

Eitel-McCullough, Inc.

SAN BRUNO, CALIFORNIA

3X3000A1

LOW-MU TRIODE

MODULATOR
AMPLIFIER

The Eimac 3X3000A1 is a low-mu forced-air-cooled power triode intended for use as an audio amplifier or modulator. The maximum rated plate dissipation is 3000 watts.

Two 3X3000A1's in class-AB₁ audio service will deliver up to 10 kilowatts maximum-signal plate power output at 6000 plate volts without drawing grid current.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament: Thoriated Tungsten									
Voltage	-	-	-	-	-	-	-	-	7.5 volts
Current	-	-	-	-	-	-	-	-	51 amperes
Amplification Factor (Average)	-	-	-	-	-	-	-	-	5
Direct Interelectrode Capacitances (Average)									
Grid-Plate	-	-	-	-	-	-	-	-	17 μ fd
Grid-Filament	-	-	-	-	-	-	-	-	29 μ fd
Plate-Filament	-	-	-	-	-	-	-	-	2.5 μ fd
Transconductance ($I_b = 1.0$ amp., $E_b = 3000$ v.)	-	-	-	-	-	-	-	-	11,000 μ mhos

MECHANICAL

Base	-	-	-	-	-	-	-	-	-	See outline drawing
Mounting Position	-	-	-	-	-	-	-	-	-	Vertical, base down or up
Cooling	-	-	-	-	-	-	-	-	-	Forced air
Maximum Temperatures:										
Grid and Filament Seals,										
Anode Cooler Core	-	-	-	-	-	-	-	-	-	150°C
Maximum Overall Dimensions:										
Length	-	-	-	-	-	-	-	-	-	9.0 inches
Diameter	-	-	-	-	-	-	-	-	-	4.16 inches
Net Weight	-	-	-	-	-	-	-	-	-	6.25 pounds
Shipping Weight (Average)	-	-	-	-	-	-	-	-	-	16 pounds

AUDIO FREQUENCY POWER AMPLIFIER OR MODULATOR

Class-AB₁

MAXIMUM RATINGS (Per tube)

D-C PLATE VOLTAGE	-	-	-	-	6000 MAX. VOLTS
D-C PLATE CURRENT	-	-	-	-	2.5 MAX. AMPERES
PLATE DISSIPATION	-	-	-	-	3000 MAX. WATTS
GRID DISSIPATION	-	-	-	-	50 MAX. WATTS

TYPICAL OPERATION (Sinusoidal wave, two tubes unless otherwise specified)					
D-C Plate Voltage	-	-	-	-	3000 4000 5000 6000 volts
D-C Grid Voltage (approx.) ¹	-	-	-	-	-600 -860 -1080 -1300 volts
Zero-Signal D-C Plate Current	-	-	-	-	665 500 400 335 ma
Max-Signal D-C Plate Current	-	-	-	-	3.35 3.00 2.80 2.65 amps
Effective Load, Plate-to-Plate	-	-	-	-	1170 2160 3320 4560 ohms
Peak A-F Grid Input Voltage (per tube)	-	-	-	-	555 760 995 1250 volts
Max-Signal Driving Power (approx.)	-	-	-	-	0 0 0 0 watts
Max-Signal Plate Power Input	-	-	-	-	10,000 12,000 14,000 16,000 watts
Max-Signal Plate Dissipation (per tube)	-	-	-	-	3000 3000 3000 3000 watts
Max-Signal Plate Power Output	-	-	-	-	4000 6000 8000 10,000 watts
Total Harmonic Distortion ²	-	-	-	-	2.7 1.8 2.6 2.1 per cent

¹Adjust to stated Zero-Signal D-C Plate Current. Effective grid-circuit resistance must not exceed 200,000 ohms.

²At maximum signal without negative feedback.

APPLICATION

Filament Voltage—The filament voltage, as measured directly at the tube, should be the rated value of 7.5 volts. Variations should be held within the range of 7.12 to 7.87 volts.

Cooling—The 3X3000A1 requires an air-flow of 150 cubic feet per minute through the anode cooler. This corresponds to a pressure drop across the cooler of 2.2 inches of water. A flow of 6 cubic feet per minute must also be directed into the filament stem structure, between the inner and outer filament conductors.

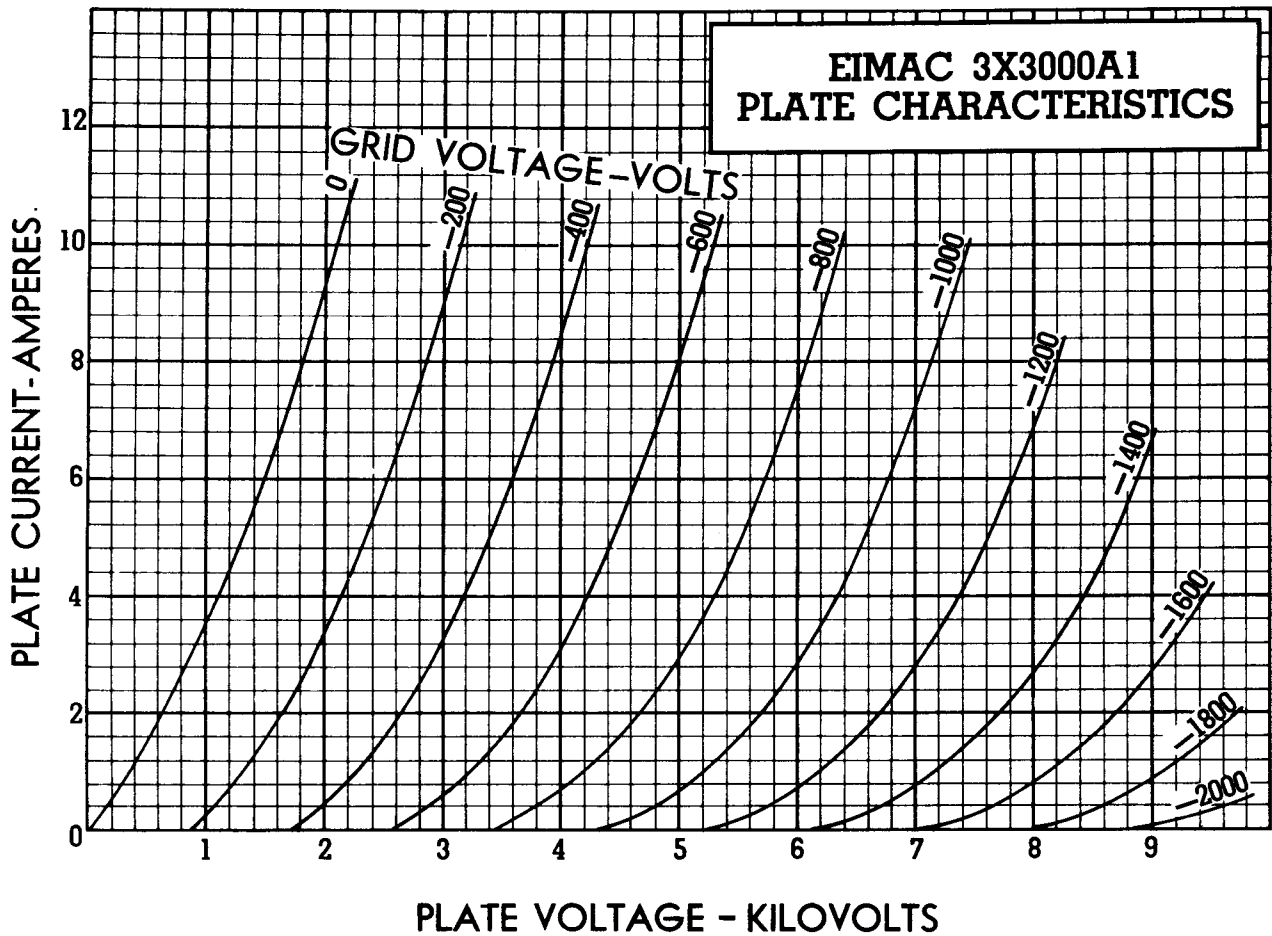
The air-flow must be started when power is applied to the filament, and must continue without interruption

until all electrode voltages have been removed from the tube. It is advisable to permit the air-cooling system to operate for two minutes or more after the removal of power.

These air requirements are based upon operation at an ambient temperature of 20°C and at sea level.

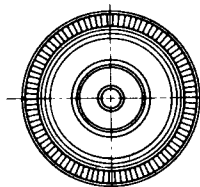
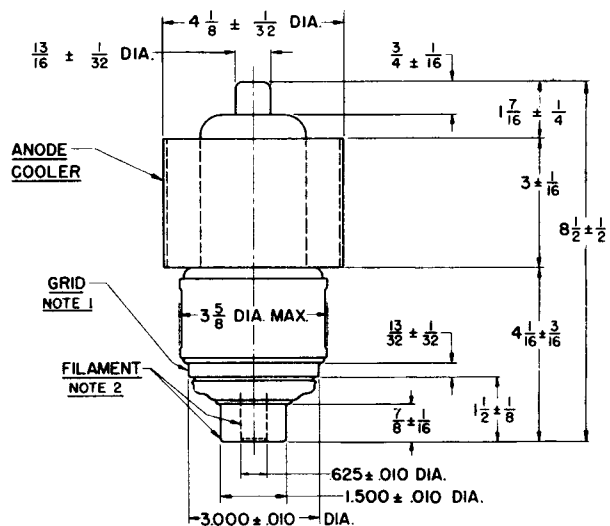
Cooling conditions for the 3X3000A1 may be considered satisfactory if the temperature of the anode cooler core and of the metal parts of the metal-to-glass seals is not allowed to exceed 150°C. A convenient accessory for the measurement of these temperatures is "Tempilaq", a temperature-sensitive lacquer manufactured by the Tempil Corporation, 132 West 22nd St., New York 11, N. Y.





NOTE 1
0.040" MAXIMUM RUNOUT OF GRID CONTACT SURFACE WITH RESPECT TO AXIS DETERMINED BY ANODE AND OUTER FILAMENT CONTACT SURFACE.

NOTE 2
0.025" MAXIMUM RUNOUT OF INNER FILAMENT CONTACT SURFACE WITH RESPECT TO OUTER FILAMENT CONTACT SURFACE.



BOTTOM VIEW

**DIMENSIONS
 IN INCHES**