

## OUTPUT TANK CIRCUIT ADJUSTMENTS WITH MFJ-259B

1. Hook it up to the output of the amp. Amp is off and unplugged!!
2. Leave the tube or tubes connected but install a carbon resistor equaling the input impedance of the tube or tubes from the plate connection to the chassis. 1/2 watt carbon resistor (must be carbon so it is non-inductive). This simulates the output impedance of the tube or tubes.
3. Manually lock the t/r relay in the transmit position.
4. Set amp's bandswitch to whatever band you want to check.
5. Set the tune and load knobs to about 1/3 positions.
6. Set the frequency fed from the antenna analyzer into the amp to where ever you want it. I begin mid band and go on either side of that.
7. Adjust the antenna analyzer until you see these 3 things happen all at the same time:
8.
  - a. 1:1 SWR or as low as you can get it.
  - b. 50 ohms impedance (Rs)
  - c. Reactance or Xs of zero or as close as you can get it.
  - d. Move the taps around on the tank coil as required to get the values above.
8. Now adjust the tune and load capacitors around and see how much range you have. If you can tune the amp ok this way and maintain low SWR and 50 ohms resistance don't change the tank coil tap. If not move it around until you get the correct match.
9. Do this with all the bands.
10. When done put the T/R relay back in it's normal state and remove the resistor!!

This works well and saves you a lot of hard work.

10 and 15 meters can take a lot of experimenting to  
find the best match.

## TUNED INPUT ADJUSTMENTS WITH MFJ-259B

1. Leave tubes plugged in sockets and connected.
2. No power at amplifier (Amp is unplugged!!)
3. Solder a carbon  $\frac{1}{2}$  watt resistor whose value equals the cathode impedance of the tube from the tube's cathodes to the chassis. This will simulate the input impedance of the tube or tubes. As an example a single 3-400Z tube equals 120 ohms of cathode impedance. My amp uses two in parallel so I used a 60 ohm carbon resistor.
4. Connect the MFJ-259B to the input of the amplifier, RF IN.
5. \*\*Use the same coax jumper you will use when the radio is reconnected to the amplifier. Its length will be critical to always having a good match.
6. Mechanically or electrically (use a small external power supply) activate the T/R relay.
7. Adjust the MFJ-259B frequency to what ever frequency you are using. I used 7.225 for 40 meters because that is about the midway point where I operate.
8. Now adjust the tuned input inductor or capacitors. I recommend leaving Cin (radio side) alone and adjust the inductor and Cout (tube side).
9. Go for a SWR of 1:1 or as close as you can get it, Rs of 50 ohms and a Xs or zero or as close as you can get it.
10. \*\*Remove the carbon resistor from the tube's cathode.\*\*
11. When done with all bands you can expect to have to do some minor tuning of the tuned input after power is applied.
12. Be patient it can take some time!!