



THE
NATIONAL
BOARD
OF BOILER AND
PRESSURE VESSEL
INSPECTORS

April 1, 2010

Mr. Ryan Carbonara
Valvtechnologies, Incorporated
5904 Bingle Rd
Houston, TX 77092

Subject: Capacity Certification, Valve Type Z*115RR85P1-001AA-001
(NB Cap. Cert ID No.: VLC-M59105)**

Dear Mr. Carbonara,

Please find enclosed copies of test numbers 28741S through 28744S performed on June 24, 2010 at the National Board Testing Laboratory for the purpose of obtaining capacity certification of the subject valve type as required by paragraph PG-69.3 of Section I of the ASME Code. Steam was the test medium.

This is a power operated valve which was manually opened and tested for flow rate only. Four tests were performed and an average slope of 42.29 PPH/PSIA was determined. All four tests had a measured slope within the +/-5% acceptance criteria. Based upon this testing, Valvtechnologies, Inc. can use a rated slope of no higher than 38.1 PPH/PSIA (42.29 x 0.9) for capacity rating of this design.

Valvtechnologies, Incorporated is hereby granted capacity certification and authorization to apply the "NB" mark to the valve type listed in the scope of certification. This authorization is valid for the above location and only while the organization holds a current ASME "V" Certificate of Authorization and is fully implementing its quality system as accepted by the National Board.

SCOPE OF CERTIFICATION

VALVE TYPE: Z*21N7BWRA6P1-MK1B**

Organization Type: Manufacturer

Certified Rating Value: Slope = 38.1 PPH/PSIA

Size: 1-1/2" x 3"

Pressure Range: 75 through 5000 psig

Certification Expiration Date: June 24, 2015

Yours truly,

Joseph F. Ball
Joseph F. Ball, P. E.
Director, Pressure Relief Department
REF: VLC-M59105ini6-10.doc

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Date: 6/29/10

From: Melody Fulton

To: Ryan Carbonara

Dept: Pressure Relief Dept.

Company: Valvtechnologies

Total Number of pages: 07

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Phone#: (614) 888-8320

Email: mfulton@nationalboard.org

The original documentation will follow through the mail. Thank you.

Provisional Testing at NBBI Testing Lab

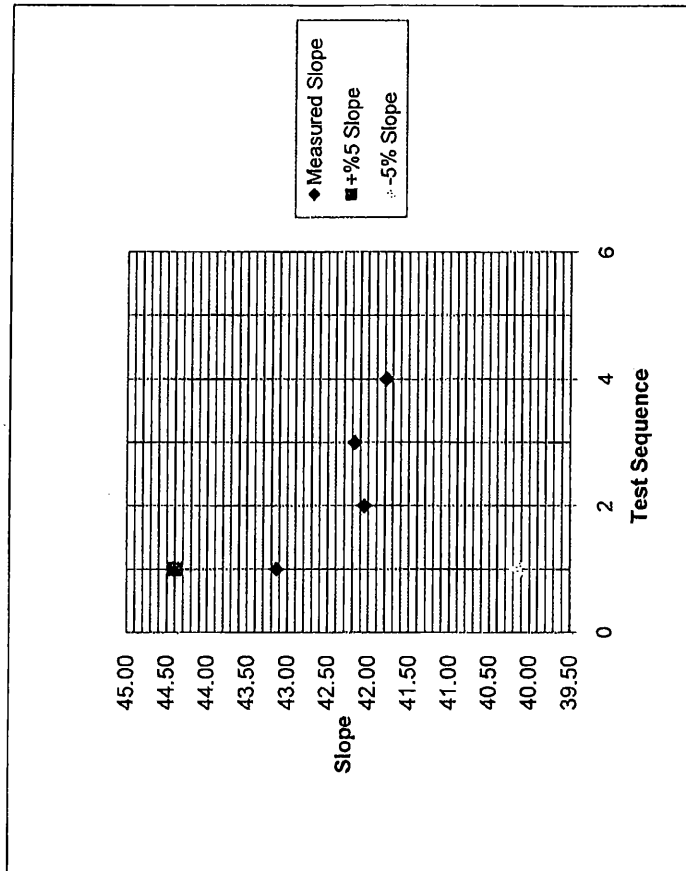
Steam Test Report—Timed Weight Method

Valvetechнологies

Provisional Test Series
 Valve Type Z***115RRR85P1-001AA-001
 Test No. Orif. Size Set Pressure PSIG

| | | |
|--------|------|-----|
| 28741S | 1.05 | 75 |
| 28742S | 1.05 | 125 |
| 28743S | 1.05 | 200 |
| 28744S | 1.05 | 275 |

VLC-M59105



Average Slope 42.29 PPH/PSIA
 +5% Slope 44.40 PPH/PSIA
 -5% Slope 40.17 PPH/PSIA

38.1 PPH/PSIA

90% Slope

I certify that the data on the attached test data sheet(s) was obtained under my supervision in accordance with the provisions of ANSI/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 _____ DATE 6-29-10

Company Representatives

Test Personnel:

- T. Brown
- D. Hennon
- B. Ashbrook

Notes:
 1. Valves tested for initial capacity certification per paragraph PG-69.3 of Section I, ASME Boiler and Pressure Vessel Code.

National Board Testing Laboratory

Steam Test - Timed Weight Method

| Valve ID Data | | C:\Data\Steam Tests\28741S.xls | |
|--|---------------------------------|--------------------------------|----------------------|
| 1 | Test Number | 28741S | |
| 2 | Test Sponsor | Valvtechnologies, Incorporated | |
| 3 | Company Type | Manufacturer | Houston, TX |
| 4 | Test Date | 6/24/2010 | VLC |
| 5 | Valve Type | Z***115RR85P1-001-AA-001 | |
| 6 | Manufacturer | Valvtechnologies, Incorporated | |
| 7 | Cap. Cert. ID No. | 59105 | |
| 8 | Set Pressure | | |
| 9 | Inlet Size | 1 1/2 FI | |
| 10 | Outlet Size | 3 FI | |
| 11 | Stamped Capacity | | |
| 12 | Code Section | I | |
| 13 | Serial Number | | |
| 14 | Date Code | | |
| Operational Data and Measured Dimensions | | | |
| 15 | Warn Pressure | | psig |
| 16 | Set Pressure | | psig |
| 17 | Reset Set Pressure | | psig |
| 18 | Blowdown | | psi |
| 19 | Reset Blowdown | | psi |
| 20 | Bore Diameter | 1.050 | inch |
| 21 | Lift | | inch |
| Measured Data | | | |
| 22 | Flow Area | 0.8659 | in ² |
| 23 | Vessel Pressure | 75.0 | psig |
| 24 | P _b | 14.25 | psia |
| 25 | Calorimeter Temp. | 289.1 | °F |
| 26 | Time of Run | 6.0 | minutes |
| 27 | Weight | 383.8 | lbm |
| 28 | Leakage | 0.0 | PPH |
| Calculated Data | | | |
| 29 | | | |
| 30 | Vessel Pressure | 89.3 | psia |
| 31 | Enthalpy, calorimeter | 1,187.7 | BTU/lbm |
| 32 | Saturation Temp., Vessel | 319.7 | °F |
| 33 | Saturation Volume, Vessel | 4.9358 | ft ³ /lbm |
| 34 | Steam Quality, Vessel | 100.0 | % |
| 35 | Vessel Temp. (Theoretical) | 323.5 | °F |
| 36 | Vessel Volume | 4.9668 | ft ³ /lbm |
| 37 | Degrees Superheat | 3.8 | °F |
| 38 | Capacity Correction | 1.0031 | |
| 39 | Measured Capacity | 3850.0 | PPH |
| 40 | Slope | 43.138 | PPH/PSIA |
| 41 | Coefficient | 0.96734 | |
| 42 | Rated Capacity For Measured Set | N/A | PPH |
| 43 | | | |
| 44 | | | in ² |

National Board Testing Laboratory

Steam Test - Timed Weight Method

| Valve ID Data | | C:\Data\Steam Tests\28742S.xls | |
|--|---------------------------------|--------------------------------|----------------------|
| 1 | Test Number | 28742S | |
| 2 | Test Sponsor | Valvtechnologies, Incorporated | |
| 3 | Company Type | Manufacturer | Houston, TX |
| 4 | Test Date | 6/24/2010 | VLC |
| 5 | Valve Type | Z***115RR85P1-001AA-001 | |
| 6 | Manufacturer | Valvtechnologies, Incorporated | |
| 7 | Cap. Cert. ID No. | 59105 | |
| 8 | Set Pressure | | |
| 9 | Inlet Size | 1 1/2 FI | |
| 10 | Outlet Size | 3 FI | |
| 11 | Stamped Capacity | | |
| 12 | Code Section | I | |
| 13 | Serial Number | | |
| 14 | Date Code | | |
| Operational Data and Measured Dimensions | | | |
| 15 | Warn Pressure | | psig |
| 16 | Set Pressure | | psig |
| 17 | Reset Set Pressure | | psig |
| 18 | Blowdown | | psi |
| 19 | Reset Blowdown | | psi |
| 20 | Bore Diameter | 1.050 | inch |
| 21 | Lift | | inch |
| Measured Data | | | |
| 22 | Flow Area | 0.8659 | in ² |
| 23 | Vessel Pressure | 125.0 | psig |
| 24 | P _b | 14.25 | psia |
| 25 | Calorimeter Temp. | 303.2 | °F |
| 26 | Time of Run | 4.0 | minutes |
| 27 | Weight | 389.8 | lbm |
| 28 | Leakage | 0.0 | PPH |
| Calculated Data | | | |
| 29 | | | |
| 30 | Vessel Pressure | 139.3 | psia |
| 31 | Enthalpy, calorimeter | 1,194.3 | BTU/lbm |
| 32 | Saturation Temp., Vessel | 352.6 | °F |
| 33 | Saturation Volume, Vessel | 3.2364 | ft ³ /lbm |
| 34 | Steam Quality, Vessel | 100.0 | % |
| 35 | Vessel Temp. (Theoretical) | 354.3 | °F |
| 36 | Vessel Volume | 3.2457 | ft ³ /lbm |
| 37 | Degrees Superheat | 1.7 | °F |
| 38 | Capacity Correction | 1.0014 | |
| 39 | Measured Capacity | 5855.4 | PPH |
| 40 | Slope | 42.049 | PPH/PSIA |
| 41 | Coefficient | 0.94294 | |
| 42 | Rated Capacity For Measured Set | N/A | PPH |
| 43 | | | |
| 44 | | | in ² |

National Board Testing Laboratory

Steam Test - Timed Weight Method

| Valve ID Data | | C:\Data\Steam Tests\28743S.xls | |
|--|---------------------------------|--------------------------------|----------------------|
| 1 | Test Number | 28743S | |
| 2 | Test Sponsor | Valvtechnologies, Incorporated | |
| 3 | Company Type | Manufacturer | Houston, TX |
| 4 | Test Date | 6/24/2010 | VLC |
| 5 | Valve Type | Z***115RR85P1-001A-001 | |
| 6 | Manufacturer | Valvtechnologies, Incorporated | |
| 7 | Cap. Cert. ID No. | 59105 | |
| 8 | Set Pressure | | |
| 9 | Inlet Size | 1 1/2 FI | |
| 10 | Outlet Size | 3 FI | |
| 11 | Stamped Capacity | | |
| 12 | Code Section | I | |
| 13 | Serial Number | | |
| 14 | Date Code | | |
| Operational Data and Measured Dimensions | | | |
| 15 | Warn Pressure | | psig |
| 16 | Set Pressure | | psig |
| 17 | Reset Set Pressure | | psig |
| 18 | Blowdown | | psi |
| 19 | Reset Blowdown | | psi |
| 20 | Bore Diameter | 1.050 | inch |
| 21 | Lift | | inch |
| Measured Data | | | |
| 22 | Flow Area | 0.8659 | in ² |
| 23 | Vessel Pressure | 200.3 | psig |
| 24 | P _b | 14.25 | psia |
| 25 | Calorimeter Temp. | 312.4 | °F |
| 26 | Time of Run | 4.0 | minutes |
| 27 | Weight | 603.6 | lbm |
| 28 | Leakage | 0.0 | PPH |
| Calculated Data | | | |
| 29 | | | |
| 30 | Vessel Pressure | 214.6 | psia |
| 31 | Enthalpy, calorimeter | 1,198.7 | BTU/lbm |
| 32 | Saturation Temp., Vessel | 387.7 | °F |
| 33 | Saturation Volume, Vessel | 2.1382 | ft ³ /lbm |
| 34 | Steam Quality, Vessel | 99.9 | % |
| 35 | Vessel Temp. (Theoretical) | 387.7 | °F |
| 36 | Vessel Volume | 2.1356 | ft ³ /lbm |
| 37 | Degrees Superheat | N/A | °F |
| 38 | Capacity Correction | 0.9994 | |
| 39 | Measured Capacity | 9048.4 | PPH |
| 40 | Slope | 42.174 | PPH/PSIA |
| 41 | Coefficient | 0.94573 | |
| 42 | Rated Capacity For Measured Set | N/A | PPH |
| 43 | | | |
| 44 | | | in ² |

National Board Testing Laboratory

Steam Test - Timed Weight Method

| Valve ID Data | | C:\Data\Steam Tests\28744S.xls | |
|--|---------------------------------|--------------------------------|----------------------|
| 1 | Test Number | 28744S | |
| 2 | Test Sponsor | Valvtechnologies, Incorporated | |
| 3 | Company Type | Manufacturer | Houston, TX |
| 4 | Test Date | 6/24/2010 | VLC |
| 5 | Valve Type | Z***115RR85P1-001AA-001 | |
| 6 | Manufacturer | Valvtechnologies, Incorporated | |
| 7 | Cap. Cert. ID No. | 59105 | |
| 8 | Set Pressure | | |
| 9 | Inlet Size | 1 1/2 FI | |
| 10 | Outlet Size | 3 FI | |
| 11 | Stamped Capacity | | |
| 12 | Code Section | I | |
| 13 | Serial Number | | |
| 14 | Date Code | | |
| Operational Data and Measured Dimensions | | | |
| 15 | Warn Pressure | | psig |
| 16 | Set Pressure | | psig |
| 17 | Reset Set Pressure | | psig |
| 18 | Blowdown | | psi |
| 19 | Reset Blowdown | | psi |
| 20 | Bore Diameter | 1.050 | inch |
| 21 | Lift | | inch |
| Measured Data | | | |
| 22 | Flow Area | 0.8659 | in ² |
| 23 | Vessel Pressure | 274.5 | psig |
| 24 | P _b | 14.25 | psia |
| 25 | Calorimeter Temp. | 319.7 | °F |
| 26 | Time of Run | 6.0 | minutes |
| 27 | Weight | 1,207.1 | lbm |
| 28 | Leakage | 0.0 | PPH |
| Calculated Data | | | |
| 29 | | | |
| 30 | Vessel Pressure | 288.8 | psia |
| 31 | Enthalpy, calorimeter | 1,202.2 | BTU/lbm |
| 32 | Saturation Temp., Vessel | 413.9 | °F |
| 33 | Saturation Volume, Vessel | 1.6023 | ft ³ /lbm |
| 34 | Steam Quality, Vessel | 99.9 | % |
| 35 | Vessel Temp. (Theoretical) | 413.9 | °F |
| 36 | Vessel Volume | 1.6005 | ft ³ /lbm |
| 37 | Degrees Superheat | N/A | °F |
| 38 | Capacity Correction | 0.9995 | |
| 39 | Measured Capacity | 12064.4 | PPH |
| 40 | Slope | 41.782 | PPH/PSIA |
| 41 | Coefficient | 0.93693 | |
| 42 | Rated Capacity For Measured Set | N/A | PPH |
| 43 | | | |
| 44 | | | in ² |