

EITEL-McCULLOUGH, INC.

SAN BRUNO, CALIFORNIA

450TL

MEDIUM-MU TRIODE

MODULATOR
OSCILLATOR
AMPLIFIER

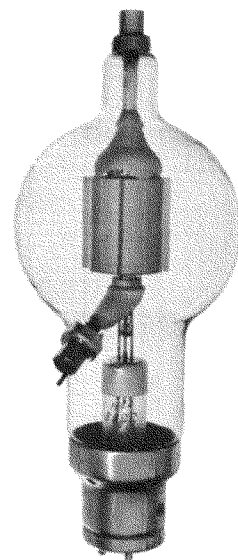
GENERAL CHARACTERISTICS

ELECTRICAL

Filament: Thoriated tungsten	
Voltage - - - - -	7.5 volts
Current - - - - -	12.0 amperes
Amplification Factor (Average) - - - - -	18
Direct Interelectrode Capacitances (Average)	
Grid-Plate - - - - -	5.2 $\mu\mu\text{f}$
Grid-Filament - - - - -	7.3 $\mu\mu\text{f}$
Plate-Filament - - - - -	0.9 $\mu\mu\text{f}$
Transconductance ($I_b=500$ ma., $E_b=4000$, $e_c=-75$) - -	6060 μmhos

MECHANICAL

Base - - - - -	4 pin, No. 5002B
Basing - - - - -	RMA type 4AQ
Maximum Overall Dimensions:	
Length - - - - -	12.625 inches
Diameter - - - - -	5.125 inches
Net weight - - - - -	1 pound
Shipping weight (Average) - - - - -	4 pounds



AUDIO FREQUENCY POWER AMPLIFIER AND MODULATOR

Class B

	TYPICAL OPERATION—2 TUBES			MAX. RATING	
D-C Plate Voltage - - - - -	3000	4000	5000	6000	volts
Max.-Signal D-C Plate Current, per tube* - -	•	•	•	600	ma.
Plate Dissipation, per tube* - - - - -	•	•	•	450	watts
D-C Grid Voltage (approx.) - - - - -	-110	-175	-240		volts
Peak A-F Grid Input Voltage - - - - -	650	740	860		volts
Zero-Signal D-C Plate Current - - - - -	200	150	120		ma.
Max.-Signal D-C Plate Current - - - - -	770	675	620		ma.
Max.-Signal Driving Power (approx.) - - - -	15	13	15		watts
Effective Load, Plate-to-Plate - - - - -	7800	12800	18600		ohms
Max.-Signal Plate Power Output - - - - -	1400	1800	2200		watts

*Averaged over any sinusoidal audio frequency cycle.

RADIO FREQUENCY POWER AMPLIFIER AND OSCILLATOR

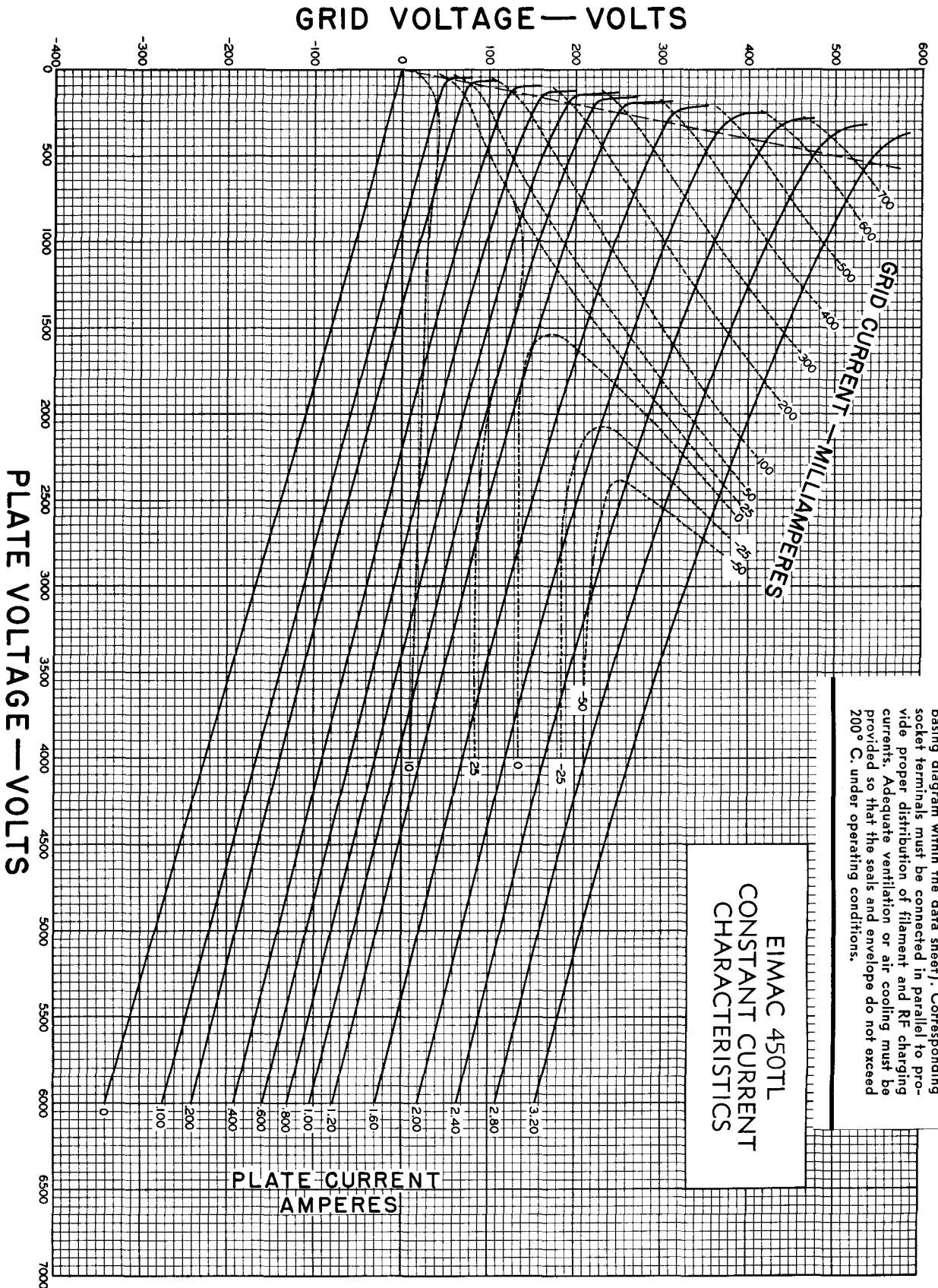
Class-C *Telegraphy

(Key down conditions without modulation)

	TYPICAL OPERATION—1 TUBE			MAX. RATING	
D-C Plate Voltage - - - - -	3000	4000	5000	6000	volts
D-C Plate Current - - - - -	500	450	450	600	ma.
D-C Grid Current - - - - -	65	53	54	75	ma.
D-C Grid Voltage - - - - -	-275	-400	-500		volts
Plate Power Output - - - - -	1050	1350	1800		watts
Plate Input - - - - -	1500	1800	2250		watts
Plate Dissipation - - - - -	450	450	450	450	watts
Peak R. F. Grid Input Voltage, (approx.) - -	640	740	870		volts
Driving Power, (approx.) - - - - -	38	35	42		watts

*The above figures show actual measured tube performance, and do not allow for variations in circuit losses.

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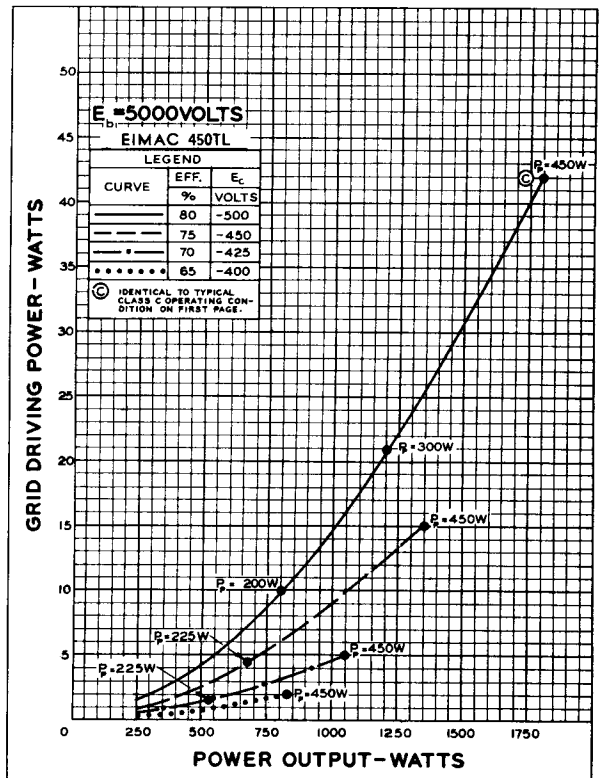
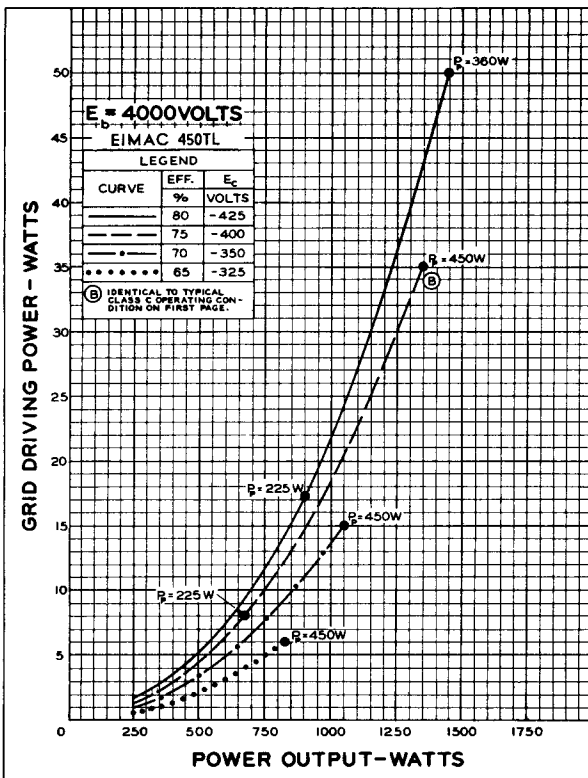
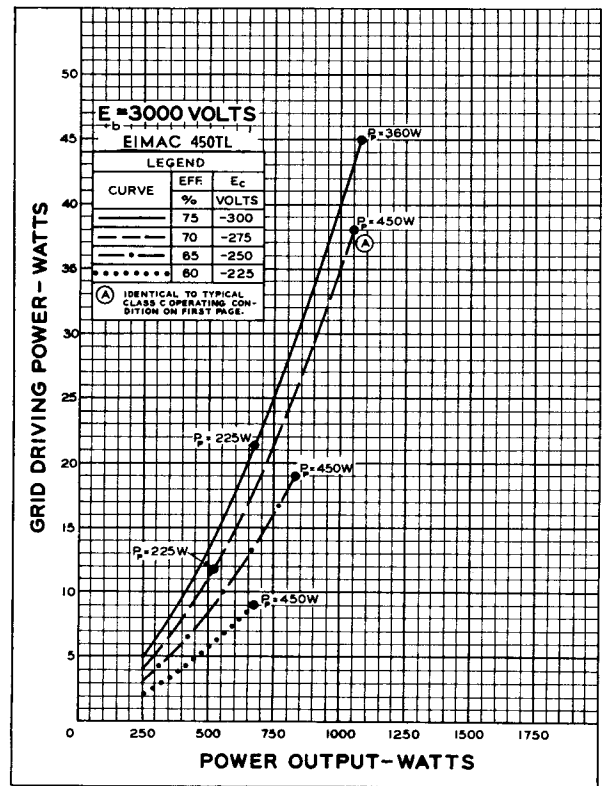


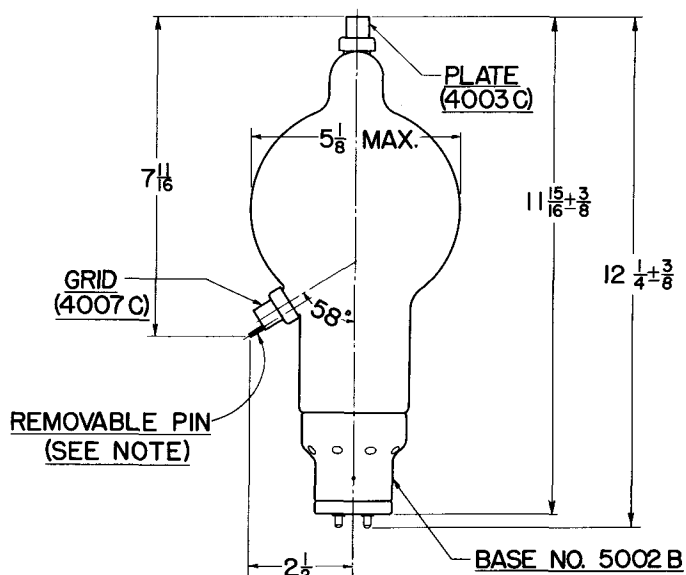
Note: Dual connections for each filament lead are provided within the base of each 450TH and 450TL (see basing diagram within the data sheet). Corresponding socket terminals must be connected in parallel to provide proper distribution of filament and RF charging currents. Adequate ventilation or air cooling must be provided so that the seals and envelope do not exceed 200° C. under operating conditions.

DRIVING POWER vs. POWER OUTPUT

The three charts on this page show the relationship of plate efficiency, power output and grid driving power at plate voltages of 3000, 4000, and 5000 volts. These charts show combined grid and bias losses only. The driving power and power output figures do not include circuit losses. The plate dissipation in watts is indicated by P_p .

Points A, B, and C are identical to the typical Class C operating conditions shown on the first page under 3000, 4000, and 5000 volts respectively.

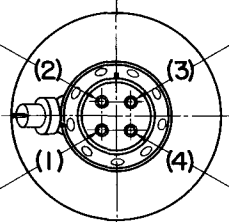




REMOVABLE PIN
(SEE NOTE)

FILAMENT

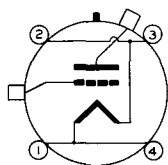
FILAMENT
(CONNECTED
INTERNALLY
TO PIN NO. 4)



FILAMENT
(CONNECTED
INTERNALLY
TO PIN NO. 2)

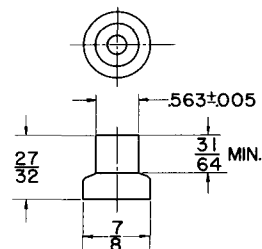
FILAMENT

4A0

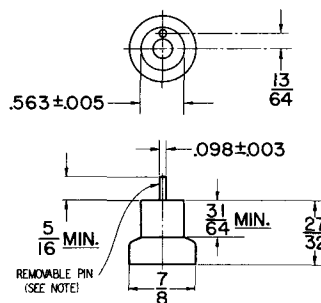


NOTE:—The grid terminal on the new 450TH and TL type tube is now .563" in diameter. To accommodate existing equipment which uses the 450TH or TL tubes with the old style .098" grid terminal, an adaptor pin is provided. This adaptor pin, if not needed, may be removed by unscrewing.

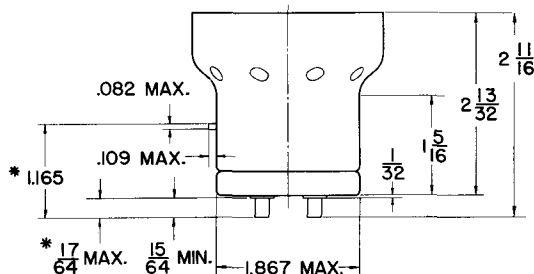
PLATE CAP
NO. 4003C



GRID CAP
NO. 4007C



BASE NO. 5002 B



* ON FINISHED TUBE
ADD .060 FOR SOLDER

