ADMIRALTY SIGNAL ESTABLISHMENT.

CATHODE-RAY-TUBE **NC14**

Specification AD/6576, Issue No.1, Dated 3rd March, 1944.	SECURITY OF TUBE. Non-Secret.	To be read in conjunction with K1003.

TYPE OF DEFLECTION :- Electrostatic, suitable for both symmetrical and assymmetrical operation.

BULB :- Internally coated with conductive coating.

SCREEN :- To give a blue trace.

PROTOTYPE :- VCR97 with different screen.

MARKING

NC14
W6601

BASE

12-side Contact Type.

Contact	Electrode
1	Mod
2	C
3	H
4	H
5	A1
6	A2
7	Coating
8	Y2
9	X2
10	A3
11	X1
12	Y1

See Note C.

DIMENSIONS.

See page 4.

RATING		Note
Heater Voltage (V)	4.0	
Heater Current (A)	1.0	
Maximum final anode voltage (kV)	2.5	
Desirable spot size (mm)	1.0	
X-plate sensitivity (mm/V)	600 / Va3	
Y-plate sensitivity (mm/V)	1140 / Va3	
Typical Operating Conditions.		
Final Anode Voltage (kV)	2.0	
Second Anode Voltage (V)	350	
First Anode Voltage (kV)	2.0	
Beam Current (μA)	20.0	

NOTES

A. The tube shall be adequately free from microphony.

B. The internal conductive coating shall be of such dimensions that it functions effectively but does not obscure the required useful screen area.

C. The tube will normally be operated with A1, A3 and conductive coating tied, and if a manufacturer so desires, any or all of these electrodes may be strapped internally, with the connections omitted from contacts marked :-

"Internal conductive coating," or "A1".

D. The neck diameter may be reduced to a minimum of 58 mm. provided that rubber rings or other approved packing is supplied with the tube to bring the overall diameter within the stated tolerances.

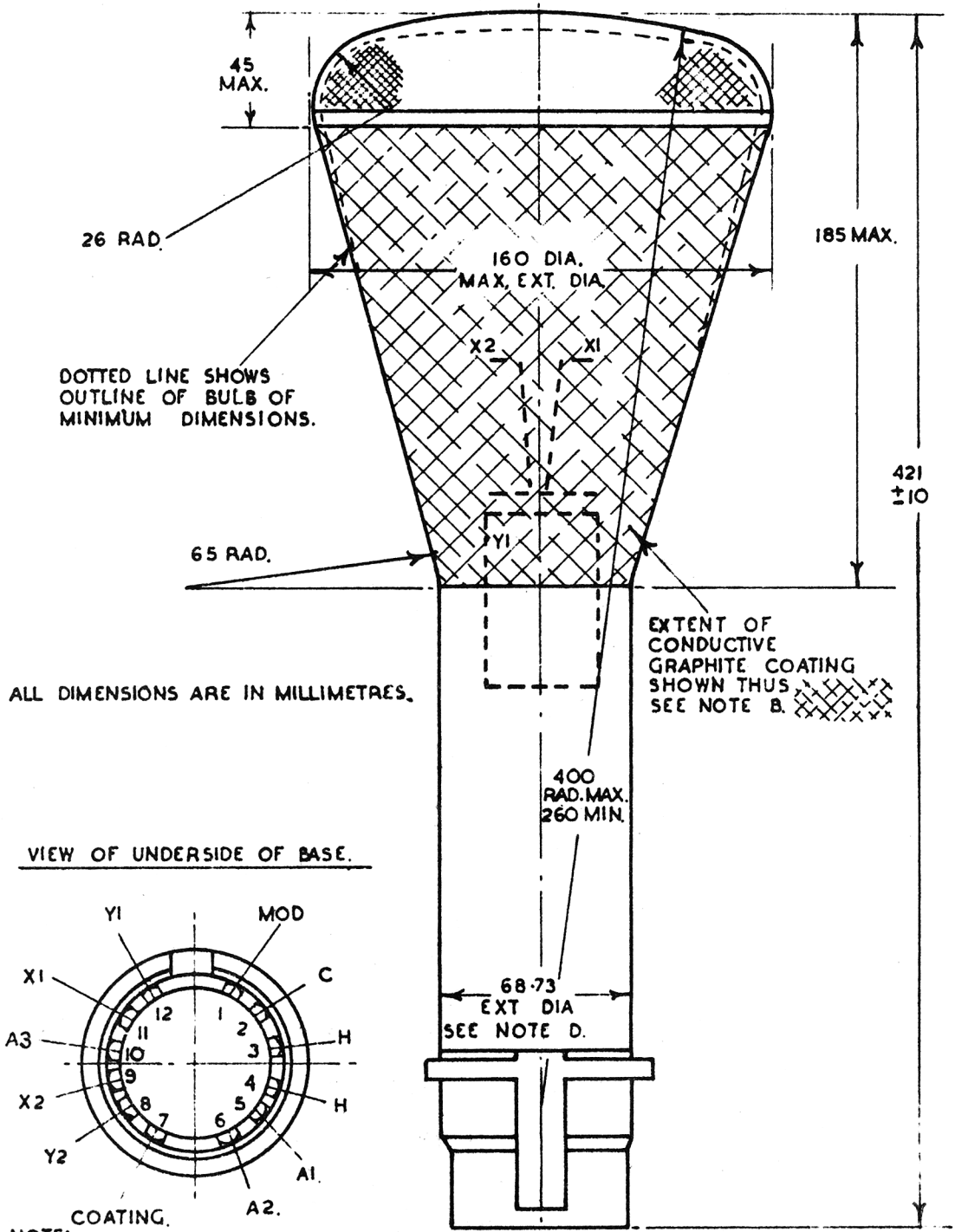
TESTS.

To be performed in addition to those applicable in K1003.

	Test Conditions					Test	Limits		No. Tested
	Vh	Va3 (kV).	Va2	Va1 (kV)	Vg		Min.	Max.	
a						Capacitances (pF)			
						(1) Each X or Y plate to all other electrodes.	-	25	5% (10)
						(2) Grid to all other electrodes.	-	25	5% (10)
						(3) One X to one Y plate.	-	5	5% (10)
b	See K1003/5.4.3. Test Voltage = 100V.					Ih-c (μA).	-	100	100%
c	4.0	0	0	0	0	Ih (A)	0.8	1.3	100%
d	4.0	2.0	Adjusted.	2.0	Adjusted.	(1) The line width shall not be greater than that of a standard tube.			
	Adjust Va2 for optimum focus and Vg to give a spot brilliance equal to that of a standard tube on a scan length of 100 mm. in the X direction and 85 mm. in the Y direction successively.					(2) Va2 (V)	250	450	100%
						(3) Vg (V)	To be at least 5 V -ve to cathode.		100%
e	4.0	2.0	As in test 'd'.	2.0	Adjusted to give cut-off.	(1) Vg (V)	-	-80	100%
						(2) Increase in negative value of Vg from test (d(3)).	-	50	100%
f	4.0	2.0	As in test 'd'.	2.0	-80	(1) Grid leakage current (μA)	-	8	100%
	See K1003/5.4.2. Value of resistor = 10 megohms.					(2) Increase in voltmeter reading.	-	100%	100%

TESTS (Continued).

	Test Conditions					Test	Limits		No. Tested
	Vh	Va3 (kV)	Va2	Va1 (kV)	Vg		Min.	Max.	
g	4.0	2.0	As in test 'd'.	2.0	Any convenient value.	DEFLECTION SENSITIVITIES			
						(1) X plates (mm/V)	$\frac{540}{Va3}$	$\frac{660}{Va3}$	10% (10)
						(2) Y plates (mm/V)	$\frac{1026}{Va3}$	$\frac{1254}{Va3}$	10% (10)
h	4.0	2.0	As in test 'd'.	2.0	Any convenient value.	Deviation of spot from centre of screen (mm).	-	10	100%
j	4.0	2.0	As in test 'd'.	2.0	Any convenient value.	USEFUL SCREEN AREA.			
	Deflection measured from centre of screen.					(1) X deflection (mm).	± 60	-	100%
						(2) Y deflection (mm).	± 40	-	100%
k	4.0	2.0	As in test 'd'.	2.0	Any convenient value.	ORIENTATION OF AXES OF DEFLECTION.			
	Angles measured relative to axis O-O' shewn in drawing on page 4.					(1) X axis	80^0	100^0	100%
						(2) Y axis	-10^0	$+10^0$	100%
l	4.0	2.0	As in test 'd'.	2.0	Any convenient value.	TRAPEZOIDAL DISTORTION.			
						(1) Angle between adjacent sides.	85^0	95^0	100%
						(2) Angle between opposite sides.	175^0	185^0	100%
m	4.0	2.0	As in test 'd'.	2.0	-	LIFE TEST.			
	Normal brightness and continuous spot movement over a raster of area 120 x 80 mm.					Life (hours).	500	-	As required



NOTE:-
VIEWING THE SCREEN OF THE TUBE WITH THE BASE SPIGOT 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