

PAC-12 Multi-band Coil Kit Assembly

The PAC-12 multi-band coil kit is designed to replace a fixed coil in the antenna system to provide continuous tuning from 40 meters through 10 meters. The coil kit is wound with tinned copper wire and has a tap lead to adjust the effective inductance and tune the resonant frequency of the antenna system.

Contents:

- 1 PVC coil form
- 2 aluminum coil end caps
- 4 #8 screws and washers
- 3 crimp or solder lugs
- 1 roll of #18 tinned copper wire
- 1 clip lead
- 1" heat shrink tubing



Coil Assembly:

To assemble the coil kit, start by feeding the bare #18 wire through the holes at the end of the lengthwise slot along the coil form. Pass the wire into the hole through the tube and out the other side. One of the ring terminals should be installed on the end of the wire by crimping and/or soldering the terminal to the wire end.



Next, install the end caps into the PVC tube and secure with 2 screws and washers on the same side of the coil as the lengthwise slot.

A #8 screw with washer can then be inserted through the terminal end and attached to the other hole in the aluminum end cap through the coil form side.

Once the end of the wire is secured, begin winding the wire around the tube by laying it into the grooves formed by the threads cut into the coil form. Maintain tension on the wire as you wind. If you need to take a break, secure the wire temporarily with tape or other method so that the wire will not become loose.



Continue winding to the other end of the tube until you have reached the end of the threaded area of the form. It is important to wind all the way to the end of the threaded area as this ensures sufficient number of turns on the coil.

Should the wire be loose on the coil winding, you can use your hand to work it in a twisting motion to remove the slack and pull the excess at the end of the coil.

Next, leave a few inches (~6) beyond the last turn on the coil and cut the wire from the spool. This end should be long enough to be passed through the holes in the form. Push this end through the holes at the end of the coil as was done when starting the coil winding so that it comes out the other side. Secure the end with another crimp terminal and cut off any extra wire. Secure the end by soldering or crimping the wire to the terminal and connect with a screw and washer.

Coil Tap Assembly



The flying tap lead is created using the test clip lead with crimp terminal placed on the end and covered with heat shrink tubing.

First, strip approximately 1/4" of the insulation from the end of the clip lead wire.

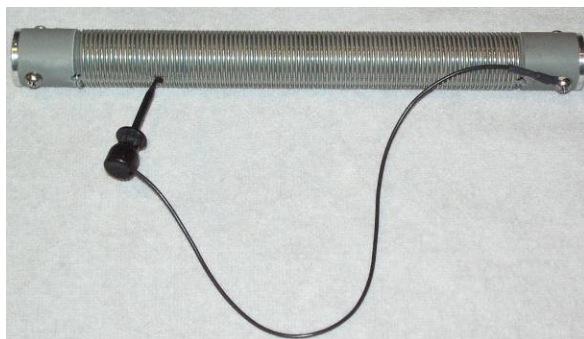
NOTE: Be sure to slip the shrink tubing over the wire before attaching the ring terminal.

Next, attach the ring terminal on to the stripped end of the wire by crimping and or soldering.

Once the wire is crimped, slide the heat shrink down and over the crimped area of the ring terminal and apply heat to shrink the tubing to secure the wire and protect from flexing.

Once the lead is complete it should be secured under one of the screws at the end of the coil form as shown below.

This completes the assembly of the PAC-12 Multi-band coil. This is how it should look when completed:



Operation:

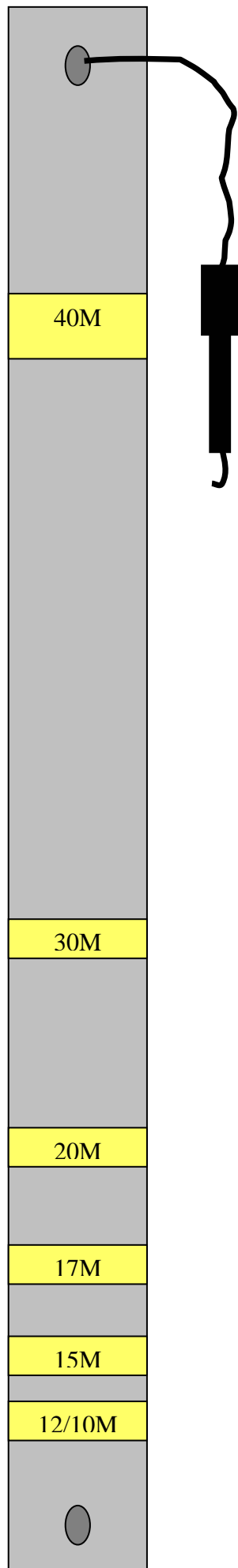
The multi-band coil kit is installed into the PAC-12 antenna system by screwing it onto the top of the base rods and screwing the whip adapter and whip into the top end.

The multi-band coil can be installed either with the tap lead up or down. The coil can be adjusted to resonate the antenna on any band between 40M and 10M. For operation on 10M, the telescoping whip may need to be collapsed a bit as the antenna may be a bit too long for resonance.

The antenna should be tuned by moving the tap position, checking the SWR and if necessary adjusting the whip length to achieve a good match (<2:1).

To insert the tap, grip the clip and press on the back end to expose the metal end. Align it parallel to the direction of the winding and while holding it extended, insert it between the turns of the coil in the desired area, rotate it by a quarter turn so that the metal end is under the wire and then release. Reverse this process to remove the clip.

Check the SWR and move up or down the coil as needed to achieve a match. See the chart and sketch on the next page for guidance in finding the tap points.



The chart and sketch are included on this page for assistance in finding the tap points for each band.

This page can be printed from the kit CD or the Pacific Antenna website and held next to the coil to aid in determining the tap location.

This guide may be cut out and laminated and carried with the kit to aid in coil adjustment.

Note: The tap locations shown are approximate and will vary with location, length of radials and surroundings.

Approximate tap points with tap lead end of the coil oriented up as shown here.

Band	Coil Tap Position
40M:	10 turns from top
30M:	57 turns from top
20M:	22 from bottom
17M:	10 from bottom
15M:	6 from bottom
12M:	1 from bottom
10M:	1 from bottom*

*whip partially collapsed