

ISO 15848-1:2015
Helium Fugitive Emission Test Report

Performed for

PBM, Inc.

www.pbmvalve.com



2 inch ANSI Class 300 Ball Valve, Graphite Packing
Product Code: AN

Project Number: 217300

Test Start Date: September 11, 2017



Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
North Yarmouth, ME 04097 USA
(207) 829-5359

info@yarmouthresearch.com

www.yarmouthresearch.com

Yarmouth Research and Technology, LLC

Fugitive Emission Test Data Sheet

Customer: PBM, Inc.

Date: 9/11/2017

Project #: 217300

Valve Description: 2 inch ANSI Class 300 Ball Valve, Graphite Packing

Product Code: AN

Sample Supplied by: Customer

Stem Diameter: 19.05 mm

Packing Nut Torque: 25 ft-lb

Test Conditions

Test Standard: ISO/FDIS 15848-1:2015

Test Stand: Yarmouth Stand 1

Tightness Class: BH

Allowable: 3.39E-05 mbar l/sec

Test Media: 99% Helium

Endurance Class: CO3 2500 Mechanical Cycles

Temperature Class: 200C 4 Thermal Cycles

Pressure Class: 300 **Rating:** 720 psig @ambient 515 psig @high temp

Testing Method: Suck Through Method

Mounting Position: Stem and Bore Horizontal

Max. Allowable Bonnet Gasket Leakage: 50 PPMv by sniffing method

Leakage Device: Pfeiffer SmartTest HLT560

Cycling Rate: 1 cycle per 30 seconds

Test Data Summary - Stem Seal

Cycle Number	Nom.Temp (C)	Static Stem Seal Leakage (mbar l/sec)		Packing Retorque See Notes
		Avg.	Max.	
0	20	1.0E-06	1.2E-06	
50	20	1.3E-06	1.4E-06	
50	200	1.4E-06	1.5E-06	
100	200	1.6E-06	1.9E-06	
100	20	1.5E-05	1.6E-05	
150	20	4.6E-05	4.8E-05	1
150	20	4.1E-06	4.2E-06	
150	200	3.8E-06	3.8E-06	
200	200	3.8E-06	3.9E-06	
205	20	9.9E-07	1.0E-06	
1,000	20	1.5E-06	1.6E-06	
1,000	200	8.4E-07	8.6E-07	
1,500	200	1.0E-06	1.0E-06	
1,500	20	9.6E-07	9.7E-07	
2,000	20	9.4E-07	1.0E-06	
2,000	200	9.1E-07	9.6E-07	
2,500	200	9.6E-07	9.9E-07	
2,500	20	8.9E-07	9.3E-07	
Maximum Leakage:		4.6E-05	4.8E-05	
Maximum Allowable:		3.4E-05	3.4E-05	

Yarmouth Research and Technology, LLC

Test Data Summary - Bonnet Seal

Cycle Number	Nom.Temp (C)	Leakage - PPMv	
		Avg.	Max.
0	20	1	1
205	20	1	1
1,500	20	1	1
2,500	20	1	1
Maximum Leakage:		1	1
Maximum Allowable:		50	50

Test Data Summary - Operating Actuator Pressure

Cycle Number	Nom.Temp (C)	Operating Actuator Pressure (psig)
0	20	26
2,500	20	18

Packing Retorque Notes:

Adjustment Number	Static Leakage Readings before Tightening (mbar l/sec)		Before Adjustment Nut Torque (ft-lb)	After Adjustment Nut Torque (ft-lb)	Operating Actuator Pressure (psig)	
	Avg.	Max.			Before Adjustment	After Adjustment
	1	4.6E-05			4.8E-05	15
2						
3						
	3.39E-05	3.39E-05	<- Maximum Allowable Leakage			

Performance Class:

ISO FE BH - CO3 - SSA 1 - t200C - ANSI Class 300 - ISO 15848-1

Results

The valve met the requirements of the performance class stated above.

Certified By



Matthew J. Wasielewski, PE
 President and Manager
 Yarmouth Research and Technology, LLC

