

EITEL-McCULLOUGH, INC.

SAN BRUNO, CALIFORNIA

450TL

MEDIUM-MU TRIODE

MODULATOR
OSCILLATOR
AMPLIFIER

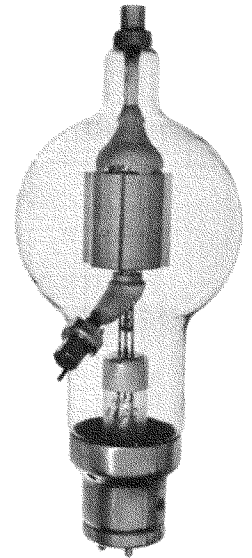
GENERAL CHARACTERISTICS

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

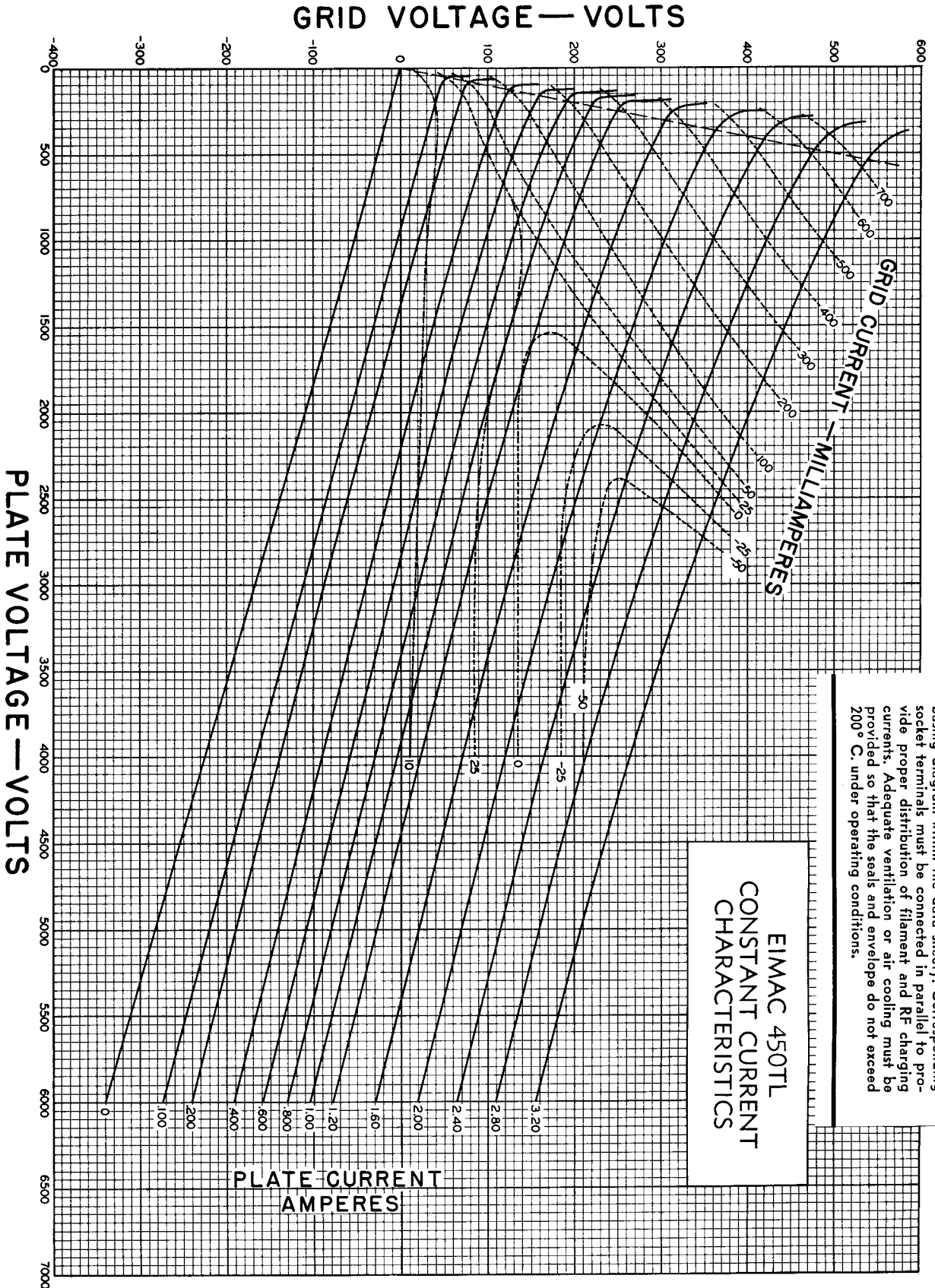
Class-C *Telegraphy

(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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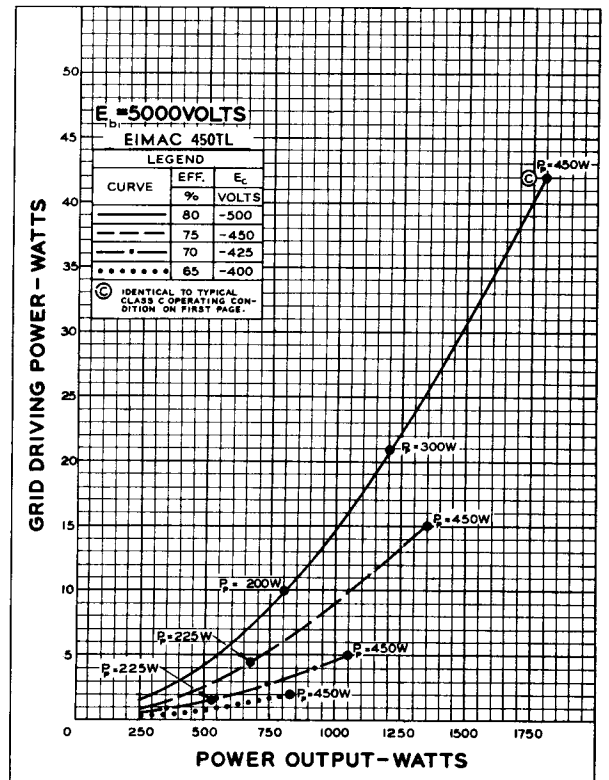
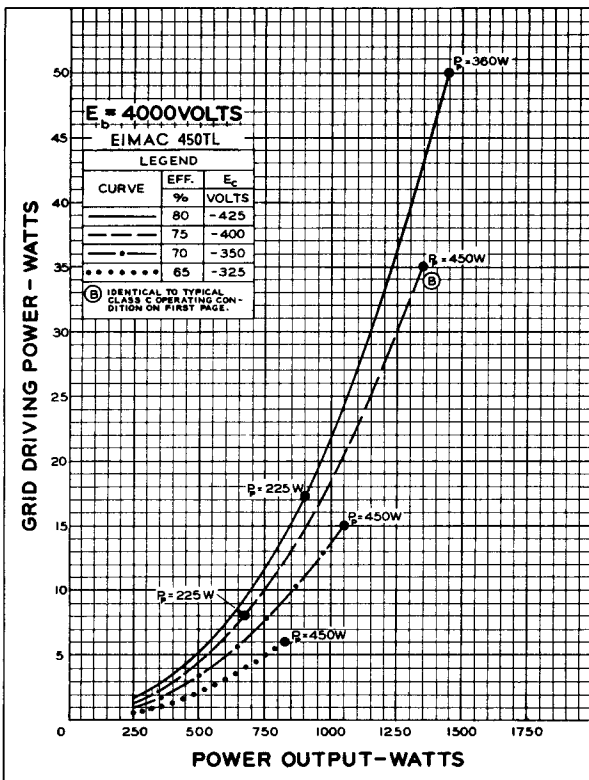
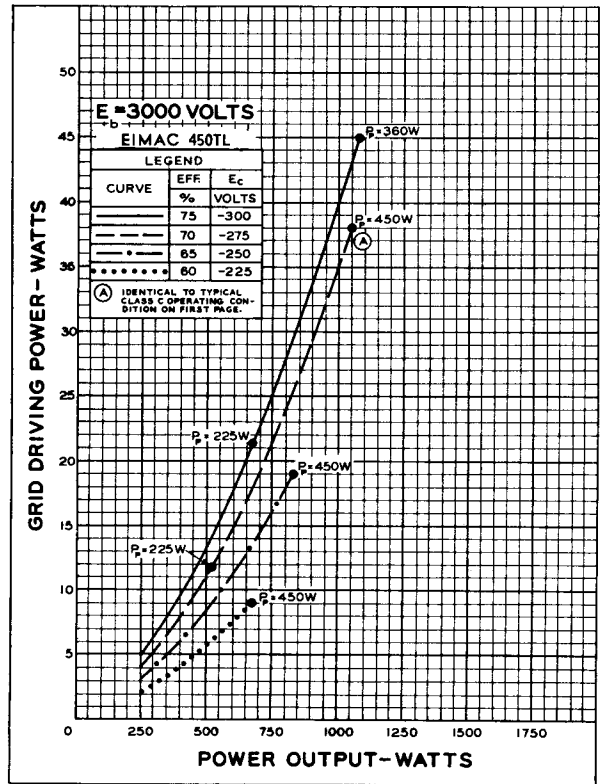


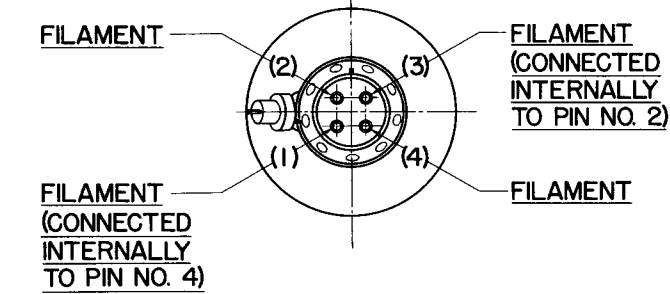
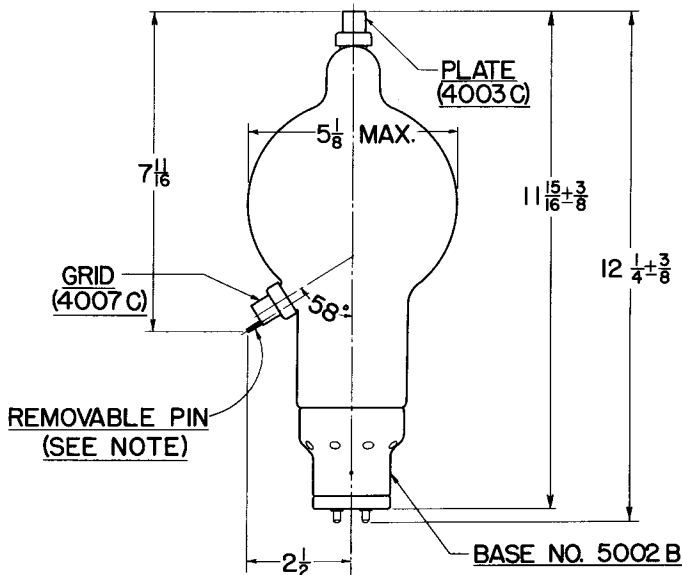
Note:
 Dual connections for each filament lead are provided within the base of each 450TH and 450TL (see basing diagram within the data sheet). Corresponding socket terminals must be connected in parallel to provide proper distribution of filament and RF charging currents. Adequate ventilation or air cooling must be provided so that the seats 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.





4A0

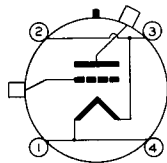
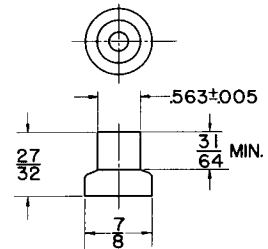
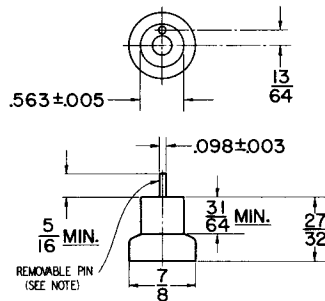


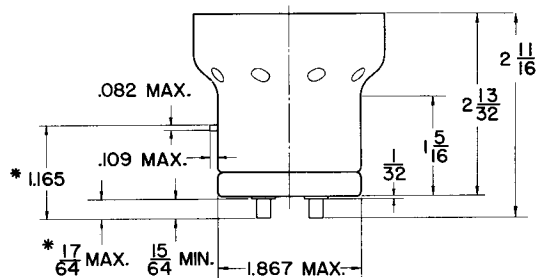
PLATE CAP NO. 4003C



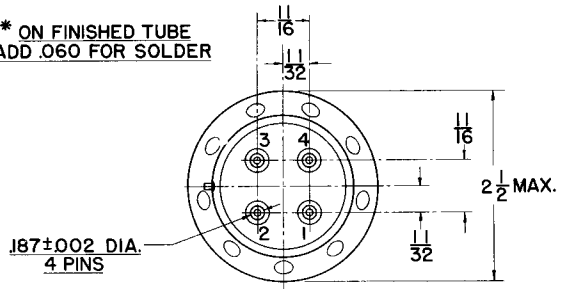
GRID CAP NO. 4007C



BASE NO. 5002 B



* ON FINISHED TUBE
ADD .060 FOR SOLDER



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.