

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

Specification MOSA/CV2216 Issue 2 Dated 6.1.55 To be read in conjunction with B.S.448, B.S.1409 & K.1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

Indicates a change

TYPE OF VALVE - Cathode Ray Tube	<u>MARKING</u> See K.1001/4.
TYPE OF DEFLECTION - Electrostatic	
BULB - Coated partially internally with graphite	<u>BASE</u> B.S.448/ B12D
SCREEN - GGN 53; with special markings (See Note 1.)	
PROTOTYPE - CV275	<u>CONNECTIONS</u>

<u>RATING</u> (All limiting values are absolute)		Note	Pin	Electrode
Heater Voltage (V)	4.0		1	g1
Heater Current (A)	0.715		2	k
Max. Anode 1 Voltage (V)	500		3	h
Max. Anode 2 Voltage (kV)	1.0		4	h
Max. Anode 3 Voltage (kV)	4.0		5	a1
x-Plate Sensitivity (mm/V)	$\frac{800}{Va3}$		6	a2
y-Plate Sensitivity (mm/V)	$\frac{800}{Va3}$		7	NC
			8	y''
			9	y'
			10	a3
			11	x'' x'
			12	x' x'
<u>TYPICAL OPERATING CONDITIONS</u>			<u>DIMENSIONS</u> See Drawing on Page 4.	
Anode 1 Voltage (V)	450			
Anode 2 Voltage (Focussing) (V)	450			
Anode 3 Voltage (kV)	2.2			
Grid Voltage for beam cut-off	-30 to -90			
<u>CAPACITANCES (pF)</u>				
x', x''	5.1			
x', all	15.2			
x'', all	15.6			
y', y''	4.8			
y', all	14.9			
y'', all	15.6			
x' + x'', y' + y''	2.9			
g1, all	9.8			

NOTES

- The screen calibration markings shall be made by sticking on an approved transparent material. The markings shall be as shown in Figure 3. The calibration must be sufficiently accurate to pass the relevant tests given. At Type Approval the scale will be subjected to mechanical and tropical tests.

The four major bearings 0°, 90°, 180°, 270°, shall be accurate to +0.25°. The scale is graduated to correct for octantal error. (See table on Page 6 for octantal corrections).

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

Test Conditions						Test	Limits		No. Tested	Note
							Min.	Max.		
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)					
a	4.0	-	-	-	-	Ih (A)	0.64	0.79	100%	
b	4.0	2.2	Adjust for optimum focus	450	Adjust	Vg cut-off (V)	-30	-90	100%	
			Vg adjusted for visual Ib cut-off							
c	4.0	2.2	ditto	450	Adjust	(i) Line Width (mm)	-	1.5	100%	
	The line width to be measured at the extremities of a 6 inch linearly deflected line at intervals of 45° with an approved microscope. Adjust Vg to make the microscope graduations just clearly visible.					(ii) Va2 (V)	385	515	100%	
d	4.0	2.2	ditto	450	Adjust	<u>Sensitivity</u>				
	Apply plate voltages to give 5 inch deflection.					(i) Of less sensitive pair of plates (mm/V)	$\frac{735}{Va3}$	$\frac{865}{Va3}$	100%	
						(ii) Of more sensitive pair of plates	To be within 6% of value for 'd'(i)		100%	
e	4.0	2.2	ditto	450	Adjust	Angle between x-axis and y-axis	89°	91°	100%	
f	4.0	2.2	ditto	450	Adjust	Deviation of spot (mm) from centre of screen	-	12	100%	
	Tube screened from external field									
g	4.0	2.2	ditto	450	Adjust	Calibration. (Angular divergence of scan line from calibration for every 22.5° of scale)	-	1°	100%	
	Apply x and y deflecting voltages, calculated to give bearings at every 22.5°. If trace is non-linear, check bearing by laying cursor along straight part of the scan.									

Test Conditions						Test	Limits		No. Tested	Note
							Min.	Max.		
h	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)	Calibration (Angular divergence of scan line from 0°, 90°, 180°, 270° markings)	-	0.25°	100%	
	4.0	2.2	Adjust for optimum focus	450	Adjust					
x and y deflections applied independently and successively.										
j	4.0	2.2	ditto	450	Adjust	Basing Measure angle between vertical trace and diameter of base through centre of key	35°	55°	100%	
k	4.0	2.2	ditto	450	Adjust	Grid Leakage current (μ A)	-	3.0	100%	
Adjust Vg for Ib = 15 μ A.										

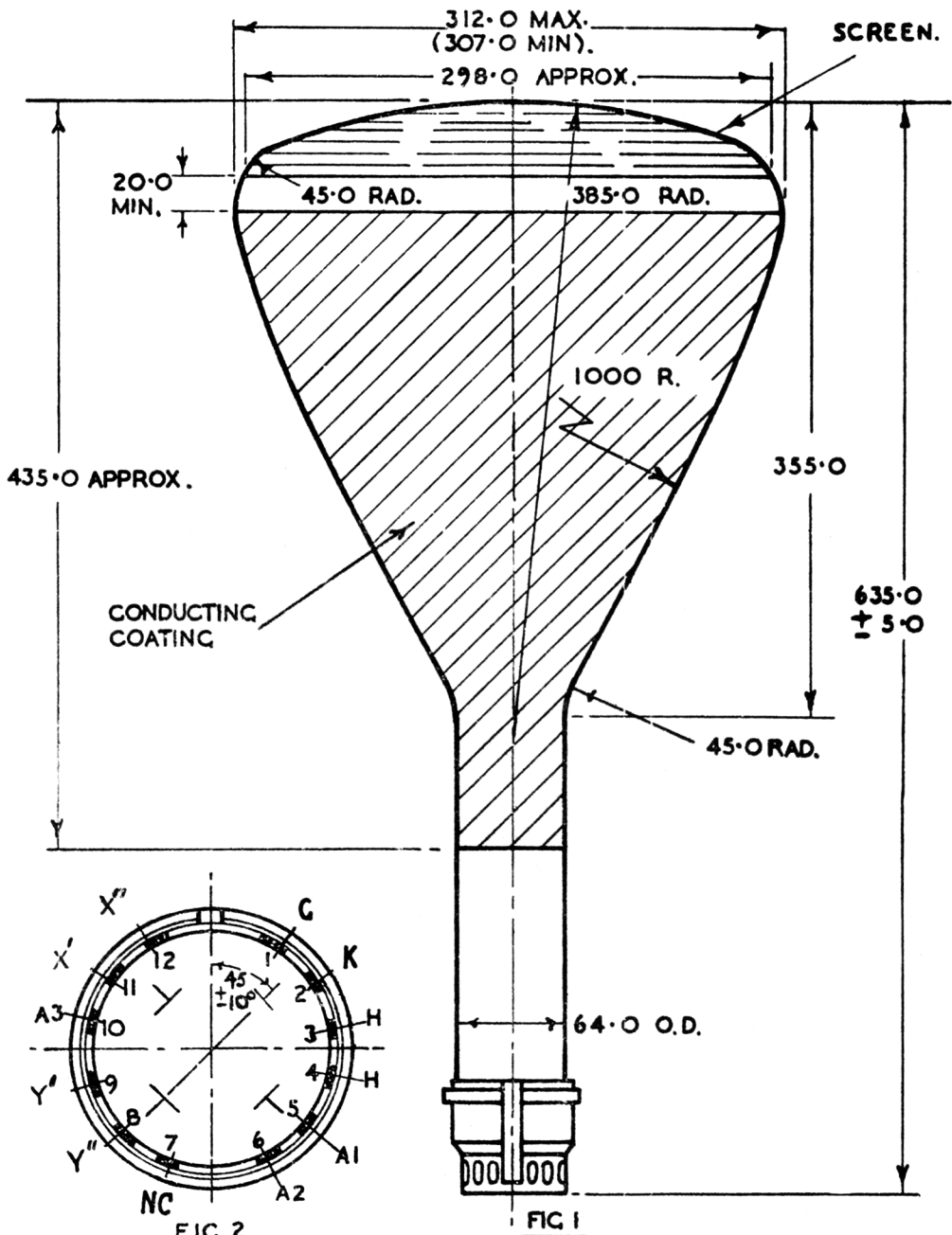


FIG. 2.
VIEW OF FREE END.

ALL DIMENSIONS IN MMS.

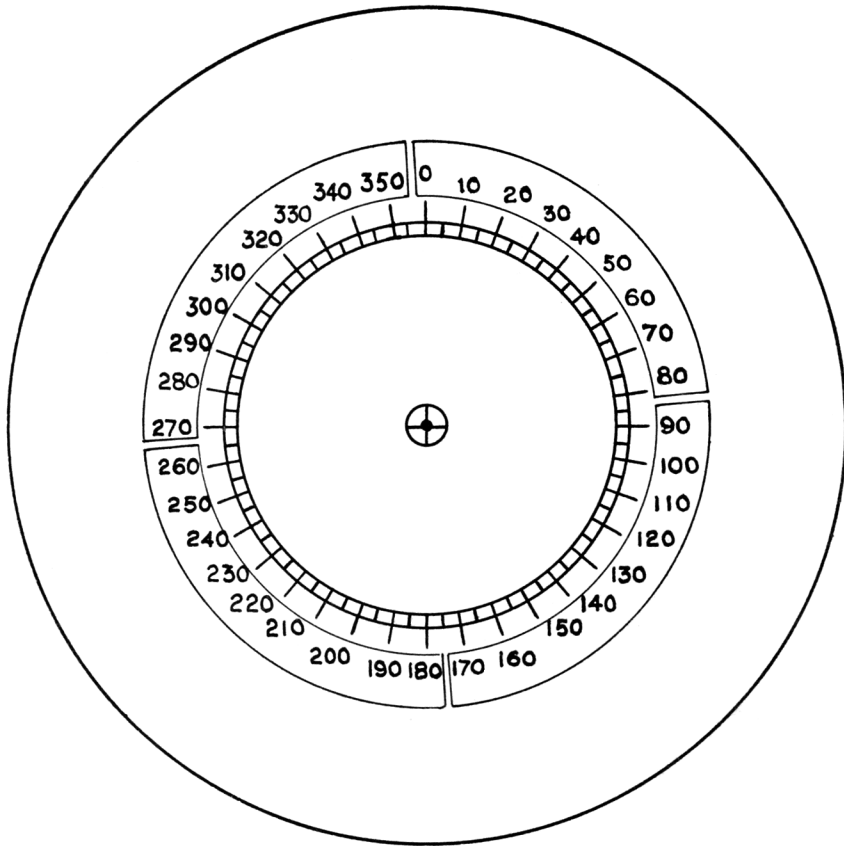


FIG.3.

NOTE:-

THE SCALE SHALL BE CENTRED ON THE MECHANICAL CENTRE OF THE SCREEN.

COLOUR CODE OF SCALE
ALL BLACK

NOT TO BE SCALED

<u>Details of octantal corrections</u>					
(1)	(2)	(3)	(4)	(5)	(6)
Scale Graduation	Angle of Graduation	Scale Graduation	Angle of Graduation	Scale Graduation	Angle of Graduation
000	0				
1	1.14	31	32.62	61	59.23
2	2.28	32	33.54	62	60.17
3	3.42	33	34.45	63	61.12
4	4.56	34	35.35	64	62.08
005	5.70	035	36.25	065	63.04
6	6.83	36	37.14	66	64.01
7	7.96	37	38.03	67	65.00
8	9.09	38	38.91	68	66.00
9	10.21	39	39.79	69	67.01
010	11.32	040	40.66	070	68.02
11	12.42	41	41.53	71	69.05
12	13.51	42	42.39	72	70.08
13	14.60	43	43.26	73	71.12
14	15.69	44	44.13	74	72.18
015	16.76	045	45.00	075	73.24
16	17.82	46	45.87	76	74.31
17	18.88	47	46.74	77	75.40
18	19.92	48	47.61	78	76.49
19	20.95	49	48.47	79	77.58
020	21.98	050	49.34	080	78.68
21	22.99	51	50.21	81	79.79
22	24.00	52	51.09	82	80.91
23	25.00	53	51.97	83	82.04
24	25.99	54	52.86	84	83.17
025	26.96	055	53.75	085	84.30
26	27.92	56	54.65	86	85.44
27	28.88	57	55.55	87	86.58
28	29.83	58	56.46	88	87.72
29	30.77	59	57.38	89	88.86
030	31.70	060	58.30	090	90.00

SPECIFICATION CV.2216 ISSUE 2 dated 6.1.55

AMENDMENT NO.1

Page 1

CONNECTIONS

Against Pin 11

Delete " x' "

Insert " x" "

Against Pin 12

Delete " x" "

Insert " x' "

January, 1957
N.50986.R

T.V.C. Office
for R.A.E.