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

VALVE ELECTRONIC

CV1589
CV1590

Specification MOSA/CV1589/CV1590 Issue 6 Dated 1.11.54 To be read in conjunction with B.S.448,B.S.1409 & K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

--------► Indicates a change

TYPE OF VALVE - Cathode Ray Tube

TYPE OF DEFLECTION - Electrostatic. Suitable for symmetrical deflection.

BULB - Internally coated with conductive coating.

SCREEN - CV1589 - GGM27 or YYM36
CV1590 - GGM26 or WWM42 or OOM52

PROTOTYPES - CV1589 - VCR511A
CV1590 - VCR511B

MARKING

See K1001/4

BASE

B.S.448/B12D

CONNECTIONS

Pin	Electrode
1	k
2	g
3	h
4	h
5	N.C
6	a2
7	N.C.
8	y_2
9	x_2
10	a3
11	x_1
12	y_1

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. Final Anode Voltage	(kV)	6.5	
x-plate Sensitivity	(mm/V)	1000/Va3	
y-plate Sensitivity	(mm/V)	1000/Va3	
TYPICAL OPERATING CONDITIONS			
Final Anode Voltage	(kV)	4.0	
Second Anode Voltage	(V)	800	
Beam Current	(μA)	20	

DIMENSIONS

See Drawing on Page 3

NOTES

A. A magnetic shield shall be supplied fitted to the valve and be such as to provide adequate screening from internal magnetic field.

B. When viewing the screen with the valve positioned such that the base spigot is uppermost, a positive voltage applied to the terminal x_1 shall deflect the spot to the right, and a positive voltage applied to the terminal y_1 shall deflect the spot downwards.

To be performed in addition to those applicable in K1001

	Test Conditions				Test		Limits Min.	Limits Max.	No. Tested
	Vh	Va3 (kV)	Va2	Vg					
a	See K1001/5A.13				INTER-ELECTRODE CAPACITANCES (pF)				
					1. Each x or y plate to all other electrodes		-	20	
					2. Grid to all other electrodes		-	20	5% (10)
					3. One x to one y plate		-	5	
b	4.0	0	0	0	Ih	(A)	0.75	1.2	100%
c	4.0	4.0	Adjust for optimum focus	Adjust	-Vg	(V)	1	-	100%
	Adjust Vg to give a light output of .01 candelas on a closed raster.								
d	4.0	4.0	ditto	Adjust to cut-off	(1) -Vg	(V)	23	60	100% ←
					(2) Change in value of Vg from test (c)	(V)	-	25	100% ←
e	4.0	4.0	ditto	Adjust	(1) Line width	(mm)	-	0.8	100%
	DEFLECTION With a sine wave time base of 10 kc/s (Nominal) and a line length of 200 mm in the x and 200 mm in the y directions successively.				(2) Va2	(V)	600	1200	100%
	GRID The grid will be pulsed positively from cut-off with amplitude equal to the value of test d (2), the nominal value of pulse duration and recurrence being 100 μ secs and 100 c/s respectively.								
f	4.0	4.0	Any convenient value	-60	GRID INSULATION				
					1. Leakage Current	(μA)	-	6.0	100%
					2. Increase in voltmeter reading		-	100%	
	Recommended Method K1001/5A.3.2. Resistor = 10 Megohms								
g	4.0	4.0	Adjust for optimum focus	Any convenient value	DEFLECTION SENSITIVITIES				
					1. x - plate	(mm/V)	750/Va3	1250/Va3	10% (10)
					2. y - plate	(mm/V)	750/Va3	1250/Va3	10% (10)
h	4.0	4.0	ditto	ditto	Deviation of spot from centre of screen	(mm)	-	25	100%

TESTS (Continued)

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	Test Conditions				Test	Limits		No. Tested
	Vh	Va3 (kV)	Va2	Vg		Min.	Max.	
j	4.0	4.0	Adjust for optimum focus	Any convenient value	USEFUL SCREEN AREA 1. x deflection (mm) 2. y deflection (mm)	 ±105 ± 50	 - -	 100% 100%
	Deflections measured from centre of screen							
k	4.0	4.0	ditto	ditto	1. Orientation of x axis of deflection relative to OO' on drawing. 2. Angle between x and y axes of deflection	80° 85°	100° 95°	100% 100%
l					The screen shall not be worse for graininess and non-uniformity than a standard tube or pattern.			100% ←
m	Test to be carried out in Test Set 331				Afterglow (secs)	15	-	10% ←