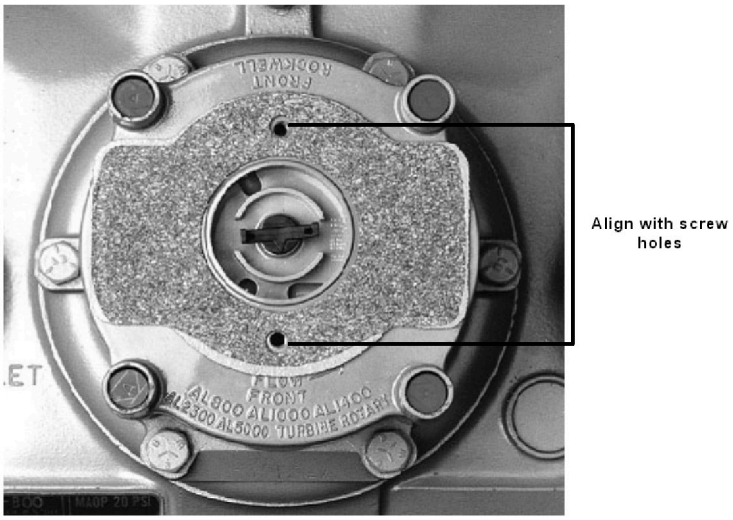
A gap at the screw locations is normal both before and after the index cover mounting-plate screws are tightened.

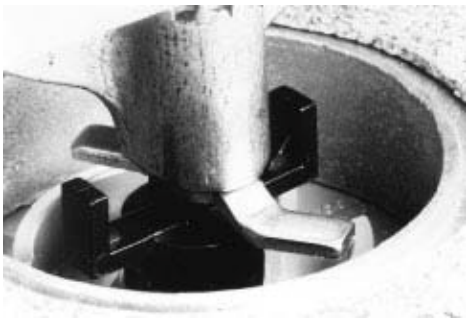
7. Install the four ERT module mounting screws and tighten them, in a diagonal sequence. Turn each screw 1/4 to 1/2 turn after it contacts the mounting plate. If you are using a torque wrench, tighten to 72 inch-pounds.
8. Place new tamper seals over screws and press the seals into place with an 11/32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

To attach the index and cover

1. Locate the gasket previously 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. Place the index facing the same direction 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. Verify there is no gap between the bottom of the index cover and the top of the gasket. If there is a gap, it may be 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.

100G ERT Module installation on the American Commercial Meter is complete.

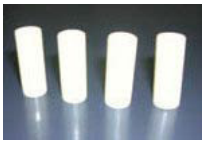
Installing 100G ERT Module on Actaris

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

- One adapter plate

- Four ERT mounting screws

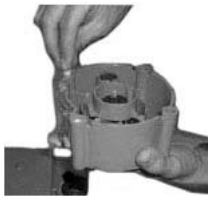
- Four screw bushings



- One extension driver

To mount the index assembly to the adapter plate

1. Turn the 100G ERT Module upside down in your hand.
2. 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.



3. Turn the 100G ERT Module right side up and place it on the top of the commercial meter.

4. Verify both the 100G ERT Module and meter drive dogs are lined correctly to eliminate binding.
5. INLET lettering must be on the inlet side of the meter.
6. Place the adapter plate on top of the 100G ERT Module. The two small screw holes in the adaptor plate must face the back of the meter.

7. Place the extension driver onto the 100G ERT Module wriggler.

8. Gently place the index assembly onto the adapter plate and install the two index mounting screws.

9. Place the index cover over the index assembly. The transparent section of the cover must be on the same side as the index dials so the meter dials can be easily read.

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

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

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

13. 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.

14. Complete necessary paperwork and properly dispose excess installation and scrap materials.

100G ERT Module installation on the Actaris Commercial Meter is complete.

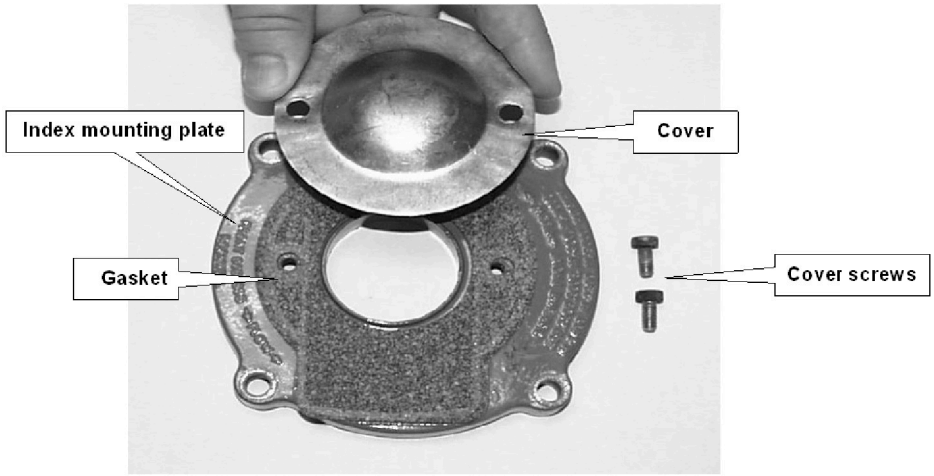
Installing 100G ERT Module on ROOTS Rotary

The information in this section guides you through the installation of the 100G ERT Module Commercial on ROOTS rotary meters. Installation requires the following items:

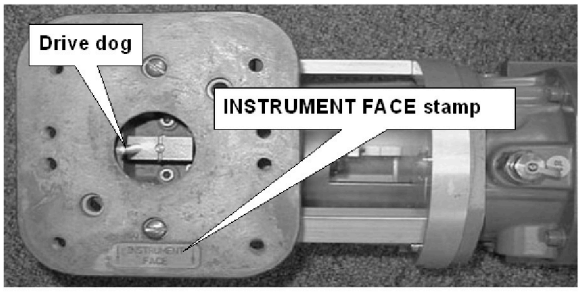
- One index mounting plate
- Gasket and drive cover kit
- 100G ERT Module
- A flat screwdriver

To attach the Commercial 100G ERT Module to the meter

1. Install the gasket and cover on the index mounting plate (as shown) using the two screws included with the kit.

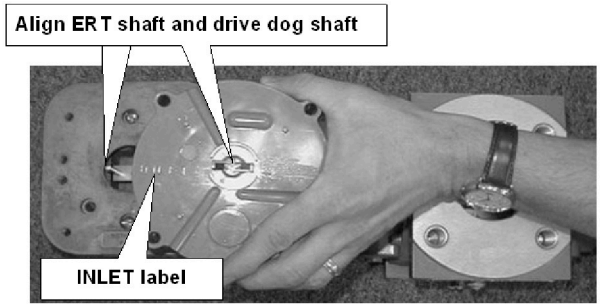


2. Locate the INSTRUMENT FACE stamp and position the meter with the drive dog aligned (as shown).



IMPORTANT Handle the 100G ERT Module carefully so the metal passive radiator antenna is not damaged.

3. Locate the INLET label and position the ERT module as shown. Verify the two shafts are aligned.



4. Verify the shafts are engaged by turning the ERT shaft. You should feel resistance.
5. Place the index mounting plate on the module and install the four bolts. Do not disturb the shaft alignment.

6. 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.

NOTE To mount an index and index cover on the rotary meter, remove the domed cover and reference "*To attach the index and cover*" in the previous section.

CHAPTER 7

Sensus Commercial Meter Installation

This chapter shows you how to install a 100G ERT Module on a Sensus Commercial meter.

Before installing the 100G ERT Module, verify you have:

- A compatible meter shown in the Meter Compatibility List.
- A compatible index. Itron 100G ERT Module can be used with standard dial and direct read (odometer) indexes.
- The list of materials defined under Installation Prerequisites in this chapter.

IMPORTANT Handle the 100G ERT Module carefully so the metal passive radiator antenna is not damaged.

Sensus meters are also known as: **Invensys, Equimeter,** and **Rockwell**. For consistency, these meter types will be referred to as Sensus meters for this installation procedure.

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 Module
- New tamper seals
- Four screws for securing the 100G ERT Module assembly to the meter. These screws may have holes drilled into the heads to accept wire tamper seals.
- Two internal-tooth star washers for the mounting screws when using metal index plates.
- Two cork washers and two flat washers for the mounting screws when using plastic index covers.

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.
- **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

Use 12 - 24 x 1/2-inch slotted, Fillister head machine screws (drilled to accept wire seals) for replacement screws to mount the index cover.

Pre-installation Preparations

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

- All Itron 100G ERT Module gas modules are compatible with your brand of gas meter. See the Meter Compatibility List for compatible meter model numbers for the 100G ERT Module.

Installing the 100G ERT Module

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

- Remove the index
- 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.

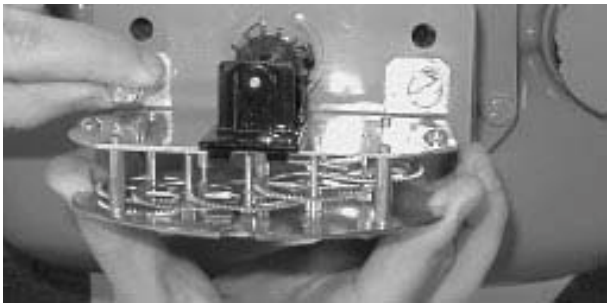
To remove the index

1. Note the orientation of the index. Remove the tamper seals or wire seals from the index cover.

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

2. Remove the index cover screws from the meter. Verify screws are 1/2-inch long and not corroded.
    - If the screws are the correct length and 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.

3. Remove the index mounting screws and discard them.



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.

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 that 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.

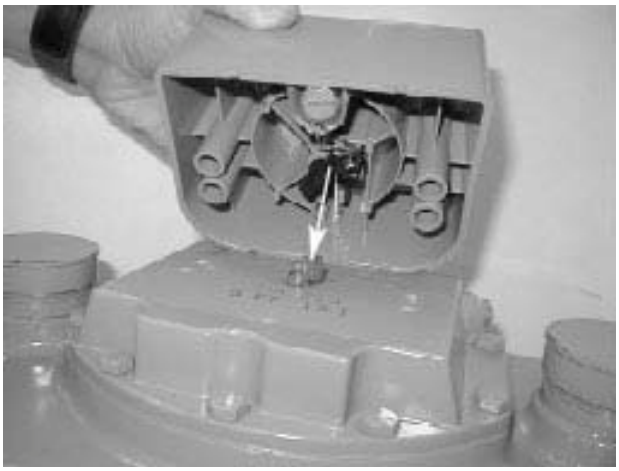
   During programming, the 100G ERT module is programmed to the *nearest 100 cubic feet*; the last two digits (the tens and units) are programmed as zeros (0). Once programming is complete, however, the ERT module assembly can be read to the nearest cubic foot.
2. Slowly turn the ERT module drive wriggler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

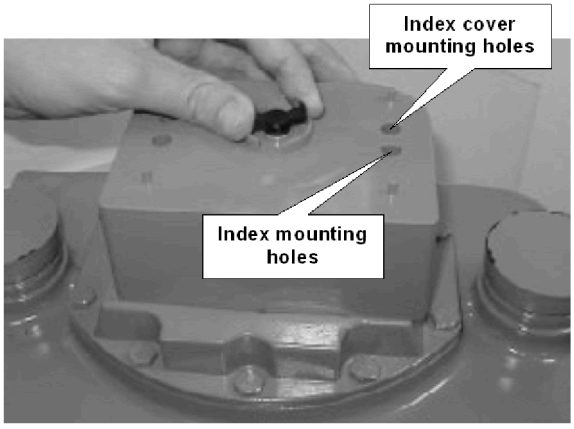
3. Read the ERT module assembly using the FC200SR. Consult the *EndPoint-Link ERT Programming Guide* (*TDC-0411*) or other applicable instructions for details on how to read an ERT.
    - If this reading is higher than the one you programmed in step 1 above, the ERT module assembly is counting correctly.
    - 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. Carefully lower the 100G ERT Module onto the meter top so the wriggler aligns with the meter drive dog.



2. Verify there is no gap between the bottom of the ERT module and the top of the meter. If there is a gap, it may be the drive notches of the ERT module's lower wriggler are not properly aligned with the meter wriggler's drive teeth.
3. Position the ERT module so its screw holes line up with the screw holes in the top of the meter.



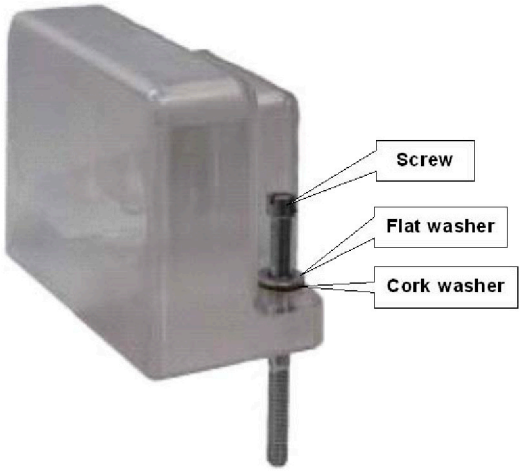
4. Rotate the 100G ERT Module drive to make sure it engages with the meter drive.

5. Place the index on top of the 100G ERT Module and line up the mounting holes. Install the ERT module mounting screws (Itron part number SCR-0062-003).

6. 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.

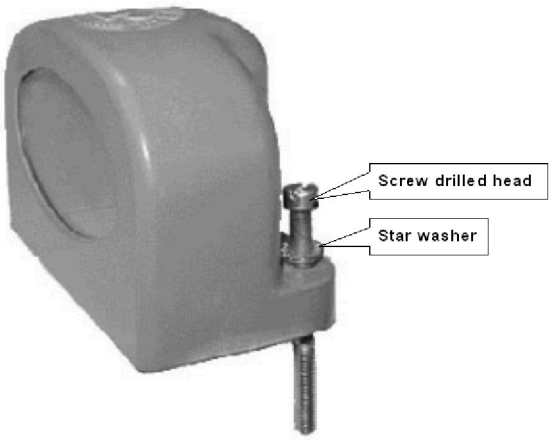
7. Install the index cover:

   - For plastic covers with a flat surface for screw holes: use screws (Itron part number SCR-0062-002), flat washers (Itron part number WSH-0020-005), and cork washers (Itron part number WSH-0032-001).



NOTE Some plastic covers have a raised boss area for screw placement. In this case, use screws and red tamper seals. Press the tamper seals into place with an 11/32 nut driver or other blunt tool.

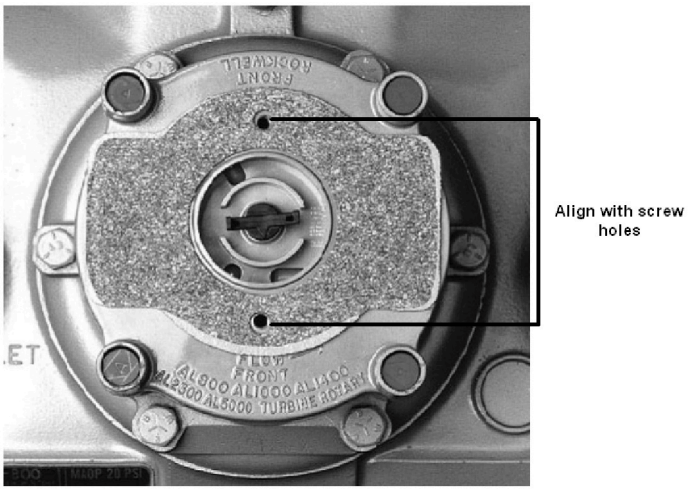
- For metal index covers: use screws with the heads drilled to accept wire seals and star washers (Itron part number WSH-0003-006).



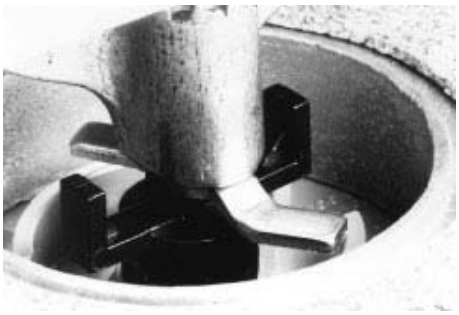
8. Place new tamper seals
    - For plastic covers over screws: Press the seals into place with an 11/32 inch nut driver or other blunt tool. For metal covers: pass wires through the holes in the screw heads and crimp the seal.

To attach the index and cover

1. Locate the gasket previously 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. Place the index facing the same direction 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. Verify there is no gap between the bottom of the index cover and the top of the gasket. If there is a gap, it may be 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.

100G ERT Module installation on the Sensus Commercial meter is complete.

Installing 100G ERT Module on ROOTS Rotary

The information in this section guides you through the installation of the 100G ERT Module Commercial on ROOTS rotary meters.

Installation Prerequisites

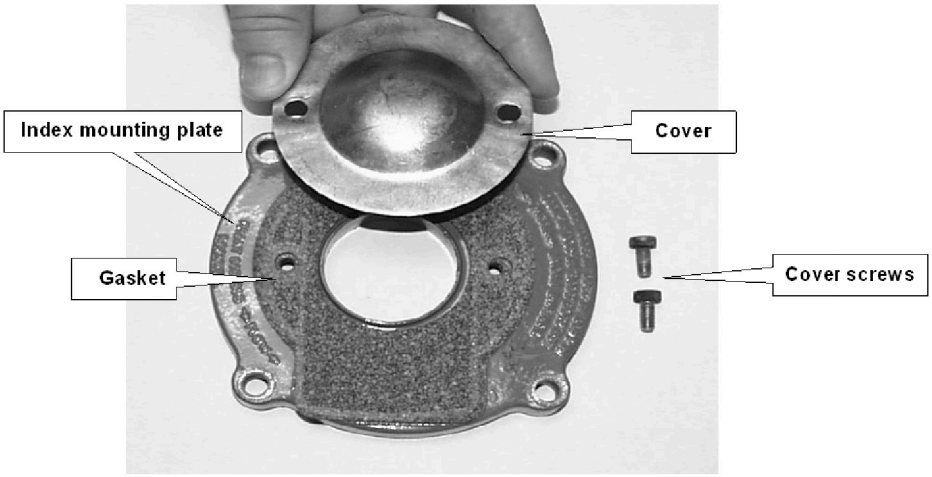
Installation requires the following items:

- One index mounting plate
- Gasket and drive cover kit
- 100G ERT Module
- A flat screwdriver

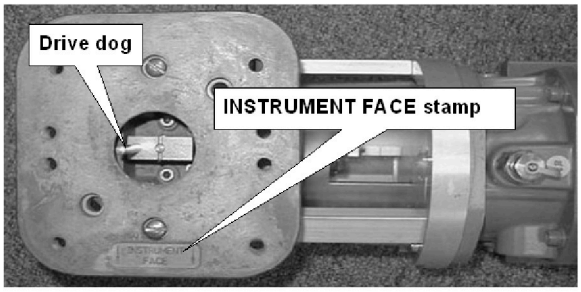
NOTE For illustrative purposes, an American/Actaris ERT is used in this procedure. The procedure for installing a Sensus Rockwell commercial ERT is exactly the same.

To attach the Commercial 100G ERT Module to the meter

1. Install the gasket and cover on the index mounting plate (as shown) using the two screws included with the kit.

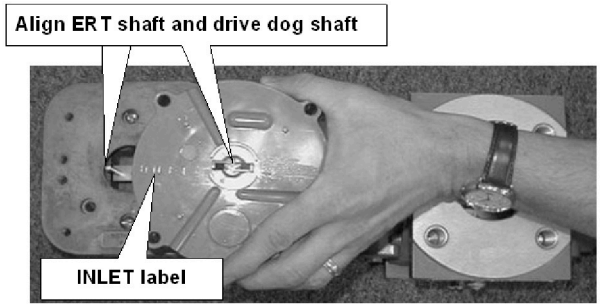


2. Locate the INSTRUMENT FACE stamp and position the meter with the drive dog aligned (as shown).



IMPORTANT Handle the 100G ERT Module carefully so the metal passive radiator antenna is not damaged.

3. Locate the INLET label and position the ERT module as shown. Verify the two shafts are aligned.



4. Verify the shafts are engaged by turning the ERT shaft. You should feel resistance.
5. Place the index mounting plate on the module and install the four bolts. Do not disturb the shaft alignment.

6. 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.

NOTE To mount an index and index cover on the rotary meter, remove the domed cover and reference "*To attach the index and cover*" in the previous section.