

MINISTRY OF AVIATION -DLRD-RREVALVE ELECTRONIC CV 2339

Specification MOA/CV2339 Issue 2A Dated 4.10.65 To be read in conjunction with K1001	<table border="1"> <tr> <th colspan="2"><u>SECURITY</u></th></tr> <tr> <td><u>Specification</u></td><td><u>Valve</u></td></tr> <tr> <td>UNCLASSIFIED</td><td>UNCLASSIFIED</td></tr> </table>	<u>SECURITY</u>		<u>Specification</u>	<u>Valve</u>	UNCLASSIFIED	UNCLASSIFIED
<u>SECURITY</u>							
<u>Specification</u>	<u>Valve</u>						
UNCLASSIFIED	UNCLASSIFIED						

→ Indicates change

TYPE OF VALVE - Plug-in Type Pre-TR Cell PROTOTYPE - VX3185	<u>MARKING</u> See K1001/4
<u>RATINGS AND CHARACTERISTICS</u> (Absolute, non-simultaneous and not for Inspectorate)	<u>DIMENSIONS</u> See Drawing on Page 5

Note	
Max. Peak RF Power (MW)	1.5
Min. Peak RF Power (kW)	20
Operating Frequency (See Note B)	A

NOTES

- A. At 0.0015 duty cycle when operating in a hybrid duplexer.
- B. The cell is designed for use with No. WG10 Waveguide. The operating frequency depends on the mounting.
- C. NATO Stock: 5960-99-000-2339

To be performed in addition to these tests applicable in K1001

Test Conditions:- Unless otherwise specified								
Frequency (Mc/s) 3000 \pm 50			P.R.F. (pps) 275 \pm 25		tp (uS) 5.0 \pm 0.5		Note 1	
Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units	
					Min.	Max.		
a	<u>VSWR</u> Determined as if the line were terminated in a perfectly matched load		100%		-	1.17		
	1. Frequency = 2940 Mc/s		100%		-	1.17		
	2. Frequency = 3060 Mc/s							
b	Insertion Loss		100%		-	0.15	dB	
	Valve shall be mounted between impedances matched better than 1.10 VSWR Frequency = 3060 Mc/s							
c	Arc Loss		100%		-	0.2	dB	
	Peak RF power measured immediately after the valve = 10 kW max. Notes 2 & 7							
d	<u>High Power Leakage</u>		QA					
	Valve shall be mounted in one arm of a hybrid ring. Peak RF power = 1.5 \pm 0.15 MW Max tp = 5.0 \pm 0.5 uS Note 3							
	(i) Spike energy				-	2500	ergs/ pulse	
	(ii) Flat power				-	250	pk W	
e	Recovery Time		QA		-	50	S	
	High Power Leakage Frequency of the simulated echo pulse = 3000 \pm 50 Mc/s; tp = 5.0 \pm 0.5 uS Note 4							

TESTS (Cont'd.)

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Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
					Min.	Max.	
f	<u>Electrical Length</u> The length of No. WG10 waveguide shall be determined having the same effective electrical length as the valve	Frequency = 3000 Mc/s	QA		-	3	deg
g	<u>Position of Short</u> The distance shall be measured on the effective RF short in front of the centre-line of the mount	Recovery Time	QA		0.100	0.130	inch
h	<u>High Pressure</u> (i) VSWR (ii) Arc Loss	The valve shall be subjected to air pressure in the waveguide maintained at 45lbs/sq. in. absolute Duration = 2 mins. min. Note 5	QA		-	1.17 0.2	db
j	<u>Life</u> <u>Life Test End-point</u> <u>- 500 hours</u> (i) VSWR (ii) Insertion Loss (iii) Arc Loss (iv) High Power Leakage (a) Spike energy (b) Flat power (v) Recovery Time	Recovery Time Note 6	QA		-	1.22 0.20 0.2 3000 300 60	db db ergs/pulse pk W uS

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NOTES

1. The valve shall be tested using the special test mount. See Drawing on Page 6.
2. The test shall be performed after a holding period of at least 7 days.
3. If the leakage power is B mW mean at a maximum pulse length of T usecs and the average variation in leakage power over the range of approximately 1 to T usecs is X mW/usec then

$$\text{Flat power} = 10^3 \frac{X}{\text{PRF}} \text{ watts peak}$$

$$\text{Spike energy} = 10^4 \frac{(B-TX)}{\text{PRF}} \text{ ergs/pulse}$$

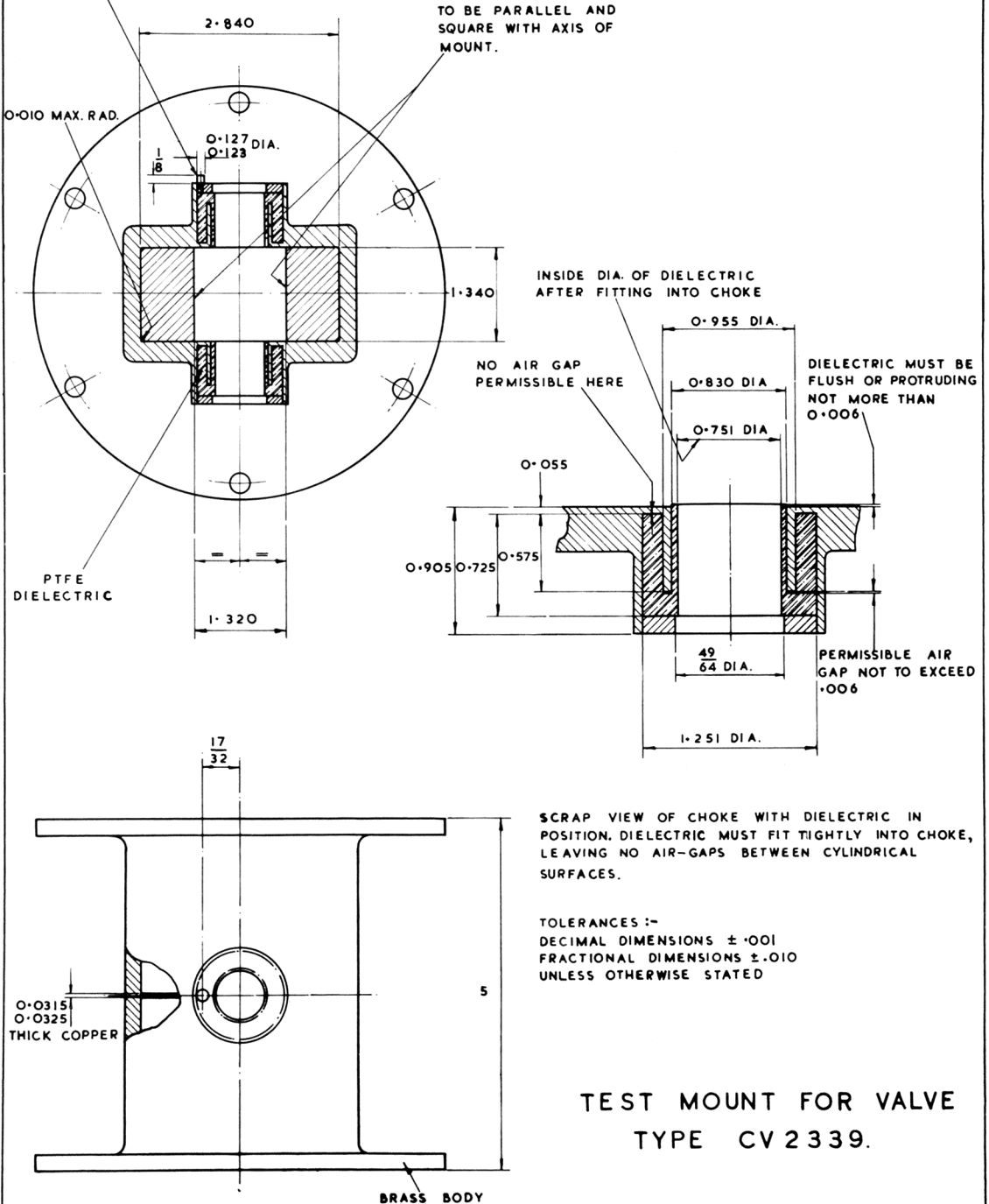
4. The time shall be measured from the trailing edge of the transmitter pulse for an insertion loss 6 db greater than that immediately before the transmitter pulse.

A TR Cell, Type VX3085 shall be mounted $\frac{3}{4}\lambda_g$ behind the valve under test, where λ_g is the guide wavelength.

5. VSWR and Arc Loss shall be measured after the test in accordance with the requirements of Test Clauses (a) and (c), respectively.
6. VSWR, Insertion Loss, Arc Loss, High Power Leakage and Recovery Time shall be measured in accordance with the requirements of Test Clauses (a), (b), (c), (d) and (e), respectively.
7. This test may be done with $t_p = 2.25 \pm 0.25 \mu\text{secs}$ and $\text{PRF} = 500 \pm 50 \text{ pps}$.



LOCATING PIN TO BE
ON RIGHT HAND SIDE
FACING GENERATOR.



DIMENSIONS IN INCHES