ADMIRALTY SIGNAL ESTABLISHMENT

VALVE ELECTRONIC

CV950

(NC1)

Specification AD/CV950/Issue 4.
Dated 16.9.47.
To be read in conjunction with K1003.

SECURITY	
Specn.	Valve
Restricted	Unclassified

→ Indicates a change

TYPE OF VALVE:- Cathode ray tube.

TYPE OF DEFLECTION AND FOCUS:- Electrostatic.

BULB:- Internally coated with conductive coating.

SCREEN:- To give a green trace. Negligible after-glow.

PROTOTYPE:- 4053A (See Note A).

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Max. Va3	(V)	800	B
X-plate sensitivity	(mm/V)	$\frac{100}{Va3}$	
Y-plate sensitivity	(mm/V)	$\frac{90}{Va3}$	
Desirable spot size	(mm)	1.0	
→ Max. line width	(mm)	1.4	C

TYPICAL OPERATING CONDITIONS

Va3	(V)	800
Va2	(V)	135
Va1	(V)	800
Ib	(μA)	3.0

MARKING

See K1003/7.

BASE

British Standard 9-pin.

Pin	Electrode
1	X1
2	Y1
3	A2
4	H and C
5	H
6	Modulator
7	A1 and A3
8	Y2
9	X2

DIMENSIONS

See Drawing, page 3.

PACKAGING

See K1005.

NOTES

→ A. CV950 is obsolescent and should not be used in any new equipment. CV967 is the same tube, but with an improved focus quality and satisfies all the requirement of CV950.

B. The tube shall be of the three anode construction.

→ C. Focus Quality measured as follows:- With a focussed raster of 2.5 x 2.5 cms set to a brightness of 1.0 E.F.C. at Va3 = 800 V, the drive positive from V blackout is noted (= x) and should be not more positive than -1.0 V.

Then with Va3 = 800 V, and the beam just blacked out, a nominally square wave positive pulse of width 100 μsecs and repetition freq. 100 c.p.s. applied between cathode and modulator, with a peak value = x, and with the high freq. time base set to produce a line 2.5 cms long in X and Y axes successively (with no adjustment of focus between measurements in the two axes), the line width must not be greater than 1.4 mm in the centre.

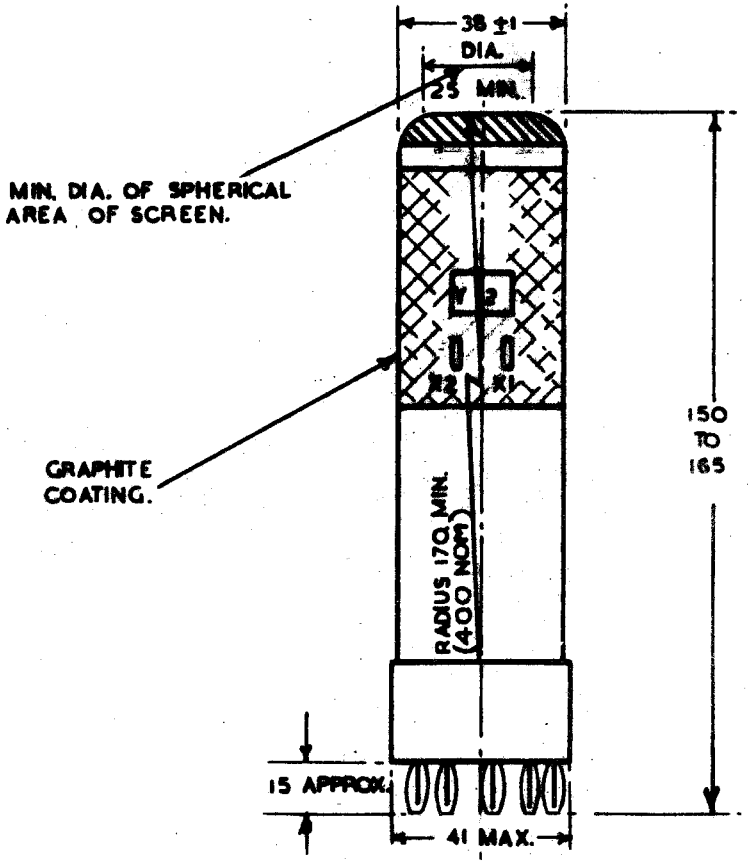
TESTS

To be performed in addition to those applicable in K1003

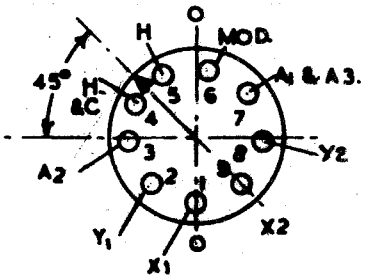
	Test Conditions					Test	Limits		No. Tested
	Vh (V)	Va3 (V)	Va2 (V)	Va1 (V)	Vmod (V)		Min.	Max.	
Deflection voltages shall be applied symmetrically in all cases									
a						Capacitances (pF.) i. Each X- or each Y- plate to all other electrodes. ii. Modulator electrode to all other electrodes. iii. One X- to one Y- plate.	 - - -	 15 20 5	Type Approval
b	4.0					Ih (A)	0.95	1.25	5% (10)
c	4.0	800	Adjusted	800	Adjusted	i. Line width	Not to be greater than that of standard tube		100%
	See K1003/5.7.					ii. Va2 (V)	50	175	5% (10)
						iii. Vmod (V)	To be at least 2 V. -ve to C.		100%
d	4.0	800	As test 'c'	800	Adjusted	Vmod for cut-off (V)	-7	-20	100%
e	4.0	800	As test 'c'	800	Any convenient value	i. X-plate sensitivity (mm/V) ii. Y-plate sensitivity (mm/V)	$\frac{80}{Va3}$ $\frac{72}{Va3}$	$\frac{120}{Va3}$ $\frac{108}{Va3}$	5% (10)
f	4.0	800	As test 'c'	800	Any convenient value	Deviation of spot from centre of screen	-	5	100%
	See K1003/5.10.								
g	4.0	800	As test 'c'	800	Any convenient value	Minimum useful screen diameter (mm)	30	-	100%
	Deflection to cover the stated circle concentric with the screen.								
h	4.0	800	As test 'c'	800	Any convenient value	Angle between X- and Y- axes of deflection	85°	95°	100%
j	4.0	800	As test 'c'	800	Any convenient value	Orientation of Y-axis of deflection	-	10°	100%
.	Angle of Y-axis of deflection measured relative to Axis 00 on Fig. 1.								

OUTLINE DIMENSIONS.

CV950



VIEW OF UNDERSIDE OF BASE SHOWING CONNECTIONS.



NOTES:-

1. VIEWING THE SCREEN OF THE TUBE WITH THE BASE ORIENTATED AS SHOWN ABOVE, A POSITIVE POTENTIAL APPLIED TO PIN No.1 (X1) SHALL DEFLECT THE SPOT TO THE LEFT AND A POSITIVE POTENTIAL APPLIED TO PIN No.2 (Y1) SHALL DEFLECT THE SPOT DOWNWARDS.
2. ALL DIMENSIONS ARE IN MILLIMETRES.

CV 950/4/3