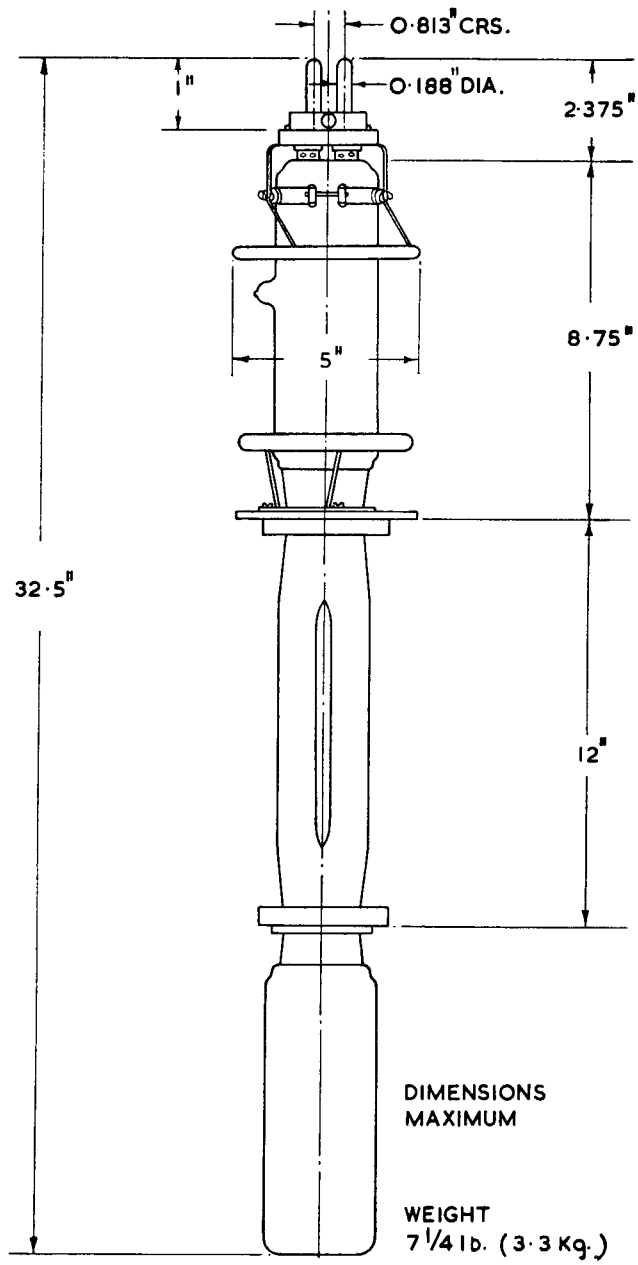
Diode *TypeCAR2*

POWER RECTIFIER



General. A double-ended rectifying valve fitted with a tungsten filament.

Cooling. The anode forms part of the valve envelope and is designed for cooling by water circulated in direct contact with the anode. The rated flow must not be less than 2 gallons per minute. The temperature of the cooling water at the outlet must not be greater than 65°C (150°F). All cooling supplies must be started before the application of any supply voltages.

Filament Starting. The cold resistance of the filament is approximately 0·03 Ω. The filament current must never exceed 75 A at any time during the switching-on period. It is not normally permissible to control the output by varying the filament voltage.

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HT Switching. It is not permissible to apply directly a peak inverse voltage in excess of 20 kV. At higher voltages the applied voltage should either be gradually increased from a low value, or two-position switching employed.

Mounting. The valve must be completely supported by its water jacket with its axis in a vertical position. Rigid connection must be made to the anode only.

APPROXIMATE DATA

V_f	18–20	V
I_f	50	A
PIV (max)	40	kV
p_a (max)	5	kW

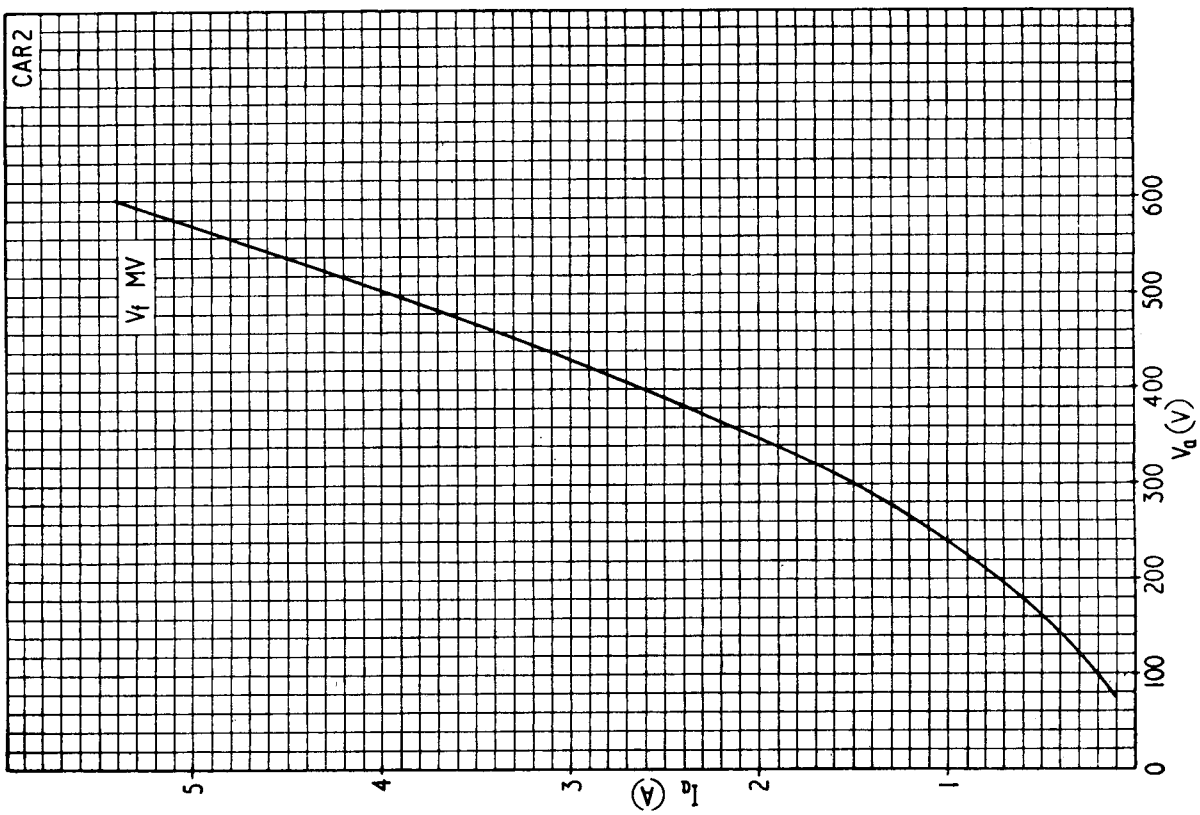
Each valve is marked with the filament voltage to give 4A emission at 90% saturation.

OPERATING DATA

(Full load conditions)

Circuit	No. of Valves	DC Output Voltage (kV)	DC Output Current (A)
Bi-phase half-wave	2	12·5	2·25
Single-phase full-wave	4	25	2·25
Three-phase half-wave	3	19	3·4
Three-phase full-wave	6	38	3·4
Double three-phase inter-connected	6	19	6·8

This data is based on the assumption that the filter circuit is designed so that the ratio of the peak anode current to the rectified output current does not exceed 3·5: 1.



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