VALVE ELECTRONIC
CV 6188

SPECIFICATION UKAEA/CV 6188 ISSUE 1, DATED 14.10.66 To be read in conjunction with K1001 (except Clauses 5.2, 5.8) and BS448	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED
Type of Valve: Electrometer Pentode. Cathode: Directly Heated Envelope: Glass Prototype: ME1403/CV2348. Selected	MARKING See K1001/4, except that the valve shall be marked with CV No., Date Code and Factory Code only.

RATING AND CHARACTERISTICS (Not for Inspection Purposes) See Notes A, B, C, D.		NOTES	BASE BS448/B5J/F
RATINGS			**CONNECTIONS AND DIMENSIONS**
Nominal Filament Voltage	(V)	1.25 E	See Drawing on Page 3
Maximum Anode Supply Voltage	(V)	45	
Maximum Control Grid Voltage	(V)	-50	
Maximum Screen Grid Voltage	(V)	10	
Maximum Cathode Current	(μA)	180	
CHARACTERISTICS			**MOUNTING POSITION**
Filament Current	(mA)	8.2	ANY
Min. Dynamic Anode Resistance	(MΩ)	5 F	
Min. Mutual Conductance	(μA/V)	10 F	
Min. Amplification Factor		50 F	
Screen Grid Voltage typ.	(V)	6 F	
Screen Grid Current typ.	(μA)	3 F	
Max. Negative Control Grid Crossover Voltage	(V)	1.7 F.G.	
Max. Control Grid Current	(A)	3×10^{-15} F.H.	

Notes

A. All voltages are with respect to the negative end of the filament.

B. Valve to be used in an electrostatically shielded light tight container.

C. The glass envelope must not be touched by hand within ½ in. from leads. The leads must not be soldered within ½ in. from the base.

D. Anode voltage must be applied after filament voltage to avoid excessive drift.

E. Filament voltage range 1.1 to 1.5V.

F. Value at Vf = 1.25V, Va = 7V, Vg_1 = -2.5V, Vg_2 adjust for Ia = 5μA

G. Value at Vf = 1.25V, Va = 7V, Vg_2 set as described in Note F and Ig_1 = 0

H. This value of Ig_1 will be obtained only if the valve is operated in complete darkness. A stabilisation period of up to 60 minutes at these conditions may be required before the final level of Ig_1 is obtained.

I. NATO Stock No. 5960-99-037-4885

(445741)

Valve Electronic CV 6188

TESTS

To be performed in addition to those required by K1001

TEST CONDITIONS: (unless otherwise stated) Vf = 1.25 V, Va = 7 V, Vg_1 = -2.5V, Vg_2 adjust for I_a = 5 μA

	TEST	TEST CONDITIONS	A.Q.L.	Insp. Level	SYMBOL	LIMITS Min	LIMITS Max	
	GROUP A							
a	Screen Grid Voltage			100%	Vg_2	5	7.5	V
b	Mutual Conductance	Note 1		100%	gm	10	-	μA/V
c	Amplification Factor	Note 2		100%	μ	50	-	
d	Control Grid Current	Vg_2 = 6V adj. Vgl to give Ia within 4.5 to 5.5 μA Note 3		100%	Ig_1	-	$3x10^{-15}$	A
e	Vg_1 Crossover	Notes 4 and 5		100%		-	1.7	V
	GROUP B	Omit						
	GROUP C							
f	Filament Current	Vf = 1.25 No other Voltages	6.5	I	If	7.2	9.2	mA
	GROUPS D AND E	Omit						
	GROUP F							
g	Life Test	t = 500 hours		S.1				
	Life Test End Point 500 hours							
	Tests a to e	Combined A.Q.L.	10			As in A	Group	
	GROUP G	Omit						

Note: 1 Measure by increasing the bias voltage by not more than 0.1 V.

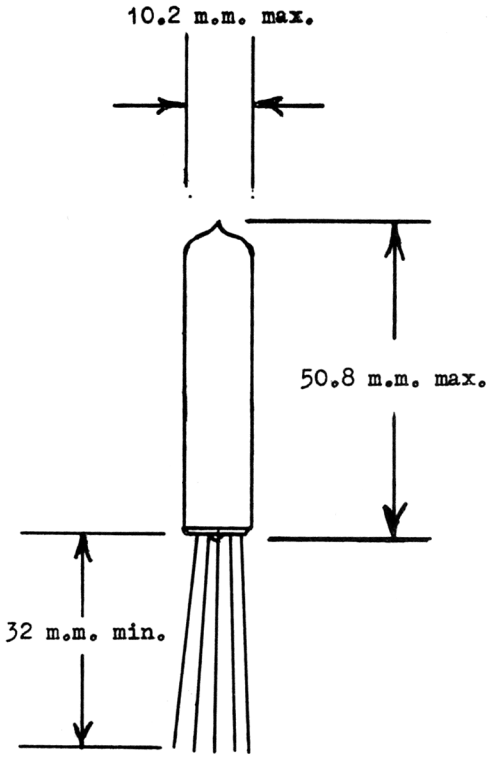
2 Measure by increasing Va by between 2 and 3 volts, the anode current being maintained at 5 μA by adjusting Vg_1.

3 This may be measured directly (e.g. by measuring the voltage drop across a suitable resistor connected in series with the control grid) or indirectly. A suitable indirect method is to connect a capacitor in series with the control grid and to measure the change of voltage across the capacitor caused by the grid current flowing into it during a given time interval.
This measurement may be made after up to 60 minutes' operation under the specified conditions, but as the grid current normally decreases with time, the valve may be accepted if the grid current is within limits after at least 5 minutes' operation. The measurement must be made in an electrostatically shielded light-tight container.

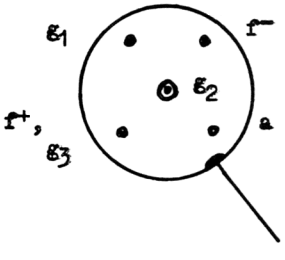
4 Vg_2 is set to the value obtained in Test a. The Vg_1 crossover is then determined as that control grid voltage for which Ig_1 = 0.

5 Valve to be allowed to settle. This test may subject the valve to overload conditions and thus a period of normal operation may be required for the valve to regain its normal characteristics.

Warning: See Note C Page 1.



View of underside of base



B5J/F Base