

### **Technical Note: 7000 Probe Issued June 16, 2008**

This technical note offers additional information on connecting the 7000 probe sections to help ensure that the electrical and pneumatic pins that make the connection are not damaged or bent, especially the main flow line pin made from Torlon®. There are also instructions for creating a simple transport cover for the probe. Refer to the 7000 Operating Manual for complete information on assembling and installing the 7000 probe sections.



### **Connecting the Probe**

The 7000 probe sections connect through a series of electronic and pneumatic pin connections. Users must ensure that these pins and their recessed connections are clean and free to debris during assembly. When the connection is made and mechanical force is applied to tighten the connection, debris or other contaminants in the system can bend or break the pneumatic pins or the electronic pins, or damage the O-rings.

### **When handling the probe sections:**

- *Ensure both the male and female ends are kept completely clean and free of debris.*
- *Do not stand the probe on the end with the pneumatic and electronic pin connectors. Probe sections should not be stood on either end, but it is especially important not to rest them on the pin end or the electronic or pneumatic pin connectors may bend or break.*
- *Do not use excessive force when tightening the connection screw that pulls the sections together. A connection that must be forced implies that debris, a loose O-ring or something else is interfering with the connection. Pull the sections apart and check again to make sure the electronic and pneumatic pins and their matching recesses are clean and free of debris.*
- *Consider a protective cover to protect both ends of the probe during transportation. These covers can help protect the electronic and pneumatic pins from being bent or broken, and help keep the matching connections at the other end of the probe sections free of debris. The second part of this technical note describes the materials needed to create a simple, inexpensive cover for the probe ends.*

## To Connect the Probe Sections

**1.** Examine the electronic and sample pneumatic pins, especially the Torlon (plastic) pin. They should be straight and free of any debris. The O-rings on each should be in place, and properly lubricated.



Figure 1. Electronic and pneumatic pin connections

**2.** Examine the pin and pneumatic connector holes on the other section of probe. Ensure the holes are clean and completely free of debris, both around the edges and inside the recessed area.

Figure 2.  
Holes for matching  
pin connectors



**3.** Lay the two sections of the probe on a flat surface (or carefully support each section). Lightly push the sections together so the alignment bar and connection screw line up.

Figure 3.  
Probe sections  
lightly pressed  
together



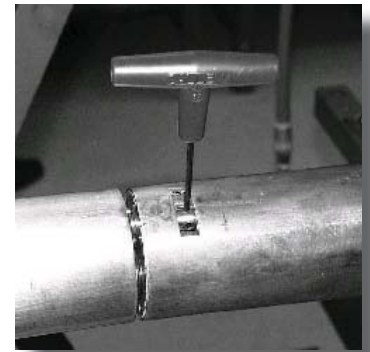
**4.** Push the two sections together as far as they will go.



Figure 4.  
Probe sections fully  
pressed together

**5.** Tighten the connector screw with the T-handle hex wrench. **DO NOT APPLY EXCESSIVE FORCE.** If the sections do not readily move together, take the sections apart and check again to ensure that the pneumatic and electronic pins and the matching holes are straight and completely free of debris.

Figure 5.  
Tightening the  
connector screw



**6.** Install the shoulder bolt.

### Probe Cover Supplies:

A simple cover for either end of a 7000 probe section can be created with some PVC pipe parts and some foam:

You will need:

3-inch PVC pipe (6- to 18-inches long, depending on the probe end)

3-inch rubber coupler with hose clamps

3-inch PVC cap

Foam (a 6-inch square piece about 2-inches thick)

## Creating a Probe Cover

### To Create a Probe Cover:

**1.** Cut a length PVC pipe 6- to 18-inches long. The length will depend on which probe section and which end; it should extend at least three or four inches onto the solid stainless section of the probe.

**2.** Place the end of the PVC on the piece of foam to mark the foam for the cut. Cut about an eighth of the inch inside the marked line, and test the foam for a secure fit inside the PVC.



Figure 6.  
Measuring/marketing  
the foam

**3.** If the foam will be used to protect the pneumatic pins, cut a section out of the foam to allow for the pins. Other probe ends may need other cuts, others may need none. For example, if the probe end to be covered is the umbilical end, or the mating end with the screw and alignment, no cuts are necessary.

Figure 7.  
Foam cut to match  
pneumatic pins



**4.** Fit the foam into the end of the pipe, then install the PVC cap over the foam.



Figure 8.  
Foam installed  
in PVC

**5.** Install the rubber coupler on the other end of the PVC pipe, and tighten the hose clamp on the PVC-pipe end of the coupler.

**6.** Slide the cover onto the probe and tighten the hose clamp on the probe. If you have cut out the foam for the pins (or another connection), ensure that the cut section of the foam will match up with the pins. Tighten the second hose clamp. Tighten it only enough to keep the cover in place – *Do not overtighten.*

Figure 9.  
Install the cover



Questions please call 1-800-282-0430 to reach a technical support representative or email [service.aqi@thermoifhser.com](mailto:service.aqi@thermoifhser.com)

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