

## W1 Connector

### Male Connector for 0.047 inch OD Semi-Rigid Coaxial Cable

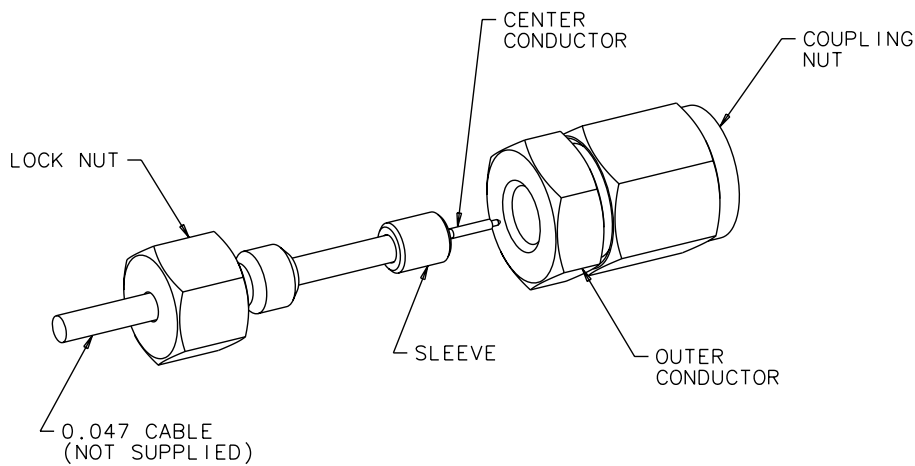


Figure 1. W1-101M Connector

## W1-101M

### 1. Tools and Materials

The following tools and materials are recommended to install W1-101M connectors on 0.047-inch outer diameter cable. Equivalent tools may be used if recommended tools are not available.

Name	Model/Part Number and Vendor Name
Resistance Soldering Unit, with tweezers	American Beauty Model 10501
Solder Ribbon, 80In 15Pb 5Ag, 0.1" X 0.002"	11877, Indium Corp.
Cleaning Fluid	Isopropyl Alcohol
Cable Cutting Fixture	01-419, Anritsu Co.
Precision knife	X-Acto
Wire cutters, flush cutting	0295-4C, Klein
File, flat, extra fine	Common tool
Torque wrench	01-504, Anritsu Co.
Rosin Flux 1544	Kester Co.

### 2. Fabrication Instructions

- Cut the coax cable to the desired length.
- Slide the lock nut onto the cable.
- Slide the sleeve onto the cable. Place the sleeve so that approximately 3/16 inch (4 mm) of the cable protrudes from the sleeve.
- Set the resistance soldering iron to its lowest setting.
- Apply a small amount of flux to the cable. Wrap the solder ribbon around the cable and slide it onto the cable so that it touches the sleeve.
- Heat the sleeve with the resistance soldering iron. The solder will melt and move up under the sleeve.

#### NOTE

Do not allow solder on the outside of the sleeve. Apply minimum heat necessary for the solder to flow.

- Slide the sleeve back and forth over the cable slightly to spread the solder around the coax. Allow only a minimum of solder on the front face of the sleeve.
- Allow the assembly to cool, then remove the excess flux.

#### CAUTION

Do not get solvent into the inside of the coax, as it will cause excessive loss. If the solvent does get into the coax, heat the assembly to 125°C for at least 10 minutes to drive out the solvents.

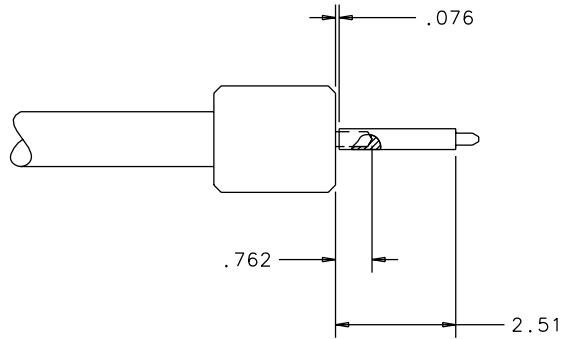
- Score the coax flush with the face of the sleeve using the precision knife.
- Break the outer conductor using hole "B" of the 01-419 Assembly Tool (Figure 4) and remove the outer conductor.

#### CAUTION

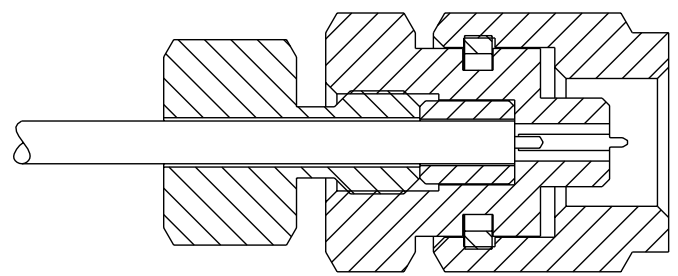
It is critical that the coax outer conductor is flush with the sleeve face and the dielectric and center conductor are not distorted.

- Cut the Teflon flush with the face of the sleeve using the precision knife. Be sure not to score the center conductor.
- Carefully remove the Teflon without bending the center conductor.
- Cut the center conductor to 0.030"  $\pm$ 0.005" (0.75 mm) with the flush cutting wire cutters. Hole "C" of the 01-419 Assembly Tool (Figure 4) can be used to set the length.
- Set the resistance soldering iron to the lowest level. If possible, reduce the temperature of the resistance soldering iron with a rheostat adjusted to set the voltage to about 30 to 50% of normal.
- Pre-tin the coax center conductor with a small amount of solder, then heat the male pin and slide it over the coax center conductor and adjust to the correct location. The thin (0.003") stainless steel shim, provided, may help set the 3 mil (0.075 mm) gap.

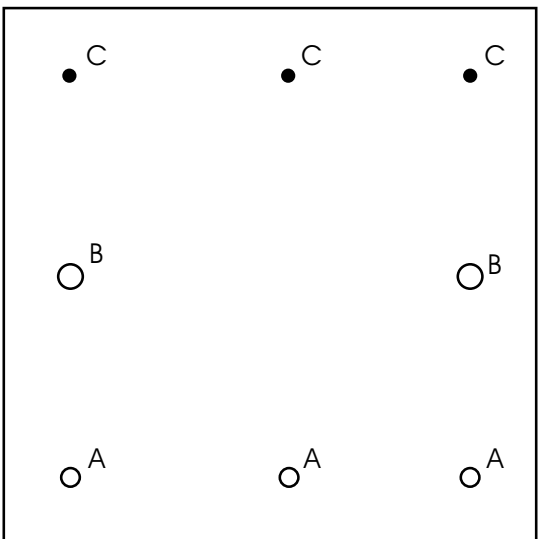
- p. Measure the distance from the top of the male pin to the top of the sleeve. It should be between 0.098 and 0.0998 inches.
- q. Insert the assembly into the male outer conductor and screw in the lock nut. Using a 5 mm wrench on the lock nut and a 6 mm torque wrench (01-504) on the outer conductor, torque to 4 in-lb.
- r. Verify the center conductor is centered in the outer conductor. Adjust if required by pushing the contact slightly with a small probe.
- s. Inspect the completed assembly for the following:
  - That the center conductor is centered in the outer conductor.
  - That the outer conductor is flush with the sleeve.
  - That there is no excess solder.
  - That the entire assembly is clean and has no burrs.



**Figure 2.** W1-101M Center Conductor Dimensions



**Figure 3.** W1-101M Connector, Fully Assembled



**Figure 4.** 01-419 Trimming Tool

