

- 5 Check the labeling on your old housing top cover and apply the respective labels to your new housing top cover. Use the appropriate label from the label sheet.

Refitting the Front Bezel

To refit the front bezel, press it back into place over the measurement connector hardware until you hear a click.



Final Inspection

Perform a final inspection to ensure:

- The MSL connector is positioned correctly
- There are no gaps between the MSL connector and the cover
- There is no gap between the top and bottom cover

Testing

To ensure the Multi-Measurement Module is functioning correctly, perform safety tests and a performance check. See the "Testing and Maintenance" chapter of this Service Guide.

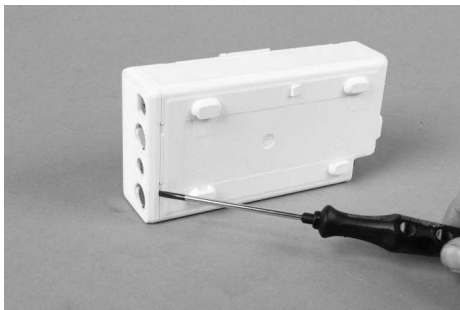
WARNING

When disassembling/assembling an MMS, an applied part leakage current test **must** be performed before it is used again for monitoring.

Measurement Extensions (Current Generation - 867039, 867040, 867041) Disassembly Procedures

Removing the Front Bezel

- 1 Position the thin-bladed screwdriver in the small slot provided for this purpose. The front bezel then clicks away from the extension. Remove the bezel.

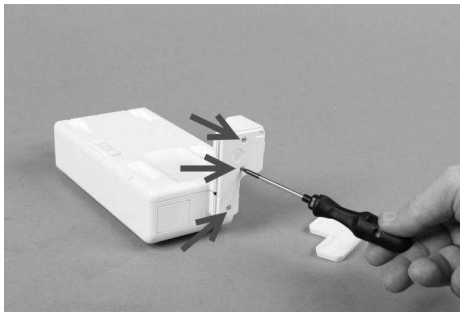


Removing the Housing Top Cover

- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Use a thin-bladed screwdriver to pry off the MSL Link Bar back cover.



- 3 Remove the three T6 screws securing the MSL Link Bar back plate.



- 4 Remove the MSL Link Bar back plate.

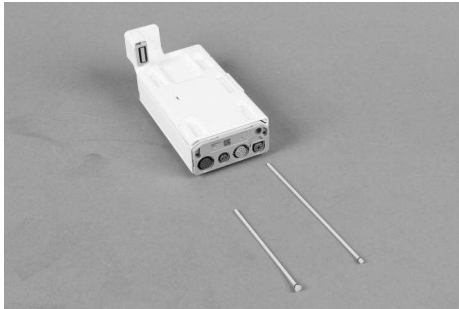


- 5 Locate the two plastic pins on the connector side and pull them out.

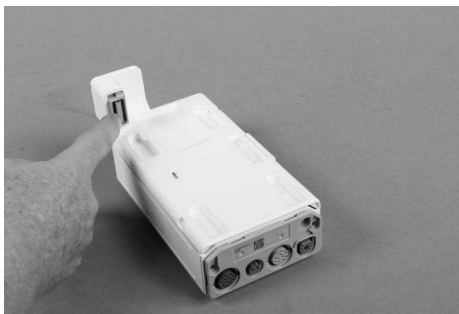


NOTE

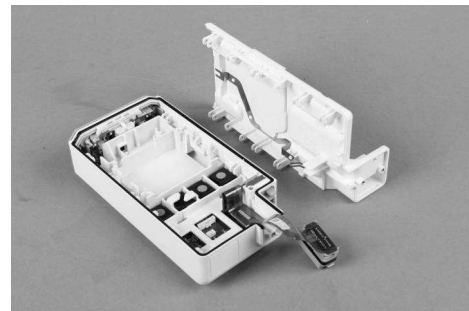
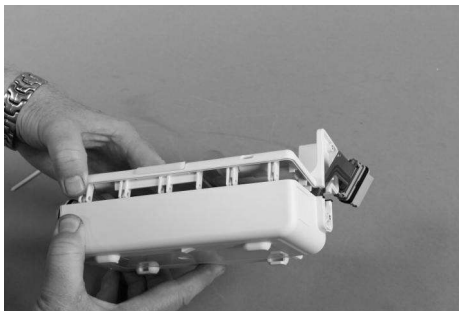
The pins have two different lengths and must be reinserted in their designated slots when reassembling the monitor.



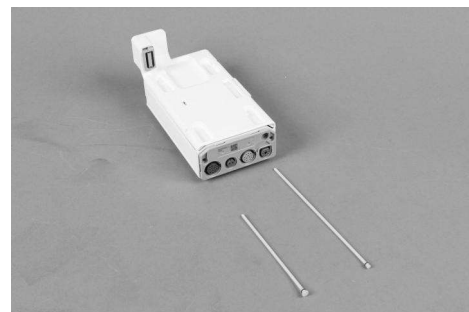
- 6 Push the MSL connector out of the MSL Link Bar housing to release it.



- 7 Carefully remove the housing top cover from the Extension by pulling the housing top cover off with a slight rotating movement.

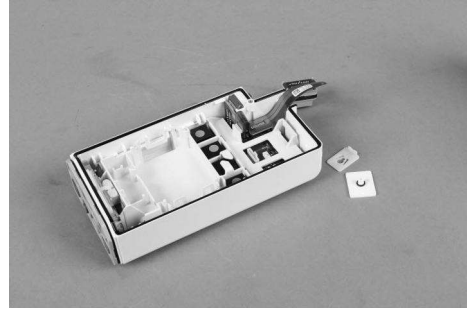


- 8 **Reassemble** the extension by performing the above steps in reverse order. Be careful not to damage the flex connector and remember that the pins have two different lengths and must be inserted into the correct slot.



Removing the Serial Number Plate

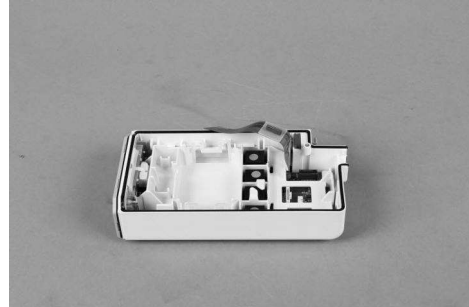
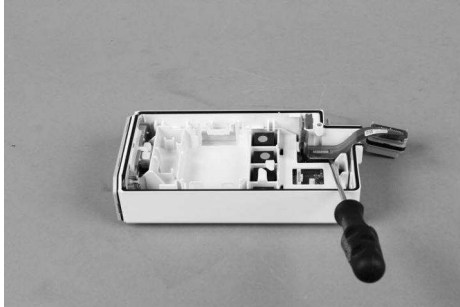
- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Lift up and remove the plastic serial number plate holder and then push out the serial number plate.



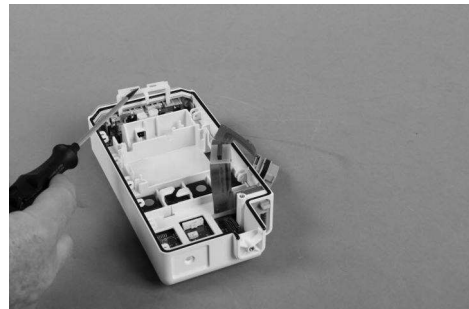
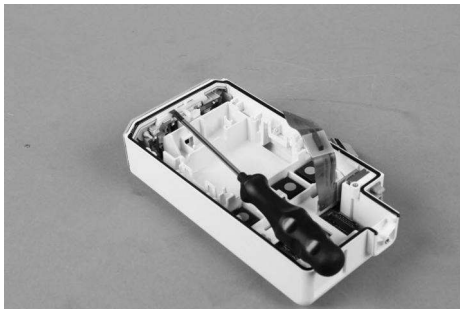
- 4 **Reassemble** the extension by performing the above steps in reverse order.

Removing the Chassis Sled

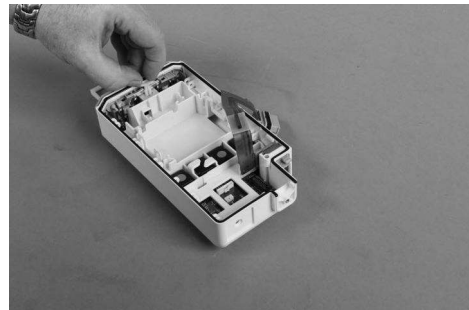
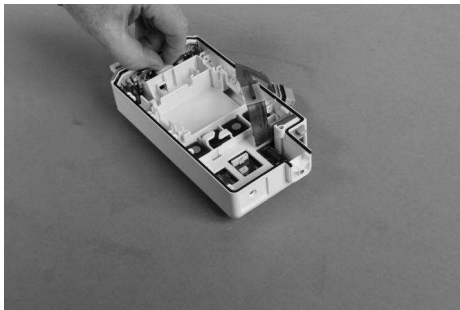
- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Disconnect the MSL Flex Connector from the Power Board.



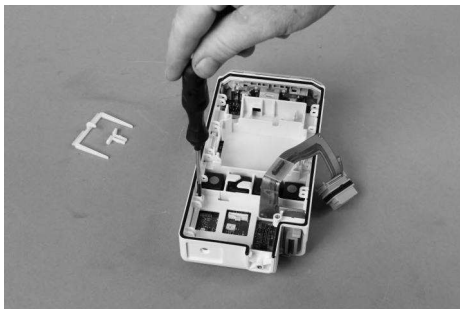
- 4 Remove the Connector Block holder by positioning a thin-bladed screwdriver in the small slot provided for this purpose and then lifting the holder upwards.



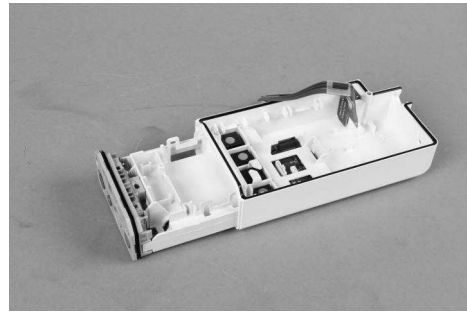
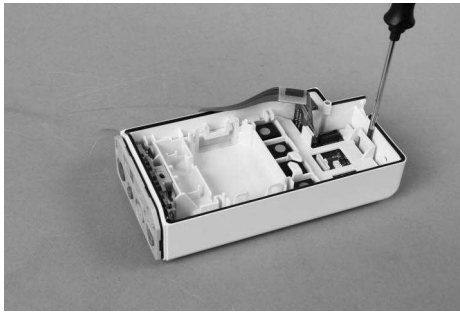
- 5 Press the ends of the plastic holder clamp together and pull out the clamp.



- 6 Remove the screw securing the Chassis Sled to the housing.



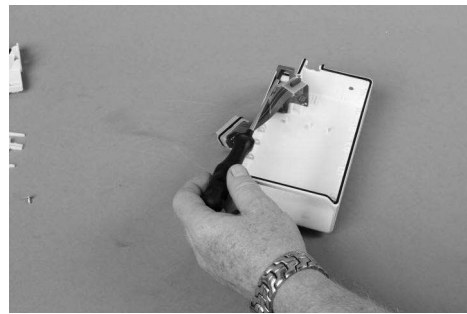
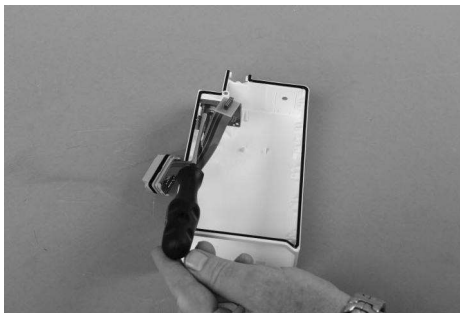
- 7 Release the Chassis Sled with a screwdriver and pull it out.



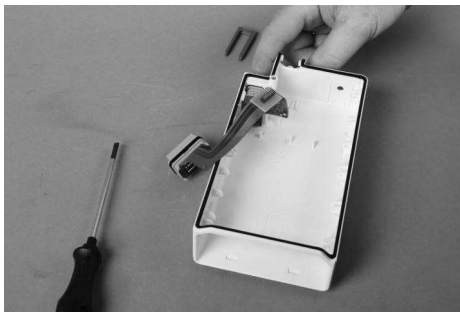
- 8 **Reassemble** the extension by performing the above steps in reverse order. Ensure the Connector Block holder, the holder clamp and the screw are reinserted into the correct positions.

Removing the MSL Board Assembly

- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Remove the Chassis Sled as described in “Removing the Chassis Sled” on page 366.
- 4 Lift up and remove the red MSL Board Holder.



- 5 Push the MSL connector inwards and remove the MSL Board Assembly.



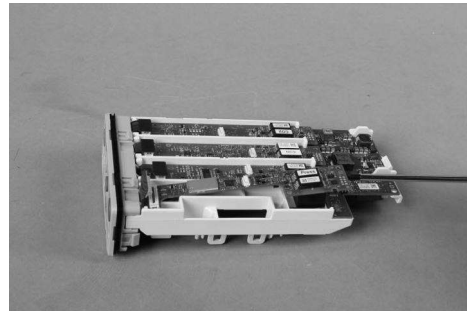
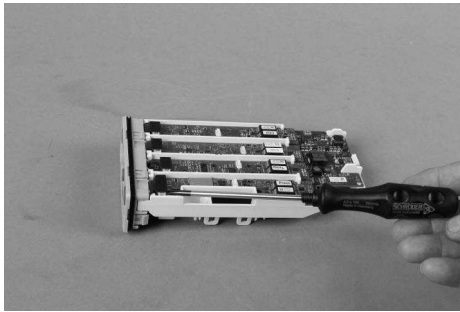
- 6 **Reassemble** the extension by performing the above steps in reverse order. Ensure the red MSL Board Holder is reinserted into the correct position. Note that it only fits when it is correctly oriented.

Removing the Measurement Boards

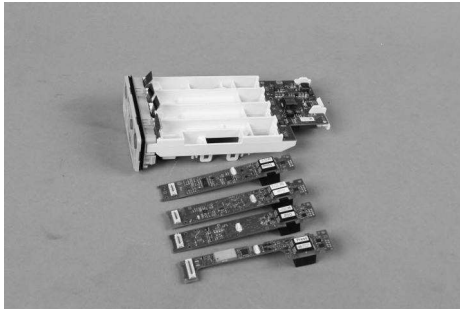
- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Remove the Chassis Sled as described in “Removing the Chassis Sled” on page 366.
- 4 Release the flex cables from the measurement board you wish to replace carefully with a screwdriver and disconnect it.

CAUTION

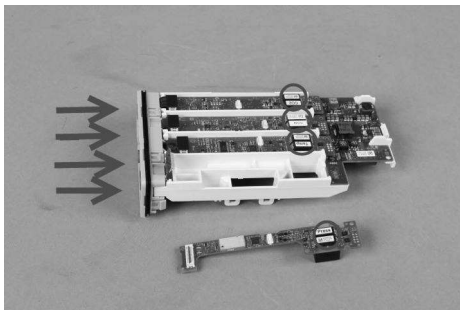
Handle these thin flex cable connectors with care, as they can easily be damaged. Do not pull on the cable itself.



- 5 Apply the same procedure to all or any other measurement board you wish to replace.

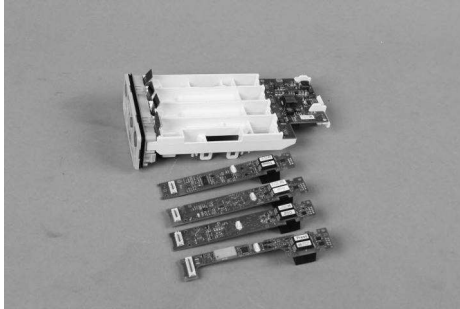


- 6 **Reassemble** the extension by performing the above steps in reverse order. Ensure each board is reinserted into its correct slot. The parameter label on each board must correspond with the parameter input connector. Be careful not to damage the connectors.

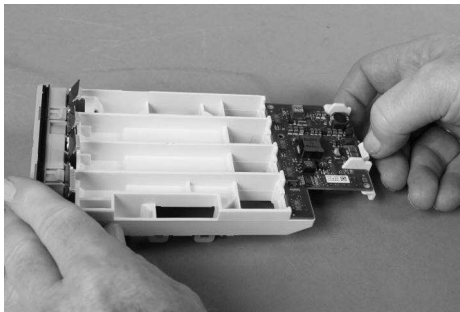


Removing the Power Board

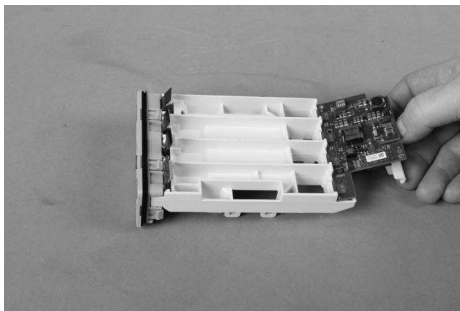
- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Remove the Chassis Sled as described in “Removing the Chassis Sled” on page 366.
- 4 Remove all Measurement Boards as described in “Removing the Measurement Boards” on page 368.



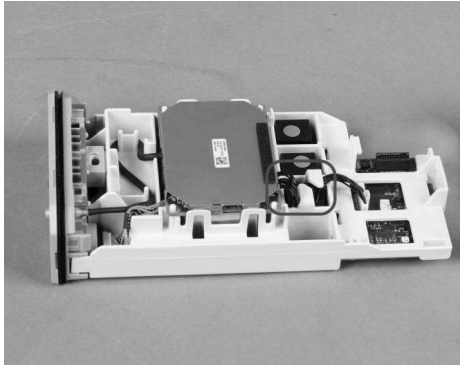
- 5 If Microstream CO₂ is installed, remove the connector to the Microstream CO₂ measurement unit as described in “Removing the Microstream CO₂ Measurement Unit” on page 372.
- 6 Push the white lever outwards to release the Power Board.



- 7 Remove the Power Board.



- 8 **Reassemble** the extension by performing the above steps in reverse order. When connecting the cable from the Microstream measurement unit to the power board, ensure the cable is correctly inserted into the guiding latches.

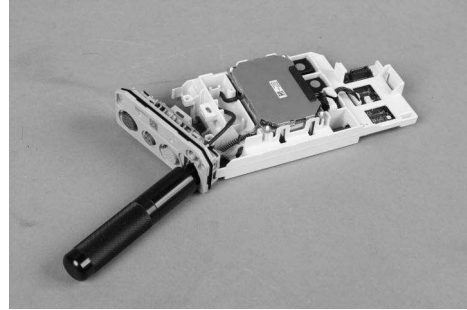
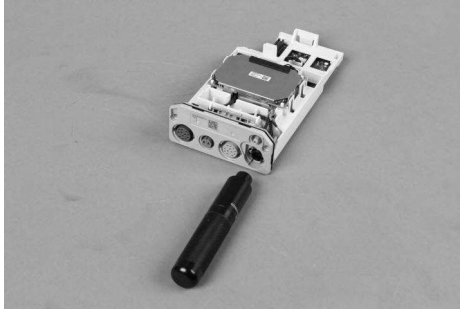


NOTE

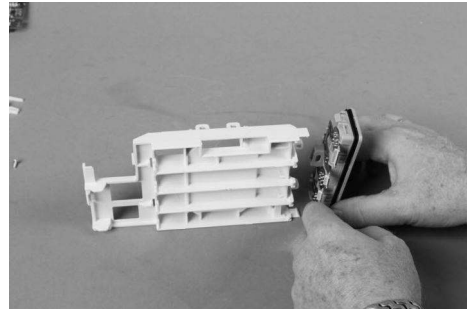
When replacing the power board, the monitor must have the (hardware) serial number and product options reloaded. Support Tool Mark2 is required to perform this task. Refer to the *Support Tool Mark2 Instructions for Use* for details.

Removing the Connector Block

- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Remove the Chassis Sled as described in “Removing the Chassis Sled” on page 366.
- 4 Remove all Measurement Boards as described in “Removing the Measurement Boards” on page 368.
- 5 If Microstream CO₂ is installed, Use the mCO₂ Luer Remover to release the Microstream CO₂ connector from the housing and remove the exhaust tubing from the connector block.



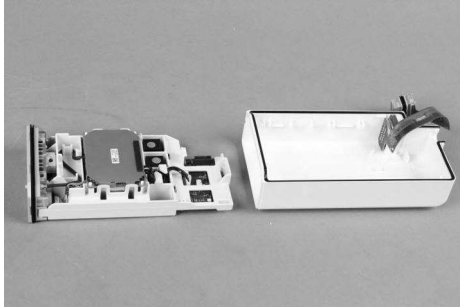
- 6 Carefully pull off the connector block.



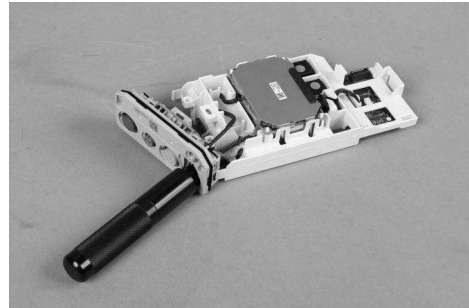
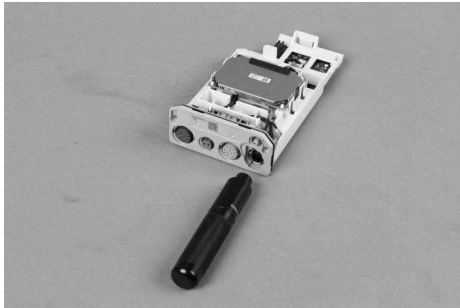
- 7 **Reassemble** the extension by performing the above steps in reverse order. For reassembly of the Microstream connector and exhaust tubing, see “Removing the Microstream CO₂ Measurement Unit” on page 372.

Removing the Microstream CO₂ Measurement Unit

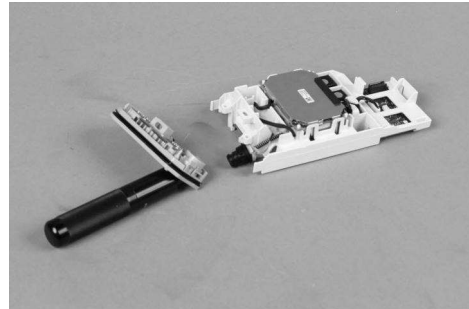
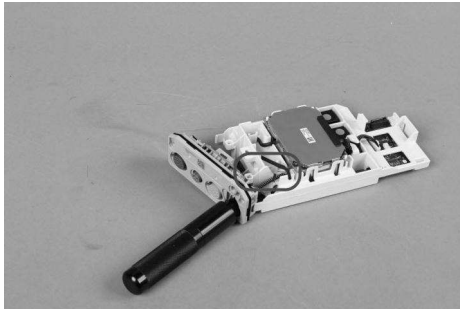
- 1 Remove the front bezel as described in “Removing the Front Bezel” on page 362.
- 2 Remove the housing top cover as described in “Removing the Housing Top Cover” on page 363.
- 3 Remove the Chassis Sled as described in “Removing the Chassis Sled” on page 366.



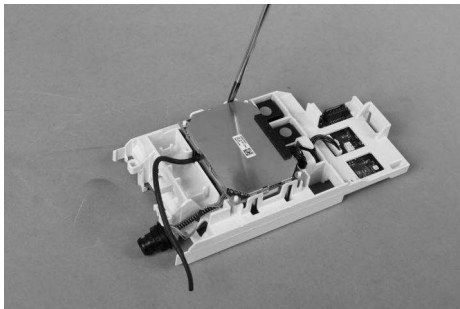
- 4 Use the Luer Remover to release the Microstream CO₂ connector from the housing.



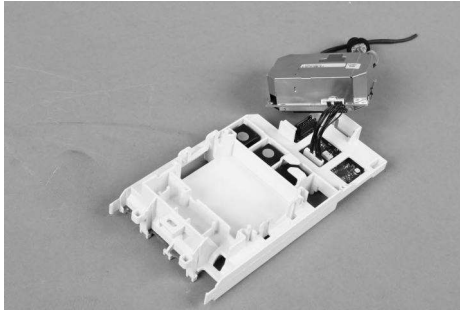
- 5 Remove the tubing from the connector block and then pull off the connector block.



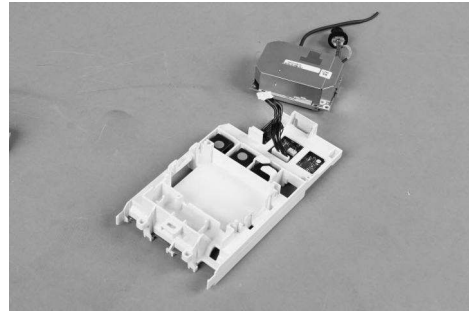
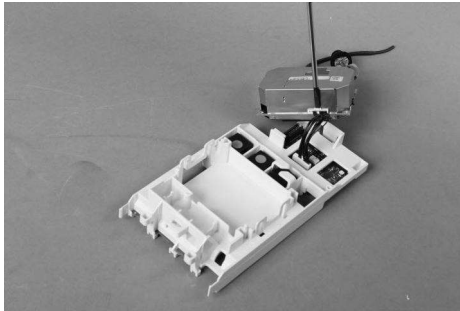
- 6 Release the Microstream CO₂ measurement unit by pushing out the latches.



- 7 Lift out the Microstream CO₂ measurement unit.

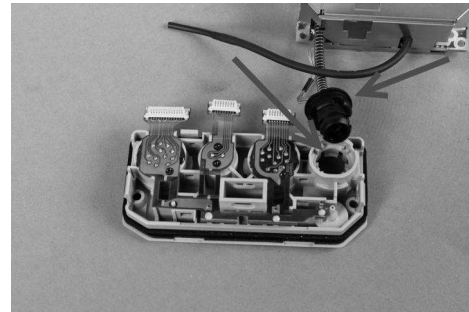
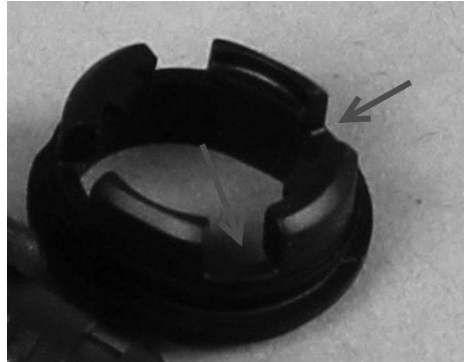


- 8 Remove the connector to the power board.

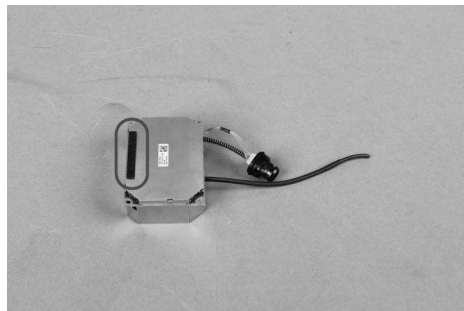


9 **Reassemble** the extension by performing the above steps in reverse order while noting the following considerations:

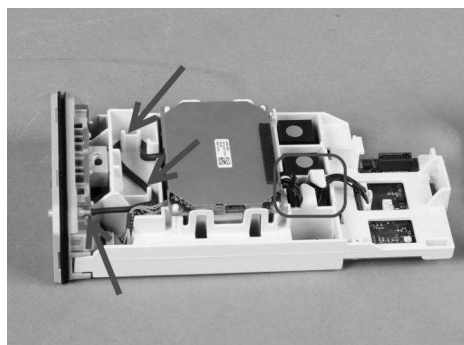
- The Luer connector of the Microstream unit is inserted into a crown-like gasket. Keep this gasket for the reassembly procedure as it is not shipped with the exchange Microstream measurement unit. When reassembling the Luer connector with the gasket, ensure the cut-outs of the gasket fit correctly into the connector block



- The Microstream measurement unit requires the placement of an adhesive foam pad on one side. This is not included with the exchange part. Before reassembling the unit, place the adhesive pad on the exchange unit, using either the foam pad from the defective part or a new one, which is set up as a support part.



- Ensure:
 - The cable from the Microstream unit to the Power Board and the exhaust tube are correctly inserted into the fixation latches.
 - The cable is not pinched or kinked.
 - The exhaust tube is tightly connected to the outlet of the connector block and is not twisted or kinked.

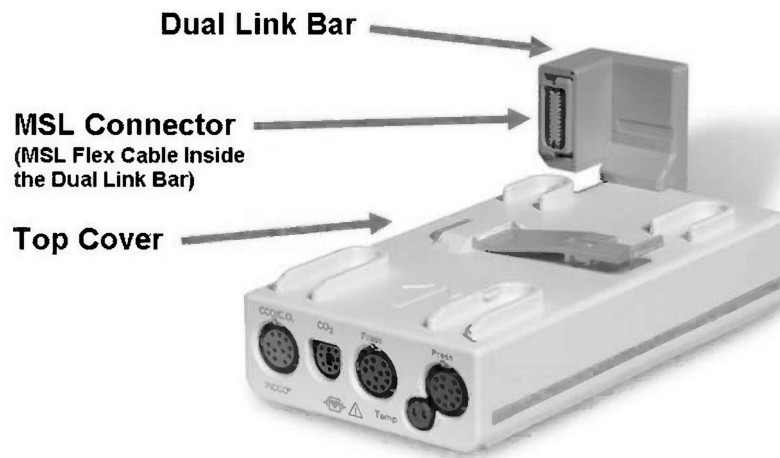


Measurement Extensions - (Previous Generation - M3012A, M3014A, M3015A/B)

This section describes the exchange procedures for:

- The Top Cover with new release mechanism
- The Dual Link Bar including the MSL Board Assembly

for all Measurement Extension (MSE) types (M3012A, M3014A, M3015A/B).



Exchange Procedures

NOTE

Follow the disassembly and reassembly steps closely.

Tools Required

A thin-bladed screwdriver and a thick-bladed screwdriver, ESD mat and wrist strap.

WARNING

- Do not open the MSE while it is connected to a monitor.
 - Parts inside the instrument may be contaminated with bacteria. Protect yourself from possible infection by wearing examination gloves during this procedure.
-

NOTE

Once you have reassembled the MSE, perform a performance check on it. See the *Testing and Maintenance* chapter of this Service Guide.