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Catalog No. H-SOBV  
Feb. 2023



# Swing Out Ball Valves

## SO Series



### Design & Engineering

- Positive leak tight shut off
- Live loaded design
  - Compensates for wear, pressure and temperature changes
- Swing-out three piece design
  - Easy and fast replace seats, seals and ball without major disruption in-line.

### Application

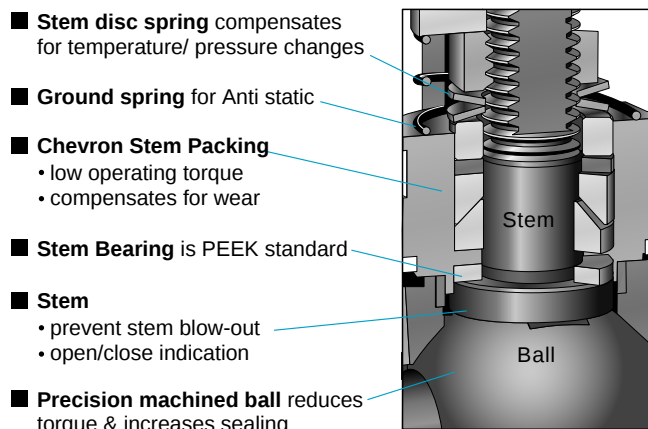
- Chemical Processing
- Oil & Gas Production
- Pharmaceutical
- Power and Utilities
- Biotech
- Food and Beverage

**HY-LOK CORPORATION**

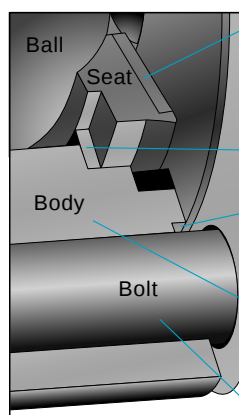
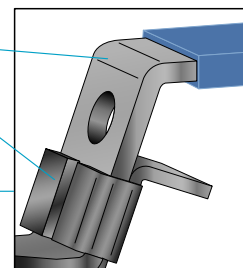
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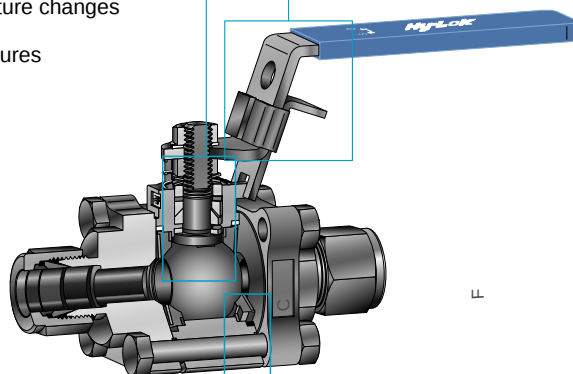
## Features and Benefits



- Lever Handle**  
 • oval or extended handle option  
 • low operation torque  
**■ Self-Locking device & pad lock**



- Disc Spring & Seat**  
 • compensates for wear and pressure / temperature changes  
 • protects seats from pressure surge  
 • allows leak-tight operation under various pressures  
**■ Support Ring** prevents seat bulging and wear  
**■ End packing with PTFE**  
 • allows leak tight sealing between center  
 • body and end connection flange  
**■ Center Body**  
 • Swing-out design  
 • available 3-Way (Switching)  
**■ High-strength 4-Bolt & Nut**



## Specification

Pressure Rating up to 3000 psig(206bar) @ 100°F(38°C)  
 Temperature Range from -20°F(-28°C) to 450°F(232°C)  
 Size Range

- Hy-Lok ends : 1/4" to 1" (6mm to 25mm)
- Screwed ends : 1/8" to 1" (NPT, BSPT)
- Butt-weld ends : 1/4" to 1" (Pipe)
- Socket weld ends : 1/4" to 1" (Tube and Pipe)
- ZCO O-Ring Face Seal ends : 1/4" to 1/2"
- ZCR Metal Gasket Seal ends : 1/4" to 1/2"

## Testing

- Each valve is tested with nitrogen @ 1000 psig (69 bar) to Max. leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Other tests are upon request.

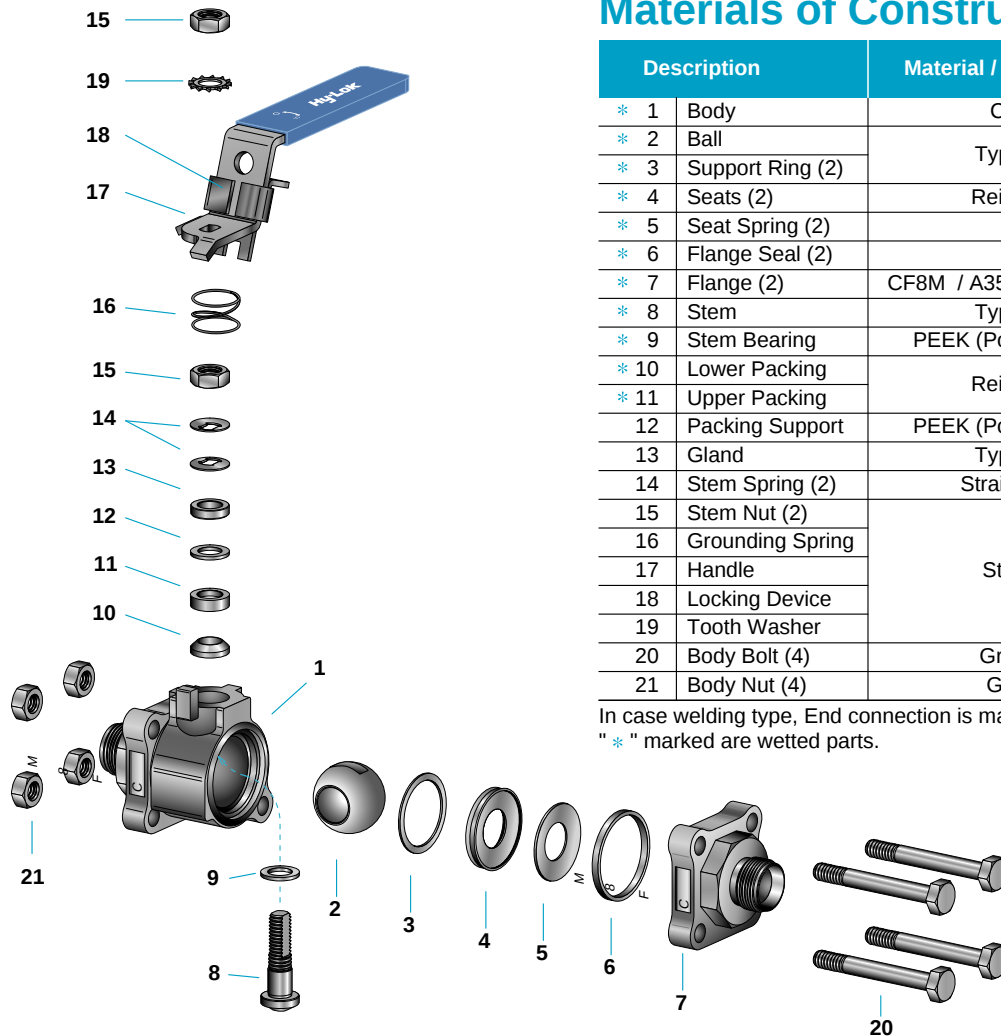
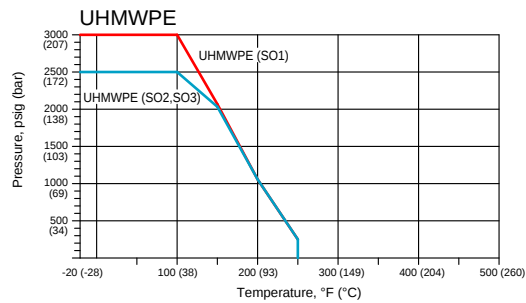
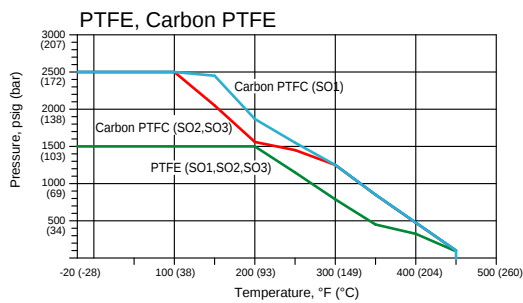
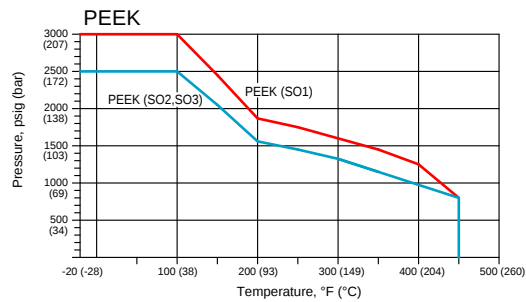
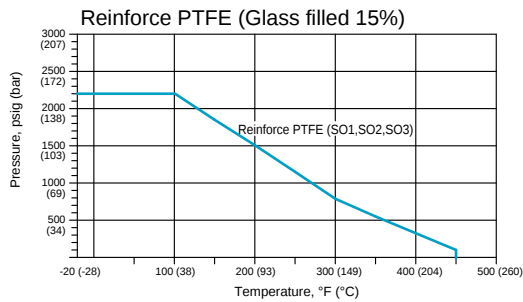
## Pressure and Temperature Rating

| Seat Material              | Valve Series         | Pressure Rating at -20 °F to 100 °F (-28 °C to 38 °C )<br>psig (bar) | Pressure Max. Temperature               |
|----------------------------|----------------------|----------------------------------------------------------------------|-----------------------------------------|
| Reinforced PTFE (Standard) | SO1B<br>SO2B<br>SO3B | 2200 (151)                                                           | 100 psig at 450 °F ( 7 bar at 232 °C )  |
| PTFE                       | SO1B<br>SO2B<br>SO3B | 1500 (103)                                                           | 100 psig at 450 °F ( 7 bar at 232 °C )  |
| UHMWPE (Polyethylene)      | SO1B                 | 3000 (206)                                                           | 250 psig at 250 °F ( 17 bar at 121 °C ) |
|                            | SO2B<br>SO3B         | 2500 (172)                                                           |                                         |
| Carbon PTFE                | SO1B<br>SO2B<br>SO3B | 2500 (172)                                                           | 100 psig at 450 °F ( 7 bar at 232 °C )  |
| PEEK                       | SO1B                 | 3000 (206)                                                           | 800 psig at 450 °F ( 55 bar at 232 °C ) |
|                            | SO2B<br>SO3B         | 2500 (172)                                                           |                                         |

### Note

Pressure rating of switching valve is 1000psig(69bar) @ -20 °F to 100 °F (-28 °C to 38 °C)

## Pressure & Temperature of Seat Material



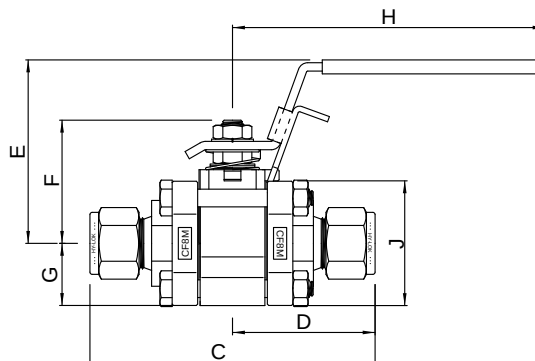
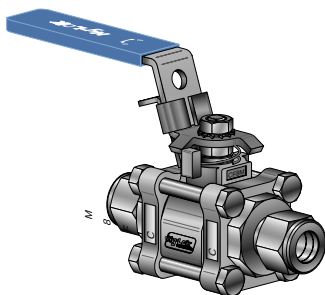
## Materials of Construction

| Description |                  | Material / ASTM Specification   |
|-------------|------------------|---------------------------------|
| * 1         | Body             | CF8M / A351                     |
| * 2         | Ball             | Type 316 / A479                 |
| * 3         | Support Ring (2) |                                 |
| * 4         | Seats (2)        | Reinforced PTFE                 |
| * 5         | Seat Spring (2)  | 17-7PH                          |
| * 6         | Flange Seal (2)  | PTFE                            |
| * 7         | Flange (2)       | CF8M / A351 or Type 316L / A479 |
| * 8         | Stem             | Type 316 / A479                 |
| * 9         | Stem Bearing     | PEEK (Polyetheretherketone)     |
| * 10        | Lower Packing    | Reinforced PTFE                 |
| * 11        | Upper Packing    |                                 |
| 12          | Packing Support  | PEEK (Polyetheretherketone)     |
| 13          | Gland            | Type 316 / A479                 |
| 14          | Stem Spring (2)  | Strain Hardened 316             |
| 15          | Stem Nut (2)     | Stainless Steel                 |
| 16          | Grounding Spring |                                 |
| 17          | Handle           |                                 |
| 18          | Locking Device   |                                 |
| 19          | Tooth Washer     | Gr. B8M / A193                  |
| 20          | Body Bolt (4)    |                                 |
| 21          | Body Nut (4)     | Gr. 8M / A194                   |

In case welding type, End connection is made of A479 TYPE 316L  
 " \* " marked are wetted parts.

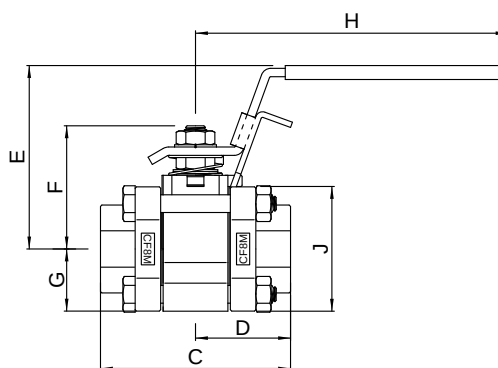
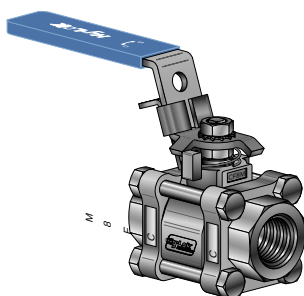
## Dimensions 2-Way (Shut-off)

### Hy-Lok Tube End Connections



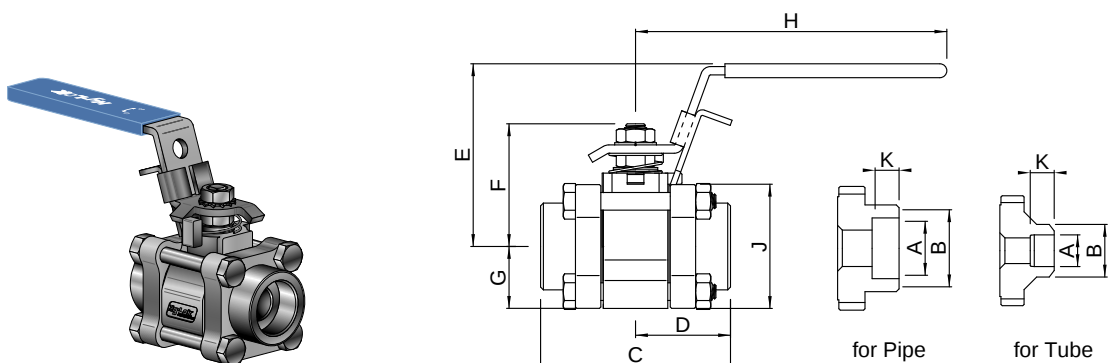
| Basic Order No. | End Connection Size | Orifice |      | Cv   | Dimensions (mm) |       |      |      |       |       |      |
|-----------------|---------------------|---------|------|------|-----------------|-------|------|------|-------|-------|------|
|                 |                     | in.     | mm   |      | C               | D     | E    | F    | G     | H     | J    |
| Fractional      |                     |         |      |      |                 |       |      |      |       |       |      |
| SO1BH- 4T       | 1/4"                | 0.188   | 4.8  | 1.2  | 80.8            | 40.40 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |
| SO1BH- 6T       | 3/8"                | 0.281   | 7.1  | 3.8  |                 |       |      |      |       |       |      |
| SO2BH- 8T       | 1/2"                | 0.411   | 10.4 | 7.5  | 103.8           | 51.90 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |
| SO2BH-12T       | 3/4"                | 0.516   | 13.1 | 13.6 |                 |       |      |      |       |       |      |
| SO3BH-16T       | 1"                  | 0.875   | 22.2 | 40.0 | 136.7           | 68.35 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |
| Metric          |                     |         |      |      |                 |       |      |      |       |       |      |
| SO1BH- 6M       | 6mm                 | 0.188   | 4.8  | 1.2  | 80.8            | 40.40 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |
| SO1BH- 8M       | 8mm                 | 0.250   | 6.4  | 2.5  |                 |       |      |      |       |       |      |
| SO1BH-10M       | 10mm                | 0.281   | 7.1  | 3.8  | 103.8           | 51.90 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |
| SO2BH-12M       | 12mm                | 0.374   | 9.5  | 7.5  |                 |       |      |      |       |       |      |
| SO3BH-25M       | 25mm                | 0.875   | 22.2 | 40.0 | 136.7           | 68.35 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |

### Female Pipe Thread End Connections



| Basic Order No.           | End Connection Size | Orifice |      | Cv   | Dimensions (mm) |       |      |      |       |       |      |
|---------------------------|---------------------|---------|------|------|-----------------|-------|------|------|-------|-------|------|
|                           |                     | in.     | mm   |      | C               | D     | E    | F    | G     | H     | J    |
| Female NPT (ASME B1.20.1) |                     |         |      |      |                 |       |      |      |       |       |      |
| SO1BF- 2N                 | 1/8" NPT            | 0.281   | 7.1  | 3.8  | 55.4            | 27.70 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |
| SO1BF- 4N                 | 1/4" NPT            |         |      |      |                 |       |      |      |       |       |      |
| SO2BF- 6N                 | 3/8" NPT            | 0.516   | 13.1 | 12.0 | 68.9            | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |
| SO2BF- 8N                 | 1/2" NPT            |         |      |      |                 |       |      |      |       |       |      |
| SO3BF-12N                 | 3/4" NPT            | 0.875   | 22.2 | 31.0 | 92.0            | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |
| SO3BF-16N                 | 1" NPT              |         |      | 38.0 |                 |       |      |      |       |       |      |
| Female ISO Tapered        |                     |         |      |      |                 |       |      |      |       |       |      |
| SO1BF- 4R                 | 1/4" ISO Tapered    | 0.281   | 7.1  | 3.8  | 55.4            | 27.70 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |
| SO2BF- 8R                 | 1/2" ISO Tapered    | 0.516   | 13.1 | 12.0 | 68.9            | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |
| SO3BF-12R                 | 3/4" ISO Tapered    | 0.875   | 22.2 | 31.0 | 92.0            | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |
| SO3BF-16R                 | 1" ISO Tapered      |         |      | 38.0 | 114.3           | 57.15 |      |      |       |       |      |

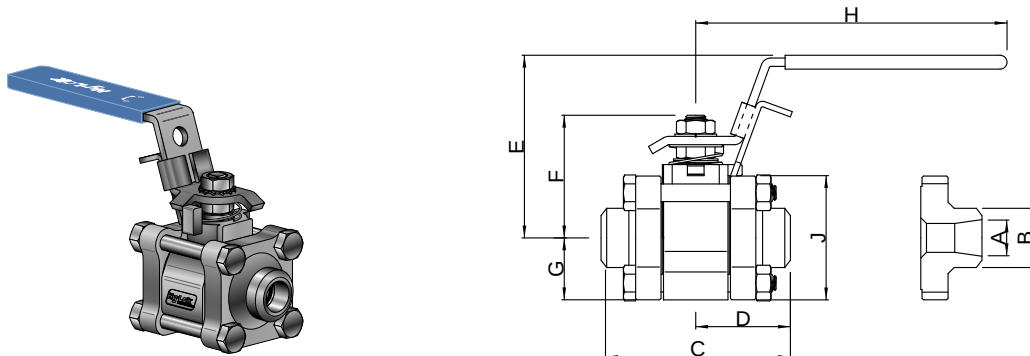
## Pipe &amp; Tube Socket Weld End Connections



## Tube Socket Weld

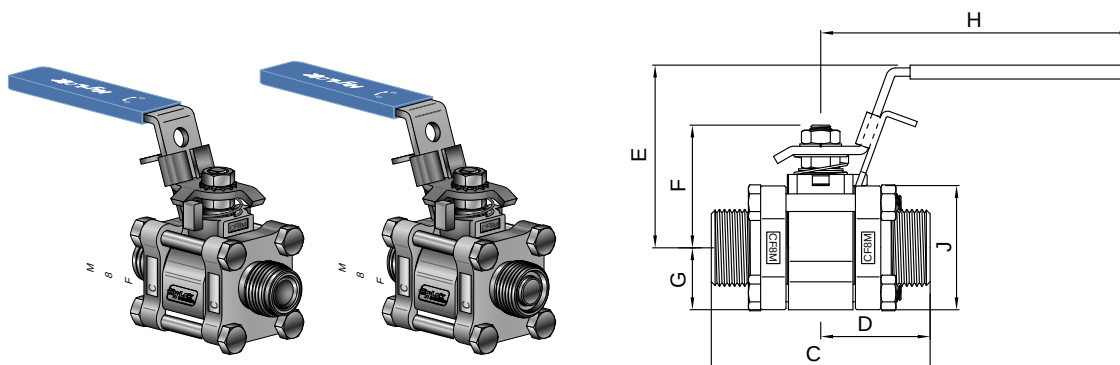
| Basic Order No.  | End Connection Size | Orifice |      | Cv   | Dimensions (mm) |       |      |       |      |      |       |       |      |      |  |
|------------------|---------------------|---------|------|------|-----------------|-------|------|-------|------|------|-------|-------|------|------|--|
|                  |                     | in.     | mm   |      | A               | B     | C    | D     | E    | F    | G     | H     | J    | K    |  |
| Tube Socket Weld |                     |         |      |      |                 |       |      |       |      |      |       |       |      |      |  |
| SO1BSW- 4T       | 1/4"                | 0.188   | 4.8  | 1.2  | 6.50            | 13.70 | 55.4 | 27.70 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 | 7.1  |  |
| SO1BSW- 6T       | 3/8"                | 0.281   | 7.1  | 3.8  | 9.70            | 17.10 |      |       |      |      |       |       |      | 7.9  |  |
| SO2BSW- 8T       | 1/2"                | 0.411   | 10.4 | 7.5  | 12.90           | 21.30 | 68.9 | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 | 9.7  |  |
| SO2BSW-12T       | 3/4"                | 0.516   | 13.1 | 13.6 | 19.20           | 26.70 |      |       |      |      |       |       |      | 11.2 |  |
| SO3BSW-16T       | 1"                  | 0.875   | 22.2 | 40.0 | 25.65           | 33.40 | 92.0 | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 | 16.0 |  |
| Pipe Socket Weld |                     |         |      |      |                 |       |      |       |      |      |       |       |      |      |  |
| SO2BSW- 8P       | 1/2"                | 0.516   | 13.1 | 15.0 | 21.80           | 31.20 | 68.9 | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 | 9.7  |  |
| SO3BSW-12P       | 3/4"                | 0.875   | 22.2 | 36.0 | 27.20           | 42.16 |      |       |      |      |       |       |      | 12.7 |  |
| SO3BSW-16P       | 1"                  |         |      | 42.0 | 33.90           | 45.30 | 92.0 | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |      |  |

## Pipe Butt Weld End Connections



| Basic Order No. | End Connection Size | Orifice |      | Cv   | Dimensions (mm) |       |      |       |      |      |       |       |      |  |
|-----------------|---------------------|---------|------|------|-----------------|-------|------|-------|------|------|-------|-------|------|--|
|                 |                     | in.     | mm   |      | A               | B     | C    | D     | E    | F    | G     | H     | J    |  |
| Schedule 10     |                     |         |      |      |                 |       |      |       |      |      |       |       |      |  |
| SO1BBW- 4P-S10  | 1/4"                | 0.188   | 4.8  | 1.2  | 10.40           | 13.70 | 52.4 | 26.20 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |  |
| SO2BBW- 8P-S10  | 1/2"                | 0.516   | 13.1 | 15.0 | 17.10           | 21.30 | 68.9 | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |  |
| SO3BBW-12P-S10  | 3/4"                | 0.875   | 22.2 | 36.0 | 22.45           | 26.67 | 92.0 | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |  |
| SO3BBW-16P-S10  | 1"                  |         |      | 40.0 | 27.90           | 33.40 | 88.9 | 44.45 |      |      |       |       |      |  |
| Schedule 40     |                     |         |      |      |                 |       |      |       |      |      |       |       |      |  |
| SO1BBW- 4P-S40  | 1/4"                | 0.188   | 4.8  | 1.2  | 9.20            | 13.70 | 52.4 | 26.20 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |  |
| SO2BBW- 8P-S40  | 1/2"                | 0.516   | 13.1 | 15.0 | 15.80           | 21.30 | 68.9 | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |  |
| SO3BBW-12P-S40  | 3/4"                | 0.875   | 22.2 | 36.0 | 20.93           | 26.67 | 92.0 | 46.00 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |  |
| SO3BBW-16P-S40  | 1"                  |         |      | 40.0 | 26.60           | 33.40 | 88.9 | 44.45 |      |      |       |       |      |  |
| Schedule 80     |                     |         |      |      |                 |       |      |       |      |      |       |       |      |  |
| SO1BBW- 4P-S80  | 1/4"                | 0.188   | 4.8  | 1.2  | 7.70            | 13.70 | 52.4 | 26.20 | 47.7 | 31.8 | 16.75 | 57.2  | 33.0 |  |
| SO1BBW- 6P-S80  | 3/8"                | 0.281   | 7.1  | 3.8  | 10.70           | 17.10 |      |       |      |      |       |       |      |  |
| SO2BBW- 8P-S80  | 1/2"                | 0.411   | 10.4 | 7.5  | 13.90           | 21.30 | 68.9 | 34.45 | 64.8 | 44.2 | 22.25 | 111.0 | 44.5 |  |
| SO2BBW-12P-S80  | 3/4"                | 0.516   | 13.1 | 13.6 | 18.80           | 26.70 |      |       |      |      |       |       |      |  |
| SO3BBW-16P-S80  | 1"                  | 0.875   | 22.2 | 40.0 | 23.90           | 33.40 | 88.9 | 44.45 | 79.0 | 61.9 | 31.00 | 149.4 | 62.0 |  |

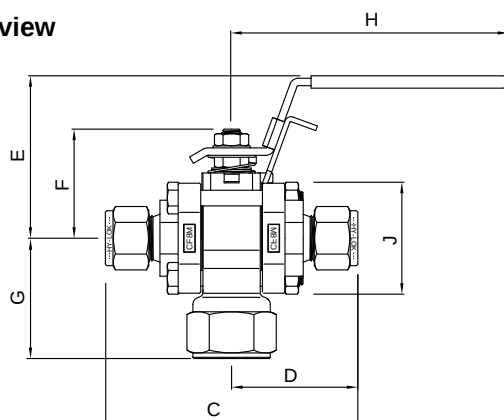
## Zero Clearance Face Seal End Connections



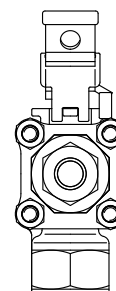
| Basic Order No.        | End Connection Size | Orifice |      | Cv  | Dimensions (mm) |      |      |      |       |        |      |
|------------------------|---------------------|---------|------|-----|-----------------|------|------|------|-------|--------|------|
|                        |                     | in.     | mm   |     | C               | D    | E    | F    | G     | H      | J    |
| O-Ring Face Seal       |                     |         |      |     |                 |      |      |      |       |        |      |
| SO1BZCO-4              | 1/4" ZCO            | 0.188   | 4.8  | 1.2 | 66.6            | 33.3 | 47.7 | 31.8 | 16.75 | 57.15  | 33.0 |
| SO2BZCO-8              | 1/2" ZCO            | 0.411   | 10.4 | 7.5 | 82.8            | 41.4 | 64.8 | 44.2 | 22.25 | 111.00 | 44.5 |
| Metal Gasket Face Seal |                     |         |      |     |                 |      |      |      |       |        |      |
| SO1BZCR-4              | 1/4" ZCR            | 0.188   | 4.8  | 1.2 | 63.6            | 31.8 | 47.7 | 31.8 | 16.75 | 57.15  | 33.0 |
| SO2BZCR-8              | 1/2" ZCR            | 0.406   | 10.3 | 7.5 | 92.0            | 46.0 | 64.8 | 44.2 | 22.25 | 111.00 | 44.5 |

## 3-Way (Switching)

Front view



Side view

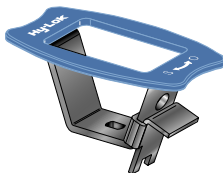


| Basic Order No.           | End Connection Size | Orifice |      | Dimensions (mm) |       |      |      |      |       |      |
|---------------------------|---------------------|---------|------|-----------------|-------|------|------|------|-------|------|
|                           |                     | in.     | mm   | C               | D     | E    | F    | G    | H     | J    |
| Hy-Lok Tube Connections   |                     |         |      |                 |       |      |      |      |       |      |
| SO1B3H-4T                 | 1/4"                | 0.188   | 4.8  | 80.8            | 40.40 | 47.7 | 31.8 | 43.6 | 57.2  | 33.0 |
| SO1B3H-6T                 | 3/8"                | 0.281   | 7.1  |                 |       |      |      | 44.5 |       |      |
| SO2B3H-8T                 | 1/2"                | 0.411   | 10.4 | 103.8           | 51.90 | 64.8 | 44.2 | 59.0 | 111.0 | 44.5 |
| SO2B3H-12T                | 3/4"                | 0.516   | 13.1 |                 |       |      |      |      |       |      |
| SO3B3H-16T                | 1"                  | 0.812   | 20.6 | 136.7           | 68.35 | 79.0 | 61.9 | 74.9 | 149.4 | 62.0 |
| Female NPT (ASME B1.20.1) |                     |         |      |                 |       |      |      |      |       |      |
| SO1B3F- 4N                | 1/4" NPT            | 0.281   | 7.1  | 55.4            | 27.70 | 47.7 | 31.8 | 36.5 | 57.2  | 33.0 |
| SO2B3F- 8N                | 1/2" NPT            | 0.516   | 13.1 | 68.9            | 34.45 | 64.8 | 44.2 | 49.0 | 111.0 | 44.5 |
| SO3B3F-12N                | 3/4" NPT            | 0.812   | 20.6 | 92.0            | 46.00 | 79.0 | 61.9 | 62.5 | 149.4 | 62.0 |
| SO3B3F-16N                | 1" NPT              |         |      |                 |       |      |      |      |       |      |
| Female ISO Tapered        |                     |         |      |                 |       |      |      |      |       |      |
| SO1B3F- 4R                | 1/4" ISO Tapered    | 0.281   | 7.1  | 55.4            | 27.70 | 47.7 | 31.8 | 36.5 | 57.2  | 33.0 |
| SO2B3F- 8R                | 1/2" ISO Tapered    | 0.516   | 13.1 | 68.9            | 34.45 | 64.8 | 44.2 | 49.0 | 111.0 | 44.5 |
| SO3B3F-12R                | 3/4" ISO Tapered    | 0.812   | 20.6 | 92.0            | 46.00 | 79.0 | 61.9 | 62.5 | 149.4 | 62.0 |
| SO3B3F-16R                | 1" ISO Tapered      |         |      | 114.3           | 57.15 |      |      |      |       |      |

## Option

### Oval Handle

Oval handle as an option.  
For the ordering number of the oval handle, refer to the ordering information (page 8)



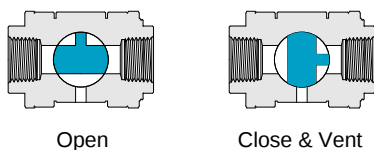
### Vent Option

2-way valve is available with both internal or external vent and down stream or upstream vent

- Ball design for internal & external vent



- Downstream & Upstream vent



For the ordering number of downstream & upstream, refer to the ordering information (page 8)

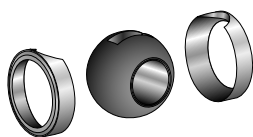
### Sour Gas Service

Valves are available in materials which comply with standard NACE MR-01-75 latest revision relating to metallic materials offering optimum resistance to sulfide stress cracking

### Low Dead Space Inserts

2-Way is available with low dead space inserts.  
It prevents fluid entrapment around the ball and stem during operation.

Low dead space insert is made of reinforced PTFE.  
Not suitable for steam, thermal and fire service.



Ordering Number  
KIT- \*\*\*\* -LDSI

- \* For a complete ordering number, insert the desired series designator as a suffix to the Low dead space insert kit basic ordering number.  
e.g : KIT-SO2B-LDSI

### Mounting Bracket

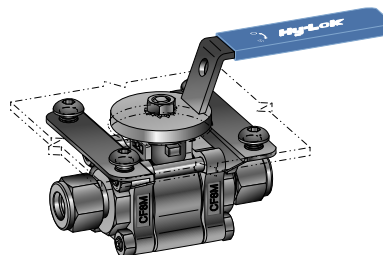
panel mounting kit contains panel mounting bracket, body bolt for mounting, Round hex. socket head screw, cover plate.

- Horizontal and vertical mounting
- SO1B series - 3/16 in. (4.8mm)
- SO2B, SO3B series - 1/4 in. (6.4mm)
- Templates for panel drilling will be supplied.

Ordering Number

KIT- \*\*\*\* -PNM

- \* For a complete ordering number, insert the desired series designator as a suffix to the panel mounting kit basic ordering number. e.g : KIT-SO2B-PNM



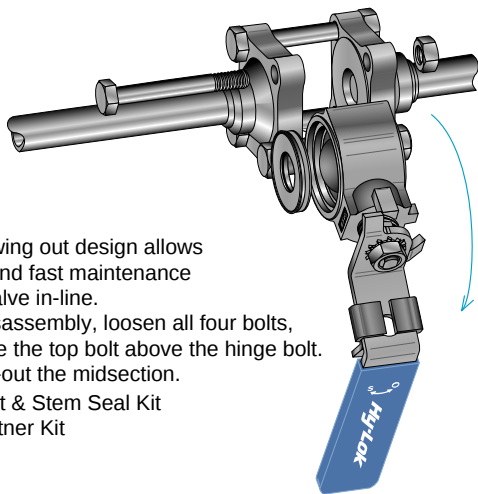
### Actuator

So Series Ball Valves are available with Pneumatic Actuator and Electric Actuator.

So Series Ball Valves can be supplied with Actuator and Mounting Bracket used to connect Valves to Actuators.

For Actuator option, contact your local distributors.

## Maintenance kits



The swing out design allows easy and fast maintenance with valve in-line.

For disassembly, loosen all four bolts, remove the top bolt above the hinge bolt. Swing-out the midsection.

- Seat & Stem Seal Kit
- Fastner Kit

## Seat & Stem Seal Kits

Seat & stem seal kits contain components as below.

| Basic Ordering No. | Seat Material | Component                                                                                         |
|--------------------|---------------|---------------------------------------------------------------------------------------------------|
| KIT- **** -SEAL    | RTFE          | Seats, Seat springs, Support rings, End Packing, Stem bearings, Packings, Packing supports, Gland |
|                    | PTFE          |                                                                                                   |
|                    | RTFC          |                                                                                                   |
|                    | PEEK          |                                                                                                   |
|                    | UHMW          |                                                                                                   |

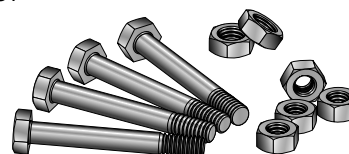
\* For a complete ordering number, insert the desired series designator as a suffix to the seal kit basic ordering number  
e.g : KIT-SO2B-SEAL / RTFC (Vee tip, Carbon filled seat)

## Fastner Kits

Fastner kit contains valve component as below.

| Basic Ordering No. | Bolt Material | Component                   |
|--------------------|---------------|-----------------------------|
| KIT- **** -FST     | B8M           | 4-Hex. bolt & Nut, Stem nut |

\* For a complete ordering number, insert the desired series designator as a suffix to the fastner kit basic ordering number  
e.g : KIT-SO2B-FST



## Ordering Information

| SO2B                                                                                                     | 3   | H                                                                                                                                                                                                                                    | 8T | PK                                                                                                                                                                                                                                                                                                                                                                                                             | M                     | O                                                                               | DV | SOG                                                                                                 | S316 |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------|------|---------------|-----------------------|-----------------------------------------|-----|-----|----|----|--------|----|---|-----|-----|----|----|--------|----|---|--|--|--|--|
| <b>Valve Series Designator</b><br>SO1B - 7.1mm Orifice<br>SO2B - 13.1mm Orifice<br>SO3B - 22.2mm Orifice |     | <b>Body Pattern Designator</b><br>• Nil - Straight (Standard)<br>• 3 - Switching                                                                                                                                                     |    | <b>Panel Mounting Option*</b><br>• Nil - without<br>• M - with                                                                                                                                                                                                                                                                                                                                                 |                       | <b>Handle Option*</b><br>• Nil - Lever (standard)<br>• O - Oval with stop plate |    | <b>Body Material Designator</b><br>• S316 - Stainless Steel A351 CF8M                               |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     | <b>End Connection Designator</b><br>• H - Hy-Lok Tube Fittings<br>• F - Female Thread<br>• M - Male Thread<br>• SW - Socket Weld<br>• BW - Butt Weld<br>• ZCO - O-Ring Face Seal Fittings<br>• ZCR - Metal Gasket Face Seal Fittings |    | <b>Seat Material Designator*</b><br>• Nil-Reinforce PTFE(Standard)<br>• PK-PEEK<br>• RC-Carbon PTFE<br>• UH-UHMWPE                                                                                                                                                                                                                                                                                             |                       | <b>Sour Gas Option*</b><br>• Nil - without (standard)<br>• SOG - NACE MR-01-75  |    | <b>Vent Option*</b><br>• Nil - without (standard)<br>• DV - Downstream vent<br>• UV - Upstream vent |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    | <b>Size Designator</b>                                                                                                                                                                                                                                                                                                                                                                                         |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    | <table><tr><th colspan="2">Size</th><th colspan="2">Hy-Lok Tube Fitting &amp; Tube Socket Weld</th><th>NPT (ISO/BSP)</th><th>Pipe Socket/Butt Weld</th><th>ZCO O-Ring &amp; ZCR Metal Gasket Face Seal</th></tr><tr><td>1/8</td><td>3mm</td><td>2T</td><td>3M</td><td>2N (R)</td><td>2P</td><td>-</td></tr><tr><td>1/4</td><td>6mm</td><td>4T</td><td>6M</td><td>4N (R)</td><td>4P</td><td>4</td></tr></table> |                       | Size                                                                            |    | Hy-Lok Tube Fitting & Tube Socket Weld                                                              |      | NPT (ISO/BSP) | Pipe Socket/Butt Weld | ZCO O-Ring & ZCR Metal Gasket Face Seal | 1/8 | 3mm | 2T | 3M | 2N (R) | 2P | - | 1/4 | 6mm | 4T | 6M | 4N (R) | 4P | 4 |  |  |  |  |
| Size                                                                                                     |     | Hy-Lok Tube Fitting & Tube Socket Weld                                                                                                                                                                                               |    | NPT (ISO/BSP)                                                                                                                                                                                                                                                                                                                                                                                                  | Pipe Socket/Butt Weld | ZCO O-Ring & ZCR Metal Gasket Face Seal                                         |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
| 1/8                                                                                                      | 3mm | 2T                                                                                                                                                                                                                                   | 3M | 2N (R)                                                                                                                                                                                                                                                                                                                                                                                                         | 2P                    | -                                                                               |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
| 1/4                                                                                                      | 6mm | 4T                                                                                                                                                                                                                                   | 6M | 4N (R)                                                                                                                                                                                                                                                                                                                                                                                                         | 4P                    | 4                                                                               |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
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|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |
|                                                                                                          |     |                                                                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                 |    |                                                                                                     |      |               |                       |                                         |     |     |    |    |        |    |   |     |     |    |    |        |    |   |  |  |  |  |

**Note** \*: No designator is required for standard  
e.g. SO2B3H-8T - S316

## SAFETY in VALVE SELECTION

Proper installation, materials compatibility, operation and maintenance of these valves is the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety