Velocity Modulated Oscillator

V230A/1K (CV234)

This is a velocity modulated oscillator of the coaxial line type for CW operation within the wave range 8.9 cm. to 11 cm. and 8 cm. to 16 cm.

CATHODE.

Indirectly-heated oxide-coated.		
Voltage	6.3	V
Nominal current (AC frequencies above 60 c/s must not be used)	0.3	A

DIMENSIONS.

Maximum overall length	81	mm.
Maximum bulb diameter	20.1	mm.
Base Miniature 7 pin button		
Net weight	22½	g.

MAXIMUM RATINGS.

The mean input power to all electrodes other than the heater must not exceed	15	W
The maximum direct cathode current	65	mA
Maximum direct screen voltage	200	V

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OPERATING CONDITIONS.

Oscillator 8.9 to 11 cm. See Fig. 1.

Grid voltage Vg_1	0 to 200 V negative with respect to cathode
Resonator voltage Vr	At 9.1cm. 250V ± 5%. For other wavelengths the Vr is approximately proportional to the square of the frequency
Screen voltage Vg_2	0 to Vr
Anode voltage Va	Vr plus 10 to 20 V
Output power	Not less than 0.3 W at the ends of the band with 15 W input

The output may be controlled by either Vg_1 or Vg_2. It is usually desirable to set Vg_1 to zero voltage and adjust Vg_2 by means of a potentiometer across the resonator supply.

Oscillator over at least an octave, approximately 8-16 cm.

See Fig. 2.

Grid voltage Vg_1	0 to 200 V negative with respect to cathode
Resonator voltage Vr	At 15 cm. 100V ± 5%. For other wavelengths the Vr is approximately proportional to the square of the frequency
Screen voltage Vg_2	0 to Vr
Anode voltage Va	Vr plus 10 to 20 V
Output power	Not less than 0.4 W in the middle of the band

The output may be controlled by either Vg_1 or Vg_2 as for 8.9 to 11 cm. operation.

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PULSE OPERATION.

The valve may be operated with 10% duty cycle giving peak power output of the same values as for CW operation. The delay time for optimum voltage will be approximately 1 microsecond.

MAGNET AND MAGNET ALIGNMENT.

The magnet recommended is Jessops type 10512 but any magnet giving a uniform field of about 1200 oersteds over a 22 mm. gap may be used. The valve must be accurately aligned in the magnetic field so that as much of the current as possible reaches the anode. Once aligned no further adjustment will be necessary when replacing valves.

CIRCUITS.

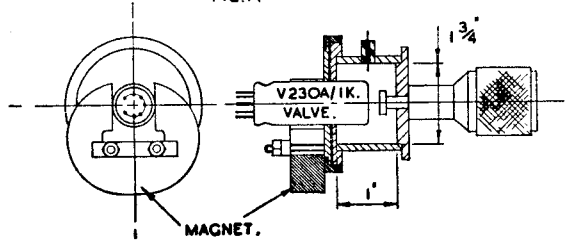
Two circuits suitable for use with this valve are shown in Fig. 1 and 2. The position of the output probe is of importance.

Circuit Fig. 1 is a rhumbatron cavity with micrometer screw for wavelength adjustment. Wavelength 8.9 to 11 cm.

Circuit Fig. 2 is a non-contact octave rhumbatron.

Further information may be obtained on application to the Chief Valve Engineer, Standard Telephones and Cables Ltd., Connaught House, Aldwych, London, W.C.2.

FIG.1.



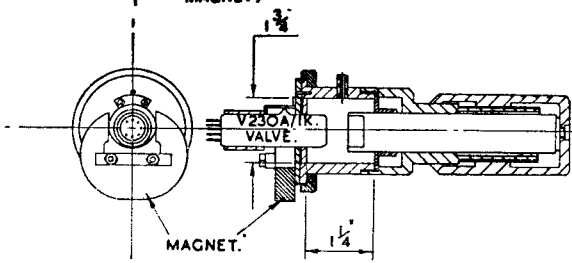


FIG.2.

Tentative data
November, 1945

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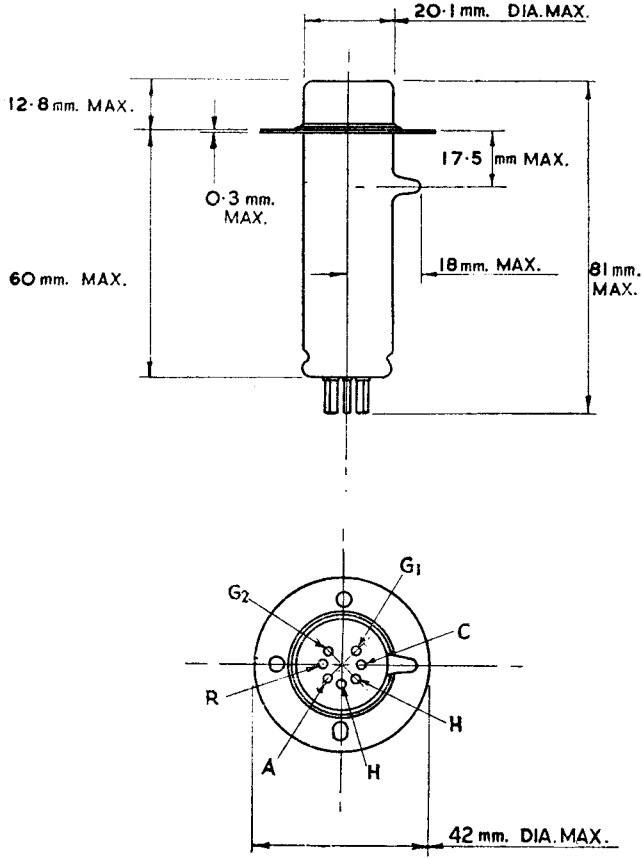

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