

Specification MOS(A)/CV1965 Issue 2 Dated 7.7.54 To be read in conjunction with K1001,	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube TYPE OF DEFLECTION - Magnetic TYPE OF FOCUS - Magnetic SCREEN - 009 (with aluminium backing - See also Note E) PROTOTYPE - VCRX 405	<u>MARKING</u> See K1001/4  <u>BASE</u> B7B																																											
<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2" style="text-align: center;"><u>RATING</u></th> <th colspan="2" style="text-align: center;"><u>CONNECTIONS</u></th> </tr> <tr> <th></th> <th style="text-align: center;">Note</th> <th style="text-align: center;">Pin</th> <th style="text-align: center;">Electrode</th> </tr> </thead> <tbody> <tr> <td>Heater Voltage</td> <td style="text-align: center;">(V) 6.3</td> <td style="text-align: center;">1</td> <td rowspan="2">Internally connected</td> </tr> <tr> <td>Heater Current</td> <td style="text-align: center;">(A) 0.6</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Max. First Anode Voltage</td> <td style="text-align: center;">(V) 600 A, B</td> <td style="text-align: center;">3</td> <td style="text-align: center;">A1</td> </tr> <tr> <td>Max. Final Anode Voltage</td> <td style="text-align: center;">(kV) 15 A</td> <td style="text-align: center;">4</td> <td style="text-align: center;">G</td> </tr> <tr> <td>Max. Heater-Cathode Voltage</td> <td style="text-align: center;">(V) 60 A, C</td> <td style="text-align: center;">5</td> <td rowspan="2">Internally connected</td> </tr> <tr> <td>Max. Beam Current</td> <td style="text-align: center;">(uA) 50 A</td> <td style="text-align: center;">6</td> <td style="text-align: center;">H</td> </tr> <tr> <td>Average Persistence</td> <td style="text-align: center;">(secs) 40</td> <td style="text-align: center;">7</td> <td style="text-align: center;">C</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">SC</td> <td style="text-align: center;">H</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">A2</td> </tr> </tbody> </table>	<u>RATING</u>		<u>CONNECTIONS</u>			Note	Pin	Electrode	Heater Voltage	(V) 6.3	1	Internally connected	Heater Current	(A) 0.6	2	Max. First Anode Voltage	(V) 600 A, B	3	A1	Max. Final Anode Voltage	(kV) 15 A	4	G	Max. Heater-Cathode Voltage	(V) 60 A, C	5	Internally connected	Max. Beam Current	(uA) 50 A	6	H	Average Persistence	(secs) 40	7	C			SC	H				A2	<u>CONNECTIONS</u> See K1001/AI/D5.1  <u>DIMENSIONS</u> See Drawing on Page 4
<u>RATING</u>		<u>CONNECTIONS</u>																																										
	Note	Pin	Electrode																																									
Heater Voltage	(V) 6.3	1	Internally connected																																									
Heater Current	(A) 0.6	2																																										
Max. First Anode Voltage	(V) 600 A, B	3	A1																																									
Max. Final Anode Voltage	(kV) 15 A	4	G																																									
Max. Heater-Cathode Voltage	(V) 60 A, C	5	Internally connected																																									
Max. Beam Current	(uA) 50 A	6		H																																								
Average Persistence	(secs) 40	7	C																																									
		SC	H																																									
			A2																																									
<u>NOTES</u> A. Absolute maximum value. B. Under these conditions the maximum beam current must not be exceeded. C. Heater negative to cathode. D. In order to prevent damage to the screen material and to ensure that maximum life is obtained from the cathode and screen, the tube should not be operated with a stationary or slowly moving spot. The tube should be operated at the minimum useful brightness, i.e. at a maximum beam current of 50uA. E. The fluoride screen shall not contain beryllium (Screen Powder - 00L65).																																												

CV1965/2/1

CV1965

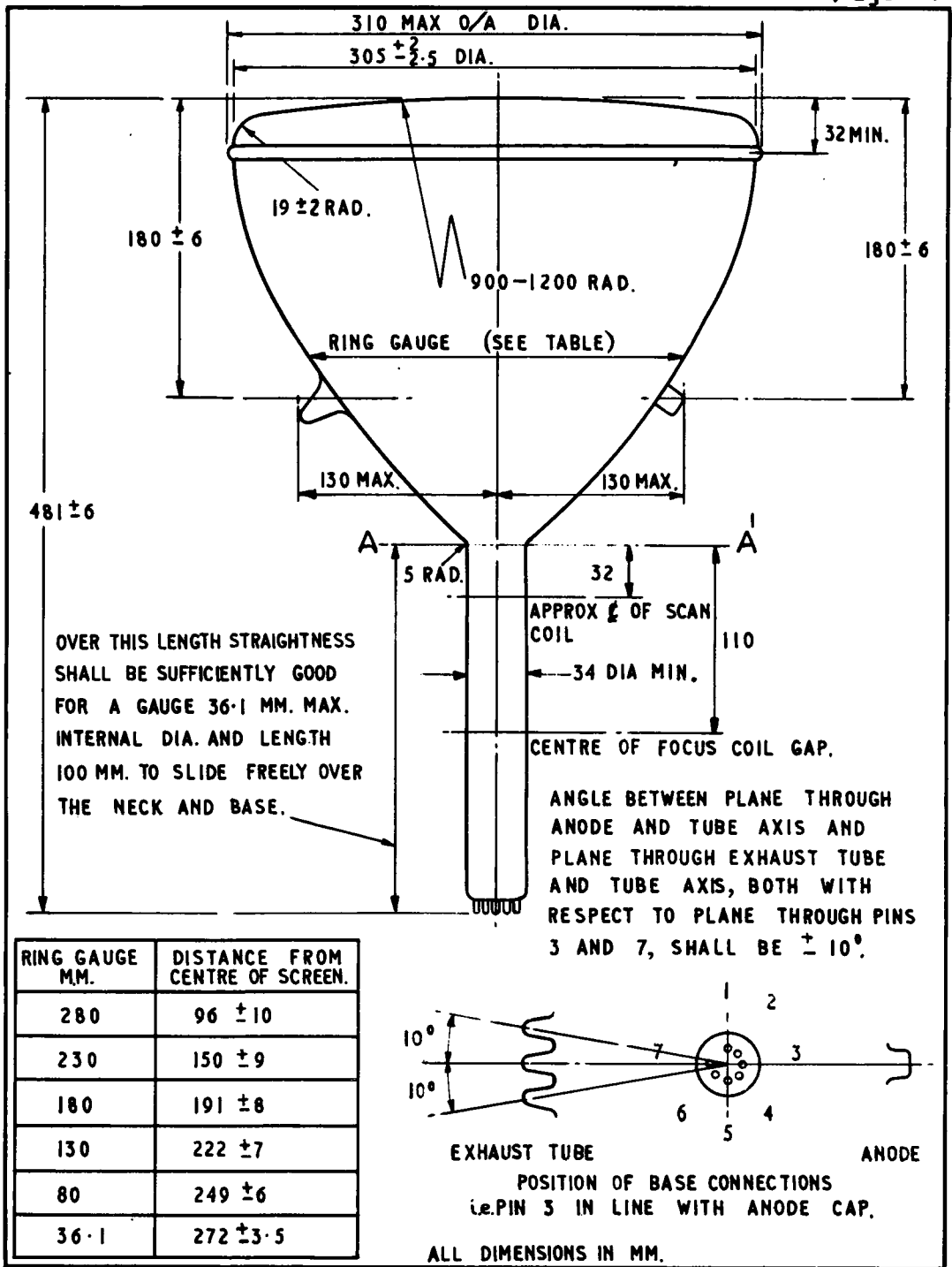
## TESTS

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Note
						Min.	Max.		
a	See K1001/5A.13				<u>CAPACITANCES (pF)</u> 1. Cg-all 2. Cc-all	-	15	5% (20)	
b	Vh (v)	Va1 (V)	Va2 (kV)	Vg (V)	Ih (A)	0.28	0.66	100%	
c	6.3	0	0	0	Vg (-V)	25	60	100%	
d	6.3	600	15	Adjust to cut-off. Value to be noted	Vg (-V)	25	60	100%	
e	As for Test (c) but Vg adjusted to give light output of 0.15 candela, using a close raster of convenient size.				<u>Light Intensity</u> Beam Current (uA)	-	5	100%	
f	As for Test (c) but Vg adjusted to give Ib = 50uA. Spot to be deflected off the useable screen area, or scanned.				1. Vg (-V) 2. Change in Vg from value found in Test (c) (V) 3. The beam current shall increase continuously within the range of grid voltage from cut-off to that value which makes Ib = 50uA	1	25	100%	
g	6.3	600	15	-	Line Width (mm)	-	0.3	100%	2
	Focus adjusted for optimum DEFLECTION. Using a sine-wave scan of 10kc/s nom or or a linear scan having a repetition frequency of 10kc/s and a line length of 250 mm, the line width shall be measured at the centre of the trace. <u>GRID</u> The grid shall be pulsed positively from cut-off with amplitude equal to the value of grid voltage obtained in Test (e.2). Tp = 100usec nom; IRF = 100c/s nom.								
g	6.3	600	15	60	<u>Grid Insulation</u> 1. Leakage Current (uA) 2. Increase in voltmeter reading (%)	-	6	100%	
	Recommended method: See K1001/5A.3.2 Resistor = 10 megohms						100		

CV1965/2/2

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va1 (V)	Va2 (kV)	Vg (V)		Min.	Max.		
h	6.3	-	-	-	Heater-Cathode Leakage Current (uA)	-	60	100%	
	See K1001/5A.3.3. 60 volts shall be applied between heater and cathode								
j	6.3	600	15	Adjust.	Useful Screen Area Diameter (mm)	250	-	100%	
	Adjust for optimum focus. Deflection shall cover the specified circle centred on the centre of the screen.								
k	6.3	600	15	Pulsed as in Test (f) No focus coil energisation	1. Deviation of unfocussed spot from centre of screen (mm) 2. Dia. of unfocussed spot when Vg adjusted to give Ib = 50uA (mm)	-	12	100%	
						-	12	100%	
m	As for Test(k) but Vg adjusted to give Ib = 50uA. No focus coil energisation				Beam Width (mm)	-	20	100%	
n	6.3	600	15	Adjust The test shall be performed using approved test gear and a close raster of convenient size.	Persistence (secs) 1. Using Filter N3 2. Using Filter N4	28 84	-	10% (20)	3
p	Less than 75mm. rad from centre of screen - - - - - More than 75mm. rad. from centre of screen - - - - - For other test conditions, see Note 4				Stones, Bubbles & Blemishes 0.75 mm. dia. 1.0 mm. dia.	-	6		
						-	6		
<b>NOTES</b>									
1. The tube shall be mounted having the front edge of the coil assembly set 1.5mm from the axis AA'. (See Drawing on Page 4).									
2. Alternatively, the line width may be measured using a raster having a linear scan of 250mm at 10kc/s in the X-direction and a 50c/s scan in the Y-direction. The Y-scan shall be expanded so that individual lines are spaced apart by at least one line width. Measurements shall be made at the centre of the screen. The grid need not be pulsed for this test but the grid voltage should be set to the value obtained in Test (e.2).									
3. These are alternative tests; the test may be performed using one filter only if desired.									
4. Spacing between any two bubbles shall be greater than 20mm. Bubbles of less than 0.25mm dia. shall be ignored.									



CV1965/2/4