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INSTALLATION CHECKLIST

- ☐ Cable Connections
- ☐ Computer Setup Completed (Pre-Install Disk, FPC Application, and Database Software Installed)
- ☐ Assay Update Disk
- ☐ Firmware (Verify/Installation) Pipettor
- ☐ Setting Date and Time Procedure Completed
- ☐ Update System Version Option [NOTE: This must be done for all customers in any TPC Mode (OFF, RECORD, VERIFY)]
- ☐ Pipettor Setup Completed (All hardware or TPC™ options)
- ☐ Printer Setup Completed
- ☐ Port Configuration
- ☐ Loopback Test Passed On All 8 Serial Ports
- ☐ Pipettor Alignments
- ☐ Printer Diagnostics Performed
- ☐ Bar Code Reader Diagnostic Performed
- ☐ Sensor Module Diagnostic Performed
- ☐ ABC Diagnostics Performed (For ABC Configured Instrument)
- ☐ Leak Test
- ☐ Tip Threshold Performed
- ☐ Total Service Call Completed (Attach Tray Map Printout From Assay Pipetted).

INTRODUCTION

This section provides the Field Service Engineer (FSE) with complete installation instructions for the COMMANDER® FPC System. The installation procedure consists of the following steps:

1. □ Unpacking the instrument
2. □ Installation Checklist
3. □ Cable Connections
4. □ Installing FPC Firmware
5. □ ABC Installation
6. □ Computer Setup
7. □ UNIX® System Date and Time Update Procedure
8. □ FPC System Integration
9. □ RS-232 Port Configuration
10. □ Pipettor Setup

UNPACKING THE INSTRUMENT

Before unpacking the FPC, check the condition of the shipping boxes and contents of each box in the shipment for physical damage. There should be three (3) boxes in the shipment.

NOTE:

When unpacking the Pipettor box, locate the arrow imprinted on the cardboard under the Pipettor. This arrow points to the front of the Pipettor when the Pipettor is repackaged for shipment.

Saving The Packing Contents

The packing contents of the FPC boxes should not be thrown away. Keeping the packing materials ensures that the instrument can be properly repackaged for shipment. Proper repackaging helps prevent the instrument from being damaged during shipment.

Shipping Boxes Contents

The contents of the three (3) shipping boxes are as follows:

1. □ Pipettor Box
2. □ Platform Box
3. □ Pipettor Accessory Box

Pipettor Box Contents

The Pipettor Box contains three (3) items:

1. Pipettor
2. Platform Box
3. Pipettor Accessory Box

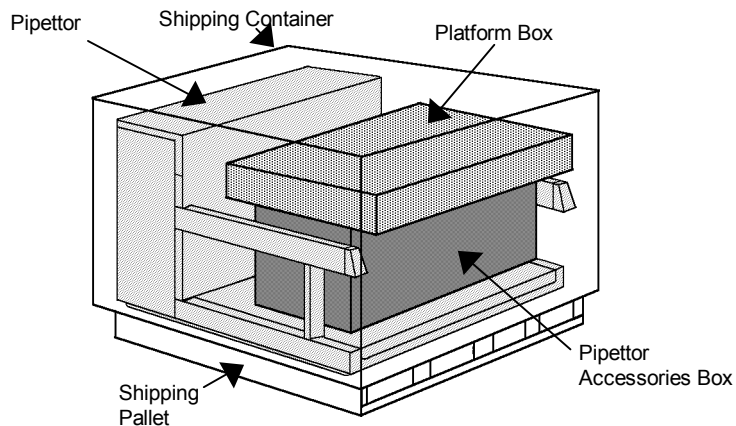


Figure 4D-1. Pipettor Box Contents

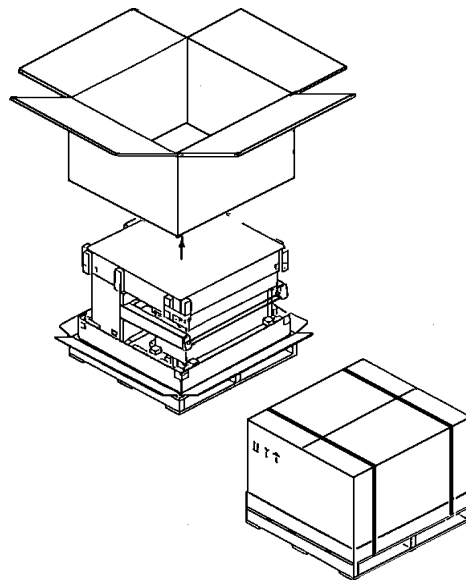


Figure 4D-2. Unpacking the FPC

Platform Box Contents

The Platform Box contains the Sample Rack Tray Platforms. Refer to Figure 4D-4.

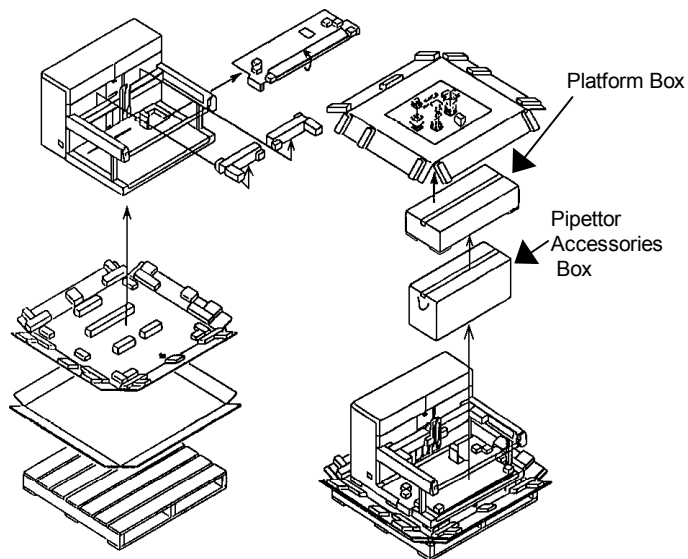


Figure 4D-3. Unpacking the FPC

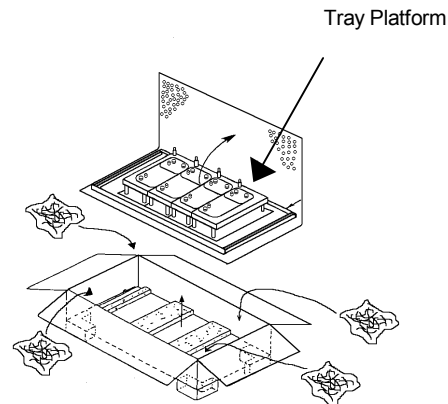


Figure 4D-4. Platform Box Contents

Pipettor Accessories Box Contents

The Pipettor Accessories Box contains the following items:

1. Diluent Bottle Rack
2. Two (2) Tip Racks
3. Tray Adapter
4. Microtiter Adapter
5. Tip Bin
6. Power Cable (Not shown in Figure 4D-5)
7. RS-232 Conversion Cable (Not shown in Figure 4D-5)
8. Sample Kit Box (Not shown in Figure 4D-5)
9. Diluent Kit Box (Not shown in Figure 4D-5)

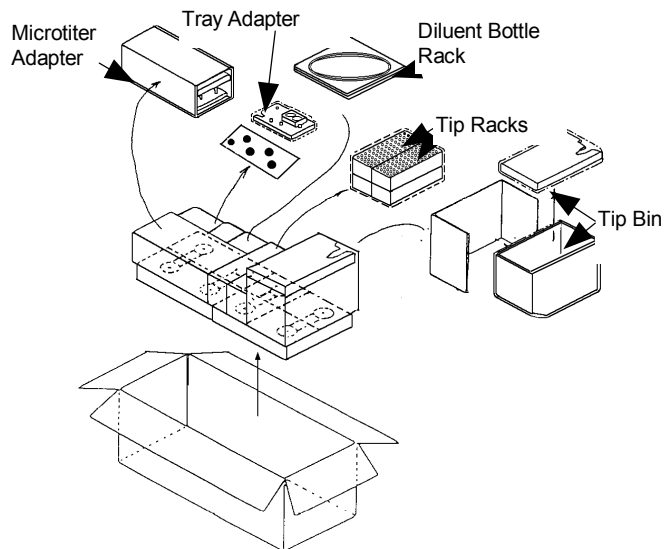


Figure 4D-5. Pipettor Accessories Box Contents

Sample Kit Box

The Sample Kit Box contains the following items:

1. **One Bag Containing:**
 - Sampling Nozzle Assembly
 - Tip Fitting Assembly
 - Sampling Tube Assembly
 - Three (3) Sampling Tube Clamps
2. **One Sample Syringe Fixture Set Box Containing:**
 - Sample Syringe Fixing Plug
 - Sample Syringe Fixing Nut
 - Sample Plunger Fixing Nut
 - Sample Ferrule
 - Lock Washer
3. **One Sample Syringe Kit (500 μ L) containing:**
 - Sampling Syringe (500 μ L), Pre-lubricated

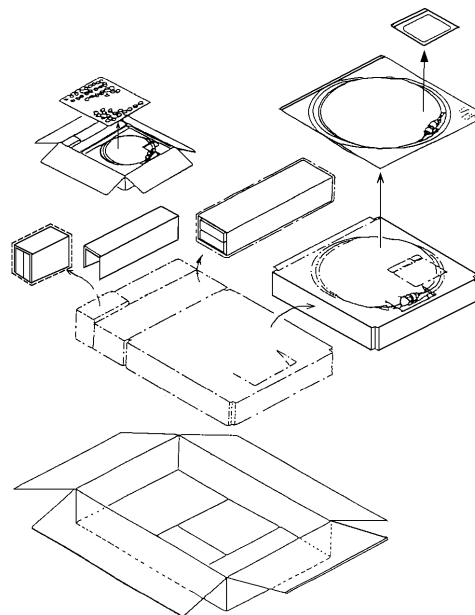


Figure 4D-6. Sample Kit Box Contents

Diluent Kit Box

The Diluent Kit Box contains the following items:

1. **Diluent Nozzle Holder**
2. **One Bag Containing:**
 - Diluent Delivery Tubing Assembly
 - Diluent Suction Tubing Assembly
3. **One Bag Containing:**
 - Valve Connection Tubing Assembly
4. **One Diluent Syringe Fixture Set Box Containing:**
 - Diluent Syringe Fixing Plug
 - Diluent Syringe Fixing Nut
 - Diluent Plunger Fixing Nut
 - Diluent Ferrule
 - Lock Washer
5. **One Diluent Syringe Kit (2500 μ L) Containing:**
 - Diluent Syringe (2500 μ L)
 - Three (3) Diluent Syringe Plunger Tips

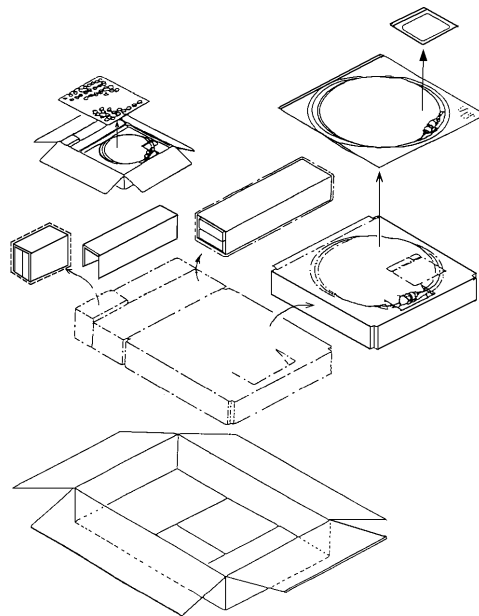


Figure 4D-7. Diluent Kit Box Contents

UNPACKING THE COMPUTER SYSTEM

Computer System Contents

The Computer System contains the following boxes:

1. Computer Box
2. Printer Box
3. Printer Stand Box
4. Monitor Box
5. Keyboard

Computer Box Contents

The Computer Box contains the following:

1. Computer
2. Setup Manual
3. Computer Power Cable
4. Keyboard Cable
5. Digiboard™ Cable

Printer Box Contents

The Printer Box contains the following items:

1. Printer
2. Parallel Printer Cable
3. Printer Power Cable
4. Operator's manual

Monitor Box Contents

The Monitor Box contains the Monitor, a Power Cable, and Communication Cable.

Keyboard Box Contents

The Keyboard Box contains the Keyboard.

FPC Accessories Box Contents

The FPC Accessories Box contains:

1. Four (4) each Sample Racks with 13 mm inserts
2. Four (4) each 3.5 amp Fuses
3. Four (4) each 6.5 amp Fuses
4. Ten (10) each Waste Bags
5. Loopback Connector
6. Sensor Module Box containing Sensor Module
7. Bar Code Reader Box containing Bar Code Reader
8. Two (2) containers of Disposable Tips
9. Diskette Holder
10. Two (2) each FPC System Software Diskettes
11. Two (2) each Oracle™ Database System Diskettes
12. Assay Update Diskette
13. Bar Code Labels (Tray and Rack)
14. Bar Code Labels (Tube Boxes)
15. MLA Volume Verification Kit
16. Diluent Syringe
17. Sample Syringe
18. Keyboard Protector
19. One (1) Bottom Platform Tray Assembly
20. Three (3) Reagent Rack Assembly

CABLE CONNECTIONS

Connect cables according to the following procedure. Refer to each accompanying figure for visual assistance.

1. Connect "computer-end" of Digiboard™ Cable to Digiboard Port on back of the computer. Refer to Figures 4D-8 and 4D-9.

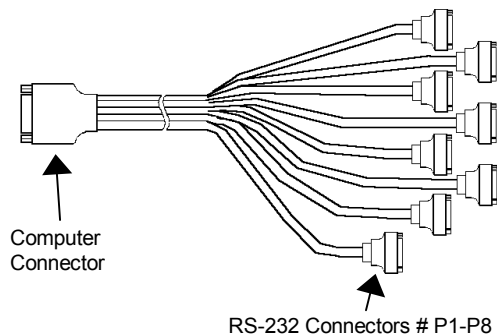


Figure 4D-8. Digiboard Cable

Note: Port, jack, and cable locations may differ depending upon the model of computer.

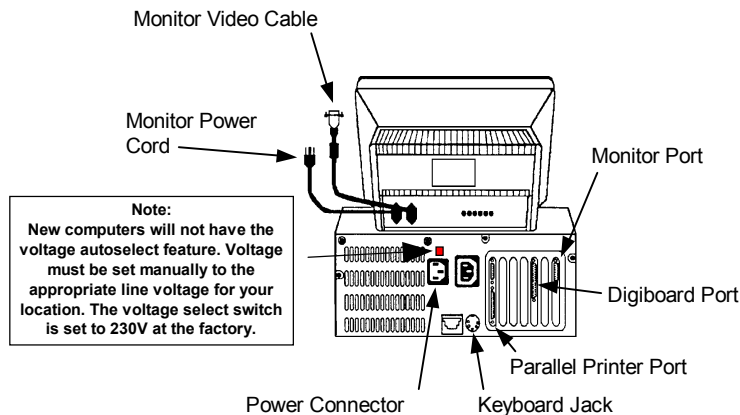


Figure 4D-9. Computer and Monitor Ports

2. Connect Pipettor Connector of the RS-232 Conversion Cable to the Pipettor RS-232 Port. Refer to Figures 4D-10 and 4D-11 below.

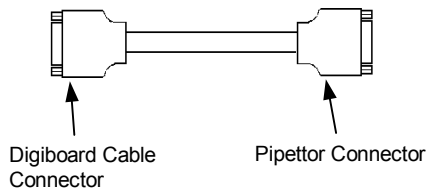


Figure 4D-10. RS-232 Conversion Cable

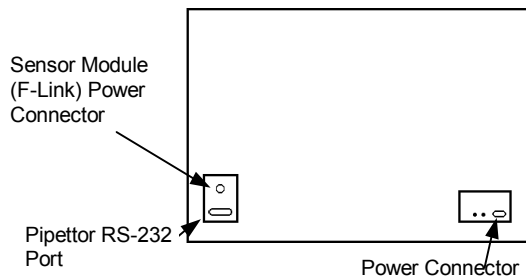


Figure 4D-11. Pipettor Connections

3. Connect RS-232 #P3 Connector of the Digiboard™ Cable to the Digiboard Connector of the RS-232 Conversion Cable. Refer to [Figures 4D-8](#) and 4D-10.

4. Connect Bar Code Reader Connector into Bar Code Reader Socket of the Sensor Module. Refer to Figure 4D-12.

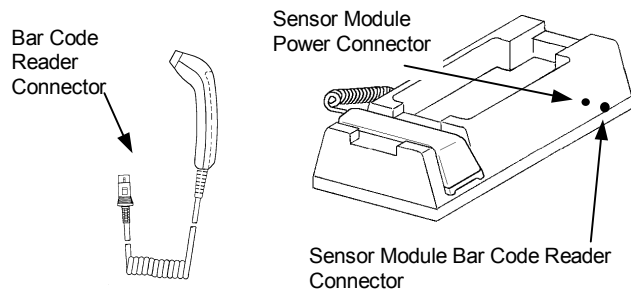


Figure 4D-12. Bar Code Reader and Sensor Module Connectors

5. Connect Power Connector of the Sensor Module to the Sensor Module Connector of the Pipettor. Refer to Figures 4D-11 and 4D-12.
6. Connect Sensor Module Connector of the Sensor Module to the RS-232 # P2 Connector of the Digiboard™ Cable. Refer to [Figure 4D-8](#).

7. Connect the Bar Code Reader Connector of Sensor Module to RS-232 # P1 Connector of Digiboard Cable. Refer to Figure 4D-13.

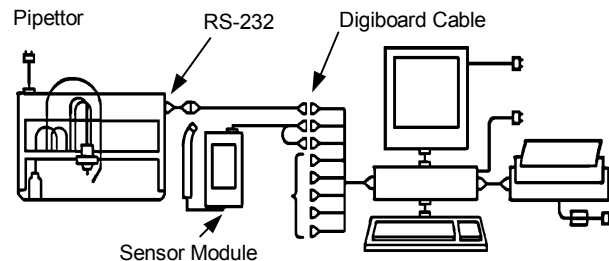


Figure 4D-13. Sensor Module Connections

8. Plug the monitor video cable connector to the monitor port of the computer. Refer to [Figure 4D-9](#).
9. Connect the keyboard connector of the keyboard cable into the keyboard. Refer to [Figure 4D-9](#).
10. Connect the computer connector of the keyboard cable into the computer keyboard jack.

11. Connect the computer connector of the parallel printer cable into the parallel printer port of the computer. Refer to **Figure 4D-9**.
12. Connect the printer connector of the parallel printer cable to the parallel port of the printer. Connect AC power cords to the Pipettor, computer, and printer. Refer to **Figure 4D-9**.

ABC Installation

To install the ABC onto the FPC, perform the following procedure:

1. Remove the packing material and plastic covers from the shipping carton containing the ABC.
2. Carefully remove the ABC from the shipping carton. Examine the contents for any damage due to shipping and handling. Check for the presence of all parts.
3. Carefully place the ABC on the table next to the FPC.

NOTE:

The ABC must be level with the FPC and the table must be large enough for both the ABC and FPC.

4. Remove the old style control racks and platform from the FPC.

NOTE:

Version 2.5 uses the new style control racks and platform.

5. Remove three screws from FPC Lower Left Base Cover with a Phillips-tip screwdriver. Slide the cover to the left and remove.
6. Remove the two screws attaching the Support Post FPC Arm (top) and two screws attaching the FPC Support Post (bottom) with a 3 mm Allen wrench. Loosen the hex screws on the top and bottom plate of the support post. Slide the support post to the left and remove. Retighten the two bottom screws.
7. Reinstall the FPC Lower Left Base Cover that was removed in Step 5.
8. Remove Tube Rack and Carrier Holding Plate from the ABC.

9. Remove six (6) carriers from the ABC and push the remaining carriers to the left. This allows access to the ABC Mounting Post Stud and permits installation of the ABC Support Post.
10. Loosen the 5/32" Allen screws on the ABC Support Post Block. Remove FPC Support Post from ABC accessory box and install the post on the ABC Support Post Block using the original Allen screws.
11. Place ABC onto the FPC base and position the ABC so that the guide pin fits securely in the positioning guide hole on the FPC base.
12. Use a level to verify that ABC legs are level and secure on the table.
13. Place FPC Platform on the ABC base. Ensure that bushings are placed on the ABC locating pins.
14. Secure Platform Positioning Pin to the FPC base. Tighten screw on the ABC Platform.
15. Using upper 3 mm Allen screws, secure top of ABC post to the FPC.
16. Tighten the 5/32" Allen screw on the ABC post.
17. Replace the previously removed six (6) carriers.

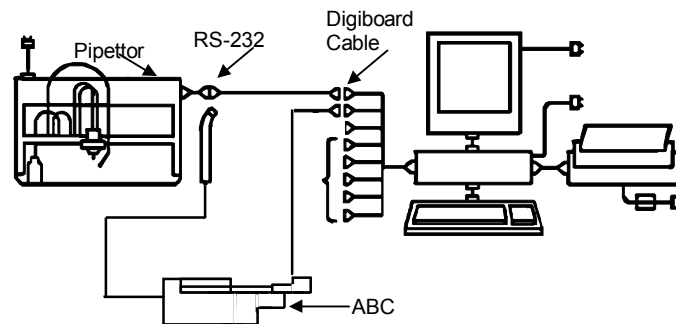


Figure 4D-14. ABC Connection

18. Return Carrier Holder Plates and Tube Rack to their respective positions.
19. Plug the Hand Bar Code Reader into the cable extender and then the cable extender into the side connector of the ABC.
20. Plug the RS-232 Cable from the ABC into the FPC Serial Port (#2 is preferred or another available port).
21. Plug the FPC/ABC Power Cable from the ABC Connector to the FPC Connector Marked "F-Link".
22. Plug AC Power Cords into ABC and FPC.
23. ABC is now installed. FPC Version 2.5 Software must now be installed.

4. Locate the blue and brown jumpers. Do not confuse the blue and brown jumpers with the blue and brown wires that go to the filter assembly. Do not remove these wires.
5. Move the blue and brown jumpers to their respective terminals as shown in **Figure 4D-15** for the desired operating line voltage. Tighten the terminal connections.

NOTE:

Verify that the proper power setting is selected for the instrument before turning the Pipettor on to avoid possible damage to the equipment.

AC Power Conversion (Older Instrument)

The FPC is shipped with AC power input set for 115VAC. The FPC may also be converted to 100VAC, 220VAC, and 240VAC by performing the following steps:

1. Turn the POWER to the Pipettor OFF.
2. Remove the Pipettor rear cover.
3. Locate the terminal block on the transformer top in the AC Power Supply.

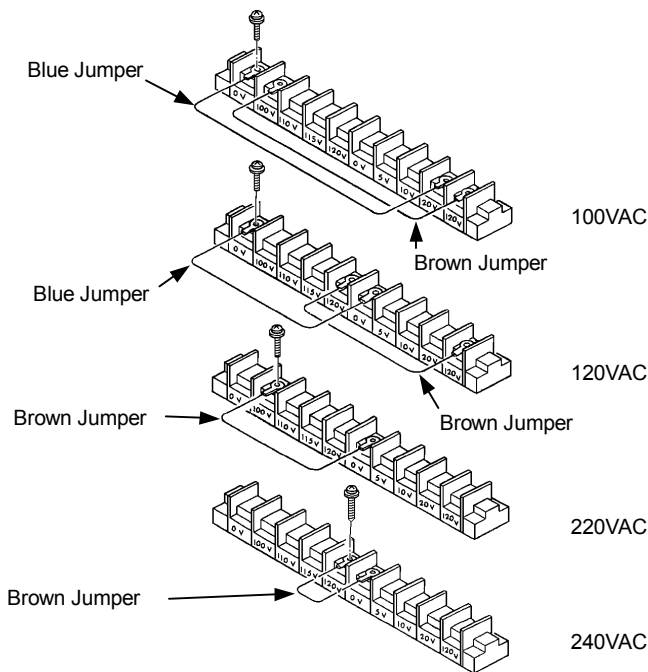


Figure 4D-15. AC Power Input Conversion Jumper Settings

AC Power Conversion (New Instrument)

The procedures listed below describe how to set the input voltages to 100VAC, 120VAC, 220VAC, or 240VAC, and the proper fuses required.

1. Disconnect the AC power cord.
2. Refer to Figure 4D-16, which shows the AC Power Entry/Fuse Holder Assembly located on the back panel of the FPC.
3. Notice the white, bullet-shaped indicator protruding through a hole in the fuse cover. This indicator indicates the current power selection.
4. Remove the Fuse Holder Cover using a small, flat-bladed screwdriver.
5. Pull Voltage Selector Card straight out from the housing.
6. Slide the small, white indicator around the Voltage Selector Card until the indicator points to the desired voltage setting on the opposite side of the Voltage Selector Card. Ensure the white indicator is in the desired AC Voltage setting.
7. With the card set to the chosen power selection, reinsert the card into the AC Power Entry/Fuse Holder Assembly.

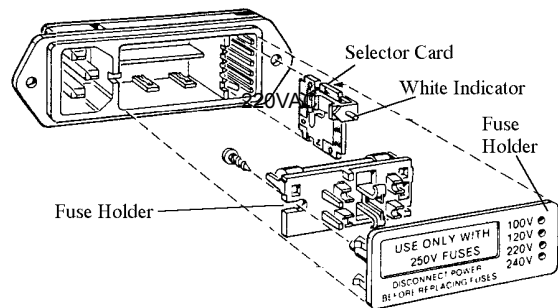
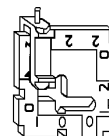
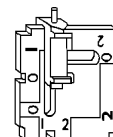


Figure 4D-16. AC Power Entry/Fuse Holder Panel Assembly



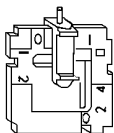
100VAC

Figure 4D-17. Voltage Selector Card Setting For 100VAC



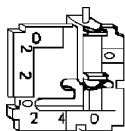
120VAC

Figure 4D-18. Voltage Selector Card Setting For 120VAC



220VAC

Figure 4D-19. Voltage Selector Card Setting For 220VAC



240VAC

Figure 4D-20. Voltage Selector Card Setting For 240VAC

8. Ensure proper fuses are used. The proper sizes are as follows:

- 100VAC and 120VAC applications require one (1) 5.0 Amp "Slo-Blo" Fuse.
- 220VAC and 240VAC applications require two (2) 3.15 Amp "Slo-Blo" Fuses.

9. Reinstall Fuse Cover.

If fuse replacement is necessary, refer to the **Fuse Replacement Procedure** below.

Fuse Replacement Procedure

1. Disconnect AC Power Cord.
2. Remove Fuse Holder Cover using a small, flat-bladed screwdriver.
3. Remove the fuse block by sliding it up, then away from the mounting screw. Lift the block away from the pedestal.
1. Change fuse(s). The Fuse Holder uses a jumper bar and a 5.0 amp fuse for 100VAC and 120VAC voltage conversion. For 220VAC and 240VAC voltage conversion, the jumper bar is removed and both 3.15 amp fuses are installed.
2. Invert the fuse block and slide it back onto the mounting screw and tighten.

FIRMWARE AND SOFTWARE INSTALLATION

The installation of the ABC requires updating the FPC firmware, attaching the ABC to the Pipettor, and installing the new FPC software onto the Main Computer. The installation consists of three steps:

1. Installing FPC firmware.
2. ABC installation.
3. Installing Database and Application for FPC version 2.5 onto the Main Computer.

Installing FPC Firmware

The firmware is resident in the Pipettor and controls all Pipettor Motor functions, error detection, and communications with the PC.

The Pipettor firmware consists of three PROMs that contain their own individual version numbers.

PROM	Firmware Version 2.1	Firmware Version 2.5
Main EPROM	Version 15.3	Version 16.0 or higher
EEPROM	Version 5.2	Version 6.0 or higher
LSU EPROM	Version 23.2	Version 24.0 or higher

The purpose of each of the PROMs listed is:

PROM	Purpose
Main EPROM	Program instructions for the operation of the Pipettor
EEPROM	Position; aspiration/dispense, and speed parameters for the Pipettor
LSU EPROM	Liquid level sense, aspiration, and dispense monitoring algorithms

To update the FPC firmware, perform the following procedure:

1. Turn off all power to the FPC.
2. Remove the FPC Back Cover using a small, Phillips-tip screwdriver.
3. Remove board holders and remove Master Processing Unit (MPU) Board from slot 1.
4. Take precautions for protecting static sensitive items before handling any boards or components. Use an anti-static pad, wrist strap, and grounding strap.
5. Locate the main system EPROM in position E16 on the MPU board.

6. Remove the EPROM from position E16 and insert updated EPROM version 16.0 or higher.
7. Locate the EEPROM in position E12.
8. Remove the old EEPROM and replace with new EEPROM version 6.0 or higher.
9. Return the Main System Board to slot 1.
10. Locate the Liquid Sense Unit (LSU) Board in slot 3. Remove the LSU Board using anti-static precautions.
11. Locate EPROM in position E12 (designator ROM 1) of the LSU Board.
12. Remove the old EPROM and replace the component with new EPROM version 24.0 or higher.
13. Install the LSU Board in slot 3 and secure the board holders.
14. Update Instrument Modification sticker # with the appropriate TSB sticker number, if needed.
15. FPC Firmware installation is now complete.

COMPUTER SETUP

The Hewlett-Packard® and Intel® computers are shipped with the UNIX® Operating System pre-installed. The following three types of computers are currently being shipped:

- HP VECTRA 386™
- HP VECTRA 486™
- Intel® 486™
- Intel® Pentium™

NOTE:

TPC™ will not load on a 386 machine. A 486 (or greater) machine is required to run TPC™.

Software Loading Procedures

Pre-Install Software

The installation of FPC Version 2.5 Pre-Install causes all FPC Version 2.0 software to be removed from the system. The following diskette is required:

Pre-install Diskette Version 2.5
Disk 1 of 1
C/N 1-43794-02

FPC System Administration Menu

1. Main Menu
2. Installation
3. Database
4. System
5. Shutdown

Please Select one for the Above: 4

5. At the FPC Login prompt, type **fpc** in lower case letters and Press **␣Enter**. The FPC System Administration Menu now displays. There are five choices to select.

Welcome to Abbott Laboratories Flexible Pipetting Center

```
#####  #####  #####
/######/######/######
/#         /#      #/#
#####  #####  #
/######/######/#
/######/######/#
/#         /#      #/#
/#         /#      #/#
/#         /#      #####
//          //      //#####
```

-To run type in 'fpc' and press <Enter>.
System name: fpc2.0
FPC Login:

1. Select **Installation** option.
2. The password prompt displays. Type **sezme** in lowercase only and press **␣Enter**.
3. Insert the Pre-Install Disk. Follow steps 3 through 5 on the following page for the remainder of the procedure.
4. The #2 command above runs the Pre-Install program.

Database, Applications, All Interface Diskettes, and TPC™ Options

Ensure the keyboard Caps Lock key is off:

FPC System Administration Menu
1. Main Menu
2. Installation
3. Database
4. System
5. Shutdown
 Please Select one of the Above:

1. Select option 2, Installation, from the FPC System Administration Menu.
2. The password prompt displays. Type **sezme** (in lower case only) and then press **␣Enter**.

The FPC Installation Menu displays:

FPC Installation Menu
1. Load Software
2. Exit
 Please Select One of The Above: ____

3. Select option 1, Load Software.

The following instructions display:

Please insert the first diskette into Drive A.

4. Insert database or applications diskette 1 of 2. At the Confirm Placement [yes/no] prompt, type **yes**. Press **␣Enter**.

This confirms that you have inserted a diskette into the drive and will load the software onto the hard drive.

NOTE:

There is a waiting period before the screen has the instruction message of inserting diskette 2 of 2.

5. Insert database or applications diskette 2 of 2 into Drive A. Confirm placement by typing **yes** at the prompt and then press **␣Enter**. The host computer first examines the diskette, then loads the software onto the hard drive.
6. Continue loading from the remaining diskettes.

NOTE:

After the files are loaded onto the hard drive, a message prompt states the software installation is complete. The system instructs to “please hit Enter to return to the FPC Installation Menu.” Press **␣Enter.**

Installing Assay Protocols from Diskette

This section provides instructions for installing assay protocols to your FPC system from diskette. Procedures involving Abbott assays from Abbott-supplied diskettes are covered.

1. Select the **Assay Protocol** option from the FPC Main Menu.

The screen displays all assay protocols entered into the system as shown in the following example. Abbott-supplied protocols are designated “-a”. All assay protocols carry code numbers created by the user:

System Print View Delete Create Disk Panel							
Assay Protocols							
095	Chlamydia	-a	101 Anti-HBc IgM	-a	215	HIVAB	-a
AUB	Ausab	-a	AUS Auszyme	-a	COR	Corzyme	-a
HCV	Hepatitis C	-a	HIV-1	-a	HTL	HTLV-1	-a
etc.							
[] Messages [Time]							
[Date]							

NOTE:

You can only install assay protocols when the Pipettor is not busy.

2. Select **Disk** from the menu bar. A pull-down screen displays.

Backup
Install
Activate

3. Highlight **Install** and press **␣Enter**. A confirmation pop-up screen displays.

Confirm

Insert Diskette in the drive.

Yes No

4. Insert the diskette with the assay(s) to be installed into the drive.

Select **Yes** followed by **␣Enter** to install the assays from the diskette.

If Installing Abbott Assays

A pop-up screen displays showing the first assay on the diskette to be installed. Only assays not previously installed from this diskette are shown on this specific FPC System display.

Confirm	
Install:	HTLV1
New Code:	-----
Yes	No

NOTE:

Assay protocols are displayed in descending order of numeric code, upper-case alphabetic code, and lower-case alphabetic code.

1. Type a code for the assay according to the preference of your lab, using any combination of three alphanumeric characters not already assigned to another assay. Press **␣Enter**.

The Code Number affects the position of the assay in the list of assays to be assigned shown on a pop-up screen during registration (and at other times). If this assay is used often, a code can be created consisting of relatively low alphanumeric characters to place the assay near the top of this list. The code reduces the need to scroll through a long list to select an assay.

2. Select **Yes**. The assay is installed and the next available assay to be installed from the diskette displays.

Repeat Step #1 to load the assay or select **No** to skip it and view the next available assay. Only assays not previously installed from the diskette to this specific FPC unit display.

When you have installed or skipped all available assays on the diskette, the following pop-up screen displays:

Confirm
Remove Diskette from the Drive
OK

3. Remove the diskette from the drive. Press **␣Enter** to return to the Assay Protocol screen.

FPC SYSTEM INTEGRATION

This section explores typical FPC System configurations. Ensure the port characteristics of the two instruments to be integrated are identical. These port characteristics are:

- Baud Rate
- Parity
- Data Bits
- Handshaking
- Stop Bits

There are three alternative methods available for obtaining data stored in the FPC System. These are:

1. **Data can be transmitted to and uploaded from the FPC via the ASTM-compatible, bi-directional interface.** For further information on this interface, refer to the Host Interface Specification (List No. 6A97-30). The host interface allows a laboratory computer to send test requests and sample IDs to the FPC. The FPC can send destination maps, source maps, and sample IDs matched with test results back to the host computer.

2. **Data can be transmitted from the FPC via the data output interface.** This interface sends data in the same format as it was received from the interfaced analyzers. Please note that for the IMx® System, the data output format would contain results ONLY, unless the user entered sample IDs manually into the Analyzer. (For more information, refer to the IMx® System Integration discussion in the General Pipetting Reagent and Assay Appendix of the FPC V2.5 Operations Manual) for additional information. The data output format for the QUANTUM™ instrument, QUANTUMATIC™ instrument, or PPC replicates the format on the analyzer's printout of printed tape.
3. **Work lists, test results, destination maps, and source maps can be copied to a DOS-compatible diskette in Files Mode.** An ASCII file is created that can be used on another computer system. Refer to the APPENDIX section of the Operator's manual for the structure of the files. If the user is pipetting to systems that use Microtiter Plates that are not interfaced to the FPC, a map of the tray can be obtained and matched to the results sent directly to the laboratory computer by the reader.

Port Requirements

The port requirements for connecting each device to the eight ports available on the FPC Computer are the following:

ABC	1 Port
Data Output (DMS)	1 Port
FPC	1 Port
Host (LIS)	1 Port
IMx [®] System	1 Port
PPC	1 or 2 Ports
QUANTUM [™] System	1 Port
QUANTUMATIC [™] System	1 Port
Sensor Module (F-Link):	2 Ports
1 Port for Hand Bar Code Reader	
1 Port for Sensor Module	

1. Universal cables are not provided with the FPC. ALL Universal cables MUST BE ORDERED SEPARATELY (List No. 1A41-15, 50, 51).
2. When a QUANTUMATIC[™] instrument is used with an FPC, an adapter (List No. 03A46-76) is required.
3. One FPC Computer can support up to two (2) FPC Pipettors configured with ABCs or a Sensor Module/Bar Code Reader, but not both.

4. There are two (2) ways to connect the PPC to the FPC for downloading data:

- **Data collected on the FPC Computer (requires two ports and two cables).**

Connect the Data Transmission Cable from the FPC to the PPC.

Run the Auto-Configure Mode on the PPC.

Connect the Data Download Cable from the PPC to FPC port. Configure the port on PPC as a DMS port.

- **Data not collected on the FPC Computer (requires one port and one cable).**

The Data Download Port can be attached directly from the PPC to the DMS (or another computer system).

The Analyzer Test Number in the FPC Assay Protocol must match the appropriate PPC Test Number. If necessary, change the Analyzer Test Number to match the PPC Test Number.

5. Each analyzer connected to the FPC must have a port configured according to the appropriate configuration parameters.
6. Only one Host (LIS) Port is allowed in configuration to transmit data from any/all analyzers to a Host (LIS) System. When interfacing FPC for Data Output (DMS), one Data Output port can be assigned for each type of analyzer configured on the FPC.

7. The DMS Baud rate is dependent upon the type of DMS hardware used. The typical DMS Communications Protocol is 9600 baud, 1 stop bit, 7 bits, no handshaking.
8. For further information on interface diagnostics and troubleshooting, refer to the Troubleshooting and Error Code Guide Section of the Service Manual or the COMMANDER® Pocket Guide.
9. The minimum analyzer versions required for interfacing between the analyzer and FPC are listed below:

Analyzer	Software Version
Data Output (DMS)	Version 2.5 or greater
Host (LIS)	No version requirement
IMx® System	Version 3.0 or greater
PPC	Version 5.03 or greater
QUANTUM™ Instrument	
A. Main Instrument	Version 8.5 or greater
B. Module A	Version 16.0 or greater
QUANTUMATIC™ Instrument	Version 40 or greater

Port Configuration Options

To use the FPC without interfacing to any host computer system, perform the following procedure:

1. Select communications settings in Configuration for each analyzer as **"Ignore"** or **"Store"**. Selecting **"Ignore"** saves analyzer file (raw data) only and can be viewed or printed in Files Mode.
2. Selecting **"Store"** saves analyzer file (raw data) and results file (database) for viewing, editing, or printing in Files Mode.
See [Figure 4D-21 through 4D-29](#) for sample configuration diagrams.

To send the analyzer file (raw data) to a Data Output (DMS) port:

1. Configure a port as Data Output with the correct port parameters.
2. Link analyzers to individual ports with their **"To"** configuration set to the Data Output Port Number(s).
3. Select communications settings for each analyzer as **"Ignore"** or **"Pass-Thru"**. Selecting **"Ignore"** saves the analyzer file (raw data) only. The operator can manually upload, view, or print the analyzer files in Files Mode. Selecting **"Pass-Thru"** automatically sends the analyzer file through the port. The analyzer file (raw data) is saved and can be viewed or printed in Files Mode. See [Figure 4D-22](#) for a sample configuration diagram.

To use the ASTM Format and send data to a Host (LIS) port:

1. Configure a port as a Host with the correct port parameters.
2. Link analyzer ports with their **"To"** configuration set to the port configured as Host.
3. Select communications settings for each analyzer as **"Store"** or **"Pass-Thru"**. Selecting **"Store"** saves the analyzer file (raw data) and results file (database). The operator can select results to view, edit, approve, and manually upload file in Files Mode. Selecting FPC System Configuration **"Pass-Thru"** automatically sends the results file through the port without prior approval from the operator. Both the analyzer file (raw data) and results file (database) are saved. The operator can select results and analyzer files to view or print in Files Mode. See [Figure 4D-23](#) for a sample configuration diagram.

NOTE:

Data is sent to Host in ASTM Format when Upload is requested in Files Mode. If approval of results is required, results cannot automatically be sent back to the Host.

RS-232 Port Configuration

This function allows the user to assign devices and set data communications specifications for the FPC ports. When assigning a new device, the port will default to the “typical” port characteristics of the device identified.

NOTE:

One FPC Computer can support up to two (2) FPC Pipettors configured with ABCs or a Sensor Module/Bar Code Reader, but not both.

To configure the RS-232 ports, follow the procedure below:

1. From the FPC Main Menu, select **Configuration** and press **⏏Enter**.

System	Print
FPC Main Menu	
Registration	
Pipetting	
Assay Protocol	
Files Mode	
Configuration	
Diagnostics	
Transfer	
[Messages [Time] [Date]	

2. From the Configuration Menu, select **RS-232 Port Diagnostics** and press **⏏Enter**.

System	Print
Configuration	
System Parameters	
Database Initialization	
Tip Threshold	
RS-232 Port Diagnostics	
Reset Clock	
Password Assignments	
Version	
[Messages [Time] [Date]	

The following screen displays:

System	Print	Save	RS-232 Port Configuration						
Printer: DeskJet									
Port	Device	To	Baud	Parity	Data	Stop	Handshake	Communication	
01	Pipettor	>	9600>	Even>	7>	2>	None>		>
02	ABC	>01>	9600>	Even>	7>	1>	None>		>
03	PPC	>05>	4800>	Odd >	7>	1>	None>	Store	>
04	Host	>	9600>	Even>	8>	1>	None>		>
05	IMx	>	9600>	Even>	8>	1>	None>	Store	>
06		>	>	>	>	>	>		>
07		>	>	>	>	>	>		>
08		>	>	>	>	>	>		>
									[Messages [Time]
									[Date]

NOTE:

**The Device Menu options will depend on the software installed and available on the FPC system.
The menu shown will vary.**

- Highlight the information that needs to be changed or the position that needs to be addressed using the **Arrow** keys. Press the **Space Bar** to view a pop-up menu displaying the following available choices:

Printer - select the printer provided with the system.

DeskJet
None
ThinkJet

Device - the pre-configured modules and analyzers for use with the FPC. The Device Menu will depend on the interface diskettes installed with each upgrade.

Pipettor
ABC
Sensor Module
Hand BCR
PPC
Quantumatic
Quantum
IMx
Host
Data Output
Open

To - identifies the device to which the port is connected. The device is identified by its port number. For example, if an FPC shown at Port #3 is connected to the Host at Port #4, the FPC's "To" field shows "04". This parameter applies only to ABC, IMx®, PPC, QUANTUM™, and QUANTUMATIC™ instruments.

01
02
03
04
05
06
07
08

Baud - a communications parameter that defines the speed of data transmission according to bits per second.

9600
4800
2400
1200
600
300

Parity - a communications parameter that must have matched settings between the sending and receiving devices.

Odd
Even
None

Data - a communications parameter whose sending and receiving device settings must match.

7
8

Stop - a communications parameter whose sending and receiving device settings must match.

1
2

Handshake - a communications parameter defining the acknowledgment required between the sending and receiving devices before a data transmission can begin.

XON/XOFF
None

Communication - select **Store** if data collected from the analyzer is to be stored in the FPC Database. Data can be reviewed and edited when transmitted to the Host under Files Mode (data is in ASTM Format). Select **Pass-Thru** if data collected from the analyzer is to be immediately transmitted to the Host in standard ASTM Format (Host Port) or to the data output (the default for IMx[®], PPC, QUANTUM[™], and QUANTUMATIC[™] instruments). If an analyzer is linked, the device's default communications parameter would have a setting of "**Store**" for Host or "**Ignore**" for data output.

Store
Pass-Thru
Ignore

Reviewing or Updating Configuration Information

Use this function to review or update the configuration information on the FPC System.

1. From the FPC Main Menu, select **Configuration** and press **␣Enter**.

System Print
FPC Main Menu
Registration
Pipetting
Component Library
Assay Protocol
Files Mode
Configuration
Diagnostics
Transfer
[Messages [Time]
[Date]

2. From the Configuration Menu, select **Version**.

System Print
Configuration
System Parameters
Database Initialization
Tip Threshold
RS-232 Port Configuration
Reset Clock
Password Assignments
Version
[Messages [Time] [Date]]

3. The screen displays the current status of the FPC System. The serial numbers of the FPC computer and other devices configured on the system's RS-232 ports may now be recorded or updated.
4. Enter the following information on this screen.

Note:
This information is used on generated reports and during communication with attached PPCs and must be correct. The Computer S/N, Instrument S/N, and Software Revision is required for the system to document information in any TPC configuration.

System Print Save				
Version				
Computer Serial Number		Version	Installed	
Software				
Application				
Database				
Installation				
Pipettor	Serial #	SW Ver	SW Ver	SW Ver
		14.1	4.3	22.0
Data Output				
IMx				
PPC				
QUANTUM™				
QUANTUMATIC™				
Host				
Language (s)				
Assay (s)				
[Messages [Time] [Date]]				

4. Highlight the entry to be changed using the **Arrow** keys. Type in the serial numbers as needed and press **Enter**.
5. Select **Print** from the Menu Bar to obtain a printed page of the serial numbers.
6. After entering the serial numbers, select **Save** from the Menu Bar. The screen then returns to the Configuration Menu.

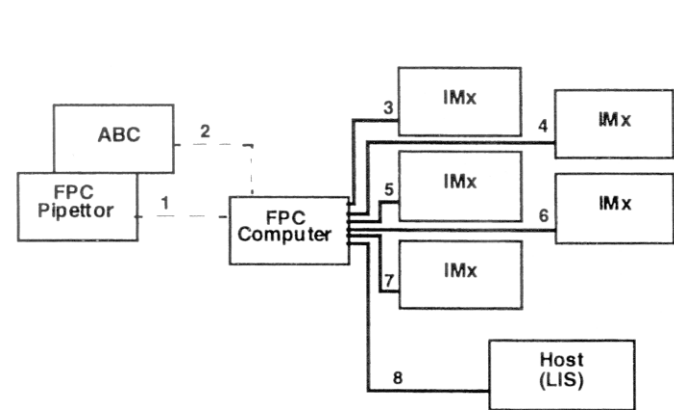
FPC Communications Port Options

	Baud Rate	Parity	Data	Stop Bit	Handshake
ABC	9600	Even	7	1	None
Pipettor	9600	Even	7	1	None
PPC	4800	Odd	7	1	None
IMx [®]	9600	None	8	1	None
Data Output (DMS)	9600	None	8	1	None
BCR	1200	None	8	1	None
Sensor Module	9600	Odd	7	1	None
QUANTUMATIC™	4800	Odd	7	1	None
QUANTUM™	2400	Odd	7	1	None

NOTE:
Sensor Module (F-Link) requires two (2) ports.

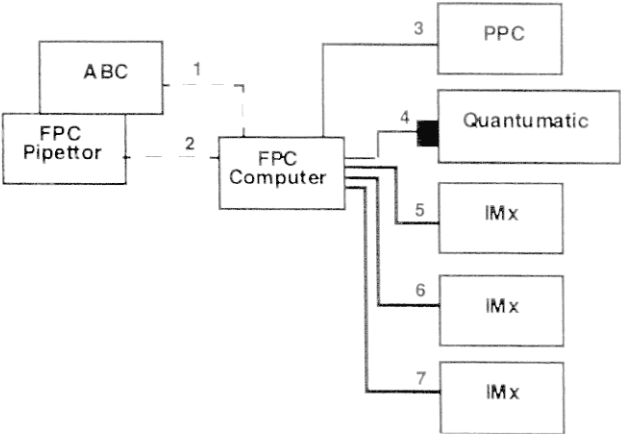
IMx[®] Communications Port Options

IMx[®] System File 1.18, Edit to 2215. Enable Communication Port COM2.



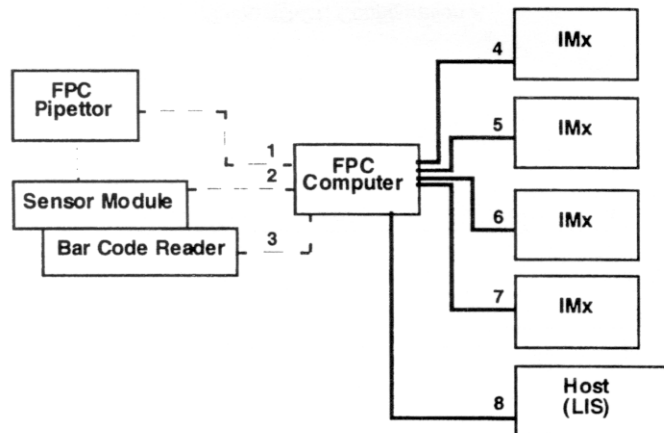
Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - IMx	8	Store/PassThru
4 - IMx	8	Store/PassThru
5 - IMx	8	Store/PassThru

Figure 4D-21. Configuration A



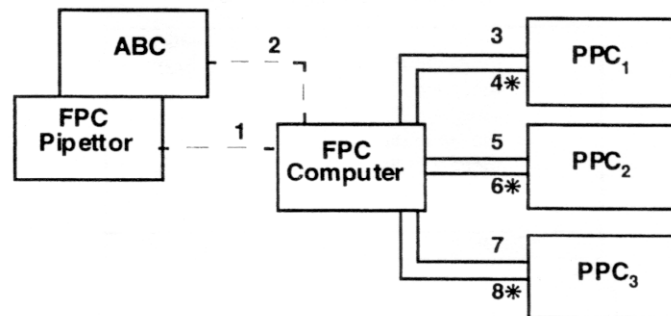
Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - IMx		Ignore/Store
4 - IMx		Ignore/Store
5 - IMx		Ignore/Store
6 - IMx		Ignore/Store
7 - IMx		Ignore/Store

Figure 4D-22. Configuration B



Comm Port	"To"	Setting
1 - Pipettor		
2 - Sensor Module		
3 - BCR		
4 - IMx	8	Store/PassThru
5 - IMx	8	Store/PassThru
6 - IMx	8	Store/PassThru
7 - IMx	8	Store/PassThru
8 - Host		

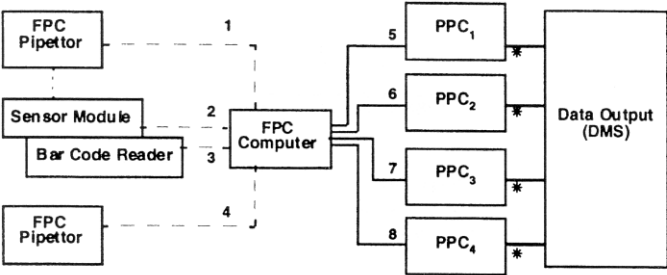
Figure 4D-23. Configuration C



Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - PPC1		Ignore
4 - PPC1		Ignore/Store
5 - PPC2		Ignore
6 - PPC2		Ignore/Store
7 - PPC3		Ignore
8 - PPC3		Ignore/Store

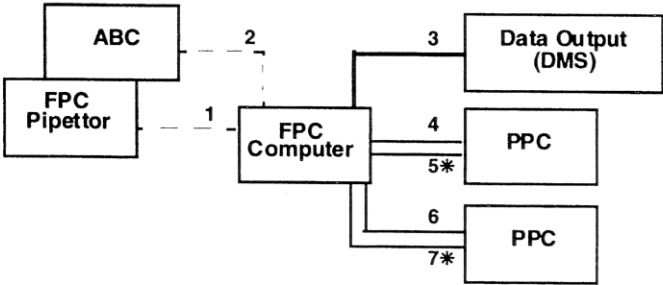
* DMS Port Configured at the PPC

Figure 4D-24. Configuration D



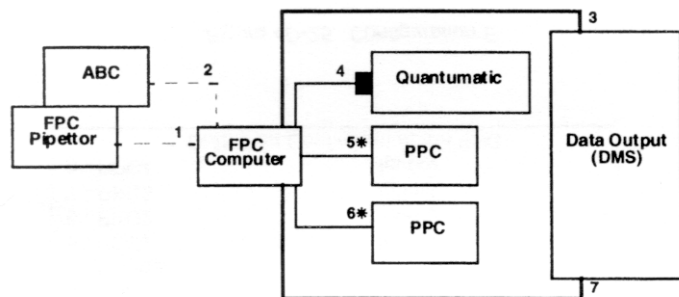
Comm Port	"To"	Setting
1 - Pipettor		
2 - Sensor Module		
3 - BCR		
4 - Pipettor		
5 - PPC1	Ignore	
6 - PPC2	Ignore	
7 - PPC3	Ignore	
8 - PPC4	Ignore	
* DMS Port Configured at the PPC		

Figure 4D-25. Configuration E



Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - Data Output		
4 - PPC		
5 - PPC	3	Ignore/PassThru
6 - PPC		Ignore
7 - PPC	3	Ignore/PassThru
8 - Open		Ignore
* DMS Port Configured at the PPC		

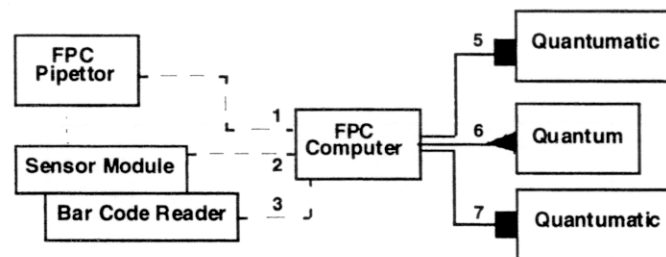
Figure 4D-26. Configuration F



Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - Data Output		
4 - Quantumatic	3	Ignore/PassThru
5 - PPC	7	Ignore/PassThru
6 - PPC	7	Ignore/PassThru
7 - Data Output		
8 - Open		

* DMS Port Configured at the PPC

Figure 4D-27. Configuration G



Comm Port	"To"	Setting
1 - Pipettor		
2 - Sensor Module	1	
3 - BCR		
4 - Open	3	
5 - Quantumatic	4	Ignore/Store
6 - Quantum	8	Ignore/Store
7 - Quantumatic	4	Ignore/Store
8 - Open		

* DMS Port Configured at the PPC

Figure 4D-28. Configuration H

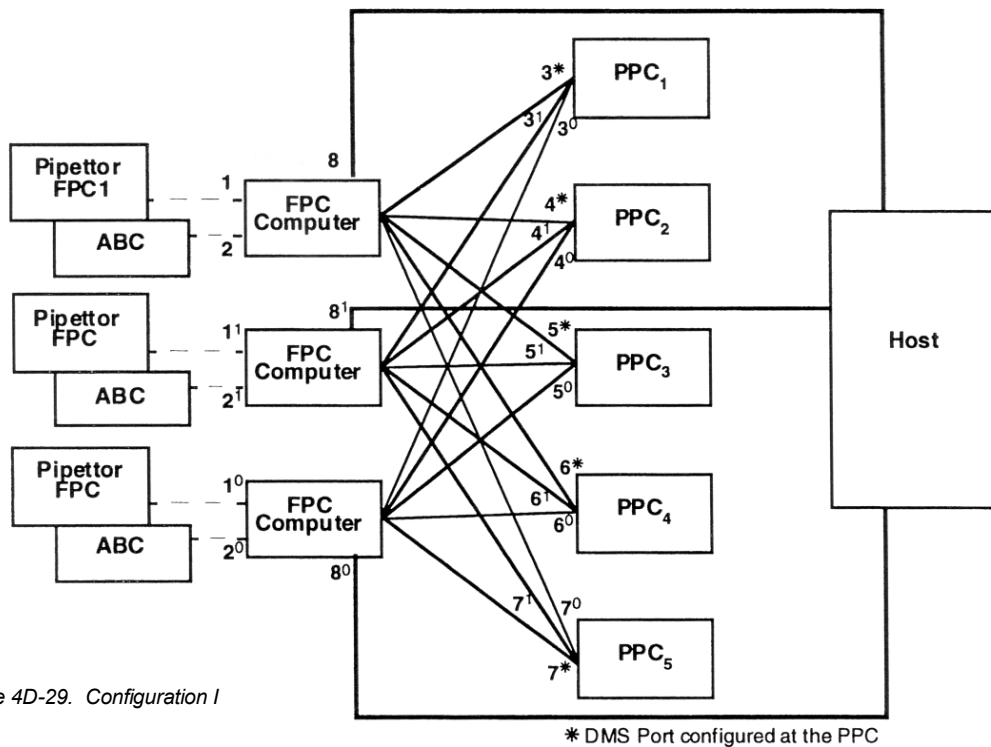


Figure 4D-29. Configuration I

Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - PPC1	8	Store/PassThru
4 - PPC2	8	Store/PassThru
5 - PPC3		
6 - PPC4		
7 - PPC5		
8 - Host		
* DMS Port Configured at the PPC		

Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - PPC1		
4 - PPC2		
5 - PPC3		
6 - PPC4		
7 - PPC5	8	Store/PassThru
8 - Host		
* DMS Port Configured at the PPC		

Comm Port	"To"	Setting
1 - Pipettor		
2 - ABC	1	
3 - PPC1		
4 - PPC2		
5 - PPC3	8	Store/PassThru
6 - PPC4	8	Store/PassThru
7 - PPC5		
8 - Host		
* DMS Port Configured at the PPC		

PIPETTOR SETUP

The FPC is shipped with the syringes removed to prevent damage from occurring during shipment. The syringes must be installed prior to operating the instrument.

Syringe Installation

1. Bring up the FPC Main Menu on the monitor screen.
2. Turn on the Pipettor using the power switch. A green LED on the Left End Arm Cover will light indicating power is on.
3. From the FPC Main Menu, select **Diagnostics** and press **⏏Enter**.
4. From the Diagnostics Menu, select **Pipettor** and press **⏏Enter**.
5. A dialog box will display asking the operator to confirm Syringe Maintenance. Select **Yes** and press **⏏Enter**. The pipetting arm will move forward and the syringe plungers will move downward.
6. Locate Sample Syringe Fixture Set, Sample Syringe Kit (500 µL), Diluent Syringe Fixture Set, and Diluent Syringe Kit (2500 µL).

7. Disassemble Sample Syringe Fixture Set into its five (5) components as shown in Figure 4D-30.

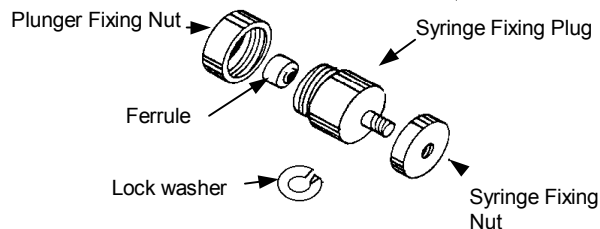


Figure 4D-30. Syringe Fixture Set (Sample or Diluent)

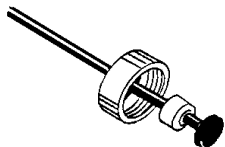


Figure 4D-31. Inserting Plunger

8. Pass syringe plunger through plunger fixing nut and ferrule. Ensure the threaded side of the plunger fixing nut and white end of the ferrule are pointed toward the back end of the plunger as shown in Figure 4D-31.
9. Insert plunger into syringe.
10. Insert threaded end of syringe fixing plug through the hole in the Right (left if attaching the Diluent Syringe) Syringe Drive on the front of the Pipettor. Fasten it firmly to the drive with syringe fixing nut. Refer to Figure 4D-32.

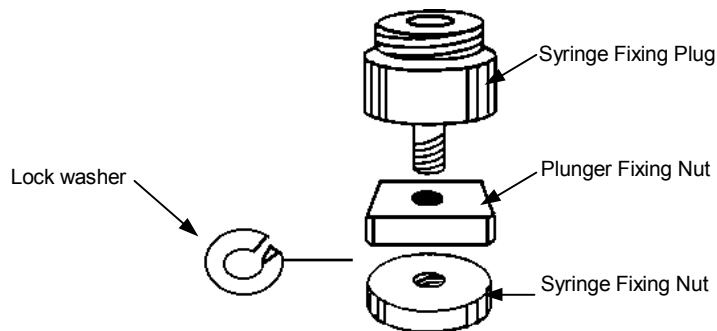


Figure 4D-32. Mounting Plug and Nut to Pipettor

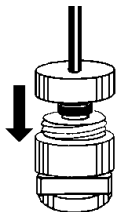


Figure 4D-33. Attaching Nut to Plug

11. Connect plunger fixing nut (attached to the syringe and plunger) with the syringe fixing plug as shown in Figure 4D-33.

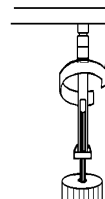


Figure 4D-34. Attaching Syringe to Pipettor

12. Hold syringe with both hands and pull syringe up to Luer Lock™ on the Pipettor. Carefully twist syringe counter-clockwise (CCW) to engage the Luer Lock™ as shown in Figure 4D-34.

13. Disassemble Diluent Syringe Fixture Set into its five (5) parts as shown in **Figure 4D-30**.
14. Repeat Steps 8-12 for the Diluent Syringe (2500µL).
15. Press **↵Enter** twice to return to the FPC Main Menu.

Attaching Sample Nozzle Assembly

Loosen the hex-head bolt and open the bracket. Insert and position Sample Nozzle Assembly and close the bracket as shown in Figure 4D-35.

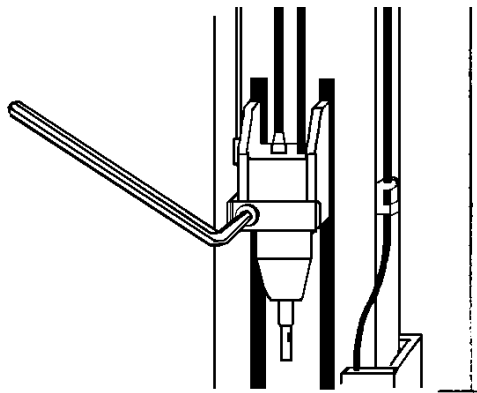


Figure 4D-35. Attaching Sample Nozzle Assembly

Attaching Diluent Nozzle Holder

Attach the Diluent Nozzle Holder with two (2) hex-head screws to the instrument as shown in Figure 4D-36.

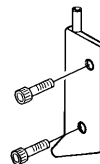


Figure 4D-36. Diluent Nozzle Holder

Attaching Diluent Delivery Tubing Assembly

Connect one end of Diluent Delivery Tubing Assembly to Port A on the valve as shown in Figures 4D-37 and 4D-38.

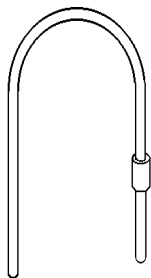


Figure 4D-37. Diluent Delivery Tubing

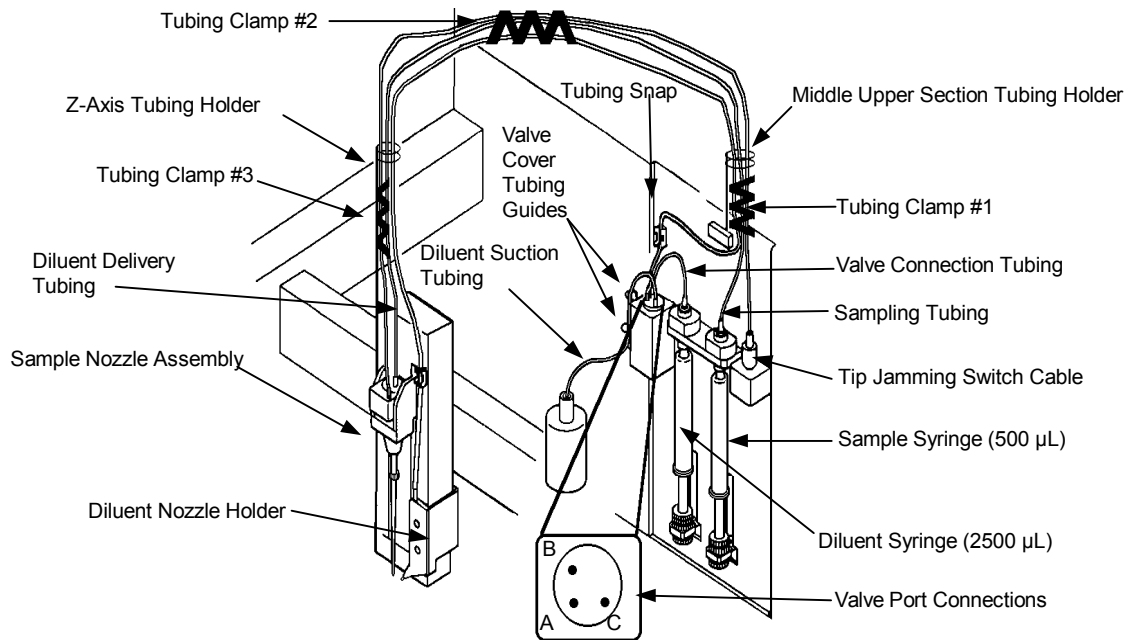


Figure 4D-38. Tubing and Cable Locations

Port A - Diluent Delivery Tubing Assembly (Normally Closed Port)
 Port B - Valve Connection Tubing Assembly (Normally Open Port)
 Port C - Diluent Suction Tubing Assembly (Common Port)

Attaching Diluent Suction Tubing Assembly

1. Insert Diluent Suction Tubing into Diluent Bottle as shown in Figure 4D-39.

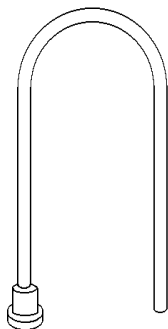


Figure 4D-39. Diluent Suction Tubing

2. Thread the other end of suction tubing through Valve Cover Tubing Guides to Port C of the valve as shown in [Figure 4D-38](#) and [Figure 4D-41](#).

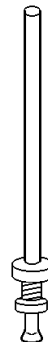


Figure 4D-40. Valve Connecting Tubing Assembly

Attaching Valve Connection Tubing

1. Screw on the end of Valve Connection Tubing Assembly to the fitting on top of the Left Syringe. Ensure the tubing is seated prior to securing in place as shown in **Figure 4D-40**.
2. Connect other end of tubing to Port B as shown in **Figure 4D-38**.

Attaching Sampling Tubing Assembly

1. Screw Sample Valve Port to the fitting on top of the Right Syringe as shown in **Figures 4D-39** and **4D-41**.

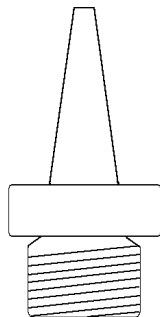


Figure 4D-41. Sample Valve Port

2. Verify one end of Sampling Tube Assembly is attached to the Nozzle Port so the tubing is inside the port and the sleeve is on the outside of the port. Refer to Figures 4D-42 and 4D-43.



Figure 4D-42. Sampling Tube Assembly

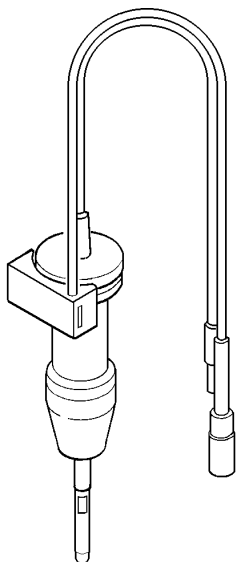


Figure 4D-43. Tip Jamming Switch Cable and Nozzle Head

3. Thread the other end of the Sampling Tube Assembly through the Z-Axis Tubing Holder and the Middle Upper Section Tubing Holder. Connect it to the right syringe (Sample Syringe) so the tubing fits into this port and the sleeve goes to the outside.

Attaching Tip Jamming Switch Cable

Thread the Tip Jamming Switch Cable through the Z-Axis Tubing Holder and the Middle Upper Section Tubing Holder as shown in [Figures 4D-38](#) and 4D-43.

Attaching Sampling Tube Clamp

1. Turn Pipettor power OFF. Remove AC power cord from power source.
2. Move Z-Axis Assembly to the right front corner of the instrument as viewed from the front of the Pipettor.
3. Wrap Diluent Delivery Tubing, Sampling Tubing, and Tip Jamming Switch Cable together just below the Upper Section Tubing Holder with one of the enclosed tubing clamps as shown in [Figure 4D-39](#).
4. Wrap Diluent Delivery Tubing, Sampling Tubing, and Tip Jamming Switch Cable with another tubing clamp midway between the Z-Axis Tubing Holder and Middle Upper Section Tubing Holder as shown in [Figure 4D-39](#).
5. Wrap Sampling Tubing and Tip Jamming Switch Cable with the final tubing clamp just below the Z-Axis Tubing Holder as shown in [Figure 4D-39](#). DO NOT wrap Diluent Delivery Tube with the Tubing Clamp.

Placing Pipettor Accessories (Base/Plus or TPC™)

The Pipettor Platform may be configured in a number of different ways. Four possible configurations are shown in Figures 4D-44 through 4D-47. The placement of accessories on the platform is dependent upon the configuration. Refer to **Figure 4D-48** for accessory locations. The accessories that may be placed on the pipettor platform include the following:

- Sample Racks with Platen-Extension Assemblies (for a non-ABC configuration)
- 20 or 60-Well Tray(s) with Tray Platform(s)
- MEIA or FPIA Carousel(s) with Platforms
- Microtiter Plates, Adapter(s), and Platform(s)

Other platform configurations may be selected such as one carousel and one tray, three trays and no carousel, or two carousels and no tray.

The source samples for the Pipettor depend on the FPC configuration. In a non-ABC configuration, the sample rack or the 20/60-well tray(s) can be a sample source. With an ABC configured FPC, the ABC provides source samples to the FPC.

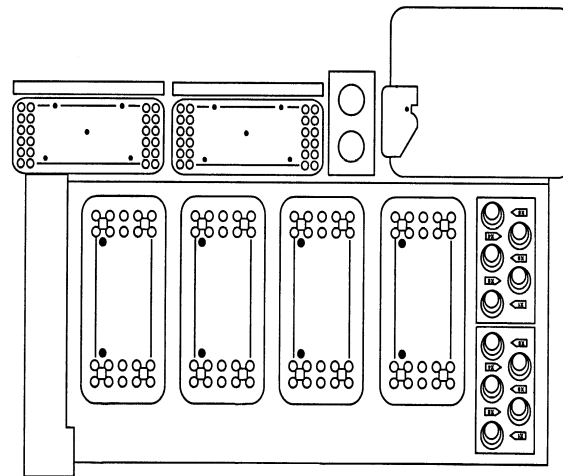


Figure 4D-44. Four-Tray Platform Configuration

The four-tray platform can support four Abbott 60-well trays as shown. Four 20-well trays can be substituted for 60-well trays. By using Microtiter and carousel adapters (not shown), tray platforms can also accommodate Microtiter plates and carousels. Library racks (not shown) can be used by combining the library tray platform and Microtiter adapters. The above figure shows four trays and two control bottle racks in place.

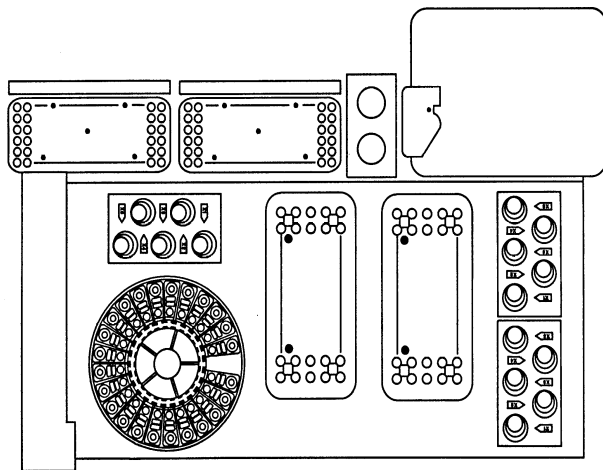


Figure 4D-45. Two-Tray/One Carousel Platform Configuration

This configuration contains two 60-well trays, one MEIA carousel, and three control bottle racks. The carousel can be either an FPIA or MEIA type. It is supported by the carousel adapter.

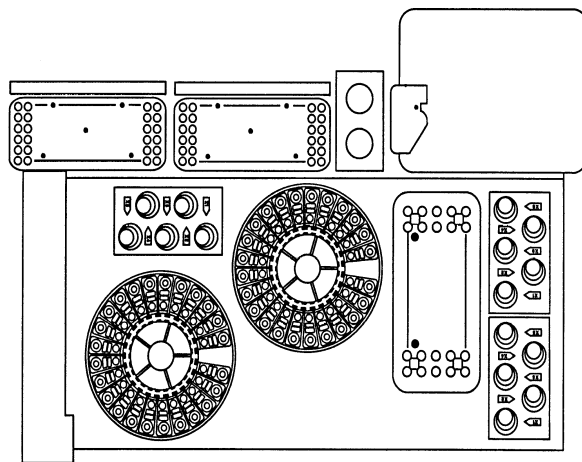


Figure 4D-46. One-Tray/Two Carousel Platform Configuration

This configuration contains one 60-well tray, two MEIA carousels, and three control bottle racks.

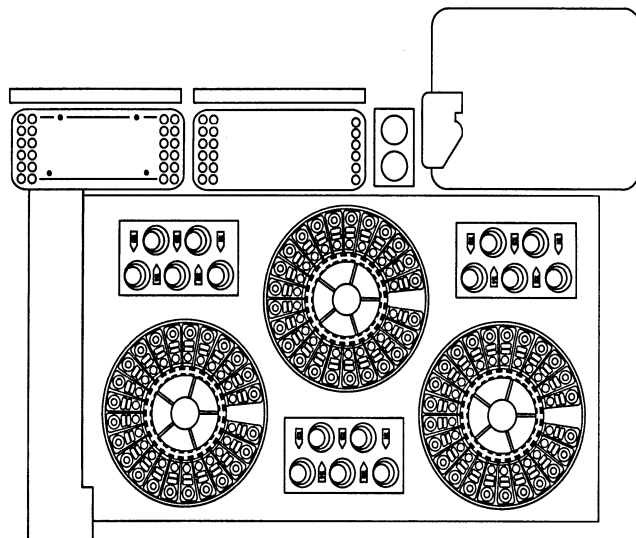


Figure 4D-47. No Tray/Three Carousel Platform Configuration

In this configuration, three MEIA carousels, three control bottle racks, and no tray platforms are used. The carousels can also support the FPIA type carousel.

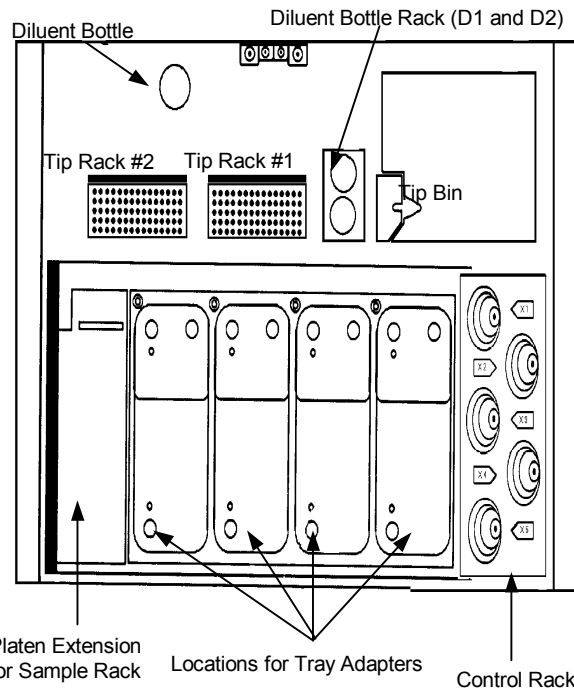


Figure 4D-48. Accessory Locations

FPC Source/Destination Capabilities

The FPC is a highly versatile pipetting system. It is capable of using trays, racks, Microtiter Plate, and carousels all within the same platform when the appropriate adapters are used. The FPC Version 2.5 software creates flexibility. Not only can the FPC be configured to pipette from sample tubes to typical destination devices (trays, racks, and other destinations), but also it can reverse its strategy by using trays, racks, and plates as source devices.

The table below lists the FPC source/destination capabilities. All sources must be placed on the Platen Extension. **Sources other than ABC can only be used when the ABC is not connected to the FPC.**

FPC SOURCE/DESTINATION CAPABILITIES

	SOURCE	DESTINATION
Abbott 20/60-Well Tray	Yes	Yes
Automatic Bar Code Reader (ABC)	Yes	No
FPIA Carousel	No	Yes
Library Rack	Yes	Yes
MEIA Carousel	No	Yes
Microtiter Plate	Yes	Yes
Sample Tube Rack	Yes	Yes

Platform

The platform of the FPC is specifically designed to work with a variety of destination devices. By making use of adapters, the platform can be configured for use with Abbott 20-well and 60-well trays (P1), Abbott Tube Racks (P2), Microtiter Plates (P3), Library Racks (P4), FPIA and MEIA carousels (C1-C3). Positioning holes and artwork on the platform provide a guide for correct placement of the destination devices.

To accommodate controls, the platform also includes positions for Control Bottle Racks (R1-R5). Refer to Figure 4D-49. For an illustration of how TPC™ bar code labels should be applied, refer to Figure 1-11.

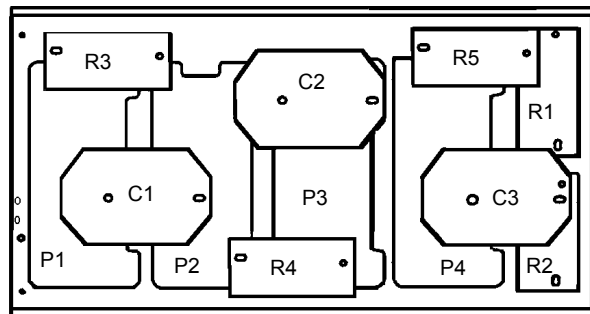


Figure 4D-49. Platform

Control Bottle Rack

The Control Bottle Rack provides five positions as shown in Figure 4D-51. Refer to **Figure 1-6** for an illustration of where TPC™ bar code labels are located.

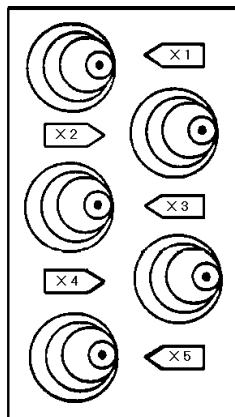


Figure 4D-50. Control Bottle Rack

Control Bottle Types

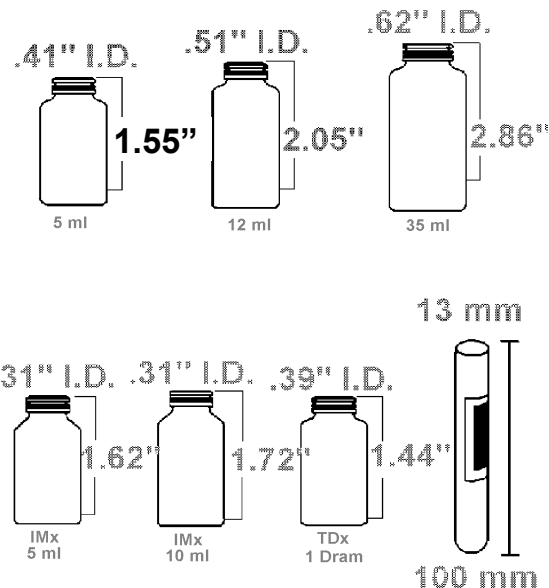


Figure 4D-51. Control Bottle Types

Sample Tube Rack

Sample Tube Racks can hold tubes with 14 mm to 16 mm diameters and heights of 75 mm to 100 mm. Standard inserts to accommodate 12 mm to 13 mm tubes are included. Rack positions are labeled A1 through M5 as shown in Figure 4D-52.

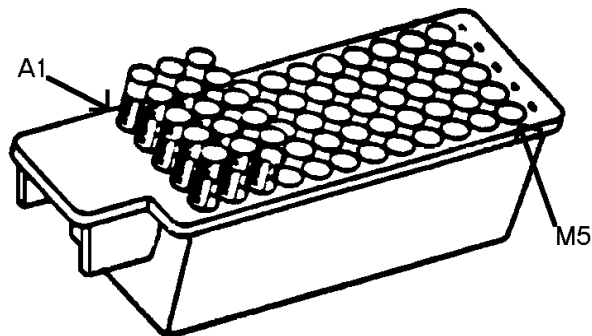


Figure 4D-52. Sample Tube Rack

Library Rack and Platform

The FPC can pipette to or from most types of library racks. When using these racks, the library rack platform is used with a Microtiter adapter to assure proper height and position. The library rack platform is different from the standard tray platform. When placing a library on the adapter, **A1 must be in its designated position** as shown in Figure 4D-53.

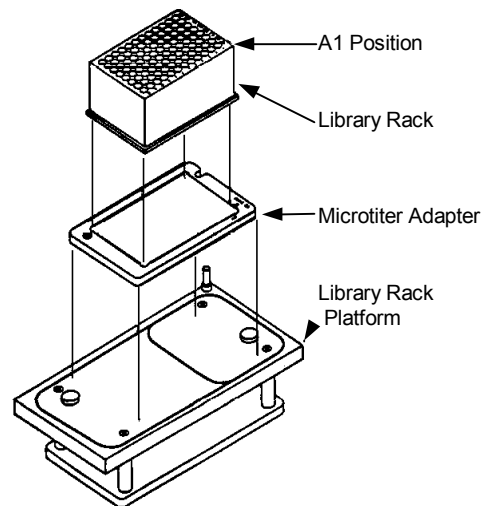


Figure 4D-53. Library Rack and Platform

The FPC can also pipette to or from Microtiter plates. When using these plates, the Microtiter adapter is positioned on a tray platform to provide the correct position for the Microtiter plate. When placing Microtiter plate on the adapter, **A1 must be in its designated position** as shown in Figure 4D-54.

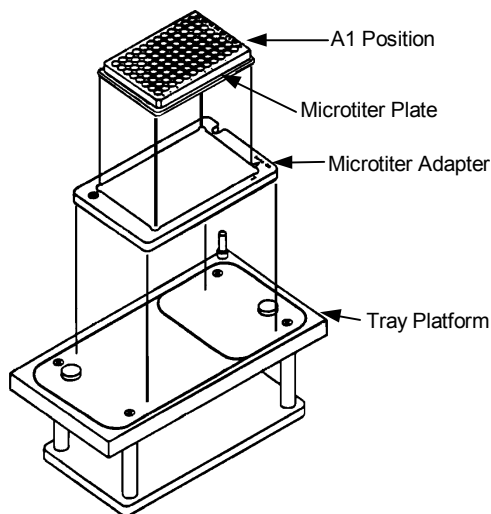


Figure 4D-54. Microtiter Plate and Adapter

MEIA and FPIA Carousels

The FPC can pipette into MEIA and FPIA carousels. Carousel adapter(s) are necessary for positioning carousels on the platform. When placing a MEIA carousel on the adapter, it must be aligned so the adapter post is wedged between carousel positions 1 and 24 as shown in Figure 4D-55.

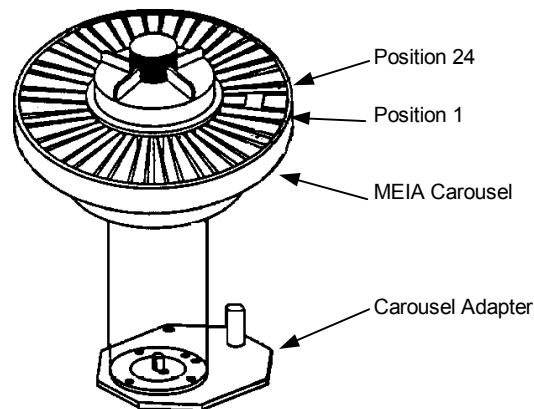


Figure 4D-55. MEIA Carousel

When using an FPIA carousel, an FPIA sleeve is needed. When placing an FPIA carousel on the “sleeved” adapter post, it must be wedged between carousel positions 1 and 20 as shown in Figure 4D-56.

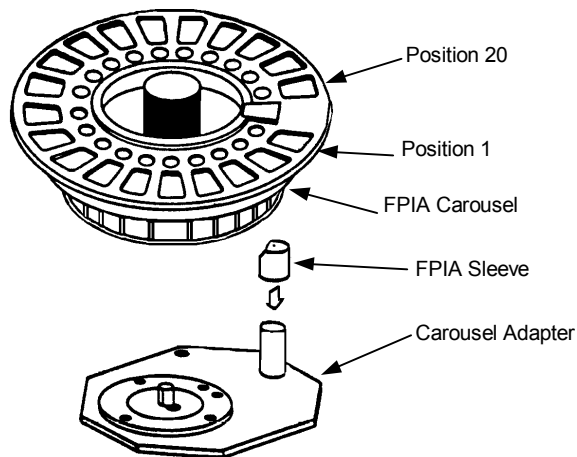


Figure 4D-56. FPIA Carousel and Sleeve

The TPC feature includes bar code labels and a rack adapter. Refer to Figure 4D-57.

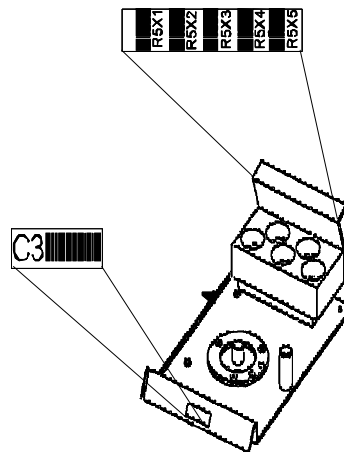


Figure 4D-57. Carousel Adapter with Control Bottle Rack Assy

Tray Platform and Assay Trays

The FPC can pipette to or from Abbott 20-well and 60-well trays. Tray platforms fit on the FPC platform in predetermined positions. Assay trays are placed on tray platforms. When placing the assay tray on the tray platform, **well A1 must be located in the upper right position** as shown in Figure 4D-58.

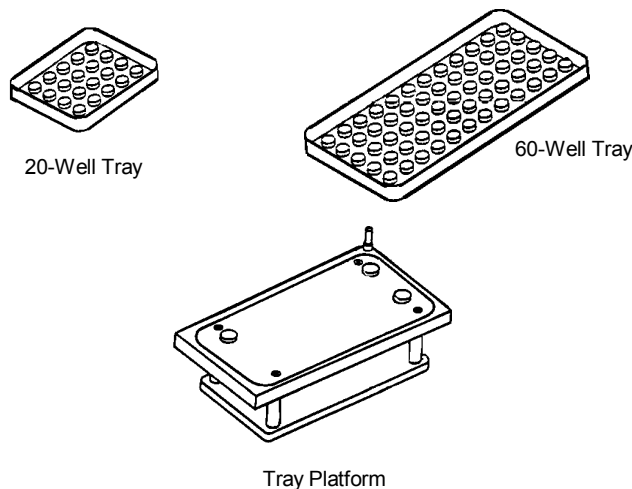


Figure 4D-58. Tray Platform and 20/60-Well Trays

Accessory Placement For Non-ABC FPC Configuration

Perform the following applicable steps to place the FPC accessories in place on the FPC platform area.

1. **Sample Rack as Source**
 - a) Place the Sample Rack Platen Extension Assembly (Non-ABC configuration) on the FPC platform at the left side of the FPC platform in the space provided.
 - b) Place Sample Rack on the platen as a sample source. Ensure well A1 of the rack is in its designated position with respect to the platform position. Well A1 should be at the right rear corner of the rack and platform as viewed when facing the FPC.
2. **20/60-Well Tray as Sample Source**
 - a) Place Tray Platform at left end of FPC platform in the place provided.
 - b) Place 20-well or 60-well tray on platform as source sample device, ensuring that Well A1 is in the proper position.

3. Library Rack as Sample Source

- a) Place the Library Rack Platform and Microtiter adapter in place provided on the FPC platform.
- b) Place the Library Rack on the adapter and platform. Ensure Well A1 is in the proper position.

4. Microtiter Plate as Sample Source

- a) Place Microtiter plate platform and Microtiter adapter in place provided on the FPC.
- b) Place Microtiter plate on the adapter and platform. Ensure Well A1 is in the proper position.

5. 20-Well or 60-Well Tray as Destination

- a) Place a tray platform in proper position for each destination tray. Ensure the platform holes are aligned with guide posts on platform.
- b) Place 20-well or 60-well tray on each platform so that well position A1 is in the right, rear corner of the platform as viewed facing the FPC.

6. MEIA Carousel as a Destination

- a) Place the special MEIA Carousel Adapter in place on the FPC platform. Special adapter guide holes ensure that the adapter will fit only one way onto the platform.
- b) Place MEIA Carousel on adapter. The carousel must be aligned so that adapter post is wedged between carousel positions 1 and 24. This establishes proper position for the FPC coordinates.

7. FPIA Carousel as a Destination

- a) Place the special FPIA Carousel Adapter in place on the FPC platform. Special adapter guide holes ensure that the adapter fits in only one position on the platform.
- b) Place FPIA Carousel on adapter. Ensure that sleeve adapter is in position on guidepost. The carousel must be aligned so that adapter post is wedged between carousel positions 1 and 20. This establishes proper position for the FPC coordinates.

8. Microtiter Plate as a Destination

- a) Place the special tray platform in position on the FPC platform. Ensure holes in the tray base plate fit over the guide posts on the FPC platform.

- b) Place the Microtiter adapter and plate on the special platform, ensuring that Well A1 is in the proper position.

9. Library Rack as a Destination

- a) Place special tray platform in position on the FPC platform. Ensure holes in tray base plate fit over the guide posts on the FPC platform.
- b) Place the Microtiter adapter and Library Rack onto the special platform, ensuring Well A1 is in its proper position.
- c) Place Control Bottle Rack(s) in their respective positions as required. Each rack has guide pins that fit in the FPC base and allow the rack to be inserted in one position only. Ensure each control bottle rack is seated and positioned correctly.
- d) Place Tip Racks on the Pipettor as shown in **Figures 4D-45 through 4D-47**.
- e) Place a waste bag in the Tip Bin to collect disposed syringe tips. Place the Tip Bin on the Pipettor and place the top on the bin.

Preparing System for Operation

1. Perform XYZ Software Positions Alignment Procedure as described in the Alignments and Calibrations Section of this manual.
2. Perform the following pre-operating procedures as described in the Operator's manual:
 - a) Powering up
 - b) Configuration
 - c) Pipette Tip Loading
 - d) Calibration
 - e) Priming the Diluter

Printer Setup

1. To install any of the DeskJet® Printer series, follow the installation procedures in the Printer Setup Guide shipped with the printer (HP 500/520 Printers).
2. Verify that all dip switches in Banks A and B are in the down position. The banks are located on the printer's front base underneath the IN tray (HP 540 Printers do not have dip switches).

UNIX® System Date and Time Update Procedure

If the FPC Computer prompts for a password where no password is required, perform the "UNIX® System Date and Time Update Procedure".

Note:

This is the only case for which this procedure should be executed.

CAUTION

This procedure takes the user to menus that change the setup parameters of the UNIX® Operating System. DO NOT go into or change any options except where directed in this procedure. If the user changes any other options, there will be problems getting the FPC software to work.

1. Press the **Esc** key as many times as necessary to return to the FPC Main Menu.
2. Select **System** from the menu bar (F1). Select **Exit** from the pull down menu and press **␣Enter**. At the confirmation box "Really Exit the FPC Applications," select **Yes**.
3. Select **4. System** from the FPC System Administration Menu. After pressing 4 and the **␣Enter** Key, the screen displays:
Enter Password:

4. Type in **presto** and press **␣Enter**. The screen displays the prompt **root>**.

CAUTION

From this point forward, if any questions are inadvertently answered incorrectly, the user can type *q* to Quit.

This allows the user to return to this point in the procedure.

5. Type in **sysadm datetime** in lowercase letters only and press **␣Enter**. The following displays:

**Current Time and Time Zone is XX:XX GMT.
Change the Time Zone? [y,n,q] _____**

6. Type in **n** and press **␣Enter**. The following screen displays:

Note:

You must use the GMT Time Zone for FPC V2.5.

7. The following prompt then displays:

**Current date and time: xxxxxxxxxx
Change the date and time? [y, n, ?, q]_____**

8. Type in **y** and press **␣Enter**. The screen displays:
Month default xx (1-12):_____

9. Type in the correct number for the current month and press **␣Enter**. The screen then displays:

Day default xx (1-31)_____

10. Type in the number corresponding to the current day of the month and press **␣Enter**. The screen displays:

Year default xx (70-99)_____

11. Type in the number corresponding to the current year and press **␣Enter**. The screen displays:

Hour default xx (0-23)_____

12. Type in the number corresponding to the current hour of the day and press **␣Enter**. The screen displays:

Minute default xx (0-59)_____

13. Type in the number corresponding to the current minute of the current hour and press **␣Enter**. The screen displays:

Date and time will be set to: xxxxxxxx OK? [y, n, ?, q]_____

14. Type in **y** and press **␣Enter**.

15. Press **␣Enter**.

16. Type in **exit** and press **␣Enter**. The screen changes and displays the FPC System Administration Menu.

17. Select **1. Main Menu** from the FPC System Administration Menu. Press **1** and then **␣Enter**. After the program checks the database integrity, the screen displays the FPC Main Menu.

This completes the procedure for updating date and time.