

Truelok®

[THE MEASURABLE DIFFERENCE]

INSTRUMENTATION VALVES



- INSTRUMENTATION BALL VALVES**
- INTEGRAL-BONNET NEEDLE VALVES**
- TOGGLE VALVES** (TG Series)
- CHECK VALVES** (CHV Series: For General Industry)
- RELIEF VALVES** (RVL/RVH Series)

INSTRUMENTATION BALL VALVES



ONE PIECE INSTRUMENTATION BALL VALVES:

- Working Pressure: up to 3000 psig (206 bar)
- Working Temperature: from 50°F to 150°F(10°C to 65°C)
- End Connections: 1/8" to 3/4"
- 2-Way and 3-Way Valves with On-Off & Switching Flow Paths

ONE-PIECE INSTRUMENTATION BALL VALVES:

Our Product:



- Truelok Ball Valves LC and HC Series are designed and manufactured for instrumentation and general industry.
- Our Ball valves are offered with seat all in one type, stainless steel body, and PTFE packing material.
- 90° actuation for 2 way and 180° actuation for 3 way ball valve.
- Truelok ball valves are designed to be operated in the fully closed or fully open position.

- Truelok Ball valves are available in variety of end connections, ranging from 1/8" to 3/4" Tube Fittings, Male NPT, and Female NPT. Flow coefficients (Cv) ranges from 0.2 to 6.3.
- Temperature rating range from 50°F to 150°F(10°C to 65°C) with a maximum working pressure up to 3000 psig (206 bar) at 100°F(37°C).

FEATURES:

- Simple design with one piece body and one piece ball stem to ensure alignment of stem and orifice
- Tight and smooth, low torque and easy operation
- Handle indicates flow direction
- Panel mountable
- 2-way straight, 2-way angle, and 3-way flow patterns

TECHNICAL DATA:

Temperature - Working Pressure Rating

Series	Temperature °F (°C)	2-Way Straight Pattern	2-Way Angle Valve	3-Way Ball Valve	Seat Material
LC1	50°F to 150°F (10°C to 65°C)	2500 psig (172 bar)	2500 psig (172 bar)	2500 psig (172 bar)	PTFE
LC2	-65°F to 300°F (-53°C to 148°C)	3000 psig (206 bar)	2500 psig (172 bar)	2500 psig (172 bar)	
HC1	50°F to 150°F (10°C to 65°C)	2500 psig (172 bar)	1500 psig (103 bar)	1500 psig (103 bar)	
HC2	50°F to 150°F (10°C to 65°C)	2500 psig (172 bar)	1500 psig (103 bar)	1500 psig (103 bar)	

Flow data at 70°F(20°C)

Flow Coefficient (Cv)	Pressure Drop to Atmosphere (Δp), psi (bar)					
	10 (0.68)		50 (3.4)		100 (6.8)	
	Air Flow			Water Flow		
	std ft ³ /min (std L/min)			U.S gal/min (std L/min)		
0.15	1.7(48)	4.5(120)	8.2(220)	0.4(1.5)	1.0(3.7)	1.5(5.6)
0.20	2.3(65)	6.0(160)	11(310)	0.6(2.2)	1.4(5.2)	2.0(7.5)
0.30	3.4(96)	9.0(250)	16(450)	0.9(3.4)	2.1(7.9)	3.0(11)
0.35	4.0(110)	10(280)	19(530)	1.1(4.1)	2.4(9.0)	3.5(13)
0.50	5.6(150)	15(420)	27(760)	1.6(6.0)	3.5(13)	5.0(18)
0.60	6.8(190)	18(500)	32(900)	1.9(7.1)	4.2(15)	6.0(22)
0.70	7.9(220)	21(590)	37(1000)	2.2(8.3)	4.9(18)	7.0(26)
0.75	8.5(240)	22(620)	40(1100)	2.3(8.7)	5.3(20)	7.5(28)
0.80	9.0(250)	24(670)	42(1100)	2.5(9.4)	5.6(21)	8.0(30)
0.90	10(280)	27(760)	48(1300)	2.8(10)	6.4(24)	9.0(34)
1.20	14(390)	36(1000)	64(1800)	3.8(14)	8.5(32)	12(45)
1.40	16(450)	42(1100)	74(2000)	4.4(16)	9.9(37)	14(52)
1.50	17(480)	45(1200)	80(2200)	4.7(17)	11(41)	15(56)
1.60	18(500)	48(1300)	85(2400)	5.0(18)	11(41)	16(60)
1.70	19(530)	51(1400)	90(2500)	5.3(20)	12(45)	17(64)
2.00	22(620)	60(1600)	100(2800)	6.3(23)	14(52)	20(75)
2.60	29(820)	78(2200)	140(3900)	8.2(31)	18(68)	26(98)
3.00	34(960)	90(2500)	160(4500)	9.5(35)	21(79)	30(110)
3.50	39(1100)	100(2800)	180(5000)	11(41)	25(94)	35(130)
3.80	43(1200)	110(3100)	200(6700)	12(45)	27(100)	38(140)
4.60	52(1400)	140(3900)	240(6700)	15(56)	33(120)	46(170)
6.00	68(1900)	180(5000)	320(9000)	19(71)	42(150)	60(220)
6.30	71(2000)	190(5300)	330(9300)	20(75)	45(170)	63(230)
6.40	72(2000)	190(5300)	340(9600)	20(75)	45(170)	64(240)
12.00	130(3600)	360(10000)	640(18000)	38(140)	85(320)	120(450)

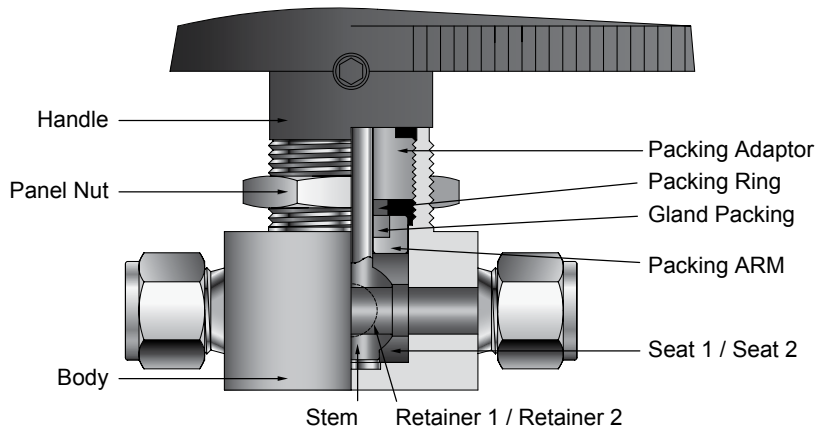
Testing:

Every valve is tested with Nitrogen at 1000 psig (69 bar) for the seat performance. Maximum allowable leakage around the seat under this test condition is 0.1 std cc/min.

Cleaning and Packaging:

Every valve is cleaned and packaged in accordance with the Truelok standard specifications of cleaning and packaging procedures, P1004 & P1007.

MATERIALS OF CONSTRUCTION:



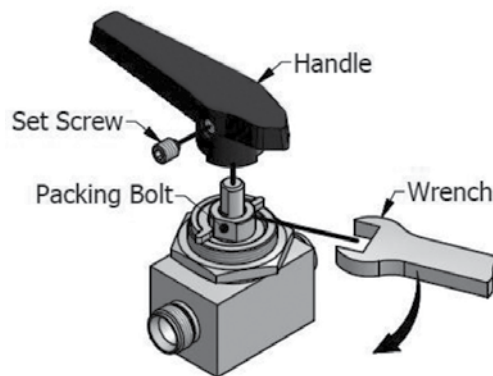
No.	Material Grade / ASTM Specification	
	Description	Material
1	Handle	Nylon6 / ADC6 insert
2	Panel Nut	304SS / A276
3	Packing Adaptor	316SS / A276
4	Gland Packing	PTFE
5	Packing Ring	316SS / A276
6	Packing ARM	316SS / A276
7	Seat1 / Seat2	PTFE
8	Retainer1	SS316L
	Retainer2	
9	Stem	316SS / A276
10	Body	316SS / A479

Packing Adjustment

Valve Packing is set at 1000 psig (69 bar) service at the factory. For service at pressure higher than 1000 psig, the valve packing must be readjusted to prevent leakage. Before installation, valve packing exposed to environmental conditions may lose initial packing load, therefore, packing adjustment may be needed. For adjustment instruction, please refer to packing adjustment as follows:

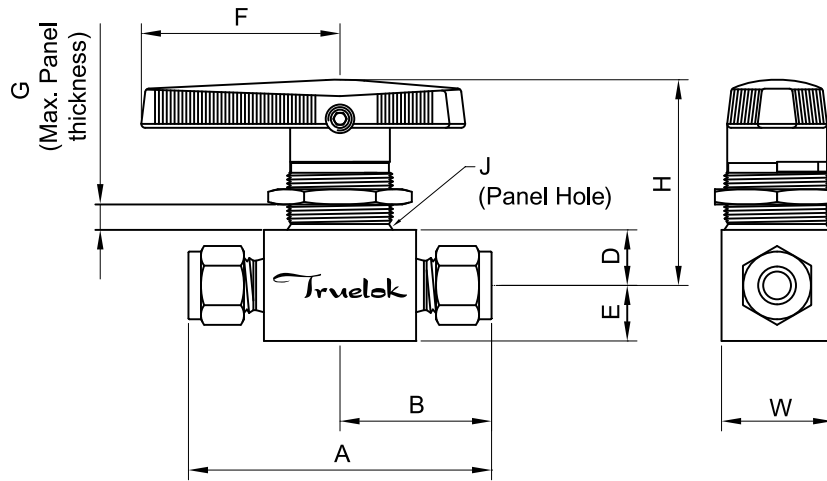
Procedure for Packing Adjustments:

1. Relieve the pressure from the system.
2. Remove residue from the valve by operating and closing the valve.
3. Remove the handle after loosening Set Screw.
4. Turn the Packing Bolt clockwise in 1/16-turn (22.5°)
5. Reassemble the valve in reverse order.
6. Check the valve's operation after adjusting Packing Bolt and repeat this procedure until leak-tight.

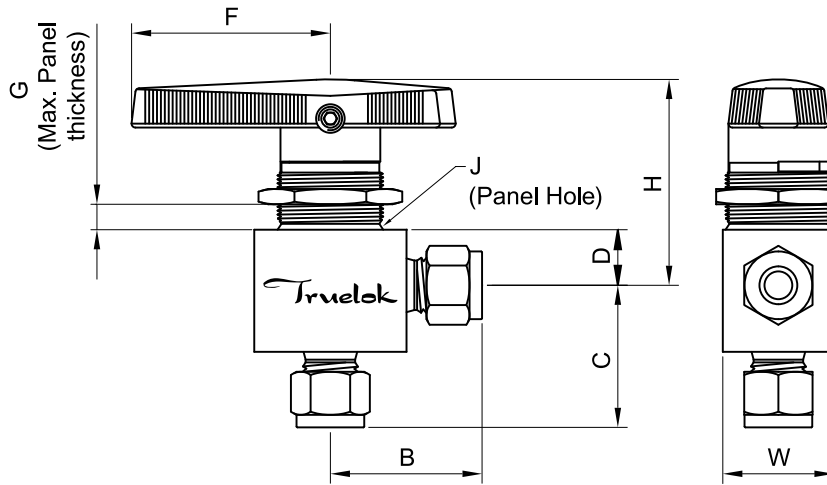


DIMENSIONS:

2-Way Valve



Straight Pattern



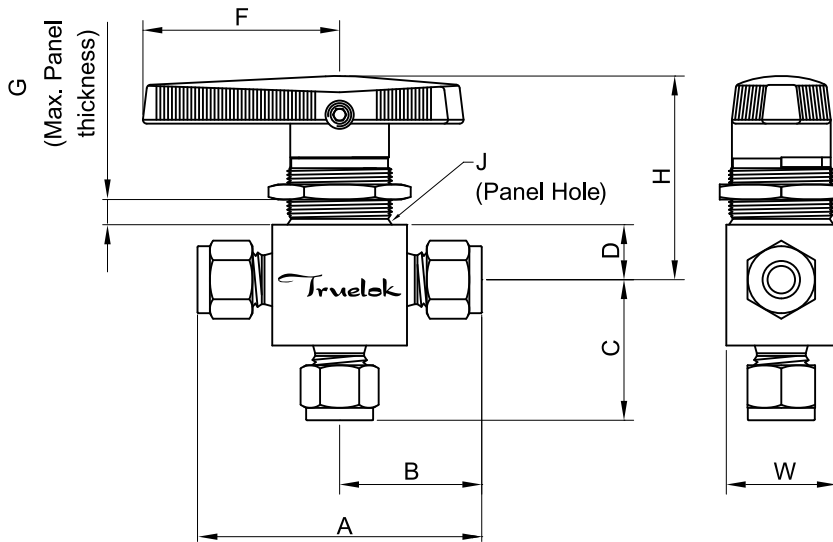
Angle Pattern

Truelok Ordering No.		Orifice (in.)	Cv		End Connections		Dimensions (in.)									
Series	Part Number		Straight	Angle	Inlet	Outlet	A	B	C	D	E	F	G	J	H	W
LC1	BV-S-2TF2TF	0.094	0.20	0.15	1/8" TF		2.01	1.00	0.97	0.34	0.28	1.12	0.25	0.59	1.37	0.58
	BV-S-4TF4TF	0.126	0.60	0.35	1/4" TF		2.21	1.10								
	BV-S-2FN2FN		0.50	0.30	1/8" Female NPT		1.63	0.81								
LC2	BV-S-4TF4TF	0.187	1.40	0.90	1/4" TF		2.39	1.20	1.17	0.44	0.38	1.53	0.19	0.78	1.47	0.78
	BV-S-6TF6TF		1.50	0.90	3/8" TF		2.58	1.29								
	BV-S-2FN2FN		1.20	0.70	1/8" Female NPT		2.00	1.00								
	BV-S-4FN4FN		0.90	0.75	1/4" Female NPT		2.06	1.03								
	BV-S-4MN4MN		1.20	0.75	1/4" Male NPT		2.00	1.00	1.03							
	BV-S-4MN4TF		1.60	0.75	1/4" Male NPT	1/4" TF	2.20	1.20	1.03							
HC1	BV-S-6TF6TF	0.280	6.00	2.00	3/8" TF		3.05	1.52	1.43	0.56	2.00	2.00	0.38	1.13	2.07	1.12
	BV-S-4FN4FN		3.00	1.70	1/4" Female NPT		2.50	1.25								
	BV-S-6FN6FN		2.60	1.50	3/8" Female NPT											
HC2	BV-S-8TF8TF	0.406	12.00	4.60	1/2" TF		3.92	1.96	1.74	0.69	0.69	3.00	1.50	2.43	1.50	
	BV-S-12TF12TF		6.40	3.80	3/4" TF		3.12	1.56								
	BV-S-8FN8FN		6.30	3.50	1/2" Female NPT											

*For angle patterns add A at the suffix of part number. BV-S-8FN8FN-3.50-A

DIMENSIONS:

3-Way Valve



Truelok Ordering No.		Orifice (in.)	Cv	End Connections		Dimensions (in.)								
Series	Part Number			Inlet	Outlet	A	B	C	D	F	G	J	H	W
LC1	BV-S-2TF2TF-3W	0.094	0.15	1/8" TF		2.01	1.00	0.97	0.34	1.12	0.25	0.59	1.37	0.58
	BV-S-4TF4TF-3W	0.126	0.35	1/4" TF		2.21	1.11	1.07						
	BV-S-2FN2FN-3W		0.30	1/8" Female NPT		1.63	0.81							
LC2	BV-S-4TF4TF-3W	0.189	0.90	1/4" TF		2.39	1.18	1.17	0.44	1.53	0.19	0.78	1.56	0.78
	BV-S-4FN4FN-3W		0.75	1/4" Female NPT		2.06	1.03							
	BV-S-4MN4TF-3W		0.80	1/4" Male NPT	1/4" TF	2.39	1.20	1.03						
HC1	BV-S-6TF6TF-3W	0.280	2.00	3/8" TF		2.89	1.43		0.56	2.00	0.37	1.13	2.07	1.12
	BV-S-4FN4FN-3W		1.70	1/4" Female NPT		2.50	1.25							
	BV-S-6FN6FN-3W		1.50	3/8" Female NPT										
HC2	BV-S-8TF8TF-3W	0.406	4.60	1/2" TF		3.48	1.74		0.69	3.00	1.50	2.43	1.50	
	BV-S-12TF12TF-3W		3.80	3/4" TF										
	BV-S-8FN8FN-3W		3.50	1/2" Female NPT		3.12	1.56							

ORDERING INFORMATION:

BV-S-4TF4TF-3W-0.90

BV= Ball Valve, S=SS, 4TF= 1/4" Tube Fitting, 3W= 3-Way, Cv= 0.90

Series	Material	Connection Size	Connection Type	Cv
BV=Ball Valve	S=Stainless Steel 316	2=1/8" 4=1/4" 6=3/8" 8=1/2"	TF=Tube Fitting MN=Male NPT FN=Female NPT	LC1/LC2 Series=0.15-0.90 HC1/HC2 Series=1.50-4.60

INTEGRAL-BONNET NEEDLE VALVES



INTEGRAL-BONNET NEEDLE VALVES:

- Compact Design
- Working Pressure: up to 5000 psig (344 bar) @ 100°F(37°C)
- Working Temperature: from -65°F to 450°F(-53°C to 232°C)

INTEGRAL-BONNET NEEDLE VALVES:

Our Product:



- Truelok Needle Valves are designed and manufactured for instrumentation and general industry for application in the gas delivery system.
- Our standard LC and HC series are manufactured in SS 316 material, with PFA packing, phenolic handle, and regulating stem.
- Inlet/Outlet connections ranges from 1/8" to 3/4" with Flow Coefficient (Cv) range from 0.09 to 1.8. Maximum working Pressure is up to 5000 psig (344 bar) and Temperature rating from -65°F to 450°F (-53°C to 232°C).
- Truelok Needle Valves are available in 2-way straight pattern and 2-way Angle.

FEATURES:

- Panel Mountable
- Regulating Stem
- Variety of end connections
- Straight or Angle Pattern

TECHNICAL DATA:

Temperature-Working Pressure Rating

Material	316SS
Temperature Rating, °F (°C)	Working Pressure, psig (bar)
-65 (-53) to -20 (-28)	5000 (344)
-20 (-28) to 100 (37)	5000 (344)
200 (93)	4295 (295)
250 (121)	4085 (281)
300 (148)	3875 (266)
350 (176)	3715 (255)
400 (204)	3560 (245)
450 (232)	3435 (236)

Temperature-Pressure Rating According to Packing Materials

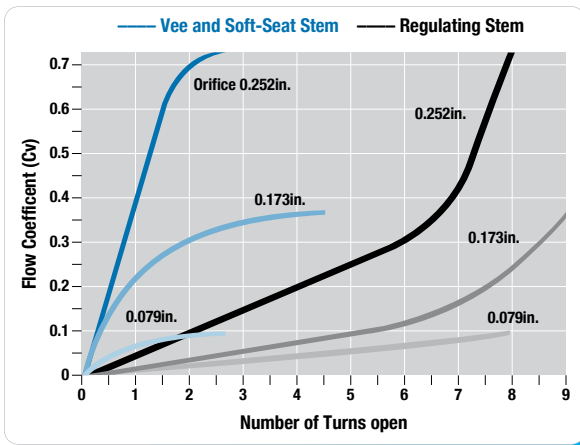
Packing Material	Temperature Rating °F(°C)	Pressure Rating @ Max. Temperature
PTFE	-65°F to 450°F(-53°C to 232°C).	3435 psig (236 bar)
PFA	-65°F to 450°F(-53°C to 232°C).	3435 psig (236 bar)

Caution:

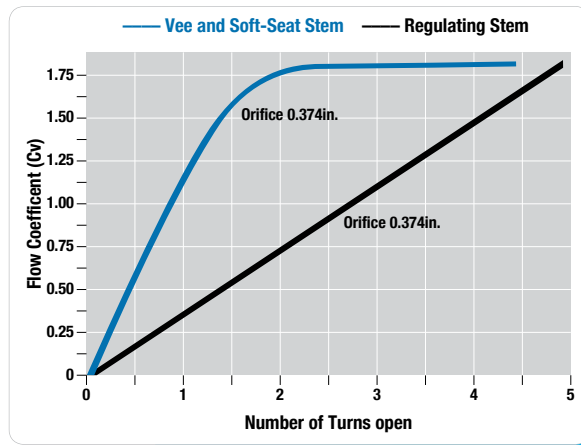
Packing adjustment may be required during the valve’s service life. Valves that have not been cycled for a period of time may have a higher initial actuation torque.

FLOW DATA AT 100°F (37°C):

LC Series



HC Series



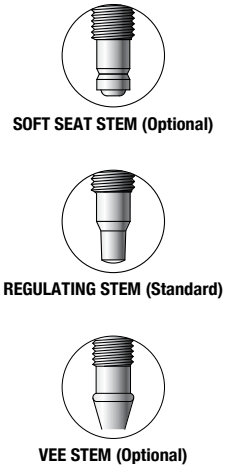
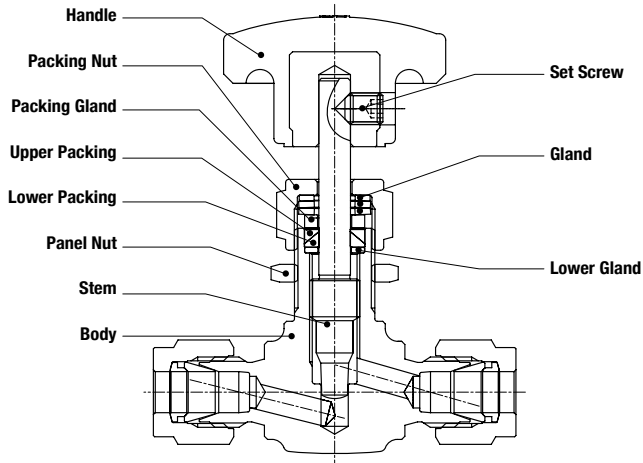
Testing:

Every valve is tested with Nitrogen at 1000 psig (69 bar) for the seat performance. Maximum allowable leakage around the seat under this test condition is 0.1 std cc/min.

Cleaning and Packing:

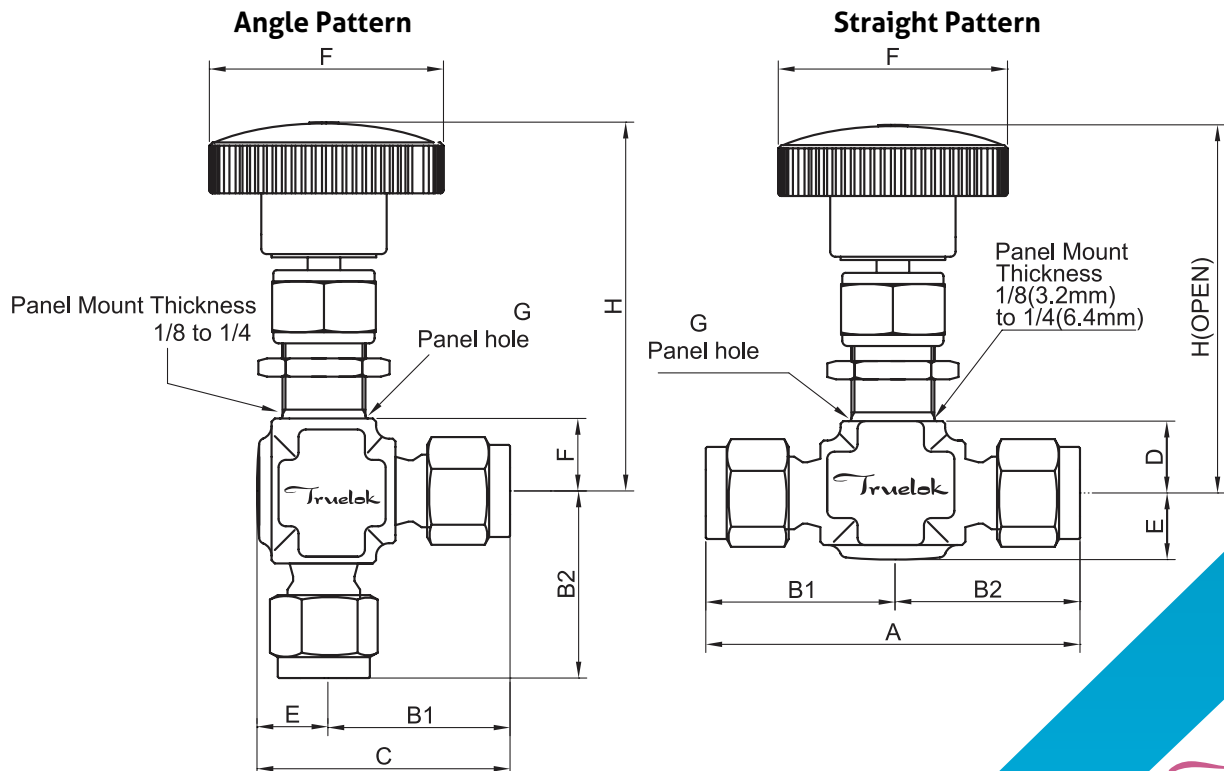
Every valve is cleaned and packaged in accordance with Truelok standard specifications of cleaning and packaging procedures, P1004 & P1007.

MATERIALS OF CONSTRUCTION:



No.	Description		Material
			Material Grade / ASTM Specification
1	Body		316 SS / A182
2	STEM	VEE Tip	316 SS/A276
		Regulating Tip	
		Soft-Seat Tip	
3	Panel Nut		316 SS
4	Lower Gland		316 SS / A240
5	Lower Packing		PFA / D3307
6	Upper Packing		PFA / D3307
7	Packing Gland		316 SS / A240, A276, B783
8	Gland		304 SS / A240, A167
9	Packing Nut		316 SS / A276
10	Set Screw		Nickel cadmium-plated steel
11	Handle		Phenolic with brass insert

DIMENSIONS:



DIMENSIONS:

Part Number	Orifice (in.)	Cv	End Connections		Dimensions (in.)								
			Inlet	Outlet	A	B1	B2	C	D	E	F	G	H
NV-S-2TF2TF-0.09	0.079	0.09	1/8" TF		1.94	0.98	1.29	0.31	1.00	0.47	2.28		
NV-S-2FN2FN-0.09			1/8" Female NPT		1.88	0.94	1.25						
NV-S-2MN2MN-0.09			1/8" Male NPT		1.50	0.75	1.06						
NV-S-2MN2TF-0.09			1/8" Male NPT	1/8" TF	1.73	0.98	0.75					1.29	
NV-S-4TF4TF-0.37	0.173	0.37	1/4" TF		2.27	1.13	1.51	0.44	0.38	1.38	0.53	2.50	
NV-S-2FN2FN-0.37			1/8" Female NPT		1.62	0.81	1.19						
NV-S-2MN2MN-0.37			1/8" Male NPT		1.97	0.98	1.36						
NV-S-4MN4MN-0.37			1/4" Male NPT		1.95	1.13	0.98						1.51
NV-S-4MN4TF-0.37	1/4" Male NPT		1/4" TF	1.95	1.13	0.98	1.51						
NV-S-6TF6TF-0.73	0.252	0.73	3/8" TF		2.58	1.29	1.79	0.55	0.50	1.88	0.78	2.97	
NV-S-8TF8TF-0.73			1/2" TF		2.80	1.40	1.90						
NV-S-4FN4FN-0.73			1/4" Female NPT		2.12	1.06	1.56						
NV-S-6MN6MN-0.73			3/8" Male NPT		2.25	1.12	1.62						
NV-S-4MN6TF-0.73			1/4" Male NPT	3/8" TF	2.42	1.29	1.12						1.79
NV-S-6MN6TF-0.73			3/8" Male NPT	3/8" TF	2.52	1.40							1.90
NV-S-6MN8TF-0.73			3/8" Male NPT	1/2" TF	2.52	1.40	1.90						
NV-S-4MN4FN-0.73			1/4" Male NPT	1/4" Female NPT	2.19	1.06	1.56						
NV-S-8TF8TF-1.8	0.374	1.8	1/2" TF		3.80	1.90	2.65	0.75	3.00	1.03	3.88		
NV-S-12TF12TF-1.8			3/4" TF		3.80	1.90	2.65						
NV-S-6FN6FN-1.8			3/8" Female NPT		3.00	1.50	2.25						
NV-S-8FN8FN-1.8			1/2" Female NPT		3.00	1.50	2.25						
NV-S-8MN8MN-1.8			1/2" Male NPT		3.00	1.50	2.25						
NV-S-8MN8FN-1.8			1/2" Male NPT	1/2" Female NPT	3.00	1.50	2.25						

*For angle patterns add A at the suffix of part number. NV-S-2TF2TF-0.09-A

ORDERING INFORMATION:

NV-S-4TF4TF-0.37

NV= Needle Valve, S=SS, 4TF= 1/4" Tube Fitting, Cv= 0.37

Series	Material	Connection Size	Connection Type	CV	
NV=Needle Valve	S=Stainless Steel 316	2=1/8"	TF=Tube Fitting	LC Series	0.09
		4=1/4"	MN=Male NPT		0.37
		6=3/8"	FN=Female NPT		0.73
		8=1/2"		HC Series	1.80
		12=3/4"			

TOGGLE VALVES (TG Series)



TOGGLE VALVES:

- Maximum Working Pressure: 300 psig (20.6 bar) @ 100°F(37°C)
- Working Temperature Range: -20°F(-28°C) to 200°F(93°C)
- Straight and Angle Body Patterns
 - SS 316 Body Material

FEATURES:

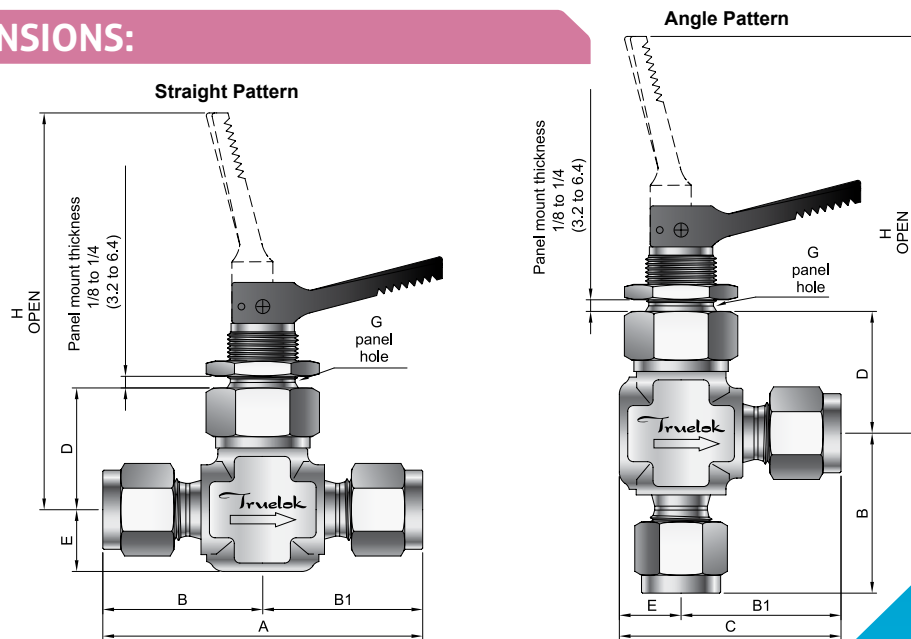
- Compact Design
- Open and Closes Quickly
- Variety of End Connection: Tube Fitting, Male NPT, Female NPT
- Straight or Angle Pattern
- Flow Coefficient (Cv) from 0.11 to 0.7

TECHNICAL DATA:

Series	Orifice in.	Temperature Rating °F (°C)	Working Pressure psig(bar)
TG1	0.079	-20 to 200	300(20.6)
TG2	0.126		
TG3	0.252	(-28 to 93)	200(13.7)

*Rating based on manual valve.

DIMENSIONS:

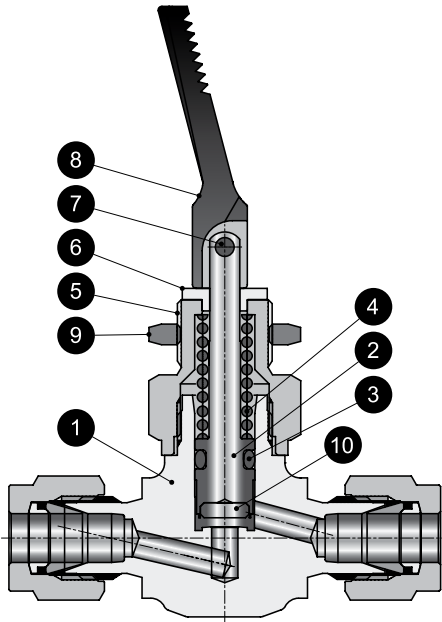


DIMENSIONS:

Series	Ordering No. Part Number	Orifice in.	Cv	End Connections		Dimensions (Inches)										
				Inlet	Outlet	A	B	B1	C	D	E	G	H			
TG1	VT-S-2TF-2TF	0.079	0.11	1/8" TF		1.96	0.98	1.29	0.92	0.31	0.53	2.87				
	VT-S-2MN-2MN			1/8" Male NPT		1.5	0.75	1.06								
	VT-S-2MN-2TF			1/8" Male NPT	1/8" TF	1.73	0.75	0.98					1.5			
TG2	VT-S-4TF-4TF	0.126	0.2	1/4" TF		2.26	1.13	1.19	0.86	0.38	0.53	2.81				
	VT-S-2FN-2FN			1/8" Female NPT		1.63	0.81	1.06								
	VT-S-2MN-2MN			1/8" Male NPT		1.5	0.75	1.36					0.92	0.31		
	VT-S-4MN-4MN			1/4" Male NPT		1.96	0.98	1.5					0.86	0.38	2.81	
	VT-S-4MN-4TF			1/4" Male NPT	1/4" TF	2.11	0.98	1.13								1.19
	VT-S-2MN-2FN			1/8" Male NPT	1/8" Female NPT	1.63	0.81	1.79								
	TG3			VT-S-6TF-6TF	0.252	0.7	3/8" TF						2.58	1.29	1.9	1.06
VT-S-8TF-8TF		1/2" TF		2.8			1.4	1.56								
VT-S-4FN-4FN		1/4" Female NPT		2.12			1.06	1.62								
VT-S-6MN-6MN		3/8" Male NPT		2.25			1.12									

*For angle patterns add A at the suffix of part number. VT-S-2TF2TF-0.11-A

MATERIALS OF CONSTRUCTION:



No.	Description	Material
		Material Grade/ASTM Specification
1	Body	316 SS/A182
2	Stem	316 SS/A276
3	O-Ring	Fluorocarbon FKM
4	Spring	631 SS PTFE Coated
5	Packing Nut	316 SS/A276
6	Washer	Nylon
7	Roll Pin	304 SS
8	Handle	Nylon
9	Panel Nut	304 SS/A276
10	Stem Tip	PTFE

Testing:

Every valve is tested with Nitrogen at 200 psig (13.7 bar) for the seat performance. Required standard is no detectable leakage with a liquid leak detector.

Cleaning and Packaging:

Every valve is cleaned and packaged in accordance with Truelok standard specifications of cleaning and packaging procedures, P1004 & P1007.

ORDERING INFORMATION:

VT-S-4TF4TF-0.2

VT=Toggle Valve, S=SS, 4=1/4", TF=Tube Fitting, Cv=0.2

Series (Orifice Size)	Material	Connection Size	Connection Type	Flow Pattern
TG1 (0.079")	S=Stainless Steel 316	2=1/8"	TF=Tube Fitting	A=2 Way Angle
TG2 (0.126")		4=1/4"	MN=Male NPT	Blank=2-Way Straight (Standard)
TG3 (0.252")		6=3/8"	FN=Female NPT	
		8=1/2"		

CHECK VALVES (CHV Series: For General Industry)



CHV SERIES:

- Maximum Working Pressure: up to 6000 psig (413 bar) @ 100°F(37°C)
- Cracking Pressure: 1/3 psi (0.03 bar) to 25 psi (1.80 bar)
- Working Temperature Range: -10°F(-23°C) to 375°F(190°C)

FEATURES:

- Stainless Steel Construction
- In-Line Design
- Fixed Cracking Pressure
- Poppet Design
- Variety of End Connections

TECHNICAL DATA:

Temperature- Working Pressure Rating

Series	CHV1	CHV2	CHV3
Temperature, °F (°C)	Working Pressure, psig (bar)		Working Pressure, psig (bar)
-10(-23) to 100 (37)	6000 (413)		5000 (344)
-10(-23) to 200 (93)	5160 (355)		4290 (295)
-10(-23) to 250 (121)	4910 (338)		4080 (281)
-10(-23) to 300 (148)	4660 (321)		3875 (266)
-10 (-23) to 375 (190)	4280 (294)		3560 (245)

Cracking and Reseal Pressures at 70°F (20°C)

	Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
Cracking Pressure psi (bar)	1/3 (0.03)	Up to 3 (0.21)	Up to 6 (0.42) back pressure
	1 (0.07)	Up to 4 (0.28)	Up to 5 (0.35) back pressure
	5 (0.35)	3 to 9 (0.21-0.63)	Up to 2 (0.14) back pressure
	10 (0.69)	7 to 15 (0.49 to 1.1)	3 (0.21) or more upstream pressure
	25 (1.80)	20 to 30 (1.4 to 2.1)	17 (1.2) or more upstream pressure

- **Cracking Pressure:** The inlet pressure at which the first indication of flow occurs
- **Reseal Pressure:** The pressure at which there is no indication of flow
- **Back Pressure:** The differential pressure between the inlet and outlet pressures

Caution:

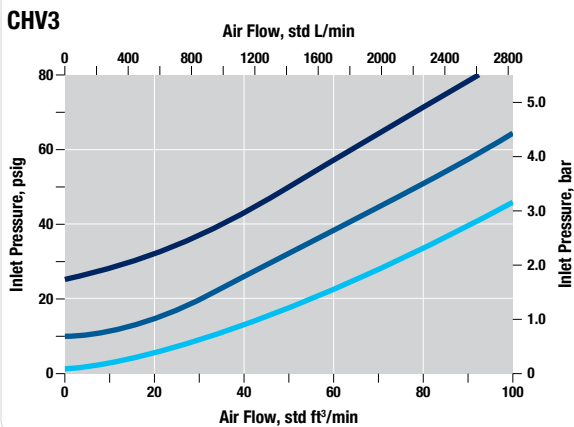
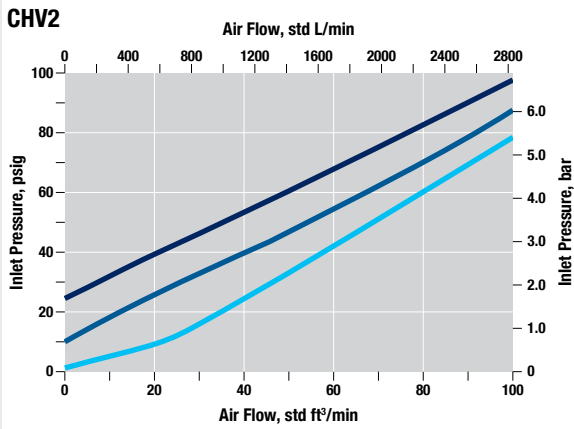
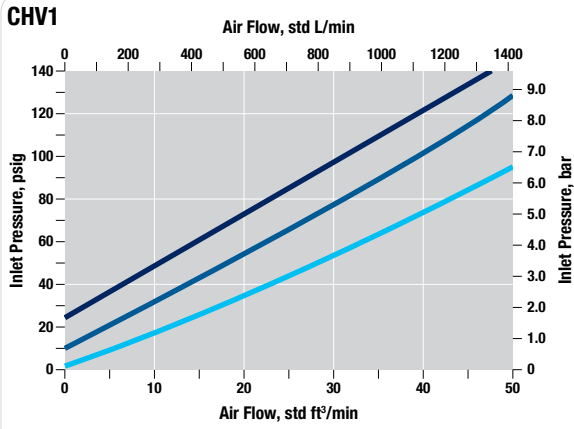
For valves not actuated for a period of time, initial cracking pressure may be higher than the set cracking pressure.

FLOW DATA AT 70°F (20°C)

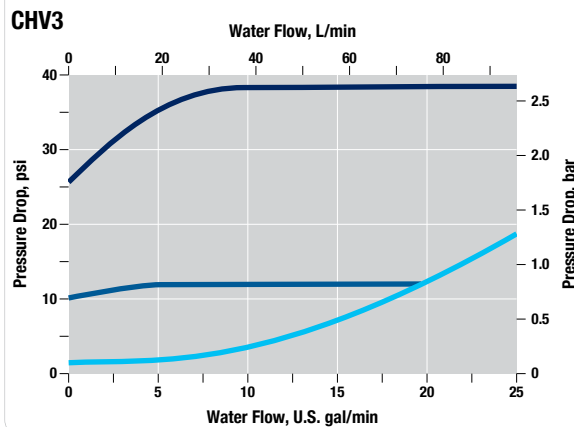
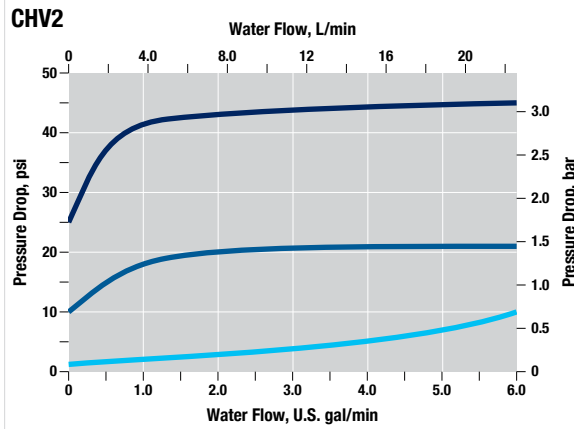
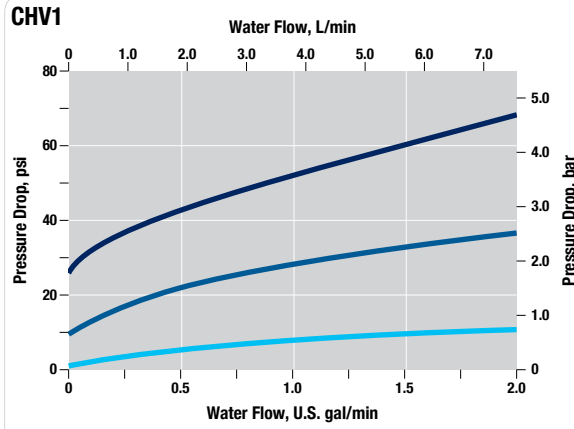
CHV Series

Nominal Cracking Pressures — 1 psi (0.07bar) — 10 psi (0.69bar) — 25 psi (1.8 bar)

AIR



WATER



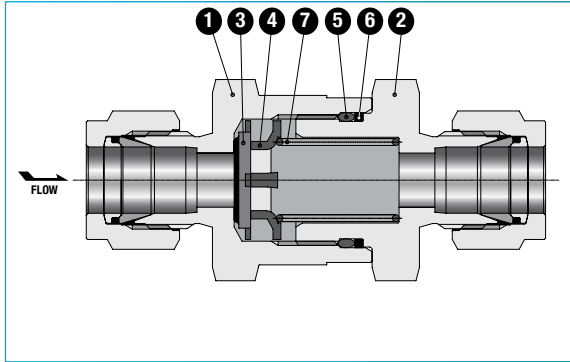
Testing:

Every valve is factory tested for functionality at the relevant cracking and reseal pressure.

Cleaning and Packing:

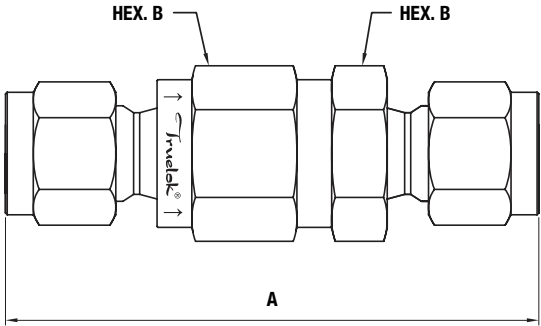
Every valve is cleaned and packaged in accordance with Truelok standard specifications of cleaning and packaging procedures, P1004 & P1007.

MATERIALS OF CONSTRUCTION:

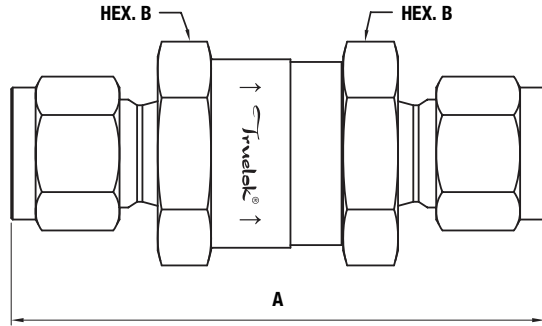


No.	Description	Material
		Material Grade/ ASTM Specification
1	Inlet Body	316 SS/A479
2	Outlet Body	316 SS/A479
3	Poppet Assembly	FKM- bonded 316 SS/A479
4	Poppet Stoper	316 SS/A276
5	O-Ring	Fluorocarbon FKM
6	Backup Ring	PTFE
7	Spring	316 SS/A479

DIMENSIONS:



CHV1 SERIES



CHV2 / CHV3 SERIES

Type		Orifice Inches	Cv	End Connections		Pressure Rating psig (bar) @ 100°F(37°C)	Dimensions Inches			
Series	Connection			Inlet	Outlet		A	B		
CHV1	2TF	0.189	0.67	1/8" TF		6000 (413)	2.27	11/16		
	4TF			1/4" TF						
	4FN			1/4" Female NPT						
	2MN			1/8" Male NPT						
	4MN			1/4" Male NPT						
CHV2	6TF	0.307	1.8	3/8" TF		6000 (413)	2.75	1		
	8TF			1/2" TF						
	6FN			3/8" Female NPT		5300 (365)	2.55	1 1/16		
	8FN			1/2" Female NPT		4900 (337)	3.03			
	6MN			3/8" Male NPT		6000 (413)	2.36	1		
	8MN			1/2" Male NPT						
CHV3	12TF	0.591	4.7	3/4" TF		5000 (344)	3.52	1 5/8		
	16TF			1" TF						
	12FN			3/4" Female NPT					4600 (316)	3.23
	16FN			1" Female NPT					4400 (303)	3.83
	12MN			3/4" Male NPT					5000 (344)	3.29
	16MN			1" Male NPT						

ORDERING INFORMATION:

CHV1-S-4TF-1

CHV1=Valve Series, S=SS, 4TF= 1/4" Tube Fitting, 1= Cracking Pressure

Series (Orifice Size)	Material	Connection Size	Connection Type	Cracking Pressure
CHV1 (0.19")	S=Stainless Steel 316	2=1/8"	TF=Tube Fitting	1/3 psi=1/3
CHV2 (0.31")		4=1/4"	MN=Male NPT	1 psi=1
CHV3 (0.60")		6=3/8"	FN=Female NPT	5 psi=5
		8=1/2"	MFS=Face Seal	10 psi=10
				25 psi=25

Relief Valves (RVL/RVH Series)



RVL/RVH SERIES

Maximum Working Pressure:

- RVL Series: 300 psig (20.6 bar) @ 100°F (37°C)
- RVH Series: 6000psig (420 bar) @ 100°F (37°C)

Working Temperature Range: 10°F (-12°C) to 300°F (148°C)

Set Pressure:

- RVL Series: 10 psig (0.68 bar) to 225 psig (15.5 bar)
- RVH Series: 50 psig (3.4 bar) to 6000 psig (413 bar)

Connections: 1/4" and 1/2"

FEATURES:

RVL Series (Low-Pressure Valves)

- Service up to 300 psig (20.6 bar)
- Installed spring is for the full set pressure range

RVH Series (High-Pressure Valves)

- Service up to 6000 psig (413 bar)
- Multiple springs for a selection of set pressure ranges. Refer to set pressure rating and symbols below

TECHNICAL DATA:

Temperature - Working Pressure Rating

Series	RVH1	RVH2	RVL1 and RVL2
Working Pressure at 70°F (20°C)	6000 psig (413 bar)	6000 psig (413 bar)	300 psig (20.6 bar)
Set Pressure	50 to 6000 psig (3.4 to 413 bar)	50 to 1500 psig (3.4 to 103 bar)	10 to 225 psig (0.68 to 15.5 bar)
Outlet Pressure	1500 psig (103 bar)	2500 psig (172 bar)	225 psig (15.5 bar)
Seal Material	FKM	FKM	FKM
Temperature, F (C)	Maximum Set Pressure, psig, (bar)		
10 (-12)	6000 (413)	1500 (103)	225 (15.5)
25 (-4)			
30 (-1)			
50 (10)			
150 (65)			
200 (93)			
250 (121)			
275 (135)			
300 (148)			

*Outlet pressure should not exceed inlet pressure

TECHNICAL DATA:

Set Pressure Rating

- To obtain good pressure settings over the entire pressure range, the entire pressure range is sub divided into 8 pressure ratings. A pressure rating corresponds to a certain spring, which can be used for setting a maximum pressure, is referred below.

Spring Designator		Set Pressure		
No.	Spring Color	psig	bar	Mpa
A	Blue	50 to 350	3.4 to 24.1	0.34 to 2.41
B	Yellow	350 to 750	24.1 to 51.7	2.41 to 5.17
C	Purple	750 to 1500	51.7 to 103	5.17 to 10.3
D	Orange	1500 to 2250	103 to 155	10.3 to 15.5
E	Brown	2250 to 3000	155 to 206	15.5 to 20.6
F	White	3000 to 4000	206 to 275	20.6 to 27.5
G	Red	4000 to 5000	275 to 344	27.5 to 34.4
H	Green	5000 to 6000	340 to 413	34.4 to 41.3

Set Pressure and Resealing Pressure

- Set pressure is the upstream pressure at which the first indication of flow occurs. Set pressure of each valve after initial relief is repeatable within
 - ± 3.0 psig (0.20 bar) or $\pm 5\%$ (whichever is greater) of the initial set pressure at 60 to 80°F (15 to 26°C)
 - ± 6.0 psig (0.40 bar) or $\pm 20\%$ (whichever is greater) of the initial set pressure below 60°F (15°C) and above 80°F (26°C).
- Resealing pressure is the upstream pressure at which there is no indication of flow. Resealing pressure is always lower than set pressure.

Testing

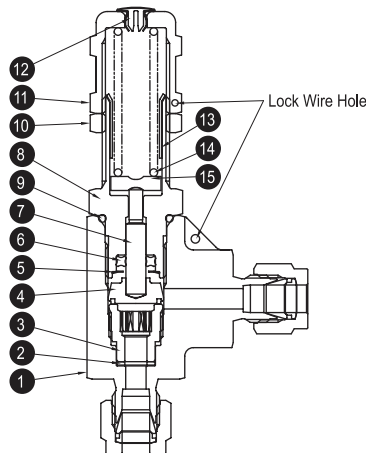
- Every valve is factory tested for functionality at the relevant cracking and resealing performance.

Cleaning and Packaging

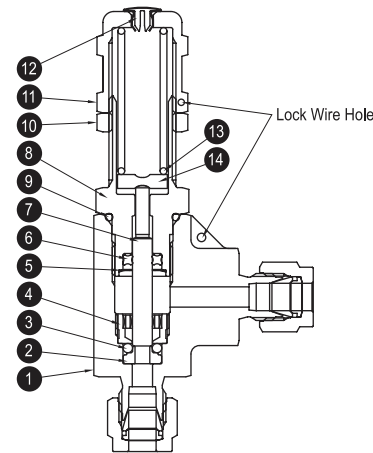
- Every valve is cleaned and packaged in accordance with Truelok standard specifications of cleaning and packaging procedures, P1004 & P1007.

MATERIALS:

RVL Series (Low-Pressure Valves):



RVH Series (High-Pressure Valves):



RVL Series (Low-Pressure Valves):

No.	Material Grade/ ASTM Specification		No.	Material Grade/ ASTM Specification		
	Description	Material		Description	Material	
1	Body	316SS/A182	8	Bonnet	316SS/A479	
2	Gasket	316SS/A240	9	O-Ring	FKM	
3	Seat	316SS/A479	10	Lock Nut	316SS/A276	
4	Disc Ass'y	316SS/AA479 + FKM	11	Cap	316SS/A479	
5	Retainer	RVL1 Series	304SS/A666	12	Plug	Nylon6
		RVL2 Series	316SS/A479	13	Sleeve	304SS/A479
6	X-Ring	FKM	14	Spring	S177000ss/AMS 5678	
7	Stern	316SS/A479	15	Spring Support	316SS/A276	

MATERIALS:

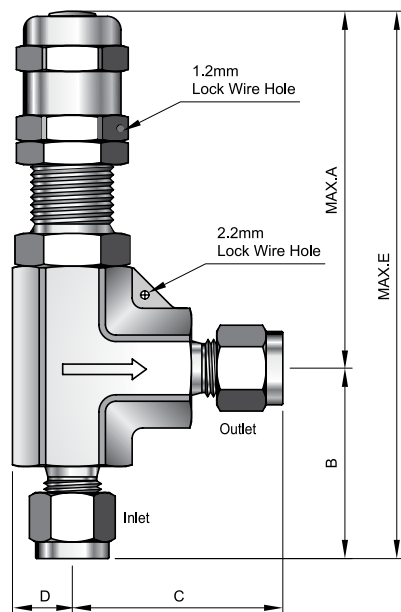
RVH Series (High-Pressure Valves):

No.	Material Grade/ ASTM Specification		No.	Material Grade/ ASTM Specification		
	Description	Material		Description	Material	
1	Body	316SS/A182	8	Bonnet	316SS/A479	
2	Insert	316SS/A479	9	O-Ring	FKM	
3	O-Ring	FKM	10	Lock Nut	316SS/A276	
4	Seat Retainer	316SS/AA479	11	Cap	316SS/A479	
5	Retainer	RVH1 Series	304SS/A666	12	Plug	Nylon6
		RVH2 Series	316SS/A479			
6	X-Ring	FKM	13	Spring	S17700ss/AMS 5678	
7	Stern	316SS/A479	14	Spring Support	316SS/A276	

Adjustment of Pressure Relief Valve

- Make sure there is no pressure in the system and purge the installed relief valve before performing the maintenance.
- Break and remove the pressure tag wire
- Unscrew the lock nut and remove the cap from the bonnet
- Remove the included spring and spring support
- Check that all parts are clean
- Insert the spring support from the top of the bonnet
- Mount proper spring for the desired pressure range
- Remove the label from the cap and affix a new one, Make sure the desired pressure falls within the range shown on the table
- Screw in the cap to the bonnet by the "Number of times to turn the cap". Then tighten the lock nut and test the set pressure.
- To adjust the set pressure, remove the pressure from the system and loosen the lock nut. Then, make adjustment while checking the blowout pressure until the desired level is reached.
- Tighten the lock nut by the torque of 11.3N-m
- After final adjustment of the pressure, lock the cap and body with wire

DIMENSIONS



DIMENSIONS

RVL Series (Low-Pressure Valves):

Ordering Number		Orifice Inches	End Connection		Dimensions Inches				
Series	Part No.		Inlet	Outlet	A	B	C	D	E
RVL1	4TF		1/4" TF		2.74	1.44	1.6	0.45	4.18
	4MN	4TF	1/4" Male NPT	1/4" TF		1.19			
	4MN	4NF	1/4" Male NPT	1/4" Female NPT			1.17		
RVL2	8TF		1/2" TF		4.09	1.83	1.83	0.52	5.92
	8MN	8TF	1/2" Male NPT	1/2" TF		1.43			
	8MN	8FN	1/2" Male NPT	1/2" Female NPT			1.43		

RVH Series (High-Pressure Valves):

Ordering Number		Orifice Inches	End Connection		Dimensions Inches				
Series	Part No.		Inlet	Outlet	A	B	C	D	E
RVH1	4TF		1/4" TF		2.74	1.44	1.6	0.45	4.18
	4MN	4TF	1/4" Male NPT	1/4" TF		1.19			
	4MN	4NF	1/4" Male NPT	1/4" Female NPT			1.17		
RVH2	8TF		1/2" TF		4.09	1.83	1.83	0.52	5.92
	8MN	8TF	1/2" Male NPT	1/2" TF		1.43			
	8MN	8FN	1/2" Male NPT	1/2" Female NPT			1.43		

Application Notes:

- Truelok pressure relief valves are not certified to ASME boiler and pressure vessels code safety relief devices or any other ASME code.
- Pressure relief valves open when pressurized vessel or system pressure reaches beyond the set pressure and closes when system pressure falls below the set pressure.
- For valves not actuated for a period of time, initial relief pressure may be higher than the set pressure.

ORDERING INFORMATION:

RVH1-S-4TF-A

RVH1 = Relief Valve RVH1 Series, S = SS 316L Body Material, 4TF = 1/4" Tube Fitting,
A = Set Pressure Range 50-350psi

Valve Series (Orifice Size)	Material	Connection Size	Connection Type	Spring Specifications		
				Set Pressure Range	Spring Color	Designator
RVL1: 0.189"	S=Stainless	8=1/2"	TF=Tube Fitting	50 to 350psi	Blue	A
RVH1 : 0.142"	Steel 316	4=1/4"	MN=Male NPT	350 to 750psi	Yellow	B
RVL2 & RVH2: 0.25"			FN=Female NPT	750 to 1500psi	Purple	C
				1500 to 2250 psi	Orange	D
				2250 to 3000psi	Brown	E
				3000 to 4000psi	White	F
				4000 to 5000psi	Red	G
				5000 to 6000psi	Green	H

*No spring /set pressure designator is required for RVL, low pressure series

Truelok®

[THE MEASURABLE DIFFERENCE]



Truelok® Valves and Fittings

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