

MINISTRY OF SUPPLY (S.R.D.E.)

Specification: MOS/CV36/Issue 5 Dated: 21.4.48 To be read in conjunction with K1001 ignoring clauses:- 5.8 and 7.2	<u>SECURITY</u>	
	<u>SPECIFICATION</u> Restricted	<u>VALVE</u> Unclassified

→ indicates a change

<u>TYPE OF VALVE:-</u> Velocity modulation (reflection) type oscillator. <u>CATHODE:-</u> Indirectly heated <u>ENVELOPE:-</u> Glass, unmetallised with sealed-in metal discs forming part of external resonator. <u>PROTOTYPE:-</u> None.	<u>MARKING</u> See K1001/4
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<u>RATING</u>	Note	<u>BASE</u> I 0	
Heater voltage (V)	4.0	Pin	
Max. heater current (A)	1.6	1	
Resonator voltage (V)	1000-1500	2	
Grid voltage (V)	0	3	
Reflector voltage (V)	-170 to -290	4	
Max. limiting resonator dissipation (W)	10	5	
Min. Power output (mW)	150	6	
Min. tuning range (in Mc/s)	2760-2924	7	
) (in cms)	10.85-10.25	8	
Range of each coarse tuner	3% approx	Metal framework - resonator	
Range of fine tuner	2% approx	Top Cap - reflector	
		<u>DIMENSIONS</u> See drawings page 4	

NOTESA:- The valve is designed to operate at $V_g = 0$.

This valve type is obsolete and this specification is for record purposes only.

TESTS

To be performed in addition to those applicable in K1001

Test conditions	Test	Limits		No: tested
		Min.	Max.	
a Vh = 4.0 volts	Ih (A)	-	1.6	100%
b See K1001/5.3	Ihc (μ A)	-	5.0	100%
c See K1001/5.2.2	Cathode grid insulation (Mohms)	1.0	-	100%
For all the following tests Vh = 4.0, Vg = 0, Va shall be adjusted within the limits of 1000 and 1500 volts, and Vr within the limits of -170 to -290. The cathode current shall be such that the dissipation does not exceed 10 W. Frequency measurements to be made with the oscillator loaded under approved conditions.				
d Wavelength of oscillations varied by means of coarse and fine tuners	Range of oscillation (Mc/s) Upper limit Lower limit (See Note 1)	2924	2760	100%
e (a) Tuners set at:- 2760+0 Mc/s or 10.85 +.05cms -13 -0	Output Power (mW)	150	-	5%(3)
(b) Tuners set at:- 2924+13 Mc/s or 10.25 +0 cms -0 -05		150	-	5%(3)
f With all tuners at middle of traverse, Va and Vr and output coupling to be adjusted within above stated limits for optimum output. The fine tuner is then to be adjusted over its full traverse, Va and Vr and output coupling remaining unchanged and the output shall exceed 150 mW throughout this adjustment.				100%

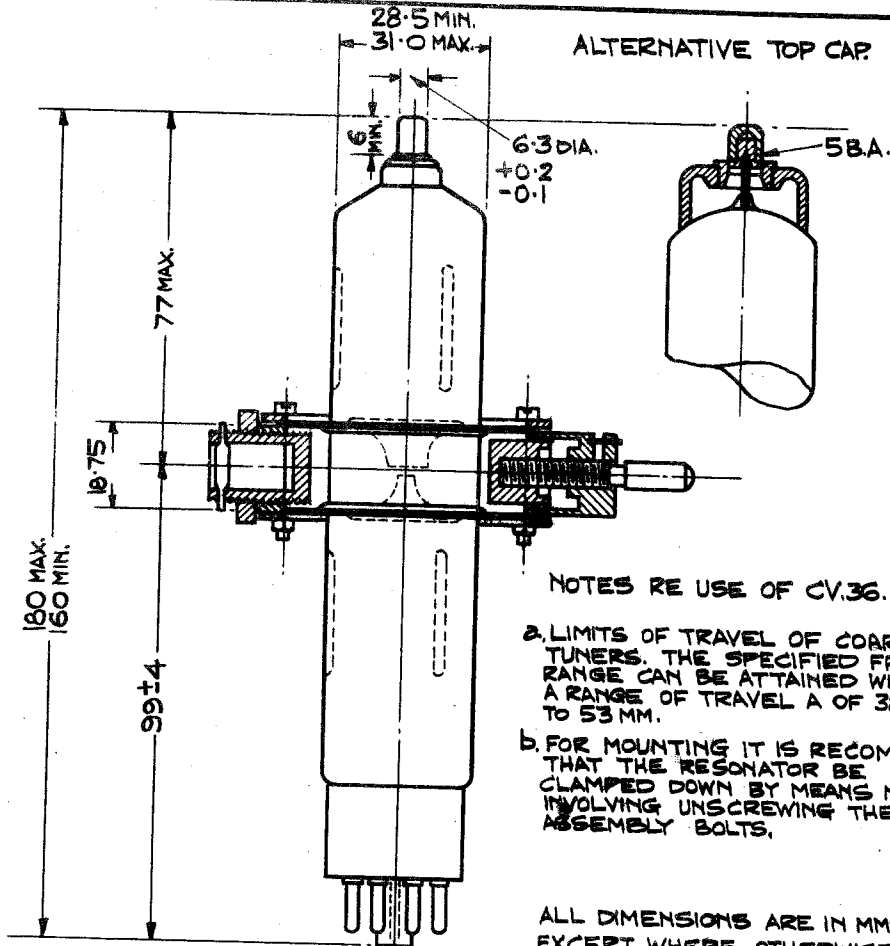
NOTE

1. This test will be regarded as satisfied if the minimum wavelength does not exceed 10.25 cms and the maximum wavelength is not less than 10.85 cms. It is also satisfied by 100% testing under test e.

CONDITIONS OF TYPE APPROVAL

CV 36

- a) The valve is to be processed to withstand a voltage of 5 KV R.M.S. between the resonator and each other electrode.
- b) It is to be supplied complete with resonator, the tuning plungers of which are to be reasonably slack when unlocked and lubricated with graphite grease or other suitable material.
- c) Frequency drift from cold to equilibrium temperature (under normal ambient temperature conditions) shall not exceed 3 Mc/s. (After 20 mins. operation at 9 to 10 watts input, frequency to be within 3 Mc/s of value measured at end of first minute).
- d) The fine tuner, when adjusted through seven revolutions in its traverse from the innermost position, shall provide a tuning range of at least 1.6 per cent at 2864 Mc/s or 10.45 cms.
- e) The valve required to operate at heater voltages of $4.0 \pm 5\%$.
- f) Capacity of the grid to the cathode, heater and resonator - 15pF
Max.
- g) The valve is required to be continuously operative with ordinary unforced ventilation and room temperature of 65° C. i.e. with resonator temperature of order of 110° C.



TUNING PLUNGERS AND COUPLING HOLE DIA. 26 T.P.I. LOCK NUTS 23-24 ACROSS FLATS.

