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

VALVES ELECTRONIC

CV1591 TO CV1595

Specification MOSA/CV1591 to CV1595 inclusive
Issue 6 Dated11.11.55
To be read in conjunction with B.S.448,B.S.1409 & K1001

SECURITY	
Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

------► Indicates a change

TYPE OF VALVES - Cathode Ray Tube

TYPE OF DEFLECTION - Electrostatic, suitable for either symmetrical or asymmetrical operation.

TYPE OF FOCUS - Electrostatic.

BULB - Internally coated with conductive coating.

SCREENS - Afterglow YYM5 - CV1591
YYM36 - CV1592
GGM7 - CV1593
GGM27 - CV1594
YYM31 - CV1595

PROTOTYPES - VCR517A - CV1591
VCR517B - CV1592
VCR517C - CV1593
VCR517D - CV1594
VCR517E - CV1595

MARKING

See K1001/4

BASE

B.S.448/B12D

CONNECTIONS

Pin	Electrode
1	g
2	k
3	h
4	h
5	a1
6	a2
7	IC
8	y2
9	x2
10	a3
11	x1
12	y1

RATINGS

			Note
Heater Voltage	(V)	4	
Heater Current	(A)	1	
Max. Final Anode Voltage	(kV)	6	A,C
Max. First Anode Voltage	(kV)	2	C
x plate Sensitivity	(mm/V)	720/Va3	
y plate Sensitivity	(mm/V)	880/Va3	

TYPICAL OPERATING CONDITIONS

Final Anode Voltage	(kV)	3
Second Anode Voltage	(V)	525
First Anode Voltage	(kV)	2

DIMENSIONS

See Drawing on page 4

NOTES

A. This rating applies only at normal atmospheric pressure.

B. The tube shall be adequately free from microphony.

C. Absolute Value.

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 to one y plate	 - - -	 25 25 5	 5% (10) 5% (10) 5% (10)	
	Vh	Va3 (kV)	Va2	Va1 (kV)	Vg					
b	4	0	0	0	0	Ih (A)	0.7	1.3	100%	
c	4	3	Adjust for optimum focus	2	Adjust to cut-off	Vg (V) Value to be noted	-	-80	100%	
d	4	3	ditto	2	-	(1) Vg (V) (2) Change in value of Vg from test (c) (V)	-1 -	- 40	100% 100%	
	Vg adjusted to give a light output of 0.032 candelas on a close raster									
e	4	3	ditto	2	-	(1) Line width (mm) (2) Va2 (V)	- 375	0.8 675	100% 100% 100%	
	DEFLECTION With a sine wave time base of 10 kc/s nom. and a line length of 130 mm. in the x and y directions successively.									
f	4	3	Any convenient value	2	-80	GRID INSULATION (1) Leakage Current (μA) (2) Increase in Voltmeter reading	 - -	 16 100%	 100% 100%	
	Recommended method K1001/5A.3.2. Resistor = 5 Megohms									
g	4	3	Adjust for optimum focus	2	Any convenient value	DEFLECTION SENSITIVITIES (1) x plate (mm/V) (2) y plate (mm/V)	 650/Va3 790/Va3	 790/Va3 970/Va3	 10% (10) 10% (10)	
h	4	3	ditto	2	ditto	Deviation of spot from centre of screen (mm)	-	10	100%	
j	4	3	ditto	2	ditto	USEFUL SCREEN AREA				
	Deflections to cover stated circle centred on centre of screen.					Diameter (mm)	130	-	100%	

TESTS (Continued)

CV1591 TO CV1595

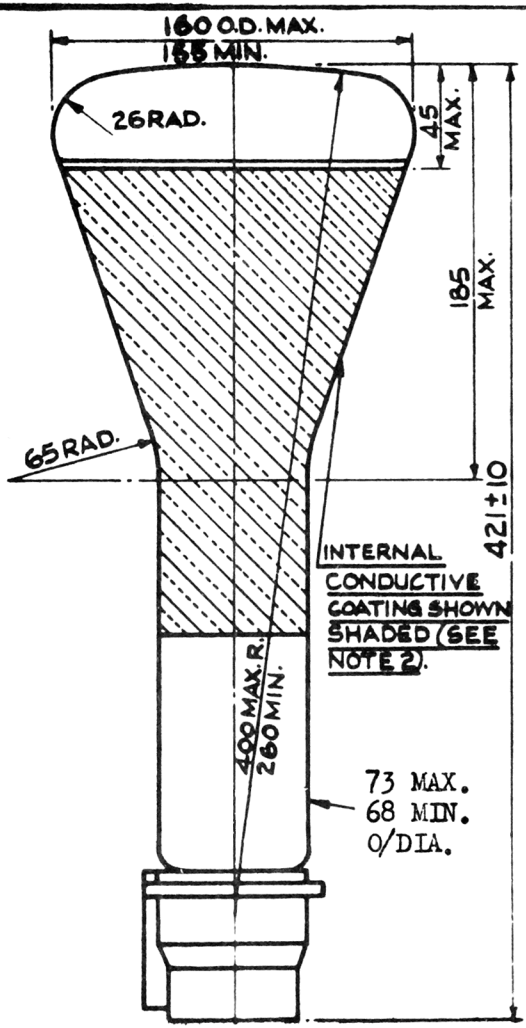
Test Conditions						Test	Limits		No. Tested	Note
	Vh	Va3 (kV)	Va2	Va1 (kV)	Vg		Min.	Max.		
k	4	3	Adjust for Optimum focus	2	Any convenient value	TRAPEZOIDAL DISTORTIONS (1) Angles between opposite sides. (2) Angles between adjacent sides	 175° 85°	 185° 95°	 100% 100%	
l	4	3	ditto	2	ditto	(1) Orientation of x axis of deflection relative to OO' on the drawing. (2) Angle between x and y axes of deflection.	80° 85°	100° 95°	100% 100%	
m	4	3	Un-focussed	2	ditto	The screen shall not be worse for graininess and non-uniformity than a standard tube or pattern			100%	
n	4	3	Adjusted for optimum focus	2	ditto	Afterglow (secs)	5	-	100%	2
p	4	3	ditto	2	ditto	SPECTRAL DISTRIBUTION Ratio:- Light Output / Light Output Thro' C2 Filter =	-	3	100%	1
Vg and raster size adjusted to give a brightness of 8 ± 25% E.F.C.										

NOTE

1. It will normally be satisfactory to make a visual examination of the colour of the screen and to apply Test "p" only in cases of doubt.

2. This test shall be performed using an approved test set The specified figure is for Test Set 331, A.M. Ref. No. 10S/696.

CV1591 TO CV1595



NOTE:

1 WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SUCH THAT THE BASE SPIGOT IS UPPERMOST, A POSITIVE VOLTAGE APPLIED TO THE TERMINAL X1 SHALL DEFLECT THE SPOT TO THE LEFT AND A POSITIVE VOLTAGE APPLIED TO THE TERMINAL Y1 SHALL DEFLECT THE SPOT UPWARDS.

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

3 THE NECK DIA. MAY BE REDUCED TO A MINIMUM OF 58 MM. PROVIDED THAT RUBBER RINGS OR OTHER APPROVED PACKING IS SUPPLIED WITH THE TUBE TO BRING THE OVERALL DIA. WITHIN THE STATED TOLERANCES.

ALL DIMENSIONS IN MILLIMETRES.