(No. of pages:- 3)

VALVE ELECTRONIC

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

C V 2493.

Specification AD/CV2493 Issue No. 1 dated 18.2.59. To be read in conjunction with K1001 and B.S.1409	SECURITY	
	Specification	Valve
	Unclassified	Unclassified

TYPE OF VALVE: Low Noise Double Triode
CATHODE: Indirectly heated
ENVELOPE: Glass
PROTOTYPE: E88CC

MARKING
See K1001/4

BASE
B9A

RATINGS
(All limiting values are absolute)

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.3	
Max. Peak Anode Voltage (Ia=0)	(V)	440	
Max. D.C. Anode Voltage	(V)	250	
Max. D.C. Anode Voltage (Pa < 0.8W)	(V)	275	
Max. Anode Dissipation	(W)	1.9	E
Max. Grid Dissipation	(W)	0.04	E
Max. Grid-Cathode Resistor; (Auto bias Condition)	(MΩ)	1.2	
Max. Grid-Cathode Resistor; (Fixed bias Ia = <5mA)	(MΩ)	1.2	A
Max. Negative Grid Voltage	(V)	120	
Max. Peak Negative Grid Voltage	(V)	220	B
Max. D.C. Cathode Current	(mA)	22	E
Max. Peak Cathode Current	(mA)	110	B,E
Max. Heater-Cathode Voltage (Cathode Positive)	(V)	150	
Max. Heater-Cathode Voltage (Cathode Negative)	(V)	70	
Max. Bulb Temperature	(°C)	185	
Anode Current	(mA)	15	C,E
Mutual Conductance	(mA/V)	12.5	C,E
Amplification Factor		33	C,E

CAPACITANCES (pF)

C a, g	1.4	D,E
C in	3.3	D,E
C out'	1.8	D
C out"	1.7	D

CONNECTIONS

Pin	Electrode
1	a"
2	g"
3	k"
4	h
5	h
6	a'
7	g'
8	k'
9	s

DIMENSIONS
See K1001/A.1/D.4

Dimension (mm)	Min.	Max.
A. Overall length	-	55.6
B. Diameter	-	22.2
L. Seated height	-	49.0

NOTES

A. Fixed bias should not be used when anode current exceeds 5 mA.

B. Max. duty cycle = 0.1; max. pulse duration = 200/uS.

C. Measured at Va(b) = 100V; Vg(b) = + 9V; Rk = 680 ohms.

D. Without external shield.

E. Values apply to each section.

C V2493.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions			Test	Limits		No. Tested	Note
	Links to H.P.	Links to L.P.	Links to E		Min.	Max.		
a				Capacitances (pF)				
	6	7	Rest	C a' g'	1.2	1.6		1
	1	2	Rest	C a" g"	1.2	1.6	6	1
	7	4,5,8,9.	Rest	C in'	2.7	3.9	per	1
	2	3,4,5,9.	Rest	C in"	2.7	3.9	week	1
	6	4,5,8,9.	Rest	C out'	1.6	2.0		1
	1	3,4,5,9.	Rest	C out"	1.5	1.9		1

	Vh (V)	Va (b) (V)	Vg (b) (V)	Rk (Ohms)	Test	Min.	Max.	No. Tested	Note
b	6.3	-	-	-	Ih (mA)	285	350	100%	
c	6.3	-	-	-	Heater-Cathode Insulation Leakage Current (/uA)	-	6.0	100%	2
d	6.3	100	9	680	Ia (mA)	14.2	15.8	100%	3
e	6.3	100	9	680	Ig1 (/uA)	-	0.1	100%	3
f	6.3	100	9	680	gm (mA/V)	10.5	15.0	100%	3,4
g	6.3	150	-8.5	0	Ia(tail) (mA)	-	0.1	100%	3

	Vh (V)	Va (b) (V)	Ia (mA)	Rk Ohms	Ra Ohms	Test	Min.	Max.	No. Tested	Note
h	6.3	196	15	adj	1000	Noise Factor (dB)	-	2.2	See Note 6	5

NOTES

1. Measured without an external shield.

2. Heater-Cathode leakage current when the heater is 120 volts negative to cathode through a meter-protecting resistance of not greater than 1 Megohm.

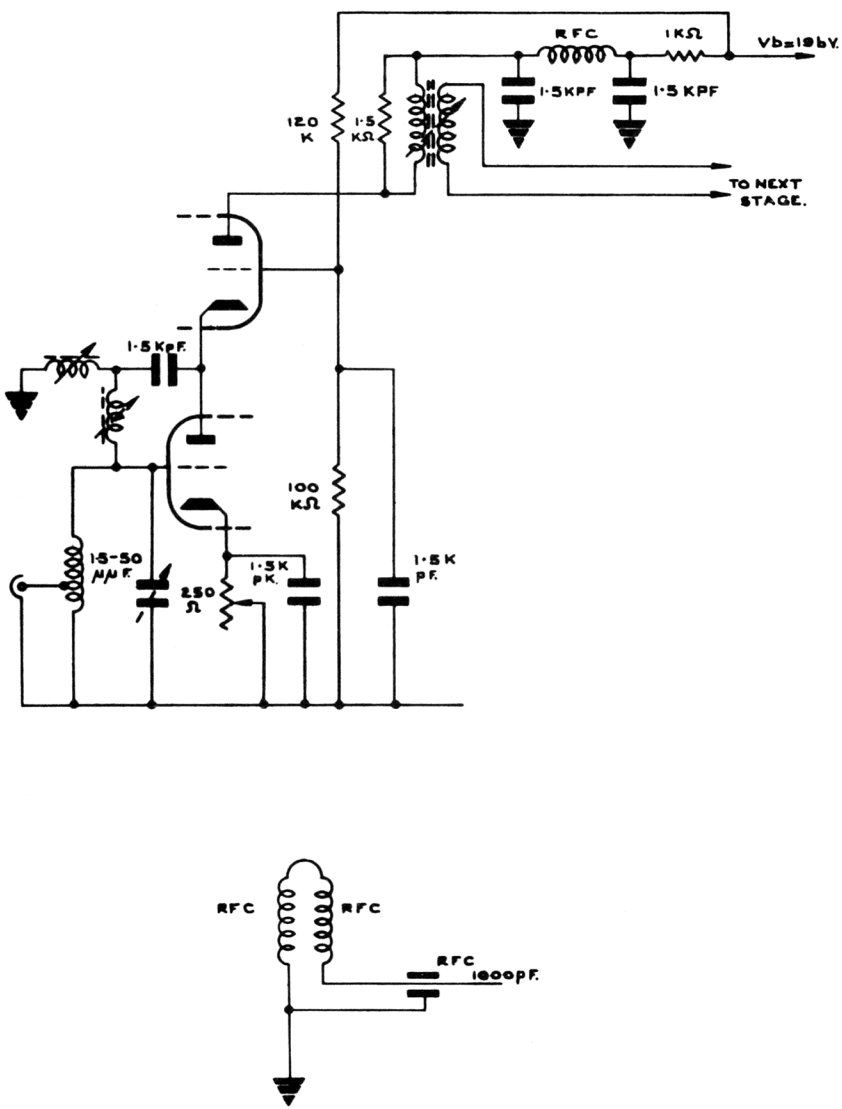
3. Test each section separately.

4. Measuring signal on grid not to exceed 100 mV r.m.s.; cathode resistor suitably by-passed.

5. Valves shall be tested at a convenient frequency within the range 40-50 Mc/s in an approved head amplifier (see circuit diagram). The noise factor of the complete unit shall be measured for a bandwidth not exceeding 1 Mc/s. The noise contributed by the second stage shall not exceed 3% of the total noise. The input circuit losses measured at the grid shall not exceed an equivalent conductance of 30 micro-mhos at the test frequency. The transformed source of resistance shall be such that a minimum value of noise factor is obtained for a representative value of this type (approximately 15,000 ohms).

6. This test is to be carried out at Inspection Level I to an A.Q.L. of 4%.

CV 2493.



CIRCUIT FOR CV.2493 NOISE FACTOR MEASUREMENTS.