MINISTRY OF AVIATION/R.A.E.

VALVE ELECTRONIC **CV 6126**

Specification M.O.A./CV 6126 Issue No. 1 Dated 26th November, 1964 To be read in conjunction with K.1001 and BS.448	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates a change

TYPE OF VALVE	Cathode Ray Tube
TYPE OF DEFLECTION	Magnetic
TYPE OF FOCUS	Magnetic
TYPE OF ELECTRON GUN	Triode with beam limiting aperture
SCREEN	G.G.5 Aluminium backed
PROTOTYPE	VX9241

MARKING

See K1001/4

BASE

B9A (mod.)

See Drawing page 6

RATING
(All limiting ratings are absolute)

			NOTE
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.6	
Max. Anode Voltage	(kV)	25	
Max. Heater/cathode Voltage	(-Ve)	100	A)
	(+Ve)	75	)
Max. Cathode Current	(μA)	150	

TYPICAL OPERATING CONDITIONS

Anode Voltage	(kV)	20	
Cathode Current	(μA)	25	

CAPACITANCES

Max. Cg to all other electrodes	pF	6.5	
Max. Ck to all other electrodes	pF	6.5	

CONNECTIONS

PIN	ELECTRODES
1	NC
2	g
3	NC
4	h
5	h
6	g
7	NC
8	c
9	g
Side Contact	

SIDE CONTACT

B.S. 448 CT.1

DIMENSIONS

See drawings pages 5 and 6

NOTES

A. Voltage may be temporarily increased to 250 Vmax. either polarity (short term overload condition).

B. The Joint Service Catalogue Number is 5960-99-037-3524.

TESTS

To be performed in addition to those applicable in K1001

	Test	Conditions	No. Tested	Symbol	LIMITS Min.	LIMITS Max.	Unit
a	Inter-Electrode Capacitance	See K1001/5.A,4.6	Note 7				
	(1) Grid to all other electrodes.			Cg-all	-	6.5	pF
	(2) Cathode to all other electrodes			Ck-all	-	6.5	pF

FOR ALL FURTHER TESTS Vh = 6.3 VOLTS

b	Heater Current		100%	Ih	0.55	0.65	A
c	Heater Cathode Leakage	Vhk = 200V See K1001/5.A.4.1.3	100%				
	(1) Heater positive			+Ihk	-	50	μA
	(2) Heater negative			-Ihk	-	50	μA

FOR ALL FURTHER TESTS Va = 20 kV EXCEPT CLAUSES (k,m.)

d	Grid Cut-off Voltage	Adjust for optimum focus Adjust Vg for cut-off	100%	-Vg	30	60	V
e	Grid Drive (1)	(1) Deflecting fields applied to give a focused raster. Grid voltage adjusted to produce a photometric intensity of 1 candela. Note 1.	100%				
	(1) Change in Vg from that in test (d)			Vg	-	18	V
	(2) Cathode Current.			Ik	-	25	μA
	Grid Drive (2)	(2) Deflecting fields applied to give a single diametric line. Grid voltage pulsed from beyond cut-off to give a visual brightness of 10,000 ft.-lamberts. Note 2.	5%				
	(3) Change in Vg from that in test (d)			Vg	-	18	V
	(4) Cathode Current			Ik	-	25	μA

TESTS (CONTD.)

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	Test	Conditions	No. Tested	Symbol	LIMITS		Unit
					Min.	Max.	
f	Line Width (at centre of trace) Note 6	Deflecting field and grid voltage pulse applied as in test clause (e)(2). Grid voltage adjusted to give a peak cathode current equal to that measured in test clause (e)(2), if applied; otherwise that measured in test clause (e)(1).	100%	-	-	0.28	mm
g	Total Cathode Current	Deflecting fields applied to give a defocussed raster	100%	Ik	100	-	μA
h	(1) Useful Screen Area. Centrally disposed circle.	Vg = any convenient value	100%	dia.	60	-	mm
	(2) Screen Blemishes Note 3	Defocussed raster to cover whole screen	100%				
	(2.1) Whole Useful Screen except for central circle 15 mm dia.)						
	(2.1.1) Area above 80 units:Number			-	-	0	-
	(2.1.2) Area 28 - 80 units: separation			-	10	-	mm
	(2.2) Central Area Circle 15 mm dia.						
	(2.2.1) Area above 28 units:Number			-	-	0	-
	(2.3) Whole of Useful Screen Area						
	(2.3.1) Area 13-28 units:Separation			-	5	-	mm
	(2.3.2) Area below 13 units shall be ignored unless in sufficient number to cause perceptible darkening of the screen at a distance of 1 ft.						
	(3.3) Variation in luminance of area above 80 units from average screen luminance			-	-	0.25	-

	Test	Conditions	No. Tested	Symbol	LIMITS		Unit
					Min.	Max.	
j	Deviation Displacement of centre of spot from point of intersection of neck axis with screen surface	Vg = Any convenient value. No. deflecting or focussing fields	100%		-	3	mm
k	Over-Voltage	Va = 25 kV, Vg = Any convenient value. Note 4	100%		Note 5		-
l	Grid Insulation Alternative method See K1001/5A.4.1.3 Increase in cut-off Voltage	Vg = -90V Resistor = 25 M.Ohms	100%	Ig Vg inc.	- -	2 25	µA V
m	Climatic Tests	See K1001/10	T.A.	-	-	-	-

NOTES

1. Raster size = 2.54 cm. square.

   Scan Conditions: Line frequency = 8,533 c/s
   Frame frequency = 33.3 c/s (approximately 245 lines)

2. Line Scan Conditions: Writing Speed = 2,540 cm/sec. Frequency 58 c/s Focus magnet Type A.93/25179 Scan Coil Type A.93/25176. The front of the focus magnet shall be positioned 114 mm from the front ground reference surface on the tube envelope (See drawing on page 6). The cathode current required to produce a raster having a photometric intensity of 1 candela (test clause (e)(1)) should be similar to that which produces a line brightness of 10,000 ft-lamberts (test clause (e)(2)).

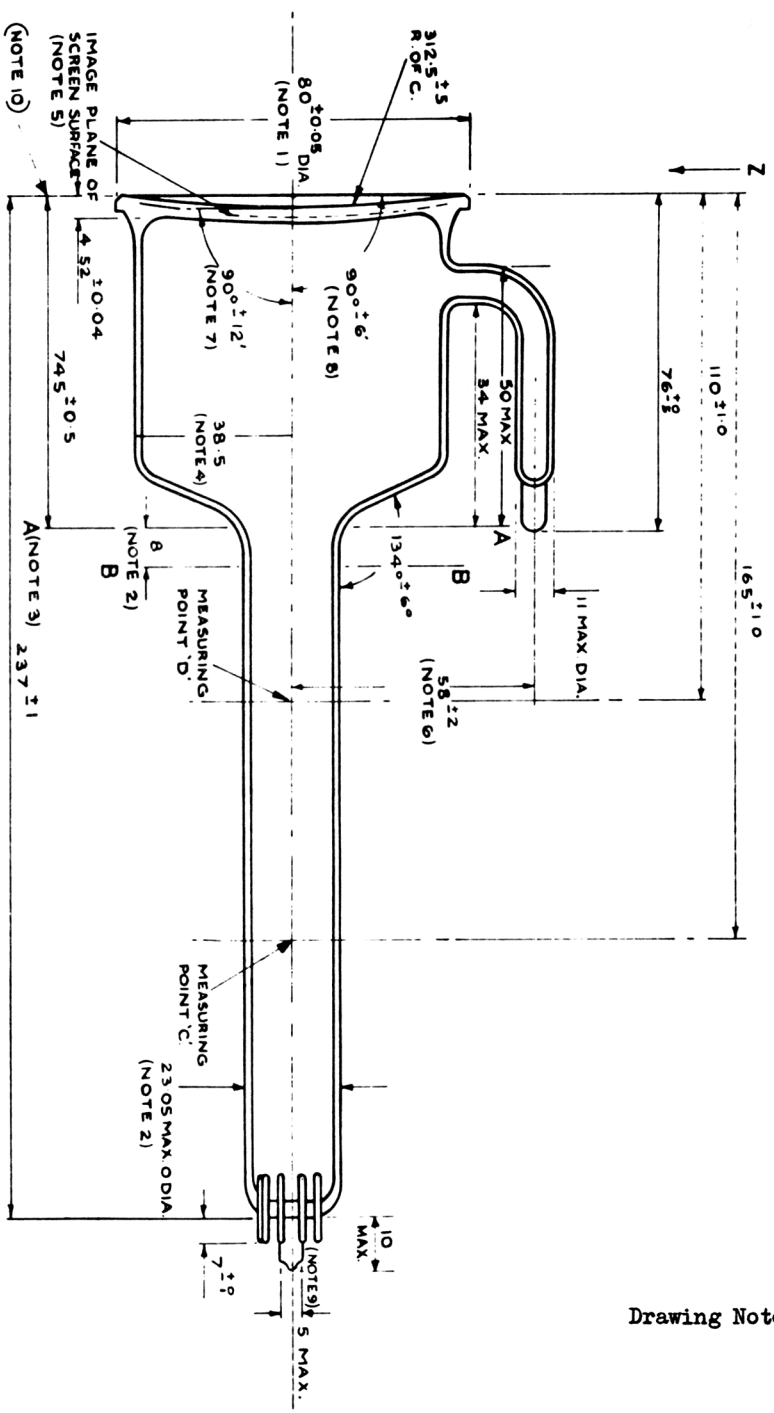
3. The unit of area is 10^{-6} square inches.

4. Pre-heat the cathode for 10 minutes. The tube shall be held with the neck vertical and screen uppermost while the neck is tapped gently with an approved rubber covered forked hammer at a minimum of two taps per second for 15 seconds.

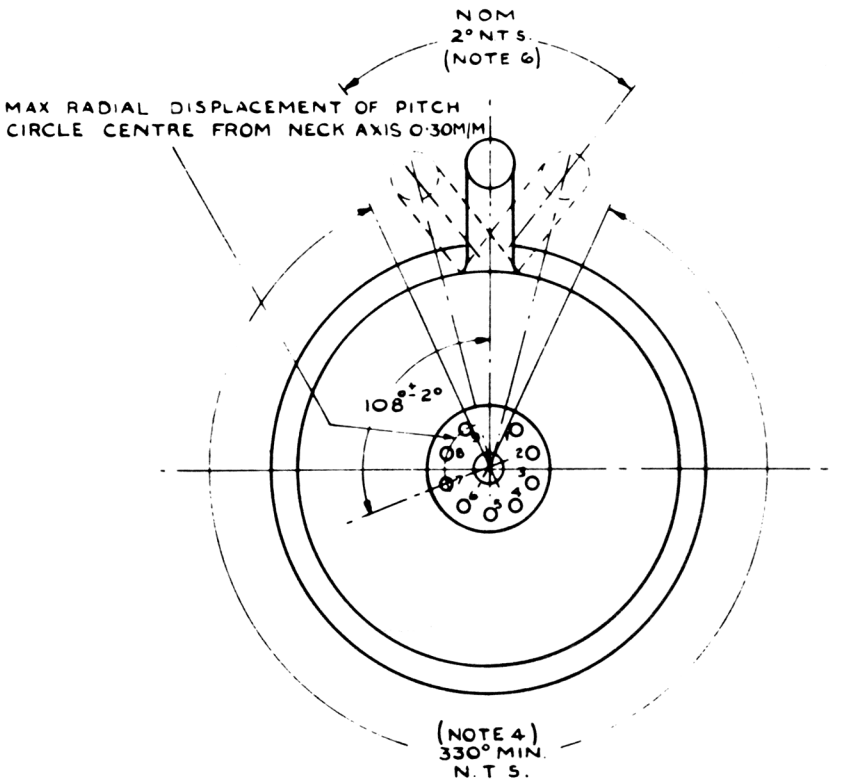
5. The tube shall be free from sparking and field emission after the first 5 secs. and for a period of not less than 15 secs., after tapping has ceased.

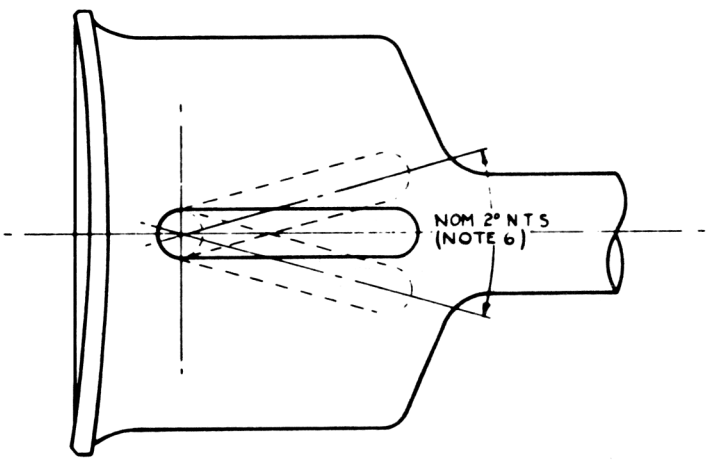
6. The line width is defined as the separation of those regions of the line where the luminous intensity is one half the peak intensity at the centre of the line.

7. An Inspection Level of 1C and A.Q.L. of 6.5% shall apply.



Drawing Notes- See Page 7





VIEW IN DIRECTION OF ARROW 'Z'.

Drawing Notes - See Page 7

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DRAWING NOTES

1. Max. eccentricity between edge of face plant and neck is 0.10 mm. The min. centrally disposed usuable screen area is a circle of 60 mm diam.

2. Max. neck O.D. applies from the pinch to this dimension from the datum surface. A gauge of length 100 mm and internal diam. of 23.10 mm. will slide freely over the neck from the pinch to reference line B.B.

3. A.A. is reference line defined by Ring Gauge 24.5 mm. diam.

4. Max. height of barrel above neck axis at all points around periphery within 330° arc.

5. The thickness of the face plate is dependent on the refractive index of the glass, the max. wedge across any diam. of the face plate is 0.1 mm. The dimension of 4.52 mm. relates to a wave-length of 5875°A.

6. Disposition of side arm to be such that tube shall enter approved gauge (GAD.5874/B). The max. permissible angular displacement of sidearm is 4°.

7. Max. tilt of outer surface of face plate at point of intersection of neck axis as defined in Note 8.

8. Angle between datum surface and neck axis (defined as axis of surface of revolution between measuring points C and D on neck).

9. Tube to enter a B9A Valve Base with central hole 6.5 mm. diam. to admit exhaust stem.

10. The width of the ground reference surface shall not be less than 0.4 mm. Any pits or other depressed regions in the reference surface shall not reduce the area of that surface by more than 10%.