Replacing the Board Stack
IFT9701, IFT9703, and Model 5300 Transmitters

1   General guidelines

These instructions explain how to replace the circuit board stack for Micro Motion® IFT9701, IFT9703, and Model 5300 transmitters. The stack of three circuit boards should be replaced as a unit.

After the faulty board stack has been replaced, return it to Micro Motion for failure analysis. For more information about returning the board stack, see Section 9, page 6.

⚠ CAUTION

Improper replacement of the board stack could damage the transmitter.

- To prevent electrostatic discharge, wear an anti-static wrist strap while performing the board stack replacement procedure.
- To prevent damage to circuit boards, make sure they do not make contact with water or other contaminants.
- Handle the boards by their edges to avoid touching electronic components.
- If a breaker bar is used for loosening the cover of the circuit board compartment:
  - Apply steady pressure to avoid chipping the paint on the transmitter housing. Chipped paint can result in corrosion of the housing. If paint becomes chipped, repaint the housing.
  - Do not apply too much pressure. Excessive torque can damage the pipeline, transmitter, or sensor.
- For personal and system safety, follow all instructions to ensure transmitter will operate properly.

⚠ CAUTION

Board stack replacement requires complete reconfiguration of the flowmeter.

To reconfigure the flowmeter, refer to the instruction manual that was shipped with the transmitter before putting the transmitter back into service.

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| 2 | **Parts in replacement kit** | The board stack replacement kit includes:
| | | • These instructions
| | | • The 3-board stack, including attached mounting screws, in an anti-static bag
| | | • A tube of thread adhesive |

| 3 | **Required tools** | Tools required for replacing the board stack include:
| | | • 4-mm (5/32-inch) Allen wrench
| | | • Number 2 Phillips-head screwdriver |

| 4 | **Removing the original circuit board stack** | To remove the board stack: |

1. Make sure you are wearing an anti-static wrist strap.

2. Disconnect input power to the transmitter.

3. If the circuit board compartment has a lockout device, as shown in Figure 1, use a 4-mm (5/32-inch) Allen wrench to loosen the lockout screw. Lift the clamp from the slot and rotate the clamp out of the way.

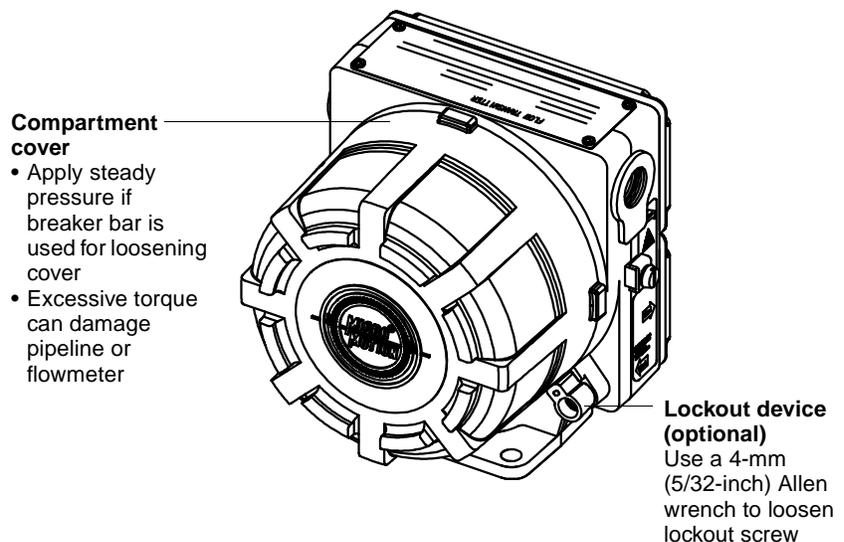4. Unscrew the circuit board compartment cover, shown in Figure 1.

⚠ WARNING

Explosion hazard

To avoid risk of explosion in an explosive atmosphere:
• Read label that points to compartment cover before accessing field wiring compartment.
• Shut off power, and wait at least 2 minutes before removing EEx d (circuit board) compartment cover

Figure 1.

Compartment cover
• Apply steady pressure if breaker bar is used for loosening cover
• Excessive torque can damage pipeline or flowmeter

Lockout device (optional)
Use a 4-mm (5/32-inch) Allen wrench to loosen lockout screw

5. Pull the cover away from the housing until the cover clears the board stack. See Figure 2.

6. Three mounting screws hold the board stack in place. Using a No. 2 Phillips-head screwdriver, loosen the mounting screws, but do not remove them from the board stack.

7. Gently pull the board stack away from the housing until the wires attached to the housing are approximately perpendicular to the boards.

Figure 2.

8. Unplug the wiring connectors as shown in Figure 3. Exercise care to avoid pulling the wires loose from the connectors.

Figure 3.
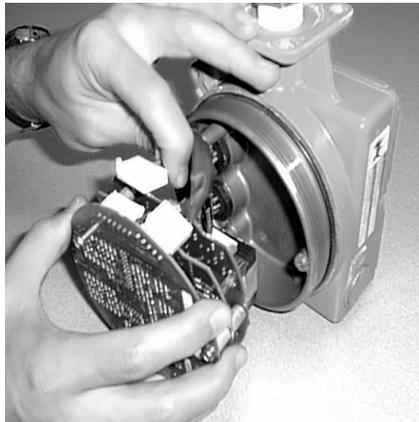
9. After removing the original board stack, inspect the circuit board compartment, wiring, connectors, and other components for loose or broken parts or other damage. Remove any loose parts. They should be returned to Micro Motion with the original board stack.

If components inside the circuit board compartment are damaged, phone the Micro Motion Customer Service Department:
• In the U.S.A., phone 1-800-522-6277, 24 hours
• From outside the U.S.A., phone 303-530-8400, 24 hours
• In Europe, phone +31 (0) 318 549 443
• In Asia, phone 65-770-8155

5   Installing the replacement circuit board stack

To install the replacement board stack:

1. Make sure you are wearing an anti-static wrist strap.

2. Check the shipping carton and anti-static bag that contain the replacement board stack to make sure the voltage rating for the board stack matches the voltage of the actual power supply.

3. Remove the replacement board stack from the carton and anti-static bag. The carton and anti-static bag will be used for returning the original board stack to Micro Motion.

4. Do not remove the retaining clips that secure the mounting screws to the replacement board stack.

5. Inspect the replacement board stack to make sure it has not been visibly damaged during shipping.

6. Apply a few drops of the supplied thread adhesive to the threads of each mounting screw.

7. Insert the connector pins on each board into the wiring connectors.

8. To prevent wiring inside the compartment from making contact with components on the innermost board, place the wires between the mounting posts and the compartment wall, as shown in Figure 4.

Figure 4.
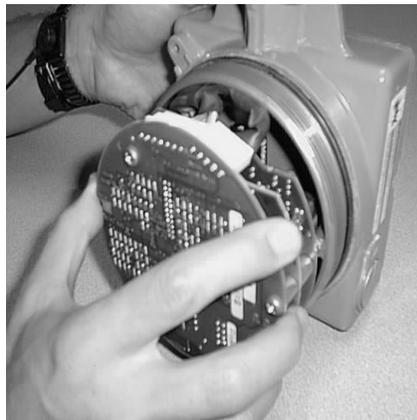
9. Insert the mounting screws into the mounting posts in the compartment. Tighten each screw one or two turns at a time so the board stack will draw up evenly to the housing. Do not apply excessive torque to the screws. Torque the screws to 14 inch-pounds.

| **6** | **Jumper settings** | For IFT9701 and IFT9703 transmitters only: unless otherwise specified on the order, jumpers on the outermost board are set so the transmitter generates downscale fault outputs and enables flowmeter configuration. |

• Jumper settings should match the settings on the original board stack.
• If jumper settings need to be changed, the procedure should be performed before the circuit board compartment cover is re-installed.
• For more information about jumper settings, refer to the instruction manual that was shipped with the transmitter.
• The Model 5300 transmitter does not have jumpers.

| **7** | **Re-installing the circuit board compartment cover** | To re-install the cover of the circuit board compartment: |

1. Screw the cover back onto the housing.

2. Hand-tighten the cover until it seats on the O-ring.

3. If the circuit board compartment has a lockout device, as shown in Figure 1, page 2, rotate the clamp into place and push it into the slot. Use a 5/32-inch (4 mm) Allen wrench to tighten the lockout screw to 5 inch-pounds (0.56 Nm) of torque.

| **8** | **Re-installing and reconfiguring the transmitter** | If the transmitter was removed from the process line to facilitate board stack replacement, re-install the transmitter according to the refer to the instruction manual that was shipped with the transmitter. |

⚠ CAUTION

Failure to reconfigure the flowmeter after board stack replacement will cause measurement error.

To reconfigure the flowmeter, refer to the transmitter instruction manual before putting the transmitter back into service.

After the transmitter has been properly re-installed, reconfigure the flowmeter according to the instructions in the instruction manual that was shipped with the transmitter.

9 Returning the original board stack to Micro Motion®

After the board stack has been replaced, follow these steps to return the original board stack to Micro Motion:

1. Obtain a Return Material Authorization (RMA) number. To obtain an RMA number, phone the Micro Motion Customer Service Department:
   • In the U.S.A., phone 1-800-522-6277, 24 hours
   • From outside the U.S.A., phone 303-530-8400, 24 hours
   • In Europe, phone +31 (0) 318 549 443
   • In Asia, phone 65-770-8155

2. Write the RMA number on the carton in which the replacement board stack was shipped.

3. Place the original board stack and any loose parts inside the anti-static bag and shipping carton.

4. Seal the box and ship the transmitter to Micro Motion for failure analysis.

Visit us on the Internet at www.micromotion.com

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