

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

Specification ^{MSA} MSA/CV1097	<u>SECURITY</u>	
Issue 7 Dated 8.11.1954	<u>Specification</u>	<u>Valve</u>
To be read in conjunction with B.S.448, B.S.1409 & K.1001	UNCLASSIFIED	UNCLASSIFIED

Indicates a change

TYPE OF VALVE - Cathode Ray Tube.	<u>MARKING</u> See K.1001/4. <u>BASE</u> B.S.448/B12D. <u>CONNECTIONS</u>
TYPE OF DEFLECTION - Electrostatic, suitable for both symmetrical and asymmetrical operation.	
BULB - Internally coated with conductive coating.	
SCREEN - GGN/1/28/35.	
PROTOTYPE - VCR97.	

<u>RATINGS</u>		Note	Pin	Electrode
Heater Voltage (V)	4		1	g1
Heater Current (A)	1		2	k
Max. Final Anode Voltage (kV)	2.5		3	h
			4	h
<u>TYPICAL OPERATING CONDITIONS</u>			5	a1 (Note C)
Final Anode Voltage (kV)	2		6	a2
Second Anode Voltage (V)	350		7	Internal Conductive Coating (Note C)
First Anode Voltage (kV)	2		8	y2
Beam Current (mA)	20		9	x2
x-plate sensitivity (mm/V)	600/Va3		10	a3
y-plate sensitivity (mm/V)	1140/Va3		11	x1
			12	y1
			<u>DIMENSIONS</u>	
			See drawing on Page 4.	

NOTES

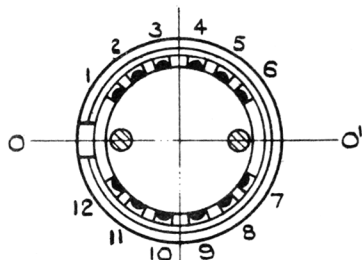
- The tube shall be adequately free from microphony.
- No objectionable fluorescence shall be produced by ultra-violet light of the wavelengths transmitted by nickel-oxide glass.
- The tube will normally be operated with a1, a3 and conductive coating tied, and, if a manufacturer so desires, any or all of these electrodes may be strapped internally, with the connections omitted from the contacts marked - "Internal Conductive Coating", - or "a1".

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

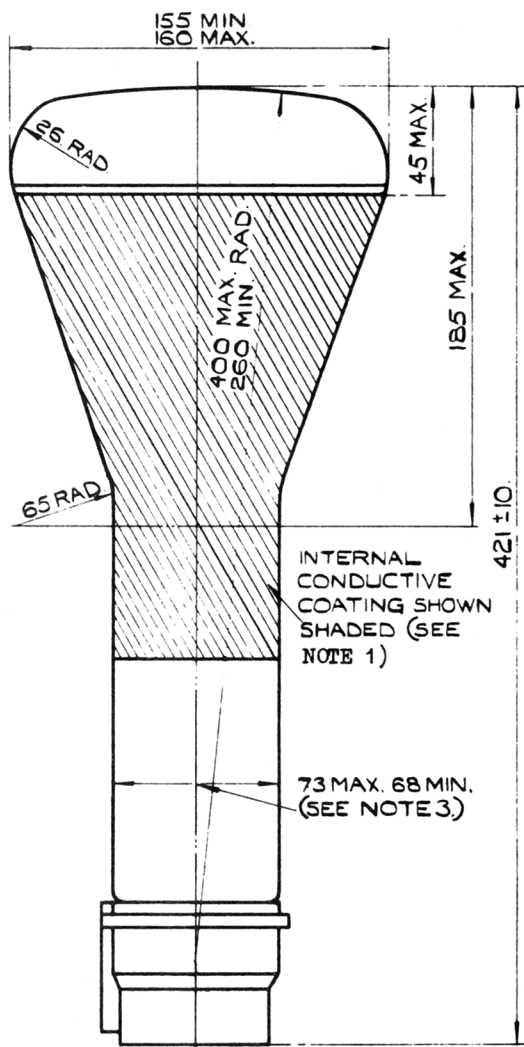
Test Conditions						Test	Limits		No. Tested	Note
							Min.	Max.		
a	See K.1001/5A.13					<u>CAPACITANCES (pF)</u> (1) Each x or y plate to all other electrodes (2) Grid to all other electrodes (3) One x to one y plate	-	25	5%(10)	
b	See K.1001/5A.4.3 Test Voltage = 100V					Ihk (μ A)	-	100	100%	
	Vh	Va3 (kV)	Va2	Va1 (kV)	Vg					
c	4	0	0	0	0	Ih (A)	0.7	1.3	100%	
d	4	2	Adjust for optimum focus	2	Adjust to cut off	Vg (V)	-	-80	100%	
e	4	2	ditto	2		(1) Vg (V) (2) Change in value of Vg from test (d) (V)	-1 -	- 35	100% 100%	
f	4	2	ditto	2	-	(1) Line width (mm) (2) Va2 (V)	Not greater than that of a standard tube 0.8 250	 450	100% 100%	
<p><u>DEFLECTION</u> With a sine wave time base of 10 kc/s nom. and a line length of 85 mm in the x and y directions successively. The line width to be measured at the centre of the trace.</p> <p><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 μseconds and 100 c/s respectively.</p>										
g	4	2	Any convenient value	2	-80	<u>GRID INSULATION</u> (1) Leakage Current (μ A) (2) Increase in voltmeter reading	- -	8 100%	100% 100%	
<p>Recommended method:- K.1001/5A.3.2 Resistor = 10 MΩ</p>										

Test Conditions						Test	Limits		No. Tested	Note
							Min.	Max.		
h	Vh	Va3 (kV)	Va2	Va1 (kV)	Vg	<u>DEFLECTION SENSITIVITIES</u> (1) x-plate (mm/V) (2) y-plate (mm/V)	540/Va3 1026/Va3	660/Va3 1254/Va3	10%(10) 10%(10)	
	4	2	Adjust for optimum focus	2	Any convenient value					
j	4	2	ditto	2	ditto	Deviation of spot from centre of screen (mm)	-	10	100%	
k	4	2	ditto	2	ditto	<u>USEFUL SCREEN AREA</u> (1) x deflection (mm)	+60 -40	-	100%	100%
						(2) y deflection (mm)				
l	4	2	ditto	2	ditto	<u>TRAPEZOIDAL DISTORTION</u> (1) Angle between adjacent sides	85° 175°	95° 185°	100%	100%
						(2) Angle between opposite sides				
m	4	2	ditto	2	ditto	(1) Orientation of x axis of deflection relative to 00° on drg.	80°	100°	100%	
						(2) Angle between x and y axes of deflection				

NOTES



VIEW OF UNDERSIDE
OF BASE.



NOTES.

1. 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

3. THE NECK DIAMETER MAY BE REDUCED PROVIDED THAT RUBBER RINGS OR OTHER APPROVED PACKING IS SUPPLIED WITH THE TUBE TO BRING THE OVERALL DIAMETER WITHIN THE STATED TOLERANCES.

ALL DIMENSIONS IN MILLIMETRES

SPECIFICATION MOSA/CV1097 ISSUE 7 DATED 8.11.1954

- (i) Page 1 Top of Page Amend "MINISTRY OF SUPPLY D.L.R.D.(A)/RAE." to read "MINISTRY OF AVIATION DLRD/RAE."
- (ii) Page 1 Specification Title Amend "Specification MOSA/CV1097" to read "Specification MOA/CV1097."
- (iii) Page 2 Test Clause (f) (1) Line width

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108/45

May 1965.