



DNV BUSINESS ASSURANCE

DESIGN VERIFICATION REPORT

(Independent Review Certificate)

PROJECT : -
 CLIENT : **BRENNAN INDUSTRIES INC**
 MANUFACTURER : **Fluid Controls Pvt. Ltd.,**
 T-169, MIDC Bhosari, Pune – 411 026,
 India
 DNV PROJECT NUMBER : **55024043**
 APPLICABLE STANDARD : **ASME B16.34, MSS SP 99**

This is to verify that the design calculation and drawings of

INSTRUMENTATION VALVES – Needle & Ball Valves

has been reviewed with respect to **Design Code ASME B16.34, MSS SP 99** and found to comply.

Products Covered

Product Description	Size	Material	Design Pressure PSIG	Design temperature
Integral/ Screwed Bonnet Needle valve with Screwed/ tube ends	1/8" to 1/2"	ASTM A182 Gr. F316/ ASTM A276 Type 316/ ASTM A479 Type 316	6000	38 °C
		ASTM B124 UNS C37700/ ASTM B16 UNS C36000	3000	38 °C
SWS Ball Valve with Screwed/ tube ends	1/8" to 1/2"	ASTM A182 Gr. F316/ ASTM A479 Gr. 316	6000	38 °C
		ASTM B124 UNS C37700/ ASTM B16 UNS C36000	3000	38 °C

Note: Please refer to Appendix-1 for the list of G.A. drawing references pertaining to the the prouducts listed above.

Chennai, 2014-08-14
DNV Business Assurance Pvt Ltd

Hariharan Sundaeswara Iyer
Head – Technicial Support Service Centre

A G Ramakrishnan
Senior Assessor – Pressure Equipment

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DNV Id.No. : DNV-2014-IND-DVR-111009R

Ord.No : 55024043

The following reference standards was used:

- Design Code **ASME B16.34, Clause 5.7 of MSS SP 99**
- Design basis Updated Design Drawings and Burst test report furnished by Fluid Controls India Pvt. Ltd. by email dated 26/07/2014

The verification is based on the following:

A Design Documents

Document/ Drawing name	Reference
G. A. drawing list for needle valves & Ball Valves	Refer Appendix I of this Certificate for individual Assembly drawing reference
Needle valve body drawing list	FC/DRG/BD/NV/002, Rev. 00 dated 2014-03-07
G. A. drawing list for Ball valves	Refer Appendix I of this Certificate for individual Assembly drawing reference
Ball valve body drawing list	FC/DRG/BD/BLV/004, Rev. 00 dated 2014-03-07
Test Reports pertaining to Burst tests carried out for tube end valves	Refer Burst test report as per MSS-SP-99 conducted at FCPL & witnessed by DNV dated 2014-07-24 & 25.

B Corresspondence

References/ Identification	Subject
Email	First submission of updated documents (where drawing reference of Brennan Industries been included) dated 2014-07-26 & 2014-08-01; DNV comments on design sample dated 2014-08-03; Submission of final documents dated 2014-08-11 & 12

C Comments:

- *For Experimental method, type test to be performed for each & every type of Valves*
- *For threaded end valves, dimensions shall be as per ASME B16.34*
- *The assessment is carried out on sampling basis. Manufacturer shall keep all Type Testing Records & Reports for all sizes compliance to applicable Standard*



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APPENDIX I

SI No	Part No / Drawing No	Size	Pressure PSIG	Design Temperature
1	2 BLV-SWS-T-(Ø2.4).ss / NVB-1002-SS	1/8" to 1/2"	6000	38°C
2	2 BLV-SWS-FN-(Ø3.2).ss / NVB-1003-SS			
3	4 BLV-SWS-T-(Ø3.2).ss / NVB-1005-SS			
4	4 BLV-SWS-FN-(Ø4.76).ss / NVB-1007-SS			
5	4 BLV-SWS-T-(Ø4.76).ss / NVB-1006-SS			
6	6 BLV-SWS-FN-(Ø7.1).ss / NVB-1013-SS			
7	6 BLV-SWS-T-(Ø7.1).ss / NVB-1012-SS			
8	8 BLV-SWS-FN-(Ø10.3).ss / NVB-1015-SS			
9	8 BLV-SWS-T-(Ø10.3).ss / NVB-1014-SS			
10	4-3 BLV-SWS-T-(Ø3.2).ss / NVB-1104-SS			
11	4-3 BLV-SWS-FN-(Ø7.1).ss / NVB-1107-SS			
12	4-3 BLV-SWS-T-(Ø4.76).ss / NVB-1105-SS			
13	6-3 BLV-SWS-FN-(Ø7.1).ss / NVB-1110-SS			
14	6-3 BLV-SWS-T-(Ø7.1).ss / NVB-1109-SS			
15	8-3 BLV-SWS-FN-(Ø10.3).ss / NVB-1112-SS			
16	8-3 BLV-SWS-T-(Ø10.3).ss / NVB-1111-SS			
17	2 NV-IB-T-P-REG.ss / NVN-2001-SS			
18	2 NV-IB-FN-P-REG (Ø2.1).ss / NVN-2002-SS			
19	2 NV-IB-FN-P-REG(Ø4.76).ss / NVN-2003-SS			
20	4 NV-IB-MN-P(Ø4.76).ss / NVN-2031-SS			
21	4 NV-IB-T-P(Ø4.76).ss / NVN-2032-SS			
22	4 NV-T-P(Ø4.76).ss / NVN-2204-SS			
23	4 NV-IB-MN-P-REG(Ø4.76).ss / NVN-2009-SS			
24	4 NV-IB-T-P-REG(Ø4.76).ss / NVN-2007-SS			
25	4 NV-IB-MN/T-P-REG(Ø4.76).ss / NVN-2010-SS			
26	4 NV-IB-FN-P-REG(Ø6.35).ss / NVN-2008-SS			
27	4 NV-IB-FN-P(Ø6.35).ss / NVN-2033-SS			
28	6 NV-T(Ø4.76).ss / NVN-2207-SS			
29	6 NV-IB-T-P(Ø6.35).ss / NVN-2035-SS			
30	6 NV-IB-T-P-REG(Ø6.35).ss / NVN-2013-SS			
31	6 NV-IB-MN-P(Ø6.35).ss / NVN-2037-SS			
32	8 NV-IB-T-P-REG(Ø6.35).ss / NVN-2018-SS			
33	8 NV-IB-T-P(Ø6.35).ss / NVN-2038-SS			
34	8 NV-IB-T-P(Ø9.5).ss / NVN-2039-SS			
35	8 NV-IB-FN-P(Ø9.5).ss / NVN-2040-SS			



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APPENDIX I

SI No	Part No / Drawing No	Size	Pressure PSIG	Design Temperature
36	2 BLV-SWS-T-(Ø2.4).b / NVB-1002-B	1/8" to 1/2"	3000	38 °C
37	2 BLV-SWS-FN-(Ø3.2).b / NVB-1003-B			
38	4 BLV-SWS-T-(Ø3.2).b / NVB-1005-B			
39	4 BLV-SWS-FN-(Ø4.76).b / NVB-1007-B			
40	4 BLV-SWS-T-(Ø4.76).b / NVB-1006-B			
41	6 BLV-SWS-FN-(Ø7.1).b / NVB-1013-B			
42	6 BLV-SWS-T-(Ø7.1).b / NVB-1012-B			
43	8 BLV-SWS-FN-(Ø10.3).b / NVB-1015-B			
44	8 BLV-SWS-T-(Ø10.3).b / NVB-1014-B			
45	4-3 BLV-SWS-T-(Ø3.2).b / NVB-1104-B			
46	4-3 BLV-SWS-FN-(Ø7.1).b / NVB-1107-B			
47	4-3 BLV-SWS-T-(Ø4.76).b / NVB-1105-B			
48	6-3 BLV-SWS-FN-(Ø7.1).b / NVB-1110-B			
49	6-3 BLV-SWS-T-(Ø7.1).b / NVB-1109-B			
50	8-3 BLV-SWS-FN-(Ø10.3).b / NVB-1112-B			
51	8-3 BLV-SWS-T-(Ø10.3).b / NVB-1111-B			
52	2 NV-IB-T-P-REG(Ø2.1).b / NVN-2001-B			
53	2 NV-IB-FN-P-REG(Ø2.1).b / NVN-2002-B			
54	2 NV-IB-FN-P-REG(Ø4.76).b / NVN-2003-B			
55	4 NV-IB-MN-P(Ø4.76).b / NVN-2031-B			
56	4 NV-IB-T-P(Ø4.76).b / NVN-2032-B			
57	4 NV-T-P(Ø4.76).b / NVN-2204-B			
58	4 NV-IB-MN-P-REG(Ø4.76).b / NVN-2009-B			
59	4 NV-IB-T-P-REG(Ø4.76).b / NVN-2007-B			
60	4 NV-IB-MN/T-P-REG(Ø4.76).b / NVN-2010-B			
61	4 NV-IB-FN-P-REG(Ø6.35).b / NVN-2008-B			
62	4 NV-IB-FN-P(Ø6.35).b / NVN-2033-B			
63	6 NV-T(Ø4.76).b / NVN-2207-B			
64	6 NV-IB-T-P(Ø6.35).b / NVN-2035-B			
65	6 NV-IB-T-P-REG(Ø6.35).b / NVN-2013-B			
66	6 NV-IB-MN-P(Ø6.35).b / NVN-2037-B			
67	8 NV-IB-T-P-REG(Ø6.35).b / NVN-2018-B			
68	8 NV-IB-T-P(Ø6.35).b / NVN-2038-B			
69	8 NV-IB-T-P(Ø9.5).b / NVN-2039-B			
70	8 NV-IB-FN-P(Ø9.5).b / NVN-2040-B			