

SBE 18-I, 22-B pH Sensor Replacement Instructions

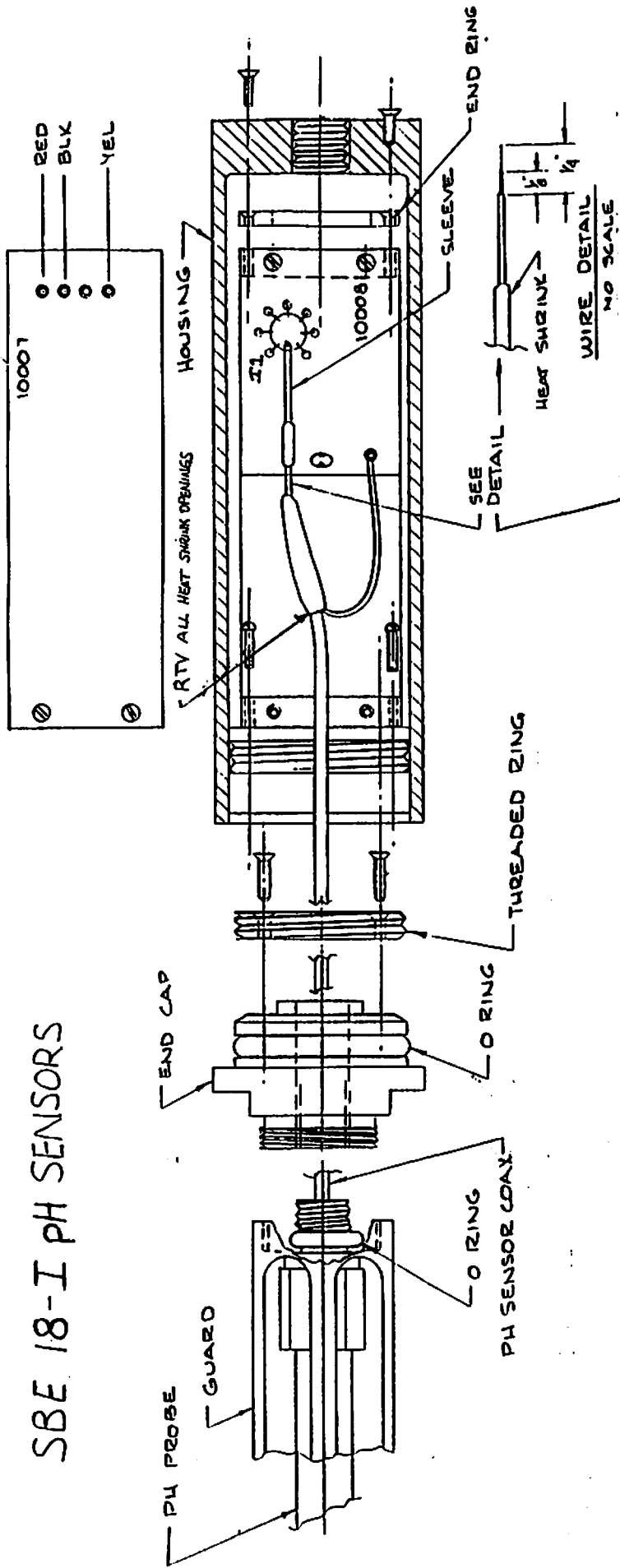
- 1) Open aluminum housing by gently unscrewing plastic endcap.
- 2) Using exacto blade or other sharp knife, carefully cut heat shrink tubing from I1 (upside down IC.) Do this gently so as not to break free lead.
- 3) Unsolder lap-spliced wire, noting relative wire configuration.
- 4) Unsolder #24 TFE wire from turret marked REF.
- 5) Remove pH electrode guard, then remove pH sensor.
- 6) Take new pH sensor from box.
- 7) Lubricate O-ring at sensor base with Parker Super-O.
- 8) Place small amount of Loc-tite 222 on inner threads of plastic endcap.
- 9) Thread pH Sensor onto endcap, taking care to route wires to correct side of circuit board.
- 10) For pH sensors pre-wired at the factory, the following steps are for re-assembly. For pH sensors not pre-wired, skip to step 11.
 - a) Cut a piece of 1/16" heat shrink 0.7" long. Slide this over inner conductor of coax cable to strain relief.
 - b) Lap splice inner conductor to free lead of I1.
 - c) Slide heat shrink over splice; shrink.
 - d) Completely surround both ends of heat shrink with RTV.
 - e) Solder black #24 TFE wire to REF turret.
 - f) Allow sufficient time for RTV to cure before threading endcap back onto housing.
- 11) For pH sensors not pre-wired at factory, look at sketch appropriate to the particular SBE model to be repaired.
- 12) Cut the coax from the sensor to just reach the center of I1 (see appropriate sketch for layout.)
- 13) For SBE 18-I, remove outer insulation to just past small circuit board (approximately 1.50 inches.) Remove all but 0.25 inch of the exposed shield.

For SBE 22-B, wire must be draped around components (see sketch.) Remove outer insulation to first turn (approximately 3.50 inches.) Remove all but 0.25 inch of the exposed shield.
- 14) For SBE 18-I and SBE 22-B, prepare a 2 inch long piece of black #24 TFE wire: strip 0.2" one end and 0.4" other end. Wrap 0.4" around exposed shield. Solder using minimum heat so as not to melt inner conductor. Put a 1" piece of 1/16" heat shrink over joint. Shrink.
- 15) Remove black conducting insulation back to shield joint (approximately 1.50" for SBE 18-I, 3.50" for SBE 22-B) without removing clear teflon inner insulation of inner conductor. Now, cover all of clear insulation except for last 0.5" with 1/16" heat shrink. Shrink this down, being careful not to

melt the inner conductor. Take shield joint and gently bend back towards the sensor. Cover this bend and the area on either side of the joint with a 1.0" long piece of 1/8" heat shrink. Shrink using minimum heat.

- 16) Bare last 0.25" of inner conductor. There should now be a 0.25" bare inner conductor wire, a 0.25" long piece of clear teflon insulation, and the outer piece of heat shrink - see wire detail closeup on sketch.
- 17) Final assembly is similar to step 10:
 - a) Cut a piece of 1/16" heat shrink 0.7" long. Slide this over inner conductor of coax cable to strain relief.
 - b) Lap splice inner conductor to free lead of I1.
 - c) Slide heat shrink over splice; shrink.
 - d) Completely surround both ends of all heat shrink openings with RTV
 - e) Solder black #24 TFE wire (0.2" end) to REF turret.
 - f) Allow sufficient time for RTV to cure before rethreading endcap back onto housing.

SBE 18-I PH SENSORS



SBE 22-8 DO/PH SENSORS

