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POWER TRIODE

WATER & FORCED-AIR COOLED

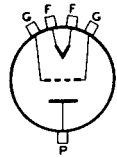
GENERAL DATA

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 Interlectrode Capacitances (Approx.):		
Grid to Plate.	24.5	μμf
Grid to Filament . . .	47	μμf
Plate to Filament. . .	3	μμf

Mechanical:

Terminal Connections:



F - Filament
G - Grid
P - Water-Cooled Plate

Grid terminals are spaced diametrically wider than filament 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 voltages, 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 application 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●	−840	volts
	1075	ohms
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:

DC Plate Voltage	10000	10000	12500	15000	volts
DC Grid Voltage▲▲	−720	−770	−630	−990	volts
	140	115	115	185	ohms
	1040	1000	840	1240	ohms
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.

□ For effect 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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	Note	Min.	Max.	
Grid-Plate Capacitance	–	20	28	μμf
Grid-Filament Capacitance. . .	–	39	55	μμf
Plate-Filament Capacitance . .	–	2.3	3.7	μμf
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 concition 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 ± 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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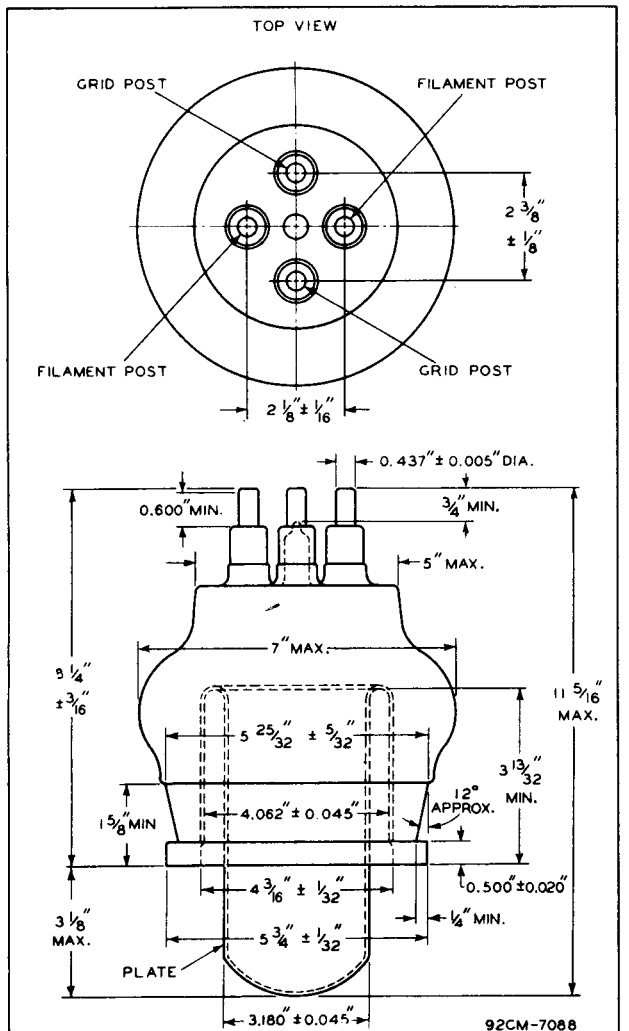

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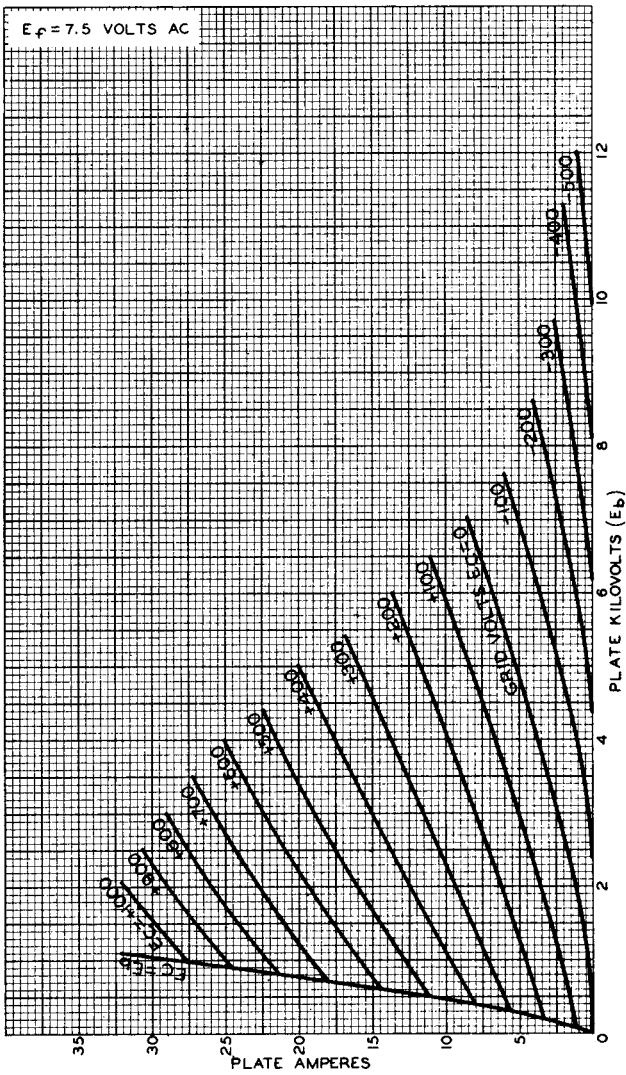
AVERAGE PLATE CHARACTERISTICS



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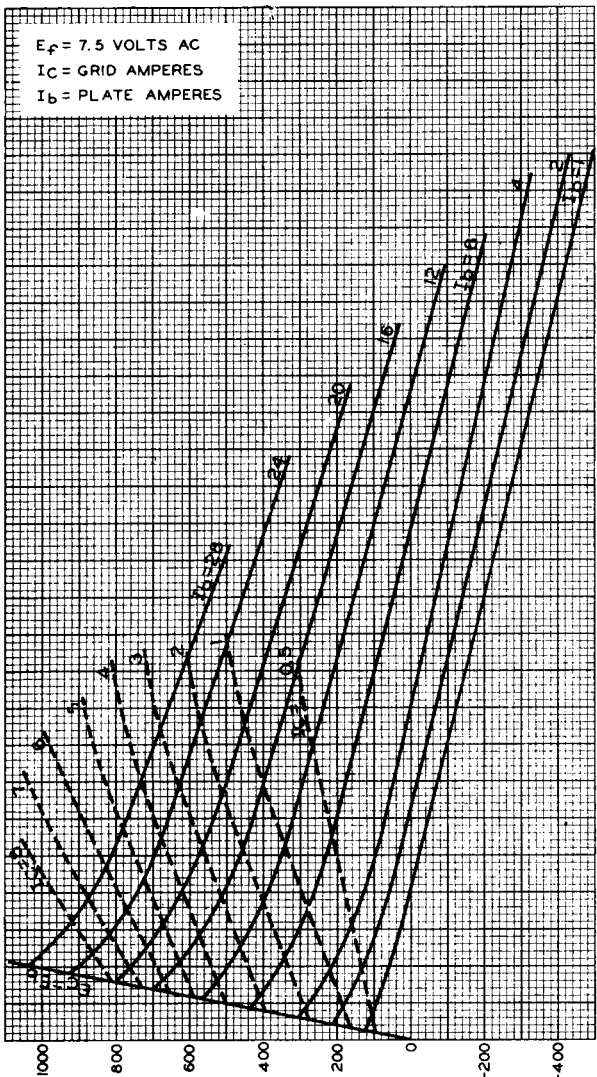
AVERAGE CONSTANT-CURRENT CHARACTERISTICS



OCTOBER 18,1948

TUBE DEPARTMENT

92CM-7098

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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TYPICAL CHARACTERISTICS