

## DN 15–200/NPS ½”–10” full port, NPS 5”–10” reduced port

Ideally suited for positive shut-off, flow control and throttling of corrosive or even toxic process media in either liquid or gaseous state.

### Modular Design

Ball Valves SBV Series are available as DIN- or ANSI-valves, with hand lever for manual quarter turn operation as per standard or with bare shaft for easy installation of actuator units.

The sturdy design bodies are made of cast steel 1.0619 (WCB), RAL 5005 signal-blue epoxy-coated or stainless steel 1.4408 (CF8M), with corrosion resistant linings such as PFA or PFA-AS (conductive).



**CE** Conformity according to European Pressure Equipment Directive 2014/68/EU (PED)

### Main Features

- Heavy-duty, robust construction, maintenance-free
- Body halves metal-to-metal (Live-loaded)
- Bubble-tight shut-off throughout the full pressure and temperature range
- One-piece ball/shaft, PFA-encapsulated
- Zero stem leakage provided by a dynamic (Live-loaded) stem sealing mechanism
- Consistent low operating torque
- Maximum flow rates at lowest pressure drops
- Integrated ISO top flange for standard actuators
- Flanges acc. to EN 1092-1, PN 16/40 or ASME B16.5, CL 150
- TA Luft VDI 2440, ISO 15848-1
- FDA compliant

### Example



#### Automated

Body 1.0619 (WCB)/PFA-lined,  
pneumatic quarter turn actuator, FC/FO or DA

Further options on request



#### Stainless Steel

Body 1.4408 (CF8M)/PFA-AS lined, bare shaft



#### Padlock

Hand lever on ISO top flange  
with safety lock

## Operating Conditions

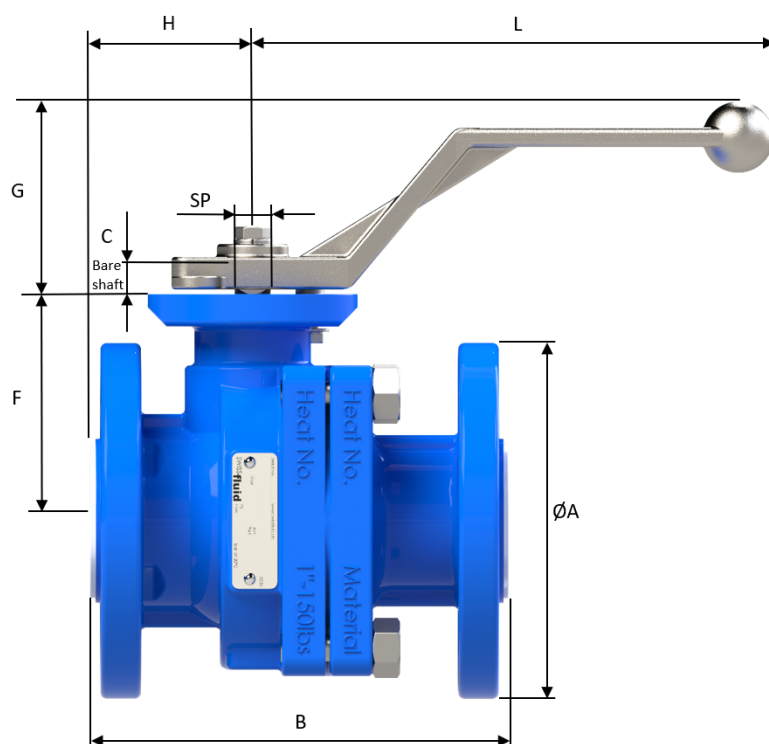
- Temperature ranges from  $-40^{\circ}\text{C}$  up to  $+200^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  up to  $+400^{\circ}\text{F}$ ), depending on lining material
- Pressure ranges from 1 mbar up to 16 bar (0.01 psi up to 232 psi), depending on size/temperature

## Testing/Marking

- Pressure- and tightness testing acc. to EN 12266-1, leakage rate A, resp. API 598
- Marking of valves on body and name plate acc. to EN 19
- Live loaded, maintenance free stem seal TA Luft VDI 2440, ISO 15848-1
- Material- resp. test certificates acc. to EN 10204-3.1/2.2/2.1

## Manual Valve

Standard version with hand lever



Dimensions in mm (lbs = kg x 2.2)

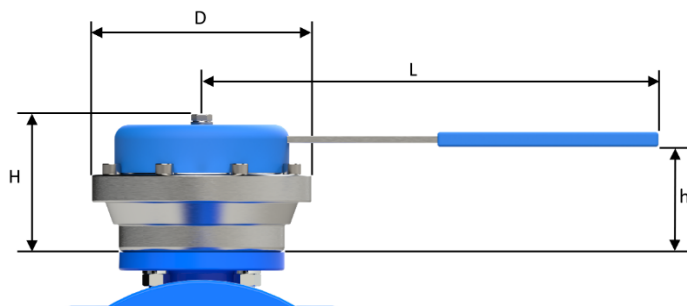
| DN/NPS    | ØA  | B   | ØA   | B   | C  | SP | ISO | F   | H     | kg   |      | G  | L   | kg     |
|-----------|-----|-----|------|-----|----|----|-----|-----|-------|------|------|----|-----|--------|
| Size nom. | DIN |     | ANSI |     |    |    |     |     |       | DIN  | ANSI |    |     | Handle |
| 15/1/2"   | 95  | 130 | 90   | 130 | 11 | 11 | F05 | 64  | 50    | 3.9  | 3.9  | 58 | 161 | 0.32   |
| 20/3/4"   | 105 | 150 | 100  | 150 | 11 | 11 | F05 | 66  | 50    | 4.7  | 4.2  | 58 | 161 | 0.32   |
| 25/1"     | 115 | 160 | 110  | 127 | 11 | 11 | F05 | 70  | 50    | 5.3  | 4.7  | 58 | 161 | 0.32   |
| 32/1 1/4" | 140 | 180 | 117  | 180 | 11 | 11 | F05 | 75  | 60    | 7    | 6.1  | 58 | 161 | 0.32   |
| 40/1 1/2" | 150 | 200 | 125  | 165 | 15 | 14 | F07 | 87  | 64    | 10   | 8.3  | 58 | 211 | 0.36   |
| 50/2"     | 165 | 230 | 150  | 178 | 15 | 14 | F07 | 94  | 71    | 13.2 | 11.3 | 58 | 211 | 0.36   |
| 65/2 1/2" | 185 | 290 | 180  | 190 | 15 | 14 | F07 | 106 | 77    | 16.8 | 15   | 58 | 315 | 0.41   |
| 80/3"     | 200 | 310 | 190  | 203 | 15 | 14 | F07 | 115 | 81    | 24   | 21   | 58 | 315 | 0.41   |
| 100/4"    | 220 | 350 | 230  | 229 | 17 | 17 | F10 | 130 | 92    | 33   | 33   | 62 | 315 | 0.90   |
| 150/6"    | 285 | 480 | 280  | 267 | 22 | 22 | F12 | 189 | 240   | 78   | 68   | -  | -   | -      |
| 200/8"    | 340 | 600 | 343  | 457 | 35 |    | F14 | 235 | 225.5 | 143  | 145  | -  | -   | -      |
| 10"       | -   | -   | 406  | 533 | 60 |    | F16 | 305 | 266   | -    | 303  | -  | -   | -      |
| 125/5" RP | 250 | 400 | 254  | 254 | 17 | 17 | F10 | 130 | 103   | -    | -    | 62 | 315 | 0.90   |
| 6" RP     | -   | -   | 280  | 267 | 17 | 17 | F10 | 130 | 112   | -    | 64   | 62 | 315 | 0.90   |
| 8" RP     | -   | -   | 340  | 292 | 30 | 22 | F12 | 189 | 200   | -    | 83   | -  | -   | -      |
| 10" RP    | -   | -   | 406  | 330 | 35 |    | F14 | 235 | 162   | -    | 160  | -  | -   | -      |

Face to face B acc. to DIN EN 558-1 range 1 resp. ASME B16.10

RP=reduced

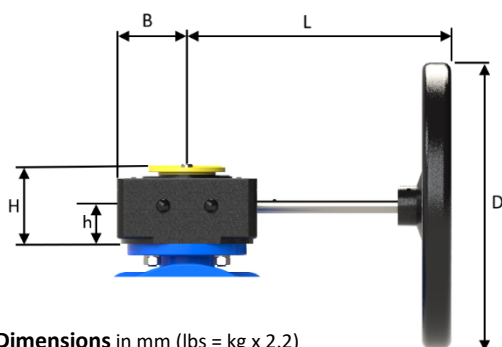
## Manual Valve

Versions with spring return hand lever or manual gearbox. **Note:** Gearbox mounted perpendicular to pipeline.



Dimensions in mm (lbs = kg x 2.2)

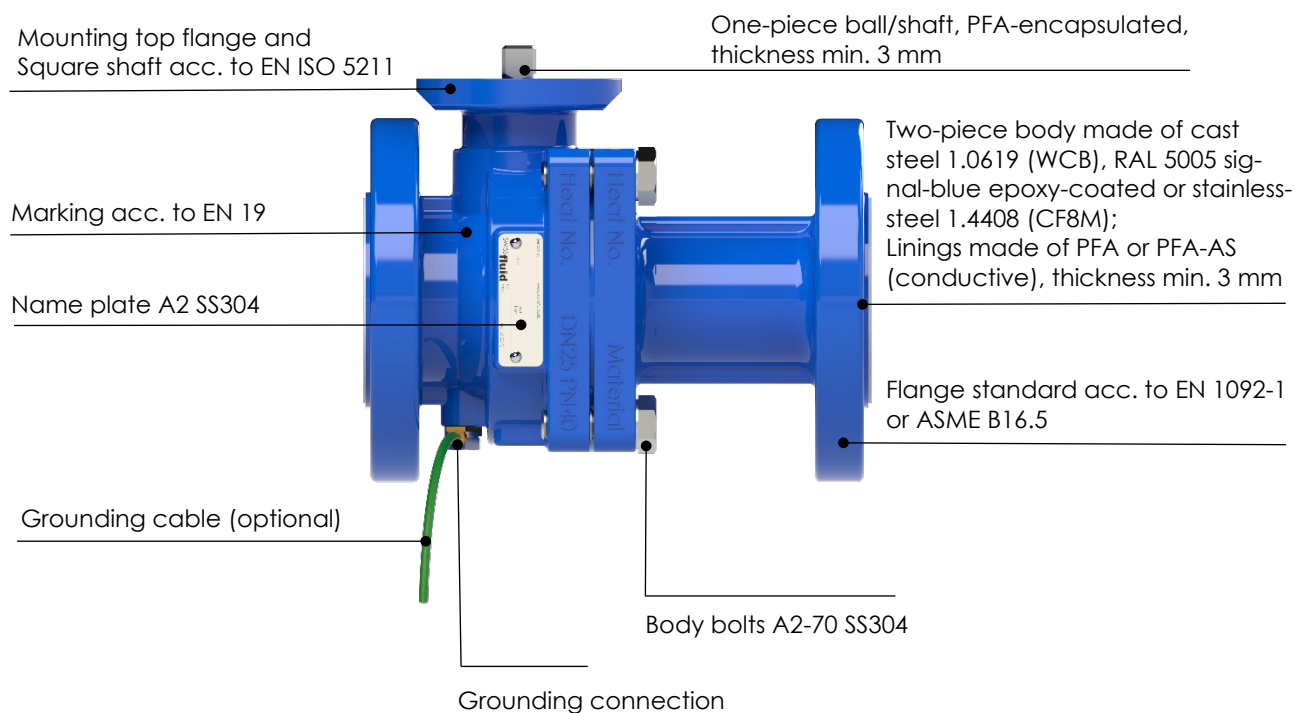
| DN/NPS<br>Size nom. | L   | H  | h  | D   | kg<br>Spring Return<br>Handlever |
|---------------------|-----|----|----|-----|----------------------------------|
| 15/1/2"             | 248 | 74 | 57 | 119 | 2.5                              |
| 20/3/4"             | 248 | 74 | 57 | 119 | 2.5                              |
| 25/1"               | 248 | 74 | 57 | 119 | 2.5                              |
| 32/1 1/4"           | 248 | 74 | 57 | 119 | 2.5                              |
| 40/1 1/2"           | 248 | 74 | 57 | 119 | 2.5                              |
| 50/2"               | 248 | 74 | 57 | 119 | 2.5                              |



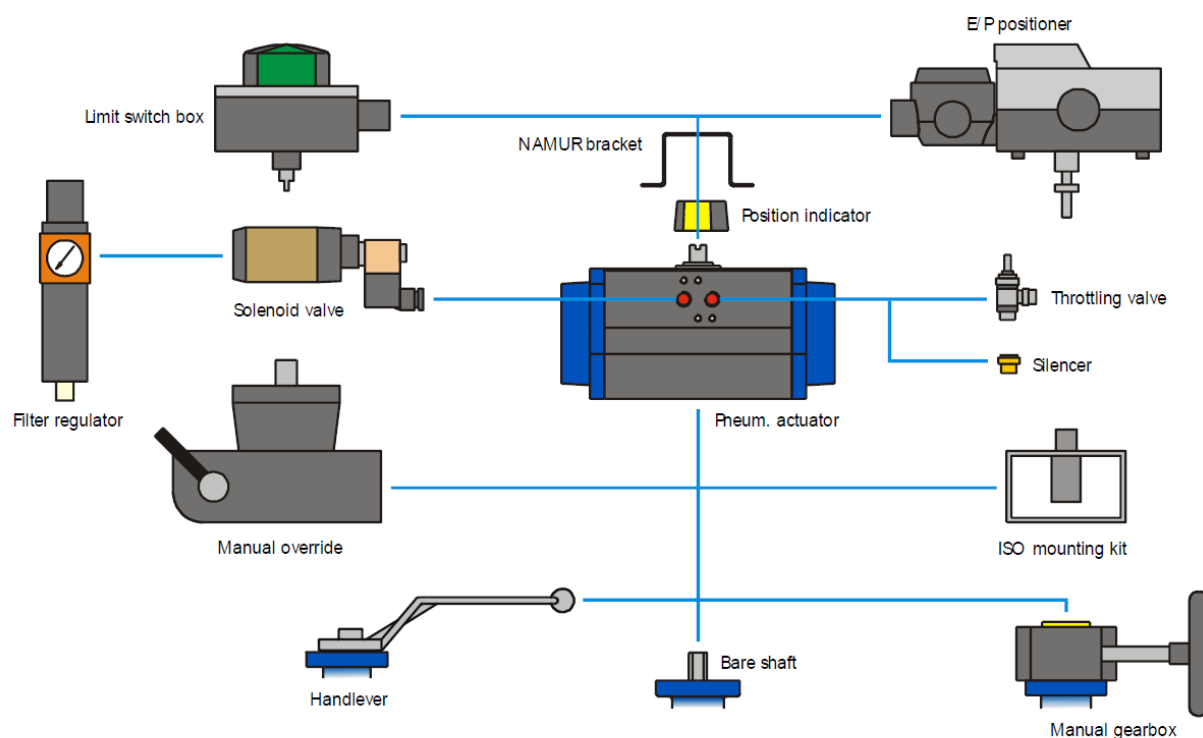
Dimensions in mm (lbs = kg x 2.2)

| DN/NPS<br>Size nom. | L   | B   | H   | h    | D   | kg<br>Manual gearbox |
|---------------------|-----|-----|-----|------|-----|----------------------|
| 15/1/2"             | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 20/3/4"             | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 25/1"               | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 32/1 1/4"           | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 40/1 1/2"           | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 50/2"               | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 65/2 1/2"           | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 80/3"               | 148 | 42  | 64  | 28.5 | 125 | 2.7                  |
| 100/4"              | 220 | 56  | 75  | 34   | 200 | 4.8                  |
| 150/6"              | 288 | 68  | 91  | 43   | 300 | 9                    |
| 200/8"              | 323 | 90  | 100 | 50   | 400 | 16.5                 |
| 10"                 | 383 | 141 | 128 | 55   | 400 | 33.5                 |
| 125/5" RP           | 220 | 56  | 75  | 34   | 200 | 4.8                  |
| 6" RP               | 220 | 56  | 75  | 34   | 200 | 4.8                  |
| 8" RP               | 288 | 68  | 91  | 43   | 300 | 9                    |
| 10" RP              | 323 | 90  | 100 | 50   | 400 | 16.5                 |

## Construction of Valve

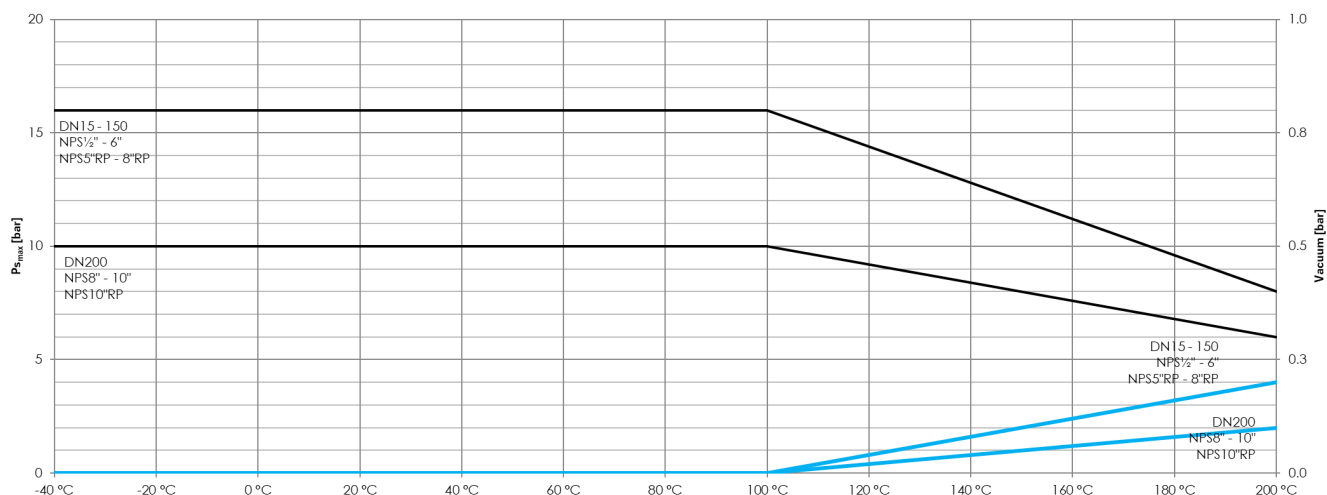


## Mounting Options



## Pressure-/Temperature Diagram for PFA/PFA-AS

Low temperature or austenitic steels are required for use below -10 °C operating temperature



## Torque Values in Nm (in-lbs = Nm x 8.85)

Max. torque values for PFA-encapsulated balls and PFA-lined bodies

| DN          | 15  | 20  | 25  | 32  | 40  | 50  | 65  | 80  | 100          | 150     | 200      | 250   |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|--------------|---------|----------|-------|
| NPS         | ½"  | ¾"  | 1"  | 1¼" | 1½" | 2"  | 2½" | 3"  | 4"/5"RP/6"RP | 6"/8"RP | 8"/10"RP | 10"   |
| Torque nom. | 8   | 8   | 12  | 18  | 23  | 30  | 50  | 65  | 95           | 240     | 600      | 1'200 |
| max allow.  | 145 | 145 | 145 | 145 | 145 | 206 | 320 | 320 | 700          | 1'200   | 5'500    | 4'000 |

Stated values to be break-away torques without any consideration of safety factors (min. 1.3) for pneum. Actuators

## Flow Rate Values Kv m<sup>3</sup>/h (Cv = Kv x 1.16)

| DN        | 15 | 20 | 25 | 32  | 40  | 50  | 65  | 80  | 100          | 150     | 200      | 250   |
|-----------|----|----|----|-----|-----|-----|-----|-----|--------------|---------|----------|-------|
| NPS       | ½" | ¾" | 1" | 1¼" | 1½" | 2"  | 2½" | 3"  | 4"/5"RP/6"RP | 6"/8"RP | 8"/10"RP | 10"   |
| Flow Rate | 16 | 31 | 50 | 85  | 120 | 183 | 370 | 530 | 830          | 2'000   | 3'400    | 4'700 |

## Options

### V-Port-Ball

DN 15–150/NPS ½"–6"

Suitable for control applications, with various contours



### Cs-Ball

DN 15–150/NPS ½"–6"

To prevent media residues inside ball cavity, for full drainage



### C-Ball

DN 15–50/NPS ½"–2"



### Vented Ball

DN 15–150/NPS ½"–6"

With drilled vent hole, suited for upstream pressure relief



## Typical Service Applications

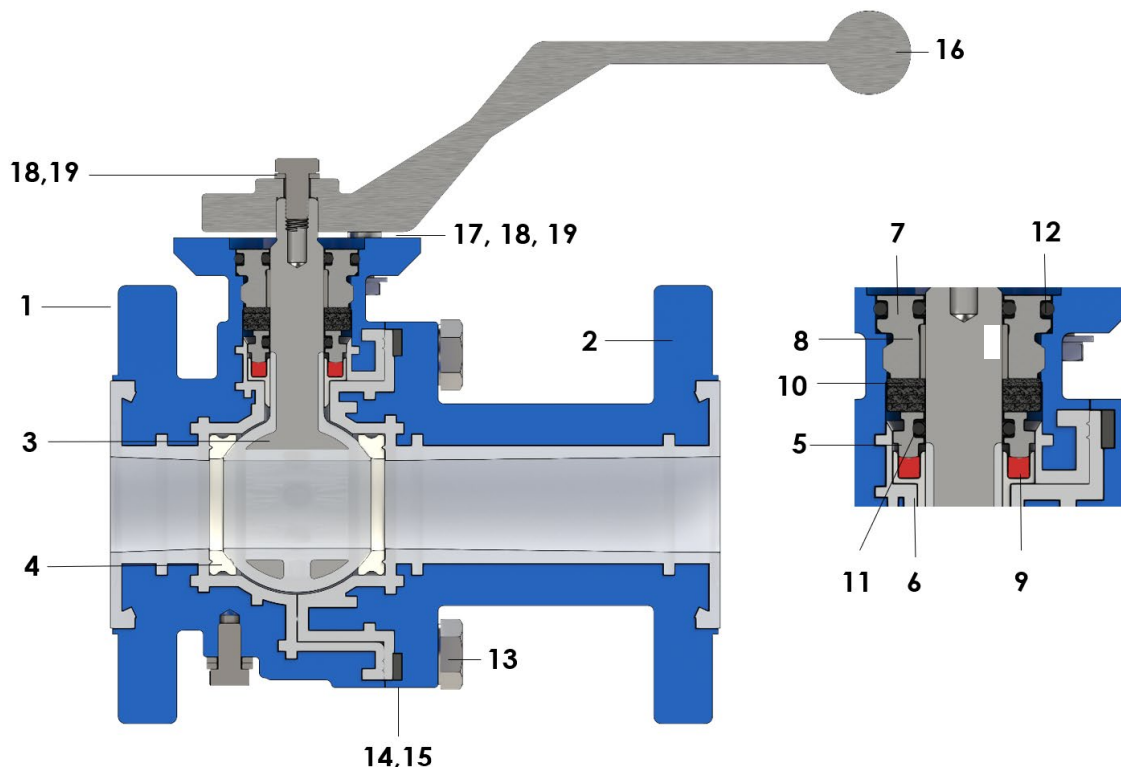
- Chemical
- Petro-Chemical
- Bio-Technical
- Pharmaceutical industry
- Pulp and paper
- Food processing
- Paint and pigments
- Fertilizers
- Textile industry
- Mining and steel
- Water treatment
- ...

Special trims upon request

**Standard Version** (Picture showing valve DN 50, WCB, PFA-lined, with hand lever)

Parts list

Manual valve compl.



| Item | Qty. | Description                        | Material<br>Description | Material No.<br>DIN 17440/41 |
|------|------|------------------------------------|-------------------------|------------------------------|
| 1    | 1    | Body half left, lined, RAL 5005    | WCB/PFA                 | 1.0619                       |
| 2    | 1    | Body half right, lined, RAL 5005   | WCB/PFA                 | 1.0619                       |
| 3    | 1    | Ball/Shaft one-piece, encapsulated | Duplex/PFA              | 1.4469                       |
| 4    | 2    | Ball seat                          | PTFE                    |                              |
| 5    | 1    | Pressure sleeve                    | SS316L                  | 1.4404                       |
| 6    | 1    | Sealing sleeve                     | PTFE                    |                              |
| 7    | 1    | Threaded bushing                   | SS316L                  | 1.4404                       |
| 8    | 1    | Bearing                            | C.Steel/PTFE            |                              |
| 9    | 1    | Elastomer insert                   | VMQ                     |                              |
| 10   | 4    | Belleville spring                  | Spring Steel            | 1.8159                       |
| 11   | 2    | O-ring                             | FPM                     |                              |
| 12   | 1    | O-ring                             | FPM                     |                              |
| 13   | 4    | Hex. head cap screw                | A2-70                   | 1.4310                       |
| 14   | 1    | Name plate                         | A2                      | 1.4301                       |
| 15   | 2    | Hammer screw                       | A2                      | 1.4310                       |
| 16   | 1    | Hand lever                         | SS304                   | 1.4308                       |
| 17   | 1    | Stop                               | SS316L                  | 1.4404                       |
| 18   | 2    | Hex. head cap screw                | A2-70                   | 1.4310                       |
| 19   | 2    | Lock washer                        | SS304                   | 1.4310                       |

## Specification

### Project-/Customer Data

Inquiry/Date:

Ref. SF

|            |                 |         |
|------------|-----------------|---------|
| Project    | Contact person: | Phone:  |
| Company:   | Function:       | E-mail: |
| Address:   | Department:     | Mobile: |
| ZIP/Place: | Phone direct:   |         |

## Operating Conditions

### Media/Chemical Composition:

|                                   |                                           |                                        |                                                            |                                           |
|-----------------------------------|-------------------------------------------|----------------------------------------|------------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Liquid   | <input type="checkbox"/> Powdery          | <input type="checkbox"/> Crystallizing | <input type="checkbox"/> Sticky                            | <input type="checkbox"/> Spec. Grav. ____ |
| <input type="checkbox"/> Gaseous  | <input type="checkbox"/> Solids ____ %    | <input type="checkbox"/> Viscous       | <input type="checkbox"/> Flow velocity ____ m/s            |                                           |
| <input type="checkbox"/> Abrasive | <input type="checkbox"/> Particle ____ mm | <input type="checkbox"/> Visc. ____ cp | <input type="checkbox"/> Flow rate ____ m <sup>3</sup> /hr |                                           |

### Pressure

max. \_\_\_\_ bar

min. \_\_\_\_ bar

### Temperature

max. \_\_\_\_ °C

min. \_\_\_\_ °C

### Mode

☐ On/Off

☐ Flow control

\_\_\_\_ Cycles/ \_\_\_\_

### Installation/Environment

☐ Horizontal

☐ Vertical

☐ \_\_\_\_

☐ Room dry

☐ Room humid

☐ Outdoor

Remarks:

## SBV Product Code

Specification of a complete Ball Valve SBV Series

| Product code | Nom. size                                 | Flange conn.                                   | Body                | Lining body                                   | Elastomer                                  | Ball Encaps./solid                                                                                            | Shaft end                       | Options                                                                                                                                                                                                   |
|--------------|-------------------------------------------|------------------------------------------------|---------------------|-----------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SBV</b>   |                                           |                                                |                     |                                               |                                            |                                                                                                               |                                 |                                                                                                                                                                                                           |
|              | DN 15–200<br>NPS ½"–10"<br>NPS 5"RP–10"RP | PN10<br>PN16<br>PN40<br>Class 150<br>Class 300 | G10 WCB<br>G15 CF8M | A85 PFA<br>A86 PFA-AS<br>A88 PVDF<br>A91 ETFE | E60 EPDM<br>E67 FPM<br>E68 VMQ<br>E72 FFKM | U85 PFA<br>U86 PFA-AS<br>U88 PVDF<br>U91 ETFE<br>S40 Ti. Gr.2<br>S41 Ti. Gr.7<br>S43 Alloy 276<br>Z00 Ceramic | SP Square parallel<br>KB Keyway | HL Hand lever<br>Vp15 15° V-port<br>Vp30 30° V-port<br>Vp45 45° V-port<br>Vp60 60° V-port<br>Cs Cs-Ball<br>C C-Ball<br>Vh Vented Ball<br>B7 B7 body bolts<br>RAL... Special coating<br>GC Grounding Cable |

**Note:** Actuator options and accessories to be specified on orders separately