

engineering

TUBE DATA

F-7328
POWER TRIODE



Components Division

DESCRIPTION

THE F-7328 IS A THREE ELECTRODE TUBE DESIGNED FOR USE AS A MODULATOR, ITS ELECTRICAL CHARACTERISTICS MAKING IT PARTICULARLY SUITABLE FOR CLASS AB₁ CIRCUITS. THE ANODE IS CAPABLE OF DISSIPATING 20 KW DURING CONTINUOUS COMMERCIAL SERVICE. COOLING IS ACCOMPLISHED BY FORCED AIR. THE CATHODE IS A THORIATED TUNGSTEN FILAMENT OF MESH CONSTRUCTION AND MAY BE OPERATED ON D-C OR SINGLE PHASE A-C. MAXIMUM RATINGS APPLY FOR AUDIO FREQUENCY USE ONLY.

ELECTRICAL

FILAMENT VOLTAGE	7.0	VOLTS
FILAMENT CURRENT	260	AMPERES
FILAMENT STARTING CURRENT	1000	AMPEPES
AMPLIFICATION FACTOR		
$E_c = -450 \text{ v.}$ $I_b = 5.0 \text{ AMPS.}$	5.5	
DIRECT INTER-ELECTRODE CAPACITANCE		
GRID PLATE	88	UUF
GRID FILAMENT	70	UUF
PLATE FILAMENT	12	UUF

from JEDEC release #2990, Oct. 10, 1960



ELECTRON TUBE DEPARTMENT
COMPONENTS DIVISION

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

8-60

MECHANICAL

MOUNTING POSITION	VERTICAL, ANODE UP OR DOWN		
TYPE OF COOLING	FORCED AIR		
MAXIMUM INCOMING AIR TEMPERATURE	45 °C		
MAXIMUM GLASS & SEAL TEMPERATURE (NOTE 1)	180 °C		
MAXIMUM RADIATOR CORE TEMPERATURE (NOTE 1)	180 °C		
REQUIRED AIR FLOW ON ANODE (NOTE 2)			
PLATE DISSIPATION - KW	20	15	10
AIR FLOW - CFM	1700	1250	800
STATIC PRESSURE - INCHES OF WATER	6	3.5	2
WEIGHT, APPROXIMATE	72 LBS.		

NOTE 1

A TEMPERATURE SENSITIVE LACQUER MANUFACTURED BY THE TEMPIL CORPORATION, 132 W. 22ND STREET, NEW YORK 11, NEW YORK IS CONVENIENT FOR THIS MEASUREMENT.

NOTE 2

COOLING AIR SHOULD BE APPLIED BEFORE OR SIMULTANEOUSLY WITH THE APPLICATION OF ANY VOLTAGES. AIR FLOW SHOULD CONTINUE APPROXIMATELY 2 MINUTES AFTER THE REMOVAL OF ANY VOLTAGES. THESE RATINGS APPLY IF THE LOAD IS ESSENTIALLY RESISTIVE.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR -- CLASS AB₁

MAXIMUM RATINGS, ABSOLUTE VALUES

CCS

D-C PLATE VOLTAGE	8	KV
MAXIMUM SIGNAL D-C PLATE CURRENT (NOTE 3)	10	AMPERES
MAXIMUM SIGNAL PLATE INPUT (NOTE 3)	50	KW
PLATE DISSIPATION (NOTE 3)	20	KW
GRID DISSIPATION	800	WATTS

TYPICAL OPERATION

(UNLESS OTHERWISE SPECIFIED, VALUES ARE FOR TWO TUBES)

D-C PLATE VOLTAGE	6000	8000	VOLTS
D-C GRID VOLTAGE, APPROX. (NOTE 4)	-1200	-1600	VOLTS
PEAK A-F GRID-TO-GRID VOLTAGE	2300	3100	VOLTS
ZERO SIGNAL D-C PLATE CURRENT	.5	.5	AMPERES
MAXIMUM SIGNAL D-C PLATE CURRENT	12	6.4	AMPERES
PEAK A-F PLATE-TO-PLATE VOLTAGE	6700	12500	VOLTS
EFFECTIVE LOAD RESISTANCE PLATE-TO-PLATE	710	2700	OHMS
MAXIMUM SIGNAL DRIVING POWER	0	0	WATTS
MAXIMUM SIGNAL POWER OUT	30	33	KW

NOTE 3

AVERAGED OVER ANY AUDIO FREQUENCY CYCLE OF SINE-WAVE FORM

NOTE 4

ADJUST TO STATED ZERO SIGNAL DC PLATE CURRENT. EFFECTIVE GRID CIRCUIT RESISTANCE NOT TO EXCEED 200,000 OHMS.



MODULATOR TUBE-PULSE OPERATION
MAXIMUM RATING, ABSOLUTE VALUES

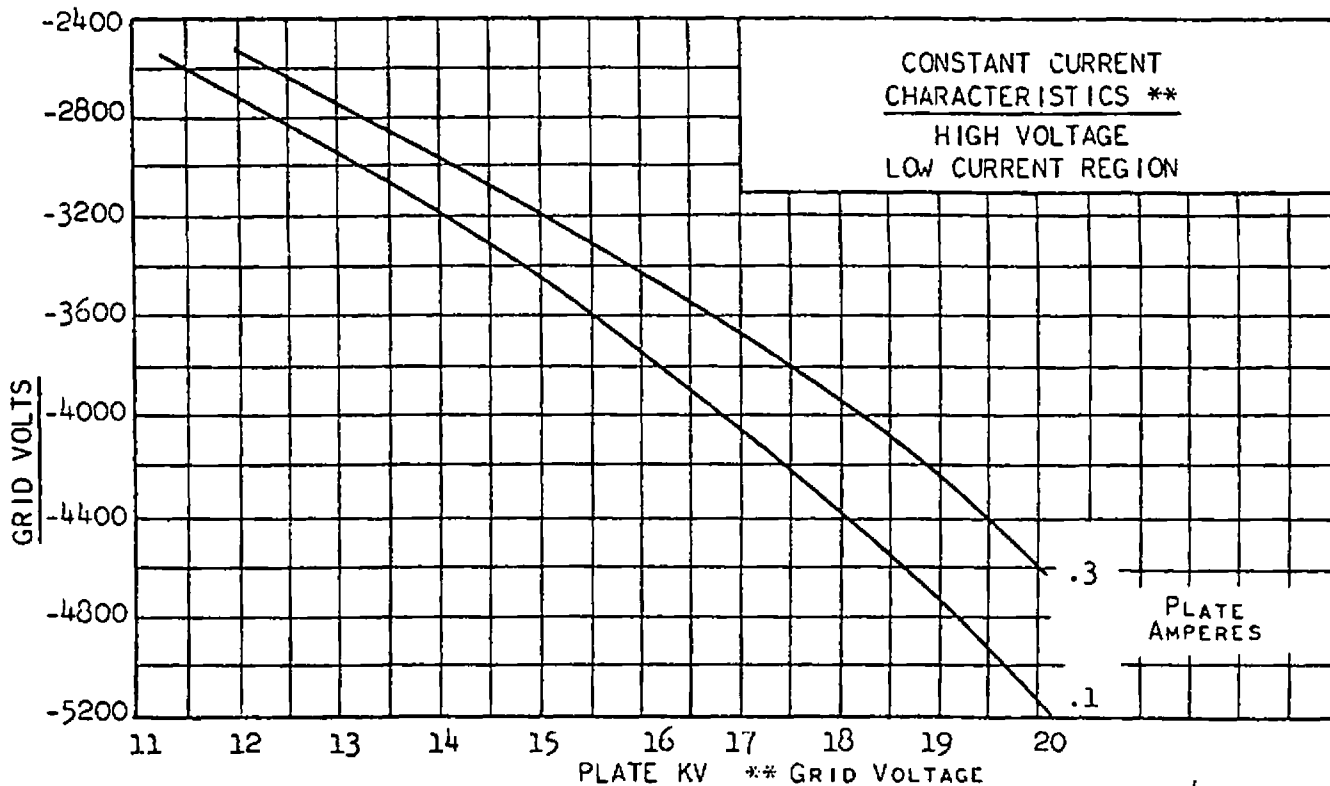
D-C PLATE VOLTAGE	20	KV
PEAK POSITIVE VOLTAGE (INSTANTANOUES)	25	KV
D-C GRID VOLTAGE	-6	KV
PEAK POSITIVE GRID VOLTAGE	2.5	KV
PULSE CATHODE CURRENT	160*	100 AMPERES
GRID DISSIPATION	800	WATTS
DUTY FACTOR	.01	
PULSE LENGTH	2000	USEC.

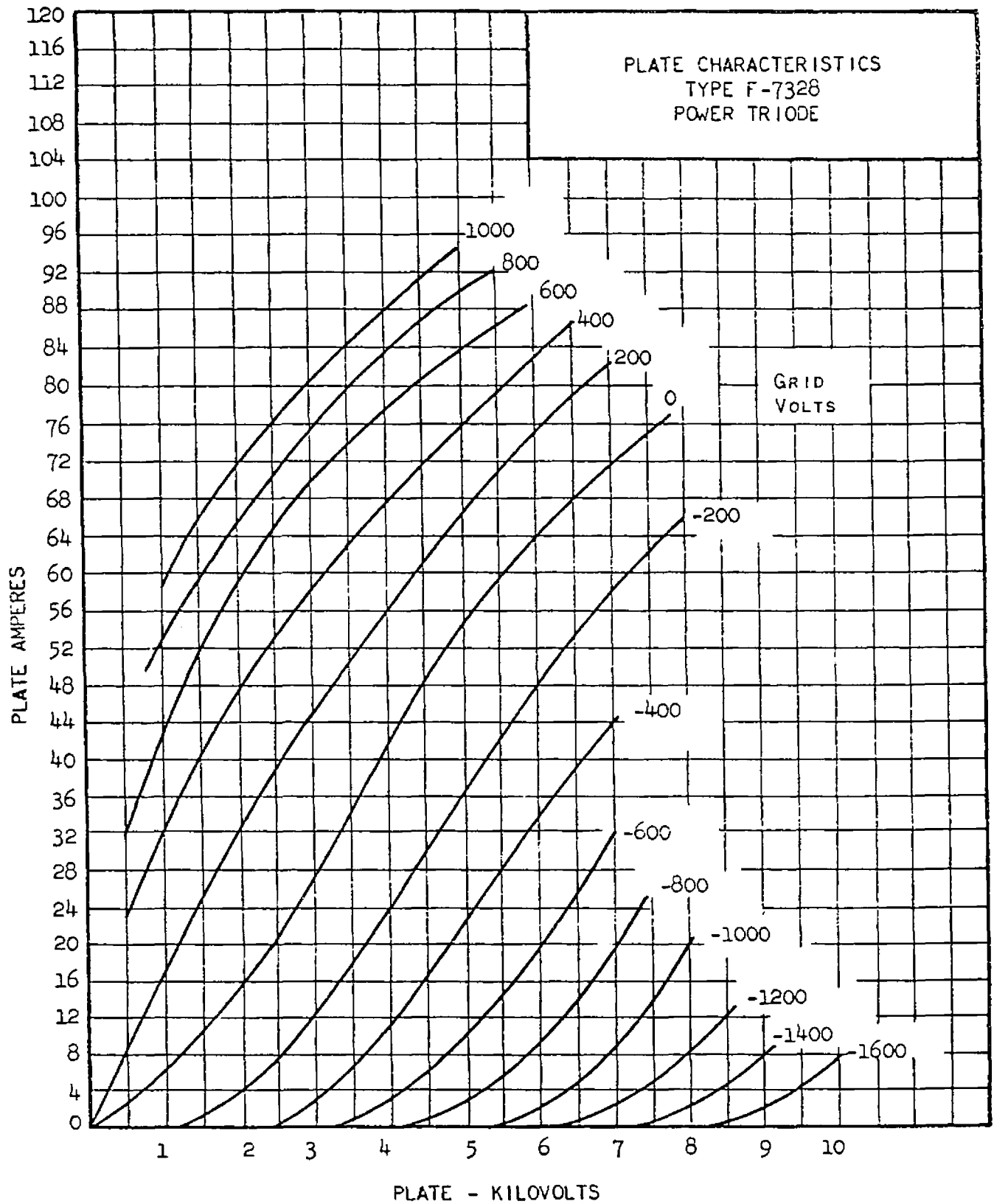
TYPICAL OPERATION

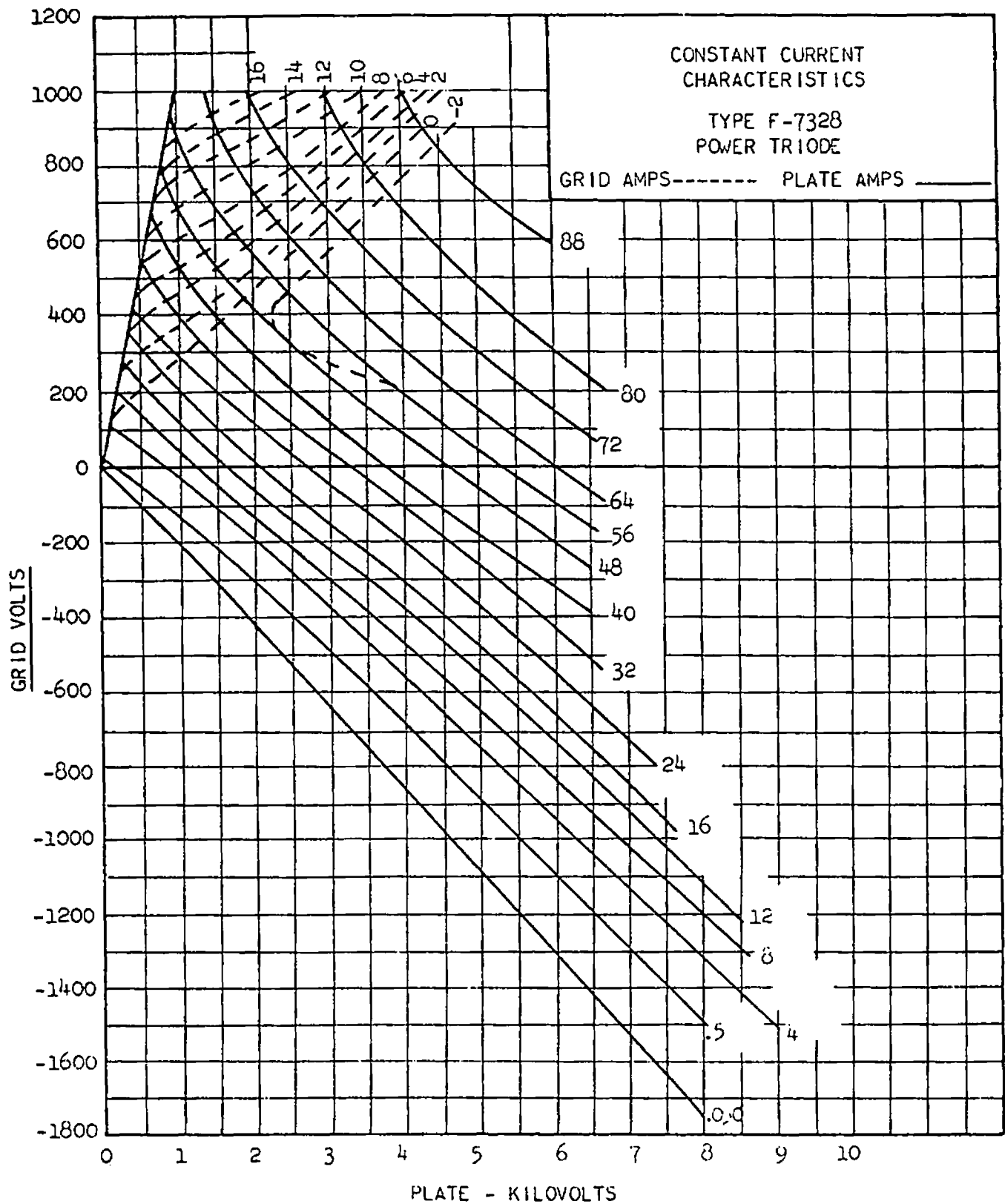
D-C PLATE VOLTAGE	14	17	KV
PULSE PLATE CURRENT	68	80	AMPERES
D-C GRID VOLTAGE	-3300	-4200	VOLTS
PULSE GRID CURRENT	0	12	AMPERES
PULSE POSITIVE GRID VOLTAGE	0	1000	VOLTS
PULSE GRID DRIVE POWER	0	12	KW
PLATE OUTPUT VOLTAGE	7.5	14	KV
PULSE OUTPUT POWER	510	1200	KW

* THIS RATING APPLIES ONLY UNDER ELEVATED FILAMENT TEMPERATURE AS SPECIFIED BY $E_f = 7.6$ VOLTS. REDUCED LIFE WILL RESULT AS A CONSEQUENCE OF CONTINUED OPERATION AT THIS VALUE.

ADDITIONAL INFORMATION FOR SPECIFIC APPLICATIONS CAN BE OBTAINED FROM THE
ELECTRON TUBE APPLICATIONS SECTION - ITT COMPONENTS DIVISION
POST OFFICE BOX 412 - CLIFTON, NEW JERSEY





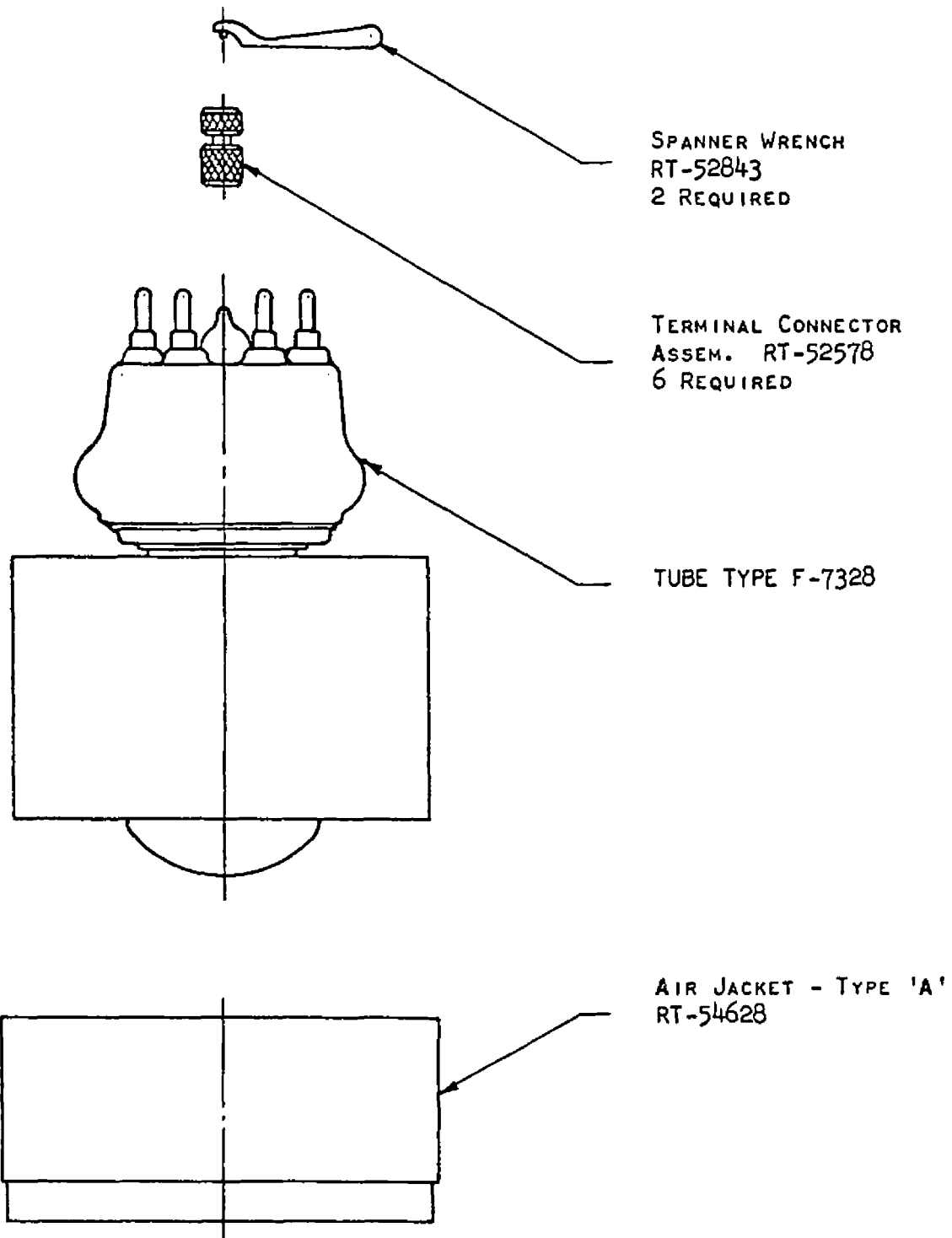


- 7 -

Figure 1 is a schematic diagram of a circular structure. It features a central circle surrounded by eight smaller circles arranged in a ring. The top and bottom pairs of these outer circles are labeled F_1 and F_2 , respectively. The left and right pairs are labeled G . A diagonal line with arrows at both ends passes through the center of the central circle. A dimension line at the bottom right indicates a diameter of $4 \frac{1}{8}$ DIA.



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ACCESSORIES