

Tuning a Manual Tuner - RCC October 2009

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There are several iterations of the Manual tuner out there. They usually consist of variable capacitors on the input and output and either switched inductance taps or a roller coil in the middle.

The rear view of the interior of a MFJ 941C is shown on the right as a typical tuner of this type. The transmit capacitor is shown in the upper left, the tapped coil in the middle and the output capacitor at the upper right.



Below is the front panel, now that we know what we are moving when we turn the knobs.



The quickest way to get these tuned is to listen to the receiver first. The noise will increase as you reach resonance. If there is a signal there, better yet. Preset the capacitors to their mid range

markings and start switching the switch, listening for an increase in noise/signal. There should be some spot that there is an increase. At that spot, try turning first one capacitor, then the other for a further peak.

Now we can get to the transmitter part of the process. It is best to use a continuous carrier for this at a low a power as you can get a reliable reading. Most rigs these days have an "AM" position and this will give you a reduced continuous carrier. "CW" will also give you a continuous carrier depending on the settings for the radio. It has to be set for a straight Key, not a keyer. "SSB" will not give you any power until you speak.

You are looking for maximum power or minimum reflected or SWR. The tuner may have metering but the Radio is what we are trying to satisfy, so let's watch that. With the Power applied or key down, slowly rotate each capacitor, watching for minimum SWR. Then let off the key and try the nearby Inductance switch positions to see if they are any better. **DO NOT SWITCH with the KEY DOWN.**

If you cannot get a reasonable/usable SWR then perhaps the antenna is too far from resonance to start with. You need at least a quarter wave of antenna to resonate on the lowest frequency that you plan to use.