Hot Cathode Mercury Vapour Thyratron

4078GA

CATHODE.

Oxide-coated shielded filament

Voltage	5	V
Nominal current	20	A

DIMENSIONS.

Maximum overall length	435	mm.
Maximum bulb diameter	158	mm.
Net weight	925	g.
Base. Special 3 pin.	See Drawing.	
Top cap. Special.	See Drawing.	

MAXIMUM RATINGS.

Maximum peak inverse voltage	20,000	V
Maximum peak anode current	10	A
Maximum average anode current	2.5	A
Condensed mercury temperature range with forced ventilation	15° C. to 65° C. maximum	

The above ratings apply to operation with a choke input filter and a supply frequency of 50 c/s.

MAXIMUM PEAK INVERSE VOLTAGE RATINGS.

Natural Ventilation	15° C. to 50° C.	15° C. to 40° C.	—	—
Forced Ventilation	15° C. to 65° C.	15° C. to 55° C.	15° C. to 45° C.	15° C. to 40° C.
Peak inverse voltage	Less than 7,000 V	7,500 to 10,000 V	10,000 to 12,500 V	Greater than 12,500 V

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TYPICAL OPERATING CONDITIONS

Circuit No.	No. of Valves	Maximum D.C. Output volts	Maximum D.C. Output Amps
2	2	6,400 V	6 A
3	4	13,000 V	6 A
4	3	9,500 V	8 A
5	6	9,500 V	15 A
6	6	18,500 V	8 A

THYRATRON OPERATION.

With a condensed mercury temperature of 35° C. the minimum values of grid blocking voltages to prevent ignition are :

Grid voltage (approximately)	Anode voltage
—0.5 V	2 kV
—15 V	16 kV

To strike the valve the grid should be pulsed positive.
The pulse should have a leading edge as near vertical as possible.
The control of the output is made by variation in phase of the grid pulse relative to the phase of the applied anode voltage.

This thyratron being directly heated, the output circuit must be connected to the mid-point of the filament transformer secondary.

Temperature limits given under " Natural Ventilation " are only valid for unrestricted natural ventilation, forced air blast being required for operation up to the maximum condensed mercury temperature limit.

CATHODE HEATING TIME.

Ambient Temperature	10° C. to 15° C.	15° C. to 20° C.	20° C. and above
Minimum pre-heating period	30 minutes	15 minutes	5 minutes

After shipment or transit the valve must be pre-heated not less than 30 mins. before any voltage is applied so that the mercury may be distributed correctly.

NOTE.—Before putting a valve of this type into service it is recommended that reference be made to the General Information sheet K.

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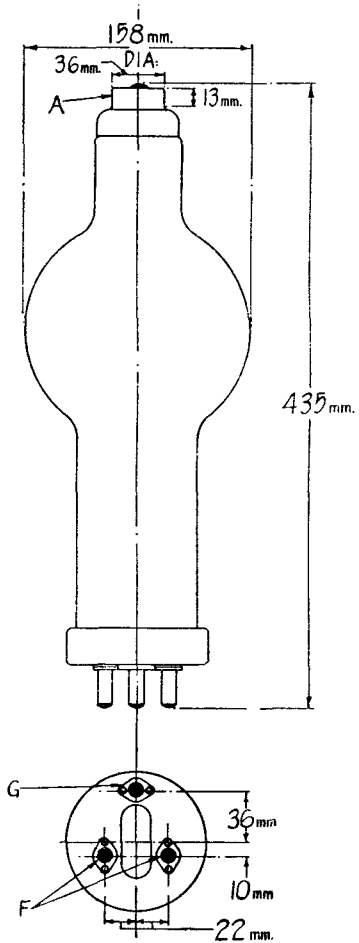

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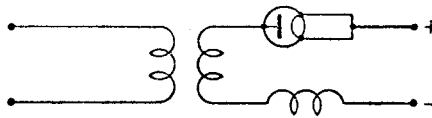
Circuit No.

1



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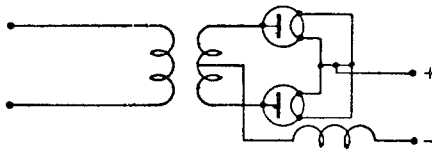

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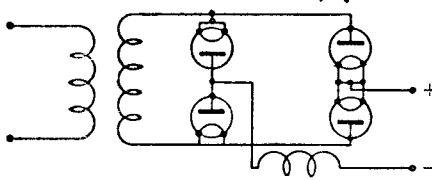

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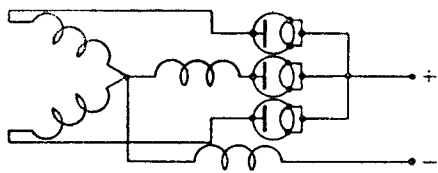

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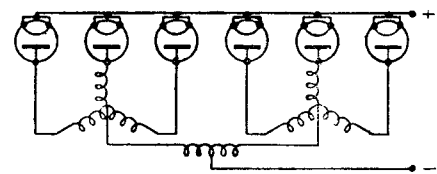
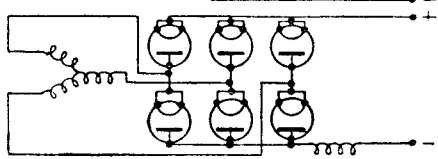
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