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

VALVE ELECTRONIC

CV1524

Specification MOSA/CV1524
Issue 5 Dated 18.5.54
To be read in conjunction with K1001

SECURITY

Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube
TYPE OF DEFLECTION - Electrostatic; symmetrical
TYPE OF FOCUS - Electrostatic
BULB - Internally coated with conductive coating
SCREEN - BYL46
PROTOTYPE - VCR524

MARKING
See K1001/4

BASE
12 Contact Key Base

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Maximum Fourth Anode Voltage	(KV)	6	A
Maximum Third Anode Voltage	(KV)	4	A
Maximum First Anode Voltage	(KV)	2.5	A
TYPICAL OPERATING CONDITIONS			
Fourth Anode Voltage	(KV)	4	
Third Anode Voltage	(KV)	2	
Second Anode Voltage	(V)	150	
First Anode Voltage	(KV)	2	
X-Plate Sensitivity	(mm/V)	.18	
Y-Plate Sensitivity	(mm/V)	.24	

CONNECTIONS

Pin	Electrode
1	G
2	C
3	H
4	H
5	A1
6	A2
7	Internal Coating (See Note E)
8	Y2
9	X2
10	A3
11	X1
12	Y1
Side Contact	A4

SIDE CONTACT
Snap Terminal

DIMENSIONS & CONNECTIONS
See drawing on page 4.

NOTES

A. The tube shall operate satisfactorily with Va1 = 2.5KV, Va3 = 3KV and Va4 = 6KV under conditions of reduced pressure equivalent to 6" of mercury at 15°C.

B. The tube shall be adequately free from microphony.

C. The tube shall be of the post deflector accelerated type, and the design shall be such that with Va1 = 2.5KV the focus shall be substantially unaffected by varying Va4 down to the value of Va3. A change of ± 10% in Va2 shall not produce an appreciable change in cut-off voltage.

D. The tube will normally be operated with A3 and conductive coating tied and if the manufacturer so desires these electrodes may be strapped internally with the connection omitted from contact marked "internal coating".

E. The internal conductive coatings shall be of such dimensions that they function effectively but do not obscure the required useful screen.

To be performed in addition to those applicable in K1001

	Test Conditions						Test	Limits Min.	Limits Max.	No. Tested	Note
a	See K1001/5A.13						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.	 - - -	 25 25 6	 5%(10) 5%(10) 5%(10)	
	Deflection voltages shall be applied symmetrically in all cases.										
	Vh (V)	Va4 (KV)	Va3 (KV)	Va2 (V)	Va1 (KV)	Vg (V)					
b	4	0	0	0	0	0	Ih (A)	0.8	1.3	100%	
c	4	4	2	Adjust for optimum focus	2	Adjust to cutoff	Vg value to be noted (V)	-	-80	100%	
d	4	4	2	ditto	2	ditto	(1) Vg (V)	-1	-	100%	
	Vg adjusted to give a light output of 0.04 candelas when viewed through a C2 filter (Type 26,10AB/474) on a closed raster.						(2) Change in Vg from test (c) (V)	-	35	100%	
e	4	4	2	ditto	2	ditto	(1) Line width (mm)	-	1.0	100%	
	DEFLECTION-With a sine-wave time base of 10 kc/s nom. and line length of 66 mm. in the X direction and 70 mm. in the Y direction successively, the line width to be measured at the centre of the trace.										
	GRID- The grid will be pulsed positively from cut off with amplitude equal to the value obtained in test d(2), the nominal values of pulse duration and recurrence being 100 μseconds and 100 c/s respectively.						(2) Va2 (V)	50	250	100%	←
f	4	4	2	Any convenient value	2	-80	GRID INSULATION (1)Leakage current (μA) (2)Increase in voltmeter reading	 - -	 8 100%	 100% 100%	
	Recommended method:- K1001/5A.3.2. Resistor = 10 megohms										
g	4	4	2	ditto	2	Any convenient value	DEFLECTION SENSITIVITIES (1) X plate (mm/V) (2) Y plate (mm/V)	 0.16 0.21	 0.20 0.27	 5%(10) 5%(10)	
h	4	4	2	ditto	2	ditto	Deviation of spot from centre of screen (mm)	-	6	100%	

TESTS (contd.)

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	Test Conditions						Test	Limits		No. Tested	Note
	Vh (V)	Va4 (KV)	Va3 (KV)	Va2 (V)	Va1 (KV)	Vg (V)		Min.	Max.		
j	4	4	2	Any convenient value	2	Any convenient value	USEFUL SCREEN AREA Deflections to cover stated rectangle.			100%	
	Measurement to be made on a raster of 50 mm x 55 mm in the X and Y directions successively.						Deviation of centre of boundary lines of raster from a true rectangle. (mm)	-	±2	5%	
k	4	4	2	ditto	2	ditto	(1)Orientation of X-axis of deflection relative to 00' on drawing.	80°	100°	100%	
							(2)Orientation of the diameter through the centre of the snap terminal relative to 00'.	80°	100°	100%	
l	4	4	2	ditto	2	ditto	Angle between X and Y axis of deflection	88°	92°	100%	

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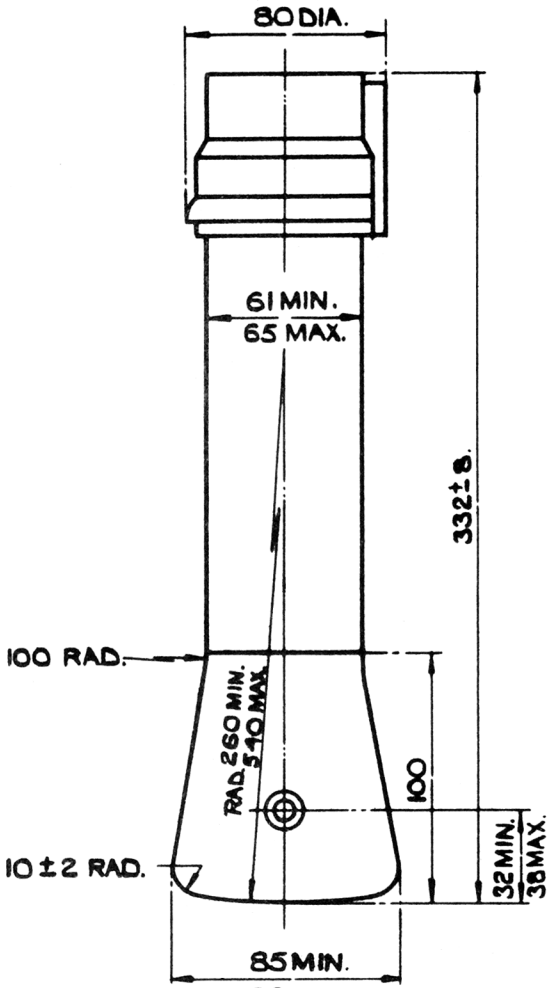

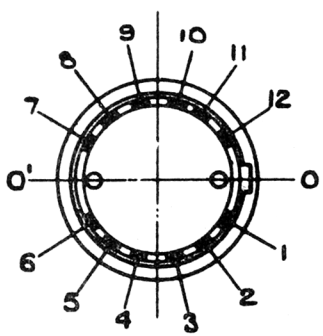

VIEW OF UNDERSIDE OF BASE.

ALL DIMENSIONS IN MILLIMETRES.

NOTES

1. THE INTERNAL CONDUCTIVE COATINGS SHALL BE OF SUCH DIMENSIONS THAT THEY FUNCTION EFFECTIVELY BUT DO NOT OBSCURE THE REQUIRED USEFUL SCREEN AREA.
2. WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SUCH THAT THE SPIGOT IS UPPERMOST, A POSITIVE VOLTAGE APPLIED TO TERMINAL X_1, SHALL DEFLECT THE SPOT TO THE LEFT, AND A POSITIVE VOLTAGE APPLIED TO TERMINAL Y_1, SHALL DEFLECT THE SPOT UPWARDS.
3. THIS DIA. SHALL INCLUDE ANY PROTRUSION DUE TO SIDE CONTACT.
4. WHEN VIEWING THE SCREEN UNDER THE SAME CONDITIONS AS IN 'NOTE 2' THE SNAP TERMINAL SHALL BE ON THE LEFT HAND SIDE OF THE TUBE