VALVE ELECTRONIC **CV 2222**

MINISTRY OF SUPPLY R.R.E. (L.S)

Specification MOS/CV2222/Issue 3 Dated:- February 1954 To be read in conjunction with K1001	SECURITY Specification: Unclassified Valve: Unclassified

← Indicates a change

TYPE OF VALVE:- High Speed Oscilloscope Cathode Ray Tube.	MARKING See K1001/4
→ TYPE OF DELFECTION:- Electrostatic, Symmetrical X Asymmetrical Y	PACKAGING See K1005
TYPE OF FOCUS:- Electrostatic	BASE B8E See K1001/A4/D17
BULB:- Glass. Internally coated with conductive coating	CONNECTIONS
SCREEN:- GG4	
PROTOTYPE VCRX312	

RATING				CONNECTIONS	
				Pin	Electrode
Heater voltage	(V)	4.0		1	A_2
Heater current	(A)	1.2		2	H
Max. final anode voltage	(kV)	4.0		3	C
Max. continuous cathode current	(mA)	1.0		4	H
X Plate sensitivity	(mm/V)	620		5	G
		Va3		6	X_2
Y Plate sensitivity	(mm/V)	530		7	A_1 and A_3
		Va3		8	X_1
				Side Contacts	Y_1 and Y_2 (See dwg. page 4)
TYPICAL OPERATING CONDITIONS				SIDE CONTACTS See K1001/A1/D.5/1	
Final anode voltage	(kV)	3.5		DIMENSIONS See drawing page 4	
Second anode voltage	(V)	450			

NOTE

A:- The focussing system shall be of the three electrode type.

B:- The tube must be adequately free from Microphony and Deflection Defocus. These tests will be covered by Type Approval.

CV2222/3/1

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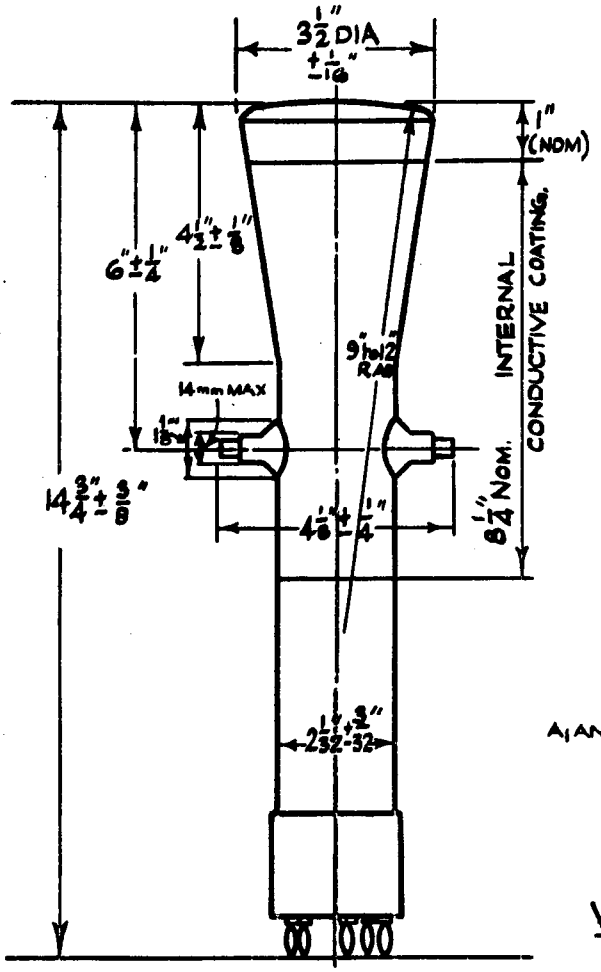
To be performed in addition to those applicable in K1001

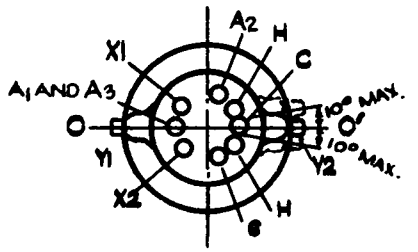
Clause	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
a		Capacitances (pF)			
		1. Each X plate to all other electrodes.	-	15	5% (5)
		2. Each Y plate to all other electrodes.	-	10	5% (5)
		3. Grid to all other electrodes	-	15	5% (5)
		4. Each X plate to each Y plate.	-	0.2	5% (5)
	FOR ALL TESTS GIVEN BELOW Vh = 4.0V.				
b		Ih (A)	1.08	1.32	100%
c	Cathode 100V positive to heater	Heater cathode current Ihc (μA)	-	200	100%
	FOR ALL TESTS GIVEN BELOW Va3 = 3.5kV				
d	Va2 adjusted for optimum focus and Vg for cut off.	-Vg (V) Value to be noted	30	60	100%
e	With a close raster scan adjust Va2 as in "d" and Vg for a light intensity of 0.17 candela	1. -Vg (V)	5	-	100%
		2. Change in value of Vg from clause "d"(V)	-	25	100%
		3. Within the range of grid voltage from cut-off to that obtained in clause (e1) the beam current shall increase continuously			
f	With Vg as in test "e" adjust Va2 for optimum focus. Line length 70 mm. linear scan 100 μS x 25 C.P.S. in X and Y directions successively. See note 1	Line width (mm)	-	0.8	100%
		Va2 (V)	350	525	100%

Phase	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
g	See K1001/5A.3.2. (a) Vg -60V. (b) Alternative method Resistor 10 MΩ	Grid Insulation (a) Leakage current (μA) (b) Increase in voltmeter reading	- -	6 100%	100%
h		Deflection Sensitivities 1. X plate (mm/V) 2. Y plate (mm/V)	540/Va3 460/Va3	700/Va3 600/Va3	5%(10) 5%(10)
j	With Vg as in (e) and both Y plates connected to A3. X1 connected to X2. The tube should be defocussed to avoid screen burn.	Deflector Plate Current X plate current (μA)		12	100%
k	See K1001/5A.11.1.	Deviation of spot from centre of screen (mm)	-	10	100%
l	Deflection to cover the stated circle centred on centre of the screen	Useful Screen Area Diameter (mm)	70	-	100%
m		Orientation of Deflection Axes 1. Orientation of Y axis of deflection relative to 00′ on the drawing 2. Angle between X and Y axes of deflection	- 88°	±10° 92°	100% 100%

NOTES:-

1. A standard T.V. raster may be used with the frame scan expanded to facilitate the measurement of line width.





VIEW OF UNDERSIDE OF BASE.

WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SUCH THAT THE TERMINAL A1 AND A3 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 UPWARD.