VALVE ELECTRONIC

CV2332

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV.2332 Issue No. 2 Dated 29th August, 1955. To be read in conjunction with K.1001, B.S.448 and B.S.1409	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates a change

TYPE OF VALVE: Cathode Ray Tube, Double Gun Type.
TYPE OF DEFLECTION: Electrostatic.
TYPE OF FOCUS: Electrostatic
BULB: Glass, Internally coated with conductive coating.
FACE DIAMETER: Six inches.
SCREEN: BY8
PROTOTYPE: VCRX.359

MARKING
See K1001/4

BASES
B.S.448/B12D/B8-0

RATING (for each gun)

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Max. Third Anode Voltage	(kV)	4.0	A
Max. Second Anode Voltage	(kV)	1.3	A
Max. First Anode Voltage	(kV)	2.0	A
X-Plate Sensitivity	(mm/V)	630 Va3	
Y-Plate Sensitivity	(mm/V)	525 Va3	

CONNECTIONS B12D

Pin	Electrode	
1	g)	
2	k)	
3	a2)	
4	a1)	Gun 2
5	x1)	
6	x2)	
7	g)	
8	k)	
9	a2)	Gun 1
10	a1)	
11	x1)	
12	x2)	

NOTE

A. Absolute Maximum Value

CONNECTIONS B8-0

Pin	Electrode	
1	NC	
2	h)	Gun 2
3	h)	
4	NC	
5	NC	
6	h)	Gun 1
7	h)	
8	NC	

SIDE CONTACTS CT2

SC1) SC2) y-Plates of Gun 2

SC3) SC4) y-Plates of Gun 1

SC5 a3

DIMENSIONS

See drawing on page 6.

CV2332

TESTS

To be performed in addition to those applicable in K.1001.
Tests (a) to (h) are to be done using each gun separately.

	Test Conditions					Test	Limits		No. Tested
	(Vh) (V)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)		Min.	Max.	
a	See K.1001/5A/13					Capacitances (pF) Grid to all other electrodes Cathode to all other electrodes Each X-plate to all other electrodes Each Y-plate to all other electrodes	 - - - -	 25 30 20 12	5%
b	4.0	0	0	0	0	Ih (A)	0.95	1.2	100%
c	4.0	4.0	Adjust for opt. focus	2.0	Adjust to cut-off	Cut-Off Negative Vg. (V)	60	110	100%
d	4.0	4.0	Adjust for opt. focus	2.0	Adjust	Light Output i. Vg (V)	At least 1V negative to cathode		
	Vg adjusted to give a light output of 0.05 candela, measured through a C2 filter, from a close raster of convenient size.					ii. Change in value of Vg from value in test (c) (V)	-	40	100%
e	4.0	4.0	Adjust for opt. focus	2.0	Adjust	i. Line Width (mm)	-	0.5	100%
	Deflection With a sine wave time-base of 10 kc/s nom. and a line length of 120 mm, in X and Y directions successively, the line width shall be measured at the centre of the trace.					ii. Va2 (V)	800	1300	100%
	Grid. The grid shall be pulsed positively from cut-off with amplitude equal to the value obtained in test (d)(ii). The nominal value of pulse duration shall be 100 microsecs. and of recurrence rate 100 p.p.s.								
f	4.0	4.0	Any convenient value	2.0	-105	Grid Insulation i. Leakage Current(μA)	-	10.5	100%
	or:- With recommended method of K.1001/5A.3.2 using a 10 megohm resistor.					ii. Increase in Voltmeter reading	-	100%	100%

TESTS (Contd.)

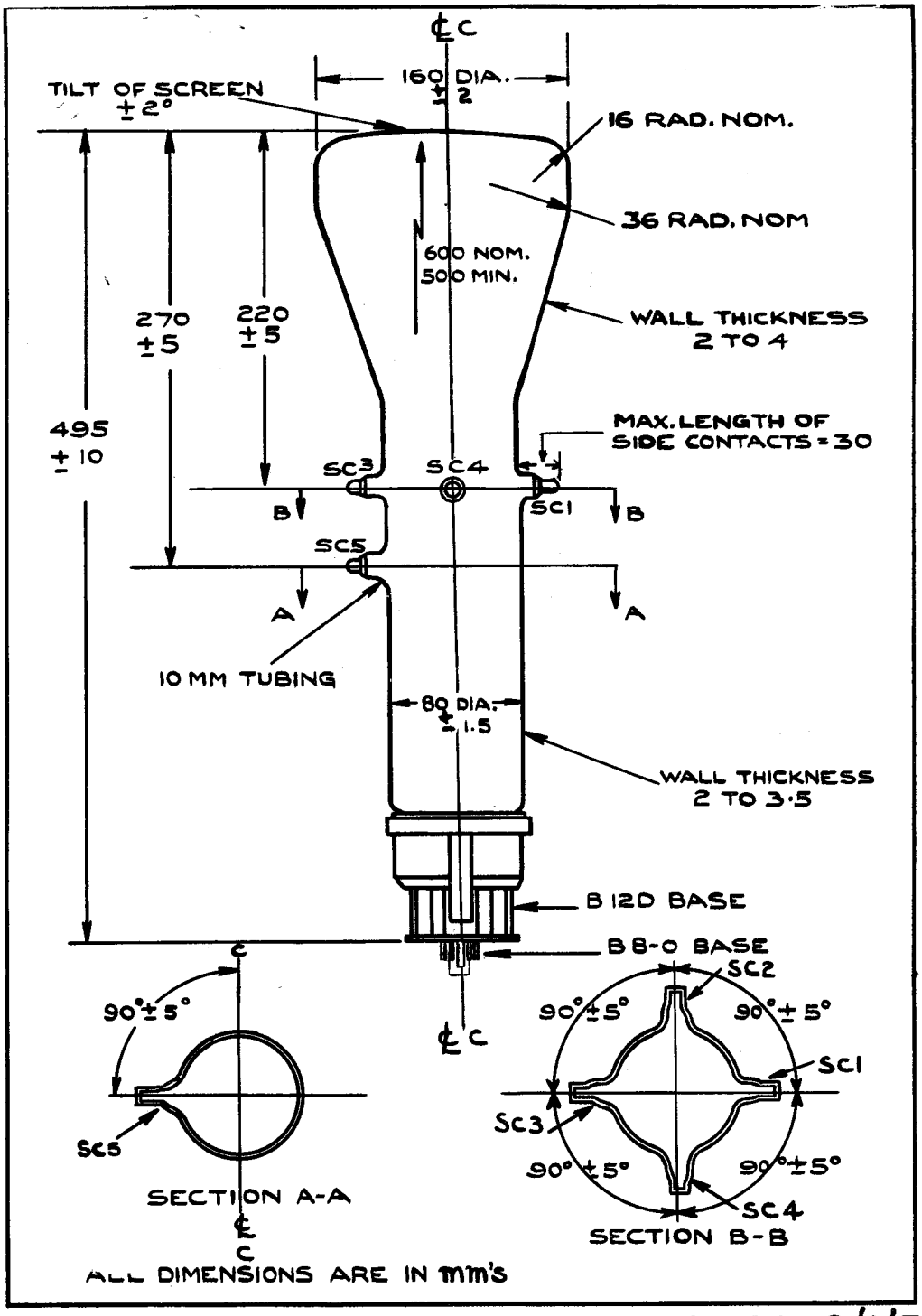
CV2332

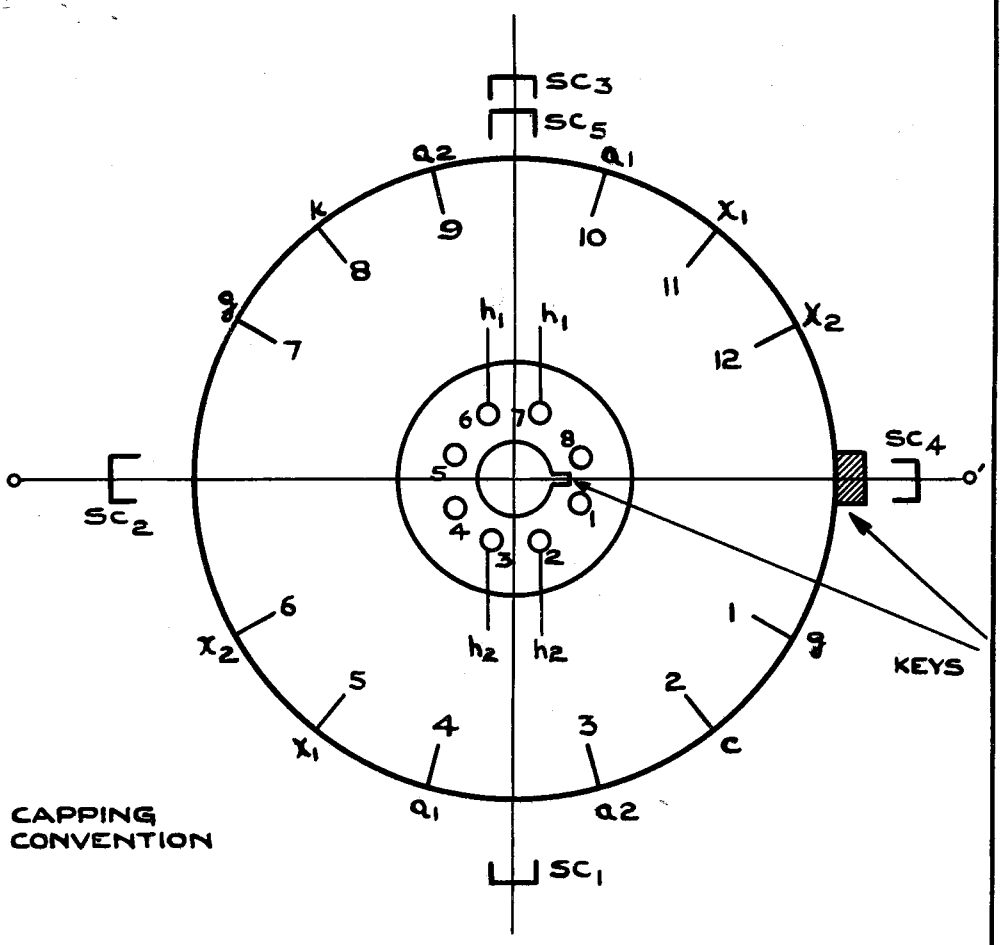
	Test Conditions (Vh) (V)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)	Test	Limits Min.	Limits Max.	No. Tested
g	4.0	-	-	-	-	Heater-Cathode Insulation Leakage Current (μA)	-	150	100%
	A voltage of 150V shall be applied between heater and cathode. (See K1001/5A.3.3.)								
h	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Deflection Sensitivities X-Plate Sensitivity (mm/V) Y-Plate Sensitivity (mm/V)	560/ Va3 448/ Va3	700/ Va3 600/ Va3	100%
j	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Spot Displacement Deviation of spot from centre of screen (mm)	-	20	100%
k	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Useful Screen Area Diameter (mm)	120	-	100%
l	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Orientation of Deflection Axes i. Orientation of X axes of deflection for the two guns relative to line 0-0' on drawing, page 6. ii. Angle between X and Y axes of deflection for each gun.	80° 88.5°	100° 91.5°	100% 100% ←
m	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Tilt Between Traces The angle between the X axes of deflection for the two guns.	-	2½°	100%
n	4.0	4.0	Adjust for opt. focus. Any convenient value	2.0	Any convenient value	Persistence (Secs.)	10	-	100%
	To be performed in Test Set 331								

TESTS (Contd.)

	Test Conditions					Test	Limits		No. Tested
	(Vh) (V)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)		Min.	Max.	
o	4.0	4.0	Any convenient value	2.0	Any convenient value	Interaction Between the Guns Deflection (by interaction) of the spot produced by Gun 2. (mm)	-	3.6	100%
	A 60 kc/s sinusoidal voltage, sufficient to give a 5" deflection shall be applied simultaneously to an X plate and a Y plate of Gun 1. Each of the deflector plates of Gun 2 shall be connected to earth, i.e. to A3, through a 1 Megohm resistor.								

CV2332


℄C
160 DIA. ±2
TILT OF SCREEN ±2°
16 RAD. NOM.
36 RAD. NOM
600 NOM.
500 MIN.
WALL THICKNESS 2 TO 4
270 ±5
220 ±5
495 ±10
MAX. LENGTH OF SIDE CONTACTS = 30
SC3
SC4
SC1
B
B
SC5
A
A
10 MM TUBING
80 DIA. ±1.5
WALL THICKNESS 2 TO 3·5
B 12D BASE
B 8-0 BASE
℄C
90°±5°
SC5
SECTION A-A
℄C
SC2
90°±5°
90°±5°
SC1
SC3
90°±5°
90°±5°
SC4
SECTION B-B
ALL DIMENSIONS ARE IN mm's



CAPPING CONVENTION

WHEN VIEWING THE TUBE FACE WITH KEYS OF THE TUBE AT 9·0'CLOCK THEN A POSITIVE VOLTAGE APPLIED TO SC3 SHALL DEFLECT THE BEAM OF GUN 1 UPWARDS.

A POSITIVE VOLTAGE APPLIED TO CONTACT SC2 SHALL DEFLECT THE BEAM OF GUN 2 UPWARDS.

A POSITIVE VOLTAGE APPLIED TO PIN 11 SHALL DEFLECT THE BEAM OF GUN 1 TO THE RIGHT.

A POSITIVE VOLTAGE APPLIED TO PIN 5 SHALL DEFLECT THE BEAM OF GUN 2 TO THE LEFT.