MINISTRY OF SUPPLY, D.L.R.D.(A)/R.A.E.

VALVE ELECTRONIC

CV 1596

Specification MOSA/CV.1596 Issue 6 Dated 4.7.56 To be read in conjunction with BS.448, BS.1409 & K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

-------→ Indicates a change

TYPE OF VALVE — Cathode Ray Tube

TYPE OF DEFLECTION - Electrostatic, Split Beam. y Plates suitable for asymmetrical deflection only, x Plates suitable for both asymmetrical and symmetrical deflection.

TYPE OF FOCUS - Electrostatic

BULB - Glass, unmetallised and uncoated.

→ SCREEN - GG1 to 5 (100 ms. max.)

PROTOTYPES - VCR.518A, 09

RATING			Note
Heater Voltage	(V)	4	
Heater Current	(A)	1.1	
Max. Third Anode Voltage	(kV)	2	A
Max. Grid Voltage	(V)	-500	
x-plate sensitivity	(mm/V)	558/Va3	C
Each y-plate sensitivity	(mm/V)	370/Va3	C
TYPICAL OPERATING CONDITIONS			
Second Anode Voltage	(V)	345	
Third Anode Voltage	(kV)	1.2	A
Hood (a4) Anode Voltage	(kV)	1.23	B
Modulator Voltage	(V)	-14	
Cathode Current	(μA)	135	
Beam Current	(μA)	15	

MARKING

See K.1001/4

BASE

BS.448/B12B

CONNECTIONS

Pin	Electrode
1	k
2	g
3	h
4	h
5	-
6	a2
7	a4 Hood
8	y2
9	x2
10	a3
11	x1
12	y1

DIMENSIONS

See Drawing on Page 4

NOTES

A. The tube shall be of three anode construction with the first anode connected internally to the third anode.

B. The hood a4 is an internal electrostatic shield around the deflecting system.

C. Viewing the screen of the tube with the key on the base downwards, a positive potential applied to Pin x1 shall deflect both spots to the left, a positive potential applied to Pin y1 shall deflect one spot upwards, and a positive potential applied to Pin y2 shall deflect the other spot downwards.

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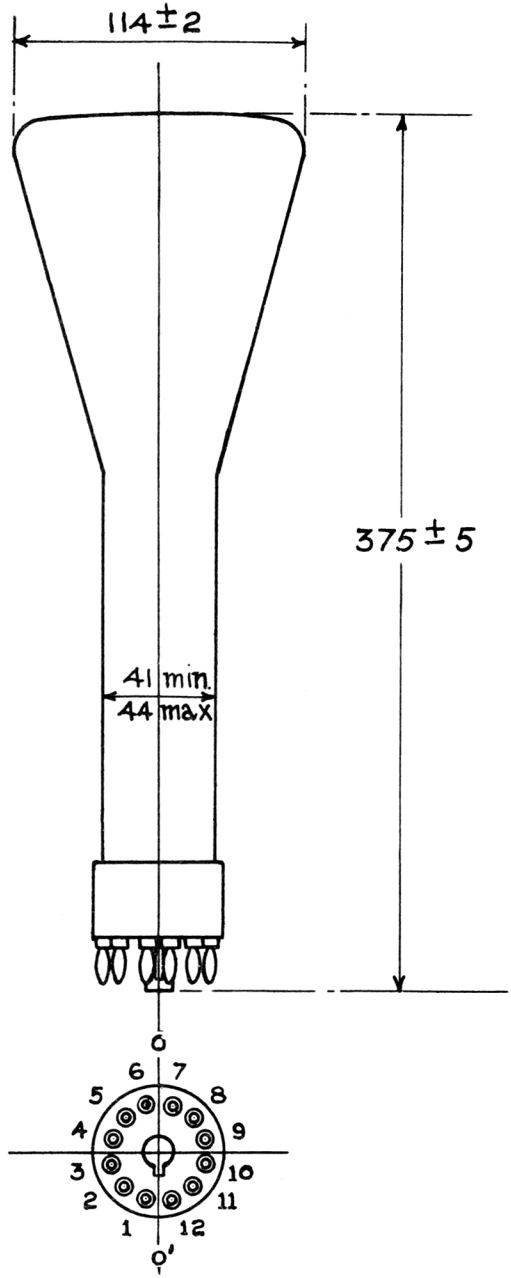
To be performed in addition to those applicable in K.1001

	Test Conditions				Test	Limits		No. Tested	Note
						Min.	Max.		
For the following Tests a4 shall be connected to a3, and any deflection voltages applied to the x-plates shall be applied asymmetrically. The beam current shall be measured in the a4 lead.									
	Vh	Va3 (kV)	Va2	Vg					
a	4	0	0	0	Ih (A)	1	1.25	5%(1)	
b	4	1.2	-	To give Ib=10μA	Va2 (V)	200	400	5%(1)	
c	4	1.2	-	Varied from zero to value for cut-off	Variation in value of Va2 for optimum focus over the stated range of Vg (V)	-	20	100%	
d	4	1.2	Adjust for optimum focus	Adjust to give cutoff of both beams	-Vg (V)	-	35	100%	
e	4	1.2	ditto	Adjust to give cutoff of each beam in turn	Difference in value of Vg for cut off of each beam (V)	-	4	100%	
f	4	1.2	ditto	Adjust	-Vg (V)	3	30	100%	
	Adjust Vg to give a light output of .004 candelas on a close raster								
g	4	1.2	ditto	Adjust	(1) Line width shall not be greater than that of a standard tube over the useful screen area.			100%	
	DEFLECTION with a sine-wave time base of 10 kc/s nominal and line length of 30 mm. in the x and y directions successively, the line width to be measured at the centre of the trace								
h	4	1.2	ditto	-30	GRID INSULATION				
	See K.1001/5A.3.2 Resistor = 1 Megohm				Leakage current (μA)	-	30	100%	
					Increase in voltmeter reading	-	100%	100%	
j	4	1.2	ditto	Any convenient value	DEFLECTION SENSITIVITIES				
					(1) x-plate (mm/V)	500/Va3	616/Va3	5%(1)	
					(2) Each y-plate (mm/V)	310/Va3	430/Va3	5%(1)	

TESTS (Continued)

CV1596

	Test Conditions				Test	Limits		No. Tested	Note
	Vh	Va3 (kV)	Va2	Vg		Min.	Max.		
k	4	1.2	Adjust for optimum focus	Any convenient value	(1) x deflection (mm)	± 40	-	100%	
					(2) y2 deflection (mm)	± 30	-	100%	
					(3) y1 deflection (mm)	± 30	-	100%	
	Deflections measured from the centre of the screen (2) y1 plate joined to a3 (3) y2 plate joined to a3								
l	4	1.2	ditto	ditto	Origin distortion, as indicated by the presence of a bright cross in the centre of the screen, shall be negligible.			5%(1)	
	Deflection voltages to give a close raster.								
m	4	1.2	ditto	ditto					
	(1) y1 plate joined to a3				(1) Angle between x and y axes	85°	95°	5%(1)	
	(2) y2 plate joined to a3				(2) Angle between x and y axes.	85°	95°	5%(1)	
n	4	1.2	ditto	ditto	ORIENTATION OF AXES OF DEFLECTION				
	Angle measured relative to axis O-O' shown in drawing				y axis	-	± 20°	100%	
o	4	1.2	ditto	ditto					
	(1) Saw tooth deflection voltages applied to x plate and to y2 plate, y1 plate joined to a3.				(1) Deflection of y1 trace as a percentage of maximum y2 displacement	-	2%	100%	
	(2) Saw tooth deflection voltages applied to x plate and to y1 plate, y2 plate joined to a3				(2) Deflection of y2 trace as a percentage of maximum y1 displacement.	-	2%	100%	



UNDERSIDE OF BASE

ALL DIMENSIONS IN MILLIMETRES