MINISTRY OF SUPPLY - DLRD(A)/RRE (South) VALVE ELECTRONIC

CV420

Specification MOS(A)/CV420 Issue 4 Dated 17. 8. 54 To be read in conjunction with K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube TYPE OF FOCUS - Electro-static TYPE OF DEFLECTION - Magnetic BULB - Internally coated with conductive coating SCREEN - 008 PROTOTYPE - VCRX277	MARKING See K1001/4. BASE International Octal.

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. First Anode Voltage	(kV)	1.45	A
Max. Third Anode Voltage	(kV)	8.0	A
Max. Peak Beam Current	(μA)	100	A

CONNECTIONS

Pin	Electrode
1	No connection
2	A1
3	A2
4	No connection
5	G
6	C
7	H
8	H
S.C.	A3

→ Typical Operating Conditions

First Anode Voltage	(kV)	1.25
Second Anode Voltage	(V)	950
Third Anode Voltage	(kV)	7.0

SIDE CONTACT

Snap Terminal Connector.

DIMENSIONS

See Drawing on Page 4

NOTES

A. Absolute maximum value.

B. The first anode must always be at least 50V positive to the second anode and the supply network must take account of variations in first anode current from zero to working value.

TESTS

To be performed in addition to those applicable in K1001.

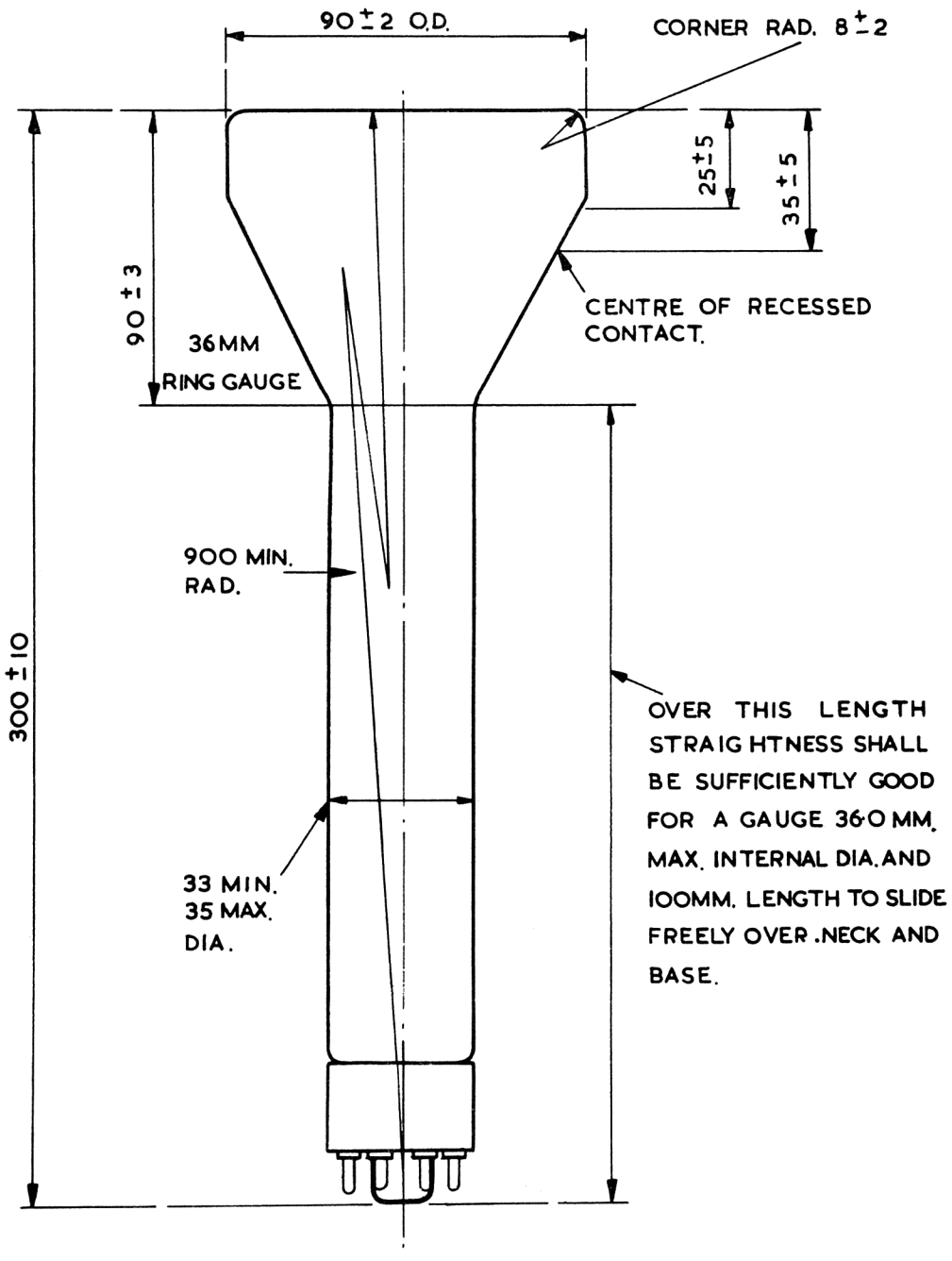
	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)					
a	See K1001/5A.13					CAPACITANCES (pF) 1. Cg-c 2. Cc-h	 - -	 10 10	5% (20)	
b	4.0	0	0	0	0	Ih (A)	0.95	1.15	100%	
c	4.0	7.0	Adjust for optimum focus	1.25	Adjust to cut-off. Value to be noted.	Vg (V)	-40	-80	100%	
d	4.0	7.0	As for Test (c)	1.25	-	Light Intensity Beam Current (μA)	 -	 5.0	100%	
	Using a raster of convenient size, adjust to give a light output of 0.028 candela									
e	4.0	7.0	As for Test (c)	1.25	-	1. Vg (-V) 2. Change in Vg from value found in Test (c) (V) 3. Beam current shall increase continuously over the range of Vg from cut-off to that value required for Test (d).	1 - -	• 35 -	100%	
	Adjust Vg to give a beam current = 100 μA. Spot to be deflected off the usable screen area.									
f	4.0	7.0	As for Test (c)	1.25	-	1. Line Width (mm) 2. Va2 (V)	- 850	0.5 1050	100%	1
	DEFLECTION. With a sine-wave time base of 10 kc/s nom. and a line length of 80 mm, the line width shall be measured at the centre of the trace, in the X and Y directions, successively. GRID. The grid shall be pulsed positively from cut-off with amplitude equal to the value obtained in Test (e2). Nom Tp = 100 μsecs. Nom PRF = 100 c/s.									
g	4.0	7.0	Any con-venient value	1.25	-80	Grid Insulation 1. Leakage Current (μA) 2. Increase in voltmeter reading (%)	 - -	 8 100%	100%	
	See K1001/5A.3.2 Grid resistor = 10 megohms									

TESTS (Cont'd)

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (kV)	Val (kV)	Vg (V)		Min.	Max.		
h	4.0	7.0	As for Test (g)	1.25	Any convenient value	Deviation of unfocussed spot from centre of screen (mm)	-	5	100%	
j	As for Test (h)					Useful Screen Area / Diameter (mm)	80	-	100%	
k	4.0	7.0	Any convenient value	1.25	-	Persistence (secs)	30	-	100%	
	Tests shall be performed using an approved method.									
m	The tube shall be capable of use with an earth connection to any point on the HT potential divider without causing distortion of the trace or spot shift.								TA	

NOTE

1. Alternatively, the test may be performed using a raster having a 10 kc/s nom sine-wave time base 80 mm long in the X direction and a 50 c/s scan in the Y direction, widened so that the individual lines are separated by at least one line width. The line width shall be measured in both X and Y directions. The grid need not be pulsed for this alternative test, but should be set to give a beam current = 100 μA.


90 ± 2 O.D.
CORNER RAD. 8 ± 2
25 ± 5
35 ± 5
90 ± 3
36MM
RING GAUGE
CENTRE OF RECESSED
CONTACT.
900 MIN.
RAD.
300 ± 10
OVER THIS LENGTH
STRAIGHTNESS SHALL
BE SUFFICIENTLY GOOD
FOR A GAUGE 36·0 MM.
MAX. INTERNAL DIA. AND
100MM. LENGTH TO SLIDE
FREELY OVER NECK AND
BASE.
33 MIN.
35 MAX.
DIA.
ALL DIMENSIONS IN MILLIMETERS