



**Valves Technical**  
**True Union Industrial 3-Way Full Port Ball Valves**



**Quick-View Valve Selection Chart**  
**3-Way Vertical Full Port Ball Valve**

| Valve Size | O-ring Material | PVC Part Number <sup>1, 2, 3, 4</sup> |              |            |            | Pressure Rating                                                                                     |
|------------|-----------------|---------------------------------------|--------------|------------|------------|-----------------------------------------------------------------------------------------------------|
|            |                 | Socket                                | SR Threaded  | Flanged    | Spigot     |                                                                                                     |
| 1/2        | EPDM            | 7122L1-005                            | 7121L1-005SR | 7123L1-005 | 7127L1-005 | 235 psi<br>Non-Shock<br>Water<br>@ 73°F<br><br>(Flanged<br>150 psi<br>Non-Shock)<br>Water<br>@ 73°F |
|            | FKM             | 7132L1-005                            | 7131L1-005SR | 7133L1-005 | 7137L1-005 |                                                                                                     |
| 3/4        | EPDM            | 7122L1-007                            | 7121L1-007SR | 7123L1-007 | 7127L1-007 |                                                                                                     |
|            | FKM             | 7132L1-007                            | 7131L1-007SR | 7133L1-007 | 7137L1-007 |                                                                                                     |
| 1          | EPDM            | 7122L1-010                            | 7121L1-010SR | 7123L1-010 | 7127L1-010 |                                                                                                     |
|            | FKM             | 7132L1-010                            | 7131L1-010SR | 7133L1-010 | 7137L1-010 |                                                                                                     |
| 1-1/4      | EPDM            | 7122L1-012                            | 7121L1-012SR | 7123L1-012 | 7127L1-012 |                                                                                                     |
|            | FKM             | 7132L1-012                            | 7131L1-012SR | 7133L1-012 | 7137L1-012 |                                                                                                     |
| 1-1/2      | EPDM            | 7122L1-015                            | 7121L1-015SR | 7123L1-015 | 7127L1-015 |                                                                                                     |
|            | FKM             | 7132L1-015                            | 7131L1-015SR | 7133L1-015 | 7137L1-015 |                                                                                                     |
| 2          | EPDM            | 7122L1-020                            | 7121L1-020SR | 7123L1-020 | 7127L1-020 |                                                                                                     |
|            | FKM             | 7132L1-020                            | 7131L1-020SR | 7133L1-020 | 7137L1-020 |                                                                                                     |

- 1: For CPVC valve, add the letter "C" to the part number (e.g. 7122L1-005C)
- 2: For Double L-Port, add the number "2" to the part number (e.g. 7122L2-005)
- 3: For Triple L-Port, add the number "3" to the part number (e.g. 7122L3-005)
- 4: For T-Port, add the letter "T" to the part number (e.g. 7122T1-005)

**Quick-View Valve Selection Chart**  
**3-Way Horizontal Full Port Ball Valve**

| Valve Size | O-ring Material | PVC Part Number <sup>1, 2</sup> |              |            |            | Pressure Rating                                                                                  |
|------------|-----------------|---------------------------------|--------------|------------|------------|--------------------------------------------------------------------------------------------------|
|            |                 | Socket                          | SR Threaded  | Flanged    | Spigot     |                                                                                                  |
| 1/2        | EPDM            | 7022L1-005                      | 7021L1-005SR | 7023L1-005 | 7027L1-005 | 235 psi<br>Non-Shock<br>Water<br>@ 73°F<br><br>(Flanged 150 psi<br>Non-Shock)<br>Water<br>@ 73°F |
|            | FKM             | 7032L1-005                      | 7031L1-005SR | 7033L1-005 | 7037L1-005 |                                                                                                  |
| 3/4        | EPDM            | 7022L1-007                      | 7021L1-007SR | 7023L1-007 | 7027L1-007 |                                                                                                  |
|            | FKM             | 7032L1-007                      | 7031L1-007SR | 7033L1-007 | 7037L1-007 |                                                                                                  |
| 1          | EPDM            | 7022L1-010                      | 7021L1-010SR | 7023L1-010 | 7027L1-010 |                                                                                                  |
|            | FKM             | 7032L1-010                      | 7031L1-010SR | 7033L1-010 | 7037L1-010 |                                                                                                  |
| 1-1/4      | EPDM            | 7022L1-012                      | 7021L1-012SR | 7023L1-012 | 7027L1-012 |                                                                                                  |
|            | FKM             | 7032L1-012                      | 7031L1-012SR | 7033L1-012 | 7037L1-012 |                                                                                                  |
| 1-1/2      | EPDM            | 7022L1-015                      | 7021L1-015SR | 7023L1-015 | 7027L1-015 |                                                                                                  |
|            | FKM             | 7032L1-015                      | 7031L1-015SR | 7033L1-015 | 7037L1-015 |                                                                                                  |
| 2          | EPDM            | 7022L1-020                      | 7021L1-020SR | 7023L1-020 | 7027L1-020 |                                                                                                  |
|            | FKM             | 7032L1-020                      | 7031L1-020SR | 7033L1-020 | 7037L1-020 |                                                                                                  |

- 1: For CPVC valve, add the letter "C" to the part number (e.g. 7022L1-005C)
- 2: For T-Port, add the letter "T" to the part number (e.g. 7022T1-005)

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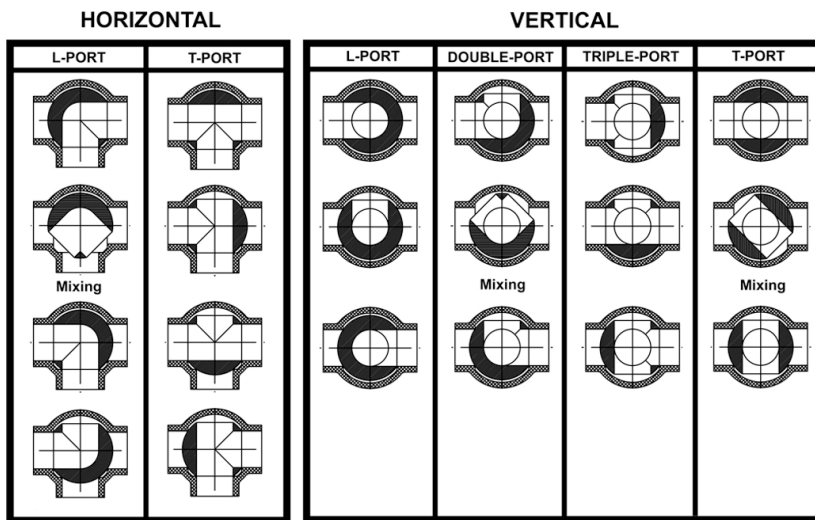


**Features — PVC, CPVC**

Versatile Full-Port design provides full flow capability through this multiple port 3-way valve with configuration options for controlling flow distribution in industrial and chemical processing applications. Choose Full-Port Vertical 3-Way or Full-Port Horizontal 3-way with branch shutoff. Valves are available in IPS sizes 1/2" through 2" with socket, SR threaded (Special Reinforced), flanged or spigot end connectors.

- Chemical & Corrosion Resistant PVC or CPVC Construction
- Vertical 3-Way or Horizontal Design
- L-Port, Multi L-Port & T-Port with increased Ball Configuration Options, including special mixing configurations
- 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
- All Flanged Pressure Rated 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**



**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
- Adjustable Stop Ring for Mixing Port Options

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

The Adjustable Stop Ring (sold separately) must be used with any "MIXING" Port Option to provide proper mid-way handle stop function.

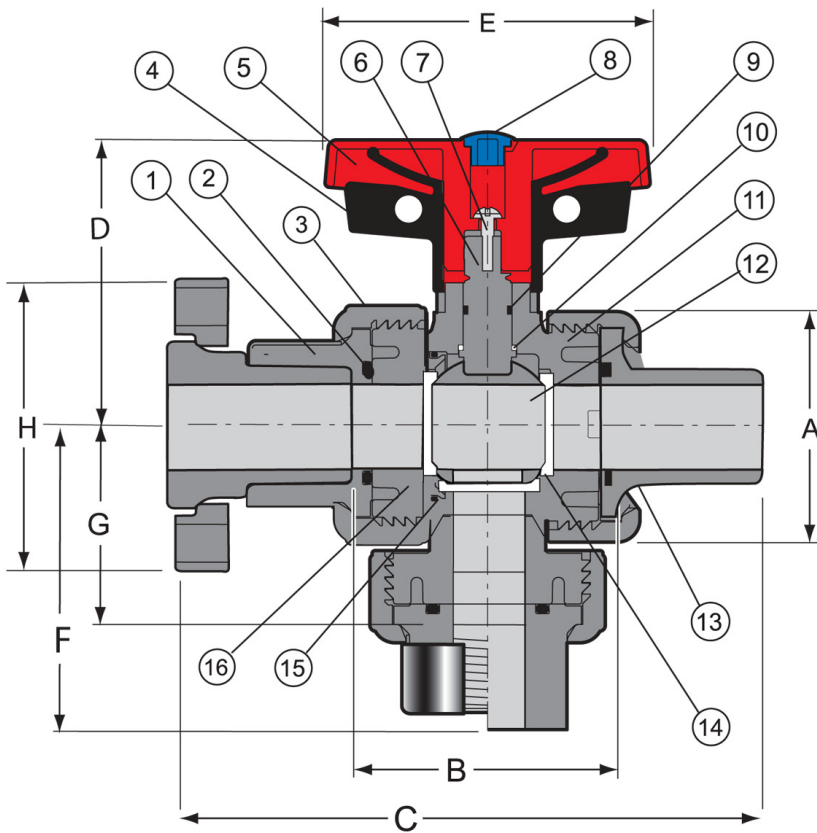
Ball Port Options viewed from top of valve.

**Sample Engineering Specification**

All thermoplastic ball valves shall be True Union Industrial 3-Way Full Port Ball Valves [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 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                 | 3    | PTFE            |
| 15  | Carrier O-ring       | 3    | EPDM/FKM        |
| 16  | Seal Carrier         | 3    | PVC/CPVC        |

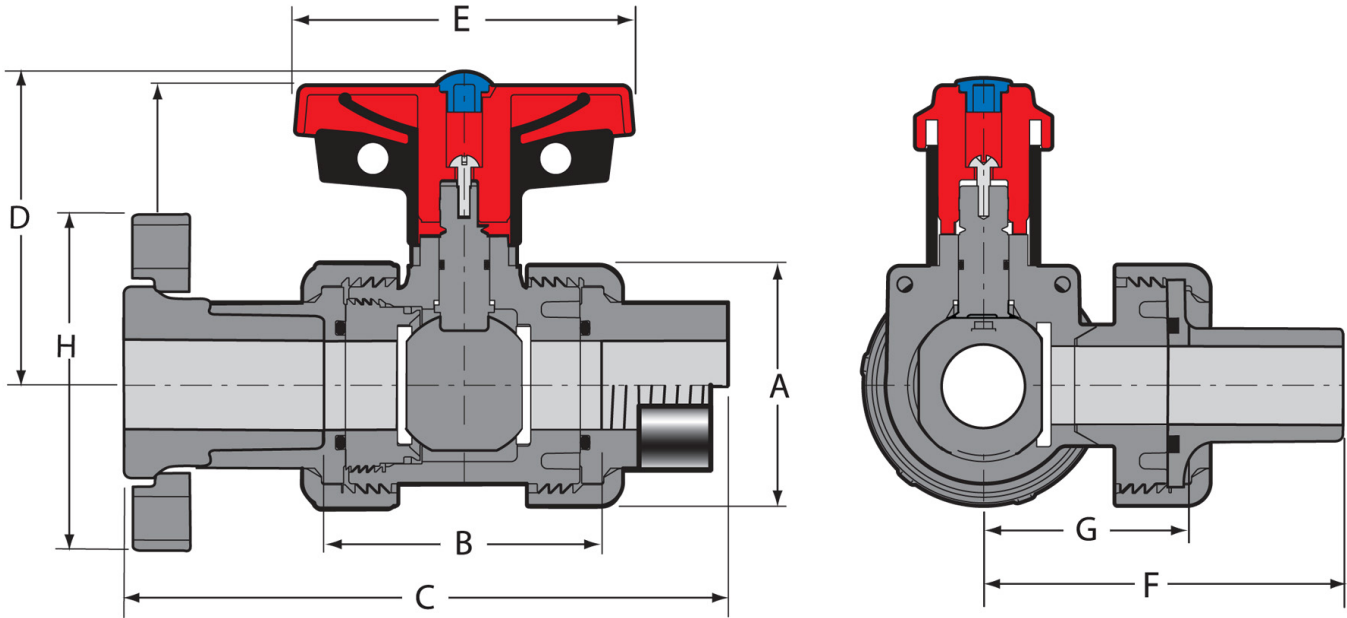
**Vertical 3-Way Full Port Ball Valves — Dimensions & Operating Torque**

| Vertical 3-Way Ball Valve |        |                |        |        |        |        |        |         |         |              |         |               |         |       | Oper. <sup>2</sup><br>Torque<br>(in.<br>lbs.) |
|---------------------------|--------|----------------|--------|--------|--------|--------|--------|---------|---------|--------------|---------|---------------|---------|-------|-----------------------------------------------|
| Nominal<br>Size           | A      | B <sup>1</sup> |        | C      |        |        | D      | E       | F       |              |         | G             |         | H     |                                               |
|                           |        | Soc/SR<br>Thd  | Spigot | Socket | SR Thd | Spigot |        |         | Socket  | SR<br>Thread | Spigot  | Soc/SR<br>Thd | Spigot  |       |                                               |
| 1/2                       | 2-1/8  | 3-5/8          | 4-1/8  | 5-3/8  | 5      | 5-7/8  | 2-5/8  | 2-13/16 | 2-11/16 | 2-1/2        | 2-15/16 | 1-13/16       | 2-11/16 | 3-1/2 | 12                                            |
| 3/4                       | 2-9/16 | 4-1/4          | 4-3/4  | 6-1/4  | 5-3/4  | 6-3/4  | 3      | 3-3/8   | 3-1/8   | 2-7/8        | 3-3/8   | 2-1/8         | 2-3/8   | 3-7/8 | 12                                            |
| 1                         | 2-7/8  | 4-1/2          | 5      | 6-3/4  | 6-3/8  | 7-3/8  | 3-3/16 | 3-7/16  | 3-3/8   | 3-3/16       | 3-11/16 | 2-1/4         | 2-1/2   | 4-1/4 | 20                                            |
| 1-1/4                     | 3-9/16 | 5-3/4          | 6-1/4  | 8-1/8  | 7-5/8  | 8-3/4  | 3-3/4  | 3-7/8   | 4-1/16  | 3-3/4        | 4-3/8   | 2-13/16       | 3-1/8   | 4-5/8 | 25                                            |
| 1-1/2                     | 4      | 6-5/16         | 6-5/8  | 9-1/16 | 8-1/8  | 9-1/2  | 4-3/16 | 4-1/4   | 4-1/2   | 4-1/16       | 4-3/4   | 3-1/8         | 3-5/16  | 5     | 40                                            |
| 2                         | 4-5/8  | 7-3/8          | 8-1/16 | 10-3/8 | 9-1/4  | 10-3/4 | 4-9/16 | 5-1/16  | 5-1/8   | 4-5/8        | 5-3/8   | 3-5/8         | 3-7/8   | 6     | 67                                            |

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.

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**Horizontal 3-Way Full Port Ball Valves Dimensions & Operating Torque**

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

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<br>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-) |
|                                      |           | 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)  |

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