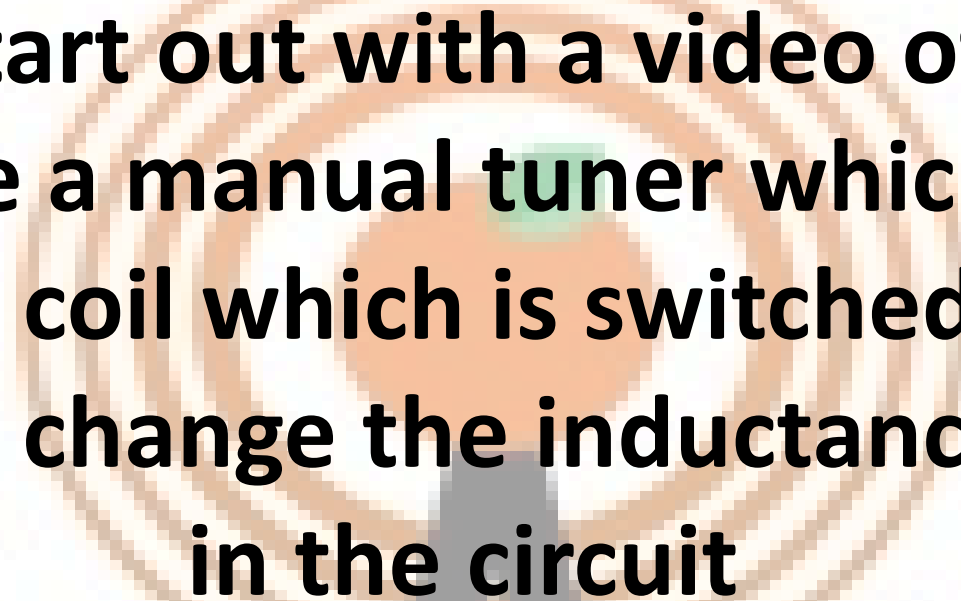


HOW TO TUNE A MANUAL ANTENNA TUNER

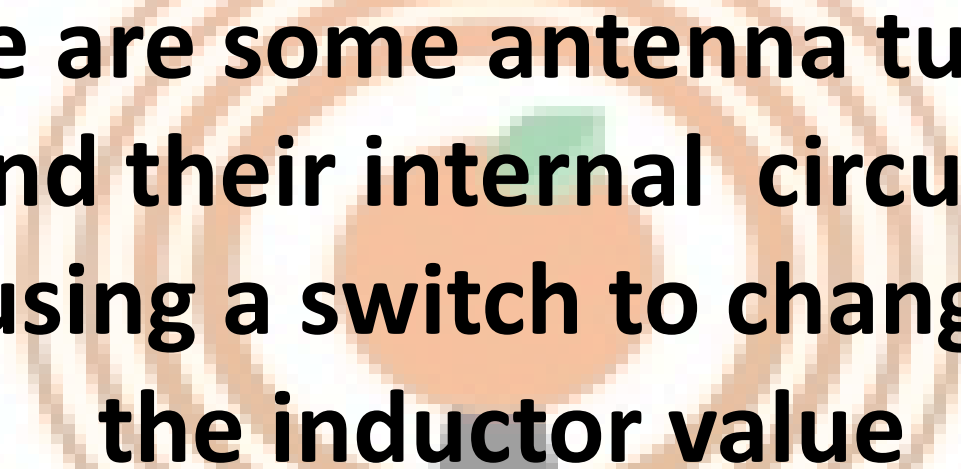


BY
PETE RIMMEL
N8PR



**Let's start out with a video of how
to tune a manual tuner which has
a coil which is switched
to change the inductance
in the circuit**

DCARC



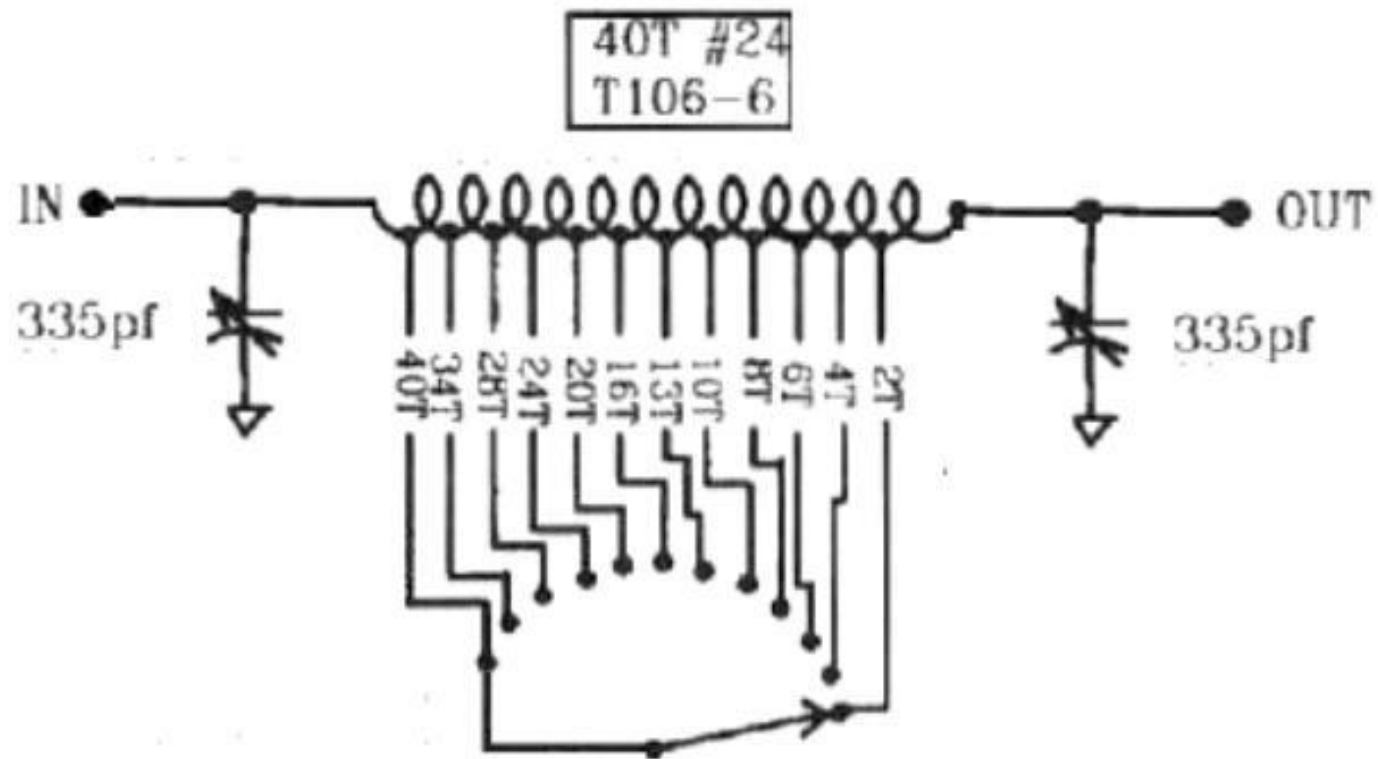
**Here are some antenna tuners
and their internal circuits
using a switch to change
the inductor value**

DCARC

This little tuner will handle 100+ watts

Use the built in SWR bridge in your rig for tuning

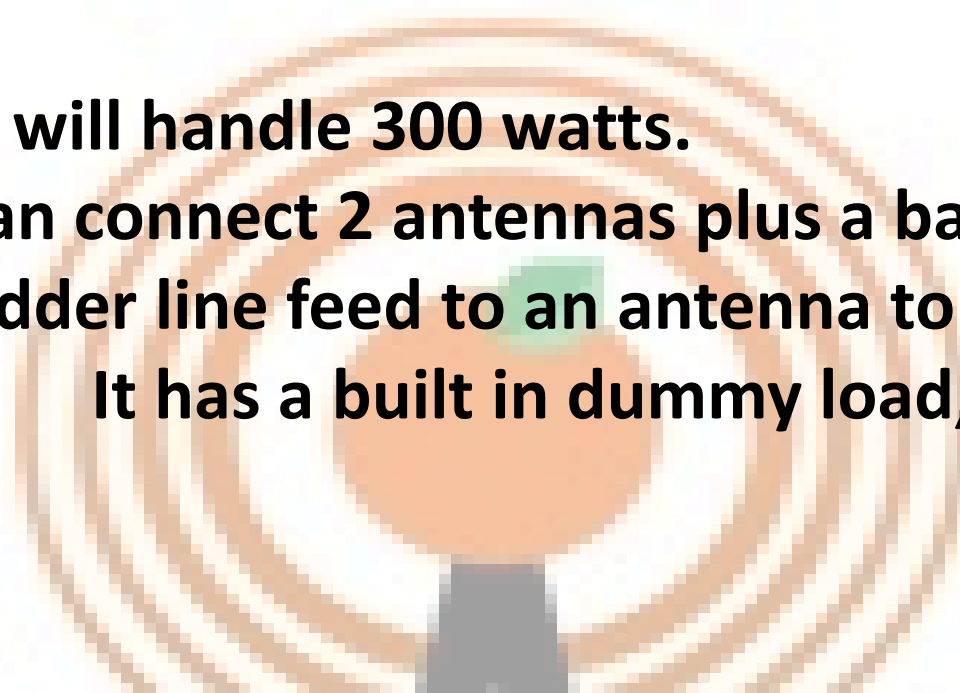


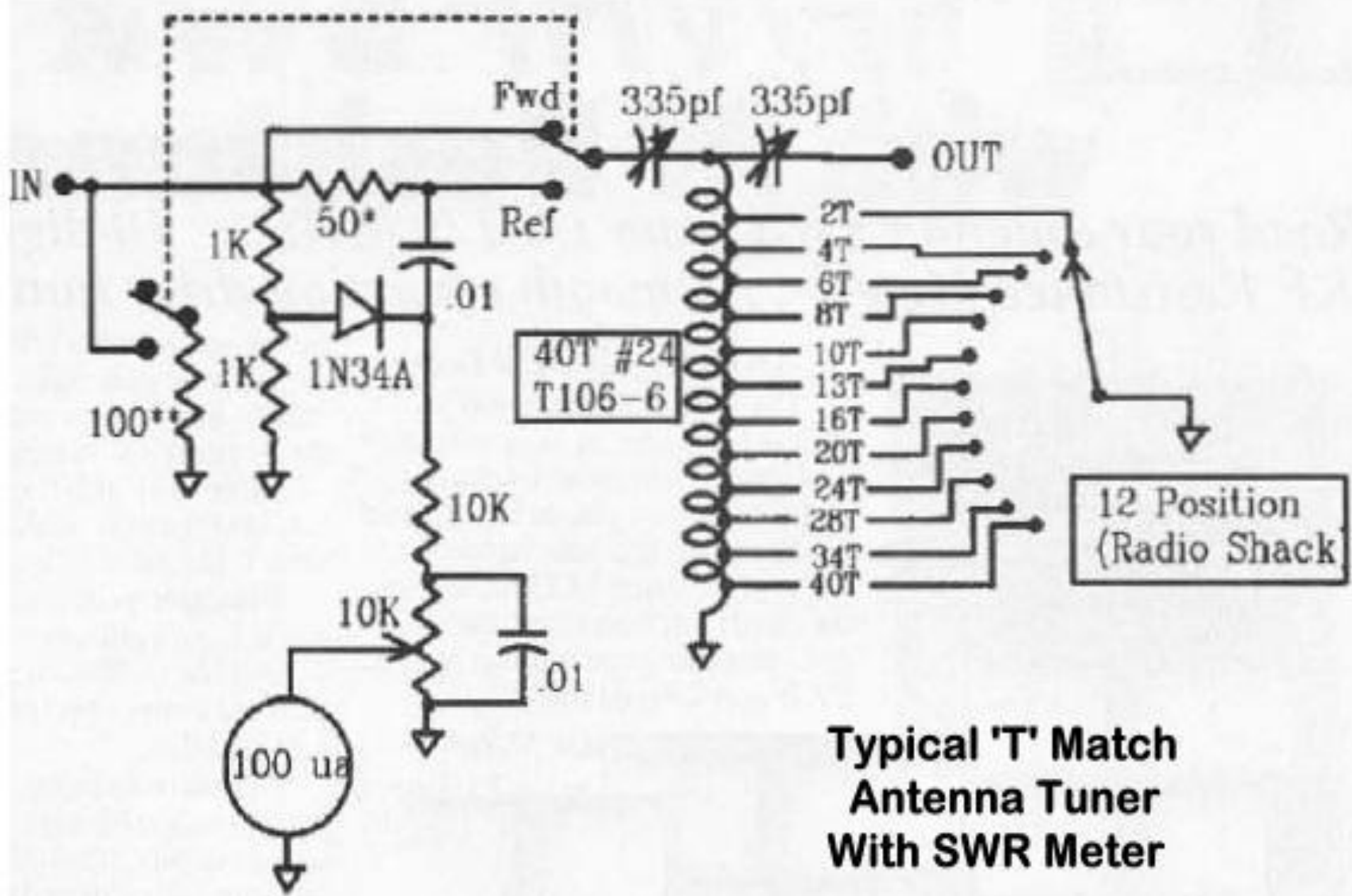


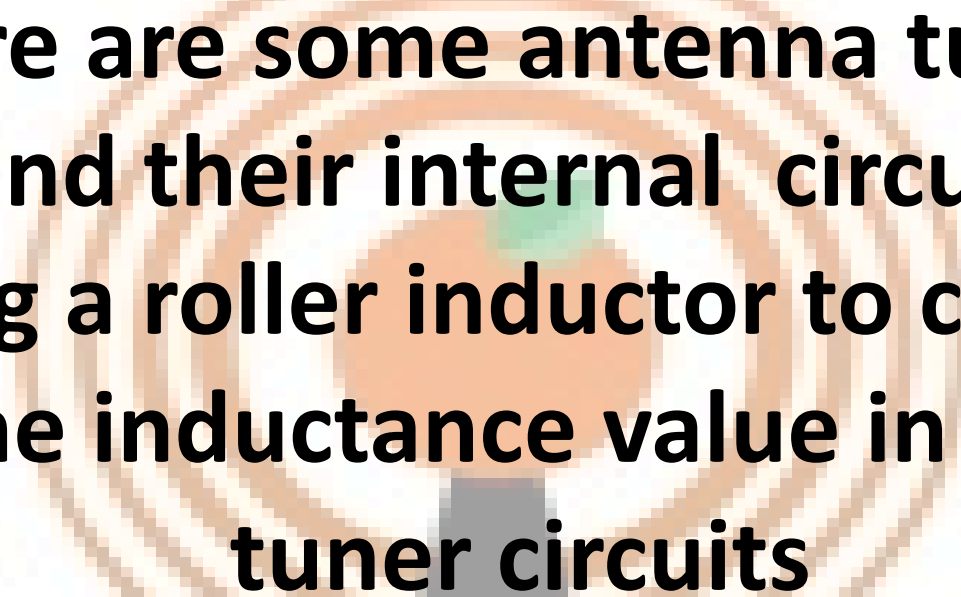
Typical PI Network Antenna Tuner With Switched Inductor

This tuner will handle 300 watts.

You can connect 2 antennas plus a balanced ladder line feed to an antenna to this tuner. It has a built in dummy load, too.

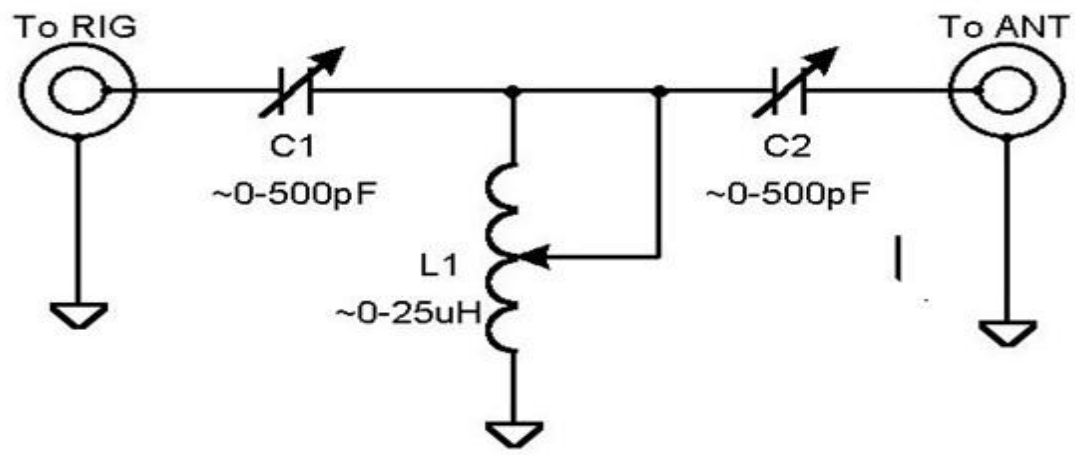




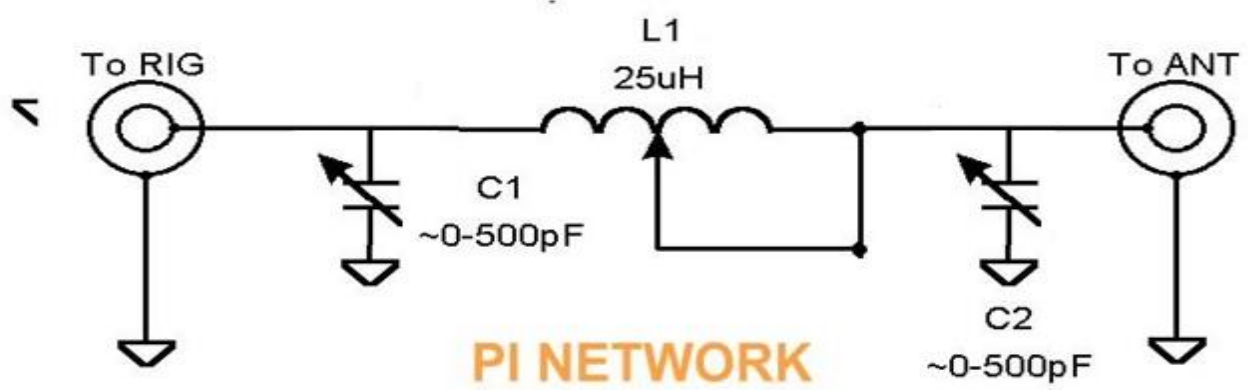
A stylized graphic in the background featuring a radio tower with a lattice structure. Behind the tower are several concentric, semi-transparent orange circles, resembling radio waves or signal strength indicators. The overall image has a pixelated or dithered appearance.

**Here are some antenna tuners
and their internal circuits
using a roller inductor to change
the inductance value in the
tuner circuits**

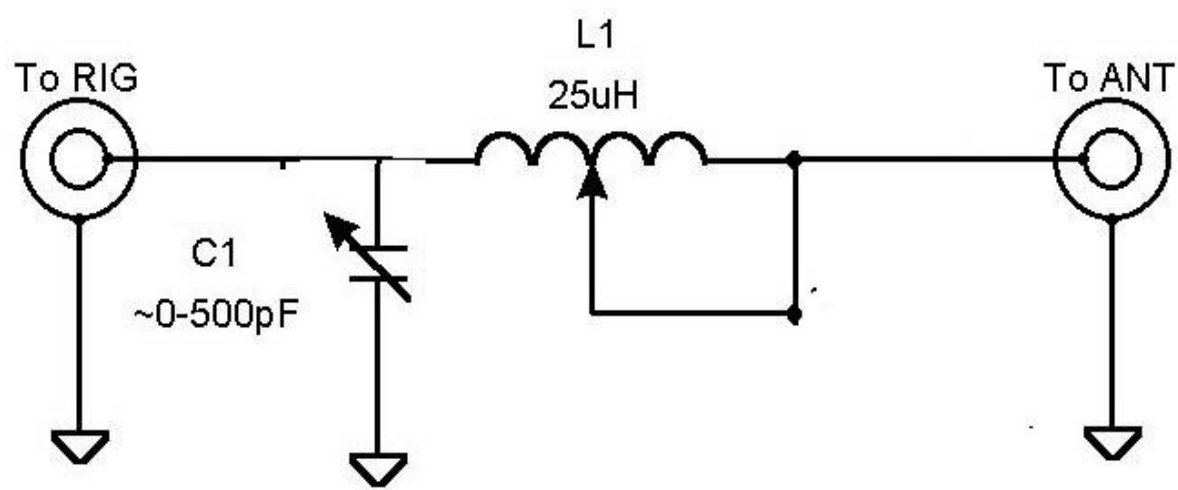
DCARC



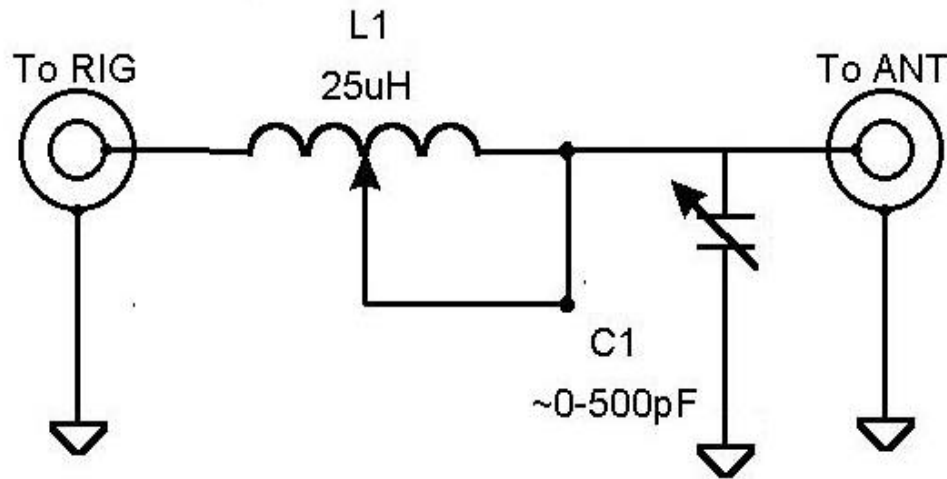
T NETWORK



PI NETWORK



"L" NETWORK TUNERS



IN SOME TUNERS THE CAPACITOR CAN BE SWITCHED TO EITHER SIDE OF THE COIL

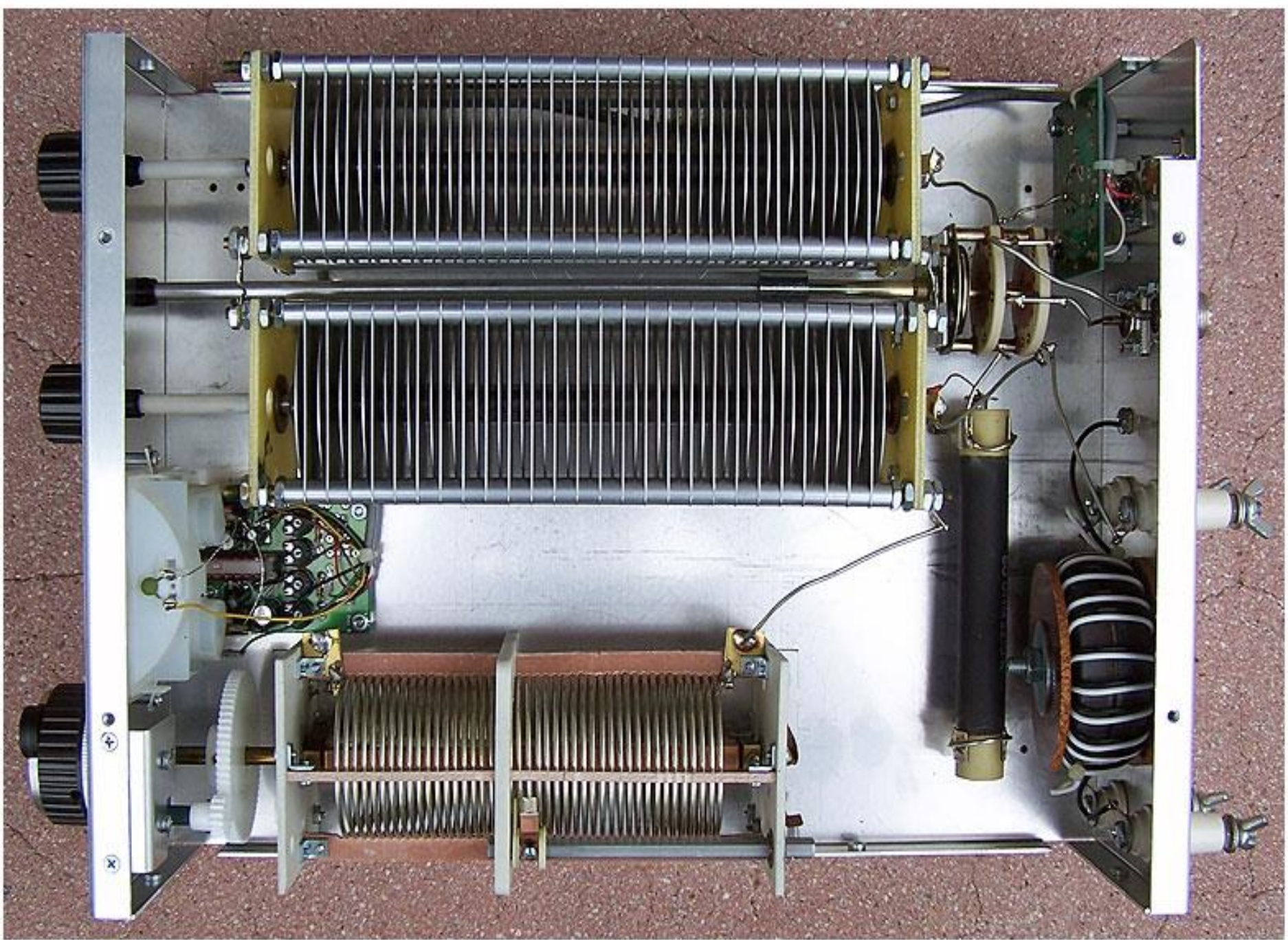
This tuner will handle 1500+ watts.

You can connect 2 antennas plus a balanced ladder line feed to an antenna to this tuner.

It has a built in dummy load, too.

It uses a 'T' network for tuning



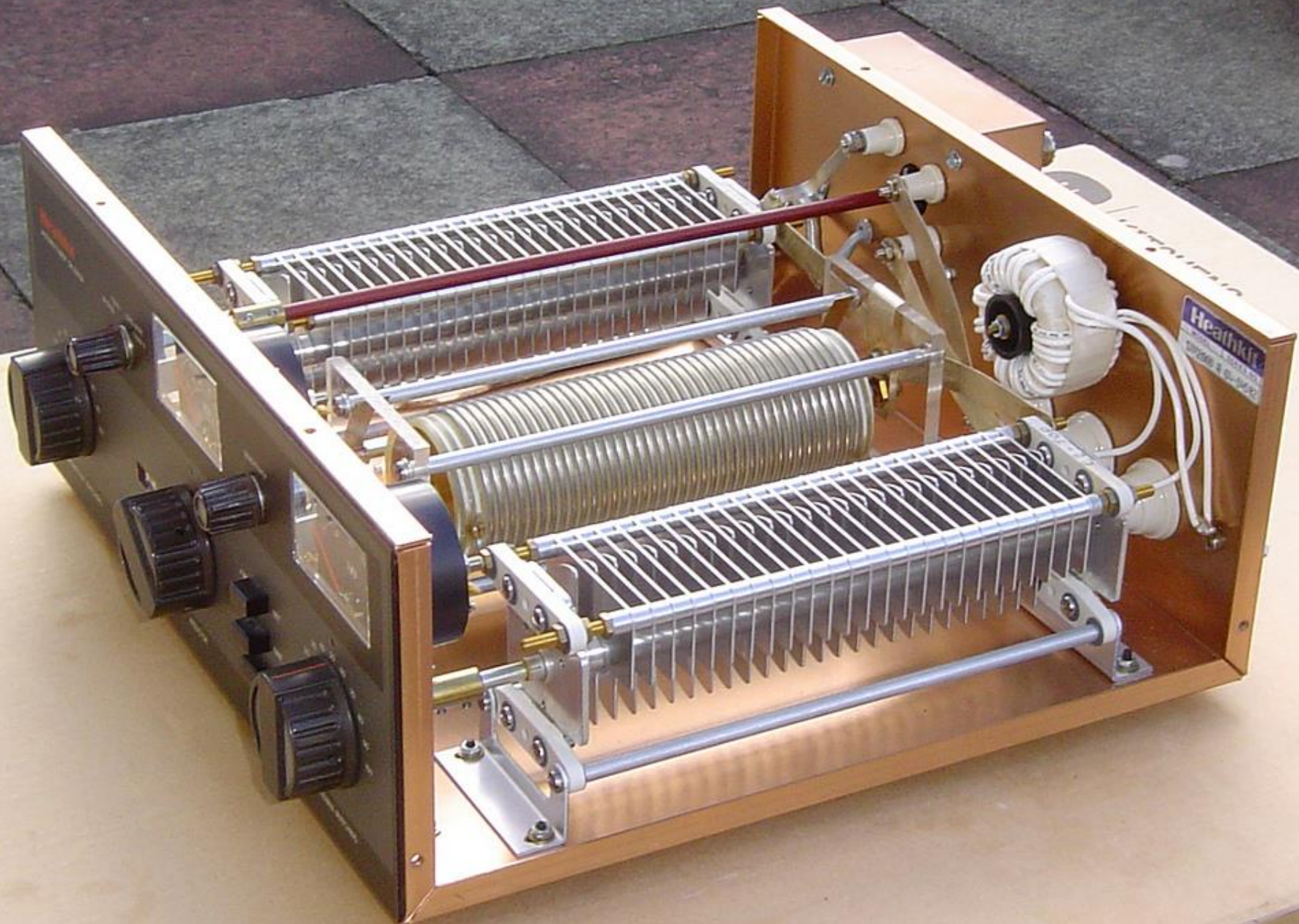


**This Heathkit tuner will handle 1500+ watts into two coax feeds or one ladder line.
It was a Kit that you put together yourself, including the capacitors !
NOTE: the separate forward and reflected power meters.
This tuner uses a PI network circuit for tuning the antenna**



This is the back of the Heathkit tuner

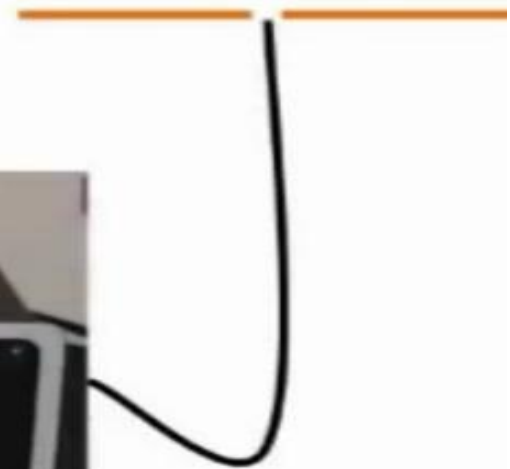




You saw in the videos that you put the Antenna tuner between the rig and the antenna And keyed up the radio to tune the antenna



On the next slide you will see a way to tune your antenna tuner without putting a signal on the air, thus eliminating QRM on the bands:



Switch to the MFJ 949
Dial up your QRG and
Tune the tuner for
Minimum SWR on the
Meter



To Summarize:

1. **Attach your antenna coax to an output on your antenna tuner. Attach your rig and MFJ 949 through a switch to the rig input on the tuner.**
 2. **Switch to your rig so you can listen through the tuner.**
 3. **Set both capacitors to 50% of their values.**
 4. **Start with MINIMUM Inductance and increase it for maximum signal input. (That stops harmonic tuning)**
 5. **Adjust the capacitors, one at a time for maximum signal “loudness”.**
 6. **Key up rig in low power and adjust the caps for minimum reflected power —OR—**
 7. **Switch to an MFJ analyzer and set it for the QRG you want and tune for minimum SWR on the analyzer.**
 8. **Switch the tuner to your rig and apply power. Then increase power through the tuner and fine tune your adjustments.**
- THEN GO WORK SOMEONE ;-)**

THANK YOU FOR YOUR ATTENTION

ANY QUESTONS?

DCARC