VALVE ELECTRONIC

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

CV2465

Specification AD/CV2465 Issue No. 1 Dated 28-4-58 To be read in conjunction with K1001, BS448 and BS1409.	SECURITY Specification: Unclassified Valve: Unclassified

TYPE OF VALVE: Output Tetrode with flying leads.

CATHODE: Indirectly heated.

ENVELOPE: Glass

PROTOTYPE: CV428, VX7110

RETMA DESIGNATION:

MARKING

K1001/4

BASE

B8G/F

CONNECTIONS

Lead	Electrode	
1	Heater	h
2	(Cathode and Beam (plates	k, bp
3	Grid No. 2	g2
4	(Cathode and Beam (Plates	k, bp
5	Grid No. 1	g1
6	(Cathode and Beam (plates	k, bp
7	(Cathode and Beam (plates	k, bp
8	Heater	h
Top Lead	Anode	a

RATING
(All limiting values are absolute)

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.9	
Max. Anode Voltage	(V)	600	
Max. Anode Voltage (I_a = 0)	(V)	750	
Max. Screen Voltage	(V)	300	
Max. Anode Dissipation	(W)	25	
Max. Screen grid Dissipation	(W)	4.5	
Max. Heater/Cathode Voltage	(V)	±135	
Max. Anode Current	(mA)	120	
Max. D.C. Control Grid Voltage	(V)	-200	
Max. Grid/Cathode resistance (fixed bias)	(KΩ)	100	
Max. Grid/Cathode resistance (cathode bias)	(KΩ)	500	
Mutual Conductance	(mA/V)	6	A
Inner /u		9	
Max. shock (short duration)	(g)	100	
Max. acceleration (continuous operation)	(g)	½g	

Capacitances (pF)

C in (max.)	12.0	B
C out (max.)	10.0	B
C -g1 (max.)	0.2	B

DIMENSIONS

See BS448

Dimensions mm	Min.	Max.
A. Seated height	-	92.1
B. Diameter	27.8	29.2
C. Lead length	50.8	-

MOUNTING POSITION

Any

NOTES

A. Measured at V_a = 250V; V_{g2} = 250V; V_{g1} = -14V.

B. Measured on a 1 Mc/s bridge with the valve mounted in a fully screened and approved socket. No shield.

TESTS

To be performed in addition to those applicable in K1001 and in the specified order unless otherwise agreed by the Inspection Authority.

Test conditions - unless otherwise specified

Vh (V)	Va (V)	Vg1 Adjust	Vg2 (V)	Ia (mA)
6.3	500		300	28

K1001	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
	GROUP A							
	Insulation	Vg1 - all = -100V D.C.		100%	R	100	-	MΩ
		Vg2 - all = -500V D.C.		100%	R	100	-	MΩ
		Va - all = -500V D.C.		100%	R	100	-	MΩ
	Reverse Grid Current	IA = 50 mA. See Note 1		100%	Ig1		3.5	/uA
	GROUP B	Combined AQL	1.0					
	Heater Current	Vh = 6.3V	0.65	II	Ih	0.8	1.0	A
	Heater/Cathode leakage Current	Vhk = ± 130V D.C. in series with 1MΩ	0.65	II	Ihk	-	15.0	/uA
	Control Grid Voltage		0.65	II	Vg1	-25	-40	V
	Screen Grid Current		0.65	II	Ig2	-	2.5	mA
	Mutual Conductance		0.65	II	gm	2.5	~~3.8~~ 4.3	mA/V
	GROUP C	Combined AQL	6.5	I				
	Cut-off Grid Voltage	Ia = 1 mA	2.5	I	Vg1) c/o)	-40	-58	V
	Emission	See Note 2	2.5	I	Ik	3.5	-	A
	GROUP D							
5.12	Lead fragility	No Voltages	6.5	IA				
	Capacitance	Measured on a 1 Mc/s bridge with the valve mounted in a fully screened and approved socket. No shield.	6.5	IC	Cg-g1	-	0.2	/u/uF
					C in	9.5	12.0	/u/uF
					C out	7.5	10.0	/u/uF

CV2465

TESTS (Contd.)

K1001	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
	GROUP E	Combined AQL						
11.3	Fatigue	Vh = 6.3V switched 1 minute on, 3 minutes off. Va = Vg2 = 0 Acceleration = 1g Frequency = 170 c/s Duration = 23 hrs. Note 3.		IA				
	POST FATIGUE TESTS							
	Heater/Cathode Leakage Current	Vhk = ± 130V D.C. in series with 1 MΩ	4.0		Ihk	-	30	/uA
	Reverse Grid Current	Ia = 50 mA. See Note 1.	4.0		Ig1	-	4.0	/uA
	Mutual Conductance		4.0		gm	2.5		mA/V
11.4	Shock	No voltages Hammer angle 20°		IA				
	POST SHOCK TESTS							
	Heater/Cathode Leakage Current	Vhk = ± 130V D.C. in series with 1 MΩ	4.0		Ihk	-	30	/uA
	Reverse Grid Current	Ia = 50 mA	4.0		Ig1	-	4.0	/uA
	Mutual Conductance		4.0		gm	2.5		mA/V

CV2465

TESTS (Contd.)

K1001	Test	Test Conditions	AQL %	Insp. Level	Symbol.	Limits Min.	Limits Max.	Units
AV1/5.3	Life Test	Va = 400V Vg2 = 300V Rk = 300Ω		IA				
	Life Test End Point							
AV1/5.6	(500 hours)	Inoperatives	4.0					
	Control Grid Voltage		4.0		Vg1	-20	-45	V
	Mutual Conductance		4.0		gm	2.5	-	mA/V
	Reverse Grid Current	Ia = 50 mA See Note 1	4.0		Ig1	-	4.0	/uA
	Emission	See Note 2	4.0		Ia	2.5	-	A
A1X/2.5	Electrical re-test after 28 day holding period.			100%				
AV1/5.6	Inoperatives		0.5					
	Reverse Grid Current	Ia = 50 mA. See Note 1.			Ig1	-	4	/uA

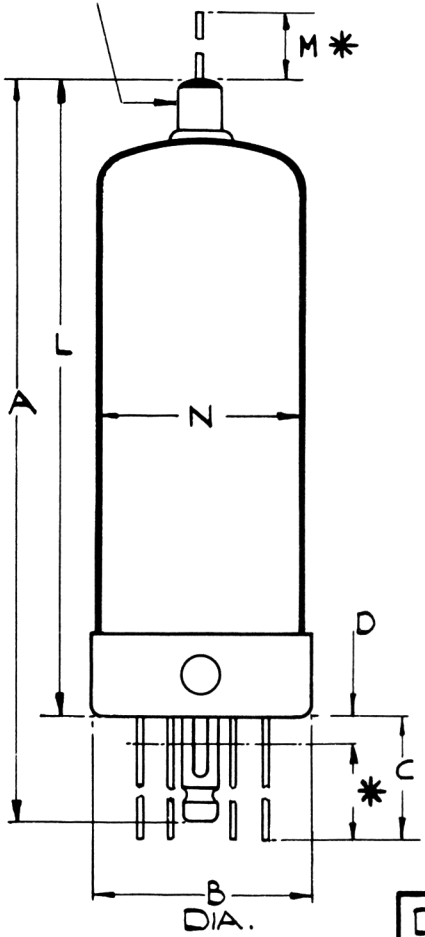
NOTES

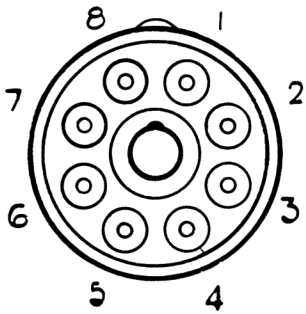
1. After 2 minutes, reverse current to control grid must not exceed the value specified and must not be rising.

2. The test shall be carried out by application of a 2 /u second pulse of 300 volts amplitude of 50 p.p.s. repetition frequency between cathode and all other electrodes.

3. This test shall be carried out with the direction of acceleration at 45° to the three main axes of the valve.

CV2465





BASING.

1. HEATER.
2. CATHODE & BEAM PLATES.
3. GRID Nº2
4. CATHODE & BEAM PLATES.
5. GRID Nº1
6. CATHODE & BEAM PLATES.
7. CATHODE & BEAM PLATES.
8. HEATER.

T.C. ANODE.

NOTE:-
LEADS SHALL BE FLEXIBLE 25-27 S.W.G. TINNED COPPER WIRE.

DIM.	MILLIMETRES	
A	105·6	MAX.
B	30·2	MAX.
C	50·8	MIN.
D	3·2	NOM.
L	92·1	MAX.
M	25·4	MIN.
N	27·8	MIN.
	29·2	MAX.

* DENOTES:- LEADS TINNED OVER THIS PORTION.

SPECIFICATION AD/CV2465

ISSUE NO. 1. DATED 28.4.58

Amendment No. 1

Page 2. Group B. Mutual Conductance

Amend max. of 3.8 mA/V to read 4.3 mA/V.

March, 1959. Admiralty Surface Weapons Establishment

N.54427/D