

SECTION 8

8 SERVICING THE BIS VISTA SYSTEM

INTRODUCTION

This section provides instructions for replacing the PIC, BISx, and the monitor, and for removing and replacing parts of the monitor and the BISx. If a component needs to be serviced, please consult Sections 8.12 and 8.13 for instructions on packaging and shipping.

The BIS VISTA Monitoring System is designed to be easily serviced by using the built in diagnostic routines (see Section 7 “Diagnostics and Troubleshooting”) and the major component swapping techniques described below. Replacement part numbers are listed in Section 10.1, “Accessories and Spare Parts List.”

8.1 Replacing the PIC

Parts Required:

Patient Interface Cable (PIC Plus) P/N 186-0107

Tools Required:

None

To replace the PIC, unplug the PIC cable from the BISx Bulkhead Connector by grasping the connectors (NOT the cable!) and firmly pulling the two sections apart.

To attach the replacement PIC cable to the BISx, align and press the PIC and BISx connectors together firmly.

8.2 Replacing the BISx

Parts Required:

BIS VISTA BISx with Patient Interface Cable;
P/N 185-0145-AMS

Tools Required:

None

To replace the BISx:

Disconnect the BISx from the front of the monitor. To do this, carefully grasp the connector on the BISx Monitor Interface Cable and pull. DO NOT twist or pull on the cable.

If necessary, unplug the PIC cable from the BISx by grasping the connector (NOT the wires!) and firmly pulling it out of the BISx Bulkhead Connector.

To install the replacement BISx, hold the cylindrical connector with the flat side up (at 12 o'clock position) and insert firmly into BISx port on front of monitor.

To re-attach the PIC cable, align the PIC and BISx connectors and press together firmly.

8.3 Replacing the Monitor

Parts Required:

BIS VISTA Monitor P/N 185-0151

Tools Required:

None

To replace the monitor:

1. Put monitor in Standby mode by pressing the ON/Standby button. The light to the right of the button should be yellow or off.
2. Unplug the power cable from the wall and remove it from its receptacle in the rear of the monitor.
3. Disconnect the BISx from the front of the monitor. To do this, grasp the connector on the BISx Monitor Interface Cable and pull. DO NOT twist or pull on the cable.
4. If necessary, dismount monitor from pole clamp by removing set screw from clamp, then depressing top of clamp shoe (blue plastic clip at top of aluminum pole clamp) and slide the monitor up and off of the clamp.
5. To install the replacement monitor, insert power cord into receptacle on rear of monitor.
6. To install the BISx, hold the cylindrical connector with flat side up (at 12 o'clock position) and insert firmly into BISx port on front of monitor.
7. Re-mount pole clamp assembly.

8.4 Replacing the Battery

Parts Required:

Battery Replacement Kit P/N 186-0208

Tools Required:

Philips #2 screwdriver

Caution:

All repairs to the BIS VISTA Monitoring System should be made only by a qualified Biomedical Engineering Technician or other authorized personnel.

To replace the battery, you will need a Philips #2 screwdriver. Follow the instructions below:

1. Unplug A/C line cord from the monitor.
2. Lay monitor screen-side-down on a scratch-free work surface so that the Battery/Power Supply cover is accessible.



3. Remove 4 screws from the Battery/Power Supply cover and remove the cover. Note the position of the battery cable.
4. Squeeze the battery connector latch to disengage it from the back of the monitor and remove the old battery.



5. Lay the new battery in the recess with the wires at the top, and plug in the connector.
6. Replace the cover and four screws (hand-tighten only) and reconnect the A/C power cord.

8.5 Replacing the Power Supply

Parts Required:

Power Supply Replacement Kit P/N 186-0216

Tools Required:

Philips #2 screwdriver

Caution:

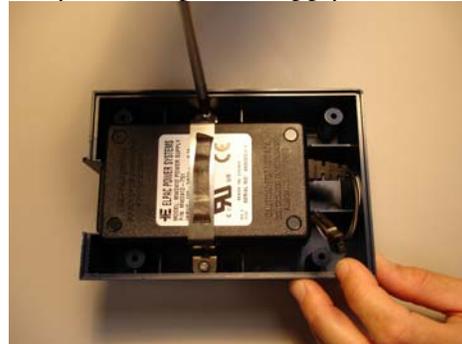
All repairs to the BIS VISTA Monitoring System should be made only by a qualified Biomedical Engineering Technician or other authorized personnel.

WARNING:

POWER SUPPLY IS INTERNALLY FUSED. REPLACE POWER SUPPLY ONLY WITH ASPECT MEDICAL SYSTEMS BIS VISTA POWER SUPPLY.

To replace the power supply, you will need a Philips #2 screwdriver. Follow the instructions below:

1. Unplug A/C line cord from the BIS VISTA monitor.
2. Lay the monitor screen-side-down on a scratch-free work surface so that the Battery/Power Supply cover is accessible.
3. Remove 4 screws from the Battery/Power Supply cover and remove the cover. The power supply is located inside the cover.
4. Unplug (squeeze and pull to remove) the battery and the power supply connectors.



5. Remove screws from the power supply bracket and remove the old power supply.
6. Insert new power supply into the cover, lining up the A/C power receptacle with the cutout in the cover.
7. Reconnect the power supply.
8. Reconnect the battery.
9. Replace the cover and 4 screws (hand-tighten only) and reconnect the A/C power cord.

8.6 Replacing the Clamp Shoe

Parts Required:

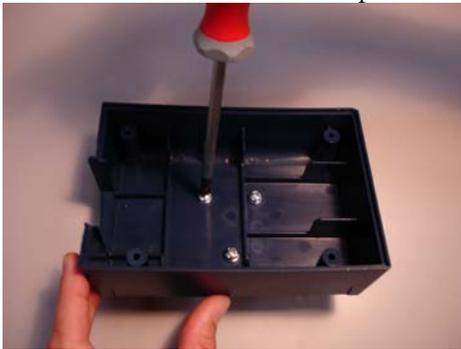
Shoe Clamp Replacement Kit P/N 186-0217

Tools Required:

Philips #2 and #8 screwdrivers

To replace the Clamp Shoe, you will need Philips #2 and #8 screwdrivers. The power supply must be removed to access the Clamp Shoe screws. Follow the instructions below:

1. Unplug A/C line cord from the BIS VISTA monitor.
2. Lay the monitor screen-side-down on a scratch-free work surface so that the Battery/Power Supply cover is accessible.
3. Remove 4 screws from the Battery/Power Supply cover and remove the cover. The power supply is located inside the cover.
4. Unplug (squeeze and pull to remove) the power supply connector.
5. Remove screws from the power supply bracket and remove the power supply.



6. Remove the three screws that attach the Clamp Shoe to the back panel.
7. Replace the Clamp Shoe and attach it to the back panel with the three new screws provided in the kit (hand-tighten only).
8. Insert power supply into the cover, lining up the A/C power receptacle with the cutout in the cover.
9. Reconnect the power supply.
10. Replace the cover and 4 screws (hand-tighten only) and reconnect the A/C power cord.

8.7 Replacing the Monitor Interface Cable

Caution:

All repairs to the BIS VISTA Monitoring System should be made only by a qualified Biomedical Engineering Technician or other authorized personnel.

Use only the parts and tools specified. Use of any others may damage the instrument.

8.7.1 Parts and Tools Required

Parts Required:

BIS VISTA Host Cable Replacement Kit;
P/N 186-0201-AMS includes:
BISx Monitor Interface Cable P/N
175-0061-GA
Gasket, P/N 150-0187
Torx head screws, P/N 606-0008

Tools Required:

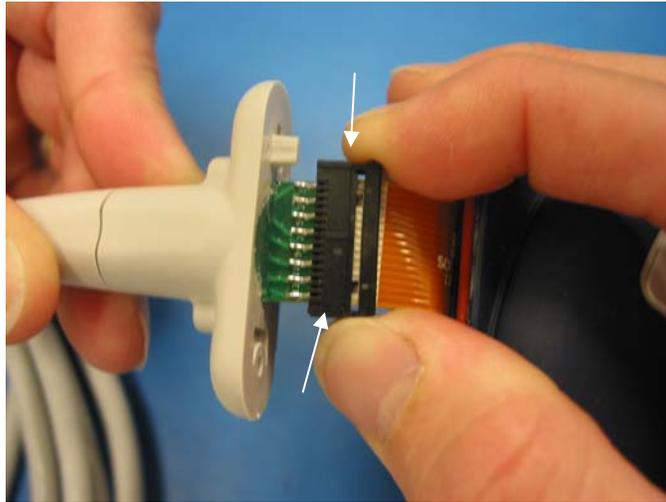
Torque screwdriver with Torx bit size T-7.



8.7.2 Procedure:



1. Disconnect BISx from the monitor.
2. Remove screws from the bulkhead of the old Monitor Interface Cable.



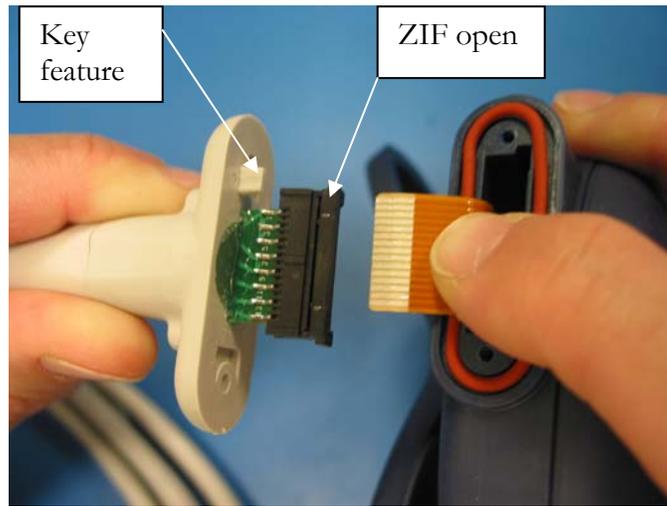
3. Open the ZIF connector by pulling away from the bulkhead.



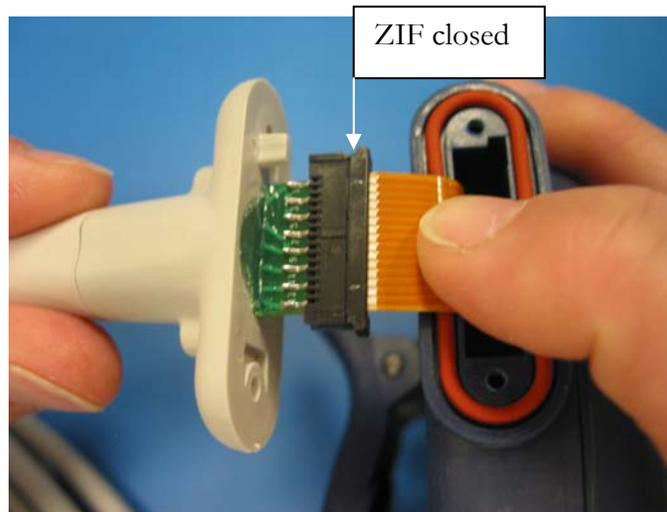
4. Disconnect from the flex cable. Discard the old gasket.



5. Set the new gasket in the groove of the BISx housing.



6. Align the key feature on the bulkhead and the BISx unit. Attach the flex cable from the BISx to the ZIF connector on the replacement cable.



7. Ensure that the flex cable is fully inserted into the ZIF and close the ZIF connector by pushing toward the bulkhead. Carefully feed the flex cable into the housing and seat the cable bulkhead to the BISx housing.



8. Set the screws in the holes. Slowly tighten to 45 in-oz.

8.8 Replacing the BISx Bulkhead Connector

Caution:

All repairs to the BIS VISTA Monitoring System should be made only by a qualified Biomedical Engineering Technician or other authorized personnel.

Use only the parts and tools specified. Use of any others may damage the instrument.

8.8.1 Parts and Tools Required

Parts Required:

BISx Bulkhead Replacement Kit P/N 195-0052 includes:

- BISx Bulkhead, P/N 175-0052
- Gasket, P/N 150-0187
- Torx head screws, P/N 606-0008

Tools Required:

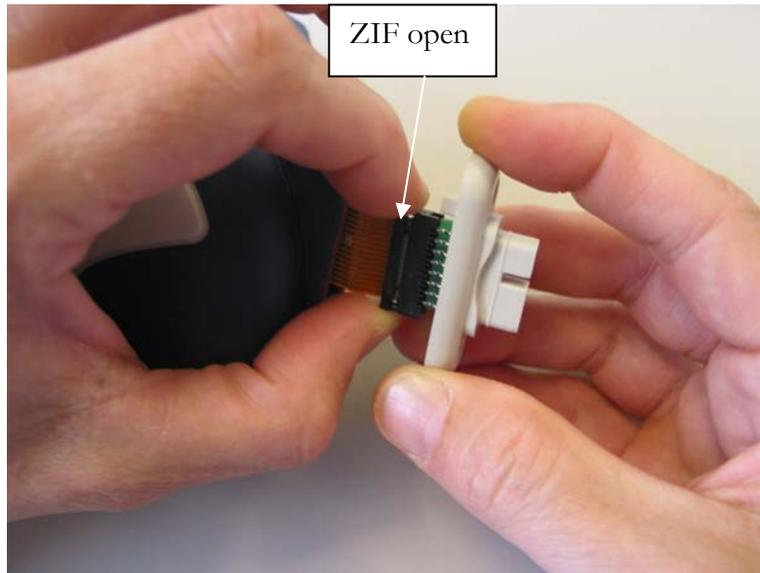
Torque screwdriver with Torx bit size T-7.



8.8.2 Procedure:



1. Disconnect BISx from the monitor and remove Patient Interface Cable from BISx.
2. Remove screws from the bulkhead.



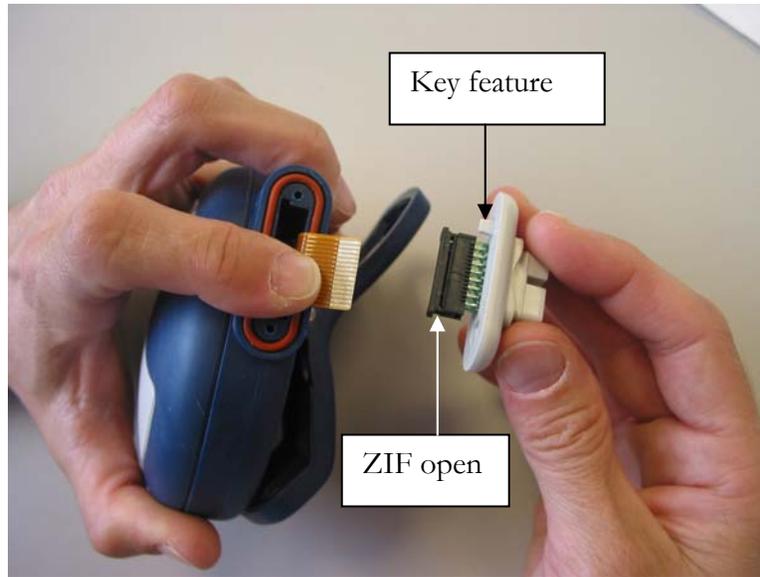
3. Open the ZIF connector by pulling away from the bulkhead.



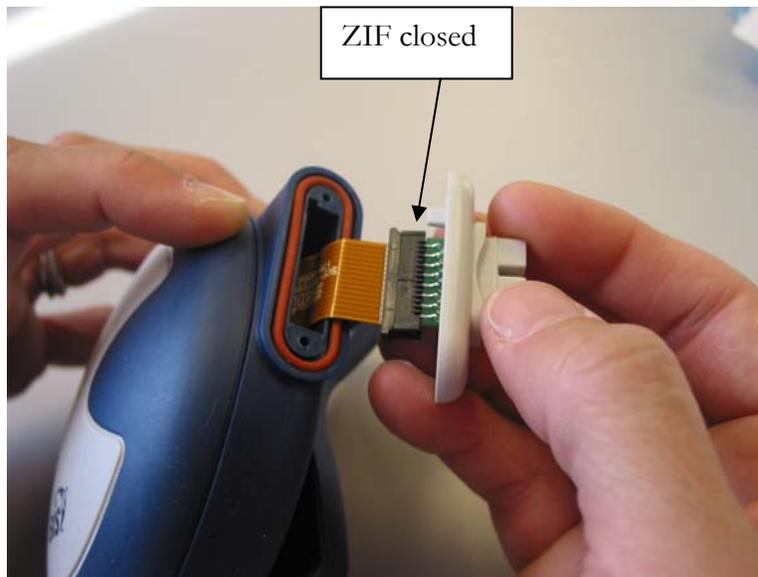
4. Disconnect from the flex cable. Discard the old gasket.



5. Set the new gasket in the groove of the BISx housing.



6. Align the key feature on the bulkhead and the BISx unit. Attach the flex cable from the BISx to the ZIF connector on the replacement bulkhead.



7. Ensure that the flex cable is fully inserted into the ZIF and close the ZIF connector by pushing toward the bulkhead. Carefully feed the flex cable into the housing and seat the bulkhead to the BISx housing.



8. Set the screws in the holes. Slowly tighten to 45 in-oz.

8.9 Calibrating the Touch Screen

The Touch Screen is calibrated at the factory and does not need to be re-calibrated on a regular basis. However, if necessary, the touch screen may be calibrated by selecting **[Calibrate Touch Screen]** from the Maintenance Menu. Follow the on-screen instructions.

8.10 Using the Reset Button

The Reset button is located on the back panel of the monitor. If necessary, the software can be reset by accessing this button with a ballpoint pen, paper clip or other similar tool.

8.11 BISx Checkout and Safety Tests

1. Perform DSC Self Test. See Section 7.2.2 “The BISx Checkout Procedure” or refer to the BIS VISTA Monitoring System Operating Manual.
2. Verify that all test sections PASS.
3. Install a known good PIC cable.
4. Connect a Sensor Simulator or Test Sensor tool as described in Section 10 “Appendix I.”
5. Perform a Patient Interface Cable (PIC) Checkout Procedure as described in Section 7.2.3. “PIC Checkout Procedure.” For more detail, refer to the BIS VISTA Monitoring System Operating Manual.
6. Perform a leakage (electrical safety test) according to the appropriate institution requirements.
7. If appropriate, perform a Hipot test according to institution requirements.
8. End of Procedure.