VALVE ELECTRONIC **CV1866**

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV1866	SECURITY	
Issue No.1 Dated 20/12/55	Specification	Valve
To be read in conjunction with K1001	Unclassified	Unclassified

TYPE OF VALVE: Package Magnetron
CATHODE: Indirectly Heated
ENVELOPE: Metal and Glass
PROTOTYPES: E.E.V., Type M503
Mullard, Type ME1101

MARKING
See K1001/4
Additional Marking:-
Serial No. .....

RATINGS			Note
Heater Voltage	(V)	6.3	D
Heater Current	(A)	0.5	
Max. Peak Anode Voltage	(kV)	6	A
Max. Peak Anode Current	(A)	6.0	A
Max. Peak Input Power	(kW)	36	A
Max. Mean Input Power	(W)	90	A
Max. Duty Ratio for above rating		0.0025	A, C
Max. Pulse Duration	(uS)	2.5	A
Nominal Operating Frequency	(Mc/s)	9375	
Min. Cathode Heating Time	(Mins)	2	B
Max. Anode Temperature	(°C)	120	A
TYPICAL OPERATING CONDITIONS			
Peak Anode Voltage	(kV)	5.5	
Peak Anode Current	(A)	6.0	
Peak Output Power	(kW)	8.0	
Pulse Duration	(uS)	0.2	
Pulse Repetition Rate	(pps)	1000	

CONNECTIONS AND DIMENSIONS
See drawing on page 3

NOTES

A. Absolute Maximum Value.

B. Cathode heating time shall be three minutes minimum if the ambient temperature is below 0°C.

C. The duty ratio, that is the product of pulse duration in seconds and of the pulse repetition frequency in pulses per second, must not exceed 0.0025 at maximum peak input power.

D. For duty ratios greater than 0.001 the heater voltage should be reduced to 4.5V after switching on the HT.

Z.11024.R.

TESTS

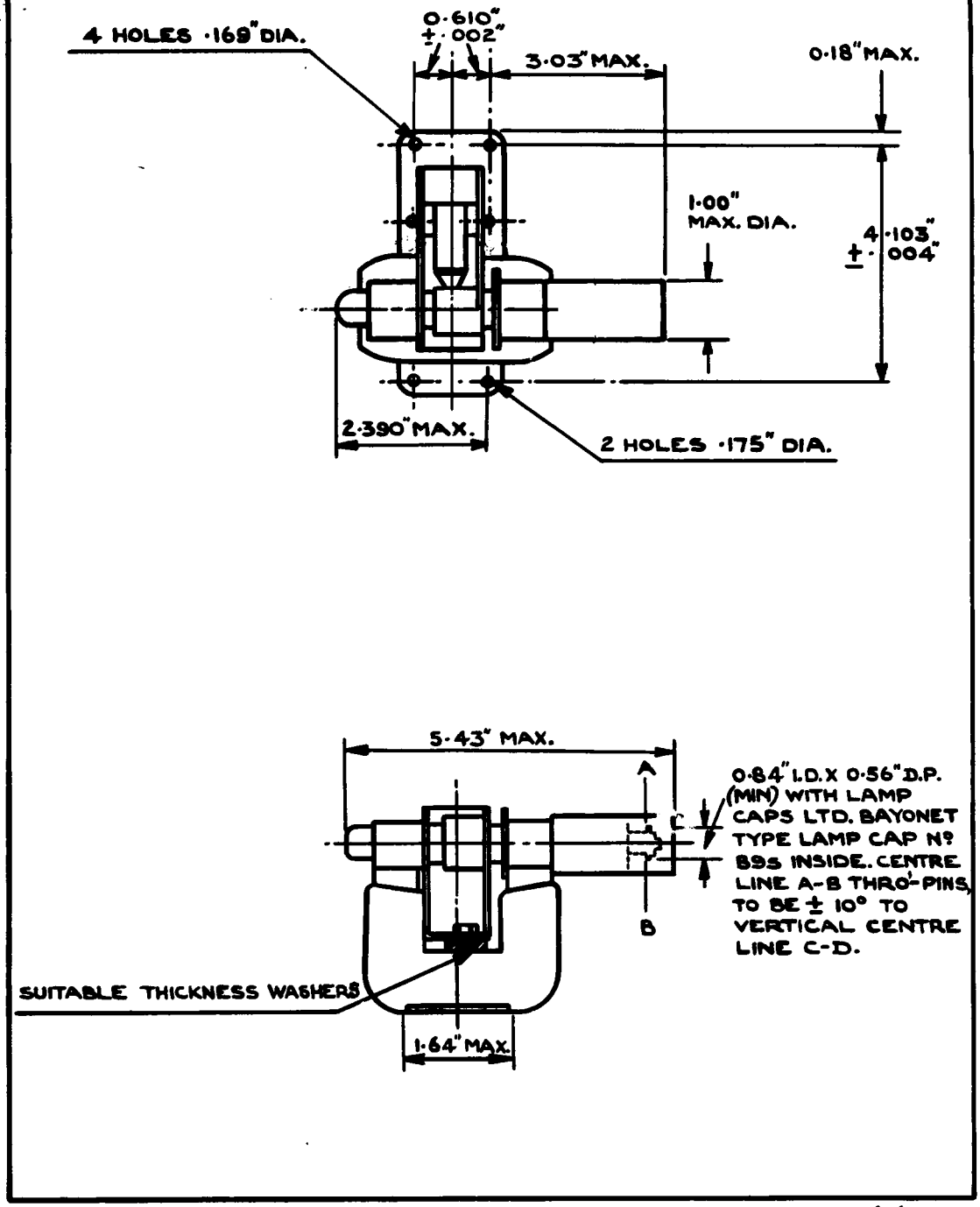
To be performed in addition to those applicable in K1001.

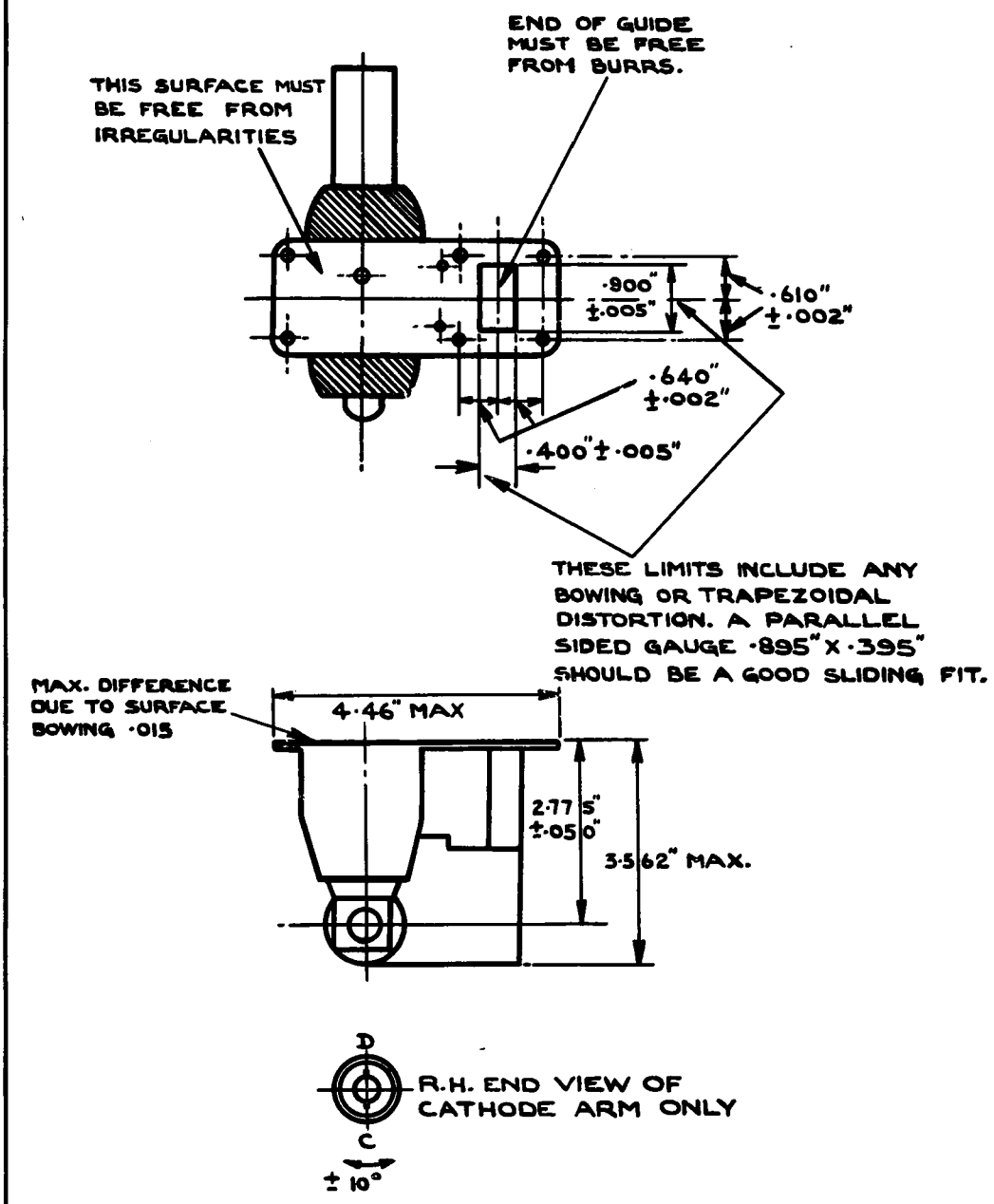
	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Pulse Duration (µS)	Pulse Rep. Freq. (pps)	Mean Ia (mA)		Min.	Max.		
a	6.3	0	0	0	Heater Current (A)	0.43	0.6	100%	
b	6.3	0.12 ±0.03	1000	0.60	Anode Voltage (kV)	5.0	6.0	100%	1,2
c	6.3	-do-	-do-	-do-	Mean Output Power (W)	0.80	-	100%	1,2,3
d	6.3	-do-	-do-	-do-	Frequency (Mc/s)	9345	9405	100%	1,4
e	6.3	1.00	-do-	6.0	Frequency Pulling (Mc/s)	-	15	100%	1,5
f	6.3	1.00	-do-	Varied from 4.5 to 6.0	Frequency Pushing (Mc/s)	-	1.5	100%	1
g	6.3	0.12 ±0.03	-do-	-	Range of Mean Ia for "Mode-change-free" Operation (mA)	0.45	0.60	100%	1
h	6.3	1.00	-do-	Varied from 4.5 to 6.0	Dynamic Input Impedance (ohms)	100	-	5%	1
j	-	-	-	-	Non-Oscillating Characteristics (i) VSWR (ii) Position of VSW minimum (mm)	6.7 16.5	- 21.5	5%	6

NOTES

1. The rate of rise of pulse voltage shall be between 100 and 150 kV/µS.
2. The valves shall operate correctly on application of anode voltage pulses as in this test. There shall be no missing or defective pulses during the last 2 minutes of a 5 minute period of operation following the application of Va.
3. The mean output power may be measured by a thermistor bridge.
4. Measured at anode-block temperature between 25°C and 35°C.
5. This test is to be made by varying the phase of the output load through 180° with a VSWR of 1.5:1.
6. A CW Oscillator, tuned to the measured frequency of the magnetron, shall feed power through an attenuator and a standing wave detector into the output circuit of the non-oscillating magnetron. The VSWR shall be within the limits specified and the position of the nearest VSW minimum to the magnetron shall be within the distance specified from the face of the magnetron output flange.

CV1866


4 HOLES ·169" DIA.
0·610" ± ·002"
3·03" MAX.
0·18" MAX.
1·00" MAX. DIA.
4·103" ± ·004"
2·390" MAX.
2 HOLES ·175" DIA.
5·43" MAX.
0·84" I.D. X 0·56" D.P. (MIN) WITH LAMP CAPS LTD. BAYONET TYPE LAMP CAP Nº B9s INSIDE. CENTRE LINE A-B THRO'-PINS, TO BE ± 10° TO VERTICAL CENTRE LINE C-D.
A
B
C
D
SUITABLE THICKNESS WASHERS
1·64" MAX.


END OF GUIDE MUST BE FREE FROM BURRS.
THIS SURFACE MUST BE FREE FROM IRREGULARITIES
·900" ±·005"
·610" ±·002"
·640" ±·002"
·400" ±·005"
THESE LIMITS INCLUDE ANY BOWING OR TRAPEZOIDAL DISTORTION. A PARALLEL SIDED GAUGE ·895" X ·395" SHOULD BE A GOOD SLIDING FIT.
MAX. DIFFERENCE DUE TO SURFACE BOWING ·015
4·46" MAX
2·775" ±·050"
3·562" MAX.
D
C
± 10°
R.H. END VIEW OF CATHODE ARM ONLY