MINISTRY OF SUPPLY, R.R.E.

VALVE ELECTRONIC **CV2497**

Specification MOS/CV2497 Issue 1 dated 6th March, 1959. To be read in conjunction with K.1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

Indicates a change ←

Type of Valve: Cathode Ray Tube
Type of Deflection: Magnetic
Type of Focus: Magnetic
Bulb: Glass, internally coated with conductive coating.
Faceplate: Non-solarising glass
Screen: G.G.4. Aluminium backed
Prototype: VCRX437C

RATING		Note
Heater voltage (v)	6.3	
Heater current (A)	0.6	A, F
Max. anode voltage (kv)	25	B
Min. anode voltage (kv)	10	
Max. h/k voltage (v)	300	C
Max. h/k voltage (v)	90	D
Max. mean anode current (/uA)	200	
Max. peak anode current (mA)	5	E

TYPICAL OPERATING CONDITIONS		
Anode voltage (kv)	22	

CAPACITANCES		
Max. Cg - ALL (pf)	9	
Max. Cc - ALL (pf)	7	
Min. Ca - External coating (pf)	500	

MARKING

See K.1001/4

BASE

B9A with exhaust stem in centre.
See drawing on page 4.

CONNECTIONS

Pin	Electrode	
1	grid	g
2	heater	h
3	Internal connection	IC
4	Internal connection	IC
5	Cathode	k
6	Internal connection	IC
7	Spark trap	
8	heater	h
9	See Note F	
side contact	anode	a

SIDE CONTACT

CT.7 on special cone. See drawing on page 4.

WEIGHT

1.75 lbs. maximum

DIMENSIONS

See drawing on page 4.

NOTES

A. The nominal heater current may be between 0.3 and 0.6 amp.

B. The tube shall operate satisfactorily at this voltage at an air pressure equivalent to 5.8" of mercury at 15°C. T.A. Test only.

C. With cathode positive to heater.

D. With cathode negative to heater.

E For not more than 10/usec in 400/usec.

F. Both 0.3 and 0.6 amp. heaters are allowed. If the current regulation of the heater supply at the base socket is poor, then a 21 ohm 2 watt resistor should be connected between tabs 2 and 9 of the socket. This will ensure that the heater supply delivers 0.6 amp. for both the allowed heaters.
Pin 9 for a 0.3 amp. heater is then connected internally to pin 8 and for a 0.6 amp. heater is left without an internal connection.
For test (b) a 21 ohm 2 watt resistor shall be included on the valve base between Pins 2 and 9.

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

	Test Conditions	Test	Limits Min.	Limits Max.	No. Tested	
a	See K.1001/5A-13	Capacitances 1. Grid to all other (pf) electrodes 2. Cathode to all other electrode 3. Anode to external coating.	 500	 9 7 1500	 5% 5% 100%	 (20) (20)
	For all tests below V_h = 6.3 volts					
b	See Note F on page 1.	Heater current (A)	0.54	0.66	100%	
c	1.Cathode +300v. to heater 2.Cathode -90v. to heater	Heater-Cathode Leakage 1. Leakage current (μA) 2. Leakage current (μA)		 20 30	 100% 100%	
	For all tests below except clause J, V_a = 22 kv. Spark trap, focus unit deflection coil support and tube external conductive coating to be earthed.					
d	Adjust for optimum focus and Vg for cut off. See K.1001/5A.10	Grid Base - Vg (V) (Value to be noted)	50	100	100%	
e	Grid to be driven positive from cut-off with a pulse 20 μsec. long and a recurrence frequency of 50 c/s and of amplitude to give a mean light intensity of .0375 candela when measured through an Ilford 624 filter. At the same time, the tube is linearly scanned at 50 kc/s in one direction only to give a line length of 75 mm. Adjust focus field for optimum focus. See Note I.	1. Grid Drive (V) Pulse amplitude. 2. Peak Anode Current (mA) 3. Peak Grid Current (mA) 4. Line Width. Measured at centre of trace (mm)		100 2.0 2.0 1.0	100% 100% 100% 100%	
f	Adjust Vg for cut-off with and without a 1 Megohm grid resistor	Grid Insulation Change in Vg (Volts)		5	100%	
g	With a raster scan to cover the useful screen area adjust Vg to any convenient value and focus field for optimum focus. See Note I.	Useful Screen Area Diameter on the geometric centre of the screen.(mm)	100		100%	

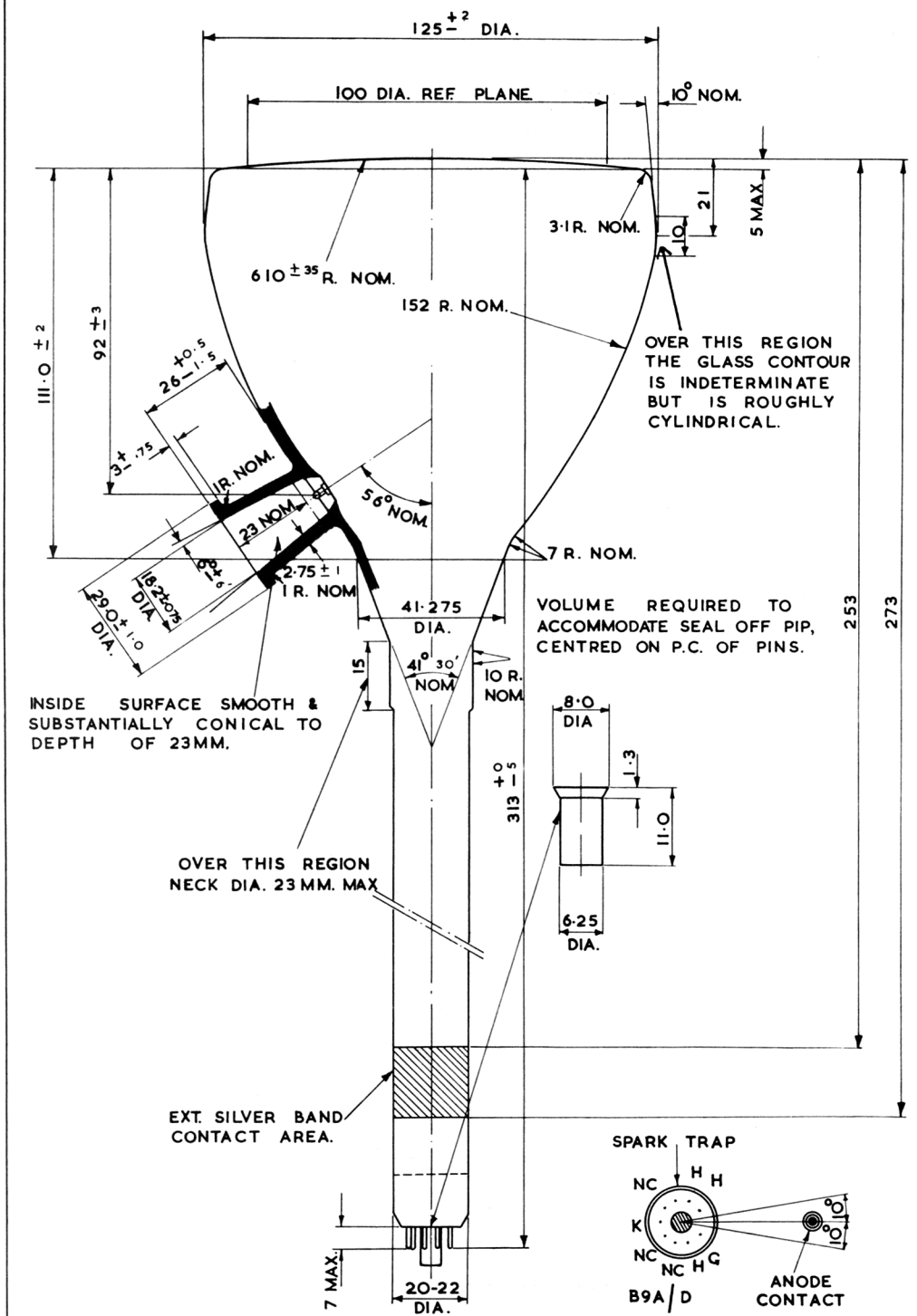
	Test Conditions	Test	Limits Min.	Limits Max.	No. Tested	
h	With no deflecting field adjust focus field for optimum focus and Vg for the lowest convenient light intensity. See Note 1.	Deviation of spot from the geometric centre of the screen (mm)		5	100%	
j	Va = 27kV. Vg = 175v. Pre-heat cathode at Vh = 6.3v. for at least 10 minutes. Tube to be held with the screen vertical. With the focus field as in test e, view the screen for 30 secs. in darkness.	Flashover and Stray Emission After 15 secs. there shall be no flashover or emission visible at the screen			100%	
k	Defocused raster of any convenient brightness to cover the useful screen area See Note 2.	Blemishes (Stones, bubbles and screen defects.) Above 1.0 mm. diameter 1.0 to 0.5 mm. diameter Below 0.5 mm diameter ignore.	none	6	100%	
l	Sinusoidal vibration of peak to peak amplitude .01 inches at all frequencies between 5 and 100 c/s to be applied (a) axially; (b) radially	Re-test to above specification			T.A.	
m	Tube to be subjected to the condition of K.1001/10.1 for a period of 28 days.	The external coating shall show no signs of blistering or flaking			T.A.	

NOTES

1. Coils Deflecting 104 Reference Number 100/16429 shall be used for the electrical tests, the tube being pushed home into the deflection coil until the neck flare is just touching the deflection coil moulding. Either electromagnetic or permanent magnet focussing may be used.

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

CV2497


125 +2 −2 DIA.
100 DIA. REF. PLANE
10° NOM.
21
5 MAX.
3·1R. NOM.
10
610 ±35 R. NOM.
152 R. NOM.
OVER THIS REGION THE GLASS CONTOUR IS INDETERMINATE BUT IS ROUGHLY CYLINDRICAL.
111·0 ±2
92 ±3
26 +0·5 −1·5
3 ±·75
1R. NOM.
23 NOM.
56° NOM.
7 R. NOM.
2·75 ±1
1R. NOM
18·2±0·75 DIA.
29·0±1·0 DIA.
41·275 DIA.
VOLUME REQUIRED TO ACCOMMODATE SEAL OFF PIP, CENTRED ON P.C. OF PINS.
253
273
15
41° 30' NOM.
10 R. NOM.
INSIDE SURFACE SMOOTH & SUBSTANTIALLY CONICAL TO DEPTH OF 23MM.
8·0 DIA
1·3
313 +0 −5
11·0
OVER THIS REGION NECK DIA. 23 MM. MAX
6·25 DIA.
EXT. SILVER BAND CONTACT AREA.
SPARK TRAP
NC
H
H
K
NC
NC
H
G
B9A/D
ANODE CONTACT
7 MAX.
20-22 DIA.