Amdt. 1
Ministry of ~~Aviation~~ Technology DLRD/RRE

VALVE ELECTRONIC CV6132

Specification MOA/CV6132 Issue No. 1A Dated 8th April 1965 To be read in conjunction with K1001 and BS1409	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates change

TYPE OF VALVE: Broad-band T.R. Cell PROTOTYPE: CV2307	MARKING See K1001/4

RATINGS AND CHARACTERISTICS
(Absolute, non-simultaneous and not for Inspectorate)

			Note
Operating Frequency	(Mc/s)	8500 to 9100	
Max. Peak Power	(kW)	200	A.B
Min. Peak Power	(kW)	4	
Primer Supply Voltage	(V)	-1000	
Max. Primer Current	(μA)	150	C

DIMENSIONS & CONNECTIONS
See Drawing on Page 6

NOTES

A. Operation at this power level results in considerably reduced life. For satisfactory operation at power levels above 50 kW, it is recommended that the valve be preceded by a Pre-T.R. valve.

B. With duty ratio not exceeding 0.001.

C. Primer current to be limited by a series resistance of 5.5 Megohms of which at least 0.5 megohms must be placed adjacent to the valve.

D. NATO Stock number: 5960-99-037-3590

(278498)

TESTS
To be performed in addition to those applicable in K1001
Section 5H

TEST CONDITIONS: unless otherwise specified primer supply voltage = -1000v

K1001 Ref. 5H		Test	Test Condition	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
3.1.1	a	Primer Breakdown The delay between application of primer voltage and initial breakdown to be measured.	Primer supply voltage to be -900v. Test to be performed at least 7 days after any previous discharge.		100%	t_i	-	5	s
3.1.2	b	Primer Operating Current The primer current to be measured after breakdown has occurred.	As for test "a"		100%	Id	75	150	µA
4.1.3.1	c	VSWR VSWR to be measured at frequencies: 8500, 8800 and 9100 Mc/s.	Line to be energised with not more than 10 mW RF power and terminated in a load matched better than 1.02 VSWR.		100%	-	-	1.2	-
4.1.1.1	d	Low Level Insertion Loss Measured at frequencies: 8500, 8800 and 9100 Mc/s.	Valve to be mounted between impedances matched better than 1.1 VSWR. Line to be energised with not more than 10 mW RF power.		100%	αp	-	0.8	dB
4.2.4	e	High Power Leakage	Line to be energised using 50kW ± 10% peak RF power with PRF = 1000 c/s ± 10% terminated in a matched load. Test frequency: 8800 Mc/s ± 100 Mc/s.				See Page 3		

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TESTS (Cont'd)

K1001 Ref. 5H		Test	Test Condition	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
4.2.4.2.1 (Cont'd)	e	1. Spike energy	tp1 = 1.0 µS ± ± 10% tp2 = .15 µS ± ± 10%		100%	Wαs	-	0.2	ergs/ pulse
4.2.4.1		2. Total Leakage power	tp = 1.0 µS ± ± 10%		100%	Pα	-	100	mW
4.2.5	f	Recovery Time The time to be measured from the trailing edge of the applied pulse until the insertion loss has fallen to a value 3 dB above its value immediately before the pulse is applied.	tp = 1 µS ± 10% Other conditions as in test "e"		100%	tdα	-	2	µS
4.2.4.4	g	Low Power Leakage The peak total leakage through the valve is to be measured as the applied power is varied.	Applied peak RF power varied from 100 mW to 100 Watts. tp = 1 µS ± 10% Other conditions as in test "e" (Note 5)	6.5	I	PαL	-	250	mW
4.2.7	h	Position of Short The distance of the effective RF short circuit behind the front flange of the valve is to be measured.	tp = 1 µS ± 10% Other conditions as in test "e" (Note 5)	6.5	I	1	0.014	0.028	in

TESTS (Cont'd)

K1001 Ref 5H		Test	Test Condition	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
4.2.2	j	Arc Loss	Line to be energised with 4 kW peak RF power measured immediately after the valve. tp = 1 µS ± 10%. Other conditions as in test "e" Note 2		Q.A.	(A)α arc	-	0.8	dB
5.2.3	k	Temp Cycling	The valve shall be stored at 100°C for one hour and followed by one hour at room temperature and one hour at -40°C, this cycle to be repeated six times.		4.0%				
		Post Temperature Cycling Tests	Tests and limits as contained in (a) and (b) Note 4						
5.3	l	Life Test Valves to be run for 1000 hours. Tests "b" to "f" to be performed at 0.100, 200 300, 750 and 1000 hours.	The valves to be mounted on E-Plane T junctions followed by a matched load. Input power not exceeding 30 kW. Output power not less than 20 kW. Other conditions as in test "e" 2. Note 3 and 4		4.0%		See Note 5		

NOTES

1. Where the rate of production is low a batch size may be considered as being that obtained over a period of one month. The manufacturer may at his discretion test more valves than that quoted.
2. Maintenance of Q.A. quality to be agreed with the manufacturer.
3. A further six sample valves to be provided by the manufacturer for Q.A. life tests.
4. The tests shall be performed on a sampling basis consisting of the specified percentage of the contract requirement (taken to the nearest whole number in excess of the percentage value) and spread evenly over the production period. Samples used shall be taken from those values in current production at the time of commencement of the test.

/During

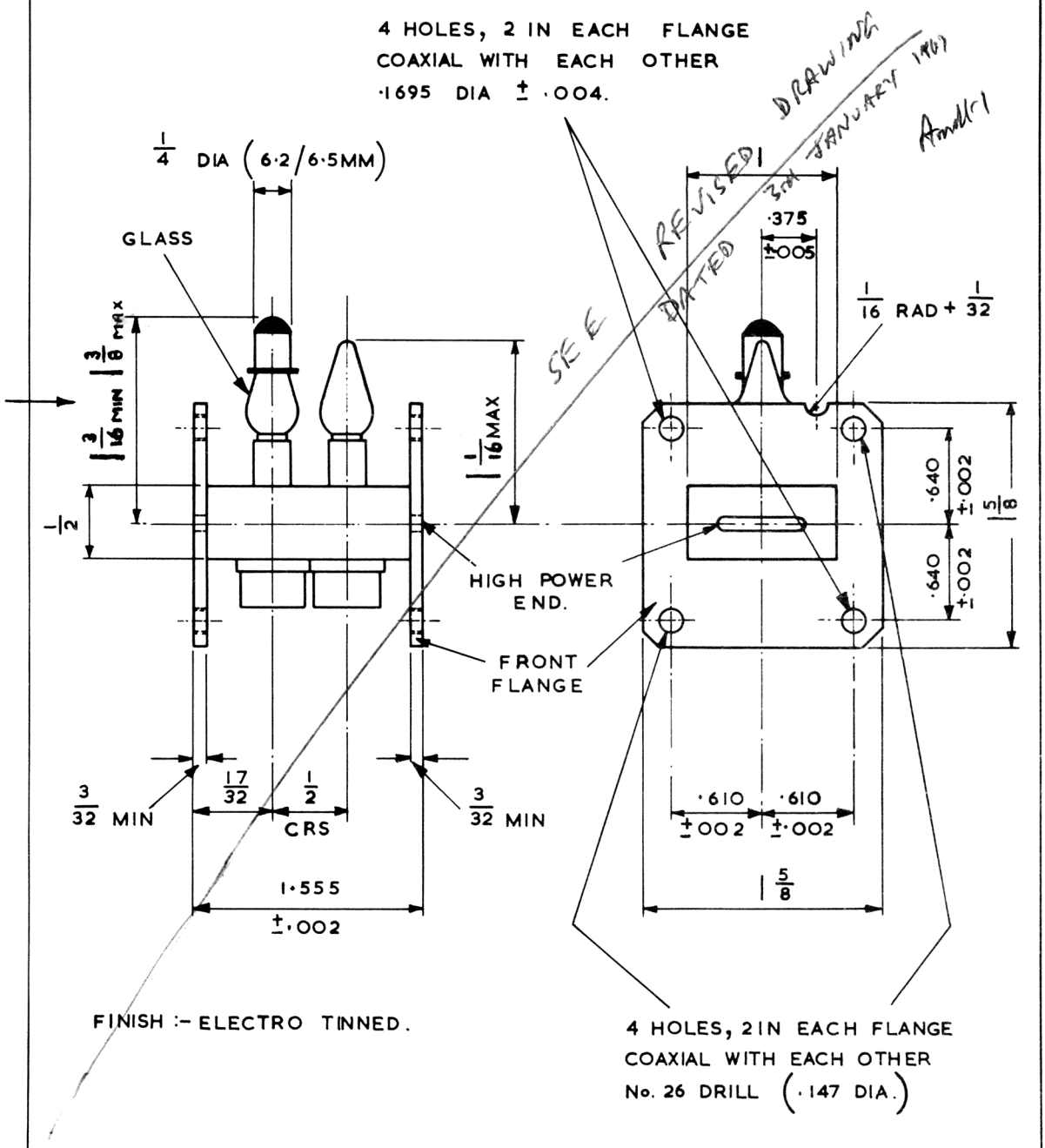
During continuous production (which for the purpose of this specification shall be considered as being production which has not been interrupted for a period in excess of six calendar months) the criterion of acceptance shall be based on not more than one failure in any ten consecutive samples tested and shipment of valves may be permitted from the commencement of a contract provided that rejection of earlier production lots had not occurred.

Following a six months non-production period, shipment may be permitted after the first sample satisfies the specified tests, but in the event of an early failure, before the criterion of acceptance can be applied, the Manufacturer shall test at least two further samples made at the time of the failure.

If neither samples fail acceptance then shipment is permitted, but in event of an additional failure the Approval Authority shall be informed.

5. End of life will be indicated by failure to pass any of the b, c, d, e, f tests with the following relaxations of limits:-

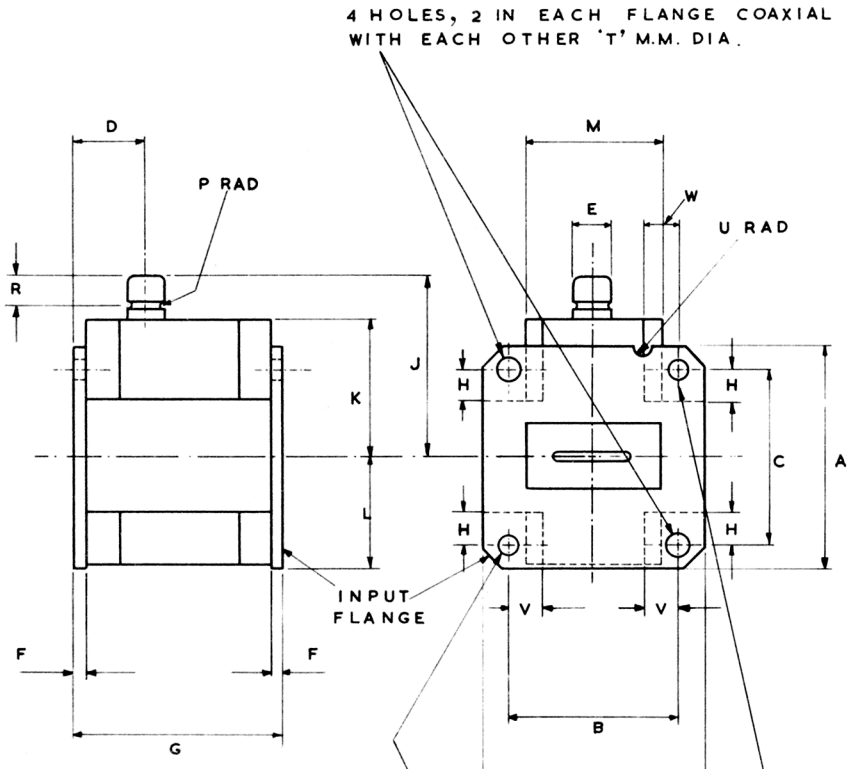
(c) VSWR Max. 1.4
(d) Insertion Loss Max. 1.5 dB.
(e) Spike Energy 0.25 ergs/pulse max.
(f) Recovery Time 10 dB at 4 μs



OUTLINE DRAWING

DIMS. IN INCHES

OUTLINE DRAWING
(THIRD ANGLE PROJECTION)



FINISH :- PROTECTIVE COVER TO AN APPROVED BS. FINISH.

REF.	MIN	NOM	MAX	REF.	MIN	NOM	MAX
A	–	1 5/8	–	L	–	–	53/64
B	1·216	–	1·224	M	–	–	1
C	1·276	–	1·284	P	–	0·030	–
D	–	17/32	–	R	–	0·170	–
E	–	0·250	–	S	3·7 MM	–	3·9 MM
F	3/32	–	1/8	T	4·2 MM	–	4·4 MM
G	1·553	–	1·557	U	1/32	–	3/32
H	3/16	–		V	7/32	–	
J	1·11/32	–	1·13/32	W	0·225	–	0·245
K	–	–	1·125	–			

DIMENSIONS IN INCHES UNLESS OTHERWISE STATED

MINISTRY OF AVIATION
SPECIFICATION MOA/CV 6132
ISSUE 1A DATED 8th APRIL 1965
AMENDMENT NO: 1

Page 1 Delete: Ministry of Aviation
Insert: Ministry of Technology

Page 6 Cross out but do not remove existing outline drawing.

Insert: New outline drawing dated 3rd January, 1967.

4th April 1967 T.V.C. for R.R.E.

JAS 2/68