



THE NATIONAL BOARD

OF BOILER AND PRESSURE VESSEL INSPECTORS

October 10, 2017

Zachary Berggren
Engineered Controls International, LLC
100 Rego Drive
Elon, NC 27244

Subject: Capacity Certification, Valve Type: A3149 (20% OP)
NB Cap Cert. No.: REG-M46077

Dear Mr. Berggren:

We have reviewed the enclosed test results, referenced below, which were performed at the **National Board Testing Laboratory** on October 4, 2017 for the purpose of testing for capacity certification of the subject valve type as required by paragraph UG-136(c)(3) of Section VIII of the ASME Code.

Engineered Controls International, LLC is hereby granted capacity certification and authorization to apply the “NB” mark and ASME Certification mark with “UV” designator to the valve type listed in the scope of certification. This authorization is valid only for the above location and only while the organization is fully implementing its quality control system as accepted by the National Board.

SCOPE OF CERTIFICATION

Valve Type: A3149 (20% OP)

Organization Type: Manufacturer

Certified Rating Value/Sizes/Pressure Ranges: As listed in the NB-18

Certification Expiration Date: February 3, 2024

Sincerely,

Thomas P. Beirne, P.E.
Technical Manager, Pressure Relief Dept.

REFERENCING TEST NUMBERS: 45548A, 45549A

File:GF: 171010 REG-M46077 Pass

National Board Testing Laboratory

Nitrogen Test - Orifice Plate Flow Meter Method

Valve ID Data		Revision 2.4	
1	Test Number	45548A	
2	Test Sponsor	Engineered Controls International, LLC	
3	Company Type	Manufacturer	Elon, NC
4	Test Date	10/4/2017	REG
5	Valve Type	A3149A200	
6	Manufacturer	Engineered Controls International, LLC	
7	Cap. Cert. ID No.	46077	
8	Set Pressure	200 psig	
9	Inlet Size	2 1/2 M	
10	Outlet Size	Top	
11	Stamped Capacity	7408. SCFM	
12	Code Section	VIII	
13	Serial Number	1	
14	Date Code	09E17	
Operational Data and Measured Dimensions			
15	Warn Pressure		psig
16	Set Pressure	201.3	psig
17	Reset Set Pressure		psig
18	Blowdown	42.2	psi
19	Reset Blowdown		psi
20	Bore Diameter	1.640	inch
21	Lift		inch
Measured Data			
22	Flow Area	2.11241	in ²
23	Line Pressure	248.4	psig
24	Differential Pressure	5.75	psid
25	Line Temp.	45	°F
26	Vessel Pressure	239.6	psig
27	Vessel Temp.	60	°F
28	P _b	14.41	psia
29	Plate ID Number	9	3 Plate Dia.
Calculated Data			
	Line Pressure (absolute)	262.808	psia
32	Density @ Flow Condition _(w)	1.3653	lbm/ft ³
33	Area Factor _(Fa)	0.999644	
34	Trial Flow Rate	10.6913	lbm/sec
35	Viscosity	1.1394E-05	lbm/ft-sec
36	Reynolds Number RD	3,956,017	
37	Theoretical Capacity _(WT)		
	WT=CKAP√M/T	44,318.9	lbm/hr N2
38	Measured Capacity at Std. Cond.	38,488.6	lbm/hr N2
39	Measured Capacity at Std. Cond.	8543.4	SCFM AIR
40	Slope	33.634	SCFM/PSIA
41	Coefficient	0.86845	
42	Rated Capacity For Measured Set	7388.1	SCFM
43	Rated Slope	29.086	
44			

National Board Testing Laboratory

Air Test - Orifice Plate Method: Test Summary

Test Summary for test 45548A:

1. Valve tested for 6 Year Capacity Recertification as a Manufacturer.

I certify that the data on the attached test data sheets was obtained under my supervision in accordance with the provisions of ASME PTC 25, the applicable sections of the ASME Boiler and Pressure Vessel Code, and the National Board Testing Laboratory Quality Control Manual. To the best of my knowledge and belief the objects tested were of the same type and design as indicated.


Authorized Observer: Robert Viers

10-4-17
Date

Test Personnel

Company Representatives

Tim Brown
Robert Viers
Steve Bowman

Kevin Jordan

National Board Testing Laboratory

Nitrogen Test - Orifice Plate Flow Meter Method

Valve ID Data		Revision 2.4	
1	Test Number	45549A	
2	Test Sponsor	Engineered Controls International, LLC	
3	Company Type	Manufacturer	Elon, NC
4	Test Date	10/4/2017	REG
5	Valve Type	A3149A232	
6	Manufacturer	Engineered Controls International, LLC	
7	Cap. Cert. ID No.	46077	
8	Set Pressure	232 psig	
9	Inlet Size	2 1/2 M	
10	Outlet Size	Top	
11	Stamped Capacity	8525. SCFM	
12	Code Section	VIII	
13	Serial Number	3	
14	Date Code	8A16	
Operational Data and Measured Dimensions			
15	Warn Pressure		psig
16	Set Pressure	241.8	psig
17	Reset Set Pressure		psig
18	Blowdown	161.6	psi
19	Reset Blowdown		psi
20	Bore Diameter	1.640	inch
21	Lift		inch
Measured Data			
22	Flow Area	2.11241	in ²
23	Line Pressure	287.7	psig
24	Differential Pressure	6.89	psid
25	Line Temp.	40	°F
26	Vessel Pressure	277.1	psig
27	Vessel Temp.	53	°F
28	P _b	14.41	psia
29	Plate ID Number	9	3 Plate Dia.
Calculated Data			
	Line Pressure (absolute)	302.105	psia
32	Density @ Flow Condition _(w)	1.5885	lbm/ft ³
33	Area Factor _(Fa)	0.999559	
34	Trial Flow Rate	12.6162	lbm/sec
35	Viscosity	1.1300E-05	lbm/ft-sec
36	Reynolds Number RD	4,707,041	
37	Theoretical Capacity _(WT)		
	WT=CKAP√M/T	51,216.9	lbm/hr N2
38	Measured Capacity at Std. Cond.	45,418.2	lbm/hr N2
39	Measured Capacity at Std. Cond.	10081.6	SCFM AIR
40	Slope	34.585	SCFM/PSIA
41	Coefficient	0.88678	
42	Rated Capacity For Measured Set	8478.7	SCFM
43	Rated Slope	29.086	
44			

National Board Testing Laboratory

Air Test - Orifice Plate Method: Test Summary

Test Summary for test 45549A:

1. Valve tested for 6 Year Capacity Recertification as a Manufacturer.

I certify that the data on the attached test data sheets was obtained under my supervision in accordance with the provisions of ASME PTC 25, the applicable sections of the ASME Boiler and Pressure Vessel Code, and the National Board Testing Laboratory Quality Control Manual. To the best of my knowledge and belief the objects tested were of the same type and design as indicated.


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