# MFJ-900 ECONO TUNER INSTRUCTIONS

Thank you very much for purchasing the MFJ-900 Econo Tuner.

## GENERAL INFORMATION

The MFJ-900 Econo Tuner is designed to match virtually any transmitter (up to 200 watts RF power output) to almost any antenna. This includes dipoles, inverted vees, random wires, verticals, mobile whips, beams, and others fed by coax lines or single wire from 160 thru ten meters.

## INSTALLATION

1. Install the MFJ-900 between your antenna and SWR/WATT meter as shown in FIGURE 1. Connect a coax line from the SO-239 coax connector on the rear of the tuner marked TRANSMITTER to an SWR meter connected to the transceiver.
2. Coax fed antennas must be connected to the SO-239 coax connector marked COAX on the tuner.
3. Random wire antennas must be connected to the five-way binding post marked WIRE. The random wire should be long, high, and clear of surrounding objects as possible. Do not ground the random wire antenna. Wire antenna should be quarter wave length or longer at operating frequency.
   NOTE: Make sure the MFJ-900 tuner is well grounded to the transmitter.

## USING THE MFJ-900

The INDUCTANCE switch on the MFJ-900 tuner presents a minimum inductance at position "A." Minimum inductance is used at the higher frequencies. At "1" the TRANSMITTER and ANTENNA controls present maximum capacitance.

Before installing the MFJ-900, your transmitter must be tuned for a 50 ohm output impedance for each frequency band. To do this a 50 ohm dummy load is recommended. After properly tuning your transmitter, install the MFJ-900 as described in "INSTALLATION."

After proper installing the MFJ-900, use the tuner to tune for minimum SWR as described below. Do not re-adjust the transmitter tuning for minimum SWR.

1. Set TRANSMITTER and ANTENNA controls to 3.5 (capacitors half opened).
2. Rotate INDUCTANCE control for maximum noise in the receive mode of your receiver.
3. Apply enough transmitter power to give an adequate indication on your SWR meter. Do not apply full power while tuning for minimum SWR.
4. While transmitting, turn the INDUCTANCE control for minimum SWR.
5. Adjust the TRANSMITTER control for a drop in SWR.
6. Adjust the ANTENNA control until minimum SWR is achieved.

7. If minimum SWR is not achieved, increase or decrease the INDUCTANCE control one position and repeat steps 5 and 6.
   CAUTION: If arcing between capacitor plates occurs, increase or decrease the INDUCTANCE control one position then repeat steps 5 and 6.
8. After minimum SWR is obtained check output power with a voltmeter, relative power meter or with an antenna current meter. Tune the Antenna Tuner for maximum power output, make sure SWR is at minimum.
9. When minimum SWR is obtained, full power up to 200 watts output may be applied to the MFJ-900. On 160 meter power applied to the tuner may be reduced to 80 or 100 watts if excessive heating and arcing occurs.

For receiving, do steps 1 and 2 and adjust TRANSMITTER and ANTENNA controls for maximum noise on signal strength.

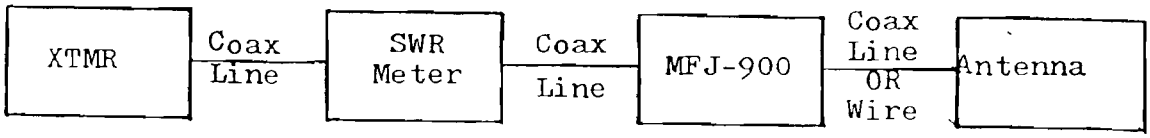
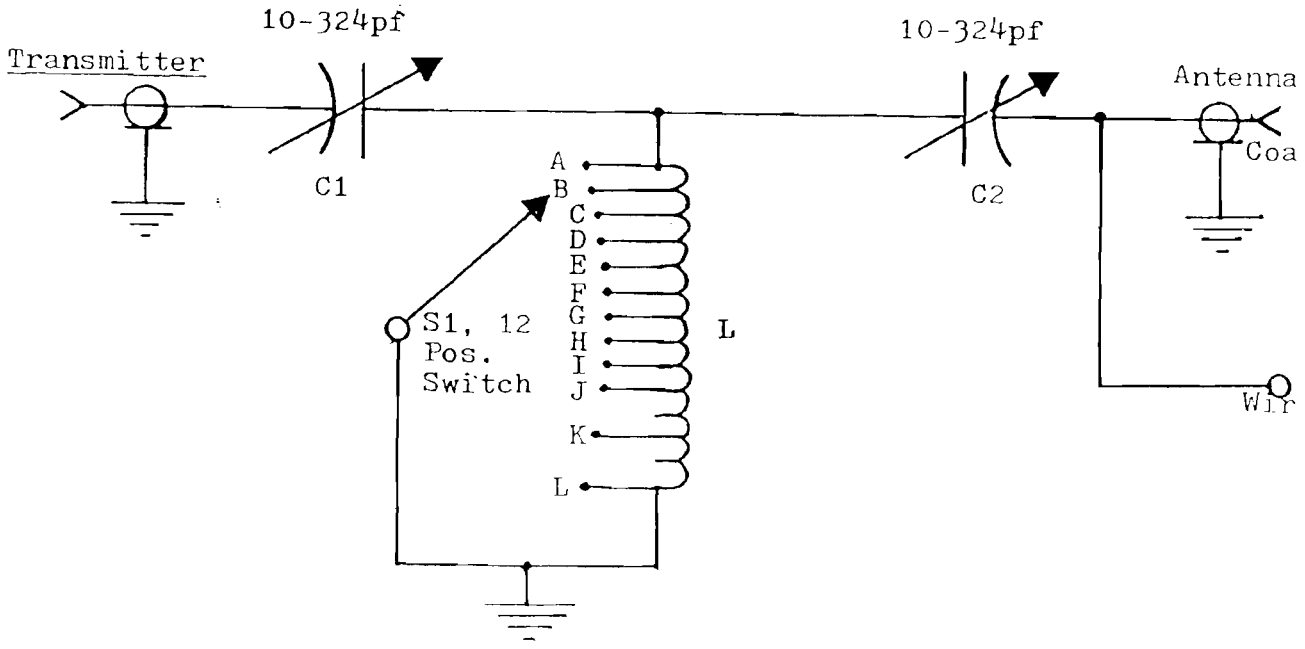



Figure 1. Connect the MFJ-900 as shown




MJF-900 Circuit Diagram