

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

Specification AD/CV1952/Issue 5. Dated : 5. 11. 53. To be read in conjunction with K1001.	<table border="1"> <tr> <th colspan="2">SECURITY</th></tr> <tr> <td>Specification</td><td>Valve</td></tr> <tr> <td>Unclassified</td><td>Unclassified</td></tr> </table>	SECURITY		Specification	Valve	Unclassified	Unclassified
SECURITY							
Specification	Valve						
Unclassified	Unclassified						

→ indicates a change

<u>TYPE OF VALVE</u> : Cathode Ray Tube				<u>MARKING</u>		
<u>TYPE OF DEFLECTION</u> : Magnetic				See K1001/4.		
<u>TYPE OF FOCUS</u> : Magnetic				<u>BASE</u>		
<u>SCREEN</u> : 008 (with aluminium backing). See Note "B"				B7B		
<u>PROTOTYPE</u> : VCRX267						
<u>RATING</u>			Note	Pin	<u>CONNECTIONS</u>	
					Electrode	
Heater Voltage	(V)	6.3			1	Int. Conn.
Heater Current	(A)	0.6			2	A1
					3	G
Max. First Anode Voltage	(V)	600			4	Int. Conn.
Max. Final Anode Voltage	(kV)	15			5	H2
					6	G
Persistence (average)	(secs)	40	7	H1		
Max. Heater-Cathode Voltage	(V)	150	8C	A2 (See Note C).		
				<u>SIDE CONTACT</u>		
				See K1001/A1/D5.1.		
				<u>DIMENSIONS</u>		
				See Drawing, Page 4.		

NOTES

- A. To prevent damage to the screen material and to ensure that maximum life is obtained from cathode and screen, the tube should not be operated with a stationary, or slowly moving, spot. The tube should be run at the minimum useful brightness.
- B. The fluoride screen shall not contain beryllium.
- C. In the central 180 mm. dia. of the tube face there shall not be more than 15 screen blemishes or bubbles up to 1 mm. dia. (Neglect all blemishes and bubbles below  $\frac{1}{2}$  mm. dia.). There shall be no bubble more than 2 mm. dia. in the central 235 mm. dia. of the tube face. There shall not be heavy vein in the glass and the outer surface shall be free from ripple over the central 235 mm. dia.
- d. The front surface shall be of regular form and within the central 235 mm. dia. the deviations from flat over any 6" shall be  $\pm 20$  thousand max.

TESTS

To be performed in addition to those applicable in K1001.

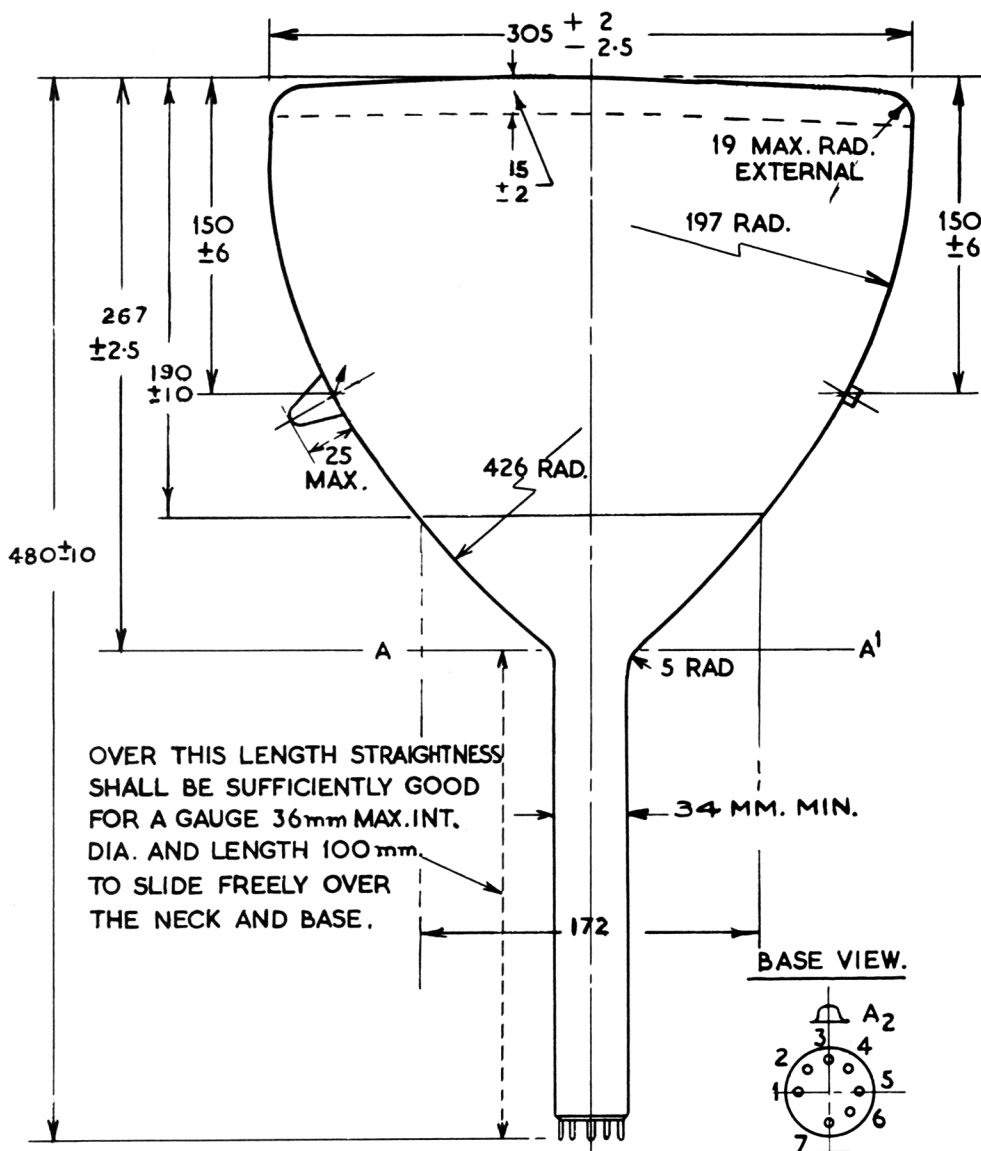
	Test Conditions				Test	Limits		No. Tested	Note
						Min.	Max.		
a	See K1001/5A.13.				Capacitances (pF) Grid to all other electrodes. Cathode to all other electrodes.	-	15	5% (20)	←
						-	8	5% (20)	
b	V <sub>a</sub> (V)	V <sub>a2</sub> (kV)	V <sub>a1</sub> (V)	V <sub>g</sub> (V)	I <sub>b</sub> (A)	0.40	0.66	100%	←
c	6.3	0	0	0	-V <sub>g</sub> (V)	25	60	100%	
d	6.3	15	300	Adjust to Cut-off.	Light Output and Beam Current I <sub>b</sub> (μA)	-	10	100%	
e	6.3	15	300	- Spot to be deflected off the usable screen area. Adjust V <sub>g</sub> to give I <sub>b</sub> = 50 μA.	1. -V <sub>g</sub> (V) 2. Change in V <sub>g</sub> from value found in Test 'c' (V) 3. The beam current shall increase smoothly from I <sub>b</sub> = 0 to I <sub>b</sub> = 50 μA.	1 10	- 25	100% 100%	
f	6.3	15	300	- Focus adjusted for optimum. Deflection With a sine wave scan of 10 kc/s, or a linear trace of 10,000 p.r.f. and a line of length 250 mm, the line width will be measured at the centre of the trace. Grid The grid will be pulsed positively from cut-off with amplitude equal to the value obtained in test 'e' 2., the nominal value of pulse duration and recurrence rate being 100 μsec, and 100 c/s respectively.	1. Line Width (mm) 2. Focus Coil Current		0.8 (Limits to be specified later)	100%	

## TESTS (Contd.)

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va2 (kV)	Va1 (V)	Vg (V)		Min.	Max.		
g	6.3	15	300	60	<u>Grid Insulation</u>  Recommended method : See K1001/5A.3.2. Resistor = 10 Megohms.	1. Leakage Current ( $\mu$ A) 2. Increase in voltmeter reading.	- 100%	6 100%	100% 100%
h	6.3	15	300	Adjust	<u>Useful Screen Area</u> Diameter (mm)	250	-	100%	
	Adjust for optimum focus. Deflection to cover the stated circle centred on the centre of the screen.								
j	6.3	15	300	Near cut-off	Deviation of spot from centre of screen, (mm)	-	15	100%	
	No focus coil energisation								
k	6.3	15	300	Adjust	<u>Persistence</u> Filter N3 (secs) Filter N4	28 84	- -	10%(20)	3
	Test to be performed with Test Set Type 331, using a close raster of convenient size.							Results to be recorded and collated	
l	6.3	-	-	-	<u>Heater Cathode Insulation</u> Leakage Current ( $\mu$ A)	-	150	100%	
	See K1001/5A.3.3. A voltage of 150 V shall be applied between Heater and Cathode.								

NOTES

1. The Deflection and Focussing coils used in the tests are to be of an approved type.
2. The position of the focus coil to be such that the centre of the gap is 81 mm. from A41 and the scan coil assembly shall be advanced as far as possible to the neck of the tube and then be retracted 1/10.
3. These are alternatives, the test may be carried out with only one filter if desired.



THE DIAMETER OF THE "FLAT" AREA OF THE SCREEN IS TO BE 235 MINIMUM.

ALL DIMENSIONS ARE IN MILLIMETRES.

$A_2$  AND EXHAUST PIP TO BE WITHIN  $\pm 15^\circ$  OF LINE THROUGH PINS 3 & 7.