345 Carlingview Drive
Toronto, Ontario
CANADA M9W 6N9
Tel.: 416.734.3300
Fax.: 416.231.1626
Toll Free: 1.877.682.8772
www.tssa.org

September13, 2018

SURESH BALACHANDRAN
VALVTECHNOLOGIES INC
5904 BINGLE
HOUSTON TX 77092
US

Service Request Type.: BPV-National CSA
Service Request No.: 2317444
Your Reference No.:
Registered to.: VALVTECHNOLOGIES INC

Dear SURESH BALACHANDRAN,

Please find enclosed the original response from QC,SK, registered under the CRN No.: CSA-0C11555.56R1.

As all jurisdictional fees are handled by the Technical Standards and Safety Authority (TSSA), you do not pay any jurisdictions directly.

Should you have any questions or require further assistance, I will be happy to assist you.
For general enquiries, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

Tanya Francis
Administrative Assistant_ BPV Engineering
Tel. : 416-734-3423
Fax : 416-231-6183
Email :tfrancis@tssa.org

Régie du bâtiment Québec

REGISTERED CSA Group
CRN: CSA-0C11555.56R1
Registration Process administered by CSA Group per CSA B51

Statutory Declaration Registration of Fittings

(a) Design Qualification

I[1] Suresh Balachandran
(Name of applicant)

Sr. QAE Manager
(Position eg, president, plant manager, chief eng.)

of ValvTechnologies, Inc.
(name of company)

Located at 5904 Bingle Road, Houston, TX 77092, USA
(plant address)

do solemnly declare that the fittings listed hereunder, which are subject to the Boilers & Pressure Vessels Act:

☒ comply with all the requirements of the ANSI/ASME codes as to their dimensions, material, identification & service for which are required:

Or

☐ are not covered by the provisions of the ANSI/ASME codes, and are therefore constructed to comply with _____ code and standard, and are designed to the best current engineering practice, as shown by the supporting test data.

(b) Quality control of Manufacture

I further declare the manufacture of these fittings is controlled by a quality control program which complies with the requirements of ISO 9001:2015, and has been verified by the following authority or authorized agency DNV GL

The fittings[2] covered by this declaration, for which I seek registration, are Ball Valves, Model: V1-1, V1-2 & V1-3

In support of the application, the following information, calculations and/or test data are attached:
Wall Thickness table, Scope of registration, Sample GA drawings, Product brochures.

Declared before me at ValvTechnologies, Inc.

In the of Houton, Texas of USA

The 16th day of March AD 2018

MELBA STELLA KELLY
Notary Public, State of Texas
Comm. Expires 07-02-2019
Notary ID 130281764

Melba Stella Kelly
A (commissioner for oaths)

Signature of Declarer

For Official Use Only

The application is accepted for registration in Category C in accordance with the Boilers and Pressure Vessels Act and CSA Standard B51.

This registration must be revalidated after ten (10) years from the date of acceptance. MAY. 16. 2028

Registered Number CRN CSA-0C11555.56R1

For the Chief Inspector A. BANWATT

Date June. 13. 2018

CSA Group

---

1 *Three completed copied of Statutory Declaration form together with three copies of Catalogs, drawings of Bulletins illustrating above fittings shall be submitted.*

2 *All fittings are required to be registered in the name of the Manufacturer.*

3 *This form shall be completed and signed by the president of highest official in the manufacturing plan where the fitting is produced.*

*Note:
1. See attachment as the scope of registration.
2. Renewal registration without design change.
3. This registration covers only the valves in full compliance with B16.34 & technical review performed in the previous registration.

CSA Group

REGISTERED
CSA Group
CRN: CSA - 0C11555.56 R1
Registration Process administered by CSA Group per CSA B51

Technical Safety Authority of Saskatchewan
2202 2nd Ave.
Regina, SK S4R 1K3
PH: (306)798-7112 Toll Free: (866)530-8599
FAX: (306)787-9273 Toll Free: (866)760-9255
Email: boilerpermits@tsask.ca
Website: www.tsask.ca

Statutory Declaration (Registration of Fillings)

TSK-1008

I. Declaration Information

I. Suresh Balachandran, Sr. QAE Manager

(company title, e.g. vice president, plant manager, chief engineer)
(must be in a position of authority in the manufacturing plant where the fitting is produced)

In this space, show facsimile of manufacturer's logo or trademark as it will appear on the fitting.

of: ValvTechnologies, Inc.
(name of manufacturer)

located at: 5904 Bingle Road (Plant Address – Apt/Street) | Houston (City,Prov) | TX 77092 (Postal Code)

do solemnly declare that the fittings listed hereinunder, which are subject to the ***Saskatchewan Boiler and Pressure Vessel Safety Act*** (check one)

⊗ Comply with the requirements of ASME B16.34 (title of recognized North American Standard) which specifies the dimensions, Materials of construction, pressure / temperature ratings and identification marking of the fittings, or

○ Are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, materials of construction, pressure / temperature ratings and the basis for such ratings, and the marking of the fittings for identification.

I further declare that the manufacturer of these fittings is controlled by a quality control program which has been verified by the following authority, DNV GL as being suitable for the manufacturer of these fittings to the stated standard. The fittings covered by this declaration, for which I seek registration, are Ball Valves model: V1-1, V1-2 & V1-3

In support of this application, the following information, calculations and / or test data are attached:
Wall Thickness table, Scope of registration, Sample GA drawings, Product Brochures.

II. Declaration

DECLARED before me at ValvTechnologies, Inc. In the Houston, Texas of USA

this 16th day of March, 2018

Melba Stella Kelly
(print name)

(Signature)

Melba Stella Kelly
(Signature of Commissioner of Oaths)

MELBA STELLA KELLY
Notary Public State of Texa
Comm. Expires 07-02-2019
Notary ID 130281764

III. Office Use Only

To the best of my knowledge and belief, the application meets the requirements of the ***Boiler and Pressure Vessel Safety Act*** and CSA B51, Clause 4.2, and is accepted for registration in Category _____

(Registration Number)	(Date Registered – MM DD YYYY) (For the Administrator / Chief Inspector)	(Expiry Date – MM DD YYYY)
CSA-0C11555.56 R1	June · 13 · 2018	MAY · 16 · 2028

CSA Group
A. BANWATT

*Note:
1. See attachment as the scope of registration.
2. Renewal registration without design change.
3. This registration covers only the valves in full compliance with B16.34 & technical review performed in the previous registration.

CSA Group

345 Carlingview Drive
Toronto Ontario M9W 6N9
Tel 416 734 3300
Fax 416 231 1626
Toll Free 1 877 682 8772

www.tssa.org

May 17, 2018

SURESH BALACHANDRAN
VALVTECHNOLOGIES INC
5904 BINGLE
HOUSTON TX 77092
US

Service Request Type: BPV-Fitting Registration
Service Request No.: 2267870
Your Reference No.:
Registered to: VALVTECHNOLOGIES INC

Dear SURESH BALACHANDRAN,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN: **0C11555.5R1**
Main Design No.: BALL VALVES V1-1, V1-2, V1-3, V1-4 see attached documents
Expiry Date: 16-May-2028

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

A stamped copy of the approved registration and invoice for engineering services will be mailed to you shortly. Should you have any questions or require further assistance, however, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

Alan Wu P. Eng.
Mechanical Engineer, BPV
Tel. : 416-734-3443
Fax : 416-231-6183
Email : awu@tssa.org

CSA Group 1 OF 9

ATTACHMENT TO
C.R.N. CSA-0C11555.5R1
Signed:
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

VALVTECHNOLOGIES

V1-1 Forged High Pressure Ball Valve NPS 1/2" – 4"

Min. wall thickness.

Purpose of this chart is to tabulate Min. wall thickness for CRN certification requirements

Valve Size	Port Designation	Pressure Class																					
		900# (1)			1500# (1)			2250# (2)			2500# (1)			3100# (2)			4000# (2)			4500# (1)		
		Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}	Bore	$t_{min.}$	t_{actual}
0.50	FP	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.63	0.52	0.59	0.63	0.59	0.59
0.50	RP	0.38	0.15	0.29	0.38	0.17	0.29	0.38	0.22	0.29	0.38	0.23	0.29	0.38	0.28	0.29	0.38	0.35	0.43	0.38	0.39	0.43
0.50	STD	0.38	0.15	0.29	0.38	0.17	0.29	0.38	0.22	0.29	0.38	0.23	0.29	0.38	0.28	0.29	0.38	0.35	0.43	0.38	0.39	0.43
0.75	FP	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.63	0.52	0.59	0.63	0.59	0.59
0.75	RP	0.38	0.15	0.29	0.38	0.17	0.29	0.38	0.22	0.29	0.38	0.23	0.29	0.38	0.28	0.29	0.38	0.35	0.43	0.38	0.39	0.43
0.75	STD	0.38	0.15	0.29	0.38	0.17	0.29	0.38	0.22	0.29	0.38	0.23	0.29	0.38	0.28	0.29	0.38	0.35	0.43	0.38	0.39	0.43
1.00	FP	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.63	0.52	0.59	0.63	0.59	0.59
1.00	RP	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.38	0.35	0.43	0.38	0.39	0.43
1.00	STD	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.38	0.35	0.43	0.38	0.39	0.43
1.50	FP	1.06	0.25	0.52	1.06	0.28	0.52	1.06	0.40	0.52	1.06	0.44	0.52	1.06	0.57	0.94	1.06	0.77	0.94	1.06	0.88	0.94
1.50	RP	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.63	0.52	0.59	0.63	0.59	0.59
1.50	STD	0.63	0.18	0.59	0.63	0.21	0.59	0.63	0.29	0.59	0.63	0.31	0.59	0.63	0.39	0.59	0.63	0.52	0.59	0.63	0.59	0.59
2.00	FP	1.50	0.28	1.00	1.50	0.38	1.00	1.50	0.55	1.00	1.50	0.61	1.00	1.50	0.81	1.00	1.50	1.11	1.50	1.50	1.28	1.50
2.00	RP	1.06	0.25	0.52	1.06	0.28	0.94	1.06	0.40	0.94	1.06	0.44	0.94	1.06	0.57	0.94	1.06	0.77	0.94	1.06	0.88	0.94
2.00	STD	1.06	0.25	0.52	1.06	0.28	0.94	1.06	0.40	0.94	1.06	0.44	0.94	1.06	0.57	0.94	0.63	0.52	0.59	0.63	0.59	0.59
2.50	FP	1.50	0.28	1.00	1.50	0.38	1.00	1.50	0.55	1.00	1.50	0.61	1.00	1.50	0.81	1.00	1.50	1.11	1.50	1.50	1.28	1.50
2.50	RP	1.06	0.25	0.52	1.06	0.28	0.94	1.06	0.40	0.94	1.06	0.44	0.94	1.06	0.57	0.94	1.06	0.77	0.94	1.06	0.88	0.94
2.50	STD	1.06	0.25	0.52	1.06	0.28	0.94	1.06	0.40	0.94	1.06	0.44	0.94	1.06	0.57	0.94	0.63	0.52	0.59	0.63	0.59	0.59
3.00	FP	2.12	0.33	0.84	2.12	0.49	0.84	2.12	0.74	0.84	2.12	0.83	0.84	2.12	1.11	1.77	2.12	1.53	1.77	2.12	1.77	1.77
3.00	RP	1.50	0.28	1.00	1.50	0.38	1.00	1.50	0.55	1.00	1.50	0.61	1.00	1.50	0.81	1.00	1.50	1.11	1.50	1.50	1.28	1.50
3.00	STD	1.50	0.28	1.00	1.50	0.38	1.00	1.50	0.55	1.00	1.50	0.61	1.00	1.50	0.81	1.00	1.06	0.77	0.94	1.06	0.88	0.94
4.00	FP	3.50	0.47	1.56	3.50	0.75	1.56	3.50	1.16	1.56	3.50	1.29	1.56	2.12	1.11	1.77	2.12	1.53	1.77	2.12	1.77	1.77
4.00	RP	2.12	0.33	0.84	2.12	0.49	0.84	2.12	0.74	0.84	2.12	0.83	0.84	2.12	1.11	1.77	1.50	1.11	1.50	1.50	1.28	1.50
4.00	STD	1.50	0.28	1.00	1.50	0.38	1.00	1.50	0.55	1.00	1.50	0.61	1.00	1.50	0.81	1.00	1.06	0.77	0.94	1.06	0.88	0.94

Notes: (1) Standard Class V1-1 B16.34 2017 Minimum Wall Thickness
(2) Intermediate rating per B16.34 paragraph 6.1.4

VALVTECHNOLOGIES

V1-2 Cast Flanged Ball Valve NPS 1"-36"

Min. wall thickness.

Purpose of this chart is to tabulate Min. wall thickness for CRN certification requirements

Valve Size	Port Designation	Pressure Class								
		150#			300#			600#		
		Bore [in]	t_{min}	t_{actual}	Bore [in]	t_{min}	t_{actual}	Bore [in]	$t_{min.}$	t_{actual}
1"	FP	1.06	0.16	0.20	1.06	0.17	0.39	1.06	0.19	0.39
	RP	0.63	0.13	0.14	0.63	0.14	0.14	0.63	0.15	0.15
1.5"	FP	1.50	0.19	0.33	1.50	0.21	0.25	1.50	0.22	0.32
	RP	1.06	0.16	0.39	1.06	0.17	0.39	1.06	0.19	0.39
2"	FP	2.13	0.22	0.32	2.13	0.24	0.34	2.13	0.25	0.34
	RP	1.50	0.19	0.33	1.50	0.21	0.25	1.50	0.22	0.32
3"	FP	3.06	0.24	0.40	3.06	0.28	0.31	3.06	0.31	0.31
	RP	2.13	0.22	0.32	2.13	0.24	0.34	2.13	0.25	0.34
4"	FP	4.06	0.26	0.38	4.06	0.31	0.63	4.06	0.38	0.46
	RP	3.06	0.24	0.40	3.06	0.28	0.31	3.06	0.31	0.31
6"	FP	6.06	0.28	0.40	6.06	0.38	0.41	6.06	0.52	0.55
	RP	4.06	0.26	0.34	4.06	0.31	0.63	4.06	0.38	0.46
8"	FP	8.06	0.32	0.45	8.06	0.44	0.67	8.06	0.65	0.65
	RP	5.13	0.27	0.40	6.06	0.38	0.41	6.06	0.52	0.55
10"	FP	10.06	0.35	0.37	10.06	0.51	0.53	10.06	0.79	0.79
	RP	7.13	0.30	0.45	8.06	0.44	0.67	8.06	0.65	0.65
12"	FP	12.06	0.38	0.50	12.06	0.58	0.75	12.06	0.92	1.00
	RP	8.06	0.32	0.50	10.06	0.51	0.53	10.06	0.79	0.79
14"	FP	12.06	0.38	0.50	12.06	0.58	0.75	12.06	0.92	1.00
	RP	10.06	0.35	0.70	10.06	0.51	0.53	10.06	0.79	0.79
16"	FP	15.25	0.43	0.68	15.25	0.68	0.97	12.25	0.94	1.25
	RP	10.06	0.35	0.70	12.06	0.58	0.75	13.06	0.99	1.00
18"	FP	17.25	0.47	0.75	15.25	0.68	0.94	15.25	1.14	1.63
	RP	13.25	0.40	0.75	13.25	0.62	0.75	13.25	1.00	-
20"	FP	19.25	0.50	1.33	17.25	0.75	0.95	17.25	1.27	1.38
	RP	15.25	0.43	0.94	15.25	0.68	0.94	15.25	1.14	1.63
22"	FP	21.25	0.53	-	19.25	0.82	1.33	19.25	1.41	-
	RP	15.25	0.43	0.94	15.25	0.68	0.94	17.25	1.27	1.38
24"	FP	23.25	0.56	1.18	21.25	0.88	-	21.25	1.57	-
	RP	17.25	0.47	0.75	17.25	0.75	0.95	17.25	1.27	1.38
26"	FP	25.25	0.59	-	23.25	0.95	1.15	23.25	1.68	-
	RP	19.25	0.50	1.33	19.25	0.82	1.33	19.25	1.41	-
28"	FP	27.25	0.62	1.44	25.25	1.01	2.13	25.25	1.81	-
	RP	21.25	0.53	-	21.25	0.88	-	21.25	1.57	-
30"	FP	29.25	0.65	-	27.25	1.08	1.44	27.25	1.95	-
	RP	23.25	0.56	1.18	23.25	0.95	1.15	23.25	1.68	-
32"	FP	31.25	0.68	1.52	29.25	1.15	-	29.25	2.08	-
	RP	-	-	-	-	-	-	-	-	-
34"	FP	33.25	0.71	-	31.25	1.21	1.52	31.25	2.21	-
	RP	-	-	-	-	-	-	-	-	-
36"	FP	35.25	0.75	-	33.25	1.28	-	33.25	2.35	
	RP	-	-	-	-	-	-	-	-	-

Notes: 1. t_{min} = wall thickness (inches) per Table 3 of ASME B16.34 2017

2. t_{actual} = design wall thickness at the thinnest point

CSA Group 3 OF 9

ATTACHMENT TO

C.R.N. CSA-0C11555.6R1

Signed:

178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

THIS IS PART OF

C.R.N. 0C11555.5R1

Safety Authority

Vessels

Rev 3, March 5, 2018

VALVTECHNOLOGIES

V1-3 Investment Cast ball Valve (Class 150, 300, 600)
Min. wall thickness.

Purpose of this chart is to tabulate Min. wall thickness for CRN certification requirements

Wall thickness	NPS 1/2"			NPS 3/4"			NPS 1"			NPS 1-1/2"			NPS 2"		
	Port Designation			Port Designation			Port Designation			Port Designation			Port Designation		
	STD	RP	FP	STD	RP	FP	STD	RP	FP	STD	RP	FP	STD	RP	FP
Port	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	1.06	0.63	1.06	1.50	1.06	1.50	2.13
Body $t_{min.}$	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.19	0.15	0.19	0.22	0.19	0.22	0.25
Body t_{actual}	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.40	0.15	0.40	0.34	0.40	0.34	0.26
End cap $t_{min.}$	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.19	0.15	0.19	0.22	0.19	0.22	0.25
End cap t_{actual}	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.40	0.15	0.40	0.34	0.40	0.34	0.26

Notes:

1. This applies to SW, BW and NPT end valves only
2. $t_{min.}$ = wall thickness (inches) per Table 3 of ASME B16.34
3. t_{actual} = design wall thickness at the thinnest point

CSA Group 4979

ATTACHMENT TO

C.R.N. CSA-0C11555.5R1

Signed:

178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

THIS IS PART OF CRN 0C11555.5R1

Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

Rev 4, March 5, 2018

VALVTECHNOLOGIES

V1-4 Cast Flanged Ball Valve NPS 4"-36"

Min. wall thickness.

Purpose of this chart is to tabulate Min. wall thickness for CRN certification requirements

Valve Size	Port Designation	Pressure Class											
		900#			1500#			2500#			4500#		
		Bore [in]	$t_{min.}$	t_{actual}	Bore [in]	$t_{min.}$	t_{actual}	Bore [in]	$t_{min.}$	t_{actual}	Bore [in]	$t_{min.}$	t_{actual}
4"	FP	3.50	0.47	1.38	3.50	0.75	1.44	3.50	1.29	1.38	2.13	1.77	1.84
	RP	2.13	0.32	1.12	2.13	0.48	0.67	2.13	0.82	1.21	1.50	1.28	2.25
6"	FP	5.13	0.63	1.97	5.13	1.02	1.94	3.50	1.29	1.53	3.50	2.85	2.79
	RP	3.50	0.47	1.53	3.50	0.75	1.53	2.13	0.82	1.21	2.13	1.77	1.84
8"	FP	7.13	0.84	2.31	6.06	1.22	2.14	5.13	1.82	1.93	5.13	4.11	-
	RP	5.13	0.63	2.24	5.13	1.03	3.19	3.50	1.29	1.53	3.50	2.85	-
10"	FP	8.06	0.95	3.08	8.06	1.60	2.61	7.13	2.53	3.81	6.06	4.86	-
	RP	7.13	0.84	3.68	7.13	1.41	3.69	6.06	2.23	2.52	5.13	4.11	-
12"	FP	10.06	1.15	2.03	10.06	1.95	1.95	8.06	2.85	4.26	7.13	5.69	-
	RP	8.06	0.95	3.29	8.06	1.60	-	7.13	2.63	4.06	6.06	4.86	-
14"	FP	12.06	1.38	2.23	10.06	1.95	2.63	8.06	2.85	4.24	8.06	6.42	-
	RP	8.06	0.95	-	8.06	1.60	-	7.13	2.53	-	7.13	5.69	-
16"	FP	13.25	1.48	3.19	12.06	2.34	4.85	10.06	3.53	3.69	10.06	8.03	-
	RP	10.06	1.15	3.94	10.06	1.95	-	8.06	2.85	-	8.06	6.42	-
18"	FP	15.25	1.69	-	13.25	2.54	-	12.06	4.21	-	10.06	8.20	-
	RP	12.06	1.36	-	12.06	2.34	-	10.06	3.53	-	8.06	6.42	-
20"	FP	17.25	1.90	-	15.25	2.91	-	13.25	4.62	-	12.06	9.61	-
	RP	13.25	1.48	-	12.06	2.34	-	10.06	3.53	-	10.06	8.20	-
22"	FP	19.25	2.11	-	17.25	3.28	-	13.25	4.62	-	13.25	10.50	-
	RP	15.25	1.69	-	13.25	2.54	-	12.06	4.21	-	12.06	9.61	-
24"	FP	19.25	2.11	-	19.25	3.65	4.57	15.25	5.30	-	15.25	12.07	-
	RP	17.25	1.90	-	15.25	2.91	-	13.25	4.62	-	13.25	10.50	-
26"	FP	21.25	2.32	-	19.25	3.65	-	17.25	5.98	-	15.25	12.07	-
	RP	19.25	2.11	-	17.25	3.28	-	13.25	4.62	-	13.25	10.50	-
28"	FP	23.25	2.53	-	21.25	4.02	-	17.25	5.98	-	17.25	13.64	-
	RP	19.25	2.11	-	19.25	3.65	-	15.25	5.30	-	15.25	12.07	-
30"	FP	25.25	2.74	3.46	23.25	4.39	-	19.25	6.66	-	19.25	15.21	-
	RP	21.25	2.32	-	19.25	3.65	-	15.25	5.30	-	15.25	12.07	-

Notes: 1. t_{min} = wall thickness (inches) per Table 3 of ASME B16.34 2017
2. t_{actual} = design wall thickness at the thinnest point

Rev 3, March 5, 2018

CSA Group 5 OF 9

ATTACHMENT TO
C.R.N. CSA-OC11555.5-6R1
Signed:
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

THIS IS PART OF
CRN OC11555.5R1
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

Valve Model	Series/ Type	ANSI Pressure Class	Size
V7TT-UU-VV-B005-WWWXX-YYY	V1-1	900	0.50
V7TT-UU-VV-B007-WWWXX-YYY	V1-1	900	0.75
V7TT-UU-VV-B010-WWWXX-YYY	V1-1	900	1.00
V7TT-UU-VV-B012-WWWXX-YYY	V1-1	900	1.25
V7TT-UU-VV-B015-WWWXX-YYY	V1-1	900	1.50
V7TT-UU-VV-B020-WWWXX-YYY	V1-1	900	2.00
V7TT-UU-VV-B030-WWWXX-YYY	V1-1	900	3.00
V7TT-UU-VV-B040-WWWXX-YYY	V1-1	900	4.00
V8TT-UU-VV-B005-WWWXX-YYY	V1-1	1500	0.50
V8TT-UU-VV-B007-WWWXX-YYY	V1-1	1500	0.75
V8TT-UU-VV-B010-WWWXX-YYY	V1-1	1500	1.00
V8TT-UU-VV-B012-WWWXX-YYY	V1-1	1500	1.25
V8TT-UU-VV-B015-WWWXX-YYY	V1-1	1500	1.50
V8TT-UU-VV-B020-WWWXX-YYY	V1-1	1500	2.00
V8TT-UU-VV-B030-WWWXX-YYY	V1-1	1500	3.00
V8TT-UU-VV-B040-WWWXX-YYY	V1-1	1500	4.00
V0TT-UU-VV-B005-WWWXX-YYY	V1-1	2500	0.50
V0TT-UU-VV-B007-WWWXX-YYY	V1-1	2500	0.75
V0TT-UU-VV-B010-WWWXX-YYY	V1-1	2500	1.00
V0TT-UU-VV-B012-WWWXX-YYY	V1-1	2500	1.25
V0TT-UU-VV-B015-WWWXX-YYY	V1-1	2500	1.50
V0TT-UU-VV-B020-WWWXX-YYY	V1-1	2500	2.00
V0TT-UU-VV-B030-WWWXX-YYY	V1-1	2500	3.00
V0TT-UU-VV-B040-WWWXX-YYY	V1-1	2500	4.00
VBTT-UU-VV-B005-WWWXX-YYY	V1-1	4500	0.50
VBTT-UU-VV-B007-WWWXX-YYY	V1-1	4500	0.75
VBTT-UU-VV-B010-WWWXX-YYY	V1-1	4500	1.00
VBTT-UU-VV-B012-WWWXX-YYY	V1-1	4500	1.25
VBTT-UU-VV-B015-WWWXX-YYY	V1-1	4500	1.50
VBTT-UU-VV-B020-WWWXX-YYY	V1-1	4500	2.00
VBTT-UU-VV-B030-WWWXX-YYY	V1-1	4500	3.00
VBTT-UU-VV-B040-WWWXX-YYY	V1-1	4500	4.00
TTWWW - defines the materials			
UU - defines the end connection			
VV - defined the port			
XX - defines quality aspects			
YYY - differentiates on on categorized options			
Other Pressure Classes are available, including:			
3100 (same as 2500)			
3500 (same as 4500)			

MATERIALS MAY BE USED ON ALL VALVE MODELS

ASME/ ASTM Material	Maximum Design Temp (C)	Minimum Design Temp (C)
ASTM A105	538 °C	-29 °C
ASTM A182 F22	650 °C	-29 °C
ASTM A182 F91	650 °C	-29 °C
ASTM A376 316H	816 °C	-29 °C
Above are examples		
Any B16.34 Material		
Wrought or Forged		

Design Basis:

ASME B16.34 2017
PED
10CFR50 App B
ASME III, Class 1, 2 and 3

End Connections
Socket Weld
Butt Weld

Ports:
Full Port
Reduced Port
Standard Port

Manufacturing location(s)
Houston, TX USA

THIS IS PART OF CRN 0C1155.5R1
Technical Standards & Safety Authority
Boilers & Pressure Vessels Safety Program

6 OF 9

ATTACHMENT TO
C.R.N. CSA-0C1155.5R1
Signed.
178 Rexdale Boulevard, Toronto, ON, Canada M9W 1R3

Valve Model	Series/ Type	ANSI Pressure Class	Size
V3TT-UU-VV-B005-WWWXX-YYY	V1-2	150	0.50
V3TT-UU-VV-B007-WWWXX-YYY	V1-2	150	0.75
V3TT-UU-VV-B010-WWWXX-YYY	V1-2	150	1.00
V3TT-UU-VV-B012-WWWXX-YYY	V1-2	150	1.25
V3TT-UU-VV-B015-WWWXX-YYY	V1-2	150	1.50
V3TT-UU-VV-B020-WWWXX-YYY	V1-2	150	2.00
V3TT-UU-VV-B025-WWWXX-YYY	V1-2	150	2.50
V3TT-UU-VV-B030-WWWXX-YYY	V1-2	150	3.00
V3TT-UU-VV-B040-WWWXX-YYY	V1-2	150	4.00
V3TT-UU-VV-B050-WWWXX-YYY	V1-2	150	5.00
V3TT-UU-VV-B060-WWWXX-YYY	V1-2	150	6.00
V3TT-UU-VV-B080-WWWXX-YYY	V1-2	150	8.00
V3TT-UU-VV-B100-WWWXX-YYY	V1-2	150	10.00
V3TT-UU-VV-B120-WWWXX-YYY	V1-2	150	12.00
V3TT-UU-VV-B140-WWWXX-YYY	V1-2	150	14.00
V3TT-UU-VV-B160-WWWXX-YYY	V1-2	150	16.00
V3TT-UU-VV-B180-WWWXX-YYY	V1-2	150	18.00
V3TT-UU-VV-B200-WWWXX-YYY	V1-2	150	20.00
V3TT-UU-VV-B220-WWWXX-YYY	V1-2	150	22.00
V3TT-UU-VV-B240-WWWXX-YYY	V1-2	150	24.00
V3TT-UU-VV-B260-WWWXX-YYY	V1-2	150	26.00
V3TT-UU-VV-B280-WWWXX-YYY	V1-2	150	28.00
V3TT-UU-VV-B300-WWWXX-YYY	V1-2	150	30.00
V3TT-UU-VV-B320-WWWXX-YYY	V1-2	150	32.00
V3TT-UU-VV-B340-WWWXX-YYY	V1-2	150	34.00
V3TT-UU-VV-B360-WWWXX-YYY	V1-2	150	36.00
TTWWW - defines the materials			
UU - defines the end connection			
VV - defined the port			
XX - defines quality aspects			
YYY - differentiates on on categorized options			
Other Pressure Classes are available, including 300 (V5 in PN), 600 (V6 in PN)			

MATERIALS MAY BE USED ON ALL VALVE MODELS

ASME/ ASTM Material	Maximum Design Temp (C)	Minimum Design Temp (C)
ASTM A216 WCB	538 °C	-29 °C
ASTM A351 CF8M	816 °C	-29 °C
Above are examples		
Any B16.34 Material		
Cast		

Design Basis:

ASME B16.34 2017
PED
10CFR50 App B
ASME III, Class 1, 2 and 3

End Connections
Raised Face

Ports:
Full Port
Reduced Port
Standard Port

Manufacturing location(s)
Houston, TX USA

THIS IS PART OF CRN 0C11555.5R1
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

CSA Group 7 OF 9

ATTACHMENT TO
C.R.N. CSA-0C11555.5R1
Signed:
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

Valve Model	Series/ Type	ANSI Pressure Class	Size
V3TT-UU-VV-B005-WWWXX-YYY	V1-3	150	0.50
V3TT-UU-VV-B007-WWWXX-YYY	V1-3	150	0.75
V3TT-UU-VV-B010-WWWXX-YYY	V1-3	150	1.00
V3TT-UU-VV-B012-WWWXX-YYY	V1-3	150	1.25
V3TT-UU-VV-B015-WWWXX-YYY	V1-3	150	1.50
V3TT-UU-VV-B020-WWWXX-YYY	V1-3	150	2.00
V5TT-UU-VV-B005-WWWXX-YYY	V1-3	300	0.50
V5TT-UU-VV-B007-WWWXX-YYY	V1-3	300	0.75
V5TT-UU-VV-B010-WWWXX-YYY	V1-3	300	1.00
V5TT-UU-VV-B012-WWWXX-YYY	V1-3	300	1.25
V5TT-UU-VV-B015-WWWXX-YYY	V1-3	300	1.50
V5TT-UU-VV-B020-WWWXX-YYY	V1-3	300	2.00
V6TT-UU-VV-B005-WWWXX-YYY	V1-3	600	0.50
V6TT-UU-VV-B007-WWWXX-YYY	V1-3	600	0.75
V6TT-UU-VV-B010-WWWXX-YYY	V1-3	600	1.00
V6TT-UU-VV-B012-WWWXX-YYY	V1-3	600	1.25
V6TT-UU-VV-B015-WWWXX-YYY	V1-3	600	1.50
V6TT-UU-VV-B020-WWWXX-YYY	V1-3	600	2.00
TTWWW - defines the materials			
UU - defines the end connection			
VV - defined the port			
XX - defines quality aspects			
YYY - differentiates on on categorized options			

MATERIALS MAY BE USED ON ALL VALVE MODELS

ASME/ ASTM Material	Maximum Design Temp (C)	Minimum Design Temp (C)
ASTM A216 WCB	538 °C	-29 °C
ASTM A217 WC9	595 °C	-29 °C
ASTM A351 CF8M	816 °C	-29 °C
Above are examples		
Any B16.34 Material		
Cast		

Design Basis:

ASME B16.34 2017
PED
10CFR50 App B
ASME III, Class 1, 2 and 3

End Connections
Socket Weld
Butt Weld
Raised Face

Ports:
Full Port
Reduced Port
Standard Port

Manufacturing location(s)
Houston, TX USA

CSA Group 8 OF 9

ATTACHMENT TO
C.R.N. CSA-0C11555.5R1
Signed:
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3

THIS IS PART OF
CRN 0C11555.5R1
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

Valve Model	Series/ Type	ANSI Pressure Class	Size
V7TT-UU-VV-B040-WWWXX-YYY	V1-4	900	4.00
V7TT-UU-VV-B060-WWWXX-YYY	V1-4	900	6.00
V7TT-UU-VV-B080-WWWXX-YYY	V1-4	900	8.00
V7TT-UU-VV-B100-WWWXX-YYY	V1-4	900	10.00
V7TT-UU-VV-B120-WWWXX-YYY	V1-4	900	12.00
V7TT-UU-VV-B140-WWWXX-YYY	V1-4	900	14.00
V7TT-UU-VV-B160-WWWXX-YYY	V1-4	900	16.00
V7TT-UU-VV-B180-WWWXX-YYY	V1-4	900	18.00
V7TT-UU-VV-B200-WWWXX-YYY	V1-4	900	20.00
V7TT-UU-VV-B220-WWWXX-YYY	V1-4	900	22.00
V7TT-UU-VV-B240-WWWXX-YYY	V1-4	900	24.00
V7TT-UU-VV-B260-WWWXX-YYY	V1-4	900	26.00
V7TT-UU-VV-B280-WWWXX-YYY	V1-4	900	28.00
V7TT-UU-VV-B300-WWWXX-YYY	V1-4	900	30.00
TTWWW - defines the materials			
UU - defines the end connection			
VV - defined the port			
XX - defines quality aspects			
YYY - differentiates on on categorized options			
Other Pressure Classes are available, including 1500 (V8), 2500 (V0), 4500 (VB)			

MATERIALS MAY BE USED ON ALL VALVE MODELS

ASME/ ASTM Material	Maximum Design Temp (C)	Minimum Design Temp (C)
ASTM A105	538 °C	-29 °C
ASTM A182 F22	650 °C	-29 °C
ASTM A182 F91	650 °C	-29 °C
ASTM A376 316H	816 °C	-29 °C
Above are examples		
Any B16.34 Material		
Wrought or Forged		

Design Basis:

ASME B16.34 2017
PED
10CFR50 App B
ASME III, Class 1, 2 and 3

End Connections
Raised Face
Butt Weld

Ports:
Full Port
Reduced Port

Manufacturing location(s)
Houston, TX USA

THIS IS PART OF
CRN 0C11555.52R1
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

CSA Group 9 of 9

ATTACHMENT TO
C.R.N. CSA-0C11555.52R1
Signed:
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3