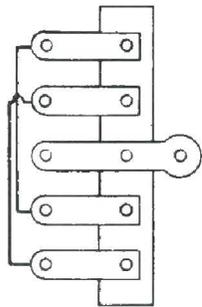
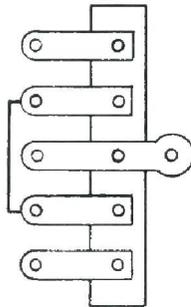


The LA-1000A is factory wired to operate from 117 vac. If 234 vac operation is desired, and this input power will provide the best performance, rewire the power transformer primary connection as shown in below. The terminal strip is located in front of the power transformer on the chassis, Page 4.

NOTE: Remove the undesired jumper before installing the new jumper.



117 vac
Connection

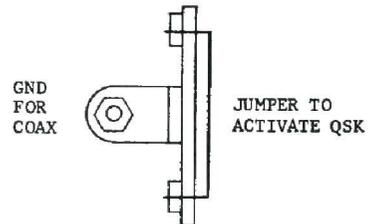


234 vac
Connection

Power Transformer connections for operation on 117 or 234 vac.

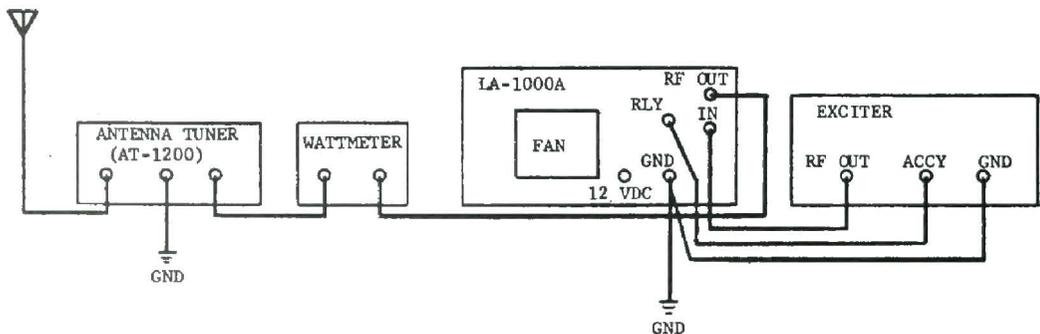
When the LA-1000A is operated on 117 vac, number 12 wire should connect the outlet to the fuse box. This wire size is required to prevent a significant voltage drop.

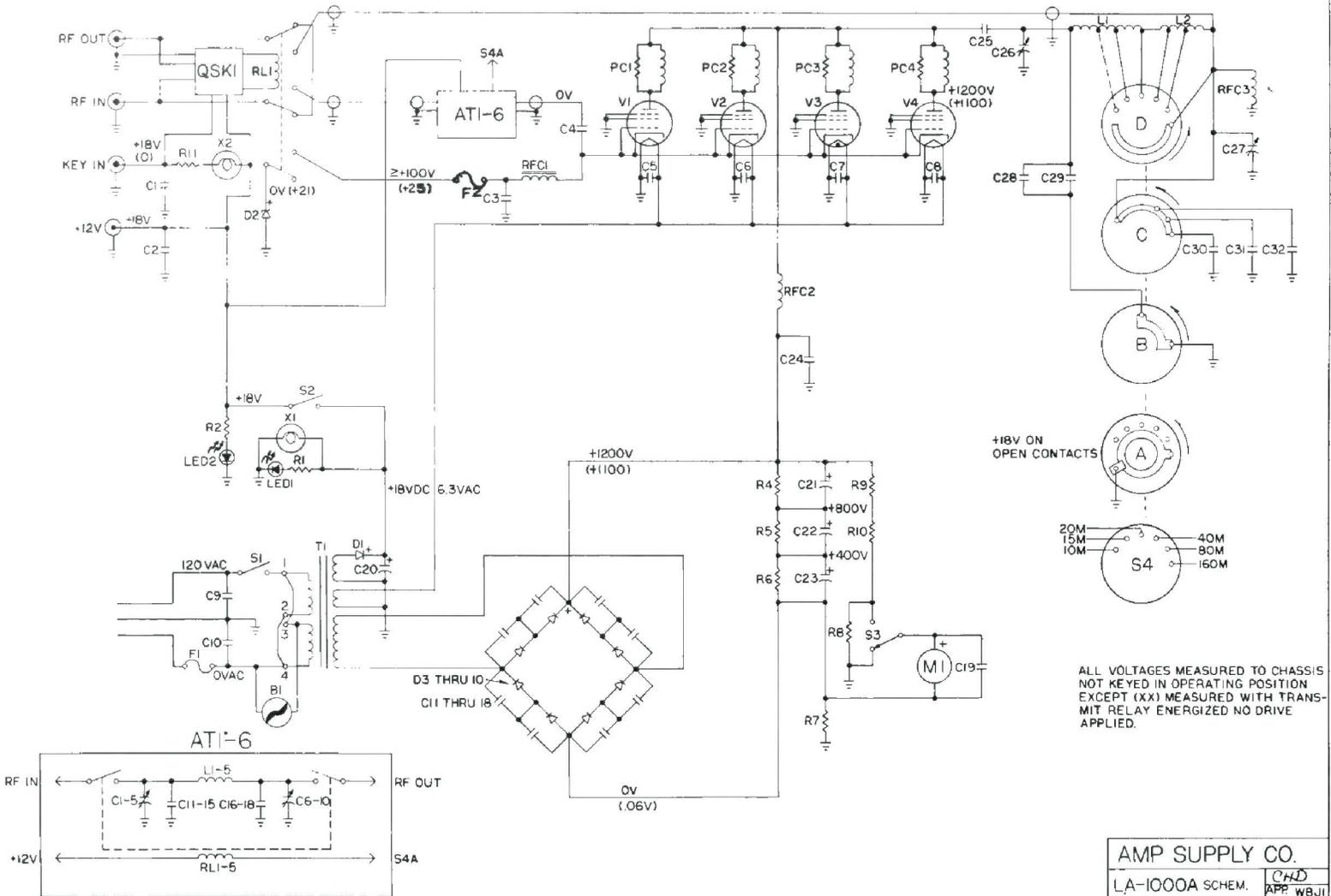
The QSK is not connected at the factory. If you wish to use the amplifier for QSK, locate the 3-lug terminal strip between the fan and the relay. (See the figure below.) ATTACH a jumper as shown.



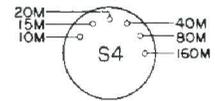
Position the LA-1000A so the rear is at least 1 inch from a wall and the bottom of the unit is clear of all obstructions. This will assure adequate air circulation.

Connect a wattmeter and a 50-ohm load to the RF OUT connector using RG-8U, 52-ohm coaxial cable, or its equivalent.



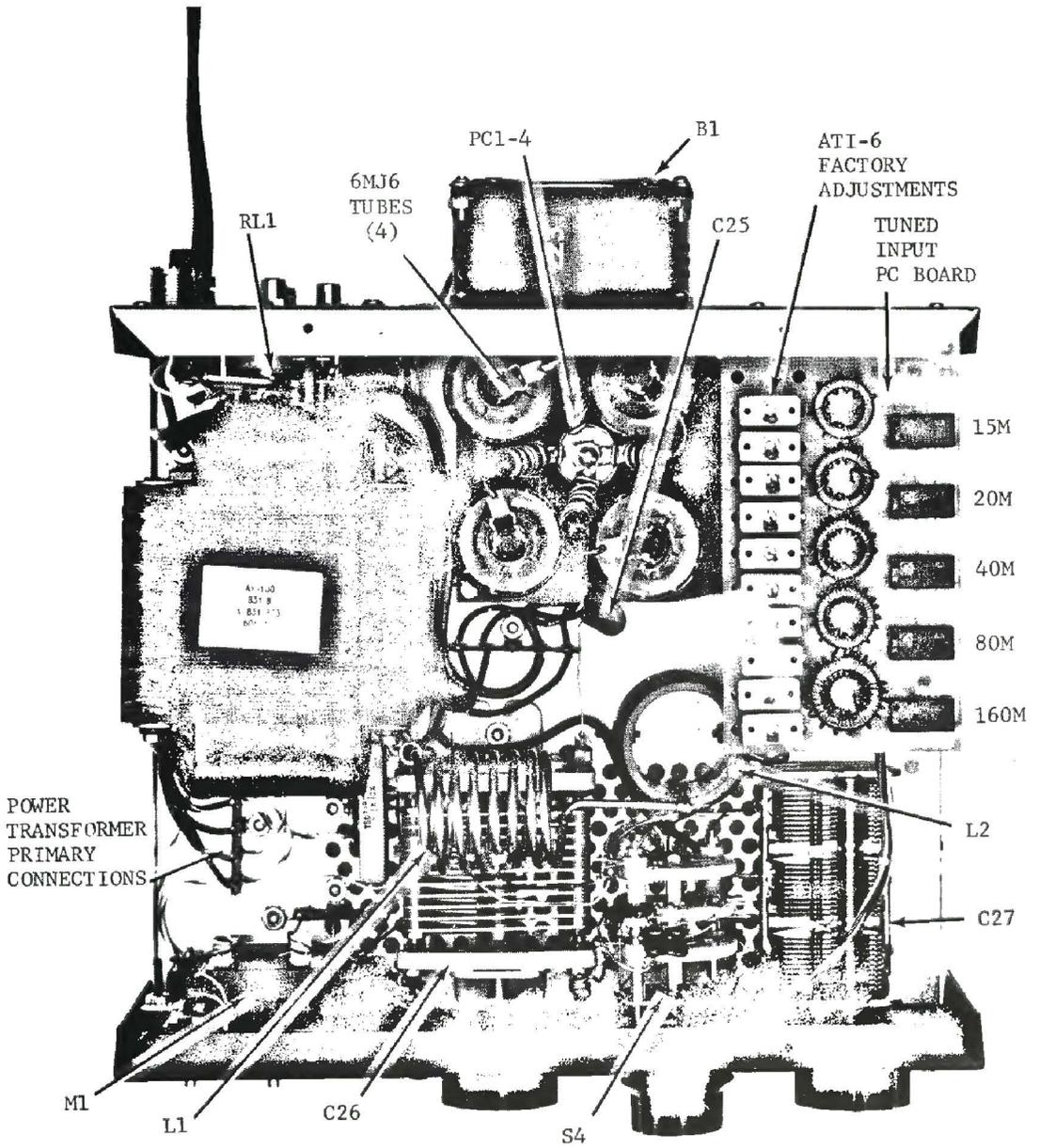


+18V ON OPEN CONTACTS



ALL VOLTAGES MEASURED TO CHASSIS NOT KEYS IN OPERATING POSITION EXCEPT (XX) MEASURED WITH TRANSMIT RELAY ENERGIZED NO DRIVE APPLIED.

AMP SUPPLY CO.	
LA-1000A SCHEM.	CHD
	APP WBJ
26, MAY 83	LA-10001



<u>Drawing Symbol</u>	<u>Description</u>	<u>Drawing Symbol</u>	<u>Description</u>
B1	Blower	RFC1	Cathode choke
C1-19	.01uf 1 Kv	RFC2	Plate choke
C20	1000uf 25 v	RFC3	2.5 mH
C21-23	125uf 500 v	R1, R2	1K 1/4 w
C24	.001uf 5 Kv	R4-7	100K 2 w
C25	.001uf 7.5 Kv	R8	.4 ohm 1%
C26	250 pf variable	R9, R10	Factory selected
C27	1100 pf variable	RL1	TPDT 12 v DC
C28-29	200 pf 5 Kv	S1, S2	SPST Toggle
C30	1500 pf Dm 19	S3	SPDT Rotary
C31-32	220 pf Dm 19	S4	Band Switch
D1, D3-10	3A 1000 piv	T1	Power Transformer
D2	1N3321	X1	Meter Lamp 12 v
F1	15 A Fuse (10A - 220 v)	X2	Xmit Lamp 12 v
F2	1 A fuse	V1-4	6MJ6 Tubes
J1, J2	S0239 Connector		
J3, J4	RCA Connector		
L1	Tank Coil (30 MHz - 14 MHz)		ATI-6
L2	Tank Coil (1.8 MHz - 14 MHz)	C1-10	Trimmer Capacitor
LED1, LED2	Internal Part of Switch	C11-18	Factory Selected
M1	Plate meter	L1-L5	Padding Caps
PC1-PC4	Parasitic choke	RL1-5	Input Coils
			DPST - 12 v dc

LA-1000-A ENGINEERING CHANGE

A SAFETY FUSE IS INSTALLED IN YOUR NEW LA-1000-A AMPLIFIER. THE FUSE IS IN SERIES WITH THE ZENER DIODE. THIS WILL PREVENT A DIODE FAILURE IN THE EVENT A TUBE WOULD FLASH. NEW VACUUM TUBES OCCASIONALLY WILL FLASH OVER. WITH THE NEW FUSE INSTALLED, IF THIS SHOULD HAPPEN, THE ZENER IS PROTECTED. THE FUSE IS LOCATED ON THE CHASSIS JUST BEHIND THE POWER TRANSFORMER. THE VALUE OF THIS FUSE IS 1 AMP FAST BLOW. AN INDICATION OF A BLOWN FUSE IS ZERO PLATE CURRENT IN THE TRANSMIT MODE. SIMPLY REMOVE THE TOP COVER AND REPLACE THE DEFECTIVE FUSE.

To operate SSB, tune the LA-1000A as stated above. When fully tuned in CW, simply change your exciter to SSB. No further adjustments to the LA-1000A are required.

To operate on the new 30-meter band, place the LA-1000A band selector on the 7 MHz position.

THEORY OF OPERATION

After the LA-1000A has been installed according to the instructions, and power is applied, S1 is used for initial turn on. AC is applied to T1, the main power transformer, and to the fan, B1. The three secondary windings of the transformer produce filament voltage (6.3 v), relay control voltage (12 v), and HV. The 12-v dc is developed by a half-wave rectifier. When power is applied, meter lamp X1 and LED 1 (internal part of S1) will light.

Closing S2 applies 12 v to the relays (RL1-5) in the ATI-6 tuned input, the QSK module, the XMT lamp (X2) and the LED 2 (internal part of S2).

The high-voltage section consists of eight diodes in a bridge circuit. Each diode (D3-10) is rated at 3-amp, 1000-piv and is in parallel with a 0.01-uf capacitor (C11-18) for transient protection. For filtering, 3, 125-uf, 500-v capacitors (C21-23) are used in series. Each has a 100K-ohm 2-w bleeder resistor (R4-6) in parallel.

RF OPERATION

When S2 is in the OPT mode, 12 v is applied to the tuned input relays, the QSK module and the transmitter light. The band switch selects a ground path for one of the tuned input relays, allowing the proper section to be placed in series with the RF path. When the exciter is keyed, it provides a closed circuit for the transmitter lamp and the QSK module. The QSK module, in turn, keys the antenna relay RL-1.

RF from the exciter flows into J1, through the proper input circuit, through C4, to the cathodes of tubes V1-V4. Diode D2 provides bias for the tubes.

A safety fuse is installed in your new LA-1000A amplifier. The fuse is in series with the zener diode. This will prevent a diode failure in the event the tube would flash. New vacuum tubes occasionally will flash over. With the new fuse installed, if this should happen, the zener is protected. The fuse is located on the chassis just behind the power transformer. The value of this fuse is 1 amp fast blow. An indication of a blown fuse is zero plate current in the transmit mode. Simply remove the top cover and replace the defective fuse. Thank you for purchasing your new LA 1000A.

PC 1-4 are parasitic chokes. The RF comes from the tubes, through C25 to the tank circuit L1, L2, C26, C27. The tank is tuned for maximum transfer of RF to the antenna through J3. RFC 3 protects the antenna from dc potential.

MAINTENANCE

When operated according to the instructions in this manual, your LA-1000A should require very little, if any, maintenance. The 6MJ6 tubes will provide thousands of hours of service. Deterioration of a tube will generally be indicated by a change in idling current or inability to draw normal plate current, or both characteristics.

In the grounded-grid circuit used in the LA-1000A, it is not necessary to match the 6MJ6 tubes.

Should you desire factory servicing for your LA-1000A, it may be returned to Amp Supply Company for checking and alignment. Any repairs will be made on a time and material basis.

Be sure to insert packing materials above the tubes and under the tuned input PC board. Also, it is recommended that the unit be shipped in the original shipping carton.

Please write or call the factory for authorization before returning your unit.

Renewal parts may be obtained from the factory for a nominal cost. Parts, listed on Page 8, should be ordered by designation, description, your amplifier serial number, and state that the parts are for an LA-1000A Amplifier.

DANGER

This electronic equipment operates at high voltages and frequencies. Therefore, contacting the internal parts of this amplifier, the power supply cable, the antenna or other dangerous parts can cause serious or fatal injuries.

Only persons knowledgeable and qualified with this electrical equipment and the hazards involved should install, operate, or service this unit and associated accessories.

INTRODUCTION

General

The LA-1000A is a compact 1200 w PEP linear amplifier covering the 15 through 160 meter amateur radio bands. This rugged unit can also operate at 700 w CW and 500 w RTTY and SSTV.

This quality amplifier uses four 6MJ6 power tubes connected in a grounded-grid configuration. It will work into a wide range of antenna impedances, from 50 to 70 ohms with SWR or 2:1 or less. For impedances outside this range, an Amp Supply AT-1200 Antenna Tuner is recommended. The LA-1000A also features a self-contained power supply and a meter for indicating plate current and voltage.

The unit will operate from 117 vac or 230 vac by jumper reconnection, 50/60 Hz.

Please read and understand this manual before putting your new LA-1000A on the air.

SPECIFICATIONS

Frequency Coverage:

- 160 meter band - 1.8 to 2.5 MHz
- 80 meter band - 3.5 to 4.5 MHz
- 40 meter band - 7.0 to 7.3 MHz
- 30 meter band - 10.1 to 10.15 MHz
(operates in 40-meter position)
- 20 meter band - 14.0 to 14.350 MHz
- 15 meter band - 21.0 to 21.450 MHz
- *10 meter band - 28.0 to 30 MHz

* This band supplied only on amplifiers shipped outside the U.S.A. A modification kit may be purchased from Amp Supply for a nominal fee and a copy of your amateur license.

Power Requirements:

- 234 volts, 7.5 amp, 50/60 Hz; or 117 volts, 15 amp, 50/60 Hz.

Plate Power Input:

- SSB: 1200 w PEP
- CW: 700 w
- RTTY and SSTV: 400 w

QSK:

- Full break-in CW.

Drive Power:

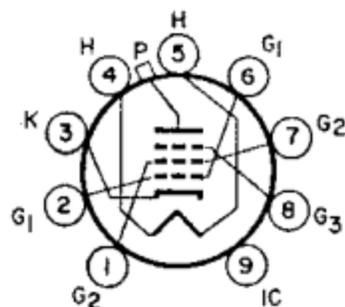
- Typically 100 w PEP; 150 w maximum.

Input Impedance:

- 50 ohms tuned input, low-pass, pi-network type.

Output Impedance:

- Adjustable pi-network matches 50 to 70 ohm with SWR of 2:1 or less.



9QL

BEAM POWER TUBE

6MJ6/ 6LQ6/6JE6C

24LQ6/24JE6C, 31LQ6

Novar types used as horizontal-deflection amplifier in color and black-and-white television receivers. **Outlines section, 32C**; requires novar 9-contact socket. Types 24LQ6/24JE6C, and 31LQ6 are identical with type 6MJ6/6LQ6/6JE6C except for heater ratings.

	6MJ6/ 6LQ6/6JE6C	24LQ6/24JE6C	31LQ6	
Heater Voltage (ac/dc)				
Heater Current	6.3	24	31	volts
Heater Warm-up Time	2.3	0.6	0.45	amperes
Heater-Cathode Voltage:				seconds
Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts
Direct Interelectrode Capacitances:				
Grid No.1 to Plate			0.6	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3			22	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3			11	pF

Class A₁ Amplifier

CHARACTERISTICS

	Triode* Connection		Pentode Connection		
	—	5000	—	—	
Peak Positive-Pulse Plate Voltage#	—	5000	—	—	volts
Plate Voltage	145	—	60	175	volts
Grid-No.3 (Suppressor-Grid) Voltage	—	30	30	30	volts
Grid-No.2 (Screen-Grid) Voltage	145	145	145	145	volts
Grid-No.1 (Control-Grid) Voltage	—35	—	0	—35	volts
Plate Resistance (Approx.)	—	—	—	7000	ohms
Transconductance	—	—	—	7500	μmhos
Plate Current	—	—	710‡	95	mA

Grid-No.2 Current	—	—	55‡	2.4	mA
Grid-No.1 Voltage for plate current of 1 mA	—	—125	—	—60	volts
Amplification Factor	2.8	—	—	—	

* Grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.
‡ This value may be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.

Horizontal-Deflection Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)

Plate Supply Voltage	990	volts
Peak Positive-Pulse Plate Voltage#	7500	volts
Peak Negative-Pulse Plate Voltage	1100	volts
Grid-No.3 Voltage■	75	volts
Grid-No.2 Voltage	220	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	volts
Peak Cathode Current	1200	mA
Average Cathode Current	350	mA
Plate Dissipation ^o	30	watts
Plate Dissipation (Temporary overload)▲	200	watts
Grid-No.2 Input	5	watts
Envelope Temperature (At hottest point)	250	°C

MAXIMUM CIRCUIT VALUES

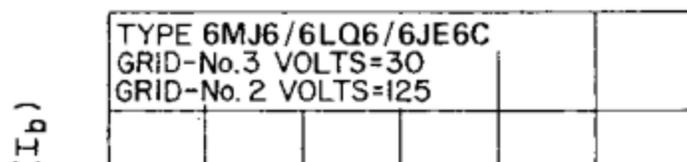
Grid-No.1-Circuit Resistance:		
For grid-No.1-resistor-bias operation	0.47	megohm
For plate-pulsed operation (horizontal-deflection circuits only)	10	megohms

Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

■ For horizontal-deflection service, a positive voltage may be applied to grid-No.3 to minimize "snivets" interference in both vhf and uhf television receivers. A typical value is 30 volts.

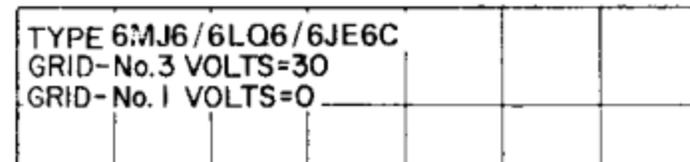
o A bias resistor or other means is required to protect the tube in absence of excitation.

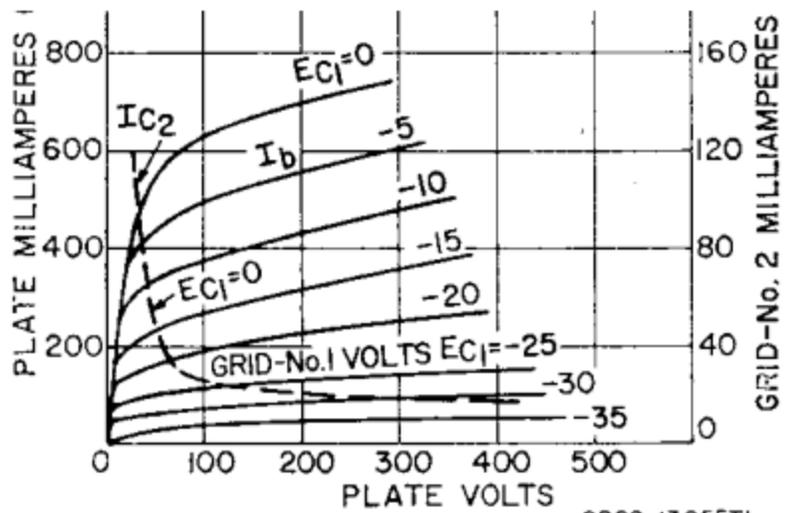
▲ Total continuous or accumulated time not to exceed 40 seconds.



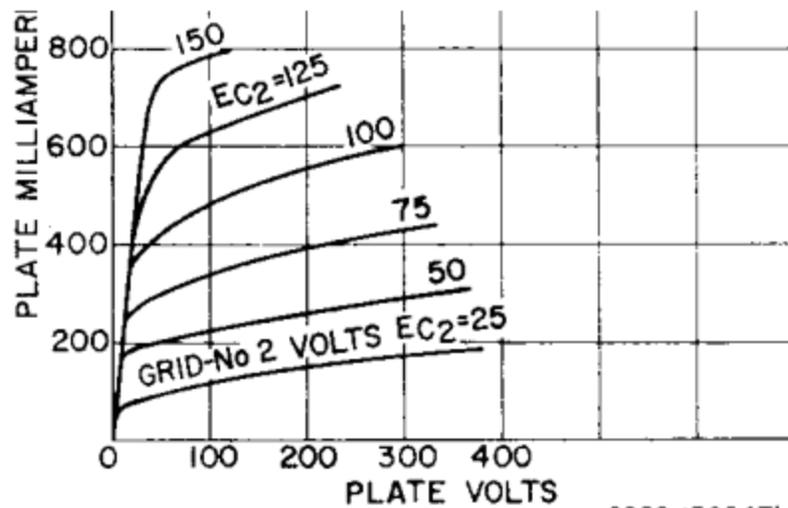
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ES





92CS-13055T1



92CS-13054T1