



Hot Cathode Mercury Vapour Thyatron

3V/590E (4080GA)
4080GA

CATHODE.

Oxide coated shielded filament.

Voltage	5	V
Nominal current	100	A

DIMENSIONS.

Maximum overall length	685	mm.
Maximum bulb diameter	266	mm.
Net weight	4	kg.
Base.	Special 3 pin.	See drawing.
Top cap.	Special.	See drawing.

MAXIMUM RATINGS.

Maximum peak inverse voltage	16,000	V
Maximum peak anode current	50	A
Maximum average anode current	20	A

Condensed mercury temperature range with forced air cooling 15° C. to 60° 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 45° C.	15° C. to 35° C.	—	—
Forced Ventilation	15° C. to 60° C.	15° C. to 50° C.	15° C. to 40° C.	15° C. to 35° C.
Peak inverse voltage	Less than 7,500 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. (for ideal choke-input filter).

Circuit No.	No. of Valves	Maximum D.C. Output volts	Maximum D.C. Output current
2	2	5,000 V	31 A
3	4	10,000 V	31 A
4	3	7,500 V	38 A
5	6	7,500 V	76 A
6	6	15,000 V	47 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 volts
—1	1 kV
—20 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 of the phase of the grid pulse relative to the phase of the applied grid voltage.

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

CATHODE HEATING TIME.

Ambient Temperature	15° to 20° C.	20° C. and above
Min. Pre-heating period	30 min.	10 min.

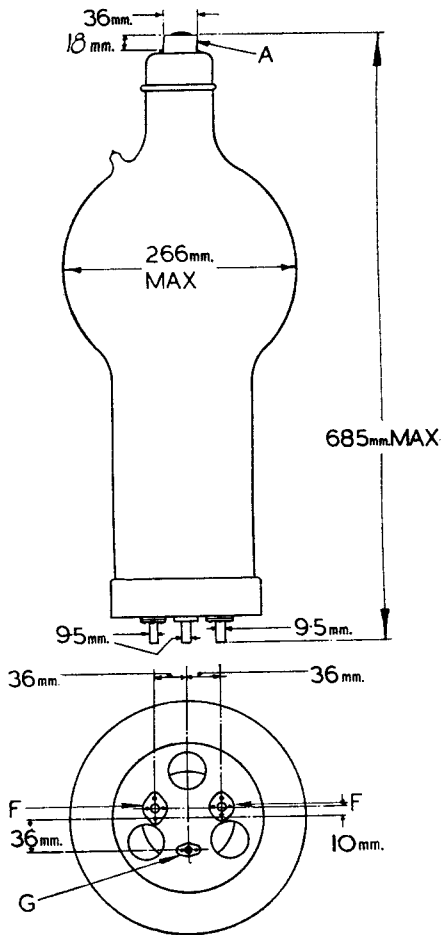
After shipment or transit the valve must be preheated not less than 30 min. before any anode voltage is applied so that the mercury may be distributed correctly.

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.

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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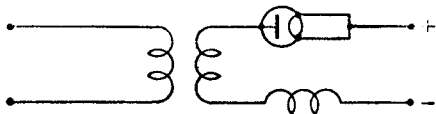
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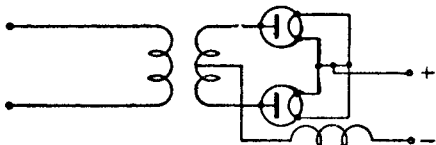
4080GA

Circuit
No.

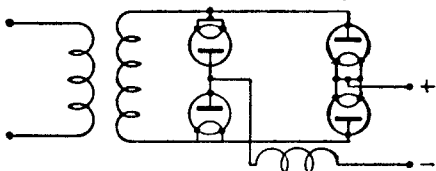
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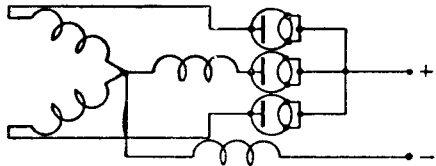
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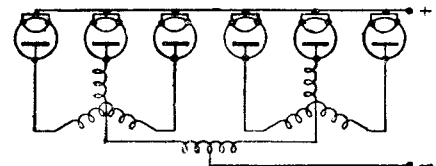
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