HENRY 2K CLASSIC X CONVERSION TO HENRY 5K

This uses two 8877's

This project was done in conciliation with Gerd W2ISB

Henry 2K Classic X Conversion to 5K

Henry 2K Classic X Conversion to 5K

- 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 warrantees, 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 Needed For Project Henry 2K Classic X Conversion 5K

- 1 X 12 volt Zenor diodes 50 watts dissipation
- 2 x Eimac 3cx1500 or yu-209
- 2 X Complete tube sockets with grid clips installed
- 2 X 391-1500 LLT, Tube, Chimneys for 8877
- 2 X Fuse Clip, Gould PN: 60310, IN Pair
- 4, 6A-10 diodes

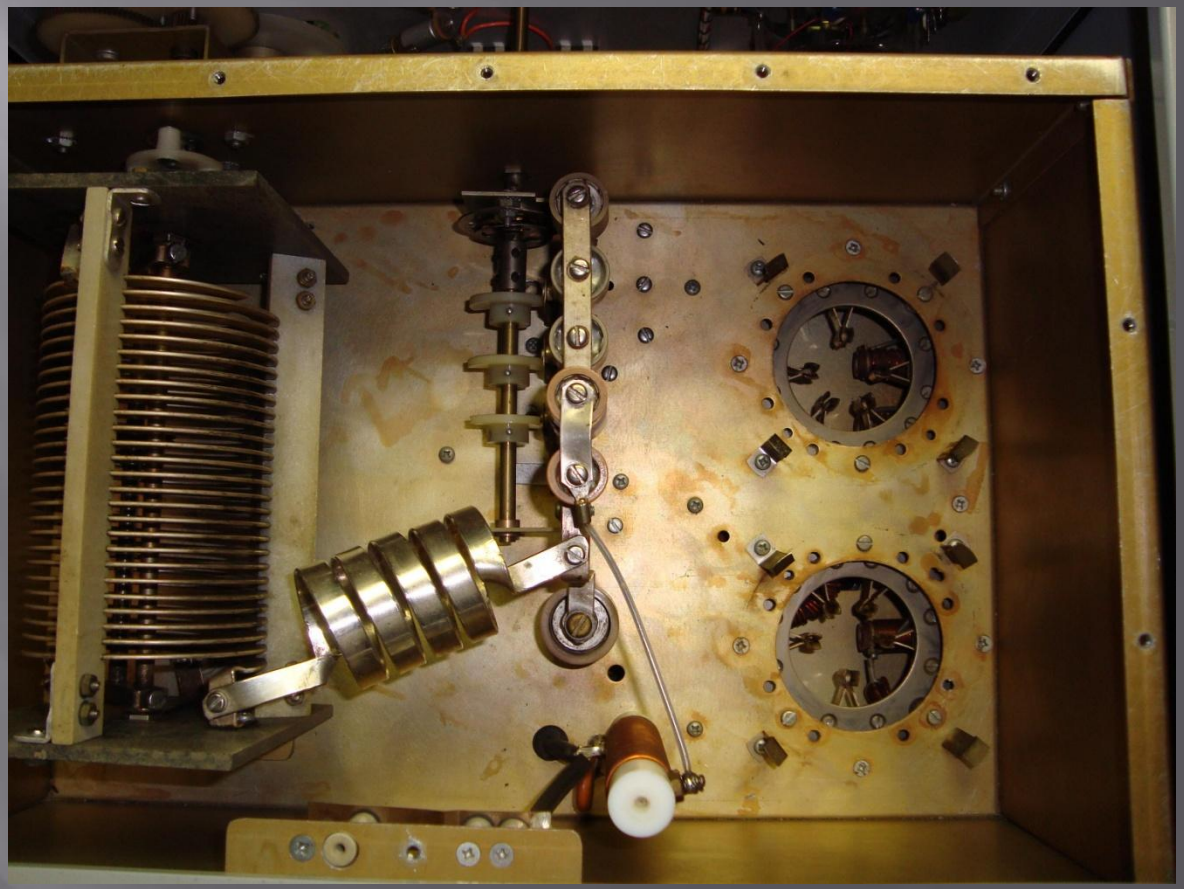
- K2AW's Silicon Alley 175 Friends Lane Westbury NY 11590 +1-516-334-7024
- Tube Man Richard Hale,
- 902 Lothian Dr.
- Tallahassee, FL. 32312-2820
- Alternate : Tube supplier
- Richardson Electronics
- 1-800-348-5580

RF Parts 1-800-737-2787
435 South Pacific Street
San Marcos, Ca 92078

- Ameritron Phone 662-323-8211
- Ameritron Phone 662-323-8211
- Rf Parts 1-800- 737-2787

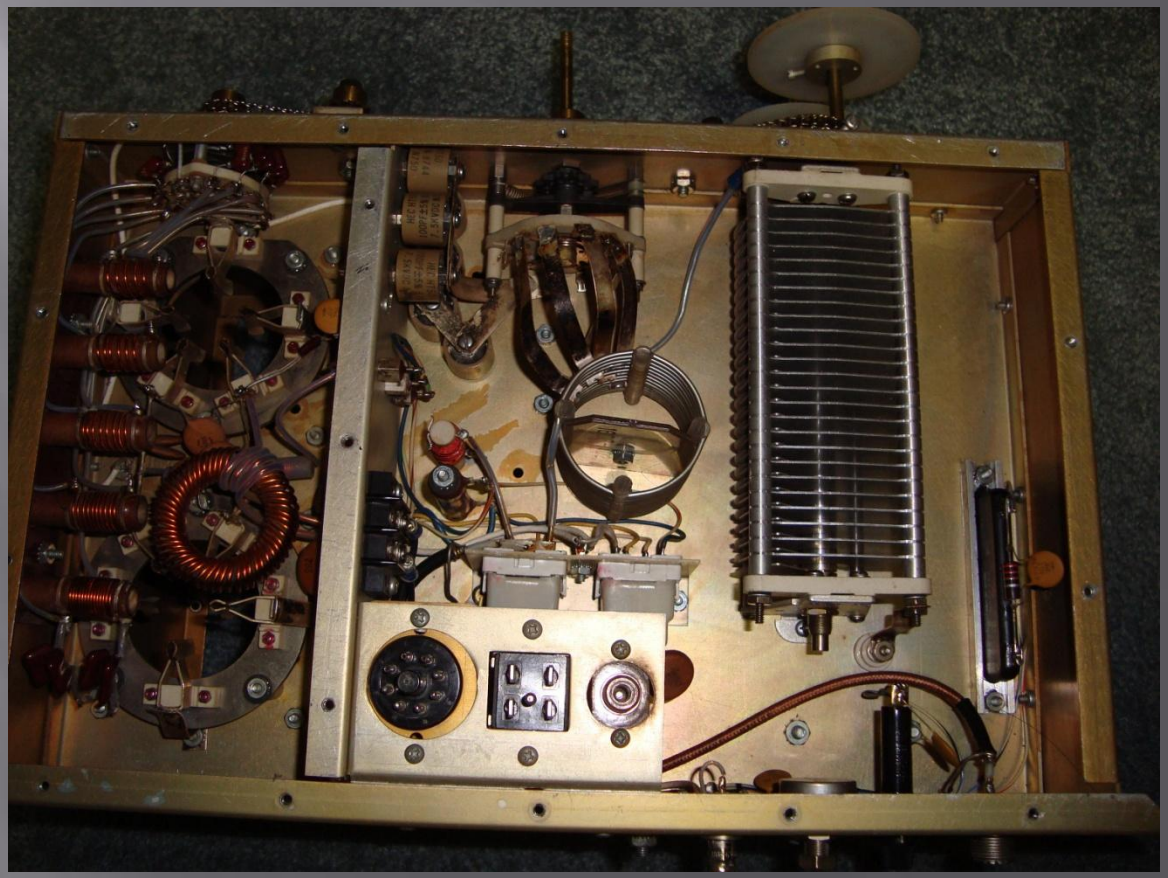
Henry 2K classic Conversion to 5K

- Remove existing tubes , tube sockets, and connection to original tubes



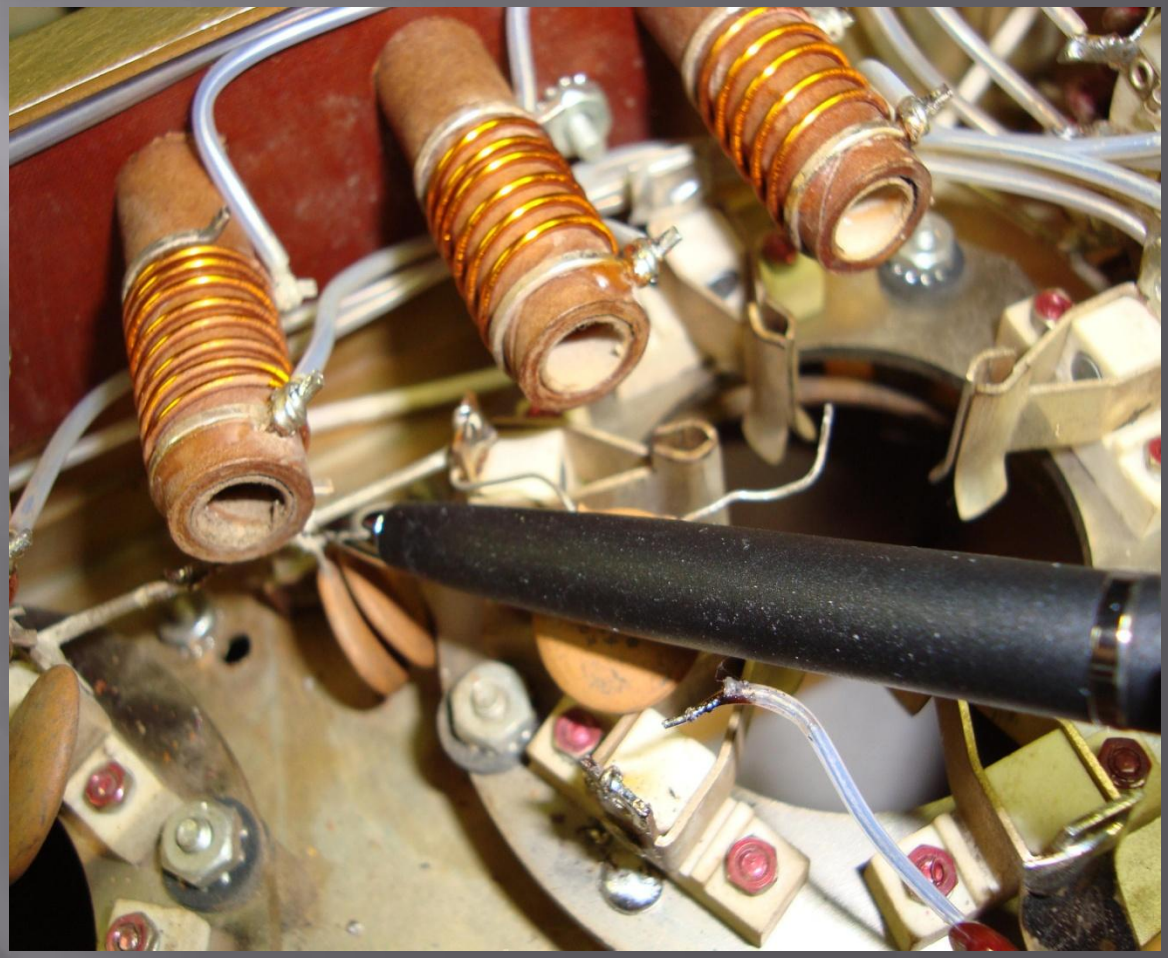
Henry 2K Classic Conversion to 5K

- Remove bottom cover of RF deck exposing existing 3-500 tube sockets. Remove the tube sockets.
- Unsolder all connections to tube sockets, but don't remove the other end of the connection, (ie) filament choke, input caps, rf choke, input center tap.



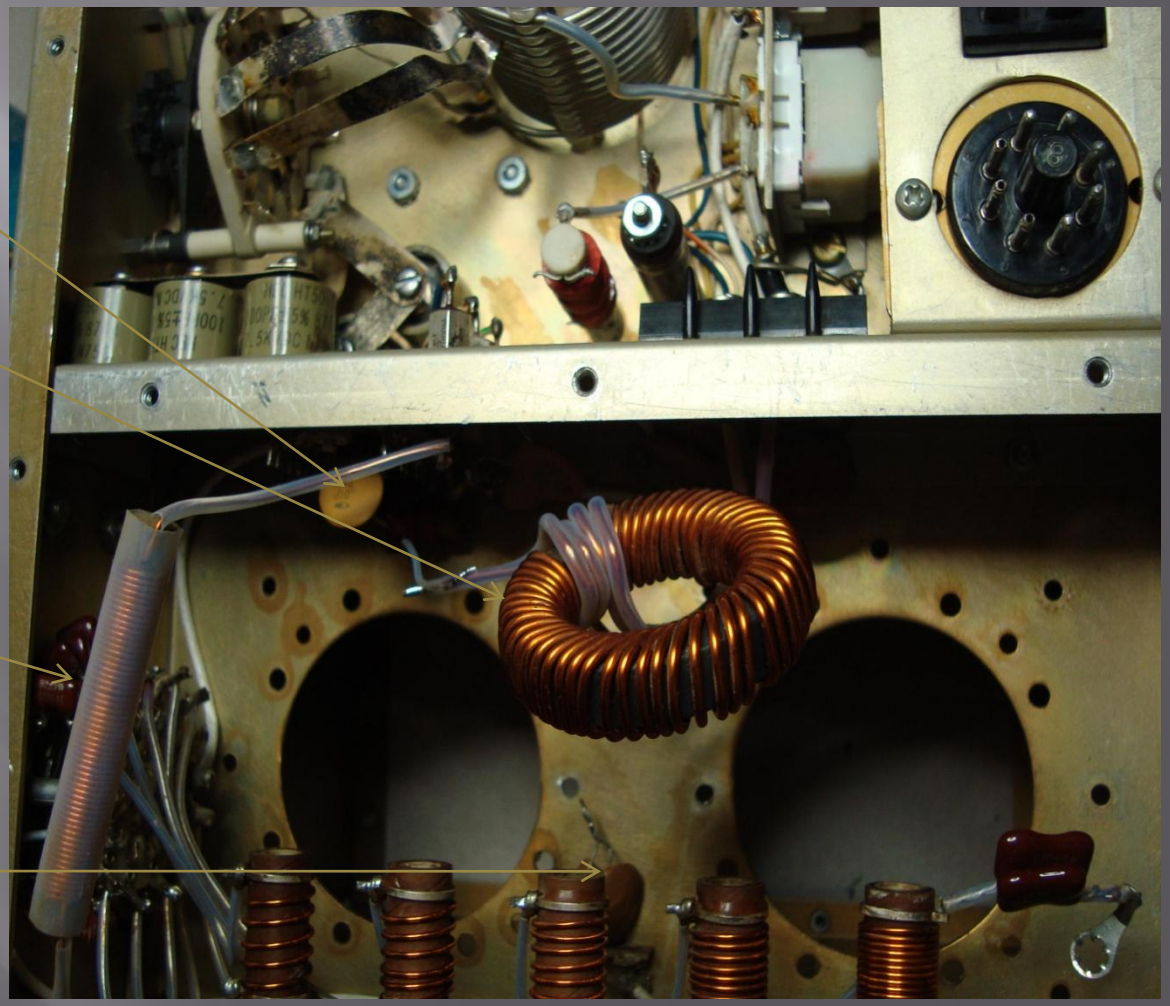
Henry 2K Classic Conversion to 5K

- Note RF input Caps to Cathodes



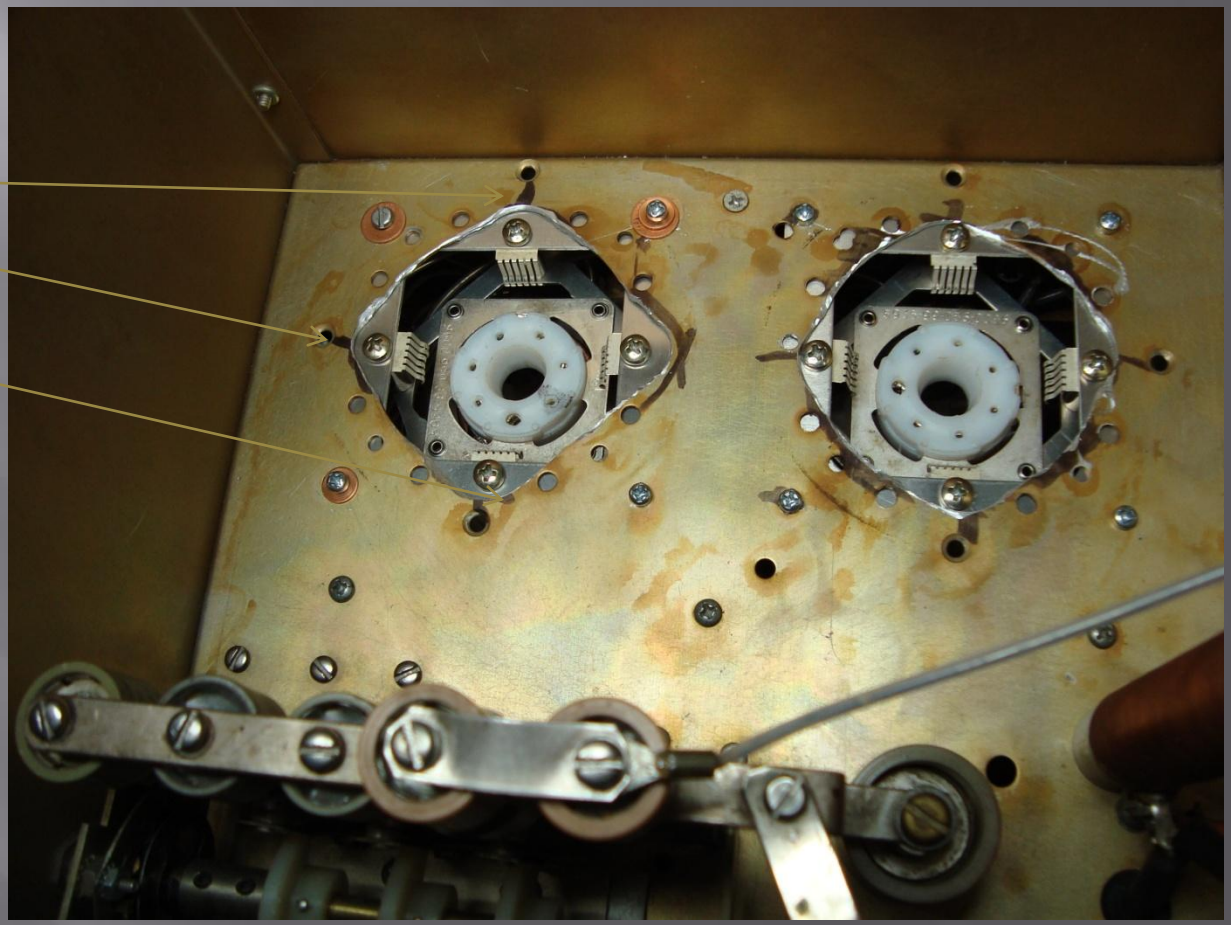
Henry 2K Classic X conversion to 5K

- Alc Connection
- Cap connects to cathode
- Note Filament choke
- RF choke, input center tap
- Input Caps RF to Cathodes



Henry 2K Classic X Conversion to 5K

- Using a hand grinder, grind necessary sheet metal for new 8877 tube sockets
- Realign screws and nuts, drill necessary holes for mounting the new tube sockets.



Henry 2K Classic X to 5K

- The next slide shows one way to wire the sockets for the connections:

- The filaments are wired in series, note the numbers on diagram, the pin connecting to the center of the 8877 is pin number 5.
- Heater is pin 1 and 5
- Cathode is 2 – 3 – 4 – 6 – 7

- The top portion of the next diagram is not used in this project:

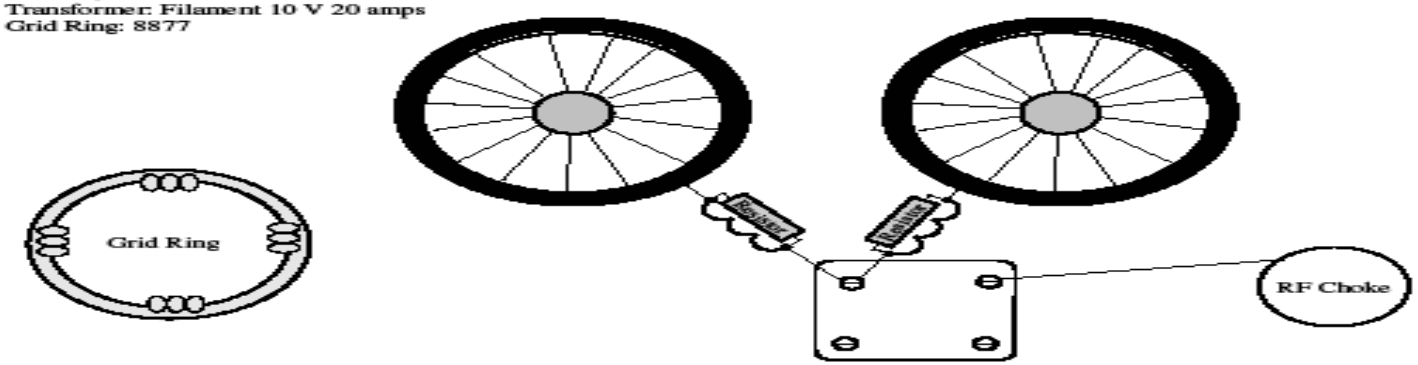
Henry 2K Classic X to 5K

Modification from 5K Classic to 2 x 8877 Tubes

Parts Required:

2 Tube: 8877
2 Socket: 8877
2 Chimney: 8877
1 Transformer: Filament 10 V 20 amps
2 Grid Ring: 8877

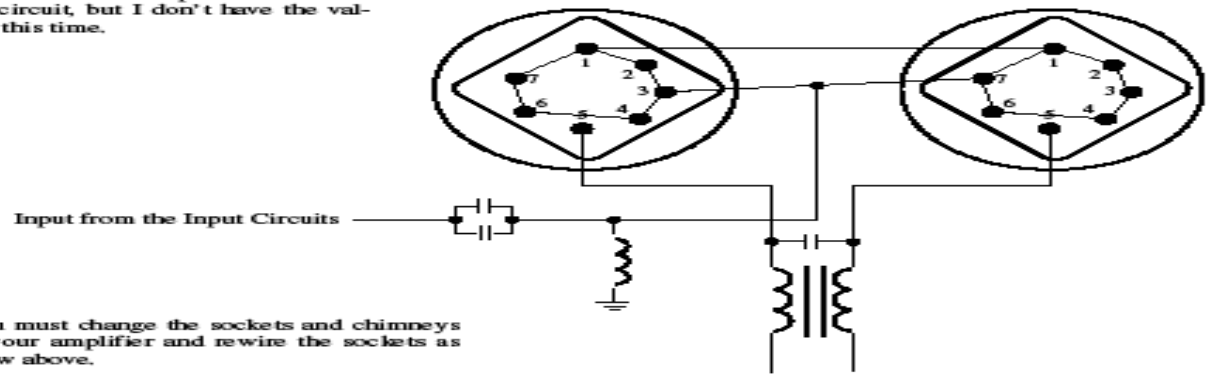
Top Chassis View



Note:

For an optimum input match, you may have to add some capacitance on the input circuit, but I don't have the values at this time.

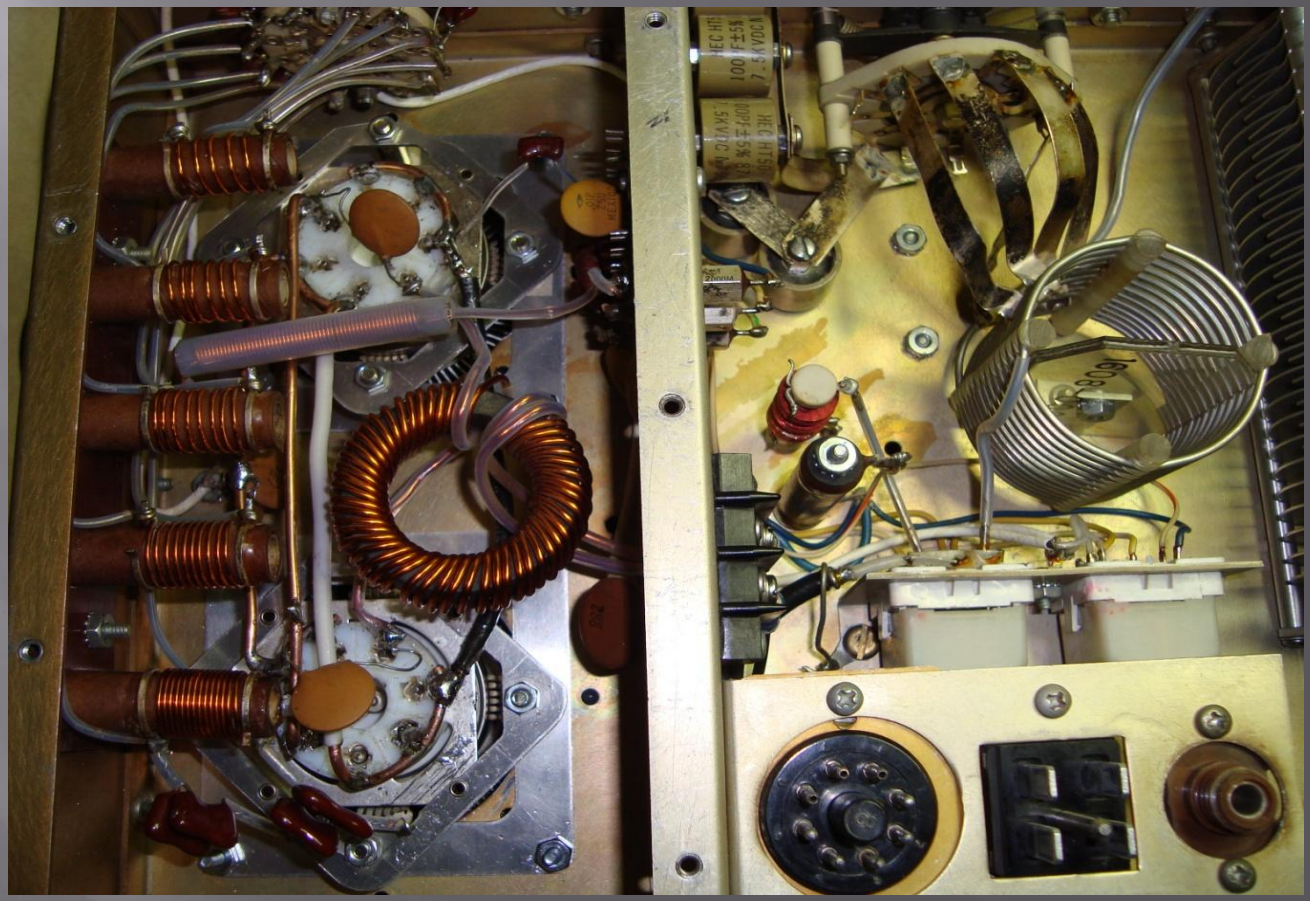
Bottom Chassis View



You must change the sockets and chimneys in your amplifier and rewire the sockets as show above.

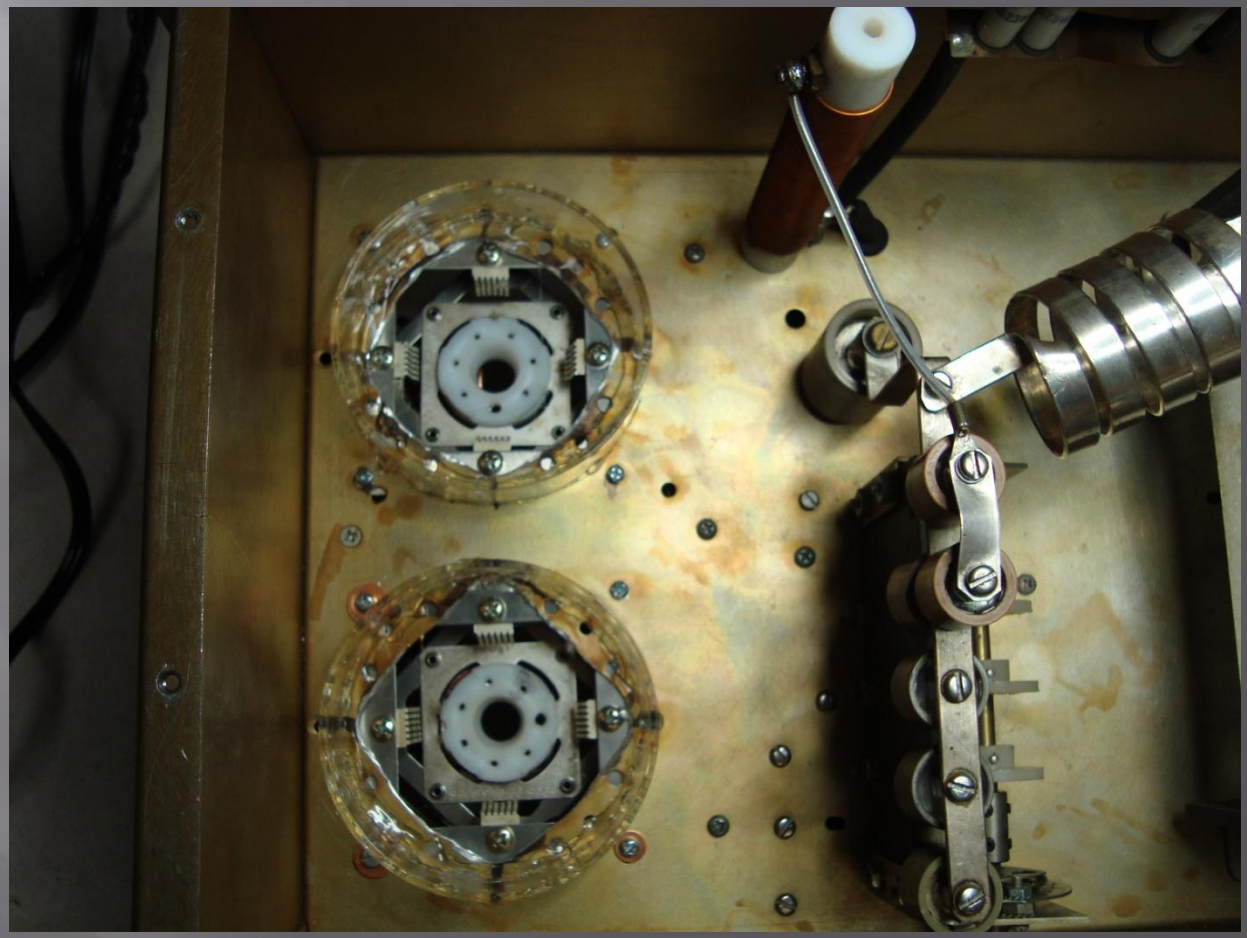
Henry 2K Classic Conversion to 5K

- Note wiring, double check all connections:
- They must be secure.
- Tubes filaments are wired in series.



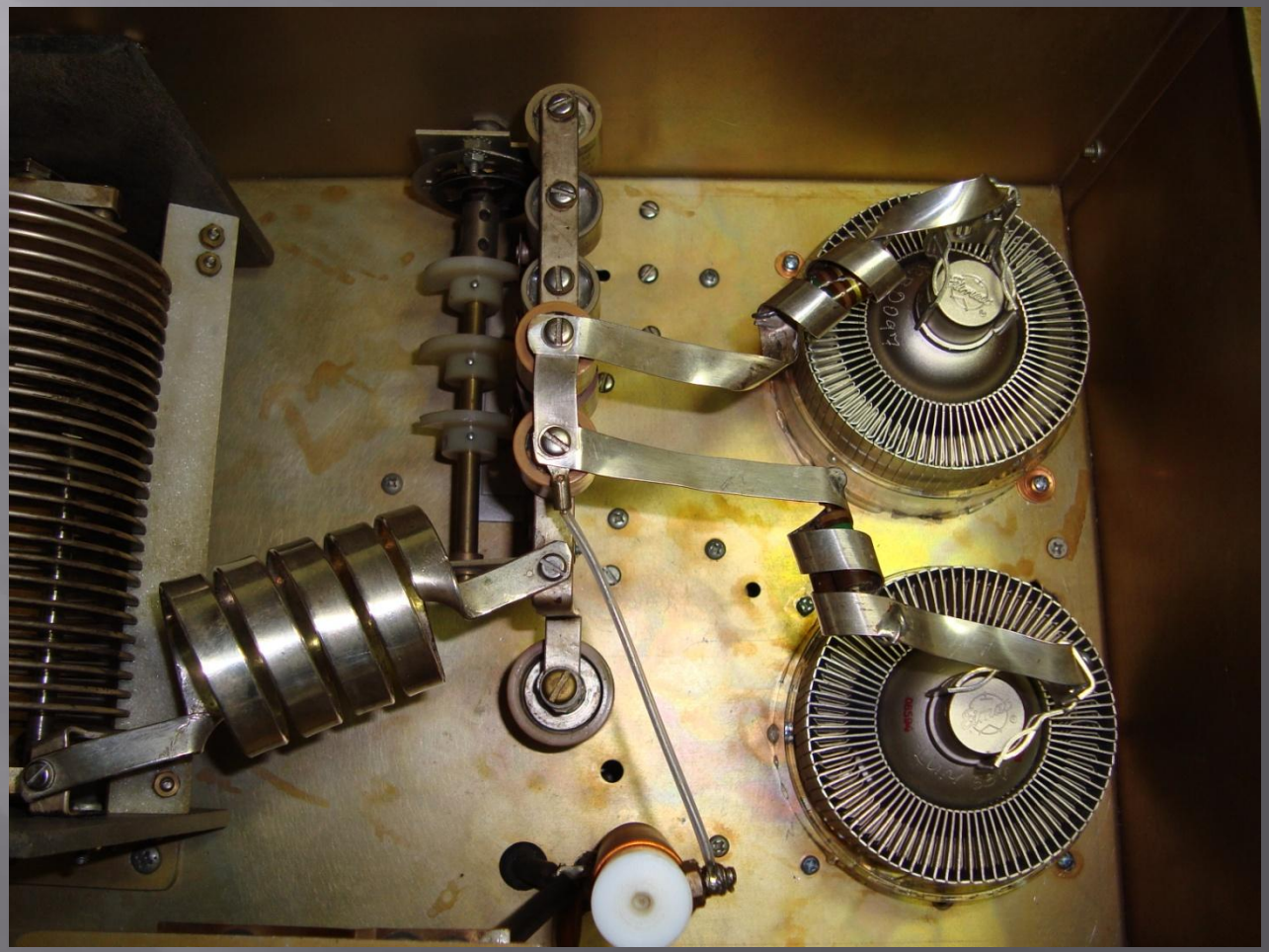
Henry 2K Classic Conversion to 5K

- Use a glue gun and install new chimney's
- Align new chimneys for proper installation of tubes.



Henry 2K Classic Conversion to 5K

- Use existing connections from the 3-500 tubes, connect new clips to anodes.

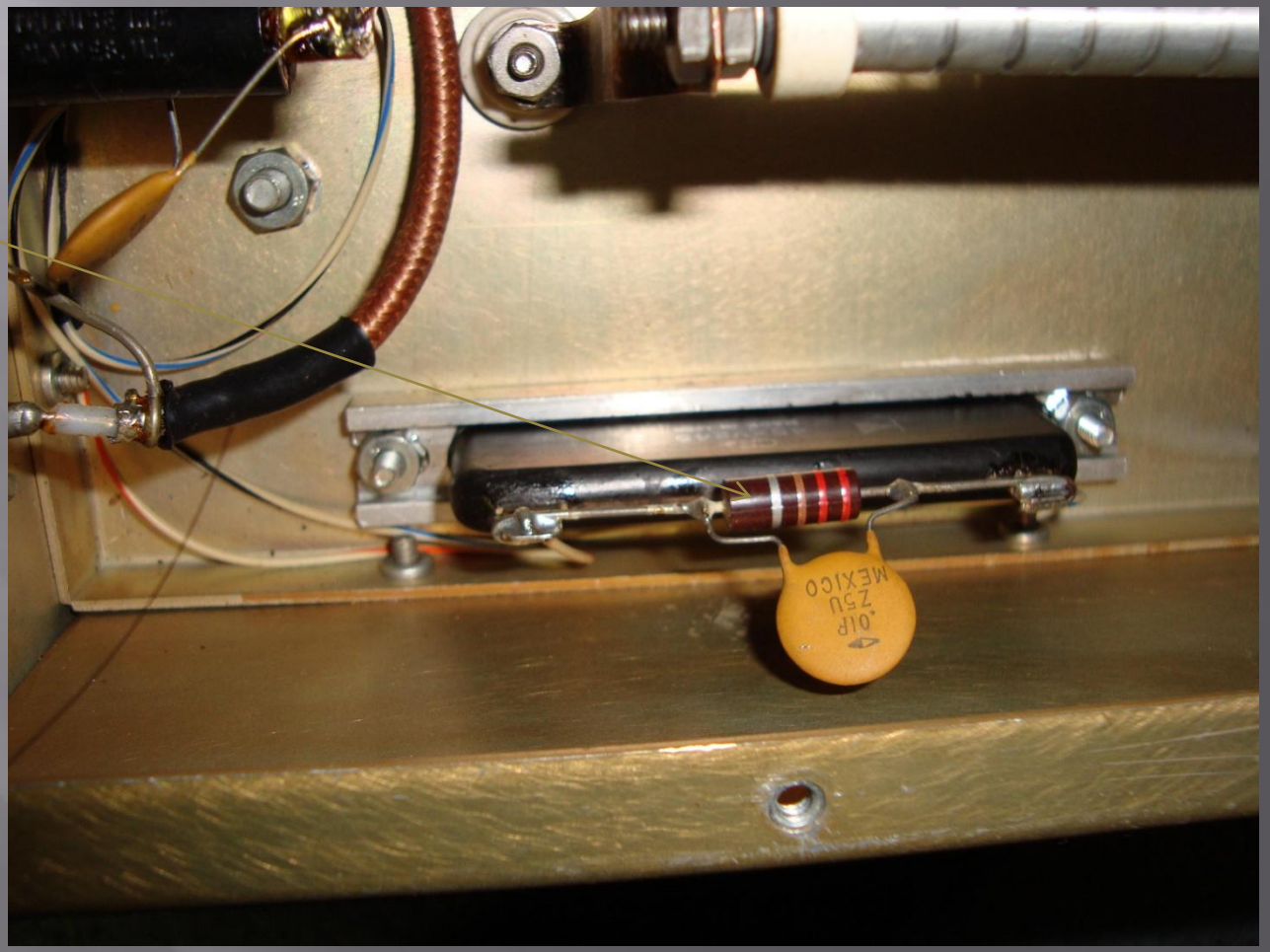


Henry 2K Classic X Conversion to 5K

- Ready to install shield and test.
- Make two test point connections to the filaments to verify the filament voltage is 10 volts: (filaments in series) normally 5 volts in parallel.
- Double check all connections.

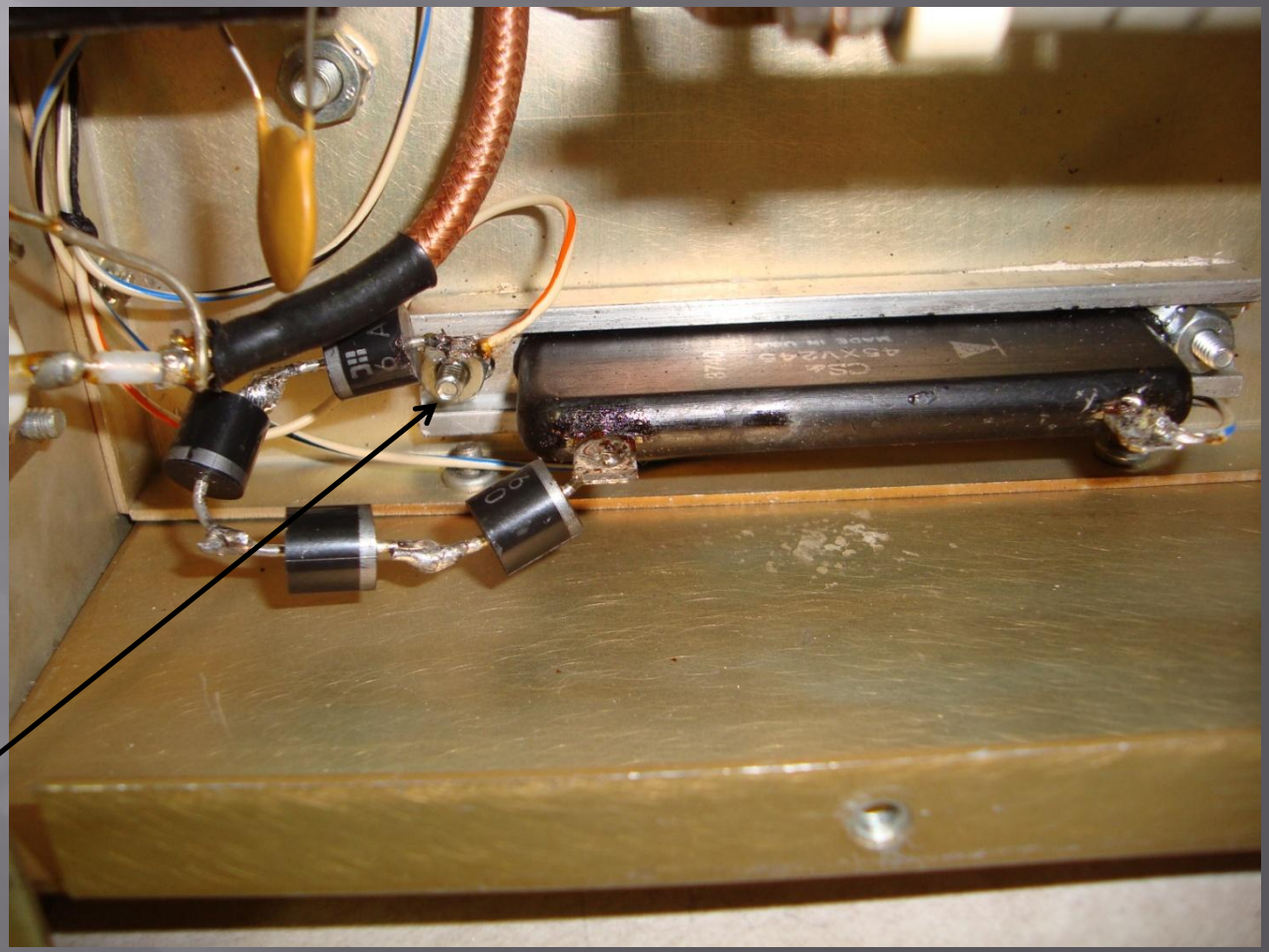
Henry 2K Classic X Conversion to 5K

- Note original diode(D1) and connections before removing resistor and cap.



Henry 2K Classic X Conversion to 5K

- Add 4 diodes
- In series with existing cathode biasing diode.
- Remove resister and cap.
- 4, 6A-10 diodes added in series with diode(D1, 1.2 amps, 10VDC) to reduce bias current to 230 ma in SSB position
- Note: The diodes and orange stripe wire are NOT connected to that nut or screw



Henry 2K Classic X Conversion to 5K

- All tuning over 500 watts is done using a 3898 pecker pulsar.
- The pulsar uses audio pulses. It reduces the strain on the amp .
- I would not recommend using a carrier over 1000 watts for tuning, always use the 3898 pecker pulsar, it will save your amp.
- Use a PEAK reading watt meter for tuning.

- Henry 2K Classic X tune up sheet after conversion to 5K Classic

Freq.	Tune	Load
28.5	5	60
21.3	22	72
14.3	47	73
7.22	77	59
3.86	135	42

Idle Plate Current = 230 Mils
Plate voltage Keyed = 3900 V

All tuning done with a 3898 pulsar into a dummy load

Henry 2K Classic X Conversion to 5K

- Drive is up to 200 watts for full output. = here to over 5KW out pep
- The radio's internal antenna tuner was used for matching the input of the radio to the amplifier. The radio seen a 1:5:1 SWR.
- The meter used for this testing was a coaxial dynamic peak reading power meter using a 10KW slug
- The amp was connected to a Palstar 5KW dummy load.
- Peak out put was demonstrated from 4500 watts and higher, depending on band.
- All power meters read differently, most read lower than the coaxial dynamic peak reading meters.

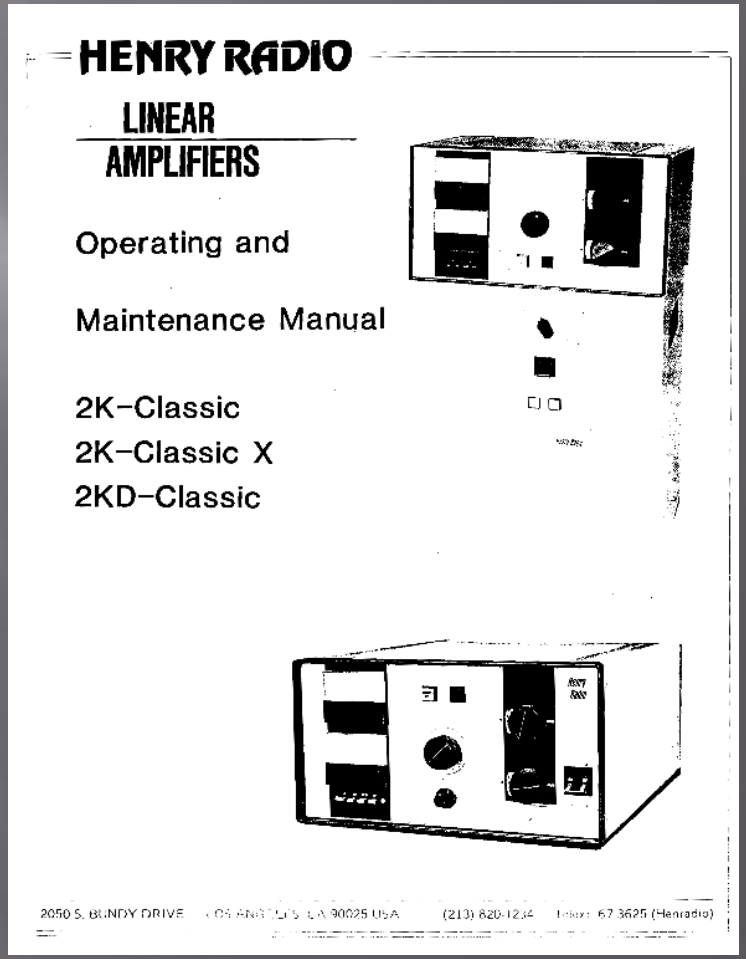
Henry 2K Classic X Conversion to 5K

- This completes the installation of two 8877's. The amp is now ready for 80 to 10 meter operation.
- I use a 3898pecker 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 during testing.
- 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

- 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!!!!!!!!!!!!!!!!!

Henry 2K Classic X Conversion to 5K

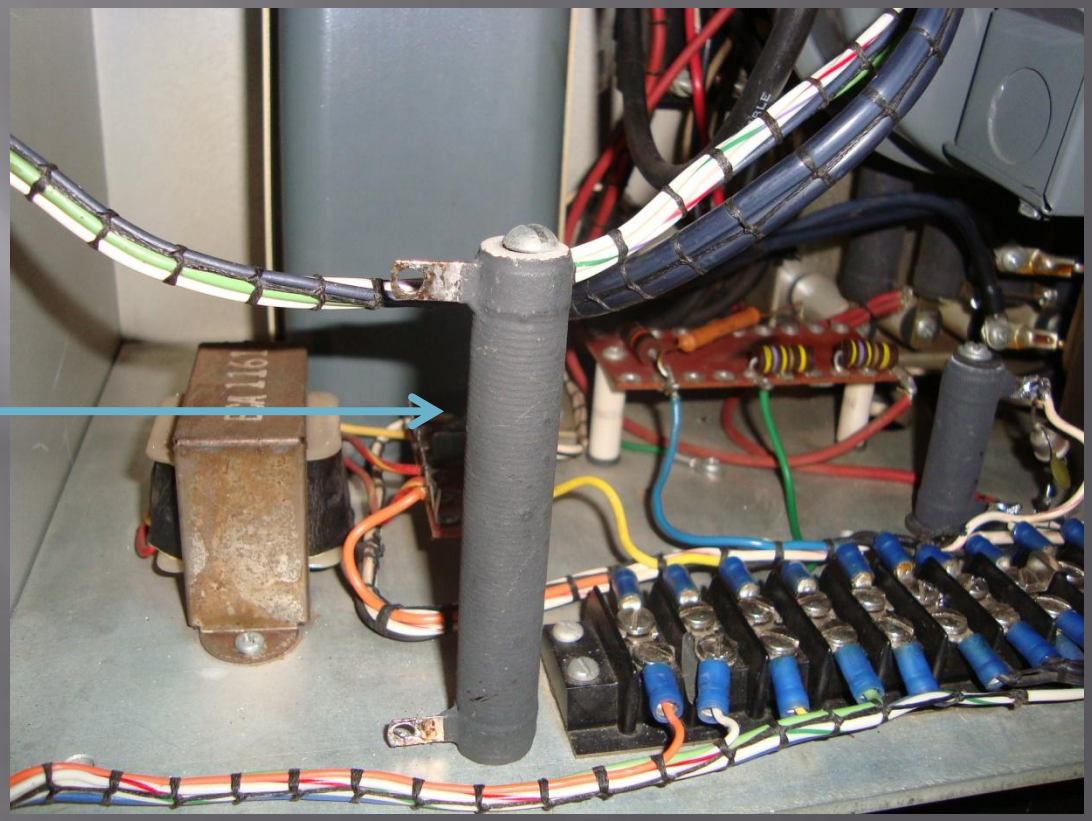
- With the 8877 tubes installation there are many more modifications that can be made.
- With the 8877 you MUST wait a minimum of 3 minutes for the tubes to warm up before keying the amplifier.
- Short cutting tube warm up time will ALLOW you to purchase new tubes sooner than you may want, wait at least 3 minutes



Extra Resistor For Use with 8877's

A 25 ohm 50 watts resistor is pictured here as a stand by incase The 3CPX1500's tubes need to be replaced with 3CX1500A7's.

NOTE The Resistor, no connections until needed.



If you change out the pulse rated tubes (3CPX1500A7) you must lower the filament voltage for a 3CX1500A7 to 10 volts. This resistor is to be hooked up in series with the primary voltage going to the filament transformer. It will allow the proper voltage for 3CX1500 filaments. If you replace the tubes and want to use the 3CX1500A7 instead of the pulse rated tubes, both must be changed out at the same time

Henry 2K Classic X Conversion to 5K

- Henry amplifiers were designed when most amateur radios were the tube type . These tube type radio did not require almost a perfect input swr, like modern transmitters do. Current radio have circuits designed so the radios swr must be very low or it will cut back on the output power to stop any damage to solid state final transistors. Most tube type transmitters did not have these protective circuits and could operate fine with higher input swr transceivers made today. You must use your radios built in antenna tuner to provide your radio with a low swr to enable maximum output from your radio to the amplifier. With out this the amp will not deliver expected out put.

- Many Henry Radio Amplifiers were made years ago and continue to operate with little trouble. These amplifiers can fail from time to time, and some maintenance work may be required.