



Valves Technical

True Union 2000 Industrial 3-Way Ball Valves



Quick-View Valve Selection Chart
3-Way Vertical Ball Valve

Quick-View Valve Selection Chart
3-Way Horizontal Diverter Valve (no branch shutoff)

Valve Size	O-ring Material	PVC Part Number ^{1, 2, 3, 4}				Pressure Rating
		Socket	SR Threaded	Flanged	Spigot	
1/2	EPDM	4722L1-005	4721L1-005SR	4723L1-005	4727L1-005	235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F
	FKM	4732L1-005	4731L1-005SR	4733L1-005	4737L1-005	
3/4	EPDM	4722L1-007	4721L1-007SR	4723L1-007	4727L1-007	
	FKM	4732L1-007	4731L1-007SR	4733L1-007	4737L1-007	
1	EPDM	4722L1-010	4721L1-010SR	4723L1-010	4727L1-010	
	FKM	4732L1-010	4731L1-010SR	4733L1-010	4737L1-010	
1-1/4	EPDM	4722L1-012	4721L1-012SR	4723L1-012	4727L1-012	
	FKM	4732L1-012	4731L1-012SR	4733L1-012	4737L1-012	
1-1/2	EPDM	4722L1-015	4721L1-015SR	4723L1-015	4727L1-015	
	FKM	4732L1-015	4731L1-015SR	4733L1-015	4737L1-015	
2	EPDM	4722L1-020	4721L1-020SR	4723L1-020	4727L1-020	
	FKM	4732L1-020	4731L1-020SR	4733L1-020	4737L1-020	
2-1/2	EPDM	4722L1-025	4721L1-025SR	4723L1-025	4727L1-025	150 psi Non-Shock Water @ 73°F
	FKM	4732L1-025	4731L1-025SR	4733L1-025	4737L1-025	
3	EPDM	4722L1-030	4721L1-030SR	4723L1-030	4727L1-030	
	FKM	4732L1-030	4731L1-030SR	4733L1-030	4737L1-030	
4	EPDM	4722L1-040	4721L1-040SR	4723L1-040	4727L1-040	
	FKM	4732L1-040	4731L1-040SR	4733L1-040	4737L1-040	

Valve Size	O-ring Material	PVC Part Number ^{1, 2}				Pressure Rating
		Socket	SR Threaded	Flanged	Spigot	
1/2	EPDM	5022L1-005	5021L1-005SR	5023L1-005	5027L1-005	235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F
	FKM	5032L1-005	5031L1-005SR	5033L1-005	5037L1-005	
3/4	EPDM	5022L1-007	5021L1-007SR	5023L1-007	5027L1-007	
	FKM	5032L1-007	5031L1-007SR	5033L1-007	5037L1-007	
1	EPDM	5022L1-010	5021L1-010SR	5023L1-010	5027L1-010	
	FKM	5032L1-010	5031L1-010SR	5033L1-010	5037L1-010	
1-1/4	EPDM	5022L1-012	5021L1-012SR	5023L1-012	5027L1-012	
	FKM	5032L1-012	5031L1-012SR	5033L1-012	5037L1-012	
1-1/2	EPDM	5022L1-015	5021L1-015SR	5023L1-015	5027L1-015	
	FKM	5032L1-015	5031L1-015SR	5033L1-015	5037L1-015	
2	EPDM	5022L1-020	5021L1-020SR	5023L1-020	5027L1-020	
	FKM	5032L1-020	5031L1-020SR	5033L1-020	5037L1-020	
2-1/2	EPDM	5022L1-025	5021L1-025SR	5023L1-025	5027L1-025	150 psi Non-Shock Water @ 73°F
	FKM	5032L1-025	5031L1-025SR	5033L1-025	5037L1-025	
3	EPDM	5022L1-030	5021L1-030SR	5023L1-030	5027L1-030	
	FKM	5032L1-030	5031L1-030SR	5033L1-030	5037L1-030	
4	EPDM	5022L1-040	5021L1-040SR	5023L1-040	5027L1-040	
	FKM	5032L1-040	5031L1-040SR	5033L1-040	5037L1-040	

1: For CPVC valve, add the letter "C" to the part number (e.g. 4722L1-005C)
 2: For Double L-Port, add the number "2" to the part number (e.g. 4722L2-005)
 3: For Triple L-Port, add the number "3" to the part number (e.g. 4722L3-005)
 4: For T-Port, add the letter "T1" to the part number (e.g. 4722T1-005)

1: For CPVC valve, add the letter "C" to the part number (e.g. 5022L1-005C)
 2: For T-Port, add the letter "T1" to the part number (e.g. 5022T1-005)

Suitable for Oil-Free air handling to 25 psi, not for distribution of compressed air or gas
 See Spears® Product Sourcebook for product offerings

Spears® Manufacturing Company

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True Union 2000 Industrial 3-Way Ball Valves



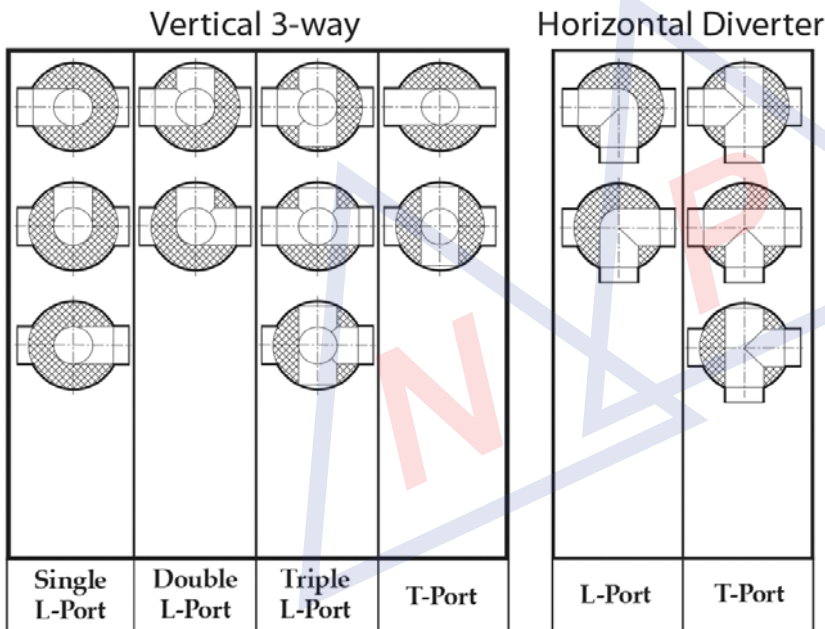
Features — PVC, CPVC

Versatile design provides multiple port and configuration options for controlling flow distribution in industrial and chemical processing applications. Choose Vertical 3-Way (L-Port Diverter, T-Port Off) or Horizontal Diverter configurations with open branch (no shutoff) design. Valves are available in IPS sizes 1/2" through 4" with socket, SR threaded (Special Reinforced), flanged or spigot end connectors. Venturied 6" (4" valves with 4 x 6 reducers) are also available with socket or flanged valve end connections.

- Chemical & Corrosion Resistant PVC or CPVC Construction
- Vertical 3-Way or Horizontal Diverter Design (no branch shutoff)
- L-Port, Multi L-Port & T-Port Ball Configuration Options
- Interchangeable with all True Union 2000 Valves, Mates with Union 2000 Pipe Unions
- High Impact Polypropylene Handle
- Built-in Handle Lockout
- Strong, Buttress Thread Union Nuts
- Spears® Double O-ring Safe-T-Shear® Stem Design
- EPDM or FKM O-rings
- Spears® Safe-T-Blocked® Seal Carrier
- Self Adjusting PTFE Floating Seat Design
- Fully Serviceable, Replaceable Components
- Sizes 1/2" - 2" pressure rated to 235 psi @ 73°F Sizes 2-1/2" - 4" and all Flanged to 150 psi @ 73°F
- EPDM Valves NSF® Certified for Potable Water use
- Suitable for Vacuum Service
- Assembled with Silicone-Free, Water Soluble Lubricants
- Manufactured to ASTM F 1970
- Metric Socket and BSP Thread Available

3-Way Port Options

Diverter Valves have no shut-off on branch.



Optional Accessories*

- Retro-Fit End Connector Sets for Valve Replacement
- Split-Nut Repair Kits for Union Nut Replacement
- Supplemental End Connectors
- Stem Extension Kits
- Square Operator Nuts
- Multi Mount Valve/Actuation Mounting Kits

* See **"BALL VALVE ACCESSORIES"** section for details of individual products.

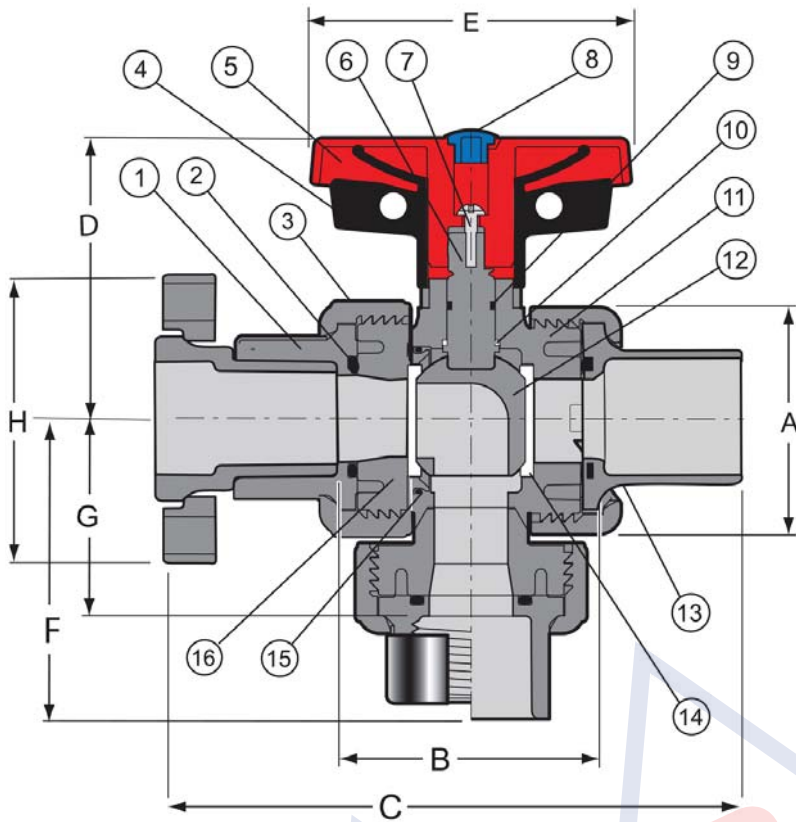
Ball Port Options viewed from top of valve.

Sample Engineering Specification

All thermoplastic ball valves shall be True Union 2000 3-Way [specify horizontal or vertical] type with [specify port option] manufactured to ASTM F 1970 and constructed from PVC Type I, ASTM D 1784 Cell Classification 12454, or CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM or FKM. All valves shall have Safe-T-Shear® stem with double O-ring stem seals. All valve handles shall be polypropylene with built-in lockout mechanism. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All EPDM valves shall be certified by NSF International for use in potable water service. All PVC and CPVC 1/2" through 2" valves shall be pressure rated to 235 psi, all 2-1/2" through 4" and all flanged valves shall be pressure rated to 150 psi for water at 73°F as manufactured by Spears® Manufacturing Company.



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Replacement Parts

No.	Component	Qty.	Material
1	End Connector	3	PVC/CPVC
2	End Connector O-ring	3	EPDM/FKM
3	Union Nut	3	PVC/CPVC
4	Handle Lock	1	PP
5	Handle	1	PP
6	Stem	1	PVC/CPVC
7	Screw	1	Stainless Steel
8	Handle Cover	1	PP
9	Stem O-ring	2	EPDM/FKM
10	Stem Bearing*	1	PTFE
11	Body	1	PVC/CPVC
12	Ball	1	PVC/CPVC
13	End Connector Collar	3	Stainless Steel
14	Seat	2	PTFE
15	Carrier O-ring	1	EPDM/FKM
16	Seal Carrier	1	PVC/CPVC

Note: Applies to both Vertical and Horizontal configurations.
 * For sizes 2-1/2, 3 & 4 only.

NOTE: Diverter style valve has no shutoff on branch.

Vertical 3-Way Ball Valves — Dimensions & Operating Torque

Nominal Size	A	B ¹		C			D	E	F			G		H	Oper. ² Torque (in. lbs.)
		Soc/SR Thd	Spigot	Socket	SR Thd	Spigot			Socket	SR Thread	Spigot	Soc/SR Thd	Spigot		
1/2	1-15/16	2-1/2	2-15/16	4-1/4	3-27/32	4-3/4	2-17/32	2-7/8	2-11/16	2-9/16	2-13/16	1-13/16	2	3-1/2	12
3/4	2-3/8	2-3/4	3-5/16	4-3/4	4-1/4	5-3/8	2-7/8	3-3/8	3-1/16	2-3/4	3-5/16	2-1/16	2-5/16	3-7/8	12
1	2-11/16	2-15/16	3-1/2	5-3/16	4-11/16	5-3/4	3-1/16	3-1/2	3-5/16	3	3-9/16	2-3/16	2-7/16	4-1/4	20
1-1/4	3-3/16	3-5/16	3-13/16	5-13/16	5-3/16	6-5/16	3-5/8	3-7/8	3-3/4	3-3/8	4-1/16	2-1/2	2-13/16	4-5/8	25
1-1/2	3-5/8	3-5/8	4	6-3/8	5-7/16	6-3/4	4	4-3/16	4-5/16	3-13/16	4-1/2	2-15/16	3-1/8	5	40
2	4-5/16	4-7/8	5-3/16	7-7/8	6-3/4	8-1/4	4-7/16	5-1/16	5	4-1/2	5-5/16	3-1/2	3-3/4	6	67
2-1/2	6-3/16	7-1/8	8-1/8	10-5/8	9-7/8	11-5/8	5-7/8	7-5/8	6-5/8	6-1/4	7-1/16	4-7/8	5-5/16	7-1/2	120
3	6-3/16	7	7-13/16	10-3/4	9-3/4	11-9/16	5-7/8	7-5/8	6-3/4	6-3/16	7-3/16	4-7/8	5-5/16	7-1/2	120
4	7-3/4	7-7/16	8-1/4	11-15/16	10-1/4	12-13/16	6-11/16	9	8-3/16	6-3/4	8-3/4	5-15/16	6-1/2	9	336

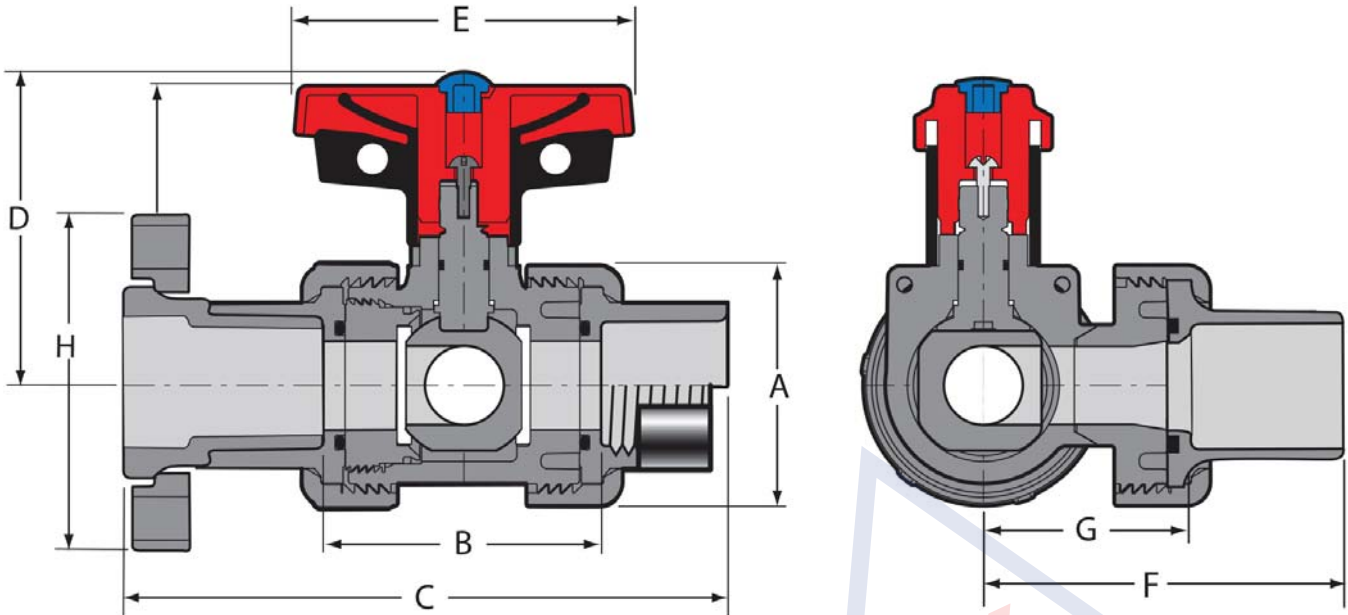
1: Valve Lay Length

2: Torque required at valve maximum internal pressure rating, 5ft/sec. Flow velocity; due to adjustment differences during installation, actual values may vary.

Suitable for Oil-Free air handling to 25 psi, not for distribution of compressed air or gas
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NOTE: Diverter style valve has no shutoff on branch

Horizontal Diverter 3-Way Ball Valves Dimensions & Operating Torque

Nominal Size	A	B ¹		C			D	E	F			G		H	Oper. ² Torque (in. lbs.)
		Soc/SR Thread	Spigot	Socket	SR Thread	Spigot			Socket	SR Thread	Spigot	Soc/SR Thread	Spigot		
1/2	1-15/16	2-1/2	2-15/16	4-1/4	3-13/16	4-3/4	2-17/32	2-7/8	2-3/4	2-3/8	2-13/16	1-7/8	2	3-1/2	12
3/4	2-3/8	2-3/4	3-15/16	4-3/4	4-1/4	5-3/8	2-7/8	3-3/8	3-1/8	2-3/4	3-5/16	2-1/8	2-5/16	3-7/8	12
1	2-11/16	2-15/16	3-1/2	5-3/16	4-11/16	5-3/4	3-1/16	3-1/2	3-5/16	3	3-9/16	2-3/16	2-7/16	4-1/4	20
1-1/4	3-3/16	3-5/16	3-13/16	5-13/16	5-3/16	6-5/16	3-5/8	3-7/8	3-13/16	3-3/8	4-1/16	2-9/16	2-13/16	4-5/8	25
1-1/2	3-5/8	3-5/8	4	6-3/8	5-7/16	6-3/4	4	4-3/16	4-5/16	3-13/16	4-1/2	2-15/16	3-1/8	5	40
2	4-5/16	4-7/8	5-3/16	7-7/8	6-3/4	8-1/4	4-7/16	5-1/16	5-1/16	4-1/2	5-5/16	3-9/16	3-3/4	6	67
2-1/2	6-3/16	7-1/8	8-1/8	10-5/8	8-1/2	11-5/8	5-7/8	7-5/8	6-5/8	5-1/2	7-1/16	4-7/8	5-5/16	7-1/2	120
3	6-3/16	7	7-13/16	10-3/4	9-3/4	11-9/16	5-7/8	7-5/8	6-3/4	6-3/16	7-3/16	4-7/8	5-5/16	7-1/2	120
4	7-3/4	7-7/16	8-1/4	11-15/16	10-1/4	12-13/16	6-11/16	9	8-1/4	6-3/4	8-3/4	6	6-1/2	9	336

1: Valve Lay Length

2: Torque required at valve maximum internal pressure rating, 5ft/sec. Flow velocity; due to adjustment differences during installation, actual values may vary.

Temperature Pressure Rating

System Operating Temperature °F (°C)			100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)
Valve Pressure Rating psi (MPa)	1/2" - 2"	PVC	235 (1.62)	211 (1.45)	150 (1.03)	75 (.52)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)
		CPVC	235 (1.62)	219 (1.51)	170 (1.17)	145 (1.00)	130 (.90)	110 (.76)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)
	2-1/2" - 4"	PVC	150 (1.03)	135 (.93)	110 (.76)	75 (.52)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)
		CPVC	150 (1.03)	140 (.97)	130 (.90)	120 (.83)	110 (.76)	100 (.70)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)

Note: Flanged Valves have a base pressure rating of 150 psi.

Made in the U.S.A.

Suitable for Oil-Free air handling to 25 psi, not for distribution of compressed air or gas

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