

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

Specification MOSA/CV1588 Issue 5 Dated 26.10.1953 To be read in conjunction with K1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube		<u>MARKING</u>	
TYPE OF DEFLECTION - Electrostatic, suitable for symmetrical operation		See K1001/4	
BULB - Internally coated with conductive coating		<u>BASE</u>	
SCREEN - GGN/28/35		12-pin Spigot Type	
PROTOTYPE - VCRL39A			
<u>RATING</u>		Note	<u>CONNECTIONS</u>
			Pin      Electrode
Heater Voltage	(V) 4		1 Cathode
Heater Current	(A) 1.1		2 Grid
Max. Final Anode Voltage	(kV) 1		3 Heater
X-plate Sensitivity	(mm/V) 170/Va <sub>3</sub>		4 Heater
Y-plate Sensitivity	(mm/V) 170/Va <sub>3</sub>		5 A <sub>2</sub>
<u>TYPICAL OPERATING CONDITIONS</u>			6 Pin omitted
Final Anode Voltage	(V) 800		7 Y <sub>2</sub>
Second Anode Voltage	(V) 135		8 X <sub>2</sub>
Beam Current	(μA) 3		9 A <sub>3</sub>
			10 X <sub>1</sub>
			11 Y <sub>1</sub>
			12 Pin omitted
			<u>DIMENSIONS</u>
			See Drawing on Page 4
<u>NOTES</u>			
A The tube shall be adequately free from microphony.			
B No objectionable fluorescence shall be produced at the screen or glass by ultra-violet light of the wavelength transmitted by nickel-oxide glass.			
C The tube shall be capable of operating at a pressure equivalent to six inches of mercury at 15°C.			
D Viewing the screen of the tube with the key on the base uppermost, a positive potential applied to pin X <sub>2</sub> shall deflect the spot to the right and a positive potential applied to pin Y <sub>2</sub> shall deflect the spot downwards.			

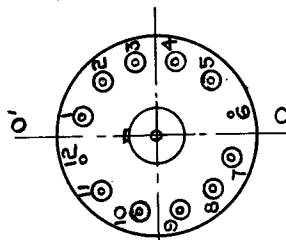
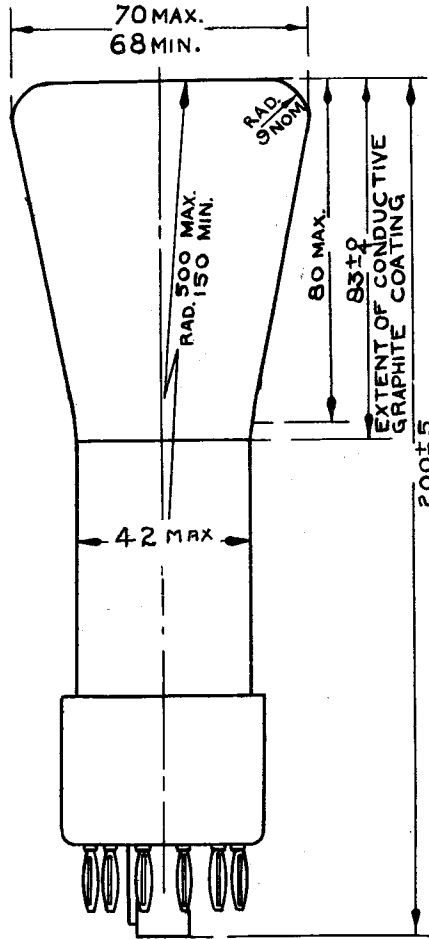
## CV1588

## TESTS

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Note			
						Min.	Max.					
a	See K1001/5A.13				<u>Deflection voltages shall be applied symmetrically in all cases.</u>							
					<u>INTER-ELECTRODE CAPACITANCES (pF)</u>							
					(1) Each X or Y plate to all other electrodes.					-	15	T/A
					(2) Grid to all other electrodes.					-	20	T/A
					(3) X <sub>1</sub> to Y <sub>1</sub> plate					-	3	0.5%
					(4) X <sub>2</sub> to Y <sub>2</sub> plate					-	3	(5)
					(5) X <sub>1</sub> to Y <sub>2</sub> plate					-	2	
(6) X <sub>2</sub> to Y <sub>1</sub> plate					-	2						
b	Cathode 50V positive to heater				I <sub>h-c</sub> (μA)	-	25	100%				
c	V <sub>h</sub>	V <sub>a3</sub>	V <sub>a2</sub>	V <sub>g</sub>	I <sub>h</sub> (A)	0.85 0.95	1.25	5%(10)				
	4	0	0	0								
d	4	800	Adjust for optimum focus	Adjust to cut off	V <sub>g</sub> (V)	-7	-16	100%				
e	4	800	Adjust for optimum focus	Adjust	V <sub>g</sub> (V)	-1	-	100%				
Adjust V <sub>g</sub> to give a light output of 0.0012 candelas on a closed raster.												
f	4	800	Adjust for optimum focus		(1) Line width (mm)	-	0.8	100%				
					(2) V <sub>a2</sub> (V)	50	175	5%(10)				
<u>DEFLECTION</u> - With a sine-wave time base of 10 Kc/s nom. and line length of 55 mm in the X and Y directions successively, the line width to be measured at the centre of the trace.												

	Test Conditions				Test	Limits		No. Tested	Note
	Vh	Va3	Va2	Vg		Min.	Max.		
g	4	800	Any convenient value	-16	<u>GRID INSULATION</u> (1) Leakage current ( $\mu\text{A}$ ) (2) Increase in voltmeter reading	- -	3.5 100%	100% 100%	
Recommended method - K1001/5A.3.2 Resistor - 5 megohms									
h	4	800	Adjust for optimum focus.	Any convenient value	<u>DEFLECTION SENSITIVITIES</u> (1) X plate (mm/V) (2) Y plate (mm/V) (3) Deviation of X to Y plate sensitivities	14.5/Va3 14.5/Va3 0.85	195/Va3 195/Va3 1.15	5%(10) 5%(10) 100%	
j	4	800	Adjust for optimum focus	Any convenient value	Deviation of spot from centre of screen (mm)	-	5	100%	
k	4	800	Adjust for optimum focus	Any convenient value	<u>USEFUL SCREEN AREA</u> Diameter (mm)	55	-	100%	
Deflections to cover stated circle centred on centre of screen									
l	4	800	Adjust for optimum focus	Any convenient value	(1) Orientation of X axis of deflection relative to 00' on the drawing (2) Angle between X and Y axes of deflection	80° 85°	100° 95°	100% 100%	



PIN CONNECTIONS  
VIEWED FROM  
UNDERSIDE OF  
BASE

ALL DIMENSIONS IN  
MILLIMETRES