

FSJ1-50 Quarter Inch Hard Line Connectors

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I recently acquired a few nice pieces of FSJ1-50 quarter inch hard line. Unfortunately, they didn't come with connectors. Looking through my connector box, I discovered a slick and cheap way to mate this coax with two common connectors; the PL-259 and the two-piece Andros Mfg N-Type connectors. Both of these connectors will receive the UG-175/U or UG-176/U reducers used for RG58 and RG59 coax, respectively. The UG-175/U has a center diameter of 0.200 inches and the UG-176/U has a center diameter of 0.250 inches.

With the outer jacket of the FSJ1-50 removed, the outer shield measured 0.250 inches. I didn't have any UG-176/U reducers, so I reamed out a UG-175/U with a 0.250 inch drill in my drill press. The following pictures illustrate how I prepared the coax with the two different connectors.



PL-259 connector and UG-175/U reducer



Andros Mfg two-piece N-Type connector and UG-/175/U reducer.

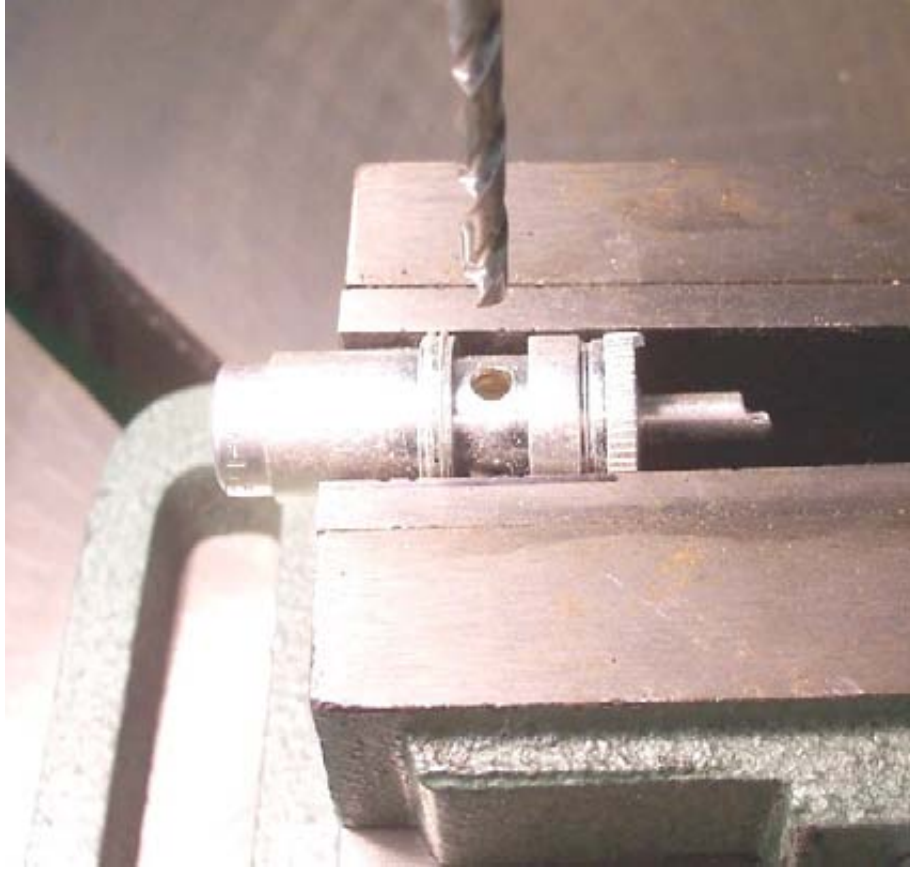
The next step is to prepare the FSJ1-50 coax for the two different connector types. For the N-connector, strip 38 millimeters of the outer plastic sheath from the coax. I found using a common utility knife works fine for cutting this coax for all steps. Next, roll the utility knife and the coax to remove 13 millimeters of the outer copper shield. Be careful not to cut the center conductor. If nicked, it has a tendency to break when flexed. This process will leave 25mm of outer shield and 13mm of center conductor exposed.



Prepared FSJ1-50 for an N-connector

For the PL-259 connector preparation, strip the FSJ1-50 so that 25mm of outer shield is exposed and 20mm of center conductor is exposed. The next step is preparing the UG-175/U reducer. The center diameter is 0.200 inches, so you will have to drill out the reducer to a center diameter of 0.250 inches. If using the UG-176/U (for RG59), this step is not necessary since the center diameter is already 0.250 inches.

Once the reducer is drilled out to the proper center diameter, screw it into the body of the one the connectors. Using a #28 drill, drill through the holes in the connector, through the reducer and out the bottom hole of the connector. This process will allow easy soldering of the coax shield to the reducer.

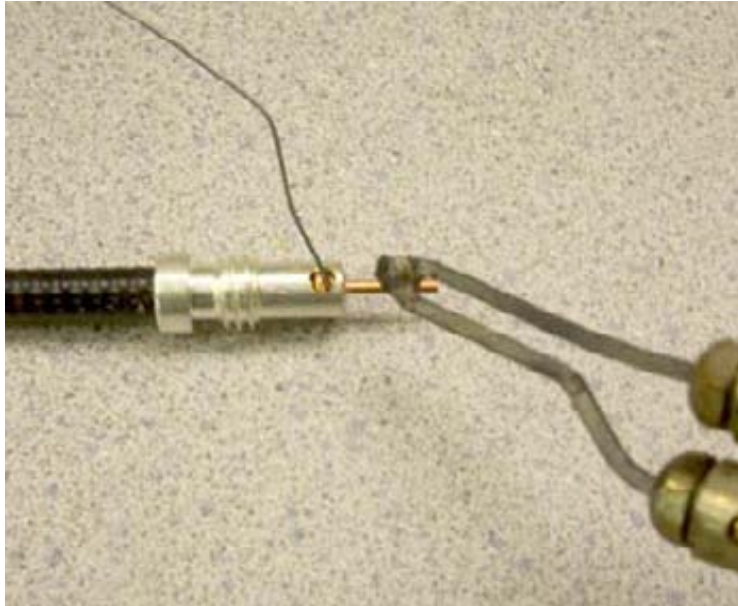


Drill through reducer using holes in connector body



#28 drill hole in reducer

Next, slide the reducer over the outer shield of the coax and solder through the two holes. Be careful not to apply too much heat and melt the center dielectric material.



Solder reducer to shield

Next, screw coax body onto reducer and solder center conductor.



Solder center pin

Before soldering the center pin of the connector body, be sure to tighten the connector body to the reducer with a wrench and pliers. It is not necessary to solder the connector body to the reducer if the two pieces are tight.



Completed PL-259 connector



Completed Andros N connector

Hopefully, when you find a supply of FSJ1-50 hard line coax at the next swap meet, you'll have a better appreciation for a simple and cheap connector application.