



Velocity Modulated Oscillator

V230A/IK (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
-----	---

Velocity Modulated Oscillator

V230A/1K (CV234)



OPERATING CONDITIONS.

Oscillator 8.9 to 11 cm. See Fig. 1.

Grid voltage V_{g_1}	0 to 200 V negative with respect to cathode
Resonator voltage V_r	
	At 9.1 cm. $250V \pm 5\%$. For other wavelengths the V_r is approximately proportional to the square of the frequency
Screen voltage V_{g_2}	0 to V_r
Anode voltage V_a	V_r 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 V_{g_1} or V_{g_2} . It is usually desirable to set V_{g_1} to zero voltage and adjust V_{g_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 V_{g_1}	0 to 200 V negative with respect to cathode
Resonator voltage V_r	
	At 15 cm. $100V \pm 5\%$. For other wavelengths the V_r is approximately proportional to the square of the frequency
Screen voltage V_{g_2}	0 to V_r
Anode voltage V_a	V_r 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 V_{g_1} or V_{g_2} as for 8.9 to 11 cm. operation.



Velocity Modulated Oscillator

V230A/1K (CV234)

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.

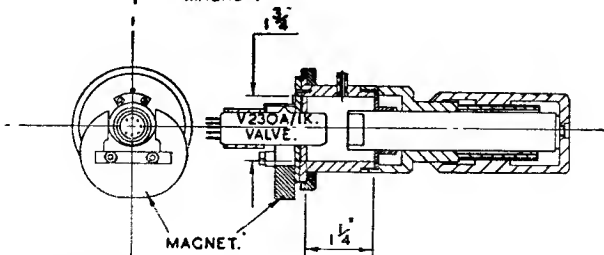
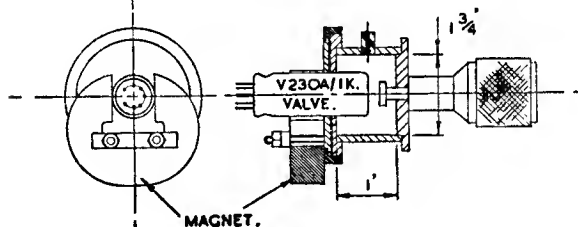


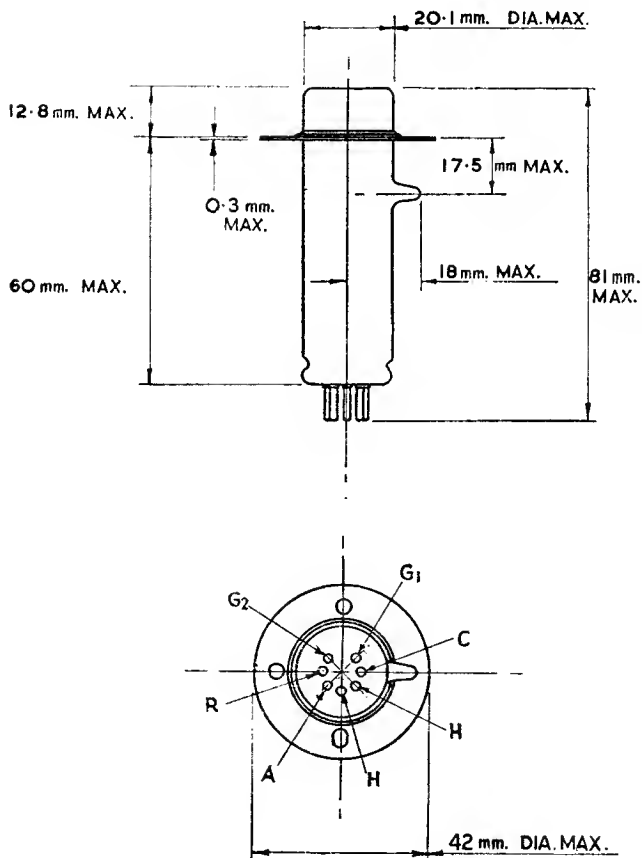
FIG. 2.

V230A/IK

Velocity Modulated Oscillator



V230A/IK (CV234)



Tentative data
November, 1945

V230A/IK- 4