MINISTRY OF AVIATION D.L.R.D./R.A.E.

VALVE ELECTRONIC

CV 6074

Specification M.O.A./CV.6074 Issue 1A Dated 1.3.62 To be read in conjunction with BS.1409 and K.1001 excluding Clause 11.2	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Cathode Ray Tube
TYPE OF DEFLECTION - Magnetic
TYPE OF FOCUS - Electrostatic
BULB - Special with flat face
SCREEN - G.G.5
PROTOTYPE CV.2342

MARKING

See K1001/4

BASE

B9A Modified
(See Note B)

RATING

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.65	
Max. First and Third Anode Voltage	(kV)	2.5	A
Max. Peak Cathode Current	(mA)	1.0	A
Max. Heater to Cathode Voltage Cathode Negative	(V)	100	A
Typical Operating Conditions			
First and Third Anode Voltage	(kV)	1.5	
Second Anode Voltage (approx.)	(V)	300	
Peak Cathode Current	(μA)	60	

CONNECTIONS

Pin	Electrode
1	a2
2	NC
3	g
4	h
5	h
6	g
7	k
8	NC
9	a1 and a3

DIMENSIONS

See drawings pages 4 and 5

NOTES

A. Absolute value.

B. This tube will enter a B9A radio valve holder with central hole 0.256 inch diameter to admit exhaust pipe.

C. The Joint Services Catalogue Number is 5960-99-037-2330.

TESTS

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To be performed in addition to those applicable in K.1001

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va1 and Va3 (kV)	Va2 (V)	Vg (V)		Min.	Max.		
a	See K.1001/AIII				Capacitance (pF) (1) Cathode-all (2) Grid-all	 4.0 12.5	 6.0 17.5	 TA	
b	6.3	0	0	0	Ih (A)	0.55	0.65	100% or S	
Amdt.1 c	7.0	~~0~~ Disconnected	~~0~~	~~0~~	Ihk (μA)	-	100	100%	
	Cathode 100 volts negative with respect to heater								
d	6.3	1.5	Adjust for optimum focus	Adjust for cut-off	(1) Vg, value to be noted (V) (2) Va2 (V)	-30 288	-45 -	100% 100%	
e	6.3	1.5	Ditto	Adjust to Spot bright-ness = ~~570~~ 300 ft. lamberts	(1) Change in value of Vg from test (d) (V) (2) Ia2 (μA) (3) Va2 (V) (4) Spot diameter (mm)	8.0 - - 0.3	25 2.0 313 0.6	100% 100% 100% 100%	3
Amdt. 1									
f	6.3	1.5	Any con-venient value	Any con-venient value	(1) The variation of the brightness over any part of the area shall not exceed a 2:1 ratio (2) Screen blemishes			100% 100%	5 4
	Deflecting voltages to give a raster covering the useful screen area. The spot shall be defocussed such that separate lines shall not be discernable on the raster.								
g	6.3	1.5	Ditto	Adjust for cut-off	Grid Insulation Leakage Current (μA)	-	5.0	100%	
	Alternative method See K.1001/5A.3.2. Resistor = 10 MΩ. Increase in Voltmeter reading = 100%								
h	0	1.5	0	0	First and Third Anode Insulation Ia (μA)	-	1.5	100%	
j	6.3	1.5	Any con-venient value	Any con-venient value	Deviation of spot from axis of tube (mm)	-	1.25	100%	2
k	6.3	1.5	Ditto	Ditto	Useful Screen Area Diameter (mm)	45	-	100%	
l					Vibration			T.A.	1
NOTES - See Overleaf									

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NOTES

1. With the tube operating with normal electrode potentials applied, the vibration test will be performed in accordance with:- R.A.E., Technical Note Vib.13. "Aircraft Equipment and Instrument Vibration Panel" in equipment which shall be approved by the Design Authority.

2. The centre of the undeflected focussed spot is to lie within the specified distance of the intersection of the extended gun neck axis with the screen.

3. When energised by pulsed electron beam in the following fashion. Square pulses of 1.25 millisecond duration to a P.R.F. of 400 per second applied to the grid for three such consecutive pulses, followed by a waiting time of six consecutive pulses giving a mark to space ratio, overall, of 1:6. The spot diameter must be within the specified limits everywhere within the useful screen area.

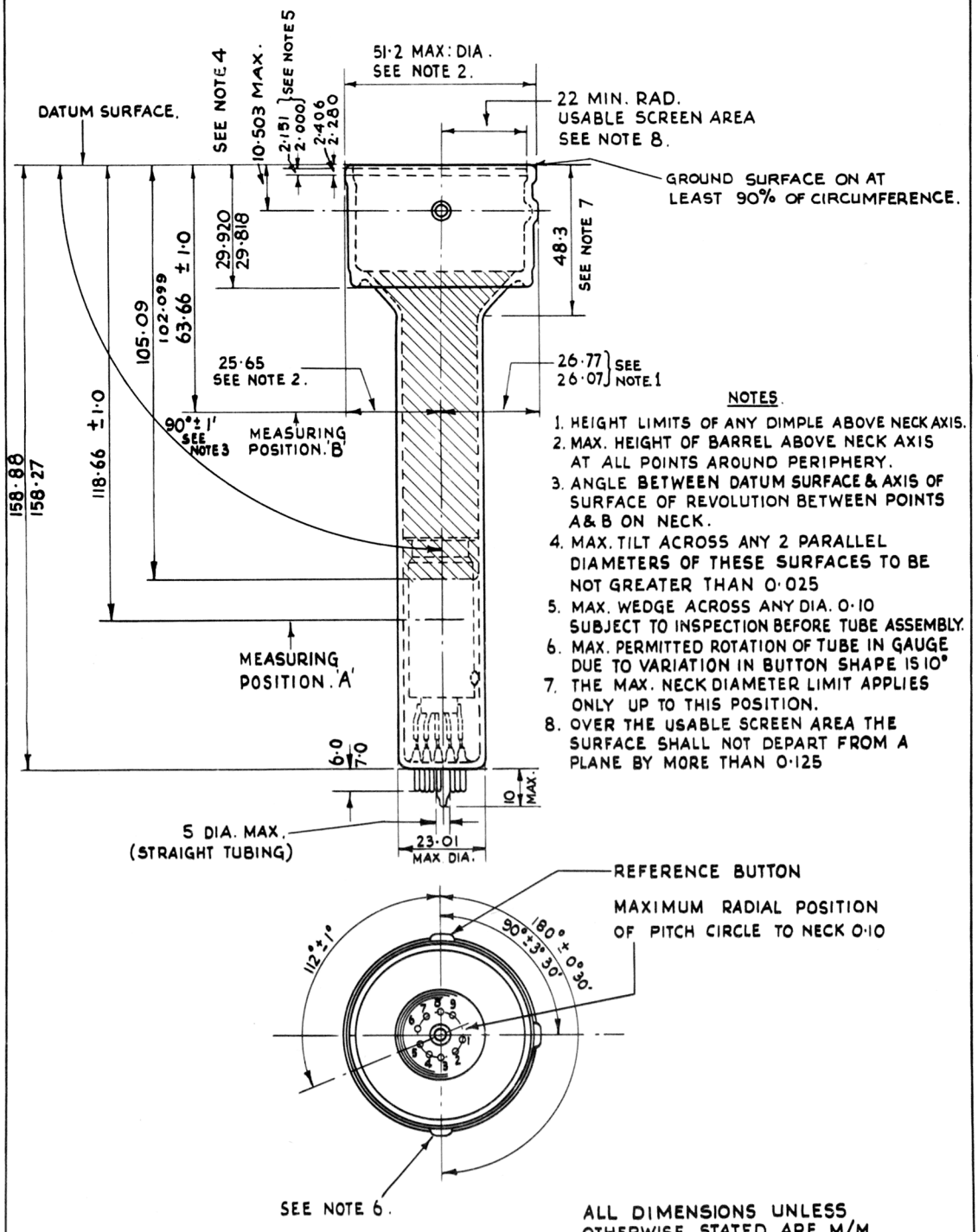
4. Within a central circle 12.5 mm diameter, there shall be no dead spots greater than 0.125 mm diameter, with a maximum of three in the circle. In any other area of the screen, there shall be no dead spot, greater than 0.15 mm diameter, with a maximum total density of 1.5 dead spots per sq. cm.

   Within a central circle of 27 mm diameter, no bubble shall exceed 0.38 mm diameter, and there shall not be more than 5 bubbles greater than 0.25 mm diameter, and not more than 10 greater than 0.13 mm diameter.

   Elsewhere on the screen, no bubble shall exceed 0.51 mm diameter, and there shall not be more than 10 greater than 0.38 mm diameter, and not more than 30 greater than 0.13 mm diameter.

   If two or more blemishes are separated by a distance not greater than the maximum dimension of the largest blemish, then the group of blemishes shall be considered as one blemish of diameter equal to the maximum overall diameter of the group

5. Visual estimation will normally satisfy this requirement.

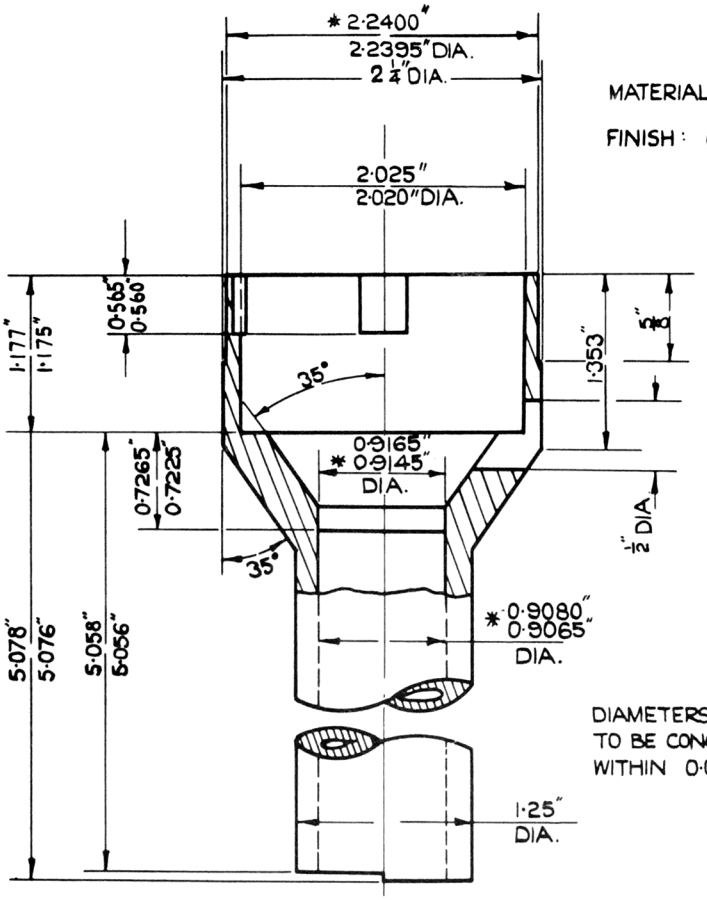


NOTES.

1. HEIGHT LIMITS OF ANY DIMPLE ABOVE NECK AXIS.
2. MAX. HEIGHT OF BARREL ABOVE NECK AXIS AT ALL POINTS AROUND PERIPHERY.
3. ANGLE BETWEEN DATUM SURFACE & AXIS OF SURFACE OF REVOLUTION BETWEEN POINTS A & B ON NECK.
4. MAX. TILT ACROSS ANY 2 PARALLEL DIAMETERS OF THESE SURFACES TO BE NOT GREATER THAN 0·025
5. MAX. WEDGE ACROSS ANY DIA. 0·10 SUBJECT TO INSPECTION BEFORE TUBE ASSEMBLY.
6. MAX. PERMITTED ROTATION OF TUBE IN GAUGE DUE TO VARIATION IN BUTTON SHAPE IS 10°
7. THE MAX. NECK DIAMETER LIMIT APPLIES ONLY UP TO THIS POSITION.
8. OVER THE USABLE SCREEN AREA THE SURFACE SHALL NOT DEPART FROM A PLANE BY MORE THAN 0·125

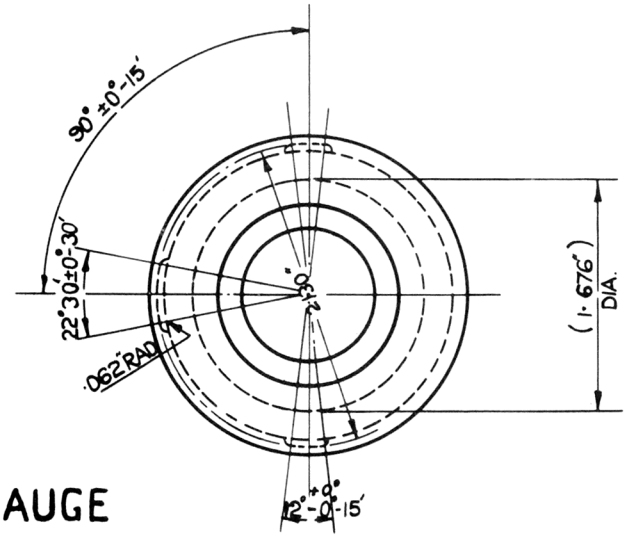
ALL DIMENSIONS UNLESS OTHERWISE STATED ARE M/M

C.V.6074



MATERIAL: STAINLESS STEEL
FINISH: CLEAN.

DIAMETERS MARKED THUS * TO BE CONCENTRIC TO WITHIN 0·0005"



GAUGE

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION MOA/CV 6074 ISSUE 1A, DATED 1.3.62
AMENDMENT No.1

Page 2

(i) Test Clause (c) Test Conditions:-

Delete '0' in columns headed 'Va1 and Va3', 'Va2' and 'Vg' and substitute: "Disconnected" across the three columns.

(ii) Test Clause (e) Test Conditions:

In column headed Vg, delete '570 ft. lamberts' and substitute '300 ft. lamberts'.

September 1963

T.V.C. for R.A.E.

N.190311

17/9/63