MINISTRY OF SUPPLY

CATHODE RAY TUBE **CV.1379** (ACR1)

Specification MOS/CV1379/Issue 1 Dated 20.11.45. To be read in conjunction with K1003	SECURITY Specification Restricted | C.R.T. Restricted

→ Indicates a change

TYPE OF DEFLECTION:- Electrostatic. BULB:- Internally coated with conductive coating. SCREEN:- YYN2, WWN23, or YYK40				MARKING See K1001/4
RATING			Note	BASE 6 Clip
Heater Voltage	(V)	4		
Heater Current	(A)	1.1		
Max. Final Anode Voltage	(kV)	4		DIMENSIONS AND CONNECTIONS See Drawing on Page 5.
X plate sensitivity	(mm/V)	600/Va3		
Y plate sensitivity	(mm/V)	675/Va3		
TYPICAL OPERATING CONDITIONS				
Final Anode Voltage	(kV)	3		
Second Anode Voltage	(V)	600		
Beam Current	(μA)	15		

NOTE

A:- The tube must be adequately free from microphony. This test to be covered by type approval.

B:- If a first accelerator anode is used in addition to focussing and final anodes, it shall:-

(i) be connected to contact clip A_1, and be designed to take the same voltage as A_3,

(ii) be connected to contact clip A_2, and be designed to take the same voltage as A_2.

To be performed in addition to those applicable in K1003.

Clause	Test Conditions V_h	V_{a3} (kV)	V_{a2}	V_g	Tests	Limits Min.	Max.	No. Tested.
(a)	0	0	0	0	Capacitances (pf) 1. Each X plate to all other electrodes. 2. Each Y plate to all other electrodes. 3. Each X plate to each Y plate.	- - -	14 10 2	Type Approval Test only.
(b)	4	0	0	0	I_h (A)	0.4	1.4	100%
(c)	4	3	-	-	1. V_{a2} (V) 2. Line width shall not be greater than that of a standard tube within an area of radius 2.5 cms. around the centre of the screen. 3. Deflection defocussing at any point within an area of radius 4.5 cms. around the centre of the screen shall not be greater than that of a standard tube. 4. V_g (to be noted)	390	720	100%
	Adjust V_{a2} for optimum focus and V_g to give spot brilliance equal to that of a standard tube using a trace of length 110 mm. in the X and Y directions successively.							
(d)	4	3	As in (c)	As in (c)	Cathode current (μA)	-	500	Type Approval Test only
(e)	4	3	As in (c)	-	1. V_g (V) 2. Increase in negative value of V_g compared with value noted in test (c)4.	- 4	-30 15	100%
	V_g adjusted to visual cut off.							
(f)	4	3	As in (c)	-30	Grid Insulation Leakage current (μA) Increase in voltmeter reading (V)	- -	5 100%	100%
	Recommended method: See K1003, clause 5.4.2. Insert resistor = 6 megohms							

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(g)	4	3	As in (c)	Any convenient value	Deflection Sensitivities 1. X plate. (mm/V) 2. Y plate. (mm/V)	$\frac{500}{V_{a3}}$ $\frac{550}{V_{a3}}$	$\frac{650}{V_{a3}}$ $\frac{800}{V_{a3}}$	10%
(h)	4	3	As in (c)	As in (g)	Deviation of spot from centre of screen. (mm)	-	7.5	100%
	All deflector plates connected to a_3.							
(j)					Spot movement along X axis. Zero voltage between X plates.			
	4	3	As in (c)	-	1. Movement. (mm)	-	0.5	
	V_g varied from cut off to standard working brightness							
	4	-	As in (c)	As in (g)	1. Movement (mm)	-	0.5	100%
	V_{a3} varied from 2.7 kV to 3.3 kV							
	4	3	As in (c)	As in (g)	3. Movement (mm)	-	0.5	
	$\pm$10v. between a_3 and X plates							
	4	3	-	As in (g)	4. Movement (mm)	-	0.5	
	V_{a2} varied over range for which spot appears to be focussed.							
(k)	4	3	As in (c)	As in (g)	Zero Drift along X Axis (mm)	-	0.5	100%
	X_1 plate connected to a_3. Square waves as shown in Fig.3. on drawing, applied between X_2 plate and a_3. Repeat reversing X_1 and X_2 connections							

(l)	4	3	As in (c)	As in (c)	1. Current flowing to X_2. (μA)	-	1	100%
	X_1 plate connected to a_3 and -2kV on X_2 plate. Using +5v. instead of -2kV.in the above test. Repeat reversing X_1 and X_2 connections.				2. Current flowing to X_2. (μA)	-	1	
(m)	4	3	As in (c)	As in (g)	The tube must withstand the application of ±4 kV to any one deflector plate, the other three being connected to a_3.			100%
(n)	4	4	See clause 5.14 of K1003.		Over Voltage Test			100%
(o)	4	3	As in (c)	As in (g)	When the screen bears two superimposed traces with recurrence frequencies up to 3000 cycles/sec., there shall be no distortion of one trace by the other.			Type Approval Test only
(p)	4	3	As in (c)	As in (g)	Useful Screen Area Radius (mm)	55	-	100%
(q)	4	3	As in (c)	As in (g)	1. Angle between X axis and line 00' on drawing.	-5°	+5°	100%
					2. Angle between X and Y axes.	85°	95°	
(r)	4	3	As in (c)	As in (c)	Life Test Life (hrs)	1000	-	1%
	Deflection to cover a raster of area 80 mms. x 80 mms.							

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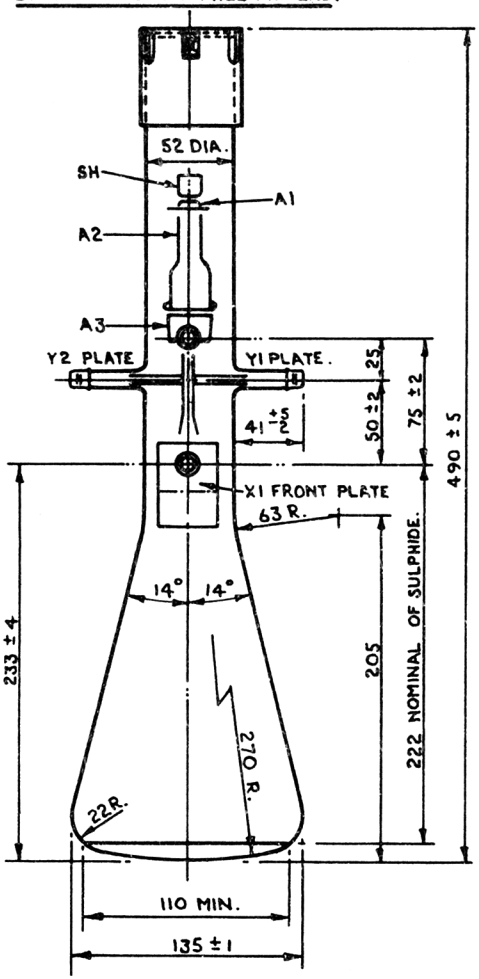
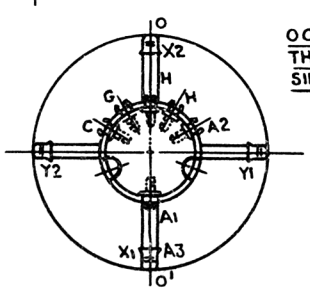
FIG.1. C.R. TUBE.

DIMENSIONS IN MILLIMETERS.

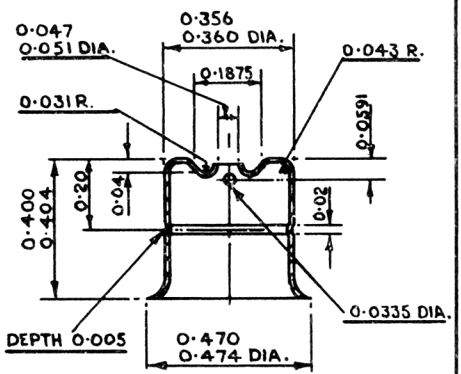


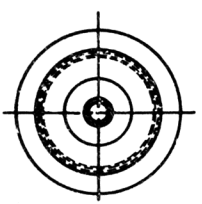


OO' IS LINE THROUGH SIDE ARMS X_1X_2.

FIG.2. PLATE CAP.

DIMENSIONS IN INCHES.





No.32 S.W.G.

FIG.3.