MINISTRY OF SUPPLY D.L.R.D.(A)/R.A.E. VALVE ELECTRONIC **CV1597**

Specification MOSA/CV.1597 Issue 5 Dated 12.6.53 To be read in conjunction with K.1001, ignoring clause 5A.3.3.	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube
TYPE OF DEFLECTION - Electrostatic, suitable for symmetrical deflection
TYPE OF FOCUS - Electrostatic
BULB - Internally coated with conductive coating
SCREEN - GGM35
PROTOTYPE - VCR522A

MARKING

See K.1001/4

Additional marking:- $\frac{X\phi}{Y\theta}$

ϕ and θ - See Note D

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Max. Final Anode Voltage	(kV)	1.0	A
Plate Sensitivity			
X-plate	(mm/V)	90/Va3	
Y-plate	(mm/V)	90/Va3	
TYPICAL OPERATING CONDITIONS			
Final Anode Voltage	(V)	800	
Second Anode Voltage	(V)	135	
First Anode Voltage	(V)	800	
Beam Current	(μA)	2-4	

BASE

British standard 9-pin

CONNECTIONS

Pin	Electrode
1	X_1
2	Y_1
3	Second Anode
4	Heater and cathode
5	Heater
6	Grid
7	First and final anodes internally connected
8	Y_2
9	X_2

DIMENSIONS

See Drawing on Page 3

NOTES

A - The tube shall be capable of operating with first and final anode voltages of 900V at a pressure equivalent to 7.36" mercury at 15°C.

B - The tube shall be of three-anode construction, and shall be adequately free from microphony.

C - The gun assembly shall be sufficiently robust to withstand considerable mechanical shocks without suffering displacement.

D - The tube is required to be graded and marked according to the values of the deflection plate sensitivities. The tube marking shall be of the form $\frac{X\phi}{Y\theta}$ where ϕ and θ represent the grades of X and Y plate sensitivities respectively as given in the table below.

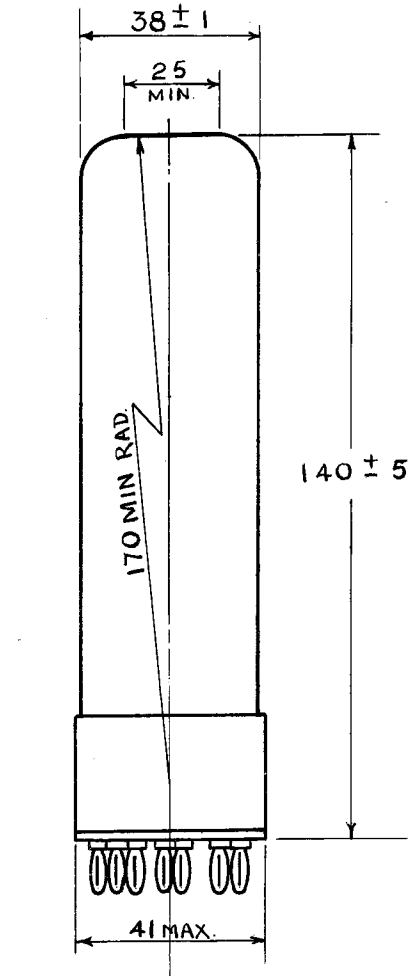
MARKING	PLATE SENSITIVITY mm/Volt/Va3
L	70-80 inclusive
A	Over 80 but not greater than 90
B	Over 90 but not greater than 100
C	Over 100 but not greater than 110
D	Over 110 but not greater than 120

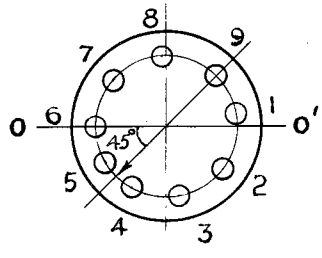
E - Viewing the screen of the tube, with pin number 6 at the top, a positive potential applied to pin number 9 shall deflect the spot to the right, and a positive potential applied to pin number 8 shall deflect the spot upwards.

To be performed in addition to those applicable in K.1001

	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested	Note
a	See K.1001/5A.13.					INTER-ELECTRODE CAPACITANCES (pF) 1. Each X or Y-plate to all other electrodes. 2. Grid to all other electrodes. 3. One X-plate to one Y-plate.	 - - -	 15 20 5	 T/A T/A T/A	
	Deflection voltages shall be applied symmetrically in all cases									
	Vh	Va3	Va2	Va1	Vg					
b	4	0	0	0	-	Ih (A)	0.85 0.95	1.25	5%(10)	
c	4	800	Adjusted for optimum focus	800	Adjust to give cut-off	Vg (V)	-7	-20	100%	
d	4	800	ditto	800	Adjust Vg adjusted to give a light output of .001 candelas on a closed raster.	Vg (V)	-1		100%	
e	4	800	ditto	800	Adjust DEFLECTION. With a sine-wave time-base of 10 kc/s nom. and a line length of 30 mm. in the X and Y directions successively, the line width will be measured at the centre of the trace.	(1) Line Width (mm) (2) Focussing voltage (V)	- 50	0.8 175	100% 5%(10)	
f	4	800	Any convenient value	800	-20 See K.1001/5A.3.2. Resistor = 5 megohms.	GRID INSULATION Leakage current (uA) Increase in voltmeter reading	- -	4 100%	100% 100%	
g	4	800	Adjusted for optimum focus	800	Any convenient value	DEFLECTION SENSITIVITIES (1) X-plate (2) Y-plate (3) Ratio of X to Y-plate	 70/Va3 70/Va3 0.85	 110/Va3 110/Va3 1.15	 100% 100%	
h	4	800	ditto	800	ditto	Deviation of spot from centre of screen (mm)	-	3	100%	
j	4	800	ditto	800	ditto Deflection to cover the stated circle centred on the centre of the screen.	USEFUL SCREEN AREA Diameter (mm)	 30	 -	 100%	
k	4	800	ditto	800	ditto	Angle between X and Y axes of deflection	85°	95°	100%	
m	4	800	ditto	800	ditto Angle measured relative to axis O-O' (drawing, page 3)	Orientation of Y axis of deflection	-	10°	100%	
n	4	800	ditto	800	varied Resistor -5MΩ in each deflector lead. Vg varied from working brightness to cut-off.	Spot movement (mm)	-	0.5	5%(20)	

CV1597





VIEW OF UNDERSIDE OF BASE

ALL DIMENSIONS IN MILLIMETERS