ABBOTT
ADD

INDEX
TECHNICAL SERVICE BULLETIN

PRODUCT:	DATE:
COMMANDER® PPC(TM) (50)	**17-FEB-98**

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50-038	N - See TSB	COMMANDER® PPC(TM) Optics Filter Wheel Modification	01-DEC-97
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50-016	F	Waste Line Pressure Switch Assembly	CANCELLED
50-015A	O - 2030 & Below	Main Transport Upgrade	19-JAN-90
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50-008	N - 1665 & Below	PPC Lock-up Problems	OBSOLETE
50-007	F - * See TSB	Belt Slide Assembly with Ball Style Web Switch	OBSOLETE
50-006	I - * See TSB	PPC Software Upgrade U.S. 1.08/Intl. 1.09	OBSOLETE
50-005	F - 1399 & Below	Main Transport Assembly Changes	OBSOLETE
50-004	N - 1378 & Below	Cable Panel Interface Board Retrofit	COMPLETE
50-003	F - * See TSB	Load Module Stepper Motor Shock Mounts	OBSOLETE
50-002A	F - * See TSB	PPC Load Module Belt Guide Assembly	OBSOLETE
50-001	N - * See TSB	PPC Electro Static Discharge Protection	COMPLETE

PENDING - TSB index number has been reserved for a future TSB.
CANCELLED - TSB index number is cancelled.
INCORPORATED - TSB was incorporated into another document or manual.
OBSOLETE - TSB no longer applies.
COMPLETE - TSB implementation is complete.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
COMMANDER® PPC(TM) Optics Filter Wheel Modification

TSB#: **50-038**

ORIGINATOR: **Thomas A. Owusu**
APPROVED: **Mark Slater 21-NOV-97**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **12779-004**

IMPLEMENTATION: ○ **Immediate** ● **Next Service Call** ○ **Next Failure** ○ **Optional** Instruments Requiring Modification: **See Administrative Notes**	TSB Part/Kit #: **See Parts, Section V** TSB Effectivity/ Part(s) Availability: **01-DEC-97** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **0.5 Hr.** Validation Time: **1.0Hrs.** Total Mod. Time: **1.5 Hrs.** ****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:

WORLDWIDE

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

II. PURPOSE:

To inform the worldwide Field Service organization of the addition of a Heat Sink to the Optics Filter Wheel Assembly of the Parallel Processing Center (PPC) instrument. There have been observations of damage (charring/melting or in some cases cracks) to the Optics Filter Wheel at the “No Filter” position. Severe damage, such as cracks, to the filter wheel results in Optics Read problems (*Errors,filter counts out of specifications, and linearity tests failures). Installation of the heat sink provides a shield to prevent the concentration of heat on the filter wheel at the 'No filter' position. The heat sink will minimize the damage caused by the heat from the optics lamp.

III. ADMINISTRATIVE NOTES:

All new or re-built PPC instruments will have the heat sink installed before shipping. The heat sink must be installed on all PPC instruments in the field on next service call.

Implementation: This is a Next Service Call TSB.

U.S.: This TSB is to be installed on PPC instruments by Abbott Field Service Representatives

R.O.W: This TSB is to be installed on PPC instruments by Abbott Field Service Representatives

IV. SPECIAL TOOLS:

No Special tool required

V. PARTS:

Anodized Heat Sink (C/N 1-73803-01) in Figure 1 below.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

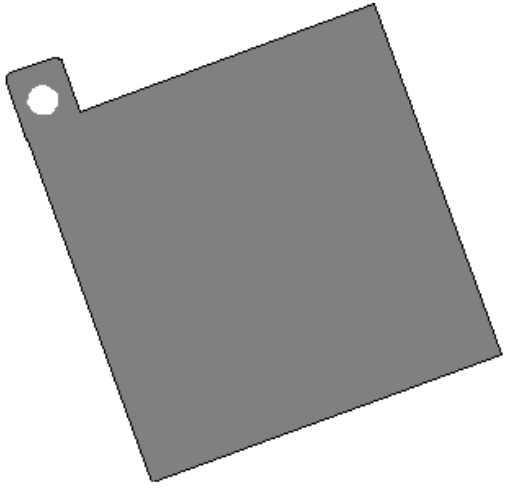

Figure 1. Anodized Heat Sink

U.S./R.O.W
TSB 50-038 modification part (Anodized Heat Sink, C/N 1-73803-01) will need to be forecasted/ordered for installations. Each country (ROW) will be responsible for forecasting/ordering the part through normal channels. The local Service Logistics areas of the world will forecast/order the required number of parts.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

REPLACED PARTS:
N/A

COMPATIBILITY:
N/A

VI. PROCEDURE:

MODIFICATION STEPS:

1. Prior to performing the installation of the heat sink on the Filter Wheel, check Red Filter, Blue Filter and Dark (No Filter) counts and note/record the results. Refer to Verification Procedure (VP-7) in the PPC Service manual.
2. If the Dark count is very high (greater than 60), inspect the Filter wheel for a severe heat damage (cracks) in the “No Filter” position. The “No Filter” position is the location with no filter or filter holder.

3. **Inspecting the Filter Wheel for Severe Heat Damage:**

a) Turn off the power to the PPC instrument.
b) Remove the left front cover of the PPC instrument to get access to the Filter Wheel. Refer to the Optics Filter Cleaning procedure (VP-47) in Section 5 of the PPC service manual.
c) Manually rotate the Filter Wheel until the “No Filter” position is closest to you.
d) Use a flashlight to inspect or check the Filter wheel for severe charring or cracks at the “No Filter” area. Another way to inspect for damage is to turn on the power to the instrument for the optics lamp to come on. When the Filter Wheel rotates, look for cracks in the “No Filter” area.

e) If the Filter wheel has severe charring, cracks or holes in the “No Filter” area, replace the Main Drive Assy.

4. **Installing the Heat Sink on the Optics Filter Wheel:**

a) Refer to Figure 2 below. The Heat sink should be installed at the “No Filter” position of the Filter Wheel.

b) Remove the heat sink from the plastic envelope.

c) Install the heat sink in the “No Filter” area with the tab on the heat sink extending over the rim of the filterwheel.

d) Maintain the position of the heat sink while pressing the ball end of an allen wrench against the corner with the tab. A typical wrench size is: 1/8 - 1/4. The heat sink corner is pressed in until the tab is totally obscured from view by the rim of the filterwheel. This requires that the tab bends at the angle to the heat sink surface and lodges on the inside wall of the rim.

e) Ensure that the heat sink is well secured in place. It should not move when trying to rotate or move it around with your finger.

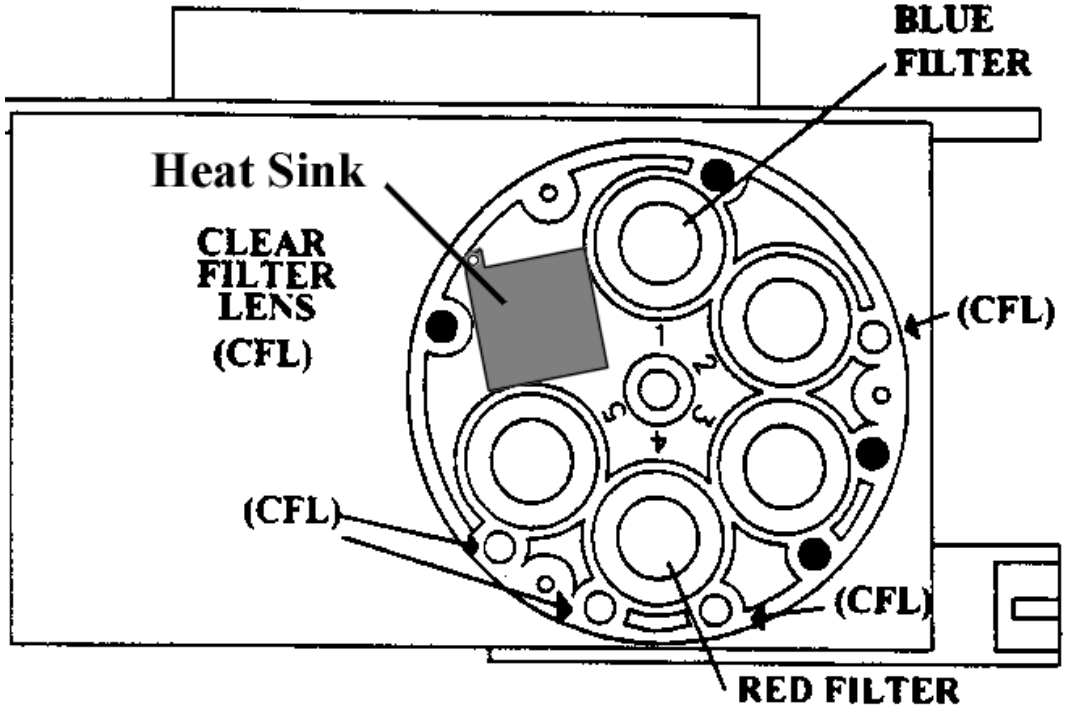

Figure 2. Optics Filter Wheel with Heat Sink Installed

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

g) Replace the left front cover of the PPC instrument and turn on the power to the instrument.

CHECKOUT:

a) Perform a reader test with the Optical Standard tray and note the Blue Filter, Red Filter and Dark counts. Make adjustments, if needed, to obtain values within the following specifications:

COUNT	SPECIFIED RANGE
Blue Filter	1200 - 1800
Red Filter	1000 - 2500
Dark (No Filter)	30 - 60

VII. VERIFICATION:

a) Perform Linearity and Repeatability tests.

b) Perform Optics Calibration for PPCs at software version 8.00 or higher.

DOCUMENTATION NOTE:

Removal and replacement procedures, Optics Read System Verification tests, and Optics Calibration are in the PPC Service Manual.

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MODIFICATION CONTROL STICKER UPDATE:

Place an X through number 38 on the modification control label located underneath the card cage assembly.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
COMMANDER® PPC(TM) Version 9.00/9.10 Software Upgrade

TSB#: **50-037**

ORIGINATOR: **Thomas A. Owusu**
APPROVED: **Jack Hall**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **12825-001**

IMPLEMENTATION:	TSB Part/Kit #: **See Parts, Section V**	Upgrade Time: **1.5 Hrs.**
○ Immediate ○ Next Service Call ○ Next Failure ● Optional	TSB Effectivity/ Part(s) Availability: **16-FEB-98**	Validation Time: **2.0 Hrs.**
Instruments Requiring Modification: **See Administrative Notes**	**TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Total Mod. Time: **3.5 Hrs.** ****NOTE** The instrument must be at TSB Level 31 prior to performing this TSB.**

I. DISTRIBUTION:

Worldwide

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

II. PURPOSE:

The COMMANDER® PPC Version 9.00/9.10 software upgrade/installation is a software enhancement with the following objectives:

* Implement corrected software defects/enhancements present in the current PPC software.
* Faster bootup sequence to reset the instrument.
* Addition of new assay protocols to include third positive control capability for cutoff assay protocols.
* Capability to delete Abbott assay protocols.
* Removal of the Quality Control database.
* Provide a way to enter the instrument serial number if one is not present during bootup sequence.
* PPC Assay Upload that will allow the user to add Abbott supplied assays using the External Barcode Reader.
* User Urge Belt replacement as routine maintenance.

III. ADMINISTRATIVE NOTES:

US: TSS organization will install both the hardware and software if the TSB level of the instrument is not at 33. If the TSB level is at 33 or 36 only PPC V9.00/9.10 software will need to be installed. FSRs will provide support during installation only if necessary. If the account uses a COMMANDER FPC instrument, the PPC system upgrade must be performed when the FPC V2.5 software installation is done. The PPC V9.00/9.10 is not compatible with FPC V2.0 software. Optical Reference Solution (LN 1B07-01) is needed to perform calibration as part of the PPC V9.00/9.10 upgrade procedures.

A. V9.00 Software Orders:

1. All TSSs, Executive Account Managers (ExAMs) and FSRs will order PPC V9.00 software when needed. Field Service Representatives, TSSs and ExAMs who no longer require the use of PPC Versions 8.00/8.01 will return the software to Dallas using established procedures.

2. The Depots will no longer be stocked with PPC Flash Software.

3. The FSRs, TSSs and ExAMs who are shipped flash software will retain the software in their possession until its return is requested.

4. FSRs requiring PPC software can place orders through Customer Service (Order Entry) using the appropriate isotope customer numbers. These orders can be guaranteed overnight delivery. In cases where overnight delivery is not acceptable, the local ExAM or TSS can be called in to assist with the software download as they will be required to execute the Installation and Validation Protocol prior to putting the PPC System back into service.

   Emergency orders may be placed using Field Service Parts to expedite the order. This procedure will not track the serial numbers. Dallas planning must add the software list number (1A05-75) to the Field Service system.

5. COMMANDER Product Quality Assurance will maintain traceability of software shipments according to current practices.

R.O.W: The group responsible for the installation of TSB# 50-037 and the plan for the return of V8.01/8.11 software, will be decided by each individual area. Both the hardware and software will be installed if the TSB level of the instrument is not at 33. If the TSB level is at 33 or 36, only PPC V9.00/9.10 software will need to be installed. If the account uses a COMMANDER FPC system, the PPC V9.00/9.10 upgrade procedure must be performed when the FPC 2.5 software installation is done. Optical Reference Solution (LN 1B07-01) is needed to perform calibration as part of the PPC V9.00/9.10 upgrade procedures.

IV. SPECIAL TOOLS:

No Special Tools Required. An FSR tool, 5/16 Hex Nut Driver (P/N 14207-143) may be needed by TSSs during hardware installation.

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V. PARTS:

US:

List #	Description
1A05-50	**Flash Hardware Kit (required if the PPC is at TSB level lower than 033)**

Flash Memory Assembly
CPU Cage Cover
Screw 4-40 x 6.25
Antistatic Pad
Component Station Label
Cover Letter
Cover Plate
Grounding Strap
Backpanel

9C96-50 **PPC V9.00 US ACC Kit**

Installation/Validation Protocol (US)
Cover Letter
PPC V9.00/9.10 Output Data Diskette
Label, LN ID PPC ROW Accessory Kit
PPC RAP Pack (US)
Operation Manual
PC RS-232 Output Specification
Diskette Mailer, 3-1/2
Box, RSC 200, SNGL, 12x12x6
Urge Belts

1A05-75 **PPC V9.00 US SW Kit**

Hardware Installation Instruction
PPC V9.00 Memory Flash Card (US)
Label, LN ID, PPC V9.00 US Software Kit
Installation/Validation Protocol (US)
Envelope, Bubble Ship 9.5 x 14.5
Return Mailer Label

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

R.O.W:

1A05-50 033) **FLASH Hardware Kit (required only if the PPC System is at the TSB level lower than**

Flash Memory Assembly	Cover Letter
CPU Cage Cover	Cover Plate
Screw 4-40 x 6.25	Grounding Strap
Antistatic Pad	Backpanel
Component Station Label	

9C96-60 **PPC V9.10 ROW ACC Kit**

Installation/Validation Protocol (ROW)	Operation Manual
Maintenance Log	Cover Letter
PPC RS-232 Output Specification	PPC V9.00/9.10 Output Data Diskette
Diskette Mailer, 3-1/2	Label, LN ID PPC ROW Accessory Kit
Box, RSC 200, SNGL, 12x12x6	PPC RAP Pack (ROW)
Urge Belts	

1A05-76 **PPC V9.10 ROW Software Kit**

Hardware Installation Instructions	Installation/Validation Protocol (ROW)
PPC V9.10 Memory Flash Card (ROW)	

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

SERVICE KIT IMPACT:

PPC Field Service Parts Kit

US: 1-43645-02 (Flash Memory Assembly) will be added to the Field Service Remote Depots. Also, the new RS232 board, P/N 1-42472-02, has been added to Dallas stock.

R.O.W: The Local Service Logistics Areas of the world will forecast and order the required number of upgrade kits using LN1A05-76 (PPC 9.10 ROW Software Kit), 1-43645-02 (Flash memory assembly) and 1-42472-02 (RS232 board). One software kit will be needed for each Abbott representative who will perform this upgrade.

REPLACED PARTS:
The following parts have been deleted from Depot Stock:

Memory Cartridge Interface Board 1-42474-01
Memory Module Cartridge (Current Version)
Memory Module Interface Cable 1-36249-01
RS-232 Board 1-42472-01

The above parts will not be available from Dallas Depot Stock once all of the remaining COMMANDER® PPC systems have been upgraded with FLASH Memory board and V9.00 (U.S.) or V9.10 (ROW) software.

COMPATIBILITY:
PPC instruments upgraded to FLASH technology will not be compatible with previous software versions. PPC instruments upgraded to V9.00/9.10 will not be compatible with FPC software versions less than V2.5.

VI. PROCEDURE:

MODIFICATION STEPS:
The FLASH Hardware Installation Instructions will be included with the PPC Software Kit (U.S. Version 9.00 LN1A05-75 and ROW Version 9.10 LN1A05-76). The Installation/Validation Protocol will be included in the PPC Accessory Kits (U.S. Version 9.00 LN9C96-50 and ROW Version 9.10 LN 9C96-60) as well as the software kits.

CHECKOUT:
Complete instrument validation should be performed after the FLASH Upgrade and software download have been completed. The Installation/Validation protocol is included in both the US and ROW Accessory Kits.

MODIFICATION CONTROL STICKER UPDATE:
TSB# 50-037 will be marked off by the Abbott representative as part of the final instrument validation procedure.

Marking through the number 37 on the TSB Control Sticker is part of the Validation Procedure. The following procedures detail all of the necessary steps to perform when replacing either the FLASH Memory Interface or Main CPU Boards. The procedures are as follows:

1. Pre-replacement checklist
2. FLASH Memory Interface/CPU Board removal & replacement
3. FLASH Memory Software download detailed instructions
4. Validation protocol checklist

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NOTE: *Before attempting to install PPC Software version 9.00/9.10, all batches in process in the PPC must be run to completion with results printed and transmitted to the connected LIS. ALL INFORMATION RELATED TO PREVIOUSLY PROCESSED TRAYS, BATCHES, SAMPLE IDs, SAMPLE RESULTS, AND QUALITY CONTROL DATA WILL BE LOST WHEN THE HARDWARE IS UPGRADED*.

VII. PRE-REPLACEMENT CHECKLIST:

1. Prior to installing TSB 50-037, check for the TSB level of the instrument. If the TSB level is at 31, perform hardware and software installations. If the TSB level is at 33 or 36, perform software installation only.
2. Prior to replacing the FLASH Memory or CPU Board, obtain the setup configuration information using the Special Modes Main Menu. Use the Config Option in the menu.

   Record all current setup configuration information listed below. Refer to Section 2 of the COMMANDER® PPC™ Operations Manual (66-4853/R14) for instructions on how to access the configuration information.
   a. Instrument port assignments
   b. Baud rates
   c. Parity
   d. Bits per character
   e. Handshaking
   f. Stop Bits
   g. DMS Checksum
   h. Bar code type
   i. Bar code length

   Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

NOTE: *For instruments currently at TSB 33, record the "Setup" configurations found in section II.*

3. Print the Protocol/Test Number Assignment. Refer to Section 2 of the COMMANDER® PPC™ Operations Manual (66-4853/R14) under Assay Tools. This printout is a listing of the FPC™/PPC Test Numbers that are linked to PPC System Assay Numbers.

NOTE: *This step is not necessary if the PPC instrument is connected to an FPC™ system with Version 2.5 or greater software.*

4. Press the LIST ASSAYS key to list the assay directory. Print each edited assay protocol (edited assays are identified by an "E" on the right side of the assay directory). Refer to Section 4 of the COMMANDER PPC Operations Manual under the Assay Tools Option.

5. Perform this step only if the laboratory utilizes the Quality Control (QC) database. Print a copy of the QC Directory and print the QC Data for each assay listed in the directory. Refer to Section 4 of the COMMANDER PPC Operations Manual under the Database Option.

Note: The Quality Control Database has been discontinued in PPC version 9.00x/9.10x.

6. Power down the instrument and proceed to Section VIII.

VIII. FLASH MEMORY INTERFACE/CPU BOARD REMOVAL & REPLACEMENT:

NOTE: *Use static protection when handling printed circuit boards.*

1. Raise the Top Right Cover and lower the Keypad/Display Panel.

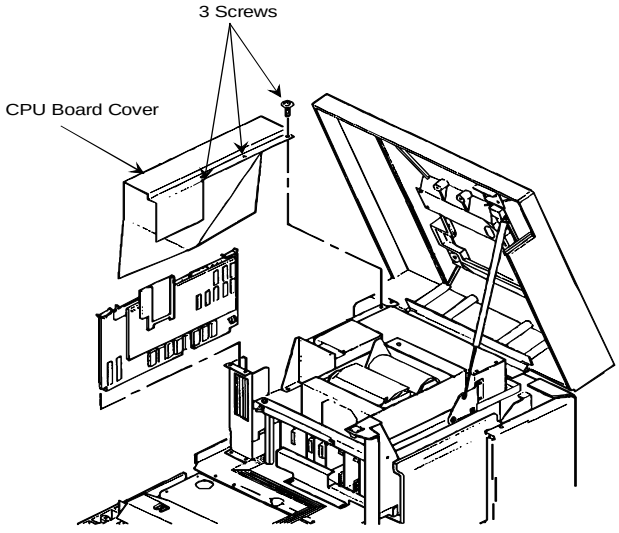

Figure 1 - Flash Memory/CPU Board Removal and Replacement

2. To remove the CPU Board Cover, remove 3 screws and lift straight up.

3. Remove the 10-pin Bitbus Cable Connector and the 40-pin Serial Cable to the Bar Code

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Reader/Keyboard Display Connector from the top edge of the CPU Board.

DO NOT PULL ON THE CABLES.

4. Slowly slide the CPU Board up until you can reach the Cartridge Interface Cable connected to the front of the CPU Board. Remove the cable connector by pulling the connector away from the CPU Board. This connector will be somewhat difficult to remove.
5. Remove the CPU Board from the PPC analyzer and place it on the anti-static grounded mat.
6. Disconnect the Cartridge Interface Cable from the 2 cartridge connectors inside the PPC instrument and completely remove the cable (this cable will not be reused). The cable will be difficult to disconnect.
7. Locate the clock chip at position U1 on the CPU Board.
8. If the part number of the clock chip is MM58274BN, the CPU Board must be replaced. Any non-"BN" suffix (such as “CN”, "AN" or "N") is correct. Refer to TSB 50-031 for additional instructions.

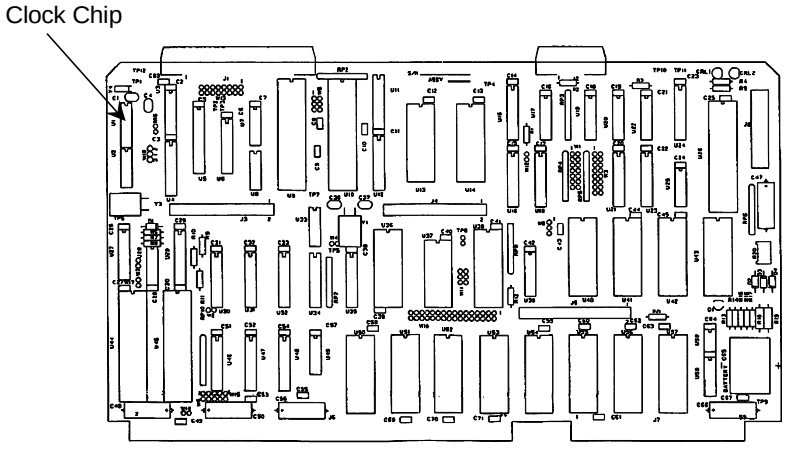

Figure 2 - CPU Board Clock Chip

9. Make sure there are no bent pins in the 40-pin CPU Board Connector. Align the 4 standoffs on the FLASH Memory Board with the 4 holes on the CPU Board. The standoffs must clear all components, BE CAREFUL WITH CAPACITOR C7 ON THE CPU BOARD. Then align the board to the board mating connectors. Press the 2 boards together by pressing in the connector area so that the standoffs on the FLASH Memory Board protrude through the holes in the CPU Board and the connectors mate.

NOTE: *The standoffs must be replaced if they are broken or the boards will not be secure*

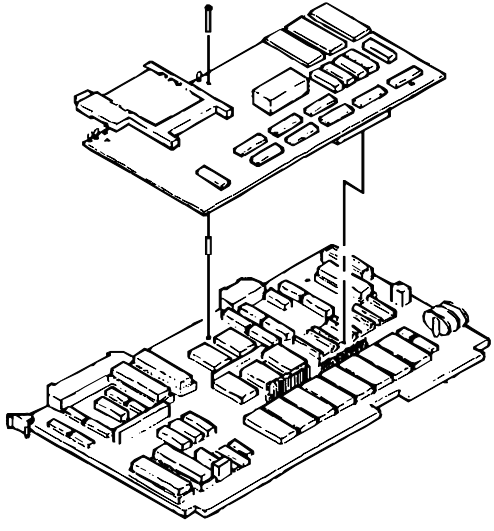

Figure 3 - Mounting/Removing the Flash Memory Board

10. Slide the CPU Board back into its slot and connect the 10-pin and 40-pin connectors to their respective slots.
11. Install the new CPU Cover using the original screws. The old CPU Cover cannot be used.
12. Remove the Memory Modules and set them aside. They will not be reused.
13. Remove the 4 corner screws on the face of the Upper and Lower Software Module Enclosure.

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14. Install the Memory Cartridge Cover plate using 4 new screws.

COMPONENT STATION LABEL PLACEMENT

Affix the component station label to the reagent shelf so that Barcode 1 is below Tri-Continent Reagent Dispenser 1.

BACKPANEL INSTALLATION

a. Remove the 2 screws in the upper corners of the Backpanel (Lower Left Rear Cover) and swing the cover open.

b. Disconnect Fan Power Cable and Ribbon Cable at the RS-232 Connector Board.

c. Remove the 4 nuts that hold the backpanel to the hinge.

d. Install the new rear cover by attaching it onto the hinge and reconnecting the ribbon cable and Fan Power Cable.

NOTE: *The Fan Power cable from the backpanel may not reach the fan power cable connection on the PPC system. Release the PPC Fan Power cable from the wire clamp to achieve the necessary length.*

e. Close the rear cover and reinstall 2 screws in the upper corners.

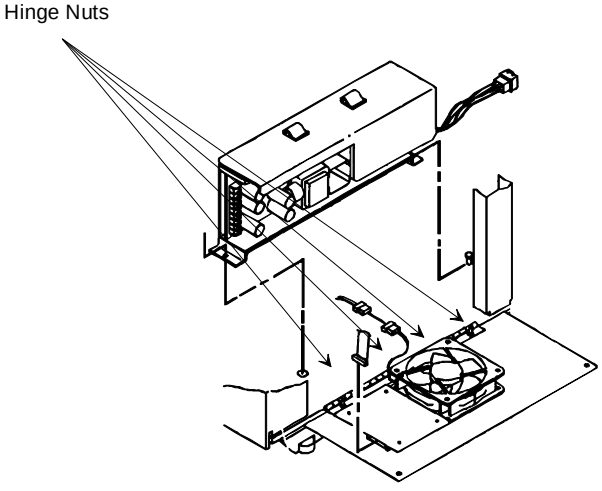

Figure 4 - Backpanel Installation

IX. FLASH MEMORY SOFTWARE DOWNLOAD DETAILED INSTRUCTIONS:

1. Insert the programmed FLASH Card (referred to as cartridge from this point forward) into the slot on the FLASH Memory Interface Board. THE CARTRIDGE CAN ONLY BE INSERTED ONE WAY: THE EDGE WITH THE SMALL HOLES FACES DOWN AND THE CARTRIDGE LABEL WILL BE ON THE RIGHT. Press down on the cartridge firmly until the eject button and the top of the cartridge are at approximately the same level.

CAUTION: *IT IS IMPORTANT THAT THE CARTRIDGE IS INSERTED PRIOR TO TURNING ON*

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THE PPC INSTRUMENT.

2. Turn the PPC instrument ON.
3. The instrument will initialize for approximately 1 minute before the following screen appears:

Program Rev Level Difference Database Will Be Destroyed Proceed? (YES/NO)

4. Press <YES> to proceed. After <YES> is pressed, the analyzer will continue initializing for approximately 1 minute. Pressing <NO> will abort the procedure.
5. The Insert Tray screen will appear:

Insert Tray --------->	
Date: xx/xx/xx	Time: xx:xx:xx

6. Press <#> to access the Special Modes Main Menu as shown below:

1. Database	2. Assay Tools	3. Config
4. Diagnostics	5. Verification	6. Download
7. Setup	8. Reconstitute	9. Bead Drop

Selection Option OR <#> To Exit

7. Press <6> to select Program Download. The following screen will appear:

Program Download
Enter New Password:_____

Press <#> to Exit

Pressing <#> returns the screen to the Special Modes Main Menu. If fewer than 4 characters are entered, the "Error 6.1.4.1. Invalid Entry" screen is displayed. If more than 4 characters are entered, the keyboard beeps.

8. Enter a four (4) character alphanumeric password such as "**AAAA**" and press <ENTER>.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

The following screen will appear:

Program Download New Password: AAAA (YES/NO)

Pressing <YES> causes the PPC system to reinitialize and begin program download. Pressing <NO> returns the screen to the Special Modes Main Menu.

NOTE: *This password is stored on the PPC system. If an Abbott Representative has already performed the software download and used a different password, you must obtain the original password or reset RAM to continue.*

9. The PPC system will initialize for approximately one minute, then the "Program Download In Progress" screen will be displayed for 5-8 minutes while the program download is in progress.
10. When the download process is finished, the "Program Download Complete" screen will be displayed.
11. Turn OFF the instrument, then remove the program cartridge by pressing down on the eject button on the cartridge holder. Turn ON the PPC instrument and wait for the "Insert Tray" screen to appear.
12. Close the Top Right Cover. After completing these steps, proceed to Section X, Validation Protocol Checklist.

X. VALIDATION PROTOCOL CHECKLIST:

REFER TO THE HARDWARE PROTOCOL (69-0131/R7).

NOTE: *The PPC instrument must be calibrated before assay processing can begin. Refer to the PPC Operations Manual (69-0101/R16), Section 6.*

XI. ADDED FEATURES AND SETUP OPTIONS:

Setup Option

The Setup option is an item in the Special Modes menu. The Special Modes Menu Screen is shown below:

1. Database	2. Assay Tools	3. Config
4. Diagnostics	5. Verification	6. Download
7. Setup	8. Reconstitute	9. Bead Drop
	Selection Option OR <#> To Exit	

A new selection will be available in the Special Modes/Setup menu. This selection is Date/Time. To access this menu, press <#> at the Insert Tray screen and press <7> for Setup at the Special Modes Menu. This will invoke the Setup Menu password function screen. After entering the proper Setup

Password, the Setup Menu will be displayed as shown below:

```
Setup
1. Reread      2. OPD Timing   3. TPC
4. SID Length  5. Retransmit   6. Date/Time
Selection Option OR <#> To Exit
```

If Setup Selection 6 (Date/Time) is chosen, the following relocated screen will be displayed:

```
Date/Time Configuration
Date: MM/DD/YY       Time: HH:MM:SS
1. Date      2. Time      3. Format
Select 1-3 To Modify OR <#> To Exit
```

Press <1> to set the Date. Press <2> to set the Time. Press <3> to change the Date format. Press <#> to return to the Setup menu screen.

COMMUNICATIONS PROTOCOL

The communications protocol (BABEL) facilitates the passing of information between the PPC instrument and other external systems such as FPC™ system. It will carry all of the tray and Sample ID information formerly available via JIBBERISH. In addition, for TPC™ capable instruments, it will carry TPC-related information.

The communication mode will be transparent to the operator. In the BABEL mode there are no assay protocol link table assignments. These protocols will be passed from the COMMANDER® FPC™ system with the tray information. There will be no other changes to the operator interface during normal operation. Communication link failures will be addressed by the communications handler for both JIBBERISH and BABEL messages.

When a request is made to send or collect data from an external instrument, the communications mode of the COMMANDER® PPC™ instrument will be examined.

If the PPC instrument is connected to JIBBERISH instruments, the current JIBBERISH protocol handler will be used. If the PPC system is connected to BABEL-capable FPC instruments, the BABEL protocol will be followed. If the PPC analyzer is connected to TPC™ instruments, TPC information will be available.

The communications mode of the PPC instrument will be determined and stored during each auto-configuration from the instrument's port assignment screen. This communications mode will be retained through power cycling.

Note: The PPC system will no longer communicate with JIBBERISH speaking FPC instruments. FPC software version 2.5 or greater must be used.

XII. NEW ERROR CODES:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
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
8.1.1.37	Incorrect Password	Wrong Abbott Assay Delete password 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 software version again.
8.1.1.44	Assay nn Exists	Attempt to save to assay number already in use	Choose unique assay number.
12.1.2	Program Checksum Error	Background software checksum test failure	Call CSC

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
COMMANDER® PPC(TM) Version 8.01/8.11 Software Upgrade

TSB#: **50-036**

ORIGINATOR: **Thomas Owusu**
APPROVED: **Bob Schabel 23/November/96**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **10498-035**

IMPLEMENTATION:	TSB Part/Kit #: **See Parts, Section V**	Upgrade Time: **1.5 Hrs.**
● Immediate ○ Next Service Call ○ Next Failure ○ Optional	TSB Effectivity/ Part(s) Availability: **23-NOV-96**	Validation Time: **2.0 Hrs.**
Instruments Requiring Modification: **See Administrative Notes**	**TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ● YES ○ NO	Total Mod. Time: **3.5 Hrs.** ****NOTE** The instrument must be at TSB Level 31 prior to performing this TSB.**

I. DISTRIBUTION:

Worldwide

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

II. PURPOSE:

The COMMANDER® PPC™ Version 8.01/8.11 software upgrade/installation is to correct the software defects found with PPC Version 8.0/8.1 software. The software defects include Batch Checksum Error on Power-up, no prompt for conjugate on Four Pass Assay, and Database Corruption on Power-up. In addition, -A-HIVAG-1 MC 2A81, and HIV-1HIV-2 Plus updates have been made, Assay 18 (CMV TOTAL AB EIA) has been removed and Assay 33 (CMV TOTAL AB EIA SCN) is available. The COMMANDER PPC Version 8.01/8.11 Hardware / Software installation has been designed to make the PPC instrument communicate with the COMMANDER® FPC™ instrument, as part of Total Process Control™ (TPC). In addition, the increased onboard program memory space is maintained.

III. ADMINISTRATIVE NOTES:

U.S.: TSS organization will install both the hardware and software if the TSB level of the instrument is not at 33. If the TSB level is at 33, only PPC V8.01/8.11 software will need to be installed. FSRs will provide support during installation only if necessary. If the account uses a COMMANDER FPC instrument, the PPC system upgrade must be performed when the FPC V2.5 software installation is done. Optical Reference Solution (LN 1B07-01) is needed to perform calibration during the PPC V8.01/8.11 software upgrade.

U.S. SOFTWARE TRACEABILITY PLAN:

TSS and BBAM Plan

A. 8.00 Software Returns:

1. After Pre-Market PAR, a Fed-Ex mailer will be sent to all TSSs, BBAMs, or other Abbott Personnel who had previously received PPC 8.00 software. The mailing will include a PQA addressed Fed-Ex shipping label and the Software Return Form.
2. Abbott Personnel will ship the completed Software Return Form and the 8.00 software to PQA

using the pre-addressed Fed-Ex label.

B. 8.01 Software Orders:

1. All TSSs and BBAMs will receive 8.01 software (list number 1A05-58). These orders will be placed using the isotope account numbers. A listing of the Abbott Reps will be provided by Marketing.
2. COMMANDER Product Quality Assurance will maintain traceability of software shipments according to current practices.

Field Service Plan:

A. 8.00 Software Returns:

1. The Field Service Organization will obtain the number of 8.00 software shipments to the Depots from the Dallas planning organization.
2. The Field service organization will stop all replenishment of 8.00 software to the Depots and request the return of 8.00 software. The number of returns will be compared to the final list of shipments provided from planning.
3. The Field Service Organization will notify all FSRs via Lotus Notes or Voice-com that 8.00 software must be returned. The Field Service organization must also track the number of software cards returned from individual FSRs.
4. A summary of the returned software from the Depots and individual FSRs will be required at the Post-launch review.

B. 8.01 Software Orders

1. **The Depots will no longer be stocked with PPC Flash Software.**
2. The Dallas Field Service Support Organization will provide a list of individual FSRs who

routinely service a majority of the PPC customers. Also those FSRs who service the larger facilities which have numerous PPC instruments will receive their own PPC 8.01 software card. The FSRs who are shipped flash software will retain the software in their possession until its return is requested.

3. Additional FSRs requiring PPC software can place orders through Customer Service (CSC) using the appropriate isotope customer numbers. These orders can be guaranteed overnight delivery. In cases where overnight delivery is not acceptable, the local BBAM or TSS can be called in to assist with the software download as they will be required to execute the Installation and Validation Protocol prior to putting the PPC back into service.

   Emergency orders may be placed using Field Service Parts to expedite the order. This procedure will not track the serial numbers. Dallas planning must add the software list number (1A05-58) to the Field Service system.

4. COMMANDER Product Quality Assurance will maintain traceability of software shipments according to current practices.

International: The group responsible for installation of TSB 50-036 and the plan for the return of V8.00/8.10 software, will be decided by each individual area. Both the hardware and software will be installed if the TSB level of the instrument is not at 33. If the TSB level is at 33, only PPC V8.01/8.11 software will need to be installed. If the account uses a COMMANDER FPC™ system, the PPC V8.01/8.11 upgrade must be performed when the FPC 2.5 software installation is done. Optical Reference Solution (LN 1B07-01) is needed to perform calibration as part of the PPC V8.01/8.11 upgrade procedures.

IV. SPECIAL TOOLS:

No Special Tools Required. An FSR tool, 5/16 Hex Nut Driver (P/N 14207-143) may be needed by TSSs during hardware installation.

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V. PARTS:

DOMESTIC:

List #	Description
1A05-50	**FLASH Hardware Kit** FLASH Memory Assembly Cover Letter CPU Cage Cover Cover Plate Screw 4-40 x 6.25 Grounding Strap Antistatic Pad Backpanel Component Station Label
9C96-10	**PPC 8.01 U.S. Literature Kit** Installation/Validation Protocol (US) User Validation Letter Operation Manual Maintenance Log Cover Letter PPC RS-232 Output Specification PPC 8.0/8.1 Output Data Diskette Diskette Mailer, 5-1/4 Label, LN ID PPC US Literature Kit Box, RSC 200, SNGL, 12x12x6
9C96-20	**PPC 8.01 U.S. Accessory Kit** Installation/Validation Protocol (US)

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User Validation Letter
Operation Manual
Cover Letter
PPC RS-232 Output Specification
PPC 8.0/8.1 Output Data Diskette
Diskette Mailer, 5-1/4
Label, LN ID PPC ROW Accessory Kit
Box, RSC 200, SNGL, 12x12x6
PPC RAP Pack (US)

INTERNATIONAL:

1A05-50 **FLASH Hardware Kit**
Flash Memory Assembly
Cover Letter
CPU Cage Cover
Cover Plate
Screw 4-40 x 6.25
Grounding Strap
Antistatic Pad
Backpanel
Component Station Label

9C96-30 **PPC 8.11 ROW Literature Kit**
Installation/Validation Protocol (ROW)
User Validation Letter
Operation Manual
Maintenance Log
Cover Letter

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

PPC RS-232 Output Specification
PPC 8.0/8.1 Output Data Diskette
Diskette Mailer, 5-1/4
Label, LN ID PPC ROW Literature Kit
Box, RSC 200, SNGL, 12x12x6

9C96-40 **PPC 8.11 ROW Accessory Kit**
Installation/Validation Protocol (ROW)
User Validation Letter
Operation Manual
Maintenance Log
Cover Letter
PPC RS-232 Output Specification
PPC 8.0/8.1 Output Data Diskette
Diskette Mailer, 5-1/4
Label, LN ID PPC ROW Accessory Kit
Box, RSC 200, SNGL, 12x12x6
PPC RAP Pack (ROW)

1A05-59 **PPC 8.11 ROW Software Kit**
Hardware Installation Instructions
Installation/Validation Protocol (ROW)
PPC 8.11 Flash Card (ROW)
Envelope, Bubble Ship 9.5x14.5
Label, LN ID, PPC 8.11 ROW Software Kit

SERVICE KIT IMPACT:

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PPC Field Service Parts Kit

U.S.: 1-43645-02 (Flash Memory Assembly) will be added to the Field Service Remote Depots. Also, the new RS232 board, P/N 1-42472-02, has been added to Dallas stock.

International: The Local Service Logistics Areas of the world will forecast and order the required number of upgrade kits using LN1A05-59 (PPC 8.11 ROW Software Kit), 1-43645-02 (Flash memory assembly) and 1-42472-02 (RS232 board). One software kit will be needed for each Abbott representative who will perform this upgrade.

PARTS RETURNS (Refer to the Software Traceability plan in section III)

For TSS's/BBAM's: After 100 downloads, the PPC 8.01/8.11 FLASH Memory Card must be returned through normal channels. All 6.10 Flash Memory Boards must be returned.

For FSR's: After 100 downloads, the PPC 8.01/8.11 FLASH Memory Card must be returned through normal channels.

U.S. Returns should be sent to:

Abbott Laboratories
Product Quality Assurance D9B8 AP50
200 Abbott Park Road
Abbott Park, IL 60064

International: After 100 downloads the FLASH Memory Card must be returned through normal channels.

REPLACED PARTS:
The following parts will be deleted:

Memory Cartridge Interface Board 1-42474-01 (will be deleted from Depot Stock)

Memory Module Cartridge Current Version (will be deleted from Depot Stock)

Memory Module Interface Cable 1-36249-01 (will be deleted from Depot Stock)

RS-232 Board 1-42472-01 (will be deleted from Depot Stock).

The above parts will be deleted from Dallas Depot Stock once all of the remaining COMMANDER® PPC™ systems have been upgraded with FLASH Memory and 8.01 (U.S.) or 8.11 (ROW) software.

COMPATIBILITY:
PPC instruments upgraded to FLASH technology will not be compatible with previous software versions.

VI. PROCEDURE:

MODIFICATION STEPS:
The FLASH Hardware Installation Instructions will be included with the PPC Software Upgrade Kit (U.S. Version 8.01 LN1A05-58 and ROW Version 8.11 LN1A05-59). The Installation/Validation Protocol will be included with the PPC Literature Kits (U.S. Version 8.01 LN9C96-10 and ROW Version 8.11 LN9C96-30) and PPC Accessory Kits (U.S. Version 8.01 LN9C96-20 and ROW Version 8.11 LN9C96-40) as well as the software upgrade kits.

CHECKOUT:
Complete instrument validation should be performed after the FLASH Upgrade and software download have been completed. The Installation/Validation protocol is included in both the U.S. and ROW Literature Kits and the U.S. and ROW Accessory Kits.

MODIFICATION CONTROL STICKER UPDATE:
TSB 50-036 will be marked off by the Abbott representative as part of the final instrument validation procedure.

Marking through the number 36 on the TSB Control Sticker is part of the Validation Procedure. The following procedures detail all of the necessary steps to perform when replacing either the FLASH Memory Interface or Main CPU Boards. The procedures are as follows:

1. Pre-replacement checklist
2. FLASH Memory Interface/CPU Board removal & replacement
3. FLASH Memory Software download detailed instructions
4. Validation protocol checklist

NOTE: *Before attempting to install PPC Software version 8.01/8.11, all batches in process in the PPC must be run to completion with results printed and transmitted to the connected LIS. ALL INFORMATION RELATED TO PREVIOUSLY PROCESSED TRAYS, BATCHES, SAMPLE IDs, SAMPLE RESULTS, AND QUALITY CONTROL DATA WILL BE LOST WHEN THE HARDWARE IS UPGRADED*.

VII. PRE-REPLACEMENT CHECKLIST

1. Prior to installing TSB 50-036, check for the TSB level of the instrument. If the TSB level is at 31, perform hardware and software installations. If the TSB level is at 33, perform software installation only.
2. Prior to replacing the FLASH Memory or CPU Board, obtain the following information using the Special Modes Main Menu. Use the Config Option in the menu.
3. Record all current setup configuration information listed below. Refer to Section 4 of the COMMANDER® PPC™ Operations Manual (66-4853/R14) for instructions on how to access the configuration information.
   a. Instrument port assignments
   b. Baud rates
   c. Parity
   d. Bits per character
   e. Handshaking
   f. Stop Bits
   g. DMS Checksum
   h. Bar code type
   i. Bar code length

   NOTE: *For instruments currently at TSB 33, record the "Setup" configurations found in section XI.*
4. Print the Protocol/Test Number Assignment. Refer to Section 4 of the COMMANDER® PPC™

Operations Manual (66-4853/R14) under Assay Tools. This printout is a listing of the FPC/PPC Test Numbers that are linked to PPC System Assay Numbers.

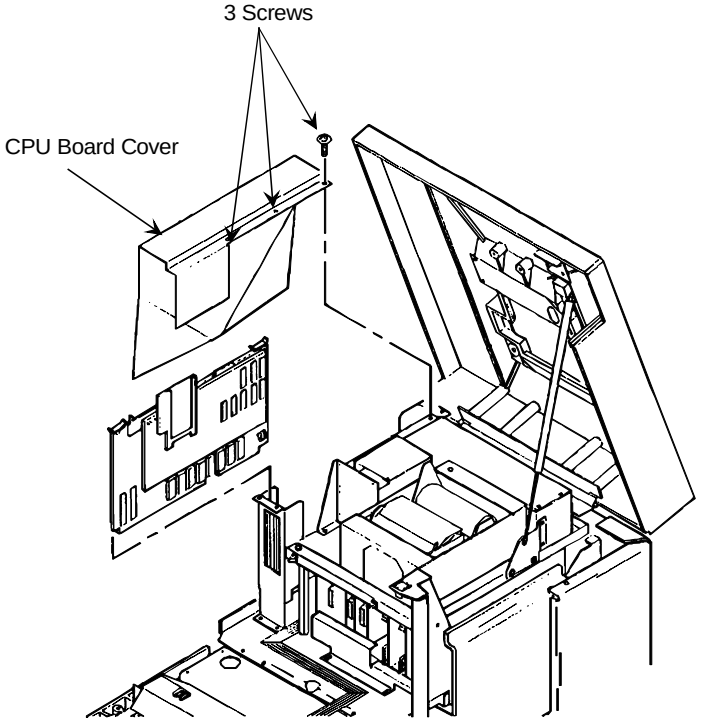
NOTE: *This step is not necessary if the PPC instrument is connected to an FPC™ system with Version 2.5 software.*

5. Press the LIST ASSAYS key to list the assay directory. Print each edited assay protocol (edited assays are identified by an "E" on the right side of the assay directory). Refer to Section 4 of the COMMANDER PPC Operations Manual under the Assay Tools Option.
6. Perform this step only if the laboratory utilizes the Quality Control (QC) database. Print a copy of the QC Directory and print the QC Data for each assay listed in the directory. Refer to Section 4 of the COMMANDER PPC Operations Manual under the Database Option.
7. Power down the instrument and proceed to Section VIII.

VIII.FLASH MEMORY INTERFACE/CPU BOARD REMOVAL & REPLACEMENT

NOTE: *Use static protection when handling printed circuit boards.*

1. Raise the Top Right Cover and lower the Keypad/Display Panel.



2. To remove the CPU Board Cover, remove 3 screws and lift straight up.
3. Remove the 10-pin Bitbus Cable Connector and the 40-pin Serial Cable to the Bar Code Reader/Keyboard Display Connector from the top edge of the CPU Board.

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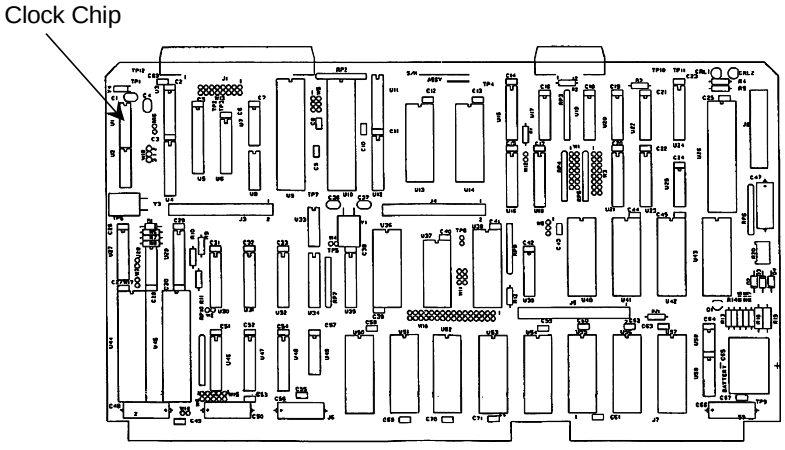
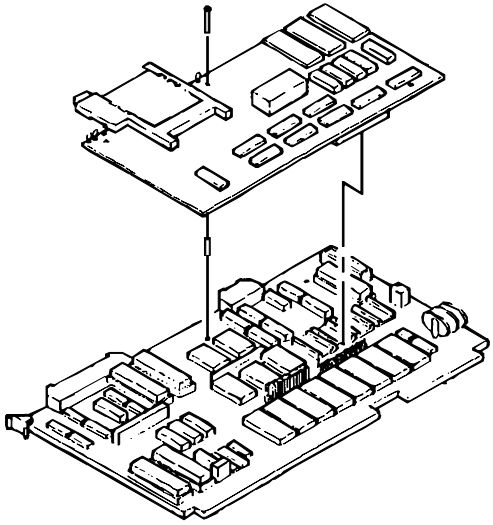
DO NOT PULL ON THE CABLES.

4. Slowly slide the CPU Board up until you can reach the Cartridge Interface Cable connected to the front of the CPU Board. Remove the cable connector by pulling the connector away from the CPU Board. This connector will be somewhat difficult to remove.
5. Remove the CPU Board from the PPC analyzer and place it on the anti-static grounded mat.
6. Disconnect the Cartridge Interface Cable from the 2 cartridge connectors inside the PPC instrument and completely remove the cable (this cable will not be reused). The cable will be difficult to disconnect.
7. Locate the clock chip at position U1 on the CPU Board.
8. If the part number of the clock chip is MM58274BN, the CPU Board must be replaced. Any non-"BN" suffix (such as "AN" or "N") is correct. Refer to TSB 50-031 for additional instructions.



9. Make sure there are no bent pins in the 40-pin CPU Board Connector. Align the 4 standoffs on the FLASH Memory Board with the 4 holes on the CPU Board. The standoffs must clear all components, BE CAREFUL WITH CAPACITOR C7 ON THE CPU BOARD. Then align the board to the board mating connectors. Press the 2 boards together by pressing in the connector area so that the standoffs on the FLASH Memory Board protrude through the holes in the CPU Board and the connectors mate.

NOTE: *The standoffs must be replaced if they are broken or the boards will not be secure.*



10. Slide the CPU Board back into its slot and connect the 10-pin and 40-pin connectors to their respective slots.
11. Install the new CPU Cover using the original screws. The old CPU Cover cannot be used.
12. Remove the Memory Modules and set them aside. They will not be reused.
13. Remove the 4 corner screws on the face of the Upper and Lower Software Module Enclosure.
14. Install the Memory Cartridge Cover plate using 4 new screws.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

COMPONENT STATION LABEL PLACEMENT

Affix the component station label to the reagent shelf so that Barcode 1 is below Tri-Continent Reagent Dispenser 1.

BACKPANEL INSTALLATION

a. Remove the 2 screws in the upper corners of the Backpanel (Lower Left Rear Cover) and swing the cover open.

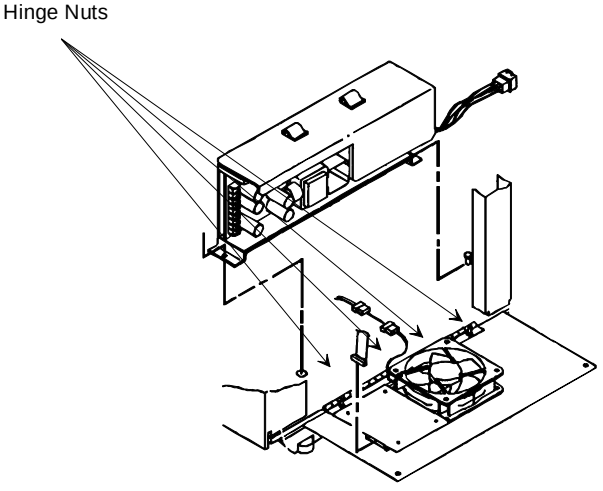
b. Disconnect Fan Power Cable and Ribbon Cable at the RS-232 Connector Board.

c. Remove the 4 nuts that hold the backpanel to the hinge.

d. Install the new rear cover by attaching it onto the hinge and reconnecting the ribbon cable and Fan Power Cable.

NOTE: *The Fan Power cable from the backpanel may not reach the fan power cable connection on the PPC. Release the PPC Fan Power cable from the wire clamp to achieve the necessary length.*

e. Close the rear cover and reinstall 2 screws in the upper corners.



IX. FLASH MEMORY SOFTWARE DOWNLOAD DETAILED INSTRUCTIONS

1. Insert the programmed FLASH Card (referred to as cartridge from this point forward) into the slot on the FLASH Memory Interface Board. THE CARTRIDGE CAN ONLY BE INSERTED ONE WAY: THE EDGE WITH THE SMALL HOLES FACES DOWN AND THE CARTRIDGE LABEL WILL BE ON THE RIGHT. Press down on the cartridge firmly until the eject button and the top of the cartridge are at approximately the same level.

CAUTION: *IT IS IMPORTANT THAT THE CARTRIDGE IS INSERTED PRIOR TO TURNING ON THE PPC INSTRUMENT*.

2. Turn the PPC instrument ON.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

3. The instrument will initialize for approximately 1 minute before the following screen appears:

Program Rev Level Difference Database Will Be Destroyed Proceed? (YES/NO)

4. Press YES to proceed. After YES is pressed, the analyzer will continue initializing for approximately 1 minute. Pressing NO will abort the procedure.
5. The Insert Tray screen will appear:

Insert Tray --------->	
Date: xx/xx/xx	Time: xx:xx:xx

6. Press # to access the Special Modes Main Menu as shown below:

1. Database	2. Assay Tools	3. Config
4. Diagnostics	5. Verification	6. Download
7. Setup	8. Reconstitute	9. Bead Drop
	Selection Option OR <#> To Exit	

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

7. Press 6 to select Program Download. The following screen will appear:

Program Download
Enter Password:_____
Press <#> to Exit

8. Enter the four (4) character alphanumeric password "**AAAA**" and press ENTER.

NOTE: *This password is stored on the PPC. If an Abbott Representative has already performed the software download and used a different password, you must obtain the original password or reset RAM to continue.*

Pressing # returns the screen to the Special Modes Main Menu. An incorrect password also returns the screen to the Special Modes Main Menu. If fewer than 4 characters are entered, the "Error 6.1.4.1. Invalid Entry" screen is displayed. If more than 4 characters are entered, the keyboard beeps.

NOTE: *The download password can be changed by pressing * once the Operator or Technician ID entry screen is displayed as in Step 9 below. Pressing * from this screen will return to the "Program Download Enter New Password" screen. The operator may then type in a new 4 character alphanumeric password.*

9. When the correct Program Download Password (AAAA) has been entered the following screen appears:

Program Download
Enter Technician ID:_____
Press <#> to Exit

10. Enter a 3 character alphanumeric ID and press ENTER. The following screen appears:

Program Download
Enter Instrument Location:_____
Press <#> to Exit

11. Enter the following instrument location data:
    a. Use the first 11 characters for the site name, using spaces as needed for fillers.
    b. Use the next 9 characters for the city location.
    c. Use the next 5 characters for the Zip Code (U.S.) or country code (Non-U.S.).
    d. Use the last 10 characters for the phone number.

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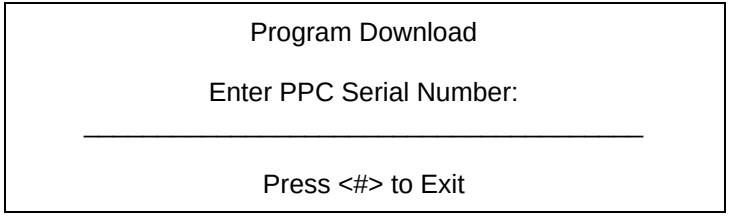
NOTE: *A minimum of 5 characters must be entered.*

Press ENTER. The following screen appears:



12. Enter the 7 digit serial number of the PPC system (including leading zeros if applicable and deleting 96) when the operator is downloading software to, and press ENTER. The serial number is located on the left side of the instrument on the manufacturing faceplate.
13. The PPC system will initialize for approximately 1 minute, then the "Program Download In Progress" screen will be displayed for 5-8 minutes while the program download is in progress.
14. When the download process is finished, the "Program Download Complete" screen will be displayed.
15. Turn OFF the instrument, then remove the program cartridge by pressing down on the reject button on the cartridge holder. Turn ON the PPC analyzer and wait for the "Insert Tray" screen to appear.
16. Close the analyzer lid. After completing these steps, proceed to Section X, Validation Protocol Checklist.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

X. VALIDATION PROTOCOL CHECKLIST

REFER TO THE HARDWARE PROTOCOL (66-8589/R6).

NOTE: *The PPC instrument must be calibrated before assay processing can begin. Refer to the PPC Operations Manual (66-4853/R14), Section 6.*

XI. ADDED FEATURES AND SETUP OPTIONS

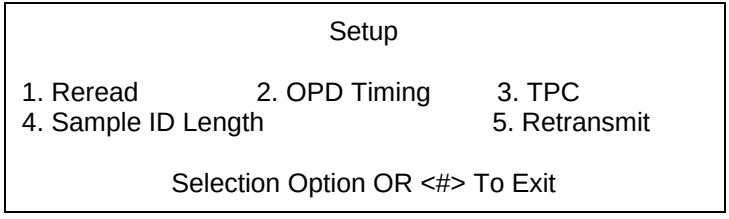
Setup Option

The Setup option is a new item in the Special Modes menu. The modified Special Modes Menu Screen is shown below:

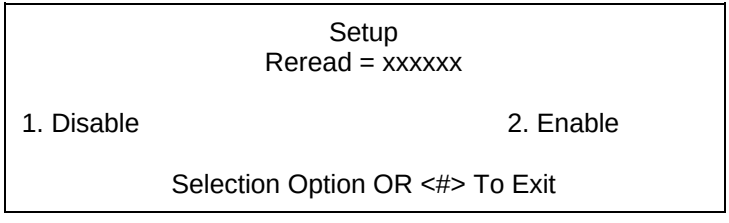
1. Database	2. Assay Tools	3. Config
4. Diagnostics	5. Verification	6. Download
7. Setup	8. Reconstitute	9. Bead Drop

Selection Option OR <#> To Exit

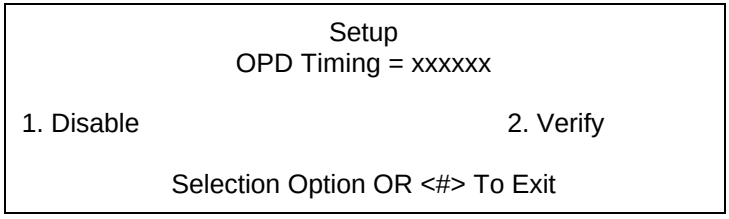
Five new selections will be available in the Special Modes/Setup menu. These selections are Reread, OPD Timing, TPC™, Sample ID Length, and Retransmit. To access this menu, press # at the Insert Tray screen and press 7 for Setup at the Special Modes Menu. This will invoke the Setup Menu password function screen. After entering the proper Setup Password, the Setup Menu will be displayed as shown below:



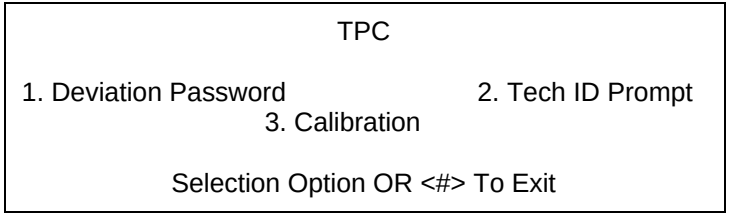
If Setup Selection 1 (Reread) is chosen, the following new screen will be displayed:



Press 1 to disable the Reread or press 2 to enable the Reread feature. Selection of 2 (OPD Timing), allows access to the OPD Timing Setup screen.

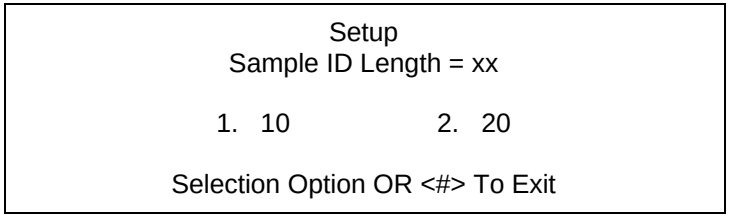


Press 1 to disable the OPD Timing or press 2 to enable the Verify Mode. If option 3 (TPC) was chosen, the new TPC™ Menu screen below will be displayed:



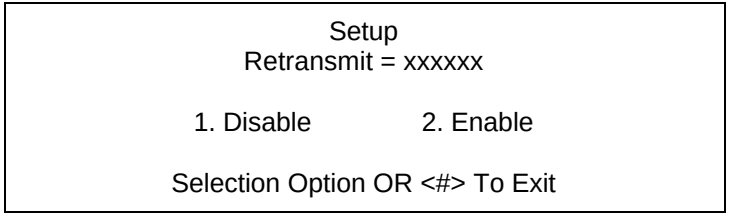
Press 1 to invoke the Deviation Password option. Pressing 2 will set when the instrument prompts for a Tech ID. Pressing 3 sets the TPC mode for the Calibration option. Refer to Section 2 of the COMMANDER® PPC™ Operations Manual (66-4853/R14) for a complete description of all TPC features.

If Setup Option 4 (Sample ID Length) is chosen, the following new screen will be displayed with "XX" as the current setting (10 or 20). The default setting is 10.



Pressing 1 will set the maximum sample ID length to 10 characters. Pressing 2 will set the maximum sample ID length to 20 characters.

If Setup Menu option 5 is selected, the following screen appears:



Pressing 1 will disable the Retransmit function. Pressing 2 enables the Retransmit function. Refer to the COMMANDER PPC Operations Manual, Section 6 for a detailed description of the Retransmit function.

EXTERNAL BARCODE READER

The External Barcode Reader function mode allows operator input of TPC™-related information. The External Barcode Reader and PPC instrument communicate through serial Port 4 of the existing four RS-232 ports. Port 4 can be assigned as the External Barcode Reader port or as a RS 232 communication Port by the use of a switch located near it (Port 4). The External Barcode Reader is used only to input TPC-related information.

The External Barcode Reader port assignment is a new option in the PPC Configuration Menu. The operator must enter Special Modes by pressing # at the Insert Tray screen, and selecting 3 (Config) from the Special Modes screen. The following screen will appear:

1. Date/Time	2. DMS/Ext. BCR Assign
3. Instr. Port Assign	4. Int. Barcode
5. View Angle	6. Port Characteristics

Selection Option OR <#> To Exit

If Option 2 (External BCR) is selected, the following screen appears:

DMS/Ext. BCR Assign

1. DMS	2. External BCR

Selection 1 OR 2 to Modify OR <#> To Exit

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If Option 1 is selected, and the External Barcode Reader was not previously selected, then the DMS Port Assignment screen will display "Select Port # 0, 1, 2, 3, 4 To Modify". After the DMS port assignment has been completed, the display will return to the above DMS/Ext. Barcode Reader Assign screen. The operator will be able to assign the External Barcode Reader to port 4 only when port 4 is NOT configured to an external device.

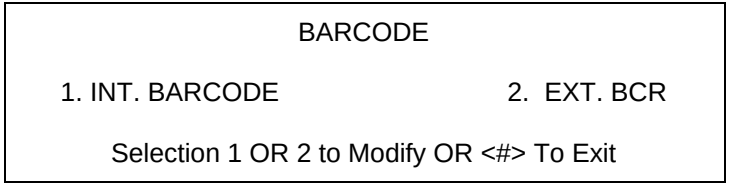
If Option 2 (External BCR) is selected and port 4 is available, the new screen below will be displayed:

External BCR Port Assignment = x Select Port # 0, 4 To Modify OR <#> To Exit

This gives the RS 232 option for assigning the External Barcode Reader to port 4. To achieve this, set the Select switch near Port 4 to the External Barcode Reader mode. Select Port 4 for the External BCR Port assignment.

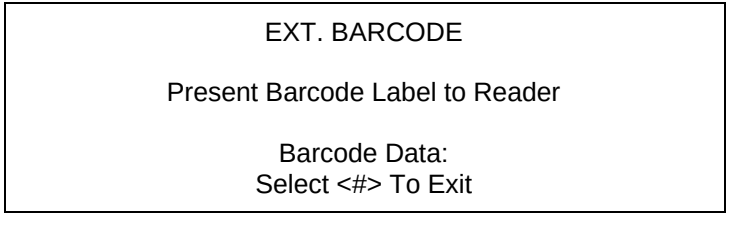
The External Barcode Reader diagnostics is a new option in the PPC Diagnostics menu. The operator must enter Special Modes by pressing # when the Insert Tray screen appears, and then selecting 4 (Diagnostics). Select 1 to enter the Barcode Diagnostics Menu screen.

The following new screen will be displayed:



The INT. BARCODE Option (1), has the same functionality as the current BARCODE Diagnostics. The only difference is after the operator has completed the INT. BARCODE option, the display returns to the BARCODE Diagnostics screen shown above.

If the operator selects the EXT. BARCODE (2) while port 4 is not configured to an External Barcode Reader, Error 10.3 will occur. If option 2 is selected while port 4 is configured to an External Barcode Reader, the following new screen will appear:



A barcode label will be read and the barcode label number displayed on screen if a label is presented

to the External Barcode Reader.

COMMUNICATIONS PROTOCOL

The communications protocol (BABEL) facilitates the passing of information between the PPC instrument and other external systems such as FPC™ system. It will carry all of the tray and Sample ID information currently available via JIBBERISH. In addition, for TPC™ capable instruments, it will carry TPC-related information.

The communication mode will be transparent to the operator. In the BABEL mode there are no assay protocol link table assignments. These protocols will be passed from the COMMANDER® FPC™ system with the tray information. There will be no other changes to the operator interface during normal operation. Communication link failures will be addressed by the communications handler for both JIBBERISH and BABEL messages.

When a request is made to send or collect data from an external instrument, the communications mode of the COMMANDER® PPC™ instrument will be examined.

If the PPC instrument is connected to JIBBERISH instruments, the current JIBBERISH protocol handler will be used. If the PPC system is connected to BABEL-capable FPC instruments, the BABEL protocol will be followed. If the PPC analyzer is connected to TPC instruments, TPC information will be available.

The communications mode of the PPC instrument will be determined and stored during each auto-configuration from the instrument's port assignment screen. This communications mode will be retained through power cycling.

NEW BUSY SCREENS

The PPC system will display a message indicating that it is busy communicating tray information with an attached pipettor system as shown in the screen below:

Communicating Tray Information Please Wait

The analyzer will display a message indicating that the reader is busy when it is reading a test tray and the urge belts are turned off as shown in the screen below:

Reader Busy - Please Wait to Insert Tray xxxxxx

XII. NEW ERROR CODES

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION

1.1.4	Incompatible Transport Hardware, Transport Hardware Must Be Changed	Pre-production Transport Detected	Replace Transport
1.5.3	Tray was locked in without being gated.	PPC system has incorrectly allowed a removed tray to be pulled into the urge mechanism. Improper tray placement or insertion caused improper switch status to be detected.	Cycle power and remove tray.
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 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.
2.1.1.20	No Blank Value - No Further Calculations Possible	One or more wells failed the instrument lower limit check.	Advisory
3.2.11	Bad Pipettor Test Number	SMC test number sent by the SMC does not match up with a valid assay on the PPC system.	IP-32

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 PPC system.	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 - xxxxxxxxxxxxxxxxxx		Advisory
3.2.1.13	Master Lot Mismatch		Advisory
3.2.1.14	Registration of Component Used Failed		Advisory
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 system.	Advisory
3.2.1.21	Tray in Use	Tray entered cannot be gated.	Advisory
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	External Barcode Reader not configured.	Advisory
3.2.1.29	INTERNAL SYSTEM ERROR: External Barcode Reader Status Fault		Advisory-cycle power
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

5.1.1	Multiple Communication Types Found. Disconnect Differing Instruments	Connecting JIBBERISH and BABEL instruments to a COMMANDER PPC instrument simultaneously is not allowed	
5.1.2	Communication Link Failure Port: n, n, n, n	A transmission or expected reception could not be completed, and the communications link to that port was disconnected.	IP-36
5.1.3	Multiple Responses from Pipettors Duplicate Tray ID: xxxxxxxxxxxxxxx		Advisory
5.1.4	Hardware Communications Failure Port: n	A hardware failure is detected during auto-config.	Replace RS-232 Bd., Serial I/O Bd.
5.1.5	Instrument NOT Supported. Disconnect Unsupported Instruments.	The COMMANDER PPC will only support COMMANDER® FPC™ and PIP instruments.	Advisory
5.1.6	Invalid Message Format	An Invalid Message format was detected per the TPC BABEL Instrument Communications Protocol.	Advisory

5.1.7	Incorrect Communications Response	An invalid message type is detected per the TPC BABEL Instrument Communications Protocol.	Advisory
5.1.8	INTERNAL SYSTEM ERROR	A BABEL or JIBBERISH internal communication error occurred. The communications structure has been corrupted.	Cycle Power. Replace CPU.
6.2.1.1	No TPC™ Capable Instruments Connected		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 - xxxxxxxxxxxx		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	The COMMANDER PPC instrument was unable to communicate to a TPC pipettor.	IP-36

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
6.2.1.2	Illegal operation - Lot number exists: xxxxxxxxxx		Advisory
6.2.1.20	Warning - Mixture registration failed		Advisory
6.3.1.1	Protocol Select option not available in current communication mode.	PPC instrument is not in JIBBERISH communication mode when Protocol Select option was chosen.	Protocol Select option not available in JIBBERISH mode.
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 Barcode Reader Status Fault	External Barcode Reader task returns a fault status of not configured	
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
6.1.5.3	Operation not allowed. A batch is in process.	ADE option is selected and batches are active.	Advisory
6.1.7.1	Retransmit Disabled	Retransmit was selected, but the function has been disabled.	Advisory
6.2.1.6	Illegal Operation - TPC™ Mode Off		Advisory
6.1.4.5	No Calibration Data		Advisory
6.1.7.2	Illegal Operation - Batch In Process	Retransmit selected while a batch is in process.	Advisory
6.1.8.1	Cannot Assign Barcode Reader Port. Port 4 Not Available	Port 4 is already assigned to something else.	Advisory
6.2.1.7	Warning - Master Lot Expired		Advisory
6.1.7.3	Illegal Operation - Batch Not Completed	Tray ID entered whose batch is active.	Advisory

6.2.1.8	Illegal Operation - [Type] Data Exists	Bead data currently exists for the tray ID entered.	Advisory
6.1.4.7	ADE Calibration Checksum Failure		Advisory
6.1.7.4	Illegal Operation - Batch Void	Tray ID entered whose batch is void.	Advisory
6.2.1.9	Lot Number Not Found - xxxxxxxxxxx		Advisory
6.1.7.5	Illegal Operation - Batch Modified.	Tray ID entered whose batch has changed status.	Advisory
7.3	Barcode Error - Illegal Task ID	BCR (Internal or External BCR) was unable to decode where to send incoming information.	
7.4	Barcode Error - Bitbus User Error	BCR task cannot create a user ID with the Bitbus.	IP-2
7.5	Barcode Error - Bitbus Connection Error	The BCR task could not create a Bitbus connection.	IP-2
7.6	External Barcode Not Configured	The external BCR is not configured	Advisory

8.1.1.36	Assay List Number/Assay Procedure Combination Not Unique	An attempt was made to save an edited assay protocol and its Assay List Number/Assay Procedure is not unique.	Advisory
9.1.1.34	Pipettor Sample ID Length Incompatible	PPC system is in the 10 character mode and it attempts to collect sample IDs with more than 10 characters.	Incompatible bar-code labels or configure PPC to 20 character mode.
10.3	External BCR Port is Not Assigned	Attempting to use external BCR when Port 4 is not configured.	Advisory
11.2.6	810 Create Connection Error	Bitbus communication error.	Replace CPU then SIO then DIO Controller A and B. Replace Bitbus Cable.
12.1.1	Internal Status Checksum Failure All Assay Data Destroyed.	Checksum verification failed during power up.	If pressing ENTER will let you continue, the error occurred on the FLASH board or CPU. If you cannot continue, the error occurred on a bitbus board.

END OF DOCUMENT

ABBOTT ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
COMMANDER® PPC(TM) Compressor Control Switch Upgrade

TSB#: **50-035**

ORIGINATOR: **Tim Kitzmiller**
APPROVED: **Bob Schabel 24/MAY/96**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **Proj. Fldr. PP#2301**

IMPLEMENTATION:

- ○ **Immediate**
- ○ **Next Service Call**
- ○ **Next Failure**
- ● **Optional**

Instruments Requiring Modification:
See Administrative Notes Section

TSB Part/Kit #: **N/A**

TSB Effectivity/
Part(s) Availibility: **23-MAY-96**

TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)

- ○ YES
- ● NO

Upgrade Time: **1.0 Hr.**

Validation Time: **0.5 Hr.**

Total Mod. Time: **1.5 Hrs.**

****NOTE**** **The instrument must be at TSB Level n/a prior to performing this TSB.**

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

I. DISTRIBUTION:

Worldwide

II. PURPOSE:

This Technical Service Bulletin (TSB) is to inform the Worldwide Service organizations of the release of a Compressor Control Switch modification, for installation on Non-CE Mark PPC instruments that have not been modified to TSB Level 50-034 (CE Mark Hardware Upgrade). Prior to 01/01/96, Non-CE Mark instruments were shipped under the following LNs:

- 6208-01 PPC, Non-CE, New Build
- 6208-09 PPC, Non-CE, Refurb

PPC instruments that have been modified to TSB 50-034, or remanufactured instruments shipped from Dallas or Delkenheim after 01/01/96, will be labeled as LN 6208-86, designating a CE Mark configuration. The -86 (TSB 50-034) configurations already have the Compressor Control Switch modification installed.

As part of the TSB 50-034 CE Mark upgrade, a new CE Mark Valve Mount assembly (1-36020-02) will be installed that includes an additional compressor control pressure switch for controlling cycle time of the compressor. The new switch will monitor system pressure, then cutoff the +5VDC input to the compressor control relay, once the required system pressure level is reached to perform a bead wash function. The compressor will no longer continue to run after the regulator is closed, reducing the compressor noise level, resulting from back pressure buildup between the regulator and compressor motor.

TSB 50-035 provides a list of parts, and procedures required to install the -02 CE Mark Valve Mount assembly into a Non-CE Mark PPC instrument. This is accomplished through the re-wiring of the Input Power Module Logic Cable, on the Non-CE Mark Power Entry assembly (1-42485-01).

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III. ADMINISTRATIVE NOTES:

Implementation:

1. This is an OPTIONAL TSB, to be installed on Non-CE Mark PPC instruments (6208-01 and 6208-09) in the field.
2. Installation of TSB 50-035 (**US/ROW**) on Non-CE Mark instruments, already in customer accounts, will be at the Country Manager or District Manager's discretion, based upon customer requests.
3. Calls to the Customer Support Center (**ROW**), involving a defective CDCM system (Product Code 78) , will be forwarded to that country's Field Service Organization. Instead of repairing the CDCM system, the FSE will upgrade the customers PPC instrument (if Non-CE Mark) to a TSB 50-035 configuration. (**See CDCM ISA 78-003, for more details on the CDCM Market status**)

IV. SPECIAL TOOLS:

Pin Extractor Tool 10932-000 (must order separately)
Fine Tip Permanent Marking Pen

U.S. - US FSRs should have one (1), 10932-000, Pin Extractor Tool in their tool kits. If not, one can be ordered through normal parts channels.

ROW - It will be the responsibility of the individual countries to forecast and order the quantity of tools required to supply all PPC trained FSEs.

V. PARTS:

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U.S./ROW
All TSB 50-035 upgrade parts listed below will need to be forecasted/ordered separately for all upgrades. Each country (ROW) will be responsible for forecasting/ordering upgrade parts through normal channels.

QTY.	DESCRIPTION	PART NUMBER
1	CE Mark Valve Mount Assembly	1-36020-02
1	Jumper Wire Assembly 3.5" (8.9 cm)	1-73609-01
2	Pressure Switch Cable 17" (43 cm)	(Included with 1-73609-01)

SERVICE KIT IMPACT:
No additional impact to PPC Service Kits.

REPLACED PARTS:
N/A

COMPATIBILITY:
1. Any Non-CE Mark Power Entry Assembly (1-42485-01), modified to a TSB 50-035 configuration (Step 2, Modification Section), must be replaced with an equivalent -01 assembly, and modified to a TSB 50-035 configuration as well. Non-CE Mark Power Entry assemblies will not be shipped with the Input Power Module Logic Cable Jumper modification.

2. The new CE Mark Valve Mount assembly (1-36020-02), installed as part of the TSB 50-035 upgrade, must be replaced with an equivalent -02 assembly.

VI. PROCEDURE:

SAFETY NOTE:

Prior to performing the Compressor Control Switch Upgrade, insure that you have decontaminated the PPC instrument, using appropriate procedures outlined in the PPC Service Manual.

DOCUMENTATION NOTE:

Removal and replacement procedures for the PPC Valve Mount and Power Entry assemblies require the use of the PPC Service Manual. See Documentation required section for manual part number.

MODIFICATION STEPS:

1. **Removal of the Non-CE Mark Valve Mount, and Non-CE Mark Power Entry Assemblies.**
   a) Power down the PPC instrument, then pull up on the pressure relief ring on top of the water canister, to bleed off all system pressure.
   b) Disconnect the air, water, waste tubing assemblies, and compressor AC power cord from the left side panel of the PPC instrument.
   c) Remove the right rear cover on the PPC instrument. Disconnect, then remove and discard the Non CE Mark Valve mount assembly.
   d) Disconnect, then remove the Non-CE Mark Power Entry from the PPC instrument. (*Figure 1 shows both the CE and Non-CE Mark Power Entry configurations for further clarification*)

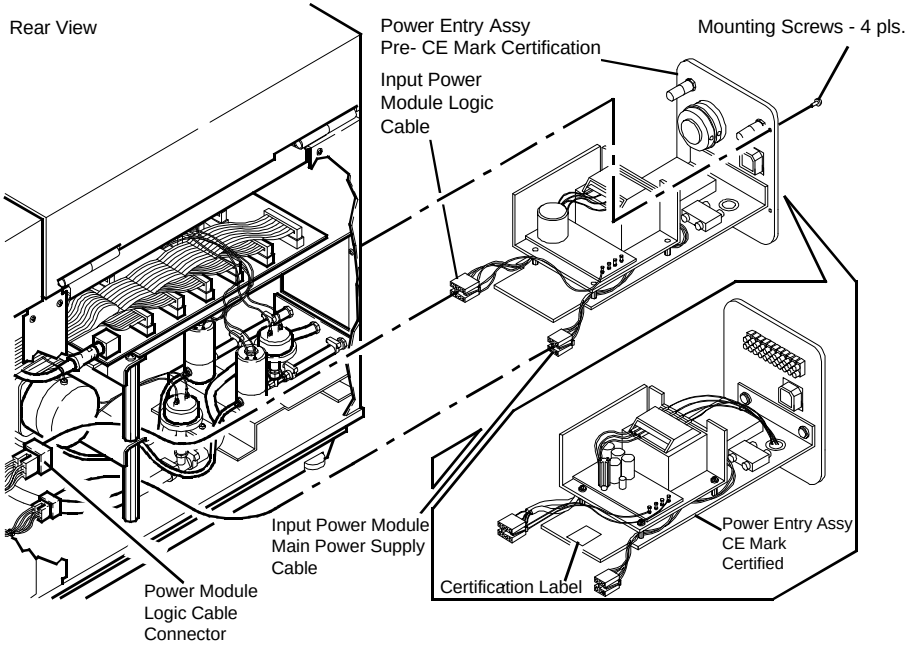

Figure 1

2. Jumpering the Non-CE Mark Power Entry Input Power Module Logic Cable.

a) Referencing Figure 1, locate the Input Power Module Logic Cable (8-pin, female connector) assembly connected to the Non-CE Power Entry assembly removed in step 1D.

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b) Referencing Figures 2 and 3, use the pin extraction tool to extract the red/white wire currently located in the pin 5 location. *For best results, push the pin extractor tool into the pin 5 location, rotate the body of the tool approximately 45 degrees, then push in on the plunger.*

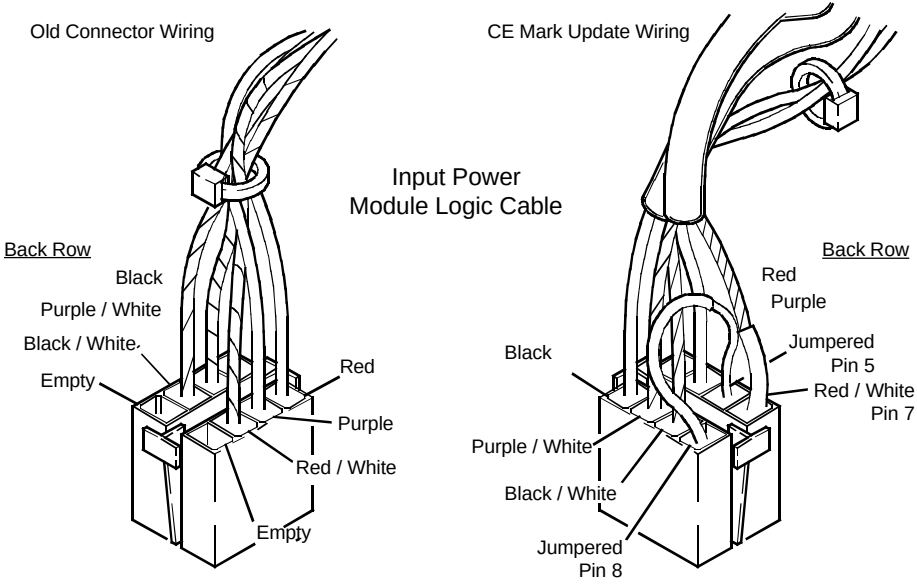

Figure 2

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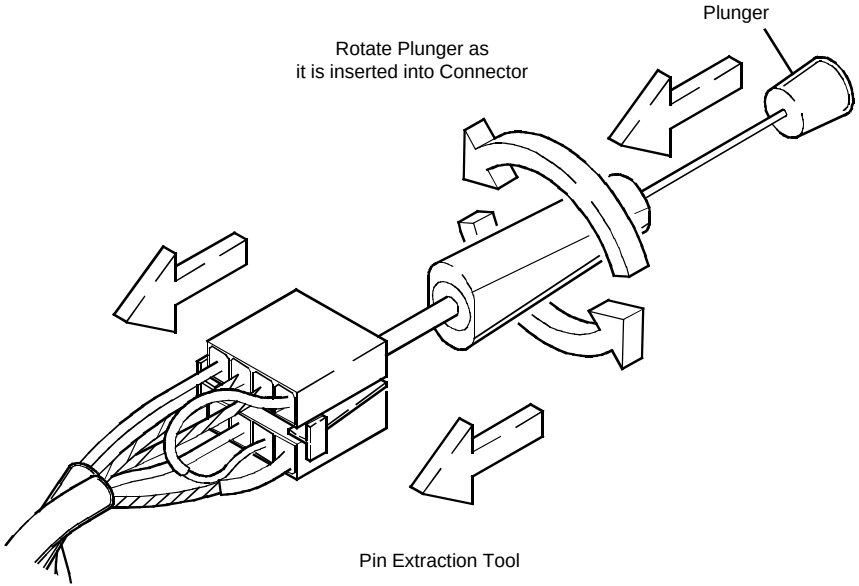

Figure 3

c) Re-insert the red/white wire into the pin 7 location of the 8-pin female connector, as shown in Figure 2.
d) Insert one end of the 3.5" (8.9 cm) jumper wire included under CN 1-73609-01, into the pin 5 location of the 8-pin connector.
e) Insert the other end of the Jumper Wire assembly into the pin 8 location of the 8-pin

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connector.

NOTE: In steps c) through e) above, ensure pins are firmly seated in the connector. If the pins will not seat firmly in place, slightly bend the tabs on the pins out, then try re-seating again.

3. **Installation of the new CE Mark Valve Mount Assembly (1-36020-02). Rewiring of the PPC Internal Power Module Logic Cable. Re-installation of the Non-CE Mark Power Entry Assembly (1-42485-01).**
   a) Mount the new CE Mark Valve Mount assembly (1-36020-02, Figure 4) onto the PPC baseplate.
   b) Locate the two (2) 17" (43 cm) pressure switch cables included under CN 1-73609-01. (The two (2) wires are the same length, and connector terminations.) Locate the compressor control pressure switch shown in Figure 4. Slide the connector from one of the pressure switch cables onto the compressor control pressure switch connector labeled N.C.. Slide the connector from the second pressure switch cable onto the pressure switch connector labeled COM.

   NOTE: The pressure switch connection points can be clearly viewed from the back right-hand side of the PPC instrument.

   c) Referencing back to figure 1, locate the Power Module Logic Cable (8-pin, male) assembly in the PPC instrument, that connects to the Power Entry, Input Power Module Logic Cable assembly Jumpered in Step 2.
   d) Referencing Figure 5, insert the opposite end of the wire connected to the terminal labeled N.C. on the compressor control switch, into the pin 7 location of the 8-Pin, Male, Power Module Logic Cable connector.

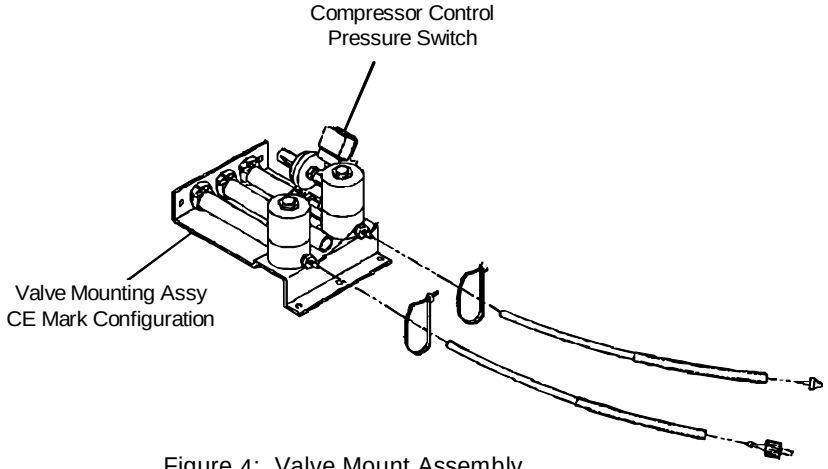

Figure 4: Valve Mount Assembly
CN 1-36020-02

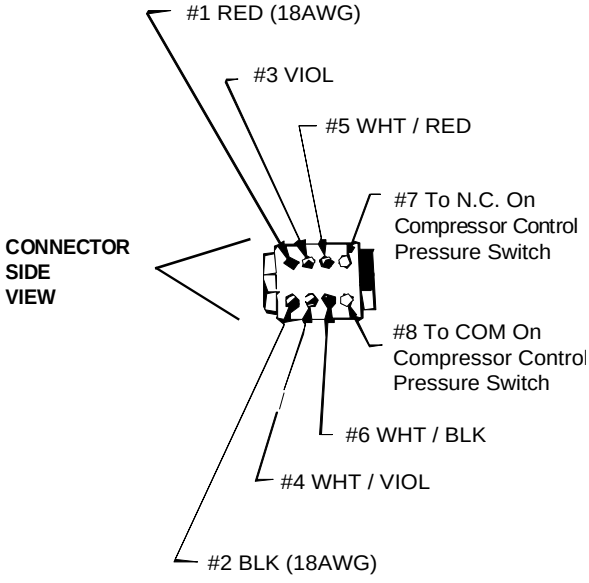

Figure 5

e) Insert the opposite end of the wire connected to the terminal labeled COM on the compressor control switch, into the pin 8 location.
f) Mark "TSB 50-035" on the side of the Power Module Logic Cable Connector with a fine tip permanent marker.
g) Re-install the rewired, Non-CE Mark Power Entry assembly into the PPC instrument.
h) Re-connect the air, water, waste tubing assemblies, and power cord from the compressor cart, to the PPC instrument left side panel connections.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

CHECKOUT:

For final instrument checkout, perform the Total Service Call Procedures in the PPC Service Manual.

NOTE: Installation of the new CE Mark Valve Mount assembly (1-36020-02) requires a check of the PPC system pressure setting at the compressor cart pressure regulator. Use the Regulator Valve Pressure Adjustment/Checkout procedure below for validating functionality of the new Compressor Control Pressure Switch.

Regulator Valve Pressure Adjustment/Checkout Procedure:

1. Bleed all system air pressure by lifting the pressure relief ring on top of the PPC water canister.
2. Install a pressure gauge in the air line between the compressor cart and the air connector on the PPC left side panel.
3. Power up the PPC Instrument.
4. At the prompt: **INSERT TRAY**
   - # Special Modes
   - Diagnostics
   - Wash
   - Compressor
   - Turn On
5. Verify on the gauge that pressure stabilizes at 22 - 25 psi, and the compressor motor turns OFF. *If the compressor motor does not turn off, recheck the Power Entry jumpering (Step 2, a through e) and Compressor Control Switch wiring (Step 3, a through f).*
6. Disconnect the black wire connected to the "NC" terminal on the compressor control pressure switch (Figure 4) and re-connect it on the switch terminal labeled "NO".

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7. Verify on the pressure gauge that the pressure stabilizes at 26 +/- 0.5 psi.
8. To adjust pressure, remove the compressor motor cover on the compressor cart assembly.
9. Loosen the pressure regulator adjustment screw locking nut.
10. Turn the pressure regulator adjustment screw clockwise to increase pressure, and counterclockwise to decrease pressure.
11. Wait for system pressure to stabilize, then bleed all pressure from the water canister.
12. Verify pressure is stable at 26 +/- 0.5 psi.
13. Repeat steps 8 through 12 if necessary.
14. Disconnect the black wire connected to the "NO" terminal in step 6, and re-connect it on the "NC" terminal.
15. Replace the back rear panel on the PPC™ instrument.
16. Unplug the compressor AC power cord form the PPC left side panel. Pressure should not drop more than .5 psi. per minute. *If pressure drop is greater than .5 psi. per minute, perform the Air Pressure Leak Isolation test in the PPC Service Manual.*

    NOTE: There may be a slight pressure drop at the instant when the compressor AC power cord is disconnected from the PPC instrument. This drop is normal.

17. Press <2> to turn compressor test off.
18. Press <#> to exit compressor diagnostic test.

MODIFICATION CONTROL STICKER UPDATE:

Place an X through number 35 on the modification control label, located underneath the card cage assembly, adjacent to the card cage fan assembly.

DOCUMENTATION REQUIRED:

PPC Service Manual (1-43990-03)

END OF DOCUMENT

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
CE Mark Certified PPC(TM) CE Mark Upgrade Procedure and Modifications

TSB#: **50-034A**

ORIGINATOR: **Tim Kitzmiller**
APPROVED: **Bob Schabel 6/Sept/96**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **10498-014**

IMPLEMENTATION: ○ Immediate ○ Next Service Call ○ Next Failure ● Optional Instruments Requiring Modification: **See Administrative Notes below**	TSB Part/Kit #: **1-73617-01** TSB Effectivity/ Part(s) Availibility: **04-SEP-96** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **3.9 Hrs.** Validation Time: **1.2 Hrs.** Total Mod. Time: **5.1 Hrs.** ****NOTE** The instrument must be at TSB Level 33A prior to performing this TSB.**

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NOTE: Changes from TSB 50-034 to 50-034A will be noted by a "*bold, italic underlining*" of the affected text.

I. DISTRIBUTION:

Worldwide

II. PURPOSE:

This Technical Service Bulletin (TSB) is to inform the Worldwide Service Organizations of the release of a CE Mark certified PPC™ instrument configuration. This configuration for newly manufactured instruments is mandatory for countries in the European Community (EC) only, but may also be marketed in countries not being members of the European Community. This TSB also provides modification instructions to the affected European service organizations on the steps needed to upgrade current non-CE Mark PPC instruments to the CE Mark configuration.

The "Communauté Européenne" (CE) Mark is a label placed on a product to indicate conformance to one of the European Community (EC) directives. In this case the CE Mark is related to the emissions of, or susceptibility to, electro-magnetic disturbances, specified in the Electro Magnetic Compatibility (EMC) directive and Low Voltage directive.

All PPC instruments shipped from Dallas Manufacturing, to either CE or Non-CE Mark countries, will be the CE/UL Version only under the List Number: **6208-86. The -86 denotes the CE Mark configuration.**

III. ADMINISTRATIVE NOTES:

This is an Optional TSB.

Definition: Countries, that are complying to European Community directives are specified as CE Mark countries in this document. Countries, that are not complying with

European Community directives are specified as non-CE Mark countries in this document.

Non-CE Mark countries (i.e., USA, Japan, Canada, etc...) will not be affected by this TSB.

Instruments currently in customer accounts in CE Mark countries, will be modified at the Country Manager's discretion, or upon specific customer's request.

Manufacturing will support CE and non-CE Mark instruments and field service spare parts for both configurations. Service organizations in the EC will be responsible for forecasting/ ordering CE Mark modification kits and CE Mark service spare parts through normal channels.

To CE Certify the PPC™ system, you must also insure that the Compressor Cart connected to the PPC instrument is at TSB 06-001 level.

PPC instruments built to or modified to the CE Mark configuration MUST be serviced with CE Mark approved parts only. Non-CE Mark PPC instruments MUST be serviced with non-CE Mark parts only.

Instruments Requiring Modification: (within the CE Mark countries)
Instruments that receive complete reconditioning (complete disassembly and upgrading), defined as Level III Servicing, must be upgraded to the CE Mark configuration.

Definitions related to CE Mark Countries: (Effective 01/01/96)
New Equipment; Equipment not previously operated by an end user (customer) within the CE Mark countries as of 01/01/96.

2nd Hand Equipment: Equipment previously operated by an end user (customer) within the CE Mark countries as of 01/01/96 and has not been remanufactured.

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Remanufactured Equipment: Instruments that receive complete reconditioning; like new condition (complete disassembly and upgrading), defined as Level III Servicing.

Repaired Equipment: Equipment that has been serviced with replacement of damaged/ worn parts with equivalent parts; activity performed at a customer site or Abbott designated facility. Repair includes;

1. Performing Mandatory TSB's
2. Cleaning and decontaminating operator accessible areas
3. Making repairs if needed
4. Confirming instrument operation
5. Checking or assessing physical appearance (i.e. condition of covers, etc...)
   NOTE: Repair does not include remanufacturing (complete disassembly and upgrade).

New Placements: (CE Mark Countries)
Effective 01/01/96 PPC instruments shipped from Remanufacturing to CE Mark countries will be of the CE Mark configuration under the above mentioned List Number (LN 6208-86). On the TSB modification control sticker located in the instrument number 34 will be marked.

Servicing: activities as of 01/01/96

1. PPC instruments installed after 01/01/96 and identified with the CE Mark label **MUST** be serviced with CE approved parts only.
2. Instruments in customer accounts prior to 01/01/96, considered 2nd hand instruments, MUST be serviced/repaired with non-CE Mark approved parts.
3. Instruments modified to the CE Mark configuration, MUST be serviced with CE Mark approved parts only. No deviations or exceptions are authorized when performing the modification. **All prerequisite TSBs must be incorporated.**

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NOTE 1: Field update/ modification may be performed at the customers request and the country manager's discretion.

NOTE 2: As this TSB is Optional, **no credit** will be issued either for Labour & Travel expenses or for Parts used to perform upgrade.

New Placements: (Non-CE Mark countries, i.e. USA, Canada, Japan, etc...)
PPC™ instruments shipped from Remanufacturing to non-CE Mark countries will be only a CE Mark production instrument under List Number (LN) 6208-86.

Servicing: No Impact to current service practices.
Service non-CE Mark instruments with non-CE Mark approved parts.
Instruments in non-CE Mark countries MUST NOT be modified.

IV. SPECIAL TOOLS:

Standard FSR/FSE tool kit
Fine Tip permanent marking pen

V. PARTS:

DOMESTIC:
All of the CE Mark upgrade accessory items listed below **(section A)** will be kitted under catalog part number 1-73617-01. The CE Mark upgrade subassemblies listed below **(section B)** are already cataloged (packaged/labeled), and will need to be forecast and ordered separately for the CE Mark upgrades.

CE Mark Upgrade Parts

(A) Accessories:

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QTY.	DESCRIPTION	PART NUMBER
1	Clamp, Cable, Lock, 1 Max.	14282-051
10" (25.4cm)	Two sided tape	73670-101
10" (25.4cm)	Conductive Copper Tape	73669-101
4.5" (11.4cm)	Gasket, EMI, Silver Cloth Foam	14606-004
1	Wash Actuator Guard	73530-101
1	Valve Mount Assy. Guard	73531-101
3	Inductor Ferrite, Snap, Plastic case 24-26 pin	14108-062
1	Inductor Ferrite, Snap, Plastic case 40 pin	14108-061
1	Printer Interface Cable	1-36294-02
2	Pressure Switch Cable	73609-101
5	Triangle Warning Label	38378-101
1	CE Mark Label	55496-101
1	Serial Number Label	42566-102
2	Washer flat, 14910, SS, 125	11535-025
	(B) Subassemblies:	
1	Main Power Supply	1-43150-02
1	Power Entry Assembly	1-42485-02
1	Valve Mount Assembly	1-36020-02

INTERNATIONAL:
SEE DOMESTIC

SERVICE KIT IMPACT:

Modified Assemblies:

- CE Mark Main Power Supply 1-43150-01 to -02

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- CE Mark Valve Mount Assy. 1-36020-01 to -02

Depot Kit Parts:
Modified Assemblies:

- Power Entry Assembly 1-42485-01 to 02
- Printer Interface Cable 1-36294-01 to 02
- Input Power Module Cable 1-36304-01 to 02
- Assy. Power Module Interface Cable 1-36310-01 to 02
- Assy. Input Power Module Logic Conn. Cable 1-36308-01 to 02
- Printer Assembly 6208-60

Non-CE Mark Subassemblies:

Non-CE Mark subassemblies removed from PPC™ instruments that are being upgraded to a CE Mark configuration for customer satisfaction etc., can still be used to repair Non-CE Mark PPC instruments in the field (*instruments not upgraded to TSB 50-034*), unless otherwise noted.

REPLACED PARTS:
See Service Kit Impact section above.

COMPATIBILITY:
CE Mark components **<u>are not</u>** downward compatible with non-CE Mark instruments. CE Mark instruments must be repaired with CE Mark components only.

VI. PROCEDURE:

MODIFICATION STEPS:
PRE-UPGRADE CHECKLIST

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

1. Prior to upgrading a Non-CE Marked PPC instrument to a CE Marked level, obtain the following information using the Special Modes Main Menu. Use the Config. Option in the menu.
2. Record all current setup configuration information listed below. Refer to Section 4 of the PPC Operations Manual for instructions on how to access the configuration information.
   a) Baud rates
   b) Parity
   c) Bits per character
   d) Handshaking
   e) Instrument Port Assignments
   f) Stop bits
   g) DMS Checksum
   h) Barcode type
   i) Barcode length
3. Print the PPC™ Protocol/Test Number Assignment. Refer to Section 2 of the PPC Operations Manual under Assay tools. This printout is a listing of the FPC™/PPC numbers that are linked to PPC Assay numbers.
   NOTE: This step is not necessary if the PPC instrument is connected to an FPC instrument with version 2.5 software.
4. Press the **LIST ASSAYS** key to list the assay directory. Print each edited assay protocol (edited assays are identified by an E´on the right side of the assay directory). Refer to Section 2 of the PPC Operations Manual under Assay Tools Option.
5. Perform this step only if the laboratory utilizes the Quality Control (QC) database. Print a copy of the QC Directory and print the QC Data for each assay listed in the directory. Refer to Section 5 of the PPC Operations Manual under the Database Option.
6. Power down the PPC™ instrument and proceed to Main Power Supply Replacement procedure.

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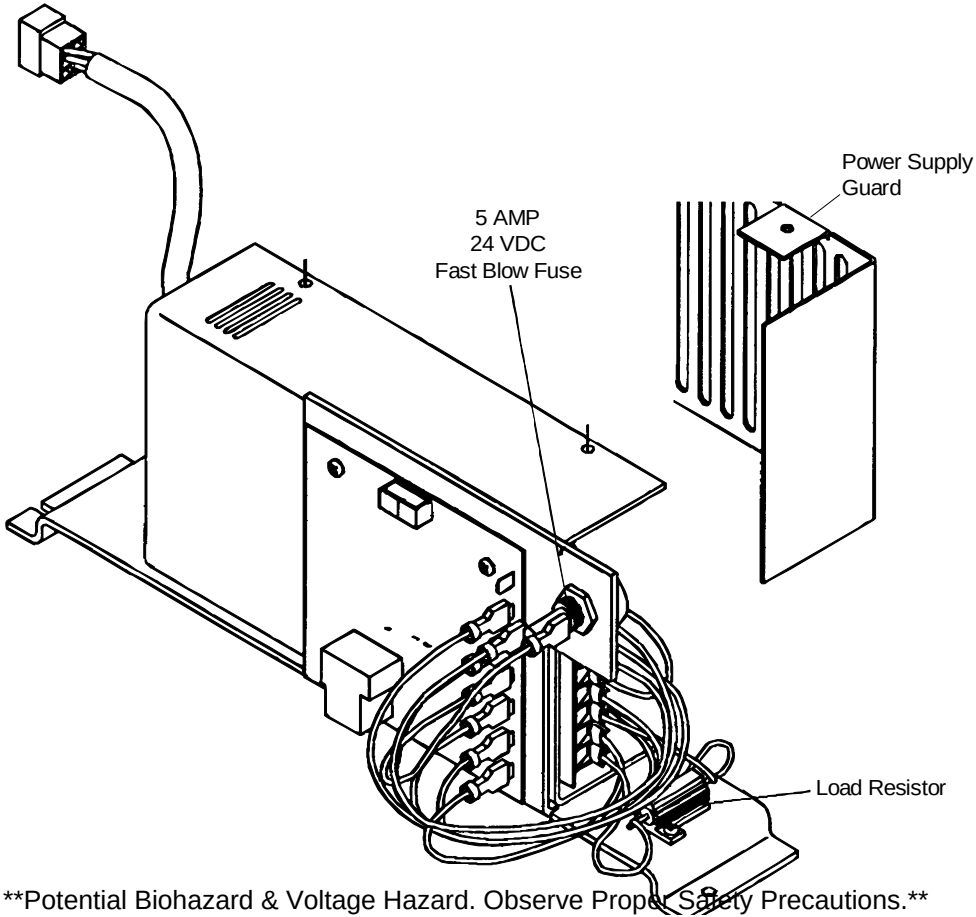
SAFETY NOTE: Prior to performing the CE Mark upgrade, insure that you have decontaminated the PPC instrument, using appropriate procedures outlined in section 3 of the PPC Service Manual.

1. **Main Power Supply Replacement: (CE Mark Version, 1-43150-02)**
   The CE Mark Power Supply utilizes the same mounting bracket as the previous -01 (*non-CE version*). Refer to Figure 1. The -02 (CE version) has been modified to include a 5 amp, 240 volt fuse link between the 24VDC output of the main supply and Stepper Driver Boards A and B (*boards 6 and 5 in the card cage*). A load resistor has also been added to insure a minimum load on the supply at all times.



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NOTE: All steps in the following upgrade procedures assume use of the PPC Service Manual for removal and replacement procedures unless otherwise noted. Refer to the Checkout Section of this TSB for final Checkout/Alignment procedures.

a) Remove the 1-43150-01 (non-CE) Main Power Supply from the PPC instrument, and replace it with the -02 version listed for this TSB upgrade.
b) Checkout/Alignment of the Main supply voltages will be performed in the final Checkout step of this TSB. Proceed to step 2 of the upgrade procedures.

2. Valve Mount Assembly (CE Mark Version 1-36020-02)

The -02 CE Mark Valve Mount assembly mounts identical to the -01 (non-CE Mark Version), with the exception of an added plastic shield to prevent any water from reaching the power entry area (see Figure 2). The Valve Mount assembly was also modified with a new pressure switch set at 24.75 +/-.25 P.S.I., that will control when AC power is switched on to the compressor cart. The pressure setting on the compressor regulator was also changed to 26 +/- .5 P.S.I. These changes will reduce overall compressor noise levels.

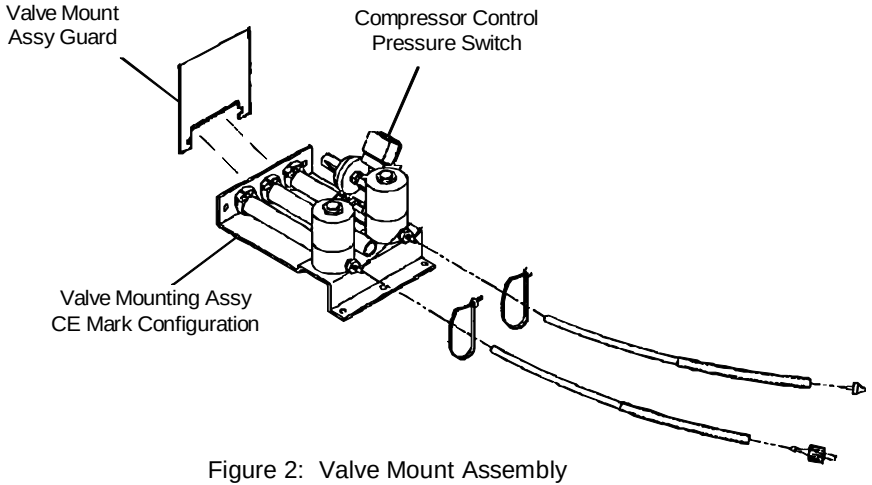

Figure 2: Valve Mount Assembly
CN 1-36020-02

a) Remove and discard the -01 (Non-CE Mark) valve mount assembly.
b) Install the -02 (CE-Mark) valve mount assembly. Place the new valve mount shield between the valve mount and the PPC™ instrument side panel. Add the new locking clamp (14182-051) to better secure the waste pressure switch as shown in Figure 3.

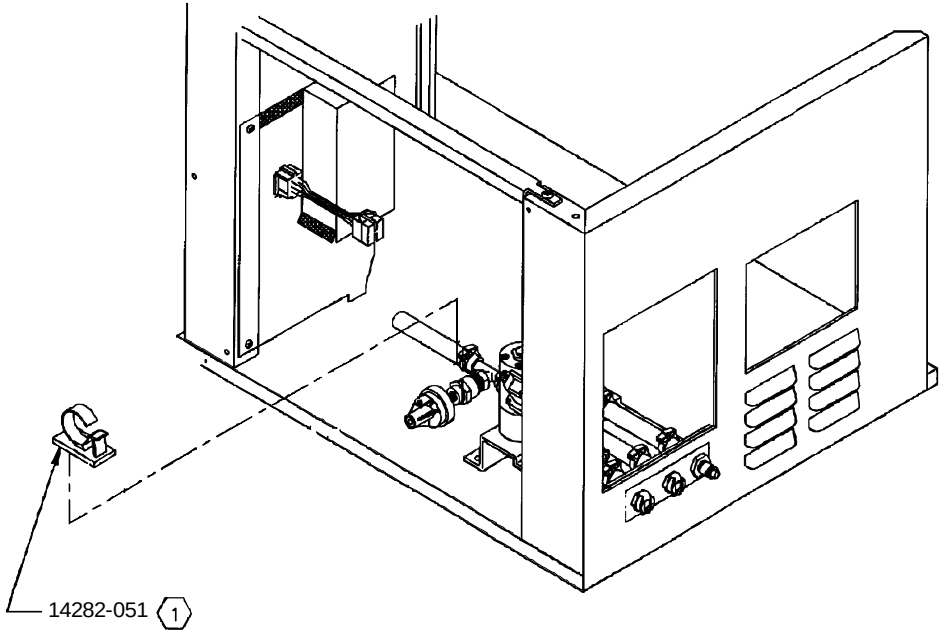

Figure 3: Valve Mount Assembly, Rear View

c) Locate the two (2) pressure switch cables (73609-101), listed in the accessories parts list. (The two (2) wires are the same length, and connector terminations). Locate the new

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

compressor control pressure switch (reference Figure 2) on the valve mount assembly. Slide the connector from one of the pressure switch cables onto the pressure switch connector labeled N.C. Slide the connector from the second pressure switch cable onto the pressure switch connector labeled COM.

NOTE: The pressure switch connection points can be clearly viewed from the back right hand side of the PPC™ instrument.

d) Using figure 4, locate the Power Interface Cable (8 pin connector) that connects to the Input Power Logic Cable on the Power Entry assembly. Using Figure 4A as a key, locate pin positions 7 and 8. (*Both of these pin locations should be empty*). Insert the other end of the cable, from the N.C. connector, on the compressor control pressure switch, into the PIN 7 location of the Power Interface cable connector. Insert the other end of the cable from the COM connector of the switch, into the PIN 8 location.

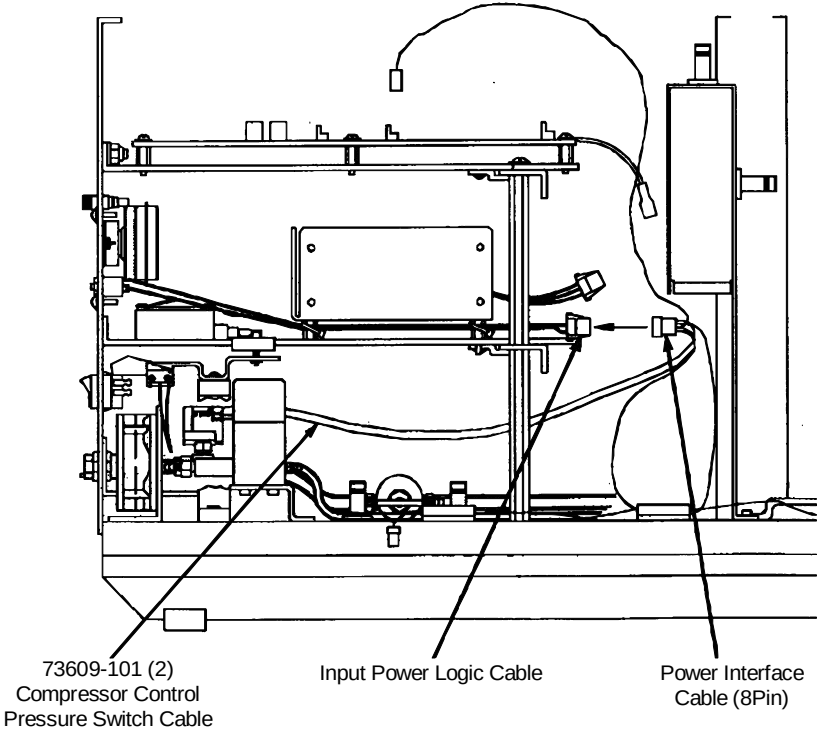

Figure 4: PPC Rearview

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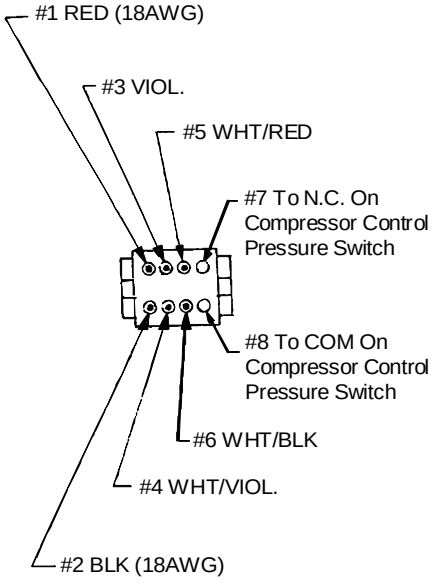

Figure 4A: Power Interface Cable Connector

3. **Power Entry Assembly Replacement: (CE Mark Version 1-42485-02)**
   The CE Mark Power Entry Assembly mounts identical to the -01 (non-CE Mark Version). The Power Entry assembly was modified to include a new +12VDC CE approved Lamp Supply and a new fuse holder module as pictured (Figure 5).

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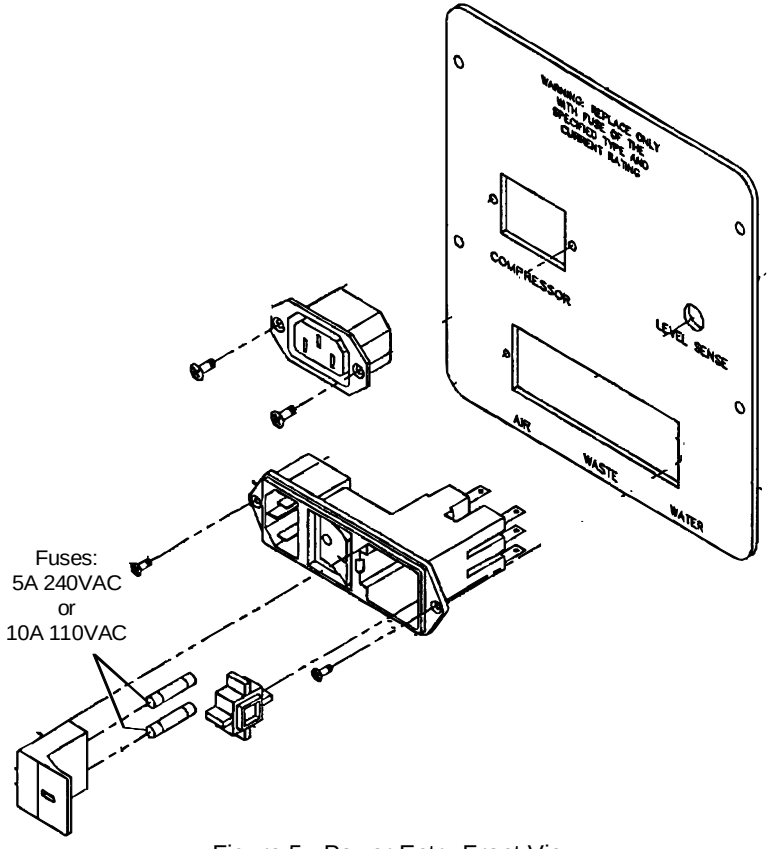

Figure 5: Power Entry Front View

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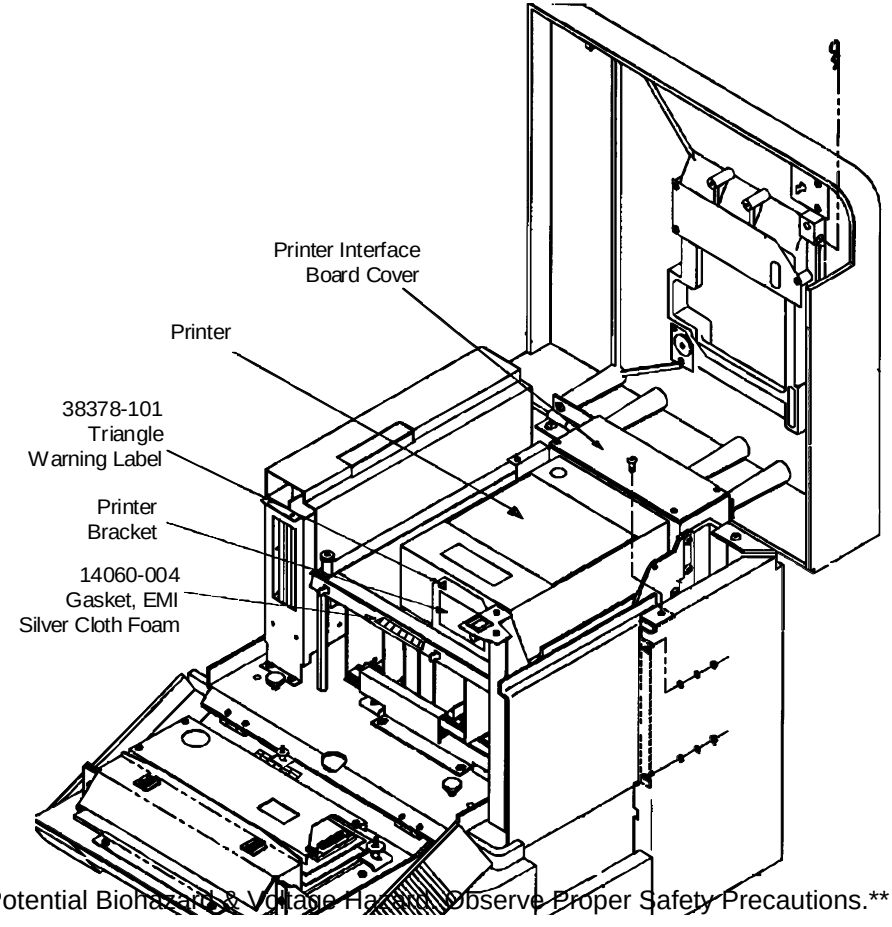
a) Remove the -01 (non-CE) Power Entry Assembly from the PPC™ instrument and replace it with the -02 version listed for this TSB upgrade.
b) Checkout/Alignment of the Lamp Power Supply voltage will be performed in the final Validation step of this TSB. Proceed to step 4 of the upgrade procedures.

4. Printer Interface Cable, w/ferrite attached (CE-Mark Version 1-36294-02) Reference Figures 6/6A/6B.

a) Power down the PPC instrument. Remove the printer bracket in front of the printer assembly. (*Reference Figure 6*) Remove the Printer assembly from the instrument.
b) Remove the printer interface board cover, just behind the printer location.



Potential Biohazard & Voltage Hazard! Observe Proper Safety Precautions.

c) Locate and remove the -01 printer interface ribbon cable connected to J3 on the printer interface board.
d) Locate the replacement printer interface cable (1-36294-02), 1- Ferrite, 24-26 pin (14108-062), and 2-sided tape (73670-101) listed on the accessories parts list. Referencing Figure 6A, peel off the protective paper on a 1 inch (2.54 cm) piece of the 2-sided tape. Attach (as pictured) to the inside face of the ferrite.

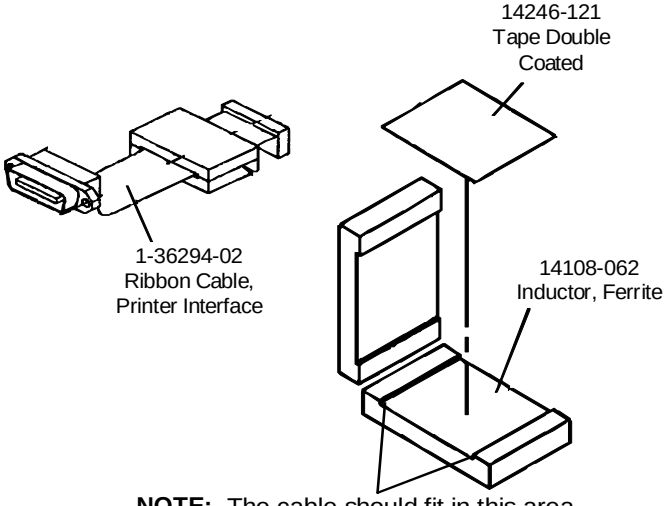


Figure 6A: Ferrite Assembly

e) Insert the -02 cable through the mounting cutout. Install the ferrite around the ribbon cable, approximately 1 inch (2.54cm) from the connector plugging into J3 on the Printer Cable Interface board.
f) Clamp the ferrite onto the Printer cable until it snaps firmly into place.
g) Place one(1) each of the flat washers (11535-025) provided in the accessories kit, between the "D Type" printer interface connector, and the printer cable interface mounting

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

bracket. (Figure 6B)

h) Perform steps a) and b) in reverse order.

i) Place one (1) Triangle Warning Label (38378-101) onto the printer bracket. (*Figure 6*)

j) Place the 6 inch (15.24cm) gasket, EMI, silver cloth foam, onto the front edge of the card cage assembly (*Figure 6*).

k) Proceed to step 5.

5. CPU Serial Interface Cable, w/ferrites attached and EMI Gasket Strip for Keyboard Display

a) Power down the PPC™ instrument and lift up the top right side cover. Lower the keyboard display panel.

b) Remove the top cover over the Main CPU board.

c) Disconnect the CPU Serial Cable assembly, from J1, on the top edge of the Main CPU board.

d) Locate the 40 pin ferrite (14108-061), the 24-26 pin ferrite (14108-062) and 2 - sided tape (14246-121).

e) Peel the protective backing from a 2 inch (5.08cm) strip of 2-sided tape and apply it to the inside face of the 40 pin ferrite (14108-061). (Reference figure 6A).

f) Referencing figure 7.0, install the 40 pin ferrite around the CPU Serial Interface cable, approximately 2 inches (5.08 cm) from the connector plugging into J1 on the Main CPU board.

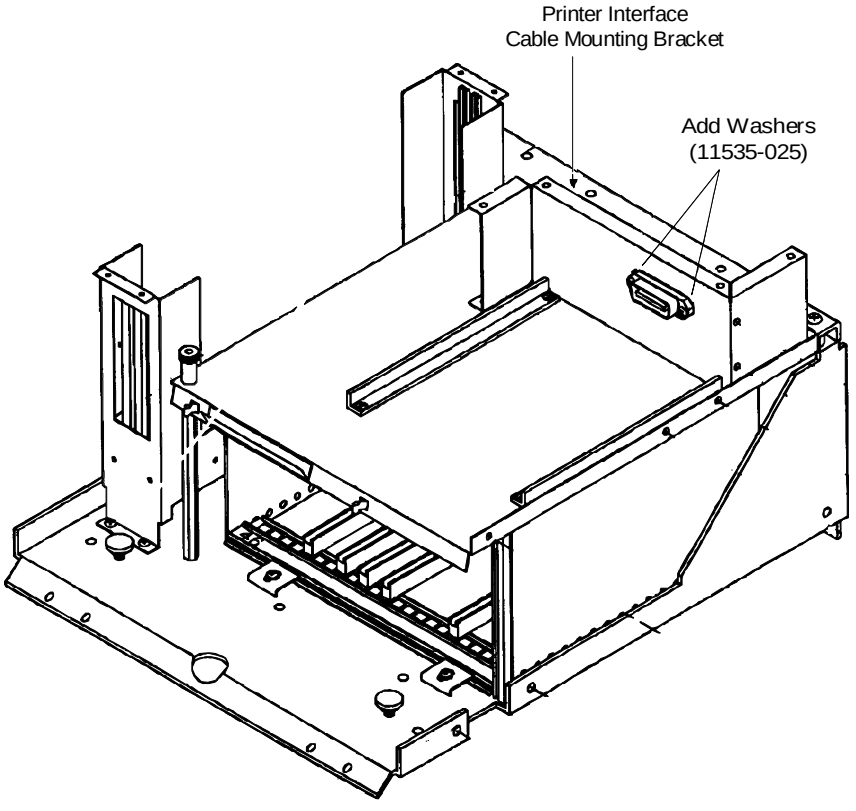
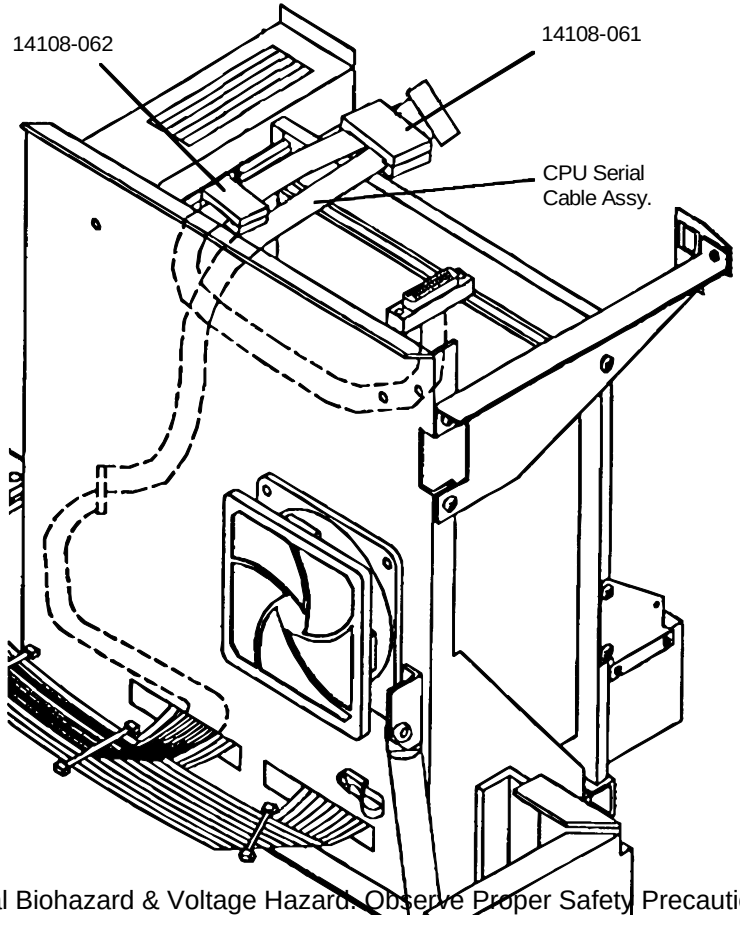


Figure 6B

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.



Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

g) Clamp the ferrite around the cable until it snaps firmly into place.
h) Referencing Figure 7, install the 24-26 pin ferrite (14108-062) onto the CPU Serial Interface cable, (1 inch or 2.54cm strip of 2-sided tape) approximately 10 inches (25.4cm) from the connector plugging into J1 on the Main CPU board.
i) Locate the 2 inch (5.08cm) strip of conductive Tin-Copper tape (14242-032) listed in the accessories parts list.
j) Referencing Figure 8, loosen the keyboard assy thumbscrew located in the center position.

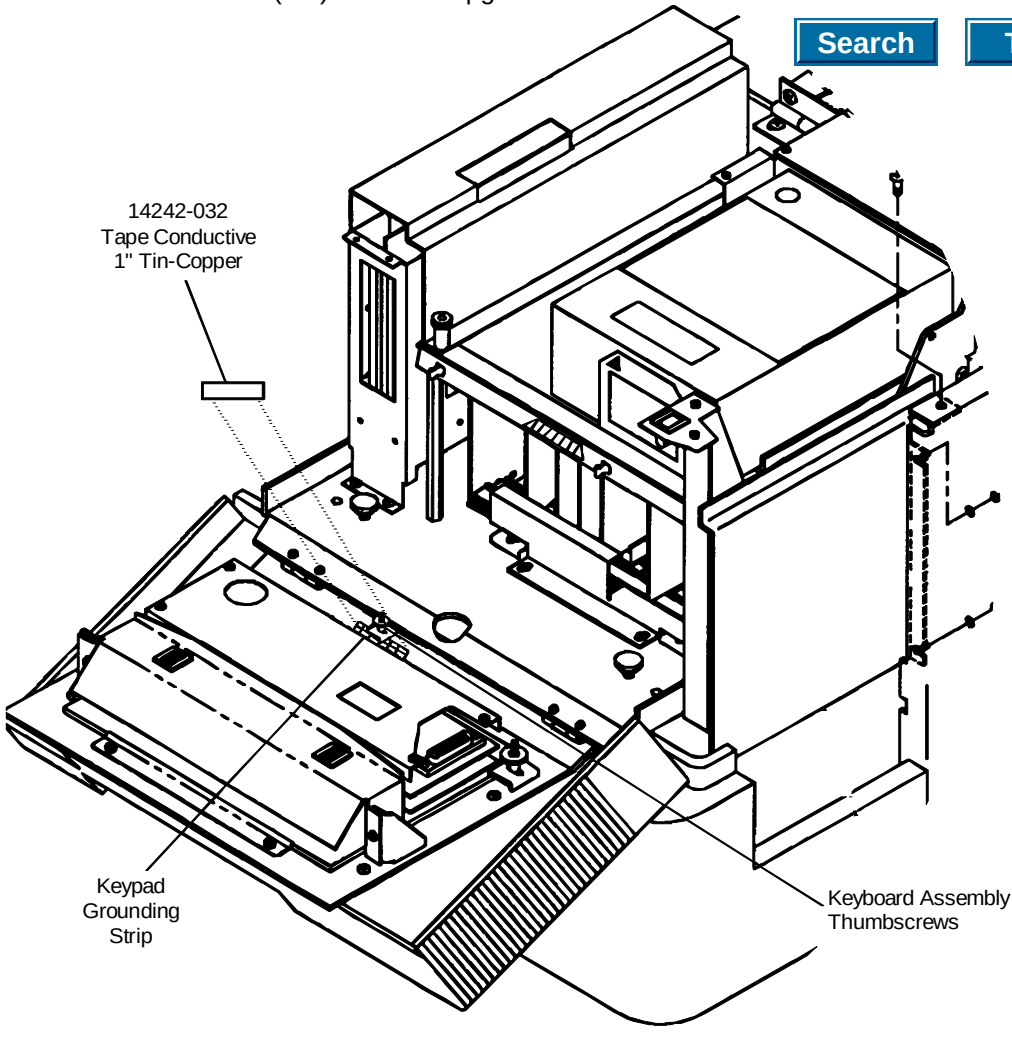
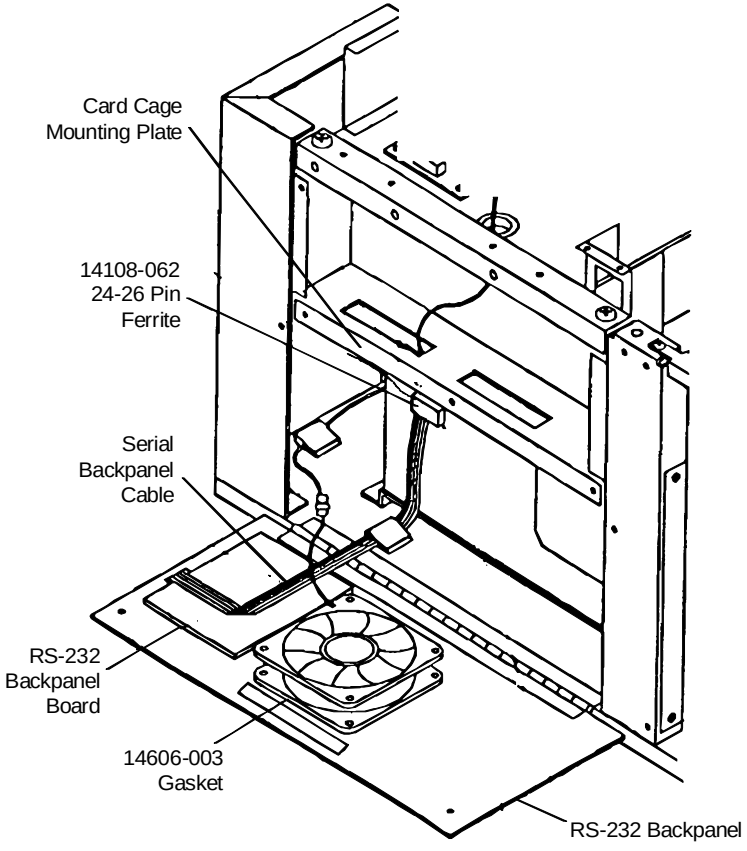


Figure 8: Keyboard/Card Cage Assembly

k) Locate the grounding strip for the keypad underneath the center thumbscrew assy. Place the 2 inch (5.08cm) strip of Tin-Copper tape directly over the existing keypad grounding strip.
l) Re-tighten the keyboard display center thumbscrew.
m) Perform steps A through C in reverse order. Proceed to step 6.

6. Serial Backplane Cable w/Ferrite attached and Backpanel Gasket

a) Remove the two (2) top screws securing the RS 232 Backpanel in place. Drop the panel down as shown in Figure 9.



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b) Locate a 24-26 pin ferrite (14108-062) listed in the accessories parts list. Peel the backing off a 1 inch (2.54cm) strip of 2 - sided tape (14246-121) and apply it to the inside face of the ferrite. (Figure 6A)
c) Install the ferrite around the Serial Backplane cable, flush to the card cage mounting plate.
d) Clamp the ferrite around the cable until it snaps firmly into place.
e) Locate the Copper EMI Gasket strip listed in the accessories parts list with teeth pointing upward. Remove the protective backing, then apply the strip along the top edge of the RS-232 Backpanel.
f) Secure the RS-232 Backpanel back into place. Proceed to step 7.

7. Wash Actuator Shield and Warning Label

a) Power down the PPC™ instrument, then lift up the card cage assembly to the full, and upright position.
b) Referencing Figure 10, remove the two (2) screws securing the wash limit sensor board to the wash actuator assembly.

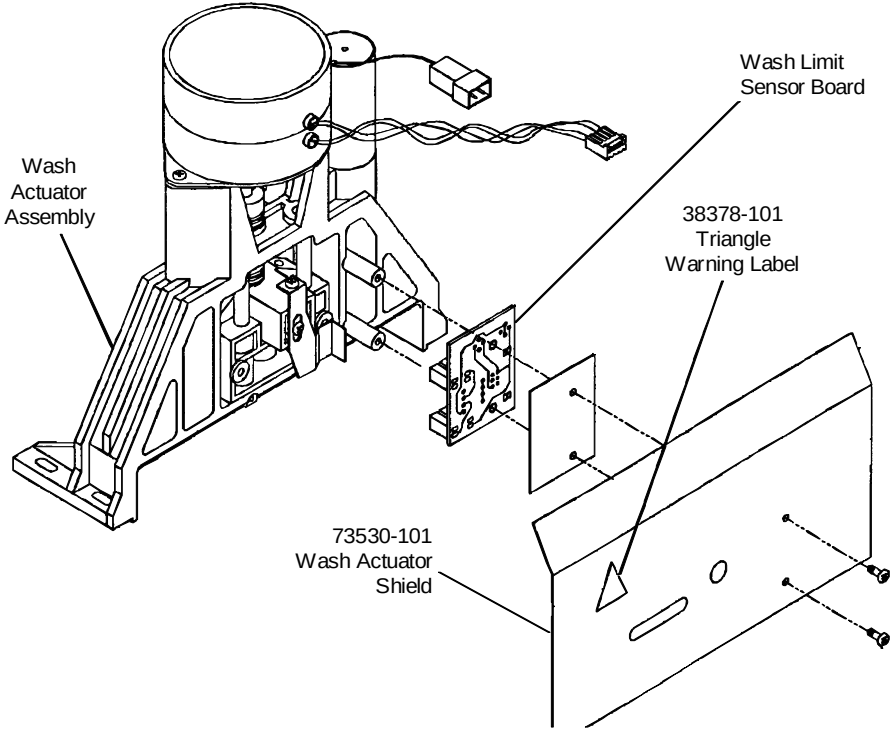

Figure 10: Wash Actuator Assembly

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

c) Secure the new Wash Actuator Shield and Wash Limit Sensor board to the wash actuator as shown.
d) Apply one (1) Triangle Warning Label (38378-101), to the face of the Wash Actuator Shield as shown.
e) Proceed to step 8.

8. Addition of Triangle Warning label (38378-101) to the Dispense Boom Sensor Board Cover, Dispense Drip Tray Assembly, and Exit Switch Mounting Bracket.

a) Lift up the top left side cover of the PPC™ instrument.
b) Remove the Dispense Drip Tray Assembly from the PPC instrument. (Figure 11)
c) Locate three (3) Triangle Warning Labels (38378-101), listed in the accessories parts list.
d) Remove the protective backing from the first Triangle Label and install it onto the Drip Tray at the location designated in Figure 11.

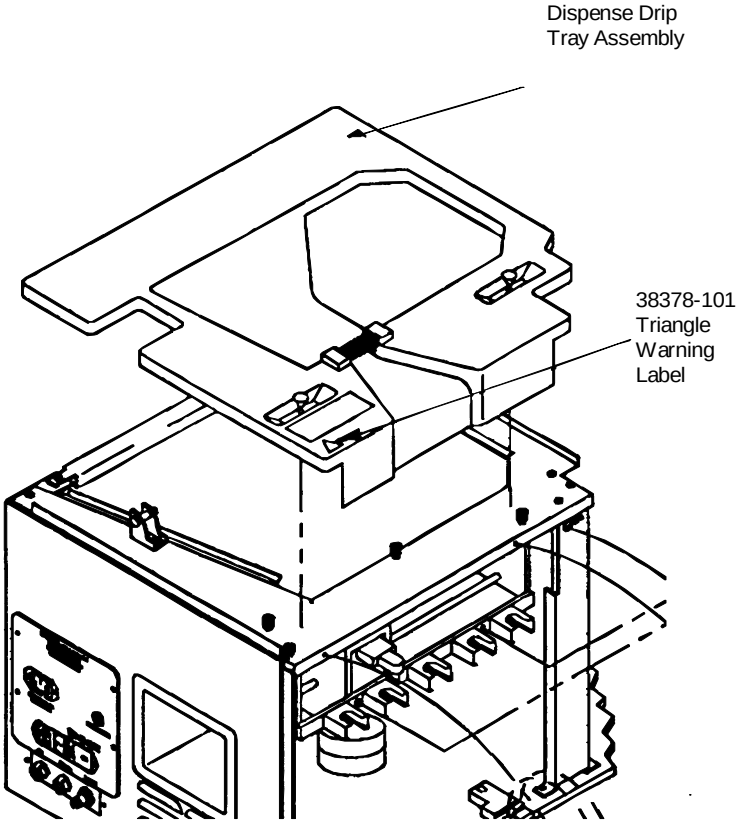

Figure 11: PPC Left Side View

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

e) Referencing Figure 12, locate the Dispense Boom Sensor Board cover assembly.
f) Place the second Triangle Label onto the Dispense Boom Sensor Board cover at the location designated in Figure 12.

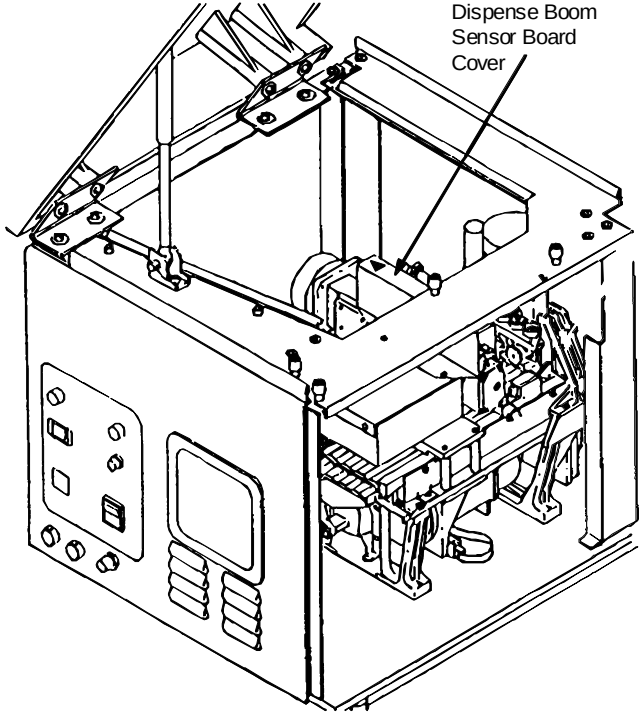

Figure 12: Left Side View

g) Remove the Exit Shroud from the PPC™ instrument tray exit location.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

h) Place the third Triangle Label onto the Exit Switch Mounting Bracket as designated in Figure 13.

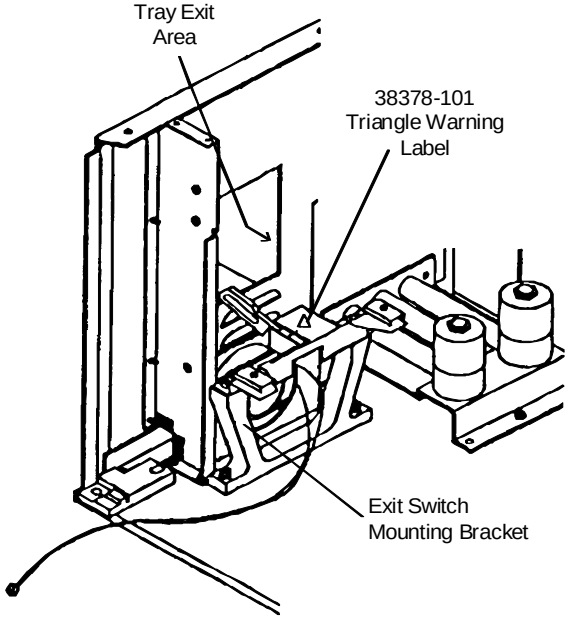

Figure 13: Tray Exit View

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

i) Re-install the Exit Shroud on the PPC™ instrument.
j) Perform steps A through B in reverse order. Proceed to step 9.

9. Addition of a Triangle Warning Label and CE Mark Label to the Power Entry Front Facing, and Replacement of the Serial Number Label.

a) Locate the CE Mark Label (55496-101), one (1) Triangle Warning Label (38378-101), and Serial Number label (42566-102), listed in the accessories parts listing.
b) Peel the protective backing from the Triangle Warning Label and place it in the area designated in Figure 14.

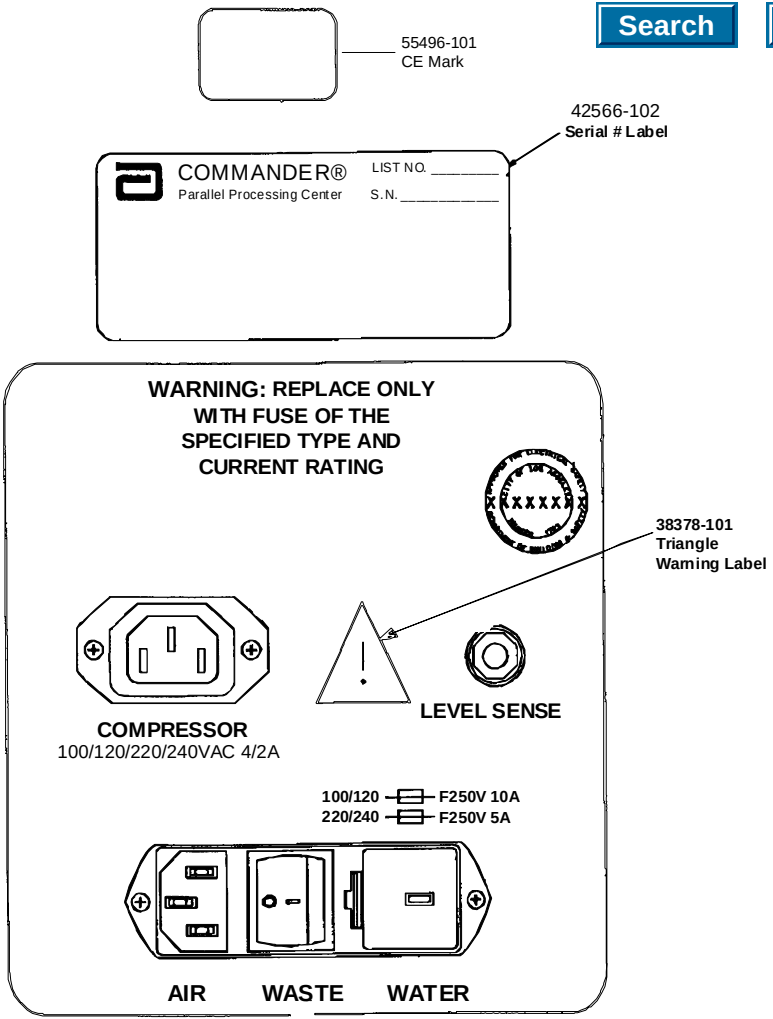

Figure 14: Power Entry Front Face

c) Place the CE Mark label onto the PPC instrument Side Panel as designated in Figure 14.
d) Make a note of the existing PPC instrument serial number on the current Serial Number Label.
e) Remove and discard the existing PPC instrument Serial Number Label.
f) Install the new Serial Number label (42566-102) in the same location.
g) Using a permanent, fine tip marker, write the serial number (recorded in step d) on the serial number line of the new label.

CHECKOUT:

For final instrument checkout, reference the "Total Call" procedure in the PPC Service Manual. **Note the following changes to the PPC instrument Checkout/Alignment procedures in the PPC Service Manual.**

NOTE: Changes have been made to the voltage adjustment procedures for the new CE Mark Main Power Supply (**1-43150-02**), and to the system pressure setting at the compressor Cart Pressure Regulator. The procedural changes described below will be included in the new version of the PPC™ Service Manual (***1-43990-03***), scheduled for release in December 1995. An ISA will be released when the manuals become available in stock, providing a part number, and ordering instructions.

Use the following updated adjustment procedures for the CE Mark Main Power Supply, and Compressor Cart Pressure Regulator adjustment:

Main Power Supply Check/Alignment Procedure: (CE Mark Supply only 1-43150-02)
Purpose: There are four voltage checks made on Main Power Supply. Locate terminal strip on Main Power Supply Board.

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With power ON, lower Left Rear Panel.

+12VDC

1. Place positive lead of multimeter on terminal 3.
2. Place negative lead of multimeter on terminal 6 or 7.
3. Reading may range from +11.8VDC to +12.3VDC.
4. The voltage is not adjustable. If not within specification, reject the power supply.

-12VDC

1. Place positive lead of multimeter on rear lead of R705, on Cable Panel Interface Board.
2. Place negative lead of multimeter on pin 3 of J407.
3. Reading may range from -11.8VDC to -12.3VDC.
4. The voltage is not adjustable. If not within specification, reject the power supply.

+5VDC

1. Place positive lead of multimeter on terminal 8 or 9.
2. Place negative lead of multimeter on terminal 6 or 7.
3. Reading may range from +5VDC to +5.2VDC.
4. To adjust voltage locate V1 potentiometer.

+24VDC

1. Place positive lead of multimeter on terminal 4.
2. Place negative lead of multimeter on terminal 5.
3. Reading may range from +23VDC to +25VDC.
4. To adjust voltage locate V2 potentiometer.

Regulator Valve Pressure Adjustment

Purpose: Verify correct pressure to Wash Manifold.

1. Bleed air pressure from water canister by lifting ring on top of canister.
2. Install pressure gauge in air line at compressor outlet or at air input connection on the PPC

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instrument left side panel.

3. At prompt: **INSERT TRAY**
   - # Special Modes
   - Diagnostics
   - Wash
   - Compressor
   - Turn On
4. Verify pressure stabilizes at 26 ± 0.5 psi and compressor cart motor turns off.
5. To adjust pressure, remove cover from compressor cart.
6. Loosen adjustment screw locking nut.
7. Turn screw clockwise to increase pressure, and counterclockwise to reduce pressure.
8. Tighten lock nut and replace cover.
9. Wait for pressure to stabilize, then bleed pressure from canister.
10. Verify pressure returns to 26 ± 0.5 psi, and is stable.
11. Repeat steps 5 through 11 as necessary.
12. Press <2> to turn compressor off.
13. Press <#> to end test.
14. When operating pressure is reached, unplug compressor AC power cord from left side of PPC™ instrument. Observe pressure gauge. Pressure should not drop more than 1/2 psi per minute. Perform Air Pressure Leak isolation test in PPC Service Manual if pressure drops at a great rate.

    NOTE: There may be a slight pressure drop when AC power cord is unplugged from PPC instrument. This is a normal drop.

MODIFICATION CONTROL STICKER UPDATE:

1. Place an X through number 34 on the modification control label, located underneath the card cage assembly adjacent to the card cage fan assembly.
2. Close the service call indicating TSB 50-034 is complete, and in the service documentation, in the text of the call, enter the following statement:

   "The instrument has been modified to the CE Mark configuration, as indicated by the List Number size code of the New Serial Number Label."

VII. DOCUMENTATION REQUIRED:

PPC Operators Manual (most current version)
PPC Service Manual - All upgrade procedures listed in this TSB reference the most current version PPC Service Manual, unless otherwise noted. Refer to the Validation Section of this TSB for Alignment/Validation procedures.

NOTE: A new PPC Service Manual (***1-43990-03***) will be released in December 1995, updating it to the PPC CE Mark configuration level.

END OF DOCUMENT

ABBOTT
ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
CE Mark Certified PPC(TM) CE Mark Upgrade Procedure and Modifications

TSB#: **50-034**

ORIGINATOR: **Tim Kitzmiller**
APPROVED: **Mark C. Cooney 12/29/95**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECN: **10498-014**

IMPLEMENTATION: ○ Immediate ○ Next Service Call ○ Next Failure ● Optional Instruments Requiring Modification: **See Administrative Notes below**	TSB Part/Kit #: **1-73617-01** TSB Effectivity/ Part(s) Availibility: **26-JAN-96** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **3.9 Hrs.** Validation Time: **1.2 Hrs.** Total Mod. Time: **5.1 Hrs.** ****NOTE** The instrument must be at TSB Level 33A prior to performing this TSB.**

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OBSOLETE. SUPERSEDED BY TSB 50-034A.

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
COMMANDER® PPC(TM) Version 8.00/8.10 Hardware and Software Installation

TSB#: **50-033A**

ORIGINATOR: **Tom Jacobson**
APPROVED: **Mark C. Cooney 12/13/95**

PRODUCT:
COMMANDER® PPC(TM) (50)

REF. ECO:

IMPLEMENTATION: ● **Immediate** ○ **Next Service Call** ○ **Next Failure** ○ **Optional** Instruments Requiring Modification: **All**	TSB Part/Kit #: **N/A** TSB Effectivity/ Part(s) Availability: **13-DEC-95** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ● YES ○ NO	Upgrade Time: **1.5 Hrs.** Validation Time: **2.0 Hrs.** Total Mod. Time: **3.5 Hrs.** ****NOTE** The instrument must be at TSB Level 31 prior to performing this TSB.**

I. DISTRIBUTION:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Worldwide

II. PURPOSE:

The COMMANDER® PPC™ 8.00/8.10 Hardware installation has been designed to enable the COMMANDER PPC System to be able to communicate with the COMMANDER® FPC™ System as part of Total Process Control™ (TPC). Additionally, the onboard program space will be increased and the cost of future software upgrades will be reduced.

III. ADMINISTRATIVE NOTES:

U.S.: TSS organization will install both the hardware and software in the U.S. FSRs will provide support during installation only if necessary. If the account uses a COMMANDER FPC pipettor, the PPC system upgrade must be performed when the FPC 2.5 software installation is done. Optical Reference Solution (LN 1B07-01) is needed to perform the PPC 8.00/8.10 upgrade.

International: Installation of TSB 50-033A will be decided by each individual area. If the account uses a COMMANDER FPC system, the PPC 8.00/8.10 upgrade must be performed when the FPC 2.5 software installation is done. Optical Reference Solution (LN 1B07-01) is needed to perform the PPC 8.00/8.10 upgrade.

IV. SPECIAL TOOLS:

No Special Tools Required.

V. PARTS:

REPLACED PARTS:

Replaced Parts	**Part Number**
Memory Cartridge Interface Board	1-42474-01 (will be deleted from Depot Stock)
Memory Module Cartridge	Current Version (will be deleted from Depot Stock)
Memory Module Interface Cable	1-36249-01 (will be deleted from Depot Stock)
RS-232 Board	1-42472-01 (will be deleted from Depot Stock)

The above parts will be deleted from Dallas Depot Stock once all of the remaining COMMANDER® PPC™ systems have been upgraded with FLASH Memory and 8.00 (U.S.) or 8.10 (ROW) software.

COMPATIBILITY:
PPC instruments upgraded to FLASH technology will not be compatible with previous software versions.

VI. PROCEDURE:

MODIFICATION STEPS:
The FLASH Hardware Installation Instructions will be included with the PPC Software Upgrade Kit (U.S. Version 8.00 LN1A05-48 and ROW Version 8.10 LN1A05-49).
The Installation/Validation Protocol will be included with the PPC Literature Kits (U.S. Version 8.00 LN1A05-37 and ROW Version 8.10 LN1A05-38) as well as the software upgrade kits.

CHECKOUT:
Complete instrument validation should be performed after the FLASH Upgrade and software download has been completed. The Installation/Validation protocol is included in both the U.S. and ROW Literature Kits.

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MODIFICATION CONTROL STICKER UPDATE:
TSB 50-033 will be marked off by the Abbott representative as part of the final instrument validation procedure.

Marking through the number 33 on the TSB Control Sticker is part of the Validation Procedure.
The following procedures detail all of the necessary steps to perform when replacing either the FLASH Memory Interface or Main CPU Boards. The procedures are as follows:

1. Pre-replacement checklist
2. FLASH Memory Interface/CPU Board removal & replacement
3. FLASH Memory Software download detailed instructions
4. Validation protocol checklist

NOTE: Before attempting to install PPC Software version 8.00/8.10, all batches in process in the PPC must be run to completion with results printed and transmitted to the connected LIS. ***ALL INFORMATION RELATED TO PREVIOUSLY PROCESSED TRAYS, BATCHES, SAMPLE IDs, SAMPLE RESULTS, AND QUALITY CONTROL DATA WILL BE LOST WHEN THE HARDWARE IS UPGRADED****.*

VII. PRE-REPLACEMENT CHECKLIST

1. Prior to replacing the FLASH Memory or CPU Board, obtain the following information using the Special Modes Main Menu. Use the Config Option in the menu.
2. Record all current setup configuration information listed below. Refer to Section 4 of the COMMANDER® PPC™ Service Manual for instructions on how to access the configuration information.
   a. Instrument port assignments
   b. Baud rates

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c. Parity
d. Bits per character
e. Handshaking
f. Stop Bits
g. DMS Checksum
h. Bar code type
i. Bar code length

3. Print the Protocol/Test Number Assignment. Refer to Section 4 of the COMMANDER® PPC™ Service Manual under Assay Tools. This printout is a listing of the FPC/PPC Test Numbers that are linked to PPC System Assay Numbers.

   NOTE: *This step is not necessary if the PPC instrument is connected to an FPC system with Version 2.5 software.*

4. Press the LIST ASSAYS key to list the assay directory. Print each edited assay protocol (edited assays are identified by an "E" on the right side of the assay directory). Refer to Section 4 of the COMMANDER PPC Service Manual under the Assay Tools Option.
5. Perform this step only if the laboratory utilizes the Quality Control (QC) database. Print a copy of the QC Directory and print the QC Data for each assay listed in the directory. Refer to Section 4 of the COMMANDER PPC Service Manual under the Database Option.
6. Power down the instrument and proceed to Section VIII.

VIII.FLASH MEMORY INTERFACE/CPU BOARD REMOVAL & REPLACEMENT

NOTE: Use static protection when handling printed circuit boards.

1. Raise the Top Right Cover and lower the Keypad/Display Panel.

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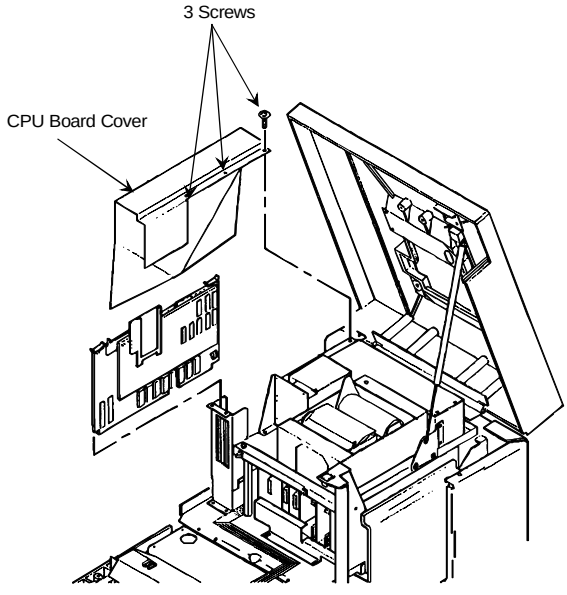

2. To remove the CPU Board Cover, remove 3 screws and lift straight up.
3. Remove the 10-pin Bitbus Cable Connector and the 40-pin Serial Cable to the Bar Code Reader/Keyboard Display Connector from the top edge of the CPU Board. **DO NOT PULL ON THE CABLES**.
4. Slowly slide the CPU Board up until you can reach the Cartridge Interface Cable connected to the front of the CPU Board. Remove the cable connector by pulling the connector away from the CPU Board. This connector will be somewhat difficult to remove.
5. Remove the CPU Board from the PPC analyzer and place it on the anti-static grounded mat.

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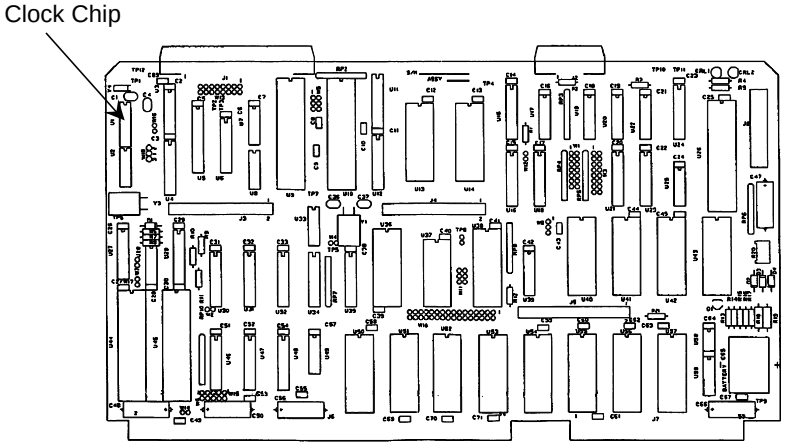
6. Disconnect the Cartridge Interface Cable from the 2 cartridge connectors inside the PPC instrument and completely remove the cable (this cable will not be reused). The cable will be difficult to disconnect.
7. Locate the clock chip at position U1 on the CPU Board.
8. If the part number of the clock chip is **MM58274BN**, ***the CPU Board must be replaced.*** *Any non-"BN" suffix is ok (such as "AN" or "N").* **Refer to TSB 50-031 for additional instructions.**



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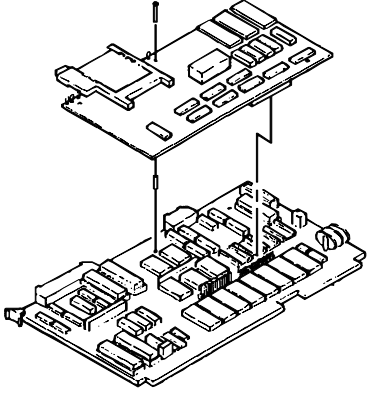
9. Make sure there are no bent pins in the 40-pin CPU Board Connector. Align the 4 standoffs on the FLASH Memory Board with the 4 holes on the CPU Board. The standoffs must clear all components, BE CAREFUL WITH CAPACITOR C7 ON THE CPU BOARD. Then align the board to the board mating connectors. Press the 2 boards together by pressing in the connector area so that the standoffs on the FLASH Memory Board protrude through the holes in the CPU Board **and** the connectors mate.

   NOTE: *The standoffs must be replaced if they are broken or the boards will not be secure.*



10. Slide the CPU Board back into its slot and connect the 10-pin and 40-pin connectors to their respective slots.
11. Install the new CPU Cover using the original screws. The old CPU Cover cannot be used.
12. Remove the Memory Modules and set them aside. They will not be reused.
13. Remove the 4 corner screws on the face of the Upper and Lower Software Module Enclosure.
14. Install the Memory Cartridge Cover plate using 4 new screws.

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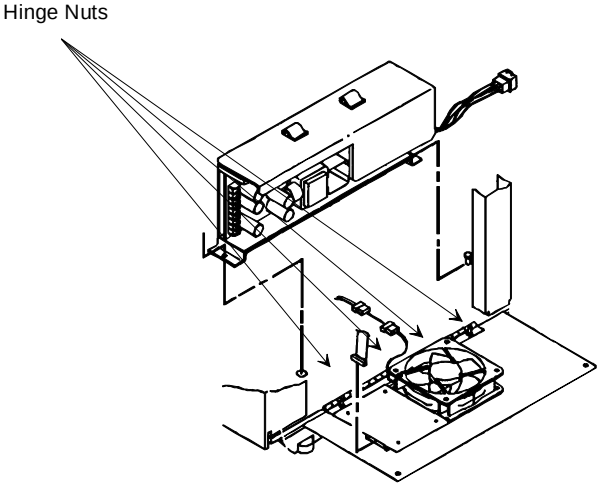
COMPONENT STATION LABEL PLACEMENT

Affix the component station label to the reagent shelf so that Barcode 1 is below Reagent Dispenser 1.

BACK PANEL INSTALLATION

a. Remove 2 screws in the upper corners of the Lower Right Rear Cover and swing the cover open.
b. Disconnect Fan Power Cable and Ribbon Cable at the RS-232 Connector Board.
c. Remove the 4 nuts that hold the cover to the hinge.
d. Install the new rear cover by attaching it onto the hinge and reconnecting the ribbon cable and Fan Power Cable.
e. Close the rear cover and reinstall 2 screws in the upper corners.



IX. FLASH MEMORY SOFTWARE DOWNLOAD DETAILED INSTRUCTIONS

1. Insert the programmed FLASH Card (referred to as cartridge from this point forward) into the slot on the FLASH Memory Interface Board. THE CARTRIDGE CAN ONLY BE INSERTED ONE WAY: THE EDGE WITH THE SMALL HOLES FACES DOWN AND THE CARTRIDGE LABEL WILL BE ON THE RIGHT. Press down on the cartridge firmly until the eject button and the top of the cartridge are at approximately the same level.

   CAUTION: IT IS IMPORTANT THAT THE CARTRIDGE IS INSERTED PRIOR TO TURNING ON THE PPC INSTRUMENT.

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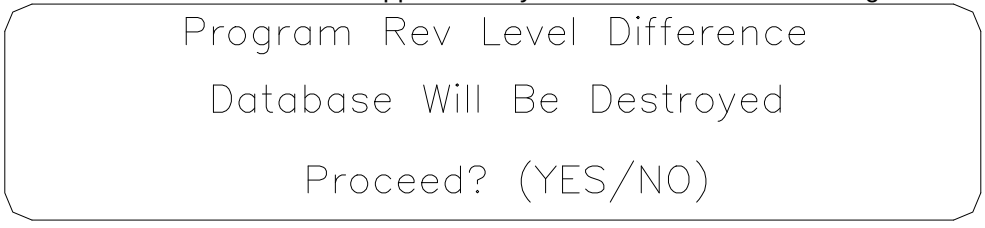
2. Turn the PPC instrument ON.
3. The instrument will initialize for approximately 1 minute before the following screen appears:



4. Press YES to proceed. After YES is pressed, the analyzer will continue initializing for approximately 1 minute. Pressing NO will abort the procedure.
5. The Insert Tray screen will appear:

6. Press # V to access the Special Modes Main Menu as shown below:

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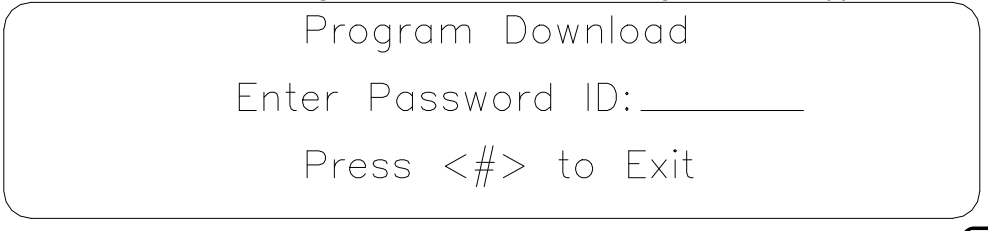
7. Press 6 M to select Program Download. The following screen will appear:



8. Enter the 4 character alphanumeric password "AAAA" and press Enter. Pressing # V returns the operator to the Special Modes Main Menu. An incorrect password also returns the operator to the Special Modes Main Menu. If fewer than 4 characters are entered, the "Error 6.1.4.1. Invalid Entry" screen is displayed. If more than 4 characters are entered, the keyboard beeps.

NOTE: *The download password can be changed by pressing* * W *once the operator has*

*reached the Technician ID screen shown in Step 9 below. Pressing * then W from this screen will transfer the operator back to the "Program Download Enter New Password" screen. The operator may then type in a new 4 character alphanumeric password.*

9. When the correct Program Download Password (AAAA) has been given, the following screen appears:

```
Program Download
Enter Technician ID:_____
Press <#> to Exit
```

10. Enter a 3 character alphanumeric ID and press ENTER. The following screen appears:

```
Program Download
Enter Instrument Location:_____
Press <#> to Exit
```

11. Enter the following instrument location data:
    a. Use the first 11 characters for the site name, using spaces as needed for fillers.
    b. Use the next 9 characters for the city location.
    c. Use the next 5 characters for the Zip Code (U.S.) or country (Non-U.S.).
    d. Use the last 10 characters for the phone number.

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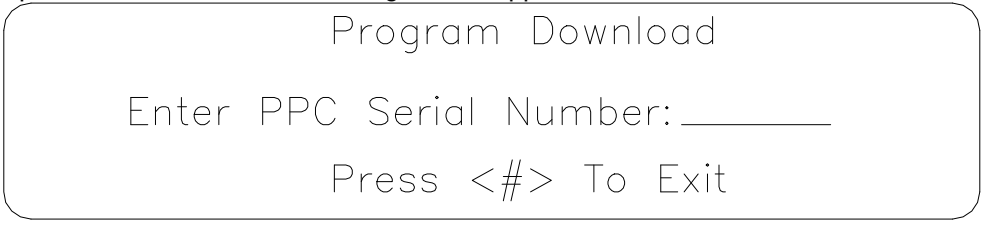
NOTE: *A minimum of 5 characters must be entered.*

Then press ENTER. The following screen appears:



12. Enter the 7 digit serial number of the PPC system (including leading zeros if applicable and deleting 96) the operator is downloading software to and press ENTER. The serial number is located on the left side of the instrument on the manufacturing faceplate.
13. The PPC system will initialize for approximately 1 minute, then the "Program Download In Progress" screen will be displayed for 5-8 minutes while the program download is in progress.
14. When the download process is finished, the "Program Download Complete" screen will be displayed.
15. Turn OFF the instrument, then remove the program cartridge by pressing down on the eject button on the cartridge holder. Turn ON the PPC analyzer and wait for the "Insert Tray" screen to appear.
16. Close the analyzer lid. After completing these steps, proceed to Section X, Validation Protocol Checklist.

X. VALIDATION PROTOCOL CHECKLIST

REFER TO THE HARDWARE PROTOCOL (66-5917).

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NOTE: *The PPC instrument must be calibrated before assay processing can begin. Refer to the PPC Operations Manual, Section 6.*

XI. ADDED FEATURES AND SETUP OPTIONS

Setup Option

The Setup option is a new item in the Special Modes menu. The modified Special Modes Menu Screen is shown below:

END OF DOCUMENT

```
1. Database   2. Assay Tools  3. Config
4. Diagnostics 5. Verification  6. Download
7. Setup      8. Reconstitution 9. Bead Drop
        Select Option OR <#> To Exit
```

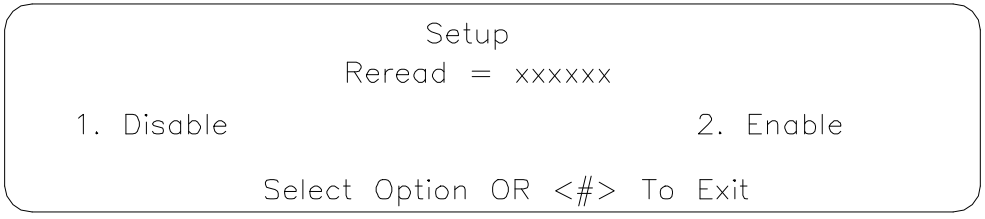
Five new selections will be available in the Special Modes/Setup menu. These selections are Reread, OPD Timing, TPC™, Sample ID Length, and Retransmit. To access this menu, press 

at the Insert Tray screen and 

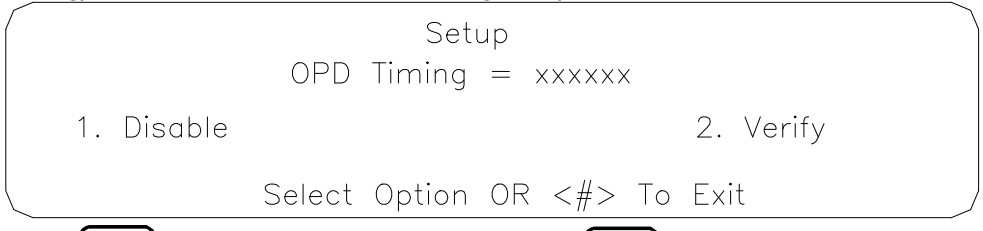
Setup at the Special Modes Menu. This will invoke the Setup Menu password function. After entering the proper Setup Password, the Setup Menu will be displayed as shown below:

```
                    Setup
1. Reread          2. OPD Timing      3. TPC
4. Sample ID Length                   5. Retransmit
                Select Option OR <#> To Exit
```

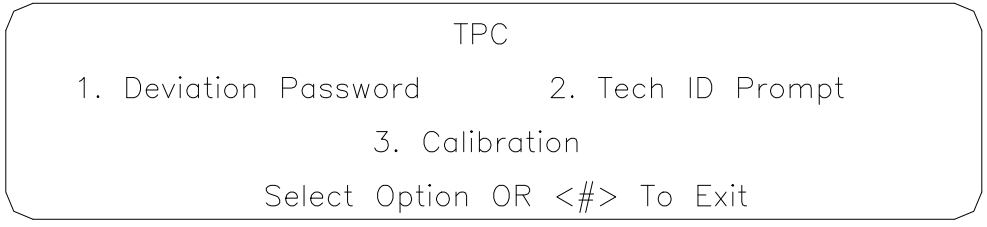
If Setup Selection 1 (Reread) is chosen, the following new screen will be displayed:



Press 1 D 2 E to enable the Reread feature. Selection 2 (OPD Timing), allows access to the OPD Timing Setup.

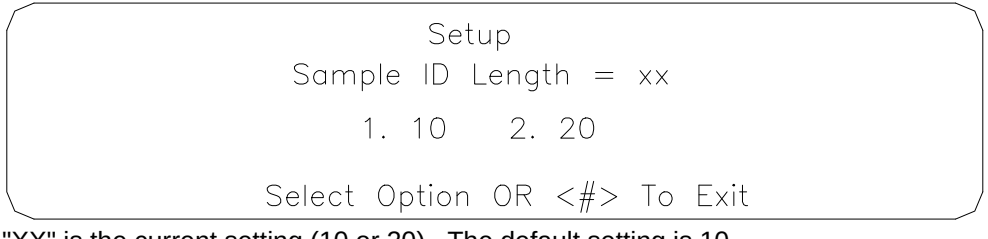


1 D to disable the OPD Timing or press 2 E to enable the Verify Mode. If Setup menu



Press 1 D to invoke the TPC deviation password option. Pressing 2 E will set when the instrument prompts for a Tech ID. Pressing 3 F set the TPC™ mode for the Calibration option.

™ Operations Manual for a complete description of all TPC features.



"XX" is the current setting (10 or 20). The default setting is 10.

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Pressing 1 D will set the maximum sample ID length to 10 characters. Pressing 2 E will set the maximum sample ID length to 20 characters.

If Setup Menu option 5 is selected, the following screen appears:

```
Setup
Retransmit = xxxxxxxx
1. Disable        2. Enable
Select Option OR <#> To Exit
```

Pressing 1 D will disable the Retransmit function. Pressing 2 E enables the Retransmit function. Refer to the COMMANDER PPC Operations Manual Section for a detailed description of the Retransmit function.

EXTERNAL BARCODE READER

The External Barcode Reader allows operator input of TPC-related information.

The External Barcode Reader and PPC instrument communicate through the circular Port 4 of the existing RS-232 ports. This port will be assigned as the External Barcode Reader port. Port 4 will be available for normal communications if no External Barcode Reader is used. The External Barcode Reader is used only to input TPC-related information. A switch setting is used to distinguish between

communication modes.

operator must enter Special Modes by pressing 

from the Insert Tray screen, and selecting 3

```
1. Date/Time     2. DMS/Ext. BCR Assign
3. Instr. Port Assign        4. Int. Barcode
5. View Angle          6. Port Characteristics
        Select Option OR <#> To Exit
```

If Option 2 (External BCR) is selected, the following screen appears:

```
              DMS/Ext. BCR Assign

    1. DMS                    2. External BCR

    Select 1 OR 2 to Modify OR <#> To Exit
```

If Option 1 Data Management System (DMS) is selected and the External Barcode Reader was not

Modify". After the DMS port assignment has been completed, the display will return to the above DMS/Ext. Barcode Reader Assign screen.

configured to an external device. If Option 2 (External BCR) is selected and port 4 is available, the new screen shown below appears:

External BCR Port Assignment = X

Select Port # 0, 1, 2, 3, 4 To Modify

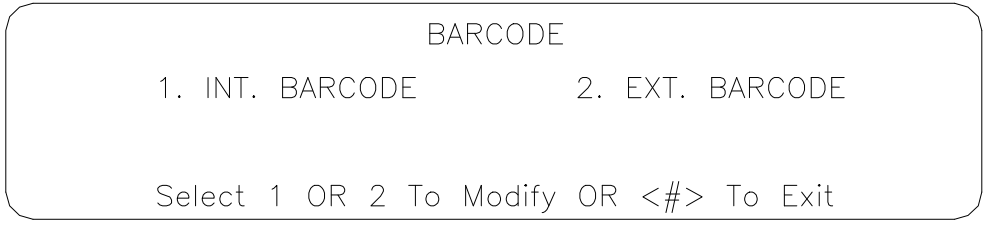
OR <#> To Exit

the switch on the backpanel of the PPC instrument near port 4 to the Barcode Reader position and pressing 4 K

assignment will be shown as port 4. By pressing 0 Z, the External Barcode Reader port

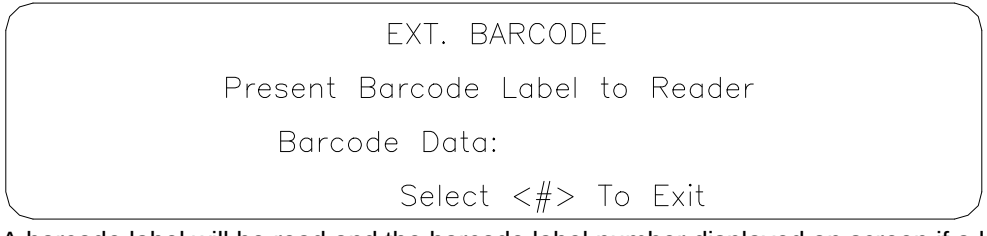
The External Barcode Reader diagnostic is a new option in the PPC Diagnostics menu. The operator must enter Special Modes by pressing # V

(Diagnostics). Select 1 D to enter the Barcode Diagnostics Menu screen. The following new



The INT. BARCODE Option (option 1), has the same functionality as the current BARCODE Diagnostics. The only difference is after the operator has completed the INT. BARCODE option, the

If the operator selects the EXT. BARCODE Option (2) while port 4 is not configured to an External Barcode Reader, Error 10.3 will occur. If option 2 is selected while port 4 is configured to an External



A barcode label will be read and the barcode label number displayed on screen if a label is presented to the External Barcode Reader.

A new communications protocol (BABEL) will be implemented to facilitate the passing of information between instruments. It will carry all of the tray and Sample ID information currently available via

JIBBERISH. In addition, for TPC™

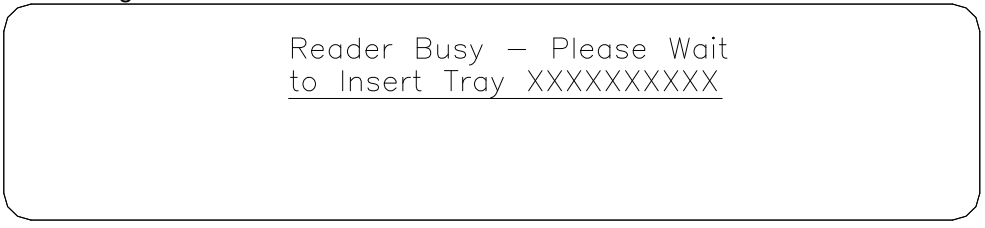
The communication mode will be transparent to the operator. In the BABEL mode there are no assay protocol link table assignments. These protocols will be passed from the COMMANDER® FPC™ system with the tray information. There will be no other changes to the operator interface during normal operation. Communication link failures will be addressed by the communications handler for both JIBBERISH and BABEL messages.

When a request is made to send or collect data from an external instrument, the communications mode of the COMMANDER® PPC™ instrument will be examined. If the PPC instrument is connected to JIBBERISH instruments, the current JIBBERISH protocol handler will be used. If the PPC system is connected to BABEL-capable FPC instruments, the BABEL protocol will be followed. If the PPC analyzer is connected to TPC instruments, TPC information will be available. The communications mode of the PPC analyzer will be determined and stored during each auto-configuration from the instrument's port assignment screen. This communications mode will be retained through power cycling.

NEW BUSY SCREENS

an attached pipettor as shown in the screen below:

and the urge belts are turned off as shown in the screen below:



XII. NEW ERROR CODES

ERROR CODE	DESCRIPTION	MEANING	CORRECTIVE ACTION
1.1.4	Incompatible Transport Hardware, Transport Hardware Must Be Changed	Pre-production Transport Detected	Replace Transport
1.5.3	Tray was locked in without being gated.	PPC system has incorrectly allowed a removed tray to be pulled into the urge mechanism.	Cycle power and remove tray.
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 is greater than 5.	Advisory-cycle power

	Process Checksum Failure	The machine map checksum failed	Replace FLASH board or CPU.
2.1.1.20	Further Calculations Possible	instrument lower limit check.	
3.2.11	Bad Pipettor Test Number	does not match up with a valid assay on the PPC system.	
3.2.15	Unknown Assay List Cannot Find Assay.	The Assay List Number/Assay pipettor does not match any on the PPC system.	
3.2.1.10	Illegal Operation - Invalid		Advisory
3.2.1.11	Mismatch		Advisory
	Lot Expired - xxxxxxxxxxxxxxxxxx		
3.2.1.13	Master Lot Mismatch		
3.2.1.14	Registration of Component		Advisory

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 system.	Advisory
3.2.1.21	Tray in Use	Tray entered cannot be gated.	Advisory
3.2.1.22	List #/Procedure From Pipettor is Inconsistent With Current Assay		Advisory
3.2.1.23	TPC™		Advisory
3.2.1.24	Component Dispense Station		
3.2.1.25	Tray Found On Wrong		Advisory
3.2.1.26	Drop		Advisory
	Unable To Verify Component	requested tray.	Advisory
	No Bead Drop Registered		Advisory
	INTERNAL SYSTEM ERROR: External Barcode	External Barcode Reader not configured.	

3.2.1.4	Invalid Tray Type From		Advisory
3.2.1.8	Data Exists		Advisory
	Lot Number Not Found		Advisory
	Multiple Communication Types Found. Disconnect	Connecting JIBBERISH and BABEL instruments to a COMMANDER PPC allowed.	
5.1.2	Failure Port: n, n, n, n	A transmission or expected reception communications link to that port was disconnected.	
5.1.3	Multiple Responses from xxxxxxxxxxxxxxx		Advisory
	Hardware Communications Failure Port: n	auto-config.	Replace RS-232 Bd., Serial I/O
5.1.5	Instrument NOT Supported. Instruments.	The COMMANDER PPC will only ™ and PIP instruments.	

5.1.6	Invalid Message Format	detected per the TPC BABEL Instrument Communications Protocol	
5.1.7	Incorrect Communications	An invalid message type is detected per the TPC BABEL Instrument	Advisory
5.1.8	ERROR	A BABEL or JIBBERISH internal communications structure has been corrupted.	
6.2.1.1	No TPC™ Capable Instruments Connected		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 - xxxxxxxxxxxx		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	The COMMANDER PPC instrument was unable to communicate to a TPC pipettor.	IP-36

	Illegal operation - Invalid mixture		
6.2.1.17	Warning - Master lot		Advisory
6.2.1.18			Advisory
6.2.1.19	registered		Advisory
	Illegal operation - Lot number exists: xxxxxxxxxx		
6.2.1.20	Warning - Mixture		Advisory
6.3.1.1	available in current communication mode.	communication mode when Protocol Select option was chosen.	available in JIBBERISH mode.
6.2.1.21			Advisory
6.2.1.22	tray		Advisory
	INTERNAL SYSTEM ERROR: External Barcode	External Barcode Reader task returns a fault status of not configured.	
	Tray Not Found		Advisory

6.2.1.4	Pipettor		Advisory
	Invalid Tray Status From Pipettor		
6.1.5.3	Operation not allowed. A	ADE option is selected and batches are active.	
6.1.7.1	Retransmit Disabled	function has been disabled.	Advisory
	Illegal Operation - TPC™ Mode Off		Advisory
	No Calibration Data		Advisory
	Illegal Operation - Batch In Process	in process.	
6.1.8.1	Cannot Assign Barcode Available	Port 4 is already assigned to else.	Advisory
	Warning - Master Lot Expired		
6.1.7.3	Illegal Operation - Batch	Tray ID entered whose batch is active.	

6.2.1.8	Illegal Operation - [Type]	Bead data currently exists for the tray ID entered.	
6.1.4.7	ADE Calibration Checksum		Advisory
6.1.7.4	Void	Tray ID entered whose batch is void.	
6.2.1.9	Lot Number Not Found -		Advisory
6.1.7.5	Modified	Tray ID entered whose batch has	Advisory
7.3	ID	BCR was unable to decode where to	
7.4	Barcode Error - Bitbus User	BCR task cannot create a user ID with	IP-2
7.5	Connection Error	The BCR task could not create a	IP-2
7.6	Configured	The external BCR is not configured.	
8.1.1.36	Assay List Number/Assay Not Unique	An attempt was made to save an assay protocol and its Assay List Number/Assay Procedure is not	Advisory

9.1.1.34	Pipettor Sample ID Length Incompatible	PPC system is in the 10 character mode and it attempts to collect sample IDs with more than 10 characters.	Incompatible barcode labels or configure PPC to 20 character mode.
10.3	External BCR Port is Not Assigned	Attempting to use external BCR when Port 4 is not configured.	Advisory
11.2.6	810 Create Connection Error	Bitbus communication error.	Replace CPU then SIO then DIO Controller A and B. Replace Bitbus Cable.
12.1.1	Internal Status Checksum Failure All Assay Data Destroyed.	Checksum verification failed during power up.	If enter will let you continue the error occurred on the FLASH board or CPU. If you cannot continue, the error occurred on a bitbus board.

END OF DOCUMENT

ABBOTT ADD	TECHNICAL SERVICE BULLETIN

SUBJECT:
PPC CPU BOARD RETROFIT

TSB#: **50-031**

ORIGINATOR: **ALICIA L. HEMPHILL**
APPROVED: **John Buckland 6-02-94**

PRODUCT:
COMMANDER® PPC (50)

REF. ECO:

IMPLEMENTATION: ○ **Immediate** ● **Next Service Call** ○ **Next Failure** ○ **Optional** Instruments Requiring Modification: **SEE ADMINISTRATIVE NOTE BELOW**	TSB Part/Kit #: **6208-78** TSB Effectivity/ Part(s) Availability: **02-JUN-94** **TSB Tracking by Serial # required (IMMEDIATE TSB's ONLY)** ○ YES ● NO	Upgrade Time: **15 min.** Validation Time: **30 min.** Total Mod. Time: **45 min.** ****NOTE** The instrument must be at TSB Level n/a prior to performing this TSB.**

I. DISTRIBUTION:

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

Worldwide

II. PURPOSE:

To notify the field to check all PPCs and to replace CPU boards with clock chip part number MM58274BN.

III. ADMINISTRATIVE NOTES:

Charge labor for upgrade and all swapped CPU boards to DDMS 348-660.

US - This TSB should be closed in Fieldwatch as follows: SC=03 TC=31 RC=93

Instruments Requiring Modification - Tracability to specific instruments cannot be obtained, all instrumentation in field must be checked

IV. SPECIAL TOOLS:

N/A

V. PARTS:

REPLACED PARTS:
N/A

COMPATIBILITY:
N/A

VI. PROCEDURE:

MODIFICATION STEPS:

1. Prior to removal of the Main CPU Board, record all of the configuration information. Record the DMS Port Assignments, Port Characteristics, and Port Assignments. Print a current list of PPC Assay selections. Failure to print assay assignments could result in incorrect assignment of Pipettor Test number to a PPC Assay number.

2. Turn the power switch off and unplug the AC power cord from the PPC.

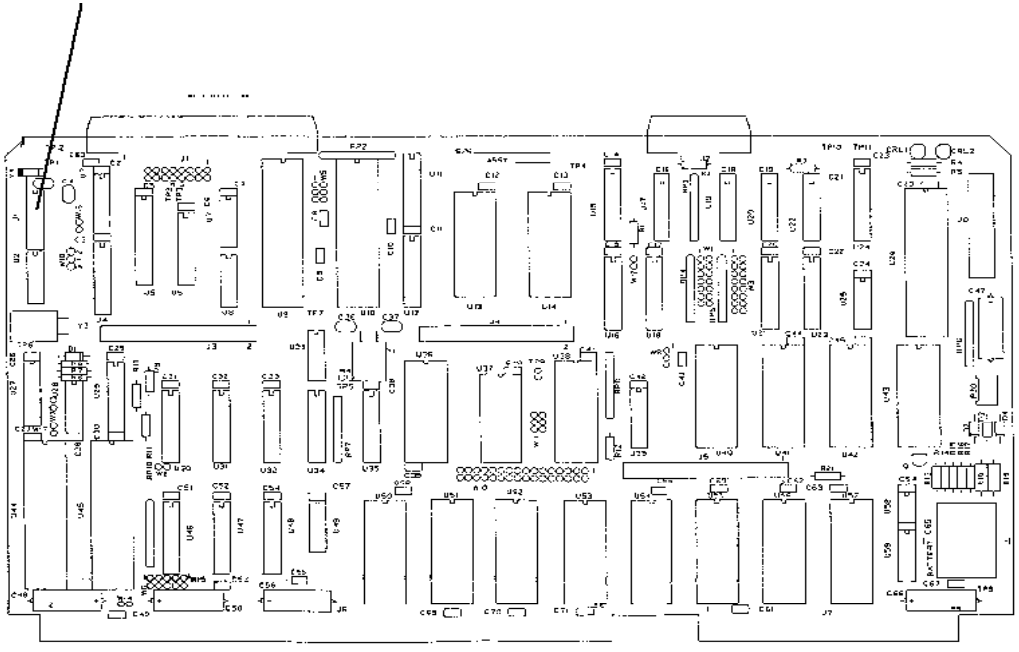
3. Raise the top right cover.

4. Lower the front keyboard panel.

5. Remove the three phillips head screws securing the CPU enclosure.

6. Locate position (U1) on the CPU board as shown below. (Refer to figure 2-1)

Clock Chip (U1)



7. If the part number of the clock chip is MM58274BN the CPU board must be replaced. The replacement CPU board must have a clock chip with a MM58274CN or higher suffix letter. If the CPU board currently in the PPC has a clock chip part number of MM58274CN or higher suffix letter, leave the CPU board in the PPC.

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8. To remove a CPU with a MM58274BN clock chip, raise the CPU Board up half way and remove the ribbon cable to the Memory Module Interface Board.

9. Remove the CPU.

10. Insert new CPU board into the PPC.

11. Connect all cable connections.

12. Insert phillips head screws to secure the CPU enclosure.

CHECKOUT:

1. After replacement of a CPU Board with serial number MM58274BN, CONFIGURE the following items on the PPC.

2.	Date/Time	Refer to PPC OPERATORS MANUAL (Page 68)
3.	DMS Port Assignment	Refer to PPC OPERATORS MANUAL (Page 68)
4.	PORT Characteristics	Refer to PPC OPERATORS MANUAL (Page 70)
5.	Port Assignments	Refer to PPC OPERATORS MANUAL (Page 89)
6.	View Angle	Refer to PPC OPERATORS MANUAL (Page 71)
7.	BarCode Reader Setup	Refer to PPC OPERATORS MANUAL (Page 70)

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8. Link SMC/PPC Assays Refer to PPC OPERATORS MANUAL (Page 66-67)

9. Prior to leaving the account, contact IDM to ensure communicator from the PPC/or SMC to the Data Management System is established. IDM will re-check and re-set communications over the modem. Contact IDM at 800-443-9791. Refer to ISA 58-001 for more information.

10. Complete Total Call.

MODIFICATION CONTROL STICKER UPDATE:
Mark an "X" through number 31 on the Modification Control Update Label.

END OF DOCUMENT
END OF DOCUMENT

ABBOTT
ADD

TECHNICAL SERVICE BULLETIN

SUBJECT:
Auxiliary Spring, Bulb Retainer Installation

TSB#: **50-029**

ORIGINATOR:
Alicia Hemphill

PRODUCT:
COMMANDER® PPC (50)

APPROVED: **John Buckland 9/27/93 (signature on file)**

REF. ECN: **PPC-2204**

IMPLEMENTATION: ☐ **Immediate** ☒ **Next Service Call** ☐ **Next Failure** ☐ **Optional** Instruments Requiring Modification: **S/N 3940 and below**	TSB Part/Kit #: **1-43891-01** TSB Effectivity/ Part(s) Availibility: **27-SEP-93**	Upgrade Time: **30 min.** Validation Time: **0.00** Total Mod. Time: **30 min.**

****NOTE** The instrument must be at TSB Level 50-005 prior to performing this TSB.**

I. DISTRIBUTION
WORLDWIDE

II. PURPOSE:
To inform the field that a coiled spring (for use on the COMMANDER® Parallel Processing Center (PPC) lamp retainer) is being installed onto new build instruments and into the Field Service Engineer (FSE) kit. Under certain conditions, external vibrations or bumps to the PPC in between the Red and Blue Filter Reads can result in optical density read variations.

Over a period of time, the changing of the lamps may cause distortion of the lamp retainer. If the lamp retainer is not holding the lamp tightly, the lamp may slightly shift. Movement between the Red and Blue Absorbance measurements can cause read variations.

The Auxiliary Spring, Bulb Retainer will be installed during the Next Service Call.

III. PARTS:
USA: 1-43891-01 Parts will be sent to each FSE per the Instrument Responsibility List (IRL).

International: 1-43891-01 The local Service Logistics areas of the world will forecast/order the required number of parts.

IV. Service Kit Impact:
Worldwide

V. PROCEDURE:
Modification Steps:
1. Raise Top Left Cover.

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2. Remove the drip tray (plastic shield) from the top of the instrument.
3. Remove the metal piece attached to the pump saddle base, by removing the two (6/32) phillips screws.
4. Remove the two (6/32) phillip screws connecting the left front cover to the unit.
5. Remove the left front panel by pushing it from right to left. Disconnect the Backlight PCB cables that are attached to it.
6. Slide the lamp out of the lamp holder.
7. Disengage the back leg of the lamp retainer. Hook one end of the coiled spring onto the disengaged leg.
8. Pull the opposite end of the spring and connect it to the near side leg of the lamp retainer.
9. Push the coiled spring to the top of the lamp spring retainer. (Refer to Figure #1)
10. Reconnect the back leg of the lamp spring retainer to its base.
11. Reinstall the lamp.
12. Reattach pump assembly covers removed in steps 3 and 4.
13. Install the left front panel and connect the backlight PCB cables.

VI. VERIFICATION STEPS:

Perform Total Call to verify normal operation of the PPC. Per Total Call, repeatability and linearity tests must be performed.

VII. Modification Control Sticker Update:

Raise the card cage assembly to gain access to the Modification Control Update Label; next to the card cage fan. (NOTE: the two (2) thumb screws securing the card cage to the base plate mounting hex posts may have to be removed first).

Mark an "X" through number 29 on the Modification Control Label.

Lower the card cage assembly and if removed, reinstall the two (2) thumb screws that were removed in step 1.

VIII. DESCRIPTION OF CHANGES:

New build instruments starting with S/N 3940 will have the spring installed during manufacturing.

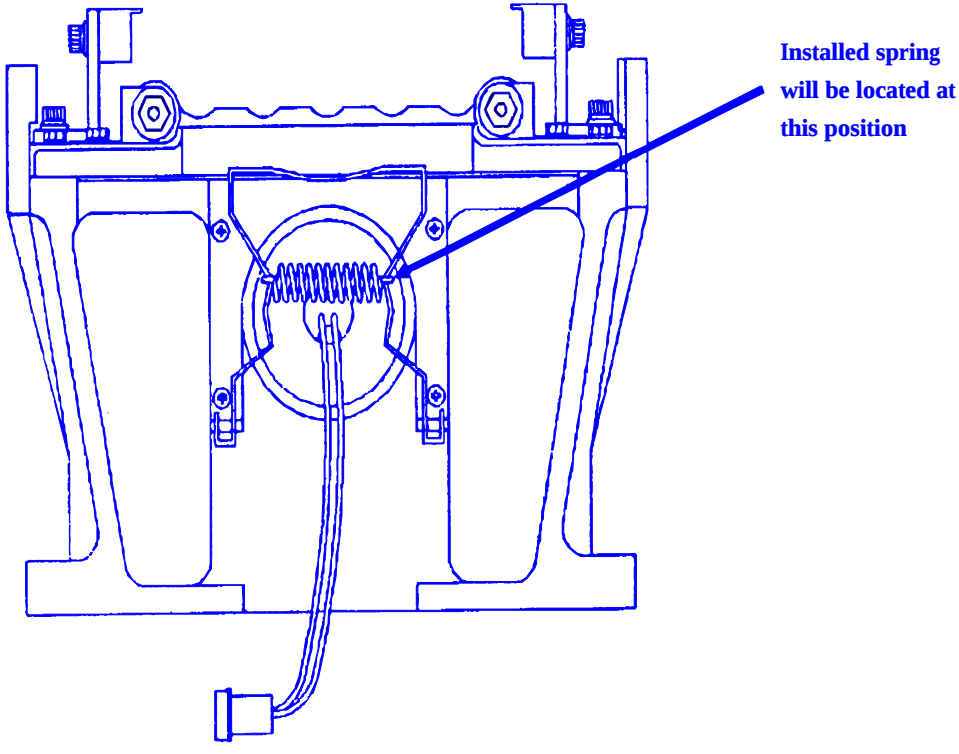

Figure #1

Potential Biohazard & Voltage Hazard. Observe Proper Safety Precautions.

END OF DOCUMENT