ADMIRALTY SIGNAL ESTABLISHMENT

VALVE ELECTRONIC **CV964** (NC16)

Specification AD/CV964/Issue 7. Dated:- 12/6/47. To be read in conjunction with K1003.	SECURITY Specn. Restricted Valve. Unclassified

TYPE OF VALVE:-	Cathode ray tube.
TYPE OF DEFLECTION:-	Electrostatic; symmetrical.
TYPE OF FOCUS:-	Electrostatic.
BULB:-	Glass. Internally coated with conductive coating.
SCREEN:-	GGN35. (Green; Willemite; no appreciable after-glow after 100 milliseconds.)
PROTOTYPE:-	"VCRX22". Tube similar to VCR139A but has better quality focus and focus uniformity.

MARKING
See K1003/7

BASE
12-pin Spigot type.

Pin	Electrode
1	Cathode
2	Modulator
3	Heater
4	Heater
5	2nd Anode (A2)
6	Pin omitted
7	Plate Y2
8	Plate X2
9	3rd Anode (A3) and graphite
10	Plate X1
11	Plate Y1
12	Pin omitted

RATING		Note
Heater Voltage (V)	4.0	
Heater Current (A)	1.1	
Max. 1st and 3rd Anode Voltage (kV)	1.5	
Average Working 2nd Anode Voltage (V)	250	A
Working Beam Current (μA)	3 to 5	

DIMENSIONS
See Fig.1, Page 4.

PACKING
See K1003/8

NOTES

A. At Va3 = 1.5 kV.

B. The design of the tube is to be such that the focus ratio is substantially independent of beam current. This feature will be checked at Type Approval.

TESTS

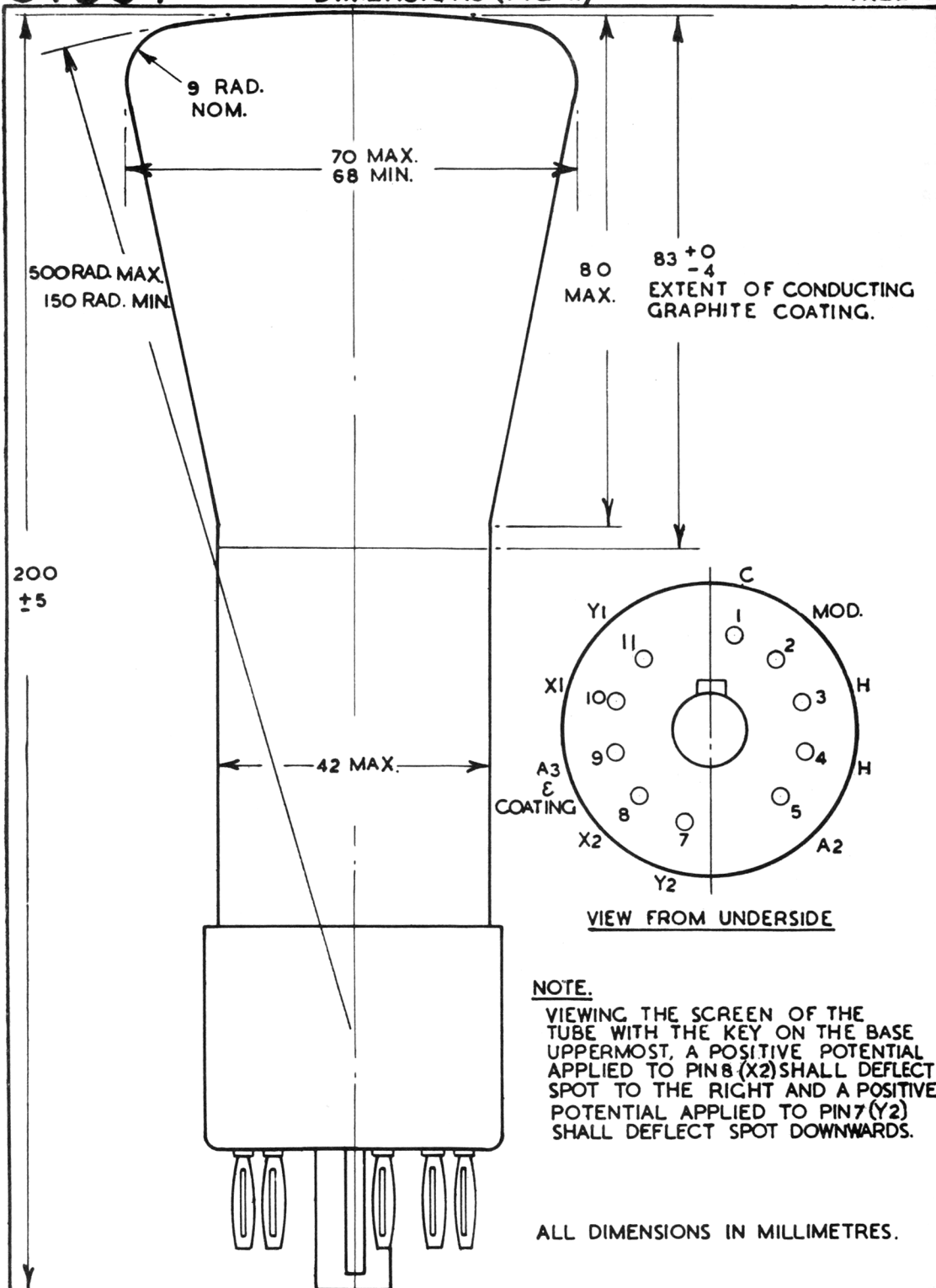
To be performed in addition to those applicable in K1003.

	Test Conditions	Test	Limits Min.	Limits Max.	No. Tested
a		Capacitances (pF.)			
		(i) Each X or Y plate to all other electrodes.	-	15	T.A.
		(ii) Mod. to all other electrodes.	-	20	T.A.
		(iii) Either X-plate to either Y-plate.	-	3	0.5% (5)
	For all tests given below Vh = 4.0 V.				
b		Ih (A)	0.95	1.25	100% or S
c	(i) Va3 = 1.5 kV. or (ii) Va3 = 800 V. See K1003/5.9	V mod. for cut off			
		(i) (V)	-13	-38	100%
		(ii) (V)	-7	-20	
d	(i) Va3 = 1.5 kV. or (ii) Va3 = 800 V. in both cases Vmod = -1 V	I beam			
		(i) (µA)	15	-	100%
		(ii) (µA)	10	-	
e	(i) Va3 = 1.5 kV. or (ii) Va3 = 800 V. Tube operated with an approved raster, or 2 lines at right angles.	Useful screen (mm) diameter.	55	-	100%
f	As test 'e'.	(i) Va2 for optimum focus (V)	150	339	100%
		(ii) Relative focus (V)	80	178	100%
		Over the whole scan area, this shall not be worse than that of a standard tube.			

CV964

TESTS (Contd.)

	Test Conditions	Test	Limits Min.	Limits Max.	No. Tested
g	(i) Va3 = 1.5 kV. or (ii) Va3 = 800V. See K1003/5.4.2.	Modulator electrode insulation (MΩ)	5	-	100%
h	As test 'g'.	X and Y plate sensitivities (mm/V)	$\frac{145}{Va3}$	$\frac{195}{Va3}$	100%
j	As test 'g' See K1003/5.10.	Centring deviation (mm)	-	5	100%
k		Angle between X- and Y-plate axes.	85°	95°	1%
l		Angle between Y-plate axis and base diameter passing thro' centre of base spigot.	-	10°	100%



NOTE.

VIEWING THE SCREEN OF THE TUBE WITH THE KEY ON THE BASE UPPERMOST, A POSITIVE POTENTIAL APPLIED TO PIN 8 (X2) SHALL DEFLECT SPOT TO THE RIGHT AND A POSITIVE POTENTIAL APPLIED TO PIN 7 (Y2) SHALL DEFLECT SPOT DOWNWARDS.

ALL DIMENSIONS IN MILLIMETRES.

E.V.S. AD/CV964 ISSUE 7

AMENDMENT "A"

Page 1. Under "PACKING" delete K1003/8
insert K1005

Page 4. Bulb diameter dimension delete 68 min.
insert 66.4 min.

A.S.E. EXTN. WATERLOOVILLE.
26.8.47

PLB 40146

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AMENDMENT "B"

Page 4. Fig.1. Dimensions.

Neck Diameter.

Amend to read :-

42 mm MAX.

40 mm MIN.

A.S.R.E. Extension,
Waterlooville,
Nr. Portsmouth.

8th July, 1948.