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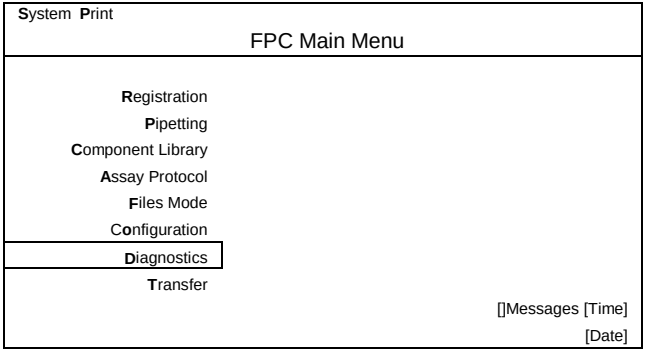
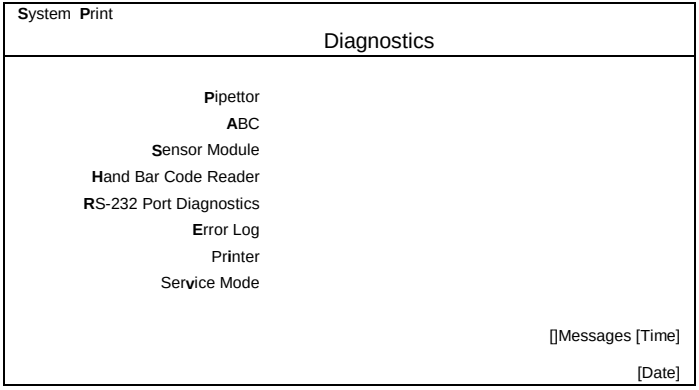
DIAGNOSTICS

INTRODUCTION

The Diagnostics Section of this manual describes the procedures that can be run to verify the operation of the COMMANDER® FPC, and to view the error messages that may occur on the FPC. Each major function begins from the **FPC Main Menu**. Select **Diagnostics** and press ↵**Enter**. Shown below is how the Main Menu and Diagnostics Menu will look when viewed on the screen:



NOTE:
Before performing diagnostic functions, ensure all operations of the FPC and any analyzers attached to the system are idle and/or not transmitting data.

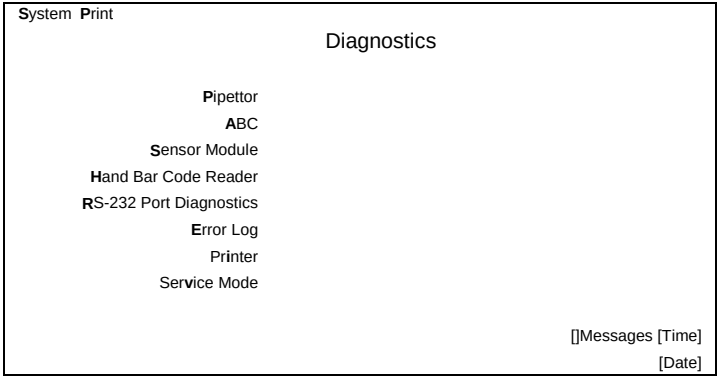


A brief description of each Diagnostics Menu Item function is listed below:

- **PIPETTOR** - Verifies the operation of the FPC Pipettor, including the X-Y movement of the Pipettor Arm, preparations for Syringe Maintenance, Reset, Status Check, and Leak Test.

- **ABC** - Verifies the operation of the Automatic Bar Code Reader (ABC), including the internal and hand-held Bar Code Readers, the Sample Tube Transport Mechanism, Flag Tubes, Reset, and Status Check.
- **SENSOR MODULE** - Confirms whether the Sensor Module used with the FPC (non-ABC configured) is detecting the placement of the sample tubes.
- **HAND-HELD BAR CODE READER** - Confirms whether the Bar Code Reader attached to an FPC (non-ABC configured) is operational.
- **RS-232 PORT DIAGNOSTICS** - Confirms data communication performance of the Pipettor, Sensor Module, Bar Code Reader, and other instruments connected to the FPC.
- **ERROR LOG** - Maintains and displays a cumulative list of errors that have occurred on the system, which will help provide information useful in troubleshooting.
- **PRINTER** - Confirms that the printer is operational.
- **SERVICE MODE** - For use only by an Abbott Field Service Engineer (FSE) or Field Service Representative (FSR).

Each function is shown on the **Diagnostics Menu**.



DIAGNOSTICS SOFTWARE FLOW

Refer to Figures 4B-1 through 4B-4 for an illustration of the diagnostics menu and sub-menus.

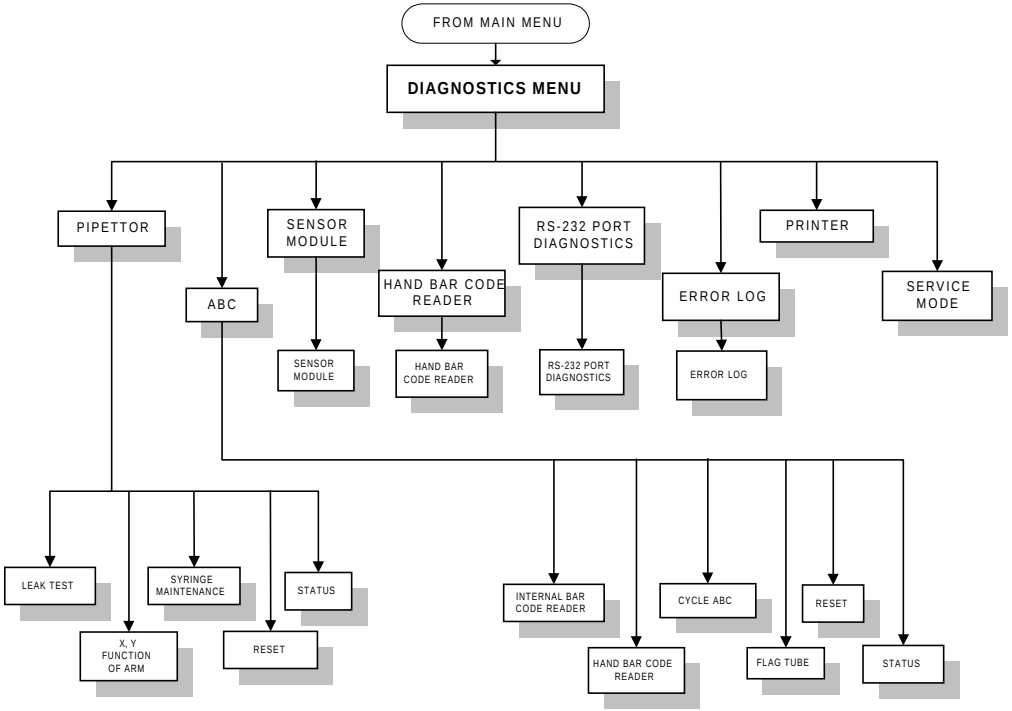


Figure 4B-1. Diagnostics Menu

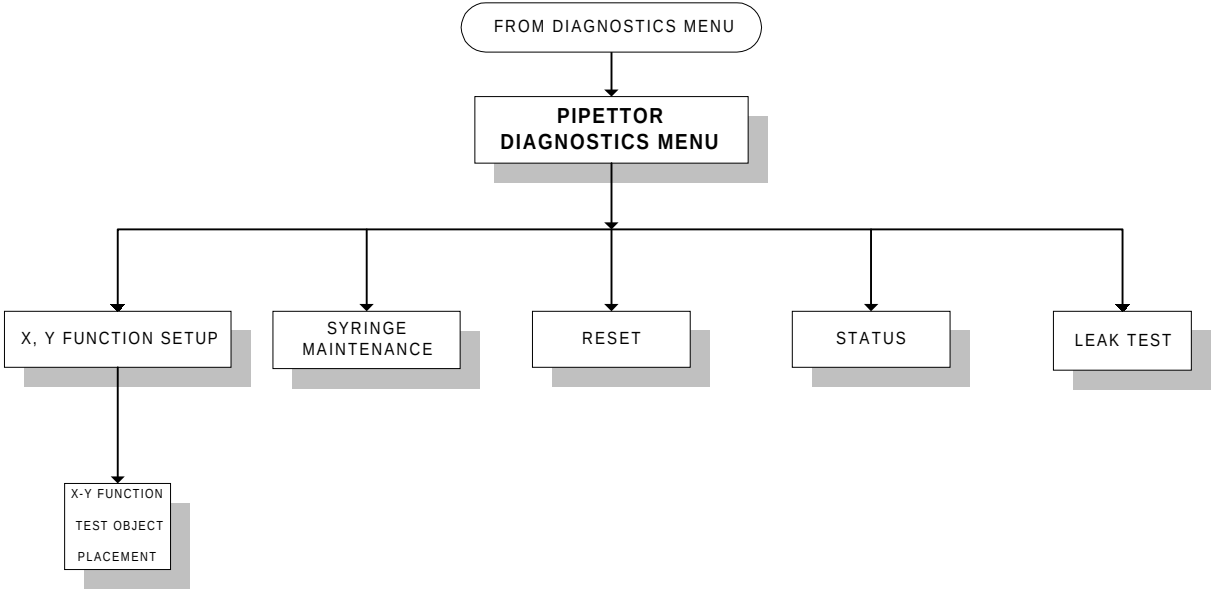


Figure 4B-2. Pipettor Diagnostics Menu

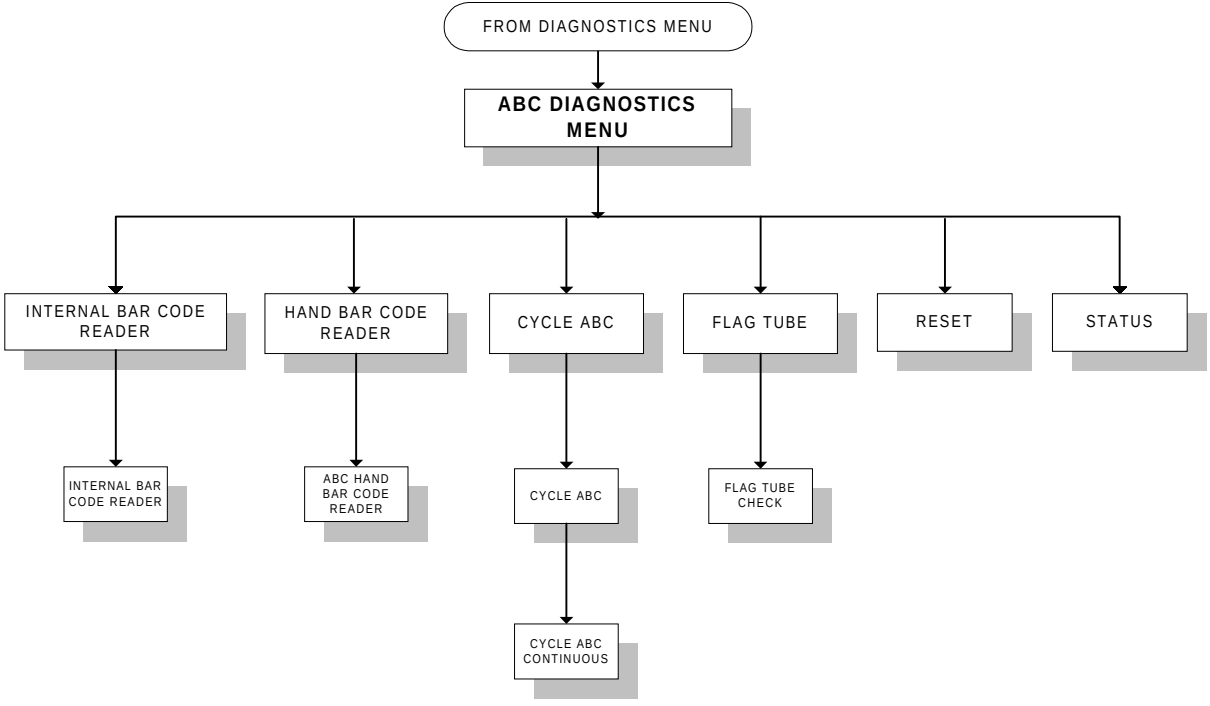


Figure 4B-3. ABC Diagnostics Menu

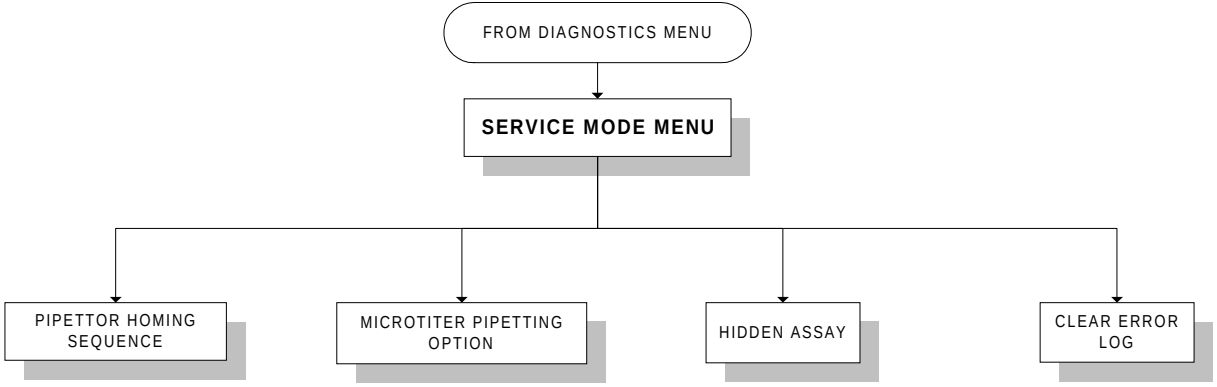


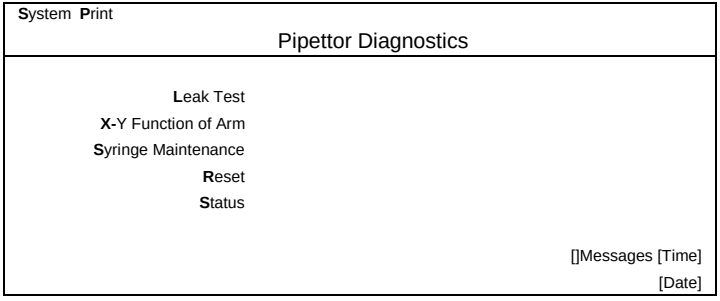
Figure 4B-4. Service Mode Menu

PIPETTOR DIAGNOSTICS

This section provides instructions for diagnostic procedures involving the operation of the Pipettor. Five diagnostic functions are provided:

1. Leak Test - Automatically tests if the sample delivery subsection of the Pipettor has leaks.
2. X-Y Function of Arm - Moves the Pipettor Arm through a series of predetermined positions.
3. Syringe Maintenance - Positions the Pipettor for the disassembly of the syringes.
4. Reset - Returns the Pipettor to the home position.
5. Status - Reports the operational state of the Pipettor.

Below is what the Pipettor Diagnostics Menu Screen looks like:

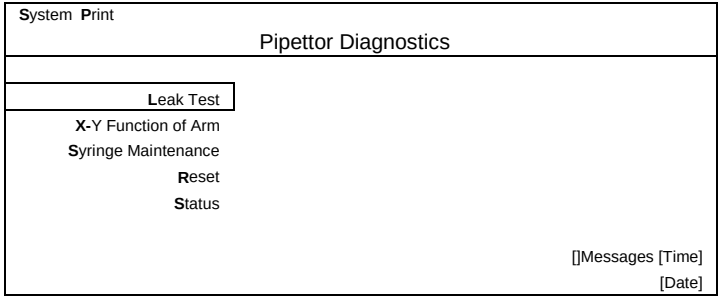


Leak Test

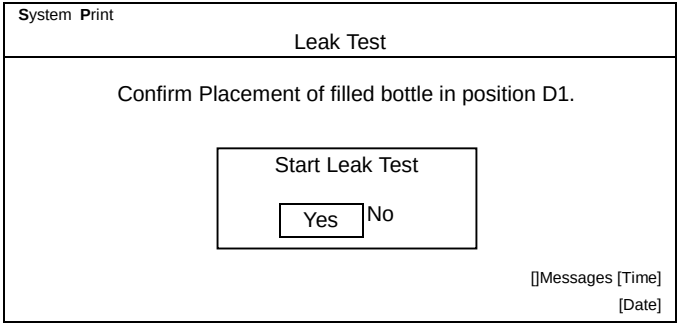
Leakage in the pipetting system is determined by a change of internal pressure in the sample delivery subsection of the Pipettor (i.e., sample syringe, sample tubing, pipette tip/plunger/nozzle, and other components of the sample delivery system).

The user places a bottle of distilled water in position D1 and then starts the Leak Test. The Pipettor automatically performs the test and reports the results to the system. The user is then notified if the test passed or failed. For those tests that fail, an Error Log entry is made, indicating the type of failure.

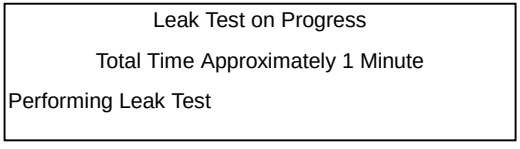
The Leak Test Screen shown below will allow the user to perform the test or exit back to the previous screen. Highlight “Leak Test” and press ↵**Enter**.



After ensuring that a filled bottle of distilled water is placed in position D1, select **Yes** from the screen and press ↵**Enter**.



The following pop-up window displays.



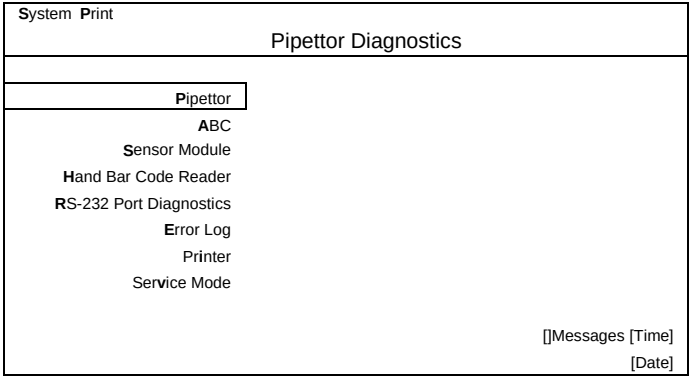
If errors are detected, refer to Section 4C,Troubleshooting and Error Code Guide, for troubleshooting information.

The system returns to the Pipettor Diagnostics Menu when the Leak Test is complete.

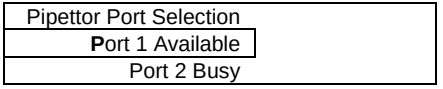
X-Y Function Arm

This function moves the Pipettor Arm through a series of predetermined positions.

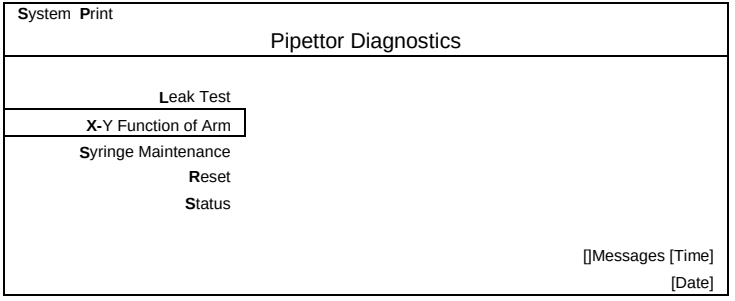
1. Select **P**ipettor from the Diagnostics Menu and press ↵**Enter**.



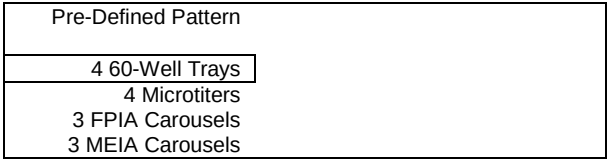
If you have two COMMANDER® FPC units, the screen requires a choice. Pipettors are designated as being “Available” or “Busy”. Only “Available” pipettors can be selected. Highlight the Pipettor Port which is available in the Pipettor Port Selection Screen and press ↵**Enter**.



2. Select **X-Y Function of Arm** and press ↵**Enter**.



A pop-up screen displays options for the type of pipetting.



Use the **Arrow** keys to highlight your choice and then press ↵**Enter**. The screen then displays the following:

System **P**rint

X-Y Function Test Object Placement

Place objects below on the platform

Source Position: ABC

Destination Position #1:	60-Well Tray
Destination Position #2:	60-Well Tray
Destination Position #3:	60-Well Tray
Destination Position #4:	60-Well Tray

Confirm Placement: **Y**es or **N**o

[]Messages [Time]

[Date]

NOTE

The shaded box shown above shows the selected objects to be used for the test; i.e. if the Destination Position was the FPIA Carousel, then the FPIA Carousel would be shown .

3. Position the trays or carousels according to the positions indicated. ***The Source Position requires a Sample Tube Rack if the optional Automatic Bar Code Reader (ABC) is not installed.***

4. Select **Yes** and press ↵**Enter**. The screen displays the positions that will be covered in the test cycle, depending upon the destinations you have selected. Up to twenty (20) positions are tested and represent those positions which are important to each type:

   - **Trays**: First and last wells.
   - **Microtiter Plates**: First and last wells.
   - **MEIA Carousels**: Reaction Cups.
   - **FPIA Carousels**: First, eighth, and sixteenth positions.

Tip Rack positions are standard for all types.

System **P**rint

X-Y Function Test

Pattern Pos 1: Tip Rack #1 TA1	Pattern Pos 2: Tip Rack #1 TFF
Pattern Pos 3: Tip Rack #2 TA2	Pattern Pos 4: Tip Rack #2 TMF
Pattern Pos 5: 60-Well Tray P1E3	Pattern Pos 6: 60-Well Tray P1M5
Pattern Pos 7: 60-Well Tray P2E3	Pattern Pos 8: 60-Well Tray P2M5
Pattern Pos 9: 60-Well Tray P3E3	Pattern Pos 10: 60-Well Tray P3M5
Pattern Pos 11: 60-Well Tray P4E3	Pattern Pos 12: 60-Well Tray P4M5
Pattern Pos 13: Control Rack R1	Pattern Pos 14: Control Rack R1X5
Pattern Pos 15: Control Rack R2	Pattern Pos 16: Control Rack R2X5
Pattern Pos 17: _____ ____	Pattern Pos 18: _____ ____
Pattern Pos 19: _____ ____	Pattern Pos 20: _____ ____

[]Messages [Time]

[Date]

NOTE:
The shaded box shown on the previous page will show the selected objects to be used for the test; i.e., if the Pattern Position was the FPIA Carousel, then FPIA Carousel would be shown in the shaded area.

5. You have two (2) choices for the type of cycle that will be run - **Single** or **Cycle**. From the Menu Bar, select:

   - **Single** (**F4**) and press ↵**Enter** if you wish to test the positioning of the wells/pattern positions that are indicated on the screen. The COMMANDER® FPC makes a single cycle through the specified positions. Observe it during the test and verify its positioning.

   - **Cycle** (**F3**) and press ↵**Enter** if you wish to troubleshoot the position of the Pipettor Nozzle. The FPC cycles continuously through the specified positions, keeping count of its activity on the screen, until it is manually stopped.

When you select **Cycle**, the screen displays the following:

System **P**rint

X-Y Function Test (Continuous)

Pattern Pos 1: Tip Rack #1 TA1	Pattern Pos 2: Tip Rack #1 TFF
Pattern Pos 3: Tip Rack #2 TA2	Pattern Pos 4: Tip Rack #2 TMF
Pattern Pos 5: 60-Well Tray P1E3	Pattern Pos 6: 60-Well Tray P1M5
Pattern Pos 7: 60-Well Tray P2E3	Pattern Pos 8: 60-Well Tray P2M5
Pattern Pos 9: 60-Well Tray P3E3	Pattern Pos 10: 60-Well Tray P3M5
Pattern Pos 11: 60-Well Tray P4E3	Pattern Pos 12: 60-Well Tray P4M5
Pattern Pos 13: Control Rack R1	Pattern Pos 14: Control Rack R1X5
Pattern Pos 15: Control Rack R2	Pattern Pos 16: Control Rack R2X5
Pattern Pos 17: _____ ____	Pattern Pos 18: _____ ____
Pattern Pos 19: _____ ____	Pattern Pos 20: _____ ____

Cycle Count: []Messages [Time]

[Date]

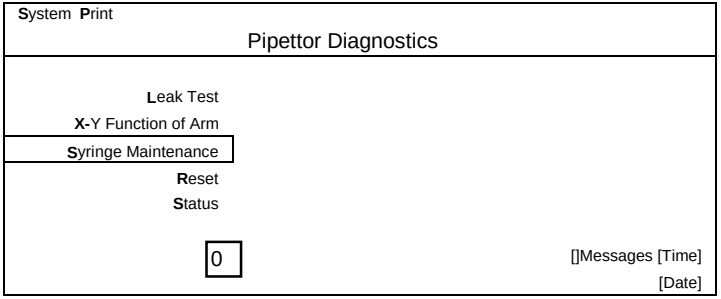
Select **Stop** (**F3**) from the Menu Bar and press ↵**Enter** to stop cycling.

6. When finished, press **Esc** three (3) times to return to the Diagnostics Menu.

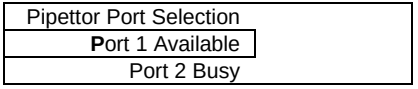
Syringe Maintenance

The Syringe Maintenance function positions the Pipettor for disassembly of the syringes.

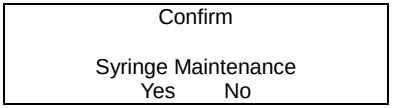
1. Select **Pipettor** from the Diagnostics Menu and press ↵**Enter**. The screen displays the following:



2. Select Syringe **Maintenance** and press ↵**Enter**. When the pop-up menu appears, select the available Pipettor Port and press ↵**Enter**.



Another pop-up screen appears with the following:



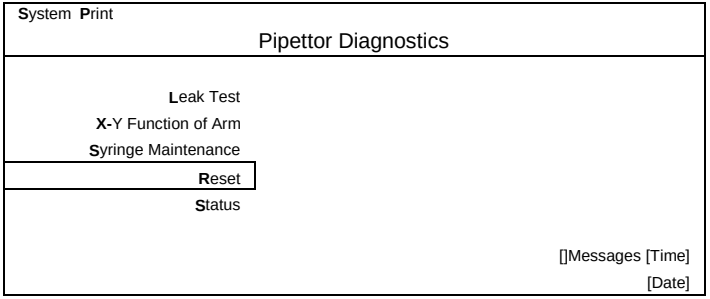
3. Select **Yes** and press ↵**Enter**. The pipetting arm will then move forward and the syringe plungers will move downward.

Follow the instructions in the Installation Section of this manual for the procedure to disassemble the syringes.

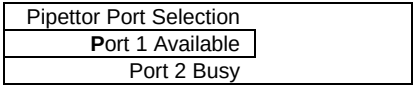
Reset

The Reset function returns the Pipettor to the Home position.

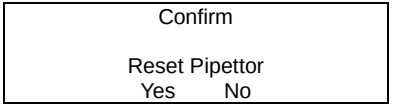
1. Select **Pipettor** from the Diagnostics Menu and press ↵**Enter**. The screen displays the following:



2. Select **Reset** and press ↵**Enter**. When the pop-up menu displays, select the available Pipettor Port and press ↵**Enter**.



Another pop-up screen is displayed to confirm if you wish to reset the Pipettor:



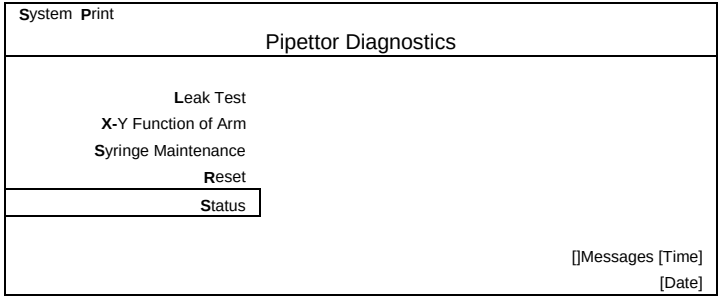
3. Select **Yes** and press ↵**Enter**. The Pipettor will then reset itself to the Home Position.

4. When finished, press **Esc** to return to the Diagnostics Menu screen.

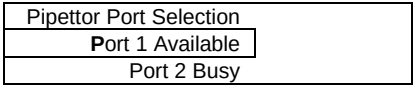
Status

The Status function reports the operational status of the Pipettor.

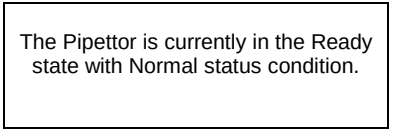
1. Select **Pipettor** from the Diagnostics Menu and press ↵**Enter**. The following screen displays:



2. Select **Status** and press ↵**Enter**. When the pop-up menu displays, select the available Pipettor Port and press ↵**Enter**.



Another pop-up screen is displayed to confirm that the FPC is in normal and ready condition:



3. If any other message is displayed, refer to the Troubleshooting and Error Code Guide that follows this section of the manual.

4. When finished, press **Esc** two (2) times to return to the Diagnostics Menu screen.

ABC DIAGNOSTICS

ABC Diagnostics Menu Bar

The following Diagnostics Menu Bar options are available. Some options are not available from every screen. Listed below is a brief description of each item on the ABC Diagnostics Menu Bar:

1. **CYCLE** starts the FPC on a repeating, predetermined test pattern used in troubleshooting. With an ABC, this command starts the Sample Transport System continuously moving.

2. **ECHO** begins a test in conjunction with another instrument to verify communications.

3. **FLAG TUBE** advances the ABC to the next available tube and activates the mechanical flag for that tube to verify the flag is operational.

4. **LOOP BACK** begins a test to verify a communications port is operational.

5. **READ** reads a sample ID bar code.

6. **REPORT** prints out a detailed listing of internal system messages as an error message to assist the CSC and your Abbott Field Service Engineer (FSE) in troubleshooting.

7. **SINGLE** starts the FPC on a single cycle of a pipetting test pattern to check for accuracy. With an ABC, this command advances the Sample Transport System to the next available tube.

8. **STOP** stops an FPC pipetting test that is under way. With an ABC, this command also stops an ABC test.

9. **STREAM** begins a test in which a stream of data is sent through a specific port to check an interface with a host computer or Laboratory Information System (LIS).

ABC Diagnostics Introduction

This section provides diagnostic procedures that can be performed to verify the operation of the ABC. Six major functions are provided in this section along with definitions and error codes. The six major functions are as follows:

1. **ABC Internal Bar Code Reader** cycles sample tubes in front of the ABC's internal Bar Code Reader to check the operation of the Bar Code Reader. The reader displays ID and bar code type on the screen.

2. **ABC Hand Bar Code Reader** displays the ID and bar code type to confirm if the Hand Bar Code Reader is operational.

3. **Cycle ABC** advances the ABC to the next available tube. It may be run in a continuous or single cycle mode.

4. **Flag Tube** advances the ABC to the next available tube and activates the mechanical flag for that tube to verify the flag operation is successful.

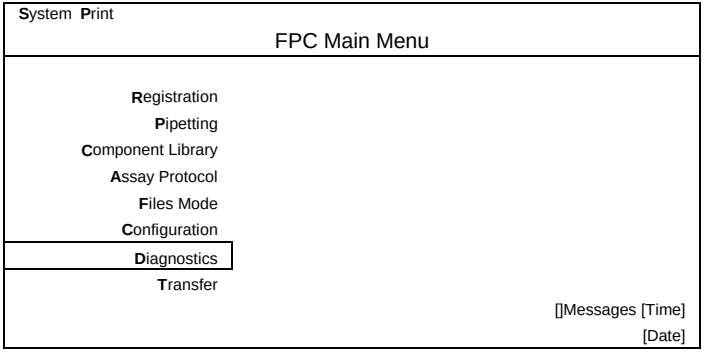
5. **Reset** resets the ABC transport mechanism.

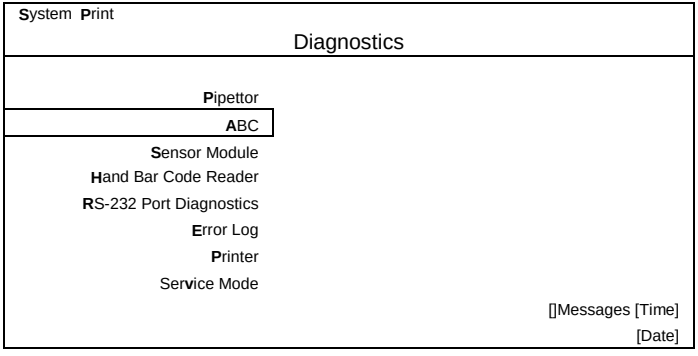
6. **Status** reports the operational status of the ABC.

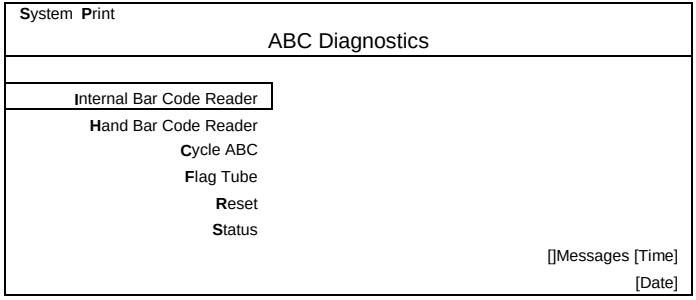
ABC Internal Bar Code Reader

Perform the following procedure to verify reader accuracy:

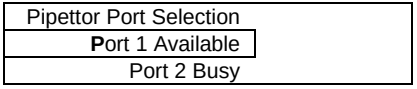
1. Select **Diagnostics** from the FPC Main Menu and press ↵**Enter**. Select **ABC** from the Diagnostics Menu and press ↵**Enter**. Select **Internal Bar Code Reader** from the ABC Diagnostics Menu and press ↵**Enter**.



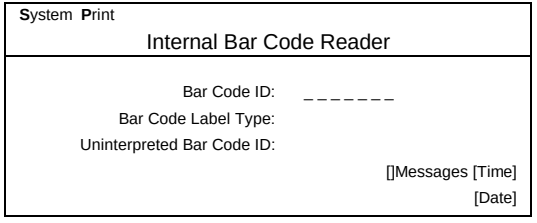




2. When the pop-up menu appears, select the Available Pipettor Port and press ↵**Enter**.

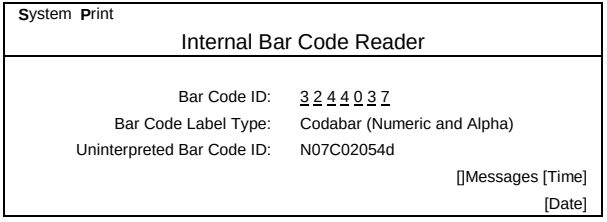


The screen now displays the following:



3. Note the Bar Code Reader type and ID's of the tubes to be tested. Place them in the ABC with the bar code labels correctly positioned.

4. Select **Read** (**F3**) from the Menu Bar and press ↵**Enter**. The ABC advances to the first available tube, reads the bar code, then displays the data as shown in the next screen. Information listed under "Uninterpreted bar code ID" is raw data used by the CSC/CSE in the event of a problem. Repeat this procedure if necessary.



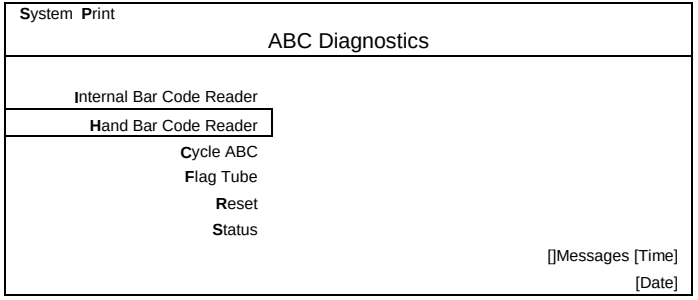
5. Select **Read** (**F3**) from the Menu Bar and press ↵**Enter** again for each tube you wish to read. Verify the accuracy of the information displayed on the monitor matches the visible portion of the label.

6. When finished, press **Esc** to redisplay the ABC Diagnostics Menu.

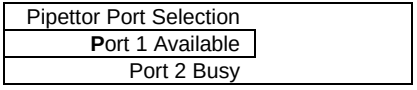
ABC Hand Bar Code Reader

This diagnostics function displays ID and bar code type to confirm if the Hand Bar Code Reader is operational.

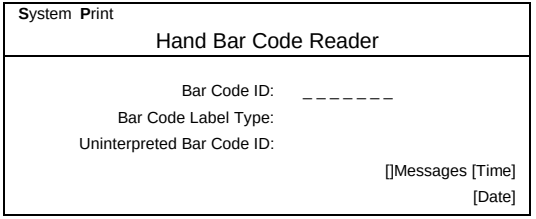
1. Select **Hand Bar Code Reader** from the ABC Diagnostics Menu and press ↵**Enter**.



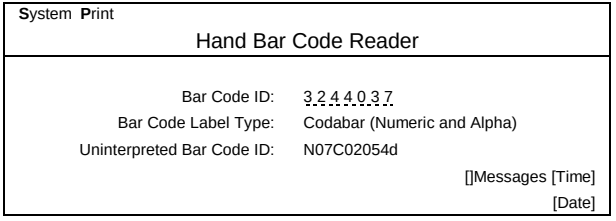
If there are two COMMANDER® FPC units, a pop-up screen is displayed showing one Pipettor Port as being busy and one available. Select the available Pipettor Port and press ↵**Enter**.



The screen then displays the following:



2. Read a bar code with the Hand Bar Code Reader. The screen displays the sample tube's bar code number and type. Verify the displayed data corresponds with the ID and bar code type on the tube. Information shown under "Uninterpreted Bar Code ID" is raw data used by the CSC/CSE in the event of a problem.

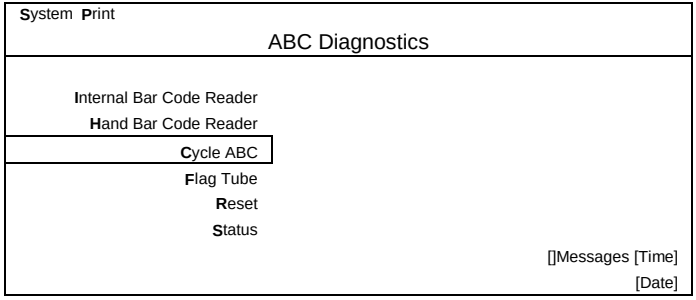


3. When finished, press **Esc** to redisplay the ABC Diagnostics Menu.

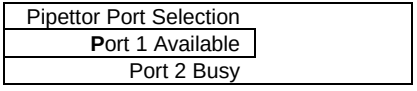
Cycle ABC

The Cycle ABC function advances the ABC to the next available tube.

1. Select **Cycle ABC** from the ABC Diagnostics Menu and press ↵**Enter**.

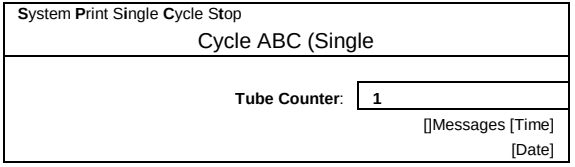


If there are two COMMANDER® FPC units, a pop-up screen is displayed showing one Pipettor Port as being busy and one available. Select the available Pipettor Port and press ↵**Enter**.

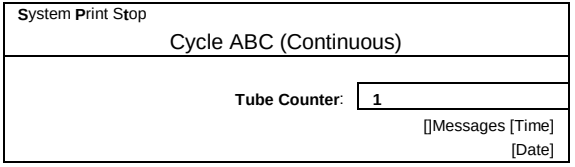


2. There are two options for cycling the ABC; **Single** or **Cycle**.

- To use **Single**, select **Single** (**F4**) from the Menu Bar and press ↵**Enter** to advance the carrier to the next available tube. Repeat this as many times as desired. When finished, press **Esc** to return to the Diagnostics Menu.



- To do a continuous cycle function, select **Cycle ABC** (**F3**) from the Menu Bar and press ↵**Enter**. This will initiate continuous cycle functioning and count the sample tubes positioned in the carriers.

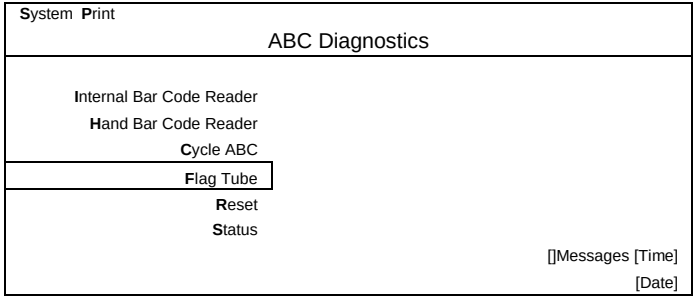


3. Select **Stop** (**F3**) from the Menu Bar and press ↵**Enter** to stop cycling when finished with the test. Press **Esc** to return to the ABC Diagnostics Menu.

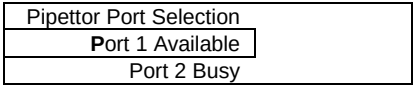
Flag Tube

The Flag Tube diagnostics function advances the ABC to the next available tube and activates the mechanical flag for that tube. This verifies that the flag function is working.

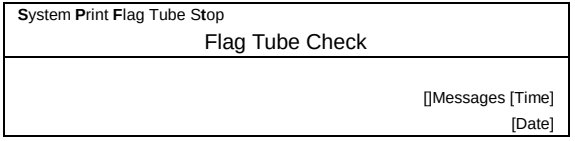
1. Select **Flag Tube** from the ABC Diagnostics Menu and press ↵**Enter**.



If there are two COMMANDER® FPC units, a pop-up screen is displayed showing one Pipettor Port as being busy and one available. Select the available Pipettor Port and press ↵**Enter**.



The screen then displays the following:



2. Select **Flag Tube** (**F3**) from the Menu Bar and press ↵**Enter**. The ABC advances to the first available tube and raises its flag. Repeat this check as necessary.

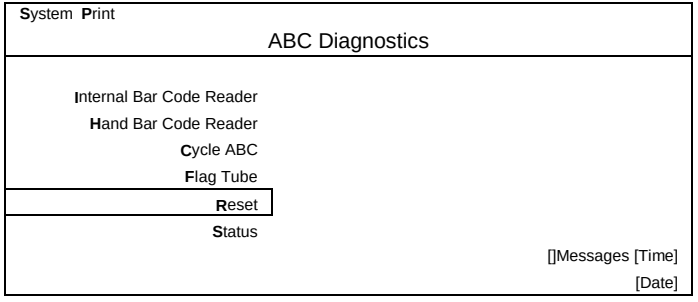
3. When finished, select **Stop** (**F4**) from the Menu Bar and press ↵**Enter** to redisplay the ABC Diagnostics Menu.

4. Return all of the flags to the down position.

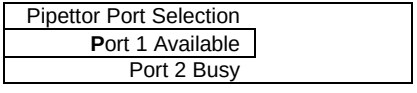
Reset

The Reset diagnostics function resets the ABC transfer mechanism.

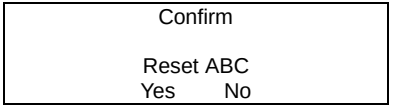
1. Select **Reset** from the ABC Diagnostics Menu and press ↵**Enter**.



If there are two COMMANDER® FPC units, a pop-up screen is displayed which indicates one Pipettor Port is busy and one is available. Select the available Pipettor Port and press ↵**Enter**.



A pop-up confirmation screen appears:



2. Select **Yes** and press ↵**Enter**. The ABC resets the tube carriers.

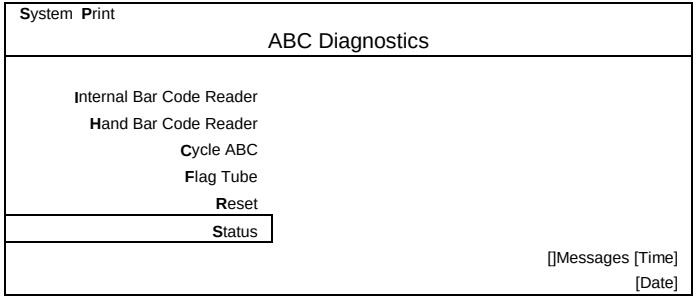
3. Press **Esc** to return to the ABC Diagnostics Menu.

Status

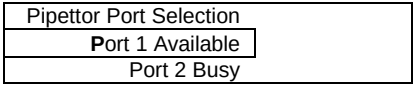
The Status diagnostics function reports the operational state of the ABC.

1. Select **Status** from the ABC Diagnostics Menu and press ↵**Enter**.

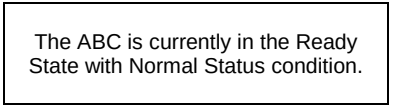
NOTE:
For assistance, contact Abbott Customer Systems Engineering (CSE) at 1-800-527-1869 (US only), then press the number 60.



If there are two COMMANDER® FPC units, a pop-up screen is displayed showing one Pipettor Port as being busy and one available. Select the available Pipettor Port and press ↵**Enter**.



The screen then displays the following:



2. If any other message is displayed, refer to the Troubleshooting and Error Code Guide Section.

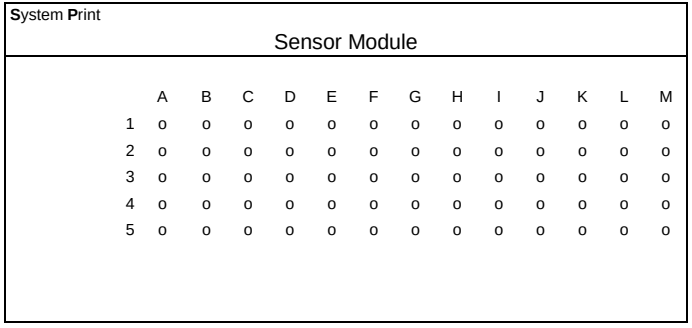
3. When finished, press **Esc** to return to the ABC Diagnostics Menu.

SENSOR MODULE DIAGNOSTICS (NON-ABC CONFIGURED)

This section provides instructions to confirm that the Sensor Module used with a COMMANDER® FPC (Non-ABC configured) is detecting the placement of sample tubes.

1. Place a Sample Rack in the Sensor Module.

2. Select **Sensor Module** from the Diagnostics Menu and press ↵**Enter** to display the Sensor Module screen.



3. Place the tubes in the Sensor Module positions one at a time. The screen registers tube placement by replacing the "O" in that location with a "X". Verify the screen displays positions where the tubes are placed or removed with an "X" or "O", as appropriate.

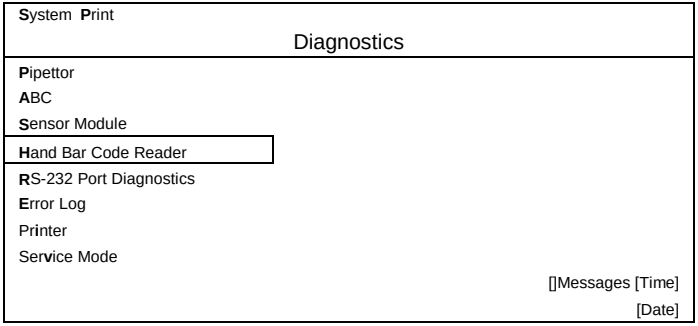
4. When you are finished, press **Esc** to return to the Diagnostics Menu.

NOTE:
For assistance, contact Abbott Customer Systems Engineering (CSE) at 1-800-527-1869 (US only), then press the number 60.

HAND BAR CODE READER DIAGNOSTICS (NON-ABC CONFIGURED)

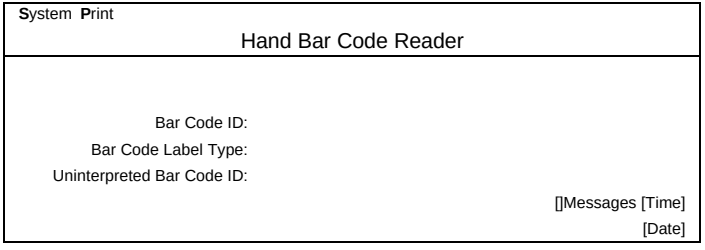
This diagnostic function confirms if the Hand Bar Code Reader attached to a COMMANDER® FPC (Non-ABC Configured) is operational. The screen displays the ID and bar code type in the test.

1. Select **Hand Bar Code Reader** from the Diagnostics Menu and press ↵**Enter**.

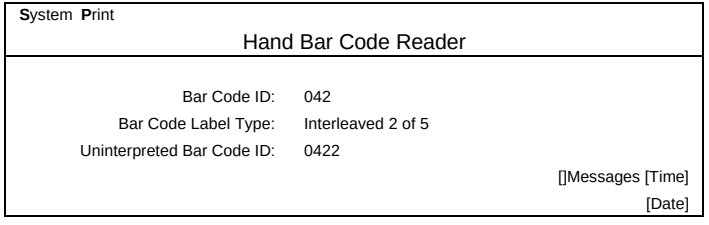


NOTE:
For assistance, contact Abbott Customer Systems Engineering (CSE) at 1-800-527-1869 (US only), then press the number 60.

The screen then displays the following:



2. Read a bar code with the Hand Bar Code Reader. The screen displays the sample tube's bar code number and type. Verify the displayed data corresponds with the ID and bar code type on the tube. Information shown under "Uninterpreted Bar Code ID" is raw data used by the CSC/CSE in the event of a problem.



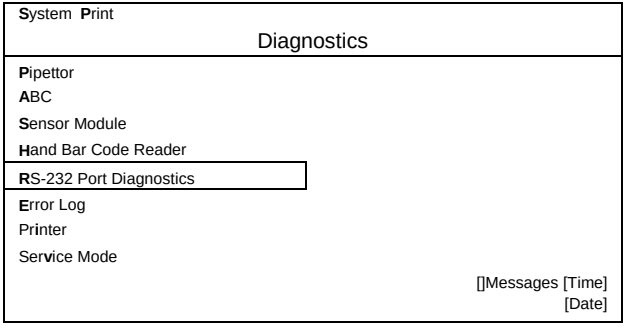
3. When finished, press **Esc** to return to the Diagnostics Menu.

RS-232 PORT DIAGNOSTICS

This section provides instructions to confirm data communication through the multiple ports of the COMMANDER® FPC, Sensor Module, Bar Code Reader, and other instruments or systems connected to the FPC.

NOTE:
To avoid damage to the RS-232 connectors, ensure all pins are correctly aligned before applying pressure to make connections. Ensure connections are secure. To prevent accidental disconnection, Abbott recommends mounting screws and connector clips be used.

1. Select **RS-232 Port Diagnostics** from the Diagnostics Menu and press ↵**Enter**.



NOTE:
For assistance, contact Abbott Customer Systems Engineering (CSE) at 1-800-527-1869 (US only), then press the number 60.

The screen then displays the list of ports and the configuration entered at installation as shown in the following example:

System **P**rint **L**oopback **E**cho S**t**ream

RS-232 Port Diagnostics

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	_ _	4800	Odd	7	1	None	Pass Thru
04	Host	_ _	9600	Even	8	1	None	_ _ _ _ _ _ _
05	Imx	_ _	9600	None	8	1	None	Stored

Etc.

[]Messages [Time]
[Date]

2. Use the **Arrow** keys to highlight the desired port. Three RS-232 tests are available for each port:
   - Loopback Test
   - Echo Test
   - Data Stream

Loopback Test

The Loopback Test is used to verify the operational status of a cable or port. Perform the diagnosis using the following step sequence.

Begin from the Diagnostics Menu. Select **RS-232 Port Diagnostics** and highlight the port to be tested.

1. Test a port on the Digicable™ connected to the back of the FPC computer.
2. Disconnect the communications cable from the port of the Digicable to be tested. Plug the special Loopback Connector (List No. 03A46-21) into the port.
3. Select **Loopback** from the RS-232 Port Diagnostics Menu Bar and press ↵**Enter** to perform the Loopback Test.
4. Depending upon the outcome of the test, the screen will display either "**Loopback Test Was Successful**" or "**Loopback Test Failed**".
   - If the test passes, the Digicable was eliminated as the source of the problem. Continue with the next test in the sequence.
   - If the test fails, the Digicable is the source of the problem. Replace the Digicable.
5. Repeat the procedure for each port to be tested.

Echo Test

The Echo Test is used in conjunction with another instrument to verify communications between the two instruments. Concurrently with the Echo test, a Loopback test must be performed on the other instrument to complete the procedure.

Begin from the Diagnostics Menu. Select **RS-232 Port Diagnostics** and highlight the port to be tested.

1. Connect the analyzer cable to the specified port on the FPC Digicable™ and to a port on the other Instrument that is capable of performing a Loopback Test.
2. Select **Echo** from the RS-232 Port Diagnostics Menu Bar and press ↵**Enter** to perform the Echo Test. The screen will display the message "**Echo test In Progress**".
3. Refer to the Operator's Manual for the instrument connected to the FPC to perform a Loopback Test on that instrument.
4. When the Echo Test is completed, select **Stop** from the Menu Bar to stop the Echo Test. The screen will then display "**Echo Test Completed**".
5. Repeat the procedure for each analyzer cable to be tested

Data Stream

The Data Stream Test sends the header record through the selected port for use in checking a Host Computer or Laboratory Information System (LIS).

Begin from the Diagnostics Menu. Select **RS-232 Port Diagnostics** and highlight the port to be tested.

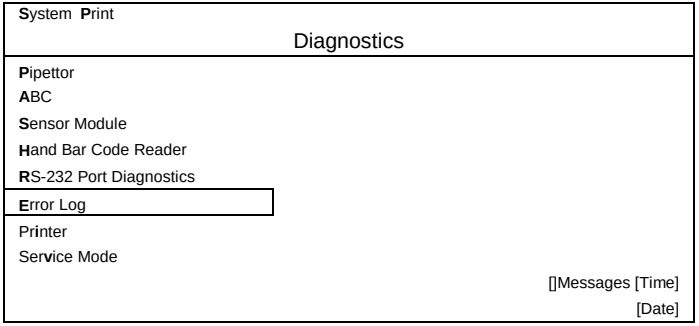
1. Verify the Host System or LIS is ready to receive the data stream.
2. Select **Stream** from the RS-232 Diagnostics Menu Bar and press ↵**Enter**. The data stream begins.
3. Confirm the data stream was received by the Host System or LIS.
4. When finished, select **Stop** (**F3**) from the Menu Bar and press ↵**Enter** to stop the data stream. Press **Esc** to return to the Diagnostics Menu.
5. Use the **Arrow** keys to highlight other ports to be tested by following the above procedure.

ERROR LOG

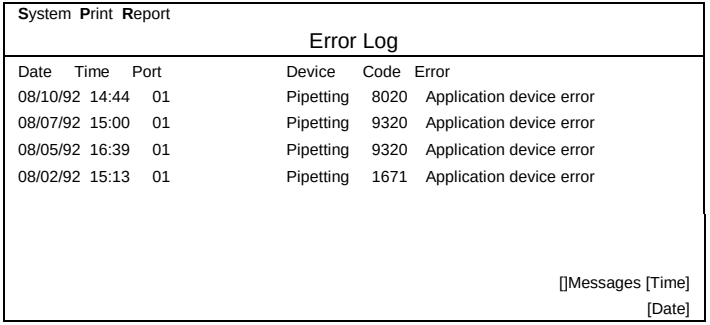
The Error Log displays a cumulative list of the last 250 errors that have occurred on the system. This list is helpful for charting and the diagnosis of system performance.

1. Select **Diagnostics** from the main Menu.

2. Select Error Log from the Diagnostics Menu and press ↵**Enter**.



The screen then displays the list of any errors that have occurred in the systems operation, pipetting, ABC operation, and data transmission as shown in the following example.



3. Review the error(s) to assist in troubleshooting.

   An abbreviated description of the error appears under the "Error" column. A more complete definition, including probable cause and corrective action, is available in the Troubleshooting and Error Code Guide Section of this manual. Use the **Arrow** and **PgUp** and **PgDn** keys to scroll through the list of error messages.

4. Select **Print** (**F2**) from the Menu Bar and press ↵**Enter**. A pull-down menu appears. Select **Current Window** and press ↵**Enter** to print the information which is shown on the screen. Press **Esc** to return to the Diagnostics Menu.

5. Your Abbott representative may require a more technical review of an error condition. To print a more detailed report of a specific error(s), use the **Arrow** keys to highlight the error report to be printed. Select **Report** from the menu bar.

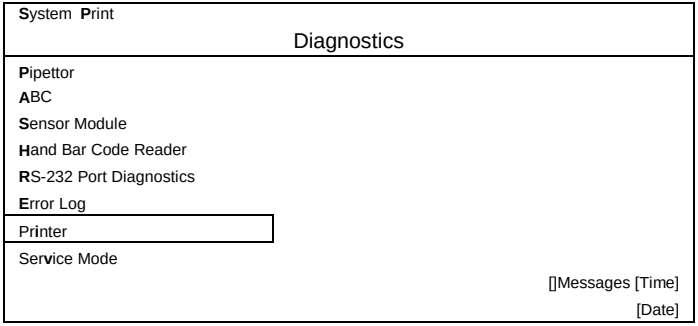
> **Note:**
>
> **Some error codes do not generate reports.**

6. Press **Esc** to return to the Diagnostics Menu.

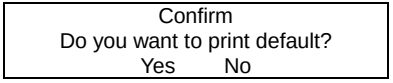
PRINTER DIAGNOSTICS

The Printer Diagnostic function provides instructions to confirm that the printer is operational

1. Select **Printer** from the Diagnostics Menu and press ↵**Enter**.



2. Verify the printer is connected and the power is ON.
3. Select **Printer** from the Menu Bar and press ↵**Enter**. A pop-up menu appears to confirm your request.

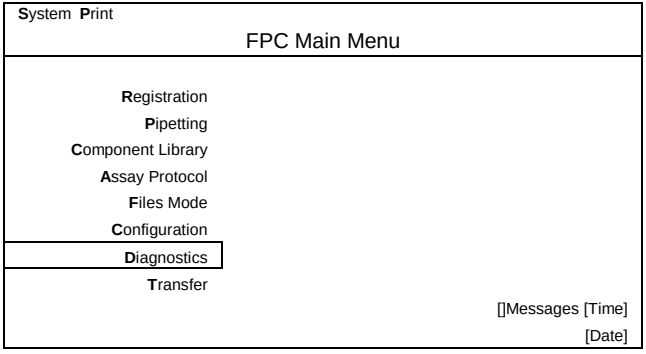


4. Select **Yes** and press ↵**Enter** to print a default test pattern on the printer.
5. When finished with the printer test, press **Esc** to return to the Main Menu.

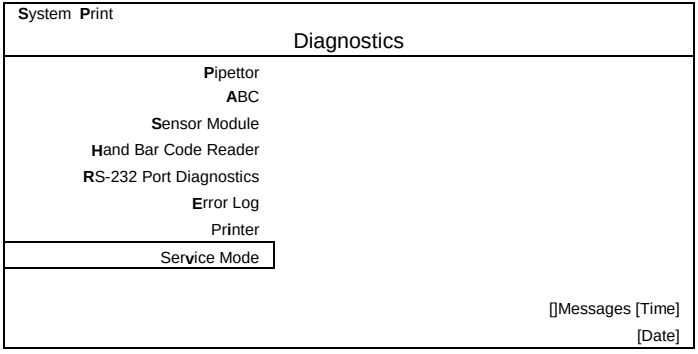
SERVICE MODE DIAGNOSTICS

This section provides instructions for performing Service Mode Diagnostics.

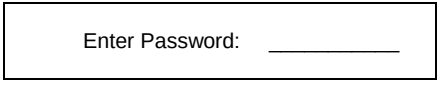
1. From the FPC Main Menu, select **Diagnostics** and press ↵**Enter**.



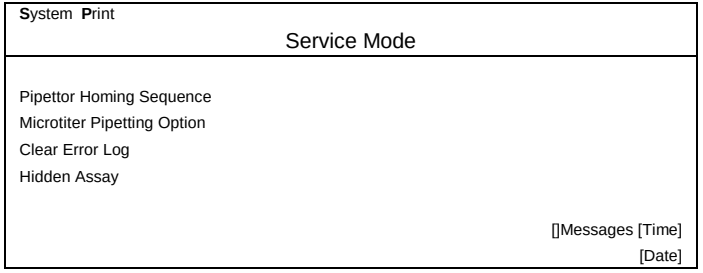
2. Select **Service Mode** from the Diagnostics Menu and press ↵**Enter**.



The screen displays:



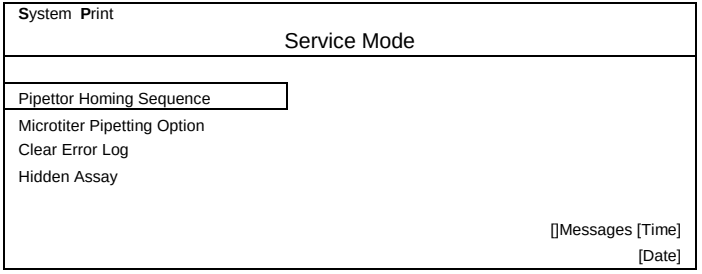
3. Enter the password (**letusin**) in **lower case letters** and press ↵**Enter**. The screen will display:



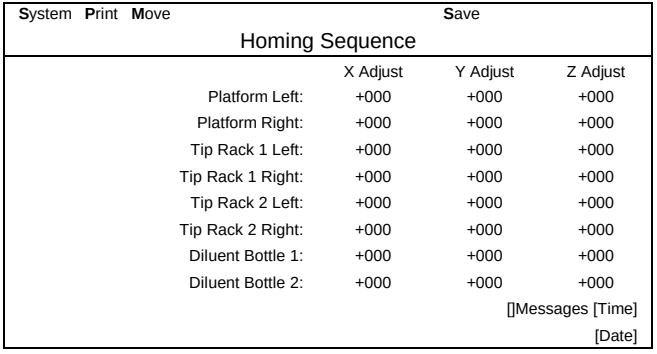
NOTE:
Password is for Abbott Personnel ONLY.

Pipettor Homing Sequence

1. Using the arrow keys, move the cursor to **Pipettor Homing Sequence** and press ↵**Enter**.



The Pipettor Homing Sequence Menu is displayed:

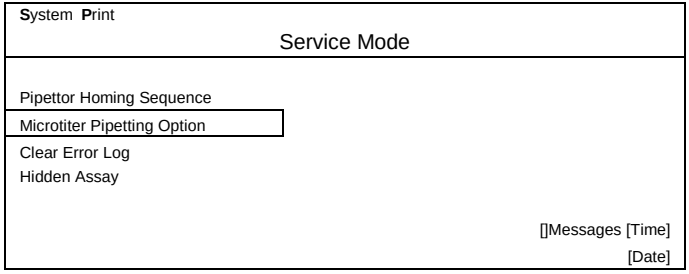


2. Use the Pipettor Homing Sequence option to set the X, Y, and Z reference positions in the software. This information is then stored in the EEPROM in the Pipettor MPU Board.

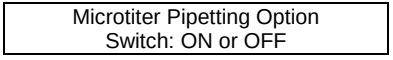
Microtiter Pipetting Option

Use this option to enable the Pipettor to pipette into Microtiter Trays. If this option is turned OFF, a Microtiter Tray in the assay protocol cannot be selected.

1. Select **Microtiter Pipetting Option** from the Service Mode Menu and press ↵**Enter**.



2. The Microtiter Pipetting Option Menu appears:

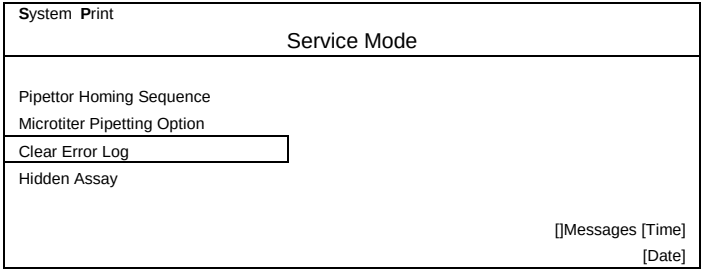


3. Select ON or OFF and press ↵**Enter** to activate the desired function.
4. Press the **Esc** key to return to the Service Mode Menu.

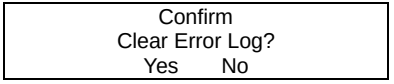
Clear Error Log

Use the Clear Error Log Option to track Pipettor related errors and System errors.

1. From the Service Mode Menu, select **Clear Error Log** and press ↵**Enter**.



2. The following pop-up menu is displayed



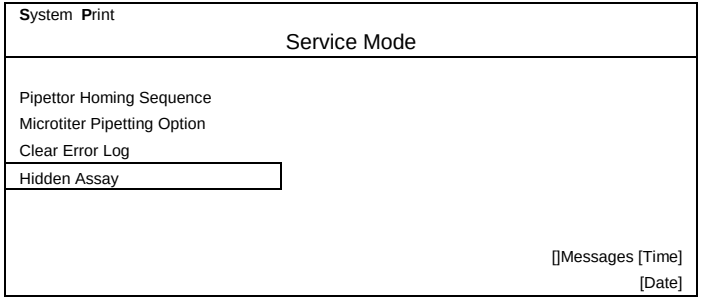
3. Select **Yes** and press ↵**Enter** to clear the Error Log.

Hidden Assay

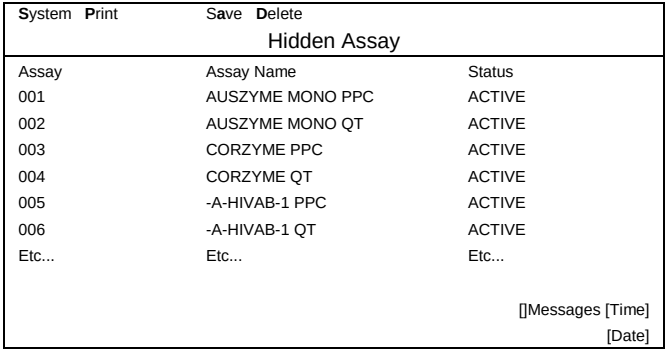
The Hidden Assay option enables the use of Hidden Assays. Hidden Assays are the type of assay that is normally non-accessible to the customer. These may be assays that are released only for research and development purposes.

CAUTION
Use this mode to enable assay(s) only when instructed by the Abbott Customer Support Center.

1. Select **Hidden Assay** from the Service Mode Menu and press ↵**Enter**.



2. The Hidden Assay Menu appears:



3. Enter an assay number preceded by the pound sign (**#**) into the Assay column change the Assay Status from **Active** to **Hidden** (i.e., “#006”).

4. Enter the Assay 3 digit number and press ↵**Enter**. This will change the Assay Status from **Hidden** to **Active**.

System **P**rint Sa**v**e **D**elete

Hidden Assay

Assay	Assay Name	Status
001	AUSZYME MONO PPC	ACTIVE
002	AUSZYME MONO QT	ACTIVE
003	CORZYME PPC	ACTIVE
004	CORZYME QT	ACTIVE
005	-A-HIVAB-1 PPC	ACTIVE
#006	-A-HIVAB-1 QT	HIDDEN
Etc...	Etc...	Etc...

[]Messages [Time]
[Date]

4. Press **Esc** to return to the Service Mode Menu.

5. Press **Esc** to return to the Diagnostics Menu.

6. Press **Esc** to return to the FPC Main Menu.