

## Frequency and SWR Adjustment

The antenna is tuned to the operating frequency by adjusting the tap on the loading coil and the length of the counterpoise wire. The excess counterpoise wire should be wrapped in a small coil 3-4 inches in diameter. The SWR is checked using a transmitter and SWR meter but will be much easier using an analyzer such as the MFJ-259/269 SWR Analyzer. Initial tuning will require some time. A permanent marker can be used to place marks on the coil to reduce the amount of time required for future tuning.

### **Before tuning check the following:**

- Coax Connections
- Counterpoise Connections and Length
- Whip Connection and Length
- The tap is only touching one coil turn

- [ ] 1. Begin by placing the tap on turn 0 (Figure 2) which will short the entire coil. The tap should only be in contact with one coil at a time.

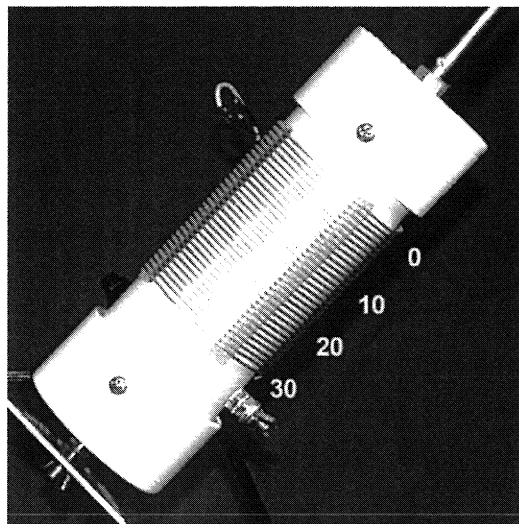


Figure 2

- [ ] 2. The counterpoise wire should be less than 1/4 wavelength of the desired frequency [  $234 / \text{frequency (MHz)}$  ]. This length may need to be increased or decreased according to height above ground level.
- [ ] 3. With the tap on turn 0 and the counterpoise just under 8 feet, the resonance point should be approximately 30 MHz. If this is not true lower the tap on the coil to lower the frequency or shorten the whip to raise the frequency. Table 1 gives approximate tap points for each of the HF bands with the counterpoise at ground level.

- [ ] 4. Each installation may require different lengths of counterpoise wire and tap positions. The greatest factor in determining the counterpoise length will be the height above ground level. The higher the installation, the closer the counterpoise length will need to be to a  $\frac{1}{4}$  wavelength =  $234 / \text{frequency (MHz)}$ .
- [ ] 5. Operation on the 6 and 2 meter bands requires that the top section of the whip be retracted completely. This may vary with some installations. The counterpoise length should be less than 5 feet.

**Table 1**  
Counterpoise Length at Ground Level

MHz	Coil #	Counterpoise Length (Ft)
144.0	0	5'
50.1	0	5'
28.00	1.75	7' 9"
24.89	1.5	8' 5"
21.00	5.5	10' 6"
18.068	5	11'
14.00	9	18'
10.1	14	19' 5"
7.00	25	33'

### **Technical Assistance**

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual, you may call *MFJ Technical Service* at **662-323-0549** or the *MFJ Factory* at **662-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile (FAX) to 662-323-6551; or by email to [techinfo@mfjenterprises.com](mailto:techinfo@mfjenterprises.com). Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.