Instructions: Temperature Sensor in Thrust Bearing Using the Spring and Ring Method for Case Style B

EI 181 Revision G

(Reference: Document 2231023)

1. Suggested Installation Procedure

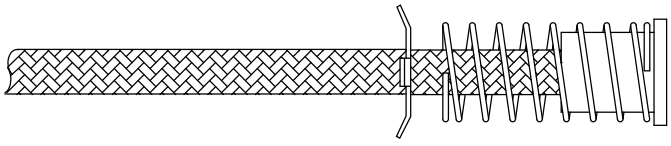
Install a case style B temperature sensor in a thrust bearing following the steps below:

1. Use a 5/16” bit to drill a 0.312” (7,93 mm) diameter hole into the bearing shoe to within 0.03”– 0.04" (0,8 mm – 1,0 mm) of the babbitt undersurface. The bottom of the hole must be flat.

   NOTE: Verify that the hole is **no larger** than 0.313" (7,95 mm). If the hole is too big, the retaining ring will **not** function properly.

Hole Diameter	Hole Depth	Hole Contour
0.312 ±0.001” (7,93 ±0,02 mm)	To within 0.03”– 0.04” (0,8 mm – 1,0 mm) of babbitt undersurface	Bottom must be flat

2. Mill a groove in the back of the bearing shoe in which to channel the leads/cable. The groove should start at the drilled 5/16” (7,93 mm) diameter hole and continue to where the leads/cable exit the bearing. Choose an appropriate groove width and depth to accommodate the leads/cable of the sensor(s) being installed.
3. Break or chamfer the corners from drilling and milling to remove sharp edges.
4. Thoroughly clean the machined surfaces so they are free of oil, shavings, etc.
5. Slide the compression (coil) spring over the leads/cable and onto the sensor case (if not already in position from the sensor manufacturer).
6. Slide the retaining ring over the leads/cable until it contacts the spring (if not already in position from the sensor manufacturer). The bent prongs of the retaining ring must be facing away from the spring, as shown in the drawing below.



7. Slide a short length of rigid tubing over the leads/cable until it contacts the retaining ring.
   NOTE: 3/16" (4,8 mm) O.D. thin wall stainless steel tubing works well.
8. Push the sensor, spring, and retaining ring into the bottom of the 0.312" (7,93 mm) diameter drilled hole, using the rigid tubing as an insertion tool. Remove the rigid tubing.
9. Lay the leads/cable flat in the bottom of the milled groove of the bearing shoe.

10. Secure the leads/cable in the groove using mechanical retainers or pot the leads/cable in the groove using epoxy or other suitable potting compound compatible with the bearing shoe material, temperature, and service conditions.

2. Drawing

Although the illustration below depicts a thrust bearing, this installation procedure can be used with other types of bearings and with equipment other than bearings.