MINISTRY OF AVIATION -DLRD-RRE

VALVE ELECTRONIC **CV 2339**

Specification MOA/CV2339 Issue 2A Dated 4.10.65 To be read in conjunction with K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates change

TYPE OF VALVE - Plug-in Type Pre-TR Cell PROTOTYPE - VX3185	MARKING See K1001/4

RATINGS AND CHARACTERISTICS

(Absolute, non-simultaneous and not for Inspectorate)

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

DIMENSIONS

See Drawing on Page 5

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 those tests applicable in K1001

Test Conditions:- Unless otherwise specified

Frequency (Mc/s)	P.R.F. (pps)	tp (uS)	
3000 ± 50	275 ± 25	5.0 ± 0.5	Note 1

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

TESTS (Cont'd.)

	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
f	Electrical Length 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	Position of Short 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	High Pressure	The valve shall be subjected to air pressure in the waveguide maintained at 45lbs/sq. in. absolute Duration = 2 mins. min. Note 5		QA				
	(i) VSWR					-	1.17	
	(ii) Arc Loss					-	0.2	db
j	Life Life Test End-point - 500 hours	Recovery Time Note 6		QA				
	(i) VSWR					-	1.22	
	(ii) Insertion Loss					-	0.20	db
	(iii) Arc Loss					-	0.2	db
	(iv) High Power Leakage							
	(a) Spike energy					-	3000	ergs/pulse
	(b) Flat power					-	300	pk W
	(v) Recovery Time					-	60	uS

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 μsecs is X mW/μsec then

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

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

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.

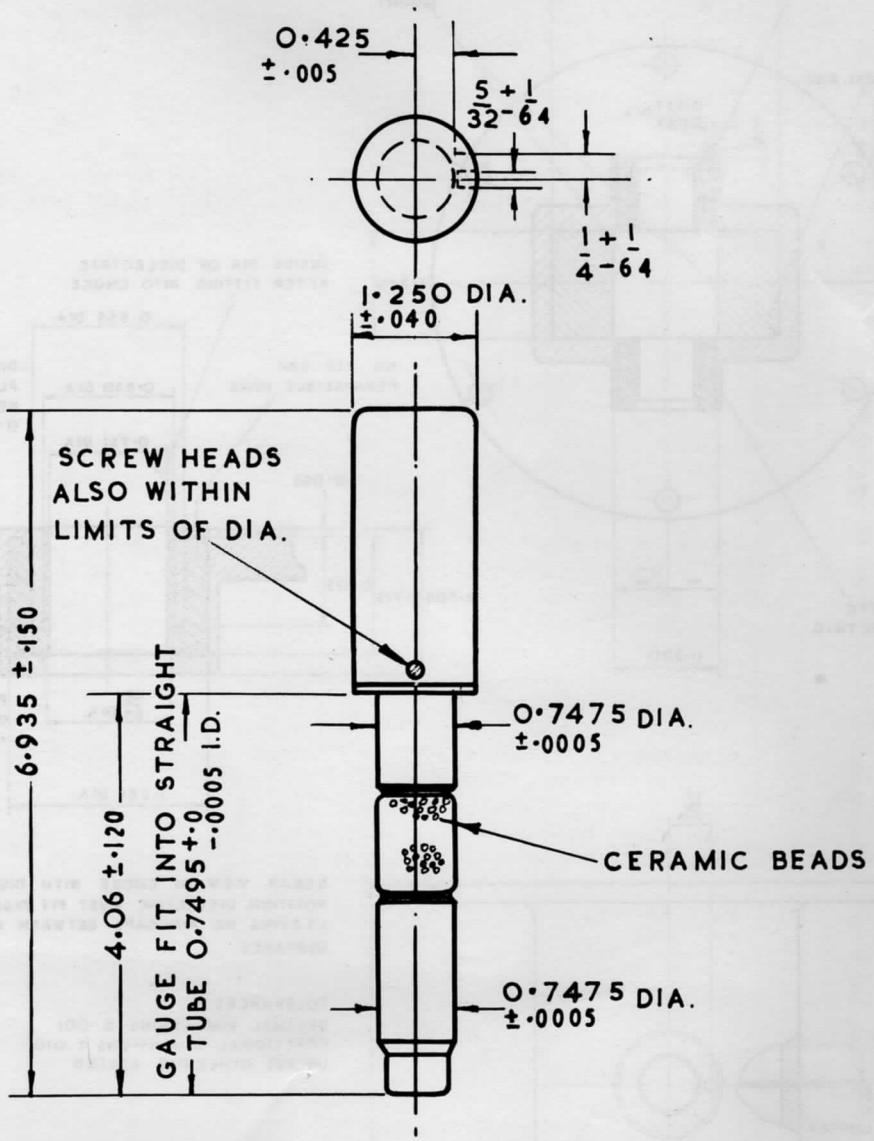
   A TR Cell, Type VX3085 shall be mounted $\frac{3}{4}\lambda g$ behind the valve under test, where λg is the guide wavelength.

5. VSWR and Arc Loss shall be measured after the test in accordance with the requirements of Test Clauses (a) and (c), respectively.

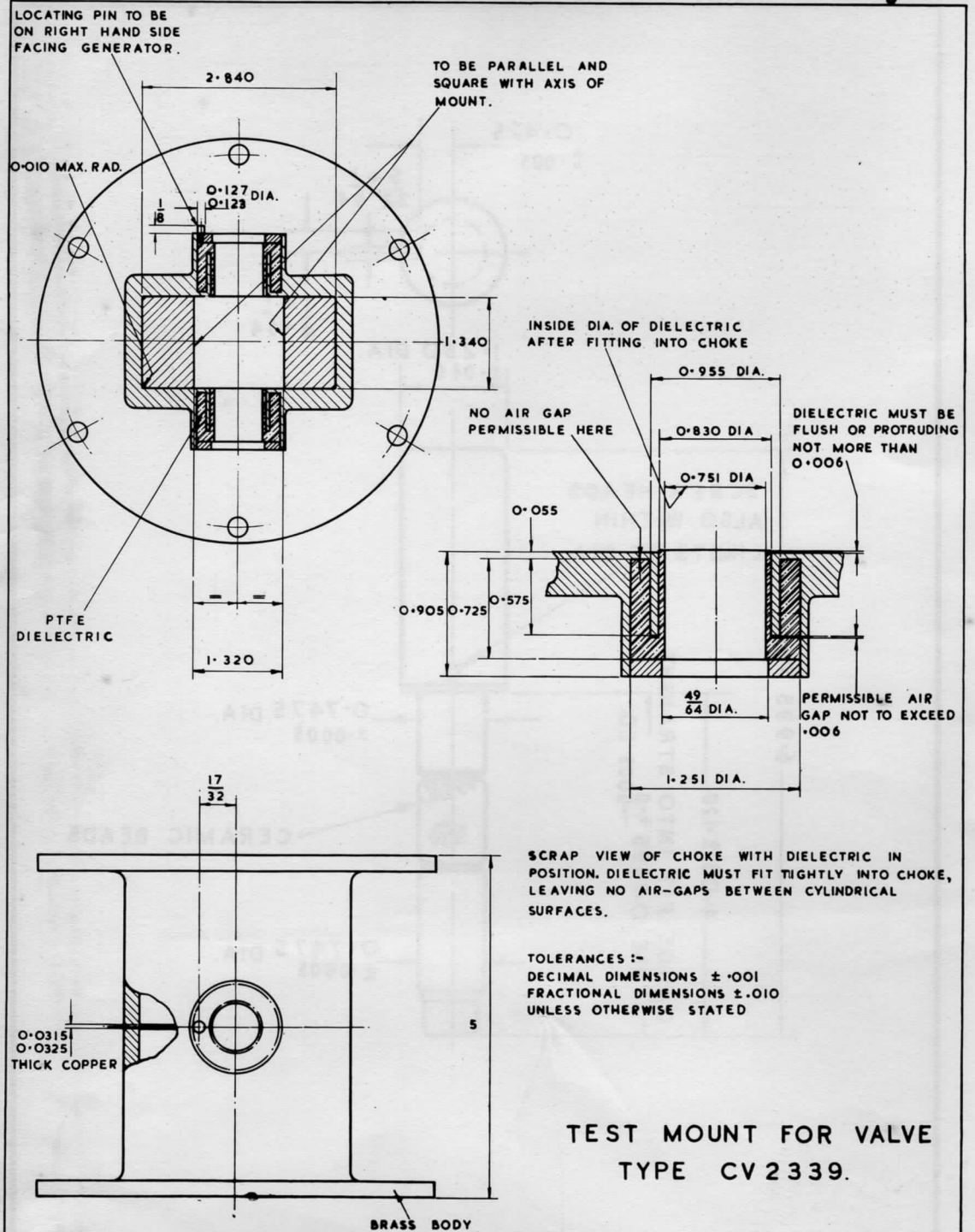
6. VSWR, Insertion Loss, Arc Loss, High Power Leakage and Recovery Time shall be measured in accordance with the requirements of Test Clauses (a), (b), (c), (d) and (e), respectively.

7. This test may be done with tp = 2.25 $\pm$ 0.25 μsecs and PRF = 500 $\pm$ 50 pps.

CV2339



ALL DIMENSIONS IN INCHES



SCRAP VIEW OF CHOKE WITH DIELECTRIC IN POSITION. DIELECTRIC MUST FIT TIGHTLY INTO CHOKE, LEAVING NO AIR-GAPS BETWEEN CYLINDRICAL SURFACES.

TOLERANCES :-
DECIMAL DIMENSIONS ± ·001
FRACTIONAL DIMENSIONS ±.010
UNLESS OTHERWISE STATED

TEST MOUNT FOR VALVE TYPE CV2339.

DIMENSIONS IN INCHES