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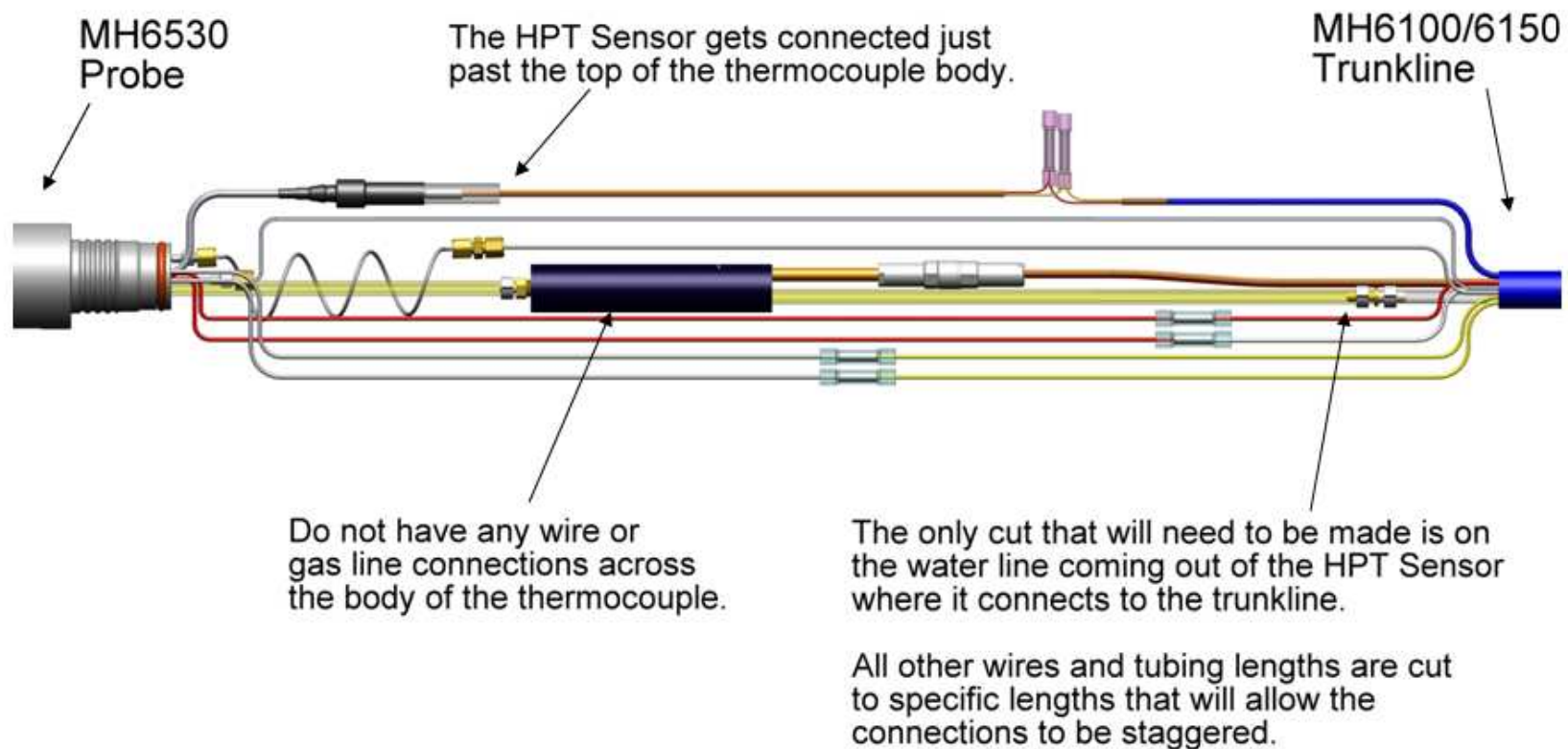
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# MiHPT Probe Connections Field Connection Tutorial

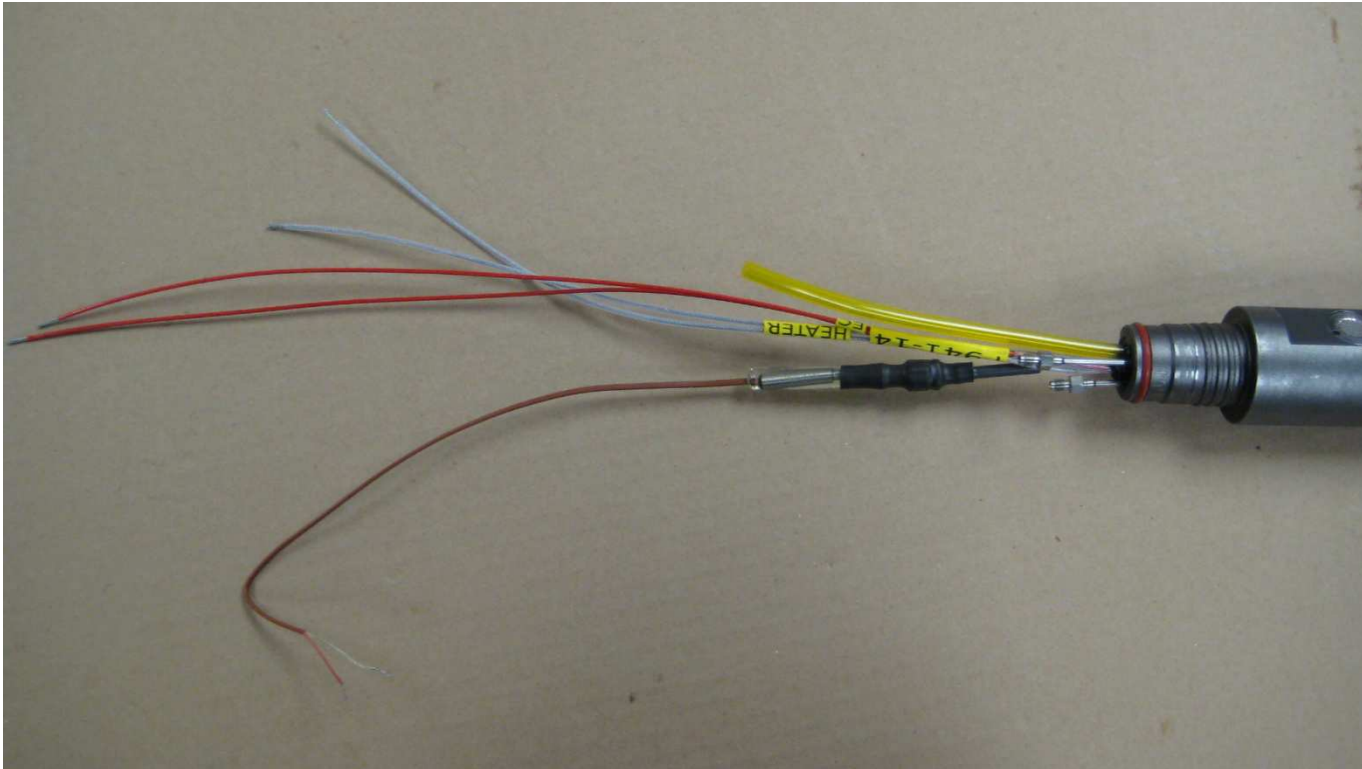


January 2012

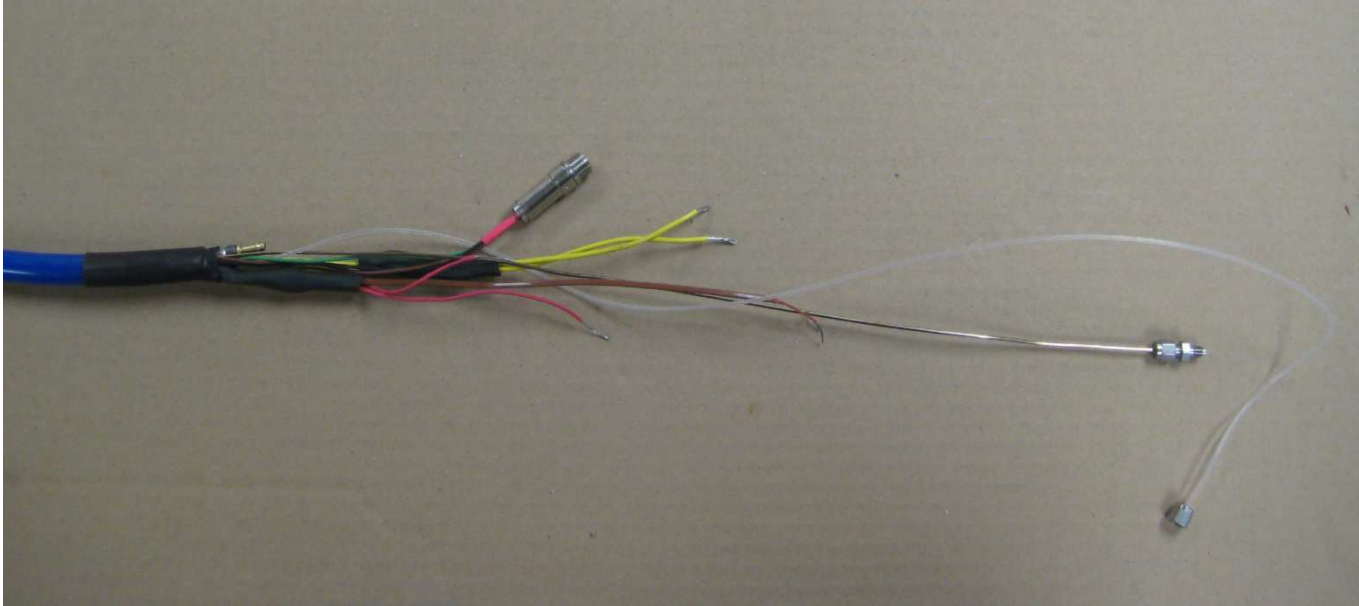


### This is the goal

All electrical, gas and water line connections will be made in a compact but staggered arrangement. Success in the field begins with these connections.



Part #: MH6530 MiHPT Probe gas & electrical connections and water line



Part #: MH6100 MiHPT Trunkline 100 ft. (30 meter)

Part #: MH6150 MiHPT Trunkline 150 ft. (46 meter)

Part #: MH6200 MiHPT Trunkline 200 ft. (61 meter)

Trunkline gas, electrical and water line connections





Part #: 43327 HPT Sensor Module and included small parts





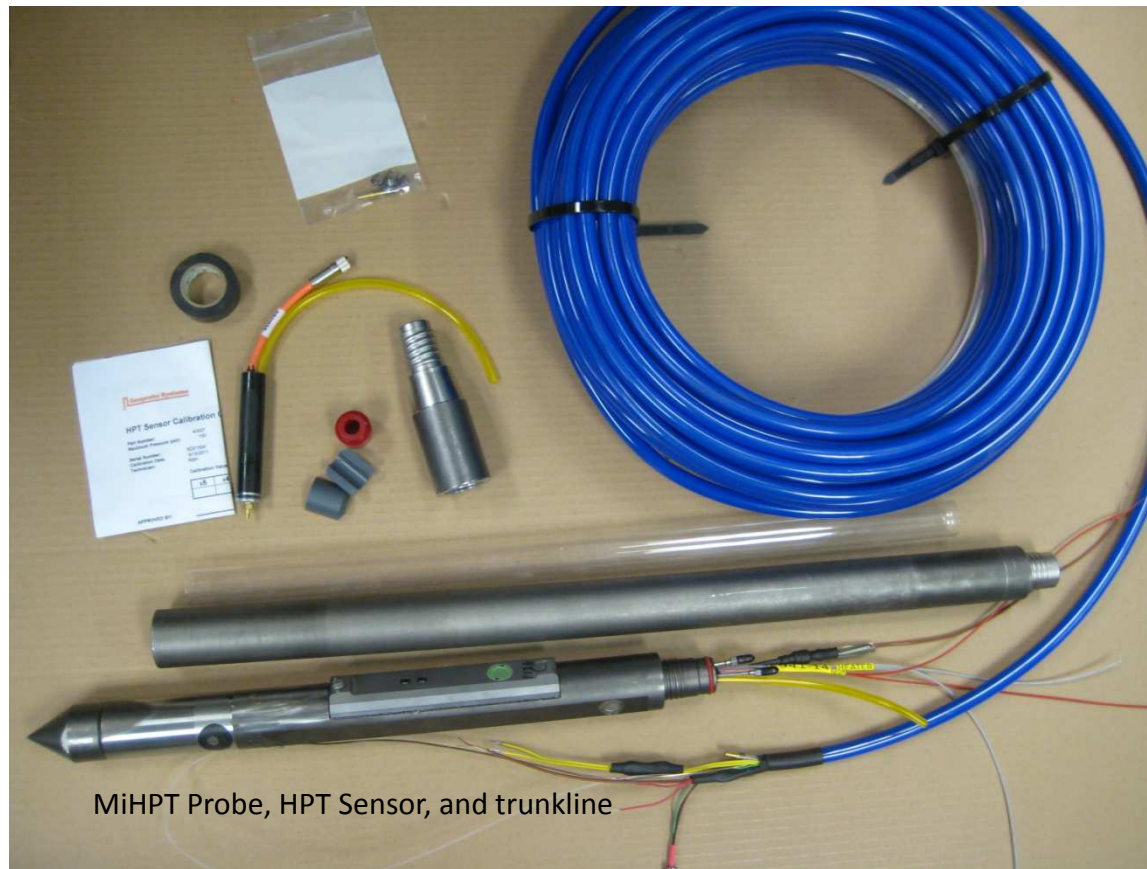
Basic hand tools and supplies needed when connecting a MiHPT Probe:

- Di-Electric Grease
- Electrical tape
- Wire Stripper
- Side Cutter
- Crimping Tool
- Hook Blade Knife
- X-Acto knife
- 5/16" wrench x2
- 1/4" wrench

PN 48092 Water Seal (red)      PN 36378 Water Seal Spacer set (gray)

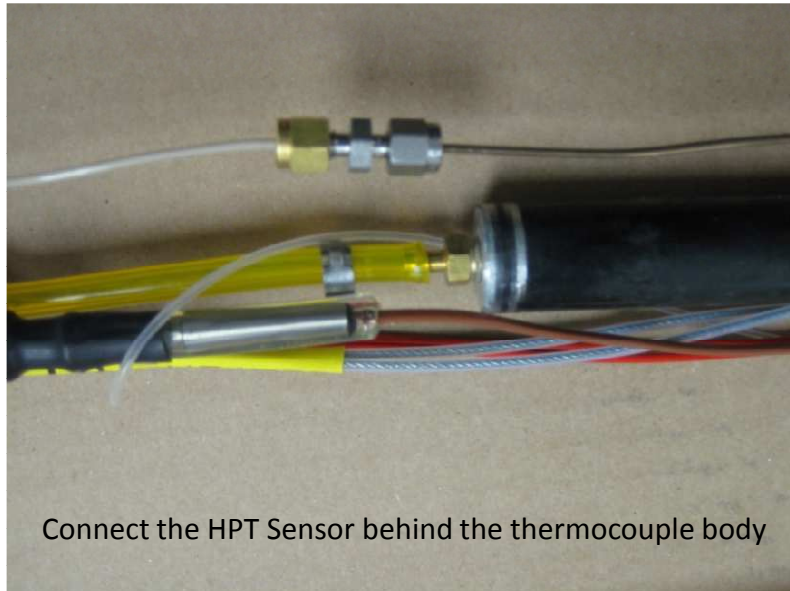
PN 48877 Membrane Wrench      PN AT665K Large Bore Liner



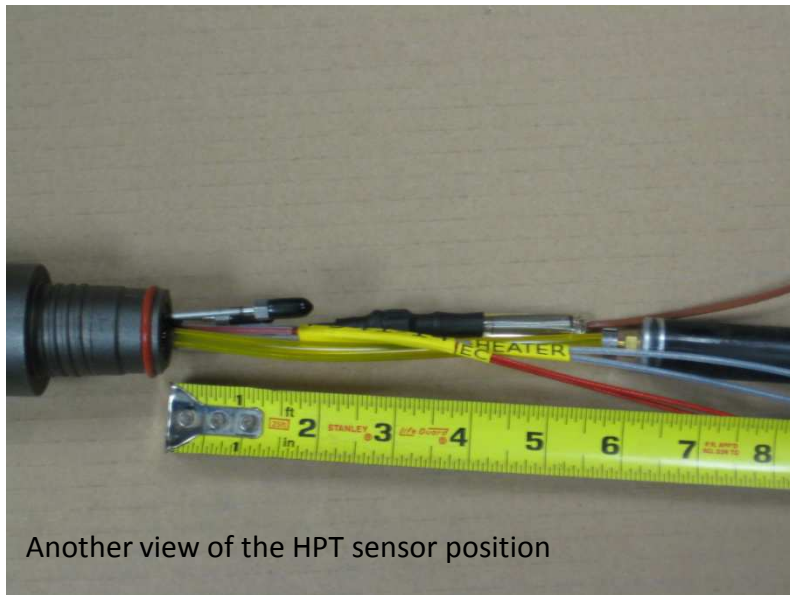


### **Assembly Lay Out:**

Begin by laying out components. The wires and tubing is already cut to specific lengths and just need to be connected.



Connect the HPT Sensor behind the thermocouple body



Another view of the HPT sensor position

### **Connect HPT Sensor:**

The HPT sensor should be connected just behind the thermocouple body.

### **Critical Note:**

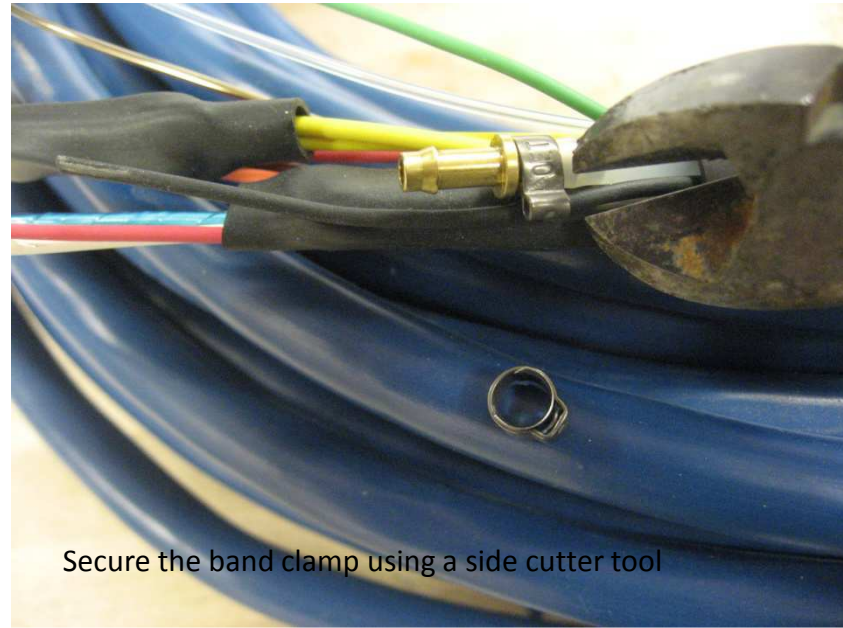
**If the HPT Sensor overlaps with the Thermocouple body or a gas line union the connection tube will not fit.**

Place a large band clamp onto the yellow water line from the probe and then insert this water line over the bottom barb of the sensor. Crimp down the band clamp with a side cutter tool to secure the connection.





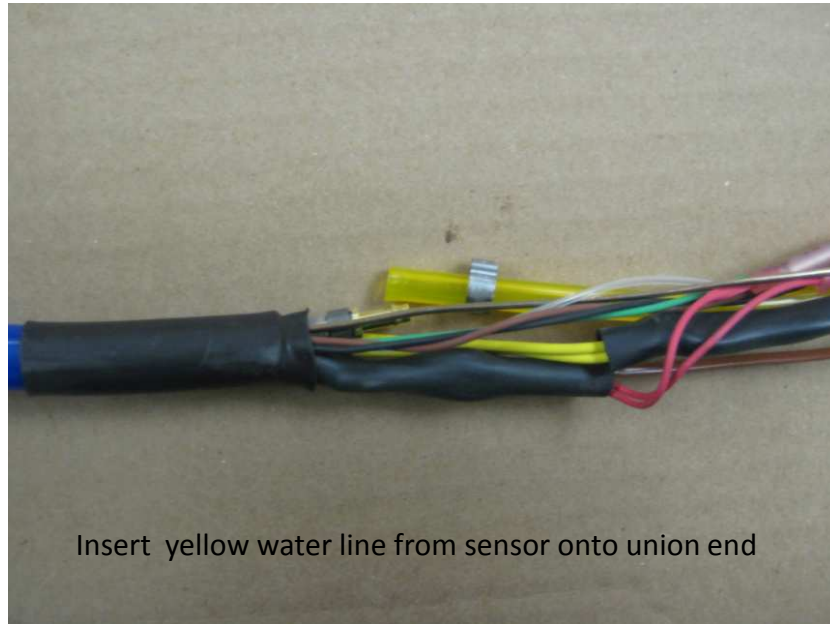
Insert barbed union and crimp band clamp



Secure the band clamp using a side cutter tool

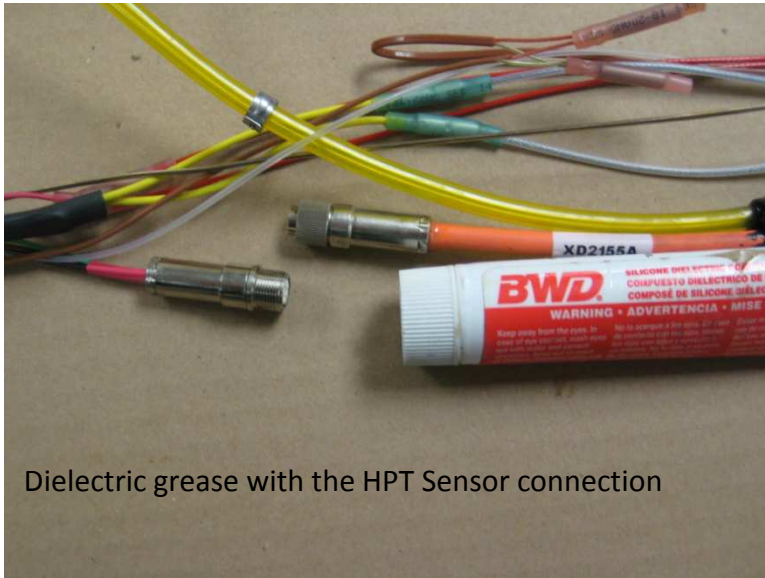
## HPT Water Line Connection

The union should be on the trunkline. If not, begin by sliding band clamp over the clear water line of MiHPT Trunkline. Next install small end of the smaller barbed union fully into clear water line and secure the band clamp with a side cutter tool. (Barbed unions and band clamps are included with HPT Sensor Kit)

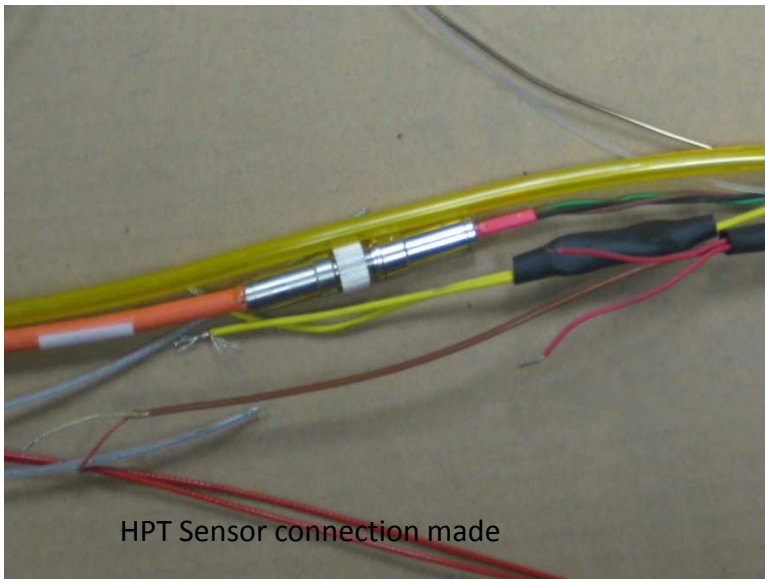


### **HPT Water Line Connection**

Measure the yellow water line on the top side of the sensor so that it will not have any slack from the probe to the trunkline. Cut the yellow tubing at that point and place a larger band clamp over the tubing. Now push the yellow tubing over the union on the water line of the trunkline, once up to the midpoint of the union crimp down the band clamp to secure the water line union.



Dielectric grease with the HPT Sensor connection

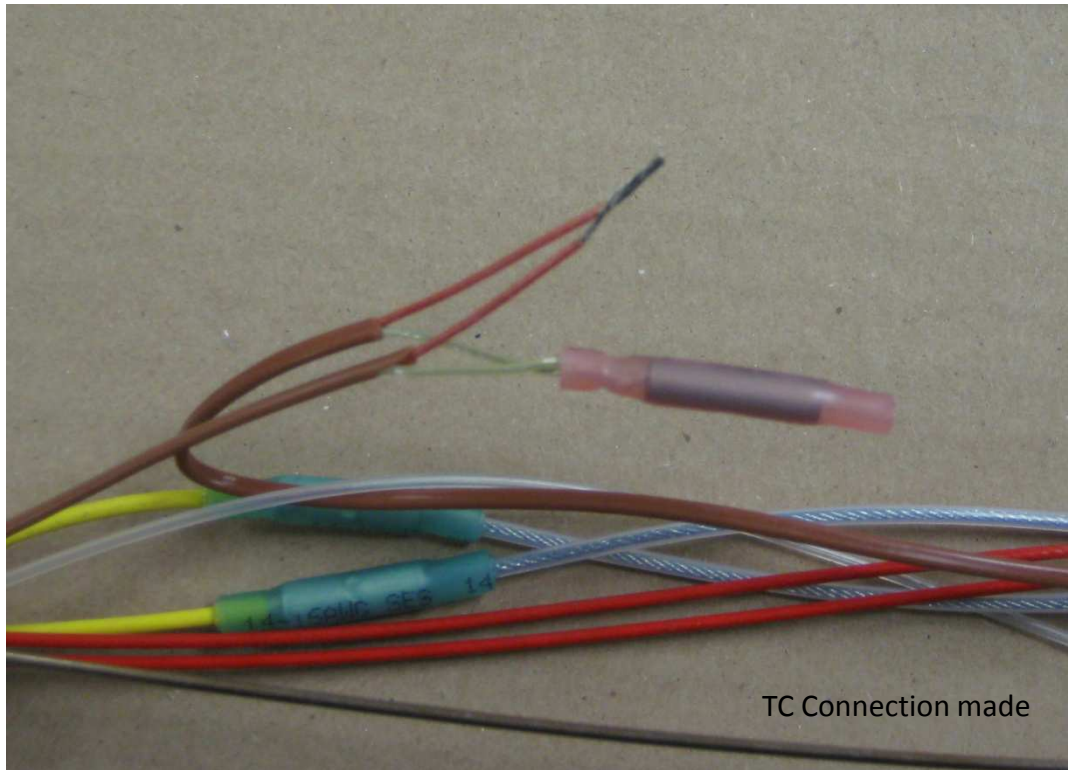


HPT Sensor connection made

### Connect HPT Sensor:

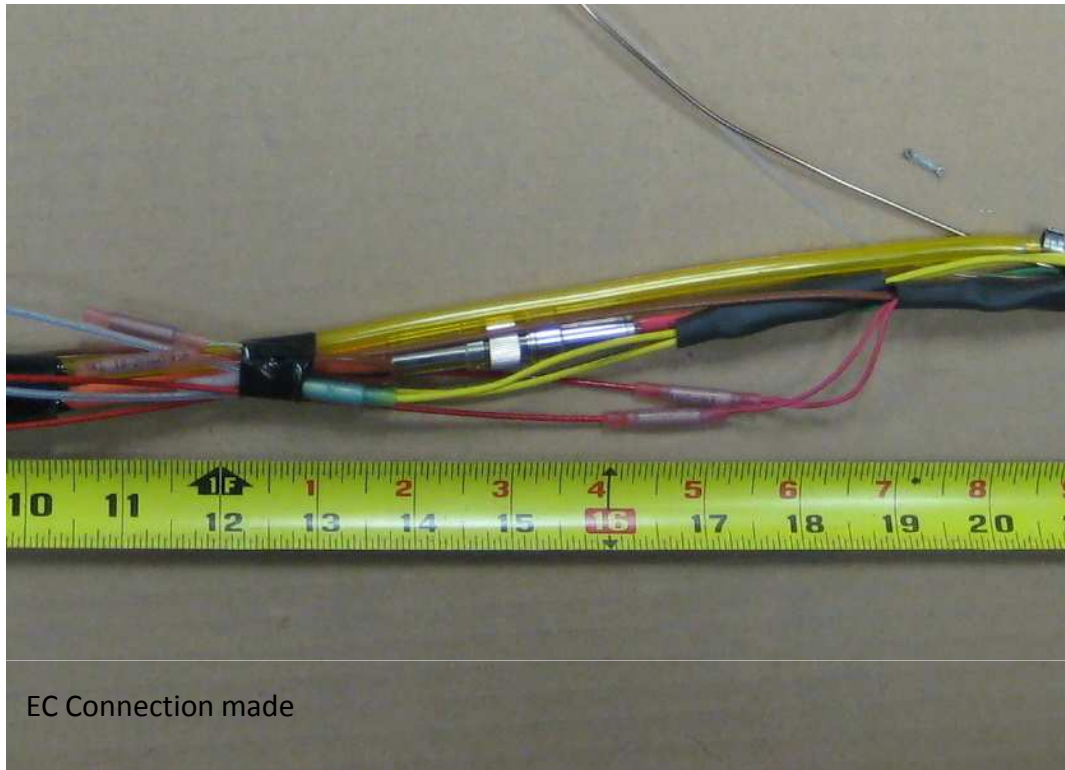
Apply a small amount of dielectric grease to the female side of the HPT chrome sensor connection on the MiHPT trunkline.

Make up HPT Sensor connection.



### **MIP Thermocouple TL-Probe Connection:**

Twist the red wires together and the yellow wires together of the trunkline and probe TC wires and place them into the same end of a crimp connection. The picture shows a heat shrinkable crimp connection, this will help to create a water tight seal.



**Side Note:**

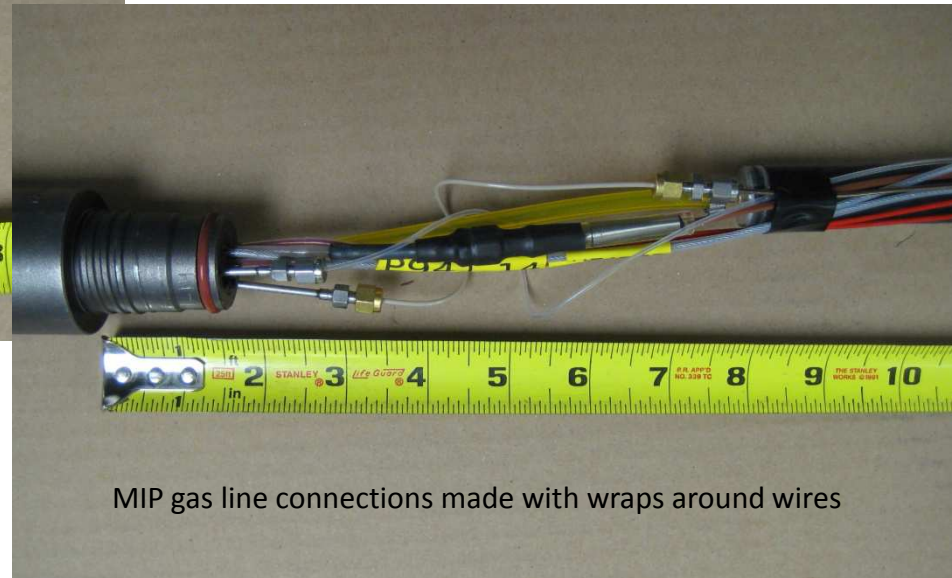
MIP heater, EC and thermocouple wires have extra wire under the heat shrink tape on the down-hole end of the MiHPT trunkline that can be pulled out if extra length is needed after changing a probe.

**MIP EC and Heater TL-Probe Connections:**

The MIP heater and EC wires of the trunkline and probe will be connected using heat shrinkable crimp connections. Stagger these connections on either side of the HPT sensor chrome connector and away from the HPT sensor body. This keeps the overall diameter of connection bundle small so it will fit easily into the connection tube.



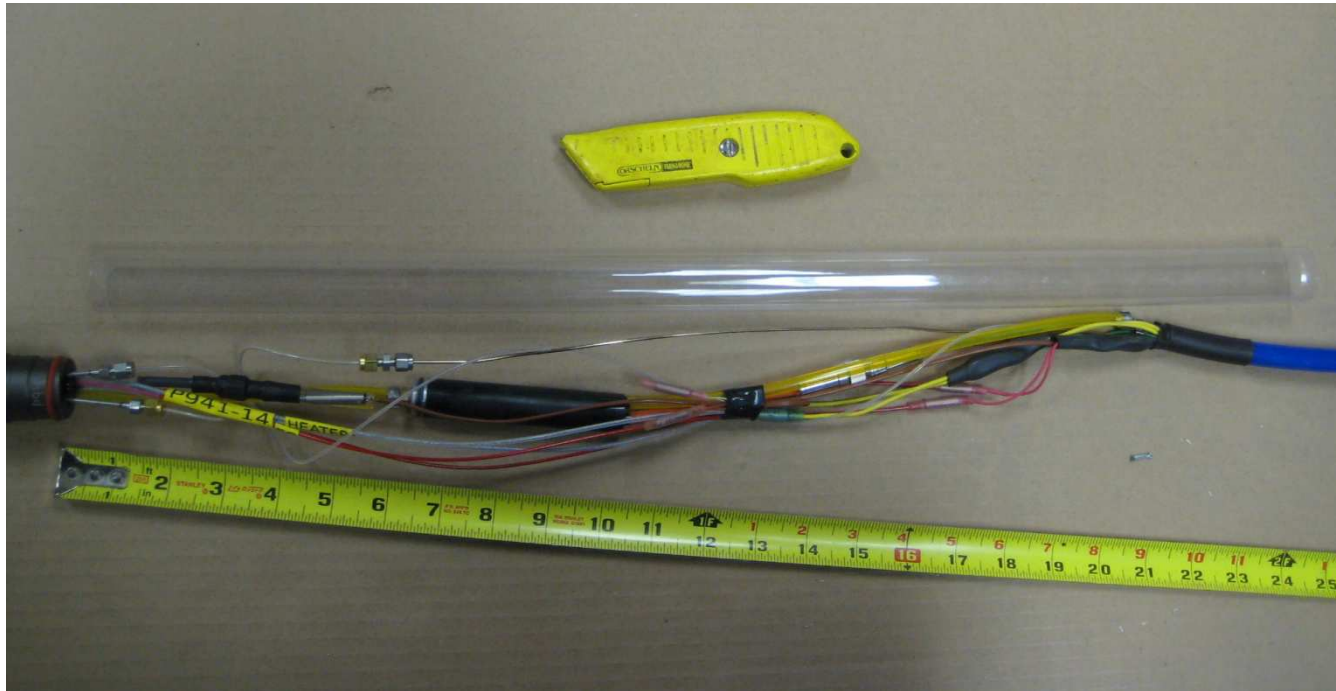
Gas line connection made with curled PEEK union



MIP gas line connections made with wraps around wires

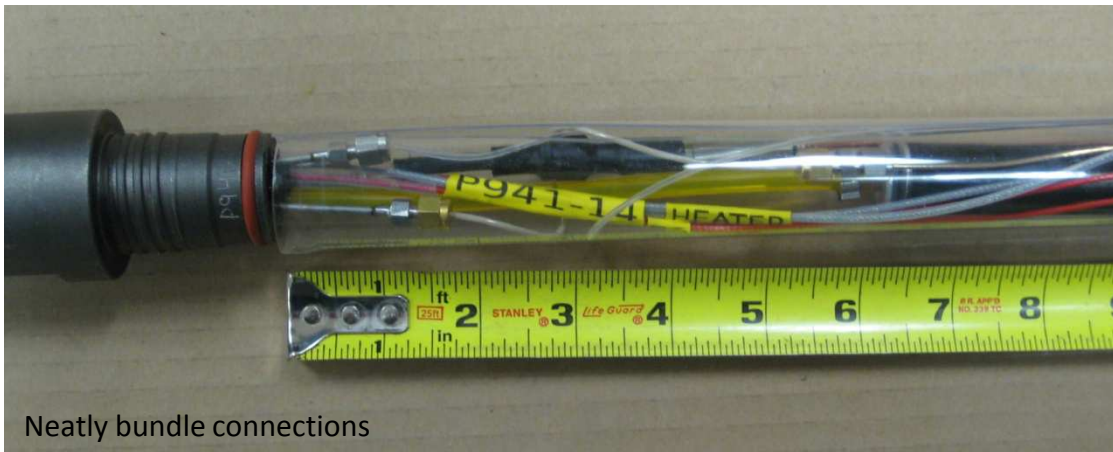
### **Gasline Connections:**

The stainless steel gas line needs to be connected to the probe via a curled Peek union PN 43809. The Teflon gas line can be connected directly to the probe. Both lines should be wrapped around the other wires to take up space. The gas lines need to come straight out of the probe gas line connections.

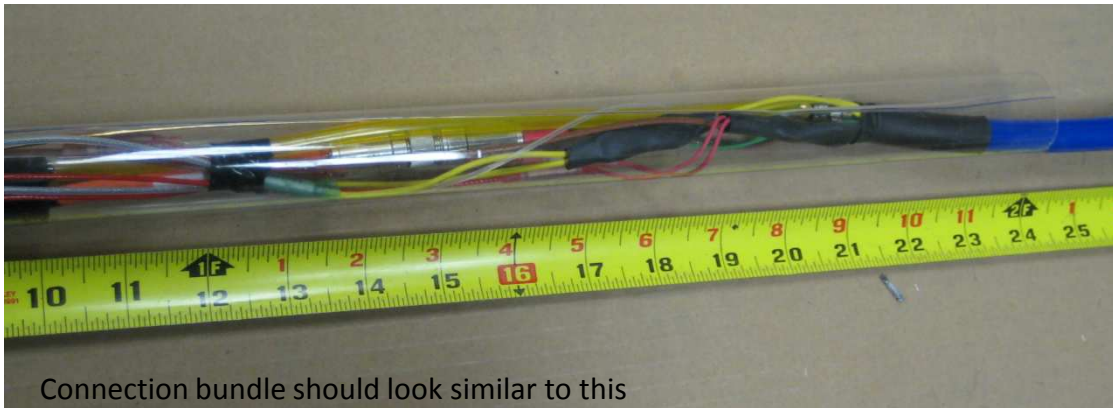


Cutting a large bore liner

Take a large bore liner and cut it lengthwise using a hook blade. After placing a couple of wraps of electrical tape to hold wires together, place the liner over the wires. The liner will keep the wires and connections secure and easily accessible as well as form isolation barrier between the electrical lines and the connection tube body which could short out.



Neatly bundle connections



Connection bundle should look similar to this

### **Bundle the Connections:**

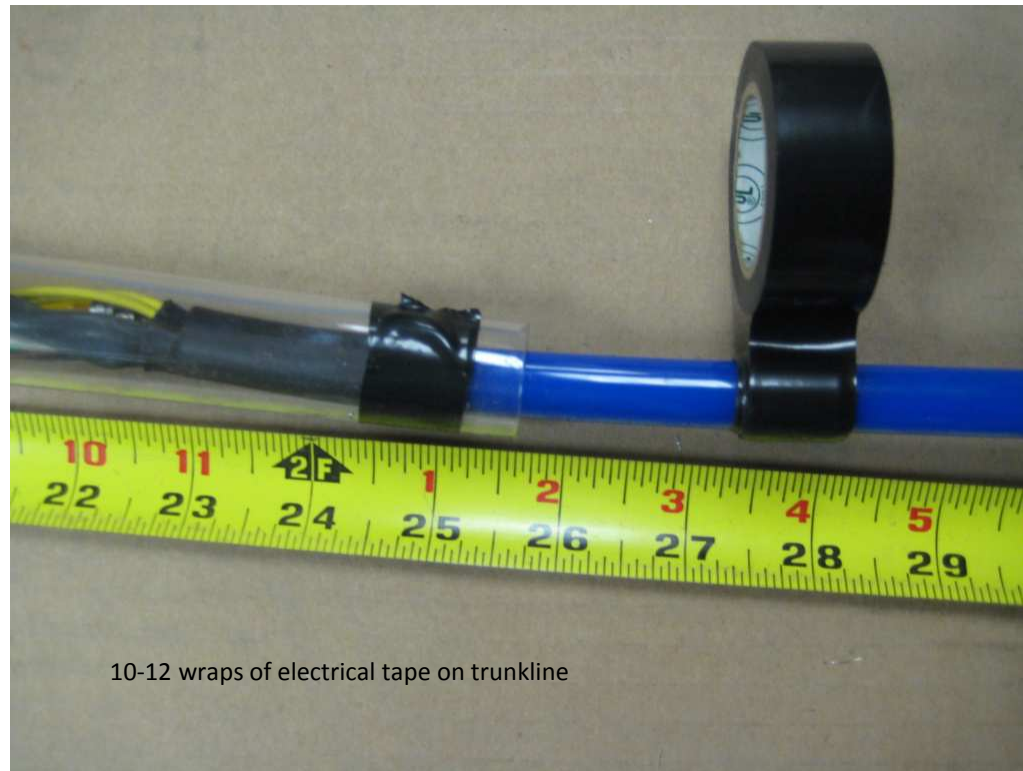
Using electrical tape neatly bundle and secure connections making the overall diameter as small as possible.

### **Assembly Notes:**

Electrical connectors are offset from one another.

None of the connectors should be positioned along the length of the sensor.

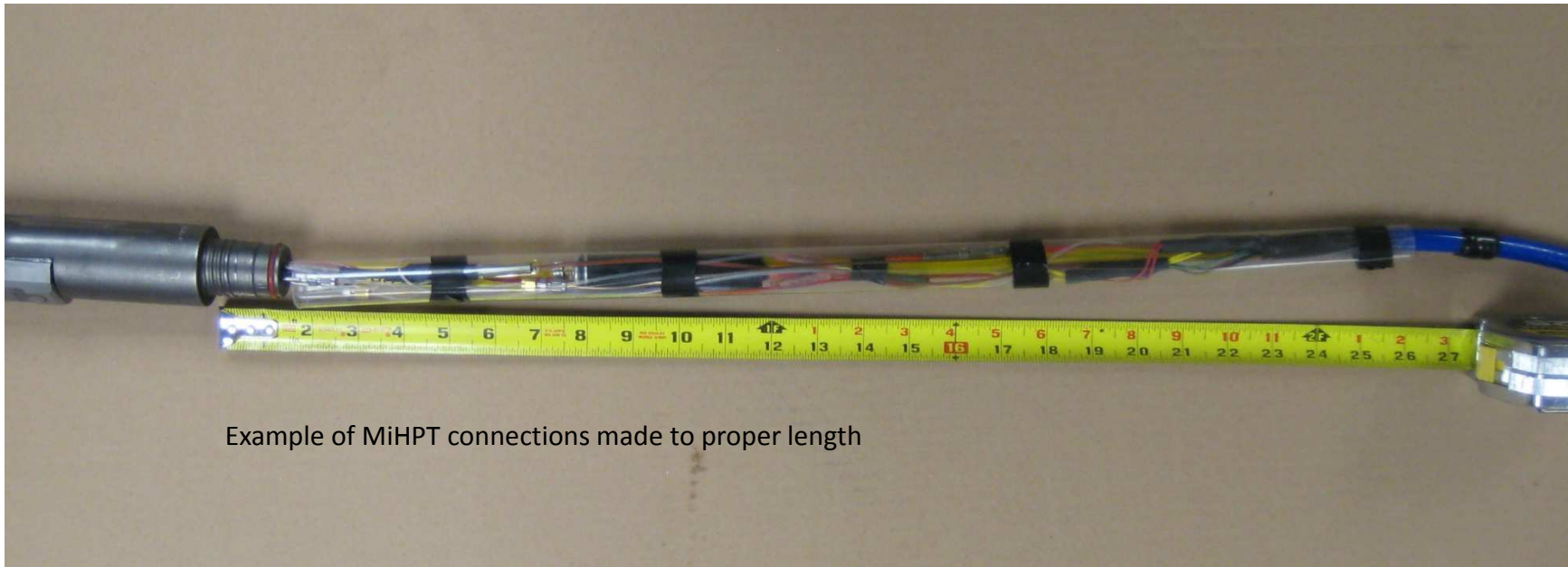




10-12 wraps of electrical tape on trunkline

### **Connection Strain Relief:**

Measuring from the thread shoulder of the probe place 10-12 wraps of electrical tape onto trunkline 28" up from the probe thread shoulder.



Example of MiHPT connections made to proper length



It is important to take care when assembling and bundling down hole HPT connections, time spent making these connections neat and secure will pay off with increased productivity when in the field.

**IMPORTANT NOTE:**

Connections must be staggered and large fittings must not overlap to fit inside Connection Tube.

Part #: 47093 MIP/HPT Long Connection Tube





### **Connection Tube Installation:**

Slide Connection Tube over connections and thread onto probe.

**Connection tube must slide on easily so it will not twist connections when threading onto probe. Twisted connections will fail almost immediately!!!**



### **Water Seal and Drive Head Installation:**

Install red MIP Trunkline Seal and gray Seal Spacers onto trunkline above the wraps of electrical tape. Put a little dielectric grease or Vaseline on the top flat of the water seal that will contact the seal spacer. This will allow the seal spacer to slide on the water seal when the drive head is tightened down. Push the trunkline into the connection tube (approx. 2 cm) and thread on the Drive Head. This will relieve any tension on the connections and provide additional strain relief.



**Completed Assembly:**  
Completed MiHPT Probe and Trunkline assembly.

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