

Specification MOSA/CV.1587 Issue 4 Dated 12.6.1953 To be read in conjunction with K.1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

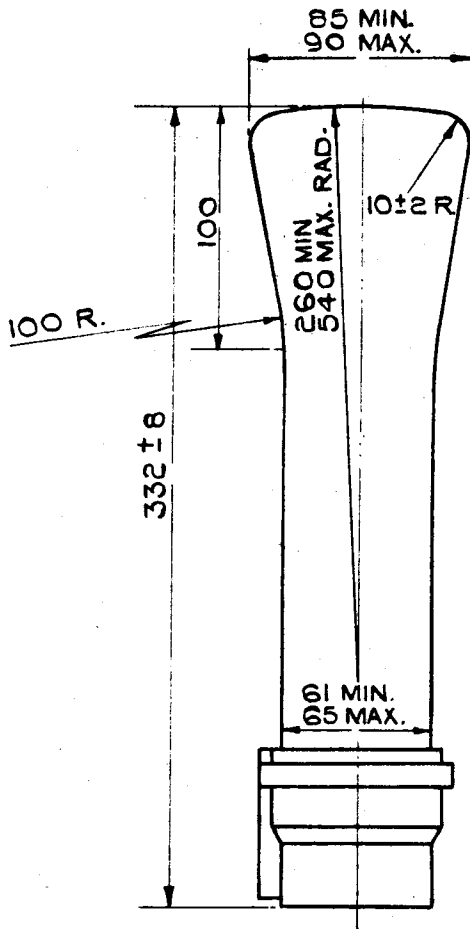
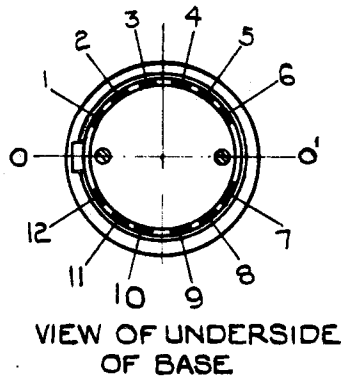
—————> Indicates a change

TYPE OF VALVE - Cathode Ray Tube TYPE OF DEFLECTION - Electrostatic, suitable for symmetric or asymmetric deflection. BULB - Internally coated with conductive coating. SCREEN - GGNI/28/35 PROTOTYPE - VGR.138A			<u>MARKING</u> See K.1001/4	
			<u>BASE</u> 12 Contact Key Base	
<u>RATING</u>		Note	<u>CONNECTIONS</u>	
Heater Voltage	(V)	4	Pin	Electrode
Heater Current	(A)	1	1	G
Max. Final Anode Voltage	(kV)	5	2	C
"X" plate Sensitivity	(mm/V)	357/Va3	3	H
"Y" plate Sensitivity	(mm/V)	780/Va3	4	H
<u>TYPICAL OPERATING CONDITIONS</u>			5	A1
Final Anode Voltage	(kV)	1.2	6	A2
Second Anode Voltage	(V)	200	7	Int. Coating (note D)
First Anode Voltage	(kV)	1.2	8	Y2
Beam Current	(μA)	15	9	X2
			10	A3
			11	X1
			12	Y1
			<u>DIMENSIONS</u> See Drawing on Page 4.	
<u>NOTES</u>				
A. The tube shall be adequately free from microphony. B. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X ₁ shall deflect the spot to the left and a positive voltage applied to the terminal Y ₁ shall deflect the spot upwards. C. The internal conductive coating shall be of such dimensions that it functions effectively but does not obscure the required useful screen area. D. The tube will normally be operated with A ₃ and conductive coating tied, and if a manufacturer so desires, these electrodes may be strapped internally, with the connection omitted from contact marked - "Internal conductive coating".				

To be performed in addition to those applicable in K.1001

Test Conditions						Test	Limits		No. Tested	Note
							Min.	Max.		
Deflection Voltages shall be applied asymmetrically in all cases.						<u>CAPACITANCES (pF)</u> 1. Each X or Y plate to all other electrodes. 2. Grid to all other electrodes. 3. One X to one Y plate	-	25	5%	
a	See K.1001/5A.13.						-	25	(10)	
							-	6		
b	Cathode 80V positive to heater					Ih-o (μA)	-	100	100%	
c	Vh	Va3	Va2	Va1	Vg	Ih (A)	0.8	1.3	100%	
	4	0	0	0	0					
d	4	1200	Adjust for optimum focus	1200	Adjust to out-off	Vg (V)	-	-48	100%	
e	4	1200	ditto	1200	Adjust	Vg (V)	-1	-	100%	
	Adjust Vg to give a light output of 0.01 candelas on a closed raster.						(2) Change in value of Vg from test (d) (V)	-	25	100%
f	4	1200	ditto	1200	ditto	(1) Line width (mm)	-	0.8	100%	
	<u>DEFLECTION</u> - With a sine-wave time base of 10 Kc/s nom. and line length of 70 mm. in the X and Y directions successively, the line width to be measured at the centre of the trace. <u>GRID</u> - The grid will be pulsed positively from cut-off with amplitude equal to the value obtained in test e.(2), the nominal values of pulse duration and recurrence being 100 μsecs. and 100 c/s respectively.									
g	4	1200	Any convenient value	1200	-48	<u>GRID INSULATION</u>	-	5	100%	
	Recommended method - See K.1001/5A.3.2 Resistor = 10 megohms									
h	4	1200	Adjust for optimum focus	1200	Any convenient value	<u>DEFLECTION SENSITIVITIES</u>	(1) X-plate (mm/V)	300/Va3	415/Va3	10%

Test Conditions						Test	Limits		No. Tested	Note
Vh	Va3	Va2	Va1	Vg	Min.		Max.			
j	4	1200	Adjust for optimum focus	1200	Any convenient value	Deviation of spot from centre of screen (mm)	-	6	100%	
k	4	1200	ditto	1200	ditto	<u>USEFUL SCREEN AREA</u> Diameter (mm)	70	-	100%	
l	4	1200	Adjusted for optimum focus	1200	Any convenient value	<u>TRAPEZOIDAL DISTORTIONS</u> (1) Angles between adjacent sides. (2) Angles between opposite sides.	85°	95°	100%	
							175°	185°	100%	
m	4	1200	ditto	1200	ditto	(1) Orientation of X axis of deflection relative to 0,0' on drawing. (2) Angles between X and Y axes of deflection.	80° 85°	100° 95°	100% 100%	



NOTES

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

- 2 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.

ALL DIMENSIONS IN MILLIMETRES