Technical Note: 10000041

Assembly & Disassembly of Maxtek Sensor Head/Feedthrough BNC Termination of Electrical Connection

Parts

- BNC Connector (P/N 051-0059)
- Barrel Nut (P/N 123414)
- Cap and Fitting with Plastic Ferrule (P/N 123413)
- Metal Ferrule (P/N 059-0394)

Tools

- Hex Wrench (.035 in)
- Two Open-end Wrenches (7/16 in)
- Open-end Wrench (1/2 in)
- Soft-nose Pliers
- Forceps
- Heat-shrink Tubing (3/4 in long x 1/8 in diameter)
- Heat Gun
- Silver Solder
- Ohmmeter

BNC Termination Disassembly

1. Remove the Cap from the Fitting by holding the Fitting stationary with a wrench and turning the Cap counter-clockwise with a wrench. (See Figure 1)
2. Turn the Hex set screw on the Fitting counterclockwise using a .035 in hex wrench until the screw is loose but do not remove the screw.
3. Remove the Fitting from the Barrel Nut by holding the Barrel Nut stationary with a wrench and turning the Fitting counter-clockwise with a wrench.
4. Remove the Barrel Nut from the BNC Connector by holding the BNC Connector stationary with soft-nose pliers and turning the Barrel Nut counter-clockwise with a wrench.
5. Remove the heat-shrink tubing from the BNC Connector and unsolder the BNC Connector from the wire.

BNC Termination Assembly

1. Turn the Fitting clockwise into the Barrel Nut and tighten with a wrench.
2. Place the Ferrules inside of the Cap and turn the Cap clockwise into the Fitting but do not tighten yet.
3. Slide the assembled Cap, Ferrules, Fitting, and Barrel Nut over the tube. (See Figure 1.)
4. Slide approximately 3/4 in of heat-shrink tubing onto the tube. (See Figure 2.)
5. Push the insulation into the tube until it meets resistance. With approximately 1/8 in. of wire exposed, clamp the insulation to the wire using forceps. (See Figure 2.)
6. Check for isolation between the wire and the tube by placing an ohmmeter lead on the tube and a lead on the wire. The resistance between wire and tube must not be less than 20 MΩ.
7. Solder the wire to the terminal of the BNC Connector using silver solder.
8. Remove the forceps and slide the heat-shrink tubing over the BNC Connector terminal. Use a heat gun to shrink the heat-shrink tubing.
9. Hold the BNC Connector stationary with soft-nose pliers. Turn the Barrel Nut clockwise onto to the stationary BNC Connector and tighten with a wrench.
10. Tighten the Hex screw on the Fitting.
11. Hold the Fitting stationary with a wrench and turn the Cap clockwise until tight. If the ferrule is plastic, tighten the Cap until hand-tight to avoid crushing the ferrule. If the ferrule is metal, turn the Cap until hand-tight and then turn the Cap an additional 1/8 turn with a wrench.
12. Verify the Hex screw on the Fitting is still tight.
13. Verify isolation between the wire and the tube (resistance must not be less than 20 MΩ). (See Figure 3)

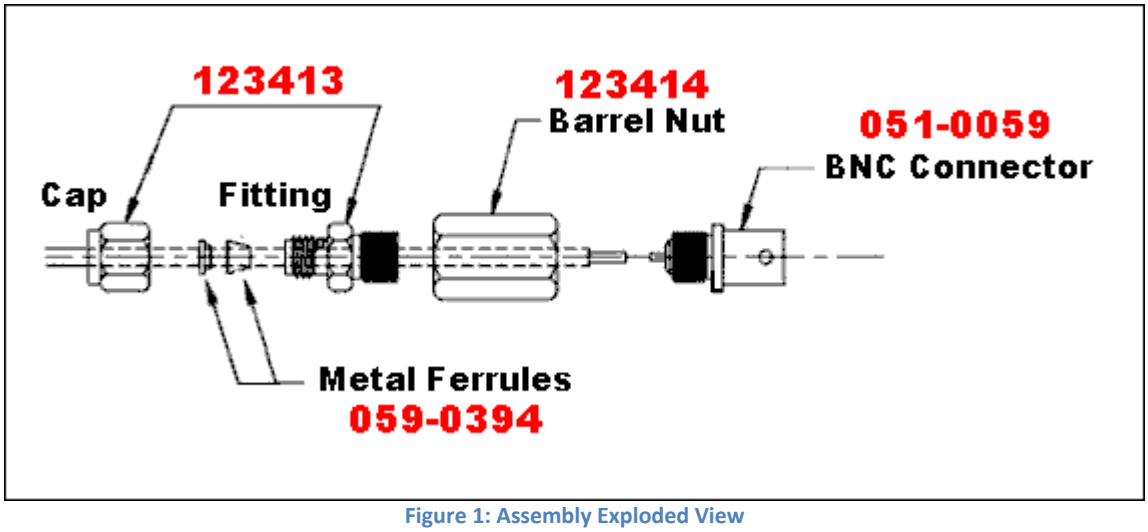

Figure 1: Assembly Exploded View

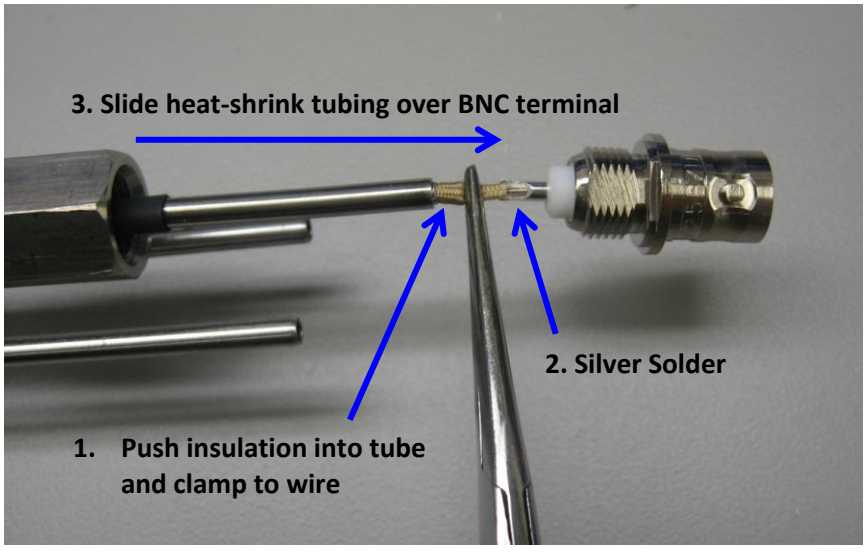

Figure 2: Soldering the BNC Connector

Figure 3: BNC Continuity Check

Document Title:	Maxtek Sensor Head/Feedthrough Termination of Electrical Connections
Document ID:	10000041
Creation Date:	
Modified Date:	3/21/2012
Related Products:	ASF-140/ASF-141, BDS-250/BDS-251, BSH-150/BSH-151, DSH5P1, SF-120, SH-101/SH-102
Product Line:	Thin Film / Vacuum
Notes:	Originally released as THIN FILM TECHNICAL NOTE V 141