

Ball Check & Foot Valves



SERIES: BT: True Union Check (1/2" to 2")
 BC: Single Union Check (2-1/2" to 4")
 FT: True Union Check (1/2" to 2")
 FV: Single Union Check (2-1/2" to 4")

SIZES: 1/2" to 4"

ENDS: Threaded, Socket, Combo¹, Flanged, Butt² or ChemFlare™³

SEAT/SEALS: EPDM, FKM (Viton®), PTFE coated FKM (Viton®)



The economical and versatile Chemline Ball Check Valve is the most popular type of non-return valves for pipe sizes under 6". A wide selection of body and seat materials, and end connections are available for many different applications. It has good flow capacity and will handle many slurry and suspended solid services. This valve works in both horizontal and vertical lines. The Foot Valve is for end of line services such as sumps.

Features

- True Union to 2"
- Full Port to 4"
- NSF Certified⁴
- May be used either horizontally or vertically
- Excellent flow characteristics
- Low seating and opening pressures

Built-in Union Design

- For easy installation and maintenance

Free Floating Ball

- The only moving part

Uniseat/Seal

- Easily removable

CRN Registration numbers by province

- Ontario: OC11045.5
- Newfoundland: OC11045.50
- Saskatchewan/Manitoba/Quebec: OC11045.56
- New Brunswick: OC11045.57
- Nova Scotia: OC11045.58
- P.E.I.: OC11045.59
- British Columbia: not required
- Alberta: not required⁵



BT Series True Union Check
1/2" to 2" in all materials

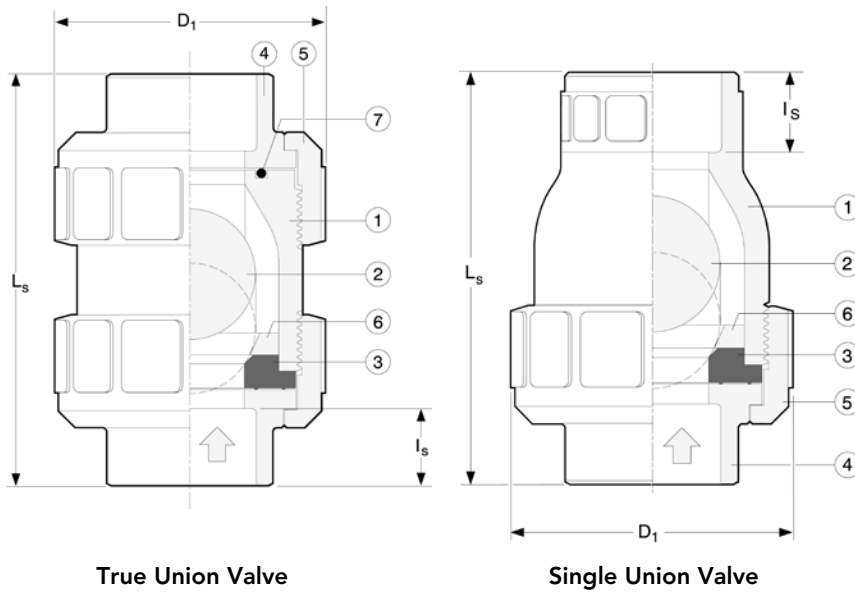
BC Series Single Union Check
2-1/2" to 4" in PVC, CPVC, PP and PVDF



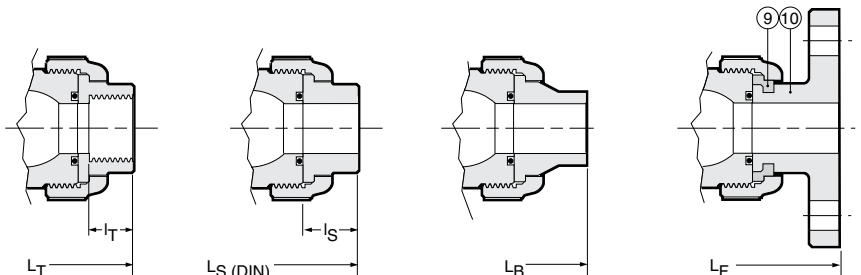
Foot Valve is light weight and has a low profile basket

¹ PVC and CPVC valves 1/2" to 2" are available as Combo (threaded and socket ends).
² PP and PVDF Butt fusion ends (available 1/2" to 2") connect to Chemline PP and PVDF piping systems.
³ For ChemFlare™ end connectors, consult Chemline.
⁴ PVC valves with EPDM or FKM (Viton®) seals are certified under NSF/ANSI Standard 61 for contact with drinking water.
⁵ Not required for non-expandable fluids.

Ball Check Valves



UNION END CONNECTIONS



PARTS

▲ Recommended Spare Parts

No.	Part	Pcs. T/U/S/U	Materials
1	Body	1 1	PVC, CPVC, PP, PVDF
2	Ball	1 1	PVC, CPVC, PP, PVDF
3▲	Uniseat/Seal ¹	1 1	EPDM, FKM(Viton®), ETFE coated FKM (Viton®)
4	End Connector	2 1	PVC, CPVC, PP, PVDF
5	Union Nut	2 1	PVC, CPVC, PP, PVDF
6	Stop Ring	1 1	PVC, CPVC, PP, PVDF
7	Face O-Ring	1 1	EPDM, FKM(Viton®)
9	Flange Retainer ²	2 1	PVDF
10	Factory Flange ³	2 1	PVC, CPVC, PP, PVDF

¹ Standard seals are EPDM in PVC, CPVC and PP valves, ETFE coated FKM (Viton®) in PVDF valves. Coating is .002" thick.

² True Union: 2 pcs 1/2" to 2", 6 pcs 1-1/2" to 4"
Single Union: 1 pcs 1/2" to 2", 3 pcs 2-1/2" to 4".

³ True Union flanged valves have two factory flanges. Single Union valves have one factory flange and one fabricated flange. Consult Chemline for details on fabricated type.

DIMENSIONS INCHES

WEIGHTS LB.

Size	D ₁	I _s	I _T	True Union								True Union Socket or Butt			
				PVC & CPVC			PP & PVDF					PVC	CPVC	PP	PVDF
				L _T	L _S	L _F	L _T	L _{S(DIN)}	L _B	L _F					
1/2"	1.9	0.69	0.59	3.4	3.4	5.1	3.4	3.19	4.0	5.1	0.3	0.3	0.2	0.3	
3/4"	2.4	0.72	0.67	4.1	3.9	6.1	4.1	3.70	4.4	6.1	0.5	0.5	0.3	0.6	
1"	2.8	0.88	0.79	4.5	4.4	6.5	4.5	4.13	4.8	6.5	0.7	0.8	0.4	0.9	
1-1/4"	3.1	0.94	0.87	5.0	4.9	6.6	5.0	TBD	5.9	6.6	1.1	1.2	0.7	1.5	
1-1/2"	3.7	1.09	0.98	5.9	5.9	7.6	5.9	5.62	5.8	7.6	1.6	1.7	1.0	2.0	
2"	4.2	1.16	1.10	7.0	6.8	8.4	7.0	6.69	6.5	8.4	2.2	2.4	1.4	2.7	

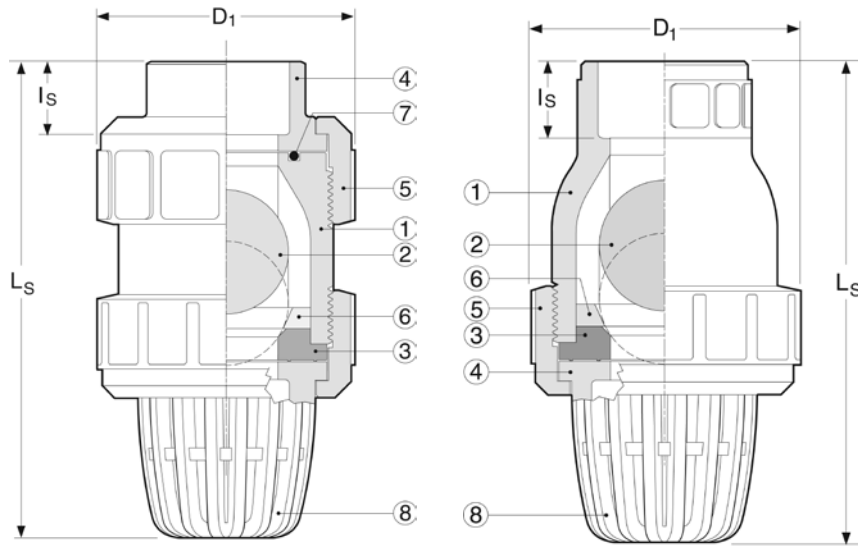
DIMENSIONS INCHES

WEIGHTS LB.

Size	D ₁	I _s ⁴	I _T	Single Union						Single Union			
				PVC & CPVC			PP & PVDF			PVC	CPVC	PP	PVDF
				L _T	L _S	L _F	L _T	L _B	L _F				
2-1/2"	6.0	2.10	2.17	10.0	10.4	14.3	8.7	24.2	27.9	5.7	6.2	*	*
3"	6.0	1.88	1.38	8.7	9.6	12.2	8.7	11.7	12.2	5.1	5.5	3.3	6.3
4"	8.3	2.00	1.77	12.1	12.2	15.0	12.1	13.9	15.6	12.7	13.9	8.1	15.7

⁴ Consult Chemline.

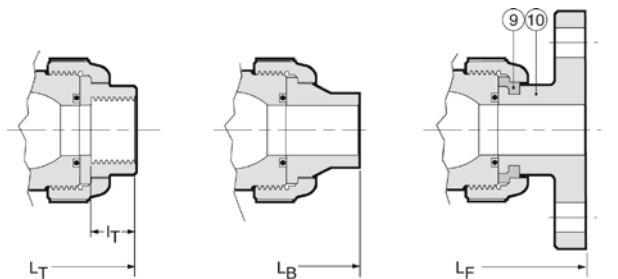
Foot Valves



True Union Valve
1/2" to 2"

Single Union Valve
2-1/2" to 4"

END CONNECTIONS FOR TRUE UNION VALVE



NPT Threaded

**Butt Fusion
PP and PVDF**

Factory Flanged

PARTS

▲ Recommended Spare Parts

No.	Part	Pcs. T/U S/U	Materials
1	Body	1 1	PVC, CPVC, PP, PVDF
2	Ball	1 1	PVC, CPVC, PP, PVDF
3▲	Uniseat/Seal ¹	1 1	EPDM, FKM(Viton®), ETFE coated FKM (Viton®)
4	End Connector	2 1	PVC, CPVC, PP, PVDF
5	Union Nut	2 1	PVC, CPVC, PP, PVDF
6	Stop Ring	1 1	PVC, CPVC, PP, PVDF
7	Face O-Ring	1 1	EPDM, FKM(Viton®)
8	Foot Valve Basket	1 1	PVC, CPVC, PP, PVDF
9	Flange Retainer ²	3 0	PVDF
10	Factory Flange ³	1 0	PVC, CPVC, PP, PVDF

¹ Standard seals are EPDM in PVC, CPVC and PP valves, ETFE coated FKM (Viton®) in PVDF valves. Coating is .002" thick.

² True Union: 1 pc 1/2" to 2", 3 pcs 2-1/2" to 4".

³ True Union valves have factory flanges. Single Union have fabricated flanges. Consult Chemline for details on fabricated type.

DIMENSIONS INCHES

WEIGHTS LB.

Size	D ₁	I _s Soc	I _T Thd	L _s	PVC & CPVC		PP & PVDF		Socket	Flanged
					L _T	L _F	L _T	L _F		
1/2"	1.9	0.69	0.59	3.74	3.74	4.61	3.62	4.53	0.22	0.66
3/4"	2.4	0.72	0.67	4.25	4.33	5.39	4.21	5.31	0.44	0.88
1"	2.8	0.88	0.79	4.80	4.84	5.87	4.72	5.79	0.66	1.32
1-1/4"	3.7	0.94	0.87	*	*	*	*	*	*	*
1-1/2"	3.7	1.09	0.98	7.17	7.17	7.99	7.05	7.91	1.54	3.31
2"	4.2	1.16	1.10	7.72	7.83	8.58	7.72	8.50	2.20	3.31
2-1/2"	6.0	2.10	2.17	*	*	*	*	*	*	*
3"	6.0	1.88	1.38	12.09	11.57	16.70	11.34	13.20	7.71	11.02
4"	8.3	2.00	1.77	14.96	14.72	20.40	14.41	16.30	15.43	23.14

* Consult Chemline for dimensions and weights

Ball Check & Foot Valves



WORKING PRESSURES PSI

Size	PVC	CPVC				Polypropylene			PVDF			
	0-50°C 32-122°F	0-50°C 32-122°F	60°C 140°F	80°C 176°F	90°C 194°F	-20-30°C -4-90°F	60°C 140°F	80°C 176°F	-20-60°C -4-140°F	80°C 176°F	90°C 194°F	100°C 212°F
1/2"	150	150	115	85	60	150	90	60	150	120	110	85
3/4"	150	150	115	85	60	150	90	60	150	120	110	85
1"	150	150	115	85	60	150	90	60	150	120	110	85
1-1/4"	150	150	115	85	60	150	90	60	150	120	110	85
1-1/2"	150	150	115	85	60	150	90	60	150	120	110	85
2"	150	150	115	85	60	150	90	60	150	120	110	85
2-1/2"	100	100	90	60	45	100	60	45	100	90	60	45
3"	100	100	90	60	45	100	60	45	100	90	60	45
4"	100	100	90	60	45	100	60	45	100	90	60	45

Maximum Temperatures: PVC 0 to 60°C (32 to 140°F), CPVC 0 to 95°C (32 to 203°F), PP -20 to 90°C (-4 to 194°F), PVDF -40 to 100°C (-40 to 212°F)

MINIMUM SEATING

AND OPENING PRESSURE PSI

Size	Vertical Piping		Horizontal Piping		Check Valves
	Open	Seating	Open	Seating	
1/2"	0.7	2.8	0.1	2.8	6.5
3/4"	0.7	4.3	0.1	4.3	17.
1"	0.7	4.3	0.1	4.3	25.
1-1/4"	1.4	4.3	0.3	4.3	86.
1-1/2"	1.4	4.3	0.3	4.3	86.
2"	1.4	4.3	0.3	4.3	130.
2-1/2"	1.4	2.8	0.3	2.8	280.
3"	1.4	2.8	0.3	2.8	280.
4"	1.4	2.8	0.3	2.8	500.

C_v VALVES

VACUUM RATING

- 29.9 inches mercury
- Maximum recommended velocity 5 m/s

INSTALLATION RECOMMENDATIONS

- at least 5 pipe diameters from fittings, valves, etc.
- at least 10 pipe diameters from pumps



SAMPLE SPECIFICATION – BT Series Ball Check Valves: PVC, CPVC, PP and PVDF

- All ball check valves in PVC, CPVC, PP or PVDF shall be Chemline BT Series or equal with EPDM (FKM (Viton®) or PTFE coated FKM (Viton®) seats and union ends. Sizes 1/2" to 2" shall be slip-out true union style, sizes 3" and 4" shall be single union.
- Socket ends 1/2" to 4" shall be Schedule 80 and conform to ASTM D 2467.
- Threaded ends 1/2" to 4" shall be Schedule 80 and conform to ASTM D 2464.
- Butt fusion ends 1/2" to 4" shall be compatible with Chemline polypropylene and PVDF piping systems.
- Flanged ends 1/2" to 4" shall be ANSI Class 150, one piece factory moulded, using no cemented nipples. This to ensure maximum strength, close tolerance end to end dimensions and eliminating the possibility of cemented joint failures.
- PVC compound shall have an ASTM cell classification 12454 A, with minimum suffix "A" designation for chemical resistance as per ASTM D 1784 (CSA Report LO 4000 1172).
- PVC compound and EPDM seals shall meet CSA Standard B137.0 para 5.2.1 environmental requirements for toxicity, (CSA Report LO 4000 1459).
- CPVC compound shall have an ASTM cell classification 23567-A with minimum suffix "A" designation for chemical resistance as per ASTM D-1784.
- CPVC compound and EPDM seals shall meet CSA Standard B137.0 para 5.2.1 environmental requirements for toxicity (CSA Report LO 4000-1459).
- All polypropylene material shall conform to ASTM D-4101 PP 0211B67272 material requirements.
- All PVDF material shall be unpigmented conforming to ASTM D 3222-91A Type II suspension resin material requirements and also with USDA Title 21, Chapter I, Part 177.2510 requirements for contact with food.
- All valves shall be custom tagged with manufacturer's inspection number to provide traceability.
- PVC/EPDM and PVC/FKM (Viton®) models shall have NSF-61 Certification for use in drinking water applications.

OPTIONS & ACCESSORIES

- **PTFE coated Uniseat/Seal**
- **Spring Loaded Ball**
 - Assists ball to seat faster
 - Materials available:
 - 316 SS spring
 - ETFE coated 316 SS spring

ORDERING EXAMPLE

					for ChemFlare™ ends only			all other ends
Chemline Ball Check/Foot Valves	BT	A	020	E	-A	8N	-1	C
Valve Type	BT – True Union Ball Check BC – Single Union Ball Check FT – True Union Foot Valve FV – Single Union Foot Valve							
Body Material	A – PVC C – CPVC B – PP K – PVDF							
Size	005 – 1/2" 007 – 3/4" 010 – 1" 012 – 1-1/4" 015 – 1-1/2" 020 – 2" 025 – 2-1/2" 030 – 3" 040 – 4"							
Seals	E – EPDM V – FKM (Viton®) P – PTFE coated FKM (Viton®)							
ChemFlare™ End Connectors for valves 1/2" to 1-1/4"								
Material	A – PVC B – PP C – CPVC K – PVDF							
Tube Size ¹	8N – 1/2" 12N – 3/4" 16N – 1" 20N – 1-1/4"							
Tube Nut	-1 – includes nut Blank – without nut							
Ends	S – Socket T – Threaded F – Flanged C – Combo ² B – Butt ³							

Example: Ball Check Valve, PVC, 2", with EPDM seat, combo ends.

¹Tube size must be equal or smaller than the valve size. ²PVC and CPVC valves 1/2" to 2" are available as Combo (socket and threaded ends). ³PP and PVDF metric butt fusion ends (1/2" to 2") connect to Chemline PP and PVDF piping systems.