VALVES ELECTRONIC **CV3659-62**

MINISTRY OF SUPPLY - DLRD(A)/RRE

Specification MOS(A)/CV3659-62 Issue 1 Dated 29th January 1954 To be read in conjunction with K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

TYPE OF VALVE - Magnetron
CATHODE - Indirectly-heated; oxide-coated; (See also Note A)
ENVELOPE - Copper and glass
PROTOTYPE - CV1479 (Booted version)

MARKING

See K1001/4
(See also Note D)

RATING

			Note
Heater Voltage (AC or DC)	(V)	5.0	A
Heater Current	(A)	2.6	A
Max. Anode Dissipation	(W)	600	B
Nom. Operating Frequency (Mc/s)			
- CV3659		3045	
- CV3660		3017	
- CV3661		2992	
- CV3662		2960	
TYPICAL OPERATING CONDITIONS (See Note C)			
Peak Anode Voltage	(kV)	27	
Peak Anode Current	(A)	35	
Output Peak Power	(kW)	450	

BASE

See Drawing on Page 3.

CONNECTIONS AND DIMENSIONS

See Drawing on Page 3.

MOUNTING POSITION

Any

NOTES

A. Vh = 5V for starting only; for normal running Vh = 0.

B. During operation and testing, the magnetron must be air-cooled to ensure that the temperature of the anode block does not exceed 140°C.

C. These figures apply for pulse operation under the following conditions:

PRF = 500 pps;
Tp = 2 or 0.7 μsec;
Pulse shape : Sensibly square;
Field strength : 2300 ± 100 gauss.

The magnetron is expected to operate with any field strength within this range. This point will be checked during Type Approval testing.

D. In addition to the requirements of K1001/4, each magnetron shall be marked with a serial number.

No technical information shall appear on the valve or its packaging.

E. The magnetron shall be processed to ensure, as far as possible, that only brief ageing in the order of 5 mins 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	Notes
	Vh (V)	Peak Ia (A)		Min.	Max.		
a	5.0	-	Ih (A)	2.3	2.9	100%	1
b	0	35	1. Peak Va (kV)	24	30	100%	2
	PRF = 500 pps Min. Tp = 2 usecs Pulse Shape: Sensibly square Field Strength = 2300 ± 20 gauss Duty Cycle = 0.001 - 0.0009		2. Frequency (Mc/s)			100%	2 & 3
			CV3659	3030	3060		
			CV3660	3005	3030		
			CV3661	2980	3005		
			CV3662	2940	2980		
			3. Peak Output Power (kW)	400	-	100%	2 & 4
c	0	Varied over the range from 30A to 40A	Frequency Continuity Change in frequency (Mc/s)	-	5	100%	2 & 5
	Other conditions as for Test (b).						
d	Waveguide plunger adjusted to produce the maximum possible frequency change.		1. Average batch frequency change (Mc/s)	-	28	5% or 5	2
			2. Max. individual frequency change (Mc/s)	-	35		6

NOTES

1. Vh = 5V for starting only; for normal running Vh = 0.

2. The valve is to be pulse-tested in an approved circuit.

   No serious or persistent flashing, internally or externally, shall occur during the test.

3. Grouping and Re-measurement. If, on a single re-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 grouping remains unchanged;
   (b) by more than 20 Mc/s, re-group accordingly;
   (c) by an amount between 6-20 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 the average is more than 6 Mc/s, re-group accordingly.

4. The output power shall be measured by an approved method.
   The apparatus used for the measurement of output power shall be checked after every 500 valves tested, or once a month (whichever is the shorter period), against the calorimetric method of measurement.

5. The frequency shall vary smoothly and without discontinuity.

6. If the average frequency change over one month of production exceeds 28 Mc/s correcting action shall be taken, and the Approving Authority notified. However, deliveries may continue.

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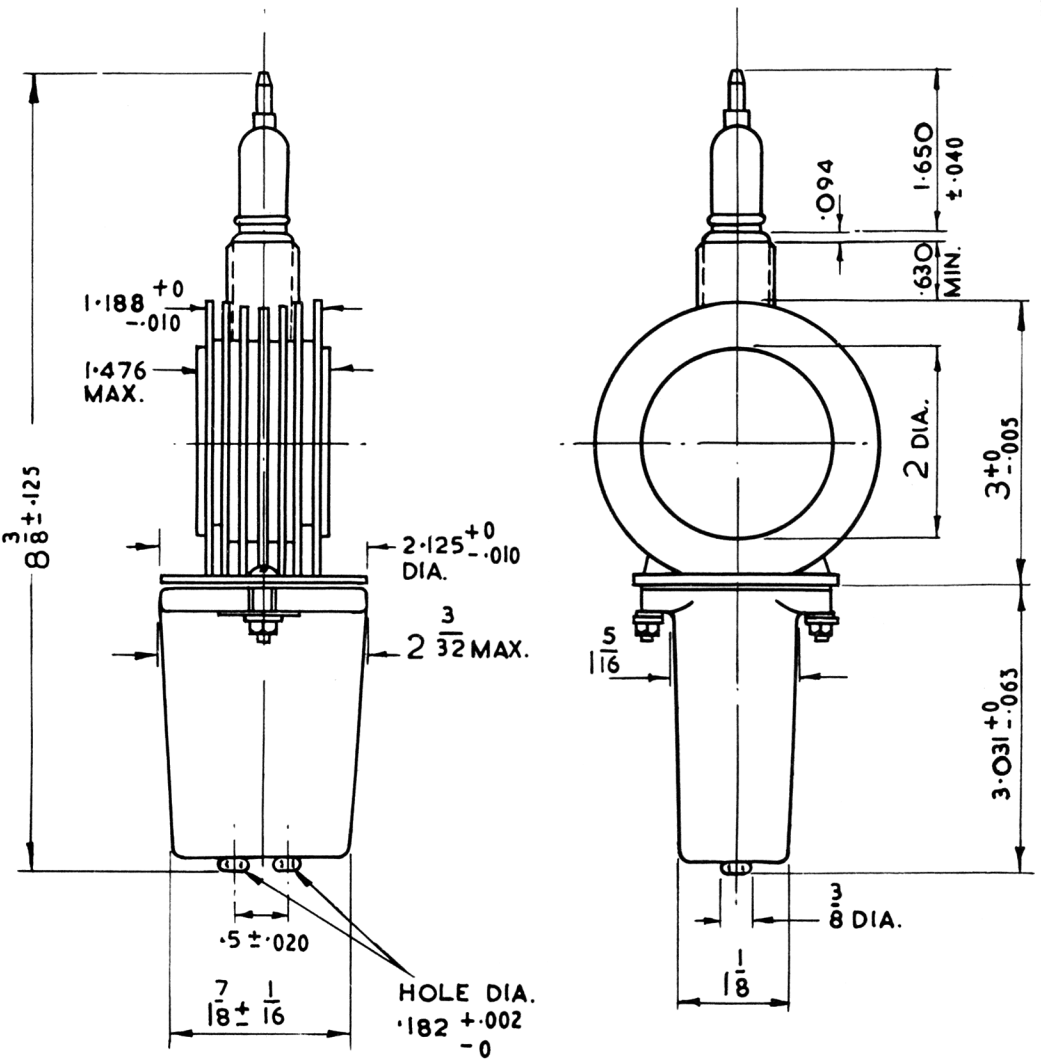

ALL DIMENSIONS IN INCHES.