VALVE ELECTRONIC CV275.

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV275 Issue No.5 dated 13.12.56. To be read in conjunction with K1001, B.S.448 and B.S.1409	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates a change

TYPE OF VALVE:- Cathode Ray Tube.
TYPE OF DEFLECTION:- Electrostatic.
TYPE OF FOCUS:- Electrostatic.
BULB:- Internally coated with conductive coating.
CATHODE:- Indirectly heated.
SCREEN:- GGN
PROTOTYPE:- V1042

MARKING
See K1001/4

BASE
B.S.448/B12D

RATINGS

Heater Voltage	(V)	4.0
Heater Current	(A)	0.715
Max. First Anode Voltage	(V)	500
Max. Second Anode Voltage	(kV)	1.0
Max. Third Anode Voltage	(kV)	4.0
x-Plate Sensitivity	(mm/V)	800/Va3
y-Plate Sensitivity	(mm/V)	800/Va3

TYPICAL OPERATING CONDITIONS

First Anode Voltage	(V)	450
Second Anode Voltage	(V)	450
Third Anode Voltage	(kV)	2.2

CAPACITANCES (pF)

xS to xP	5.1
xS to all other electrodes	15.2
xP to all other electrodes	15.6
yF to yA	4.8
yF to all other electrodes	14.9
yA to all other electrodes	15.6
xS + xP to yF + yA	2.9
Grid to all other electrodes	9.8

CONNECTIONS

Pin	Electrode
1	g
2	k
3	h
4	h
5	a1
6	a2
7	NC
8	yA
9	yF
10	a3
11	xS
12	xP

DIMENSIONS
See drawing on Page 4

NOTE

The screen shall bear the calibration markings shown on page 5. These markings may be made by any method approved by the Specifying Authority. At Type Approval, the durability of the markings will be determined by appropriate mechanical and climatic tests. ←

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions					Test	Limits		No. Tested
	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	450	Adjusted	i. Line Width (mm)	-	1.5	100%
						ii. Va2 (V)	385	515	100%
	Adjust Va2 for optimum focus of a line trace 6" long. The line width shall be measured at the extremities of the trace for various trace orientations 45° apart. The measurements shall be made with an approved microscope and with Vg adjusted to make the microscope scale graduations clearly visible.								
c	4.0	2.2	As in Test 'b'	450	Adjust to cut-off I_b	Cut-off Vg (V)	-30	-90	100%
d	4.0	2.2	Ditto	450	Any convenient value	Deflection Sensitivities			
	Suitable deflection voltages applied to give 5" line deflection.					1. Less sensitive pair (mm/V)	735/Va3	865/Va3	100%
						2. Amount by which the more sensitive pair of plates may differ from 1.	-	6%	100%
e	4.0	2.2	Ditto	450	Ditto	Angle between x axis (P and S) and y axis (F and A).	89°	91°	100%
	Deflection voltages applied to x and y plates successively, the pair of plates not in use being connected to a3.								
f	4.0	2.2	Ditto	450	Ditto	Deviation of the spot from the mechanical centre of the screen (mm)	-	12	100%
g	4.0	2.2	Ditto	450	Ditto	Deviation of bearings from calculated values.	-	1°	100%
	Deflection voltages calculated to give bearings at every 22.5° are applied simultaneously to x and y plates. Bearings to be checked if trace is non-linear by laying cursor along the straight part of the scan.								

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TESTS (cont'd)

	Test Conditions					Test	Limits		No.	
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)		Min.	Max.	Tested	Note
h	4.0	2.2	Ditto	450	Ditto	Calibration Divergence of x and y traces from markings P.S. and F.A.	-	0.25°	100%	
	Deflection voltages applied successively to x and y plates, the plates not in use being connected to a3.									
j	4.0	2.2	As in test 'b'	450	Any convenient value	Angle between F and A trace and diameter of the base through the centre of the key	35°	55°	100%	
k	4.0	2.2	Ditto	450	Adjusted to give Ib= 15 /uA	Grid Insulation Grid Leakage current (/uA)	-	3	100%	
l	See K1001/10					Climatic	-	-	2% or 1	1

Note

1. This test shall be done by the Type Approving Authority on samples taken at regular intervals during the production.

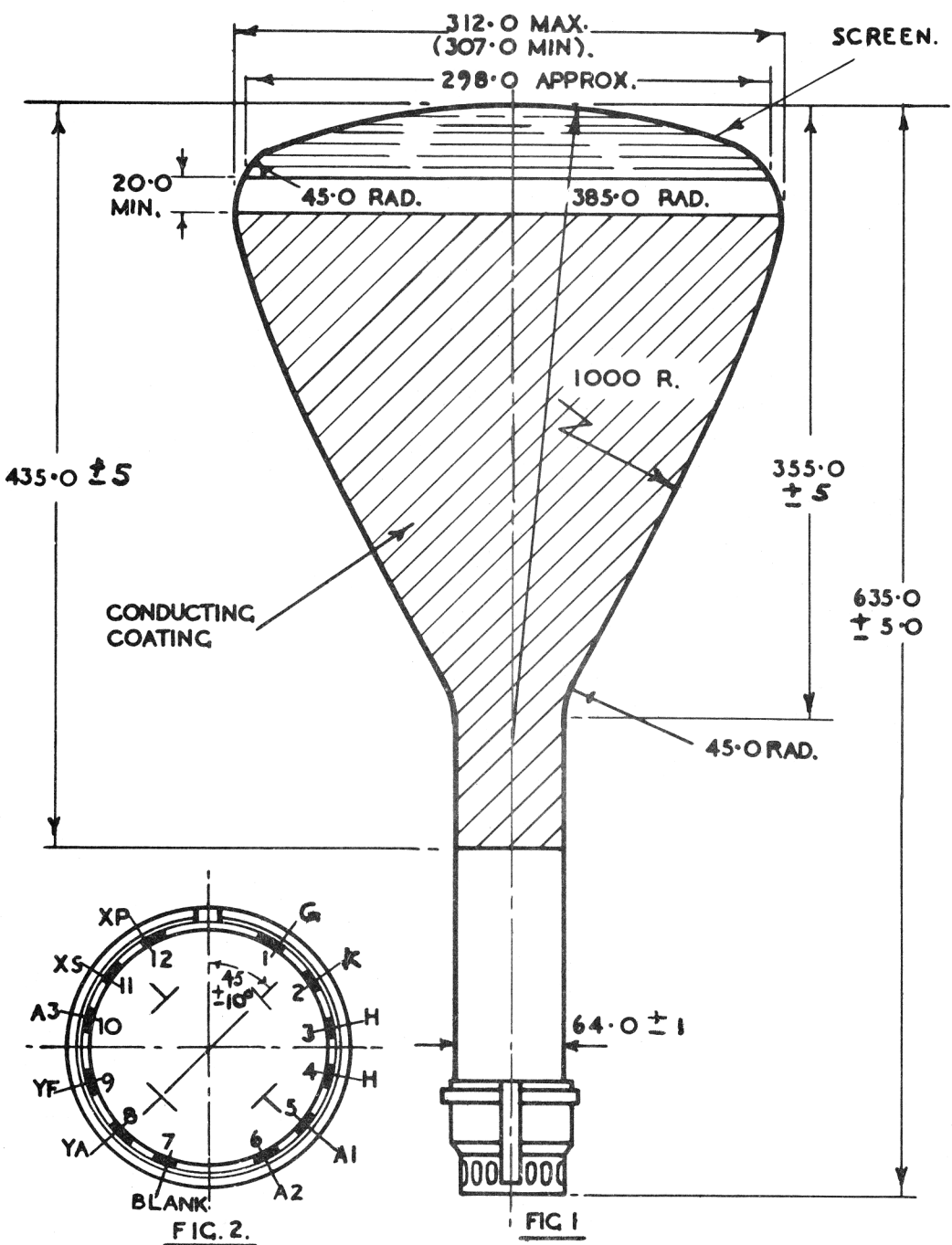

FIG 1

FIG. 2.

VIEW OF FREE END.

ALL DIMENSIONS IN MMS.

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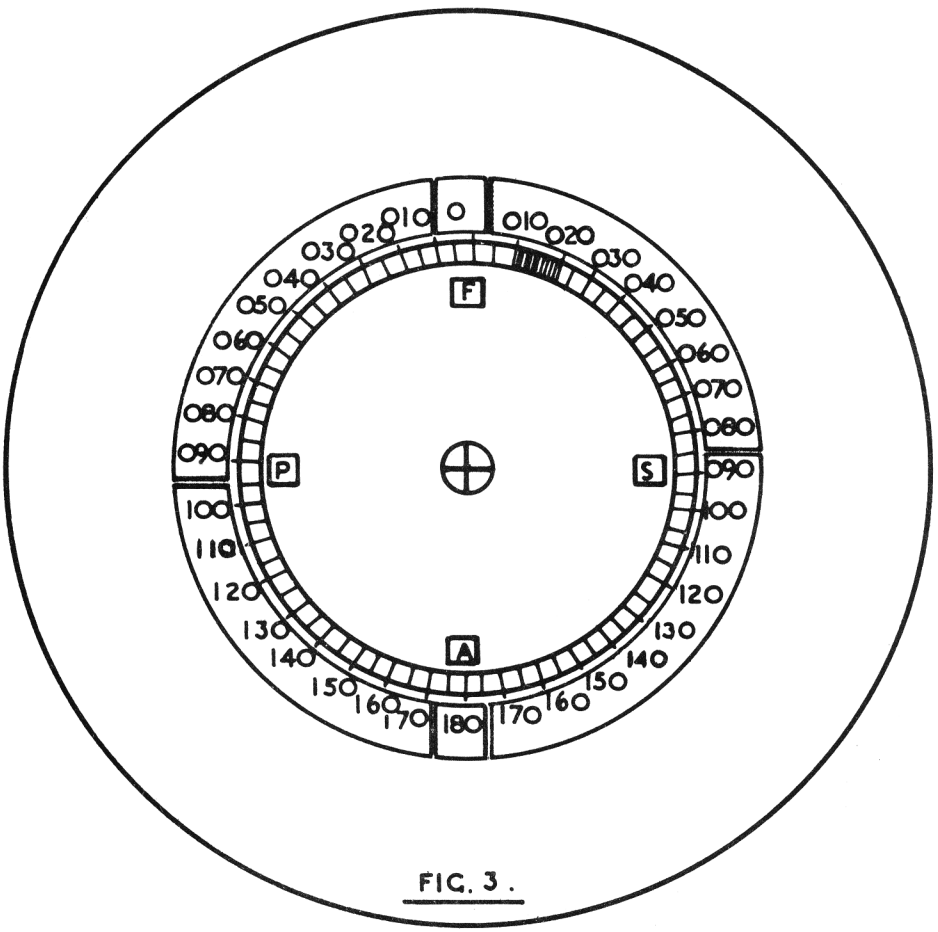

FIG. 3.

NOTES:-

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

2. COLOUR CODE OF SCALE.
   - BLACK 000 - 180
   - RED (PORT SIDE).
   - GREEN (STARBOARD SIDE).

⊕ [F] [A] DEGREE SCALE.
[P] FIGURES 010 — 170
[S] FIGURES 010 — 170