

Low Extractable Technical
Low Extractable Technical Information



Valves

Spears® low-extractable valves are available in two styles: True Union Diaphragm configurations sizes 1/2" - 2" and True Union 2000 ball valve configurations sizes 1/2" - 4". Spears® low-extractable diaphragm valves (sizes 1/2" - 2") carry a maximum pressure rating of 150 psi for water, non-shock, @ 73°F. Spears® low-extractable ball valves sizes 1/2" - 4" carry a maximum pressure rating of 235 psi for water, non-shock, @ 73°F.

Valves are supplied with both socket and threaded-end connectors for versatility. They incorporate a built-in position indicator, and are operated with a high-impact, hand-wheel-style handle for easy operation.

Diaphragm Valves

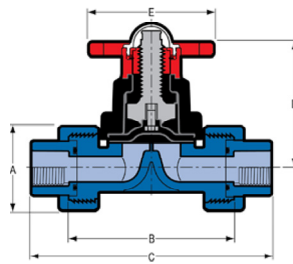
Spears® low-extractable diaphragm valves are engineered to provide accurate throttling control and shut-off, utilizing a positive-stop, non-rising stem. The Weir-type design incorporates a PTFE diaphragm for maintaining purity, and uses EPDM O-ring seals on the union connections. Low-profile True Union design minimizes space while allowing for ease of installation and maintenance.

Ball Valves

Spears® low-extractable quarter-turn True Union ball valves incorporate the same high degree of unique engineering design characteristics. Among these characteristics are heavy-bodied construction with strong buttress threads, full Schedule 80 bore to minimize pressure drop, PTFE floating seat design to minimize seat wear, EPDM or FKM O-ring seals, Safe-T-Shear® stem, socket and threaded-end connectors, and True Union design for ease of installation and maintenance.

Diaphragm Valves

EPDM O-ring Seals EPDM Backed PTFE Diaphragm



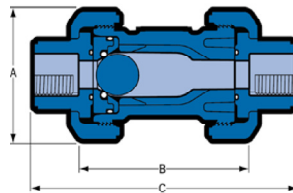
Part Number	Size	A	B	C	D	E	Approx. Wt. (Lbs.)
2729T-005BL	1/2	1-15/16	3- 7/8	5- 3/16	3-11/32	2- 7/8	.86
2729T-007BL	3/4	2- 1/2	4- 1/2	5-15/16	3- 3/4	3- 1/8	1.16
2729T-010BL	1	2- 9/16	4-15/16	6-13/16	4- 7/16	3- 3/8	1.87
2729T-012BL	1-1/4	3- 5/16	5- 1/2	8- 1/4	5- 5/8	3- 7/8	3.60
2729T-015BL	1-1/2	3-17/32	6- 5/16	8- 7/16	5- 5/8	4- 5/8	3.86
2729T-020BL	2	4- 7/32	7- 1/2	9- 1/2	7	6- 5/8	6.05

Note: Both socket and threaded end connectors are provided with valve sizes 1/2"- 2" Diaphragm valves. Valves carry a maximum pressure rating of 150 psi for water, non-shock, @ 73°F (23°C).

True Union 2000 Industrial Ball Check Valves

EPDM O-rings

Dimensions Also Applicable to
4539-XXXBL FKM O-Rings



Part Number	Size	A	B	C	Cv Values	Approx. Wt. (Lbs.)
4529-005BL	1/2	1- 7/8	2- 7/16	4- 3/16	6.3	.34
4529-007BL	3/4	2- 1/4	2- 3/4	4- 3/4	17	.52
4529-010BL	1	2- 1/2	2- 7/8	5- 1/8	25	.73
4529-012BL	1-1/4	3- 1/16	3- 1/4	5- 3/4	65	1.27
4529-015BL	1-1/2	3- 1/2	3- 1/2	6- 1/4	86	1.63
4529-020BL	2	4- 1/4	4- 3/4	7- 3/4	130	2.82
4522-030BL	3	6- 3/16	6- 7/8	10- 11/16	275	6.66
4522-040BL	4	7- 1/2	7- 1/4	11- 13/16	500	11.90



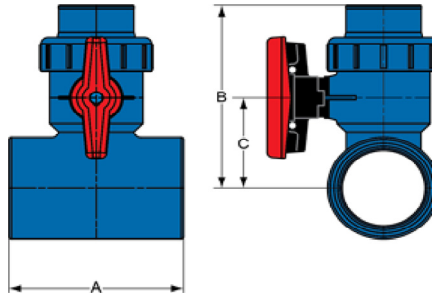
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Tee-Style Ball Valves

Spears® low-extractable True Union Tee-Style Ball Valve design integrates valve and Tee-fitting for direct branch take-off laterals. The close proximity of the valve to mainline emulates a "zero deadleg" design to minimize any areas of fluid stagnation. Custom produced to specified Tee and Valve connection sizes.

True Union 2000 Industrial T-Style Ball Valve

EPDM
 Mainline Tee x Socket/Spigot
Safe-T-Block™ Design
 Dimensions Also Applicable to
 183901-XXXBL FKM O-Rings



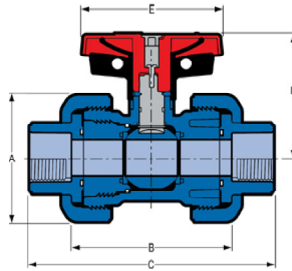
Part Number	Size	A	B	C	Approx. Wt. (Lbs.)
182901-005BL	1/2	2-5/16	3-3/4	1-5/8	.82
182901-007BL	3/4	3-7/16	4-1/4	1-7/8	1.24
182901-010BL	1	4	4-11/16	2-1/16	1.67
182901-012BL	1-1/4	4-1/4	5-5/16	2-7/16	1.62
182901-015BL	1-1/2	5-1/8	6-1/8	3	4.31
182901-020BL	2	5-7/8	7-5/16	3-7/16	6.75
182901-101BL	3/4X1/2	3-3/16	3-7/8	1-3/4	.78
182901-130BL	1X1/2	3-7/16	4	1-7/8	.70
182901-131BL	1X3/4	3-11/16	4-3/8	2	1.18
182901-166BL	1-1/4X1/2	4-1/4	4	1-7/8	.88
182901-167BL	1-1/4X3/4	4-1/4	4-1/4	1-7/8	1.02
182901-168BL	1-1/4X1	4-1/4	4-13/16	2-3/16	1.68
182901-209BL	1-1/2X1/2	4-3/8	4-1/4	2-1/8	.85
182901-210BL	1-1/2X3/4	4-1/8	4-5/8	2-3/16	1.15
182901-211BL	1-1/2X1	4-1/2	5	2-3/8	1.53
182901-247BL	2X1/2	4-3/16	4-9/16	2-7/16	1.11
182901-248BL	2X3/4	4-3/8	4-15/16	2-9/16	1.46
182901-249BL	2X1	4-3/4	5-1/4	2-5/8	1.78
182901-251BL	2X1-1/2	5-7/8	6-1/16	2-15/16	3.78
182901-333BL	3X1/2	5-1/2	5-1/8	3	4.73
182901-335BL	3X1	5-1/2	5-7/8	3-1/4	2.34
182901-337BL	3X1-1/2	7-1/4	6-9/16	3-7/16	3.98
182901-338BL	3X2	6-11/16	7-11/16	3-13/16	5.88
182901-417BL	4X1	7-7/16	6-5/16	3-11/16	3.09
182901-419BL	4X1-1/2	7-3/8	7-5/16	4-3/16	4.74
182901-420BL	4X2	7-3/4	8-5/16	4-7/16	6.60
182901-528BL	6X2	10-3/16	9-5/8	5-3/4	9.85
182901-578BL	8X2	15-5/8	12-5/8	8-3/4	20.91

Includes Plugged end with additional Socket and Threaded end connectors.

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True Union 2000 Industrial Ball Valves w/Handle Lockout & Safe-T-Block™ Design



EPDM O-ring

Dimensions Also Applicable to
 1839-XXXBL FKM O-Rings

Part Number	Size	A	B	C	D	E	Cv Values	Approx. Wt. (Lbs.)
1829-005BL	1/2	1- 7/8	2- 3/8	4- 3/16	2- 9/16	2-13/16	29	.46
1829-007BL	3/4	2- 1/4	2- 3/4	4- 3/4	2- 7/8	3- 3/8	63	.65
1829-010BL	1	2- 1/2	2- 7/8	5- 1/8	3- 1/8	3- 7/16	120	.88
1829-012BL	1-1/4	3- 1/16	3- 1/4	5- 3/4	3- 5/8	3- 7/8	243	1.35
1829-015BL	1-1/2	3- 1/2	3- 1/2	6- 1/4	4	4- 3/16	357	1.83
1829-020BL	2	4- 1/4	4- 3/4	7- 3/4	4- 1/2	5- 1/8	599	3.11
1822-030BL	3	6- 3/16	7	10-11/16	5- 7/8	7- 5/8	1416	7.73
1822-040BL	4	7- 5/8	7- 5/16	11- 7/8	6- 3/4	9- 3/16	2865	12.05

Needle Valves

Spears® low-extractable needle valves provide proportional opening to needle travel for more accurate metering and other fine-adjustment flow-control applications. Replaceable PTFE seat eliminates all elastomer seals. Available in Globe and Angle pattern configurations with socket or threaded end connections. Valves include built-in panel mounting nut and easy-grip polypropylene handles.

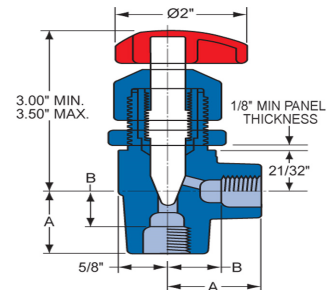
Replaceable PTFE Stem Seal - no elastomer or lubricants used. Needle valves carry a maximum internal pressure rating of 235 psi at 73°F (23°C).

Lab Fixtures (not shown)

See Low-Extractable High Purity PVC System section in the SPS-1 for additional information.

Needle Valve

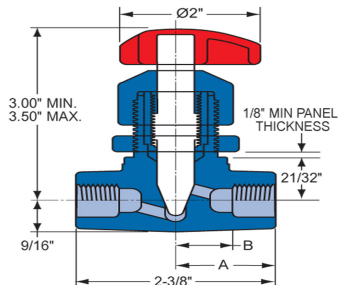
Angle Pattern - Fipt



Part Number	Size	A	B	Approx. Wt. (Lbs.)
5692-002BL	1/4	3	21/32	.22
5692-003BL	3/8	3	21/32	.21
5692-005BL	1/2	3	21/32	.23
5691-002BL	1/4	3	21/32	.22
5691-003BL	3/8	3	21/32	.21
5691-005BLSR	1/2	3	21/32	.25

Needle Valve

Globe Pattern - Fipt



Part Number	Size	A	B	Approx. Wt. (Lbs.)
5592-002BL	1/4	3	11/16	.21
5592-003BL	3/8	3	11/16	.21
5592-005BL	1/2	3	11/16	.23
5591-002BL	1/4	3	11/16	.21
5591-003BL	3/8	3	11/16	.20
5591-005BLSR	1/2	3	11/16	.24