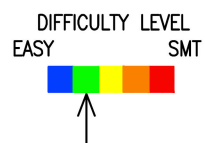




QRPGuys DS1 Antenna Assembly Manual



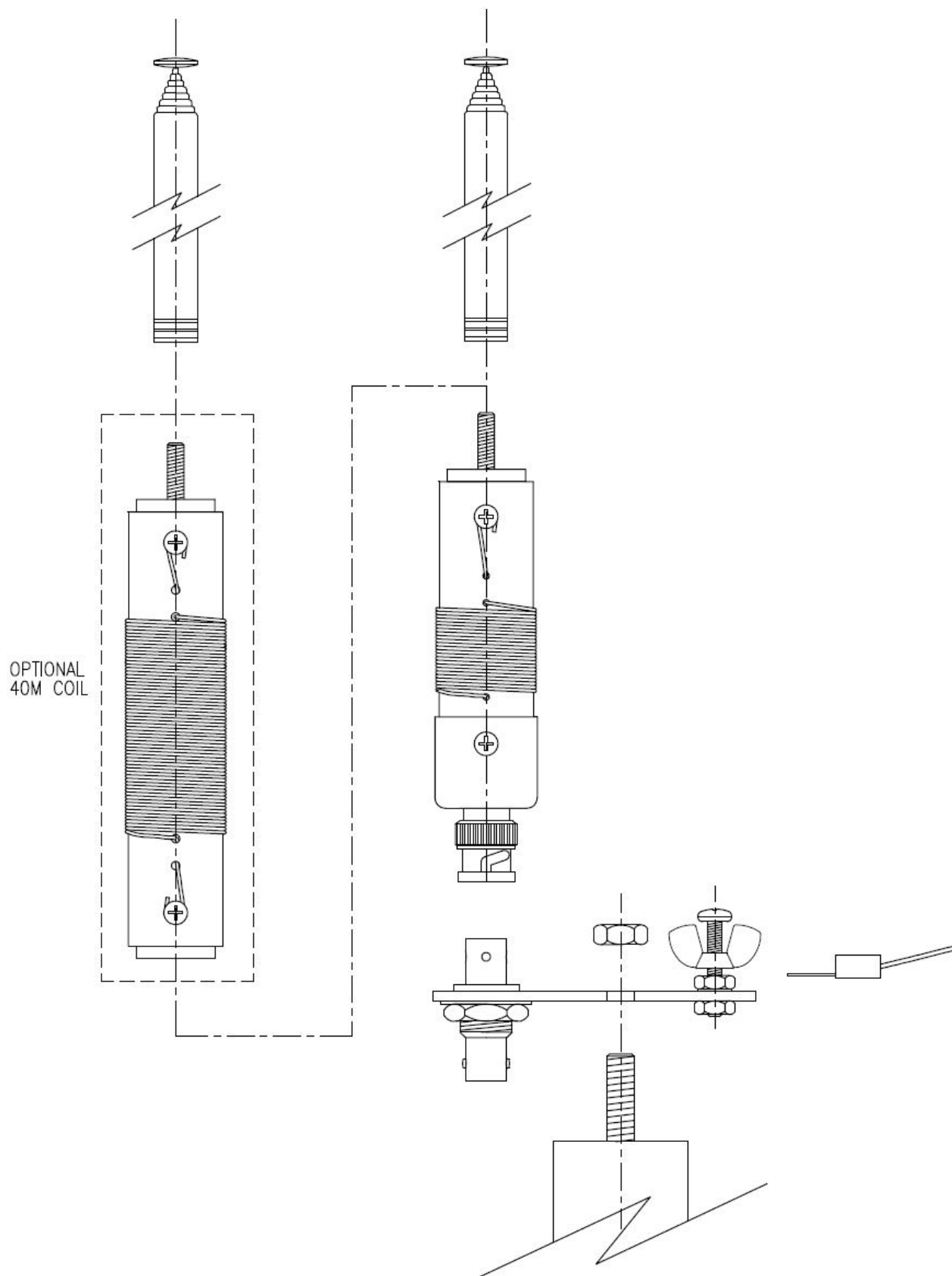
First, familiarize yourself with the parts and check for all the components. If a part is missing, please contact us and we will send one. To request a part, please use qrpguys.parts@gmail.com.

Parts List

- 1 – QRPGuys DS1 antenna mount pcb
- 1 – 3" L x 3/4" PEX tubing
- 1 – 3/4" copper pipe cap
- 1 – 3/4" brass PEX tubing plug
- 1 – 46.5" telescoping antenna element
- 1 – BNC male chassis connector
- 1 – BNC female/female bulkhead connector
- 2 – 4-40 x .25"L SS panhead screws
- 1 – 4mm x 16mm long SS panhead screw
- 1 – 8-32 x .75 long SS panhead screw
- 2 – 8-32 SS nuts
- 2 – #8 internal tooth SS lockwashers
- 1 – 1/4-20 SS nut
- 1 – #8 spade crimp connector
- 1 – 22awg magnet wire
- 1 – Ø1" x 3" long clear heatshrink tubing

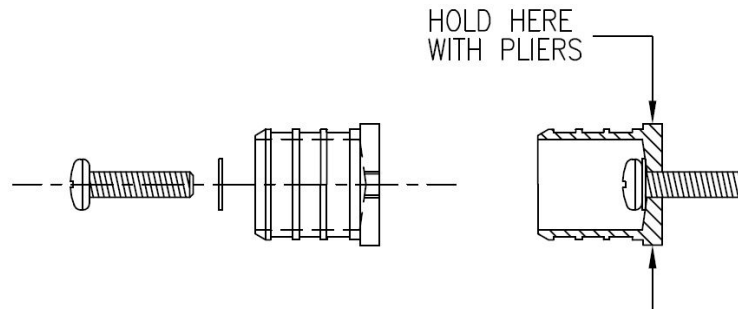
Tools required are, an electric drill, 5/64" drill bit, 4-40 tap, phillips screwdriver, pliers, soldering iron, solder.

The graphic below shows the scope of the antenna project. The instructions below, if followed, will insure a successful outcome. Please read them carefully before proceeding.

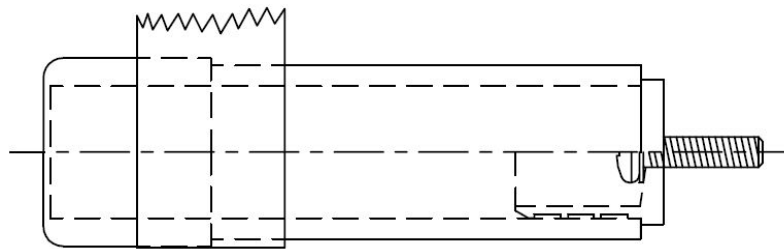


You will start with the loading coil first.

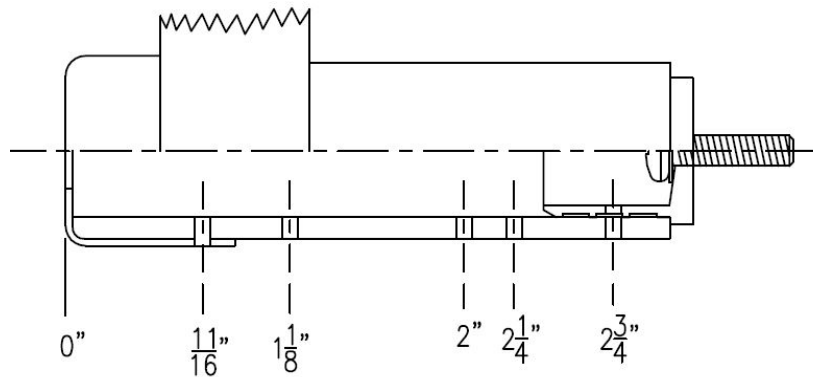
- [] Thread the 4mm x 16mm long screw, and #8 lock washer into one of the PEX plugs from the inside. Hold the brass PEX plug where shown below with pliers and tightly secure the screw.



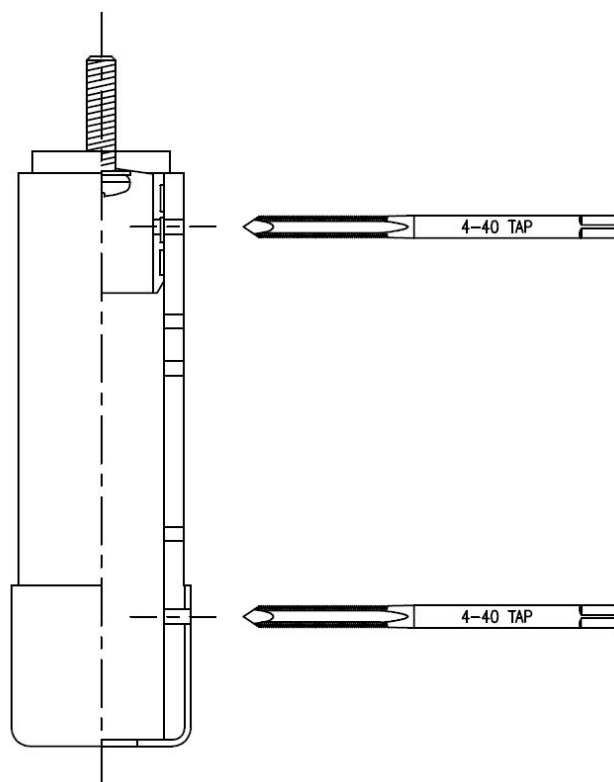
- [] Slide the piece of PEX tubing into the copper pipe plug all the way to the bottom and tape with scotch tape to prevent it from rotating. Place the PEX plug from the operation above into the open end of the PEX pipe.



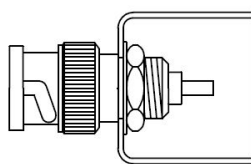
- [] Mark places for the holes in a straight line as shown below and drill $\text{Ø}5/64"$ holes thru to the inside only. The $11/16"$ location will go thru the copper and PEX tubing, the $2\ 3/4"$ location thru the PEX tubing and PEX brass plug..



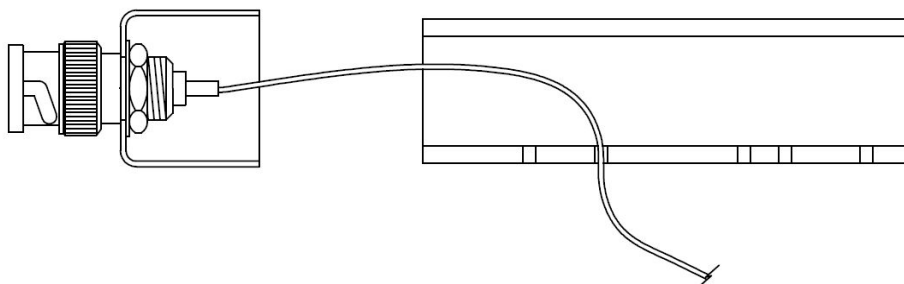
- [] Tap the 11/16" and 2 3/4" hole locations with the 4-40 tap. *Tap those locations only.*



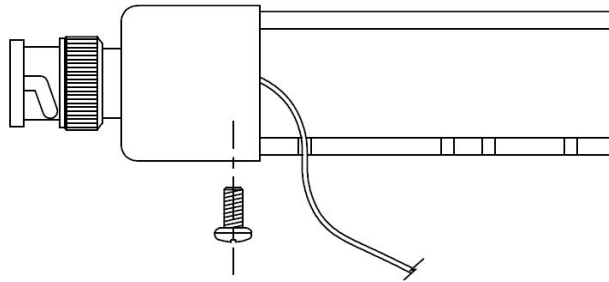
- [] Remove the PEX plug with the screw assembly attached and set aside. Remove the 3/4" copper pipe plug from the PEX tubing and install the BNC male chassis connector on the outside, securing the nut on the inside. Use a socket if available. It is not necessary to use the solder lug supplied.



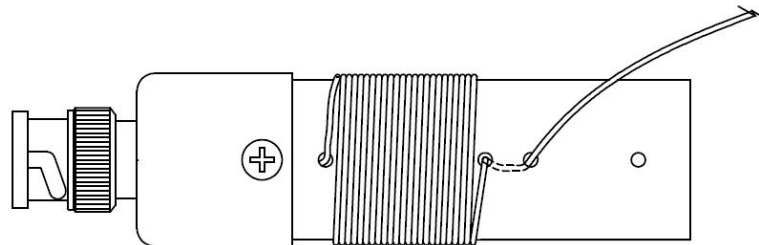
- [] Tin the end of the supplied 22awg magnet wire, with solder 1/4", and feed thru the PEX tubing at the 1 1/8" location hole to the inside as shown, and solder it to the center connection of the BNC chassis connector.



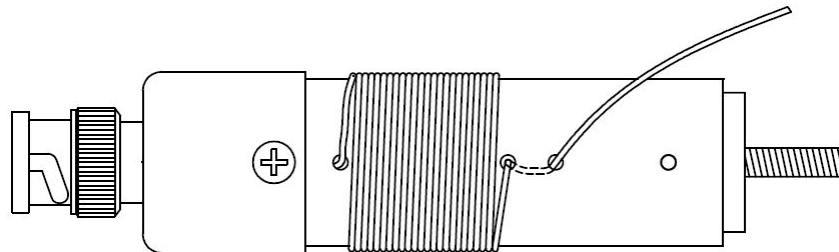
- [] Slide the PEX tubing into the copper pipe plug until the two 11/16" location holes align, and secure the two with one of the 4-40 x .25" screws.



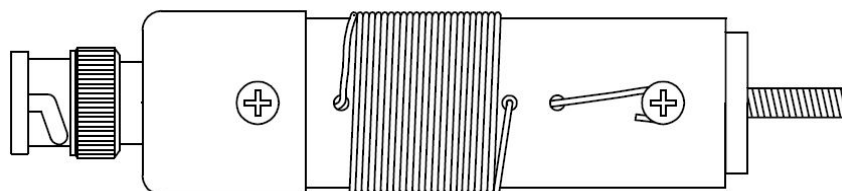
- [] Wind a total of **22 turns** close wound, and feed the far end of the magnet wire down thru the 2" location hole to the inside, and back to the outside thru the 2 1/4" location hole. You can now trim, leaving 3" of the 22awg magnet wire.



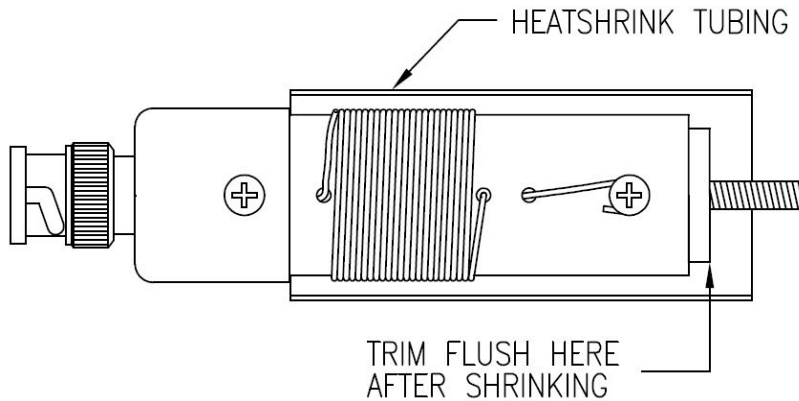
- [] Press the PEX plug/screw assembly back into the open end of the PEX tubing all the way to the shoulder of the plug and line up the 4-40 tapped holes.



- [] The 22awg wire needs to be connected to the PEX plug. Remove the enamel insulation from the wire where the wire wraps around the screw and secure the 4-40 screw as shown below.

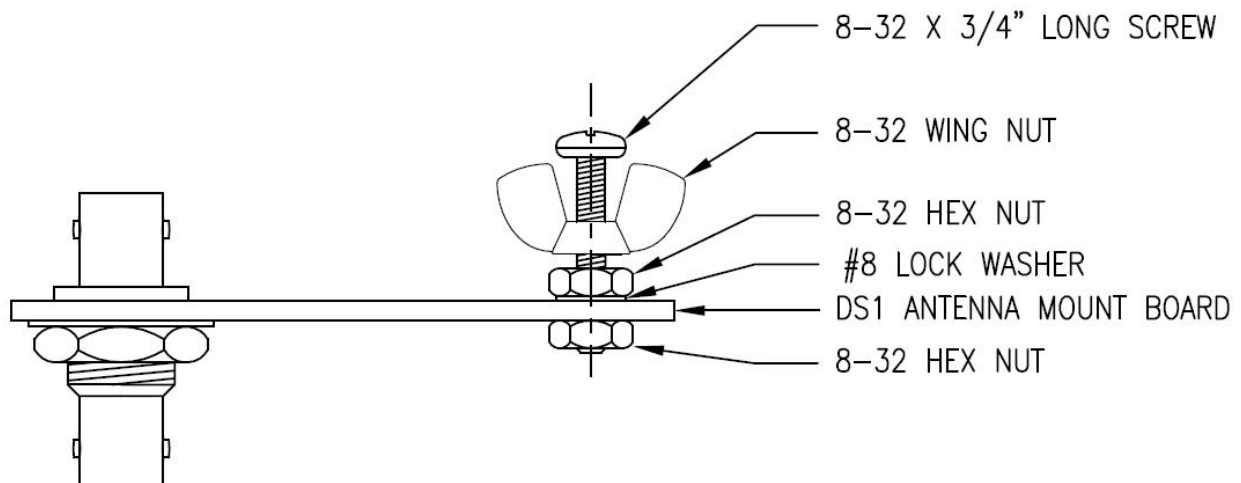


- [] The assembly gets covered with clear heatshrink tubing from the edge of the copper to the end of the PEX plug. Slide the tubing over the loading coil until it contacts the edge of the copper plug. Shrink the tubing and trim the excess flush with the end of the PEX plug.



This completes the loading coil.

- [] Populate the DS1 Antenna Mount board as shown in the sequence below. The remaining 1/4-20 nut is for securing the antenna to a user supplied 1/4-20 stud, via the center hole in the board. The remaining #8 spade crimp connector is for securing the 16.5' counterpoise under the 8-32 SS wing nut.



All that remains is to plug in the loading coil into the top BNC and thread the telescoping whip into the top exposed stud of the loading coil. Open the whip to full length.

Deployment and usage:

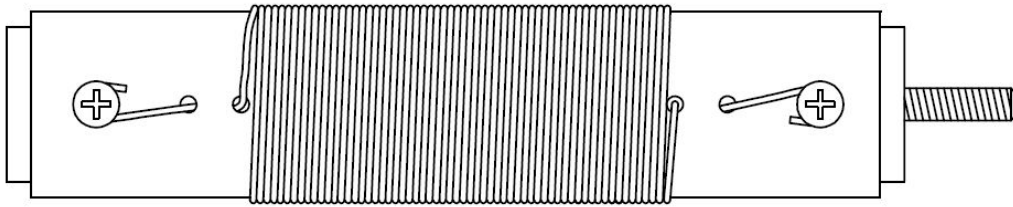
Shown below is how you can easily set up the antenna. The tripod is ~\$20 from Home Depot. It's a Husky Portable Light Tripod part# 1001 863 391. Make an adapter with a 8" long piece of 1/2" PVC pipe with a cap and 1/4-20 screw in the end. The adapter will just go into the tripod tube and rest on the cap. Attach the DS1 antenna mount with the 1/4-20 nut we supply.

Only **add** the 40m coil when working 40m. It will reduce the efficiency on the other bands if left attached.





QRPGuys DS1 Antenna 40m Coil Assembly

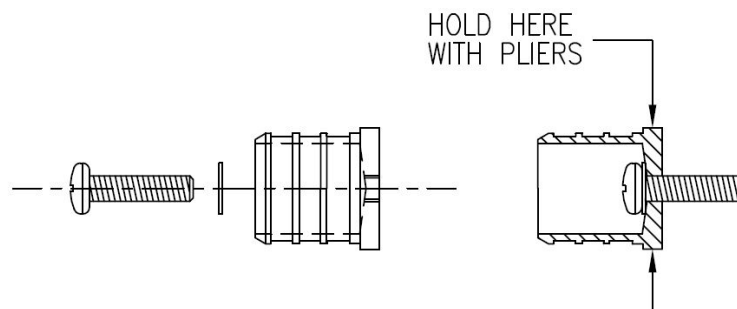


First, familiarize yourself with the parts and check for all the components. If a part is missing, please contact us and we will send one. You must use qrpguys.parts@gmail.com to request a part.

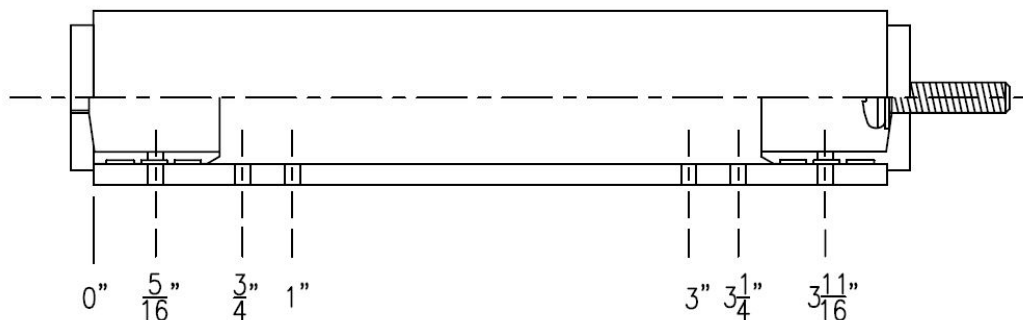
Parts List

- 1 – 4" L x 3/4" PEX tubing
- 2 -3/4" brass PEX tubing plug
- 1 – 4mm x 16mm long SS panhead screw
- 1 - #8 internal tooth SS lockwasher
- 2 – 4-40 x .25"L SS panhead screws
- 1 – 22awg magnet wire 16'
- 1 – Ø1" x 3" long clear heatshrink tubing

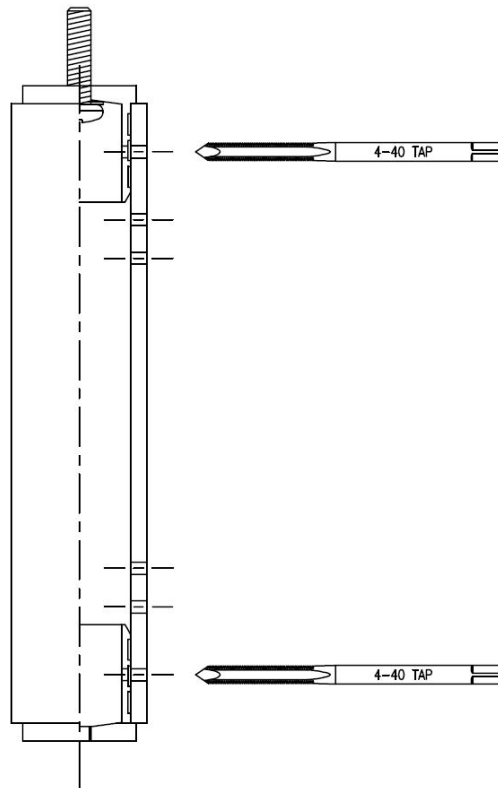
- [] Thread the 4mm x 16mm long screw, and #8 lock washer into one of the PEX plugs from the inside. Hold the brass PEX plug where shown below with pliers and tightly secure the screw.



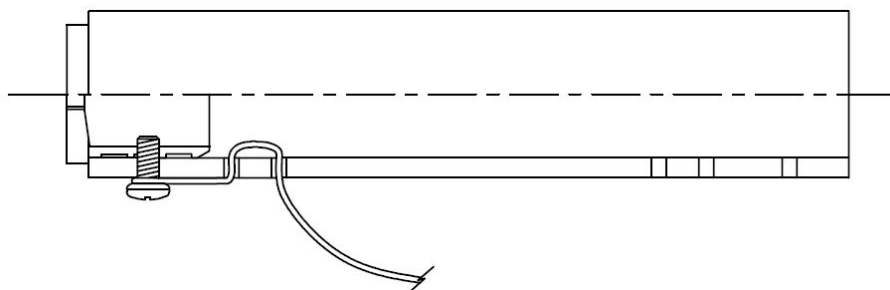
- [] Press both PEX plugs into the 4" length of PEX pipe. Measure and mark the PEX pipe as shown below, and drill the six holes Ø5/64", thru to the inside only.



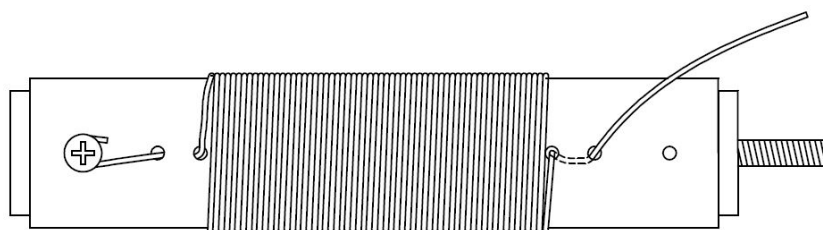
- [] Tap the 5/16" & 3 11/16" hole locations with the 4-40 tap. *Tap those locations only.*



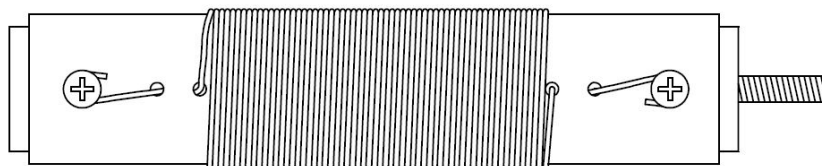
- [] Remove the PEX plug with the screw assembly attached and set aside. Thread one end of the #22awg magnet wire into the hole shown, and back out the other hole shown. The 22 awg wire needs to be connected to the PEX plug. Remove the enamel insulation from the wire where the wire wraps around the screw and secure the 4-40 screw as shown below.



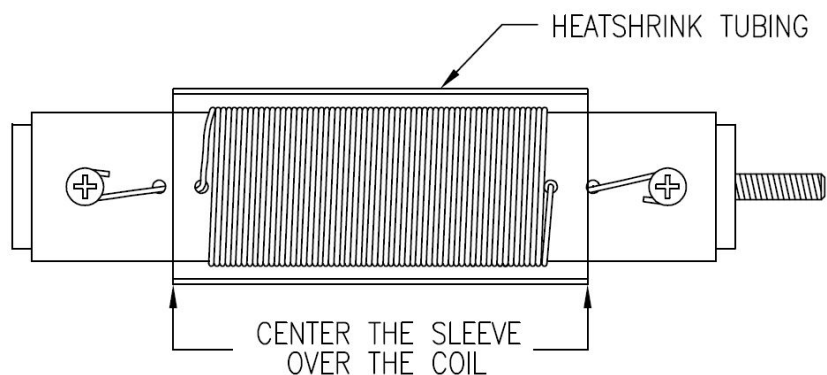
- [] Wind a total of **61 turns** close wound, and feed the far end of the magnet wire down thru the hole location shown to the inside, and back to the outside thru the next hole. You can now trim, leaving 3" of the 22awg magnet wire. Re-install the PEX, making sure the 4-40 hole lings up.



- [] Again, remove the enamel insulation from the wire where the wire wraps around the screw and secure this end with the 4-40 screw as shown below.



- [] The coil gets covered with clear heatshrink tubing. Center the sleeve and shrink it to the assembly.



This completes the assembly.

For 40m this coil is installed between the antenna whip and the existing loading coil.

Notes:
