True Union Ball Valves

1/4" to 6" - PVC, Corzan® CPVC, PPL

Features

- Full Port Design
- Reversible PTFE Seats
- Easy Maintenance
- Viton® or EPDM Seals
- Easily Automated
- Double O-Ring Stem Seals
- Adjustable Seat Retainer

Options

- Stem Extensions
- Lockouts
- Spring Return Handle
- Pneumatic Actuators
- Electric Actuators
- 2"-Square Operating Nuts

Corzan® CPVC is a trademark of Noveon, Inc.
Viton® is a trademark of DuPont Dow Elastomers

Rugged, Heavy Wall Plastic Construction

Stands up to the most aggressive of applications. Hayward True Union Ball Valves can take the day to day abuse of industrial service and continue to function.

True Union Design

This makes these valves very easy to maintain by allowing for easy removal from a piping system without breaking down piping connections. Just unscrew the two assembly nuts and lift the valve body out of the line.

Advanced Design Features

Hayward True Union Ball Valves are superior performers. A fine-pitch seal retainer thread allows for accurate compensation for seat wear. Reversible seats make it easy to get a damaged valve back in service. Should the seats become damaged they only need to be removed, turned over, and reinstalled to put the valve back on line. These valves feature a double o-ring stem seal for twice the leakage protection of valves with only a single stem seal.

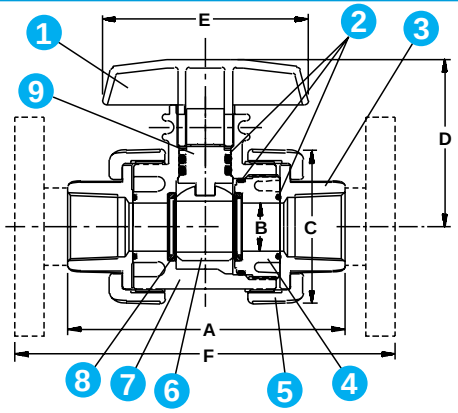
Never a Problem with Corrosion

This is because of the valves' all-plastic construction. They will never rust or corrode – and they can survive corrosive environments without the need for painting or expensive epoxy coating.

Easily Automated

Hayward's manual True Union Ball Valve has been designed so that it can be easily converted to an automated valve in the field. To do this, just remove the compression-fit handle and install an actuator mounting bracket.

Technical Information



Parts List
True Union Valves

1. Handle
2. O-ring seals
3. End connector
4. Seal retainer
5. Union nut
6. Ball
7. Body
8. Teflon seat*
9. Stem

* O Ring Backed Seats on 3" & 4" Sizes

Dimensions - Inches / Millimeters

Size	A	B	C	D	E	F	Weight (lb / kg) Soc / Thd	Weight (lb / kg) Flanged
1/4	4.63 / 117	0.37 / 13	2.25 / 57	3.00 / 76	3.50 / 89	N/A	0.75 / 0.34	N/A
3/8	4.63 / 117	0.50 / 13	2.25 / 57	3.00 / 76	3.50 / 89	N/A	0.75 / 0.34	N/A
1/2 / 20*	4.63 / 117	0.50 / 13	2.25 / 57	3.00 / 76	3.50 / 89	6.75 / 171	0.75 / 0.34	1.00 / 0.45
3/4 / 25*	4.75 / 120	0.75 / 19	2.63 / 67	3.02 / 77	3.50 / 89	7.13 / 181	0.75 / 0.34	1.00 / 0.45
1 / 32*	5.25 / 133	1.00 / 25	3.00 / 76	3.32 / 84	4.00 / 102	8.00 / 203	1.15 / 0.52	2.15 / 0.98
1-1/4 / 40*	6.30 / 160	1.25 / 32	4.00 / 102	3.92/ 100	5.00 / 127	9.19 / 233	2.15 / 0.98	3.50 / 1.6
1-1/2 / 50*	6.75 / 171	1.50 / 38	4.00 / 102	3.92/ 100	5.00 / 127	9.88 / 249	2.15 / 0.98	3.75 / 1.7
2 / 63*	8.00 / 203	2.00 / 51	4.75 / 121	4.43/ 113	5.00 / 127	11.4 / 289	3.80 / 1.7	6.30 / 2.9
2-1/2	10.68 / 271	3.00 / 76	6.40 / 163	5.50 / 140	10.50 / 267	14.38 / 365	10.50 / 4.8	14.50 / 6.6
3 / 90*	10.56 / 268	3.00 / 76	6.40 / 163	5.50 / 140	10.50 / 267	14.44 / 367	10.50 / 4.8	14.50 / 6.6
4 / 110*	12.94 / 329	3.81 / 97	8.56 / 217	6.50 / 165	10.50 / 267	17.13 / 435	17.60 / 8.0	24.80 / 11.3
6	N/A	3.81 / 97	8.56 / 217	6.50 / 165	10.50 / 267	19.19 / 487	N/A	30.75 / 14.0

* Metric End Connections Available in: BSP – Straight Thread, BSP TR – Tapered Thread and Metric Socket

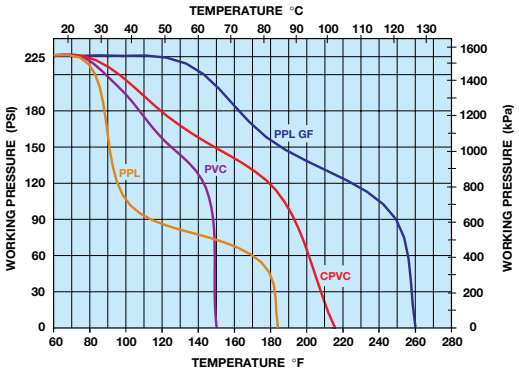
Selection Chart

Size	Material	End. Conn	Seals	Pressure Rating
1/4" - 3/8"	PVC	Socket or Threaded	Viton® or EPDM	225 PSI @70F Non-Shock
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged		
1/2" - 2"	PPL*	Threaded		
6"**	PVC or CPVC	Flanged		

* natural PPL - 1/2" to 1-1/2" rated at 150psi, 2" = 120psi

** 4" Valve venturied to 6"

Operating Temperature/Pressure



Cv Factors

Size	Factor	Size	Factor
1/4"	1.0	1-1/2"	90
3/8"	2.8	2"	150
1/2"	8.0	2-1/2"	340
3/4"	16.0	3"	490
1"	29.0	4"	600
1-1/4"	75.0	6"	550

Pressure Loss Calculation Formula

$$\Delta P = \left[\frac{Q}{Cv}\right]^2$$

ΔP = Pressure Drop
Q = Flow in GPM
Cv = Flow Coefficient

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HAYWARD®

FlowControl SYSTEMS

Three-Way Ball Valves

1/2" to 6" - PVC, Corzan® CPVC

One Valve - Two Flow Patterns

Hayward Three-Way Ball Valves are used to divert flow in process piping systems. The valves incorporates a unique design that permits them to be used for two completely different flow patterns.

Single Inlet Port Installation

With this flow pattern the valves can be installed so that the bottom port is the common, or inlet, port. The flow can be diverted 180 degrees, left or right, with a Center Off position.

Dual Inlet Port Installation.

For this flow pattern the valves are installed so that the bottom port is the outlet and the left and right ports are inlets. A 180° turn of the handle diverts the flow from the left or right port to the common bottom outlet port. There is also a Center Off position.

Single Union Design

This rugged, proven design incorporates a single, one-piece body. There are no fabricated joints to leak or fail.

No Metal...No Corrosion

Hayward all-plastic Three-Way valves contain no metal parts. The valves will never fail because of corrosion and they do not require painting or epoxy coating to stand up to aggressive environments.

Features

- Flow Direction Indicator
- Integrally Molded Bottom Port
- PTFE Seats
- Viton® Seals
- Full Port Design

Options

- Valve Safe Lockout
- Electric Actuators
- Pneumatic Actuators

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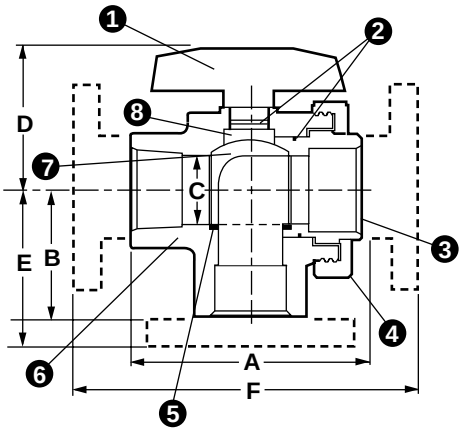
Viton® is a trademark of DuPont Dow Elastomers

Technical Information



Parts List
Three-Way Ball Valves

1. Handle
2. O - Ring Seals
3. End Connector
4. Assembly Nut
5. Teflon Seats
6. Body
7. Ball
8. Stem

Dimensions - Inches / Millimeters

Size	A	B	C	D	E	F	Weight - lb / kg	
							Skt/Thd	Flanged
1/2"	3.28 / 83	1.75 / 44	0.50 / 13	1.88 / 48	2.75 / 70	5.50 / 140	0.50 / .23	1.00 / .45
3/4"	3.75 / 95	1.80 / 46	0.75 / 19	2.00 / 51	3.13 / 80	6.00 / 152	0.75 / .34	1.38 / .63
1"	4.38 / 111	2.25 / 57	1.00 / 25	2.63 / 67	3.63 / 92	7.00 / 178	1.13 / .51	2.00 / .91
1-1/2"	5.38 / 137	2.88 / 73	1.50 / 38	3.00 / 76	4.38 / 111	8.38 / 213	2.00 / .91	3.25 / 1.48
2"	6.44 / 164	3.25 / 83	2.00 / 51	3.63 / 92	5.00 / 127	9.75 / 248	3.50 / 1.59	5.50 / 2.50
3"	8.75 / 222	4.56 / 116	3.00 / 76	5.50 / 140	6.63 / 168	12.63 / 321	9.00 / 4.09	15.00 / 6.82
4"	10.50 / 267	5.56 / 141	4.00 / 102	6.50 / 165	8.06 / 265	15.38 / 391	14.50 / 6.59	25.30 / 11.50
6"	N/A	N/A	4.00 / 102	6.50 / 165	8.88 / 226	17.25 / 438	N/A	34.30 / 15.59

Pressure Loss Calculation Formula

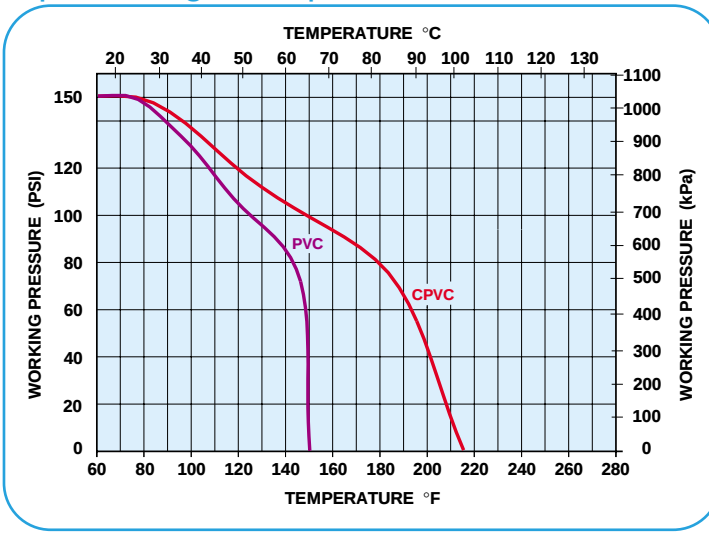
$$\Delta P = \left[\frac{Q}{Cv}\right]^2$$

ΔP = Pressure Drop
Q = Flow in GPM
Cv = Flow Coefficient

Cv Factors

Size	Factor	Size	Factor
1/2"	3.0	2"	58
3/4"	7.0	3"	190
1"	12	4"	450
1-1/2"	30	6"	340

Operating Temperature/Pressure



Selection Chart

Size	Material	End Conn.	Seals	Pressure Rating
1/2" - 4"	PVC/CPVC	Socket, Threaded, Flanged	Viton®	150psi @ 70F Non-Shock
6"*	PVC/CPVC	Flanged	Viton®	

* 4" Valve venturied to 6"

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