

PVC and CPVC Tru-Bloc® Ball Valves, True Union Model C 3" through 6" Nominal Sizes

150 psi at 73°F water–non-shock–full port

As a result of continuous testing and improvements since the inception of the True Union Ball Valve, three distinct model changes have occurred. The original True Union Model A design had a seat-carrier that slid into the smooth bore of the valve body, held in place by the external nut and end connector. Tightening the external nut adjusted the compression of the PTFE seat onto the ball.

The first major evolution to the True Union Ball Valve, Model B, introduced the Tru-Bloc concept, a functional safety feature. With this design a separate threaded retainer locked the seat-carrier into the body and prevented the seat-carrier from being extruded out of the valve body when the external nut was removed. This change negates the possibility that pressure on the other side could blow the internal components and fluid medium out of the open valve end to injure the service mechanic and/or surrounding equipment.

The Model C seat-carrier design was modified to include an external thread which mated into the valve body threads, eliminating the separate retainer. This modification also eliminated the adjustment of the seat-carrier by the external nut and end connector, resulting in a sealing envelope that was independent of external forces with an energized O-ring under the carrier seat that provided automatic adjustment to compensate for seat wear. This design modification continued the Tru-Bloc feature, preventing the seat carrier from being extruded out of the valve body when the external valve nut was removed.

Features

- The laying length of the body and the heavy-duty modified-acme threads in the union connections to the body have not changed in the four distinct models' 40-year history of the valve. This permits fouled valve replacement with a new body cartridge, which will fit the old union nuts. No change in piping length is required.

Chemtrol Figure Number

Valve Style	Elasto-meric Trim	PVC			CPVC		
		Soc.	Thd.*	Flgd.	Soc.	Thd.*	Flgd.
TU/TB	FKM	S45TB-V	T45TB-V	F45TB-V	S51TB-V	T51TB-V	F51TB-V
	EPDM	S45TB-E	T45TB-E	F45TB-E	S51TB-E	T51TB-E	F51TB-E

* Thread end connections are not available for 6" valves.

Dimensions—Weights—Flow Coefficients

Valve Size	TU Figures Profile						TU Figures End-to-End (3" thru 6")					Fluid Flow Coefficient C_v^3 TU
	A ¹	B	C	D	N	P	E Thd.	F Soc.	G Soc.	H Flgd.	Approx. ² Wt. Lbs.	
3	4.00	5.59	7.18	3.00	7.42	7.50	10.39	10.39	6.58	14.63	11.25	1348
4	8.00	6.05	8.78	4.00	8.52	9.00	12.22	12.22	7.66	17.63	17.68	2602
6	8.00	6.05	8.78	4.00	11.90	11.05	NA	30.22	24.16	24.08	29.25	2602

1 Handle is not symmetrical about centerline. Dimensions shown represent the longest operational radius. The handle position is correctly shown for the 3" True Union valve style, but the position must be rotated 180° from that shown for the 4" - 6" True Unions.

2 Weight includes socket end connections only for 3" - 6" sizes. The material represented is PVC in all cases.

3 C_v values computed for basic valve laying lengths (G & L).

4 The 6" valve is fabricated by solvent cementing either flange of socket couplings onto the ends of a 4" TU valve with plain-end concentric reducer pipe nipples. Threaded figure not available.

- Model C and D designs ensure no leakage around the back-side of the seats. Open piping attached to a filled tank will not start to drip-leak following installation and test of a Chemtrol® Tru-Bloc® shut-off valve.
- Model C and D designs, with an energizer O-ring beneath the seat-carrier, enables the valve to automatically adjust for seat wear. Adjustments for envelope squeeze on seats and valve testing are done by machine during factory assembly. Upon installation, a hand-tightened union nut serves to compress the face-seal of a Chemtrol® valve.
- Full-port design produces minimum flow restriction with the lowest possible pressure-drop.
- Valves are manufactured and assembled without exposure to silicone compounds.
- Distinctive orange handle indicates "open/close" and direction of flow at a distance. And molded-in arrows on top of the handle dictate rotational direction to personnel for easy operation within 90° stops. For applications requiring handle removal, the D-ring stem flats indicate "open/close" and a molded-in arrow on top of the stem indicates flow direction.

Notes

See page 2 for a list of *Components and Construction Materials*. For more insight in the selection of materials, refer to *Materials*, page 1. *Actuation Mounting Data* and a complete listing of *Optional Accessories* for ball valves begins on page 20. *Installation and Maintenance Instructions* for these valves appear on page 9. For specific relationships of pressure vs. temperature ratings, refer to *Engineering Data*, page 29. For *Chemtrol Valve Standards*, see page 30.

