MINISTRY OF AVIATION - DLRD/RRE

VALVE ELECTRONIC

CV 389

Specification MOA/CV389
Issue 2A Dated 18th February 1960
To be read in conjunction with K1001 and BS448

SECURITY	
Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

indicates a change ◄——

TYPE OF VALVE - Cathode Ray Tube (P.D.A.)
DEFLECTION - Electrostatic, Symmetrical
FOCUS - Electrostatic
BULB - Glass with internal conductive coating
SCREEN - GG4
PROTOTYPE - VCRX 210

MARKING

See K1001/4

BASE

See BS448: B9G with moulded sole plate and spigot

RATINGS

All limiting values are absolute

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. Anode 4 Voltage	(KV)	4.0	
Max. Anode 3 Voltage	(KV)	1.7	
Max. Anode 2 Voltage	(V)	200	
Max. Peak Cathode Current	(/uA)	500	
Typical Operating Conditions			
Anode 4 Voltage	(KV)	3.5	
Anode 3 Voltage	(KV)	1.5	
Anode 2 Voltage (Approx)	(V)	75	
Beam Current	(/uA)	30	
Cathode Current	(/uA)	40	
X Plate Sensitivity	(mm/V)	0.10	B
Y Plate Sensitivity	(mm/V)	0.093	B

CONNECTIONS

Pin.	Electrode	
1	Heater and Cathode	h+k
2	Grid	g
3	Heater	h
4	Anode 2	a2
5	X Plate 1	X1
6	Y Plate 1	y1
7	Anode 1 and Anode 3	a1 + a3
8	Y Plate 2	y2
9	X Plate 2	X2
Side Contact	Anode 4	a4

DIMENSIONS

See drawing on page 4

SIDE CONTACT

CT 7

NOTES

A. The tube shall be of the post deflection accelerator type and of a design such that a change of ± 10% in the Anode 2 voltage shall produce no appreciable change in the cut off voltage.

B. When viewing the screen with the tube positioned such that the keyway of the spigot is at an angle of 30° to the left of the vertical, a positive voltage on pin 5 will deflect the spot to the right, and a positive voltage on pin 8 will deflect the spot upwards.

CV389

TESTS

Test conditions unless otherwise stated:-

Vh(V)	Va4(KV)	Va3(KV)	Va2 and Vg
4	3.5	1.5	Any convenient value

K1001	TEST	TEST CONDITIONS	AQL %	Insp. Level	Symbol	LIMITS Min	LIMITS Max.	Units
5A.1	General Inspection	No Voltages		100%				
	Dimensions	No voltages see drawing on page 4		100%				
55 A.2	Loose Particles	No Voltages		100%				
5A.3.1	Insulation	No Voltages		100%				
5A.3.2	Grid Insulation	Vg = -120V: Rg =0		100%	Ig	-	12	uA
	Leakage Current Increase in voltmeter reading	Rg = 10M ohm		100%		-	100%	
	Heater Current		1.5%	II	Ih	1.0	1.2	A
5A.10	Negative Grid Cut-off Voltage (V1)	Optimum focus: No deflection		100%	Vg	40	120 record	V
	Negative Grid Voltage (V2)	Light Intensity = 0.1 Candela on close raster. Optimum Focus		100%	Vg	record		V
	Grid Base (V1-V2)			100%		10	35	V
5A.7	Focus, line width at centre of trace, and Anode 2 voltage	Optimum Focus Sine wave scan f = 10Kc/s (Nom), 35mm long in X and Y directions successively The line width shall be measured at the centre of the trace. Grid drive from cut-off by 100 uS pulse of amplitude (V1-V2) p.r.f. = 100 p.p.s max		100%	Va2	40	110	V
	Deflection Sensitivity (1) X Plate			100%		.086	.113	mm/v
	(2) Y Plate			100%		.080	.107	mm/v

K1001	TEST	TEST CONDITION	AQL %	Insp. Level	Sym-bol	LIMITS Min.	LIMITS Max	UNITS
5A.11	Spot Position and Displacement			100%		-	3	mm
5A.12	Useful Screen Area Diameter on Geometric Centre.			100%		35	-	mm
	Angle between X and Y axes of deflection			100%		88	92	degrees
	Orientation of Y axis of deflection relative to axis through key way on base spigot			100%		20	40	degrees
	Orientation of diameter line through side contact relative to axis through keyway on base spigot			100%		-	± 10	degrees
5A.13	Capacitances Each X plate -all Each Y plate-all to each Y plate Grid to all		6.5	IC	 cx-all cy-all Cx-y cg-all	 - - - -	 12 12 3 20	 pF pF pF pF
5A.21	Resistance to external pressure			TA				

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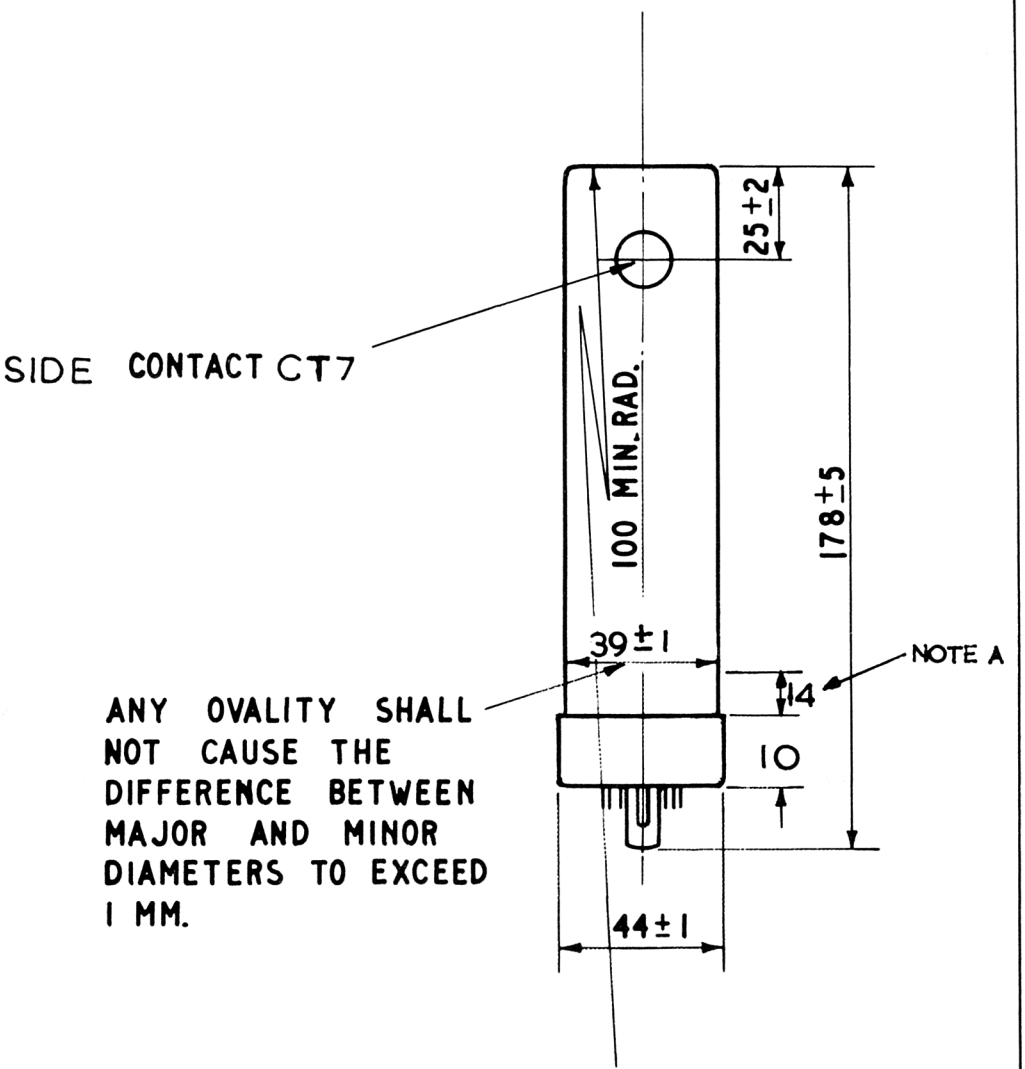

NOTES

A. OVER THIS LENGTH THE DIAMETER SHALL BE 40±2

ALL DIMENSIONS ARE IN MILLIMETRES