ITT ELECTRON TECHNOLOGY
P.O. Box 100
Easton, Pennsylvania 18044-0100
Telephone 215 252-7331

F-5918
POWER TRIODE

DESCRIPTION:

The F-5918 is a three-electrode tube designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. The anode is water cooled, capable of dissipating 80 kilowatts. The cathode is a thoriated tungsten filament. Maximum ratings apply up to 22 megacycles.

ELECTRICAL

Filament Voltage	11	Volts
Filament Current	285	Amperes
Filament Starting Current Full-rated voltage may be safely applied to the cold filament		
Filament Cold Resistance	.005	Ohms
Peak Cathode Current	100	Amperes
Amplification Factor I_b = 2 amperes, E_c = -200 Volts	41	
Interelectrode Capacitances		
Grid-Plate	34.5	µµf
Grid-Filament	75.0	µµf
Plate-Filament	2.4	µµf

MECHANICAL

Mounting Position			Vertical, Anode Down	
Type of Cooling			Forced Air* & Water	
Plate Dissipation	80	60	45	kw
Water Flow**	30	22	16	gpm
Water Jacket Pressure Drop	15	9	4.5	psi
Maximum Outgoing Water Temperature			70	°C
Maximum Glass Temperature			180	°C
Net Weight			25	Pounds

*Operation at frequencies above 2 mc may require air flow onto the dish center in order to hold the temperature of the seals and dish below 180°C. The blower required should deliver up to 250 cfm through a 3" diameter nozzle.

**Using water jacket RT-54319, Type A.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio-Frequency Power Amplifier and Modulator - Class B

Maximum Ratings, Absolute Values

DC Plate Voltage	19,500	Volts
Maximum Signal DC Plate Current*	9	Amperes
Maximum Signal Plate Input*	150	Kilowatts
Plate Dissipation*	80	Kilowatts

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

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	14,000	Volts
DC Grid Voltage	-300	Volts
Peak A-F Grid-to-Grid Voltage	1,600	Volts
Zero Signal DC Plate Current	2	Amperes
Maximum Signal DC Plate Current	16	Amperes
Effective Load Resistance, Plate-to-Plate.	2,250	Ohms
Maximum Signal Driving Power (Approx.)	1,500	Watts
Maximum Signal Power Output (Approx.)	150	Kilowatts

Radio-Frequency Power Amplifier - Class B

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values

DC Plate Voltage	17,500	Volts
DC Plate Current	12	Amperes
Plate Input	100	Kilowatts
Plate Dissipation	80	Kilowatts

Typical Operation

DC Plate Voltage	15,000	Volts
DC Grid Voltage	-375	Volts
Peak R-F Grid Voltage	500	Volts
DC Plate Current	4.9	Amperes
DC Grid Current	0.0	Amperes
Driving Power (Approximately)**	770	Kilowatts
Power Output (Approximately)	25	Kilowatts

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

Plate-Modulated Radio-Frequency Power Amplifier - Class C Telephony

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values

DC Plate Voltage	14,000	Volts
DC Grid Voltage	-3,000	Volts
DC Plate Current	12	Amperes
DC Grid Current	1.5	Amperes
Plate Input	140	Kilowatts
Plate Dissipation	53	Kilowatts

Typical Operation

DC Plate Voltage	14,000	Volts
DC Grid Voltage	-800	Volts
Peak R-F Grid Voltage	1,550	Volts
DC Plate Current	10	Amperes
DC Grid Current	1.4	Amperes
Driving Power (Approximately)	2	Kilowatts
Power Output (Approximately)	104	Kilowatts

Radio-Frequency Power Amplifier and Oscillator - Class C Telegraphy
(Key-down conditions per tube without amplitude modulation)*

*Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115% of carrier conditions.

Maximum Ratings, Absolute Values

DC Plate Voltage	17,500	Volts
DC Grid Voltage	-3,000	Volts
DC Plate Current	15	Amperes
DC Grid Current	1.5	Amperes
Plate Input	175	Kilowatts
Plate Dissipation	80	Kilowatts

Typical Operation

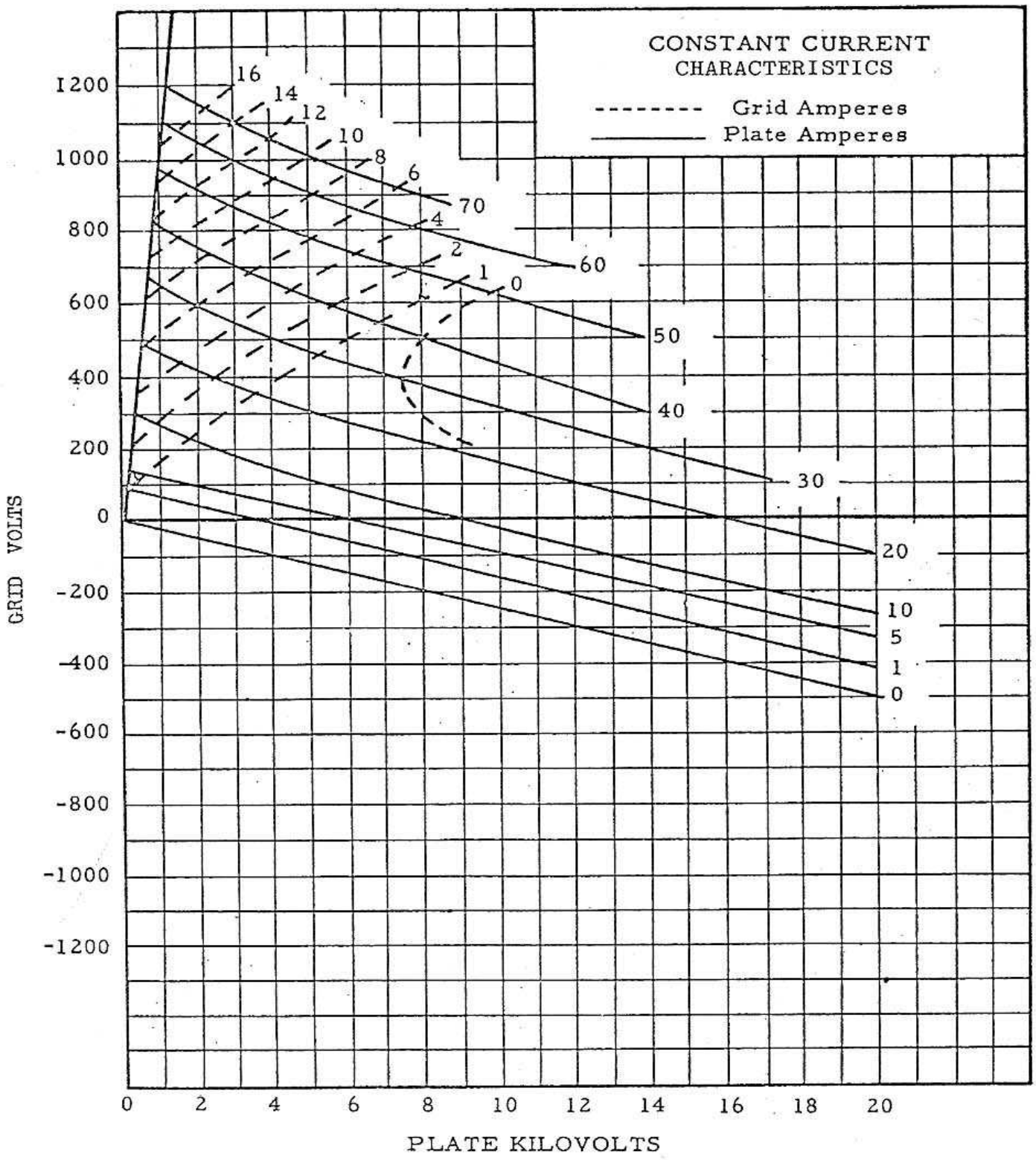
DC Plate Voltage	14,000	Volts
DC Grid Voltage	-1,200	Volts
Peak R-F Grid Voltage	2,150	Volts
DC Plate Current	12.5	Amperes
DC Grid Current (Approximately)	1.45	Amperes
Driving Power (Approximately)	3.3	Kilowatts
Power Output (Approximately)	130	Kilowatts

RATINGS VERSUS FREQUENCY

Frequency	2.0	22	30	Megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input				
Class B	100	100	80	Percent
Class C Plate Modulated	100	100	80	Percent
Class C Unmodulated	115	100	80	Percent

Additional information for specific applications can be obtained from the:

ITT ELECTRON TECHNOLOGY DIVISION
Applications Department
P.O. Box 100
Easton, Pennsylvania 18042



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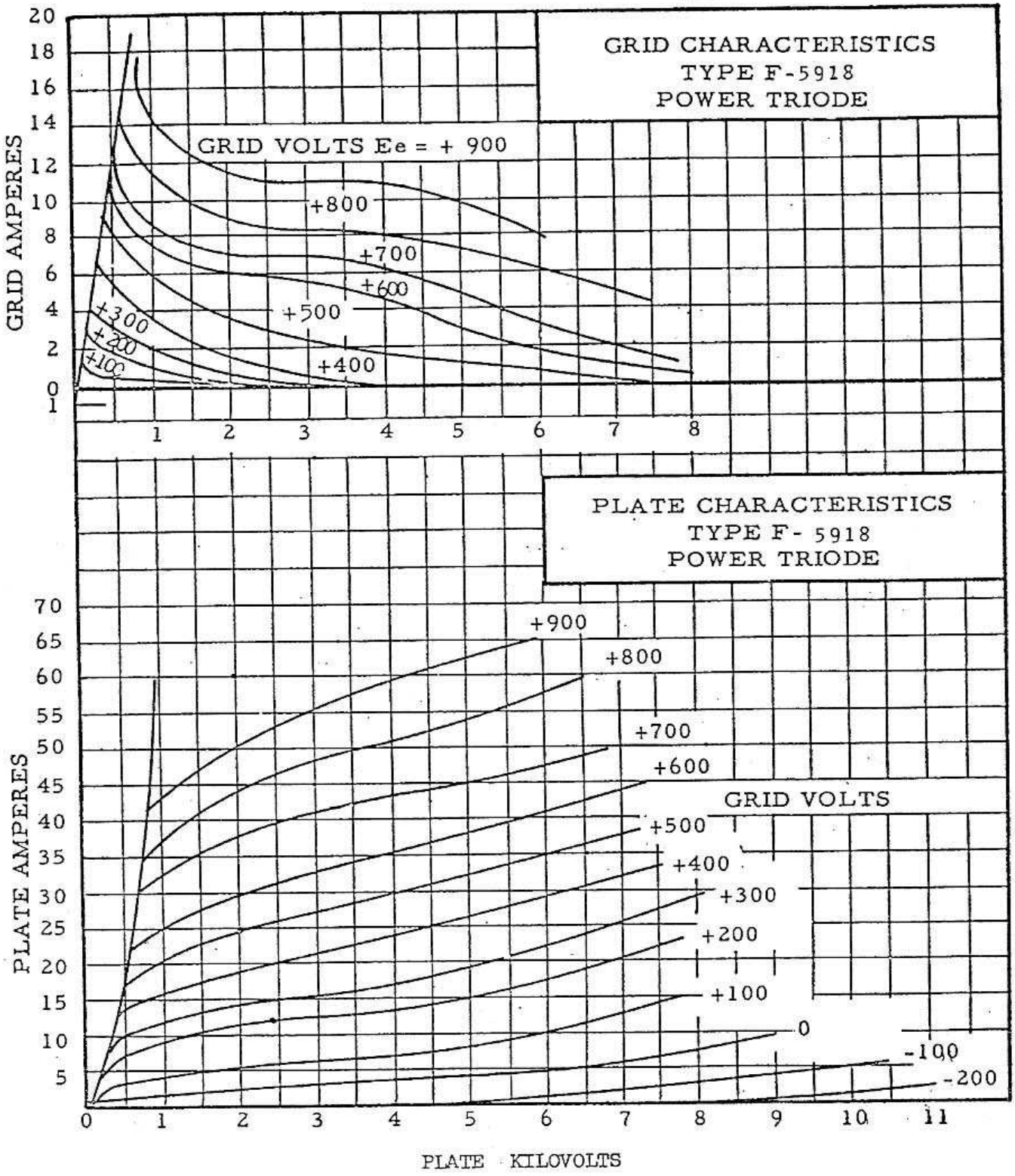
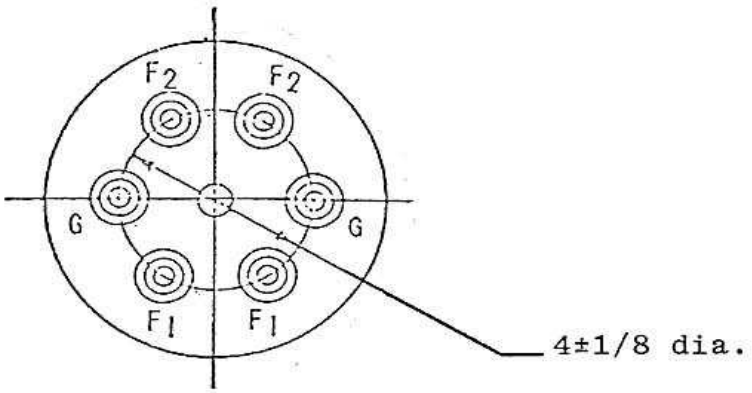
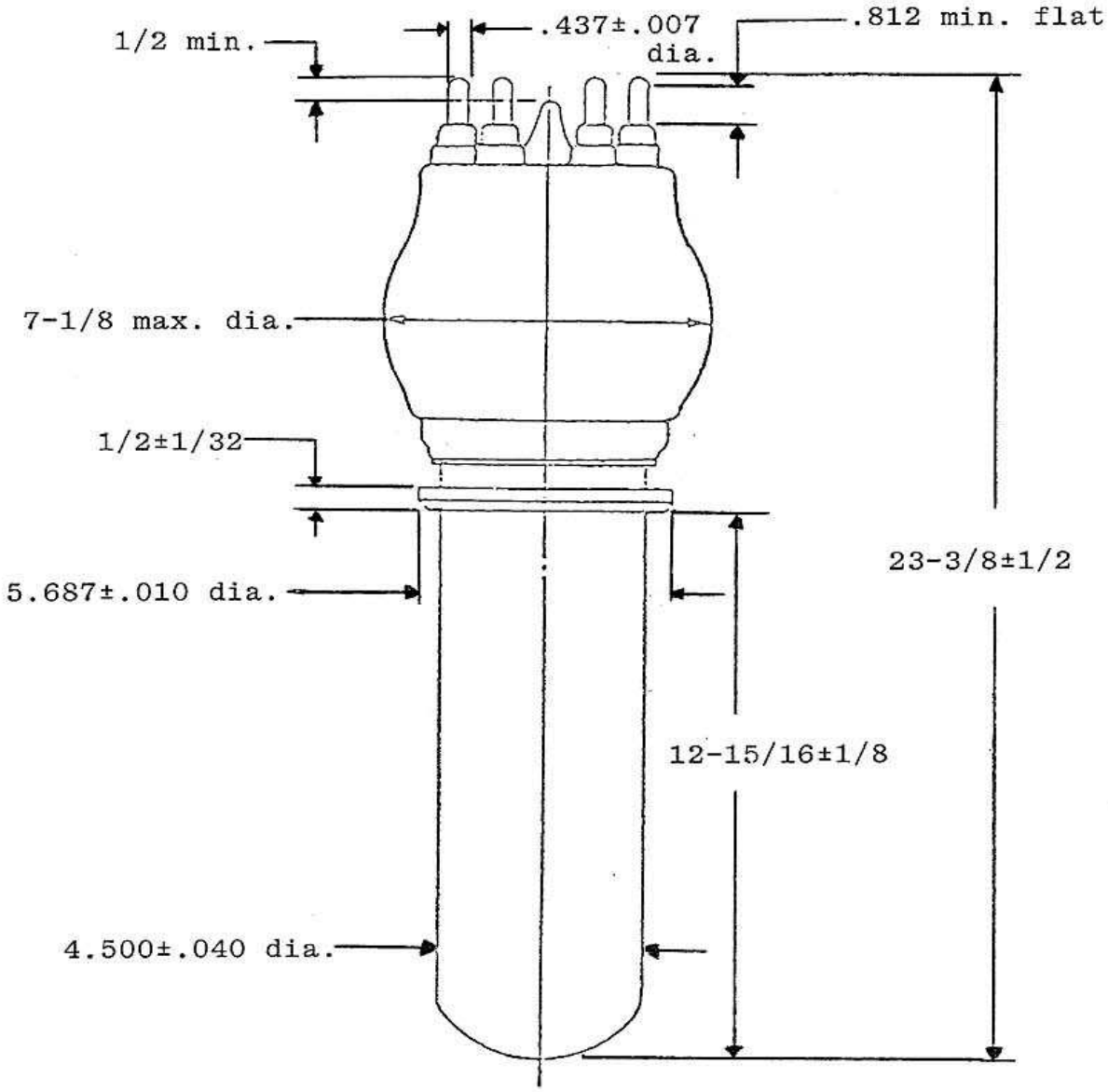
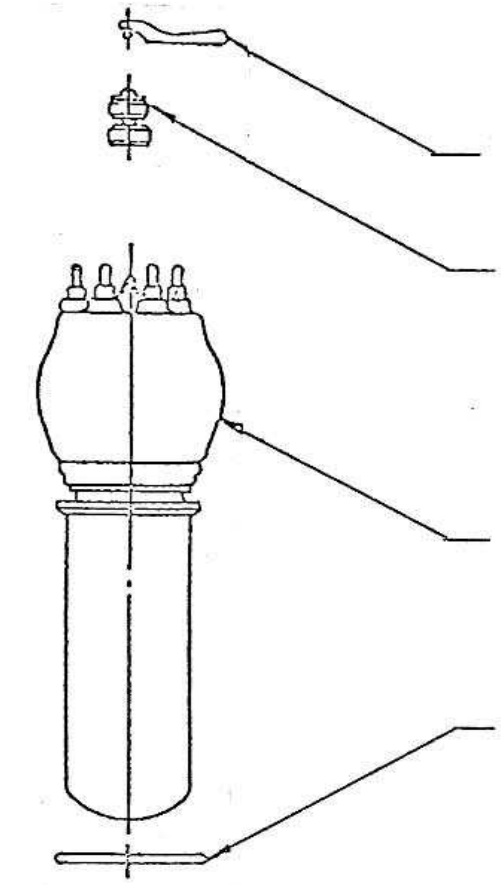
BOX 100 EASTON, PA. 18044-0100


GRID CHARACTERISTICS
TYPE F-5918
POWER TRIODE
GRID AMPERES
GRID VOLTS Ee = + 900
+800
+700
+600
+500
+400
+300
+200
+100
PLATE CHARACTERISTICS
TYPE F- 5918
POWER TRIODE
PLATE AMPERES
+900
+800
+700
+600
GRID VOLTS
+500
+400
+300
+200
+100
0
-100
-200
PLATE KILOVOLTS

TERMINALS
Black - Grid
Yellow - Fil. 1
Red - Fil. 2





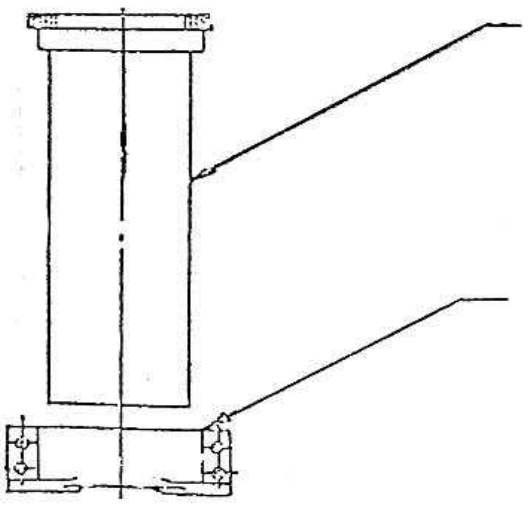


Spanner Wrench
RT-52843-1 - 2 req'd
(not to scale)

Terminal Connector
Assem. RT-52578-1
6 req'd

Tube Types
F-5918
F-6379
F-6803
F-8045

'O' Ring
RT-53836-1 cc



Water Jacket Helix
RT-54319 - Type "A"

Mounting Clamp
RT-53492-1

ACCESSORIES