

# **Instruction Manual**

**160-10L Amplifier**  
**160-10M/572B Amplifier**

Four parallel diagonal lines, increasing in thickness from top to bottom, slanting from the upper left to the lower right across the page.

**Dentron**

# 160 - 10L INSTRUCTION MANUAL

## Unpacking:

Carefully lift the amplifier out of the packing material. Examine for visible damage. Install feet. If the amplifier has been damaged in shipment, save the box and packing material, and notify the transportation company. Fill out and mail the warranty card.

## Power Transformer Connections:

The 160 - 10L is shipped with the transformer primary connected for 115 volt AC operation. Because of the high current required by the 160 - 10L it is highly recommended that the amplifier be operated on its own 220 - 240 volt circuit. To change primary to 240 volt operation refer to the figure of TBI in manual. The terminal board is located at the bottom of the power supply section. NOTE: Never run amplifier from an extension cord — the conductors are not large enough to carry the load safely!

### **"WARNING"**

MAKE NO ATTEMPT TO PUT THE AMPLIFIER IN SERVICE OUT SIDE OF THE CABINET! CONTACT WITH VOLTAGES IN THIS AMPLIFIER CAN BE FATAL!!

## Location:

The back of the amplifier case must not be obstructed and should not be placed closer than 3" from a wall or the air inlet for the blower will be blocked and overheating of the tubes may occur.

## Antenna Requirements:

The 160 - 10L has been designed for use with antennas resonant at the operating frequency and having approximate impedances of 25 to 100 ohms. The nominal output impedance of the 160 - 10L is 50 ohms and the SWR of this load should **never exceed 2:1**.

SWR in excess of 2:1 — may cause arcing of tuning capacitors.

## Antenna Tuners:

Many antennas exhibit an SWR in excess of 2:1 over an entire amateur band. For this reason we highly recommend using a DenTron 160 - 10AT 3KW Super Super Tuner or Monitor Tuner which will allow the 160 - 10L amplifier to work into a 50 ohm load for maximum power transfer into the antenna.

### **"WARNING"**

NEVER ATTEMPT TO OPERATE THE 160 - 10L WITHOUT FIRST CONNECTING IT TO AN ANTENNA OR 50 OHM DUMMY LOAD OF SUFFICIENT POWER HANDLING CAPACITY OR SERIOUS DAMAGE MAY RESULT TO THE AMPLIFIER!!

## Ground:

The 160 - 10L should be attached to a good earth ground though as short and as large a ground strap as possible.

## Drive Requirements:

To operate the 160 - 10L the exciter drive power can be as little as a few watts to 125 watts, the 160 - 10L with 572B tubes can be driven with as much as 150 watts —

### **Caution**

This amount of drive will run the amplifier above the legal limit of 2000 watts input.

## Operation

1. Make sure 160 - 10L is in the off position.
2. Connect the antenna or a dummy load to the 160 - 10L Antenna Connector.
3. Set the band selector to the proper band.
4. Preset loading and tuning controls as shown on control sheet — ***it is very important to have these controls preset before tune up.***
5. Tune and load the exciter into the antenna or dummy load, the amplifier is still in the off position. Tune to approximately 70 - 100 wats output — turn exciter off.
6. Turn the 160 - 10L switch to CONTINUOUS DUTY — power light will come on — and check in DC volt position for 1700 -2000 volts showing on the meter.
7. Switch the meter switch DC AMPS-should read zero.
8. Turn on the exciter and insert a small amount of power into the amplifier and adjust tuning control for maximum output as indicated on a watt meter such as the DenTron W-2 or SWR Bridge in the antenna coax lead.
9. Insert full power (70 - 100 watts) into amplifier and tune the 160 - 10L for maximum output alternately adjusting the loading and tuning controls for maximum forward power as indicated on station wattmeter or SWR Bridge. In case of low exciter power the loading control setting may deviate counter-clockwise from basic chart setting.
10. To Calculate Power = Voltage  $\times$  Current  $\div$  Exciter Drive  
*example on 160 - 10L: 1800 Volts  $\times$  1000 MA = 1800 Watts input + 125 Watts Drive = 1925 DC input*
11. The 160 - 10L is capable of much greater input than 1KW but only on SSB model with switch in the Continuous Duty position. ***On CW, RTTY, SSTV keep input at 1KW*** and operate in the continuous duty model
12. Normal SSB operation:
  - a) Switch in SSB
  - b) Voice peaks should read about .4 on DC amp scale — with speech processing much greater readings will show
  - c) Idle current will be approximately 40 - 60 MA.

## Cabinet Removal:

1. Unplug 160 - 10L from AC
2. Remove rubber feet and all bottom screws.
3. Remove six top screws.
4. Tilt amplifier up on its back and pull cabinet forward making sure to keep cabinet straight as it is pulled forward.

### "WARNING"

NEVER OPERATE 160 - 10L OUTSIDE OF ITS CABINET

The 160 - 10L Amplifier was designed and engineered to provide long and hard hours of service. Don't be afraid to push it to its full capabilities. Just use common sense and observe the safety precautions as outlined in manual.

### NOTE

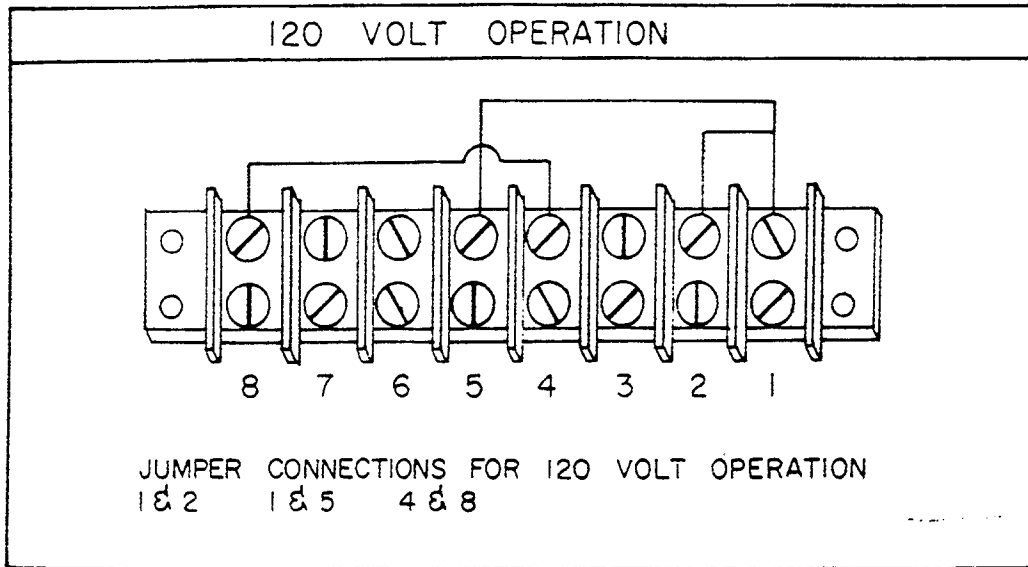
The 160 - 10L should not be turned off immediately after long periods of transmitting, but should be left on stand-by for several minutes with zero plate amperes to allow the 811A's or 572B's time to cool down.

160-10L BASIC TUNE UP CHART

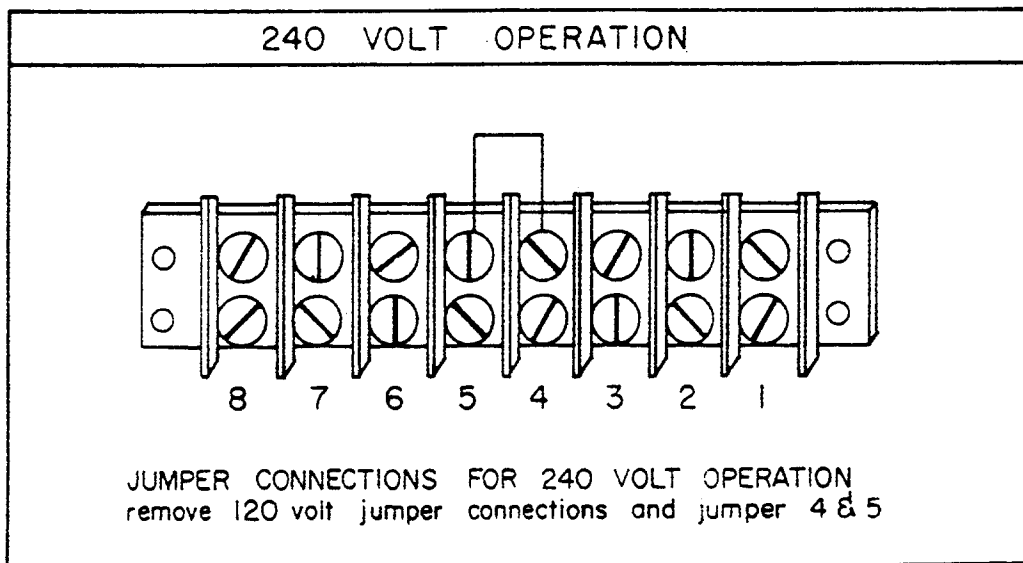
BAND	BAND SELECTOR	LOADING CONTROL	TUNING CONTROL
160	1.8	4	1.8
80	3.5	2	3.5 (No. 2)
75	3.5	3	3.5 (No. 4)
40	7.0	3½	7.0
20	14	5	14
15	21	7	21-28
10	28	8	28

# 160-10L Parts List

C-1, C-2, C-4, C-9, C-17, C-26 .....	.01 Disc 1KV
C-3 .....	800MFD - 25WVDC
C-10 - C-15 .....	150MFD - 450WVDC
C-16 .....	500PF - 6KV Disc
C-25 .....	500PF - 20KV Cap
C-27 .....	D-232 Plate Cap
C-29 .....	D-800L Load Cap
C-30 .....	500PF 20KV Doorknob
CB-1 .....	15 amp breaker
CR-1, CR-7 .....	1N4007 Diodes
K-1 .....	115VAC DPDT Relay
K-2, K-3 .....	12 VDC DPDT Relay
L-1 .....	Plate Tank Coil
M-1 .....	0-2000VDC and 0-1 amp meter
PC-1 - PC-4 .....	Parasitic Chokes
PL-1, PL2 .....	#330 and #328 Bulbs
R-1 .....	1000 ohm 10 watt wire wound
R-2 .....	2000 ohm 5 watt wire wound
R-3 .....	50K ohm 10 watt wire wound
R-4 - R-9 .....	25K 10 watt Carbon
R-11 - R-14 .....	Meter Resistors selected at factory
R-15 .....	1 ohm 1 watt Carbon
RFC-1 .....	Plate Choke
RFC-2 .....	2.5mh 300 ma Choke
RLY-1 .....	R.C.A. phono receptacle
S-1 .....	DP-3T Rotary Switch
S-2 .....	DPDT Rotary Switch
S-3 .....	2P6T Rotary Switch
T-1 .....	Power Transformer
T-2 .....	Filament Choke
V-1 - V-4 .....	572B Tubes
Z-1 .....	50W, 9V Zener Diode



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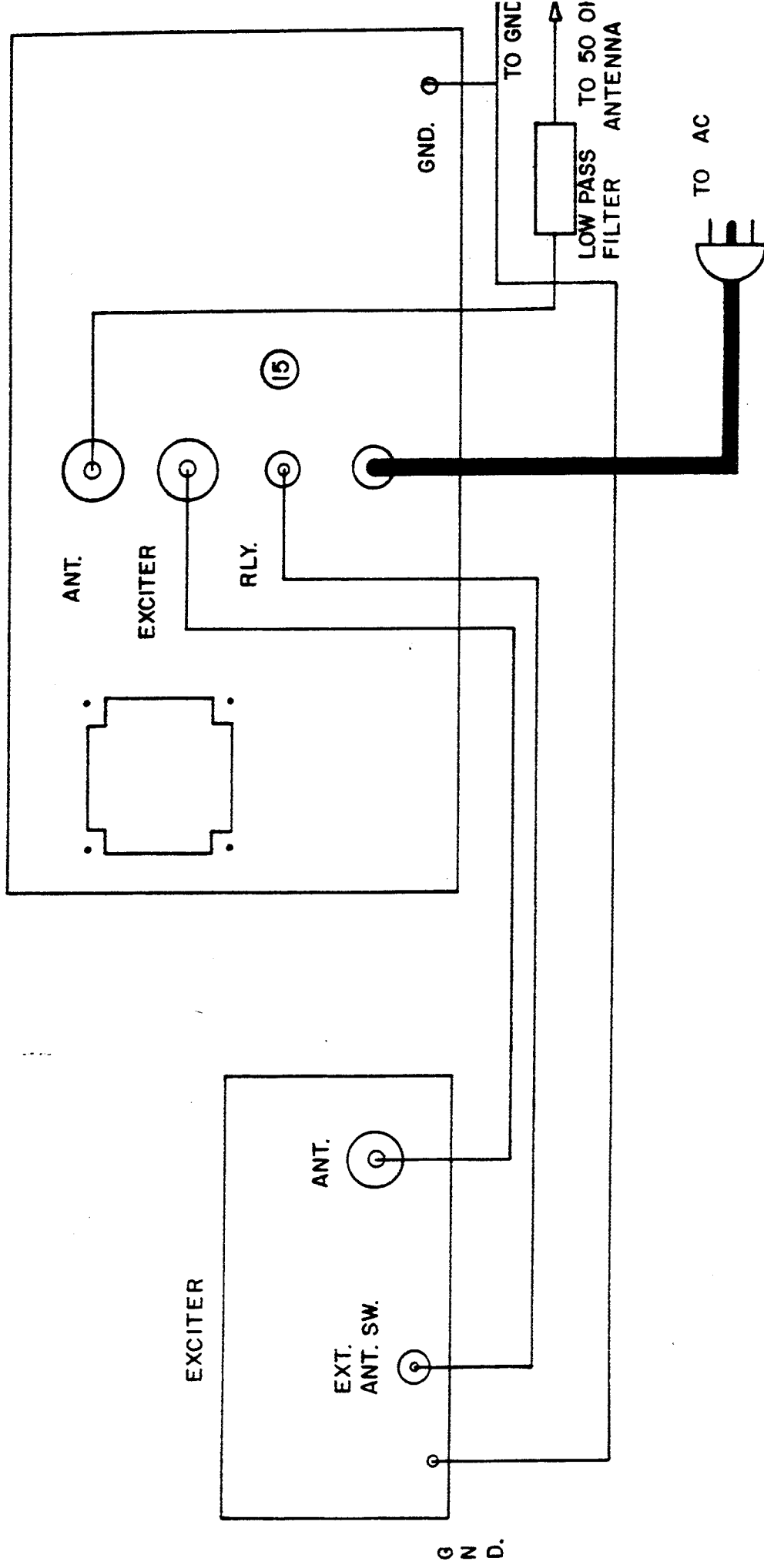


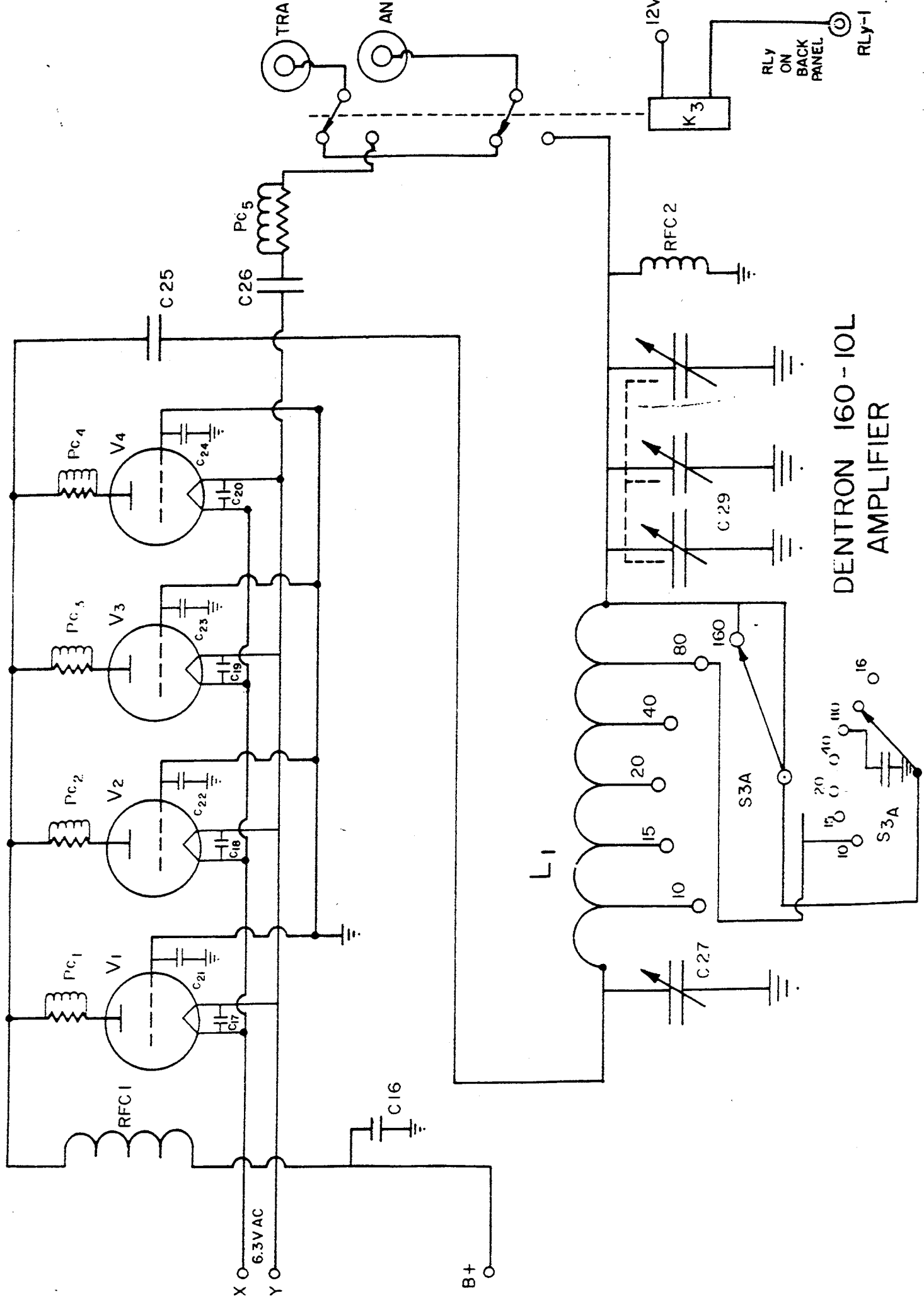
NOTE: THE AC CORD HAS 3 CONDUCTORS --- THE GREEN LEAD IS GROUND

NOTE: To locate terminal 1--8 find a 2000 ohm 5 watt resistor on terminal 1 & 2 and count toward front of amplifier.

NOTE: Replace 15 Amp circuit breaker with 10 Amp circuit breaker.

160 - 10L





DENTRON 160-10L  
AMPLIFIER



# 160 - 10 L POWER SUPPLY

