

**Using alternative stationary pickup coils for the AT-4500**

You can substitute a new brass loop element, modify an existing brass loop element, or use a flexible loop made from either Litz wire or a simple large conductor similar to the diameter of the existing brass rod pickup (1/4 inch).

- Alternate 1/4" brass loops can be made by the customer or bought from Accumetrics.
- You can make a smaller brass loop by unsoldering one of the clevis pins, removing some of the circumference of the loop, and re-assembling.
- For a flexible loop, Litz wire is an ideal/ optimal RF material for an induction power coil (this is the same individually insulated multifilament wire that is used for the 10 foot of cable used to connect the coil to the tuning enclosure), but you may need to tie the loop to a non-metallic support to hold the loop shape. The Litz wire may be able to be locally sourced/ supplied to avoid shipping charges and delay, but if you are going to try a flexible loop, then try the following simpler solution first:
- Substitute your existing 1/4 inch diameter brass loop element with a length of stranded or solid AWG 2 wire with appropriate lug terminals so that you can easily connect to the end of the existing 10 foot long Litz wire cable. The AWG 2 cable is 0.258 inch or 6.54mm diameter. It is important to approximate the 1/4 inch diameter for reasons of wire inductance. This wire diameter will be significant if you want to be able to optimally step through the RF tuning for maximum power transfer.

The loop will need to be axially centered with the transmitter position, and placed as far away from nearby metal surfaces as you can manage.

Make sure that you insulate the connections to eliminate shorts.

**Retune** whenever you change the shape or length of the coil, or if the distances to nearby metal surfaces change.



Litz wire, 8AWG. Flexible Teflon coated cable	Detail showing very large number of fine individually insulated filaments	Stripped cable prior to solder tinning, with insulation left on the tip by 1/16"	Crimped and re-soldered
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**Litz wire solder termination:**

- Slide on heat shrink
- Strip the cable 1/2 inch while keeping the filaments together with the almost stripped insulation. Keep a little of the Teflon insulation on the end of the cable to keep the fine filament wires from spreading.
- Use solder flux and a heavy duty soldering iron (175 watt American Beauty model 3138X or similar) to pre-tin the leads. The heat by itself will strip the insulation off of the individual filaments. Clean off the flux well after completion.
- Insert the tinned end into a crimp connection, crimp, and then re-solder, and clean.
- Slide heat shrink into place and shrink