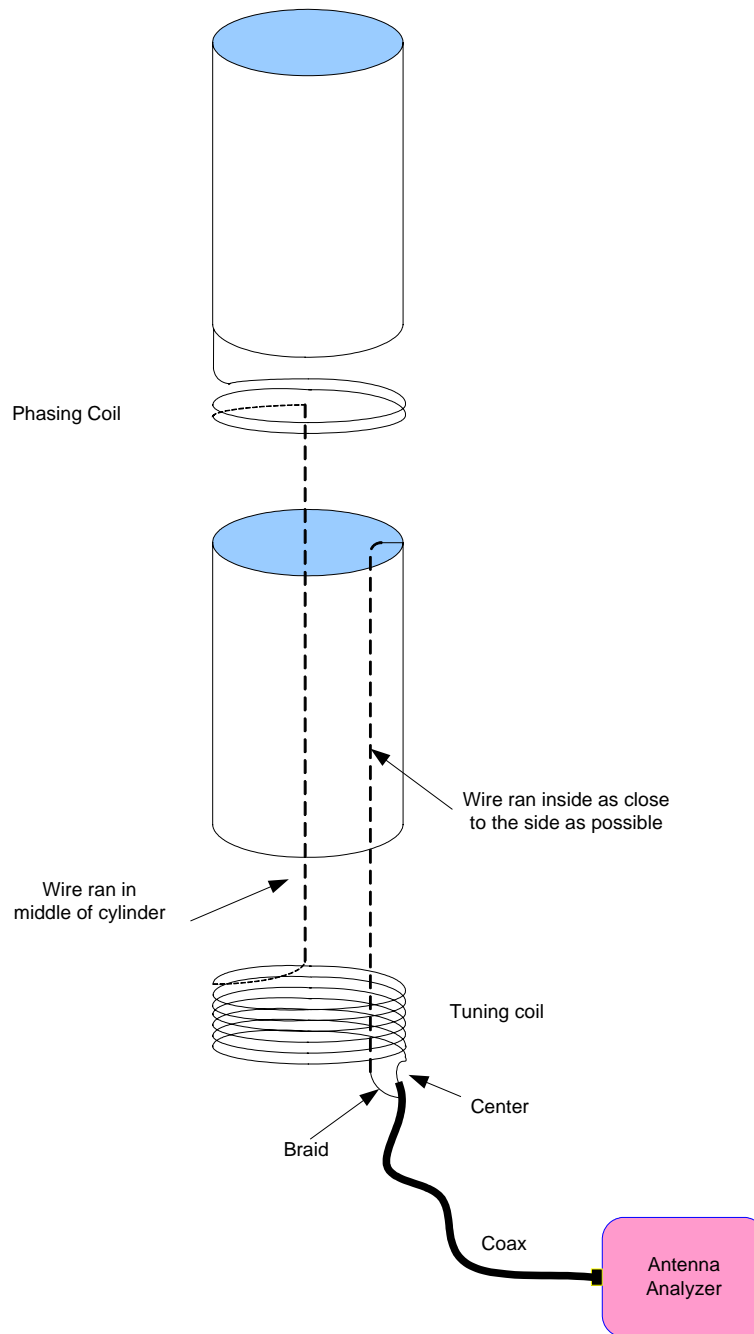


Tuning an EH for Resonance



Demonstration 4*

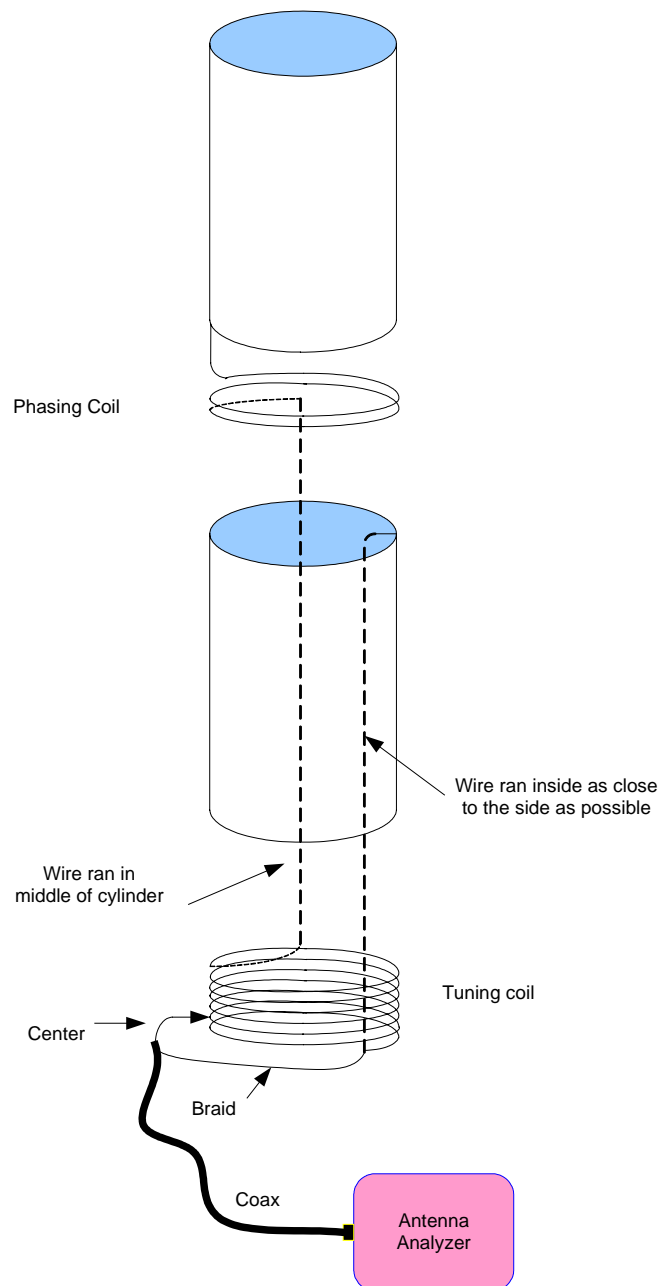
Step 5 - Connect the top of the coil to the top cylinder. Space the wire 1/2 inch or more away from the lower cylinder to minimize capacity coupling. We prefer to running this wire down the center of the lower cylinder.

Step 6 - Connect a wire to the lower cylinder. This will be "ground" for the antenna.

Step 7 - Connect a short piece of coax to the lower end of the coil and the lower cylinder wire. Measure the resonant frequency and remove turns to set the frequency just below the desired frequency.

(Note: The resonant frequency is the lowest impedance shown on the antenna analyzer.)

Tuning an EH antenna for Lowest VSWR



Step 8 - Connect the lower cylinder wire (ground) to the bottom of the coil. Connect a short piece of coax to the "ground" of the antenna (you just created) and to a tap on the coil 2 turns above the bottom.

Step 9 - Measure the value of X when $R = 50$ ohms. Calculate the value of a coil with that reactance and install it in series with the center lead of the coax. Alternately, experimentally determine the value of inductance that allow minimum VSWR to occur at the same frequency as maximum radiation.

Step 10 - Adjust the tap on the coil to get perfect VSWR, then again adjust the top turns on the coil to place the antenna resonant frequency where desired. The impedance of the antenna can be adjusted by spreading turns on the lower end of the coil. The operating frequency can be adjusted by spreading turns on the top of the coil. Be aware that changing the tap will also change the frequency, so start low with too many turns, correct the VSWR then set it on frequency. Hot glue will keep it there.

NOTE: When using a battery powered antenna analyzer, connect a ground to it. This will correct for unstable readings etc.

Calculate the number of turns required for the Source using the Coil Calculator at web site www.WB5CXC.com

* Demonstration #4 is from the EH web site. www.EH-Antenna.com - see library

STAR Configuration of an EH Antenna

