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

NOTE

A. Absolute Maximum Value

CONNECTIONS B8-0

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

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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.)

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	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			
	A voltage of 150V shall be applied between heater and cathode. (See K1001/5A.3.3.)					Leakage Current (μA)	-	150	100%
h	4.0	4.0	Adjust for opt. focus	2.0	Any convenient value	Deflection Sensitivities			
						X-Plate Sensitivity (mm/V)	560/Va3	700/Va3	100%
						Y-Plate Sensitivity (mm/V)	448/Va3	600/Va3	
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.	80°	100°	100%
						ii. Angle between X and Y axes of deflection for each gun.	88.5°	91.5°	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.	-	$2\frac{1}{2}$°	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.								

SUPERSEDED BY PAGE 4 DATED 10th Jan 1966

	Test Conditions					Test	Limits		No Tested
	VL (V)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)		Min	Max	
o	4.0	2.0	Any convenient value	1.0	Any convenient value	Interaction between deflection systems			
	A 10 kc/s sawtooth voltage sufficient to give a deflection of 120 mm shall be applied symmetrically to the Y plates of each gun in turn. Each of the remaining deflector plates shall be connected to A3 through a 1 Megohm resistor.					Deflection in any direction (by interaction) of the spot produced by the gun to which the signal is not applied.	-	2.0	100%

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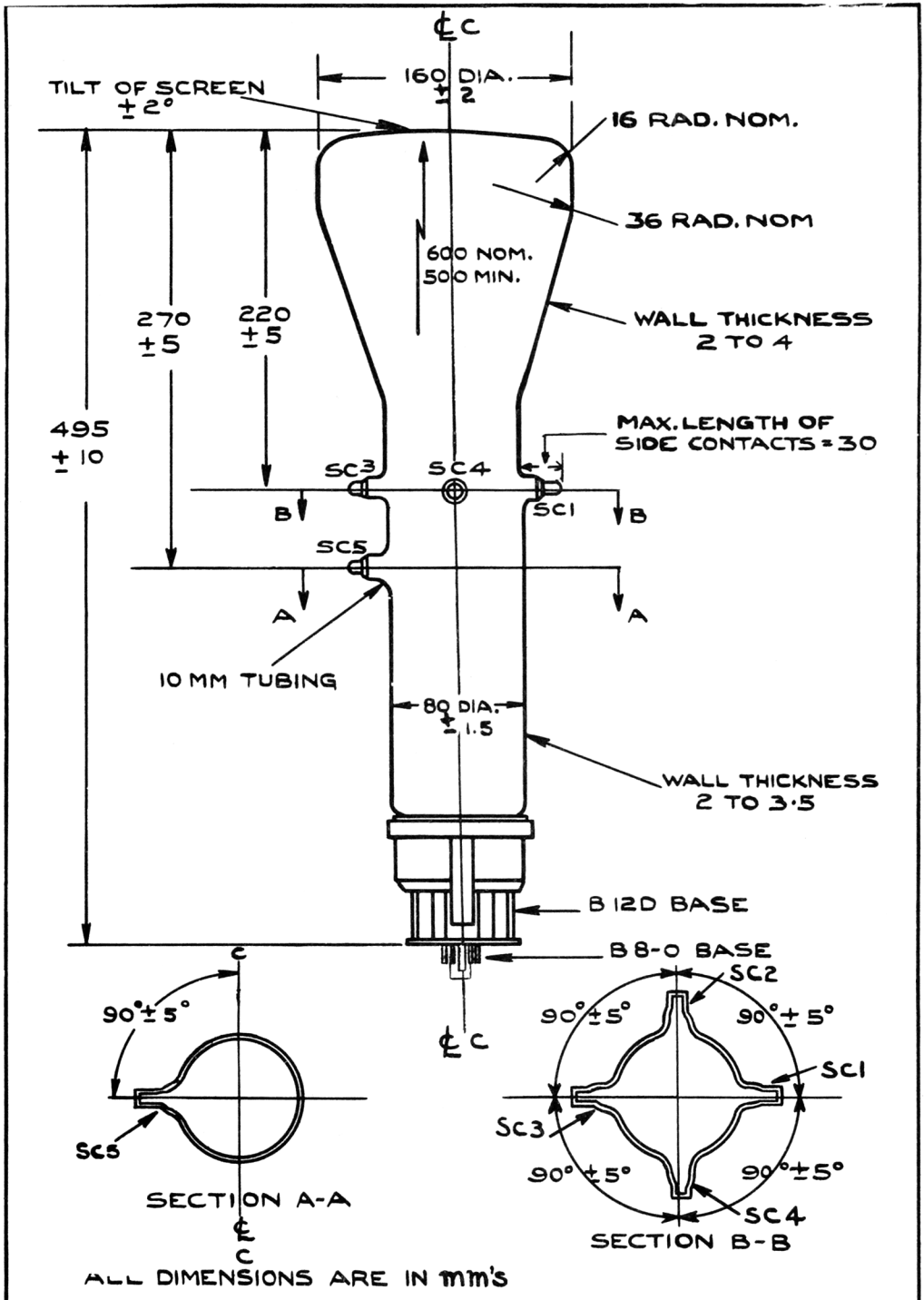
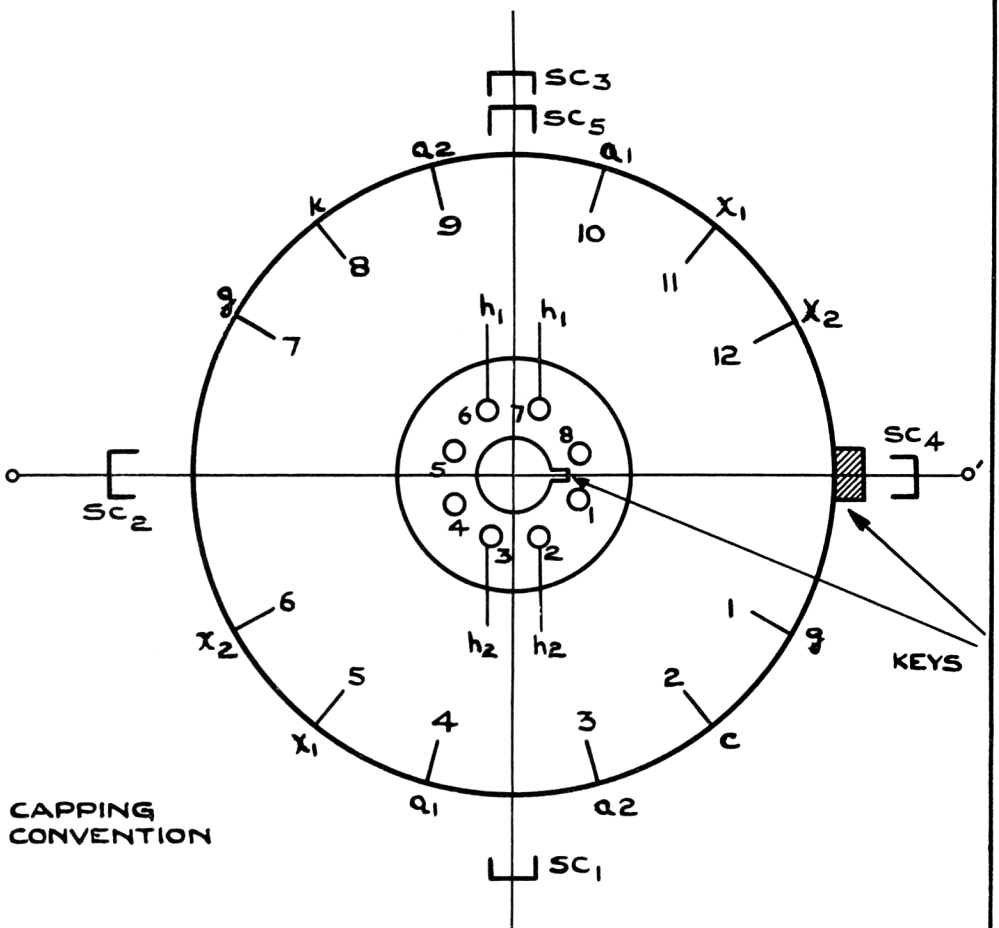

℄C
160 DIA. ±2
TILT OF SCREEN ±2°
16 RAD. NOM.
36 RAD. NOM
600 NOM.
500 MIN.
WALL THICKNESS 2 TO 4
270 ±5
220 ±5
495 ±10
MAX. LENGTH OF SIDE CONTACTS = 30
SC3
SC4
SC1
SC5
B
A
10 MM TUBING
80 DIA. ±1.5
WALL THICKNESS 2 TO 3.5
B 12D BASE
B 8-0 BASE
90° ±5°
SC5
SECTION A-A
SC2
SC1
SC3
SC4
SECTION B-B
ALL 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.

ELECTRONIC VALVE SPECIFICATIONS
SPECIFICATION AD/CV2332 ISSUE 2 DATED 29.8.55
AMENDMENT NO. 1

Cancel but do not remove Page 4 and insert new Page 4 dated 10th January, 1966 herewith.

January, 1966.
(305053)

T.V.C. for A.S.W.E.

VAAS 6/1/66