MINISTRY OF SUPPLY (DCD)

VALVE ELECTRONIC **CV1520**
(VCR520)

Specification MAP/CV1520/Issue 2 Dated 19.8.46. To be read in conjunction with K1003	SECURITY Specification: RESTRICTED Valve: RESTRICTED

→ Indicates a change

TYPE OF DEFLECTION : Magnetic

BULB : Internally coated with conductive coating.

SCREEN : A.S.E. Type 5

MARKING

VCR.520
10CV/1520
(See Note A)

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.15	
Max.Anode Voltage	(kV)	15.0	

DIMENSIONS
See drawing on page 5.

TOP CAP
See K1001/AI/D5.1.

BASE
I.O.

Pin	Electrode
1	No connection
2	Heater
3	Pin omitted
4	Pin omitted
5	Grid
6	Pin omitted
7	Heater
8	Cathode
Side Connection	Anode (See Note B)

NOTES

A. A white line approx. 1 cm. long shall be marked on the edge of the cylindrical portion of the tube at the screen end. This line shall be marked at that end of the screen diameter which is within 90° of the anode side arm, and is at right angles to the axis of the tube.

When the tube is set up in the equipment the white line will be positioned at the top. This will ensure that the tilt of the screen can be corrected by purely horizontal movement of the tube.

B. Where pins are omitted from the base, the resulting holes shall be filled.

This valve type is obsolete and this specification is for record purposes only.

To be performed in addition to those applicable in K1003.

	Test Conditions			Test	Limits		No. Tested	Note
	Vf	Vg	Va (kV)		Min.	Max.		
a	4.0	0	0	Ih (A)	1.10	1.20	100%	
b	4.0	D.C.Bias set to give just perceptible darkening of the screen. A superimposed pulse voltage shall be increased until line width is equal to that of a 3mm. 6 S.D.U. photographic standard or peak drive voltage is 45 volts whichever occurs first.	10.0	The contrast shall be better than that of the 3mm. 6 S.D.U photographic standard			100%	1
c	4.0	D.C.Bias as in clause(b) Pulse voltage to give contrast equal to that of 3mm 6 S.D.U. photo graphic standard.	10.0	The trace shall be shifted to a fresh part of the screen and the grid excitation stopped. Decay time (seconds) for contrast to fall to that of 1.5 S.D.U. photo graphic standard.	-	30	100%	1

TESTS (CONTD.)

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	Test Conditions			Test	Limits		No. Tested	Note
	Vh	Vg	Va (kV)		Min.	Max.		
d	4.0	D.C.Bias as in Clause (b). Pulse voltage to give contrast equal to that of 4 S.D.U photographic standard.	10.0	The trace shall be shifted to a fresh part of the screen and the grid excitation stopped. Decay time (seconds) for contrast to fall to that of 1.5 S.D.U photographic standard.	3	-	100%	1
e	4.0	D.C.Bias as in Clause (b)	10.0	Cut-off Voltage (V)	70	125	100%	
f	4.0	D.C.Bias approx. 20 volts less than in clause (b). There shall be no focussing coil energisation and no deflecting fields		Deviation of centre of unfocussed spot from centre of screen(mm)	-	4	100%	1
g				The screen shall not be darker in any part than the darkest tint on the approved scale of tints			100%	

	Test Conditions			TEST	Limits		No. Tested	Note
	Vh	Vg	Va (kV)		Min.	Max.		
h				Variations in whiteness of the screen to be not greater than that between consecutive tints on the approved scale of tints			100%	

NOTE

1. The grid pulse voltage shall be derived from an approved pulse generator giving 4 μsec. pulses at a repetition rate of 200 per sec. Deflecting and focussing field to be provided by coil assembly 10QB/218 which shall be set with its leading edge 1.5mm from axis AA in drawing on page 5.

Focussing Coil current shall be set up to give optimum focus, and the deflecting coil currents, supplied from the pulse generator, will give a spot at 150mm. radius. Screen to be illuminated with 10,000 ft. candles of mercury light at a temperature of between 30°C and 40°C by means of an approved light box and blower.

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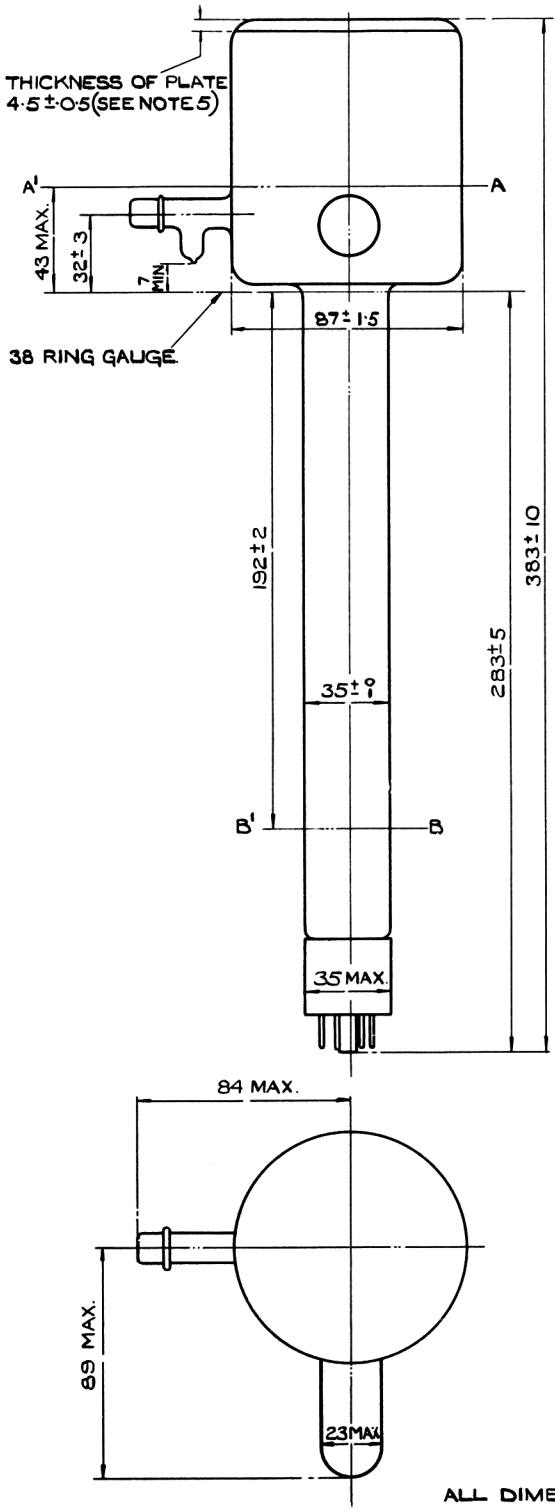

NOTES

1 AXIS AA' IS SUCH THAT THE SECTION OF THE BULB FROM AA' TO THE FACE OF THE TUBE MUST BE TRULY CYLINDRICAL.

2 AXIS BB' REPRESENTS THE PLANE OF THE MODULATOR OR LIMITING APERTURE.

3 THE INTERNAL CONDUCTIVE COATING SHALL BE OF SUCH DIMENSIONS THAT IT FUNCTIONS EFFECTIVELY BUT DOES NOT OBSCURE THE REQUIRED USEFUL SCREEN AREA.

4 THE NECK OF THE TUBE SHALL BE SUFFICIENTLY STRAIGHT FOR A GAUGE 36·0 MAX. INTERNAL DIA. AND 100 LONG TO SLIDE FREELY OVER NECK AND BASE.

5 OVER THE MINIMUM USEFUL SCREEN AREA THE FLATNESS OF THE INNER SURFACE OF THE GLASS PLATE MUST BE SUCH THAT ALL POINTS ON THIS SURFACE LIE BETWEEN TWO PARALLEL PLANES 0·3 APART WITH AN ANGLE OF TILT TO THE TUBE AXIS OF NOT GREATER THAN ½°

ALL DIMENSIONS IN MILLIMETRES.