VALVE ELECTRONIC

ADMIRALTY SURFACE WEAPONS ESTABLISHMENT

CV2499

Specification AD/CV2499 Issue No. 1 reprint "A" dated 23.3.60. To be read in conjunction with K1001	SECURITY Specification Unclassified	 Valve Unclassified

→ Indicates a change

TYPE OF VALVE	Travelling-wave amplifier
CATHODE	Indirectly heated
ENVELOPE	Glass
PROTOTYPE	VX7147

MARKING
See K1001/4

BASE
B9A

	RATING		NOTE
	Heater Voltage (V)	6.3	
→	Heater Current (A)	0.95	
→	Max. Grid Voltage Vg (V)	-25	A
→	Max. First Anode Voltage, Va1 (V)	350	
→	Max. Second Anode Voltage, Va2 (V)	375	
→	Max. Helix Voltage, Va3 (V)	475	
	Max. Collector Voltage, Va4 (V)	550	
	Max. Collector Current Ia4 (mA)	5	
	Max. First Anode Current Ia1 (uA)	250	
	Max. Second Anode Current Ia2 (uA)	250	
	Max. Helix Current Ia3 (uA)	500	A
	Frequency Coverage (Mc/s)	2,500 to 4,100	
	Low Level gain (dB)	35	B
	Max. Power output (mW)	120	
	Max. Noise factor (dB)	21.5	
	Focusing field strength (Oersteds)	520	C
	Min. Cold transmission loss (dB)	55	

CONNECTIONS

PIN	ELECTRODE
1	Anode 2
2	Anode 1
3	I.C.
4	Heater
5	Grid
6	Heater Cathode
7	Heater Cathode
8	I.C.
9	Anode 3 (helix) End Cap = Collector. Signal Input and output by 50 Ω coaxial line.

NOTES

A. The grid voltage and circuit deflection system are adjusted for minimum helix current at the specified field strength.

B. With helix voltage adjusted to optimum value ± 5V.

C. When operated in the approved circuit (see note 1 on page 2) the current in the field coils giving this field strength is 7.5 amps.

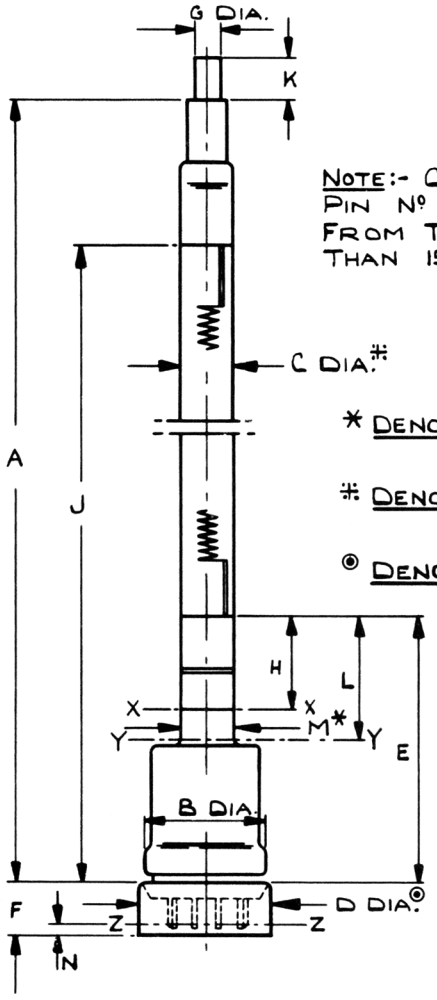
CV2499

To be performed in addition to those applicable in K1001

	Test Conditions							Test	Limits		No. Tested	Note
	Vh (V)	Vg (V)	Va1 (V)	Va2 (V)	Va3 (V)	Va4 (V)	Ia4 (mA)		Min.	Max.		
a	6.3	0	0	0	0	0	0	Heater Current (Amps)	0.8	1.1	100%	2
b	6.3			300	420	520	4	(i) 1st Anode Voltage (V)	150	325	100%	1,3
								(ii) Grid Voltage (V)	0	-25	100%	
								(iii) 1st Anode Current (μA)	-	250	100%	
								(iv) 2nd Anode Current (μA)	-	250	100%	
								(v) Helix Current (μA)	-	500	100%	
c	6.3	as in test b	Adjust	300	420	520	5	No oscillation to be detected			100%	1,4
d	6.3	as in testb	as in testb	300		Va3+ 100V	4	Optimum helix voltage (max. gain) (V)	375	450	100%	1
e	6.3	" "	" "		as ind		4	Optimum 2nd anode voltage (min. noise factor) (V)	150	375	100%	1
f	6.3	" "	" "	as ine	"		4	Low level gain (dB)	28	-	100%	1,5
g	6.3	" "	" "	"	"		4	Noise figure (dB)	-	21.5	100%	1,6
h	6.3	" "	" "	"	"		4	Max. power output (mW)	50	-	100%	1,6
j	0				0		0	Cold attenuation (dB)	55	-	100%	

NOTES

1. Tests to be performed with the valve in an approved circuit, the details of which are available from the specifying authority.
2. Heater current should be read at least one minute after switching on.
3. Adjust grid voltage and circuit deflection system for minimum helix current.
4. Helix voltage to be swept at 50 c.p.s by 50 volts r.m.s. and the output through a crystal shall be applied to the vertical deflection plates of a C.R.O., with a voltage of the same phase and frequency as the helix sweep providing the horizontal deflection. This test to be performed with and without a R/F drive.
5. Gain to be measured at 2500 and 4100 Mc/s with not greater than 10 μW input.
6. To be measured at 2500 and 4100 Mc/s.



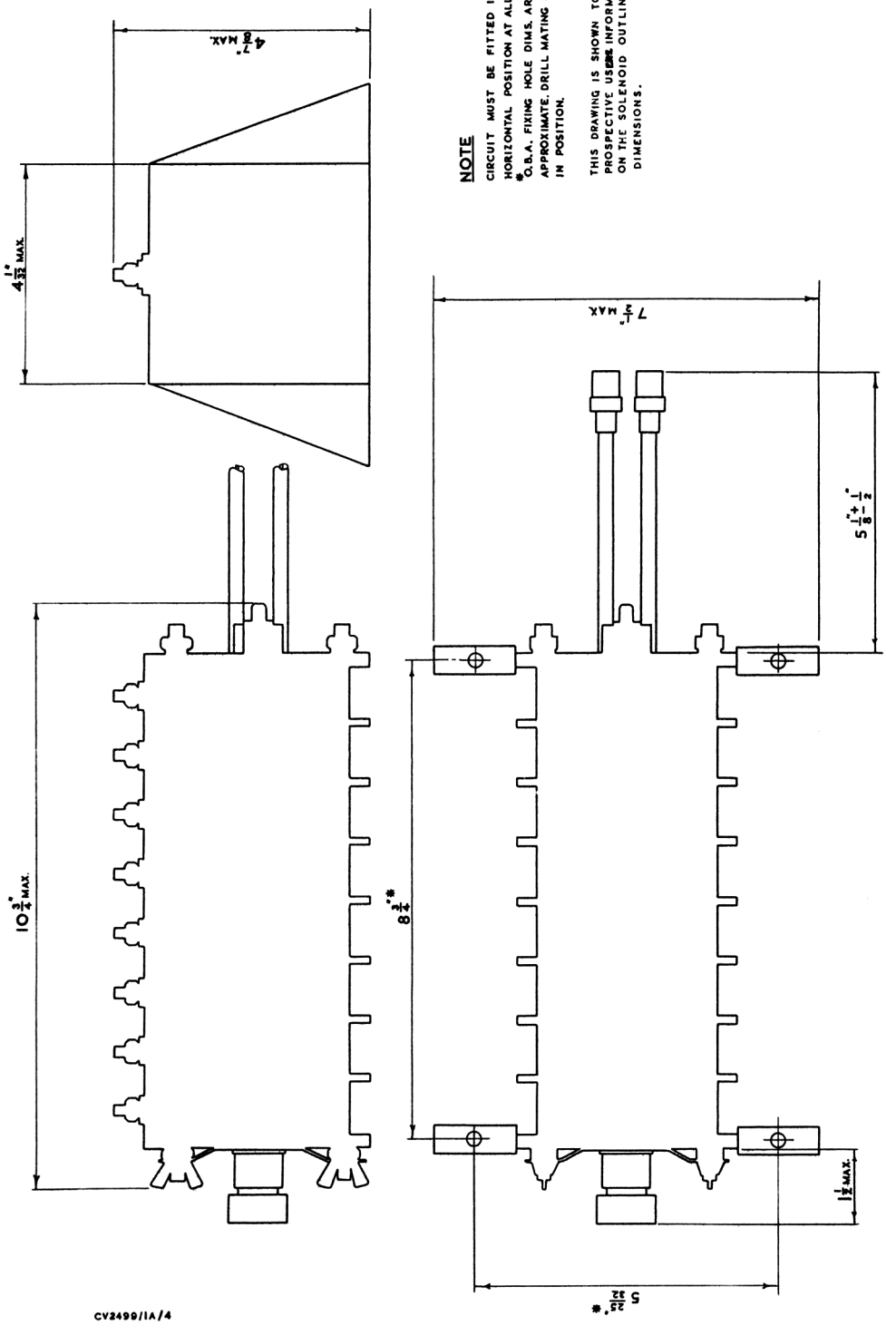
NOTE:- CHOKE SPIGOTS AND PIN Nº 1 WILL NOT DEVIATE FROM THE COMMON ℄ BY MORE THAN 15° IN EITHER DIRECTION.

* DENOTES:- DIM. M APPLIES ONLY BETWEEN LINES X-X AND Y-Y.

⁂ DENOTES:- DIM. C APPLIES ONLY DOWN TO LINE X-X.

⊙ DENOTES:- DIM. D APPLIES ONLY DOWN TO LINE Z-Z.

DIM.	MILLIMETRES	INCHES	DIM.	MILLIMETRES	INCHES
A	207·32±0·63	8·162 ± 0·025	G	5·99 ± 0·18	0·236 ± 0·007
B	23·24 MAX.	0·915 MAX.	H	18·42 MIN.	0·725 MIN.
C	9·27 MAX.	0·365 MAX.	J	179·83±0·38	7·080 ± 0·015
D	25·30± 0·18	0·996± 0·007	K	7·62 ± 0·76	0·300 ± 0·030
E	48·26± 0·89	1·900 ± 0·035	L	22·99 MIN.	0·905 MIN.
F	10·16 ± 0·63	0·400 ± 0·025	M	10·29 MAX.	0·405 MAX.
			N	1·59 MAX.	0·063 MAX.



NOTE

CIRCUIT MUST BE FITTED IN HORIZONTAL POSITION AT ALL TIMES

*D.B.A. FIXING HOLE DIMS. ARE APPROXIMATE. DRILL MATING HOLES IN POSITION.

THIS DRAWING IS SHOWN TO GIVE PROSPECTIVE USERS INFORMATION ON THE SOLENOID OUTLINE DIMENSIONS.

OUTLINE DIMENSIONS OF SOLENOID

CV2499/1A/4