



Velocity Modulated Oscillator

V246A/IK (CV.228)

The V246A/IK is a velocity modulated oscillator of the coaxial line type for pulsed or CW operation over the band 6 to 7 cm.

The low voltage operation is made possible by the use of a magnetic field to focus the electron stream through the resonator system of the valve.

CATHODE.

Indirectly-heated oxide-coated.

Voltage	6.3	V
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Nominal current (AC frequencies above 60 c/s must not be used)	0.3	A
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DIMENSIONS.

Maximum overall length	90	mm.
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Maximum bulb diameter	20.1	mm.
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Base minlature 7 pin button		
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Net weight	22½	g.
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MAXIMUM RATINGS.

The mean input power to all electrodes other than the heater must not exceed	15	W
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The peak cathode current must not exceed	0.5	A
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OPERATING CONDITIONS.

CW BEATING OSCILLATOR 6 to 7 cm.

Grid voltage V_{g_1}	0 to 200 V negative with respect to cathode.
Resonator voltage V_r	At 6.45 cm. 220 V $\pm 5\%$. 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 W_o	Not less than 0.5 W with 15 W input at 6.45 cm.

The output may be controlled by either V_{g_1} or V_{g_2} . It is usually desirable to set V_{g_1} to say—15 V and adjust V_{g_2} by means of a potentiometer across the resonator supply.

PULSE OPERATION with less than 10% duty cycle. Suitable as a transmitter. Subject to a delay time of 1 μ sec. approximately.

Grid voltage V_{g_1}	0 to 200 V negative to the cathode
Screen voltage V_{g_2}	0 to V_r
Resonator voltage V_r	At 6.45 cm. 800 V $\pm 5\%$. For other wavelengths the V_r is approximately proportional to the square of the frequency.
Anode voltage V_a	V_r plus 10 to 20 V
Output power W_o	Up to 20 W

The output may be controlled by either V_{g_1} or V_{g_2} as for CW operation.

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 very accurately aligned in the magnetic field so that as much of the current as possible reaches the anode. Once aligned no further adjustment is necessary when changing valves.



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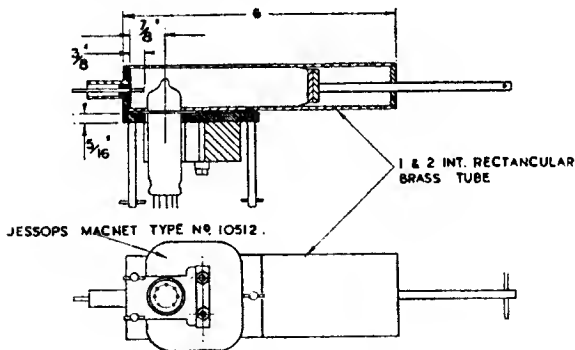
CIRCUITS.

Two circuits suitable for use with this valve are shown below. The position of the output probe is of importance. In circuit A the valve excites a rectangular wave guide which is tunable over the range 6 to 7 cm. by a feathered plunger.

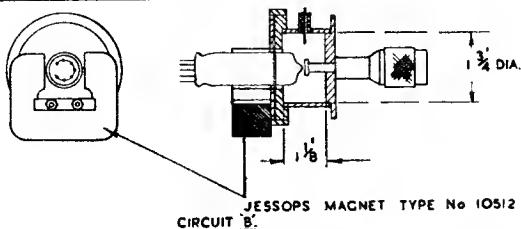
Circuit B is a cavity resonator with a micrometer screw for wavelength adjustment. Wavelength range of this circuit is 6.3 cm. $\pm$ 0.2 cm.

The mean wavelength is determined by the diameter of the cavity.

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



CIRCUIT A.



CIRCUIT B.

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