



CERTIFICATE OF TESTING

(Provisional)



FUGITIVE EMISSION TESTING OF VALVE

FLUID CONTROL RESEARCH INSTITUTE

ISO 9001: 2008 REGISTERD FIRM CERT.NO: IN/08/1117

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Report No **FCRI/ET/192/2013**

01 of 02 pages

APPROVED BY

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DATE OF TESTING : 01/07/2013

Customer:
HYD-AIR VALVES Pvt. LTD,
Lonavala-410401

DATE OF ISSUE : 08/07/2013

DETAILS OF TEST VALVE

Valve Sl. No. : 260613-101	Size & Rating : 1" & CLASS 2500
Actuation : Manual	Gland packing : GRAPHOIL

EQUIPMENT DETAILS

Helium mass spectrometer	Make : Adixen	Model : ASM 310
Pressure gauge	Make : Buden burg	Range:0-150bar
Furnace	Capacity: 700 °C	Size : 0.8 x 0.8 x 0.8 m ³
Thermocouple	Type : " T" Type	Range :400 to -199 ° C

DETAILS OF TESTS

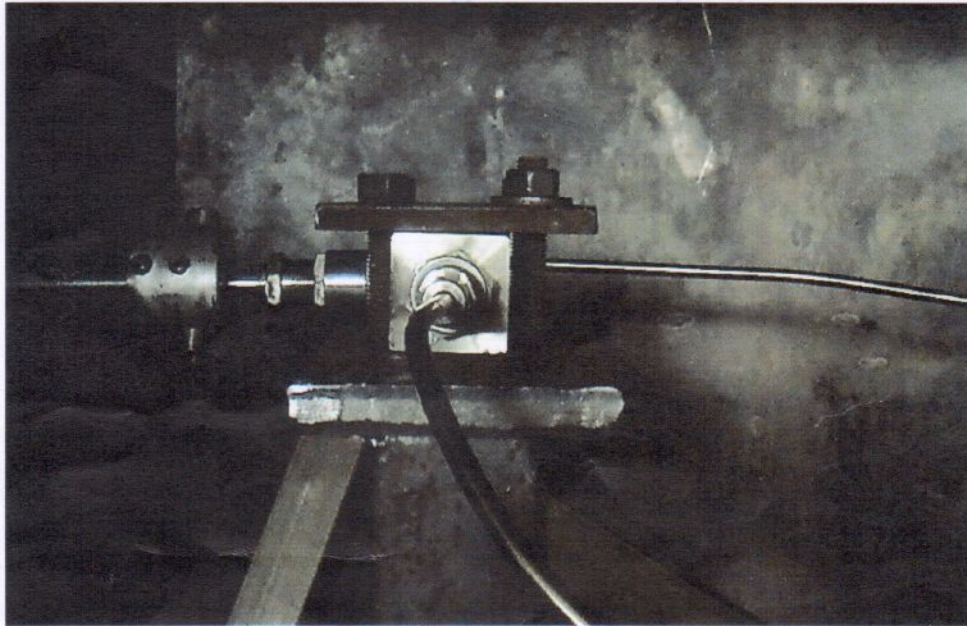
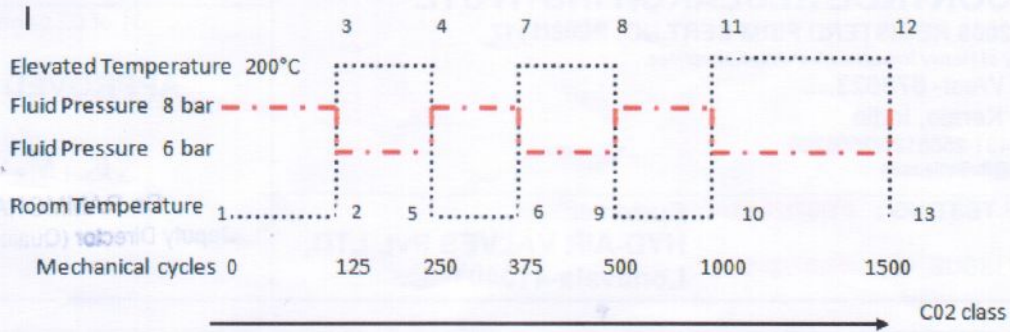
Fugitive Emission Testing : As per ISO 15848-1(Test procedure)
Test Pressure : 8 bar at ambient condition,6 bar at 200 ° C, Test Fluid : 99.99% helium

TEST RESULTS AND CONDITION

Total Number of mechanical cycles: 1500				Total Number of thermal Cycles : 3				
Test Pressure : 8 bar at Room Temperature,		6 bar at high temperature						
Allowable Leakage For Stem Seal		: 1 x10 ⁻² mbar l/sec						
Note : RT (Room temperature 30 ° C at ambient condition),				High temperature : 200 °C				
Date	Endurance Class	Test Point	Pressure (bar)	Temperature (° C)	Leakage rate (mbar l/sec) Stem seal	No. of Mech. Cycles	No of Thermal Cycles	Remarks
01/07/2013	CO1	1	8	RT	4.3 x 10 ⁻⁴	NIL	NIL	Valve ON/OFF operation lasted up to 1100 cycles ,
01/07/2013	CO1	2	8	RT	1.8 x 10 ⁻⁴	125	NIL	
01/07/2013	CO1	3	6	200	1.5 x 10 ⁻⁴	125	NIL	
01/07/2013	CO1	4	6	200	1.7 x 10 ⁻⁴	250	1	
01/07/2013	CO1	5	8	RT	1.7 x 10 ⁻⁴	250	1	
01/07/2013	CO1	6	8	RT	1.8 x 10 ⁻⁴	375	2	
01/07/2013	CO1	7	6	200	1.8 x 10 ⁻⁴	375	2	
01/07/2013	CO1	8	6	200	2.2 x 10 ⁻⁴	500	2	
01/07/2013	CO1	9	8	RT	2.8 x 10 ⁻⁴	500	2	
01/07/2013	CO2	10	8	RT	3.1 x 10 ⁻⁴	1000	3	
02/07/2013	CO2	11	6	200	5.1 x 10 ⁻⁴	1000	3	
02/07/2013	CO2	12	6	200	4.1 x 10 ⁻⁴	1100	3	

CONCLUSION: Test Valve lasted up to only 1100 cycles. Hence qualifies only CO1 endurance class as per the test procedure.

Tested by	Witnessed by	Checked by
JANESH BABU. M <i>J. Babu</i>	MAHESH PAREKAR	<i>S. Manikandan</i> S.MANIKANDAN



VALVE UNDER TEST