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

VALVE ELECTRONIC **CV1518**

| Specification MOSA/CV1518 Issue 5 Dated 5.7.56 To be read in conjunction with B.S.448, B.S.1409 and K.1001.	SECURITY	
	Specification	Valve
	UNCLASSIFIED	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	- BB3 or GG3. When green the screen shall be copper activated zinc sulphide
PROTOTYPES	- C9, VCR518

MARKING

See K.1001/4

BASE

B.S.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.

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)	$558/V_{a3}$	C
Each y-plate sensitivity	(mm/V)	$370/V_{a3}$	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	

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.

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	Test	Min.	Max.	No. Tested	Note
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 cut off of both beams	-Vg (V)	–	35	100%	
e	4	1.2	ditto	Adjust to give cut off 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 nom. 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)	

		Test Conditions					Timing			
		Vh	Va3 (Kv)					Max.		

					Test	Timing	Min.	Max.	
n	4	1.2	ditto	ditto	ORIENTATION OF AXES OF DEFLECTION				
					Angle measured relative to axis 0-0' shewn 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%

114±2

375±5

41 min.
44 max

O

6 7
5   8
4   9
3   10
2   11
1 12

O'
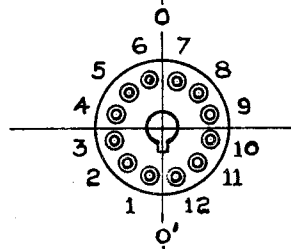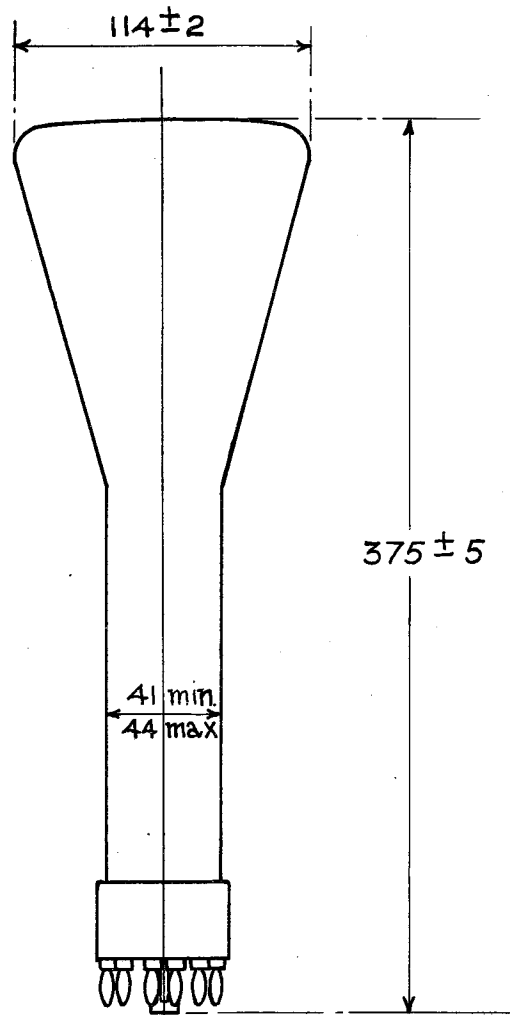
UNDERSIDE OF BASE

ALL DIMENSIONS IN MILLIMETRES