

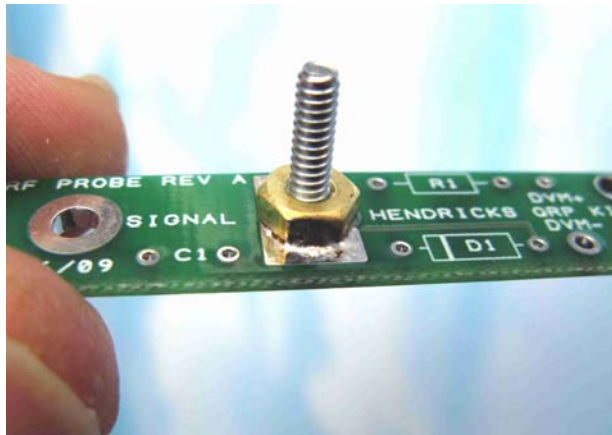
Hendricks RF Probe assembly



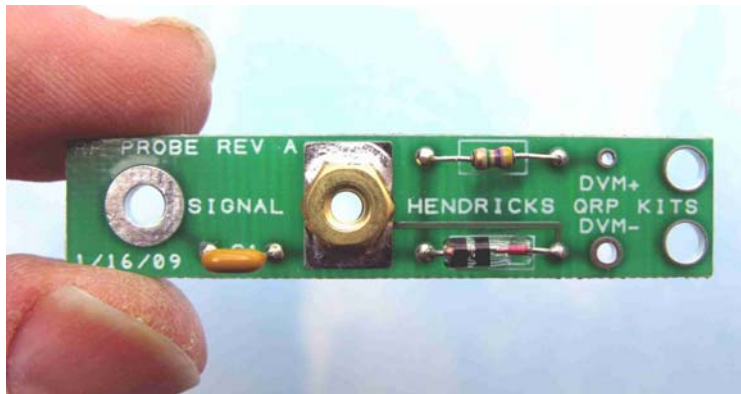
First off, check to see if the parts match the parts list...

- 1 – 1/2" x 3" CPVC tube
- 2 – 5/8" O.D. vinyl caps
- 1 – 3/32" dia x 2.5" brass rod
- 1 – 4-40 x 7/16" pan head screw
- 1 – 4-40 x 1/4" pan head screw
- 2 - #4 internal tooth lock washer
- 1 – 4-40 nut, steel
- 1 – 4-40 nut, brass
- 1 – 3/32 x 2" tyrap
- 2 - #4, 14-16ga ring terminal
- 1 – PCB
- 1 – D1 - 1N34A diode
- 1 – R1 - 4.7M 1/8w resistor (YEL, VIO, GRN, GLD) **See note**
- 1 – C1 - .01 disk ceramic capacitor (103)
- 3' – RG-174 coax
- 2 – banana plugs, 1 red, 1 black
- 2" – 3/16" dia. shrink tubing
- 1 – alligator clip and 9" lead
- 1 - copper foil tape, 2.25" x 2"
- 1 – self adhesive label

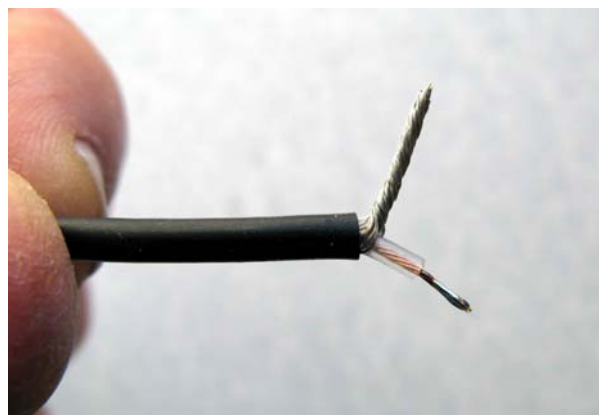
Note: If your multi meter has a different input resistance than the standard 10 to 11 Meg Ohm, for example, 22 Meg Ohms, You can figure out the scaling resistor (R_s) value by multiplying the multi-meter's input resistance R_m by 0.414. For example: $R_s = 22.00 \times 0.414 = 9.018$ Meg Ohm; instead of 4.7 Meg Ohms.



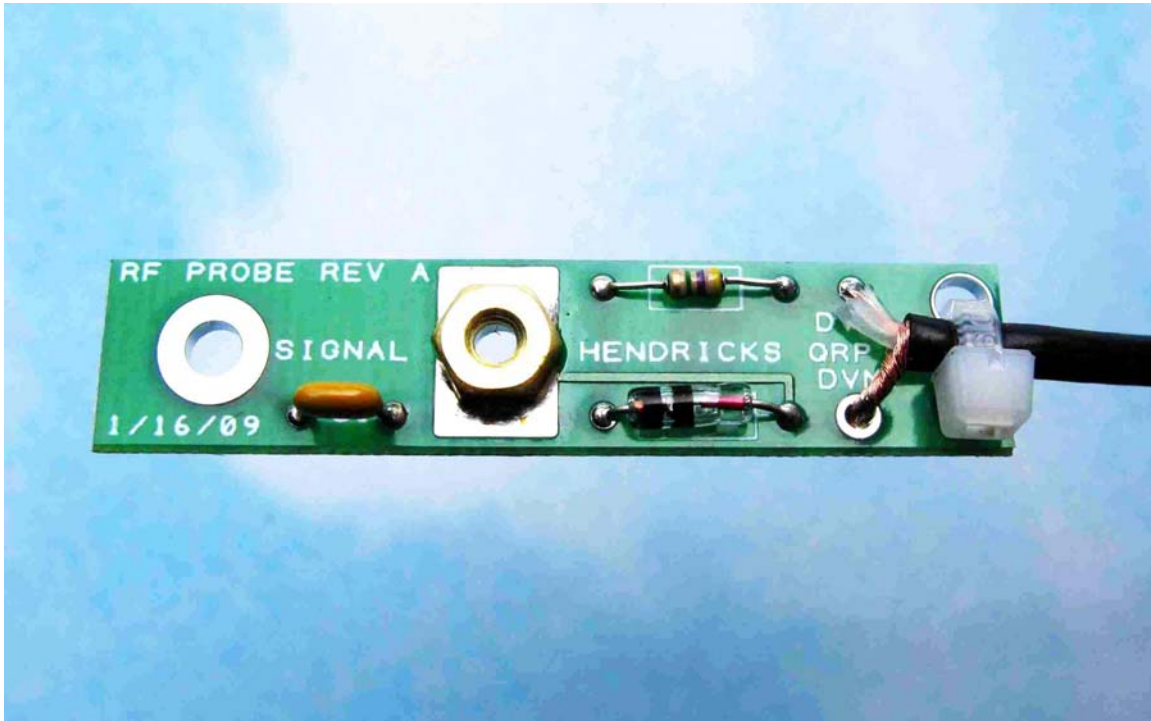
Solder the 4-40 “brass” nut to the top of the pcb. Use the 7/16” long pan head screw threaded from the bottom to position and hold the nut in place, while you are soldering it. Then, remove the screw.



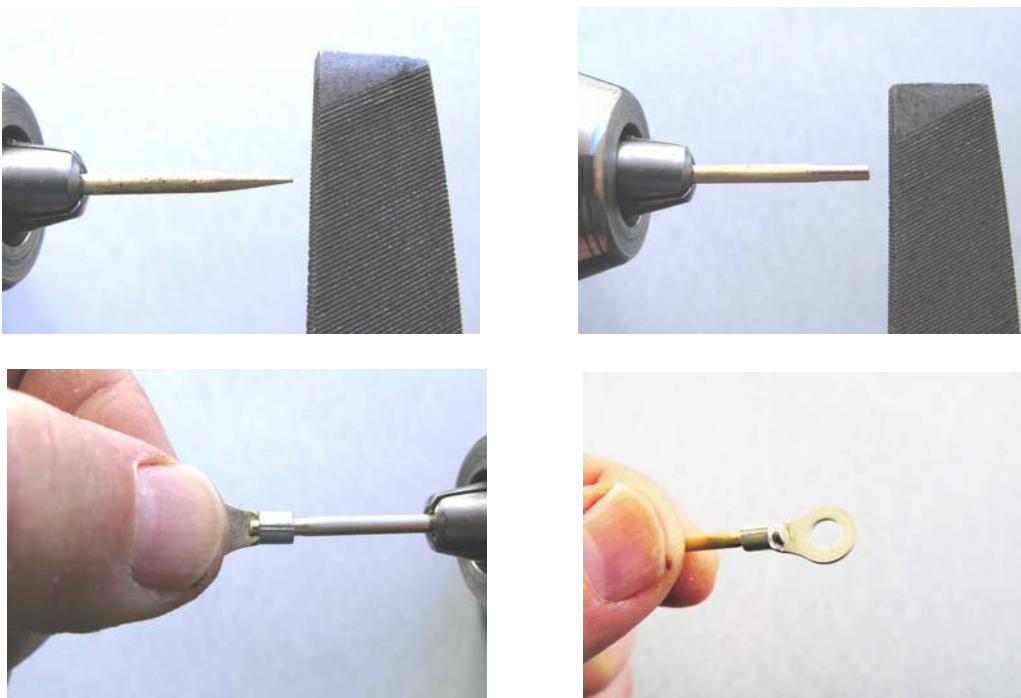
Next, we'll assemble the small pcb. Solder C1, R1, and D1 to the top of the pcb. Note and match the band on the 1N34A diode to the band on the silk screened pcb.



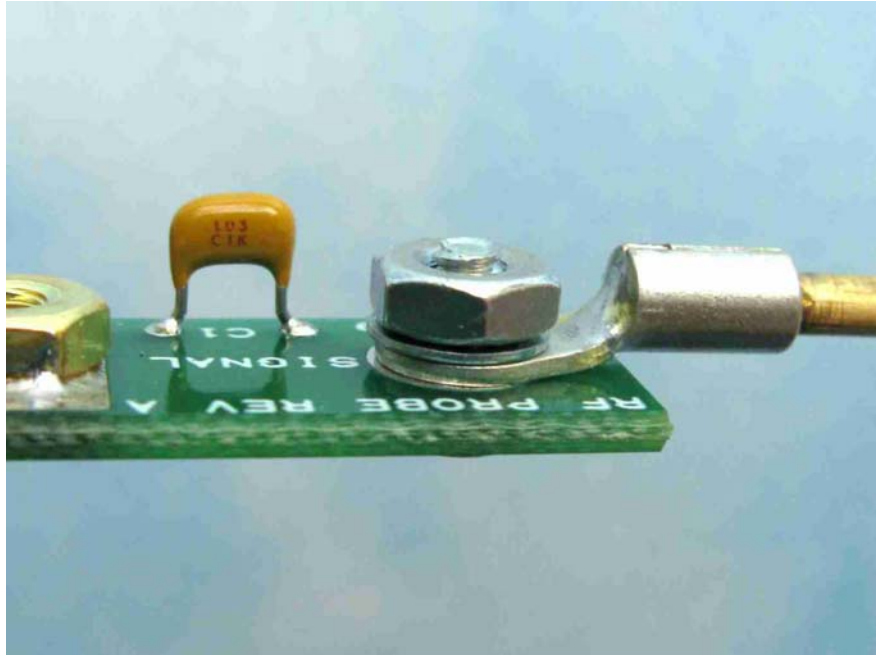
Strip and prepare as shown, 3/8” of one end of the RG-174 coax cable.



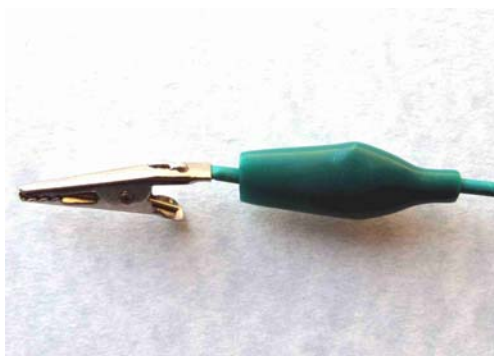
Solder the center conductor to the pad marked DVM +, and the shield to the pad marked DVM -. Secure the coax to the pcb using the cable tie supplied. Rout the tie as shown so the clinch is on the top of the pcb, not underneath.



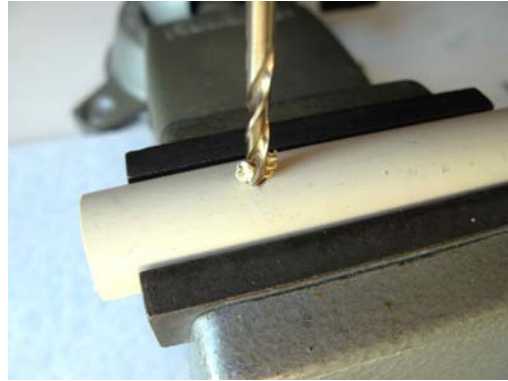
File a contact point on one end of the 3/32" brass rod as shown. File down the other end of the brass rod to accept one of the #4 ring terminals, and solder it in place. An electric drill makes it easy, but you can do it by hand as well



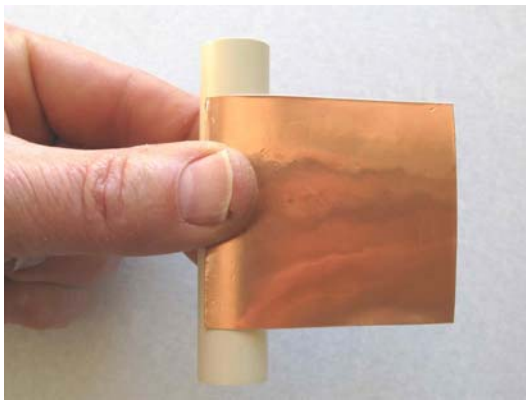
Secure the contact point and ring terminal assembly to the signal pad of the pcb using the 4-40 x 1/4" pan head screw, lock washer, and steel nut in the order shown. The screw head should be on the bottom of the pcb, then the pcb, ring terminal, lock washer, and finally the nut.



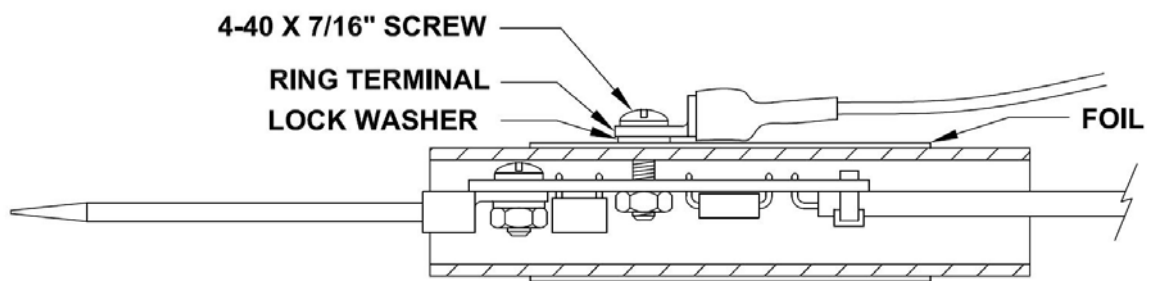
Slide the plastic boot back from the alligator clip and solder the lead to the clip. Sometimes these are crimped only, and can lose conductivity. Replace the boot. Place 1" of the 3/16" dia. heat shrink tubing over the loose end of the clip lead. Solder the lead assembly to one of the #4 ring terminals, and shrink the tubing to the transition from the ring terminal to the lead. Color may vary from picture. Set it aside for later assembly.



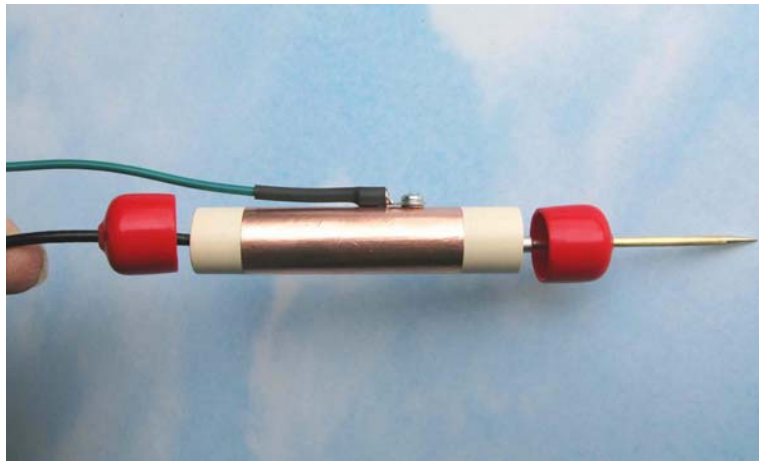
Mark and drill a 1/8" dia. hole in the side of the 3" long CPVC tube, 1-1/8" from the end.



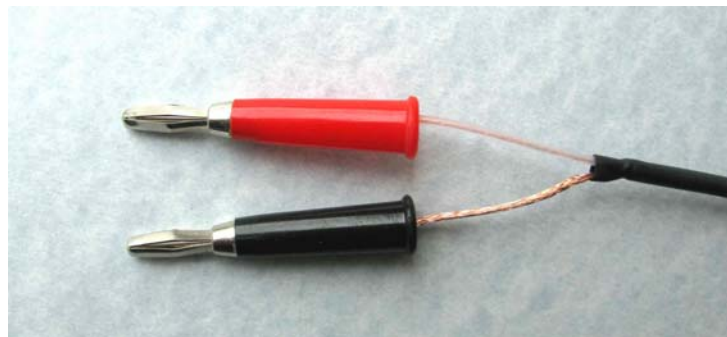
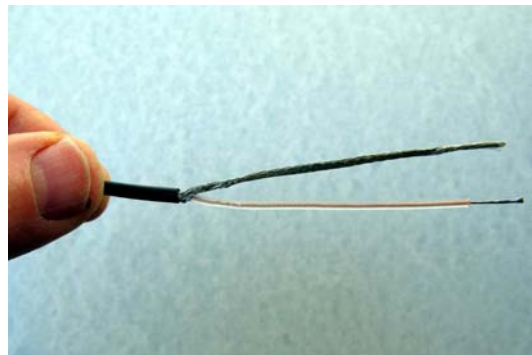
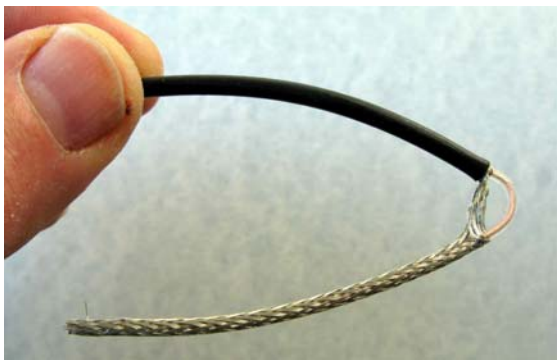
Install the copper foil tape. First, peel off the protective backing, and wrap the foil around the CPVC tube as shown. The 2 1/4" long side goes around the tube, and 2" long side, the length of the tube. Wrap it as shown so it is in the center of the tube, approx. 1/2" from the end. Now, poke a hole in the copper with a pencil, for the screw to pass through the 1/8" dia. hole.



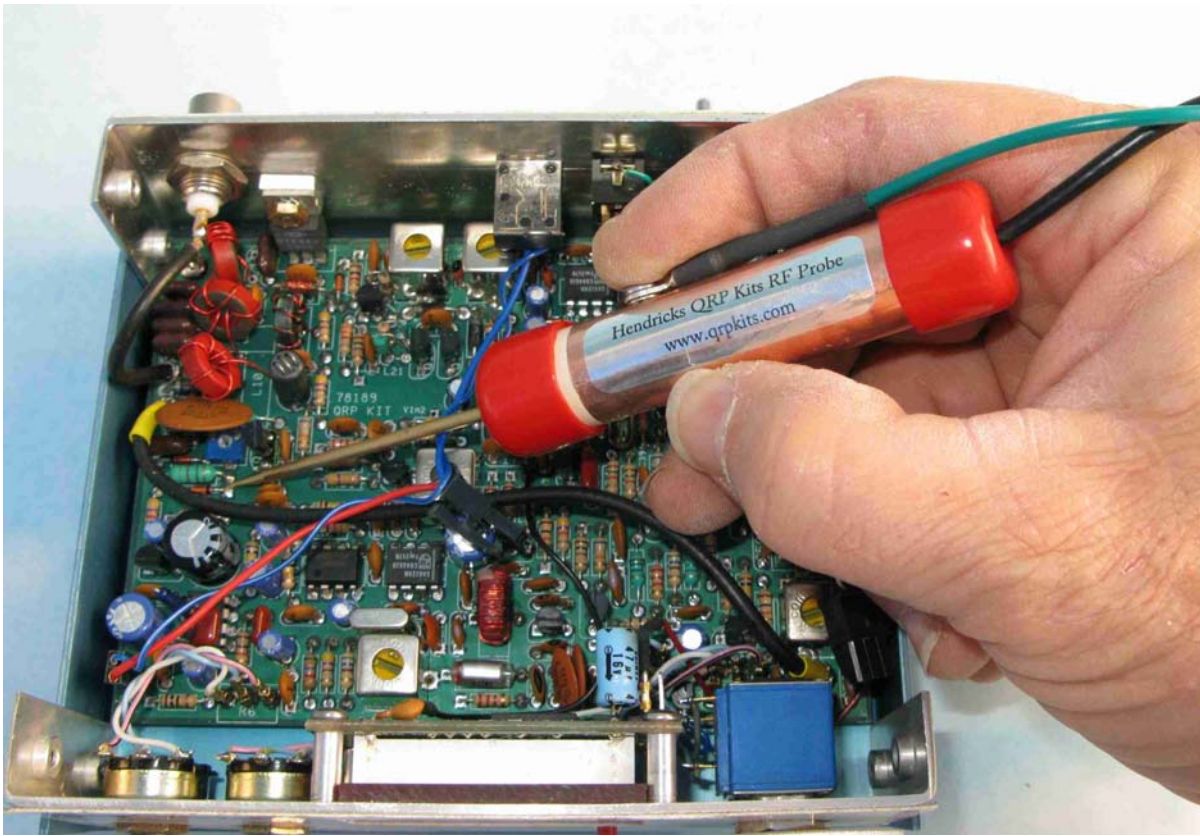
Slide the pcb in to the tube, with the bottom of the pcb facing the side hole in the CPVC tube. Attach the alligator ground clip assembly to the outside of the CPVC tube, as shown, using the 7/16" long pan head screw, and lock washer. The correct order should be, 4-40 screw, ring terminal, lock washer, and copper covered CPVC tube, with the screw passing through the 1/8" hole into the bottom of the pcb, and eventually to the brass nut. Secure, but do not over tighten.



Poke a hole in the center of both vinyl caps, with your probe tip. Slide one of the vinyl caps over the probe end and the other cap over the loose end of the RG-174 lead, and slide onto the CPVC body.



Finally, strip 2 1/2" and prepare as shown the end of the RG-174. Pass the center conductor through the side of the braided shield, as shown. Slide the remaining piece of shrink tubing over the end before attaching the banana plugs. Attach the center conductor of the coax to the RED plug and the shield to the BLACK plug, and shrink the tubing at the transition.



Stick on the Hendricks label, and you are finished.

Look in the files section for **Dar's (Darwin Piatt) – W9HZC** application and usage tips for the R.F. Probe.

