

API Standard 641, First Edition, 2016
Test Report

“Type Testing of Quarter-turn Valves for
Fugitive Emissions”

Performed for

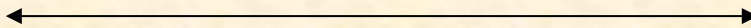
PBM, Inc.

www.pbmvalve.com



2 inch ANSI Class 300 Ball Valve
with TFM Packing
Product Code: AN SER 5 – 2IN CLASS 300

Project Number: 217112
Test Start Date: June 26, 2017



Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

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API 641 TEST CERTIFICATE

Certificate Number: 217112C

Test Start Date: 26-Jun-17
Test End Date: 29-Jun-17

Customer Information

Customer: PBM, Inc.
Web Address: pbmvalve.com
Manufacturer Location: Irwin, PA

Valve Information

Valve Size: 2 in Valve Pressure Class: 300
Valve Description: 2in ANSI CLASS 300 BALL VALVE, TFM PACKING
Product Code: AN SER 5 - 2IN CLASS 300
Assembly Drawing No.: ANH-H5M-G---02
API/ASME Design Standards: API 608
Stem Seal Description: TFM
Body/Bonnet Seal Description: Spiral Wound Gasket, 3.375 I.D., SS & Grafoil

Test Results

Test Specification: API 641, Oct 2016
Max. Allowable Stem Seal Leakage: 100 PPMv Methane
Number of Mechanical Cycles: 610
High Temperature: 200 deg. F
Test Pressure at Ambient Temp.: 600 psig
Test Pressure at High Temp.: 600 psig
Did valve pass test requirements? **YES**

Qualifications of similar valves according to para. 11 of test standard

Certified By



Matthew J. Wasielewski, PE
President and Manager
Yarmouth Research and Technology, LLC
434 Walnut Hill Road
North Yarmouth, ME 04097 USA



Yarmouth Research and Technology, LLC

FUGITIVE EMISSION TEST SUMMARY

Customer: PBM, Inc.	Start Date: 26-Jun-17
Project Number: 217112	End Date: 29-Jun-17
Manufacturing Facility: Irwin, PA	

Valve Information

Valve Description: 2in ANSI CLASS 300 BALL VALVE, TFM PACKING	
Product Code: AN SER 5 - 2IN CLASS 300	
Valve Selected by: Manufacturer	
API/ASME Design Standard(s): API 608	
Body Material: 316SST	Stem Material: 316SST
Body Seal Description: Spiral Wound Gasket, 3.375 I.D., SS & Grafoil	
Manufacturer's Published Running Torque: 16 ft-lb	Closing Torque: 16 ft-lb

Stem Seal Information

Stem Seal Description: TFM	
Recommended Packing Torque: 12	ft-lb
Nominal ID: 0.750	inches
OD: 1.125	inches
Minimum Sealing Stress: Not Provided	Stack Height: 0.450
inches	inches
Stem Seal Chamber Depth: 0.500	# of Rings: 3
inches	

Test Conditions

Test Specification: API 641, Oct 2016	
Maximum Allowable Leakage: 100	PPMv
Cycling Rate: 30	seconds per cycle
Maximum Temperature: 200	F
Test Pressure at Ambient Temperature: 600	psig
Test Pressure at Maximum Temperature: 600	psig

Stem Seal Leakage Data

Cycle Number	Bonnet Temp - (F)	Pressure (psig)	Static Leakage (PPMv)		Dynamic Leakage (PPMv)	
			Avg.	Max.	Avg.	Max.
0	67	600	1	1		
100	66	600	1	1	1	0
101	196	600	7	9		
200	200	600	6	8	5	6
201	68	600	3	4		
300	68	600	48	58	25	31
301	200	600	22	33		
400	200	600	6	7	4	5
401	72	600	17	18		
500	71	600	39	40	38	41
501	200	600	2	3		
600	200	600	3	5	3	4
601	67	600	5	17		
610	70	600	3	3	3	4
Averages ->			12	15	11	13
Maximums ->			48	58	38	41

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Body / Bonnet Leakage

<i>Cycle Number</i>	<i>Bonnet Temp - (F)</i>	<i>Pressure (psig)</i>	<i>Leakage (PPMv)</i>	
			<i>Avg.</i>	<i>Max.</i>
0	67	600	0	1
610	70	600	1	4

Valve Operating Torque

<i>Operating Torque First Cycle:</i>	256	in-lb
<i>Operating Torque Last Cycle:</i>	240	in-lb

Results

Number of Mechanical Cycles Completed:	610	
Number of Thermal Cycles Completed:	3	
Maximum Static Leakage Throughout Test:	58	PPMv
Maximum Dynamic Leakage Throughout Test:	41	PPMv
Maximum Body/Bonnet Leakage Throughout Test:	4	PPMv

<i>Final Test Results:</i>	PASS
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Qualifications of similar valves according to para. 11 of test standard per

<i>Valve Group:</i>	D
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Test Notes:

Certified By



Matthew J Wasielewski, PE
 President and Manager
 Yarmouth Research and Technology, LLC
 Test Technician: Jesse Jarvi

