

VALVE ELECTRONIC

CV 5220

MINISTRY OF AVIATION (D.L.R.D.) R.A.E.

Specification M.O.A./CV.5220 Issue No. 1 Dated 18.1.61 To be read in conjunction with K.1001 BS.448 and BS.1409			<u>SECURITY</u> Specification Valve UNCLASSIFIED UNCLASSIFIED																																																	
TYPE OF VALVE:- Beam Power Output Pentode CATHODE:- Indirectly Heated ENVELOPE:- Glass (parallel sided) PROTOTYPE:- Kt.88			<u>MARKING</u> See K.1001/4																																																	
			<u>BASE</u> BS.448/B.80																																																	
<u>RATINGS</u> (All limiting values are absolute)			CONNECTIONS																																																	
Notes Heater Volts (V) 6.3 Heater Current (A) 1.6 Max. Anode Volts (V) 600 Max. Screen Volts (V) 600 Max. Anode Dissipation (W) 35 Max. Screen Dissipation (W) 6 Max. Anode plus Screen Dissipation (W) 40 Max. Cathode Current (mA) 175 Max. Heater-Cathode Voltage (V) 150 Max. Grid-Cathode Resistance (Cathode Bias) (K.Ohms) 220 Max. Grid-Cathode Resistance (Fixed Bias) (K.Ohms) 100 Max. Bulk Temperature (°C) 250			PIN ELECTRODE																																																	
			1 Shield s																																																	
			2 Heater h																																																	
			3 Anode a																																																	
			4 Screen Grid g ²																																																	
			5 Control Grid g ¹																																																	
			6 No Pin NP																																																	
			7 Heater h																																																	
			8 Cathode and Beam Plates k + BP																																																	
			<u>Capacitances</u> (Note C) C _{ag} (max.) (pF) 1.2 C _{in} (nom.) (pF) 15.5 C _{out} (nom.) (pF) 11.25			<u>DIMENSIONS</u> K.1001/A1/D1																																														
Dimensions m/m Min. Max.																																																				
"A" Overall Length - 125 "B" Diameter - 52 "L" Seated Height - 110																																																				
<u>CHARACTERISTICS</u> <table><tr><th colspan="3">PENTODE CONNECTED</th><th colspan="3">TRIODE CONNECTED</th></tr><tr><td></td><td>(V)</td><td></td><td></td><td>(V)</td><td></td></tr><tr><td>V_a</td><td>250</td><td></td><td>V_a</td><td>250</td><td></td></tr><tr><td>V_{g2}</td><td>250</td><td></td><td>I_a</td><td>160</td><td></td></tr><tr><td>I_a</td><td>140</td><td></td><td>g_m</td><td>12</td><td></td></tr><tr><td>g_m</td><td>11</td><td></td><td>r_a</td><td>670</td><td></td></tr><tr><td>r_a</td><td>12</td><td></td><td>μ</td><td>8</td><td></td></tr><tr><td>μ_{g1 - g2}</td><td>8</td><td></td><td></td><td></td><td></td></tr></table>			PENTODE CONNECTED			TRIODE CONNECTED				(V)			(V)		V _a	250		V _a	250		V _{g2}	250		I _a	160		I _a	140		g _m	12		g _m	11		r _a	670		r _a	12		μ	8		μ _{g1 - g2}	8					<u>MOUNTING POSITION</u> Vertical Note A	
			PENTODE CONNECTED			TRIODE CONNECTED																																														
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<u>NOTES</u> A. Alternatively the valve may be mounted horizontally providing pins 4 and 8 are in a vertical plane. B. These figures also apply when triode connected. C. Tested on an R.F. (1 Mc/s) Bridge with the valve mounted in a fully shielded socket. Valve unscreened. D. The Joint Services Catalogue Number is 5960-99-000-5220																																																				

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Test conditions unless otherwise stated:-									
$V_h(V)$	$V_a(b)(V)$	$V_{g2(b)}(V)$	$R_k(\Omega)$	$C_k(\mu F)$					
6.3	250	250	$81.5 \pm 1\%$	1000					
K1001 Ref.	Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits			Units
						Min	Bogey	Max	
	<u>Group A</u>								
	Anode Current (1)	<u>Note 1</u>	-	100%	I_a	121	147.5	174	mA
	Screen Current	$R_k = 400\Omega \pm 1\%$ <u>Note 1</u>	-	100%	I_{g2}	-	-	6.0	mA
	Reverse Grid Current	<u>Note 1</u>	-	100%	$-I_{g1}$	-	-	6.0	μA
	<u>Group B</u>	Combined AQL	4.0						
	Heater Cathode Leakage Current	$V_{hk} = \pm 100V$	2.5	I	I_{hk}	-	-	20	μA
	Mutual Conductance	$G_k = 1000\mu F$ V_{g1} swing = $\pm 0.5V$ max.	2.5	I	g_m	8.9	11.6	14.2	mA/V
	Emission	$A + g^2 + g_1$ Strapped RK = 0 Adj V_a for IK = 350mA <u>Note 2</u>	2.5	I	$V_a + g_2 + g_1$	-	-	35	V
	<u>Group C</u>	Combined AQL	4.0						
	Heater Current		2.5	IA	I_h	1.47	1.60	1.73	A
	Anode Current (2)	$V_{g1} = -57V$	2.5	IA	I_a Tail	-	-	50	μA
AIII	<u>Group D</u>								
	Capacitances	Measured on 1 Mc/s bridge with the valve mounted in a fully screened socket. No shield. <u>Note 3</u>	6.5	IC	C_{ag} C_{in} C_{out}	- 14.0 9.5	- 15.5 11.25	1.2 17.0 13.0	pF pF pF

NOTES

1. Valve to be pre-heated for five minutes under the following conditions:-

$$V_h = 6.5V$$

$$W_a = 42.0 \text{ W (Approx.)}$$

2. Maximum duration of test to be 2.0 seconds.

3. Capacitance connections as follows:-

Capacitance	HP	LP	E
C_{ag}	3	5	1,2,4,6,7,8,C
C_{in}	5	1,2,4,6,7,8,C	3
C_{out}	3	1,2,4,6,7,8,C	5

ELECTRONIC VALVE SPECIFICATIONS

Specification M.O.A./CV5220

Issue 1 Dated 18.1.61

AMENDMENT NO. 1

Page 1 Note D

Amend Joint Service Catalogue Number
to read 5960-99-037-2070.

SEPTEMBER 1961
N.72712/D

ROYAL AIRCRAFT ESTABLISHMENT

16.11.61
JG