printer is out of paper or is off-line. Paper Release Lever is not in correct position.	IP-22.
1.7.1	Bit Bus Fault	General bit bus error.	Refer to Error Code 1.1.1.
1.7.2	Bottle Light Fault	General bit bus error.	Refer to Error Code 1.1.1.
1.7.3	Invalid Prime Pump Size	Prime pump size is not a defined value.	Advisory: Cycle power.
1.7.4	Prime Bottle Location Invalid	Prime bottle location value is greater than 5.	Advisory: Cycle power.
1.7.5	Process Checksum Failure	The machine map checksum failed during processing.	Replace Flash Board or CPU. Re-download software.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
2.x.x	Drift Test Failure Troubleshooting	Read System verification problem.	IP-23.
2.x.x	Wash Verification Failure Troubleshooting	Wash System verification problem.	IP-24.
2.x.x	Linearity Test Failure Troubleshooting	Read System verification problem.	IP-25/IP-26.
2.1.1.1	Tray Database Error	General Tray Database Error.	IP-27.
2.1.1.2	Tray Database Error - Not Found	Attempted to find a tray not in the database.	Refer to Error Code 2.1.1.1.
2.1.1.3	Tray Database Error - Not Open	Attempted to Write or Close a tray that was not open. (Software Bug.)	Refer to Error Code 2.1.1.1.
2.1.1.4	Tray Database Error - Write	Could not Write a tray into the database.	Refer to Error Code 2.1.1.1.
2.1.1.5	Tray Database Error - Read	Could not Read a tray from the database.	Refer to Error Code 2.1.1.1.
2.1.1.6	Batch Database Error - Read	Could not Read a Batch from the database. (Serious Error.)	Refer to Error Code 2.1.1.1.
2.1.1.7	Batch Database Error - Write	Could not Write a Batch because it was previously opened.	Refer to Error Code 2.1.1.1.
2.1.1.8	Batch Database Error	General Tray Database Error.	Refer to Error Code 2.1.1.1.
2.1.1.9	Assay Not Found	Could not locate an assay. (Indicates a serious Database problem.)	IP-28.
2.1.1.10	Assay Database Error - Read	Could not Read an Assay. Assay may have been deleted. (Indicates a serious Database problem.)	Refer to Error Code **2.1.1.9**
2.1.1.11	Unexpected Row Was Read	Row read by the reader was unexpected. Could happen due to a Wash/Dispense failure.	Advisory. Verify Tray Transport Test.
2.1.1.12	Internal Error - Bad Command To DRT	Illegal Data Reduction Command received.	Refer to Error Code **2.1.1.9**

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
2.1.1.13	Internal Error - Bad Task ID To DRT	Unrecognized Internal Communication.	Refer to Error Code **2.1.1.9**
2.1.1.14	Internal Error - Bad Well Class	Could Not Classify Well. Error Code should never be seen.	Refer to Error Code **2.1.1.9**
2.1.1.15	Internal Error - No Request To DRT	Abort command sent before tray was received.	Advisory.
2.1.1.16	Internal Error - Bad Reduction Type	Data Reduction Error detected.	Refer to Error Code **2.1.1.9**
2.1.1.17	Reduction Started On New Tray	Last row voided before tray processing was complete.	Advisory.
2.1.1.18	No Cutoff Calculated	Tray in read mode has no cutoff calculated.	Advisory.
2.1.1.19	Incomplete Standards	Number of Stds/Stds Readings did not meet System requirements.	Advisory. Check Stds or Controls.
2.1.1.20	No Blank Value - No Further Calculations Possible	One or more wells failed the instrument lower limit of Blanks Check. At least 4 wells must pass Blanks Check.	Advisory. Check Wash System. Verify Read System Tests. Recalibrate with ORS.
2.1.1.22	Assay # Is Defective	Illegal values seen in the Assay.	Refer to Error Code 2.1.1.1.
2.1.1.23	Internal Error - Can't Write Q/C Block	Could not write into the Quality Control (QC) Database.	Refer to Error Code 2.1.1.1.
2.1.1.24	Internal Error - Can't Read Q/C Block	Could not find the QC Data for this Assay.	Refer to Error Code 2.1.1.1.
2.1.1.25	Blanks Have Failed OPD Timing Checks	Extended batch database error. General QC Data Block error.	Advisory.
2.1.1.26	Controls Have Failed OPD Timing Checks	Controls incubation specified time limit was exceeded.	Advisory.
2.1.1.27	Internal Error - Extended Batch DB Full	Cannot allocate an extended batch curve.	Advisory.
2.1.1.28	No Negative Controls Found		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
2.1.1.29	Internal Error - Well Status/Bitmap Conflict	Serious database error. Indicates a bad database.	Refer to Error Code 2.1.1.1.
2.1.1.30	Internal Error - No Status On Well	Instrument was taken off-line immediately after gating.	IP-29.
2.1.1.31	Warning: At Least One Calibration Value Has Exceeded Specifications	A calibration value greater than 1.5 exists.	Recalibrate.
2.1.1.32	Controls Or Standards Cannot Fit Into One Tray	Controls/Standards not on one tray.	Advisory. Void the batch.
2.1.1.33	Controls Have Failed Validity Check(s)		Advisory.
2.1.1.34	Insufficient Controls To Do Cutoff		Advisory.
2.1.1.35	Too Many Aberrant Values	More than one aberrant value per control type is not allowed.	Advisory.
2.1.1.36	Negative Control Out Of Range		Advisory.
2.1.1.37	Positive Control Out Of Range		Advisory.
2.1.1.38	(POS-NEG) Difference Test Failed		Advisory.
2.1.1.39	Standards Are Not Monotonic		Advisory.
2.1.1.40	Selected Standard Failed	Values are not within the acceptable ranges.	Advisory.
2.1.1.41	Std A/Std B Difference Test Failed		Advisory.
2.1.1.42	Std A/Std B First Ratio Test Failed		Advisory.
2.1.1.43	Std C/Std D Second Ratio Test Failed		Advisory.
2.1.1.45	Internal Error - Undefined	Indicates an illegal error code in the status field.	Refer to Error Code 2.1.1.1.
2.1.1.47	Absorbance Of Standard Exceeded 2.200		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
2.1.1.48	(POS - NEG) Ratio Test Failed		Advisory.
2.1.1.49	Sample ID Within Control Or Standard Location		Advisory.
2.1.1.50	Absorbance Of Standard Out Of Instrument Range		Advisory.
2.1.1.51	No Control Or Standards Tray Exist		Advisory.
2.1.1.52	Standard Below Minimum Absorbance		Advisory.
2.1.1.53	Sample Below Minimum Absorbance		Advisory.
2.1.1.54	Absorbance Of Control Out Of Instrument Range		Advisory.
2.1.1.56	Positive-2 Control Difference Test Failed		Advisory.
2.1.1.57	Insufficient Positive-2 Controls		Advisory.
2.1.1.58	Invalid Positive-2 Controls - PC2 Mean Is Not Reactive	Positive-2 Control average OD is on the non-reactive side of the calculated cutoff.	Advisory.
2.1.1.60	Positive-3 Control Difference Test Failed	Positive-3 negative value exceeded limits.	Advisory.
2.1.1.61	Insufficient Positive-3 Controls	Too many Positive-3 Control replicates failed validation checks.	Advisory.
2.1.2.1	Calibration Aborted		Advisory.
2.1.2.2	Calibration Checksum Failure		Advisory. Cycle power.
2.1.2.3	ADE Calibration Checksum Failure		Advisory. Cycle power.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.?.?.?	Assay Interpreter Error Code 0000=	Unknown error code generated.	IP-30.
3.1.1	Internal System Error: Database Write Error	Attempt to write into tray or batch database failed.	Refer to Error Code 3.?.?.?.
3.1.2	Internal System Error: Tray Database Error	Attempted to read, open, or close a tray in the database.	Refer to Error Code 3.?.?.?.
3.1.3	Internal System Error: Batch Database Error	Attempted to read, open, or close a batch in the database.	Refer to Error Code 3.?.?.?.
3.1.4	Internal System Error: Cannot Find Assay	Attempt to read an assay in the database failed.	Refer to Error Code 3.1.5.
3.1.5	Internal System Error: Assay Data Corrupted	Assay checksum failed. The assay database is suspect.	IP-31.
3.2.1	Internal System Error: Tray Database Error	A tray ID reported to have finished processing control could not be successfully read from the database.	Refer to Error Code 3.?.?.?.
3.2.1.1	No TPC™ Capable Instruments Connected		Advisory.
3.2.1.4	Invalid Tray Type From Pipettor		Advisory.
3.2.1.8	Illegal Operation - [Type] Data Exists		Advisory.
3.2.1.9	Lot Number Not Found		Advisory.
3.2.1.10	Illegal Operation - Invalid Component Type		Advisory.
3.2.1.11	Illegal Operation - List # Mismatch		Advisory.
3.2.1.12	Lot Expired - xxxxxxxxxxxxxxxxxxx		Advisory.
3.2.1.13	Master Lot Mismatch		Advisory.
3.2.1.14	Registration Of Component Used Failed		Advisory.
3.2.1.21	Tray In Use	Tray entered cannot be gated.	Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.2.1.22	List#/Procedure From Pipettor Is Inconsistent With Current Assay		Advisory.
3.2.1.23	TPC™ Mode Mismatch		Advisory.
3.2.1.24	Illegal Operation - Invalid Component Dispense Station		Advisory.
3.2.1.25	Tray Found On Wrong Pipettor		Advisory.
3.2.1.26	Illegal Operation - No Bead Drop		Advisory.
3.2.1.27	Unable To Verify Component	Pipettor has no information on requested tray.	Advisory.
3.2.1.28	No Bead Drop Registered		Advisory.
3.2.1.29	Internal System Error: External Bar Code Reader Status Fault	External Bar Code Reader is not configured.	Advisory. Cycle power.
3.2.2	Internal System Error: Machine Control Command Status Fault	Machine control reported status for an unknown command.	Refer to Error Code 3.?.?.?.
3.2.3	Tray ID Lost	Tray ID was garbled by machine control after bar coding.	Refer to Error Code 3.?.?.?.
3.2.4	Internal System Error: Tray Database Error	Status of tray in the database is unexpected at the time that the tray was gated, or a garbled tray was reported as being removed from the entrance.	Refer to Error Code 3.2.2.
3.2.5	Internal System Error: Tray Database Error	Status of tray in the database is unexpected at the time that the tray was gated, or a garbled tray was reported as being removed from the entrance.	Refer to Error Code 3.2.2.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.2.6	Internal System Error: Batch Database Error	Data garbled in the batch data for the current tray.	Refer to Error Code 3.2.2.
3.2.7	Internal System Error: Batch Database Error	Data garbled in the batch data for the current tray.	Refer to Error Code 3.2.2.
3.2.8	Internal System Error: Batch Database Error	Data garbled in the batch data for the current tray.	Refer to Error Code 3.2.2.
3.2.9	Internal System Error: Tray Database Error	Tray has stored status that is garbled in the database.	Refer to Error Code 3.2.2.
3.2.10	Internal System Error: Tray Database Error	Tray has stored status that is garbled in the database.	Refer to Error Code 3.2.2.
3.2.11	Bad Pipettor Test Number	Pipettor test number does not match up with a valid assay on the PPC instrument.	IP-32.
3.2.12	This Tray May Not Be Inserted	Situation: 1.) A Tray is already in the machine. 2.) A Blanks Tray is inserted while “Blanks” tray is waiting for the first tray of a batch. 3.) A Blanks tray is inserted after all patient trays.	Remove Blanks Tray or voided tray and load correct tray.
3.2.13	This Tray Has The Wrong Mode	One of the following may have occurred: 1.) FPC™ tray was inserted during a stand-alone or POS ID Batch. 2.) POS ID tray was inserted during a stand-alone or FPC batch. 3.) Stand-alone tray was inserted during an FPC or POS ID batch.	Remove tray and set up new batch.
3.2.14	Test Number From The Pipettor Is Inconsistent With The Current Assay.	Test number for the Non-Controls tray does not select the same PPC assay as did the controls tray.	Enter the correct tray for batch being processed.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.2.15=	Unknown Assay List Number/Assay Procedure - Cannot Find Assay	The Assay List Number/Assay Procedure sent from an attached pipettor does not match any on the instrument.	Advisory.
3.2.16=	Improper Number Of Unknown Replicates=	Pipettor indicates that the number of unknown replicates for a sample tray is not the same as that for the controls tray of the batch.	Set up separate batch for trays.
3.2.17=	Tray Is NOT In A Readable State=	A tray that is not archived or voided has been inserted for rereading.	Remove tray and check the tray's status on the PPC™ instrument.
3.2.18=	Controls/Standards Must Be In The First Tray Of The Batch	Indicates that there are controls or standards in a tray which is not the first tray of the batch.	Remove the tray. Truncate the PPC Batch and run the second controls tray and any trays following it as a separate batch.
3.2.19=	Improper Location Of Controls=		Remove tray and re-edit the Pipettor test protocol for proper location of controls. Rerun Assay.
3.2.20=	Improper Number Of Controls/Standards=		Remove tray. re-edit the Pipettor test so that the number of controls and standards matches the corresponding PPC Assay.
3.2.21=	Too Many Standards In The Tray=		Refer to Error Code 3.2.20.
3.2.22=	Invalid Tray Status From Pipettor=	POS ID or FPC™ systems reported an invalid tray status: 1) FPC system not active, 2) POS ID system not ready.	Refer to Error Code 3.2.20.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.2.23	The Batch Associated With This Tray Is Not In An Archived State		Advisory.
3.2.24	The Tray Was Locked In Without Being Gated	Entry Gate Solenoid stuck open. (Retracted)	IP-33.
3.2.25	Multiple Matches Of Assay List Number/ Assay Procedure. Cannot Find Assay	The Assay List Number/Assay Procedure sent from the pipettor matches multiple protocols on the PPC™ instrument.	Advisory.
3.3.1	Size of Tray Does NOT Match Previously Stored Size	Situation: 1.) On the first pass of the FPC™ tray, the PPC measures the tray to be a different size than indicated 2.) On a second, third, or fourth pass of a stand-alone tray, the PPC measures the tray to be a different size than that measured on the first pass.	IP-34.
3.3.2	Multiple Responses From Pipettor	Two or more systems connected to the PPC indicate that they are the origin of the inserted tray.	Remove the tray. Ensure the tray has not been run on more than one instrument.
3.3.3	Tray XXX Has Been Rejected	Machine control did not process the controls tray, (probably a transport error) and whether or not it can be salvaged is unknown.	Press <Enter> to continue and void the tray batch.
3.3.4	Tray XXX Has Been Rejected	Machine control did not process the controls tray, (probably a transport error) and whether or not it can be salvaged is unknown.	Press <Enter> to continue and void the tray batch.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.3.7	Wells XX-XX Will Be Voided	Machine control has started 1 or more rows of a tray, (wash/dispense) but could not complete them.	Advisory. (Refer to Error Codes 1.1.5 and 1.1.1.)
3.3.7.1	Invalid Readings In Tray XXX		Advisory.
3.3.7.2	Insufficient Blanks Wells		Advisory.
3.3.7.3	Wells Y1-Y5 Will Be Voided		Advisory.
3.3.8	Do You Want To Continue Processing		Advisory.
3.3.9	This Tray Is Active And May Not Be Voided		Wait for tray to exit in order to void.
3.3.10	Voiding This Tray Will Cause The Batch To Void		Advisory.
3.3.11	Wrong Step For Blanks Tray		Advisory.
3.3.12	Wrong Step For Blanks Tray		Advisory.
3.3.13	Wrong Blanks Tray		Advisory.
3.3.14	Not All Trays In Batch Have Completed Previous Step		Advisory.
3.3.15	Blanks Tray Not Yet Processed		Advisory.
3.3.16	Blanks Tray Not Yet Processed		Advisory.
3.3.17	Tray Out Of Sequence		Advisory.
3.3.19	Tray Is Not A Blanks Tray		Advisory.
3.3.20	Tray Does Not Belong To Current Batch		Advisory.
3.3.21	Blanks Wells In Sample Tray		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.3.22	Remove This Tray		Advisory.
3.3.24	Tray Or Batch Data No Longer Stored In Database		Advisory.
3.3.25	Cannot Find Assay		Advisory.
3.3.26	Batch Will Be Truncated To Contain Only Those Trays Previously Inserted		Advisory.
3.3.27	No More Blanks Trays Allowed		Advisory.
3.3.28	Specified Batch Size Will Not Fit		Advisory.
3.3.29	Batch May Not Be Truncated		Advisory.
3.3.30	No Active Batch To Be Truncated		Advisory.
3.3.31	Pipettor Communications Link Failure	The attempt to archive a tray on a pipettor received a communications failure or found that the tray no longer exists.	IP-35.
3.3.32	Batch May Not Be Truncated		Advisory.
3.3.33	Pipettor Communications Link Failure	Communications failed to a previously configured pipettor.	IP-35.
3.3.34	Tray Voiding Not Allowed		Advisory.
3.3.35	Control/Standards Wells Voided		Advisory. (Select YES to continue batch. Select NO to delete batch.)
3.3.36	Tray Contains No Active Wells		Advisory.
3.4.1	Communications Status Fault	Unrecognized communications error.	Refer to Error Code 3.?.?.?.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
3.4.2	Task ID Fault	Unrecognized communications error.	Refer to Error Code 3.?.?.?.
3.4.3	Assay Interpreter Send Message Error	New message needs to be sent but assay interrupt message buffers are full. Status indicates task is not communicating.	Refer to Error Code 3.?.?.?.
3.4.4	Pipettor Communication Link Failure	A communication link failure occurred when the PPC instrument was getting assay data for the tray.	IP-35.
3.4.5	Space Not Available For New Tray		Advisory.
3.4.6	Space Not Available For New Batch		Advisory.
3.4.7	Re-read Disabled		Advisory.
3.5.1	Calibration Aborted		Advisory. Refer to Error Codes 1.1.5 and 1.1.1.
3.5.2	Incorrect Tray Size		Advisory.
3.5.3	Instrument Not Calibrated		Advisory.
3.5.5	Calibration Checksum Failure		Advisory.
5.1.1	Multiple Communication Types Found - Disconnect Differing Instruments	Connecting JIBBERISH and BABEL instruments simultaneously is not allowed.	
5.1.2	Communication Link Failure Port:n,n,n,n	A transmission or expected reception could not be completed. The communications link to that port was disconnected.	
5.1.3	Multiple Responses from Pipettors Duplicate Tray ID: xxxxxxxxxxxxxxxxx		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
5.1.4	Hardware Communication Failure Port: n	A hardware failure was detected during auto-config.	
5.1.5	Instrument NOT Supported. Disconnect Unsupported Instruments.	The PPC™ instrument will only support FPC™ instruments.	Advisory.
5.1.6	Invalid Message Format	An invalid message format was detected per the system instrument communication protocol.	Advisory.
5.1.7	Incorrect Communications Response	An invalid message type is detected per the system instrument communication protocol.	Advisory.
5.1.8	INTERNAL SYSTEM ERROR	A BABEL or JIBBERISH internal communications error occurred. The communications structure has been corrupted.	Advisory.
6.1.1.4	Assay Number Previously Assigned		Advisory.
6.1.1.5	Cannot Assign Assay Number		Advisory.
6.1.1.6	Assay Number Not Assigned		Advisory.
6.1.1.7	Cannot Initialize - Batch In Process		Advisory.
6.1.1.8	Cannot Initialize - Batch In Process		Advisory.
6.1.1.9	Cannot Delete - Assay Number Not Assigned		Advisory.
6.1.2	Cannot Delete - Batch In Process		Advisory.
6.1.2.1	Internal Database Error - Invalid	Error during database exchange.	Advisory.
6.1.2.2	Cannot Assign - Does Not Exist		Advisory.
6.1.2.3	Cannot Print - No Data		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
6.1.2.4	Cannot Print - Does Not Exist		Advisory.
6.1.2.5	Cannot Print - Does Not Exist		Advisory.
6.1.2.6.	Invalid ID - Does Not Exist		Advisory.
6.1.2.7	Cannot Void - In Use		Advisory.
6.1.2.8	Invalid Assay Number - Does Not Exist		Select valid assay number.
6.1.2.9	Printer In Use - Cannot Print		Advisory.
6.1.3	Cannot Void - Four Blanks Required		Advisory.
6.1.3.1	Cannot Void - Well Not Filled		Advisory.
6.1.3.2	Well Already Voided		Advisory.
6.1.4.1	Invalid Entry		Check validity range of entry.
6.1.4.2	Illegal Operation - Tray In Process		Advisory.
6.1.4.4	No Calibration Data		Advisory.
6.1.4.5	No Calibration Data		Advisory.
6.1.4.6	Calibration Checksum Failure		Advisory. Cycle power.
6.1.4.7	ADE Calibration Checksum Failure		Advisory.
6.1.5.1	Cannot Enter Patient IDs		Advisory.
6.1.5.3	Operation Not Allowed. A Batch Is In Process	ADE option is selected and batches are active.	Advisory.
6.1.6.1	Current RAM Assay Must Be Saved Or Deleted		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
6.1.6.2	No New Assay Locations Available		Advisory.
6.1.6.3	Cannot Delete Open Batch		Advisory.
6.1.6.4	Cannot Download	An attempt was made to perform a program download when it was not allowed.	Refer to Error Code 6.1.6.5.
6.1.6.5	WARNING: Number Downloads Remaining=nn		Advisory. Try another Flash Memory Card.
6.1.7.1	Retransmit Disabled	Retransmit was selected, but the function was disabled.	Advisory.
6.1.7.2	Illegal Operation - Batch In Process	Retransmit selected while a batch is in process.	Advisory.
6.1.7.3	Illegal Operation - Batch Not Completed	Tray ID Entered whose batch is inactive.	Advisory.
6.1.7.4	Illegal Operation - Batch Void	Tray ID Entered whose batch is void.	Advisory.
6.1.7.5	Illegal Operation - Batch Modified	Tray ID Entered whose batch has changed status.	Advisory.
6.1.8.1	Cannot Assign Bar Code Reader Port - Port 4 Not Available	Port 4 is already assigned to something else.	Advisory.
6.2.1.1	No Capable TPC™ Instruments Connected		Advisory.
6.2.1.2	Illegal Operation - Lot Number Exists: xxxxxxxxxx		Advisory.
6.2.1.3	Tray Not Found		Advisory.
6.2.1.4	Invalid Tray Type From Pipettor		Advisory.
6.2.1.5	Invalid Tray Status From Pipettor		Advisory.
6.2.1.6	Illegal Operation - TPC Mode Off		Advisory.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
6.2.1.7	Warning - Master Lot Expired		Advisory.
6.2.1.8	Illegal Operation - [Type] Data Exists	Bead data currently exists for the tray ID entered.	Advisory.
6.2.1.9	Lot Number Not Found: xxxxxxxxxx		Advisory.
6.2.1.10	Illegal Operation - Invalid Component Type		Advisory.
6.2.1.11	Illegal Operation - List # Mismatch		Advisory.
6.2.1.12	Lot Expired - xxxxxxxxxx		Advisory.
6.2.1.13	Master Lot Mismatch		Advisory.
6.2.1.14	Registration Of Component Used Failed		Advisory.
6.2.1.15	Unable To Validate	Instrument was unable to communicate to the pipettor.	Verify communication with pipettor.
6.2.1.16	Illegal Operation - Invalid Mixture		Advisory.
6.2.1.17	Warning - Master Lot Mismatch		Advisory.
6.2.1.18	Warning - Mixture Expired		Advisory.
6.2.1.19	Warning - Mixture Not Registered		Advisory.
6.2.1.20	Warning - Mixture Registration Failed		Advisory.
6.2.1.21	Blanks Bead Drop Store Full		Advisory.
6.2.1.22	This Tray Is NOT A Blanks Tray		Advisory.
6.2.1.29	INTERNAL SYSTEM ERROR: External Bar Code Reader Status Fault	External Bar Code Reader task returns a fault status of not configured.	
6.3.1.1	Protocol Select Option Not Available In Current Communication Mode	Instrument is not in JIBBERISH communication mode when the Protocol Select option was chosen.	Protocol Select option not available in JIBBERISH mode.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
7.1	Bar Code Error - Character Count Wrong		Reconfigure bar code length to correct number of characters.
7.2	Bar Code Error - Illegal Bar Code Type		Reconfigure bar code to be consistent with the one selected in the Bar Code Type menu.
7.3	Bar Code Error - Illegal Task ID	BCR was unable to decode where to send incoming information.	
7.4	Bar Code Error - Bit Bus User Error	BCR task cannot create a user ID with the Bit Bus.	
7.5	Bar Code Error - Bit Bus Connection Error	The BCR task could not create a bit bus connection.	
7.6	External Bar Code Not Configured	The external Bar Code Reader is not configured.	Advisory.
8.1.1.1	Printer In Use - Cannot Print		Advisory.
8.1.1.2	Current Assay Must First Be Saved Or Deleted		Advisory.
8.1.1.3	Assay Not Found		Advisory.
8.1.1.4	Assay Not Editable		Advisory.
8.1.1.5	No New Assay Locations Available		Advisory.
8.1.1.6	Assay In Use - Cannot Be Edited Now		Advisory.
8.1.1.7	Invalid Entry		Advisory. (Check for valid data entry.)
8.1.1.8	Fatal Assay Database Error	Database error.	Record Error Code # and Status #. Refer to Error Code 3.?.?.?.
8.1.1.9	Assay Consistency Error		Re-edit to avoid inconsistencies.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
8.1.1.10	Assay Consistency Error		Re-edit to avoid inconsistencies.
8.1.1.11	Assay Consistency Error		Re-edit to avoid inconsistencies.
8.1.1.12	Assay Consistency Error		Re-edit to avoid inconsistencies.
8.1.1.13	Assay Consistency Error		Re-edit to avoid inconsistencies.
8.1.1.14	Negative Control MIN Absorbance Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.15	Positive Control MIN Absorbance Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.16	Positive Negative MIN Difference Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.17	Positive Negative MIN Ratio Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.18	Standard Number Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.19	Different Standard A Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.20	Different Standard B Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.21	Ratio 1 Standard A Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
8.1.1.22	Ratio 1 Standard B Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.23	Ratio 2 Standard C Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.24	Ratio 2 Standard D Inconsistent With Number Of Standards		Re-edit to avoid inconsistencies.
8.1.1.25	Mean Absorbance MIN Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.26	Absorbance MIN Larger Than Max		Re-edit to avoid inconsistencies.
8.1.1.27	Ratio #1 MIN Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.28	Ratio #2 MIN Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.31	Illegal Operation - Tray In Process		Wait until processing is complete to save edited assay.
8.1.1.32	Assay Data Corrupted	Software checksums failed.	Refer to Error Code 3.?.?.?.
8.1.1.33	PC2 MIN Absorbance Is Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.34	PC2 MIN Difference Is Larger Than MAX		Re-edit to avoid inconsistencies.
8.1.1.35	Blank Check MIN. Difference Is Larger Than The MAX Difference		Re-edit to avoid inconsistencies.
8.1.1.36	Assay List Number/Assay Procedure Combination Not Unique	An attempt was made to save an edited assay protocol and the Assay List Number/Assay Procedure was not unique.	Advisory.
8.1.1.37	Incorrect Password	Wrong Abbott Assay Delete assay ID Code entered.	Verify correct password.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
8.1.1.38	Incorrect Code	Wrong Abbott Assay Delete assay ID Code entered.	Verify correct assay code.
8.1.1.39	This Assay Is In Use	Abbott assay to be deleted has an active batch in process.	Complete or void all batches in process for assay to be deleted.
8.1.1.42	Assay Upload Failure	Database fault. Could not save uploaded assay.	Call CSC if problem persists.
8.1.1.43	No New Assay Locations Available	All available assay memory has been used.	Download new software version again.
8.1.1.44	Assay *nn* Exists	Attempt to save to assay number already in use.	Choose unique assay number.
8.1.2.0	Assay Save Unsucessful	Error implies an operator edited assay was not saved.	Retry assay save.
8.1.2.1	Assay Number Reserved		Assign different assay number to user assay.
9.1.1.1	Tray Database Error	Error detected in the tray database.	Refer to Error Code 3.?.?.?.
9.1.1.4	Tray Database Error - Write	Bad status from database when updating tray well status.	Refer to Error Code 3.?.?.?.
9.1.1.5	Tray Database Error - Read	Unsuccessful attempt to read a database.	Refer to Error Code 3.?.?.?.
9.1.1.6	Batch Database Error - Read	Unsuccessful attempt to read a batch.	Refer to Error Code 3.?.?.?.
9.1.1.10	Assay Database Error - Read	Unsuccessful attempt to read an assay.	Refer to Error Code 3.?.?.?.
9.1.1.11	Bad Command ID To PAT IDs	Patient IDs read: invalid command in communication.	Refer to Error Code 3.?.?.?.
9.1.1.12	Bad Task ID To PAT IDs	Invalid task ID in command message.	Refer to Error Code 3.?.?.?.
9.1.1.13	Cannot Get Sample IDs On Tray	External communication error.	Refer to Error Code 3.?.?.? and 3.3.33.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
9.1.1.15	ID Database Full		Advisory.
9.1.1.16	Pipettor Response For Unexpected Tray		Advisory.
9.1.1.17	Pipettor Sample ID Collection Terminated		Advisory.
9.1.1.18	Warning: Entered IDs Will Overwrite Existing IDs Starting With Well XX		Advisory. (Manually enter the correct location for sample ID.)
9.1.1.20	Controls Or Standards Cannot Fit Into One Tray		Advisory.
9.1.1.21	Internal Error - State Table	Internal system error.	Press <Enter>. Trays in process. Power Down for 30 seconds, then Power Up.
9.1.1.22	Internal Error - Action Table	Internal system error.	Refer to Error Code 9.1.1.21.
9.1.1.23	Sample IDs May Only Be Assigned To Sample Wells		Advisory.
9.1.1.24	Non-Numeric Parts Of Starting ID And Ending ID Do Not Match		Advisory. (Re-enter valid data.)
9.1.1.25	Starting ID Must Be Numerically Smaller Than Ending ID		Advisory. (Re-enter valid data.)
9.1.1.26	Not Ready For Keyboard Input	Invalid next entry.	Refer to Error Code 9.1.1.21.
9.1.1.27	Last Part Of Sample ID Not Numeric		Advisory. (Re-enter valid data.)
9.1.1.28	Tray Number Too Big		Advisory. (Re-enter valid data.)
9.1.1.29	Illegal Well Location Specified		Advisory. (Re-enter valid data.)

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
9.1.1.30	Well Location Not Replicate Boundary		Advisory. (Re-enter valid data.)
9.1.1.31	Cannot Collect Sample IDs Or Well Status For This Pipettor Tray	Tray on final pass, communications error. Attempted to ID an empty well.	Advisory. (Input YES or NO if error persists.)
9.1.1.32	Patient ID Checksum Failure		Advisory. (Instrument will collect IDs on the read pass.)
9.1.1.33	Internal Error - Undefined	Invalid error code passed to error handler.	Refer to Error Code 9.1.1.21.
9.1.1.34	Pipettor Sample ID Length Incompatible	PPC™ instrument is in the 10 character mode and it attempts to collect sample IDs with more than 10 characters.	Incompatible bar code labels or reconfigure to 20 character mode.
10.1	Data Error Slope Aborting	Reader verification test fails.	IP-26.
10.2	Data Error Intercept Aborting	Reader verification test fails.	Refer to Error Code 10.1.
10.3	External BCR Port Is Not Assigned	Attempting to use external BCR port when Port 4 is not configured.	Advisory.
11.1	EPROM Checksum Error		Replace Flash Memory Bd.
11.2.4	810 Device Table Error	Bad Bit Bus Cable or all Bit Bus Boards are not communicating.	Refer to Error Code 1.1.1. Reseat all boards in the Card Cage.
11.2.6	810 Create Connection Error	Bit Bus communication error.	Replace CPU then SIO then DIO Controller A and B. Replace Bit Bus Cable.
11.3.1	Create Connection Error To SIO	Serial I/O Bd (Bd #1) is unable to communicate to the CPU through the Bit Bus.	IP-37. Refer to Error Code 1.1.1.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
11.5.1	Create Connection Error To Stepper Controller Bd	One of the two stepper controller bds, (BDs #3 or #4) is unable to communicate to the CPU through the Bit Bus.	IP-38.
11.6.1	Create Connection Error To DIO	Digital I/O Bd (Bd #2) is unable to communicate to the CPU through the Bit Bus.	IP-39.
12.1.1	Internal Status Checksum Failure - All Data Destroyed	Checksum verification failed during power up.	If pressing <Enter> will allow continued operation, the error occurred on the FLASH Board or CPU. If you cannot continue, the error occurred on the Bit Bus Bd.
12.1.2	Program Checksum Error	Background software checksum test failure.	Call CSC.
*Errors	Star Errors	Star errors are caused by: 1.) Dark counts greater than either the red or blue counts. 2.) Dark (no filter) counts less than 30 or greater than 60 counts. 3.) Red or blue counts are out of range. 4.) Final OD is less than -0.029. 5.) Final OD is greater than 4.400.	IP-40.
	Losing Date/Time Group		IP-41.
	Bar Code Reader Not Reading		IP-42.
	Instrument Power Up Sequence		IP-43.
	Wash Problem - Water Outside Of Tray Wells		IP-45.