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' "

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

January, 1957
N.50986.R

VALVE ELECTRONIC **CV2216**

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	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube

TYPE OF DEFLECTION - Electrostatic

BULB - Coated partially internally with graphite

SCREEN - GGN 53; with special markings (See Note 1.)

PROTOTYPE - CV275

MARKING

See K.1001/4.

BASE

B.S.448/ B12D

CONNECTIONS

Pin	Electrode
1	g1
2	k
3	h
4	h
5	a_1
6	a_2
7	NC
8	y"
9	y'
10	a_3
11	x'
12	x"

RATING

(All limiting values are absolute)

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	0.715	
Max. Anode 1 Voltage	(V)	500	
Max. Anode 2 Voltage	(kV)	1.0	
Max. Anode 3 Voltage	(kV)	4.0	
x-Plate Sensitivity	(mm/V)	$\frac{800}{Va3}$	
y-Plate Sensitivity	(mm/V)	$\frac{800}{Va3}$	
TYPICAL OPERATING CONDITIONS			
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	

DIMENSIONS

See Drawing on Page 4. ←

CAPACITANCES (pF)

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

1. 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). ←

Z.8921.K.

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

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)		Min.	Max.		
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	Sensitivity				
	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.									

TESTS (Continued)

CV2216

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)		Min.	Max.		
h	4.0	2.2	Adjust for optimum focus	450	Adjust	Calibration (Angular divergence of scan line from 0°, 90°, 180°, 270° markings)	-	0.25°	100%	
	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%	
	Vertical trace applied.									
k	4.0	2.2	ditto	450	Adjust	Grid Leakage current (μA)	-	3.0	100%	
	Adjust Vg for Ib = 15 μA.									

CV2216

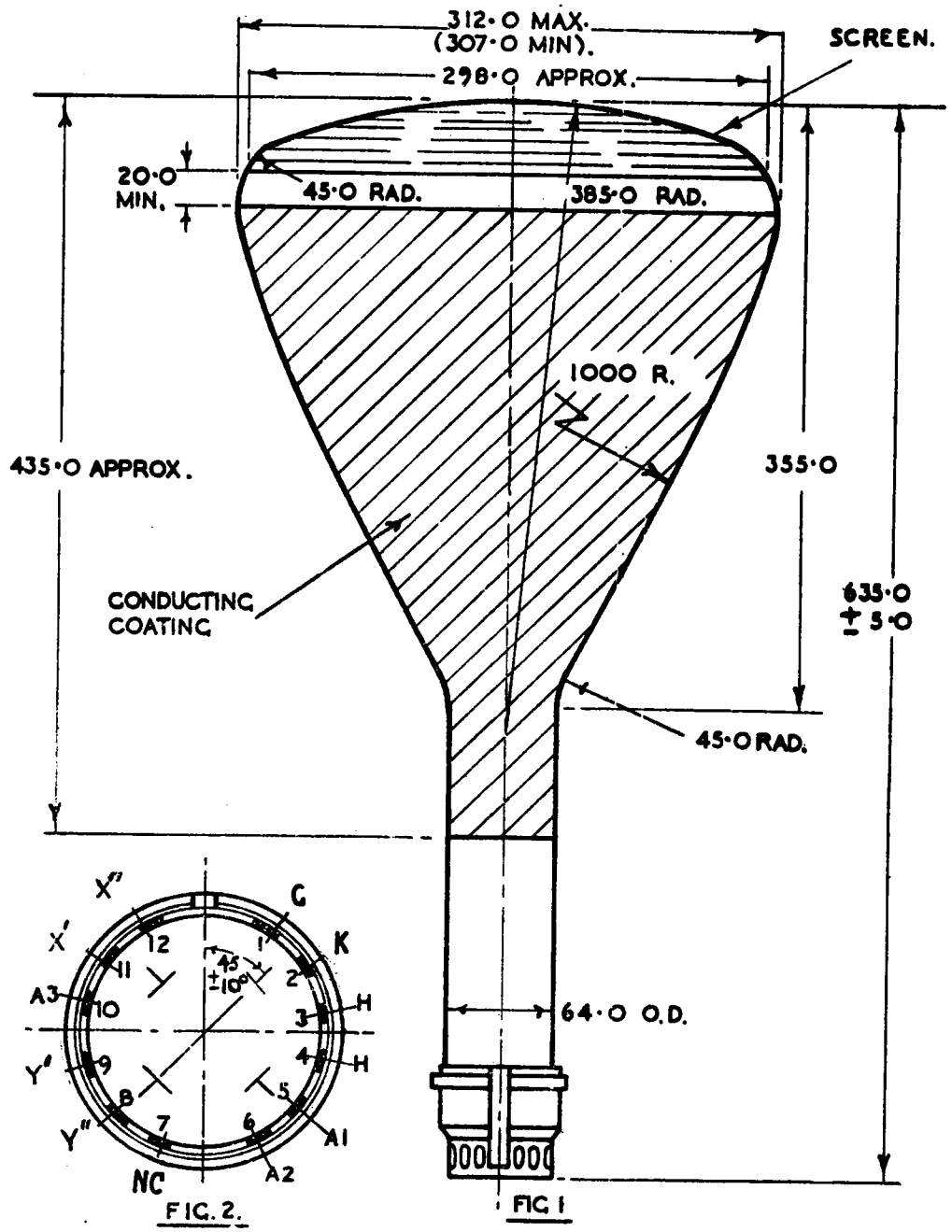

FIG. 2.
VIEW OF FREE END.

FIG 1

ALL. DIMENSIONS IN MMS.

CV2216

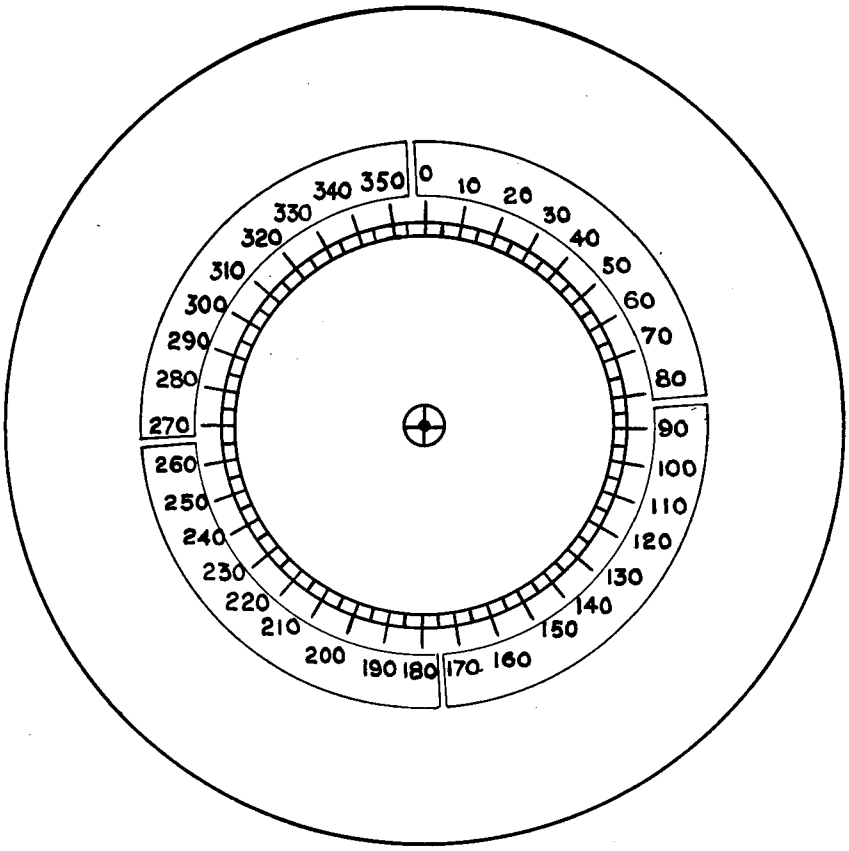

FIG.3.

NOTE:-
THE SCALE SHALL BE CENTRED ON THE MECHANICAL CENTRE OF THE SCREEN.

COLOUR CODE OF SCALE
ALL BLACK

NOT TO BE SCALED

Details of octantal corrections

(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