

<u>Specification: G.P.O./CV 5377</u> <u>Issue 1</u> Dated May 1964. To be read in conjunction with BS448, BS1409 and K1001.	<u>Security</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

—> Indicates a change

<u>Type of Valve:</u> Reliable H.F. Pentode <u>Cathode:</u> Indirectly heated. <u>Envelope:</u> Glass <u>Prototype:</u> CV 4014	<u>Marking</u> See K 1001/h
	<u>Base</u> B.S. 448/B76

The CV 5377 is a long life version of the CV 4014 with low Cathode Resistance. The full specification is identical to the CV 4014 specification with the exception of Group F tests which are replaced as detailed herein. Notes 8 to 11 have been added.

NOTES ADDITIONAL TO THOSE SHOWN IN SPEC. CV 4014

- Note 8 This is a long life test and the frequency of switching periods may be reduced to not less than once in every 24 hours.
- Note 9 Before commencing Life Tests the Average value of Mutual Conductance of the sample, and individual values of Total Cathode Resistance, should be recorded.
- Note 10 A plot is to be made of the Average Mutual Conductance of the sample throughout the 3,000 hours life and the best curve drawn through the plotted points. The slope of this line between the 1,000 and 3,000 hour periods shall not exceed 0.2 mA/V per 1,000 hours. If desired, in order to facilitate the plotting of this curve, additional Average Mutual Conductance readings may be made and plotted between the specified 0,500, 1,000, 2,000 and 3,000 hour points.
- Note 11 For the Post Office the Group E tests will be required for Qualification Approval only.

To be performed in addition to those applicable in K 1001

K 1001 Ref.	Test	Test Conditions	AQL %	insp. Level	Symbol	Limits		Units
						Min	Max	
	<u>GROUP F</u>							
A VI/5	Life	Notes 7,8 & 9						
A VI/5.1	<u>Stability Life (1 hour)</u>							
	Change in Mutual Conductance		1.0	I	Δgm	-	10	%
A VI/5.3	<u>Intermittent Life</u>							
	<u>Test Point 500 hours</u>	Combined AQL	4.0	IA				
A VI/5.6	Inoperatives		1.5					
	Heater Current		1.5		lh	275	325	mA
	Heater-cathode Leakage Current	Vhk = \pm 100V	1.5		lhk	-	7	μ A
	Reverse Grid Current	Rg1 = 500K Ω max.	1.5		lgl	-	0.75	μ A
	Mutual Conductance		1.5		gm	5.2	9.25	mA/V
	Average Mutual Conductance	See Note 10			\overline{gm}	-	-	mA/V
	Δ Average Mutual Conductance				$\Delta \overline{gm}$	-	10	%
	Anode Current		1.5		la	7.2	12.2	mA
	Electrode Insulation	Vh = 6.3 Note 6 Vg1-all = -100V Vg2-all = -300V Va-all = -300V	2.5		R R R	50 50 50	- - -	M Ω M Ω M Ω
	<u>Test Point 1000 hours</u>	Combined AQL	4.0		la			
A VI/5.6	Inoperatives		1.5					
	Heater-cathode Leakage Current	Vhk = \pm 100V	1.5		lhk	-	7	μ A
	Reverse Grid Current	Rg1 = 500k Ω max.	1.5		lgl	-	1.0	μ A
	Mutual Conductance		1.5		gm	4.9	9.25	mA/V
	Average Mutual Conductance	See Note 10			\overline{gm}	-	-	mA/V
	Δ Average Mutual Conductance				$\Delta \overline{gm}$	-	15	%
	Anode Current		1.5		la	7.0	12.2	mA
	Electrode Insulation	Vh = 6.3 Note 6 Vg1-all = 100V Vg2-all = 300V Va-all = 300V	2.5		R R R	30 30 30	- - -	M Ω M Ω M Ω

To be performed in addition to those applicable in K 1001

K 1001 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Mfn.	Max.	
AXVIII/2	Total Cathode Resistance	Valve as triode Vh = 6.3V Ia = 12.5 mA + I _{g1} = 500μA	2.5		Ri	-	25	Ohms
	Total Cathode Resistance Increase from 0 hours		2.5		Ri	-	15	Ohms
	<u>Test Point 2000 hours</u>	Combined AQL	6.5	1A				
A VI/5.6	Inoperatives		2.5					
	Heater-cathode Leakage Current	Vhk = ± 100V	2.5		Ihk	-	10	μA
	Reverse Grid Current	Rg1 = 500KΩ max.	2.5		Igl	-	1.0	μA
	Mutual Conductance		2.5		gm	4.7	9.25	mA/V
	Average Mutual Conductance	See Note 10			gm	-	-	mA/V
	Anode Current		2.5		Ia	6.5	12.2	mA
	Electrode Insulation	Vh = 6.3 Note 6 Vg1-all = -100V Vg2-all = -300V Va-all = -300V	4.0		R R R	20 20 20	- - -	MΩ MΩ MΩ
A VIII/2	Total Cathode Resistance Increase from 0 hours	Valve as triode Vh = 6.3 Va adjust for Ia = 12.5 mA, + I _{g1} = 500 μA	2.5		Inc.Ri	-	15	Ohms
	<u>Test Point 3000 hours</u>	Combined AQL	6.5	1A				
A VI/5.6	Inoperatives		2.5					
	Heater-cathode Leakage current	Vhk = ± 100V	2.5		Ihk	-	10	μA
	Reverse Grid Current	Vg1 = 500KΩ max.	2.5		Igl	-	1.0	μA
	Mutual Conductance		2.5		gm	4.7	9.25	mA/V
	Average Mutual Conductance	See Note 10			gm	-	-	mA/V
	Anode Current		2.5		Ia	6.5	12.2	mA
	Electrode Insulation	Vh = 6.3 Note 6 Vg1-all = 100V Vg2-all = 300V Va-all = 300V	4.0		R R R	20 20 20	- - -	MΩ MΩ MΩ