VALVE ELECTRONIC CV966

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV966 Issue No. 4.
Dated : 23. 3. 54.
To be read in conjunction with K1001.

SECURITY	
Specification	Valve
Unclassified	Unclassified

→ Indicates a change

TYPE OF VALVE :- Cathode Ray Tube.

TYPE OF DEFLECTION :- Electrostatic, suitable for asymmetrical or symmetrical voltages.

BULB :- Internally coated with conductive coating.

SCREEN :- BY8 (See Note A).

PROTOTYPE :- ACR13 with AG screen and modified test limits.

MARKING

See K1001/4.

Additional Marking

Serial No. .....

BASE

B12D

Pin	Electrode
1	Grid
2	Cathode
3	Heater
4	Heater
5	A1
6	A2
7	Coating (See Note 1)
8	Y2
9	X2
10	A3
11	X1
12	Y1

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Max. Third Anode Voltage	(kV)	6.0	
Max. First Anode Voltage	(kV)	2.5	
Sensitivity X Plates	(mm/V)	620 Va3	
Sensitivity Y Plates	(mm/V)	1160 Va3	

Typical Working Conditions		
Third Anode Voltage	(kV)	5.0
First Anode Voltage	(kV)	2.0
Second Anode Voltage	(V)	800

DIMENSIONS

See drawing page 4.

NOTES

A. It may be necessary to specify, for each manufacturer individually, a permissible working range of screen thickness, in which case this information will be sent independently of the specification.

B. The length of the graphite coating is to be sufficient to ensure satisfactory operation of the tube.

Z.5710.R.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (kV)		Min.	Max.		
a	See K1001/5A.13.				Capacitances (pF)				
					i. Each X or Y plate to all other electrodes.	-	25	6 per week	1
					ii. Grid to all other electrodes.	-	25		
					iii. Each X to each Y plate.	-	2.5		
b	4.0	0	0	0	Ih (A)	0.9	1.3	100%	
c	4.0	5.0	Adjust to opt. focus	2.0	Cut-off Negative Vg (V)	-	80	100%	1
	Vg adjusted for cut-off.								
d	4.0	5.0	-do-	2.0	i. Vg (V)	To be at least 2V negative to cathode			
	Vg adjusted to obtain a light output of 0.15 candela on a close raster				ii. Change in value of Vg from Test 'c'. (V)	-	45	100%	2
e	4.0	5.0	-do-	2.0	Line Width				
	With a sine wave time base of frequency 10 Kc/s nom. a line length of 100 mm in X and Y directions successively, the grid will be pulsed positively from cut-off with amplitude equal to the value obtained in test 'd' ii, the nominal values of pulse duration and recurrence being 100 µsecs, and 100 p.p.s. respectively.				i. (mm)	-	0.8	100%	
					ii. Va2 (V)	640	960	100%	

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TESTS (Contd.).

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (kV)		Min.	Max.		
f	4.0	5.0	-do-	2.0	Grid Insulation				
	(a) Vg = -80 Volts.				(a) Leakage Current (μA)	-	16	100%	
	or								
	(b) With recommended method of K1001/5A.3.2. using a 5 megohm resistor.				(b) Increase in Voltmeter reading.	-	100%	100%	
g	4.0	5.0	-do-	2.0	Deflection Sensitivities				
					X Plate (mm/V)	$\frac{540}{Va3}$	$\frac{700}{Va3}$	100%	
					Y Plate (mm/V)	$\frac{1026}{Va3}$	$\frac{1300}{Va3}$		
h	4.0	5.0	-do-	2.0	Deviation of spot from centre of screen. (mm)	-	10	100%	
j	4.0	5.0	-do-	2.0	Useful Screen Area				
					i. On X axis (mm)	±60	-	100%	
					ii. On Y axis (mm)	±40	-		
k	Angles between axes of deflection and diameter of base passing through the spigot to be observed.				i. X axis	80°	100°	100%	
					ii. Y axis	-10°	+10°	100%	
l	Test to be carried out in Test Set 331.				Afterglow (Secs)	8	-	100%	

NOTES

1. In this test, and in all the subsequent tests, the conductive coating on the bulb is to be at A3 potential, that is, pin 7 is to be connected to pin 10.

2. Vg may fall to -1 volt during life.

FIG 1.

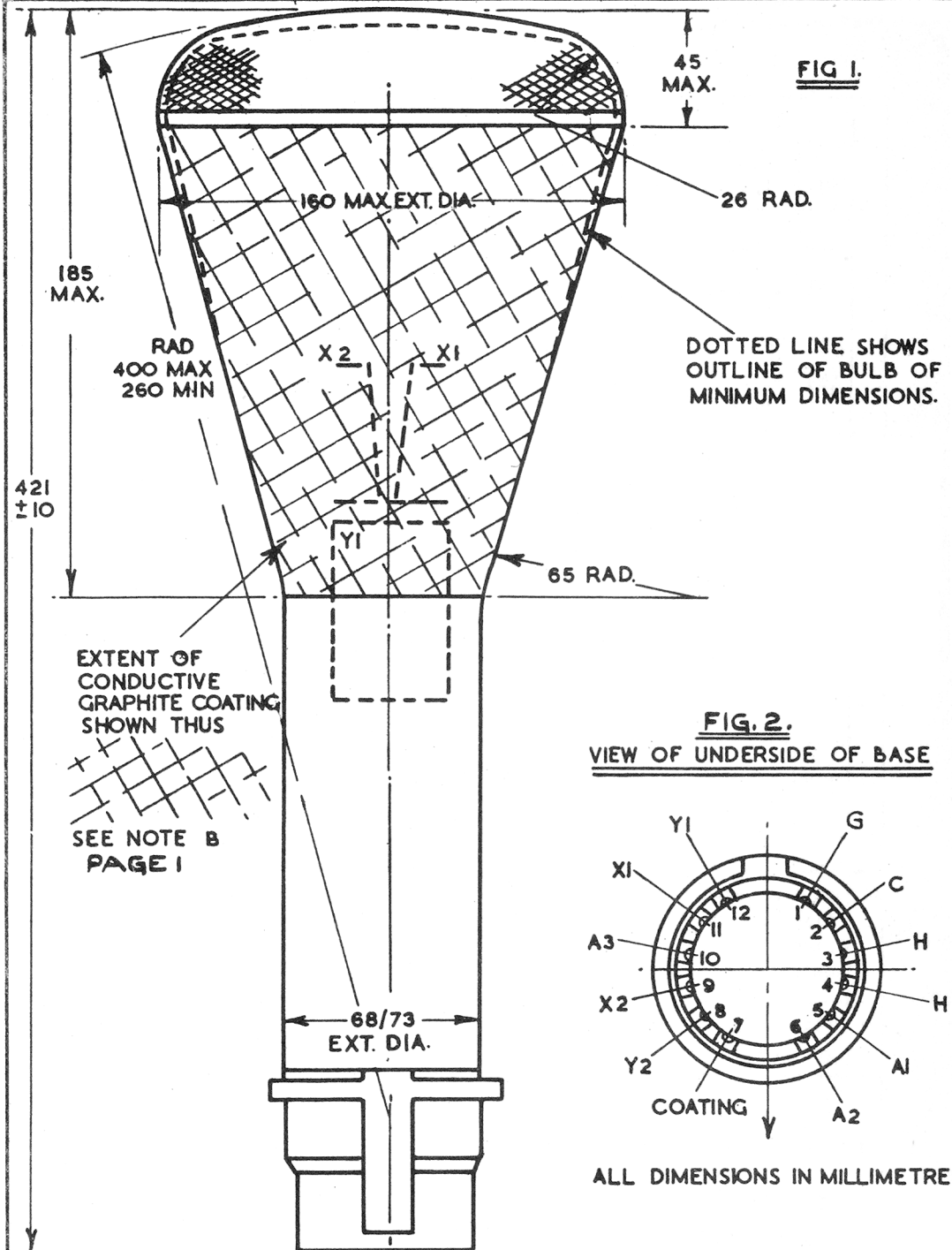

FIG. 2.

VIEW OF UNDERSIDE OF BASE

ALL DIMENSIONS IN MILLIMETRES

NOTE:- VIEWING THE SCREEN OF THE TUBE WITH THE BASE KEY UPPERMOST AS SHOWN IN THE VIEW OF THE UNDERSIDE OF THE BASE A POSITIVE POTENTIAL APPLIED TO CONTACT No. 11(X1) SHALL DEFLECT THE SPOT TO THE LEFT, AND A POSITIVE POTENTIAL APPLIED TO CONTACT No 12(Y1) SHALL DEFLECT THE SPOT UPWARDS.