ADMIRALTY SIGNAL ESTABLISHMENT

VALVE ELECTRONIC **CV1491** (NT98A)

Specification AD/CV1491/Issue 4. Dated 6.2.47. To be read in conjunction with K1001, ignoring clauses:- 5.2, 5.3, 5.8.	SECURITY Specn. Restricted Valve Unclassified

→ Indicates a change

TYPE OF VALVE:- Magnetron. CATHODE:- Indirectly heated, oxide-coated. ENVELOPE:- Copper and glass. PROTOTYPE:- E1189.	MARKING See K1001/4 Additional Marking:- Serial No. ..... See also Note 'C'.

RATING			Note
Heater Voltage (AC or DC)	(V)	6.0	
Heater Current	(A)	1.25	
Approx. Nominal Wavelength (See Test 'c')	(cm)	9.85	
Max. Anode Dissipation	(W)	150	B
TYPICAL OPERATING CONDITIONS			
Peak Anode Voltage	(kV)	9.5	A
Peak Anode Current	(A)	8.0	A
Peak Output Power	(kW)	8.0	A

DIMENSIONS AND CONNECTIONS

See Drawing, Page 3.

PACKING

See K1001/7.3.

NOTES

A. These figures are for pulse operation with:-

(i)	Recurrence frequency	:	500 pps.
(ii)	Pulse length	:	1 micro-sec.
(iii)	Pulse shape	:	Sensibly square
(iv)	Field strength	:	1,080 oersteds (See Note 'D')

B. During operation and testing, air must be blown through a suitable fitting enclosing the cooling fins of the anode so that the block temperature does not rise above 140°C.

C. No technical information shall appear on the valve or packing.

D. The valve is expected to operate with any field in the range 1,080 ± 54 oersteds. This point will be checked at Type Approval.

E. The magnetron shall be processed so as to ensure, as far as possible, that only brief ageing (of the order of 5 minutes or less) is necessary when it is put into service.

F. In use, the cathode lead side of the valve shall be adjacent to the north pole of the magnet.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions		Test	Limits		No. Tested	Note
	Vh (V)	Ia Peak (A)		Min.	Max.		
a	6.0 AC or DC	-	Ih (A)	1.0	1.5	100%	
b	6.0	8.0	Va Peak (kV)	8.55	10.45	100%	1
c	6.0	8.0	Frequency (Mc/s)	3060	3030	100%	1,2
d	6.0	8.0	Peak output power (kW)	5.0	-	100%	1,3
	Output power is to be measured by an approved method.						
e	6.0	-	Frequency Continuity	The frequency shall vary smoothly and without discontinuity and by not more than 3 Mc/s.		100%	1
	Ia peak is to be varied from 9 A to 7 A, with loading for optimum output at 8 A. The change of frequency is to be observed.						

NOTES

1. The valve is to be pulse-tested, according to the above table, (tests 'b' to 'e') in an approved circuit, and with the following test conditions:-

   1.1. Recurrence frequency : 500 pps.
   1.2. Min. pulse length : 1 μ sec.
   1.3. Min. mark/space ratio : 1/2000.
   1.4. Pulse shape : Sensibly square.
   1.5. Field strength : 1080 $\pm$ 10 oersteds.

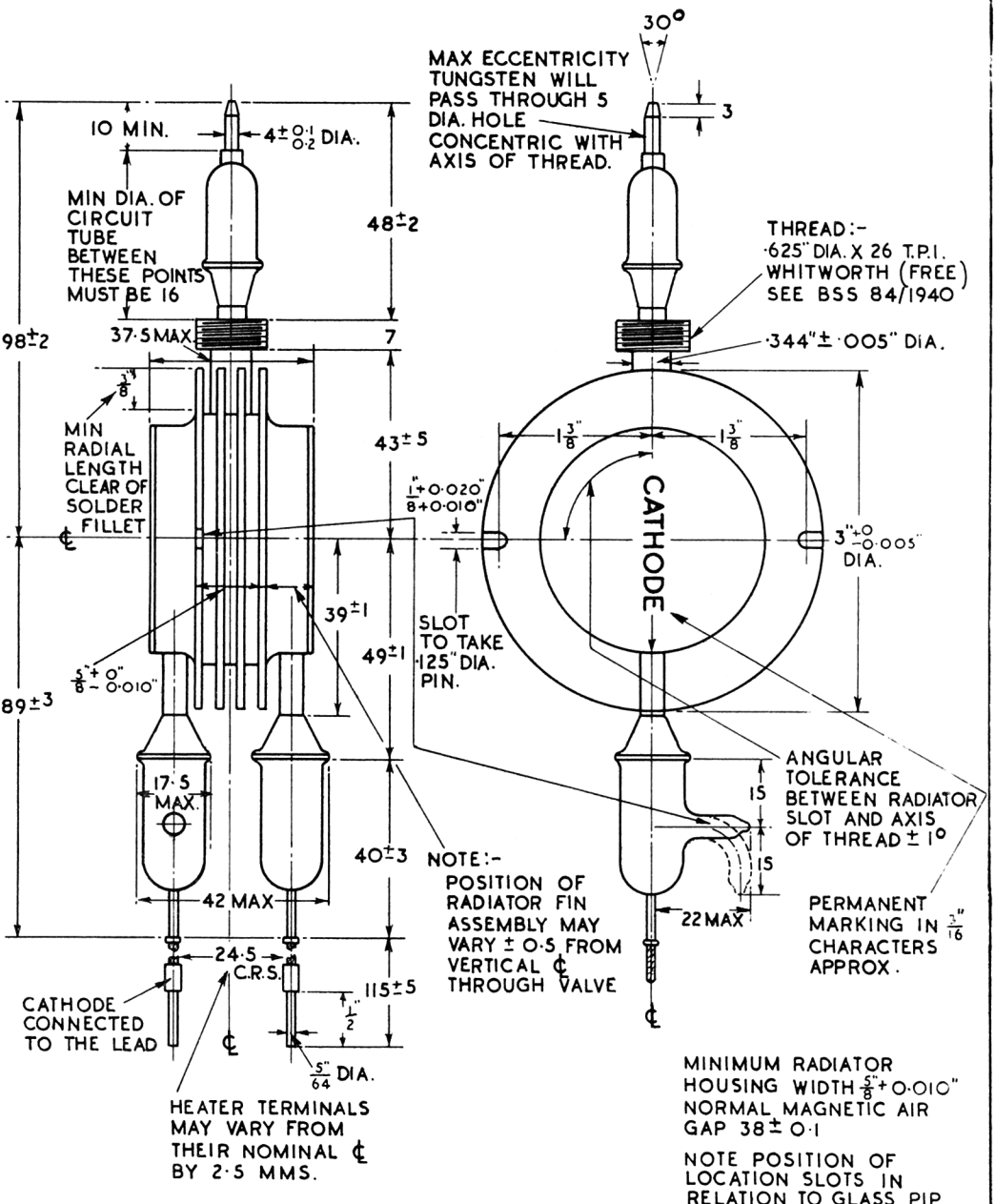
   No serious or continued flashing (internal or external) must occur during the tests. Tests 'b', 'c' and 'd' must be satisfied with the same setting of the output circuit.

2. GROUPING AND RE-MEASUREMENT. If, on a single measurement, a valve falls within an adjacent group, action shall be taken according to the extent of the discrepancy:-

   (a) By not more than 6 Mc/s. The group remains unchanged.
   (b) By more than 20 Mc/s. Re-group accordingly.
   (c) By an amount between 6 Mc/s. and 20 Mc/s. Make three more re-measurements; if the average of the four measurements shows a discrepancy of less than 6 Mc/s., the grouping remains unchanged. If more than 6 Mc/s. re-group accordingly.

3. The apparatus used for the measurement of output power is to be checked after every 500 valves tested, or once a month (whichever is the shorter period) against the calorimetric method of measurement.

OUTLINE DIMENSIONS



ALL DIMENSIONS IN MILLIMETRES EXCEPT WHERE OTHERWISE STATED.