VALVE ELECTRONIC

CV381

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV381/Issue 3. Dated 10.1.52. To be read in conjunction with K1001, ignoring clauses:- 5.2, 5.3, 5.8.	SECURITY	
	Specn.	Valve
	Unclassified	Unclassified

TYPE OF VALVE:- Hot cathode, hydrogen filled, grid controlled triode, rated for operation only in circuits where it is required to deliver current impulses of short duration.

CATHODE:- Directly heated.

ENVELOPE:- Glass.

PROTOTYPE:- VX4024.

RATING

			Note
Vf (AC or DC)	(V)	2.5	A
If	(A)	10-12-14	
Max. peak Va	(kV)	10	B,C
Max. peak Ia	(A)	90	B,C
Max. rate of rise of Ia	(A/μS)	1500	C
Max. neg. Vg	(V)	100	D
Max. Ia mean	(mA)	100	
Max. pulse rep. frequency	(pps.)	2500	

MARKING

See K1001/4.

Additional Marking:-

Serial No. .....

BASE

Special - flexible leads.

TOP CAP

Special - to fit connector A.P. W.4927.

DIMENSIONS AND CONNECTIONS

See Figure on page 3.

Overall length $8\frac{3}{4}$"

Bulb diameter $2\frac{1}{2}$"

PACKING

See K1005.

NOTES

A. The filament voltage should be switched on for a period of a least two mins. before anode voltage is applied.

B. These ratings are given for pulse discharges of 1 μS duration at a repetition frequency of 500 pps. and for AC rectifier charging.

C. The grid should be driven from a pulse generator of internal impedance of not more than 2000 ohms (including the grid stopper) producing on open circuit pulses of amplitude greater than 200 V for at least 4 μS, rising to 200 V in not more than 1 μS.

D. The valve is designed for zero grid voltage hold-off under normal conditions. A negative voltage in excess of the rated value may cause ionisation.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions			Test	Limits		No. Tested	Note
	Vf (V)	Vg (V)	Va (kV)		Min.	Max.		
a	2.5	-	-	If (A)	10	12	100%	1
b	2.5	Valve to be operated as valve V9 (normally CV12 type) in modulator Panel 3BA working into a resistive load of 50 ohms with 1.9 μS (long) pulses. The preheating air should be diverted. See clause 'c'.		The H.T. supply should be raised gradually over a period of not more than 5 minutes until current pulses of 90 A are obtained.				1,2,3.
				Time of test at full load. (mins)	2	-		
				Grid-Cathode striking voltage. (V)	-	200		
				Grid-Cathode voltage during flat part of the pulse. (V)	-	200		
c	Immediately after test "b" and without switching off, the H.T. is to be raised to 10 KV for 10 secs. All valves are to take 10 KV without loss of control and give a normal current pulse.							

NOTES

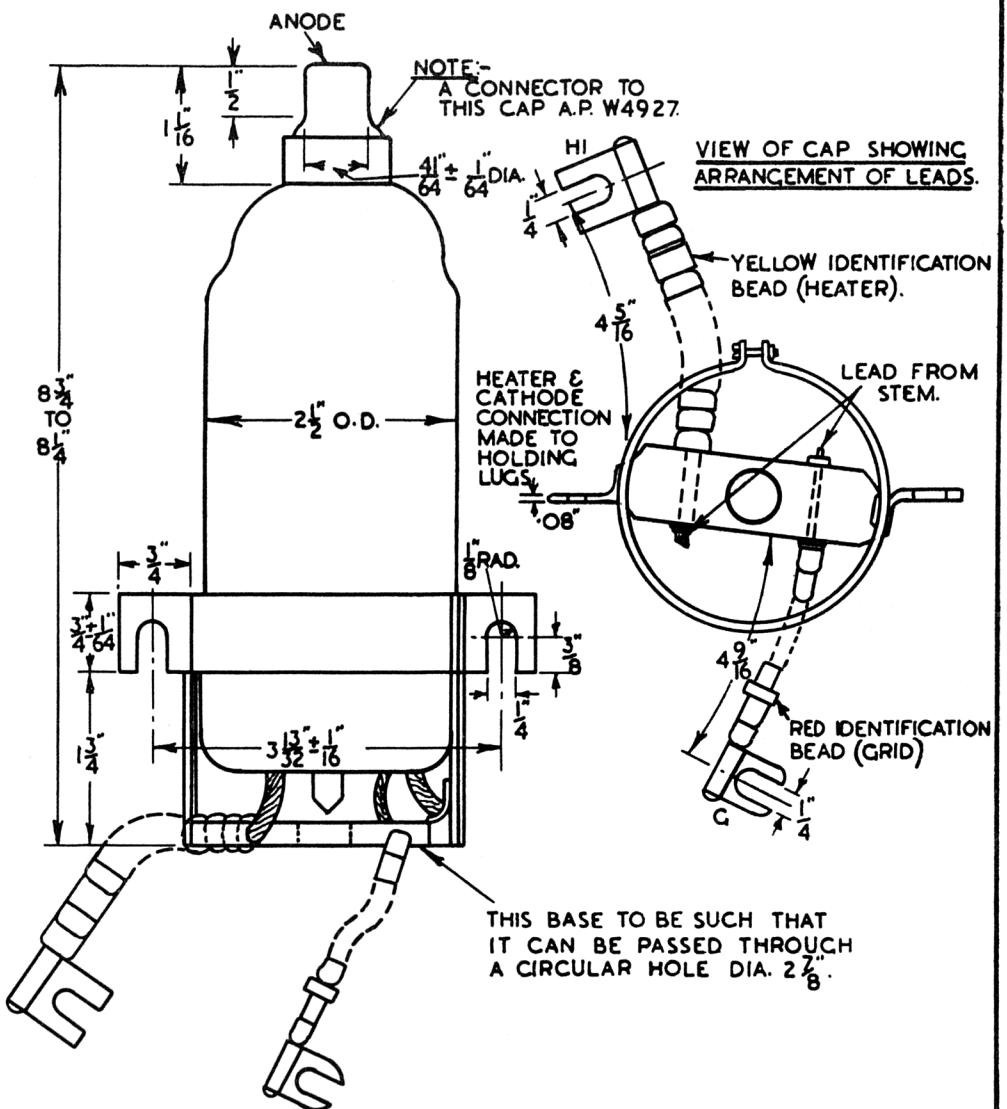
1. The filament voltage shall be switched on for a period as near as possible to, but not longer than, 2 mins. before H.T. is gradually applied.

2. This test shall be done after at least 48 hrs. idle shelf life.

3. To comply with the requirement for grid drive in Note 'C' overleaf, the trigger unit design "A" should be suitably modified, e.g. by shunting C6 by 0.01 μF bringing its total value to 0.015 μF and R9 by 150 K ohms bringing its total value to 60 K ohms, and by removing the neon valve V3 and plugging an earth lead into the grid socket of that valve's holder, thus removing bias. The current may be measured on the monitor G86 connected to Jack D. The sensitivity of the monitor tube and the measuring circuit will give a deflection of approx. 10 mm for the current of 90 A. The H.T. supply will normally give a reading of approx. 8.5 KV on the meter on Panel 3BA connected to the primary of the H.T. transformer.

DIMENSIONS & CONNECTIONS

CV381



NOTE:-
THE LEADS MUST BE CAPABLE OF BEING BENT AROUND A CIRCLE OF 1 3/4" MAX. DIA.

SPECIFICATION AD/CV381/ISSUE 3.

AMENDMENT NO. 1.

Page 1.
RATING.

If. Amend 12-14 to read 10-12.

T.V.C. Office,
(for A.S.R.E.)

December, 1952.