

AMERITRON AL 1500

Conversion to 2 X 8877

AI 1500 Modification

- ▣ This slide presentation is for informational purposes only.
- ▣ No warranty and no responsibility is given for the procedures and outcome of this experimental project.
- ▣ Your amplifier has been designed by the factory for proper operation. Making any changes/modifications to your amplifier will void any warranties, and could damage your amplifier and make it non operational.
- ▣ Any changes you make , you accept full responsibility.

Contact with any part can be fatal.

If you choose to modify your amplifier, you do so at your own risk.

Inside the amplifier are high voltages which can kill you.

Always have the amplifier unplugged and the plug connection in your sight before touching anything.

You assume all risk for your safety and work you perform.

I express or imply no guarantees.

- ▣ **WARNING!!**
- ▣ **MAKE NO ATTEMPT TO PUT THIS AMPLIFIER IN SERVICE WITH THE COVER REMOVED!**
- ▣ **CONTACT WITH VOLTAGES INSIDE THIS AMPLIFIER CAN BE FATAL! ALWAYS**
- ▣ **DISCONNECT THE AMPLIFIER FROM THE POWER MAINS AND WAIT FOR THE FILTER**
- ▣ **CAPACITORS TO DISCHARGE BEFORE REMOVING THE COVER.**

Parts list needed to perform Project

Part	Supplier	Quantity
406-1419-1j Fil Transformer for AL82 Must be Japanese Transformer "J"	Ameritron Phone 662-323-8211	1
658-0750 Screw, PAN, PH 8-32-3/4 ~Zinc	Ameritron Phone 662-323-8211	4
391-1500 LLT, Tube, Chimney for 8877	Ameritron Phone 662-323-8211	1
735-3203 Strip, Brass, 3 hole, 5/16x2-5/8~, 1500 Anode	Ameritron Phone 662-323-8211	1
735-3204 Strip, Brass, 3-Holes, 5/16 x 2- 5/8~, 1500 Anode	Ameritron Phone 662-323-8211	1
715-1725-0250 Spacer #8 x .250	Ameritron Phone 662-323-8211	4
714-0837 Washer, Fiber flat, #8 x .375 x .032 TH	Ameritron Phone 662-323-8211	4
755-3626 Fuse, Clip, Gould PN: 60310, IN Pair	Ameritron Phone 662-323-8211	1
660-0750R Screw, Phillips, 10-32X3/4 Brass	Ameritron Phone 662-323-8211	1
710-1041	Ameritron Phone 662-323-8211	4

Parts list needed to perform Project

Part	Supplier	Quantity
Eimac 3cx1500 or yu-209	Tube Man Richard Hale, 902 Lothian Dr. Tallahassee, FL. 32312-2820	1
Alternate : Tube supplier Richardson Electronics	1-800-348-5580	1
3cx1500 Tube Socket	Ameritron	1
Magnacraft Relay W389ADZCX-4 120 Vac, coil 30A SPDT	Search Internet for best price and supplier	1
400uF 500 vdc 658-0550-630	Cornell Dubilier, DCMC401T500 AJ28	8
Thin copper strap 6 inches	Hobby Shop, Flea Market	1
¼ inch rubber gasket 6"x6"	Hardware Store	1
Nylon bolts and nuts, Replace metal bolts and nuts on blower	Home Depot	4
12 volt Zenor diodes 50 watts dissipation	K2AW's Silicon Alley 175 Friends Lane Westbury NY 11590 +1-516-334-7024	2

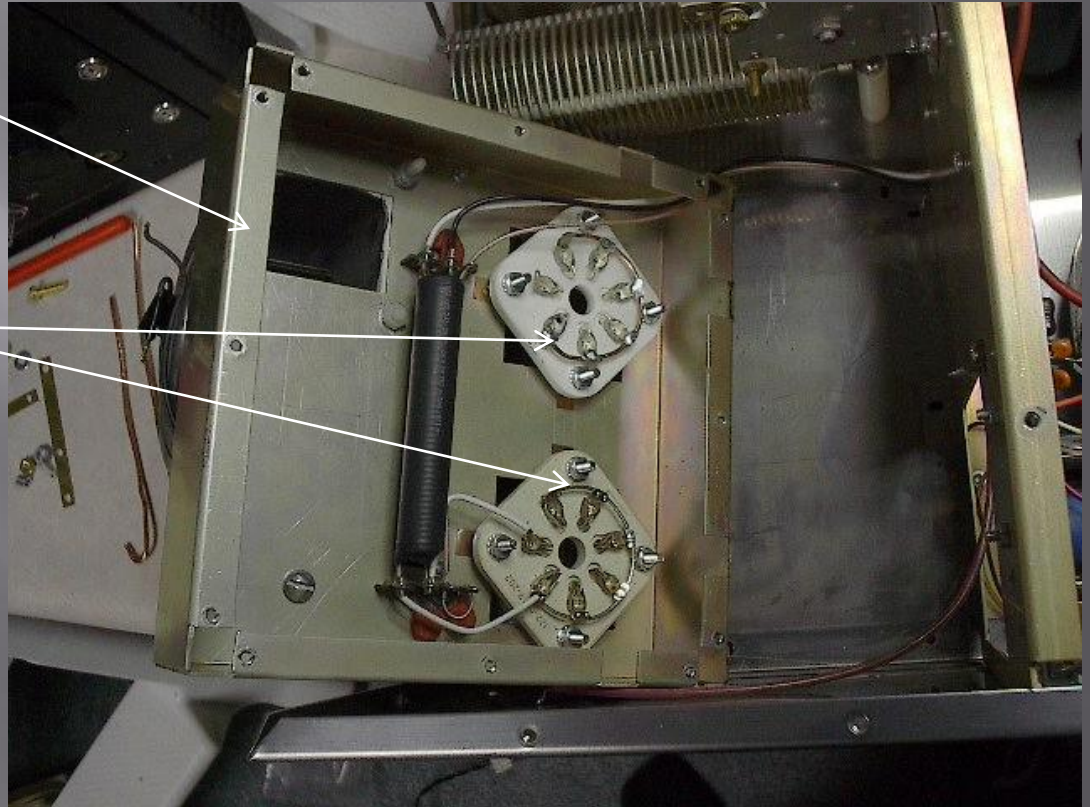
AL-1500 Step 1

Either remove access plate, or remove entire frame work to install second tube socket.

Make the connection of the new tube socket with number 12 solid wire.

Wire it exactly as the original socket.

The new tube socket will need the grid grounding clips installed before adding second socket to frame.



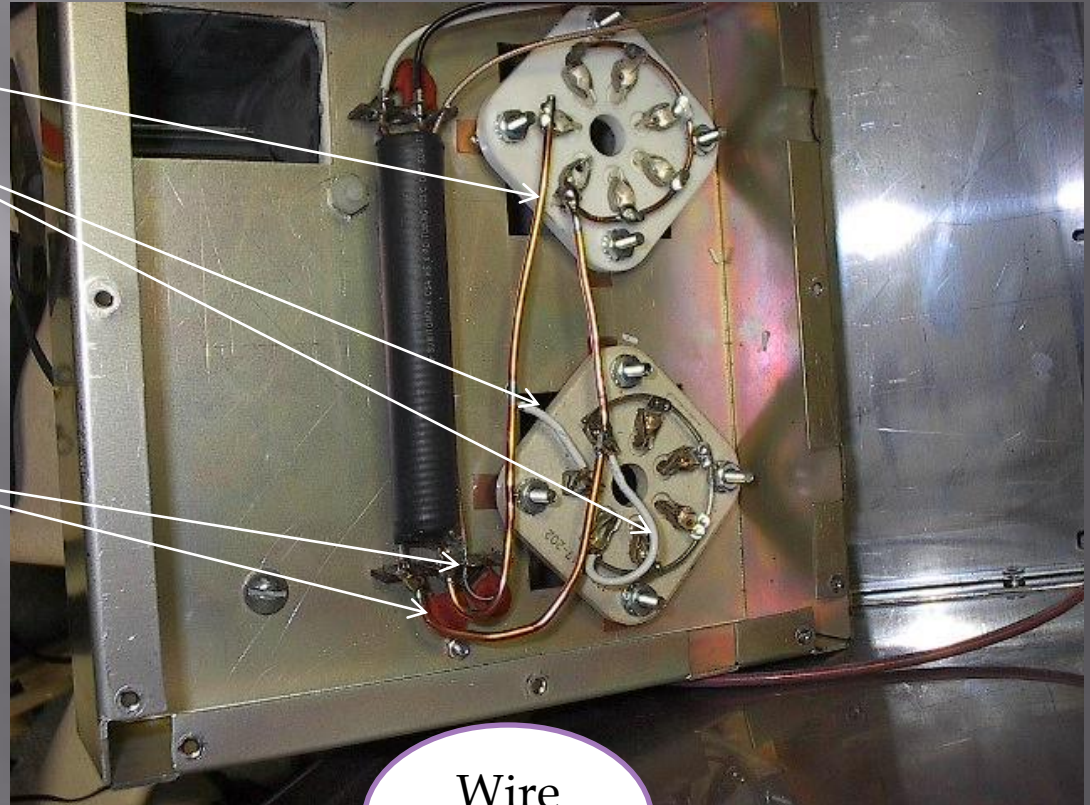
AI 1500 project

Step 2

Using number 12 solid copper wire
Connect tube socket in phase, same
as original.

Make sure all connection are solid:

Hook up copper wire from choke to
tube exactly as it was wired, don't
cross connections or change any
feed from the choke to the tube
socket.



Wire
exactly

AI 1500 Project

Step 3

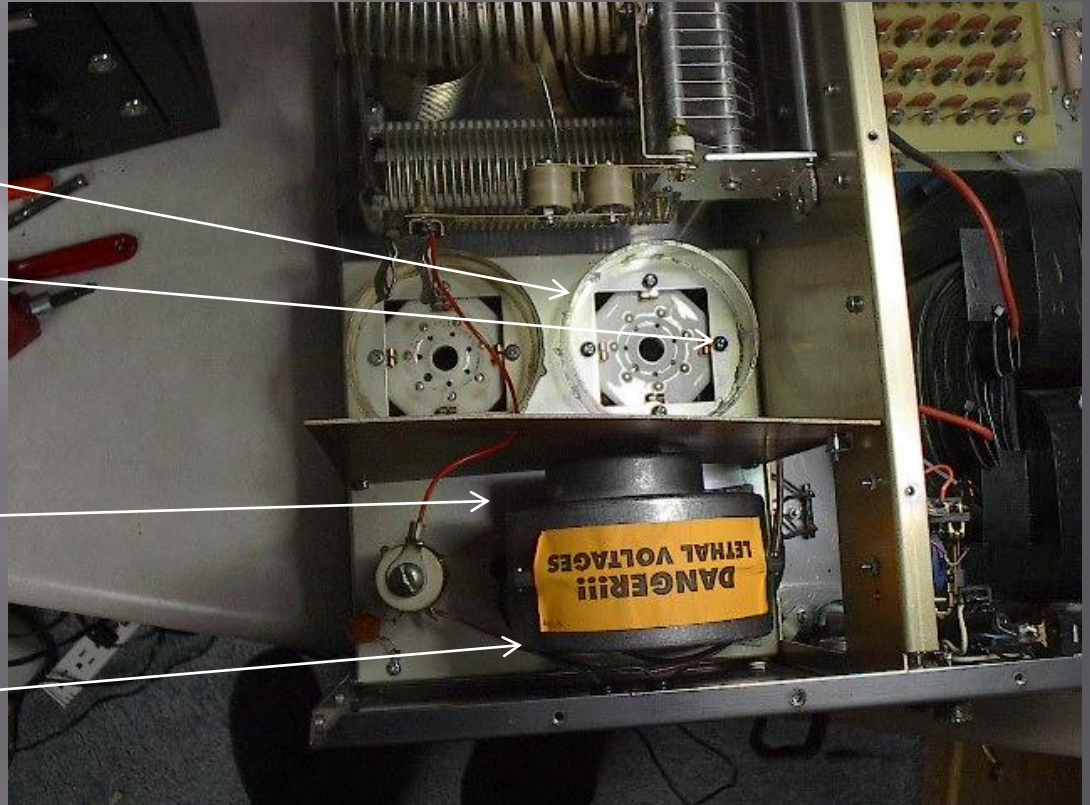
Add second tube Chimney, use glue gun to secure chimney. Use tube to properly align chimney before glue hardens

Note Grid clips

Install 1/4 " Rubber gasket under blower, cut rubber gasket to fit making sure not to restrict any air flow to tube.

Secure blower with new gasket between frame and blower with nylon bolts and nuts.

The rubber gasket and nylon parts will minimize much of the blower noise



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Remove blower and install pre cut rubber gasket 1/4" thick; Make sure gasket doesn't restrict air flow to tubes.

Replace metal screws with nylon screws and nuts, the nylon screws and nuts help stop the transfer of noise and vibration.



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Install second tube:

Reconnect original plate choke.

Original plate capacitors retained.

Connect plate using 1/2' wide copper strap.



AI 1500 Project

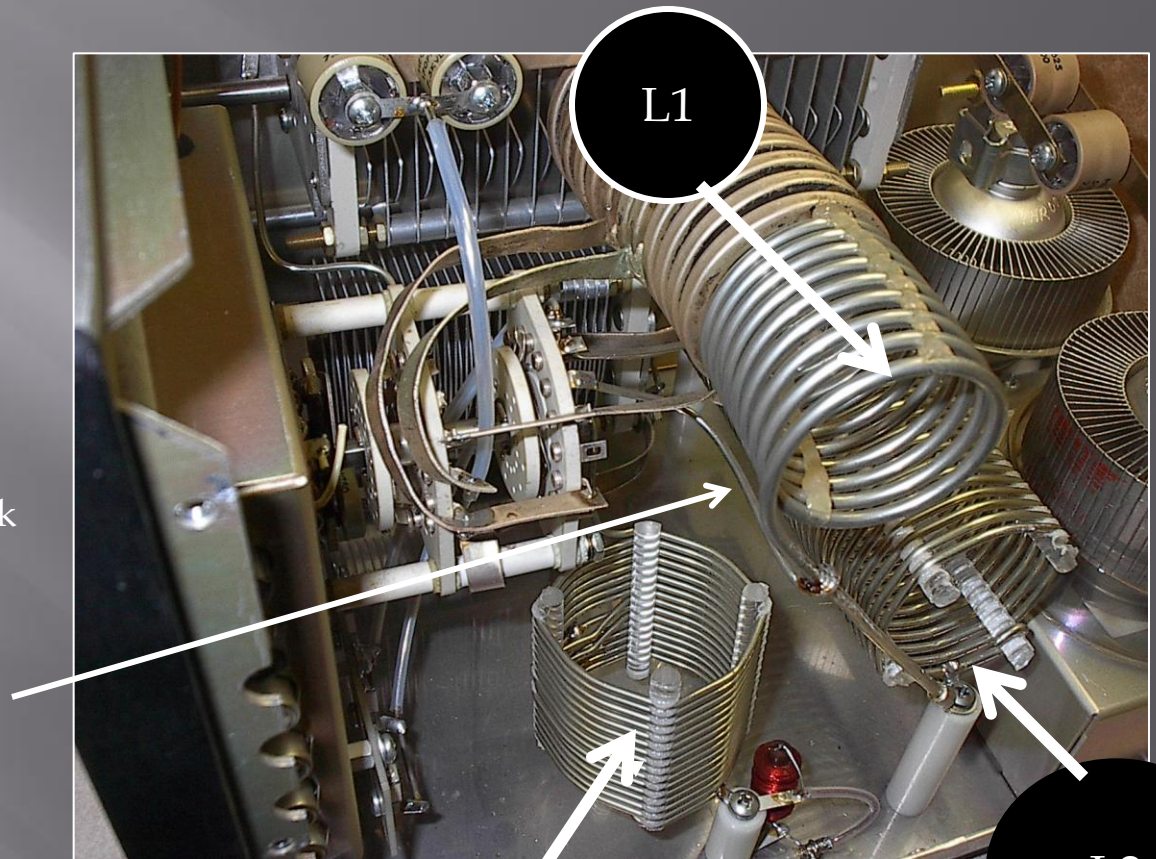
Plate Inductors

L1 is 40 Meters

L2 is 80/160 Meters

L3 is "L" inductor of PI-L network for 80/160 Meters.

Remove 1 turn off L1, Uncoil it,
Then re-connect jumper from band switch.

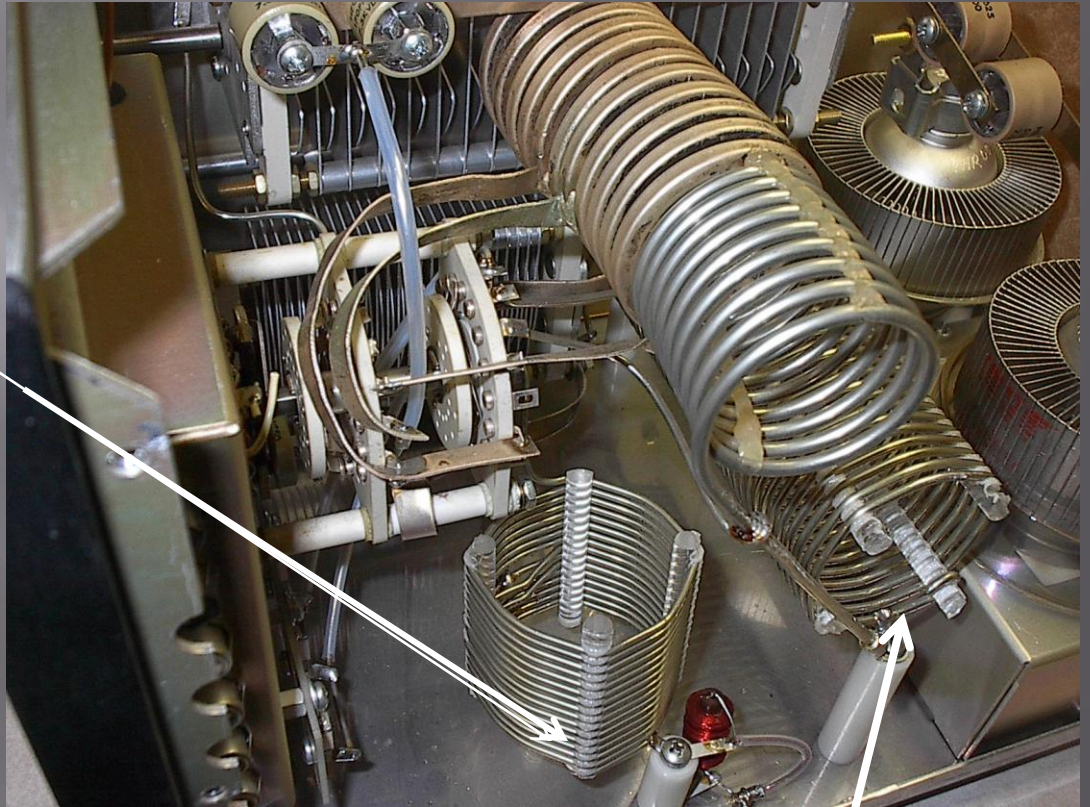


L3

L2

AI 1500 Project

Short bottom 2 turns of L3
with 1/2" copper strap

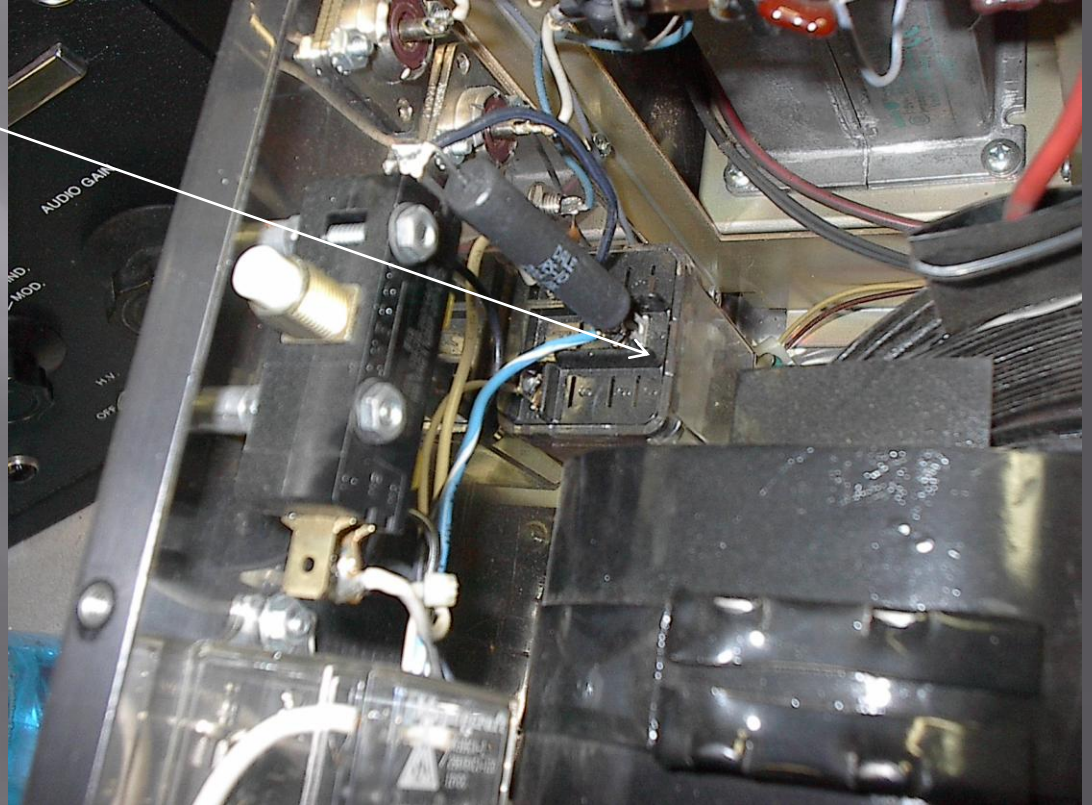


Short 4 turns on L2
for 80 Meters with
1/2" copper strap.

AI 1500 Project

Original relay

This is the original relay before removing and installing the new 30 amp relay



AI 1500 Project

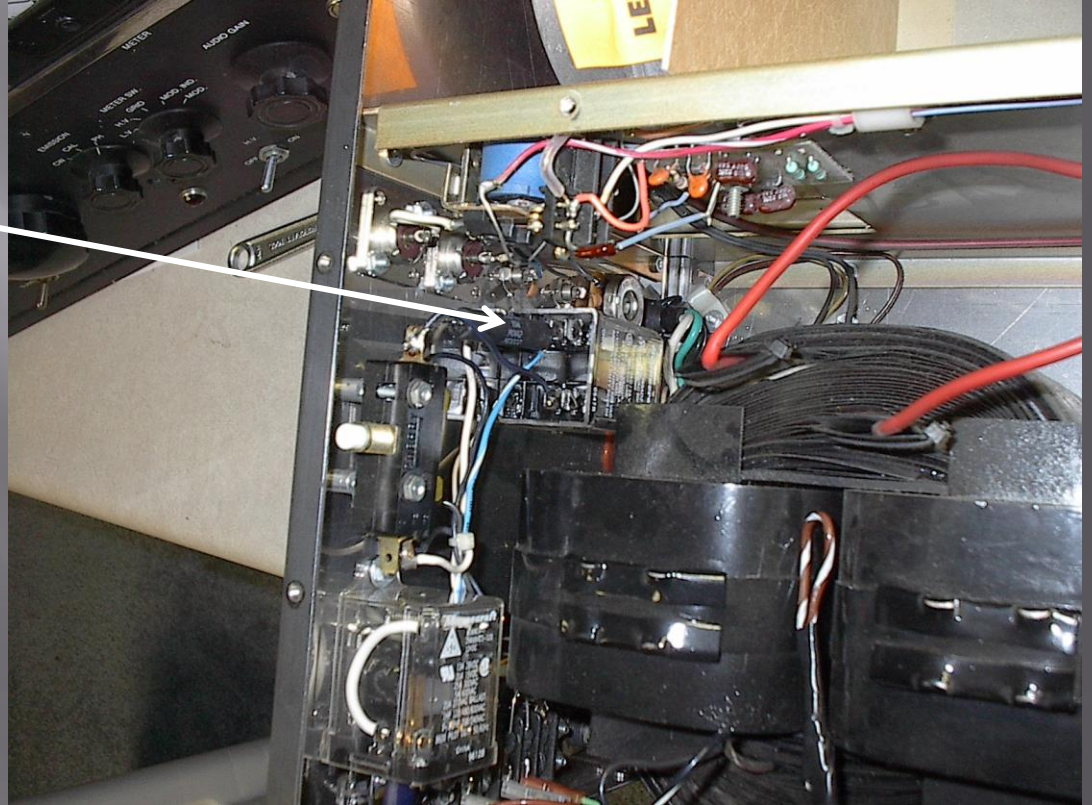
Step Start Circuit

Replace relay with
Magnacraft Relay

W389ADZCX-4

120 vac Coil

30A SPDT



AI 1500 Project

Step Start Circuit

New Relay Installation

Use glue gun to cement new relay to back plate on amplifier. Make sure the existing wire connections can reach the new relay, so position before applying hot glue to backing.

Wire new relay as shown.



30 A filament transformer

Ameritron Part # 406-1419-1j

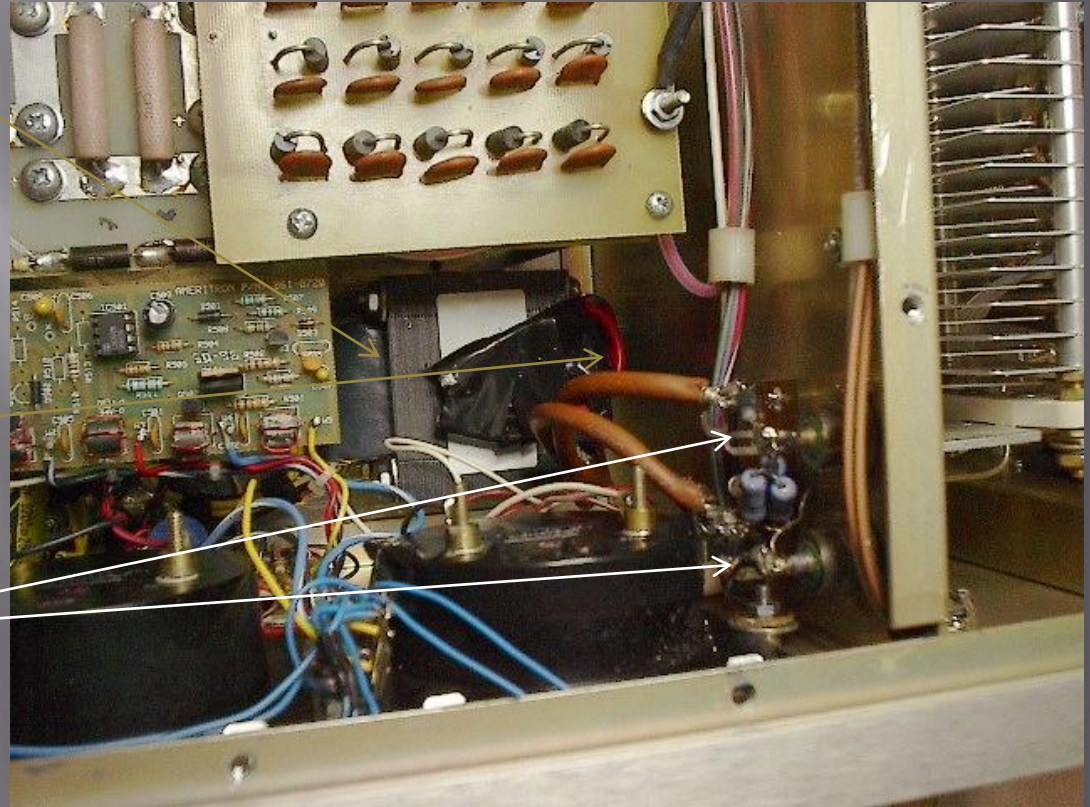
Use existing bolts and holes for mounting new transformer

Heavy red wire no connection, all other wires from transformer are wired exactly as original

30A filament transformer secondary connections

Wire filament primary using 265V tap for 5.15V at tubes.

All other connections same as original.



Removal of power supply boards are necessary to install filament transformer.

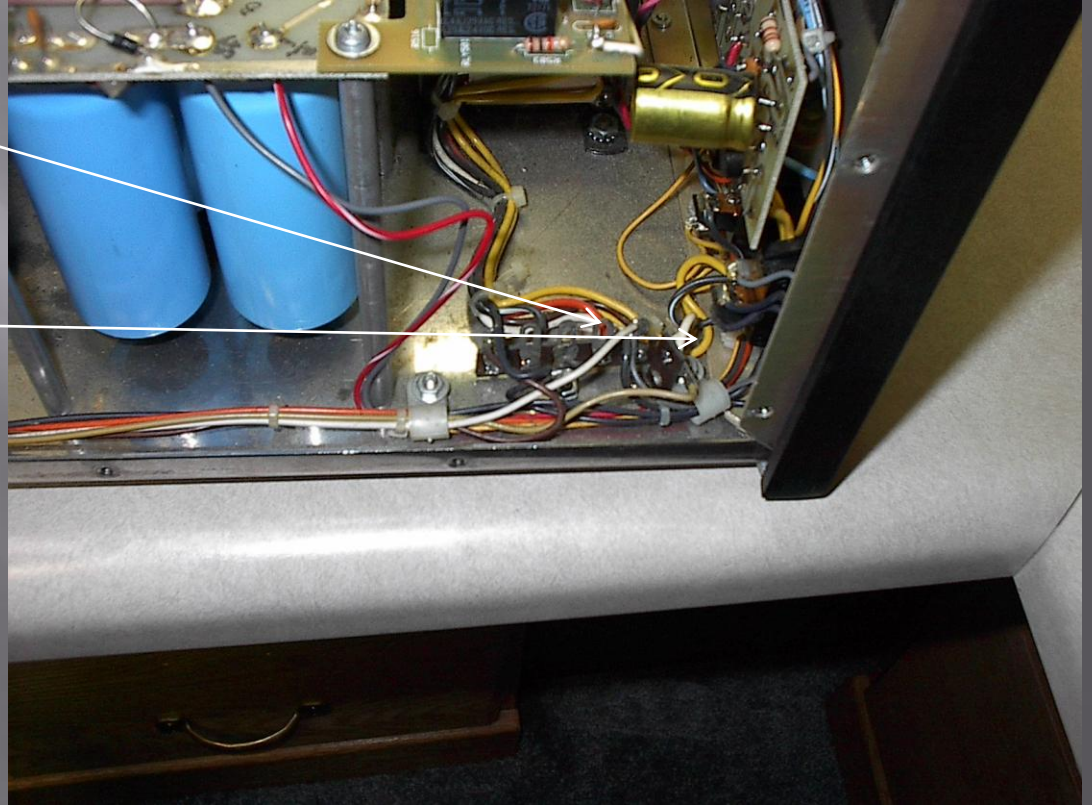
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Blower Speed Increase

Connect Brown wire to lug #5

Green wire should be on lug # 6, this should remain as original.

Refer to Owners manual.

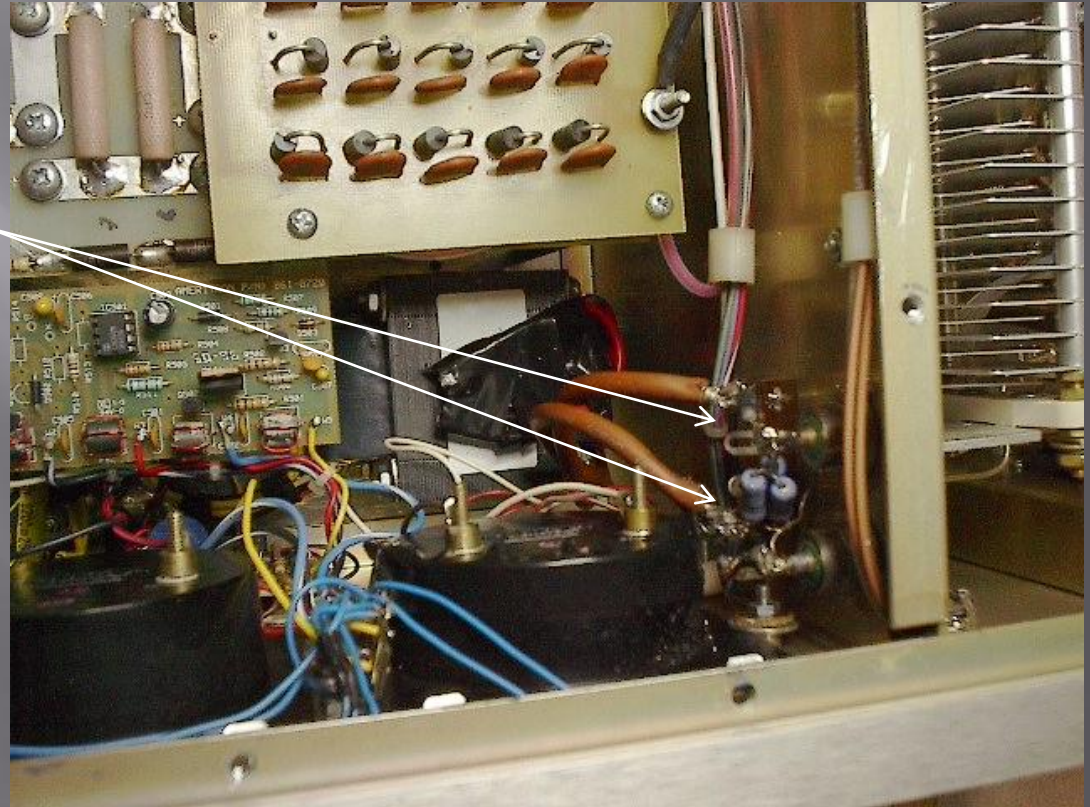


AI 1500 Project Zenor Diodes

Install two 12 volt 50 watt zenor diodes and replace existing diodes.

Make sure plastic insulator between diodes and metal frame is installed.

Use heat sink compound .



Both zenor
diodes must be
replaced.

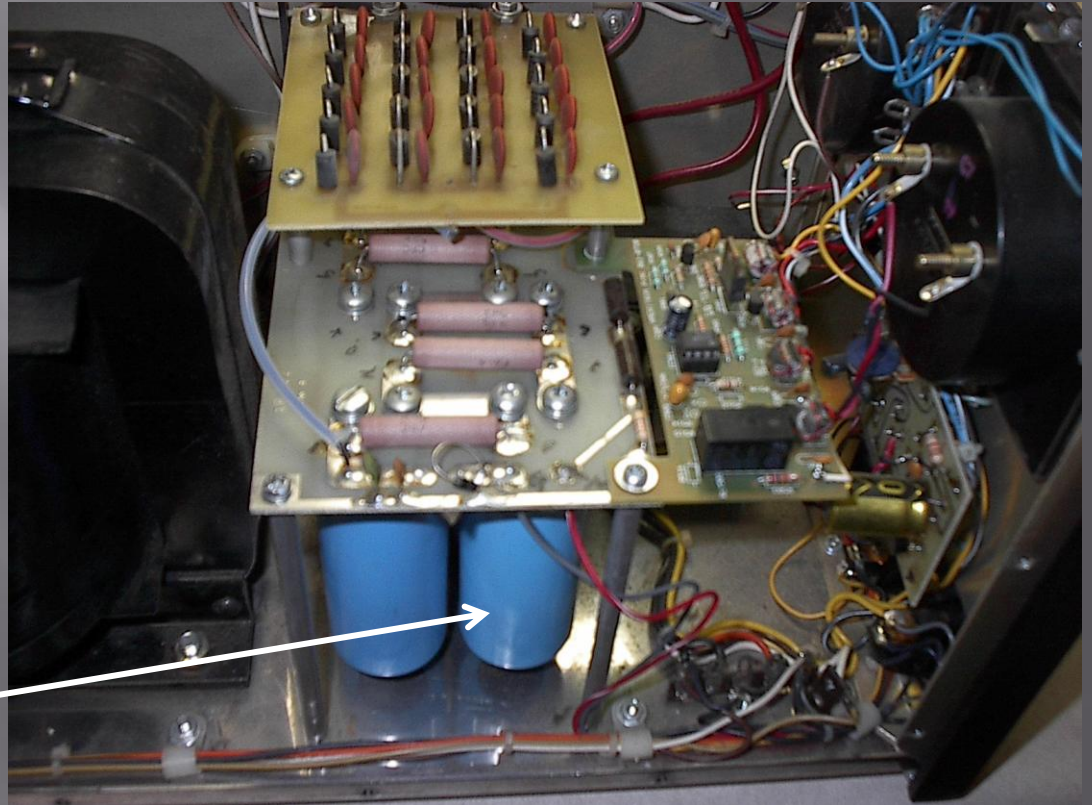
AL 1500 Project

500 Volt Caps

Remove reinstall new 500 volt caps.

Make sure you note polarity and install new caps exactly as olds were removed noting polarity.

Replace all 8 capacitors



AI 1500 project

Plate transformer re tap

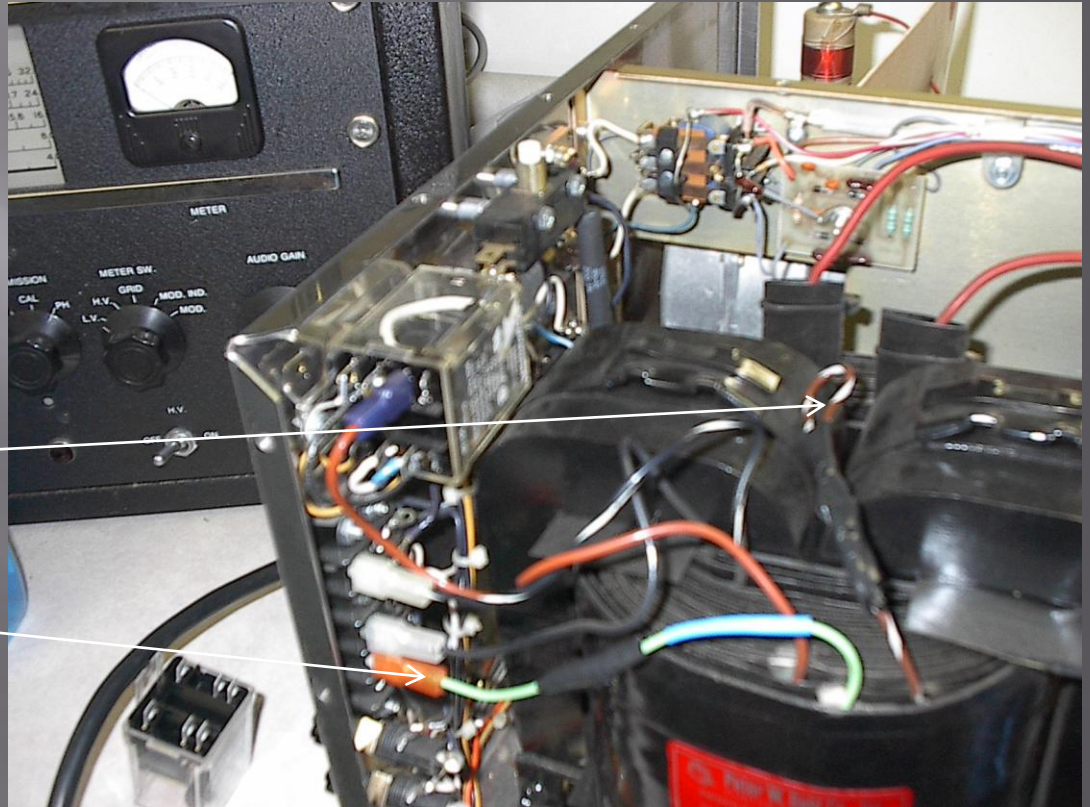
Re tap plate transformer after new 500 volt caps are in place and all other work is complete.

Disconnect brown wire, tape securely

Connect green wire to lug where brown wire was removed.

Your transformer is now wired.

Your plate voltage will be approx. 4000 volts at idle.



AL 1500 Project

This completes the installation of the second 8877. The amp is now ready for 160 to 15 meter operation.

The power supply is under rated for 2 tubes but for SSB I have had excellent results.

The band switch in the AL 1500 is one of its weak components, I use a 3898 pecker pulsar for tuning. Don't load up using a carrier.

I would NOT recommend using anything else for tuning.

Antenna SWR must be 1.5 to 1 or less, any high swr will kill the amp.

Any antenna tuner must be rated for HIGH power.

The amp will deliver 3000 watts out put with around 100 watts drive, more in put = more out put. I would use extreme caution exceeding 3000 watts.

Of course anything over 1500 watts would need to be tested into a good quality dummy load.

This power point presentation is not to be copied or redistributed.

▣ If you perform this modification you do it at your own risk.

▣ I don't accept any risk.

▣ If YOU choose to try this modification, your on your own. Period!!!!!!!

▣ NO calls !

▣ Good Luck!!!!!!!!!!!!!!!!!!!!!!