- New tamper seals
- Four screws for securing the 100G ERT Module assembly to the meter. These screws have holes drilled into the heads to accept wire tamper seals.
- Four internal tooth star washers used to attach the meter to the index mounting plate.

Materials Supplied By You

You must supply the following items to install, initialize, and check the 100G ERT Module on the meter.

- **Small and medium flat-blade or Phillips screwdrivers** Used to remove and tighten index and index-cover screws.
- **Side-cutting plier/wire snips** Used for cutting wire seals, if necessary.
- **Small putty knife** Used to remove all traces of old gaskets from the meter.
- **Meter seals, wire seals, and seal press** Used to secure the meter from tampering, if necessary.
- **11/32-inch nut driver or other blunt tool** Used to securely seat new tamper plugs over screw holes.
- **FC200SR with EndPoint-Link or EndPoint-Link Pro software** Used to program and check ERT assembly.

Replacement Screws

Replacement screws for mounting the index cover must be slotted, zinc-plated, steel machine screws. Sizing options are shown below.

For mounting 100G ERT Module assemblies on meters:

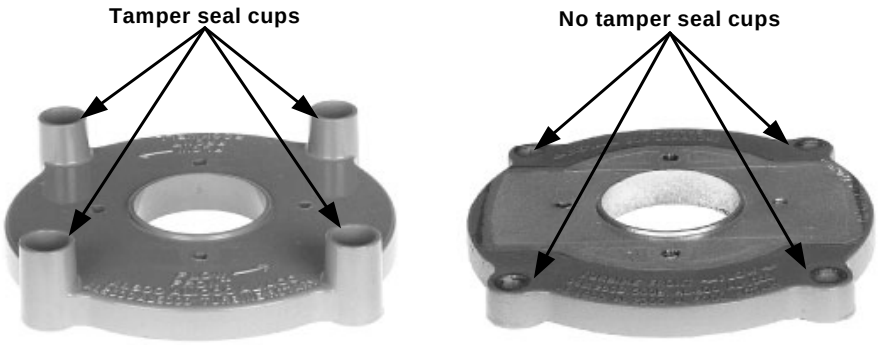
- Use 12 - 24 x 1/2-inch slotted, Fillister head machine screws, drilled to accept wire seals.

Preinstallation Preparations

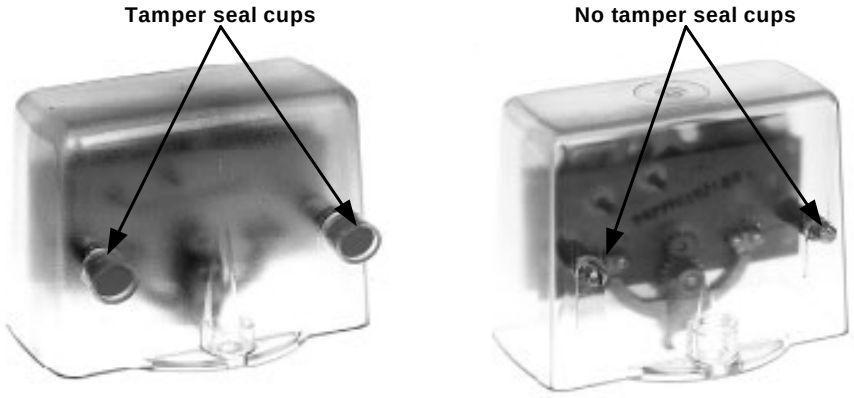
Before installing the 100G ERT Module on a meter, verify that:

- All Itron gas modules are 100G ERT Modules for your brand of gas meters.
- The model numbers of all meters on which the 100G ERT Modules will be installed are included in the Meter Compatibility List.

There are two types of index mounting plates for American Commercial meters. One type is made of plastic and has tamper seal cups. The other type is made of metal and has no tamper seal cups.



Similarly, there are index covers with tamper seal cups and ones with out tamper seal cups.



Installing the 100G ERT Module

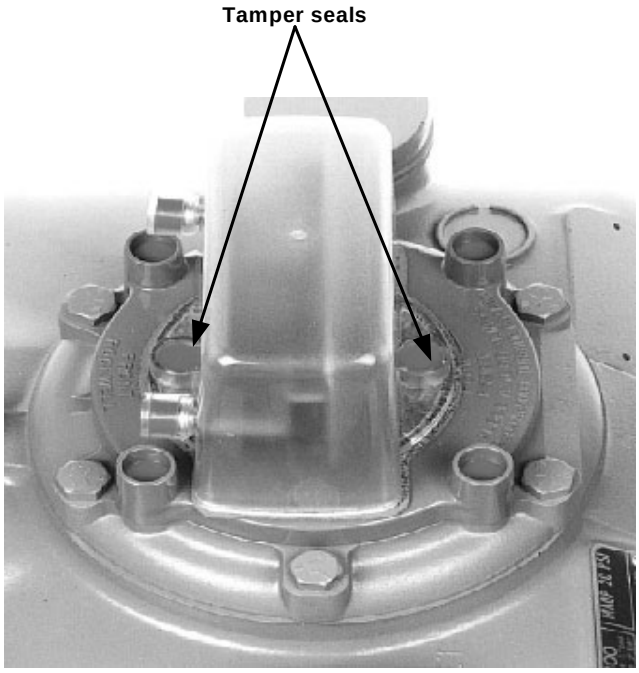
There are four major steps to installing the 100G ERT Module on a meter:

- Remove the index
- Assemble the 100G ERT Module
- Program the 100G ERT Module
- Attach the 100G ERT Module to the meter.

NOTE Properly dispose of all unused screws, old index covers, gaskets, tamper seals, and other left-over materials. Do not leave any materials on customer premises.

To remove the index

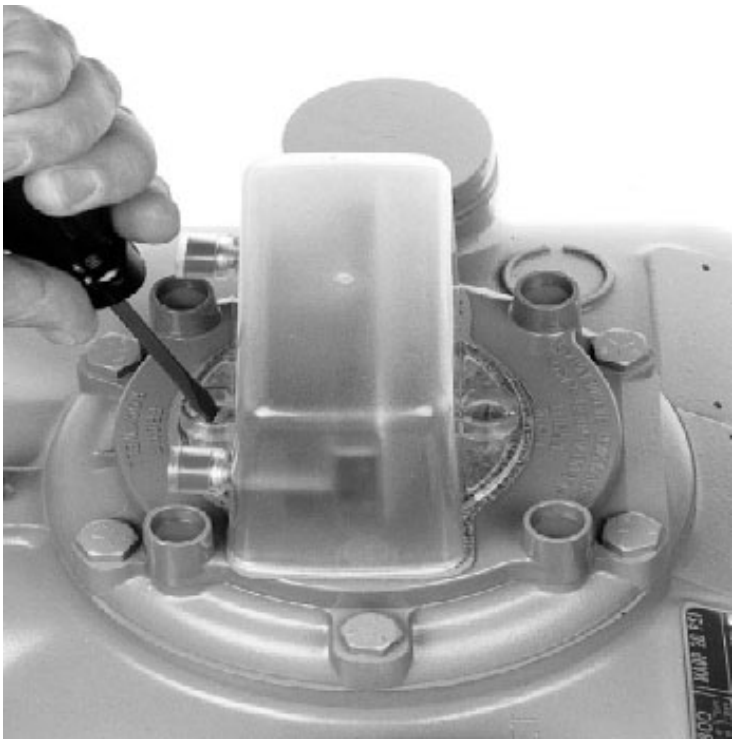
1. Remove the tamper seals or wire seals from the index cover and the mounting plate screws.



For illustrative purposes in the procedure a plastic index mounting plate with tamper seal cups was used.

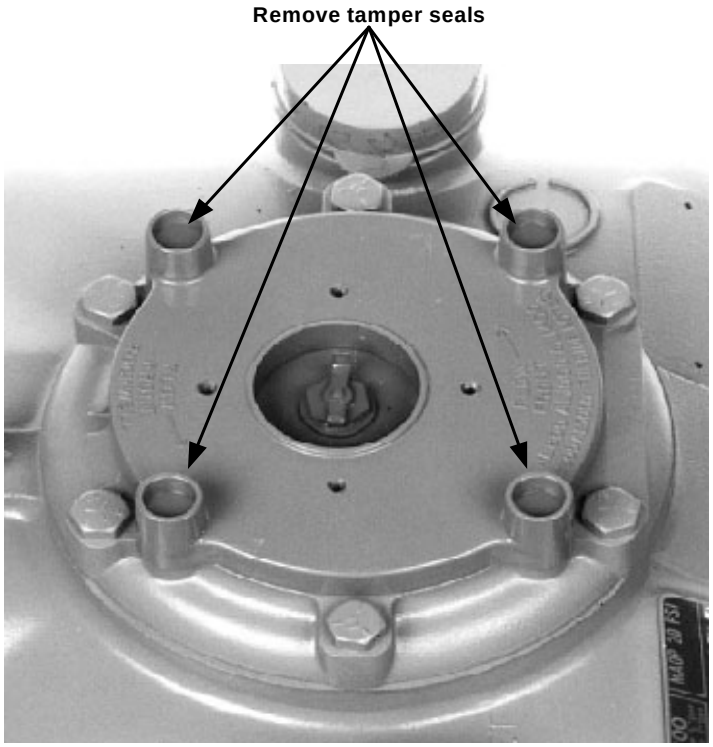
2. Remove the index cover screws from the meter. Verify that they are 1/2-inch long and are not corroded.

- If the screws are the correct length, and are not corroded, keep them for later use.
- If the screws are an incorrect length or are corroded, dispose of them properly. Use the screws listed in Replacement Screws on page 56.

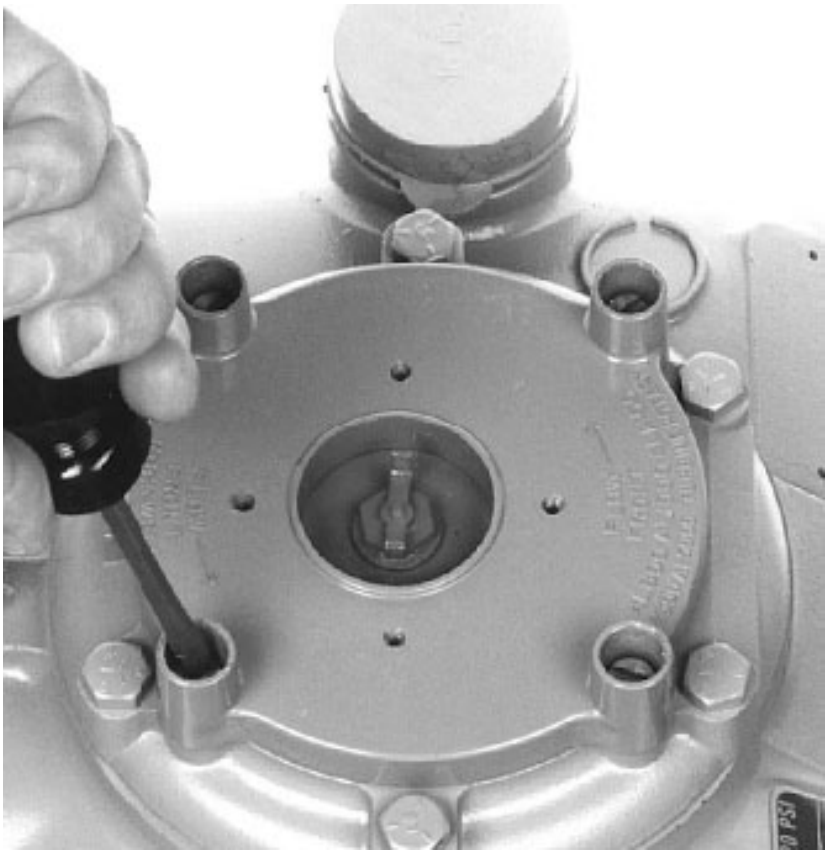


3. Remove the gasket from the index cover mounting plate and set it aside where it will not get damaged. You will use the gasket later in the installation.

4. Remove the four tamper seals from the mounting plate.



5. Remove the mounting plate screws and separate the mounting plate from the meter. Set the mounting plate aside where it will not get damaged. You will use it later in the installation.



Program the ERT

The ERT must be programmed using the FC200SR with EndPoint-Link software. See the *Endpoint-Link ERT Programming Guide (TDC-0411)* for more information.

IMPORTANT You must perform the following programming procedure for the ERT module to function properly.

When programming the ERT module, you must take note of the drive rate shown on the index of the meter. Program the meter based on the drive rate shown on the index.

To program the ERT module

1. Using the FC200SR, program the reading of the index that was on the meter into the ERT module assembly.

- For initial programming, hold the FC200SR approximately 1 foot away from the 100G.
- For reprogramming (30 days or more past initial programming), hold the FC200SR approximately 4 to 5 feet away from the 100G.

Be sure to program the 100G to the correct mode for the reading technology what will be used (for example, Fixed Network Mode, Mobile/Handheld Mode, or Hard to Read Mobile/Handheld Mode). In Endpoint-Link Pro v5.0, you will have access to the one mode that was defined by your system administrator.

During programming, the 100G ERT module is programmed to the *nearest 100 cubic feet*; the last two digits (the tens and units) are programmed as zeros (0). Once programming is complete, however, the ERT module assembly can be read to the nearest cubic foot.

2. Slowly turn the ERT module drive wriggler two turns in the direction indicated on the index drive rate. This lets you verify the ERT module is counting properly after assembly.

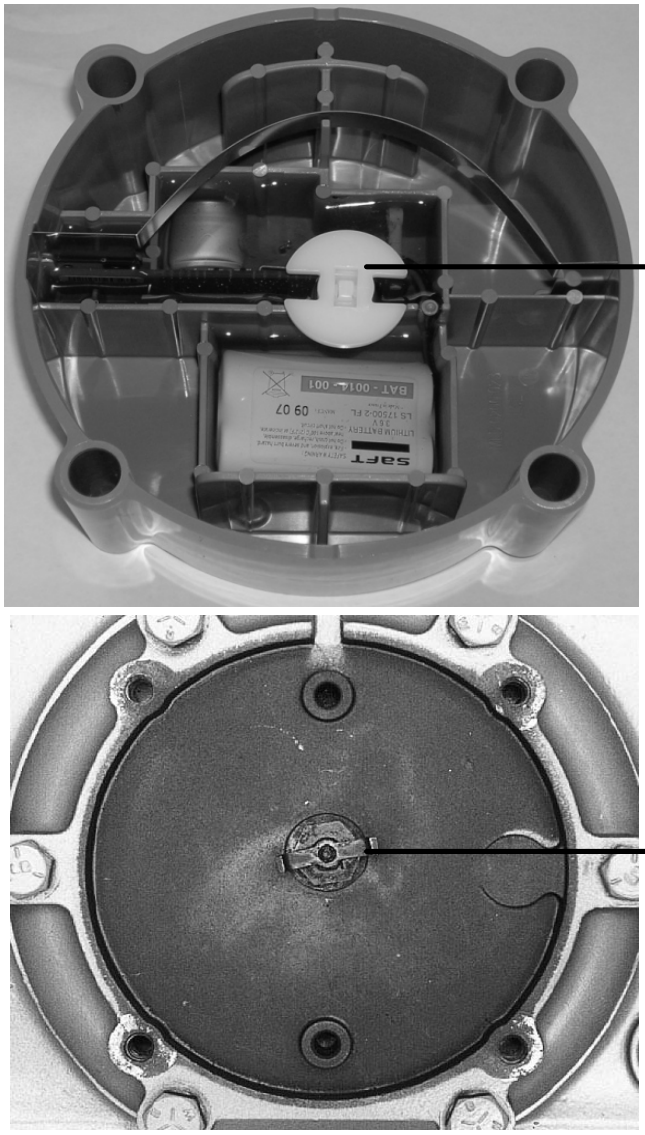
IMPORTANT Do not turn the drive wriggler faster than *one turn per second*.

3. Read the ERT module assembly using the FC200SR. Consult the *EndPoint-Link ERT Programming Guide* (*TDC-0411*) or other applicable instructions for details on how to read an ERT.
   - If this reading is higher than the one you programmed in step 1 above, the ERT module assembly is counting correctly.
   - If the ERT module assembly reading is *not* higher than what was programmed in step 1, replace the ERT module with a new one.

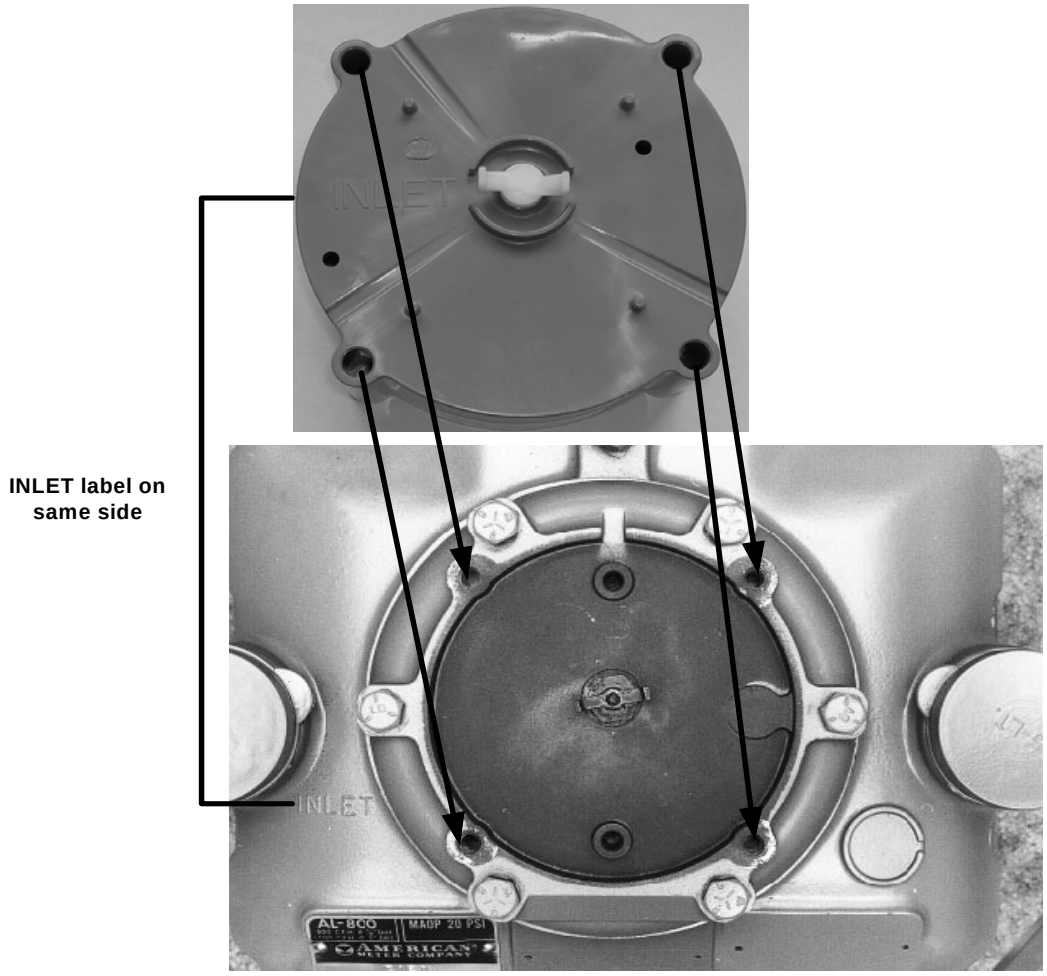
To attach the 100G ERT Module to the meter

1. Turn the ERT module upside down and turn the wriggler until its drive notches line up with drive teeth of the meter wriggler.

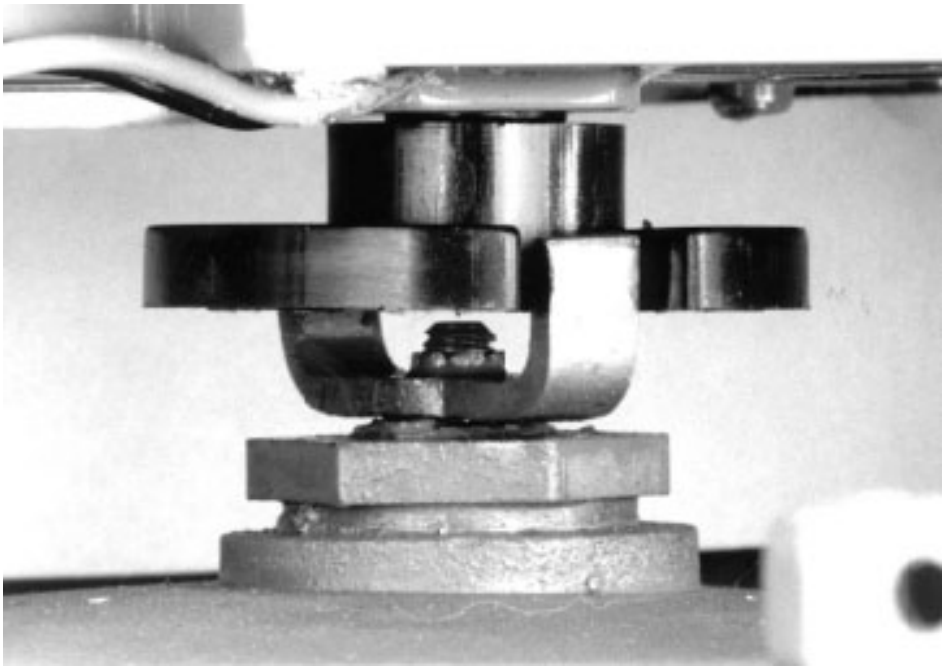
IMPORTANT The 100G ERT Module must be handled carefully so that the metal passive radiator antenna does not get damaged.


Line up notches
with teeth

2. Position the ERT module so its screw holes line up with the screw holes in the meter top then place the ERT module on the meter top. Make sure the INLET label on the ERT module is next to the INLET label on the meter case.



3. Carefully lower the 100G ERT Module onto the meter top so that its notches align with the teeth on the meter wriggler.

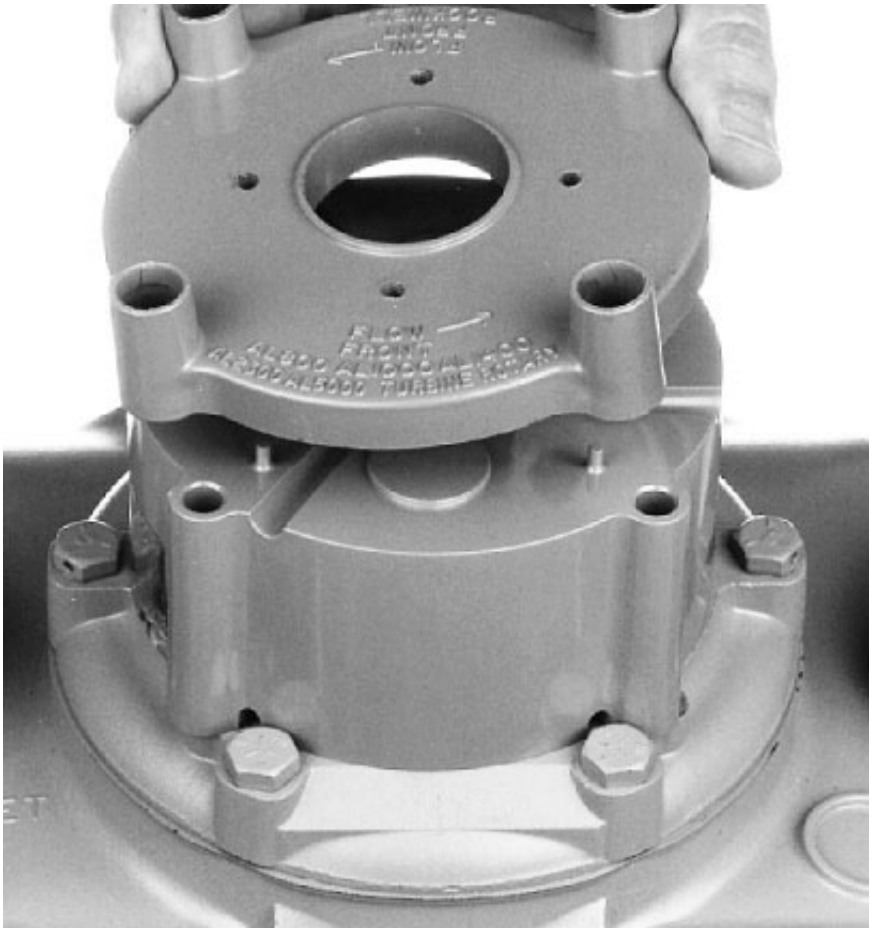


4. Make sure there is no gap between the bottom of the ERT module and the top of the meter. If there is a gap, it is because the drive notches of the ERT module's lower wriggler are not properly aligned with the meter wriggler's drive teeth.

WARNING! Do not press down on the ERT module if there is a gap. If you do, you may damage the ERT module or the meter wriggler.

5. To eliminate a gap, slowly turn the ERT module upper wriggler back and forth with your fingers until the ERT module drops down onto the top of the meter.

6. Place the index cover mounting plate on the ERT module so the words "FLOW FRONT AL800 AL1000 AL1400 AL2300 AL5000 TURBINE ROTARY" are toward the front of the meter.



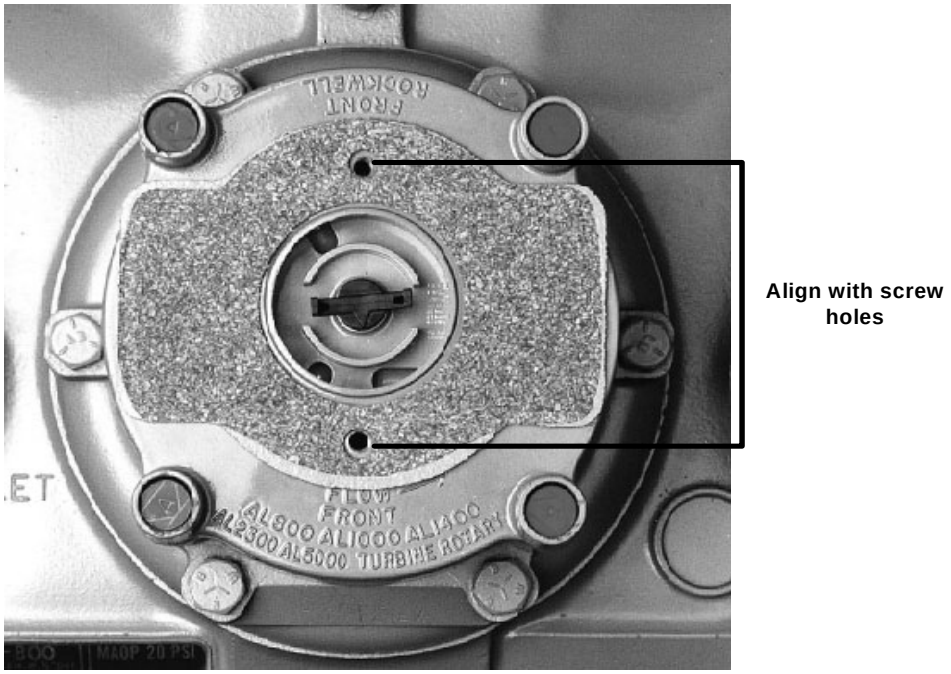
A gap at the screw locations is normal both before and after the index cover mounting-plate screws are tightened.

7. Install the four ERT module mounting screws and tighten them, in a diagonal sequence. Turn each screw 1/4 to 1/2 turn after it contacts the mounting plate. If you are using a torque wrench, tighten to 72 inch-pounds.
8. Place new tamper seals over screws and press the seals into place with an 11/32 inch nut driver, or other blunt tool.

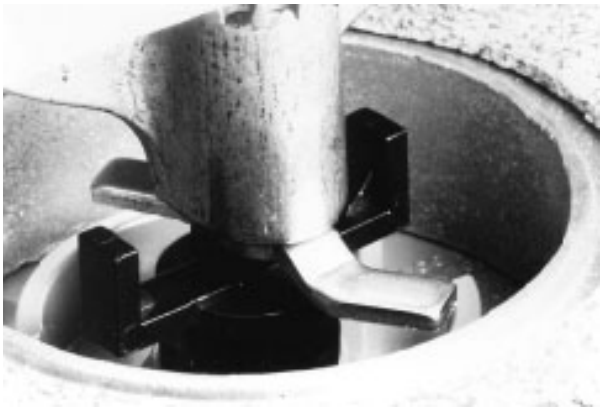
To attach the index and cover

1. Get the gasket you removed and place it on the index cover mounting plate.

2. Align the gasket screw holes with the mounting plate's screw holes.



3. Turn the index wriggler so it will go across the ERT module wriggler when you put the index onto the mounting plate.



4. Carefully lower the index and cover onto the mounting plate, facing the same way it was before you removed it.
5. Align the index cover screw holes with the screw holes in the gasket and index cover mounting plate.
6. Make sure there is no gap between the bottom of the index cover and the top of the gasket. If there is a gap, it is probably because the index wriggler is riding on top of the ERT module's upper wriggler. To eliminate a gap, repeat steps 2, 3, and 4 until the cover fits properly.

WARNING! Do not press down on the index cover if there is a gap. If you do, you can damage the index wriggler or ERT module wriggler.

7. Turn each screw 1/4 to 1/2 turn after it contacts the cover.
8. Place new tamper or wire seals over or through the screw heads.
9. Press tamper seals into place with an 11/32 nut driver, or other blunt tool, or crimp the seal if you are using wire seals.

Installing 100G ERT Module on Actaris

The information in this section guides you through the installation of the 100G ERT Module on Actaris 675A, 800A and 1000A meters. The installation requires an adapter kit (Actaris part number 80005901) which must be ordered from Actaris. The kit contains:

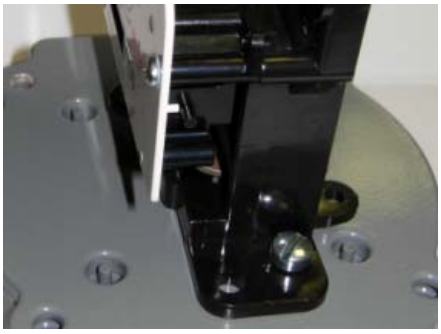
- One adapter plate
- Four ERT mounting screws
- Four screw bushings

- One extension driver

The old adapter plate will not work with the 100G ERT Module. However, the new adapter plate will work with the old and new Itron ERTs.

To mount the index assembly to the adapter plate

1. Align the index assembly so that the back outside holes on the index mounting bracket line up with the two smaller holes towards the center of the adapter plate.

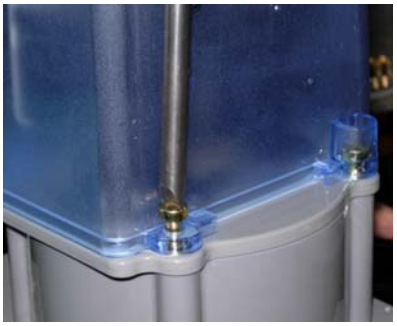


2. Place and tighten the two bracket screws. When assembled, the index assembly should look centered on the adapter plate.
3. Turn the 100G ERT Module upside down in your hand.
4. Use the other hand to place the four screw bushings into the 100G ERT Module's screw holes. If the screw bushings become dislodged before final assembly, replace them and repeat process.
5. Turn the 100G ERT Module right side up.
6. Place the extension driver onto the 100G ERT Module wriggler.
7. Turn the meter's IDM outer drive dog so it is facing the same direction as the 100G ERT Module wriggler.
8. Carefully place the 100G ERT Module onto the meter. Make sure the meter's IDM outer drive dog is still lined up with the 100G ERT Module wriggler. The INLET label on the meter top must be beside the INLET label on the 100G ERT Module.
9. Gently place the adapter plate and index assembly onto the 100G ERT Module attached to the meter.

10. Turn the index drive dog so it fits into the extension driver. The hole in the center of the adapter plate should fit comfortably around the extension driver and the rivets in the 100G ERT Module should fit into the holes in the adapter plate.

11. Place the index cover over the index assembly. The transparent section of the cover needs to be on the same side as the index dials so the meter readers can read the dials clearly.

12. Align the four holes in the index cover with the holes located in each corner of the adapter plate and install the cover screws.



13. Turn each screw 1/4 to 1/2 turn after it contacts the cover.

14. Place the tamper seals into the front right and back left of the screw holes of the index cover.

15. Install tamper seals over the screws and press them into place with an 11/32 nut driver, or some other blunt tool. The tamper seals should not protrude above the index cover screw holes.

CHAPTER 6

National/Lancaster Meter Installation

The 100G ERT Module can be installed on 175-250 CFH National/Lancaster gas meters.

Index Compatibility

100G ERT Modules for National/Lancaster meters can only be used with dial type indexes from National or Actaris/Schlumberger.

Installation Prerequisites

The following items are required to install the Itron 100G ERT Module.

Materials Supplied By Itron

The following items are supplied by Itron:

- 100G ERT Modules
- New tamper seals
- Two screws for attaching the 100G ERT Module to the meter.

Materials Supplied By You

You must supply the following items to install, initialize, and check the 100G ERT Module on the meter.

- **Small and medium flat-blade or Phillips screwdrivers** Used to remove and tighten index and index-cover screws.
- **Side-cutting plier/wire snips** Used for cutting wire seals, if necessary.
- **Small putty knife** Used to remove all traces of old gaskets from the meter.
- **Meter seals, wire seals, and seal press** Used to secure the meter from tampering, if necessary.
- **11/32-inch nut driver or other blunt tool** Used to securely seat new tamper plugs over screw holes.
- **FC200SR with EndPoint-Link or EndPoint-Link Pro software** Used to program and check ERT assembly.

Replacement Screws

Replacement screws used in this procedure are shown below.

For mounting 100G ERT Module assemblies on meters:

- Use 10-24 x 3/4-inch flat head, stainless steel, Phillips head screws (Itron part number SCR-0014-004).

For mounting indexes on 100G ERT Module backplates by their legs:

- Use 6-19 x 3/8-inch thread forming, zinc-plated, Phillips head screws (Itron part number SCR-0015-001).

For mounting indexes through 100G ERT Module backplate mounting holes:

- Use 6-19 x 3/8-inch thread forming, zinc-plated, Phillips filister head screws (Itron part number SCR-0037-001).

Preinstallation Preparations

Before installing the 100G ERT Module on a meter, verify that:

- All Itron gas modules are 100G ERT Modules for your brand of gas meters.
- The model numbers of all meters on which the 100G ERT Modules will be installed are included in the Meter Compatibility List.

Installing the 100G ERT Module

There are four major steps to installing the 100G ERT Module on a meter:

- Remove the index
- Assemble the 100G ERT Module
- Program the 100G ERT Module
- Attach the 100G ERT Module to the meter.

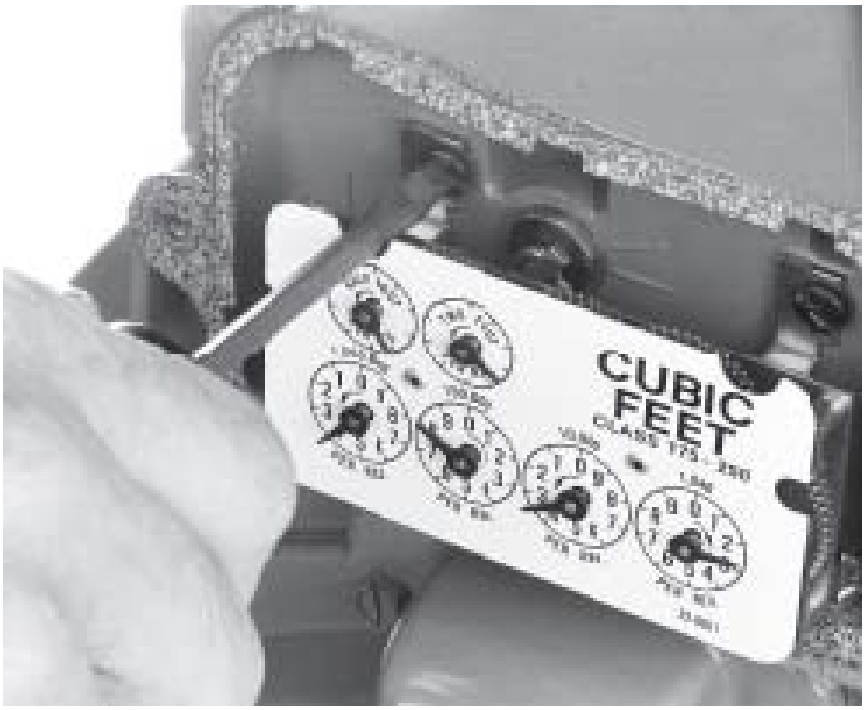
NOTE Properly dispose of all unused screws, old index covers, gaskets, tamper seals, and other left-over materials. Do not leave any materials on customer premises.

To remove the index

1. Remove any tamper seals from the meter.

2. Remove the two screws and dispose of them properly.

3. Remove the index cover from the meter.
4. Remove the index mounting screws and the index from the meter.



5. Remove all traces of the old index cover gasket from the meter. The new ERT module has its own gasket.

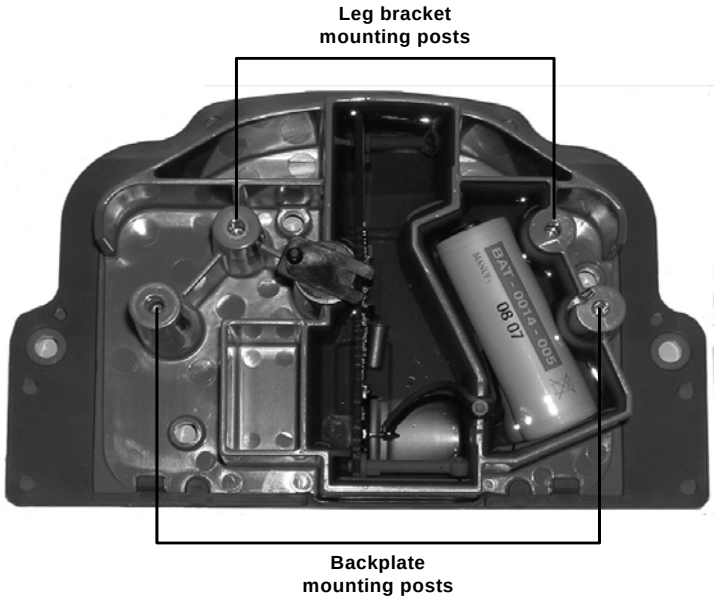
6. Make sure the meter drive dog sticks straight out from the meter.

7. If the index has mounting legs, make sure each leg is parallel to the back of the index, as shown, to provide for proper alignment between ERT and meter.

8. Make sure the index wriggler is parallel to the surface of the index.

Indexes that do not have mounting legs must be attached to the ERT module's index backplate mounting posts.

Indexes that have mounting legs only, must be attached to the ERT modules' index bracket mounting posts.



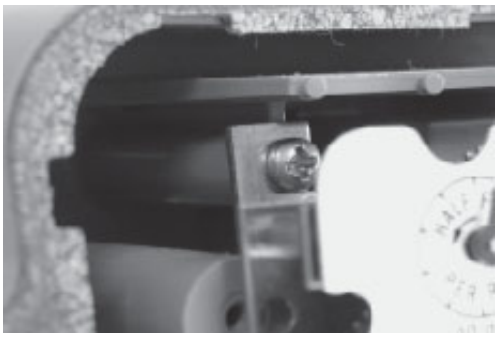
Indexes that have mounting legs as well as holes for mounting without legs can be mounted by using SCR-0015-001 to attach the mounting legs or by removing the two mounting legs and using SCR-0037-001 to attach the index to the ERT modules' index backplate mounting posts.

To attach the index to the 100G ERT Module using the mounting legs

1. Get two new screws (part number SCR-0015-001) for attaching indexes to ERT modules by their legs.

2. Install an index mounting screw in the left mounting hole and tighten the screw just enough to hold it in place.

3. Place the index's mounting leg screw slot under the screw head and tighten the screw enough to hold the index leg in place, but loose enough so you can pivot the index around the screws.



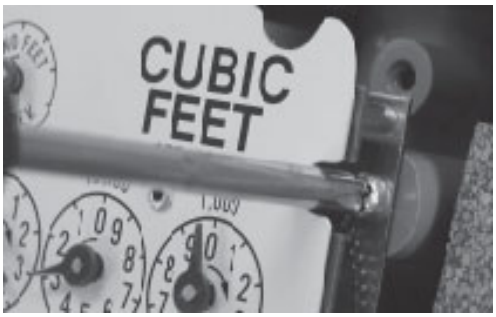
4. Make sure the index's right mounting leg screw slot is positioned over the ERT module's right index mounting leg screw hole.

5. Turn each screw 1/4 to 1/2 turn after it contacts the mounting leg.

To attach the index to 100G ERT Module without mounting legs

1. Get two screws (part number SCR-0037-001) for attaching indexes to ERT modules by their backplate mounting screw holes.

2. Put the index mounting screws through the mounting screw hole in the ERT index backplate mounting post.



3. Turn each screw 1/4 to 1/2 turn after it contacts the index backplate.

Program the ERT

The ERT must be programmed using the FC200SR with EndPoint-Link software. See the *Endpoint-Link ERT Programming Guide (TDC-0411)* for more information.

IMPORTANT You must perform the following programming procedure for the ERT module to function properly.

When programming the ERT module, you must take note of the drive rate shown on the index of the meter. Program the meter based on the drive rate shown on the index.

To program the ERT module

1. Using the FC200SR, program the reading of the index that was on the meter into the ERT module assembly.

   - For initial programming, hold the FC200SR approximately 1 foot away from the 100G.
   - For reprogramming (30 days or more past initial programming), hold the FC200SR approximately 4 to 5 feet away from the 100G.

   Be sure to program the 100G to the correct mode for the reading technology what will be used (for example, Fixed Network Mode, Mobile/Handheld Mode, or Hard to Read Mobile/Handheld Mode). In Endpoint-Link Pro v5.0, you will have access to the one mode that was defined by your system administrator.

   During programming, the 100G ERT module is programmed to the *nearest 100 cubic feet*; the last two digits (the tens and units) are programmed as zeros (0). Once programming is complete, however, the ERT module assembly can be read to the nearest cubic foot.

2. Slowly turn the ERT module drive wriggler two turns in the direction indicated on the index drive rate. This lets you verify the ERT module is counting properly after assembly.

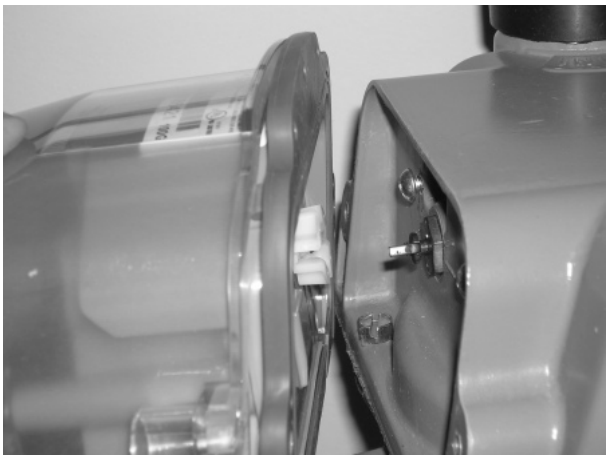
IMPORTANT Do not turn the drive wriggler faster than *one turn per second*.

3. Read the ERT module assembly using the FC200SR. Consult the *EndPoint-Link ERT Programming Guide* (*TDC-0411*) or other applicable instructions for details on how to read an ERT.
   - If this reading is higher than the one you programmed in step 1 above, the ERT module assembly is counting correctly.
   - If the ERT module assembly reading is *not* higher than what was programmed in step 1, replace the ERT module with a new one.

To attach the 100G ERT Module to the meter

1. Get two new ERT module mounting screws (part number SCR-0014-004).

2. Carefully place the ERT module assembly on the meter. Make sure the meter drive dog aligns with the white wriggler drive slot.



3. Make sure there is no gap between the 100G ERT Module and the meter.

   If there is a gap, the end of the meter drive dog is probably riding on the face of the ERT module wriggler drive post instead of in its drive slot. To eliminate the gap: Remove the ERT module. Repeat step 2 to align the ERT module drive dog.

4. Turn each screw 1/4 to 1/2 turn after it contacts the cover.

5. Install tamper seals over the screws and press them into place with an 11/32 nut driver, or some other blunt tool.