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POWER TRIODE

WATER & FORCED-AIR COOLED

GENERAL DATA**Electrical:**

Filament, Multistrand Thoriated-Tungsten:

Excitation Single Phase AC or DC

Voltage 7.5 ± 0.4 ac or dc volts

Current 170 amp

Starting Current: The filament current should never exceed 800 amperes, even momentarily.

Cold Resistance 0.0055 ohm

Minimum Heating Time 15 seconds

Amplification Factor 20

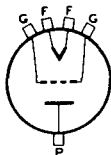
Direct Inter-electrode Capacitances (Approx.):

Grid to Plate 24.5 $\mu\mu\text{f}$ Grid to Filament 47 $\mu\mu\text{f}$ Plate to Filament 3 $\mu\mu\text{f}$ **Mechanical:**

Terminal Connections:

F—Filament

G—Grid

P—Water-Cooled
PlateGrid terminals
are spaced dia-
metrically wider
than fila-
ment terminals.

Mounting Position Vertical, Filament End Up

Maximum Overall Length 11-5/16"

Maximum Diameter 7"

Water Flow 12 to 20 gpm

The specified water flow must start before application of any volt-
ages, and may be removed simultaneously with the filament and plate
power.

Air Flow 20 min. cfm

The specified air flow should be directed vertically from a 3"-diameter
nozzle onto the top portion of the bulb before and during the appli-
cation of any voltages.

Outlet Water Temperature 70 max. °C

Bulb Temperature 180 max. °C

Seal Temperature (Filament, grid, plate) 165 max. °C

Components:

Water Jacket RCA MI-19461

Jacket Wrench RCA MI-19436

Gasket RCA MI-7441

Terminal-Post Chuck Connector (4 required) RCA MI-19466

Chuck Wrench (2 required) RCA MI-19424

Filament Transformer RCA-203T1

AF POWER AMPLIFIER & MODULATOR—Class B

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE 12500 max. volts

*: See next page.

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MAX.-SIGNAL DC PLATE CURRENT*	5 max.	amp
MAX.-SIGNAL PLATE INPUT*	45 max.	kw
PLATE DISSIPATION*	22.5 max.	kw

Typical Operation:

Values are for 2 tubes

DC Plate Voltage	12500	volts
DC Grid Voltage	-600	volts
Peak AF Grid-to-Grid Voltage	1900	volts
Zero-Signal DC Plate Current	1	amp
Max.-Signal DC Plate Current	6.4	amp
Effective Load Resistance (Plate-to-plate)	4400	ohms
Max.-Signal Driving Power (Approx.)#	430	watts
Max.-Signal Power Output (Approx.)	55	kw

* Averaged over any audio-frequency cycle of sine-wave form.

The driving stage should have good regulation and should be capable of supplying considerably more than the specified driving power.

RF POWER AMPLIFIER - Class B Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	12500 max.	volts
DC PLATE CURRENT	4 max.	amp
PLATE INPUT	33 max.	kw
PLATE DISSIPATION	22.5 max.	kw

Typical Operation:

DC Plate Voltage	12500	volts
DC Grid Voltage	-625	volts
Peak RF Grid Voltage	625	volts
DC Plate Current	2.4	amp
DC Grid Current [□]	0	amp
Driving Power (Approx.) ^{■□}	1070	watts
Power Output (Approx.)	12	kw

■ At crest of audio-frequency cycle with modulation factor of 1.0.

PLATE-MODULATED RF POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	10000 max.	volts
DC GRID VOLTAGE	-1600 max.	volts
DC PLATE CURRENT	4 max.	amp
DC GRID CURRENT	0.8 max.	amp
PLATE INPUT	40 max.	kw
PLATE DISSIPATION	15 max.	kw

■, □: See next page.

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Typical Operation:

DC Plate Voltage	10000	volts
DC Grid Voltage [•]	$\begin{cases} -840 \\ 1075 \end{cases}$	$\begin{matrix} \text{volts} \\ \text{ohms} \end{matrix}$
Peak RF Grid Voltage	1440	volts
DC Plate Current	3.8	amp
DC Grid Current (Approx.) [□]	0.78	amp
Driving Power (Approx.) [□]	1010	watts
Power Output (Approx.)	29	kw

[•] Obtained by grid resistor of value shown or by partial self-bias methods.

RF POWER AMPLIFIER & OSCILLATOR—Class C Telegraphy

Key-down conditions per tube without modulation^{□□}

Maximum CCS[•] Ratings, Absolute Values:

	1.6 to 25 Mc	Below 1.6 Mc	
DC PLATE VOLTAGE	12500 max.	15000 max.	volts
DC GRID VOLTAGE	~1600 max.	-1600 max.	volts
DC PLATE CURRENT	6 max.	6 max.	amp
DC GRID CURRENT	0.8 max.	0.8 max.	amp
PLATE INPUT	60 max.	67.5 max.	kw ←
PLATE DISSIPATION	22.5 max.	22.5 max.	kw

Typical Operation:

	10000	10000	12500	15000	
DC Plate Voltage . . .	10000	10000	12500	15000	volts
DC Grid Voltage ^{▲▲} . .	$\begin{cases} -720 \\ 140 \\ 1040 \end{cases}$	$\begin{cases} -770 \\ 115 \\ 1000 \end{cases}$	$\begin{cases} -630 \\ 115 \\ 840 \end{cases}$	$\begin{cases} -990 \\ 185 \\ 1240 \end{cases}$	$\begin{matrix} \text{volts} \\ \text{ohms} \\ \text{ohms} \end{matrix}$
Peak RF Grid Voltage .	1290	1440	1230	1620	volts
DC Plate Current . . .	4.5	6	4.8	4.5	amp
DC Grid Current (Approx.) [□]	0.69	0.77	0.75	0.8	amp
Driving Power (Approx.) [□]	800	1000	1050	1160	watts
Power Output (Approx.)	33	40	44	53	kw

[•] Continuous commercial service.

^{□□} Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

[□] Foreffect of load resistance on grid current and driving power, refer to TUBE RATINGS—Grid Current and Driving Power in the General Section.

^{▲▲} Obtained from cathode resistor (140, 115, 115, 185), or grid resistor (1040, 1000, 840, 1240) or by partial self-bias methods.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Filament Current	1	160	180	amp
Amplification Factor	1,2	17	23	

◀—Indicates a change.

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	<u>Note</u>	<u>Min.</u>	<u>Max.</u>	
Grid-Plate Capacitance	-	20	28	μmf
Grid-Filament Capacitance.	-	39	55	μmf
Plate-Filament Capacitance	-	2.3	3.7	μmf
Plate Voltage.	1,3	5300	7900	volts
Plate Voltage.	1,4	2100	3100	volts
Peak Cathode Current	1,5	35	-	amp
Useful Power Output.	1,6	33	-	kw

Note 1: With 7.5 volts ac on filament.

Note 2: With dc grid voltage of - 100 volts, and with plate voltage adjusted to give dc plate current of 2 amperes.

Note 3: With dc grid voltage of - 200 volts, and with plate voltage adjusted to give dc plate current of 2 amperes.

Note 4: With dc grid voltage of 0 volts, and with plate voltage adjusted to give dc plate current of 2 amperes.

Note 5: Represents the maximum usable cathode current (plate current and grid current) for the tube under any condition of operation.

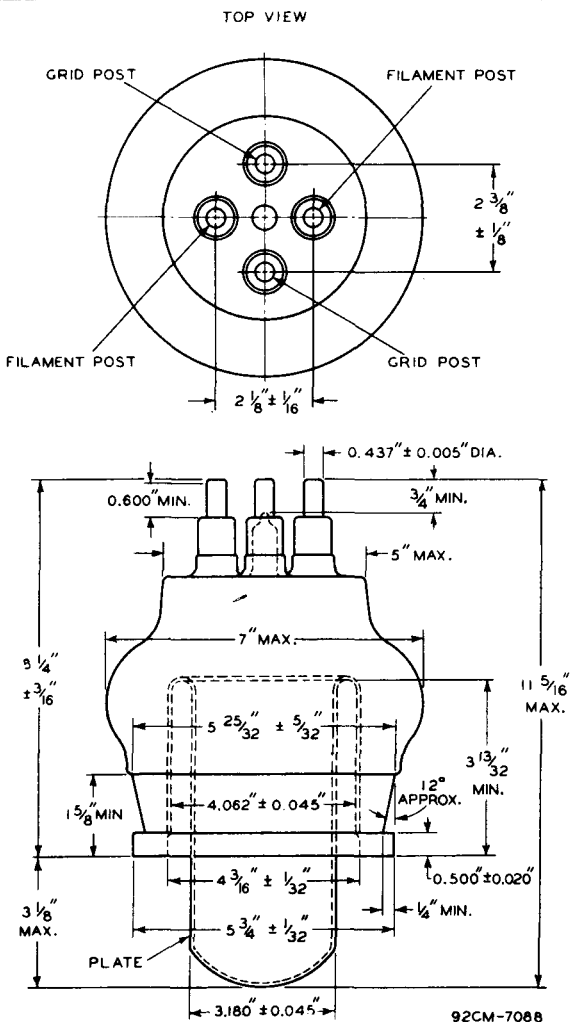
Note 6: With dc plate voltage of 12500 volts, dc plate current of 4.8 amperes, dc grid current of 0.6 to 0.9 ampere, grid resistor of $1600 \pm 10\%$ ohms, and frequency of 22 Mc.

Data on operating frequencies for the 5771 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.



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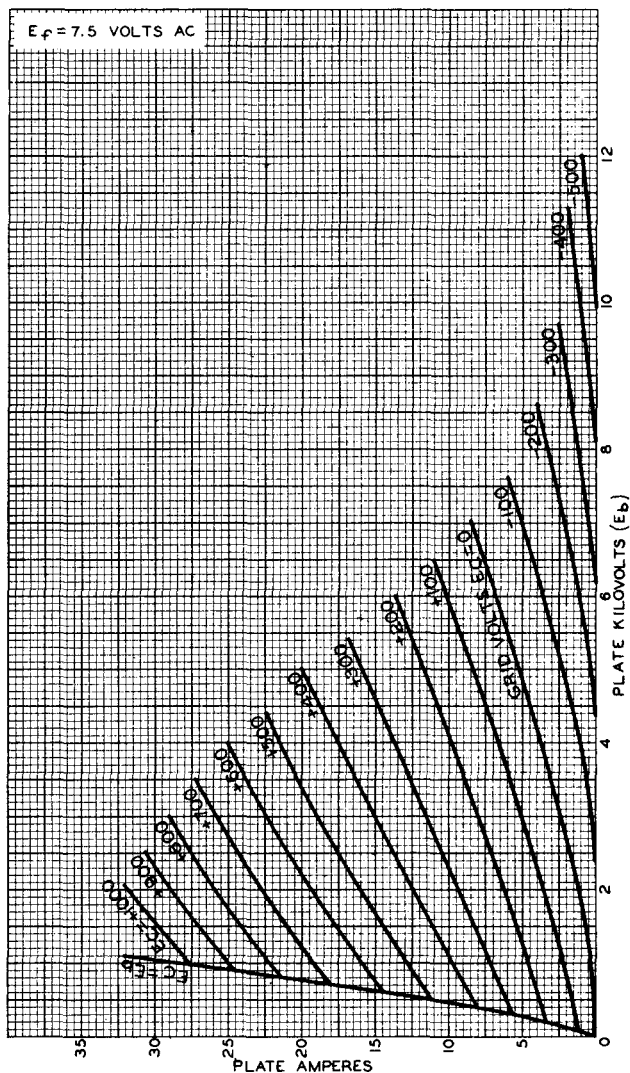
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AVERAGE PLATE CHARACTERISTICS



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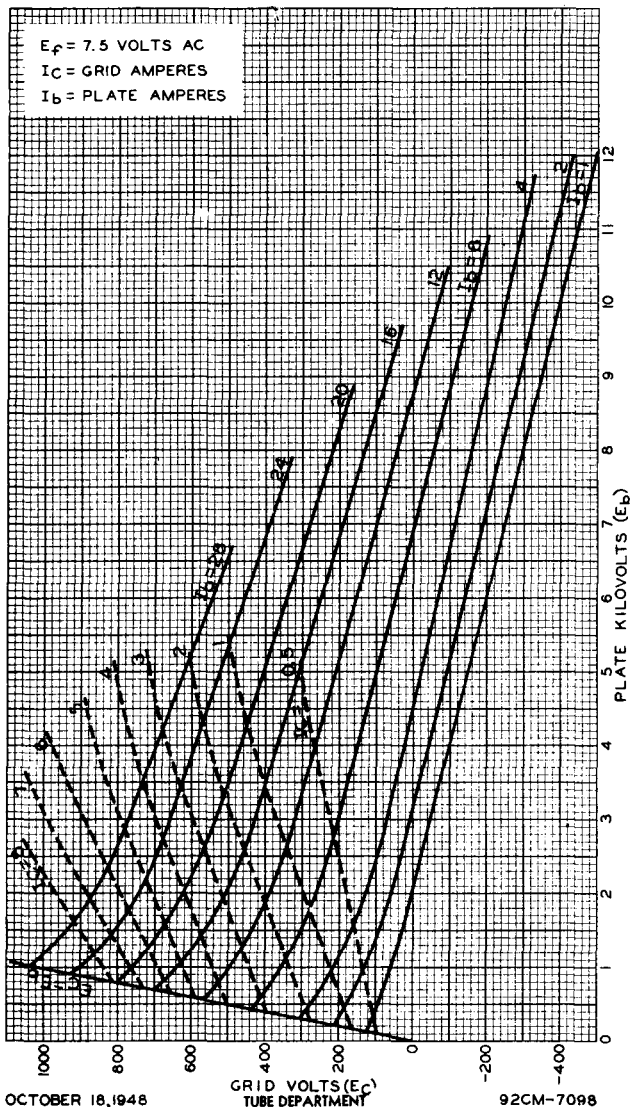
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AVERAGE CONSTANT-CURRENT CHARACTERISTICS

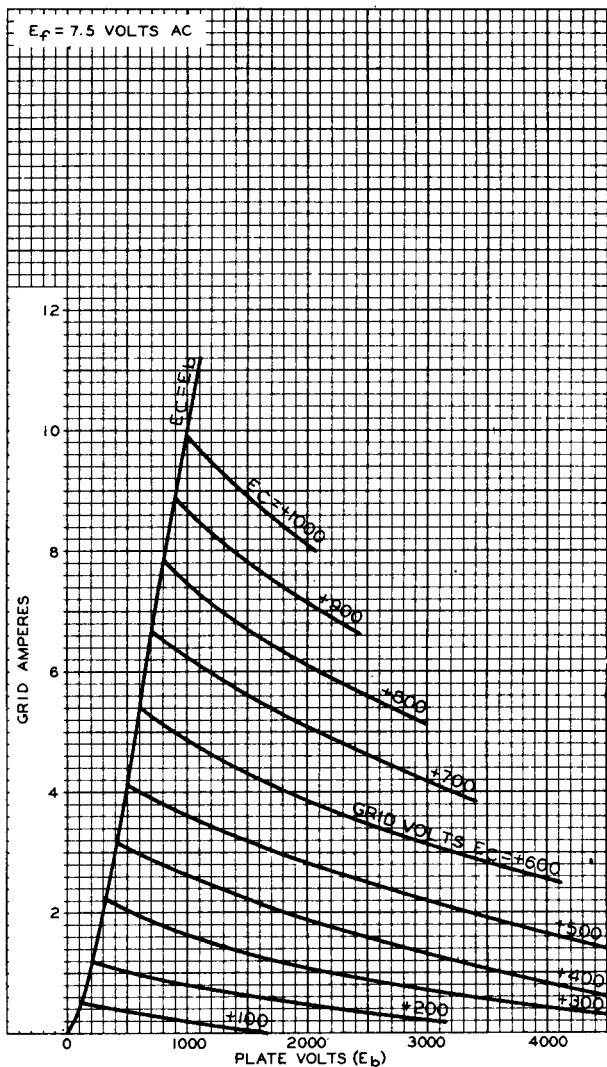


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TYPICAL CHARACTERISTICS



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