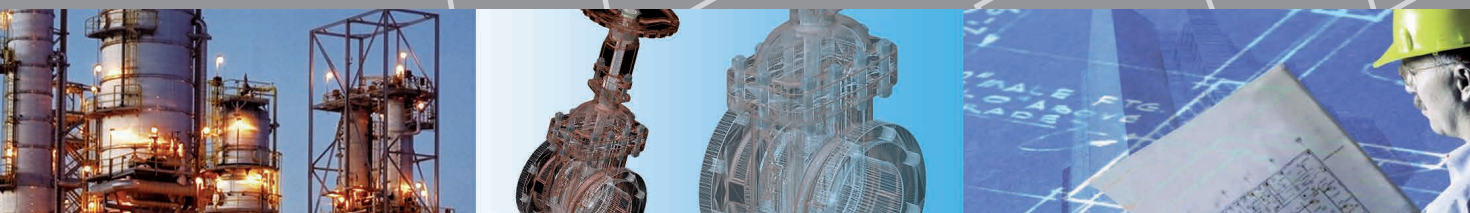


# Uniflow®



## UNIFLOW VALVES & STRAINERS



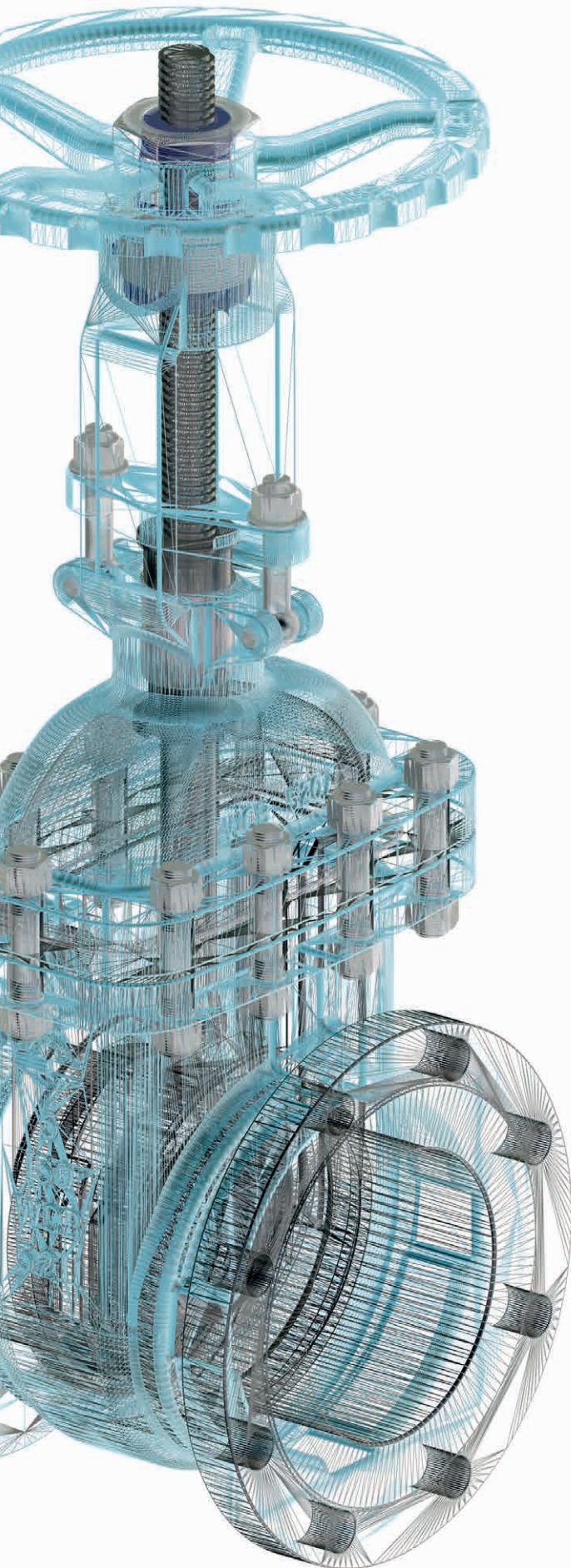
# Uniflow® Valves & Strainers

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**UNIFLOW Valves & Strainers: designed & produced to meet with our high quality standards.**



COMEVAL offers a high level of service, flexibility and adaptability to the needs of customers, with a wide range of products for all markets, being one of the leading European companies in its line of Industrial Valves.

The company is fully committed to Quality in all areas of design, manufacturing and service, always involved in continuous process of improvement and certification. UNIFLOW® product range is PED 2014/68/EU Module H audited by Lloyd's Register. The company is as well ISO 9001 certified.

COMEVAL team combines the experience gained from being a company with over 40 years of background in the industry, with a young, dynamic team in all Departments.

COMEVAL belongs to ARI ARMATUREN and benefits from the synergies of the group, participating in a large number of projects handled by the most important Engineering Companies, used to successfully handle high demanding contracts with a devoted Projects Department to ensure compliance with most demanding requirements, and counts on a network of reliable partners that provide closer support to our end customers. Most of the products manufactured by COMEVAL are exported worldwide.

Our castings and forgings are sourced from quality suppliers specialized in the manufacture of high integrity pressure containing components, being independently and periodically audited directly by COMEVAL specialists.

All castings are visually inspected to meet the requirements of MSS SP-55 and rest of relevant standards. Materials are randomly subject to PMI (Positive Material Identification), LPT (Liquid Penetrant Test) and through test bars sent to independent laboratories to counter-check mechanical and chemical properties.

Further non-destructive testing such as Radiographic Examination, Ultrasonic Examination or Magnetic Particle Examination according to ASME B16.34 Section 8 and Appendices are performed when required by applicable standards, customer specifications and internal quality criteria.

Our Engineering Department is specialist in sizing and assembling any kind of actuators and accessories for our valves, as well as customizing special solutions for our customers.

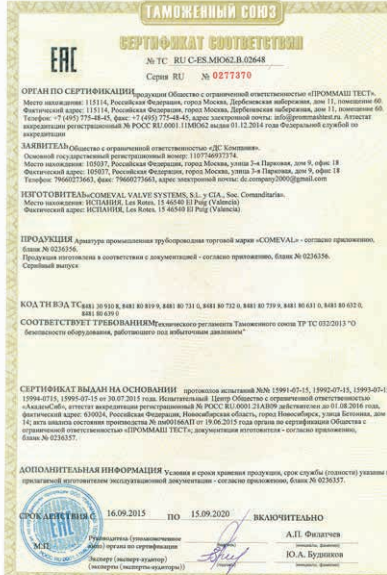
Final product is subject to strict quality control, with visual and functional inspection and pressure testing. Our computerized testing facilities allow testing equipment with pressures higher than 500 bar.

Additionally, further testing on valves such as Fugitive Emission, Cryogenic, Fire, Nace, Drinking Water, etc. can also be carried out by our specialized subcontractors.

After final inspection & testing, our Quality Department issues a Material and Test Certificate according to EN 10204 3.1. We are also used to handle Third Party Inspections in our facilities. Valves are properly cleaned, protected and packed, ready for dispatch to our customers.

## UNIFLOW Valves & Strainers: Certifications

COMEVAL is ISO 90001 certified for the whole cycle of valves & strainers life. Our certified Quality Management System covers design, manufacture, sales, after-sale service and repair.  
UNIFLOW range is PED 2014/68/EU Module H, that covers all the production range up to category III.  
UNIFLOW range is also certified for Russian market, with EAC approval.  
We are also able to offer Fire Safe design and fire test qualification certificates for Ball Valves.  
Further certificates such as API 6D are under appliance and will be obtained shortly!



## CAST PRODUCTS

### GLOBE VALVES

**Series 80, 81, 82, 83, 84, 85, 86**



2" - 24"  
 DN50 - DN600  
 Class 150-2500  
 PN16-420  
 Connections RF, RTJ, BW  
 BS 1873 / ASME B16.34 /  
 ASME B16.10 / EN 558 /  
 ASME B16.5 / EN 1092-1 /  
 ASME B16.25 / EN 12627 /  
 API 598 / EN 12266-1

**Features/Options:**

- Metal seated, unidirectional
- OS&Y, pressure seal design for high ratings
- Rising stem and handwheel
- Back seating design
- Parabolic plug for throttling/regulating function
- Threaded, welded or integral seat
- Operation by handwheel or gear
- Top arrangement for actuator assembly
- Pneumatic, electric or hydraulic actuation
- Lock device, chainwheel
- Position indicator, limit switches
- Packing with lantern ring
- Live load packing
- Bypass line, drain device available
- Jacketed body
- Extended bonnet and stem for cryogenic application
- Vacuum service design
- Manufacturing to NACE MR0175
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

### GATE VALVES

**Series 90, 91, 92, 94, 33**



2" - 48"  
 DN50 - DN1200  
 Class 150-2500  
 PN16-420  
 Connections RF, RTJ, BW  
 API 600 / API 6D / ASME B16.34 /  
 ASME B16.10 / EN 558 /  
 ASME B16.5 / ASME B16.47 /  
 EN 1092-1 / ASME B16.25 /  
 EN 12627 / API 598 / EN 12266-1

**Features/Options:**

- Metal seated, bidirectional
- OS&Y, pressure seal design for high ratings
- Rising or non-rising stem
- Back seating design
- Flexible or solid wedge
- Threaded, welded or integral seat
- Operation by handwheel or gear
- Top arrangement for actuator assembly
- Pneumatic, electric or hydraulic actuation
- Lock device, chainwheel
- Position indicator, limit switches
- Packing with lantern ring
- Live load packing
- Bypass line, drain device available
- Extended bonnet and stem for cryogenic application
- Jacketed body
- Vacuum service design
- Manufacturing to NACE MR0175
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**Materials:** Carbon steel, Low Carbon Steel, Alloy Steel, St. Steel & Exotic Materials, with wide variety of trims

**Applications:** Power, Oil&Gas, Process, Mining, Pharmaceutical, Chemical, Pulp and paper, Water and waste management

**CAST PRODUCTS****SWING CHECK VALVES**

2" - 36"  
 DN50 - DN900  
 Class 150-2500  
 PN16-420  
 Connections RF, RTJ, BW  
 API 6D / ASME B16.34 /  
 ASME B16.10 / EN 558 /  
 ASME B16.5 / ASME B16.47 /  
 EN 1092-1 / ASME B16.25 /  
 EN 12627 / API 598 /  
 EN 12266-1

**Series 3S, 31****Features/Options:**

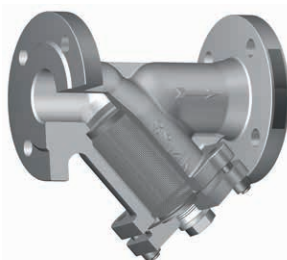
- Metal seated
- Pressure seal design for high ratings
- Full bore design
- Counterweight and hydraulic
- Tilting design
- Jacketed body
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**LIFT DISC (PISTON) CHECK VALVES**

2" - 24"  
 DN50 - DN600  
 Class 150-2500  
 PN16-420  
 Connections RF, RTJ, BW  
 API 6D / ASME B16.34 /  
 ASME B16.10 / EN 558 /  
 ASME B16.5 / EN 1092-1 /  
 ASME B16.25 / EN 12627 /  
 API 598 / EN 12266-1

**Series 3P, 32****Features/Options:**

- Metal seated
- Pressure seal design for high ratings
- Full bore design
- Spring return for piston type
- Jacketed body
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**Y-STRAINERS**

2" - 24"  
 DN50 - DN600  
 Class 150-600  
 PN16-100  
 Connections RF, RTJ, BW  
 API 6D / ASME B16.34 /  
 ASME B16.10 / EN 558 /  
 ASME B16.5 / EN 1092-1 /  
 ASME B16.25 / EN 12627 /  
 API 598 / EN 12266-1

**Series F0****Features/Options:**

- Replaceable screen
- Screen made of wire mesh or perforated basket, with full range of available commercial widths/perforations
- Bolted cover or pressure seal cover for high sizes/ratings
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**Materials:** Carbon steel, Low Carbon Steel, Alloy Steel, St. Steel & Exotic Materials, with wide variety of trims

**Applications:** Power, Oil&Gas, Process, Mining, Pharmaceutical, Chemical, Pulp and paper, Water and waste management

## FORGED PRODUCTS

### GLOBE VALVES

#### Series 89, 88, 87



3/8" - 2"  
 Class 800-2500  
 Connections:  
 SW, NPT, BSPT, BSPP, RF  
 API 602 / ASME B16.34 /  
 ASME B16.11 / EN 12760 /  
 ASME B1.20.1 / EN 10226-1 /  
 API 598 / EN 12266-1

#### Features/Options:

- Metal seated, unidirectional
- OS&Y, pressure seal design for high ratings
- Rising stem and handwheel
- Back seating design
- Parabolic plug for throttling/regulating function
- Threaded, welded or integral seat
- Operation by Handwheel or Gear
- Top arrangement for actuator assembly
- Pneumatic, electric or hydraulic actuation
- Lock device, chainwheel
- Position indicator, limit switches
- Packing with lantern ring
- Live load packing
- Bypass line, drain device available
- Jacketed body
- Extended bonnet and stem for cryogenic application
- Vacuum service design
- Manufacturing to NACE MR0175
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

### GATE VALVES

#### Series 99, 98, 97, 96



3/8" - 2"  
 Class 800-2500  
 Connections:  
 SW, NPT, BSPT, BSPP, RF  
 API 602 / ASME B16.34 /  
 ASME B16.11 / EN 12760 /  
 ASME B1.20.1 / EN 10226-1 /  
 API 598 / EN 12266-1

#### Features/Options:

- Metal seated, bidirectional
- OS&Y, pressure seal design for high ratings
- Rising or non-rising stem
- Back seating design
- Flexible or solid wedge
- Threaded, welded or integral seat
- Operation by Handwheel or Gear
- Top arrangement for actuator assembly
- Pneumatic, electric or hydraulic actuation
- Lock device, chainwheel
- Position indicator, limit switches
- Packing with lantern ring
- Live load packing
- Bypass line, drain device available
- Extended bonnet and stem for cryogenic application
- Jacketed body
- Vacuum service design
- Manufacturing to NACE MR0175
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**Materials:** Carbon steel, Alloy Steel, St. Steel & Exotic Materials, with wide variety of trims

**Applications:** Power, Oil&Gas, Process, Mining, Pharmaceutical, Chemical, Pulp and paper, Water and waste management

## FORGED PRODUCTS

### SWING CHECK VALVES



3/8" - 2"  
Class 800-2500  
Connections:  
SW, NPT, BSPT, BSPP, RF  
API 602 / ASME B16.34 /  
ASME B16.11 / EN 12760 /  
ASME B1.20.1 / EN 10226-1 /  
API 598 / EN 12266-1

#### Series 39, 38, 37

##### Features/Options:

- Metal seated
- Pressure seal design for high ratings
- Regular port design
- Counterweight and hydraulic
- Tilting design
- Jacketed body
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

### LIFT DISC (PISTON) CHECK VALVES



3/8" - 2"  
Class 800-2500  
Connections:  
SW, NPT, BSPT, BSPP, RF  
API 602 / ASME B16.34 /  
ASME B16.11 / EN 12760 /  
ASME B1.20.1 / EN 10226-1 /  
API 598 / EN 12266-1

#### Series 35, 34, 36

##### Features/Options:

- Metal seated
- Pressure seal design for high ratings
- Regular port design
- Spring return
- Jacketed body
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

### Y-STRAINERS



3/8" - 2"  
Class 800-2500  
Connections:  
SW, NPT, BSPT, BSPP, RF  
BS 5352 / ASME B16.34 /  
ASME B16.11 / EN 12760 /  
ASME B1.20.1 / EN 10226-1 /  
API 598 / EN 12266-1

#### Series F9

##### Features/Options:

- Replaceable screen
- Screen made of wire mesh or perforated basket, with full range of available commercial widths/perforations
- Bolted cover or pressure seal cover for high sizes/ratings
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

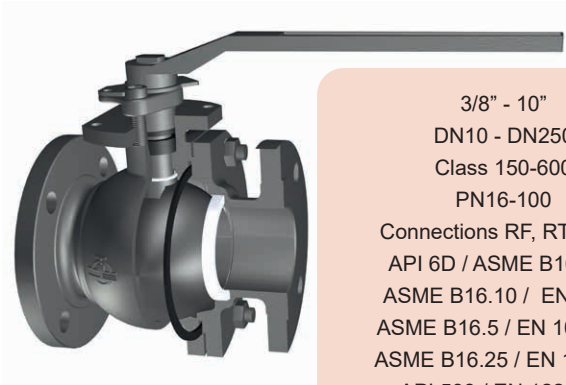
**Materials:** Carbon steel, Alloy Steel, St. Steel & Exotic Materials, with wide variety of trims

**Applications:** Power, Oil&Gas, Process, Mining, Pharmaceutical, Chemical, Pulp and paper, Water and waste management

## BALL VALVES

### FLOATING BALL VALVES

#### Series BV BF/B8



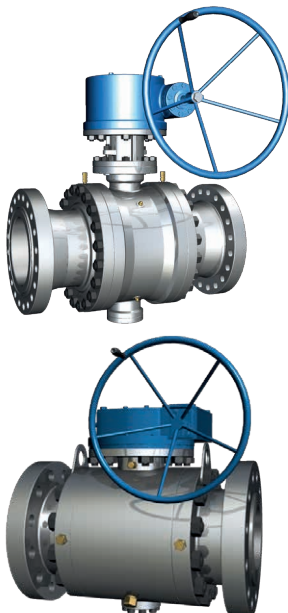
3/8" - 10"  
DN10 - DN250  
Class 150-600  
PN16-100  
Connections RF, RTJ, BW  
API 6D / ASME B16.34 /  
ASME B16.10 / EN 558 /  
ASME B16.5 / EN 1092-1 /  
ASME B16.25 / EN 12627 /  
API 598 / EN 12266-1

#### Features/Options:

- Metal or soft seated, bidirectional
- 2 pieces or 3 pieces body
- Full bore or reduced bore
- Solid or light ball
- Blow-out proof stem
- Anti-static design
- Body cavity pressure relief
- Drain and vent connections
- Injection sealing
- Operation by Lever or Worm Gear
- Top arrangement to ISO 5211 for actuator assembly
- Lock device, chainwheel
- Position indicator, limit switches
- Live load packing
- Fully welded construction
- Bypass line
- Jacketed body
- Underground application structure available
- Cryogenic design, vacuum service design
- NACE MR0175 design
- Fire safe design to API 6FA
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

### TRUNNION BALL VALVES

#### Series BV BT/B9



2" - 36"  
DN50 - DN900  
Class 150-2500  
PN16-420  
Connections RF, RTJ, BW  
API 6D / ASME B16.34 /  
ASME B16.10 / EN 558 /  
ASME B16.5 / ASME B16.47 /  
EN 1092-1 / ASME B16.25 /  
EN 12627 / API 598 / EN 12266-1

#### Features/Options:

- Metal or soft seated, bidirectional
- 2 pieces or 3 pieces body
- Full bore or reduced bore
- Straight, 3 or 4 way valves
- Solid or light ball
- Blow-out proof stem
- Anti-static design
- Body cavity pressure relief
- Top or side entry
- Double block and bleed feature (DBB)
- Double piston effect function (DPE)
- Drain and vent connections
- Injection sealing
- Operation by Lever or Worm Gear
- Top arrangement to ISO 5211 for actuator assembly
- Lifting lugs and supporting feet
- Lock device, chainwheel
- Position indicator, limit switches
- Live load packing
- Fully welded construction
- Bypass line
- Jacketed body
- Underground application structure
- Cryogenic design, vacuum service design
- NACE MR0175 design
- Fire safe design to API 6FA
- Special execution for outdoors/corrosive atmosphere, high temperature service, etc.

**Materials:** Carbon steel, Low Carbon Steel, Alloy Steel, St. Steel & Exotic Materials, with wide variety of trims

**Applications:** Power, Oil&Gas, Process, Mining, Pharmaceutical, Chemical, Pulp and paper, Water and waste management

**Manufacturers Standardization Society of Valve and Fittings Industry (MSS):**

- MSS SP-25 Standard Marking Systems for Valves, Fittings, Flanges, and Unions
- MSS SP-42 Class 150 Corrosion Resistant Gate, Globe, Angle and Check Valves with Flanged and Butt Weld Ends
- MSS SP-45 Bypass and Drain Connections
- MSS SP-55 Quality Standard for Steel Castings for Valves, Flanges, Fittings, and Other Piping Components - Visual Method for Evaluation of Surface Irregularities
- MSS SP-61 Pressure Testing of Steel Valves
- MSS SP-67 Butterfly Valves
- MSS SP-68 High Pressure Offset Seat Butterfly Valves
- MSS SP-70 Cast Iron Gate Valves, Flanged and Threaded Ends
- MSS SP-71 Cast Iron Swing Valves, Flanged and Threaded Ends
- MSS SP-72 Ball Valves with Flanged or Butt-Welding Ends for General Service
- MSS SP-78 Cast Iron Plug Valves, Flanged and Threaded Ends
- MSS SP-80 Bronze Gate, Globe, Angle, and Check Valves
- MSS SP-81 Stainless Steel, Bonnetless, Flanged, Knife Gate Valves
- MSS SP-82 Valve Pressure Testing Methods
- MSS SP-84 Valves - Socked Welding and Threaded Ends
- MSS SP-85 Cast Iron Globe and Angle Valves, Flanged and Threaded Ends
- MSS SP-88 Diaphragm Type Valves
- MSS SP-91 Guidelines for Manual Operation of Valves
- MSS SP-92 MSS Valve User Guide
- MSS SP-99 Instrument Valves
- MSS SP-101 Part-Turn Valve Actuator Attachment
- MSS SP-102 Multi-Turn Valve Actuator Attachment
- MSS SP-110 Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends

**National Association of Corrosion Engineers (NACE):**

- MR0175 Sulfide Stress Cracking Resistant Metallic Materials for Oil Field Equipment

**American Society of Mechanical Engineers (ASME):**

- ASME B1.20.1 Pipe Threads, General Purpose
- ASME B16.10 Face-to-Face and End-to-End Dimensions of Valves
- ASME B16.11 Forged Fittings, Socket-Welding and Threaded
- ASME B16.20 Metallic Gaskets for Pipe Flanges: Ring-Joint, Spiral-Wound, and Jacketed
- ASME B16.21 Nonmetallic Flat Gaskets for Pipe Flanges
- ASME B16.25 Buttwelding Ends
- ASME B16.34 Valves –Flanged, Threaded, and Welding Ends
- ASME B16.5 Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24
- ASME B16.47 Large Diameter Steel Flanges: NPS 26 through NPS 60
- Boiler and Pressure Vessel Code:
  - Section I - Power Boilers
  - Section II - Materials
  - Section IV - Heating Boilers
  - Section VIII, Division 1 - Pressure Vessels

**American Petroleum Institute (API):**

- API 594 Wafer and Wafer-Lug Check Valves
- API 598 Valve Inspection and Test
- API 599 Steel and Ductile Iron Plug Valves
- API 600 Steel Gate Valves, Flanged or Butt Welding Ends
- API 602 Compact Steel Gate Valves—Flanged, Threaded, Welding, and Extended Body Ends
- API 603 Class 150, Cast, Corrosion-Resistant, Flanged End Gate Valves
- API 6D Specification for Pipeline and Piping Valves
- API SPEC 6FA Fire Test for Valves

**British Standards Institution (BS)**

- BS 1873 Specification for steel globe and globe stop and check valves (flanged and butt-welding ends) for the petroleum, petrochemical and allied industries
- BS 5352 Specification for steel wedge gate, globe and check valves 50 mm and smaller for the petroleum, petrochemical and allied industries

**European Standards:**

- EN 558 Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — PN and Class designated valves
- EN 1092-1 Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: Steel flanges
- EN 10226-1 Pipe threads where pressure tight joints are made on the threads. Part 1: Taper external threads and parallel internal threads. Dimensions, tolerances and designation
- EN 12266-1 Industrial valves. Testing of valves. Part 1: Pressure tests, test procedures and acceptance criteria. Mandatory requirements
- EN 12627 Industrial valves. Butt welding ends for steel valves
- EN 12760 Valves. Socket welding ends for steel valves

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|

## 1-2 VALVE TYPE

|              |    |                                                              |
|--------------|----|--------------------------------------------------------------|
| GLOBE VALVES | 80 | GLOBE CAST STEEL BOLTED BONNET WITH PACKING (OS&Y)           |
|              | 81 | GLOBE CAST STEEL PRESSURE SEAL WITH PACKING                  |
|              | 84 | GLOBE CAST STEEL BELLOWS SEAL                                |
|              | 89 | GLOBE FORGED STEEL BOLTED BONNET WITH PACKING (OS&Y)         |
|              | 88 | GLOBE FORGED STEEL BELLOWS SEAL                              |
|              | 82 | GLOBE CAST STEEL BOLTED BONNET ANGLE PATTERN                 |
|              | 83 | GLOBE CAST STEEL BOLTED BONNET Y-PATTERN                     |
|              | 85 | GLOBE CAST STEEL BELLOWS SEAL ANGLE PATTEN                   |
|              | 86 | GLOBE CAST STEEL BELLOWS SEAL Y-PATTERN                      |
|              | 87 | GLOBE FORGED STEEL PRESSURE SEAL                             |
| GATE VALVES  | 90 | GATE CAST STEEL BOLTED BONNET WITH PACKING (OS&Y)            |
|              | 91 | GATE CAST STEEL PRESSURE SEAL WITH PACKING (STD FROM1500#)   |
|              | 92 | GATE CAST STEEL WELDED BONNET WITH PACKING (OS&Y)            |
|              | 94 | GATE CAST STEEL BELLOWS SEAL                                 |
|              | 99 | GATE FORGED STEEL BOLTED BONNET WITH PACKING (OS&Y)          |
|              | 98 | GATE FORGED STEEL BELLOWS SEAL                               |
|              | 97 | GATE FORGED STEEL WELDED BONNET WITH PACKING (OS&Y)          |
|              | 96 | GATE FORGED STEEL PRESSURE SEAL WITH PACKING (OS&Y)          |
| BALL VALVES  | BT | CAST STEEL BALL VALVE TRUNNION SPLIT BOLTED BODY             |
|              | BF | CAST STEEL BALL VALVE FLOATING SPLIT BOLTED BODY             |
|              | B9 | FORGED STEEL BALL VALVE TRUNNION SPLIT BOLTED BODY           |
|              | B8 | FORGED STEEL BALL VALVE FLOATING SPLIT BOLTED BODY           |
| CHECK VALVES | 3S | FLANGED OR BW CAST STEEL SWING CHECK VALVE                   |
|              | 31 | FLANGED OR BW CAST STEEL SWING CHECK VALVE PRESSURE SEAL     |
|              | 3P | FLANGED OR BW CAST STEEL LIFT DISC CHECK VALVE               |
|              | 32 | FLANGED OR BW CAST STEEL LIFT DISC CHECK VALVE PRESSURE SEAL |
|              | DP | WAFFER DUAL PLATE CHECK VALVE                                |
|              | DL | LUG DUAL PLATE CHECK VALVE                                   |
|              | DF | FLANGED DUAL PLATE CHECK VALVE                               |
|              | DC | WAFFER DISC CHECK VALVE                                      |
|              | 39 | SWING CHECK FORGED VALVE BOLTED BONNET                       |
|              | 38 | SWING CHECK FORGED VALVE PRESSURE SEAL                       |
|              | 37 | SWING CHECK FORGED VALVE BOLTED BONNET Y-PATTERN             |
|              | 36 | LIFT DISC CHECK FORGED VALVE BOLTED BONNET Y-PATTERN         |
|              | 35 | LIFT DISC CHECK FORGED VALVE BOLTED BONNET                   |
|              | 34 | LIFT DISC CHECK FORGED VALVE PRESSURE SEAL                   |

## 3-4 BODY MATERIAL

| CAST |               | FORGED        |  | CAST |                   | FORGED       |  | CAST         |  | FORGED      |  |
|------|---------------|---------------|--|------|-------------------|--------------|--|--------------|--|-------------|--|
| H0   | A126 Class B  |               |  | I1   | A351 CF3          | -            |  |              |  | B462 N08020 |  |
| H1   |               |               |  | I2   | A351 CF8          | A182 F304    |  |              |  | B160 N02200 |  |
| F0   |               |               |  | I3   | -                 | -            |  |              |  | B160 N02201 |  |
| F1   | A536 80-55-06 |               |  | I4   | -                 | A182 F316H   |  |              |  | B564 N04400 |  |
| F2   | A536 65-45-12 |               |  | I5   | A351 CF3A         | -            |  |              |  | B164 N04405 |  |
| A0   | A216WCB       | A105          |  | I6   | A351 CF8A         | -            |  |              |  | B564 N06600 |  |
| A1   | -             | A350 LF2      |  | I7   | A351 CF3M         | -            |  |              |  | B564 N08800 |  |
| A2   | -             | A350 LF6 cl.1 |  | I0   | A351 CF8M         | A182 F316    |  |              |  | B335 N10665 |  |
| A3   | A352 LC2      | -             |  | I8   | A351 CG8M         | -            |  |              |  | B564 N10276 |  |
| A4   | A352 LC3      | A350 LF3      |  | I9   | -                 | A182 F304L   |  |              |  | B564 N06625 |  |
| A5   | A216 WCC      | -             |  | IA   | 1.4581            | -            |  |              |  | B335 N10001 |  |
| A6   | A352 LCC      | -             |  | J1   | -                 | A182 F316L   |  |              |  | B573 N10003 |  |
| A7   | -             | A350 LF6 cl.2 |  | J2   | -                 | A182 F321    |  | (904L)       |  | B574 N06455 |  |
| A8   | A352 LCB      | -             |  | J3   | -                 | A182 F321H   |  |              |  | B425 N08825 |  |
| A9   |               | A350 LF1      |  | J4   | A351 CF8C         | A182 F347    |  |              |  | B572 N06002 |  |
| B1   | A217 WC1      | A182 F1       |  | J5   | -                 | A182 F347H   |  |              |  | B672 N08700 |  |
| B2   | A352 LC1      | -             |  | J6   | -                 | A182 F348    |  |              |  | B649 N08904 |  |
| B3   | -             | A182 F2       |  | J7   | -                 | A182 F348H   |  |              |  | B621 N08320 |  |
| B4   | A217 WC4      | -             |  | J8   | A351 CH8          | -            |  |              |  | B581 N06985 |  |
| B5   | A217 WC5      | -             |  | J9   | A351 CH20         | -            |  |              |  | B581 N06975 |  |
| B6   | -             | A182 F12 cl.2 |  | K1   | A351 CK20         | A182 F310H   |  |              |  | B564 N08031 |  |
| B7   | -             | A182 F11cl.2  |  | K2   | A351 CK3MCuN      | A182 F44     |  |              |  | B581 N06007 |  |
| B8   | A217 WC6      | -             |  | K3   | A995 4a           | A182 F51     |  |              |  | B564 N08810 |  |
| B9   | A217 WC9      | A182 F22 cl.3 |  | K4   | A995 5a           | A182 F53     |  | A494 N-12MV  |  | -           |  |
| C1   | -             | A182 F21      |  | K5   | A351 Gr. CE8MN    | -            |  | A494 CW-12MW |  | -           |  |
| C2   | A217 C5       | A182 F5a      |  | K6   | A351 Gr. CD4MCu   | -            |  | -            |  | B511 N08330 |  |
| C3   | -             | A182 F5       |  | K7   | A351 Gr. CD3MWCuN | -            |  | A351 CN-7M   |  | -           |  |
| C4   | A217 C12      | A182 F9       |  | K8   | -                 | A182 Gr. F55 |  |              |  |             |  |
| C5   | A217 C12A     | A182 F91      |  |      |                   |              |  |              |  |             |  |

1 2 3 4 5 6 7 8 9 10 11 12 13 14

## 5 TRIM FOR GLOBE/GATE/CHECK VALVES\*

|   |                                  |   |                         |
|---|----------------------------------|---|-------------------------|
| 0 | Standard for valve configuration | G | Trim 12                 |
| 1 | Trim 1                           | H | Trim 13                 |
| 2 | Trim 2                           | J | Trim 14                 |
| 3 | Trim 3                           | K | Trim 15                 |
| 4 | Trim 4                           | L | Trim 16                 |
| 5 | Trim 5                           | M | Trim 17                 |
| 6 | Trim 6                           | X | Special Trim            |
| 7 | Trim 7                           | P | trim 1 w/soft seal PTFE |
| 8 | Trim 8                           | E | trim 1 w/soft seal EPDM |
| 9 | Trim 9                           | N | trim 1 w/soft seal NBR  |
| D | Trim 10                          |   |                         |
| F | Trim 11                          |   |                         |

\*Trim for ball valves, please consult us

## 6 ENDS CONNECTIONS

|   |         |   |         |
|---|---------|---|---------|
| 0 | RF      | P | BSPP    |
| J | RTJ     | T | BSPT    |
| F | FF      | N | NPT     |
| B | BW ANSI | W | WAFER   |
| V | BW DIN  | L | LUG     |
| S | SW ANSI | C | CLAMP   |
| Z | SW DIN  | X | SPECIAL |

## 7 TOP WORKS/OPERATION

|   |                                          |
|---|------------------------------------------|
| 0 | HANDWHEEL OR WRENCH (LEVER) C CHAINWHEEL |
| G | GEAR WITH HANDWHEEL                      |
| F | ISO TOP FLANGE FOR ACTUATOR              |

(top flange description apart from article description)

## 8 MAIN FEATURES

|   |                                                                                       |
|---|---------------------------------------------------------------------------------------|
| S | SOLID WEDGE FOR CAST STEEL GATE VALVES                                                |
| T | TWO-PIECE SPLIT WEDGE                                                                 |
| 0 | FULL BORE / CONVENTIONAL PORT (FORGED GATE/CHECK VALVES) / FLEXIBLE WEDGE / FLAT PLUG |
| R | REDUCED BORE (FOR BALL VALVES) / THROTTLING (FOR GLOBE VALVES)                        |
| C | DUAL STOP AND CHECK (FOR GLOBE VALVES)                                                |
| M | MARGINAL SEAT                                                                         |
| B | BALL TYPE (FOR LIFT DISC CHECK VALVE)                                                 |

## 9-10 RATING

|    |                 |    |                  |
|----|-----------------|----|------------------|
| 06 | PN6             | P0 | PN100            |
| 10 | PN10            | A8 | ANSI800          |
| 16 | PN16            | A9 | ANSI900 (PN150)  |
| A1 | ANSI150 (PN20)  | P1 | PN160            |
| 25 | PN25            | P2 | PN250            |
| A3 | ANSI300 (PN50)  | AA | ANSI1500 (PN250) |
| 40 | PN40            | AB | ANSI2500 (PN420) |
| A4 | ANSI400 (PN64)  | AC | ANSI4500         |
| 64 | PN64            | P4 | PN400            |
| A6 | ANSI600 (PN100) | P6 | PN630            |

## 11 SPECIAL FEATURES / FTF (END TO END)

|   |                                            |
|---|--------------------------------------------|
| 0 | Non Special features                       |
| S | Short pattern                              |
| L | Long pattern                               |
| X | Other Special instructions                 |
| N | Accordance to NACE MR 0175                 |
| B | Special locking device (open and/or close) |

## 12-14 SIZE

|     |              |
|-----|--------------|
| 050 | 2" - DN50    |
| 200 | 8" - DN200   |
| 912 | 48" - DN1200 |

1 2 3 4 5 6 7 8 9 10 11 12 13 14

## 1-2 STRAINER TYPE

|    |                   |
|----|-------------------|
| F0 | Y-STRAINER        |
| F9 | FORGED Y-STRAINER |

## 3-4 BODY MATERIAL

| CAST |               | FORGED        | CAST |                   | FORGED       | CAST         |             | FORGED      |
|------|---------------|---------------|------|-------------------|--------------|--------------|-------------|-------------|
| H0   | A126 Class B  |               | I1   | A351 CF3          | -            |              |             | B462 N08020 |
| H1   |               |               | I2   | A351 CF8          | A182 F304    |              |             | B160 N02200 |
| F0   |               |               | I3   | -                 | -            |              |             | B160 N02201 |
| F1   | A536 80-55-06 |               | I4   | -                 | A182 F316H   |              |             | B564 N04400 |
| F2   | A536 65-45-12 |               | I5   | A351 CF3A         | -            |              |             | B164 N04405 |
| A0   | A216WCB       | A105          | I6   | A351 CF8A         | -            |              |             | B564 N06600 |
| A1   | -             | A350 LF2      | I7   | A351 CF3M         | -            |              |             | B564 N08800 |
| A2   | -             | A350 LF6 cl.1 | I8   | A351 CF8M         | A182 F316    |              |             | B335 N10665 |
| A3   | A352 LC2      | -             | I9   | A351 CG8M         | -            |              |             | B564 N10276 |
| A4   | A352 LC3      | A350 LF3      | IA   | 1.4581            | A182 F304L   |              |             | B564 N06625 |
| A5   | A216 WCC      | -             | J1   | -                 | A182 F316L   |              |             | B335 N10001 |
| A6   | A352 LCC      | -             | J2   | -                 | A182 F321    | (904L)       |             | B573 N10003 |
| A7   | -             | A350 LF6 cl.2 | J3   | -                 | A182 F321H   |              |             | B574 N06455 |
| A8   | A352 LCB      | -             | J4   | A351 CF8C         | A182 F347    |              |             | B425 N08825 |
| A9   | -             | A350 LF1      | J5   | -                 | A182 F347H   |              |             | B572 N06002 |
| B1   | A217 WC1      | A182 F1       | J6   | -                 | A182 F348    |              |             | B672 N08700 |
| B2   | A352 LC1      | -             | J7   | -                 | A182 F348H   |              |             | B649 N08904 |
| B3   | -             | A182 F2       | J8   | A351 CH8          | -            |              |             | B621 N08320 |
| B4   | A217 WC4      | -             | J9   | A351 CH20         | -            |              |             | B581 N06985 |
| B5   | A217 WC5      | -             | K1   | A351 CK20         | A182 F310H   |              |             | B581 N06975 |
| B6   | -             | A182 F12 cl.2 | K2   | A351 CK3MCuN      | A182 F44     |              |             | B564 N08031 |
| B7   | -             | A182 F11cl.2  | K3   | A995 4a           | A182 F51     |              |             | B581 N06007 |
| B8   | A217 WC6      | -             | K4   | A995 5a           | A182 F53     | A494 N-12MV  | -           | B564 N08810 |
| B9   | A217 WC9      | A182 F22 cl.3 | K5   | A351 Gr. CE8MN    | -            | A494 CW-12MW | -           |             |
| C1   | -             | A182 F21      | K6   | A351 Gr. CD4MCu   | -            | -            | B511 N08330 |             |
| C2   | A217 C5       | A182 F5a      | K7   | A351 Gr. CD3MWCuN | -            | A351 CN-7M   | -           |             |
| C3   | -             | A182 F5       | K8   | -                 | A182 Gr. F55 |              |             |             |
| C4   | A217 C12      | A182 F9       |      |                   |              |              |             |             |
| C5   | A217 C12A     | A182 F91      |      |                   |              |              |             |             |

## 5 SCREEN MATERIAL

|   |               |
|---|---------------|
| 0 | S. STEEL 316  |
| 1 | S. STEEL 304  |
| 2 | S. STEEL 316L |

## 6 ENDS CONNECTIONS

|   |         |   |         |
|---|---------|---|---------|
| 0 | RF      | P | BSPP    |
| J | RTJ     | T | BSPT    |
| F | FF      | N | NPT     |
| B | BW ANSI | W | WAFER   |
| V | BW DIN  | L | LUG     |
| S | SW ANSI | C | CLAMP   |
| Z | SW DIN  | X | SPECIAL |

## 7 SCREEN TYPE

|   |                   |
|---|-------------------|
| P | PERFORATED SCREEN |
| W | WIRE MESH         |

## 8-9 MESH WIDTH / SCREEN PERFORATION

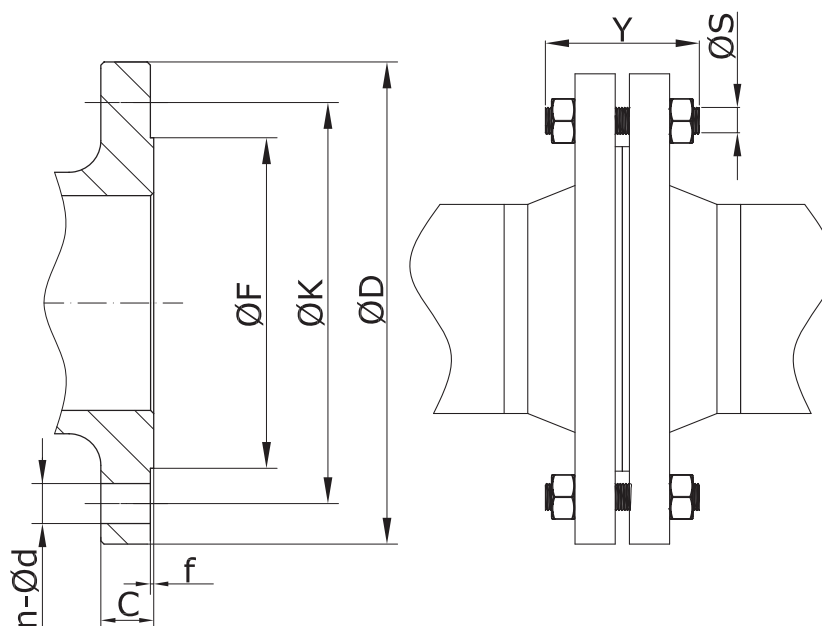
|                       |    |                     |
|-----------------------|----|---------------------|
| FOR PERFORATED SCREEN | 10 | 1 mm                |
|                       | 11 | 1,1 mm              |
|                       | 15 | 1,5 mm              |
|                       | 30 | 3 mm                |
|                       | C5 | 0,25 mm             |
|                       | A5 | 0,05 mm             |
| FOR WIRE MESH         | F0 | 0,5 mm              |
|                       | M1 | 45/cm <sup>2</sup>  |
|                       | M2 | 28/cm <sup>2</sup>  |
|                       | M3 | 15/cm <sup>2</sup>  |
|                       | M4 | 100/cm <sup>2</sup> |
|                       | M5 | 204/cm <sup>2</sup> |
|                       | M6 | 280/cm <sup>2</sup> |
|                       | M7 | 370/cm <sup>2</sup> |
|                       | M8 | 625/cm <sup>2</sup> |

## 10-11 RATING

|    |                 |    |                  |
|----|-----------------|----|------------------|
| 06 | PN6             | P0 | PN100            |
| 10 | PN10            | A8 | ANSI800          |
| 16 | PN16            | A9 | ANSI900 (PN150)  |
| A1 | ANSI150 (PN20)  | P1 | PN160            |
| 25 | PN25            | P2 | PN250            |
| A3 | ANSI300 (PN50)  | AA | ANSI1500 (PN250) |
| 40 | PN40            | AB | ANSI2500 (PN420) |
| A4 | ANSI400 (PN64)  | AC | ANSI4500         |
| 64 | PN64            | P4 | PN400            |
| A6 | ANSI600 (PN100) | P6 | PN630            |

## 12-14 SIZE

|     |              |
|-----|--------------|
| 050 | 2" - DN50    |
| 200 | 8" - DN200   |
| 912 | 48" - DN1200 |

**Flanged ends acc. to ASME B16.5 / B16.47 Raised Face (RF) Type**

**Class 150**

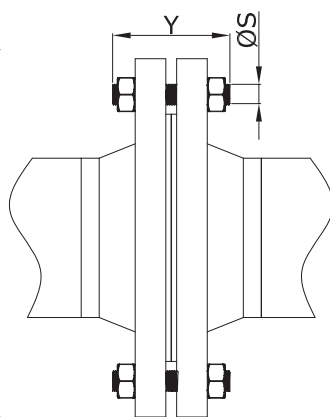
| Size   | ØD   | ØK     | ØF    | C     | f | n-Ød      | ØS    | Y   |
|--------|------|--------|-------|-------|---|-----------|-------|-----|
| 1/2"   | 90   | 60,3   | 34,9  | 13,2  | 2 | 4 - 5/8   | 1/2   | 55  |
| 3/4"   | 100  | 69,9   | 42,9  | 14,7  | 2 | 4 - 5/8   | 1/2   | 65  |
| 1"     | 110  | 79,4   | 50,8  | 16,3  | 2 | 4 - 5/8   | 1/2   | 65  |
| 1-1/2" | 125  | 98,4   | 73    | 19,5  | 2 | 4 - 5/8   | 1/2   | 70  |
| 2"     | 150  | 120,7  | 91,9  | 21,1  | 2 | 4 - 3/4   | 5/8   | 85  |
| 3"     | 190  | 152,4  | 127   | 25,9  | 2 | 4 - 3/4   | 5/8   | 90  |
| 4"     | 230  | 190,5  | 157,2 | 25,9  | 2 | 8 - 3/4   | 5/8   | 90  |
| 6"     | 280  | 241,3  | 215,9 | 27,4  | 2 | 8 - 7/8   | 3/4   | 100 |
| 8"     | 345  | 298,5  | 269,7 | 30,4  | 2 | 8 - 7/8   | 3/4   | 110 |
| 10"    | 405  | 362    | 323,9 | 32,2  | 2 | 12 - 1    | 7/8   | 115 |
| 12"    | 485  | 431,8  | 381   | 33,8  | 2 | 12 - 1    | 7/8   | 120 |
| 14"    | 535  | 476,3  | 412,8 | 37,1  | 2 | 12- 1 1/8 | 1     | 135 |
| 16"    | 595  | 539,8  | 469,9 | 38,6  | 2 | 16- 1 1/8 | 1     | 135 |
| 18"    | 635  | 577,9  | 533,4 | 41,6  | 2 | 16- 1 1/4 | 1 1/8 | 145 |
| 20"    | 700  | 635    | 584,2 | 44,9  | 2 | 20- 1 1/4 | 1 1/8 | 160 |
| 24"    | 815  | 749,3  | 692,2 | 49,8  | 2 | 20- 1 3/8 | 1 1/4 | 170 |
| 26"    | 870  | 806,4  | 749   | 68,7  | 2 | 24- 1 3/8 | 1 1/4 | -   |
| 28"    | 925  | 863,6  | 800   | 71,9  | 2 | 28- 1 3/8 | 1 1/4 | -   |
| 30"    | 985  | 914,4  | 857   | 75,1  | 2 | 28- 1 3/8 | 1 1/4 | -   |
| 32"    | 1060 | 977,9  | 914   | 81,4  | 2 | 28- 1 5/8 | 1 1/2 | -   |
| 36"    | 1170 | 1085,8 | 1022  | 90,9  | 2 | 32- 1 5/8 | 1 1/2 | -   |
| 40"    | 1290 | 1200,2 | 1124  | 90,9  | 2 | 36- 1 5/8 | 1 1/2 | -   |
| 42"    | 1345 | 1257,3 | 1194  | 97,3  | 2 | 36- 1 5/8 | 1 1/2 | -   |
| 48"    | 1510 | 1422,4 | 1359  | 108,4 | 2 | 44- 1 5/8 | 1 1/2 | -   |

**Class 300**

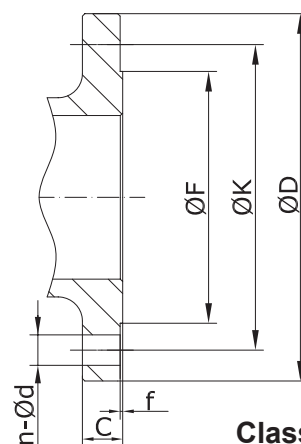
| ØD   | ØK     | ØF    | C     | f | n-Ød      | ØS    | Y   |
|------|--------|-------|-------|---|-----------|-------|-----|
| 95   | 66,7   | 34,9  | 16,3  | 2 | 4 - 5/8   | 1/2   | 65  |
| 115  | 82,6   | 42,9  | 17,9  | 2 | 4 - 3/4   | 5/8   | 75  |
| 125  | 88,9   | 50,8  | 19,5  | 2 | 4 - 3/4   | 5/8   | 75  |
| 155  | 114,3  | 73    | 22,7  | 2 | 4 - 7/8   | 3/4   | 90  |
| 165  | 127    | 91,9  | 24,3  | 2 | 8 - 3/4   | 5/8   | 90  |
| 210  | 168,3  | 127   | 30,6  | 2 | 8 - 7/8   | 3/4   | 110 |
| 255  | 200    | 157,2 | 33,8  | 2 | 8 - 7/8   | 3/4   | 115 |
| 320  | 269,9  | 215,9 | 38,6  | 2 | 12 - 7/8  | 3/4   | 120 |
| 380  | 330,2  | 269,7 | 43,3  | 2 | 12 - 1    | 7/8   | 140 |
| 445  | 387,4  | 323,9 | 49,7  | 2 | 16- 1 1/8 | 1     | 160 |
| 520  | 450,8  | 381   | 52,8  | 2 | 16- 1 1/4 | 1 1/8 | 170 |
| 585  | 514,4  | 412,8 | 56    | 2 | 20- 1 1/4 | 1 1/8 | 180 |
| 650  | 571,5  | 469,9 | 59,2  | 2 | 20- 1 3/8 | 1 1/4 | 190 |
| 710  | 628,6  | 533,4 | 62,4  | 2 | 24- 1 3/8 | 1 1/4 | 195 |
| 775  | 685,8  | 584,2 | 65,5  | 2 | 24- 1 3/8 | 1 1/4 | 205 |
| 915  | 812,8  | 692,2 | 71,9  | 2 | 24- 1 5/8 | 1 1/2 | 230 |
| 970  | 876,3  | 749   | 79,8  | 2 | 28- 1 3/4 | 1 5/8 | -   |
| 1035 | 939,8  | 800   | 86,2  | 2 | 28- 1 3/4 | 1 5/8 | -   |
| 1090 | 997    | 857   | 92,5  | 2 | 28- 1 7/8 | 1 3/4 | -   |
| 1150 | 1054,1 | 914   | 98,9  | 2 | 28 - 2    | 1 7/8 | -   |
| 1270 | 1168,4 | 1022  | 105,2 | 2 | 32- 2 1/8 | 2     | -   |
| 1240 | 1155,7 | 1086  | 114,8 | 2 | 32- 1 3/4 | 1 5/8 | -   |
| 1290 | 1206,5 | 1137  | 119,5 | 2 | 32- 1 3/4 | 1 5/8 | -   |

Dimensions in mm, except for diameters of bolts holes, which are in inch units

# Flanged ends acc. to ASME B16.5 / B16.47 Raised Face (RF) Type



**Class 600**



**Class 900**

| Size   | ØD   | ØK     | ØF    | C     | f | n-Ød      | ØS    | Y   |
|--------|------|--------|-------|-------|---|-----------|-------|-----|
| 1/2"   | 95   | 66,7   | 34,9  | 21,3  | 7 | 4 - 5/8   | 1/2   | 75  |
| 3/4"   | 115  | 82,6   | 42,9  | 22,9  | 7 | 4 - 3/4   | 5/8   | 90  |
| 1"     | 125  | 88,9   | 50,8  | 24,5  | 7 | 4 - 3/4   | 5/8   | 90  |
| 1 1/2" | 155  | 114,3  | 73    | 29,3  | 7 | 4 - 7/8   | 3/4   | 110 |
| 2"     | 165  | 127    | 91,9  | 32,4  | 7 | 8 - 3/4   | 5/8   | 110 |
| 3"     | 210  | 168,3  | 127   | 38,8  | 7 | 8 - 7/8   | 3/4   | 125 |
| 4"     | 275  | 215,9  | 157,2 | 45,1  | 7 | 8 - 1     | 7/8   | 145 |
| 6"     | 355  | 292,1  | 215,9 | 54,7  | 7 | 12- 1 1/8 | 1     | 170 |
| 8"     | 420  | 349,2  | 269,7 | 62,6  | 7 | 12- 1 1/4 | 1 1/8 | 190 |
| 10"    | 510  | 431,8  | 323,9 | 70,5  | 7 | 16- 1 3/8 | 1 1/4 | 210 |
| 12"    | 560  | 489    | 381   | 73,7  | 7 | 20- 1 3/8 | 1 1/4 | 220 |
| 14"    | 605  | 527    | 412,8 | 76,9  | 7 | 20- 1 1/2 | 1 3/8 | 235 |
| 16"    | 685  | 603,2  | 469,9 | 83,2  | 7 | 20- 1 5/8 | 1 1/2 | 255 |
| 18"    | 745  | 654    | 533,4 | 89,6  | 7 | 20- 1 3/4 | 1 5/8 | 275 |
| 20"    | 815  | 723,9  | 584,2 | 95,9  | 7 | 24- 1 3/4 | 1 5/8 | 285 |
| 24"    | 940  | 838,2  | 692,2 | 108,6 | 7 | 24 - 2    | 1 7/8 | 330 |
| 26"    | 1015 | 914,4  | 749   | 115   | 7 | 28 - 2    | 1 7/8 | -   |
| 28"    | 1075 | 965,2  | 800   | 118,2 | 7 | 28- 2 1/8 | 2     | -   |
| 30"    | 1130 | 1022,4 | 857   | 121,3 | 7 | 28- 2 1/8 | 2     | -   |
| 32"    | 1195 | 1079,5 | 914   | 124,5 | 7 | 28- 2 3/8 | 2 1/4 | -   |
| 36"    | 1315 | 1193,8 | 1022  | 130,9 | 7 | 28- 2 5/8 | 2 1/2 | -   |
| 40"    | 1320 | 1212,8 | 1111  | 165,8 | 7 | 28- 2 3/8 | 2 1/4 | -   |
| 42"    | 1405 | 1282,7 | 1168  | 175,3 | 7 | 28- 2 5/8 | 2 1/2 | -   |

| ØD   | ØK     | ØF    | C     | f | n-Ød      | ØS    | Y   |
|------|--------|-------|-------|---|-----------|-------|-----|
| -    | -      | -     | -     | - | -         | -     | -   |
| -    | -      | -     | -     | - | -         | -     | -   |
| -    | -      | -     | -     | - | -         | -     | -   |
| -    | -      | -     | -     | - | -         | -     | -   |
| 215  | 165,1  | 91,9  | 45,1  | 7 | 8 - 1     | 7/8   | 145 |
| 240  | 190,5  | 127   | 45,1  | 7 | 8 - 1     | 7/8   | 145 |
| 290  | 235    | 157,2 | 51,5  | 7 | 8- 1 1/4  | 1 1/8 | 170 |
| 380  | 317,5  | 215,9 | 62,6  | 7 | 12- 1 1/4 | 1 1/8 | 190 |
| 470  | 393,7  | 269,7 | 70,5  | 7 | 12- 1 1/2 | 1 3/8 | 220 |
| 545  | 469,9  | 323,9 | 76,9  | 7 | 16- 1 1/2 | 1 3/8 | 235 |
| 610  | 533,4  | 381   | 86,4  | 7 | 20- 1 1/2 | 1 3/8 | 255 |
| 640  | 558,8  | 412,8 | 92,8  | 7 | 20- 1 5/8 | 1 1/2 | 275 |
| 705  | 616    | 469,9 | 95,9  | 7 | 20- 1 3/4 | 1 5/8 | 285 |
| 785  | 685,8  | 533,4 | 108,6 | 7 | 20 - 2    | 1 7/8 | 325 |
| 855  | 749,3  | 584,2 | 115   | 7 | 20- 2 1/8 | 2     | 350 |
| 1040 | 901,7  | 692,2 | 146,7 | 7 | 20- 2 5/8 | 2 1/2 | 440 |
| 1085 | 952,5  | 749   | 146,7 | 7 | 20- 2 7/8 | 2 3/4 | -   |
| 1170 | 1022,4 | 800   | 149,9 | 7 | 20- 3 1/8 | 3     | -   |
| 1230 | 1085,8 | 857   | 156,3 | 7 | 20- 3 1/8 | 3     | -   |
| 1315 | 1155,7 | 914   | 165,8 | 7 | 20- 3 3/8 | 3 1/4 | -   |
| 1460 | 1289   | 1022  | 178,5 | 7 | 20- 3 5/8 | 3 1/2 | -   |

**Class 1500**

| Size | ØD   | ØK    | ØF    | C     | f | n-Ød      | ØS    | Y   |
|------|------|-------|-------|-------|---|-----------|-------|-----|
| 2"   | 215  | 165,1 | 91,9  | 45,1  | 7 | 8 - 1     | 7/8   | 145 |
| 3"   | 265  | 203,2 | 127   | 54,7  | 7 | 8- 1 1/4  | 1 1/8 | 180 |
| 4"   | 310  | 241,3 | 157,2 | 61    | 7 | 8- 1 3/8  | 1 1/4 | 195 |
| 6"   | 395  | 317,5 | 215,9 | 89,6  | 7 | 12- 1 1/2 | 1 3/8 | 260 |
| 8"   | 485  | 393,7 | 269,7 | 99,1  | 7 | 12- 1 3/4 | 1 5/8 | 290 |
| 10"  | 585  | 482,6 | 323,9 | 115   | 7 | 12 - 2    | 1 7/8 | 335 |
| 12"  | 675  | 571,5 | 381   | 130,9 | 7 | 16- 2 1/8 | 2     | 375 |
| 14"  | 750  | 635   | 412,8 | 140,4 | 7 | 16- 2 3/8 | 2 1/4 | 405 |
| 16"  | 825  | 704,8 | 469,9 | 153,1 | 7 | 16- 2 5/8 | 2 1/2 | 445 |
| 18"  | 915  | 774,7 | 533,4 | 169   | 7 | 16- 2 7/8 | 2 3/4 | 495 |
| 20"  | 985  | 831,8 | 584,2 | 184,8 | 7 | 16- 3 1/8 | 3     | 540 |
| 24"  | 1170 | 990,6 | 692,2 | 210,2 | 7 | 16- 3 5/8 | 3 1/2 | 615 |

**Class 2500**

| ØD  | ØK    | ØF    | C     | f | n-Ød      | ØS    | Y   |
|-----|-------|-------|-------|---|-----------|-------|-----|
| 235 | 171,4 | 91,9  | 57,9  | 7 | 8- 1 1/8  | 1     | 180 |
| 305 | 228,6 | 127   | 73,7  | 7 | 8- 1 3/8  | 1 1/4 | 220 |
| 355 | 273   | 157,2 | 83,2  | 7 | 8- 1 5/8  | 1 1/2 | 255 |
| 485 | 368,3 | 215,9 | 115   | 7 | 8- 2 1/8  | 2     | 345 |
| 550 | 438,2 | 269,7 | 134   | 7 | 12- 2 1/8 | 2     | 380 |
| 675 | 539,8 | 323,9 | 172,1 | 7 | 12- 2 5/8 | 2 1/2 | 490 |
| 760 | 619,1 | 381   | 191,2 | 7 | 12- 2 7/8 | 2 3/4 | 540 |

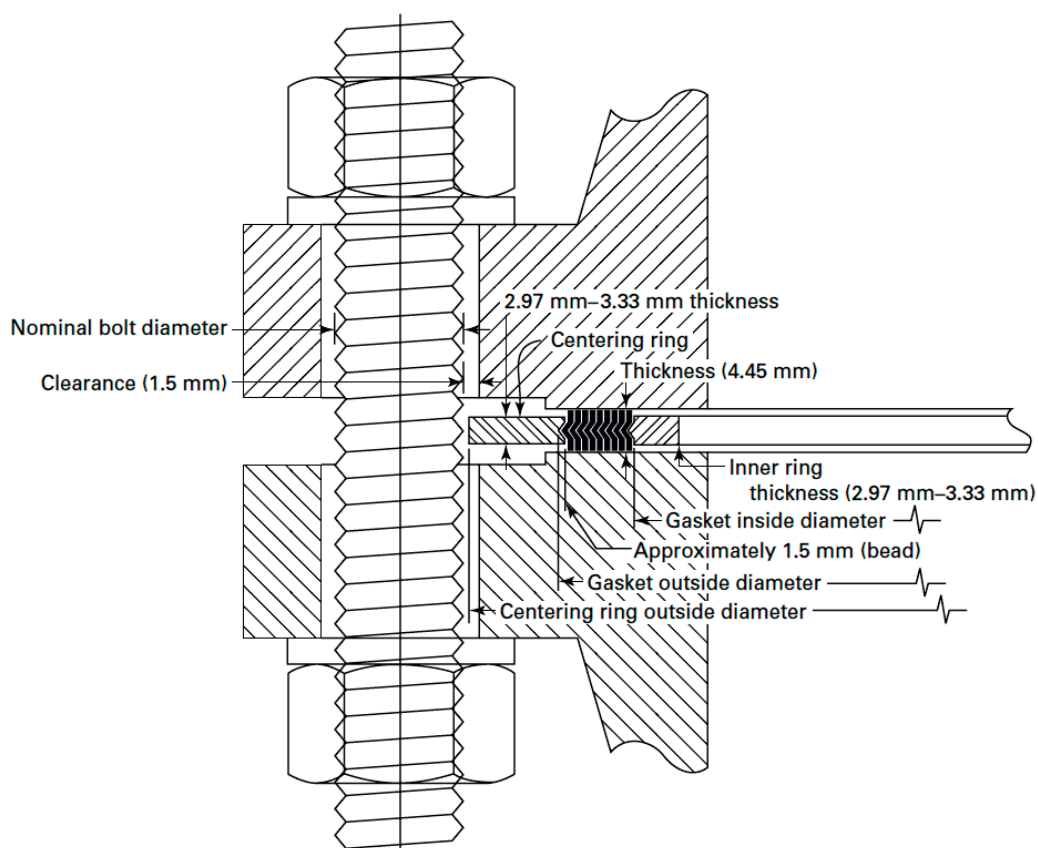
Dimensions in mm, except for diameters of bolts holes, which are in inch units

## Flat Gaskets acc. to ANSI B16.21

| Rating<br>nominal size | Gasket I.D. | Gasket O.D. by Class |       |       |
|------------------------|-------------|----------------------|-------|-------|
|                        |             | 150Lb                | 300Lb | 600Lb |
| 1/2"                   | 21          | 48                   | 54    | 54    |
| 3/4"                   | 27          | 57                   | 67    | 67    |
| 1"                     | 33          | 67                   | 73    | 73    |
| 1 1/4"                 | 42          | 76                   | 82    | 82    |
| 1 1/2"                 | 48          | 86                   | 95    | 95    |
| 2"                     | 60          | 105                  | 111   | 111   |
| 2 1/2"                 | 73          | 124                  | 130   | 130   |
| 3"                     | 89          | 136                  | 149   | 149   |
| 4"                     | 114         | 174                  | 181   | 194   |
| 5"                     | 141         | 196                  | 210   | 241   |
| 6"                     | 168         | 222                  | 250   | 266   |
| 8"                     | 219         | 279                  | 308   | 320   |
| 10"                    | 273         | 340                  | 362   | 400   |
| 12"                    | 324         | 410                  | 422   | 457   |
| 14"                    | 356         | 451                  | 486   | 492   |
| 16"                    | 406         | 514                  | 540   | 565   |
| 18"                    | 457         | 549                  | 597   | 613   |
| 20"                    | 508         | 606                  | 654   | 682   |
| 24"                    | 610         | 717                  | 774   | 790   |

Dimensions in mm

## Spiral-Wound Gaskets acc. to ASME B16.20



## Spiral-Wound Gaskets acc. to ASME B16.20

### Dimensions for Spiral-Wound Gaskets Used With ASME B16.5 Flanges

| Flange Size (NPS) | Gasket O. D.          |                         | Gasket I. D. by Class |       |       |       |       |       | Centering Ring O. D. by Class |       |       |       |       |       |
|-------------------|-----------------------|-------------------------|-----------------------|-------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------|
|                   | Classes 150, 300, 600 | Classes 900, 1500, 2500 |                       |       |       |       |       |       |                               |       |       |       |       |       |
|                   |                       |                         | 150                   | 300   | 600   | 900   | 1500  | 2500  | 150                           | 300   | 600   | 900   | 1500  | 2500  |
| 1/2               | 31,8                  | 31,8                    | 19,1                  | 19,1  | 19,1  | -     | 19,1  | 19,1  | 47,8                          | 54,1  | 54,1  | -     | 63,5  | 69,9  |
| 3/4               | 39,6                  | 39,6                    | 25,4                  | 25,4  | 25,4  | -     | 25,4  | 25,4  | 57,2                          | 66,8  | 66,8  | -     | 69,9  | 76,2  |
| 1                 | 47,8                  | 47,8                    | 31,8                  | 31,8  | 31,8  | -     | 31,8  | 31,8  | 66,8                          | 73,2  | 73,2  | -     | 79,5  | 85,9  |
| 1 1/4             | 60,5                  | 60,5                    | 47,8                  | 47,8  | 47,8  | -     | 39,6  | 39,6  | 76,2                          | 82,6  | 82,6  | -     | 88,9  | 104,9 |
| 1 1/2             | 69,9                  | 69,9                    | 54,1                  | 54,1  | 54,1  | -     | 47,8  | 47,8  | 85,9                          | 95,3  | 95,3  | -     | 98,6  | 117,6 |
| 2                 | 85,9                  | 85,9                    | 69,9                  | 69,9  | 69,9  | -     | 58,7  | 58,7  | 104,9                         | 111,3 | 111,3 | -     | 143   | 146,1 |
| 2 1/2             | 98,6                  | 98,6                    | 82,6                  | 82,6  | 82,6  | -     | 69,9  | 69,9  | 124                           | 130,3 | 130,3 | -     | 165,1 | 168,4 |
| 3                 | 120,7                 | 120,7                   | 101,6                 | 101,6 | 101,6 | 95,3  | 92,2  | 92,2  | 136,7                         | 149,4 | 149,4 | 168,4 | 174,8 | 196,9 |
| 4                 | 149,4                 | 149,4                   | 127                   | 127   | 120,7 | 120,7 | 117,6 | 117,6 | 174,8                         | 181,1 | 193,8 | 206,5 | 209,6 | 235   |
| 5                 | 177,8                 | 177,8                   | 155,7                 | 155,7 | 147,6 | 147,6 | 143   | 143   | 196,9                         | 215,9 | 241,3 | 247,7 | 254   | 279,4 |
| 6                 | 209,6                 | 209,6                   | 182,6                 | 182,6 | 174,8 | 174,8 | 171,5 | 171,5 | 222,3                         | 251   | 266,7 | 289,1 | 282,7 | 317,5 |
| 8                 | 263,7                 | 257,3                   | 233,4                 | 233,4 | 225,6 | 222,3 | 215,9 | 215,9 | 279,4                         | 308,1 | 320,8 | 358,9 | 352,6 | 387,4 |
| 10                | 317,5                 | 311,2                   | 287,3                 | 287,3 | 274,6 | 276,4 | 266,7 | 270   | 339,9                         | 362   | 400,1 | 435,1 | 435,1 | 476,3 |
| 12                | 374,7                 | 368,3                   | 339,9                 | 339,9 | 327,2 | 323,9 | 323,9 | 317,5 | 409,7                         | 422,4 | 457,2 | 498,6 | 520,7 | 549,4 |
| 14                | 406,4                 | 400,1                   | 371,6                 | 371,6 | 362   | 355,6 | 362   | -     | 450,9                         | 485,9 | 492,3 | 520,7 | 577,9 | -     |
| 16                | 463,6                 | 457,2                   | 422,4                 | 422,4 | 412,8 | 412,8 | 406,4 | -     | 514,4                         | 539,8 | 565,2 | 574,8 | 641,4 | -     |
| 18                | 527,1                 | 520,7                   | 474,7                 | 474,7 | 469,9 | 463,6 | 463,6 | -     | 549,4                         | 596,9 | 612,9 | 638,3 | 704,9 | -     |
| 20                | 577,9                 | 571,5                   | 525,5                 | 525,5 | 520,7 | 520,7 | 514,4 | -     | 606,6                         | 654,1 | 682,8 | 698,5 | 755,7 | -     |
| 24                | 685,8                 | 679,5                   | 628,7                 | 628,7 | 628,7 | 628,7 | 616   | -     | 717,6                         | 774,7 | 790,7 | 838,2 | 901,7 | -     |

### Dimensions for Spiral-Wound Gaskets Used With ASME B16.47 A Series Flanges

| Flange Size (NPS) | Class 150    |               |                              | Class 300    |               |                              | Class 600    |               |                              | Class 900    |               |                              |
|-------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|
|                   | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. |
| 26                | 673,1        | 704,9         | 774,7                        | 685,8        | 736,6         | 835,2                        | 685,8        | 736,6         | 866,9                        | 685,8        | 736,6         | 882,7                        |
| 28                | 723,9        | 755,7         | 831,9                        | 736,6        | 787,4         | 898,7                        | 736,6        | 787,4         | 914,4                        | 736,6        | 787,4         | 946,2                        |
| 30                | 774,7        | 806,5         | 882,7                        | 793,8        | 844,6         | 952,5                        | 793,8        | 844,6         | 971,6                        | 793,8        | 844,6         | 1009,7                       |
| 32                | 825,5        | 860,6         | 939,8                        | 850,9        | 901,7         | 1006,6                       | 850,9        | 901,7         | 1022,4                       | 850,9        | 901,7         | 1073,2                       |
| 34                | 876,3        | 911,4         | 990,6                        | 901,7        | 952,5         | 1057,4                       | 901,7        | 952,5         | 1073,2                       | 901,7        | 952,5         | 1136,7                       |
| 36                | 927,1        | 968,5         | 1047,8                       | 955,8        | 1006,6        | 1117,6                       | 955,8        | 1006,6        | 1130,3                       | 958,9        | 1009,7        | 1200,2                       |
| 38                | 977,9        | 1019,3        | 1111,3                       | 977,9        | 1016          | 1054,1                       | 990,6        | 1041,4        | 1104,9                       | 1035,1       | 1085,9        | 1200,2                       |
| 40                | 1028,7       | 1070,1        | 1162,1                       | 1022,4       | 1070,1        | 1114,6                       | 1047,8       | 1098,6        | 1155,7                       | 198,6        | 1149,4        | 1251                         |
| 42                | 1079,5       | 1124          | 1219,2                       | 1073,2       | 1120,9        | 1165,4                       | 1104,9       | 1155,7        | 1219,2                       | 1149,4       | 1200,2        | 1301,8                       |
| 44                | 1130,3       | 1178,1        | 1276,4                       | 1130,3       | 1181,1        | 1219,2                       | 1162,1       | 1212,9        | 1270                         | 2106,5       | 1257,3        | 1368,6                       |
| 46                | 1181,1       | 1228,9        | 1327,2                       | 1178,1       | 1228,9        | 1273,3                       | 1212,9       | 1263,7        | 1327,2                       | 2170         | 1320,8        | 1435,1                       |
| 48                | 1231,9       | 1279,7        | 1384,3                       | 1235,2       | 1286          | 1324,1                       | 1270         | 1320,8        | 1390,7                       | 3120,8       | 1371,6        | 1485,9                       |
| 50                | 1282,7       | 1333,5        | 1435,1                       | 1295,4       | 1346,2        | 1378                         | 1320,8       | 1371,6        | 1447,8                       | -            | -             | -                            |
| 52                | 1333,5       | 1384,3        | 1492,3                       | 1346,2       | 1397          | 1428,8                       | 1371,6       | 1422,4        | 1498,6                       | -            | -             | -                            |
| 54                | 1384,3       | 1435,1        | 1549,4                       | 1403,4       | 1454,2        | 1492,3                       | 1428,8       | 1479,6        | 1555,8                       | -            | -             | -                            |
| 56                | 1435,1       | 1485,9        | 1606,6                       | 1454,2       | 1505          | 1543,1                       | 1479,6       | 1530,4        | 1612,9                       | -            | -             | -                            |
| 58                | 1485,9       | 1536,7        | 1663,7                       | 1511,3       | 1562,1        | 1593,9                       | 1536,7       | 1587,5        | 1663,7                       | -            | -             | -                            |
| 60                | 1536,7       | 1587,5        | 1714,5                       | 1562,1       | 1612,9        | 1644,7                       | 1593,9       | 1644,7        | 1733,6                       | -            | -             | -                            |

Dimensions in mm

## Spiral-Wound Gaskets acc. to ASME B16.20

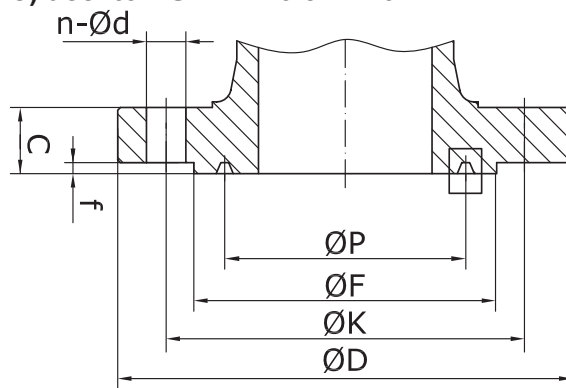
### Dimensions for Spiral-Wound Gaskets Used With ASME B16.47 B Series Flanges

| Flange Size (NPS) | Class 150    |               |                              | Class 300    |               |                              | Class 600    |               |                              | Class 900    |               |                              |
|-------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|--------------|---------------|------------------------------|
|                   | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. | Inside Diam. | Outside Diam. | Centering Ring Outside Diam. |
| 26                | 673,1        | 698,5         | 725,4                        | 673,1        | 711,2         | 771,7                        | 663,7        | 714,5         | 765,3                        | 692,2        | 749,3         | 838,2                        |
| 28                | 723,9        | 749,3         | 776,2                        | 723,9        | 762           | 825,5                        | 704,9        | 755,7         | 819,2                        | 743          | 800,1         | 901,7                        |
| 30                | 774,7        | 800,1         | 827                          | 774,7        | 812,8         | 886                          | 778          | 828,8         | 879,6                        | 806,5        | 857,3         | 958,9                        |
| 32                | 825,5        | 850,9         | 881,1                        | 825,5        | 863,6         | 939,8                        | 831,9        | 882,7         | 933,5                        | 863,6        | 914,4         | 1016                         |
| 34                | 876,3        | 908,1         | 935                          | 876,3        | 914,4         | 993,9                        | 889          | 939,8         | 997                          | 920,8        | 971,6         | 1073,2                       |
| 36                | 927,1        | 958,9         | 987,6                        | 927,1        | 965,2         | 1047,8                       | 939,8        | 990,6         | 1047,8                       | 946,2        | 997           | 1124                         |
| 38                | 974,9        | 1009,7        | 1044,7                       | 1009,7       | 1047,8        | 1098,6                       | 990,6        | 1041,4        | 1104,9                       | 1035,1       | 1085,9        | 1200,2                       |
| 40                | 1022,4       | 1063,8        | 1095,5                       | 1060,5       | 1098,6        | 1149,4                       | 1047,8       | 1098,6        | 1155,7                       | 1098,6       | 1149,4        | 1251                         |
| 42                | 1079,5       | 1114,6        | 1146,3                       | 1111,3       | 1149,4        | 1200,2                       | 1104,9       | 1155,7        | 1219,2                       | 1149,4       | 1200,2        | 1301,8                       |
| 44                | 1124         | 1165,4        | 1197,1                       | 1162,1       | 1200,2        | 1251                         | 1162,1       | 1212,9        | 1270                         | 1206,5       | 1257,3        | 1368,6                       |
| 46                | 1181,1       | 1224          | 1255,8                       | 1216,2       | 1254,3        | 1317,8                       | 1212,9       | 1263,7        | 1327,2                       | 1270         | 1320,8        | 1435,1                       |
| 48                | 1231,9       | 1270          | 1306,6                       | 1263,7       | 1311,4        | 1368,6                       | 1270         | 1320,8        | 1390,7                       | 1320,8       | 1371,6        | 1485,9                       |
| 50                | 1282,7       | 1325,6        | 1357,4                       | 1317,8       | 1355,9        | 1419,4                       | 1320,8       | 1371,6        | 447,8                        | -            | -             | -                            |
| 52                | 1333,5       | 1376,4        | 1408,2                       | 1368,6       | 1406,7        | 1470,2                       | 1371,6       | 1422,4        | 498,6                        | -            | -             | -                            |
| 54                | 1384,3       | 1422,4        | 1463,8                       | 1403,4       | 1454,2        | 1530,4                       | 1428,8       | 1479,6        | 555,8                        | -            | -             | -                            |
| 56                | 1444,8       | 1478          | 1514,6                       | 1479,6       | 1524          | 1593,9                       | 1479,6       | 1530,4        | 612,9                        | -            | -             | -                            |
| 58                | 1500,1       | 1528,8        | 1579,6                       | 1535,2       | 1573,3        | 1655,8                       | 1536,7       | 1587,5        | 663,7                        | -            | -             | -                            |
| 60                | 1557,3       | 1586          | 1630,4                       | 1589         | 1630,4        | 1706,6                       | 1593,9       | 1644,7        | 733,6                        | -            | -             | -                            |

### Inner-Ring Inside Diameters for Spiral-Wound Gaskets for Use With ASME B16.5 & B16.47 Flanges

| Flange Size (NPS) | Pressure Class |       |       |       |       |       | Flange Size (NPS) | A Series Flanges |        |        |        | B Series Flanges |        |        |        |
|-------------------|----------------|-------|-------|-------|-------|-------|-------------------|------------------|--------|--------|--------|------------------|--------|--------|--------|
|                   | 150            | 300   | 600   | 900   | 1500  | 2500  |                   | Pressure Class   |        |        |        | Pressure Class   |        |        |        |
|                   |                |       |       |       |       |       |                   | 150              | 300    | 600    | 900    | 150              | 300    | 600    | 900    |
| 1/2               | 14,2           | 14,2  | 14,2  | -     | 14,2  | 14,2  | 26                | 654,1            | 654,1  | 647,7  | 660,4  | 654,1            | 654,1  | 644,7  | 666,8  |
| 3/4               | 20,6           | 20,6  | 20,6  | -     | 20,6  | 20,6  | 28                | 704,9            | 704,9  | 698,5  | 711,2  | 704,9            | 704,9  | 685,8  | 717,6  |
| 1                 | 26,9           | 26,9  | 26,9  | -     | 26,9  | 26,9  | 30                | 755,7            | 755,7  | 755,7  | 768,4  | 755,7            | 755,7  | 752,6  | 781,1  |
| 1 1/4             | 38,1           | 38,1  | 38,1  | -     | 33,3  | 33,3  | 32                | 806,5            | 806,5  | 812,8  | 812,8  | 806,5            | 806,5  | 793,8  | 838,2  |
| 1 1/2             | 44,5           | 44,5  | 44,5  | -     | 41,4  | 41,4  | 34                | 857,3            | 857,3  | 863,6  | 863,6  | 857,3            | 857,3  | 850,9  | 895,4  |
| 2                 | 55,6           | 55,6  | 55,6  | -     | 52,3  | 52,3  | 36                | 908,1            | 908,1  | 917,7  | 920,8  | 908,1            | 908,1  | 901,7  | 920,8  |
| 2 1/2             | 66,5           | 66,5  | 66,5  | -     | 63,5  | 63,5  | 38                | 958,9            | 952,5  | 952,5  | 1009,7 | 958,9            | 971,6  | 952,5  | 1009,7 |
| 3                 | 81             | 81    | 81    | 78,7  | 78,7  | 78,7  | 40                | 1009,7           | 1003,3 | 1009,7 | 1060,5 | 1009,7           | 1022,4 | 1009,7 | 1060,5 |
| 4                 | 106,4          | 106,4 | 102,6 | 102,6 | 97,8  | 97,8  | 42                | 1060,5           | 1054,1 | 1066,8 | 1111,3 | 1060,5           | 1085,9 | 1066,8 | 1111,3 |
| 5                 | 131,8          | 131,8 | 128,3 | 128,3 | 124,5 | 124,5 | 44                | 1111,3           | 1104,9 | 1111,3 | 1155,7 | 1111,3           | 1124   | 1111,3 | 1155,7 |
| 6                 | 157,2          | 157,2 | 154,9 | 154,9 | 147,3 | 147,3 | 46                | 1162,1           | 1152,7 | 1162,1 | 1219,2 | 1162,1           | 1178,1 | 1162,1 | 1219,2 |
| 8                 | 215,9          | 215,9 | 205,7 | 196,9 | 196,9 | 196,9 | 48                | 1212,9           | 1209,8 | 1219,2 | 1270   | 1212,9           | 1231,9 | 1219,2 | 1270   |
| 10                | 268,2          | 268,2 | 255,3 | 246,1 | 246,1 | 246,1 | 50                | 1263,7           | 1244,6 | 1270   | -      | 1263,7           | 1267   | 1270   | -      |
| 12                | 317,5          | 317,5 | 307,3 | 292,1 | 292,1 | 292,1 | 52                | 1314,5           | 1320,8 | 1320,8 | -      | 1314,5           | 1317,8 | 1320,8 | -      |
| 14                | 349,3          | 349,3 | 342,9 | 320,8 | 320,8 | -     | 54                | 1358,9           | 1352,6 | 1378   | -      | 1365,3           | 1365,3 | 1378   | -      |
| 16                | 400,1          | 400,1 | 389,9 | 374,7 | 368,3 | -     | 56                | 1409,7           | 1403,4 | 1428,8 | -      | 1422,4           | 1428,8 | 1428,8 | -      |
| 18                | 449,3          | 449,3 | 438,2 | 425,5 | 425,5 | -     | 58                | 1460,5           | 1447,8 | 1473,2 | -      | 1478             | 1484,4 | 1473,2 | -      |
| 20                | 500,1          | 500,1 | 489   | 482,6 | 476,3 | -     | 60                | 1511,3           | 1524   | 1530,4 | -      | 1535,2           | 1557,3 | 1530,4 | -      |
| 24                | 603,3          | 603,3 | 590,6 | 590,6 | 577,9 | -     |                   |                  |        |        |        |                  |        |        |        |

Dimensions in mm

**Ring Joint Flanged Ends (RTJ) acc. to ASME B16.5 / B16.47**


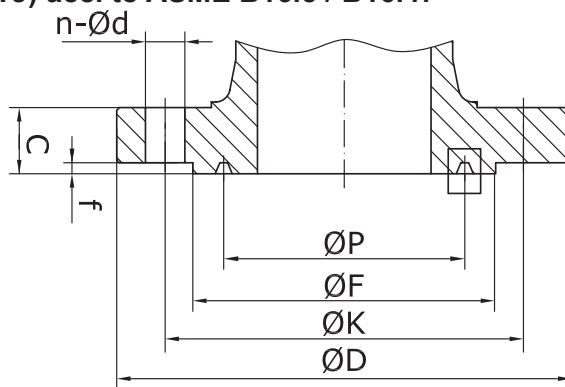
Dimensions in mm, except for diameters of bolts holes, which are in inch units

**Class 150**

| Size   | ØD   | ØK     | ØF   | ØP      | C    | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|--------|------|--------|------|---------|------|---|-----------|-------|-------|-----|-------|-----|
| 1"     | 110  | 79,4   | 63,5 | 47,63   | 16,3 | 2 | 4 - 5/8   | 8,74  | 6,35  | 0,8 | 1/2   | 75  |
| 1 1/2" | 125  | 98,4   | 82,5 | 65,07   | 19,5 | 2 | 4 - 5/8   | 8,74  | 6,35  | 0,8 | 1/2   | 85  |
| 2"     | 150  | 120,7  | 102  | 82,55   | 21,1 | 2 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 95  |
| 3"     | 190  | 152,4  | 133  | 114,3   | 25,9 | 2 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 100 |
| 4"     | 230  | 190,5  | 171  | 149,23  | 25,9 | 2 | 8 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 100 |
| 6"     | 280  | 241,3  | 219  | 193,68  | 27,4 | 2 | 8 - 7/8   | 8,74  | 6,35  | 0,8 | 3/4   | 115 |
| 8"     | 345  | 298,5  | 273  | 247,65  | 30,4 | 2 | 8 - 7/8   | 8,74  | 6,35  | 0,8 | 3/4   | 120 |
| 10"    | 405  | 362    | 330  | 304,8   | 32,2 | 2 | 12 - 1    | 8,74  | 6,35  | 0,8 | 7/8   | 125 |
| 12"    | 485  | 431,8  | 406  | 381     | 33,8 | 2 | 12 - 1    | 8,74  | 6,35  | 0,8 | 7/8   | 135 |
| 14"    | 535  | 476,3  | 425  | 396,88  | 37,1 | 2 | 12- 1 1/8 | 8,74  | 6,35  | 0,8 | 1     | 145 |
| 16"    | 595  | 539,8  | 483  | 454,03  | 38,6 | 2 | 16- 1 1/8 | 8,74  | 6,35  | 0,8 | 1     | 145 |
| 18"    | 635  | 577,9  | 546  | 517,53  | 41,6 | 2 | 16- 1 1/4 | 8,74  | 6,35  | 0,8 | 1 1/8 | 160 |
| 20"    | 700  | 635    | 597  | 558,8   | 44,9 | 2 | 20- 1 1/4 | 8,74  | 6,35  | 0,8 | 1 1/8 | 170 |
| 24"    | 815  | 749,3  | 711  | 673,1   | 49,8 | 2 | 20- 1 3/8 | 8,74  | 6,35  | 0,8 | 1 1/4 | 185 |
| 26"    | 870  | 806,4  | 810  | 749,3   | 68,7 | 2 | 24- 1 3/8 | 19,84 | 12,7  | 1,5 | 1 1/4 | -   |
| 28"    | 925  | 863,6  | 861  | 800,1   | 71,9 | 2 | 28- 1 3/8 | 19,84 | 12,7  | 1,5 | 1 1/4 | -   |
| 30"    | 985  | 914,4  | 917  | 857,25  | 75,1 | 2 | 28- 1 3/8 | 19,84 | 12,7  | 1,5 | 1 1/4 | -   |
| 32"    | 1060 | 977,9  | 984  | 914,4   | 81,4 | 2 | 28- 1 5/8 | 23,01 | 14,27 | 1,5 | 1 1/2 | -   |
| 36"    | 1170 | 1085,8 | 1092 | 1022,35 | 90,9 | 2 | 32- 1 5/8 | 23,01 | 14,27 | 1,5 | 1 1/2 | -   |

**Class 300**

| Size   | ØD   | ØK     | ØF   | ØP      | C     | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|--------|------|--------|------|---------|-------|---|-----------|-------|-------|-----|-------|-----|
| 1/2"   | 95   | 66,7   | 51   | 34,14   | 16,3  | 2 | 4 - 5/8   | 7,14  | 5,54  | 0,8 | 1/2   | 75  |
| 3/4"   | 115  | 82,6   | 63,5 | 42,88   | 17,9  | 2 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 90  |
| 1"     | 125  | 88,9   | 70   | 50,8    | 19,5  | 2 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 90  |
| 1 1/2" | 155  | 114,3  | 90,5 | 68,27   | 22,7  | 2 | 4 - 7/8   | 8,74  | 6,35  | 0,8 | 3/4   | 100 |
| 2"     | 165  | 127    | 108  | 82,55   | 24,3  | 2 | 8 - 3/4   | 11,91 | 7,92  | 0,8 | 5/8   | 100 |
| 3"     | 210  | 168,3  | 146  | 123,83  | 30,6  | 2 | 8 - 7/8   | 11,91 | 7,92  | 0,8 | 3/4   | 120 |
| 4"     | 255  | 200    | 175  | 149,23  | 33,8  | 2 | 8 - 7/8   | 11,91 | 7,92  | 0,8 | 3/4   | 125 |
| 6"     | 320  | 269,9  | 241  | 211,12  | 38,6  | 2 | 12 - 7/8  | 11,91 | 7,92  | 0,8 | 3/4   | 140 |
| 8"     | 380  | 330,2  | 302  | 269,88  | 43,3  | 2 | 12 - 1    | 11,91 | 7,92  | 0,8 | 7/8   | 150 |
| 10"    | 445  | 387,4  | 356  | 323,85  | 49,7  | 2 | 16- 1 1/8 | 11,91 | 7,92  | 0,8 | 1     | 170 |
| 12"    | 520  | 450,8  | 413  | 381     | 52,8  | 2 | 16- 1 1/4 | 11,91 | 7,92  | 0,8 | 1 1/8 | 185 |
| 14"    | 585  | 514,4  | 457  | 419,1   | 56    | 2 | 20- 1 1/4 | 11,91 | 7,92  | 0,8 | 1 1/8 | 190 |
| 16"    | 650  | 571,5  | 508  | 469,9   | 59,2  | 2 | 20- 1 3/8 | 11,91 | 7,92  | 0,8 | 1 1/4 | 205 |
| 18"    | 710  | 628,6  | 575  | 533,4   | 62,4  | 2 | 24- 1 3/8 | 11,91 | 7,92  | 0,8 | 1 1/4 | 210 |
| 20"    | 775  | 685,8  | 635  | 584,2   | 65,5  | 2 | 24- 1 3/8 | 13,49 | 9,53  | 1,5 | 1 1/4 | 220 |
| 24"    | 915  | 812,8  | 749  | 692,15  | 71,9  | 2 | 24- 1 5/8 | 16,66 | 11,13 | 1,5 | 1 1/2 | 255 |
| 26"    | 970  | 876,3  | 810  | 749,3   | 79,8  | 2 | 28- 1 3/4 | 19,84 | 12,7  | 1,5 | 1 5/8 | -   |
| 28"    | 1035 | 939,8  | 861  | 800,1   | 86,2  | 2 | 28- 1 3/4 | 19,84 | 12,7  | 1,5 | 1 5/8 | -   |
| 30"    | 1090 | 997    | 917  | 857,25  | 92,5  | 2 | 28- 1 7/8 | 19,84 | 12,7  | 1,5 | 1 3/4 | -   |
| 32"    | 1150 | 1054,1 | 984  | 914,4   | 98,9  | 2 | 28 - 2    | 23,01 | 14,27 | 1,5 | 1 7/8 | -   |
| 36"    | 1270 | 1168,4 | 1092 | 1022,35 | 105,2 | 2 | 32- 2 1/8 | 23,01 | 14,27 | 1,5 | 2     | -   |

**Ring Joint Flanged Ends (RTJ) acc. to ASME B16.5 / B16.47**


Dimensions in mm, except for diameters of bolts holes, which are in inch units

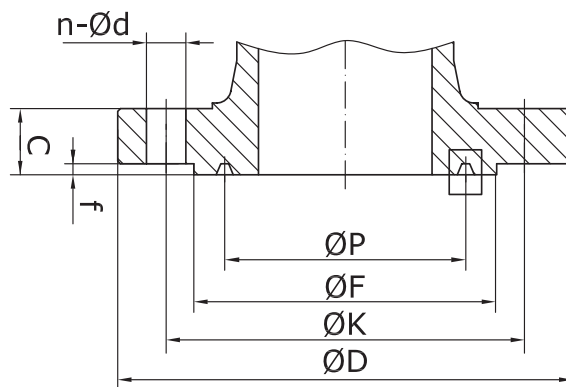
**Class 600**

| Size   | ØD   | ØK     | ØF   | ØP      | C     | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|--------|------|--------|------|---------|-------|---|-----------|-------|-------|-----|-------|-----|
| 1/2"   | 95   | 66,7   | 51   | 34,14   | 21,3  | 7 | 4 - 5/8   | 7,14  | 5,54  | 0,8 | 1/2   | 75  |
| 3/4"   | 115  | 82,6   | 63,5 | 42,88   | 22,9  | 7 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 90  |
| 1"     | 125  | 88,9   | 70   | 50,8    | 24,5  | 7 | 4 - 3/4   | 8,74  | 6,35  | 0,8 | 5/8   | 90  |
| 1 1/2" | 155  | 114,3  | 90,5 | 68,27   | 29,3  | 7 | 4 - 7/8   | 8,74  | 6,35  | 0,8 | 3/4   | 110 |
| 2"     | 165  | 127    | 108  | 82,55   | 32,4  | 7 | 8 - 3/4   | 11,91 | 7,92  | 0,8 | 5/8   | 110 |
| 3"     | 210  | 168,3  | 146  | 123,83  | 38,8  | 7 | 8 - 7/8   | 11,91 | 7,92  | 0,8 | 3/4   | 125 |
| 4"     | 275  | 215,9  | 175  | 149,23  | 45,1  | 7 | 8 - 1     | 11,91 | 7,92  | 0,8 | 7/8   | 145 |
| 6"     | 355  | 292,1  | 241  | 211,12  | 54,7  | 7 | 12- 1 1/8 | 11,91 | 7,92  | 0,8 | 1     | 170 |
| 8"     | 420  | 349,2  | 302  | 269,88  | 62,6  | 7 | 12- 1 1/4 | 11,91 | 7,92  | 0,8 | 1 1/8 | 195 |
| 10"    | 510  | 431,8  | 356  | 323,85  | 70,5  | 7 | 16- 1 3/8 | 11,91 | 7,92  | 0,8 | 1 1/4 | 215 |
| 12"    | 560  | 489    | 413  | 981     | 73,7  | 7 | 20- 1 3/8 | 11,91 | 7,92  | 0,8 | 1 1/4 | 220 |
| 14"    | 605  | 527    | 457  | 419,1   | 76,9  | 7 | 20- 1 1/2 | 11,91 | 7,92  | 0,8 | 1 3/8 | 235 |
| 16"    | 685  | 603,2  | 508  | 469,9   | 83,2  | 7 | 20- 1 5/8 | 11,91 | 7,92  | 0,8 | 1 1/2 | 255 |
| 18"    | 745  | 654    | 575  | 533,4   | 89,6  | 7 | 20- 1 3/4 | 11,91 | 7,92  | 0,8 | 1 5/8 | 275 |
| 20"    | 815  | 723,9  | 635  | 584,2   | 95,9  | 7 | 24- 1 3/4 | 13,49 | 9,53  | 1,5 | 1 5/8 | 290 |
| 24"    | 940  | 838,2  | 749  | 692,15  | 108,6 | 7 | 24 - 2    | 16,66 | 11,13 | 1,5 | 1 7/8 | 335 |
| 26"    | 1015 | 914,4  | 810  | 749,3   | 115   | 7 | 28 - 2    | 19,84 | 12,7  | 1,5 | 1 7/8 | -   |
| 28"    | 1075 | 965,2  | 861  | 800,1   | 118,2 | 7 | 28- 2 1/8 | 19,84 | 12,7  | 1,5 | 2     | -   |
| 30"    | 1130 | 1022,4 | 917  | 857,25  | 121,3 | 7 | 28- 2 1/8 | 19,84 | 12,7  | 1,5 | 2     | -   |
| 32"    | 1195 | 1079,5 | 984  | 914,4   | 124,5 | 7 | 28- 2 3/8 | 23,01 | 14,27 | 1,5 | 2 1/4 | -   |
| 36"    | 1315 | 1193,8 | 1092 | 1022,35 | 130,9 | 7 | 28- 2 5/8 | 23,01 | 14,27 | 1,5 | 2 1/2 | -   |

**Class 900**

| Size | ØD   | ØK     | ØF   | ØP      | C     | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|------|------|--------|------|---------|-------|---|-----------|-------|-------|-----|-------|-----|
| 2"   | 215  | 165,1  | 124  | 95,25   | 45,1  | 7 | 8 - 1     | 11,91 | 7,92  | 0,8 | 7/8   | 145 |
| 3"   | 240  | 190,5  | 156  | 123,83  | 45,1  | 7 | 8 - 1     | 11,91 | 7,92  | 0,8 | 7/8   | 145 |
| 4"   | 290  | 235    | 181  | 149,23  | 51,5  | 7 | 8- 1 1/4  | 11,91 | 7,92  | 0,8 | 1 1/8 | 170 |
| 6"   | 380  | 317,5  | 241  | 211,12  | 62,6  | 7 | 12- 1 1/4 | 11,91 | 7,92  | 0,8 | 1 1/8 | 195 |
| 8"   | 470  | 393,7  | 308  | 269,88  | 70,5  | 7 | 12- 1 1/2 | 11,91 | 7,92  | 0,8 | 1 3/8 | 220 |
| 10"  | 545  | 469,9  | 362  | 323,85  | 76,9  | 7 | 16- 1 1/2 | 11,91 | 7,92  | 0,8 | 1 3/8 | 235 |
| 12"  | 610  | 533,4  | 419  | 381     | 86,4  | 7 | 20- 1 1/2 | 11,91 | 7,92  | 0,8 | 1 3/8 | 255 |
| 14"  | 640  | 558,8  | 467  | 419,1   | 92,8  | 7 | 20- 1 5/8 | 16,66 | 11,13 | 1,5 | 1 1/2 | 280 |
| 16"  | 705  | 616    | 524  | 469,9   | 95,9  | 7 | 20- 1 3/4 | 16,66 | 11,13 | 1,5 | 1 5/8 | 290 |
| 18"  | 785  | 685,8  | 594  | 533,4   | 108,6 | 7 | 20 - 2    | 19,84 | 12,7  | 1,5 | 1 7/8 | 335 |
| 20"  | 855  | 749,3  | 648  | 584,2   | 115   | 7 | 20- 2 1/8 | 19,84 | 12,7  | 1,5 | 2     | 360 |
| 24"  | 1040 | 901,7  | 772  | 692,15  | 146,7 | 7 | 20- 2 5/8 | 26,97 | 15,88 | 2,4 | 2 1/2 | 455 |
| 26"  | 1085 | 952,5  | 832  | 749,3   | 146,7 | 7 | 20- 2 7/8 | 30,18 | 17,48 | 2,3 | 2 3/4 | -   |
| 28"  | 1170 | 1022,4 | 889  | 800,1   | 149,9 | 7 | 20- 3 1/8 | 33,32 | 17,48 | 2,3 | 3     | -   |
| 30"  | 1230 | 1085,8 | 946  | 857,25  | 156,3 | 7 | 20- 3 1/8 | 33,32 | 17,48 | 2,3 | 3     | -   |
| 32"  | 1315 | 1155,7 | 1003 | 914,4   | 165,8 | 7 | 20- 3 3/8 | 33,32 | 17,48 | 2,3 | 3 1/4 | -   |
| 36"  | 1460 | 1289   | 1124 | 1022,35 | 178,5 | 7 | 20- 3 5/8 | 36,53 | 20,62 | 2,3 | 3 1/2 | -   |

## Ring Joint Flanged Ends (RTJ) acc. to ASME B16.5



### Class 1500

Dimensions in mm, except for diameters of bolts holes, which are in inch units

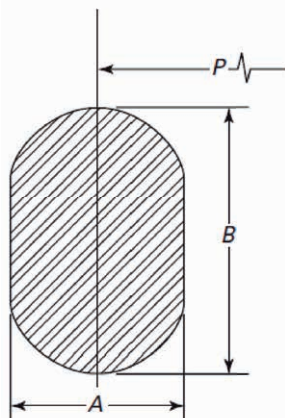
| Size | ØD   | ØK    | ØF  | ØP     | C     | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|------|------|-------|-----|--------|-------|---|-----------|-------|-------|-----|-------|-----|
| 2"   | 215  | 165,1 | 124 | 95,25  | 45,1  | 7 | 8 - 1     | 11,91 | 7,92  | 0,8 | 7/8   | 145 |
| 3"   | 265  | 203,2 | 168 | 136,53 | 54,7  | 7 | 8- 1 1/4  | 11,91 | 7,92  | 0,8 | 1 1/8 | 180 |
| 4"   | 310  | 241,3 | 194 | 161,93 | 61    | 7 | 8- 1 3/8  | 11,91 | 7,92  | 0,8 | 1 1/4 | 195 |
| 6"   | 395  | 317,5 | 248 | 211,14 | 89,6  | 7 | 12- 1 1/2 | 13,49 | 9,53  | 1,5 | 1 3/8 | 265 |
| 8"   | 485  | 393,7 | 318 | 269,88 | 99,1  | 7 | 12- 1 3/4 | 16,66 | 11,13 | 1,5 | 1 5/8 | 300 |
| 10"  | 585  | 482,6 | 371 | 323,85 | 115   | 7 | 12 - 2    | 16,66 | 11,13 | 1,5 | 1 7/8 | 345 |
| 12"  | 675  | 571,5 | 438 | 381    | 130,9 | 7 | 16- 2 1/8 | 23,01 | 14,27 | 1,5 | 2     | 385 |
| 14"  | 750  | 635   | 489 | 419,1  | 140,4 | 7 | 16- 2 3/8 | 26,97 | 15,88 | 2,4 | 2 1/4 | 425 |
| 16"  | 825  | 704,8 | 546 | 469,9  | 153,1 | 7 | 16- 2 5/8 | 30,18 | 17,48 | 2,4 | 2 1/2 | 470 |
| 18"  | 915  | 774,7 | 613 | 533,4  | 169   | 7 | 16- 2 7/8 | 30,18 | 17,48 | 2,4 | 2 3/4 | 525 |
| 20"  | 985  | 831,8 | 673 | 584,2  | 184,8 | 7 | 16- 3 1/8 | 33,32 | 17,48 | 2,4 | 3     | 565 |
| 24"  | 1170 | 990,6 | 794 | 692,15 | 210,2 | 7 | 16- 3 5/8 | 36,53 | 20,62 | 2,4 | 3 1/2 | 650 |

### Class 2500

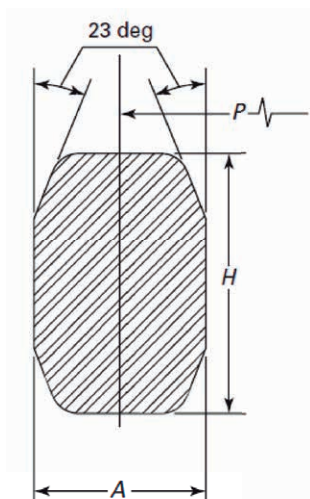
| Size | ØD  | ØK    | ØF  | ØP     | C     | f | n-Ød      | A     | B     | R   | ØS    | Y   |
|------|-----|-------|-----|--------|-------|---|-----------|-------|-------|-----|-------|-----|
| 2"   | 235 | 171,4 | 133 | 101,6  | 57,9  | 7 | 8- 1 1/8  | 11,91 | 7,92  | 0,8 | 1     | 180 |
| 3"   | 305 | 228,6 | 168 | 127    | 73,7  | 7 | 8- 1 3/8  | 13,49 | 9,53  | 1,5 | 1 1/4 | 230 |
| 4"   | 355 | 273   | 203 | 157,18 | 83,2  | 7 | 8- 1 5/8  | 16,66 | 11,13 | 1,5 | 1 1/2 | 260 |
| 6"   | 485 | 368,3 | 279 | 228,6  | 115   | 7 | 8- 2 1/8  | 19,84 | 12,7  | 1,5 | 2     | 355 |
| 8"   | 550 | 438,2 | 340 | 279,4  | 134   | 7 | 12- 2 1/8 | 23,01 | 14,27 | 1,5 | 2     | 395 |
| 10"  | 675 | 539,8 | 425 | 342,9  | 172,1 | 7 | 12- 2 5/8 | 30,18 | 17,48 | 2,4 | 2 1/2 | 510 |
| 12"  | 760 | 619,1 | 495 | 406,4  | 191,2 | 7 | 12- 2 7/8 | 33,32 | 17,48 | 2,4 | 2 3/4 | 560 |

# Ring-Joint Gaskets type R acc. to ASME B16.20

OVAL



OCTOGONAL



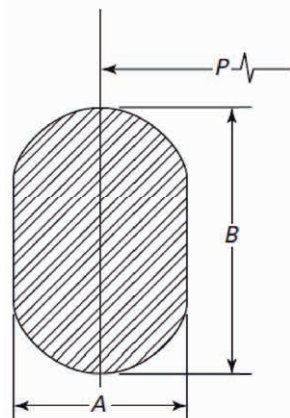
| Diam.  | Class          | Ring No. | P      | A     | B     | H     |
|--------|----------------|----------|--------|-------|-------|-------|
| 1/2"   | 300, 600       | R11      | 34,13  | 6,35  | 11,11 | 9,52  |
| 1/2"   | 1500           | R12      | 39,68  | 7,93  | 14,26 | 12,7  |
| 1/2"   | 2500           | R13      | 42,86  | 7,93  | 14,28 | 12,7  |
| 3/4"   | 300, 600       | R13      | 42,86  | 7,93  | 14,28 | 12,7  |
| 3/4"   | 1500           | R14      | 44,45  | 7,93  | 14,28 | 12,7  |
| 1"     | 150            | R15      | 47,62  | 7,93  | 14,28 | 12,7  |
| 3/4"   | 2500           | R16      | 50,8   | 7,93  | 14,28 | 12,7  |
| 1"     | 300, 600, 1500 | R16      | 50,8   | 7,93  | 14,28 | 12,7  |
| 1 1/4" | 150            | R17      | 57,15  | 7,93  | 14,28 | 12,7  |
| 1"     | 2500           | R18      | 60,32  | 7,93  | 14,28 | 12,7  |
| 1 1/4" | 300, 600, 1500 | R18      | 60,32  | 7,93  | 14,28 | 12,7  |
| 1 1/2" | 150            | R19      | 65,08  | 7,93  | 14,28 | 12,7  |
| 1 1/2" | 300, 600, 1500 | *R20     | 68,26  | 7,93  | 14,28 | 12,7  |
| 1 1/4" | 2500           | R21      | 72,23  | 11,11 | 17,46 | 15,87 |
| 2"     | 150            | R22      | 82,55  | 7,93  | 14,28 | 12,7  |
| 1 1/2" | 2500           | *R23     | 82,55  | 11,11 | 17,46 | 15,87 |
| 2"     | 300, 600       | *R23     | 82,55  | 11,11 | 17,46 | 15,87 |
| 2"     | 1500           | *R24     | 95,25  | 11,11 | 17,46 | 15,87 |
| 2 1/2" | 150            | R25      | 101,6  | 7,93  | 14,28 | 12,7  |
| 2"     | 2500           | *R26     | 101,6  | 11,11 | 17,46 | 15,87 |
| 2 1/2" | 300, 600       | *R26     | 101,6  | 11,11 | 17,46 | 15,87 |
| 2 1/2" | 1500           | *R27     | 107,95 | 11,11 | 17,46 | 15,87 |
| 2 1/2" | 2500           | R28      | 111,12 | 12,7  | 19,05 | 17,46 |
| 3"     | 150            | R29      | 114,3  | 7,93  | 14,28 | 12,7  |
| -      | -              | R30      | 117,47 | 11,11 | 17,46 | 15,87 |
| 3"     | 300, 600, 900  | R31      | 123,82 | 11,11 | 17,46 | 15,87 |
| 3"     | 2500           | R32      | 127    | 12,7  | 19,05 | 17,46 |
| 3 1/2" | 150            | R33      | 131,76 | 7,93  | 14,28 | 12,7  |
| 3 1/2" | 300, 600       | R34      | 131,76 | 11,11 | 17,46 | 15,87 |
| 3"     | 1500           | *R35     | 136,52 | 11,11 | 17,46 | 15,87 |
| 4"     | 150            | R36      | 149,22 | 7,93  | 14,28 | 12,7  |
| 4"     | 300, 600, 900  | R37      | 149,22 | 11,11 | 17,46 | 15,87 |
| 4"     | 2500           | R38      | 157,6  | 15,87 | 22,22 | 20,64 |
| 4"     | 1500           | *R39     | 161,92 | 11,11 | 17,46 | 15,87 |
| 5"     | 150            | R40      | 171,45 | 7,93  | 14,28 | 12,7  |
| 5"     | 300, 600, 900  | *R41     | 180,97 | 11,11 | 17,46 | 15,87 |
| 5"     | 2500           | R42      | 190,5  | 19,05 | 25,4  | 23,81 |
| 6"     | 150            | R43      | 193,67 | 7,93  | 14,28 | 12,7  |
| 5"     | 1500           | *R44     | 193,67 | 11,11 | 17,46 | 15,87 |
| 6"     | 300, 600, 900  | *R45     | 211,13 | 11,11 | 17,46 | 15,87 |
| 6"     | 1500           | *R46     | 211,13 | 12,7  | 19,05 | 17,46 |
| 6"     | 2500           | *R47     | 228,6  | 19,05 | 25,4  | 23,81 |
| 8"     | 150            | R48      | 247,65 | 7,93  | 14,28 | 12,7  |
| 8"     | 300, 600, 900  | *R49     | 269,87 | 11,11 | 17,46 | 15,87 |
| 8"     | 1500           | *R50     | 269,87 | 15,87 | 22,22 | 20,64 |
| 8"     | 2500           | R51      | 279,4  | 22,22 | 28,57 | 26,99 |
| 10"    | 150            | R52      | 304,8  | 7,93  | 14,28 | 12,7  |
| 10"    | 300, 600, 900  | *R53     | 323,85 | 11,11 | 17,46 | 15,87 |
| 10"    | 1500           | *R54     | 323,85 | 15,87 | 22,22 | 20,64 |
| 10"    | 2500           | R55      | 342,9  | 28,57 | 36,51 | 34,92 |

Dimensions are in millimeters.

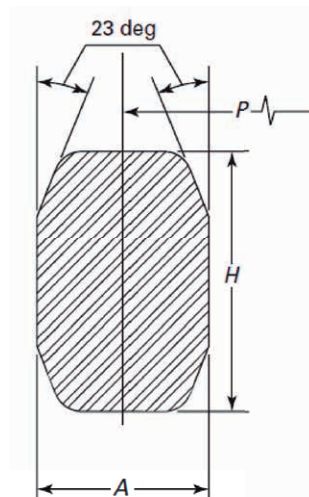
(\*) Indicate ring number acc. to API, STD, 6A

# Ring-Joint Gaskets type R acc. to ASME B16.20

## OVAL



## OCTOGONAL



| Diam. | Class         | Ring No. | P       | A     | B     | H     |
|-------|---------------|----------|---------|-------|-------|-------|
| 12"   | 150           | R56      | 381     | 7,93  | 14,28 | 12,7  |
| 12"   | 300, 600, 900 | *R57     | 381     | 11,11 | 17,46 | 15,87 |
| 12"   | 1500          | R58      | 381     | 22,22 | 28,57 | 26,99 |
| 14"   | 150           | R59      | 396,87  | 7,93  | 14,28 | 12,7  |
| 12"   | 2500          | R60      | 406,4   | 31,75 | 69,68 | 38,1  |
| 14"   | 300, 600      | R61      | 419,1   | 11,11 | 17,46 | 15,87 |
| 14"   | 900           | R62      | 419,1   | 15,87 | 22,22 | 20,64 |
| 14"   | 1500          | *R63     | 419,1   | 25,4  | 33,33 | 31,75 |
| 16"   | 150           | R64      | 454,03  | 7,93  | 14,28 | 12,7  |
| 16"   | 300, 600      | *R65     | 469,9   | 11,11 | 17,46 | 15,87 |
| 16"   | 900           | *R66     | 469,9   | 15,87 | 22,22 | 20,64 |
| 18"   | 1500          | R71      | 533,4   | 28,57 | 35,51 | 34,92 |
| 18"   | 150           | R68      | 517,52  | 7,93  | 14,28 | 12,7  |
| 18"   | 300, 600      | *R69     | 533,4   | 11,11 | 17,46 | 15,87 |
| 18"   | 900           | *R70     | 533,4   | 19,05 | 25,4  | 23,81 |
| 18"   | 1500          | R71      | 533,4   | 28,57 | 35,51 | 34,92 |
| 20"   | 150           | R72      | 558,8   | 7,93  | 14,28 | 12,7  |
| 20"   | 300, 600      | *R73     | 584,2   | 12,7  | 19,05 | 17,46 |
| 20"   | 900           | *R74     | 584,2   | 19,05 | 25,4  | 23,81 |
| 20"   | 1500          | R75      | 584,2   | 31,75 | 69,68 | 38,1  |
| 24"   | 150           | R76      | 673,1   | 7,93  | 14,28 | 12,7  |
| 24"   | 300, 600      | R77      | 692,15  | 15,87 | 22,22 | 20,64 |
| 24"   | 900           | R78      | 692,15  | 25,4  | 33,33 | 31,75 |
| 24"   | 1500          | R79      | 692,15  | 34,92 | 44,45 | 41,27 |
| 22"   | 150           | R80      | 615,95  | 7,93  |       | 12,7  |
| 22"   | 300, 600      | R81      | 635     | 14,28 |       | 19,05 |
| 26"   | 300, 600      | R93      | 749,3   | 19,05 |       | 23,81 |
| 30"   | 300, 600      | R95      | 857,25  | 19,05 |       | 23,81 |
| 34"   | 300, 600      | R97      | 965,2   | 22,22 |       | 26,99 |
| 36"   | 300, 600      | R98      | 1022,35 | 22,22 |       | 26,99 |
|       |               | *R82     | 57,15   | 11,11 |       | 15,87 |
|       |               | *R84     | 63,5    | 11,11 |       | 15,87 |
|       |               | *R85     | 79,37   | 12,7  |       | 17,46 |
|       |               | *R86     | 90,49   | 15,87 |       | 20,64 |
|       |               | *R87     | 100,01  | 15,87 |       | 20,64 |
|       |               | *R88     | 123,83  | 19,05 |       | 23,81 |
|       |               | *R89     | 114,3   | 19,05 |       | 23,81 |
|       |               | *R90     | 155,58  | 22,22 |       | 26,99 |
|       |               | *R91     | 260,35  | 31,75 |       | 38,1  |
|       |               | *R92     | 228,6   | 11,11 | 17,46 | 15,87 |
| 28"   | 300, 600      | R94      | 800,1   | 19,05 |       | 23,81 |
| 32"   | 300, 600      | R95      | 914,4   | 22,22 |       | 26,99 |
|       |               | R99      | 234,95  | 11,11 |       | 15,87 |
| 26"   | 900           | R100     | 749,3   | 28,57 |       | 34,92 |
| 28"   | 900           | R101     | 800,1   | 31,75 |       | 38,1  |
| 30"   | 900           | R102     | 857,25  | 31,75 |       | 38,1  |
| 32"   | 900           | R103     | 914,4   | 31,75 |       | 38,1  |
| 34"   | 900           | R104     | 965,2   | 34,92 |       | 41,27 |
| 16"   | 900           | R105     | 1022,35 | 34,92 |       | 41,27 |

Dimensions are in millimeters.

(\*) Indicate ring number acc. to API, STD, 6A

## Dimensions of Buttwelding Ends (BW) acc. to ASME B16.25

| Nominal wall thickness    | Welding End Detail for Joint Without Backing Ring | Welding End Detail for Joint Using Split Rectangular Backing Ring |
|---------------------------|---------------------------------------------------|-------------------------------------------------------------------|
| $\leq 0,88$ in<br>(22 mm) |                                                   |                                                                   |
| $\geq 0,88$ in<br>(22 mm) |                                                   |                                                                   |

(1) Internal surface may be as-formed or machined for dimension B at root face. Contour within the envelope shall be in accordance with section 2.  
(2) Intersections should be slightly rounded.

| Nominal Pipe Size<br>NPS | Schedule No. | O.D. at Welding Ends                   |                       | B     | C      | t     |
|--------------------------|--------------|----------------------------------------|-----------------------|-------|--------|-------|
|                          |              | Wrought or fabricated components,<br>A | Cast Components,<br>A |       |        |       |
| 2 1/2                    | 30           | 73                                     | 75                    | 63,5  | 63,6   | 4,78  |
|                          | 40           | 73                                     | 75                    | 62,5  | 62,93  | 5,16  |
|                          | 80           | 73                                     | 75                    | 59    | 59,69  | 7,01  |
|                          | 160          | 73                                     | 75                    | 54    | 55,28  | 9,53  |
|                          | XXS          | 73                                     | 75                    | 45    | 47,43  | 14,02 |
| 3                        | 30           | 88,9                                   | 91                    | 79,5  | 79,5   | 4,78  |
|                          | 40           | 88,9                                   | 91                    | 78    | 78,25  | 5,49  |
|                          | 80           | 88,9                                   | 91                    | 73,5  | 74,53  | 7,62  |
|                          | 160          | 88,9                                   | 91                    | 66,5  | 68,38  | 11,13 |
|                          | XXS          | 88,9                                   | 91                    | 58,5  | 61,19  | 15,24 |
| 3 1/2                    | 30           | 101,6                                  | 105                   | 92    | 92,2   | 4,78  |
|                          | 40           | 101,6                                  | 105                   | 90    | 90,52  | 5,74  |
|                          | 80           | 101,6                                  | 105                   | 85,5  | 86,42  | 8,08  |
| 4                        | 30           | 114,3                                  | 117                   | 104,5 | 104,9  | 4,78  |
|                          | 40           | 114,3                                  | 117                   | 102   | 102,73 | 6,02  |
|                          | 80           | 114,3                                  | 117                   | 97    | 98,28  | 8,56  |
|                          | 120          | 114,3                                  | 117                   | 92    | 93,78  | 11,13 |
|                          | 160          | 114,3                                  | 117                   | 87,5  | 89,65  | 13,49 |
|                          | XXS          | 114,3                                  | 117                   | 80    | 83,3   | 17,12 |

Dimensions in mm

STD = standard wall thickness

XS = extra strong wall thickness

XXS = double, extra strong wall thickness

## Dimensions of Buttwelding Ends (BW) acc. to ASME B16.25

| Nominal Pipe Size<br>NPS | Schedule No. | O.D. at Welding Ends                           |                          | B     | C      | t     |
|--------------------------|--------------|------------------------------------------------|--------------------------|-------|--------|-------|
|                          |              | Wrought or<br>fabricated com-<br>ponents,<br>A | Cast<br>Components,<br>A |       |        |       |
| <b>5</b>                 | 40           | 141,3                                          | 144                      | 128   | 128,8  | 6,55  |
|                          | 80           | 141,3                                          | 144                      | 122   | 123,58 | 9,53  |
|                          | 120          | 141,3                                          | 144                      | 116   | 118,04 | 12,7  |
|                          | 160          | 141,3                                          | 144                      | 109,5 | 112,47 | 15,88 |
|                          | XXS          | 141,3                                          | 144                      | 103   | 106,92 | 19,05 |
| <b>6</b>                 | 40           | 168,3                                          | 172                      | 154   | 154,82 | 7,11  |
|                          | 80           | 168,3                                          | 172                      | 146,5 | 148,06 | 10,97 |
|                          | 120          | 168,3                                          | 172                      | 140   | 142,29 | 14,27 |
|                          | 160          | 168,3                                          | 172                      | 132   | 135,31 | 18,26 |
|                          | XXS          | 168,3                                          | 172                      | 124,5 | 128,85 | 21,95 |
| <b>8</b>                 | 20           | 219,1                                          | 223                      | 206,5 | 206,95 | 6,35  |
|                          | 30           | 219,1                                          | 223                      | 205   | 205,74 | 7,04  |
|                          | 40           | 219,1                                          | 223                      | 203   | 203,75 | 8,18  |
|                          | 60           | 219,1                                          | 223                      | 198,5 | 200,02 | 10,31 |
|                          | 80           | 219,1                                          | 223                      | 193,5 | 195,84 | 12,7  |
|                          | 100          | 219,1                                          | 223                      | 189   | 191,65 | 15,09 |
|                          | 120          | 219,1                                          | 223                      | 182,5 | 186,11 | 18,26 |
|                          | 140          | 219,1                                          | 223                      | 178   | 181,98 | 20,62 |
|                          | XXS          | 219,1                                          | 223                      | 174,5 | 179,16 | 22,23 |
|                          | 160          | 219,1                                          | 223                      | 173   | 177,79 | 23,01 |
|                          | 20           | 273                                            | 278                      | 260,5 | 260,85 | 6,35  |
| <b>10</b>                | 30           | 273                                            | 278                      | 257,5 | 258,31 | 7,8   |
|                          | 40           | 273                                            | 278                      | 254,5 | 255,74 | 9,27  |
|                          | 60           | 273                                            | 278                      | 247,5 | 249,74 | 12,7  |
|                          | 80           | 273                                            | 278                      | 243   | 245,55 | 15,09 |
|                          | 100          | 273                                            | 278                      | 236,5 | 240,01 | 18,26 |
|                          | 120          | 273                                            | 278                      | 230   | 234,44 | 21,44 |
|                          | 140          | 273                                            | 278                      | 222   | 227,51 | 25,4  |
|                          | 160          | 273                                            | 278                      | 216   | 221,95 | 28,58 |
|                          | 20           | 323,8                                          | 329                      | 311   | 311,65 | 6,35  |
|                          | 30           | 323,8                                          | 329                      | 307   | 308,1  | 8,38  |
|                          | STD          | 323,8                                          | 329                      | 305   | 306,08 | 9,53  |
| <b>12</b>                | 40           | 323,8                                          | 329                      | 303   | 304,72 | 10,31 |
|                          | XS           | 323,8                                          | 329                      | 298,5 | 300,54 | 12,7  |
|                          | 60           | 323,8                                          | 329                      | 295   | 297,79 | 14,27 |
|                          | 80           | 323,8                                          | 329                      | 289   | 292,17 | 17,48 |
|                          | 100          | 323,8                                          | 329                      | 281   | 285,24 | 21,44 |
|                          | 120          | 323,8                                          | 329                      | 273   | 278,31 | 25,4  |
|                          | 140          | 323,8                                          | 329                      | 266,5 | 272,75 | 28,58 |
|                          | 160          | 323,8                                          | 329                      | 257   | 264,45 | 33,32 |
|                          | 20           | 355,6                                          | 362                      | 340   | 340,7  | 7,92  |
|                          | STD          | 355,6                                          | 362                      | 336,5 | 337,88 | 9,53  |
|                          | 40           | 355,6                                          | 362                      | 333,5 | 335,08 | 11,13 |
| <b>14</b>                | XS           | 355,6                                          | 362                      | 330   | 332,34 | 12,7  |
|                          | 60           | 355,6                                          | 362                      | 325,5 | 328,15 | 15,09 |

Dimensions in mm

STD = standard wall thickness

XS = extra strong wall thickness

XXS = double, extra strong wall thickness

## Dimensions of Buttwelding Ends (BW) acc. to ASME B16.25

| Nominal Pipe Size<br>NPS | Schedule No. | O.D. at Welding Ends                   |                       | B     | C      | t     |
|--------------------------|--------------|----------------------------------------|-----------------------|-------|--------|-------|
|                          |              | Wrought or fabricated components,<br>A | Cast Components,<br>A |       |        |       |
| <b>14 (Cont'd)</b>       | 80           | 355,6                                  | 362                   | 317,5 | 321,22 | 19,05 |
|                          | 100          | 355,6                                  | 362                   | 308   | 312,86 | 23,83 |
|                          | 120          | 355,6                                  | 362                   | 300   | 305,93 | 27,79 |
|                          | 140          | 355,6                                  | 362                   | 292   | 299    | 31,75 |
|                          | 160          | 355,6                                  | 362                   | 284   | 292,07 | 35,71 |
| <b>16</b>                | 20           | 406,4                                  | 413                   | 390,5 | 391,5  | 7,92  |
|                          | STD          | 406,4                                  | 413                   | 387,5 | 388,68 | 9,53  |
|                          | 40           | 406,4                                  | 413                   | 381   | 383,14 | 12,7  |
|                          | 60           | 406,4                                  | 413                   | 373   | 376,21 | 16,66 |
|                          | 80           | 406,4                                  | 413                   | 363,5 | 367,84 | 21,44 |
|                          | 100          | 406,4                                  | 413                   | 354   | 359,53 | 26,19 |
|                          | 120          | 406,4                                  | 413                   | 344,5 | 351,18 | 30,96 |
|                          | 140          | 406,4                                  | 413                   | 333,5 | 341,43 | 36,53 |
|                          | 160          | 406,4                                  | 413                   | 325,5 | 334,5  | 40,49 |
|                          | 20           | 457,2                                  | 464                   | 441,5 | 442,3  | 7,92  |
|                          | 30           | 457,2                                  | 464                   | 435   | 436,68 | 11,13 |
|                          | STD          | 457,2                                  | 464                   | 438   | 439,48 | 9,53  |
| <b>18</b>                | XS           | 457,2                                  | 464                   | 432   | 433,94 | 12,7  |
|                          | 40           | 457,2                                  | 464                   | 428,5 | 431,19 | 14,27 |
|                          | 60           | 457,2                                  | 464                   | 419   | 422,82 | 19,05 |
|                          | 80           | 457,2                                  | 464                   | 409,5 | 414,46 | 23,83 |
|                          | 100          | 457,2                                  | 464                   | 398,5 | 404,78 | 29,36 |
|                          | 120          | 457,2                                  | 464                   | 387,5 | 395,03 | 34,93 |
|                          | 140          | 457,2                                  | 464                   | 378   | 386,77 | 39,67 |
|                          | 160          | 457,2                                  | 464                   | 366,5 | 376,99 | 45,24 |
|                          | STD          | 508                                    | 516                   | 489   | 490,28 | 9,53  |
|                          | XS           | 508                                    | 516                   | 482,5 | 484,74 | 12,7  |
|                          | 40           | 508                                    | 516                   | 478   | 480,55 | 15,09 |
|                          | 60           | 508                                    | 516                   | 467   | 470,88 | 20,62 |
| <b>20</b>                | 80           | 508                                    | 516                   | 455,5 | 461,13 | 26,19 |
|                          | 100          | 508                                    | 516                   | 443   | 450,02 | 32,54 |
|                          | 120          | 508                                    | 516                   | 432   | 440,29 | 38,1  |
|                          | 140          | 508                                    | 516                   | 419   | 429,17 | 44,45 |
|                          | 160          | 508                                    | 516                   | 408   | 419,44 | 50,01 |
|                          | STD          | 558,8                                  | 567                   | 539   | 541,08 | 9,53  |
|                          | XS           | 558,8                                  | 567                   | 533   | 535,54 | 12,7  |
|                          | 60           | 558,8                                  | 567                   | 514   | 518,86 | 22,23 |
|                          | 80           | 558,8                                  | 567                   | 501   | 507,75 | 28,58 |
|                          | 100          | 558,8                                  | 567                   | 488,5 | 496,63 | 34,93 |
|                          | 120          | 558,8                                  | 567                   | 476   | 485,52 | 41,28 |
|                          | 140          | 558,8                                  | 567                   | 463   | 474,41 | 47,63 |
| <b>22</b>                | 160          | 558,8                                  | 567                   | 450,5 | 463,3  | 53,98 |
|                          | STD          | 609,6                                  | 619                   | 590,5 | 591,88 | 9,53  |
|                          | XS           | 609,6                                  | 619                   | 584   | 586,34 | 12,7  |
|                          |              |                                        |                       |       |        |       |

Dimensions in mm

STD = standard wall thickness

XS = extra strong wall thickness

XXS = double, extra strong wall thickness

## Dimensions of Buttwelding Ends (BW) acc. to ASME B16.25

| Nominal Pipe Size<br>NPS | Schedule No. | O.D. at Welding Ends                      |                          | B      | C       | t     |
|--------------------------|--------------|-------------------------------------------|--------------------------|--------|---------|-------|
|                          |              | Wrought or<br>fabricated components,<br>A | Cast<br>Components,<br>A |        |         |       |
| <b>24 (Cont'd)</b>       | 30           | 609,6                                     | 619                      | 581    | 583,59  | 14,27 |
|                          | 40           | 609,6                                     | 619                      | 574,5  | 577,97  | 17,48 |
|                          | 60           | 609,6                                     | 619                      | 560,5  | 565,49  | 24,61 |
|                          | 80           | 609,6                                     | 619                      | 547,5  | 554,38  | 30,96 |
|                          | 100          | 609,6                                     | 619                      | 532    | 540,49  | 38,89 |
|                          | 120          | 609,6                                     | 619                      | 517,5  | 528,03  | 46,02 |
|                          | 140          | 609,6                                     | 619                      | 505    | 516,91  | 52,37 |
|                          | 160          | 609,6                                     | 619                      | 490,5  | 504,37  | 59,54 |
| <b>26</b>                | 10           | 660,4                                     | 670                      | 645,5  | 645,5   | 7,92  |
|                          | STD          | 660,4                                     | 670                      | 641,34 | 642,68  | 9,53  |
|                          | 20           | 660,4                                     | 670                      | 635    | 637,14  | 12,7  |
| <b>28</b>                | 10           | 711,2                                     | 721                      | 695,5  | 696,3   | 7,92  |
|                          | STD          | 711,2                                     | 721                      | 692,14 | 693,48  | 9,53  |
|                          | 20           | 711,2                                     | 721                      | 686    | 687,94  | 12,7  |
|                          | 30           | 711,2                                     | 721                      | 679,5  | 682,37  | 15,88 |
| <b>30</b>                | 10           | 762                                       | 772                      | 746    | 747,1   | 7,92  |
|                          | STD          | 762                                       | 772                      | 742,94 | 744,28  | 9,53  |
|                          | 20           | 762                                       | 772                      | 736,5  | 738,74  | 12,7  |
|                          | 30           | 762                                       | 772                      | 730    | 733,17  | 15,88 |
| <b>32</b>                | 10           | 812,8                                     | 825                      | 797    | 797,9   | 7,92  |
|                          | STD          | 812,8                                     | 825                      | 793,74 | 795,08  | 9,53  |
|                          | 20           | 812,8                                     | 825                      | 787,5  | 789,54  | 12,7  |
|                          | 30           | 812,8                                     | 825                      | 781    | 783,97  | 15,88 |
|                          | 40           | 812,8                                     | 825                      | 778    | 781,17  | 17,48 |
| <b>34</b>                | 10           | 863,6                                     | 876                      | 848    | 848,7   | 7,92  |
|                          | STD          | 863,6                                     | 876                      | 844,54 | 845,88  | 9,53  |
|                          | 20           | 863,6                                     | 876                      | 838    | 840,34  | 12,7  |
|                          | 30           | 863,6                                     | 876                      | 832    | 834,77  | 15,88 |
|                          | 40           | 863,6                                     | 876                      | 828,5  | 831,97  | 17,48 |
| <b>36</b>                | 10           | 914,4                                     | 927                      | 898,5  | 899,5   | 7,92  |
|                          | XS           | 965,2                                     | 978                      | 940    | 941,94  | 12,7  |
| <b>40</b>                | STD          | 1016                                      | 1029                     | 997    | 998,28  | 9,53  |
|                          | XS           | 1016                                      | 1029                     | 990,5  | 992,74  | 12,7  |
| <b>42</b>                | STD          | 1066,8                                    | 1079                     | 1047,5 | 1049,08 | 9,53  |
|                          | XS           | 1066,8                                    | 1079                     | 1041,5 | 1043,54 | 12,7  |
| <b>44</b>                | STD          | 1117,6                                    | 1130                     | 1098,5 | 1099,88 | 9,53  |
|                          | XS           | 1117,6                                    | 1130                     | 1092   | 1094,34 | 12,7  |
| <b>46</b>                | STD          | 1168,4                                    | 1181                     | 1149,5 | 1150,68 | 9,53  |
|                          | XS           | 1168,4                                    | 1181                     | 1143   | 1145,14 | 12,7  |
| <b>48</b>                | STD          | 1219,2                                    | 1232                     | 1200   | 1201,48 | 9,53  |
|                          | XS           | 1219,2                                    | 1232                     | 1194   | 1195,94 | 12,7  |

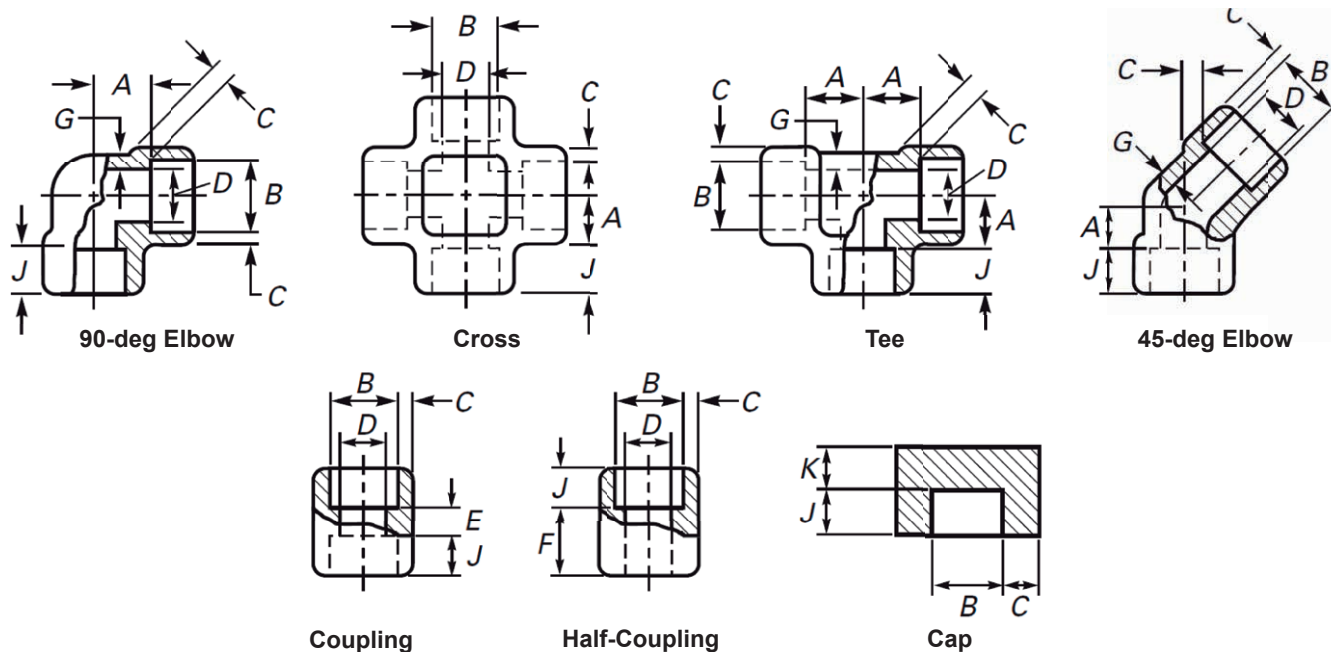
Dimensions in mm

STD = standard wall thickness

XS = extra strong wall thickness

XXS = double, extra strong wall thickness

## Dimensions of Socket-Welding Fittings (SW), acc. to ASME B16.11



### Class 3000

| Nom. Pipe Size | Socket Bore Diameter, B (1) | Bore Diameter of Fittings, D (1) | Socket Wall Thickness, C (2) |      | Body Wall, G | Min. Depth of Socket, J | Center-to-Bottom of Socket, A    |               | Laying Lengths |                   | Tolerances, ± |     |     | End Wall Thickness, K <sub>min</sub> |
|----------------|-----------------------------|----------------------------------|------------------------------|------|--------------|-------------------------|----------------------------------|---------------|----------------|-------------------|---------------|-----|-----|--------------------------------------|
|                |                             |                                  | Avg.                         | Min. |              |                         | 90-deg Elbows, Tees, and Crosses | 45-deg Elbows | Couplings, E   | Half Couplings, F | A             | E   | F   |                                      |
| 1/4"           | 14,6<br>14,2                | 10<br>8,5                        | 3,78                         | 3,30 | 3,02         | 9,5                     | 11,0                             | 8,0           | 6,5            | 16,0              | 1,0           | 1,5 | 1,0 | 4,8                                  |
| 3/8"           | 18<br>17,6                  | 13,3<br>11,8                     | 4,01                         | 3,50 | 3,20         | 9,5                     | 13,5                             | 8,0           | 6,5            | 17,5              | 1,5           | 3,0 | 1,5 | 4,8                                  |
| 1/2"           | 22,2<br>21,8                | 16,6<br>15                       | 4,67                         | 4,09 | 3,73         | 9,5                     | 15,5                             | 11,0          | 9,5            | 22,5              | 1,5           | 3,0 | 1,5 | 6,4                                  |
| 3/4"           | 27,6<br>27,2                | 21,7<br>20,2                     | 4,90                         | 4,27 | 3,91         | 12,5                    | 19,0                             | 13,0          | 9,5            | 24,0              | 1,5           | 3,0 | 1,5 | 6,4                                  |
| 1"             | 34,3<br>33,9                | 27,4<br>25,9                     | 5,69                         | 4,98 | 4,55         | 12,5                    | 22,5                             | 14,0          | 12,5           | 28,5              | 2,0           | 4,0 | 2,0 | 9,6                                  |
| 1 1/4"         | 43,1<br>42,7                | 35,8<br>34,3                     | 6,07                         | 5,28 | 4,85         | 12,5                    | 27,0                             | 17,5          | 12,5           | 30,0              | 2,0           | 4,0 | 2,0 | 9,6                                  |
| 1 1/2"         | 49,2<br>48,8                | 41,6<br>40,1                     | 6,35                         | 5,54 | 5,08         | 12,5                    | 32,0                             | 20,5          | 12,5           | 32,0              | 2,0           | 4,0 | 2,0 | 11,2                                 |
| 2"             | 61,7<br>61,2                | 53,3<br>51,7                     | 6,93                         | 6,04 | 5,54         | 16,0                    | 38,0                             | 25,5          | 19,0           | 41,0              | 2,0           | 4,0 | 2,0 | 12,7                                 |
| 2 1/2"         | 74,4<br>73,9                | 64,2<br>61,2                     | 8,76                         | 7,67 | 7,01         | 16,0                    | 41,0                             | 28,5          | 19,0           | 43,0              | 2,5           | 5,0 | 2,5 | 15,7                                 |
| 3"             | 90,3<br>89,8                | 79,4<br>76,4                     | 9,52                         | 8,30 | 7,62         | 16,0                    | 57,0                             | 32,0          | 19,0           | 44,5              | 2,5           | 5,0 | 2,5 | 19,0                                 |
| 4"             | 115,7<br>115,2              | 103,8<br>100,7                   | 10,69                        | 9,35 | 8,56         | 19,0                    | 66,5                             | 41,0          | 19,0           | 48,0              | 2,5           | 5,0 | 2,5 | 22,4                                 |

Dimensions in mm

(1) Upper and lower values for each size are the respective maximum and minimum dimensions.

(2) Average of socket wall thickness around periphery shall not be less than listed values. The minimum values are permitted in localized areas.

## Dimensions of Socket-Welding Fittings (SW), acc. to ASME B16.11

### Class 6000

| Nom.<br>Pipe<br>Size | Socket<br>Bore<br>Diameter,<br>B (1) | Bore<br>Diameter<br>of<br>Fittings,<br>D (1) | Socket Wall<br>Thickness, C (2) |      | Body<br>Wall, G | Min.<br>Depth of<br>Socket,<br>J | Center-to-Bottom of<br>Socket, A          |                  | Laying Lengths  |                         | Tolerances, ± |     |     | End Wall<br>Thickness,<br>K <sub>min</sub> |
|----------------------|--------------------------------------|----------------------------------------------|---------------------------------|------|-----------------|----------------------------------|-------------------------------------------|------------------|-----------------|-------------------------|---------------|-----|-----|--------------------------------------------|
|                      |                                      |                                              | Avg.                            | Min. |                 |                                  | 90-deg<br>Elbows,<br>Tees, and<br>Crosses | 45-deg<br>Elbows | Couplings,<br>E | Half<br>Couplings,<br>F | A             | E   | F   |                                            |
| 1/4"                 | 14,6<br>14,2                         | 7,1<br>5,6                                   | 4,60                            | 4,01 | 3,68            | 9,5                              | 13,5                                      | 8,0              | 6,5             | 16,0                    | 1,0           | 1,5 | 1,0 | 6,4                                        |
| 3/8"                 | 18<br>17,6                           | 9,9<br>8,4                                   | 5,03                            | 4,37 | 4,01            | 9,5                              | 15,5                                      | 11,0             | 6,5             | 17,5                    | 1,5           | 3,0 | 1,5 | 6,4                                        |
| 1/2"                 | 22,2<br>21,8                         | 12,5<br>11                                   | 5,97                            | 5,18 | 4,78            | 9,5                              | 19,0                                      | 12,5             | 9,5             | 22,5                    | 1,5           | 3,0 | 1,5 | 7,9                                        |
| 3/4"                 | 27,6<br>27,2                         | 16,3<br>14,8                                 | 6,96                            | 6,04 | 5,56            | 12,5                             | 22,5                                      | 14,0             | 9,5             | 24,0                    | 1,5           | 3,0 | 1,5 | 7,9                                        |
| 1"                   | 34,3<br>33,9                         | 21,5<br>19,9                                 | 7,92                            | 6,93 | 6,35            | 12,5                             | 27,0                                      | 17,5             | 12,5            | 28,5                    | 2,0           | 4,0 | 2,0 | 11,2                                       |
| 1 1/4"               | 43,1<br>42,7                         | 30,2<br>28,7                                 | 7,92                            | 6,93 | 6,35            | 12,5                             | 32,0                                      | 20,5             | 12,5            | 30,0                    | 2,0           | 4,0 | 2,0 | 11,2                                       |
| 1 1/2"               | 49,2<br>48,8                         | 34,7<br>33,2                                 | 8,92                            | 7,80 | 7,14            | 12,5                             | 38,0                                      | 25,5             | 12,5            | 32,0                    | 2,0           | 4,0 | 2,0 | 12,7                                       |
| 2"                   | 61,7<br>61,2                         | 43,6<br>42,1                                 | 10,92                           | 9,50 | 8,74            | 16,0                             | 41,0                                      | 28,5             | 19,0            | 41,0                    | 2,0           | 4,0 | 2,0 | 15,7                                       |
| 2 1/2"               | 74,4<br>73,9                         | ...                                          | ...                             | ...  | ...             | 16,0                             | ...                                       | ...              | 19,0            | 43,0                    | 2,5           | 5,0 | 2,5 | 19,0                                       |
| 3"                   | 90,3<br>89,8                         | ...                                          | ...                             | ...  | ...             | 16,0                             | ...                                       | ...              | 19,0            | 44,5                    | 2,5           | 5,0 | 2,5 | 22,4                                       |
| 4"                   | 115,7<br>115,2                       | ...                                          | ...                             | ...  | ...             | 19,0                             | ...                                       | ...              | 19,0            | 48,0                    | 2,5           | 5,0 | 2,5 | 28,4                                       |

Dimensions in mm

(1) Upper and lower values for each size are the respective maximum and minimum dimensions.

(2) Average of socket wall thickness around periphery shall not be less than listed values. The minimum values are permitted in localized areas.

### Class 9000

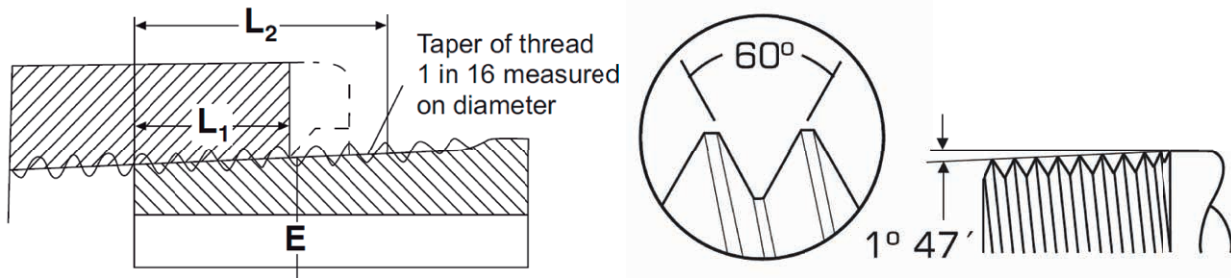
| Nom.<br>Pipe<br>Size | Socket<br>Bore<br>Diameter,<br>B (1) | Bore<br>Diameter<br>of<br>Fittings,<br>D (1) | Socket Wall<br>Thickness, C (2) |       | Body<br>Wall, G | Min.<br>Depth of<br>Socket,<br>J | Center-to-Bottom of<br>Socket, A          |                  | Laying Lengths  |                         | Tolerances, ± |     |     | End Wall<br>Thickness,<br>K <sub>min</sub> |
|----------------------|--------------------------------------|----------------------------------------------|---------------------------------|-------|-----------------|----------------------------------|-------------------------------------------|------------------|-----------------|-------------------------|---------------|-----|-----|--------------------------------------------|
|                      |                                      |                                              | Avg.                            | Min.  |                 |                                  | 90-deg<br>Elbows,<br>Tees, and<br>Crosses | 45-deg<br>Elbows | Couplings,<br>E | Half<br>Couplings,<br>F | A             | E   | F   |                                            |
| 1/2"                 | 22,2<br>21,8                         | 7,2<br>5,6                                   | 9,35                            | 8,18  | 7,47            | 9,5                              | 25,5                                      | 15,5             | 9,5             | 22,5                    | 1,5           | 3,0 | 1,5 | 11,2                                       |
| 3/4"                 | 27,6<br>27,2                         | 11,8<br>10,3                                 | 9,78                            | 8,56  | 7,82            | 12,5                             | 28,5                                      | 19,0             | 9,5             | 24,0                    | 1,5           | 3,0 | 1,5 | 12,7                                       |
| 1"                   | 34,3<br>33,9                         | 16<br>14,4                                   | 11,38                           | 9,96  | 9,09            | 12,5                             | 32,0                                      | 20,5             | 12,5            | 28,5                    | 2,0           | 4,0 | 2,0 | 14,2                                       |
| 1 1/4"               | 43,1<br>42,7                         | 23,5<br>22                                   | 12,14                           | 10,62 | 9,70            | 12,5                             | 35,0                                      | 22,5             | 12,5            | 30,0                    | 2,0           | 4,0 | 2,0 | 14,2                                       |
| 1 1/2"               | 49,2<br>48,8                         | 28,7<br>27,2                                 | 12,70                           | 11,12 | 10,15           | 12,5                             | 38,0                                      | 25,5             | 12,5            | 32,0                    | 2,0           | 4,0 | 2,0 | 15,7                                       |
| 2"                   | 61,7<br>61,2                         | 38,9<br>37,4                                 | 13,84                           | 12,12 | 11,07           | 16,0                             | 54,0                                      | 28,5             | 19,0            | 41,0                    | 2,0           | 4,0 | 2,0 | 19,0                                       |

Dimensions in mm

(1) Upper and lower values for each size are the respective maximum and minimum dimensions.

(2) Average of socket wall thickness around periphery shall not be less than listed values. The minimum values are permitted in localized areas.

## NPT Threaded Ends (NPT) acc. to ASME B1.20.1



E = Pitch diameter at hand-tight plane. This is also the pitch diameter at the gauge plane.

$L_1$  = Length of normal hand-tight engagement. This is also the  $L_1$  gauge length. (Longer thread engagement may be used in special applications, such as flanges for high pressure use. In such cases the pitch diameter, E, remains as specified and the diameter at the end of the pipe is proportionally smaller).

$L_2$  = Effective length of thread.

I = Truncation from point of thread triangle to flat (not shown in diagram). Minimum = 0.033P for all pitches. See table for maximum.

| Nom. Pipe Size | No. of threads per inch | Pitch of thread |          | Depth of thread |          | Truncation, max. |         | Pitch diameter at plane of hand-tight engagement |         | Length from end of pipe to plane of hand-tight engagement |         | Length of useful thread |         | Length of vanish (or washout) thread |         |
|----------------|-------------------------|-----------------|----------|-----------------|----------|------------------|---------|--------------------------------------------------|---------|-----------------------------------------------------------|---------|-------------------------|---------|--------------------------------------|---------|
|                |                         | P               |          | h               |          | I                |         | E                                                |         | $L_1$                                                     |         | $L_2$                   |         | $L_2$                                |         |
|                |                         | in              | mm       | in              | mm       | in               | mm      | in                                               | mm      | in                                                        | Threads | in                      | Threads | in                                   | Threads |
| 1/4"           | 18                      | 0,05556         | 1,411224 | 0,04444         | 1,128776 | 0,0049           | 0,12446 | 0,49163                                          | 12,487  | 0,228                                                     | 4,1     | 0,4018                  | 7,23    | 0,1928                               | 3,47    |
| 3/8"           | 18                      | 0,05556         | 1,411224 | 0,04444         | 1,128776 | 0,0049           | 0,12446 | 0,62701                                          | 15,926  | 0,24                                                      | 4,32    | 0,0478                  | 7,34    | 0,1928                               | 3,47    |
| 1/2"           | 14                      | 0,07143         | 1,814322 | 0,05714         | 1,451356 | 0,0056           | 0,14224 | 0,77843                                          | 19,772  | 0,32                                                      | 4,48    | 0,5337                  | 7,47    | 0,2478                               | 3,47    |
| 3/4"           | 14                      | 0,07143         | 1,814322 | 0,05714         | 1,451356 | 0,0056           | 0,14224 | 0,98887                                          | 25,117  | 0,339                                                     | 4,75    | 0,5457                  | 7,64    | 0,2478                               | 3,47    |
| 1"             | 11.5                    | 0,08696         | 2,208784 | 0,06957         | 1,767078 | 0,0063           | 0,16002 | 1,23863                                          | 31,461  | 0,4                                                       | 4,6     | 0,6828                  | 7,85    | 0,3017                               | 3,47    |
| 1 1/4"         | 11.5                    | 0,08696         | 2,208784 | 0,06957         | 1,767078 | 0,0063           | 0,16002 | 1,58338                                          | 40,218  | 0,42                                                      | 4,83    | 0,7068                  | 8,13    | 0,3017                               | 3,47    |
| 1 1/2"         | 11.5                    | 0,08696         | 2,208784 | 0,06957         | 1,767078 | 0,0063           | 0,16002 | 1,82234                                          | 46,287  | 0,402                                                     | 4,83    | 0,7235                  | 8,32    | 0,3017                               | 3,47    |
| 2"             | 11.5                    | 0,08696         | 2,208784 | 0,06957         | 1,767078 | 0,0063           | 0,16002 | 2,29627                                          | 58,325  | 0,436                                                     | 5,01    | 0,7565                  | 8,7     | 0,3017                               | 3,47    |
| 2 1/2"         | 8                       | 0,125           | 3,175    | 0,1             | 2,540    | 0,0078           | 0,19812 | 2,76215                                          | 70,159  | 0,682                                                     | 5,46    | 1,1375                  | 9,1     | 0,4337                               | 3,47    |
| 3"             | 8                       | 0,125           | 3,175    | 0,1             | 2,540    | 0,0078           | 0,19812 | 3,3885                                           | 86,068  | 0,766                                                     | 6,13    | 1,2                     | 9,6     | 0,4337                               | 3,47    |
| 3 1/2"         | 8                       | 0,125           | 3,175    | 0,1             | 2,540    | 0,0078           | 0,19812 | 3,88881                                          | 98,776  | 0,821                                                     | 6,57    | 1,25                    | 10      | 0,4337                               | 3,47    |
| 4"             | 8                       | 0,125           | 3,175    | 0,1             | 2,540    | 0,0078           | 0,19812 | 4,38712                                          | 111,433 | 0,844                                                     | 6,75    | 1,3                     | 10,4    | 0,4337                               | 3,47    |

Basic dimensions are given to four or five decimal places to eliminate errors when calculating gauge dimensions, they do not imply a greater degree of precisions than is normally obtainable.

Tolerances: When using  $L_1$  gauges to check threads, the thread is within permissible tolerance if the ring gauge face, or plug gauge notch, is +/- 1 turn from being flush with the end of the thread.

Metric dimensions, where shown, are calculated from the inch values and rounded.

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| ASTM Designation  | Material                              | Service Applications                                                                                 |
|-------------------|---------------------------------------|------------------------------------------------------------------------------------------------------|
| ASTM A105         | Carbon steel forgings                 | Non-corrosive applications including water, oil and gases for temperatures above -29°C to 455°C      |
| ASTM A182 F11 CL2 | Low alloy steel                       | Applications for high temperatures above -29°C to 538°C                                              |
| ASTM A182 F22 CL3 | Low alloy steel                       | Applications for high temperatures above -29°C to 538°C                                              |
| ASTM A182 F304    | Low temperature Austenitic St. Steel  | Applications for corrosive or non-corrosive extreme temperatures above -196°C to 538°C               |
| ASTM A182 F304L   | Low temperature Austenitic St. Steel  | Applications for corrosive or non-corrosive services for low temperatures above -196°C to 538°C      |
| ASTM A182 F316    | Low temperature Austenitic St. Steel  | Applications for corrosive or non-corrosive extreme temperatures above -196°C to 538°C               |
| ASTM A182 F316L   | Low temperature Austenitic St. Steel  | Applications for corrosive or non-corrosive extreme temperatures above -196°C to 538°C               |
| ASTM A216 WCB     | Carbon steel                          | Non-corrosive applications including water, oil and gases for temperatures above -29°C to 425°C      |
| ASTM A217 WC6     | 1¼% Cr, ½% Mo Alloy Steel             | Non-corrosive applications including water, oil and gases for high temperatures above -29°C to 538°C |
| ASTM A217 WC9     | 2 ¼ % Cr, 1% Mo Alloy Steel           | Non-corrosive applications including water, oil and gases for high temperatures above -29°C to 538°C |
| ASTM A350 LF2     | Low temperature carbon steel forgings | Applications for low temperatures above -46°C to 343°C                                               |
| ASTM A350 LF3     | Low temperature carbon steel forgings | Applications for low temperatures above -101°C to 345°C                                              |
| ASTM A351 CF3     | 304L SS                               | Applications for corrosive or non-corrosive services for low temperatures above -196°C to 425°C      |
| ASTM A351 CF3M    | 316L SS                               | Applications for corrosive or non-corrosive services for low temperatures above -196°C to 455°C      |
| ASTM A351 CF8     | 304 SS                                | Applications for corrosive or non-corrosive extreme temperatures above -196°C to 538°C               |
| ASTM A351 CF8M    | 316 SS                                | Applications for corrosive or non-corrosive extreme temperatures above -196°C to 538°C               |
| ASTM A352 LC3     | 3½% Ni steel                          | Applications for low temperatures above -101°C to 345°C                                              |
| ASTM A352 LCB     | Low temperature carbon steel          | Applications for low temperatures above -46°C to 343°C                                               |

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 150               | Material                    |                             |                             |                              |                              |                              |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|                         | A216 WCB                    | A352 LCB                    | A217 WC1                    | A217 WC6                     | A217 WC9                     | A217 C5 (*)                  |
| PSmax                   | 19,6 bar-g/<br>285 psig     | 18,4 bar-g/<br>265 psig     | 18,4 bar-g/<br>265 psig     | 19,8 bar-g/<br>290 psig      | 19,8 bar-g/<br>290 psig      | 20 bar-g/<br>290 psig        |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    |
| PS                      | 5,5 bar-g/<br>80 psig       | 8,4 bar-g/<br>125 psig      | 4 bar-g/<br>57,5 psig       | 1,4 bar-g/<br>20 psig        | 1,4 bar-g/<br>20 psig        | 0,9 bar-g/<br>15 psig        |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 343°C/ -46°C<br>650°F/-50°F | 468°C/ -29°C<br>875°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 650°C/ -29°C<br>1200°F/-20°F |
| Shell test pressure     | 3 MPa                       | 3 MPa                       | 3 MPa                       | 3 MPa                        | 3 MPa                        | 3 MPa                        |
| High pressure seal test | 2,2 MPa                     | 2,2 MPa                     | 2,2 MPa                     | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                      |
| Backseat test pressure  | 2,2 MPa                     | 2,2 MPa                     | 2,2 MPa                     | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                      |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      |

| Class 150               | Material                     |                              |                              |                             |                             |
|-------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|
|                         | A217 C12 (*)                 | A351 CF8                     | A351 CF8M                    | A351 CF3                    | A351 CF3M                   |
| PSmax                   | 20 bar-g/<br>290 psig        | 19 bar-g/<br>275 psig        | 19 bar-g/<br>275 psig        | 19 bar-g/<br>275 psig       | 19 bar-g/<br>275 psig       |
| TS                      | 38°C/-29°C<br>100°F/-20°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   |
| PS                      | 1,4 bar-g/<br>20 psig        | 1,4 bar-g/<br>20 psig        | 1,4 bar-g/<br>20 psig        | 5,5 bar-g/<br>80 psig       | 4,4 bar-g/<br>65 psig       |
| TSmax/min               | 650°C/ -29°C<br>1200°F/-20°F | 538°C/ -46°C<br>1000°F/-50°F | 538°C/ -46°C<br>1000°F/-50°F | 425°C/ -46°C<br>800°F/-50°F | 455°C/ -46°C<br>850°F/-50°F |
| Shell test pressure     | 3 MPa                        | 3 MPa                        | 3 MPa                        | 3 MPa                       | 3 MPa                       |
| High pressure seal test | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                     | 2,2 MPa                     |
| Backseat test pressure  | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                      | 2,2 MPa                     | 2,2 MPa                     |
| Air test pressure       | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                     | 0,6 MPa                     |

| Class 150               | Material                    |                              |                              |                                |                               |
|-------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|
|                         | A105                        | A182 F11 CL2 (*)             | A182 F22 CL3 (*)             | A182 F304                      | A182 F304L                    |
| PSmax                   | 19,6 bar-g/<br>285 psig     | 19,8 bar-g/<br>290 psig      | 19,8 bar-g/<br>290 psig      | 19 bar-g/<br>275 psig          | 15,9 bar-g/<br>230 psig       |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-20°F     | 38°C/-196°C<br>100°F/-320°F   |
| PS                      | 5,5 bar-g/<br>80 psig       | 1,4 bar-g/<br>20 psig        | 1,4 bar-g/<br>20 psig        | 1,4 bar-g/<br>20 psig          | 5,5 bar-g/<br>80 psig         |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 538°C/ -196°C<br>1000°F/-320°F | 425°C/ -196°C<br>800°F/-320°F |
| Shell test pressure     | 3 MPa                       | 3 MPa                        | 3 MPa                        | 2,9 MPa                        | 2,4 MPa                       |
| High pressure seal test | 2,2 MPa                     | 2,2 MPa                      | 2,2 MPa                      | 2,1 MPa                        | 1,7 MPa                       |
| Backseat test pressure  | 2,2 MPa                     | 2,2 MPa                      | 2,2 MPa                      | 2,1 MPa                        | 1,7 MPa                       |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                        | 0,6 MPa                       |

| Class 150               | Material                       |                               |                             |                               |                               |
|-------------------------|--------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
|                         | A182 F316                      | A182 F316L                    | A350 LF2                    | A350 LF3                      | A352 LC3                      |
| PSmax                   | 19 bar-g/<br>275 psig          | 15,9 bar-g/<br>230 psig       | 19,6 bar-g/<br>285 psig     | 19,6 bar-g/<br>285 psig       | 20 bar-g/<br>290 psig         |
| TS                      | 38°C/-196°C<br>100°F/-320°F    | 38°C/-196°C<br>100°F/-320°F   | 38°C/-46°C<br>100°F/-51°F   | 38°C/-101°C<br>100°F/-150°F   | 38°C/-101°C<br>100°F/-150°F   |
| PS                      | 1,4 bar-g/<br>20 psig          | 4,6 bar-g/<br>65 psig         | 5,5 bar-g/<br>80 psig       | 8,6 bar-g/<br>125 psig        | 5,5 bar-g/<br>80 psig         |
| TSmax/min               | 538°C/ -196°C<br>1000°F/-320°F | 450°C/ -196°C<br>850°F/-320°F | 425°C/ -46°C<br>800°F/-51°F | 345°C/ -101°C<br>650°F/-150°F | 345°C/ -101°C<br>650°F/-150°F |
| Shell test pressure     | 2,9 MPa                        | 2,4 MPa                       | 3 MPa                       | 3 MPa                         | 3 MPa                         |
| High pressure seal test | 2,1 MPa                        | 1,7 MPa                       | 2,2 MPa                     | 2,2 MPa                       | 2,2 MPa                       |
| Backseat test pressure  | 2,1 MPa                        | 1,7 MPa                       | 2,2 MPa                     | 2,2 MPa                       | 2,2 MPa                       |
| Air test pressure       | 0,6 MPa                        | 0,6 MPa                       | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                       |

(\*) Flanged-end valve ratings terminate at 538°C (1000°F) / PS=1,4 bar-g (20 psig)

Information / restriction of technical rules need to be observed!  
 Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
 Product suitability must be verified, contact manufacturer for information

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 300               | Material                    |                             |                             |                              |                              |                              |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|                         | A216 WCB                    | A352 LCB                    | A217 WC1                    | A217 WC6                     | A217 WC9                     | A217 C5                      |
| PSmax                   | 51,1 bar-g/<br>740 psig     | 48 bar-g/<br>695 psig       | 48 bar-g/<br>695 psig       | 51,7 bar-g/<br>750 psig      | 51,7 bar-g/<br>750 psig      | 51,7 bar-g/<br>750 psig      |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    |
| PS                      | 28,8 bar-g/<br>410 psig     | 36,4 bar-g/<br>535 psig     | 17,4 bar-g/<br>250 psig     | 14,9 bar-g/<br>215 psig      | 18,4 bar-g/<br>265 psig      | 2,4 bar-g/<br>35 psig        |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 343°C/ -46°C<br>650°F/-50°F | 468°C/ -29°C<br>875°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 650°C/ -29°C<br>1200°F/-20°F |
| Shell test pressure     | 7,5 MPa                     | 7,5 MPa                     | 7,5 MPa                     | 7,5 MPa                      | 7,5 MPa                      | 7,5 MPa                      |
| High pressure seal test | 5,5 MPa                     | 5,5 MPa                     | 5,5 MPa                     | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                      |
| Backseat test pressure  | 5,5 MPa                     | 5,5 MPa                     | 5,5 MPa                     | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                      |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      |

| Class 300               | Material                     |                              |                              |                             |                             |
|-------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|
|                         | A217 C12                     | A351 CF8                     | A351 CF8M                    | A351 CF3                    | A351 CF3M                   |
| PSmax                   | 51,7 bar-g/<br>750 psig      | 49,6 bar-g/<br>720 psig      | 49,6 bar-g/<br>720 psig      | 49,6 bar-g/<br>720 psig     | 49,6 bar-g/<br>720 psig     |
| TS                      | 38°C/-29°C<br>100°F/-20°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   |
| PS                      | 3,5 bar-g/<br>50 psig        | 24,4 bar-g/<br>355 psig      | 25,2 bar-g/<br>365 psig      | 28 bar-g/<br>405 psig       | 28,8 bar-g/<br>420 psig     |
| TSmax/min               | 650°C/ -29°C<br>1200°F/-20°F | 538°C/ -46°C<br>1000°F/-50°F | 538°C/ -46°C<br>1000°F/-50°F | 425°C/ -46°C<br>800°F/-50°F | 455°C/ -46°C<br>850°F/-50°F |
| Shell test pressure     | 7,5 MPa                      | 7,5 MPa                      | 7,5 MPa                      | 7,5 MPa                     | 7,5 MPa                     |
| High pressure seal test | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                     | 5,5 MPa                     |
| Backseat test pressure  | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                      | 5,5 MPa                     | 5,5 MPa                     |
| Air test pressure       | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                     | 0,6 MPa                     |

| Class 300               | Material                    |                              |                              |                                |                               |
|-------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|
|                         | A105                        | A182 F11 CL2                 | A182 F22 CL3                 | A182 F304                      | A182 F304L                    |
| PSmax                   | 51,1 bar-g/<br>740 psig     | 51,7 bar-g/<br>750 psig      | 51,7 bar-g/<br>750 psig      | 49,6 bar-g/<br>720 psig        | 41,4 bar-g/<br>600 psig       |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-20°F     | 38°C/-196°C<br>100°F/-320°F   |
| PS                      | 28,8 bar-g/<br>410 psig     | 6,6 bar-g/<br>95 psig        | 7,6 bar-g/<br>110 psig       | 24,5 bar-g/<br>355 psig        | 23,9 bar-g/<br>345 psig       |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 538°C/ -196°C<br>1000°F/-320°F | 425°C/ -196°C<br>800°F/-320°F |
| Shell test pressure     | 7,7 MPa                     | 7,8 MPa                      | 7,8 MPa                      | 7,5 MPa                        | 6,3 MPa                       |
| High pressure seal test | 5,6 MPa                     | 5,7 MPa                      | 5,7 MPa                      | 5,5 MPa                        | 4,6 MPa                       |
| Backseat test pressure  | 5,6 MPa                     | 5,7 MPa                      | 5,7 MPa                      | 5,5 MPa                        | 4,6 MPa                       |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                        | 0,6 MPa                       |

| Class 300               | Material                       |                               |                             |                               |                               |
|-------------------------|--------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
|                         | A182 F316                      | A182 F316L                    | A350 LF2                    | A350 LF3                      | A352 LC3                      |
| PSmax                   | 49,6 bar-g/<br>720 psig        | 41,4 bar-g/<br>600 psig       | 51,1 bar-g/<br>740 psig     | 51,1 bar-g/<br>740 psig       | 51,7 bar-g/<br>750 psig       |
| TS                      | 38°C/-196°C<br>100°F/-320°F    | 38°C/-196°C<br>100°F/-320°F   | 38°C/-46°C<br>100°F/-51°F   | 38°C/-101°C<br>100°F/-150°F   | 38°C/-101°C<br>100°F/-150°F   |
| PS                      | 25,2 bar-g/<br>365 psig        | 23,4 bar-g/<br>340 psig       | 28,8 bar-g/<br>410 psig     | 37,9 bar-g/<br>550 psig       | 28,3 bar-g/<br>410 psig       |
| TSmax/min               | 538°C/ -196°C<br>1000°F/-320°F | 450°C/ -196°C<br>850°F/-320°F | 425°C/ -46°C<br>800°F/-51°F | 345°C/ -101°C<br>650°F/-150°F | 345°C/ -101°C<br>650°F/-150°F |
| Shell test pressure     | 7,5 MPa                        | 6,3 MPa                       | 7,7 MPa                     | 7,7 MPa                       | 7,8 MPa                       |
| High pressure seal test | 5,5 MPa                        | 4,6 MPa                       | 5,6 MPa                     | 5,6 MPa                       | 5,7 MPa                       |
| Backseat test pressure  | 5,5 MPa                        | 4,6 MPa                       | 5,6 MPa                     | 5,6 MPa                       | 5,7 MPa                       |
| Air test pressure       | 0,6 MPa                        | 0,6 MPa                       | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                       |

Information / restriction of technical rules need to be observed!  
 Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
 Product suitability must be verified, contact manufacturer for information

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 600               | Material                   |                            |                            |                             |                             |                             |
|-------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                         | A216 WCB                   | A352 LCB                   | A217 WC1                   | A217 WC6                    | A217 WC9                    | A217 C5                     |
| PSmax                   | 102,1 bar-g/<br>1480 psig  | 96 bar-g/<br>1395 psig     | 96 bar-g/<br>1395 psig     | 103,4 bar-g/<br>1500 psig   | 103,4 bar-g/<br>1500 psig   | 103,4 bar-g/<br>1500 psig   |
| TS                      | 38°C/-29°C<br>100°F/-20°F  | 38°C/-46°C<br>100°F/-50°F  | 38°C/-29°C<br>100°F/-20°F  | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F   |
| PS                      | 57,5 bar-g/<br>825 psig    | 72,8 bar-g/<br>1065 psig   | 34,6 bar-g/<br>500 psig    | 29,8 bar-g/<br>430 psig     | 36,9 bar-g/<br>535 psig     | 4,7 bar-g/<br>70 psig       |
| TSmax/min               | 425°C/-29°C<br>800°F/-20°F | 343°C/-46°C<br>650°F/-50°F | 468°C/-29°C<br>875°F/-20°F | 538°C/-29°C<br>1000°F/-20°F | 538°C/-29°C<br>1000°F/-20°F | 650°C/-29°C<br>1200°F/-20°F |
| Shell test pressure     | 15 MPa                     | 15 MPa                     | 15 MPa                     | 15 MPa                      | 15 MPa                      | 15 MPa                      |
| High pressure seal test | 11 MPa                     | 11 MPa                     | 11 MPa                     | 11 MPa                      | 11 MPa                      | 11 MPa                      |
| Backseat test pressure  | 11 MPa                     | 11 MPa                     | 11 MPa                     | 11 MPa                      | 11 MPa                      | 11 MPa                      |
| Air test pressure       | 0,6 MPa                    | 0,6 MPa                    | 0,6 MPa                    | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     |

| Class 600               | Material                    |                             |                             |                            |                            |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|
|                         | A217 C12                    | A351 CF8                    | A351 CF8M                   | A351 CF3                   | A351 CF3M                  |
| PSmax                   | 103,4bar-g/<br>1500psig     | 99,3 bar-g/<br>1440 psig    | 99,3 bar-g/<br>1440 psig    | 99,3 bar-g/<br>1440 psig   | 99,3 bar-g/<br>1440 psig   |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F  | 38°C/-46°C<br>100°F/-50°F  |
| PS                      | 7,1 bar-g/<br>105 psig      | 48,9 bar-g/<br>710 psig     | 50 bar-g/<br>725 psig       | 56 bar-g/<br>810 psig      | 57,6 bar-g/<br>835 psig    |
| TSmax/min               | 650°C/-29°C<br>1200°F/-20°F | 538°C/-46°C<br>1000°F/-50°F | 538°C/-46°C<br>1000°F/-50°F | 425°C/-46°C<br>800°F/-50°F | 455°C/-46°C<br>850°F/-50°F |
| Shell test pressure     | 15 MPa                      | 15 MPa                      | 15 MPa                      | 15 MPa                     | 15 MPa                     |
| High pressure seal test | 11 MPa                      | 11 MPa                      | 11 MPa                      | 11 MPa                     | 11 MPa                     |
| Backseat test pressure  | 11 MPa                      | 11 MPa                      | 11 MPa                      | 11 MPa                     | 11 MPa                     |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                    | 0,6 MPa                    |

| Class 600               | Material                   |                             |                             |                               |                              |
|-------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|------------------------------|
|                         | A105                       | A182 F11 CL2                | A182 F22 CL3                | A182 F304                     | A182 F304L                   |
| PSmax                   | 102,1 bar-g/<br>1480 psig  | 103,4 bar-g/<br>1500 psig   | 103,4 bar-g/<br>1500 psig   | 99,3 bar-g/<br>1440 psig      | 82,7 bar-g/<br>1200 psig     |
| TS                      | 38°C/-29°C<br>100°F/-20°F  | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-196°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-320°F  |
| PS                      | 57,5 bar-g/<br>825 psig    | 13,1 bar-g/<br>190 psig     | 15,2 bar-g/<br>220 psig     | 49,0 bar-g/<br>710 psig       | 47,7 bar-g/<br>690 psig      |
| TSmax/min               | 425°C/-29°C<br>800°F/-20°F | 595°C/-29°C<br>1100°F/-20°F | 595°C/-29°C<br>1100°F/-20°F | 538°C/-196°C<br>1000°F/-320°F | 425°C/-196°C<br>800°F/-320°F |
| Shell test pressure     | 15,4 MPa                   | 15,6 MPa                    | 15,6 MPa                    | 14,9 MPa                      | 12,5 MPa                     |
| High pressure seal test | 11,2 MPa                   | 11,4 MPa                    | 11,4 MPa                    | 10,9 MPa                      | 9,1 MPa                      |
| Backseat test pressure  | 11,2 MPa                   | 11,4 MPa                    | 11,4 MPa                    | 10,9 MPa                      | 9,1 MPa                      |
| Air test pressure       | 0,6 MPa                    | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                      |

| Class 600               | Material                      |                              |                            |                              |                              |
|-------------------------|-------------------------------|------------------------------|----------------------------|------------------------------|------------------------------|
|                         | A182 F316                     | A182 F316L                   | A350 LF2                   | A350 LF3                     | A352 LC3                     |
| PSmax                   | 99,3 bar-g/<br>1440 psig      | 82,7 bar-g/<br>1200 psig     | 102,1 bar-g/<br>1480 psig  | 102,1 bar-g/<br>1480 psig    | 103,4 bar-g/<br>1500 psig    |
| TS                      | 38°C/-196°C<br>100°F/-320°F   | 38°C/-196°C<br>100°F/-320°F  | 38°C/-46°C<br>100°F/-51°F  | 38°C/-101°C<br>100°F/-150°F  | 38°C/-101°C<br>100°F/-150°F  |
| PS                      | 50,0 bar-g/<br>725 psig       | 46,8 bar-g/<br>675 psig      | 57,5 bar-g/<br>825 psig    | 75,8 bar-g/<br>1100 psig     | 56,9 bar-g/<br>825 psig      |
| TSmax/min               | 538°C/-196°C<br>1000°F/-320°F | 450°C/-196°C<br>850°F/-320°F | 425°C/-46°C<br>800°F/-51°F | 345°C/-101°C<br>650°F/-150°F | 345°C/-101°C<br>650°F/-150°F |
| Shell test pressure     | 14,9 MPa                      | 12,5 MPa                     | 15,4 MPa                   | 15,4 MPa                     | 15,6 MPa                     |
| High pressure seal test | 10,9 MPa                      | 9,1 MPa                      | 11,2 MPa                   | 11,2 MPa                     | 11,4 MPa                     |
| Backseat test pressure  | 10,9 MPa                      | 9,1 MPa                      | 11,2 MPa                   | 11,2 MPa                     | 11,4 MPa                     |
| Air test pressure       | 0,6 MPa                       | 0,6 MPa                      | 0,6 MPa                    | 0,6 MPa                      | 0,6 MPa                      |

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 900               | Material                    |                             |                             |                              |                              |                              |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|                         | A216 WCB                    | A352 LCB                    | A217 WC1                    | A217 WC6                     | A217 WC9                     | A217 C5                      |
| PSmax                   | 153,2 bar-g/<br>2220 psig   | 144,1 bar-g/<br>2090 psig   | 144,1 bar-g/<br>2090 psig   | 155,1 bar-g/<br>2250 psig    | 155,1 bar-g/<br>2250 psig    | 155,1 bar-g/<br>2250 psig    |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    |
| PS                      | 86,3 bar-g/<br>1235 psig    | 109,2 bar-g/<br>1600 psig   | 52 bar-g/<br>750 psig       | 44,7 bar-g/<br>650 psig      | 55,3 bar-g/<br>800 psig      | 7,1 bar-g/<br>105 psig       |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 343°C/ -46°C<br>650°F/-50°F | 468°C/ -29°C<br>875°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 650°C/ -29°C<br>1200°F/-20°F |
| Shell test pressure     | 22,5 MPa                    | 22,5 MPa                    | 22,5 MPa                    | 22,5 MPa                     | 22,5 MPa                     | 22,5 MPa                     |
| High pressure seal test | 16,5 MPa                    | 16,5 MPa                    | 16,5 MPa                    | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                     |
| Backseat test pressure  | 16,5 MPa                    | 16,5 MPa                    | 16,5 MPa                    | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                     |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      |

| Class 900               | Material                     |                              |                              |                             |                             |
|-------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|
|                         | A217 C12                     | A351 CF8                     | A351 CF8M                    | A351 CF3                    | A351 CF3M                   |
| PSmax                   | 155,1 bar-g/<br>2250 psig    | 148,9 bar-g/<br>2160 psig    | 148,9 bar-g/<br>2160 psig    | 148,9 bar-g/<br>2160 psig   | 148,9 bar-g/<br>2160 psig   |
| TS                      | 38°C/-29°C<br>100°F/-20°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   |
| PS                      | 10,6 bar-g/<br>155 psig      | 73,3 bar-g/<br>1065 psig     | 75,2 bar-g/<br>1090 psig     | 84 bar-g/<br>1215 psig      | 86,4 bar-g/<br>1255 psig    |
| TSmax/min               | 650°C/ -29°C<br>1200°F/-20°F | 538°C/ -46°C<br>1000°F/-50°F | 538°C/ -46°C<br>1000°F/-50°F | 425°C/ -46°C<br>800°F/-50°F | 455°C/ -46°C<br>850°F/-50°F |
| Shell test pressure     | 22,5 MPa                     | 22,5 MPa                     | 22,5 MPa                     | 22,5 MPa                    | 22,5 MPa                    |
| High pressure seal test | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                    | 16,5 MPa                    |
| Backseat test pressure  | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                     | 16,5 MPa                    | 16,5 MPa                    |
| Air test pressure       | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                     | 0,6 MPa                     |

| Class 900               | Material                    |                              |                              |                                |                               |
|-------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|
|                         | A105                        | A182 F11 CL2                 | A182 F22 CL3                 | A182 F304                      | A182 F304L                    |
| PSmax                   | 153,2 bar-g/<br>2220 psig   | 155,1 bar-g/<br>2250 psig    | 155,1 bar-g/<br>2250 psig    | 148,9 bar-g/<br>2160 psig      | 124,1 bar-g/<br>1800 psig     |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-20°F     | 38°C/-196°C<br>100°F/-320°F   |
| PS                      | 86,3 bar-g/<br>1235 psig    | 20,0 bar-g/<br>290 psig      | 22,8 bar-g/<br>330 psig      | 73,4 bar-g/<br>1065 psig       | 71,6 bar-g/<br>1035 psig      |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 538°C/ -196°C<br>1000°F/-320°F | 425°C/ -196°C<br>800°F/-320°F |
| Shell test pressure     | 23 MPa                      | 23,3 MPa                     | 23,3 MPa                     | 22,4 MPa                       | 18,7 MPa                      |
| High pressure seal test | 16,9 MPa                    | 17,1 MPa                     | 17,1 MPa                     | 16,4 MPa                       | 13,7 MPa                      |
| Backseat test pressure  | 16,9 MPa                    | 17,1 MPa                     | 17,1 MPa                     | 16,4 MPa                       | 13,7 MPa                      |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                        | 0,6 MPa                       |

| Class 900               | Material                       |                               |                             |                               |                               |
|-------------------------|--------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
|                         | A182 F316                      | A182 F316L                    | A350 LF2                    | A350 LF3                      | A352 LC3                      |
| PSmax                   | 148,9 bar-g/<br>2160 psig      | 124,1 bar-g/<br>1800 psig     | 153,2 bar-g/<br>2220 psig   | 153,2 bar-g/<br>2220 psig     | 155,1 bar-g/<br>2250 psig     |
| TS                      | 38°C/-196°C<br>100°F/-320°F    | 38°C/-196°C<br>100°F/-320°F   | 38°C/-46°C<br>100°F/-51°F   | 38°C/-101°C<br>100°F/-150°F   | 38°C/-101°C<br>100°F/-150°F   |
| PS                      | 75,2 bar-g/<br>1090 psig       | 70,2 bar-g/<br>1015 psig      | 86,3 bar-g/<br>1235 psig    | 113,8 bar-g/<br>1650 psig     | 85,2 bar-g/<br>1235 psig      |
| TSmax/min               | 538°C/ -196°C<br>1000°F/-320°F | 450°C/ -196°C<br>850°F/-320°F | 425°C/ -46°C<br>800°F/-51°F | 345°C/ -101°C<br>650°F/-150°F | 345°C/ -101°C<br>650°F/-150°F |
| Shell test pressure     | 22,4 MPa                       | 18,7 MPa                      | 23 MPa                      | 23 MPa                        | 23,3 MPa                      |
| High pressure seal test | 16,4 MPa                       | 13,7 MPa                      | 16,9 MPa                    | 16,9 MPa                      | 17,1 MPa                      |
| Backseat test pressure  | 16,4 MPa                       | 13,7 MPa                      | 16,9 MPa                    | 16,9 MPa                      | 17,1 MPa                      |
| Air test pressure       | 0,6 MPa                        | 0,6 MPa                       | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                       |

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 1500              | Material                    |                             |                             |                              |                              |                              |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|                         | A216 WCB                    | A352 LCB                    | A217 WC1                    | A217 WC6                     | A217 WC9                     | A217 C5                      |
| PSmax                   | 255,3 bar-g/<br>3705 psig   | 240,1 bar-g/<br>3480 psig   | 240,1 bar-g/<br>3480 psig   | 258,6 bar-g/<br>3750 psig    | 258,6 bar-g/<br>3750 psig    | 258,6 bar-g/<br>3750 psig    |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    |
| PS                      | 143,8 bar-g/<br>2055 psig   | 182 bar-g/<br>2665 psig     | 86,6 bar-g/<br>1250 psig    | 74,5 bar-g/<br>1080 psig     | 92,2 bar-g/<br>1335 psig     | 11,8 bar-g/<br>170 psig      |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 343°C/ -46°C<br>650°F/-50°F | 468°C/ -29°C<br>875°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 650°C/ -29°C<br>1200°F/-20°F |
| Shell test pressure     | 37,5 MPa                    | 37,5 MPa                    | 37,5 MPa                    | 37,5 MPa                     | 37,5 MPa                     | 37,5 MPa                     |
| High pressure seal test | 27,5 MPa                    | 27,5 MPa                    | 27,5 MPa                    | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                     |
| Backseat test pressure  | 27,5 MPa                    | 27,5 MPa                    | 27,5 MPa                    | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                     |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      |

| Class 1500              | Material                     |                              |                              |                             |                             |
|-------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|
|                         | A217 C12                     | A351 CF8                     | A351 CF8M                    | A351 CF3                    | A351 CF3M                   |
| PSmax                   | 258,6 bar-g/<br>3750 psig    | 248,2 bar-g/<br>3600 psig    | 248,2 bar-g/<br>3600 psig    | 248,2 bar-g/<br>3600 psig   | 248,2 bar-g/<br>3600 psig   |
| TS                      | 38°C/-29°C<br>100°F/-20°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   |
| PS                      | 17,7 bar-g/<br>255 psig      | 122,1 bar-g/<br>1770 psig    | 122,5 bar-g/<br>1820 psig    | 140 bar-g/<br>2030 psig     | 144 bar-g/<br>2090 psig     |
| TSmax/min               | 650°C/ -29°C<br>1200°F/-20°F | 538°C/ -46°C<br>1000°F/-50°F | 538°C/ -46°C<br>1000°F/-50°F | 425°C/ -46°C<br>800°F/-50°F | 455°C/ -46°C<br>850°F/-50°F |
| Shell test pressure     | 37,5 MPa                     | 37,5 MPa                     | 37,5 MPa                     | 37,5 MPa                    | 37,5 MPa                    |
| High pressure seal test | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                    | 27,5 MPa                    |
| Backseat test pressure  | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                     | 27,5 MPa                    | 27,5 MPa                    |
| Air test pressure       | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                     | 0,6 MPa                     |

| Class 1500              | Material                    |                              |                              |                                |                               |
|-------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|
|                         | A105                        | A182 F11 CL2                 | A182 F22 CL3                 | A182 F304                      | A182 F304L                    |
| PSmax                   | 255,3 bar-g/<br>3705 psig   | 258,6 bar-g/<br>3750 psig    | 258,6 bar-g/<br>3750 psig    | 248,2 bar-g/<br>3600 psig      | 206,8 bar-g/<br>3000 psig     |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-20°F     | 38°C/-196°C<br>100°F/-320°F   |
| PS                      | 143,8 bar-g/<br>2055 psig   | 33,1 bar-g/<br>480 psig      | 37,9 bar-g/<br>550 psig      | 122,0 bar-g/<br>1770 psig      | 119,3 bar-g/<br>1730 psig     |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 538°C/ -196°C<br>1000°F/-320°F | 425°C/ -196°C<br>800°F/-320°F |
| Shell test pressure     | 38,3 MPa                    | 38,8 MPa                     | 38,8 MPa                     | 37,3 MPa                       | 31,1 MPa                      |
| High pressure seal test | 28,1 MPa                    | 28,4 MPa                     | 28,4 MPa                     | 27,3 MPa                       | 22,7 MPa                      |
| Backseat test pressure  | 28,1 MPa                    | 28,4 MPa                     | 28,4 MPa                     | 27,3 MPa                       | 22,7 MPa                      |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                        | 0,6 MPa                       |

| Class 1500              | Material                       |                               |                             |                               |                               |
|-------------------------|--------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
|                         | A182 F316                      | A182 F316L                    | A350 LF2                    | A350 LF3                      | A352 LC3                      |
| PSmax                   | 248,2 bar-g/<br>3600 psig      | 206,8 bar-g/<br>3000 psig     | 255,3 bar-g/<br>3705 psig   | 255,3 bar-g/<br>3705 psig     | 258,6 bar-g/<br>3750 psig     |
| TS                      | 38°C/-196°C<br>100°F/-320°F    | 38°C/-196°C<br>100°F/-320°F   | 38°C/-46°C<br>100°F/-51°F   | 38°C/-101°C<br>100°F/-150°F   | 38°C/-101°C<br>100°F/-150°F   |
| PS                      | 125,5 bar-g/<br>1820 psig      | 117,1 bar-g/<br>1690 psig     | 143,8 bar-g/<br>2055 psig   | 189,3 bar-g/<br>2745 psig     | 141,7 bar-g/<br>2055 psig     |
| TSmax/min               | 538°C/ -196°C<br>1000°F/-320°F | 450°C/ -196°C<br>850°F/-320°F | 425°C/ -46°C<br>800°F/-51°F | 345°C/ -101°C<br>650°F/-150°F | 345°C/ -101°C<br>650°F/-150°F |
| Shell test pressure     | 37,3 MPa                       | 31,1 MPa                      | 38,3 MPa                    | 38,3 MPa                      | 38,8 MPa                      |
| High pressure seal test | 27,3 MPa                       | 22,7 MPa                      | 28,1 MPa                    | 28,1 MPa                      | 28,4 MPa                      |
| Backseat test pressure  | 27,3 MPa                       | 22,7 MPa                      | 28,1 MPa                    | 28,1 MPa                      | 28,4 MPa                      |
| Air test pressure       | 0,6 MPa                        | 0,6 MPa                       | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                       |

**Limits of use acc. to ASME B16.34-2013 and ASME B&PV Code / Pressure tests acc. to API 598**  
**GLOBE / GATE / CHECK VALVES & Y-STRAINERS**

| Class 2500              | Material                    |                             |                             |                              |                              |                              |
|-------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|                         | A216 WCB                    | A352 LCB                    | A217 WC1                    | A217 WC6                     | A217 WC9                     | A217 C5                      |
| PSmax                   | 425,5 bar-g/<br>6170 psig   | 400,1 bar-g/<br>5805 psig   | 400,1 bar-g/<br>5805 psig   | 430,9 bar-g/<br>6250 psig    | 430,9 bar-g/<br>6250 psig    | 430,9 bar-g/<br>6250 psig    |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-46°C<br>100°F/-50°F   | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    |
| PS                      | 239,7 bar-g/<br>3430 psig   | 303,3 bar-g/<br>4440 psig   | 144,4 bar-g/<br>2085 psig   | 124,1 bar-g/<br>1800 psig    | 153,7 bar-g/<br>2230 psig    | 19,7 bar-g/<br>285 psig      |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 343°C/ -46°C<br>650°F/-50°F | 468°C/ -29°C<br>875°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 538°C/ -29°C<br>1000°F/-20°F | 650°C/ -29°C<br>1200°F/-20°F |
| Shell test pressure     | 63 MPa                      | 63 MPa                      | 63 MPa                      | 63 MPa                       | 63 MPa                       | 63 MPa                       |
| High pressure seal test | 46,2 MPa                    | 46,2 MPa                    | 46,2 MPa                    | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                     |
| Backseat test pressure  | 46,2 MPa                    | 46,2 MPa                    | 46,2 MPa                    | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                     |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      |

| Class 2500              | Material                     |                              |                              |                             |                             |
|-------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|
|                         | A217 C12                     | A351 CF8                     | A351 CF8M                    | A351 CF3                    | A351 CF3M                   |
| PSmax                   | 430,9 bar-g/<br>6250 psig    | 413,7 bar-g/<br>6000 psig    | 413,7 bar-g/<br>6000 psig    | 413,7 bar-g/<br>6000 psig   | 413,7 bar-g/<br>6000 psig   |
| TS                      | 38°C/-29°C<br>100°F/-20°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F    | 38°C/-46°C<br>100°F/-50°F   | 38°C/-46°C<br>100°F/-50°F   |
| PS                      | 29,5 bar-g/<br>430 psig      | 203,6 bar-g/<br>2950 psig    | 208,9 bar-g/<br>3030 psig    | 233,3 bar-g/<br>3380 psig   | 240,1 bar-g/<br>3480 psig   |
| TSmax/min               | 650°C/ -29°C<br>1200°F/-20°F | 538°C/ -46°C<br>1000°F/-50°F | 538°C/ -46°C<br>1000°F/-50°F | 425°C/ -46°C<br>800°F/-50°F | 455°C/ -46°C<br>850°F/-50°F |
| Shell test pressure     | 63 MPa                       | 63 MPa                       | 63 MPa                       | 63 MPa                      | 63 MPa                      |
| High pressure seal test | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                    | 46,2 MPa                    |
| Backseat test pressure  | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                     | 46,2 MPa                    | 46,2 MPa                    |
| Air test pressure       | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                     | 0,6 MPa                     |

| Class 2500              | Material                    |                              |                              |                                |                               |
|-------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|-------------------------------|
|                         | A105                        | A182 F11 CL2                 | A182 F22 CL3                 | A182 F304                      | A182 F304L                    |
| PSmax                   | 425,5 bar-g/<br>6170 psig   | 430,9 bar-g/<br>6250 psig    | 430,9 bar-g/<br>6250 psig    | 413,7 bar-g/<br>6000 psig      | 344,7 bar-g/<br>5000 psig     |
| TS                      | 38°C/-29°C<br>100°F/-20°F   | 38°C/-29°C<br>100°F/-20°F    | 38°C/-29°C<br>100°F/-20°F    | 38°C/-196°C<br>100°F/-20°F     | 38°C/-196°C<br>100°F/-320°F   |
| PS                      | 239,7 bar-g/<br>3430 psig   | 55,2 bar-g/<br>800 psig      | 63,1 bar-g/<br>915 psig      | 203,4 bar-g/<br>2950 psig      | 198,8 bar-g/<br>2880 psig     |
| TSmax/min               | 425°C/ -29°C<br>800°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 595°C/ -29°C<br>1100°F/-20°F | 538°C/ -196°C<br>1000°F/-320°F | 425°C/ -196°C<br>800°F/-320°F |
| Shell test pressure     | 63,9 MPa                    | 64,7 MPa                     | 64,7 MPa                     | 62,1 MPa                       | 51,8 MPa                      |
| High pressure seal test | 46,8 MPa                    | 47,4 MPa                     | 47,4 MPa                     | 45,5 MPa                       | 37,9 MPa                      |
| Backseat test pressure  | 46,8 MPa                    | 47,4 MPa                     | 47,4 MPa                     | 45,5 MPa                       | 37,9 MPa                      |
| Air test pressure       | 0,6 MPa                     | 0,6 MPa                      | 0,6 MPa                      | 0,6 MPa                        | 0,6 MPa                       |

| Class 2500              | Material                       |                               |                             |                               |                               |
|-------------------------|--------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
|                         | A182 F316                      | A182 F316L                    | A350 LF2                    | A350 LF3                      | A352 LC3                      |
| PSmax                   | 413,7 bar-g/<br>6000 psig      | 344,7 bar-g/<br>5000 psig     | 425,5 bar-g/<br>6170 psig   | 425,5 bar-g/<br>6170 psig     | 430,9 bar-g/<br>6250 psig     |
| TS                      | 38°C/-196°C<br>100°F/-320°F    | 38°C/-196°C<br>100°F/-320°F   | 38°C/-46°C<br>100°F/-51°F   | 38°C/-101°C<br>100°F/-150°F   | 38°C/-101°C<br>100°F/-150°F   |
| PS                      | 208,9 bar-g/<br>3030 psig      | 195,1 bar-g/<br>2820 psig     | 239,7 bar-g/<br>3430 psig   | 315,4 bar-g/<br>4575 psig     | 236,5 bar-g/<br>3430 psig     |
| TSmax/min               | 538°C/ -196°C<br>1000°F/-320°F | 450°C/ -196°C<br>850°F/-320°F | 425°C/ -46°C<br>800°F/-51°F | 345°C/ -101°C<br>650°F/-150°F | 345°C/ -101°C<br>650°F/-150°F |
| Shell test pressure     | 62,1 MPa                       | 51,8 MPa                      | 63,9 MPa                    | 63,9 MPa                      | 64,7 MPa                      |
| High pressure seal test | 45,5 MPa                       | 37,9 MPa                      | 46,8 MPa                    | 46,8 MPa                      | 47,4 MPa                      |
| Backseat test pressure  | 45,5 MPa                       | 37,9 MPa                      | 46,8 MPa                    | 46,8 MPa                      | 47,4 MPa                      |
| Air test pressure       | 0,6 MPa                        | 0,6 MPa                       | 0,6 MPa                     | 0,6 MPa                       | 0,6 MPa                       |

Information / restriction of technical rules need to be observed!  
 Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
 Product suitability must be verified, contact manufacturer for information

## Limits of use / Main duties

### BALL VALVES

#### Ball Valve Seat and Seal Material

##### Virgin PTFE

Virgin PTFE are basically used as ball valve seat material, with chemical compatibility to fill the widest possible range of service applications.

| Color | Density (g/cm <sup>3</sup> ) | Elongation (%) | Tensile Strength (MPa) | Continuous Working Temp. (°C) |
|-------|------------------------------|----------------|------------------------|-------------------------------|
| White | 2,17                         | 390            | 54                     | 150                           |

##### Reinforced PTFE

Reinforced PTFE, 15% glass reinforced PTFE, chemical resistance is compatible to virgin PTFE but with better cycle life and greater P-T rating, recommended to used in Class150 and Class300 ball valve, limited use in Class600 ball valves with below NPS12.

| Color     | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|-----------|------------------------------|--------------------|----------------------------|-------------------------------|
| Off-white | 2,1                          | 76                 | 68                         | 180                           |

##### Carbon Fiber Filled PTFE

Carbon Fiber Filled PTFE, 25% Carbon Graphite with 75% TFE, retain virtually all the chemical compatibility properties of virgin PTFE but with better cycle life than PTFE, typically used for Class600&below trunnion mounted ball valve.

| Color | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|-------|------------------------------|--------------------|----------------------------|-------------------------------|
| Black | 2,23                         | 68                 | 60                         | 240                           |

##### Nylon

Nylon primarily used in high pressure ball valves upto Class2500, it can be used in high pressure oil, air and other gas systems except oxygen, it is not recommended for water.

| Color | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Water Absorption (%) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|-------|------------------------------|--------------------|----------------------|----------------------------|-------------------------------|
| White | 1,2                          | 65                 | 3,5                  | 100                        | 90                            |

##### Devlon

Devlon is improved version of Nylon, inherit basic properties of Nylon however with higher temperature limit, ideal seat material for high pressure ball valves.

| Color         | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Water Absorption (%) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|---------------|------------------------------|--------------------|----------------------|----------------------------|-------------------------------|
| Bright Yellow | 1,14                         | 79                 | 3                    | 140                        | 125                           |

Values given just for reference. Please consult us for each particular application

## Limits of use / Main duties

### BALL VALVES

#### Ball Valve Seat and Seal Material

##### PEEK

Polyetheretherketone, excellently suitable for high pressure and temperature service, meanwhile offer very good corrosion resistance, with stable sealing in COMEVAL made Class2500 ball valves.

| Color  | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|--------|------------------------------|--------------------|----------------------------|-------------------------------|
| Sallow | 1,29                         | 85                 | 118                        | 260                           |

##### PPL

Polyphenylene, recommended for use in medium high pressure and temperature floating ball valves, similar properties to PTFE, good abrasive resistance and higher deformation rating and density than PTFE.

| Color           | Density (g/cm <sup>3</sup> ) | Hardness (Shore D) | Compressive Strength (MPa) | Continuous Working Temp. (°C) |
|-----------------|------------------------------|--------------------|----------------------------|-------------------------------|
| Chocolate Brown | 2,4                          | 65                 | 40                         | 200                           |

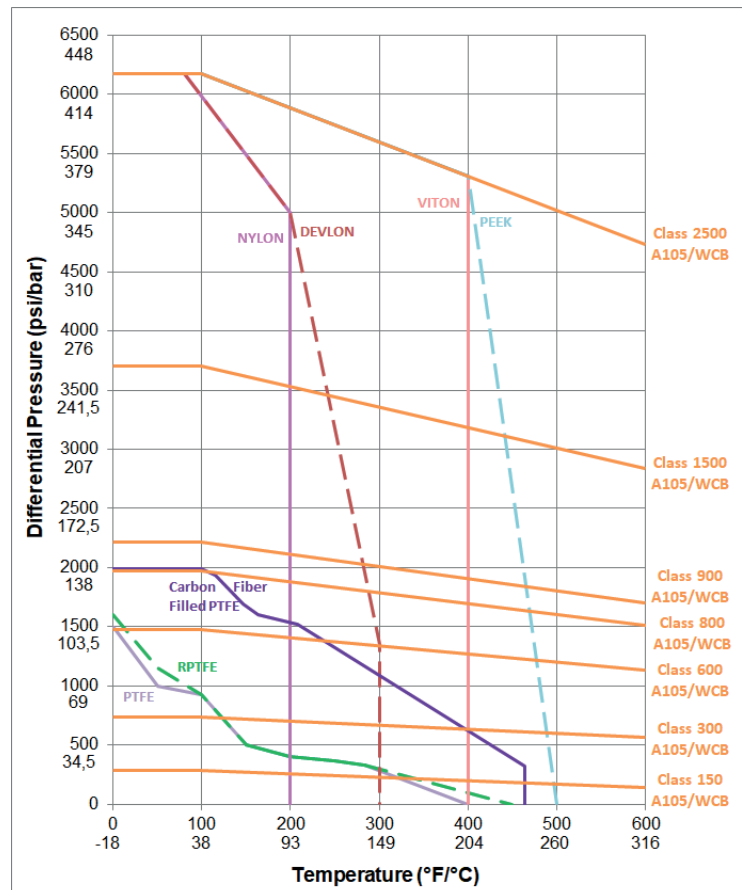
Values given just for reference. Please consult us for each particular application

Besides the soft seat ball valves, COMEVAL VALVE SYSTEMS accumulated pretty rich experiences in metal seat ball valves, all our metal seat ball valves with basic acceptance criteria of zero-leakage, successfully applied in very strict working conditions and known well for it's excellent performance stability.

#### Typical Metal Sealings:

- TCC-Tungsten Carbide Coating
- Nickle Base Alloy Spraying Welding like Inconel, Hastelloy, Monel, etc
- Cobalt Base Alloy Spraying Welding-Stellite

#### Pressure / Temperature Chart \*



\*Only for reference. Please consult us for each particular application

## Pressure / Temperature Chart according to ASME B16.34 & ASME B&PV Code CAST PRODUCTS

The following graphs represent the Temperature / Pressure relation for all metal seated valves, strainers and other flow control products made out in the following pressure retaining shell materials:

- Carbon Steel A216 WCB
- Low Carbon Steel A352 LCB
- Alloy Steel A217 WC1, A217 WC6, A217 WC9, A217 C5, A217 C12
- Stainless Steel A351 CF8, A351 CF8M, A351 CF3, A351 CF3M
- And for Design Pressures up to 2500 Lbs.

All products with resilient seat or other components are subject to temperature restrictions governed by these resilient materials.

\* See page 47 for notes

### Class 150

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |
| -48   | ....                                   | 18.4                                   | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 19                                     | 19                                      | 19                                     | 19                                      |
| -29   | 19.6                                   |                                        | 18.4                                         | 19.8                                            | 19.8                                        | 20                                         | 20                                          |                                        |                                         |                                        |                                         |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
| 50    | 19.2                                   | 18.2                                   | 18.2                                         | 19.5                                            | 19.5                                        | 19.5                                       | 19.5                                        | 18.3                                   | 18.4                                    | 18.3                                   | 18.4                                    |
| 100   | 17.7                                   | 17.4                                   | 17.4                                         | 17.7                                            | 17.7                                        | 17.7                                       | 17.7                                        | 15.7                                   | 16.2                                    | 15.7                                   | 16.2                                    |
| 150   | 15.8                                   | 15.8                                   | 15.8                                         | 15.8                                            | 15.8                                        | 15.8                                       | 15.8                                        | 14.2                                   | 14.8                                    | 14.2                                   | 14.8                                    |
| 200   | 13.8                                   | 13.8                                   | 13.8                                         | 13.8                                            | 13.8                                        | 13.8                                       | 13.8                                        | 13.2                                   | 13.7                                    | 13.2                                   | 13.7                                    |
| 250   | 12.1                                   | 12.1                                   | 12.1                                         | 12.1                                            | 12.1                                        | 12.1                                       | 12.1                                        | 12.1                                   | 12.1                                    | 12.1                                   | 12.1                                    |
| 300   | 10.2                                   | 10.2                                   | 10.2                                         | 10.2                                            | 10.2                                        | 10.2                                       | 10.2                                        | 10.2                                   | 10.2                                    | 10.2                                   | 10.2                                    |
| 325   | 9.3                                    | 9.3                                    | 9.3                                          | 9.3                                             | 9.3                                         | 9.3                                        | 9.3                                         | 9.3                                    | 9.3                                     | 9.3                                    | 9.3                                     |
| 350   | 8.4                                    | 8.4                                    | 8.4                                          | 8.4                                             | 8.4                                         | 8.4                                        | 8.4                                         | 8.4                                    | 8.4                                     | 8.4                                    | 8.4                                     |
| 375   | 7.4                                    | 7.4                                    | 7.4                                          | 7.4                                             | 7.4                                         | 7.4                                        | 7.4                                         | 7.4                                    | 7.4                                     | 7.4                                    | 7.4                                     |
| 400   | 6.5                                    | 6.5                                    | 6.5                                          | 6.5                                             | 6.5                                         | 6.5                                        | 6.5                                         | 6.5                                    | 6.5                                     | 6.5                                    | 6.5                                     |
| 425   | 5.5                                    | 5.5                                    | 5.5                                          | 5.5                                             | 5.5                                         | 5.5                                        | 5.5                                         | 5.5                                    | 5.5                                     | 5.5                                    | 5.5                                     |
| 450   | 4.6                                    | 4.6                                    | 4.6                                          | 4.6                                             | 4.6                                         | 4.6                                        | 4.6                                         | 4.6                                    | 4.6                                     | 4.6                                    | 4.6                                     |
| 475   | 3.7                                    | 3.7                                    | 3.7                                          | 3.7                                             | 3.7                                         | 3.7                                        | 3.7                                         | 3.7                                    | 3.7                                     | 3.7                                    | 3.7                                     |
| 500   | 2.8                                    | 2.8                                    | 2.8                                          | 2.8                                             | 2.8                                         | 2.8                                        | 2.8                                         | 2.8                                    | 2.8                                     | 2.8                                    | 2.8                                     |
| 538   | 1.4                                    | 1.4                                    | 1.4                                          | 1.4                                             | 1.4                                         | 1.4                                        | 1.4                                         | 1.4                                    | 1.4                                     | 1.4                                    | 1.4                                     |

### Class 300

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |
| -48   | ....                                   | 48.0                                   | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 49.6                                   | 49.6                                    | 49.6                                   | 49.6                                    |
| -29   | 51.1                                   |                                        | 48                                           | 51.7                                            | 51.7                                        | 51.7                                       | 51.7                                        |                                        |                                         |                                        |                                         |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
| 50    | 50.1                                   | 47.5                                   | 47.5                                         | 51.7                                            | 51.7                                        | 51.7                                       | 51.7                                        | 47.8                                   | 48.1                                    | 47.8                                   | 48.1                                    |
| 100   | 46.6                                   | 45.3                                   | 45.3                                         | 51.5                                            | 51.5                                        | 51.5                                       | 51.5                                        | 40.9                                   | 42.2                                    | 40.9                                   | 42.2                                    |
| 150   | 45.1                                   | 43.9                                   | 43.9                                         | 49.7                                            | 50.3                                        | 50.3                                       | 50.3                                        | 37.0                                   | 38.5                                    | 37.0                                   | 38.5                                    |
| 200   | 43.8                                   | 42.5                                   | 42.5                                         | 48.0                                            | 48.6                                        | 48.6                                       | 48.6                                        | 34.5                                   | 35.7                                    | 34.5                                   | 35.7                                    |
| 250   | 41.9                                   | 40.8                                   | 40.8                                         | 46.3                                            | 46.3                                        | 46.3                                       | 46.3                                        | 32.5                                   | 33.4                                    | 32.5                                   | 33.4                                    |
| 300   | 39.8                                   | 38.7                                   | 38.7                                         | 42.9                                            | 42.9                                        | 42.9                                       | 42.9                                        | 30.9                                   | 31.6                                    | 30.9                                   | 31.6                                    |
| 325   | 38.7                                   | 37.6                                   | 37.6                                         | 41.4                                            | 41.4                                        | 41.4                                       | 41.4                                        | 30.2                                   | 30.9                                    | 30.2                                   | 30.9                                    |
| 350   | 37.6                                   | 36.4                                   | 36.4                                         | 40.3                                            | 40.3                                        | 40.3                                       | 40.3                                        | 29.6                                   | 30.3                                    | 29.6                                   | 30.3                                    |
| 375   | 36.4                                   | 35.0                                   | 35.0                                         | 38.9                                            | 38.9                                        | 38.9                                       | 38.9                                        | 29.0                                   | 29.9                                    | 29.0                                   | 29.9                                    |
| 400   | 34.7                                   | 32.6                                   | 32.6                                         | 36.5                                            | 36.5                                        | 36.5                                       | 36.5                                        | 28.4                                   | 29.4                                    | 28.4                                   | 29.4                                    |
| 425   | 28.8                                   | 27.3                                   | 27.3                                         | 35.2                                            | 35.2                                        | 35.2                                       | 35.2                                        | 28.0                                   | 29.1                                    | 28.0                                   | 29.1                                    |
| 450   | 23.0                                   | 21.6                                   | 21.6                                         | 33.7                                            | 33.7                                        | 33.7                                       | 33.7                                        | 27.4                                   | 28.8                                    | 27.4                                   | 28.8                                    |
| 475   | 17.4                                   | 15.7                                   | 15.7                                         | 31.7                                            | 31.7                                        | 27.9                                       | 31.7                                        | 26.9                                   | 28.7                                    | 26.9                                   | 28.7                                    |
| 500   | 11.8                                   | 11.1                                   | 11.1                                         | 25.7                                            | 28.2                                        | 21.4                                       | 28.2                                        | 26.5                                   | 28.2                                    | 26.5                                   | 28.2                                    |
| 538   | 5.9                                    | 5.9                                    | 5.9                                          | 14.9                                            | 18.4                                        | 13.7                                       | 17.5                                        | 24.4                                   | 25.2                                    | 24.4                                   | 25.2                                    |

## Pressure / Temperature Chart according to ASME B16.34 & ASME B&PV Code CAST PRODUCTS

The following graphs represent the Temperature / Pressure relation for all metal seated valves, strainers and other flow control products made out in the following pressure retaining shell materials:

- Carbon Steel A216 WCB
- Low Carbon Steel A352 LCB
- Alloy Steel A217 WC1, A217 WC6, A217 WC9, A217 C5, A217 C12
- Stainless Steel A351 CF8, A351 CF8M, A351 CF3, A351 CF3M
- And for Design Pressures up to 2500 Lbs.

All products with resilient seat or other components are subject to temperature restrictions governed by these resilient materials.

### Class 600

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |
| -48   | ....                                   | 96.0                                   | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 99.3                                   | 99.3                                    | 99.3                                   | 99.3                                    |
| -29   | 102.1                                  |                                        | 96.0                                         | 103.4                                           | 103.4                                       | 103.4                                      | 103.4                                       |                                        |                                         |                                        |                                         |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
| 50    | 100.2                                  | 94.9                                   | 94.9                                         | 103.4                                           | 103.4                                       | 103.4                                      | 103.4                                       | 95.6                                   | 96.2                                    | 95.6                                   | 96.2                                    |
| 100   | 93.2                                   | 90.7                                   | 90.7                                         | 103.0                                           | 103.0                                       | 103.0                                      | 103.0                                       | 81.7                                   | 84.4                                    | 81.7                                   | 84.4                                    |
| 150   | 90.2                                   | 87.9                                   | 87.9                                         | 99.5                                            | 100.3                                       | 100.3                                      | 100.3                                       | 74.0                                   | 77.0                                    | 74.0                                   | 77.0                                    |
| 200   | 87.6                                   | 85.1                                   | 85.1                                         | 95.9                                            | 97.2                                        | 97.2                                       | 97.2                                        | 69.0                                   | 71.3                                    | 69.0                                   | 71.3                                    |
| 250   | 83.9                                   | 81.6                                   | 81.6                                         | 92.7                                            | 92.7                                        | 92.7                                       | 92.7                                        | 65.0                                   | 66.8                                    | 65.0                                   | 66.8                                    |
| 300   | 79.6                                   | 77.4                                   | 77.4                                         | 85.7                                            | 85.7                                        | 85.7                                       | 85.7                                        | 61.8                                   | 63.2                                    | 61.8                                   | 63.2                                    |
| 325   | 77.4                                   | 75.2                                   | 75.2                                         | 82.6                                            | 82.6                                        | 82.6                                       | 82.6                                        | 60.4                                   | 61.8                                    | 60.4                                   | 61.8                                    |
| 350   | 75.1                                   | 72.8                                   | 72.8                                         | 80.4                                            | 80.4                                        | 80.4                                       | 80.4                                        | 59.3                                   | 60.7                                    | 59.3                                   | 60.7                                    |
| 375   | 72.7                                   | 69.9                                   | 69.9                                         | 77.6                                            | 77.6                                        | 77.6                                       | 77.6                                        | 58.1                                   | 59.8                                    | 58.1                                   | 59.8                                    |
| 400   | 69.4                                   | 65.2                                   | 65.2                                         | 73.3                                            | 73.3                                        | 73.3                                       | 73.3                                        | 56.9                                   | 58.9                                    | 56.9                                   | 58.9                                    |
| 425   | 57.5                                   | 54.6                                   | 54.6                                         | 70.0                                            | 70.0                                        | 70.0                                       | 70.0                                        | 56.0                                   | 58.3                                    | 56.0                                   | 58.3                                    |
| 450   | 46.0                                   | 43.2                                   | 43.2                                         | 67.7                                            | 67.7                                        | 67.7                                       | 67.7                                        | 54.8                                   | 57.7                                    | 54.8                                   | 57.7                                    |
| 475   | 34.9                                   | 31.3                                   | 31.3                                         | 63.4                                            | 63.4                                        | 55.7                                       | 63.4                                        | 53.9                                   | 57.3                                    | 53.9                                   | 57.3                                    |
| 500   | 23.5                                   | 22.1                                   | 22.1                                         | 51.5                                            | 56.5                                        | 42.8                                       | 56.5                                        | 53.0                                   | 56.5                                    | 53.0                                   | 56.5                                    |
| 538   | 11.8                                   | 11.8                                   | 11.8                                         | 29.8                                            | 36.9                                        | 27.4                                       | 35.0                                        | 48.9                                   | 50.0                                    | 48.9                                   | 50.0                                    |

### Class 900

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |
| -48   | ....                                   | 144.1                                  | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 148.9                                  | 148.9                                   | 148.9                                  | 148.9                                   |
| -29   | 153.2                                  |                                        | 144.1                                        | 155.1                                           | 155.1                                       | 155.1                                      | 155.1                                       |                                        |                                         |                                        |                                         |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
| 50    | 150.4                                  | 142.4                                  | 142.4                                        | 155.1                                           | 155.1                                       | 155.1                                      | 155.1                                       | 143.5                                  | 144.3                                   | 143.5                                  | 144.3                                   |
| 100   | 139.8                                  | 136.0                                  | 136.0                                        | 154.4                                           | 154.6                                       | 154.6                                      | 154.6                                       | 122.6                                  | 126.6                                   | 122.6                                  | 126.6                                   |
| 150   | 135.2                                  | 131.8                                  | 131.8                                        | 149.2                                           | 150.6                                       | 150.6                                      | 150.6                                       | 111.0                                  | 115.5                                   | 111.0                                  | 115.5                                   |
| 200   | 131.4                                  | 127.6                                  | 127.6                                        | 143.9                                           | 145.8                                       | 145.8                                      | 145.8                                       | 103.4                                  | 107.0                                   | 103.4                                  | 107.0                                   |
| 250   | 125.8                                  | 122.3                                  | 122.3                                        | 139.0                                           | 139.0                                       | 139.0                                      | 139.0                                       | 97.5                                   | 100.1                                   | 97.5                                   | 100.1                                   |
| 300   | 119.5                                  | 116.1                                  | 116.1                                        | 128.6                                           | 128.6                                       | 128.6                                      | 128.6                                       | 92.7                                   | 94.9                                    | 92.7                                   | 94.9                                    |
| 325   | 116.1                                  | 112.7                                  | 112.7                                        | 124.0                                           | 124.0                                       | 124.0                                      | 124.0                                       | 90.7                                   | 92.7                                    | 90.7                                   | 92.7                                    |
| 350   | 112.7                                  | 109.2                                  | 109.2                                        | 120.7                                           | 120.7                                       | 120.7                                      | 120.7                                       | 88.9                                   | 91.0                                    | 88.9                                   | 91.0                                    |
| 375   | 109.1                                  | 104.9                                  | 104.9                                        | 116.5                                           | 116.5                                       | 116.5                                      | 116.5                                       | 87.1                                   | 89.6                                    | 87.1                                   | 89.6                                    |
| 400   | 104.2                                  | 97.9                                   | 97.9                                         | 109.8                                           | 109.8                                       | 109.8                                      | 109.8                                       | 85.3                                   | 88.3                                    | 85.3                                   | 88.3                                    |
| 425   | 86.3                                   | 81.9                                   | 81.9                                         | 105.1                                           | 105.1                                       | 105.1                                      | 105.1                                       | 84.0                                   | 87.4                                    | 84.0                                   | 87.4                                    |
| 450   | 69.0                                   | 64.8                                   | 64.8                                         | 101.4                                           | 101.4                                       | 101.4                                      | 101.4                                       | 82.2                                   | 86.5                                    | 82.2                                   | 86.5                                    |
| 475   | 52.3                                   | 47.0                                   | 47.0                                         | 95.1                                            | 95.1                                        | 83.6                                       | 95.1                                        | 80.8                                   | 86.0                                    | 80.8                                   | 86.0                                    |
| 500   | 35.3                                   | 33.2                                   | 33.2                                         | 77.2                                            | 84.7                                        | 64.1                                       | 84.7                                        | 79.5                                   | 84.7                                    | 79.5                                   | 84.7                                    |
| 538   | 17.7                                   | 17.7                                   | 17.7                                         | 44.7                                            | 55.3                                        | 41.1                                       | 52.5                                        | 73.3                                   | 75.2                                    | 73.3                                   | 75.2                                    |

## Pressure / Temperature Chart according to ASME B16.34 & ASME B&PV Code CAST PRODUCTS

The following graphs represent the Temperature / Pressure relation for all metal seated valves, strainers and other flow control products made out in the following pressure retaining shell materials:

- Carbon Steel A216 WCB
- Low Carbon Steel A352 LCB
- Alloy Steel A217 WC1, A217 WC6, A217 WC9, A217 C5, A217 C12
- Stainless Steel A351 CF8, A351 CF8M, A351 CF3, A351 CF3M
- And for Design Pressures up to 2500 Lbs.

All products with resilient seat or other components are subject to temperature restrictions governed by these resilient materials.

### Class 1500

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |       |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|-------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |       |
| -48   | ....                                   | 240.1                                  | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 248.2                                  | 248.2                                   | 248.2                                  | 248.2                                   |       |
| -29   | 255.3                                  |                                        | 240.1                                        | 240.1                                           | 258.6                                       | 258.6                                      | 258.6                                       |                                        |                                         |                                        |                                         | 258.6 |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |       |
| 50    | 250.6                                  | 237.3                                  | 237.3                                        | 258.6                                           | 258.6                                       | 258.6                                      | 258.6                                       | 239.1                                  | 240.6                                   | 239.1                                  | 240.6                                   |       |
| 100   | 233.0                                  | 226.7                                  | 226.7                                        | 257.4                                           | 257.6                                       | 257.6                                      | 257.6                                       | 204.3                                  | 211.0                                   | 204.3                                  | 211.0                                   |       |
| 150   | 225.4                                  | 219.7                                  | 219.7                                        | 248.7                                           | 250.8                                       | 250.8                                      | 250.8                                       | 185.0                                  | 192.5                                   | 185.0                                  | 192.5                                   |       |
| 200   | 219.0                                  | 212.7                                  | 212.7                                        | 239.8                                           | 243.4                                       | 243.4                                      | 243.4                                       | 172.4                                  | 178.3                                   | 172.4                                  | 178.3                                   |       |
| 250   | 209.7                                  | 203.9                                  | 203.9                                        | 231.8                                           | 231.8                                       | 231.8                                      | 231.8                                       | 162.4                                  | 166.9                                   | 162.4                                  | 166.9                                   |       |
| 300   | 199.1                                  | 193.4                                  | 193.4                                        | 214.4                                           | 214.4                                       | 214.4                                      | 214.4                                       | 154.6                                  | 158.1                                   | 154.6                                  | 158.1                                   |       |
| 325   | 193.6                                  | 187.9                                  | 187.9                                        | 206.6                                           | 206.6                                       | 206.6                                      | 206.6                                       | 151.1                                  | 154.4                                   | 151.1                                  | 154.4                                   |       |
| 350   | 187.8                                  | 182.0                                  | 182.0                                        | 201.1                                           | 201.1                                       | 201.1                                      | 201.1                                       | 148.1                                  | 151.6                                   | 148.1                                  | 151.6                                   |       |
| 375   | 181.8                                  | 174.9                                  | 174.9                                        | 194.1                                           | 194.1                                       | 194.1                                      | 194.1                                       | 145.2                                  | 149.4                                   | 145.2                                  | 149.4                                   |       |
| 400   | 173.6                                  | 163.1                                  | 163.1                                        | 183.1                                           | 183.1                                       | 183.1                                      | 183.1                                       | 142.2                                  | 147.2                                   | 142.2                                  | 147.2                                   |       |
| 425   | 143.8                                  | 136.5                                  | 136.5                                        | 175.1                                           | 175.1                                       | 175.1                                      | 175.1                                       | 140.0                                  | 145.7                                   | 140.0                                  | 145.7                                   |       |
| 450   | 115.0                                  | 107.9                                  | 107.9                                        | 169.0                                           | 169.0                                       | 169.0                                      | 169.0                                       | 137.0                                  | 144.2                                   | 137.0                                  | 144.2                                   |       |
| 475   | 87.2                                   | 78.3                                   | 78.3                                         | 158.2                                           | 158.2                                       | 139.3                                      | 158.2                                       | 134.7                                  | 143.4                                   | 134.7                                  | 143.4                                   |       |
| 500   | 58.8                                   | 55.4                                   | 55.4                                         | 128.6                                           | 140.9                                       | 106.9                                      | 140.9                                       | 132.4                                  | 140.9                                   | 132.4                                  | 140.9                                   |       |
| 538   | 29.5                                   | 29.5                                   | 29.5                                         | 74.5                                            | 92.2                                        | 68.6                                       | 87.5                                        | 122.1                                  | 125.5                                   | 122.1                                  | 125.5                                   |       |

### Class 2500

| Temp. | Working pressure (bar)                 |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
|-------|----------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|
| (°C)  | A216<br>WCB<br><small>Note (9)</small> | A352<br>LCB<br><small>Note (1)</small> | A217<br>WC1<br><small>Notes (10),(6)</small> | A217<br>WC6<br><small>Notes (5),(4),(6)</small> | A217<br>WC9<br><small>Notes (5),(6)</small> | A217<br>C5<br><small>Notes (5),(6)</small> | A217<br>C12<br><small>Notes (5),(6)</small> | A351<br>CF8<br><small>Note (7)</small> | A351<br>CF8M<br><small>Note (7)</small> | A351<br>CF3<br><small>Note (2)</small> | A351<br>CF3M<br><small>Note (3)</small> |
| -48   | ....                                   | 400.1                                  | ....                                         | ....                                            | ....                                        | ....                                       | ....                                        | 413.7                                  | 413.7                                   | 413.7                                  | 413.7                                   |
| -29   | 425.5                                  |                                        | 400.1                                        | 430.9                                           | 430.9                                       | 430.9                                      | 430.9                                       |                                        |                                         |                                        |                                         |
| 38    |                                        |                                        |                                              |                                                 |                                             |                                            |                                             |                                        |                                         |                                        |                                         |
| 50    | 417.7                                  | 395.6                                  | 395.6                                        | 430.9                                           | 430.9                                       | 430.9                                      | 430.9                                       | 398.5                                  | 400.9                                   | 398.5                                  | 400.9                                   |
| 100   | 388.3                                  | 377.8                                  | 377.8                                        | 429.0                                           | 429.4                                       | 429.4                                      | 429.4                                       | 340.4                                  | 351.6                                   | 340.4                                  | 351.6                                   |
| 150   | 375.6                                  | 366.1                                  | 366.1                                        | 414.5                                           | 418.2                                       | 418.2                                      | 418.2                                       | 308.4                                  | 320.8                                   | 308.4                                  | 320.8                                   |
| 200   | 365.0                                  | 354.4                                  | 354.4                                        | 399.6                                           | 405.4                                       | 405.4                                      | 405.4                                       | 287.3                                  | 297.2                                   | 287.3                                  | 297.2                                   |
| 250   | 349.5                                  | 339.8                                  | 339.8                                        | 386.2                                           | 386.2                                       | 386.2                                      | 386.2                                       | 270.7                                  | 278.1                                   | 270.7                                  | 278.1                                   |
| 300   | 331.8                                  | 322.4                                  | 322.4                                        | 357.1                                           | 357.1                                       | 357.1                                      | 357.1                                       | 257.6                                  | 263.5                                   | 257.6                                  | 263.5                                   |
| 325   | 322.6                                  | 313.1                                  | 313.1                                        | 344.3                                           | 344.3                                       | 344.3                                      | 344.3                                       | 251.9                                  | 257.4                                   | 251.9                                  | 257.4                                   |
| 350   | 313.0                                  | 303.3                                  | 303.3                                        | 335.3                                           | 335.3                                       | 335.3                                      | 335.3                                       | 246.9                                  | 252.7                                   | 246.9                                  | 252.7                                   |
| 375   | 303.1                                  | 291.4                                  | 291.4                                        | 323.2                                           | 323.2                                       | 323.2                                      | 323.2                                       | 241.9                                  | 249.0                                   | 241.9                                  | 249.0                                   |
| 400   | 289.3                                  | 271.9                                  | 271.9                                        | 304.9                                           | 304.9                                       | 304.9                                      | 304.9                                       | 237.0                                  | 245.3                                   | 237.0                                  | 245.3                                   |
| 425   | 239.7                                  | 227.5                                  | 227.5                                        | 291.6                                           | 291.6                                       | 291.6                                      | 291.6                                       | 233.3                                  | 242.9                                   | 233.3                                  | 242.9                                   |
| 450   | 191.7                                  | 179.9                                  | 179.9                                        | 281.8                                           | 281.8                                       | 281.8                                      | 281.8                                       | 228.4                                  | 240.4                                   | 228.4                                  | 240.4                                   |
| 475   | 145.3                                  | 130.6                                  | 130.6                                        | 263.9                                           | 263.9                                       | 232.1                                      | 263.9                                       | 224.5                                  | 238.9                                   | 224.5                                  | 238.9                                   |
| 500   | 97.9                                   | 92.3                                   | 92.3                                         | 214.4                                           | 235.0                                       | 178.2                                      | 235.0                                       | 220.7                                  | 235.0                                   | 220.7                                  | 235.0                                   |
| 538   | 49.2                                   | 49.2                                   | 49.2                                         | 124.1                                           | 153.7                                       | 114.3                                      | 145.8                                       | 203.6                                  | 208.9                                   | 203.6                                  | 208.9                                   |

## Pressure / Temperature Chart according to ASME B16.34 & ASME B&PV Code FORGED PRODUCTS

The following graphs represent the Temperature / Pressure relation for all metal seated valves, strainers and other flow control products made out in the following pressure retaining shell materials:

- Carbon Steel A105, A350 LF2
- Low Carbon Steel A350 LF2
- Alloy Steel A182 F11 Cl. 2, A182 F22 Cl.
- Stainless Steel A182 F304, A182 F304L, A182 F316, A182 F316L
- And for Design Pressures up to 2500 Lbs.

All products with resilient seat or other components are subject to temperature restrictions governed by these resilient materials.

### Class 800

| Temp. | Working pressure (bar) |             |                  |                  |              |               |              |               |
|-------|------------------------|-------------|------------------|------------------|--------------|---------------|--------------|---------------|
| (°C)  | A105                   | A350<br>LF2 | A182<br>F11 Cl.2 | A182<br>F22 Cl.3 | A182<br>F304 | A182<br>F304L | A182<br>F316 | A182<br>F316L |
|       | Notes (9),(11)         | Note (9)    | Notes (6),(8)    | Note (8)         | Note (7)     | Note (2)      | Note (7)     |               |
| -48   | ....                   | 136.2       | ....             | ....             | 132.4        | 110.3         | 132.4        | 110.3         |
| -29   | 136.2                  |             | 137.9            | 137.9            |              |               |              |               |
| 38    |                        |             |                  |                  |              |               |              |               |
| 50    | 133.7                  | 133.7       | 137.9            | 137.9            | 127.5        | 106.7         | 128.3        | 106.7         |
| 100   | 124.3                  | 124.3       | 137.3            | 137.4            | 109.0        | 92.8          | 112.5        | 92.8          |
| 150   | 120.2                  | 120.2       | 132.6            | 133.8            | 98.7         | 83.7          | 102.7        | 83.7          |
| 200   | 116.8                  | 116.8       | 127.9            | 129.6            | 91.9         | 77.8          | 95.1         | 77.8          |
| 250   | 111.8                  | 111.8       | 123.6            | 123.6            | 86.7         | 73.2          | 89.0         | 73.2          |
| 300   | 106.2                  | 106.2       | 114.3            | 114.3            | 82.4         | 69.5          | 84.3         | 69.5          |
| 325   | 103.2                  | 103.2       | 110.2            | 110.2            | 80.6         | 67.9          | 82.4         | 67.9          |
| 350   | 100.2                  | 100.2       | 107.3            | 107.3            | 79.0         | 66.8          | 80.9         | 66.8          |
| 375   | 97.0                   | 97.0        | 103.5            | 103.5            | 77.4         | 66.0          | 79.7         | 66.0          |
| 400   | 92.6                   | 92.6        | 97.6             | 97.6             | 75.8         | 64.8          | 78.5         | 64.8          |
| 425   | 76.7                   | 76.7        | 93.4             | 93.4             | 74.7         | 63.6          | 77.7         | 63.6          |
| 450   | 61.3                   | 61.3        | 90.2             | 90.2             | 73.1         | 62.4          | 76.9         | 62.4          |
| 475   | 46.5                   | 46.5        | 84.5             | 84.5             | 71.8         | ....          | 76.4         | ....          |
| 500   | 31.4                   | 31.4        | 68.6             | 75.3             | 70.7         | ....          | 75.3         | ....          |
| 538   | 15.7                   | 15.7        | 39.7             | 49.2             | 65.2         | ....          | 66.8         | ....          |

### Class 1500

| Temp. | Working pressure (bar) |             |                  |                  |              |               |              |               |
|-------|------------------------|-------------|------------------|------------------|--------------|---------------|--------------|---------------|
| (°C)  | A105                   | A350<br>LF2 | A182<br>F11 Cl.2 | A182<br>F22 Cl.3 | A182<br>F304 | A182<br>F304L | A182<br>F316 | A182<br>F316L |
|       | Notes (9),(11)         | Note (9)    | Notes (6),(8)    | Note (8)         | Note (7)     | Note (2)      | Note (7)     |               |
| -48   | ....                   | 255.3       | ....             | ....             | 248.2        | 206.8         | 248.2        | 206.8         |
| -29   | 255.3                  |             | 258.6            | 258.6            |              |               |              |               |
| 38    |                        |             |                  |                  |              |               |              |               |
| 50    | 250.6                  | 250.6       | 258.6            | 258.6            | 239.1        | 200.1         | 240.6        | 200.1         |
| 100   | 233.0                  | 233.0       | 257.4            | 257.6            | 204.3        | 173.9         | 211.0        | 173.9         |
| 150   | 225.4                  | 225.4       | 248.7            | 250.8            | 185.0        | 157.0         | 192.5        | 157.0         |
| 200   | 219.0                  | 219.0       | 239.8            | 243.4            | 172.4        | 145.8         | 178.3        | 145.8         |
| 250   | 209.7                  | 209.7       | 231.8            | 231.8            | 162.4        | 137.3         | 166.9        | 137.3         |
| 300   | 199.1                  | 199.1       | 214.4            | 214.4            | 154.6        | 130.3         | 158.1        | 130.3         |
| 325   | 193.6                  | 193.6       | 206.6            | 206.6            | 151.1        | 127.4         | 154.4        | 127.4         |
| 350   | 187.8                  | 187.8       | 201.1            | 201.1            | 148.1        | 125.4         | 151.6        | 125.4         |
| 375   | 181.8                  | 181.8       | 194.1            | 194.1            | 145.2        | 123.8         | 149.4        | 123.8         |
| 400   | 173.6                  | 173.6       | 183.1            | 183.1            | 142.2        | 121.5         | 147.2        | 121.5         |
| 425   | 143.8                  | 143.8       | 175.1            | 175.1            | 140.0        | 119.3         | 145.7        | 119.3         |
| 450   | 115.0                  | 115.0       | 169.0            | 169.0            | 137.0        | ....          | 144.2        | 117.1         |
| 475   | 87.2                   | 87.2        | 158.2            | 158.2            | 134.7        | ....          | 143.4        | ....          |
| 500   | 58.8                   | 58.8        | 128.6            | 140.9            | 132.4        | ....          | 140.9        | ....          |
| 538   | 29.5                   | 29.5        | 74.5             | 92.2             | 122.1        | ....          | 125.5        | ....          |

## Pressure / Temperature Chart according to ASME B16.34 & ASME B&PV Code FORGED PRODUCTS

The following graphs represent the Temperature / Pressure relation for all metal seated valves, strainers and other flow control products made out in the following pressure retaining shell materials:

- Carbon Steel A105, A350 LF2
- Low Carbon Steel A350 LF2
- Alloy Steel A182 F11 Cl. 2, A182 F22 Cl.
- Stainless Steel A182 F304, A182 F304L, A182 F316, A182 F316L
- And for Design Pressures up to 2500 Lbs.

All products with resilient seat or other components are subject to temperature restrictions governed by these resilient materials.

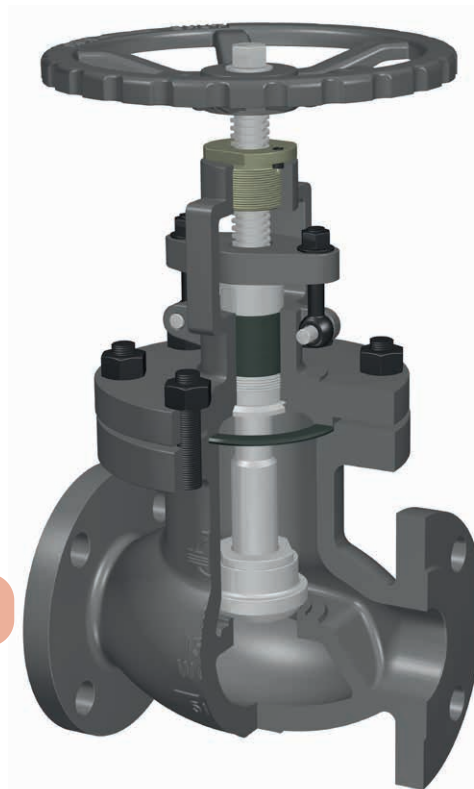
### Class 2500

| Temp. | Working pressure (bar) |          |               |               |           |            |           |            |
|-------|------------------------|----------|---------------|---------------|-----------|------------|-----------|------------|
| (°C)  | A105                   | A350 LF2 | A182 F11 Cl.2 | A182 F22 Cl.3 | A182 F304 | A182 F304L | A182 F316 | A182 F316L |
|       | Notes (9),(11)         | Note (9) | Notes (6),(8) | Note (8)      | Note (7)  | Note (2)   | Note (7)  |            |
| -48   | ....                   |          | ....          | ....          |           |            |           |            |
| -29   | 425.5                  | 425.5    | 430.9         | 430.9         | 413.7     | 344.7      | 413.7     | 344.7      |
| 38    |                        |          |               |               |           |            |           |            |
| 50    | 417.7                  | 417.7    | 430.9         | 430.9         | 398.5     | 333.5      | 400.9     | 333.5      |
| 100   | 388.3                  | 388.3    | 429.0         | 429.4         | 340.4     | 289.9      | 351.6     | 289.9      |
| 150   | 375.6                  | 375.6    | 414.5         | 418.2         | 308.4     | 261.6      | 320.8     | 261.6      |
| 200   | 365.0                  | 365.0    | 399.6         | 405.4         | 287.3     | 243.0      | 297.2     | 243.0      |
| 250   | 349.5                  | 349.5    | 386.2         | 386.2         | 270.7     | 228.9      | 278.1     | 228.9      |
| 300   | 331.8                  | 331.8    | 357.1         | 357.1         | 257.6     | 217.2      | 263.5     | 217.2      |
| 325   | 322.6                  | 322.6    | 344.3         | 344.3         | 251.9     | 212.3      | 257.4     | 212.3      |
| 350   | 313.0                  | 313.0    | 335.3         | 335.3         | 246.9     | 208.9      | 252.7     | 208.9      |
| 375   | 303.1                  | 303.1    | 323.2         | 323.2         | 241.9     | 206.3      | 249.0     | 206.3      |
| 400   | 289.3                  | 289.3    | 304.9         | 304.9         | 237.0     | 202.5      | 245.3     | 202.5      |
| 425   | 239.7                  | 239.7    | 291.6         | 291.6         | 233.3     | 198.8      | 242.9     | 198.8      |
| 450   | 191.7                  | 191.7    | 281.8         | 281.8         | 228.4     | ....       | 240.4     | 195.1      |
| 475   | 145.3                  | 145.3    | 263.9         | 263.9         | 224.5     | ....       | 238.9     | ....       |
| 500   | 97.9                   | 97.9     | 214.4         | 235.0         | 220.7     | ....       | 235.0     | ....       |
| 538   | 49.2                   | 49.2     | 124.1         | 153.7         | 203.6     | ....       | 208.9     | ....       |

- (1) Not to be used over 345°C.
- (2) Not to be used over 425°C.
- (3) Not to be used over 455°C.
- (4) Not to be used over 595°C.
- (5) Use normalized and tempered material only.
- (6) The deliberate addition of any element not listed in ASTM A217, Table 1 is prohibited, except that calcium (Ca) and manganese (Mn) may be added for deoxidation.
- (7) At temperatures above 538°C, use only when the carbon content is 0,04% or higher.
- (8) Permissible, but not recommended for prolonged use above 595°C.
- (9) Upon prolonged exposure to temperatures above 425°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 425°C.
- (10) Upon prolonged exposure to temperatures above 470°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 470°C.
- (11) Only killed steel shall be used above 455°C.

## SERIES 80/81 ANSI RANGE

Series 80 Globe Valves are linear motion valves devised for stopping the flow of the service fluid when necessary. They are bolted bonnet, outside screw and yoke, rising handwheel, being the closure element a disc seating against a precisely machined seat thus achieving the positive closure. The atmospheric sealing is achieved by flexible graphite rings. The flow comes upwards underneath the seat, being an unidirectional valve. Weir body leads to higher pressure drop compared to gate valves but operation is quicker and this feature allows to use the valve as regulating valve when arranged with throttling plug. Valves are of easy and safe operation being widely used in power, chemical and oil industry. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel or gear, depending on valve size and working pressure. Valves can also be arranged for automation with different kinds of actuators.



Outside screw and yoke

Ergonomic rising handwheel

Precise machining of components for optimal performance

Marking for identification and full traceability purpose

Back Seat feature

Seat surface can be hardened to increase wear resistance

Great versatility in end connections, materials and configurations

### Main Features / Reference Standards

Design: BS 1873 / ASME B16.34  
 Pressure Rating: 150/300/600/900/1500/2500#  
 Face to face length: ASME B16.10  
 Valve end connections: Flanged RF or RTJ to ASME B16.5  
 Welded BW to ASME B16.25  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Unidirectional design. See the arrow on the body for normal flow direction  
 Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

### Main Duties / Limits of use

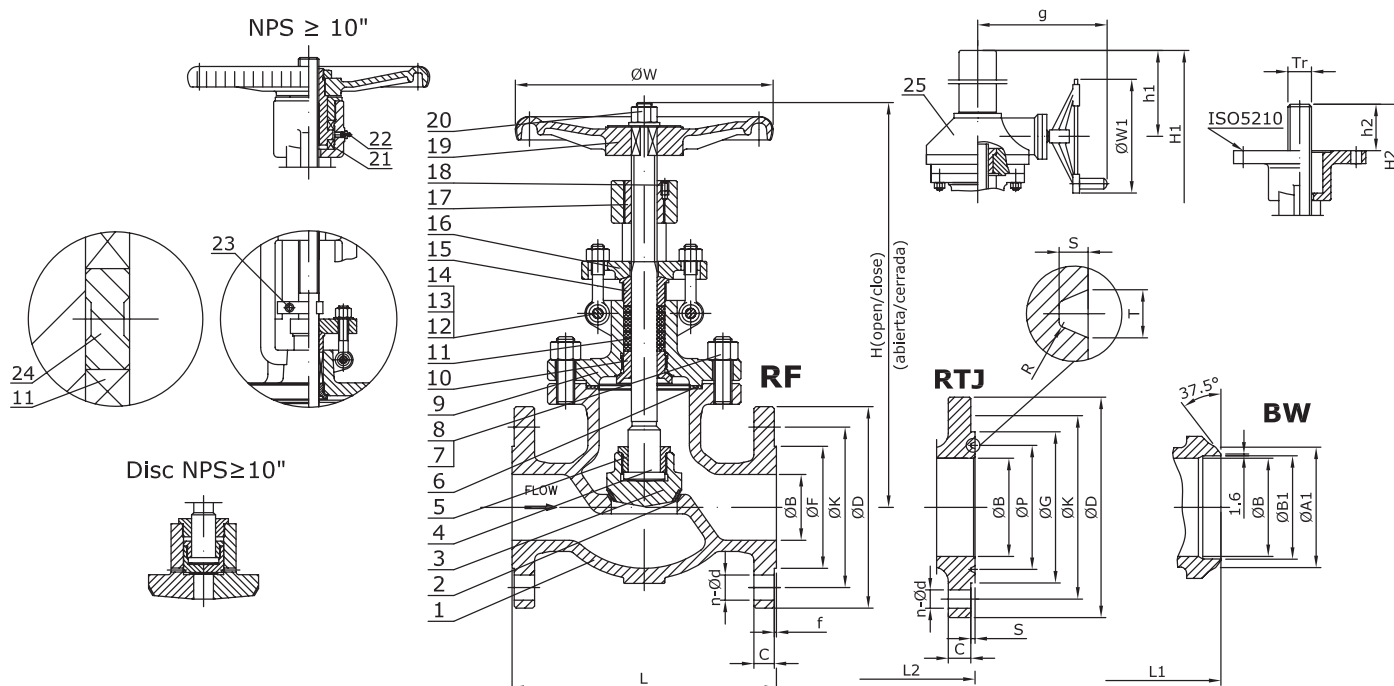
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Different body materials and trim combinations, different valve connections, angle pattern, Y-pattern, regulating plug, compliance with NACE MR0175, extended bonnet, bellow seal, pressure seal, welded bonnet, lantern ring with double packing, live loaded packing, chained hand wheel, manual gear, pneumatic, electric or hydraulic actuation, limit switches, execution for aggressive atmosphere, etc. Please consult us

## Main Parts and Materials

## SERIES 80 ANSI RANGE Class 150



From 2" to 8", the flow direction is acc. to the flow arrow shown in the drawing  
From 10" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| N° | Part name         | A216 WCB<br>(80A0_) | A352 LCB        |                  | A217 WC1<br>(80B1_) | A217 WC6<br>(80B8_) | A217 WC9<br>(80B9_) |
|----|-------------------|---------------------|-----------------|------------------|---------------------|---------------------|---------------------|
|    |                   |                     | Trim 2 (80A82_) | Trim 12 (80A8G_) |                     |                     |                     |
| 1  | Body              | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 2  | Seat              | A216 WCB            | Integral+SS304  | Integral+HF      | HF Overlay          |                     |                     |
| 3  | Disc              | A105                | A182 F304       | A182 F316        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         |
| 4  | Stem              | A182 F6a            | A182 F304       | A182 F316        | A182 F6a            |                     |                     |
| 5  | Disc Nut          | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 6  | Gasket            | SS304+Graphite      | A182 F304       | A182 F316        | SS304               |                     |                     |
| 7  | Bonnet Bolt (1)   | A193 B7             | A320 L7         |                  | A193 B16            |                     |                     |
| 8  | Bonnet Nut (1)    | A194 2H             | A194 4          |                  | A194 4              |                     |                     |
| 9  | Bonnet            | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 10 | Backseat Bushing  | A182 F6a            | A182 F304       | A182 F316        | A182 F6a            |                     |                     |
| 11 | Packing           | Graphite            | Graphite        |                  | Graphite            |                     |                     |
| 12 | Eyebolt Pin       | AISI 1025           | AISI 1025       |                  | A276 410            |                     |                     |
| 13 | Gland Eyebolt (1) | A193 B7             | A320 L7         |                  | A193 B16            |                     |                     |
| 14 | Gland Nut (1)     | A194 2H             | A194 4          |                  | A194 4              |                     |                     |
| 15 | Packing Gland     | A182 F6a            | A182 F304       |                  | A182 F6a            |                     |                     |
| 16 | Gland Flange      | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 17 | Stem Nut          | A439 D2             | A439 D2         |                  | A439 D2             |                     |                     |
| 18 | Retaining Screw   | Carbon Steel        | Carbon Steel    |                  | Carbon Steel        |                     |                     |
| 19 | Handwheel         | Steel               | Steel           |                  | Steel               |                     |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel    |                  | Carbon Steel        |                     |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel     |                  | Alloy Steel         |                     |                     |
| 22 | Grease Nipple     | Carbon Steel        | Carbon Steel    |                  | Alloy Steel         |                     |                     |
| 23 | Splint (2)        | Carbon Steel        | Carbon Steel    |                  | Alloy Steel         |                     |                     |
| 24 | Lantern Ring (3)  | A276 410            | A276 304        | A276 316         | A276 410            |                     |                     |
| 25 | Gear              | Assembly            | Assembly        |                  | Assembly            |                     |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) 10" and above

(3) On request

| Fig. 80A0_      | Seat Surface  | Disc Surface | Stem     |
|-----------------|---------------|--------------|----------|
| TRIM #1 (80A01) | A216 WCB+13Cr | A105+13Cr    | A182 F6a |
| TRIM #5 (80A05) | A216 WCB+HF   | A105+HF      | A182 F6a |
| TRIM #8 (80A08) | A216 WCB+HF   | A105+13Cr    | A182 F6a |

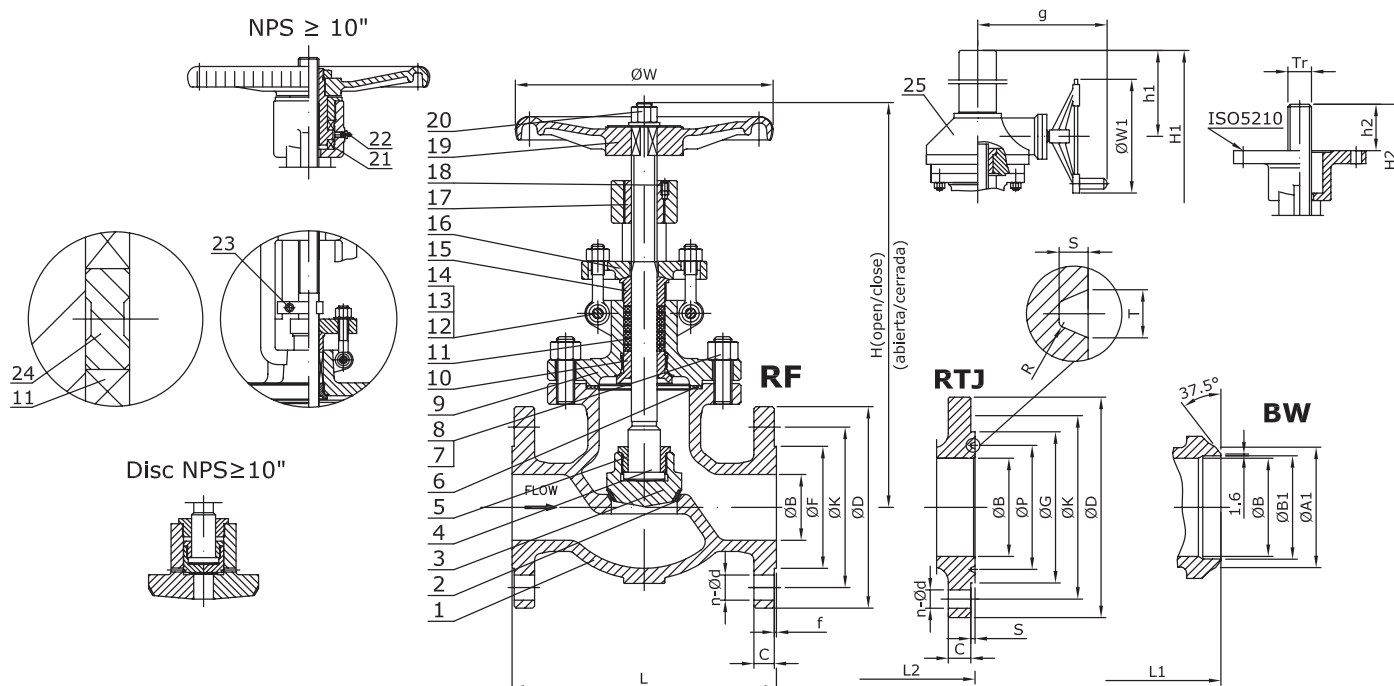
HF = Hard faced

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

# Main Parts and Materials

## SERIES 80 ANSI RANGE Class 150



From 2" to 8", the flow direction is acc. to the flow arrow shown in the drawing  
From 10" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| N° | Part name        | A217 C5 (80C2_) | A217 C12 (80C4_) | CF8 (80I2_)    | CF8M (80I0_)   | CF3 (80I1_)     | CF3M (80I7_)    |
|----|------------------|-----------------|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat             | HF Overlay      |                  | Integral SS304 | Integral SS316 | Integral SS304L | Integral SS316L |
| 3  | Disc             | A182 F5+HF      | A182 F9+HF       | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 4  | Stem             | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Disc Nut         | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 6  | Gasket           | SS304           |                  | SS304          | SS316          | SS304L          | SS316L          |
| 7  | Bonnet Bolt      | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 8  | Bonnet Nut       | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 9  | Bonnet           | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 10 | Backseat Bushing | A182 F6a        |                  | SS304          | SS316          | SS304L          | SS316L          |
| 11 | Packing          | Graphite        |                  | Graphite       |                | Graphite        |                 |
| 12 | Eyebolt Pin      | A276 410        |                  | A276 304       | A276 316       | A276 316        |                 |
| 13 | Gland Eyebolt    | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 14 | Gland Nut        | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 15 | Packing Gland    | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 16 | Gland Flange     | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 17 | Stem Nut         | A439 D2         |                  | A439 D2        |                | A439 D2         |                 |
| 18 | Retaining Screw  | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 19 | Handwheel        | Steel           |                  | Steel          |                | Steel           |                 |
| 20 | Handwheel Nut    | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 21 | Bearings (1)     | Alloy Steel     |                  | Alloy Steel    |                | Alloy Steel     |                 |
| 22 | Grease Nipple    | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 23 | Splint (1)       | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 24 | Lantern Ring (2) | A276 410        |                  | A276 304       | A276 316       | A276 316        | A276 316L       |
| 25 | Gear             | Assembly        |                  | Assembly       |                | Assembly        |                 |

(1) 10" and above

(2) On request

## Main Valve Parameters - Class 150

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"       | 6"       | 8"       |
|-----------------------|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|
|                       |                            | DN              | 50       | 65       | 80       | 100      | 125      | 150      | 200      |
| End connection        | RF                         | L               | 203      | 216      | 241      | 292      | 356      | 406      | 495      |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                            | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      |
|                       |                            | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7    | 215,9    | 269,9    |
|                       |                            | C               | 14,3     | 15,9     | 17,5     | 22,3     | 22,3     | 23,9     | 27       |
|                       |                            | f               | 2        | 2        | 2        | 2        | 2        | 2        | 2        |
|                       |                            | n-Ød            | 4 - 3/4  | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  |
|                       | BW                         | L1              | 203      | 216      | 241      | 292      | 356      | 406      | 495      |
|                       |                            | Schedule No.(1) | 40       | -        | 40       | 40       | -        | 40       | 40       |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117      | -        | 172      | 223      |
|                       |                            | ØB1             | 52,48    | -        | 78       | 102      | -        | 154      | 203      |
|                       | RTJ                        | L2              | 216      | 229      | 254      | 305      | 369      | 419      | 508      |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                            | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      |
|                       |                            | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    |
|                       |                            | ØG              | 102      | 121      | 133      | 171      | 194      | 219      | 273      |
|                       |                            | ØP              | 82,55    | 101,6    | 114,3    | 149,23   | 171,45   | 193,68   | 247,65   |
|                       |                            | C               | 17,5     | 20,7     | 22,3     | 22,3     | 22,3     | 23,9     | 27       |
|                       |                            | n-Ød            | 4 - 3/4  | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  |
|                       |                            | T               | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     |
|                       |                            | S               | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      |
| Top works/Operation   | Hand-wheel                 | H (open)        | 302      | 332      | 355      | 437      | 483      | 517      | 606      |
|                       |                            | H (close)       | 286      | 316      | 338      | 399      | 441      | 472      | 536      |
|                       |                            | ØW              | 200      | 250      | 250      | 300      | 250      | 400      | 450      |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -        | -        | -        | -        |
|                       |                            | h1              | -        | -        | -        | -        | -        | -        | -        |
|                       |                            | g               | -        | -        | -        | -        | -        | -        | -        |
|                       |                            | ØW1             | -        | -        | -        | -        | -        | -        | -        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 327      | 357      | 380      | 442      | 485      | 517      | 600      |
|                       |                            | H2 (close)      | 311      | 335      | 353      | 404      | 443      | 472      | 530      |
|                       |                            | h2              | 80       | 80       | 80       | 80       | 80       | 80       | 80       |
|                       |                            | ISO             | F07      | F07      | F07      | F10      | F12      | F12      | F14      |
|                       |                            | Tr              | Tr20×4LH | Tr26×5LH | Tr26×5LH | Tr28×5LH | Tr32×6LH | Tr32×6LH | Tr36×6LH |
|                       |                            | Stroke          | 16       | 22       | 27       | 38       | 42       | 45       | 70       |
|                       |                            | No. of turns    | 4        | 4        | 5        | 8        | 7        | 8        | 12       |
|                       |                            | Torque (Nm) (2) | 25       | 44       | 58       | 88       | 141      | 180      | 320      |
| Kvs-value             |                            | 33              | 63       | 85       | 158      | 283      | 376      | 692      |          |
| Approx. Weight RF (3) |                            | 15              | 22       | 28       | 47       | 56       | 63       | 115      |          |
| Approx. Weight BW     |                            | 12              | 18       | 23       | 39       | 45       | 50       | 93       |          |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 10"      | 12"      | 14"        | 16"        | 18"        | 20"        | 24"        |
|-----------------------|----------------------------|-----------------|----------|----------|------------|------------|------------|------------|------------|
|                       |                            | DN              | 250      | 300      | 350        | 400        | 450        | 500        | 600        |
| End connection        | RF                         | L               | 622      | 698      | 787        | 914        | 978        | 978        | 1295       |
|                       |                            | ØB              | 254      | 305      | 337        | 387        | 438        | 489        | 591        |
|                       |                            | ØD              | 405      | 485      | 535        | 595        | 635        | 700        | 815        |
|                       |                            | ØK              | 362      | 431,8    | 476,3      | 539,8      | 577,9      | 635        | 749,3      |
|                       |                            | ØF              | 323,8    | 381      | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      |
|                       |                            | C               | 28,6     | 30,2     | 33,4       | 35         | 38,1       | 41,3       | 46,1       |
|                       |                            | f               | 2        | 2        | 2          | 2          | 2          | 2          | 2          |
|                       |                            | n-Ød            | 12 - 1   | 12 - 1   | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                       | BW                         | L1              | 622      | 698      | 787        | 914        | 978        | 978        | 1295       |
|                       |                            | Schedule No.(1) | 40       | STD      | STD        | STD        | STD        | STD        | STD        |
|                       |                            | ØB              | 254      | 305      | 337        | 387        | 438        | 489        | 591        |
|                       |                            | ØA1             | 278      | 329      | 362        | 413        | 464        | 516        | 619        |
|                       |                            | ØB1             | 254,5    | 305      | 336,5      | 387,5      | 438        | 489        | 590,5      |
|                       | RTJ                        | L2              | 635      | 711      | 800        | 927        | 991        | 991        | 1308       |
|                       |                            | ØB              | 254      | 305      | 337        | 387        | 438        | 489        | 591        |
|                       |                            | ØD              | 405      | 485      | 535        | 595        | 635        | 700        | 815        |
|                       |                            | ØK              | 362      | 431,8    | 476,3      | 539,8      | 577,9      | 635        | 749,3      |
|                       |                            | ØG              | 330      | 406      | 425        | 483        | 546        | 597        | 711        |
|                       |                            | ØP              | 304,8    | 381      | 396,88     | 454,03     | 517,53     | 558,8      | 673,1      |
|                       |                            | C               | 28,6     | 30,2     | 33,4       | 35         | 38,1       | 41,3       | 46,1       |
|                       |                            | n-Ød            | 12 - 1   | 12 - 1   | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                       |                            | T               | 8,74     | 8,74     | 8,74       | 8,74       | 8,74       | 8,74       | 8,74       |
|                       |                            | S               | 6,35     | 6,35     | 6,35       | 6,35       | 6,35       | 6,35       | 6,35       |
|                       |                            | R               | 0,8      | 0,8      | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 710      | 882      | 990        | -          | -          | -          | -          |
|                       |                            | H (close)       | 638      | 794      | 889        | -          | -          | -          | -          |
|                       |                            | ØW              | 450      | 500      | 550        | -          | -          | -          | -          |
|                       | Gear with handwheel        | H1              | -        | -        | -          | 977        | 1066       | 1117       | 1295       |
|                       |                            | h1              | -        | -        | 178        | 202        | 235        | 275        | 324        |
|                       |                            | g               | -        | -        | 440        | 440        | 440        | 513        | 513        |
|                       |                            | ØW1             | -        | -        | 460        | 460        | 460        | 530        | 600        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 705      | 1050     | 940        | 1064       | -          | -          | -          |
|                       |                            | H2 (close)      | 630      | 756      | 846        | 950        | -          | -          | -          |
|                       |                            | h2              | 100      | 120      | 140        | 140        | -          | -          | -          |
|                       |                            | ISO             | F14      | F25      | F30        | F30        | -          | -          | -          |
|                       |                            | Tr              | Tr38×6LH | Tr42×6LH | Tr46×8LH   | Tr48×8LH   | -          | -          | -          |
|                       |                            | Stroke          | 75       | 294      | 94         | 114        | -          | -          | -          |
|                       |                            | No. of turns    | 13       | 16       | 12         | 14         | -          | -          | -          |
|                       |                            | Torque (Nm) (2) | 465      | 780      | 1606       | 2219       | -          | -          | -          |
| Kvs-value             |                            | 1077            | 1615     | 2086     | 2764       | 3682       | 4585       | 6688       |            |
| Approx. Weight RF (3) |                            | 248             | 365      | 680      | 880        | 1150       | 1350       | 1700       |            |
| Approx. Weight BW     |                            | 219             | 321      | 624      | 810        | 1073       | 1258       | 1558       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

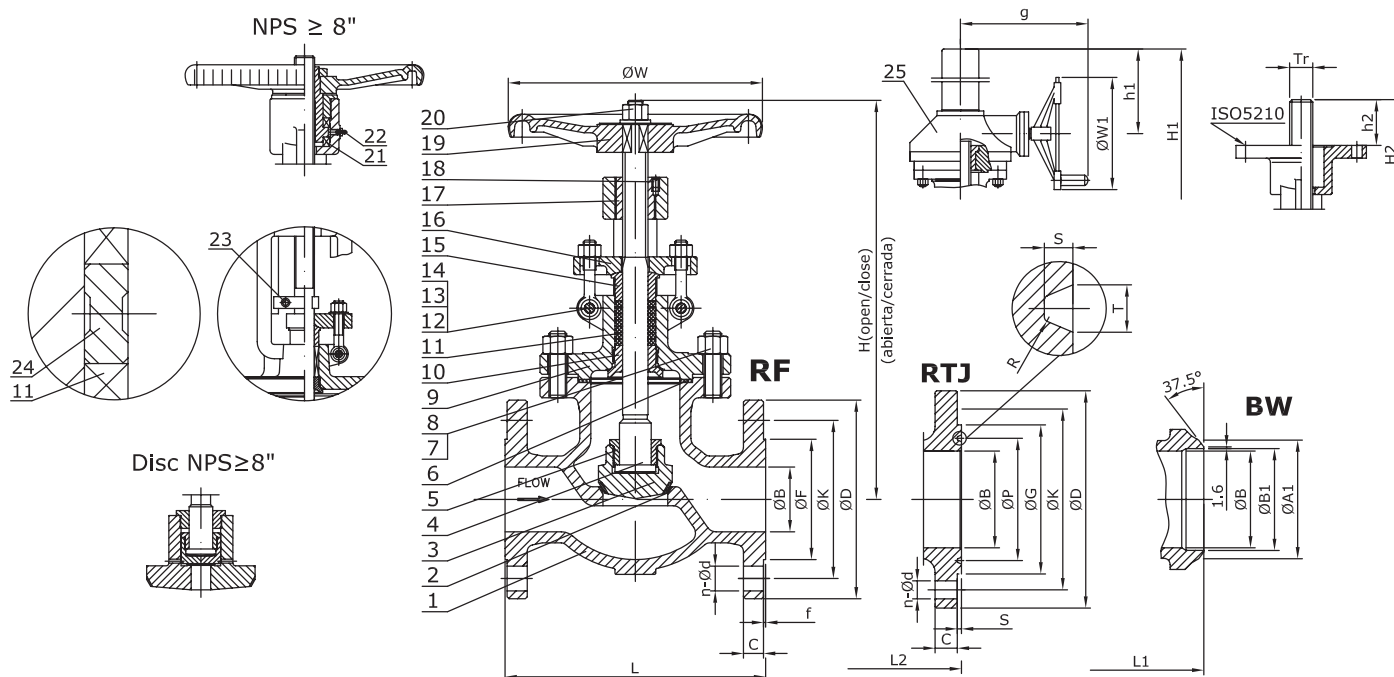
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

## SERIES 80 ANSI RANGE Class 300



From 2" to 6", the flow direction is acc. to the flow arrow shown in the drawing  
From 8" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| Nº | Part name         | A216 WCB<br>(80A0_) | A352 LCB        |                  | A217 WC1<br>(80B1_) | A217 WC6<br>(80B8_) | A217 WC9<br>(80B9_) |
|----|-------------------|---------------------|-----------------|------------------|---------------------|---------------------|---------------------|
|    |                   |                     | Trim 2 (80A82_) | Trim 12 (80A8G_) |                     |                     |                     |
| 1  | Body              | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 2  | Seat              | A105                | Integral+SS304  | Integral+HF      | HF Overlay          |                     |                     |
| 3  | Disc              | A105                | A182 F304       | A182 F316        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         |
| 4  | Stem              | A182 F6a            | A182 F304       | A182 F316        | A182 F6a            |                     |                     |
| 5  | Disc Nut          | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 6  | Gasket            | SS304+Graphite      | A182 F304       | A182 F316        | SS304               |                     |                     |
| 7  | Bonnet Bolt (1)   | A193 B7             | A320 L7         |                  | A193 B16            |                     |                     |
| 8  | Bonnet Nut (1)    | A194 2H             | A194 4          |                  | A194 4              |                     |                     |
| 9  | Bonnet            | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 10 | Backseat Bushing  | A182 F6a            | A182 F304       | A182 F316        | A182 F6a            |                     |                     |
| 11 | Packing           | Graphite            | Graphite        |                  | Graphite            |                     |                     |
| 12 | Eyebolt Pin       | AISI 1025           | AISI 1025       |                  | A276 410            |                     |                     |
| 13 | Gland Eyebolt (1) | A193 B7             | A320 L7         |                  | A193 B16            |                     |                     |
| 14 | Gland Nut (1)     | A194 2H             | A194 4          |                  | A194 4              |                     |                     |
| 15 | Packing Gland     | A182 F6a            | A182 F304       |                  | A182 F6a            |                     |                     |
| 16 | Gland Flange      | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 17 | Stem Nut          | A439 D2             | A439 D2         |                  | A439 D2             |                     |                     |
| 18 | Retaining Screw   | Carbon Steel        | Carbon Steel    |                  | Carbon Steel        |                     |                     |
| 19 | Handwheel         | Steel               | Steel           |                  | Steel               |                     |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel    |                  | Carbon Steel        |                     |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel     |                  | Alloy Steel         |                     |                     |
| 22 | Grease Nipple     | Carbon Steel        | Carbon Steel    |                  | Alloy Steel         |                     |                     |
| 23 | Splint (2)        | Carbon Steel        | Carbon Steel    |                  | Alloy Steel         |                     |                     |
| 24 | Lantern Ring (3)  | A276 410            | A276 304        | A276 316         | A276 410            |                     |                     |
| 25 | Gear              | Assembly            | Assembly        |                  | Assembly            |                     |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) 8" and above

(3) On request

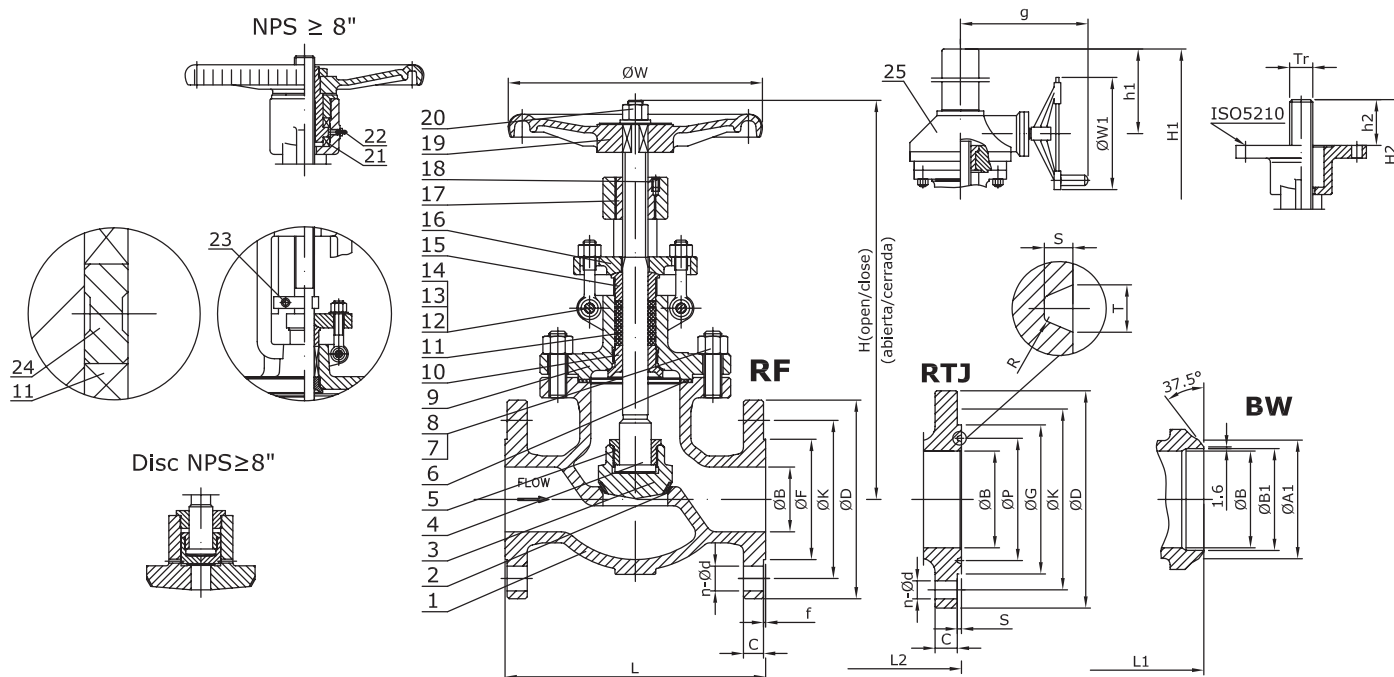
| Fig. 80A0_      | Seat Surface | Disc Surface  | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (80A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (80A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (80A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Parts and Materials

SERIES 80 ANSI RANGE  
Class 300


From 2" to 6", the flow direction is acc. to the flow arrow shown in the drawing  
From 8" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| N° | Part name        | A217 C5 (80C2_) | A217 C12 (80C4_) | CF8 (80I2_)    | CF8M (80I0_)   | CF3 (80I1_)     | CF3M (80I7_)    |
|----|------------------|-----------------|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat             | HF Overlay      |                  | Integral SS304 | Integral SS316 | Integral SS304L | Integral SS316L |
| 3  | Disc             | A182 F5+HF      | A182 F9+HF       | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 4  | Stem             | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Disc Nut         | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 6  | Gasket           | SS304           |                  | SS304          | SS316          | SS304L          | SS316L          |
| 7  | Bonnet Bolt      | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 8  | Bonnet Nut       | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 9  | Bonnet           | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 10 | Backseat Bushing | A182 F6a        |                  | SS304          | SS316          | SS304L          | SS316L          |
| 11 | Packing          | Graphite        |                  | Graphite       |                | Graphite        |                 |
| 12 | Eyebolt Pin      | A276 410        |                  | A276 304       | A276 316       | A276 316        |                 |
| 13 | Gland Eyebolt    | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 14 | Gland Nut        | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 15 | Packing Gland    | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 16 | Gland Flange     | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 17 | Stem Nut         | A439 D2         |                  | A439 D2        |                | A439 D2         |                 |
| 18 | Retaining Screw  | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 19 | Handwheel        | Steel           |                  | Steel          |                | Steel           |                 |
| 20 | Handwheel Nut    | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 21 | Bearings (1)     | Alloy Steel     |                  | Alloy Steel    |                | Alloy Steel     |                 |
| 22 | Grease Nipple    | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 23 | Splint (1)       | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 24 | Lantern Ring (2) | A276 410        |                  | A276 304       | A276 316       | A276 316        | A276 316L       |
| 25 | Gear             | Assembly        |                  | Assembly       |                | Assembly        |                 |

(1) 8" and above  
(2) On request

## SERIES 80 ANSI RANGE



(1) Other schedule nos. on request  
(2) Torque includes 30% of safety factor  
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Torques in Nm / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 80 ANSI RANGE



| Nominal Size        |                            | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"        | 24"        |
|---------------------|----------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|
|                     |                            | DN              | 250        | 300        | 350        | 400        | 450        | 500        | 600        |
| End connection      | RF                         | L               | 622        | 711        | 838        | 863        | 977        | 1016       | 1346       |
|                     |                            | ØB              | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                     |                            | ØD              | 445        | 520        | 585        | 650        | 710        | 775        | 915        |
|                     |                            | ØK              | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      |
|                     |                            | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      |
|                     |                            | C               | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62         | 68,3       |
|                     |                            | f               | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
|                     |                            | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 |
|                     | BW                         | L1              | 622        | 711        | 838        | 863        | 977        | 1016       | 1346       |
|                     |                            | Schedule No.(1) | 40         | STD        | STD        | STD        | STD        | STD        | STD        |
|                     |                            | ØB              | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                     |                            | ØA1             | 278        | 329        | 362        | 413        | 464        | 516        | 619        |
|                     |                            | ØB1             | 254,5      | 305        | 336,5      | 387,5      | 438        | 489        | 590,5      |
|                     | RTJ                        | L2              | 638        | 727        | 854        | 879        | 993        | 1035       | 1368       |
|                     |                            | ØB              | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                     |                            | ØD              | 445        | 520        | 585        | 650        | 710        | 775        | 915        |
|                     |                            | ØK              | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      |
|                     |                            | ØG              | 356        | 413        | 457        | 508        | 575        | 635        | 749        |
|                     |                            | ØP              | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15     |
|                     |                            | C               | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62         | 68,3       |
|                     |                            | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 |
|                     |                            | T               | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66      |
|                     |                            | S               | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13      |
|                     |                            | R               | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        |
| Top works/Operation | Hand-wheel                 | H (open)        | 875        | -          | -          | -          | -          | -          | -          |
|                     |                            | H (close)       | 800        | -          | -          | -          | -          | -          | -          |
|                     |                            | ØW              | 550        | -          | -          | -          | -          | -          | -          |
|                     | Gear with handwheel        | H1              | 805        | 1025       | 1192       | 1371       | 1473       | 1574       | 1803       |
|                     |                            | h1              | 156        | 186        | 204        | 235        | 299        | 355        | 406        |
|                     |                            | g               | 440        | 440        | 440        | 440        | 513        | 513        | 588        |
|                     |                            | ØW1             | 460        | 460        | 460        | 460        | 530        | 600        | 600        |
|                     | With ISO 5210 mounting pad | H2 (open)       | 877        | 1053       | 1124       | 1352       | 1480       | 1602       | -          |
|                     |                            | H2 (close)      | 802        | 945        | 1025       | 1236       | 1353       | 1460       | -          |
|                     |                            | h2              | 120        | 140        | 140        | 140        | 160        | 160        | -          |
|                     |                            | ISO             | F25        | F30        | F30        | F30        | F35        | F35        | -          |
|                     |                            | Tr              | Tr42×6LH   | Tr46×8LH   | Tr48×8LH   | Tr52×8LH   | Tr55×8LH   | Tr60×8LH   | -          |
|                     |                            | Stroke          | 75         | 108        | 99         | 116        | 127        | 142        | -          |
|                     |                            | No. of turns    | 13         | 14         | 12         | 15         | 16         | 18         | -          |
|                     |                            | Torque (Nm) (2) | 1125       | 1800       | 2100       | 2500       | 2800       | 3300       | -          |
|                     | Kvs-value                  |                 | 1077       | 1615       | 2086       | 2764       | 3575       | 4467       | 6544       |
|                     | Approx. Weight RF (3)      |                 | 389        | 580        | 1080       | 1200       | 1550       | 1950       | -          |
|                     | Approx. Weight BW          |                 | 340        | 506        | 979        | 1067       | 1384       | 1745       | -          |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

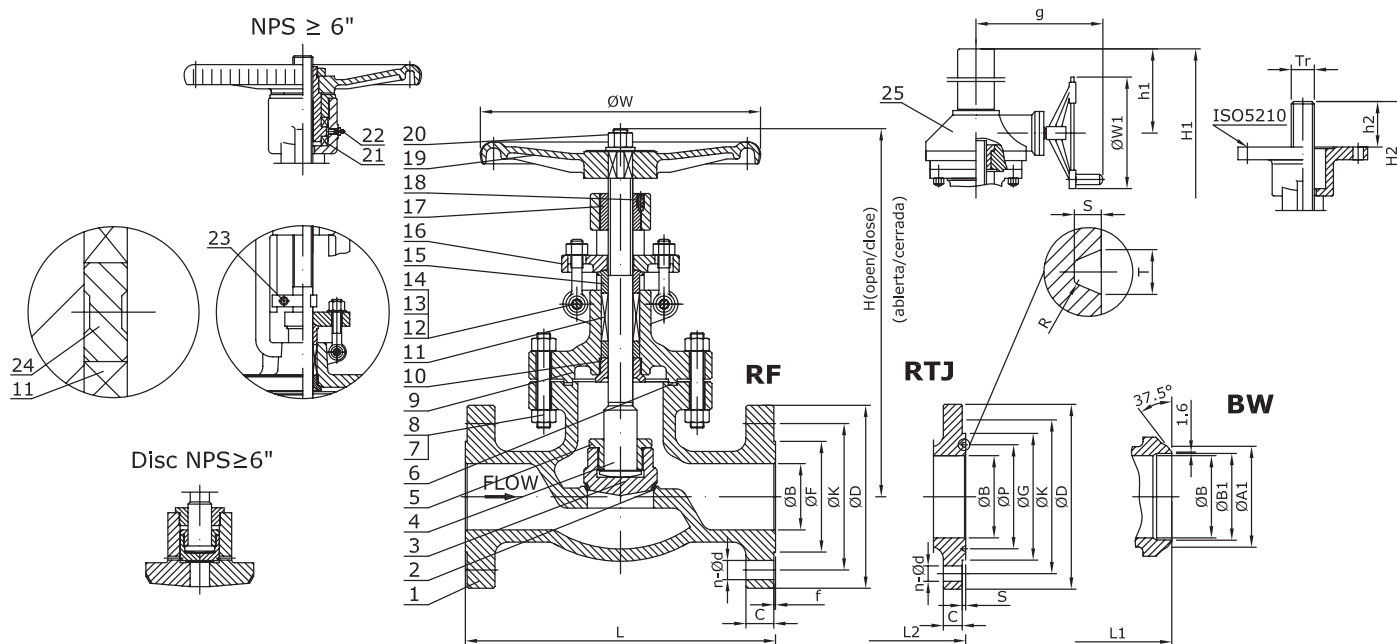
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

## SERIES 80 ANSI RANGE Class 600



From 2" to 4", the flow direction is acc. to the flow arrow shown in the drawing  
From 6" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| N° | Part name         | A216 WCB<br>(80A0_) | A352 LCB        |                  | A217 WC1<br>(80B1_) | A217 WC6<br>(80B8_) | A217 WC9<br>(80B9_) |
|----|-------------------|---------------------|-----------------|------------------|---------------------|---------------------|---------------------|
|    |                   |                     | Trim 2 (80A82_) | Trim 12 (80A8G_) |                     |                     |                     |
| 1  | Body              | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 2  | Seat              | A105                | Integral+SS304  | Integral+HF      |                     | HF Overlay          |                     |
| 3  | Disc              | A105                | A182 F304       | A182 F316        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         |
| 4  | Stem              | A182 F6a            | A182 F304       | A182 F316        |                     | A182 F6a            |                     |
| 5  | Disc Nut          | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 6  | Gasket            | SS304+Graphite      | A182 F304       | A182 F316        |                     | SS304               |                     |
| 7  | Bonnet Bolt (1)   | A193 B7             | A320 L7         |                  |                     | A193 B16            |                     |
| 8  | Bonnet Nut (1)    | A194 2H             | A194 4          |                  |                     | A194 4              |                     |
| 9  | Bonnet            | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 10 | Backseat Bushing  | A182 F6a            | A182 F304       | A182 F316        |                     | A182 F6a            |                     |
| 11 | Packing           | Graphite            | Graphite        |                  |                     | Graphite            |                     |
| 12 | Eyebolt Pin       | AISI 1025           | AISI 1025       |                  |                     | A276 410            |                     |
| 13 | Gland Eyebolt (1) | A193 B7             | A320 L7         |                  |                     | A193 B16            |                     |
| 14 | Gland Nut (1)     | A194 2H             | A194 4          |                  |                     | A194 4              |                     |
| 15 | Packing Gland     | A182 F6a            | A182 F304       |                  |                     | A182 F6a            |                     |
| 16 | Gland Flange      | A216 WCB            | A352 LCB        |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 17 | Stem Nut          | A439 D2             | A439 D2         |                  |                     | A439 D2             |                     |
| 18 | Retaining Screw   | Carbon Steel        | Carbon Steel    |                  |                     | Carbon Steel        |                     |
| 19 | Handwheel         | Steel               | Steel           |                  |                     | Steel               |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel    |                  |                     | Carbon Steel        |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel     |                  |                     | Alloy Steel         |                     |
| 22 | Grease Nipple     | Carbon Steel        | Carbon Steel    |                  |                     | Alloy Steel         |                     |
| 23 | Splint (2)        | Carbon Steel        | Carbon Steel    |                  |                     | Alloy Steel         |                     |
| 24 | Lantern Ring (3)  | A276 410            | A276 304        | A276 316         |                     | A276 410            |                     |
| 25 | Gear              | Assembly            | Assembly        |                  |                     | Assembly            |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) 6" and above

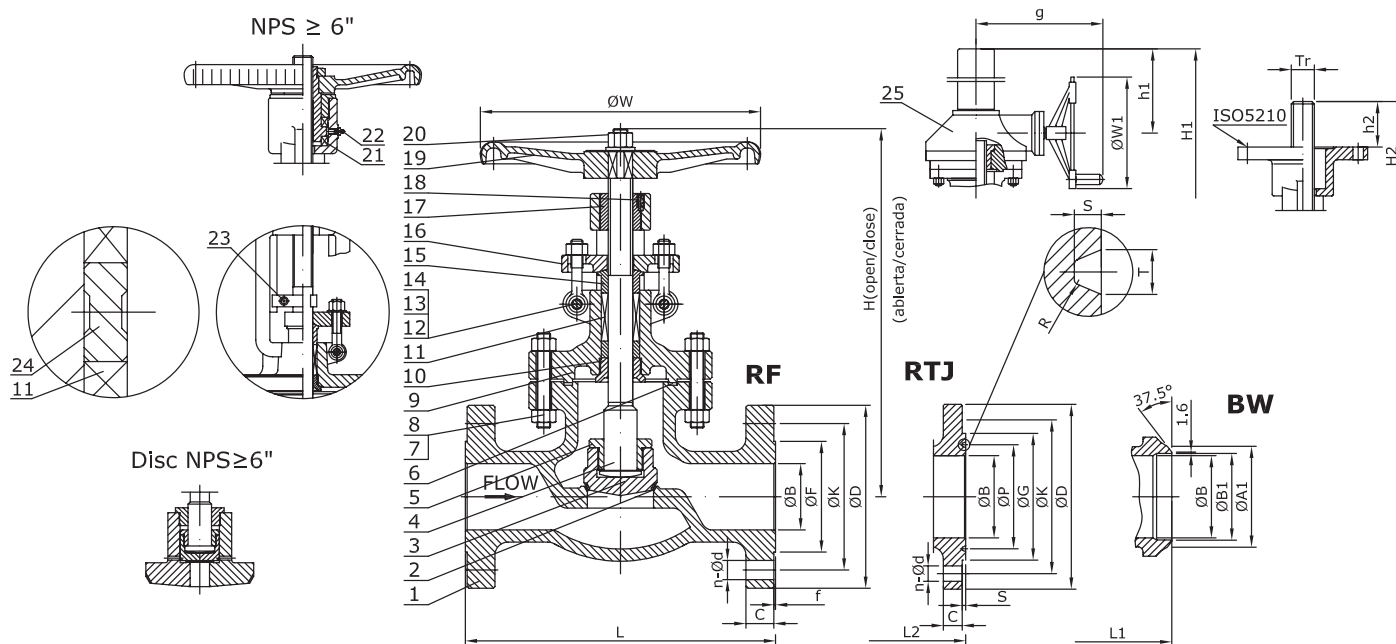
(3) On request

| Fig. 80A0_      | Seat Surface | Disc Surface  | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (80A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (80A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (80A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

## Main Parts and Materials

## SERIES 80 ANSI RANGE Class 600



From 2" to 4", the flow direction is acc. to the flow arrow shown in the drawing  
From 6" onwards, the flow direction is opposite to the flow arrow shown in the drawing

| Nº | Part name        | A217 C5 (80C2_) | A217 C12 (80C4_) | CF8 (80I2_)    | CF8M (80I0_)   | CF3 (80I1_)     | CF3M (80I7_)    |
|----|------------------|-----------------|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat             | HF Overlay      |                  | Integral SS304 | Integral SS316 | Integral SS304L | Integral SS316L |
| 3  | Disc             | A182 F5+HF      | A182 F9+HF       | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 4  | Stem             | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Disc Nut         | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 6  | Gasket           | SS304           |                  | SS304          | SS316          | SS304L          | SS316L          |
| 7  | Bonnet Bolt      | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 8  | Bonnet Nut       | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 9  | Bonnet           | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 10 | Backseat Bushing | A182 F6a        |                  | SS304          | SS316          | SS304L          | SS316L          |
| 11 | Packing          | Graphite        |                  | Graphite       |                | Graphite        |                 |
| 12 | Eyebolt Pin      | A276 410        |                  | A276 304       | A276 316       | A276 316        |                 |
| 13 | Gland Eyebolt    | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 14 | Gland Nut        | A194 4          |                  | A194 8         | A194 8M        | A194 8M         |                 |
| 15 | Packing Gland    | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 16 | Gland Flange     | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 17 | Stem Nut         | A439 D2         |                  | A439 D2        |                | A439 D2         |                 |
| 18 | Retaining Screw  | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 19 | Handwheel        | Steel           |                  | Steel          |                | Steel           |                 |
| 20 | Handwheel Nut    | Carbon Steel    |                  | St. Steel      |                | St. Steel       |                 |
| 21 | Bearings (1)     | Alloy Steel     |                  | Alloy Steel    |                | Alloy Steel     |                 |
| 22 | Grease Nipple    | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 23 | Splint (1)       | Alloy Steel     |                  | St. Steel      |                | St. Steel       |                 |
| 24 | Lantern Ring (2) | A276 410        |                  | A276 304       | A276 316       | A276 316        | A276 316L       |
| 25 | Gear             | Assembly        |                  | Assembly       |                | Assembly        |                 |

(1) 6" and above

(2) On request

## Main Valve Parameters - Class 600

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"        | 6"         | 8"       |
|-----------------------|----------------------------|-----------------|----------|----------|----------|----------|-----------|------------|----------|
|                       |                            | DN              | 50       | 65       | 80       | 100      | 125       | 150        | 200      |
| End connection        | RF                         | L               | 292      | 330      | 356      | 432      | 508       | 559        | 660      |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128       | 152        | 200      |
|                       |                            | ØD              | 165      | 190      | 210      | 275      | 330       | 355        | 420      |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7     | 215,9      | 269,9    |
|                       |                            | C               | 25,4     | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     |
|                       |                            | f               | 7        | 7        | 7        | 7        | 7         | 7          | 7        |
|                       |                            | n-Ød            | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |
|                       | BW                         | L1              | 292      | 330      | 356      | 432      | 508       | 559        | 660      |
|                       |                            | Schedule No.(1) | 80       | -        | 80       | 80       | -         | 80         | 80       |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128       | 152        | 200      |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117      | -         | 172        | 223      |
|                       |                            | ØB1             | 49,22    | -        | 73,5     | 97       | -         | 146,5      | 193,5    |
|                       | RTJ                        | L2              | 295      | 333      | 359      | 435      | 511       | 562        | 663      |
|                       |                            | ØB              | 51       | 65       | 76       | 102      | 128       | 152        | 200      |
|                       |                            | ØD              | 165      | 190      | 210      | 275      | 330       | 355        | 420      |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    |
|                       |                            | ØG              | 108      | 127      | 146      | 175      | 210       | 241        | 302      |
|                       |                            | ØP              | 82,55    | 101,6    | 123,83   | 149,23   | 180,98    | 211,12     | 269,88   |
|                       |                            | C               | 25,4     | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     |
|                       |                            | n-Ød            | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |
|                       |                            | T               | 11,91    | 11,91    | 11,91    | 11,91    | 11,91     | 11,91      | 11,91    |
|                       |                            | S               | 7,92     | 7,92     | 7,92     | 7,92     | 7,92      | 7,92       | 7,92     |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8       | 0,8        | 0,8      |
| Top works/Operation   | Hand-wheel                 | H (open)        | 360      | 409      | 446      | 536      | 678       | 783        | 937      |
|                       |                            | H (close)       | 333      | 377      | 410      | 498      | 632       | 731        | 866      |
|                       |                            | ØW              | 220      | 250      | 350      | 400      | 250       | 500        | 550      |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -        | -         | 867        | 1006     |
|                       |                            | h1              | -        | -        | -        | -        | -         | 130        | 149      |
|                       |                            | g               | -        | -        | -        | -        | -         | 440        | 440      |
|                       |                            | ØW1             | -        | -        | -        | -        | -         | 460        | 460      |
|                       | With ISO 5210 mounting pad | H2 (open)       | 380      | 424      | 456      | 540      | 682       | 787        | 926      |
|                       |                            | H2 (close)      | 353      | 392      | 420      | 502      | 636       | 735        | 855      |
|                       |                            | h2              | 80       | 80       | 80       | 80       | 103       | 120        | 140      |
|                       |                            | ISO             | F12      | F14      | F14      | F14      | F25       | F25        | F30      |
|                       |                            | Tr              | Tr22×5LH | Tr30×5LH | Tr30×5LH | Tr32×6LH | Tr42×8LH  | Tr42×8LH   | Tr46×8LH |
|                       |                            | Stroke          | 27       | 32       | 36       | 38       | 46        | 52         | 71       |
|                       |                            | No. of turns    | 5        | 6        | 7        | 6        | 6         | 7          | 9        |
|                       |                            | Torque (Nm) (2) | 160      | 289      | 385      | 365      | 615       | 800        | 1658     |
| Kvs-value             |                            | 33              | 63       | 85       | 158      | 283      | 376       | 667        |          |
| Approx. Weight RF (3) |                            | 30              | 44       | 55       | 100      | 178      | 235       | 410        |          |
| Approx. Weight BW     |                            | 23              | 34       | 42       | 77       | 142      | 191       | 346        |          |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"        | 24"    |
|-----------------------|----------------------------|-----------------|------------|------------|------------|------------|------------|------------|--------|
|                       |                            | DN              | 250        | 300        | 350        | 400        | 450        | 500        | 600    |
| End connection        | RF                         | L               | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |
|                       |                            | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                       |                            | ØD              | 510        | 560        | 605        | 685        | 745        | 815        | 940    |
|                       |                            | ØK              | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |
|                       |                            | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2  |
|                       |                            | C               | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |
|                       |                            | f               | 7          | 7          | 7          | 7          | 7          | 7          | 7      |
|                       |                            | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 -2  |
|                       | BW                         | L1              | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |
|                       |                            | Schedule No.(1) | 80         | 80         | 80         | 80         | 80         | 80         | 80     |
|                       |                            | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                       |                            | ØA1             | 278        | 329        | 362        | 413        | 464        | 516        | 619    |
|                       |                            | ØB1             | 243        | 289        | 317,5      | 363,5      | 409,5      | 455,5      | 547,5  |
|                       | RTJ                        | L2              | 790        | 841        | 892        | 994        | 1095       | 1200       | 1407   |
|                       |                            | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                       |                            | ØD              | 510        | 560        | 605        | 685        | 745        | 815        | 940    |
|                       |                            | ØK              | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |
|                       |                            | ØG              | 356        | 413        | 457        | 508        | 575        | 635        | 749    |
|                       |                            | ØP              | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15 |
|                       |                            | C               | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |
|                       |                            | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 -2  |
|                       |                            | T               | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66  |
|                       |                            | S               | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13  |
|                       |                            | R               | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5    |
| Top works/Operation   | Hand-wheel                 | H (open)        | 941        | -          | -          | -          | -          | -          | -      |
|                       |                            | H (close)       | 856        | -          | -          | -          | -          | -          | -      |
|                       |                            | ØW              | 600        | -          | -          | -          | -          | -          | -      |
|                       | Gear with handwheel        | H1              | 1061       | 1215       | 1294       | 1431       | 1568       | 1705       | 2003   |
|                       |                            | h1              | 180        | 223        | 265        | 302        | 355        | 412        | 471    |
|                       |                            | g               | 513        | 513        | 513        | 588        | 588        | 698        | 613    |
|                       |                            | ØW1             | 530        | 530        | 600        | 600        | 600        | 800        | 800    |
|                       | With ISO 5210 mounting pad | H2 (open)       | 916        | 1100       | -          | -          | -          | -          | -      |
|                       |                            | H2 (close)      | 839        | 1010       | -          | -          | -          | -          | -      |
|                       |                            | h2              | 140        | 140        | -          | -          | -          | -          | -      |
|                       |                            | ISO             | F30        | F35        | -          | -          | -          | -          | -      |
|                       |                            | Tr              | Tr52×8LH   | Tr55×8LH   | -          | -          | -          | -          | -      |
|                       |                            | Stroke          | 77         | 90         | -          | -          | -          | -          | -      |
|                       |                            | No. of turns    | 10         | 11         | -          | -          | -          | -          | -      |
|                       |                            | Torque (Nm) (2) | 2355       | 3100       | -          | -          | -          | -          | -      |
| Kvs-value             |                            | 1026            | 1547       | 2014       | 2644       | 3444       | 4214       | 6123       |        |
| Approx. Weight RF (3) |                            | 585             | 1050       | 1280       | 1600       | 2800       | 3500       | 4600       |        |
| Approx. Weight BW     |                            | 482             | 928        | 1100       | 1372       | 2512       | 3146       | 4162       |        |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

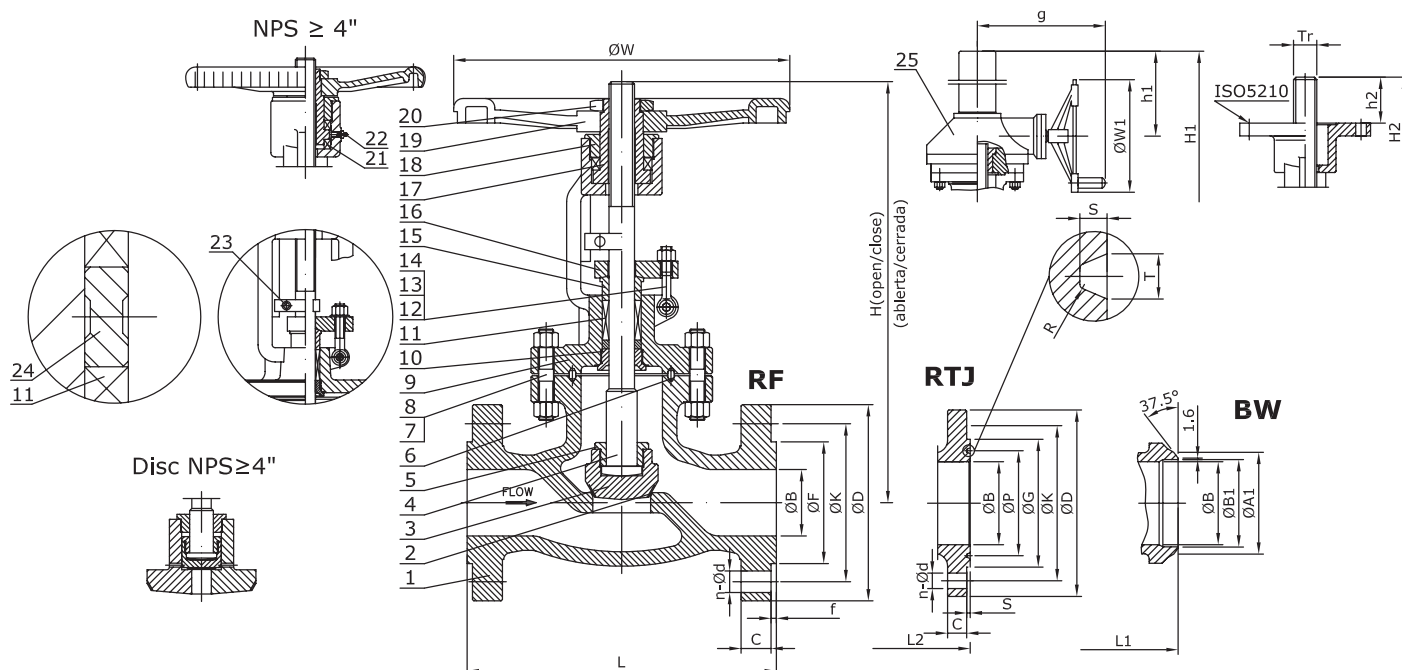
Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16



## Main Parts and Materials

## SERIES 80 ANSI RANGE Class 900



Flow direction is opposite to the flow arrow shown in the drawing to make advantage of medium pressure itself to close the disc

| Nº | Part name        | A217 C5 (80C2_) | A217 C12 (80C4_) | CF8 (80I2_)  | CF8M (80I0_) | CF3 (80I1_)   | CF3M (80I7_)  |
|----|------------------|-----------------|------------------|--------------|--------------|---------------|---------------|
| 1  | Body             | A217 C5         | A217 C12         | A351 CF8     | A351 CF8M    | A351 CF3      | A351 CF3M     |
| 2  | Seat             | HF Overlay      |                  | Integral+HF  |              | Integral+HF   |               |
| 3  | Disc             | A182 F5+HF      | A182 F9+HF       | A182 F304+HF | A182 F316+HF | A182 F304L+HF | A182 F316L+HF |
| 4  | Stem             | A182 F6a        |                  | A182 F304    | Nitronic 50  | A182 F304L    | Nitronic 50   |
| 5  | Disc Nut         | A217 C5         | A217 C12         | A351 CF8     | A351 CF8M    | A351 CF3      | A351 CF3M     |
| 6  | Gasket           | SS304           |                  | SS304        | SS316        | SS304L        | SS316L        |
| 7  | Bonnet Bolt      | A193 B16        |                  | A193 B8      | A193 B8M     | A193 B8M      |               |
| 8  | Bonnet Nut       | A194 4          |                  | A194 8       | A194 8M      | A194 8M       |               |
| 9  | Bonnet           | A217 C5         | A217 C12         | A351 CF8     | A351 CF8M    | A351 CF3      | A351 CF3M     |
| 10 | Backseat Bushing | A182 F6a        |                  | SS304        | SS316        | SS304L        | SS316L        |
| 11 | Packing          | Graphite        |                  | Graphite     |              | Graphite      |               |
| 12 | Eyebolt Pin      | A276 410        |                  | A276 304     | A276 316     | A276 316      |               |
| 13 | Gland Eyebolt    | A193 B16        |                  | A193 B8      | A193 B8M     | A193 B8M      |               |
| 14 | Gland Nut        | A194 4          |                  | A194 8       | A194 8M      | A194 8M       |               |
| 15 | Packing Gland    | A182 F6a        |                  | A182 F304    | A182 F316    | A182 F304L    | A182 F316L    |
| 16 | Gland Flange     | A217 C5         | A217 C12         | A351 CF8     | A351 CF8M    | A351 CF3      | A351 CF3M     |
| 17 | Stem Nut         | A439 D2         |                  | A439 D2      |              | A439 D2       |               |
| 18 | Retaining Screw  | Carbon Steel    |                  | St. Steel    |              | St. Steel     |               |
| 19 | Handwheel        | Steel           |                  | Steel        |              | Steel         |               |
| 20 | Handwheel Nut    | Carbon Steel    |                  | St. Steel    |              | St. Steel     |               |
| 21 | Bearings (1)     | Alloy Steel     |                  | Alloy Steel  |              | Alloy Steel   |               |
| 22 | Grease Nipple    | Alloy Steel     |                  | St. Steel    |              | St. Steel     |               |
| 23 | Splint (1)       | Alloy Steel     |                  | St. Steel    |              | St. Steel     |               |
| 24 | Lantern Ring (2) | A276 410        |                  | A276 304     | A276 316     | A276 316      | A276 316L     |
| 25 | Gear             | Assembly        |                  | Assembly     |              | Assembly      |               |

(1) 4" and above  
(2) On request

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Torques in Nm / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 900

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"        | 5"        | 6"         | 8"         |
|-----------------------|----------------------------|-----------------|----------|----------|----------|-----------|-----------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80       | 100       | 125       | 150        | 200        |
| End connection        | RF                         | L               | 368      | 419      | 381      | 457       | 559       | 610        | 737        |
|                       |                            | ØB              | 48       | 62       | 73       | 98        | 123       | 146        | 191        |
|                       |                            | ØD              | 215      | 245      | 240      | 290       | 350       | 380        | 470        |
|                       |                            | ØK              | 165,1    | 190,5    | 190,5    | 235       | 279,4     | 317,5      | 393,7      |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2     | 185,7     | 215,9      | 269,9      |
|                       |                            | C               | 38,1     | 41,3     | 38,1     | 44,5      | 50,8      | 55,6       | 63,5       |
|                       |                            | f               | 7        | 7        | 7        | 7         | 7         | 7          | 7          |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 7/8  | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                       | BW                         | L1              | 368      | 419      | 381      | 457       | 559       | 610        | 737        |
|                       |                            | Schedule No.(1) | 160      | -        | 160      | 120       | -         | 120        | 100        |
|                       |                            | ØB              | 48       | 62       | 73       | 98        | 123       | 146        | 191        |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117       | -         | 172        | 223        |
|                       |                            | ØB1             | 38,16    | -        | 66,5     | 92        | -         | 140        | 189        |
|                       | RTJ                        | L2              | 371      | 422      | 384      | 460       | 562       | 613        | 740        |
|                       |                            | ØB              | 48       | 62       | 73       | 98        | 123       | 146        | 191        |
|                       |                            | ØD              | 215      | 245      | 240      | 290       | 350       | 380        | 470        |
|                       |                            | ØK              | 165,1    | 190,5    | 190,5    | 235       | 279,4     | 317,5      | 393,7      |
|                       |                            | ØG              | 124      | 137      | 156      | 181       | 216       | 241        | 308        |
|                       |                            | ØP              | 95,25    | 107,95   | 123,83   | 149,23    | 180,98    | 211,12     | 269,88     |
|                       |                            | C               | 38,1     | 41,3     | 38,1     | 44,5      | 50,8      | 55,6       | 63,5       |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 7/8  | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                       |                            | T               | 11,91    | 11,91    | 11,91    | 11,91     | 11,91     | 11,91      | 11,91      |
|                       |                            | S               | 7,92     | 7,92     | 7,92     | 7,92      | 7,92      | 7,92       | 7,92       |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8       | 0,8       | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 558      | 618      | 662      | 748       | 802       | 842        | -          |
|                       |                            | H (close)       | 521      | 587      | 635      | 717       | 762       | 795        | -          |
|                       |                            | ØW              | 280      | 250      | 300      | 400       | 250       | 600        | -          |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -         | -         | 932        | 1117       |
|                       |                            | h1              | -        | -        | -        | -         | -         | 125        | 157        |
|                       |                            | g               | -        | -        | -        | -         | -         | 440        | 513        |
|                       |                            | ØW1             | -        | -        | -        | -         | -         | 460        | 460        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 570      | 626      | 667      | 756       | 811       | 852        | 1037       |
|                       |                            | H2 (close)      | 520      | 589      | 640      | 725       | 771       | 805        | 958        |
|                       |                            | h2              | 80       | 80       | 80       | 80        | 115       | 140        | 140        |
|                       |                            | ISO             | F12      | F14      | F14      | F14       | F30       | F30        | F30        |
|                       |                            | Tr              | Tr26×5LH | Tr32×6LH | Tr32×6LH | Tr36×6LH  | Tr48×8LH  | Tr48×8LH   | Tr52×8LH   |
|                       |                            | Stroke          | 50       | 37       | 27       | 31        | 40        | 47         | 79         |
|                       |                            | No. of turns    | 10       | 6        | 5        | 5         | 5         | 6          | 10         |
|                       |                            | Torque (Nm) (2) | 105      | 178      | 232      | 460       | 772       | 1002       | 1905       |
| Kvs-value             |                            | 21              | 53       | 77       | 145      | 258       | 342       | 607        |            |
| Approx. Weight RF (3) |                            | 85              | 97       | 105      | 160      | 298       | 400       | 715        |            |
| Approx. Weight BW     |                            | 71              | 81       | 88       | 132      | 252       | 340       | 613        |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 900

## SERIES 80 ANSI RANGE



| Nominal Size          |                            | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"    | 24"        |
|-----------------------|----------------------------|-----------------|------------|------------|------------|------------|------------|--------|------------|
|                       |                            | DN              | 250        | 300        | 350        | 400        | 450        | 500    | 600        |
| End connection        | RF                         | L               | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                       |                            | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                       |                            | ØD              | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                       |                            | ØK              | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                       |                            | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2  | 692,2      |
|                       |                            | C               | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                       |                            | f               | 7          | 7          | 7          | 7          | 7          | 7      | 7          |
|                       |                            | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                       | BW                         | L1              | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                       |                            | Schedule No.(1) | 100        | 100        | 100        | 100        | 100        | 100    | 100        |
|                       |                            | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                       |                            | ØA1             | 278        | 329        | 362        | 413        | 464        | 516    | 619        |
|                       |                            | ØB1             | 236,5      | 281        | 308        | 354        | 398,5      | 443    | 532        |
|                       | RTJ                        | L2              | 841        | 968        | 1039       | 1140       | 1232       | 1334   | 1568       |
|                       |                            | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                       |                            | ØD              | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                       |                            | ØK              | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                       |                            | ØG              | 362        | 419        | 467        | 524        | 594        | 648    | 772        |
|                       |                            | ØP              | 323,85     | 381        | 419,1      | 469,9      | 533,4      | 584,2  | 692,15     |
|                       |                            | C               | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                       |                            | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                       |                            | T               | 11,91      | 11,91      | 16,66      | 16,66      | 19,84      | 19,84  | 26,97      |
|                       |                            | S               | 7,92       | 7,92       | 11,13      | 11,13      | 12,7       | 12,7   | 15,88      |
|                       |                            | R               | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5    | 2,4        |
| Top works/Operation   | Hand-wheel                 | H (open)        | -          | -          | -          | -          | -          | -      | -          |
|                       |                            | H (close)       | -          | -          | -          | -          | -          | -      | -          |
|                       |                            | ØW              | -          | -          | -          | -          | -          | -      | -          |
|                       | Gear with handwheel        | H1              | 1237       | 1450       | 1596       | 1750       | 1889       | 2028   | 2306       |
|                       |                            | h1              | 208        | 245        | 301        | 344        | 400        | 442    | 544        |
|                       |                            | g               | 513        | 513        | 588        | 588        | 613        | 613    | 698        |
|                       |                            | ØW1             | 530        | 530        | 600        | 600        | 600        | 800    | 800        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 1127       | 1320       | -          | -          | -          | -      | -          |
|                       |                            | H2 (close)      | 1022       | 1230       | -          | -          | -          | -      | -          |
|                       |                            | h2              | 160        | 160        | -          | -          | -          | -      | -          |
|                       |                            | ISO             | F35        | F35        | -          | -          | -          | -      | -          |
|                       |                            | Tr              | Tr62×8LH   | Tr65×10LH  | -          | -          | -          | -      | -          |
|                       |                            | Stroke          | 105        | 90         | -          | -          | -          | -      | -          |
|                       |                            | No. of turns    | 13         | 9          | -          | -          | -          | -      | -          |
|                       |                            | Torque (Nm) (2) | 2877       | 3850       | -          | -          | -          | -      | -          |
| Kvs-value             |                            | 940             | 1503       | 1824       | 2382       | 3138       | 3874       | 5579   |            |
| Approx. Weight RF (3) |                            | 900             | 1450       | 3250       | 4200       | -          | -          | -      |            |
| Approx. Weight BW     |                            | 758             | 1254       | 3027       | 3931       | -          | -          | -      |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

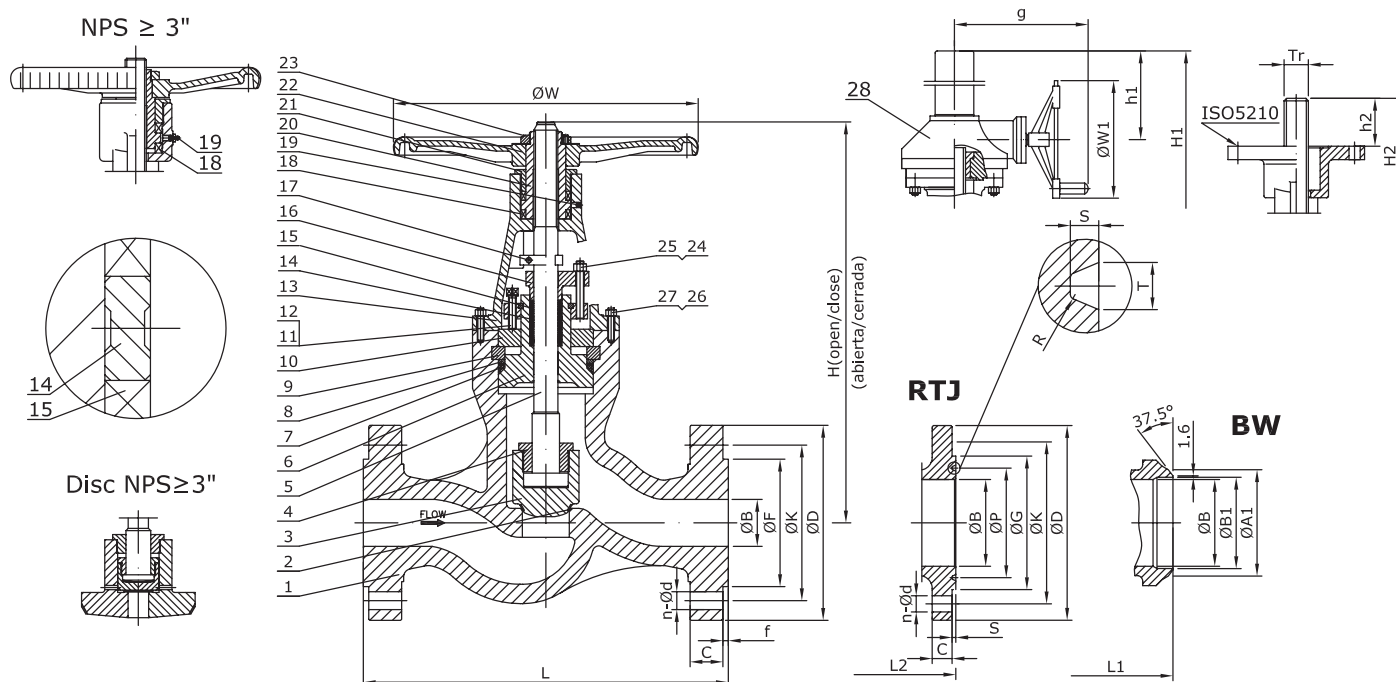
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

## SERIES 81 ANSI RANGE Class 1500&2500



Flow direction is opposite to the flow arrow shown in the drawing to make advantage of medium pressure itself to close the disc

| N° | Part name        | A216 WCB<br>(81A0_) | A352 LCB         |                  | A217 WC1<br>(81B1_) | A217 WC6<br>(81B8_) | A217 WC9<br>(81B9_) |
|----|------------------|---------------------|------------------|------------------|---------------------|---------------------|---------------------|
|    |                  |                     | Trim 15 (81A8K_) | Trim 16 (81A8L_) |                     |                     |                     |
| 1  | Body             | A216 WCB            | A352 LCB         |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 2  | Seat             | A105                | Integral+HF      | Integral+HF      | HF Overlay          |                     |                     |
| 3  | Disc             | A105                | A182 F304+HF     | A182 F316+HF     | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         |
| 4  | Disc Nut         | A216 WCB            | A352 LCB         |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 5  | Stem             | A182 F6a            | A182 F304        | Nitronic 50      | A182 F6a            |                     |                     |
| 6  | Bonnet           | A105                | A350 LF2         |                  | A182 F1             | A182 F11            | A182 F22            |
| 7  | Gasket           | SS304+Graphite      | SS304+Graphite   | SS316+Graphite   | SS304+Graphite      |                     |                     |
| 8  | Gasket Washer    | A182 F6a            | A182 F304        | A182 F316        | A182 F6a            |                     |                     |
| 9  | Split Ring       | A105                | A350 LF2         |                  | A182 F1             | A182 F11            | A182 F22            |
| 10 | Retainer Ring    | A105                | A350 LF2         |                  | A182 F1             | A182 F11            | A182 F22            |
| 11 | Screw (1)        | A193 B7             | A320 L7          |                  | A193 B16            |                     |                     |
| 12 | Nut (1)          | A194 2H             | A194 4           |                  | A194 4              |                     |                     |
| 13 | Yoke             | A216 WCB            | A352 LCB         |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 14 | Lantern Ring (2) | A276 410            | A276 304         | A276 316         | A276 410            |                     |                     |
| 15 | Packing          | Graphite            | Graphite         |                  | Graphite            |                     |                     |
| 16 | Gland Flange     | A216 WCB            | A352 LCB         |                  | A217 WC1            | A217 WC6            | A217 WC9            |
| 17 | Splint           | Carbon Steel        | Carbon Steel     |                  | Alloy Steel         |                     |                     |
| 18 | Bearings (3)     | Alloy Steel         | Alloy Steel      |                  | Alloy Steel         |                     |                     |
| 19 | Grease Nipple    | Carbon Steel        | Carbon Steel     |                  | Alloy Steel         |                     |                     |
| 20 | Stem Nut         | A439 D2             | A439 D2          |                  | A439 D2             |                     |                     |
| 21 | Stem Nut         | Carbon Steel        | Carbon Steel     |                  | Carbon Steel        |                     |                     |
| 22 | Handwheel        | Steel               | Steel            |                  | Steel/ Acero        |                     |                     |
| 23 | Handwheel Nut    | Carbon Steel        | Carbon Steel     |                  | Carbon Steel        |                     |                     |
| 24 | Bolt (1)         | A193 B7             | A320 L7          |                  | A193 B16            |                     |                     |
| 25 | Nut (1)          | A194 2H             | A194 4           |                  | A194 4              |                     |                     |
| 26 | Bolt (1)         | A193 B7             | A320 L7          |                  | A193 B16            |                     |                     |
| 27 | Nut (1)          | A194 2H             | A194 4           |                  | A194 4              |                     |                     |
| 28 | Gear             | Assembly            | Assembly         |                  | Assembly            |                     |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) On request

(3) 3" and above

| Fig. 81A0_      | Seat Surface | Disc Surface  | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (81A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (81A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (81A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

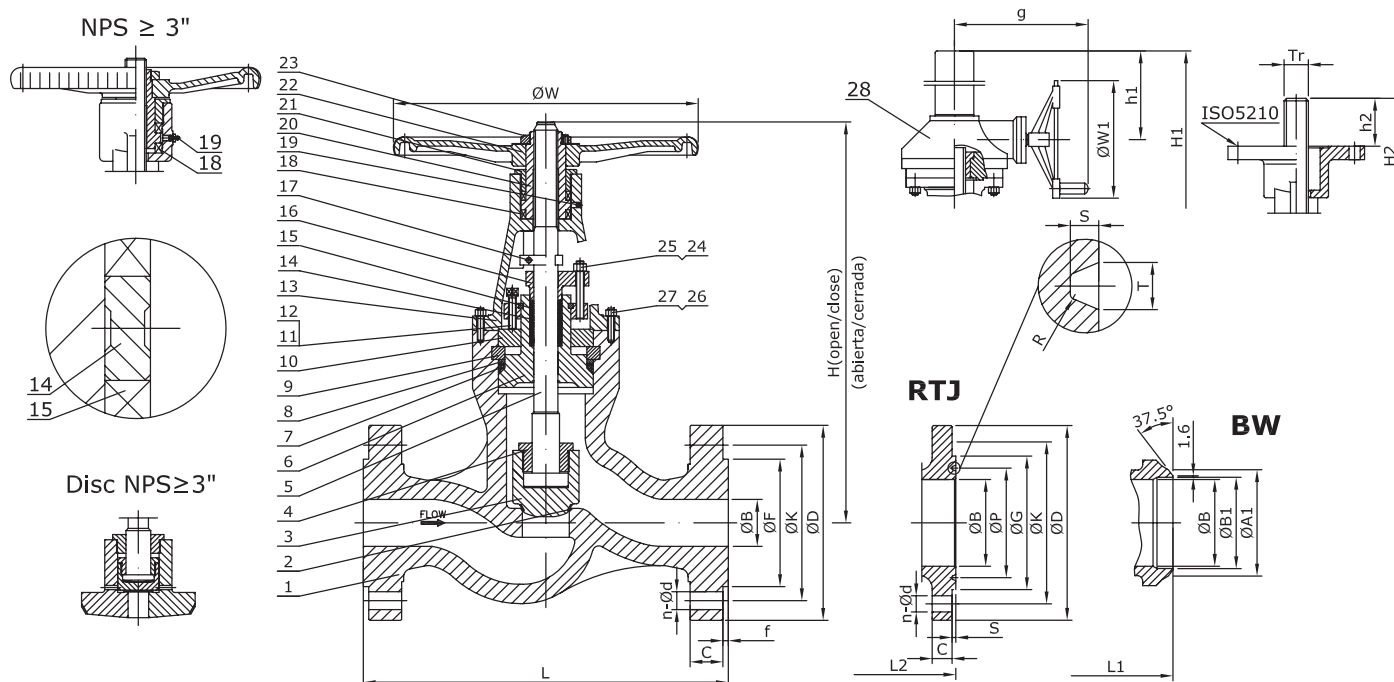
Information / restriction of technical rules need to be observed!

Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

# Main Parts and Materials

## SERIES 81 ANSI RANGE Class 1500&2500



Flow direction is opposite to the flow arrow shown in the drawing to make advantage of medium pressure itself to close the disc

| Nº | Part name        | A217 C5 (81C2_) | A217 C12 (81C4_) | CF8 (81I2_)    | CF8M (81I0_)   | CF3 (81I1_)    | CF3M (81I7_)    |
|----|------------------|-----------------|------------------|----------------|----------------|----------------|-----------------|
| 1  | Body             | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 2  | Seat             | HF Overlay      |                  | Integral+HF    |                | Integral+HF    |                 |
| 3  | Disc             | A182 F5+HF      | A182 F9+HF       | A182 F304+HF   | A182 F316+HF   | A182 F304L+HF  | A182 F316L+HF   |
| 4  | Disc Nut         | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 5  | Stem             | A182 F6a        |                  | A182 F304      | Nitronic 50    | A182 F304L     | Nitronic 50     |
| 6  | Bonnet           | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 7  | Gasket           | SS304+Graphite  |                  | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 8  | Gasket Washer    | A182 F6a        |                  | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 9  | Split Ring       | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 10 | Retainer Ring    | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 11 | Screw            | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 12 | Nut              | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 13 | Yoke             | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 14 | Lantern Ring (1) | A276 410        |                  | A276 304       | A276 316       | A276 316       | A276 316L       |
| 15 | Packing          | Graphite        |                  | Graphite       |                | Graphite       |                 |
| 16 | Gland Flange     | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 17 | Splint           | Alloy Steel     |                  | St. Steel      |                | St. Steel      |                 |
| 18 | Bearings (2)     | Alloy Steel     |                  | Alloy Steel    |                | Alloy Steel    |                 |
| 19 | Grease Nipple    | Alloy Steel     |                  | St. Steel      |                | St. Steel      |                 |
| 20 | Stem Nut         | A439 D2         |                  | A439 D2        |                | A439 D2        |                 |
| 21 | Stem Nut         | Carbon Steel    |                  | St. Steel      |                | St. Steel      |                 |
| 22 | Handwheel        | Steel           |                  | Steel          |                | Steel          |                 |
| 23 | Handwheel Nut    | Carbon Steel    |                  | St. Steel      |                | St. Steel      |                 |
| 24 | Bolt             | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 25 | Nut              | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 26 | Bolt             | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 27 | Nut              | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 28 | Gear             | Assembly        |                  | Assembly       |                | Assembly       |                 |

(1) On request

(2) 3" and above

## Main Valve Parameters - Class 1500

## SERIES 81 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"        | 4"        | 5"        | 6"         | 8"         | 10"       | 12"        | 14"        |
|-----------------------|----------------------------|-----------------|----------|----------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80        | 100       | 125       | 150        | 200        | 250       | 300        | 350        |
| End connection        | RF                         | L               | 368      | 419      | 470       | 546       | 673       | 705        | 832        | 991       | 1130       | 1257       |
|                       |                            | ØB              | 48       | 61       | 70        | 92        | 115       | 136        | 178        | 222       | 263        | 289        |
|                       |                            | ØD              | 215      | 245      | 265       | 310       | 375       | 395        | 485        | 585       | 675        | 750        |
|                       |                            | ØK              | 165,1    | 190,5    | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6     | 571,5      | 635        |
|                       |                            | ØF              | 92,1     | 104,8    | 127       | 157,2     | 185,7     | 215,9      | 269,9      | 323,8     | 381        | 412,8      |
|                       |                            | C               | 38,1     | 41,3     | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108       | 123,9      | 133,4      |
|                       |                            | f               | 7        | 7        | 7         | 7         | 7         | 7          | 7          | 7         | 7          | 7          |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2    | 16 - 2 1/8 | 16 - 2 3/8 |
|                       | BW                         | L1              | 368      | 419      | 470       | 546       | 673       | 705        | 832        | 991       | 1130       | 1257       |
|                       |                            | Schedule No.(1) | 160      | -        | 160       | 120       | -         | 120        | 120        | 120       | 120        | 120        |
|                       |                            | ØB              | 48       | 61       | 70        | 92        | 115       | 136        | 178        | 222       | 263        | 289        |
|                       |                            | ØA1             | 60,3     | -        | 91        | 117       | -         | 172        | 223        | 278       | 329        | 362        |
|                       |                            | ØB1             | 38,16    | -        | 66,5      | 92        | -         | 140        | 182,5      | 230       | 273        | 300        |
|                       | RTJ                        | L2              | 371      | 422      | 473       | 549       | 676       | 711        | 842        | 1001      | 1146       | 1276       |
|                       |                            | ØB              | 48       | 61       | 70        | 92        | 115       | 136        | 178        | 222       | 263        | 289        |
|                       |                            | ØD              | 215      | 245      | 265       | 310       | 375       | 395        | 485        | 585       | 675        | 750        |
|                       |                            | ØK              | 165,1    | 190,5    | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6     | 571,5      | 635        |
|                       |                            | ØG              | 124      | 137      | 168       | 194       | 229       | 248        | 318        | 371       | 438        | 489        |
|                       |                            | ØP              | 95,25    | 107,95   | 136,53    | 161,93    | 193,68    | 211,14     | 269,88     | 323,85    | 381        | 419,1      |
|                       |                            | C               | 38,1     | 41,3     | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108       | 123,9      | 133,4      |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2    | 16 - 2 1/8 | 16 - 2 3/8 |
|                       |                            | T               | 11,91    | 11,91    | 11,91     | 11,91     | 11,91     | 13,49      | 16,66      | 16,66     | 23,01      | 26,97      |
|                       |                            | S               | 7,92     | 7,92     | 7,92      | 7,92      | 7,92      | 9,53       | 11,13      | 11,13     | 14,27      | 15,88      |
|                       |                            | R               | 0,8      | 0,8      | 0,8       | 0,8       | 0,8       | 1,5        | 1,5        | 1,5       | 1,5        | 2,4        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 632      | 681      | 718       | 848       | 969       | 1059       | -          | -         | -          | -          |
|                       |                            | H (close)       | 592      | 649      | 691       | 805       | 925       | 1014       | -          | -         | -          | -          |
|                       |                            | ØW              | 300      | 250      | 350       | 500       | 250       | 600        | -          | -         | -          | -          |
|                       | Gear with handwheel        | H1              | -        | -        | -         | -         | -         | 1105       | 1245       | 1449      | 1760       | 1990       |
|                       |                            | h1              | -        | -        | -         | -         | -         | 128        | 180        | 229       | 280        | 325        |
|                       |                            | g               | -        | -        | -         | -         | -         | 513        | 513        | 513       | 588        | 588        |
|                       |                            | ØW1             | -        | -        | -         | -         | -         | 460        | 530        | 530       | 600        | 600        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 635      | 682      | 717       | 949       | 1019      | 1071       | 1188       | 1440      | -          | -          |
|                       |                            | H2 (close)      | 595      | 650      | 690       | 915       | 979       | 1026       | 1105       | 1356      | -          | -          |
|                       |                            | h2              | 80       | 80       | 80        | 140       | 140       | 140        | 140        | 180       | -          | -          |
|                       |                            | ISO             | F14      | F14      | F14       | F30       | F30       | F30        | F30        | F35       | -          | -          |
|                       |                            | Tr              | Tr30×5LH | Tr36×6LH | Tr36×6LH  | Tr42×8LH  | Tr52×8LH  | Tr52×8LH   | Tr58×8LH   | Tr70×10LH | -          | -          |
|                       |                            | Stroke          | 40       | 33       | 27        | 34        | 40        | 45         | 83         | 84        | -          | -          |
|                       |                            | No. of turns    | 3        | 5        | 6         | 8         | 7         | 8          | 6          | 13        | -          | -          |
|                       |                            | Torque (Nm) (2) | 220      | 309      | 375       | 1106      | 1557      | 1890       | 2785       | 4445      | -          | -          |
| Kvs-value             |                            | 21              | 55       | 81       | 145       | 256       | 338       | 594        | 594        | 1307      | 1571       |            |
| Approx. Weight RF (3) |                            | 85              | 131      | 165      | 280       | 453       | 580       | 900        | 1350       | 3400      | 4300       |            |
| Approx. Weight BW     |                            | 71              | 110      | 139      | 244       | 389       | 496       | 757        | 1105       | 3036      | 3789       |            |

- (1) Other schedule nos. on request  
 (2) Torque includes 30% of safety factor  
 (3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
 Kvs-values in m³/h / Torques in Nm / Weights in kg  
 For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 2500

## SERIES 81 ANSI RANGE



| Nominal Size          |                            | inch            | 2"        | 2-1/2"    | 3"        | 4"        | 5"        | 6"        | 8"         | 10"        | 12"        |
|-----------------------|----------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
|                       |                            | DN              | 50        | 65        | 80        | 100       | 125       | 150       | 200        | 250        | 300        |
| End connection        | RF                         | L               | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |                            | ØB              | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                       |                            | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |                            | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |                            | ØF              | 92,1      | 104,8     | 127       | 157,2     | 185,7     | 215,9     | 269,9      | 323,8      | 381        |
|                       |                            | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |                            | f               | 7         | 7         | 7         | 7         | 7         | 7         | 7          | 7          | 7          |
|                       |                            | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       | BW                         | L1              | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |                            | Schedule No.(1) | 160       | -         | 160       | 160       | -         | 160       | 160        | 160        | 160        |
|                       |                            | ØB              | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                       |                            | ØA1             | 60,3      | -         | 91        | 117       | -         | 172       | 223        | 278        | 329        |
|                       |                            | ØB1             | 42,82     | -         | 66,5      | 87,5      | -         | 132       | 173        | 216        | 257        |
|                       | RTJ                        | L2              | 454       | 514       | 584       | 683       | 807       | 927       | 1038       | 1292       | 1444       |
|                       |                            | ØB              | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                       |                            | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |                            | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |                            | ØG              | 133       | 149       | 168       | 203       | 241       | 279       | 340        | 425        | 495        |
|                       |                            | ØP              | 101,6     | 111,13    | 127       | 157,18    | 190,5     | 228,6     | 279,4      | 342,9      | 406,4      |
|                       |                            | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |                            | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       |                            | T               | 11,91     | 13,49     | 13,49     | 16,66     | 19,84     | 19,84     | 23,01      | 30,18      | 33,32      |
|                       |                            | S               | 7,92      | 9,53      | 9,53      | 11,13     | 12,7      | 12,7      | 14,27      | 17,48      | 17,48      |
|                       |                            | R               | 0,8       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5        | 2,4        | 2,4        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 632       | 727       | 798       | 887       | -         | -         | -          | -          | -          |
|                       |                            | H (close)       | 602       | 687       | 750       | 845       | -         | -         | -          | -          | -          |
|                       |                            | ØW              | 450       | 250       | 500       | 600       | 250       | -         | -          | -          | -          |
|                       | Gear with handwheel        | H1              | -         | -         | -         | 917       | -         | 1105      | 1376       | 1595       | 1821       |
|                       |                            | h1              | -         | -         | -         | 120       | -         | 175       | 222        | 276        | 328        |
|                       |                            | g               | -         | -         | -         | 513       | -         | 513       | 588        | 613        | 613        |
|                       |                            | ØW1             | -         | -         | -         | 460       | -         | 530       | 600        | 600        | 600        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 632       | 796       | 918       | 901       | 952       | 990       | 1250       | -          | -          |
|                       |                            | H2 (close)      | 602       | 693       | 760       | 859       | 908       | 945       | 1190       | -          | -          |
|                       |                            | h2              | 80        | 115       | 140       | 140       | 152       | 160       | 160        | -          | -          |
|                       |                            | ISO             | F14       | F30       | F30       | F30       | F35       | F35       | F40        | -          | -          |
|                       |                            | Tr              | Tr36×6LH  | Tr42×8LH  | Tr42×8LH  | Tr52×8LH  | Tr65×10LH | Tr65×10LH | Tr80×10LH  | -          | -          |
|                       |                            | Stroke          | 30        | 104       | 158       | 42        | 44        | 45        | 60         | -          | -          |
|                       |                            | No. of turns    | 5         | 6         | 7         | 6         | 6         | 7         | 9          | -          | -          |
|                       |                            | Torque (Nm) (2) | 475       | 832       | 1095      | 1560      | 3021      | 4100      | 5600       | -          | -          |
| Kvs-value             |                            | 14              | 36        | 52        | 87        | 161       | 216       | 387       | 615        | 903        |            |
| Approx. Weight RF (3) |                            | 100             | 163       | 210       | 500       | 931       | 1250      | 2400      | 3300       | 4200       |            |
| Approx. Weight BW     |                            | 77              | 124       | 158       | 421       | 779       | 1044      | 2369      | 2718       | 3370       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

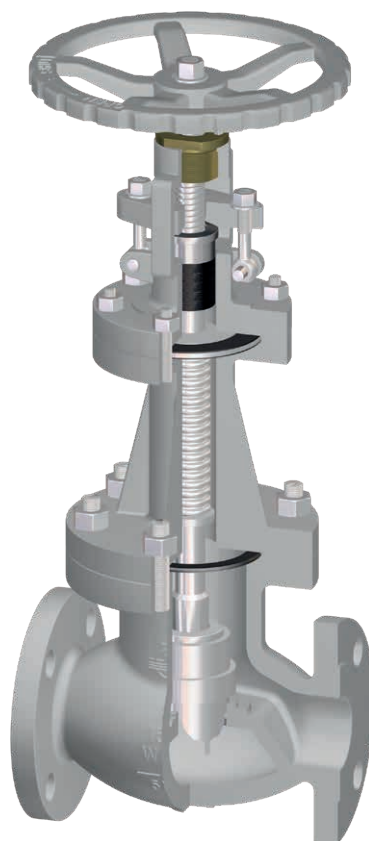
Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## SERIES 84 ANSI RANGE



Series 84 Globe Valves are linear motion valves devised for stopping the flow of the service fluid when necessary. They are bolted bonnet, outside screw and yoke, rising handwheel, being the closure element a disc seating against a precisely machined seat thus achieving the positive closure. The atmospheric sealing is achieved by flexible graphite rings. The flow comes upwards underneath the seat, being an unidirectional valve. Weir body leads to higher pressure drop compared to gate valves but operation is quicker and this feature allows to use the valve as regulating valve when arranged with throttling plug. Valves are of easy and safe operation being widely used in power, chemical and oil industry. The range is also comprehensive o a wide offer of different versions and options. The standard operation is achieved by handwheel or gear, depending on valve size and working pressure. Valves can also be arranged for automation with different kinds of actuators.



Outside screw and yoke

Ergonomic rising handwheel

Precise machining of components for optimal performance

Marking for identification and full traceability purpose

Seat surface can be hardened to increase wear resistance

Great versatility in end connections, materials and configurations

Valve disc guide feature

### Main Features / Reference Standards

Design: BS 1873 / ASME B16.34  
 Pressure Rating: 150/300/600#  
 Face to face length: ASME B16.10  
 Valve end connections: Flanged RF or RTJ to ASME B16.5  
 Welded BW to ASME B16.25  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Unidirectional design. See the arrow on the body for normal flow direction  
 Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

### Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Different body materials and trim combinations, different valve connections, angle pattern, Y-pattern, regulating plug, compliance with NACE MR0175, extended bonnet, bellow seal, pressure seal, welded bonnet, lantern ring with double packing, live loaded packing, chained hand wheel, manual gear, pneumatic, electric or hydraulic actuation, limit switches, execution for aggressive atmosphere, etc. Please consult us





## Main Parts and Materials

| No. | Part name      | A352 LCB                                            |                     | A217 WC6                                            | A217 WC9         |
|-----|----------------|-----------------------------------------------------|---------------------|-----------------------------------------------------|------------------|
|     |                | Trim 2 (84A82)                                      | Trim 10 (84A8D)     | (84B8_)                                             | (84B9_)          |
| 1   | Body           | ASTM A352 LCB+SS304                                 | ASTM A352 LCB+SS316 | ASTM A217 WC6+HF                                    | ASTM A217 WC9+HF |
| 3   | Disc           | ASTM A182 F304                                      | ASTM A182 F316      | ASTM A182 F11+HF                                    | ASTM A182 F22+HF |
| 4   | Stem           | ASTM A182 F304                                      | ASTM A182 F316      | A182 F6a                                            |                  |
| 5   | Disc Nut       | ASTM A350 LF2                                       |                     | ASTM A182 F11                                       | ASTM A182 F22    |
| 6   | Gasket         | SS304+Graphite                                      | SS316+Graphite      | SS304+Graphite                                      |                  |
| 7   | Bonnet Bolt    | ASTM A320 L7                                        |                     | ASTM A193 B16                                       |                  |
| 8   | Bonnet Nut     | ASTM A194 7                                         |                     | ASTM A194 4                                         |                  |
| 9   | Bonnet         | ASTM A352 LCB                                       |                     | ASTM A217 WC6                                       | ASTM A217 WC9    |
| 11  | Packing        | Flexible Graphite(Ta-Luft certified available)      |                     | Flexible Graphite(Ta-Luft certified available)      |                  |
| 12  | Eyebolt Pin    | AISI 1025                                           |                     | AISI 1025                                           |                  |
| 13  | Gland Eyebolt  | ASTM A320 L7                                        |                     | ASTM A193 B16                                       |                  |
| 14  | Gland Nut      | ASTM A194 7                                         |                     | ASTM A194 4                                         |                  |
| 15  | Packing Gland  | ASTM A182 F304                                      | ASTM A182 F316      | ASTM A182 F6a                                       |                  |
| 16  | Gland Flange   | ASTM A352 LCB                                       |                     | ASTM A217 WC6                                       | ASTM A217 WC9    |
| 17  | Stem Nut       | ASTM A439 D2                                        |                     | ASTM A439 D2                                        |                  |
| 18  | Retaining Nut  | Carbon Steel/ Acero Carbono                         |                     | Carbon Steel/ Acero Carbono                         |                  |
| 19  | Handwheel      | Carbon Steel/ Acero Carbono                         |                     | Carbon Steel/ Acero Carbono                         |                  |
| 22  | Grease Fitting | Brass                                               |                     | Brass                                               |                  |
| 25  | Gear           | Assembly                                            |                     | Assembly                                            |                  |
| 27  | Bellows Plate  | ASTM A276 304                                       | ASTM A276 316       | A276 304                                            |                  |
| 28  | Bellows        | SS316L(SS316Ti/Inconel/Incoloy/Hastelloy available) |                     | SS316L(SS316Ti/Inconel/Incoloy/Hastelloy available) |                  |
| 29  | Bellows Plate  | ASTM A276 304                                       | ASTM A276 316       | A276 304                                            |                  |
| 30  | Gasket         | SS304+Graphite                                      | SS316+Graphite      | SS304+Graphite                                      |                  |
| 31  | Positioner     | Carbon Steel/ Acero Carbono                         |                     | Carbon Steel/ Acero Carbono                         |                  |
| 32  | Positioner Pin | AISI 1025                                           |                     | AISI 1025                                           |                  |
| 33  | Yoke           | ASTM A352 LCB                                       |                     | ASTM A217 WC6                                       | ASTM A217 WC9    |
| 34  | Yoke Nut       | ASTM A194 7                                         |                     | ASTM A194 4                                         |                  |
| 35  | Yoke Bolt      | ASTM A320 L7                                        |                     | ASTM A193 B16                                       |                  |
| 36  | Cap            | Carbon Steel/ Acero Carbono                         |                     | Carbon Steel/ Acero Carbono                         |                  |
| 37  | Disc Guide     | St.Steel 304                                        | St.Steel 316        | St.Steel 304                                        |                  |
| 38  | Pilot plug     | ASTM A182 F304                                      | ASTM A182 F316      | ASTM A182 F11+HF                                    | ASTM A182 F22+HF |

| No. | Part name      | A217 C5         | CF8                                                 | CF8M           |
|-----|----------------|-----------------|-----------------------------------------------------|----------------|
|     |                | (84C2_)         | (84I2_)                                             | (84I0_)        |
| 1   | Body           | ASTM A217 C5+HF | ASTM A351 CF8                                       | ASTM A351 CF8M |
| 3   | Disc           | ASTM A182 F9+HF | ASTM A182 F304                                      | ASTM A182 F316 |
| 4   | Stem           |                 | ASTM A182 F304                                      | ASTM A182 F316 |
| 5   | Disc Nut       | ASTM A182 F9    | ASTM A182 F304                                      | ASTM A182 F316 |
| 6   | Gasket         |                 | SS304+Graphite                                      | SS316+Graphite |
| 7   | Bonnet Bolt    |                 | ASTM A193 B8                                        | ASTM A193 B8M  |
| 8   | Bonnet Nut     |                 | ASTM A194 8                                         | ASTM A194 8M   |
| 9   | Bonnet         | ASTM A217 C5    | ASTM A351 CF8                                       | ASTM A351 CF8M |
| 11  | Packing        |                 | Flexible Graphite(Ta-Luft certified available)      |                |
| 12  | Eyebolt Pin    |                 | AISI 304                                            |                |
| 13  | Gland Eyebolt  |                 | ASTM A193 B8                                        | ASTM A193 B8M  |
| 14  | Gland Nut      |                 | ASTM A194 8                                         | ASTM A194 8M   |
| 15  | Packing Gland  |                 | ASTM A182 F304                                      | ASTM A182 F316 |
| 16  | Gland Flange   | ASTM A217 C5    | ASTM A351 CF8                                       | ASTM A351 CF8M |
| 17  | Stem Nut       |                 | ASTM A439 D2                                        |                |
| 18  | Retaining Nut  |                 | Carbon Steel/ Acero Carbono                         |                |
| 19  | Handwheel      |                 | Carbon Steel/ Acero Carbono                         |                |
| 22  | Grease Fitting |                 | Brass                                               |                |
| 25  | Gear           |                 | Assembly                                            |                |
| 27  | Bellows Plate  |                 | ASTM A276 304                                       | ASTM A276 316  |
| 28  | Bellows        |                 | SS316L(SS316Ti/Inconel/Incoloy/Hastelloy available) |                |
| 29  | Bellows Plate  |                 | ASTM A276 304                                       | ASTM A276 316  |
| 30  | Gasket         |                 | SS304+Graphite                                      | SS316+Graphite |
| 31  | Positioner     |                 | Carbon Steel/ Acero Carbono                         |                |
| 32  | Positioner Pin |                 | AISI 1025                                           |                |
| 33  | Yoke           | ASTM A217 C5    | ASTM A351 CF8                                       | ASTM A351 CF8M |
| 34  | Yoke Nut       |                 | ASTM A194 8                                         | ASTM A194 8M   |
| 35  | Yoke Bolt      |                 | ASTM A193 B8                                        | ASTM A193 B8M  |
| 36  | Cap            |                 | Carbon Steel/ Acero Carbono                         |                |
| 37  | Disc Guide     |                 | St.Steel 304                                        | St.Steel 316   |
| 38  | Pilot plug     | ASTM A182 F9+HF | ASTM A182 F304                                      | ASTM A182 F316 |

## Main Valve Parameters - Class 150

## SERIES 84 ANSI RANGE



| Nominal Size          |                            | inch            | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"      | 8"      |
|-----------------------|----------------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|
|                       |                            | DN              | 50      | 65      | 80      | 100     | 125     | 150     | 200     |
| End connection        | RF                         | L               | 203     | 216     | 241     | 292     | 356     | 406     | 495     |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØD              | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                       |                            | ØK              | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                       |                            | ØF              | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9   | 269,9   |
|                       |                            | C               | 14,3    | 15,9    | 17,5    | 22,3    | 22,3    | 23,9    | 27      |
|                       |                            | f               | 2       | 2       | 2       | 2       | 2       | 2       | 2       |
|                       |                            | n-Ød            | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                       | BW                         | L1              | 203     | 216     | 241     | 292     | 356     | 406     | 495     |
|                       |                            | Schedule No.(1) | 40      | -       | 40      | 40      | -       | 40      | 40      |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØA1             | 60,3    | -       | 91      | 117     | -       | 172     | 223     |
|                       |                            | ØB1             | 52,48   | -       | 78      | 102     | -       | 154     | 203     |
|                       | RTJ                        | L2              | 216     | 229     | 254     | 305     | 369     | 419     | 508     |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØD              | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                       |                            | ØK              | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                       |                            | ØG              | 102     | 121     | 133     | 171     | 194     | 219     | 273     |
|                       |                            | ØP              | 82,55   | 101,6   | 114,3   | 149,23  | 171,45  | 193,68  | 247,65  |
|                       |                            | C               | 17,5    | 20,7    | 22,3    | 22,3    | 22,3    | 23,9    | 27      |
|                       |                            | n-Ød            | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                       |                            | T               | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    |
|                       |                            | S               | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    |
|                       |                            | R               | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     |
| Top works/Operation   | Hand-wheel                 | H (open)        | 391     | 459     | 500     | 593     | -       | 682     | 779     |
|                       |                            | H (close)       | 376     | 439     | 475     | 563     | -       | 642     | 724     |
|                       |                            | ØW              | 200     | 200     | 250     | 300     | -       | 400     | 450     |
|                       | Gear with handwheel        | H1              | -       | -       | -       | -       | -       | -       | -       |
|                       |                            | h1              | -       | -       | -       | -       | -       | -       | -       |
|                       |                            | g               | -       | -       | -       | -       | -       | -       | -       |
|                       |                            | ØW1             | -       | -       | -       | -       | -       | -       | -       |
|                       | With ISO 5210 mounting pad | h2              | 80      | 80      | 80      | 80      | 80      | 80      | 80      |
|                       |                            | ISO             | F07     | F07     | F10     | F10     | F12     | F12     | F14     |
|                       |                            | Torque          | 25      | 44      | 58      | 88      | 141     | 180     | 320     |
| Approx. Weight RF (3) |                            |                 | 23      | 31      | 45      | 63      | -       | 115     | 204     |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES 84 ANSI RANGE



| Nominal Size          |                            | inch            | 10"    | 12"    | 14"        | 16"        |
|-----------------------|----------------------------|-----------------|--------|--------|------------|------------|
|                       |                            | DN              | 250    | 300    | 350        | 400        |
| End connection        | RF                         | L               | 622    | 698    | 787        | 914        |
|                       |                            | ØB              | 254    | 305    | 337        | 387        |
|                       |                            | ØD              | 405    | 485    | 535        | 595        |
|                       |                            | ØK              | 362    | 431,8  | 476,3      | 539,8      |
|                       |                            | ØF              | 323,8  | 381    | 412,8      | 469,9      |
|                       |                            | C               | 28,6   | 30,2   | 33,4       | 35         |
|                       |                            | f               | 2      | 2      | 2          | 2          |
|                       |                            | n-Ød            | 12 - 1 | 12 - 1 | 12 - 1 1/8 | 16 - 1 1/8 |
|                       | BW                         | L1              | 622    | 698    | 787        | 914        |
|                       |                            | Schedule No.(1) | 40     | STD    | STD        | STD        |
|                       |                            | ØB              | 254    | 305    | 337        | 387        |
|                       |                            | ØA1             | 278    | 329    | 362        | 413        |
|                       |                            | ØB1             | 254,5  | 305    | 336,5      | 387,5      |
|                       | RTJ                        | L2              | 635    | 711    | 800        | 927        |
|                       |                            | ØB              | 254    | 305    | 337        | 387        |
|                       |                            | ØD              | 405    | 485    | 535        | 595        |
|                       |                            | ØK              | 362    | 431,8  | 476,3      | 539,8      |
|                       |                            | ØG              | 330    | 406    | 425        | 483        |
|                       |                            | ØP              | 304,8  | 381    | 396,88     | 454,03     |
|                       |                            | C               | 28,6   | 30,2   | 33,4       | 35         |
|                       |                            | n-Ød            | 12 - 1 | 12 - 1 | 12 - 1 1/8 | 16 - 1 1/8 |
|                       |                            | T               | 8,74   | 8,74   | 8,74       | 8,74       |
|                       |                            | S               | 6,35   | 6,35   | 6,35       | 6,35       |
|                       |                            | R               | 0,8    | 0,8    | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | -      | -      | -          | -          |
|                       |                            | H (close)       | -      | -      | -          | -          |
|                       |                            | ØW              | -      | -      | -          | -          |
|                       | Gear with handwheel        | H1              | 956    | 1159   | 1390       | 1689       |
|                       |                            | h1              | -      | -      | -          | -          |
|                       |                            | g               | -      | -      | -          | -          |
|                       |                            | ØW1             | 460    | 540    | 540        | 540        |
|                       | With ISO 5210 mounting pad | h2              | 100    | 100    | 100        | 120        |
|                       |                            | ISO             | F16    | F25    | F25        | F30        |
|                       |                            | Torque (Nm) (2) | 465    | 780    | 1606       | 2219       |
| Approx. Weight RF (3) |                            | 351             | 534    | 740    | 912        |            |

- (1) Other schedule nos. on request  
(2) Torque includes 30% of safety factor  
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Torques in Nm / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 84 ANSI RANGE



| Nominal Size          |                            | inch            | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"       | 8"     |
|-----------------------|----------------------------|-----------------|---------|---------|---------|---------|---------|----------|--------|
|                       |                            | DN              | 50      | 65      | 80      | 100     | 125     | 150      | 200    |
| End connection        | RF                         | L               | 267     | 292     | 318     | 356     | 400     | 444      | 559    |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                       |                            | ØD              | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                       |                            | ØK              | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                       |                            | ØF              | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9    | 269,9  |
|                       |                            | C               | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                       |                            | f               | 2       | 2       | 2       | 2       | 2       | 2        | 2      |
|                       |                            | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                       | BW                         | L1              | 267     | 292     | 318     | 356     | 400     | 444      | 559    |
|                       |                            | Schedule No.(1) | 40      | -       | 40      | 40      | -       | 40       | 40     |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                       |                            | ØA1             | 60,3    | -       | 91      | 117     | -       | 172      | 223    |
|                       |                            | ØB1             | 52,48   | -       | 78      | 102     | -       | 154      | 203    |
|                       | RTJ                        | L2              | 283     | 308     | 334     | 372     | 416     | 460      | 575    |
|                       |                            | ØB              | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                       |                            | ØD              | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                       |                            | ØK              | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                       |                            | ØG              | 108     | 127     | 146     | 175     | 210     | 241      | 302    |
|                       |                            | ØP              | 82,55   | 101,6   | 123,83  | 149,23  | 180,98  | 211,12   | 269,88 |
|                       |                            | C               | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                       |                            | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                       |                            | T               | 11,91   | 11,91   | 11,91   | 11,91   | 11,91   | 11,91    | 11,91  |
|                       |                            | S               | 7,92    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92     | 7,92   |
|                       |                            | R               | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8      | 0,8    |
| Top works/Operation   | Hand-wheel                 | H (open)        | 409     | 481     | 529     | 621     | -       | 808      | 976    |
|                       |                            | H (close)       | 394     | 461     | 504     | 591     | -       | 768      | 721    |
|                       |                            | ØW              | 250     | 250     | 250     | 300     | -       | 400      | 450    |
|                       | Gear with handwheel        | H1              | -       | -       | -       | -       | -       | -        | -      |
|                       |                            | h1              | -       | -       | -       | -       | -       | -        | -      |
|                       |                            | g               | -       | -       | -       | -       | -       | -        | -      |
|                       |                            | ØW1             | -       | -       | -       | -       | -       | -        | -      |
|                       | With ISO 5210 mounting pad | h2              | 80      | 80      | 80      | 80      | 80      | 80       | 80     |
|                       |                            | ISO             | F07     | F10     | F12     | F12     | F12     | F14      | F16    |
|                       |                            | Torque (Nm) (2) | 40      | 77      | 105     | 175     | 293     | 380      | 700    |
| Approx. Weight RF (3) |                            |                 | 31      | 44      | 62      | 84      | 99      | 182      | 300    |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 84 ANSI RANGE



| Nominal Size          |                            | inch            | 10"        | 12"        | 14"        | 16"        |
|-----------------------|----------------------------|-----------------|------------|------------|------------|------------|
|                       |                            | DN              | 250        | 300        | 350        | 400        |
| End connection        | RF                         | L               | 622        | 711        | 838        | 863        |
|                       |                            | ØB              | 254        | 305        | 337        | 387        |
|                       |                            | ØD              | 445        | 520        | 585        | 650        |
|                       |                            | ØK              | 387,4      | 450,8      | 514,4      | 571,5      |
|                       |                            | ØF              | 323,8      | 381        | 412,8      | 469,9      |
|                       |                            | C               | 46,1       | 49,3       | 52,4       | 55,6       |
|                       |                            | f               | 2          | 2          | 2          | 2          |
|                       |                            | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                       | BW                         | L1              | 622        | 711        | 838        | 863        |
|                       |                            | Schedule No.(1) | 40         | STD        | STD        | STD        |
|                       |                            | ØB              | 254        | 305        | 337        | 387        |
|                       |                            | ØA1             | 278        | 329        | 362        | 413        |
|                       |                            | ØB1             | 254,5      | 305        | 336,5      | 387,5      |
|                       | RTJ                        | L2              | 638        | 727        | 854        | 879        |
|                       |                            | ØB              | 254        | 305        | 337        | 387        |
|                       |                            | ØD              | 445        | 520        | 585        | 650        |
|                       |                            | ØK              | 387,4      | 450,8      | 514,4      | 571,5      |
|                       |                            | ØG              | 356        | 413        | 457        | 508        |
|                       |                            | ØP              | 323,85     | 981        | 419,1      | 469,9      |
|                       |                            | C               | 46,1       | 49,3       | 52,4       | 55,6       |
|                       |                            | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                       |                            | T               | 11,91      | 11,91      | 11,91      | 11,91      |
|                       |                            | S               | 7,92       | 7,92       | 7,92       | 7,92       |
|                       |                            | R               | 0,8        | 0,8        | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | -          | -          | -          | -          |
|                       |                            | H (close)       | -          | -          | -          | -          |
|                       |                            | ØW              | -          | -          | -          | -          |
|                       | Gear with handwheel        | H1              | 1118       | 1287       | 1450       | 1760       |
|                       |                            | h1              | -          | -          | -          | -          |
|                       |                            | g               | -          | -          | -          | -          |
|                       |                            | ØW1             | 610        | 610        | 610        | 610        |
|                       | With ISO 5210 mounting pad | h2              | 100        | 100        | 100        | 120        |
|                       |                            | ISO             | F25        | F30        | F30        | F30        |
|                       |                            | Torque (Nm) (2) | 1125       | 1800       | 2100       | 2500       |
| Approx. Weight RF (3) |                            | 541             | 725        | 830        | 1055       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES 84 ANSI RANGE



| Nominal Size        |                            | inch                  | 2"      | 2-1/2"  | 3"      | 4"     | 5"        | 6"         | 8"       | 10"        | 12"        |
|---------------------|----------------------------|-----------------------|---------|---------|---------|--------|-----------|------------|----------|------------|------------|
|                     |                            | DN                    | 50      | 65      | 80      | 100    | 125       | 150        | 200      | 250        | 300        |
| End connection      | RF                         | L                     | 292     | 330     | 356     | 432    | 508       | 559        | 660      | 787        | 838        |
|                     |                            | ØB                    | 51      | 65      | 76      | 102    | 128       | 152        | 200      | 248        | 299        |
|                     |                            | ØD                    | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        | 560        |
|                     |                            | ØK                    | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      | 489        |
|                     |                            | ØF                    | 92,1    | 104,8   | 127     | 157,2  | 185,7     | 215,9      | 269,9    | 323,8      | 381        |
|                     |                            | C                     | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       | 66,7       |
|                     |                            | f                     | 7       | 7       | 7       | 7      | 7         | 7          | 7        | 7          | 7          |
|                     |                            | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 | 20 - 1 3/8 |
|                     | BW                         | L1                    | 292     | 330     | 356     | 432    | 508       | 559        | 660      | 787        | 838        |
|                     |                            | Schedule No.(1)       | 80      | -       | 80      | 80     | -         | 80         | 80       | 80         | 80         |
|                     |                            | ØB                    | 51      | 65      | 76      | 102    | 128       | 152        | 200      | 248        | 299        |
|                     |                            | ØA1                   | 60,3    | -       | 91      | 117    | -         | 172        | 223      | 278        | 329        |
|                     |                            | ØB1                   | 49,22   | -       | 73,5    | 97     | -         | 146,5      | 193,5    | 243        | 289        |
|                     | RTJ                        | L2                    | 295     | 333     | 359     | 435    | 511       | 562        | 663      | 790        | 841        |
|                     |                            | ØB                    | 51      | 65      | 76      | 102    | 128       | 152        | 200      | 248        | 299        |
|                     |                            | ØD                    | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        | 560        |
|                     |                            | ØK                    | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      | 489        |
|                     |                            | ØG                    | 108     | 127     | 146     | 175    | 210       | 241        | 302      | 356        | 413        |
|                     |                            | ØP                    | 82,55   | 101,6   | 123,83  | 149,23 | 180,98    | 211,12     | 269,88   | 323,85     | 381        |
|                     |                            | C                     | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       | 66,7       |
|                     |                            | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 | 20 - 1 3/8 |
|                     |                            | T                     | 11,91   | 11,91   | 11,91   | 11,91  | 11,91     | 11,91      | 11,91    | 11,91      | 11,91      |
|                     |                            | S                     | 7,92    | 7,92    | 7,92    | 7,92   | 7,92      | 7,92       | 7,92     | 7,92       | 7,92       |
|                     |                            | R                     | 0,8     | 0,8     | 0,8     | 0,8    | 0,8       | 0,8        | 0,8      | 0,8        | 0,8        |
|                     |                            | H (open)              | 474     | 549     | 608     | 724    | -         | 1016       | 1271     | -          | -          |
| Top works/Operation | Hand-wheel                 | H (close)             | 449     | 529     | 583     | 694    | -         | 976        | 1216     | -          | -          |
|                     |                            | ØW                    | 250     | 250     | 350     | 400    | -         | 500        | 610      | -          | -          |
|                     |                            | H1                    | -       | -       | -       | -      | -         | -          | -        | 1390       | 1390       |
|                     | Gear with handwheel        | h1                    | -       | -       | -       | -      | -         | -          | -        | -          | -          |
|                     |                            | g                     | -       | -       | -       | -      | -         | -          | -        | -          | -          |
|                     |                            | ØW1                   | -       | -       | -       | -      | -         | -          | -        | 610        | 610        |
|                     |                            | h2                    | 80      | 80      | 80      | 80     | 103       | 120        | 140      | 140        | 140        |
|                     | With ISO 5210 mounting pad | ISO                   | F12     | F14     | F14     | F14    | F25       | F25        | F30      | F30        | F35        |
|                     |                            | Torque (Nm) (2)       | 160     | 289     | 385     | 365    | 615       | 800        | 1658     | 2355       | 3100       |
|                     |                            | Approx. Weight RF (3) | 49      | 65      | 80      | 134    | -         | 333        | 620      | 901        | 901        |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## SERIES 90/91 ANSI RANGE

Series 90 Gate Valves are linear motion valves devised for stopping the flow of the service fluid when necessary, not being suitable for regulating purpose. They are bolted bonnet, outside screw and yoke, rising stem, bidirectional, with metal sealing and full bore. The atmospheric sealing is achieved by flexible graphite rings. The two slightly sloped seats favor a tight shut off, being largely used in the power, chemical and oil industry sectors. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel or gear, depending on valve size and working pressure. Valves can also be arranged for automation with different kinds of actuators.

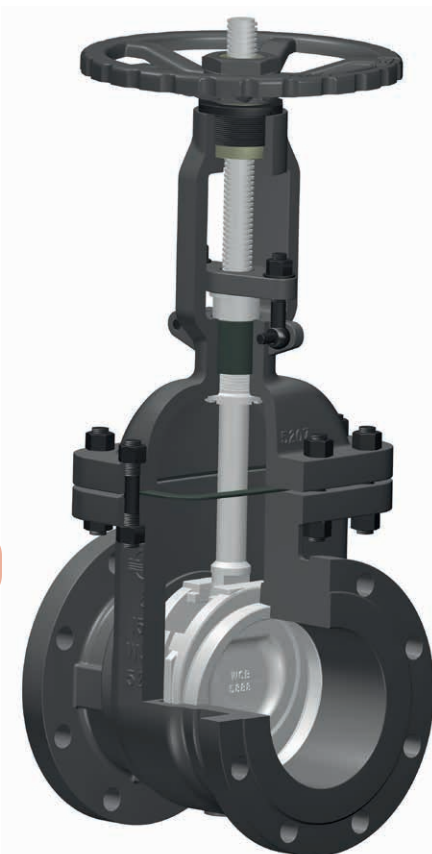
Precise machining of components for optimal performance

Outside screw and yoke, rising stem

Back Seat feature

Seat surface can be hardened to increase wear resistance

Flexible Wedge, favours the closure even at low pressures



Ergonomic non-rising handwheel

Marking for identification and full traceability purpose

Great versatility in end connections, materials and configurations

Sloped valve seats, vertical shut off, flow assists closure

Full bore, minimum pressure drop

### Main Features / Reference Standards

Design: API 600 and ASME B16.34

Pressure Rating: 150/300/600/900/1500/2500#

Face to face length: ASME B16.10

Valve end connections: Flanged RF or RTJ to ASME B16.5 (size ≤ 24") / ASME B16.47 (size > 24")  
 Welded BW to ASME B16.25

Marking: MSS SP-25

Inspections & Tests: API 598

Bidirectional design

Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)

Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

### Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us

Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"

For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III

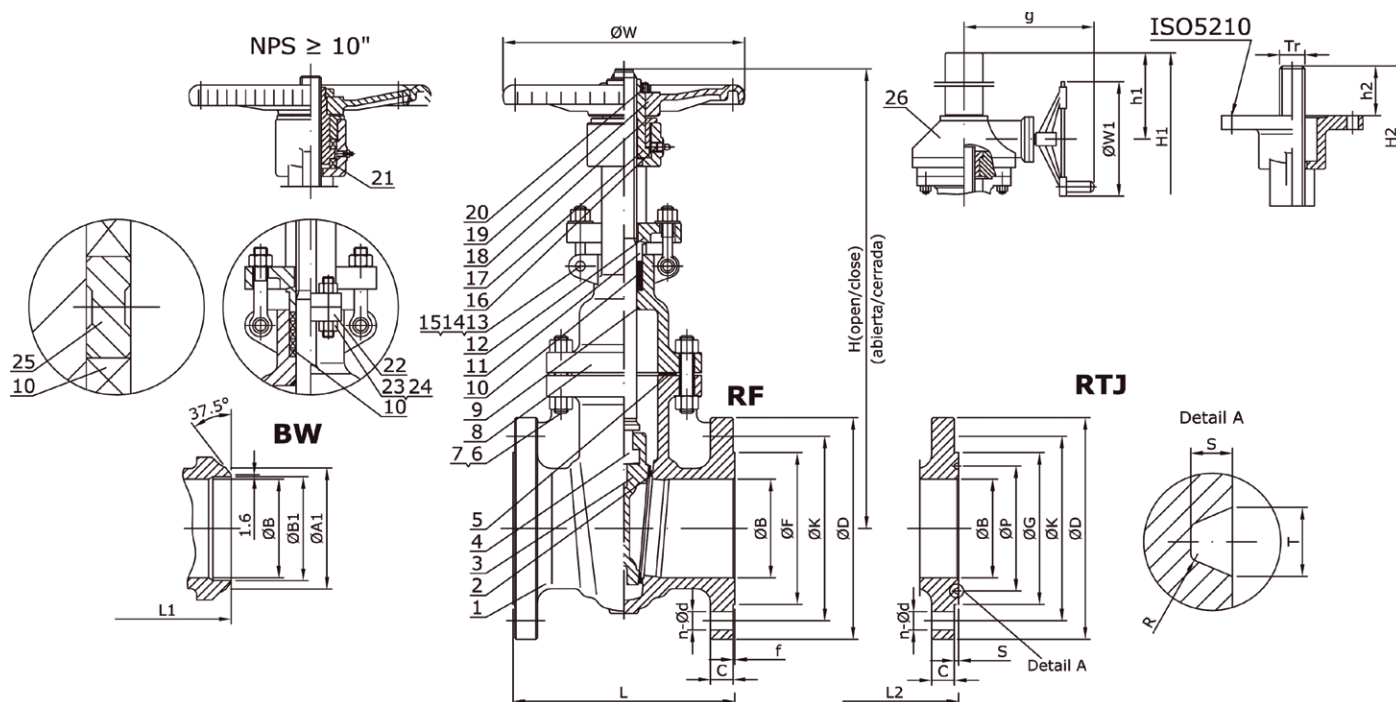
\*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Different body materials and trim combinations, different valve connections, compliance with NACE MR0175, extended bonnet, bellow seal, pressure seal, welded bonnet, lantern ring with double packing, live loaded packing, chained hand wheel, manual gear, pneumatic, electric or hydraulic actuation, limit switches, execution for aggressive atmosphere, etc. Please consult us Design acc. to API 603 for steel gate valves on request.



## Main Parts and Materials

**SERIES 90 ANSI RANGE**  
**Class 150**


| Nº | Part name        | CF8 (9012_)    | CF8M (9010_)   | CF3 (9011_)     | CF3M (9017_)    |
|----|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat Ring        | Integral SS304 | Integral+HF    | Integral SS304L | Integral SS316L |
| 3  | Wedge            | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 4  | Stem             | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Gasket           | SS304+Graphite | SS316+Graphite | SS316+Graphite  | SS316L+Graphite |
| 6  | Bonnet Bolt      | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 7  | Bonnet Nut       | A194 8         | A194 8M        | A194 8M         |                 |
| 8  | Bonnet           | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 9  | Backseat Bushing | SS304          | SS316          | SS304L          | SS316L          |
| 10 | Packing          | Graphite       |                | Graphite        |                 |
| 11 | Packing Gland    | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 12 | Gland Flange     | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 13 | Eyebolt Pin      | A276 304       | A276 316       | A276 316        |                 |
| 14 | Gland Eyebolt    | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 15 | Gland Nut        | A194 8         | A194 8M        | A194 8M         |                 |
| 16 | Grease Nipple    | St. Steel      |                | St. Steel       |                 |
| 17 | Stem Nut         | A439 D2        |                | A439 D2         |                 |
| 18 | Retaining Nut    | St. Steel      |                | St. Steel       |                 |
| 19 | Handwheel        | Steel          |                | Steel           |                 |
| 20 | Handwheel Nut    | St. Steel      |                | St. Steel       |                 |
| 21 | Bearings (1)     | Alloy Steel    |                | Alloy Steel     |                 |
| 22 | Yoke (1)         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 23 | Yoke Bolt (1)    | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 24 | Yoke Nut (1)     | A194 8         | A194 8M        | A194 8M         |                 |
| 25 | Lantern Ring (2) | A276 304       | A276 316       | A276 316        | A276 316L       |
| 26 | Gear             | Assembly       |                | Assembly        |                 |

(1) 10" and above

(2) On request

## Main Valve Parameters - Class 150

## SERIES 90 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"       | 6"       | 8"       | 10"      | 12"        | 14"        | 16"        |
|-----------------------|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|------------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80       | 100      | 125      | 150      | 200      | 250      | 300        | 350        | 400        |
| End connection        | RF                         | L               | 178      | 190      | 203      | 229      | 254      | 267      | 292      | 330      | 356        | 381        | 406        |
|                       |                            | ØB              | 51       | 63       | 76       | 102      | 127      | 152      | 203      | 254      | 305        | 337        | 387        |
|                       |                            | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      | 405      | 485        | 535        | 595        |
|                       |                            | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    | 362      | 431,8      | 476,3      | 539,8      |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7    | 215,9    | 269,9    | 323,8    | 381        | 412,8      | 469,9      |
|                       |                            | C               | 14,3     | 15,9     | 17,5     | 22,3     | 22,3     | 23,9     | 27       | 28,6     | 30,2       | 33,4       | 35         |
|                       |                            | f               | 2        | 2        | 2        | 2        | 2        | 2        | 2        | 2        | 2          | 2          | 2          |
|                       | n-Ød                       | 4 - 3/4         | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 1   | 12 - 1   | 12 - 1 1/8 | 16 - 1 1/8 |            |
|                       | BW                         | L1              | 216      | 241      | 282      | 305      | 381      | 403      | 419      | 457      | 502        | 572        | 610        |
|                       |                            | Schedule No.(1) | 40       | -        | 40       | 40       | -        | 40       | 40       | 40       | STD        | STD        | STD        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25   | 152      | 203      | 254      | 305        | 337        | 387        |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117      | -        | 172      | 223      | 278      | 329        | 362        | 413        |
|                       |                            | ØB1             | 52,48    | -        | 78       | 102      | -        | 154      | 203      | 254,5    | 305        | 336,5      | 387,5      |
|                       | RTJ                        | L2              | 191      | 203      | 216      | 242      | 267      | 280      | 305      | 343      | 369        | 394        | 419        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25   | 152      | 203      | 254      | 305        | 337        | 387        |
|                       |                            | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      | 405      | 485        | 535        | 595        |
|                       |                            | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    | 362      | 431,8      | 476,3      | 539,8      |
|                       |                            | ØG              | 102      | 121      | 133      | 171      | 194      | 219      | 273      | 330      | 406        | 425        | 483        |
|                       |                            | ØP              | 82,55    | 101,6    | 114,3    | 149,23   | 171,45   | 193,68   | 247,65   | 304,8    | 381        | 396,88     | 454,03     |
|                       |                            | C               | 17,5     | 20,7     | 22,3     | 22,3     | 22,3     | 23,9     | 27       | 28,6     | 30,2       | 33,4       | 35         |
|                       |                            | n-Ød            | 4 - 3/4  | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 1   | 12 - 1     | 12 - 1 1/8 | 16 - 1 1/8 |
|                       |                            | T               | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74       | 8,74       | 8,74       |
|                       |                            | S               | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35       | 6,35       | 6,35       |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8        | 0,8        | 0,8        |
| Top works/Operation   |                            | Hand-wheel      | H (open) | 396      | 452      | 493      | 595      | 684      | 766      | 952      | 1151       | 1376       | 1521       |
|                       | H (close)                  |                 | 336      | 376      | 406      | 473      | 543      | 595      | 738      | 879      | 1061       | 1167       | 1330       |
|                       | ØW                         |                 | 200      | 250      | 250      | 280      | 300      | 300      | 350      | 400      | 450        | 500        | 550        |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -        | -        | -        | 986      | 1205     | 1430       | 1585       | 1780       |
|                       |                            | h1              | -        | -        | -        | -        | -        | -        | 245      | 320      | 370        | 415        | 465        |
|                       |                            | g               | -        | -        | -        | -        | -        | -        | 325      | 362      | 440        | 440        | 440        |
|                       |                            | ØW1             | -        | -        | -        | -        | -        | -        | 310      | 310      | 310        | 460        | 460        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 386      | 449      | 495      | 586      | 692      | 786      | 956      | 1155     | 1376       | 1525       | 1730       |
|                       |                            | H2 (close)      | 326      | 373      | 408      | 473      | 555      | 615      | 742      | 883      | 1061       | 1171       | 1325       |
|                       |                            | h2              | 45       | 54       | 60       | 60       | 72       | 80       | 80       | 80       | 80         | 100        | 100        |
|                       |                            | ISO             | F07      | F10      | F10      | F10      | F14      | F14      | F14      | F14      | F14        | F16        | F16        |
|                       |                            | Tr              | Tr20×4LH | Tr24×5LH | Tr24×5LH | Tr26×5LH | Tr30×6LH | Tr30×6LH | Tr32×6LH | Tr36×6LH | Tr38×6LH   | Tr42×8LH   | Tr46×8LH   |
|                       |                            | Stroke          | 60       | 76       | 87       | 113      | 137      | 171      | 214      | 272      | 315        | 354        | 405        |
|                       |                            | No. of turns    | 15       | 15       | 17       | 23       | 23       | 28,5     | 36       | 45       | 53         | 44         | 51         |
|                       |                            | Torque (Nm) (2) | 36       | 42       | 47       | 85       | 102      | 115      | 202      | 267      | 350        | 480        | 686        |
| Kvs-value             |                            | 171             | 422      | 607      | 1111     | 1996     | 2650     | 4889     | 7641     | 11410    | 13910      | 18427      |            |
| Approx. Weight RF (3) |                            | 15              | 22       | 27       | 43       | 59       | 70       | 105      | 163      | 249      | 358        | 450        |            |
| Approx. Weight BW     |                            | 12              | 17       | 22       | 35       | 48       | 57       | 83       | 134      | 205      | 302        | 380        |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES 90 ANSI RANGE



| Nominal Size          |                            | inch            | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"        | 36"        | 40"        | 42"        | 48"        |
|-----------------------|----------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                       |                            | DN              | 450        | 500        | 600        | 650        | 700        | 750        | 800        | 900        | 1000       | 1050       | 1200       |
| End connection        | RF                         | L               | 432        | 457        | 508        | 559        | 610        | 610        | 610        | 711        | 812        | 812        | 1066       |
|                       |                            | ØB              | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        | 976        | 1020       | 1166       |
|                       |                            | ØD              | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       | 1290       | 1345       | 1510       |
|                       |                            | ØK              | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     | 1200,2     | 1257,3     | 1422,4     |
|                       |                            | ØF              | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914        | 1022       | 1124       | 1194       | 1359       |
|                       |                            | C               | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       | 88,9       | 95,3       | 106,4      |
|                       |                            | f               | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
|                       |                            | n-Ød            | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 | 36 - 1 5/8 | 36 - 1 5/8 | 44 - 1 5/8 |
|                       | BW                         | L1              | 660        | 711        | 813        | 864        | 914        | 914        | 965        | 1016       | 1066       | 1143       | 1371       |
|                       |                            | Schedule No.(1) | STD        | STD        | STD        | 20         | 20         | 20         | 20         | 20         | XS         | XS         | XS         |
|                       |                            | ØB              | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        | 976        | 1020       | 1166       |
|                       |                            | ØA1             | 464        | 516        | 619        | 670        | 721        | 772        | 825        | 927        | 1029       | 1079       | 1232       |
|                       |                            | ØB1             | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5      | 889        | 990,5      | 1041,5     | 1194       |
|                       | RTJ                        | L2              | 445        | 470        | 521        | -          | -          | -          | -          | -          | -          | -          | -          |
|                       |                            | ØB              | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        | -          | -          | -          |
|                       |                            | ØD              | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       | -          | -          | -          |
|                       |                            | ØK              | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     | -          | -          | -          |
|                       |                            | ØG              | 546        | 597        | 711        | 810        | 861        | 917        | 984        | 1092       | -          | -          | -          |
|                       |                            | ØP              | 517,53     | 558,8      | 673,1      | 749,3      | 800,1      | 857,25     | 914,4      | 1022,35    | -          | -          | -          |
|                       |                            | C               | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       | -          | -          | -          |
|                       |                            | n-Ød            | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 | -          | -          | -          |
|                       |                            | T               | 8,74       | 8,74       | 8,74       | 19,84      | 19,84      | 19,84      | 23,01      | 23,01      | -          | -          | -          |
|                       |                            | S               | 6,35       | 6,35       | 6,35       | 12,7       | 12,7       | 12,7       | 14,27      | 14,27      | -          | -          | -          |
|                       |                            | R               | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        | -          | -          | -          |
| Top works/Operation   | Hand-wheel                 | H (open)        | 1944       | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                       |                            | H (close)       | 1485       | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                       |                            | ØW              | 600        | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                       | Gear with handwheel        | H1              | 1984       | 2219       | 2595       | 2857       | 3019       | 3220       | 3380       | 3789       | 4254       | 4719       | 5374       |
|                       |                            | h1              | 516        | 592        | 693        | 775        | 837        | 890        | 952        | 1100       | 1248       | 1395       | 1565       |
|                       |                            | g               | 440        | 513        | 513        | 513        | 513        | 588        | 588        | 588        | 588        | 613        | 613        |
|                       |                            | ØW1             | 460        | 530        | 530        | 600        | 600        | 600        | 600        | 800        | 800        | 800        | 1000       |
|                       | With ISO 5210 mounting pad | H2 (open)       | 1949       | 2118       | 2509       | 2718       | 2922       | 3107       | 3368       | 3758       | 4151       | 4315       | 5719       |
|                       |                            | H2 (close)      | 1490       | 1607       | 1900       | 2073       | 2201       | 2332       | 2628       | 2930       | 3231       | 3360       | 4519       |
|                       |                            | h2              | 120        | 120        | 140        | 160        | 160        | 160        | 160        | 200        | 200        | 200        | 250        |
|                       |                            | ISO             | F25        | F25        | F30        | F35        | F35        | F35        | F35        | F40        | F40        | F48        | F48        |
|                       |                            | Tr              | Tr48×8LH   | Tr52×8LH   | Tr60×10LH  | Tr62×8LH   | Tr65×10LH  | Tr65×10LH  | Tr70×10LH  | Tr76×10LH  | Tr85×12LH  | Tr90×12LH  | Tr100×12LH |
|                       |                            | Stroke          | 459        | 511        | 609        | 645        | 721        | 775        | 740        | 828        | 920        | 955        | 1200       |
|                       |                            | No. of turns    | 57         | 64         | 61         | 81         | 72         | 77,5       | 74         | 83         | 77         | 80         | 100        |
|                       |                            | Torque (Nm) (2) | 903        | 1081       | 1910       | 2550       | 3560       | 3950       | 4320       | 4690       | 4850       | 5023       | 5675       |
| Kvs-value             |                            |                 | 24547      | 30564      | 44585      | 54274      | 63932      | 73705      | 88034      | 110684     | 150308     | 190855     | 286752     |
| Approx. Weight RF (3) |                            |                 | 604        | 800        | 1168       | 1680       | 1900       | 2250       | 2400       | 3500       | 4120       | 5420       | 7200       |
| Approx. Weight BW     |                            |                 | 527        | 708        | 1026       | 1508       | 1678       | 2011       | 2094       | 3060       | 2974       | 4130       | 5292       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

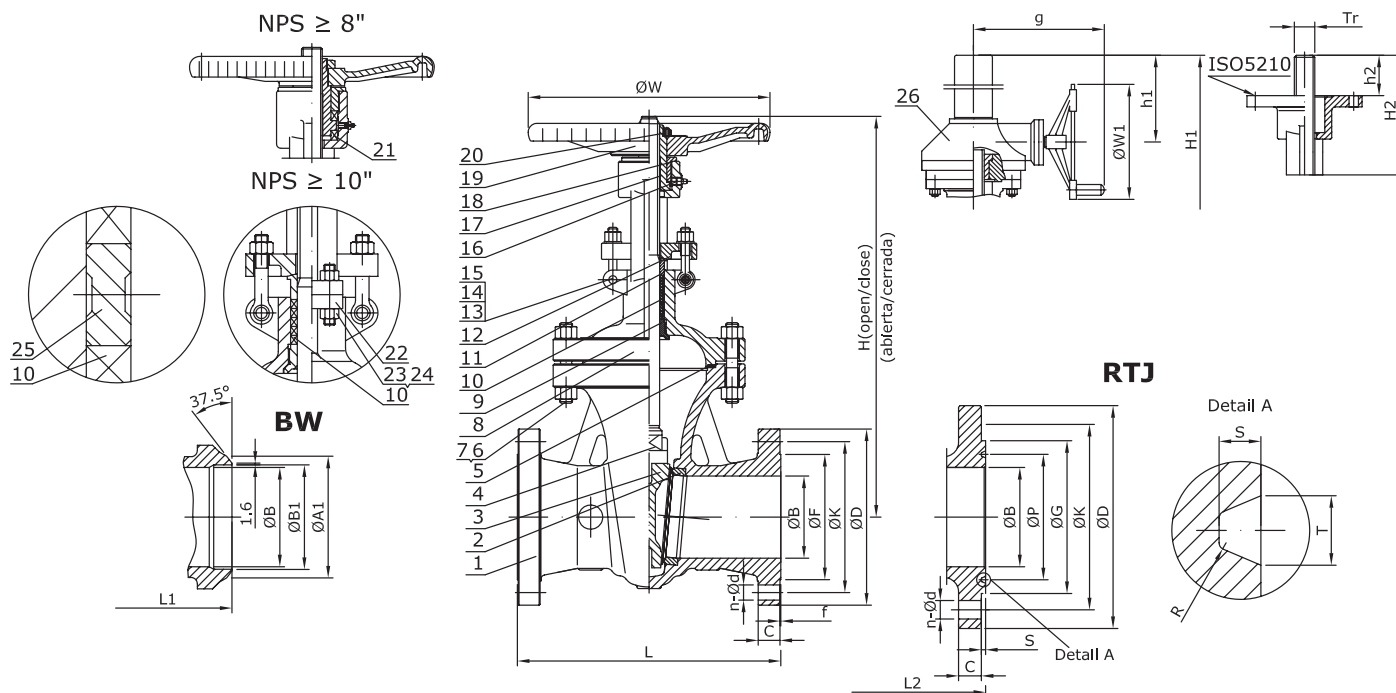
(4) To be determined

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES 90 ANSI RANGE**  
**Class 300**


| N° | Part name         | A216 WCB<br>(90A0_) | A352 LCB           |                     | A217 WC1<br>(90B1_) | A217 WC6<br>(90B8_) | A217 WC9<br>(90B9_) | A217 C5<br>(90C2_) | A217 C12<br>(90C4_) |
|----|-------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                   |                     | Trim 2<br>(90A82_) | Trim 12<br>(90A8G_) |                     |                     |                     |                    |                     |
| 1  | Body              | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring         | A105                | A182 F304          | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Wedge             | A216 WCB            | A351 CF8           | A351 CF8M           | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Stem              | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            | A182 F6a            | A182 F6a            | A182 F6a           | A182 F6a            |
| 5  | Gasket            | SS304<br>+Graphite  | SS304<br>+Graphite |                     | SS304<br>+Graphite  |                     | SS304+Graphite      |                    |                     |
| 6  | Bonnet Bolt (1)   | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 7  | Bonnet Nut (1)    | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 8  | Bonnet            | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 9  | Backseat Bushing  | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            |                     | A182 F6a            |                    |                     |
| 10 | Packing           | Graphite            | Graphite           |                     | Graphite            |                     | Graphite            |                    |                     |
| 11 | Packing Gland     | A182 F6a            | A182 F304          |                     | A182 F6a            |                     | A182 F6a            |                    |                     |
| 12 | Gland Flange      | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 13 | Eyebolt Pin       | AISI 1025           | AISI 1025          |                     | A276 410            |                     | A276 410            |                    |                     |
| 14 | Gland Eyebolt (1) | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 15 | Gland Nut (1)     | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 16 | Grease Nipple     | Carbon Steel        | Carbon Steel       |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 17 | Stem Nut          | A439 D2             | A439 D2            |                     | A439 D2             |                     | A439 D2             |                    |                     |
| 18 | Retaining Nut     | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 19 | Handwheel         | Steel               | Steel              |                     | Steel               |                     | Steel               |                    |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel        |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 22 | Yoke (3)          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 23 | Yoke Bolt (1) (3) | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 24 | Yoke Nut (1) (3)  | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 25 | Lantern Ring (4)  | A276 410            | A276 304           |                     | A276 410            |                     | A276 410            |                    |                     |
| 26 | Gear              | Assembly            | Assembly           |                     | Assembly            |                     | Assembly            |                    |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) 8" and above

(3) 10" and above

(4) On request

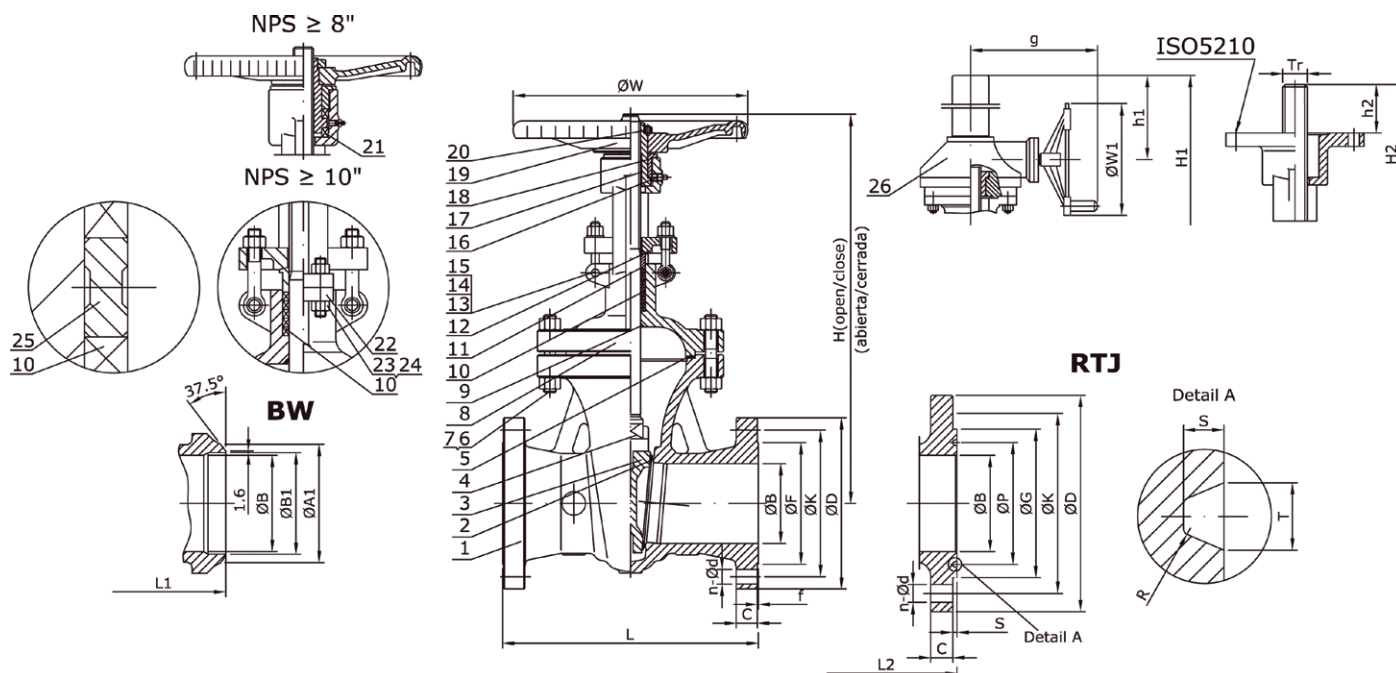
| Fig. 90A0_      | Seat Surface | Wedge Surface | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (90A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (90A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (90A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

Information / restriction of technical rules need to be observed!

Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Parts and Materials

**SERIES 90 ANSI RANGE**  
**Class 300**


| Nº | Part name        | CF8 (90I2_)    | CF8M (90I0_)   | CF3 (90I1_)     | CF3M (90I7_)    |
|----|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat Ring        | Integral SS304 | Integral+HF    | Integral SS304L | Integral SS316L |
| 3  | Wedge            | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 4  | Stem             | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Gasket           | SS304+Graphite | SS316+Graphite | SS316+Graphite  | SS316L+Graphite |
| 6  | Bonnet Bolt      | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 7  | Bonnet Nut       | A194 8         | A194 8M        | A194 8M         |                 |
| 8  | Bonnet           | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 9  | Backseat Bushing | SS304          | SS316          | SS304L          | SS316L          |
| 10 | Packing          | Graphite       |                | Graphite        |                 |
| 11 | Packing Gland    | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 12 | Gland Flange     | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 13 | Eyebolt Pin      | A276 304       | A276 316       | A276 316        |                 |
| 14 | Gland Eyebolt    | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 15 | Gland Nut        | A194 8         | A194 8M        | A194 8M         |                 |
| 16 | Grease Nipple    | St. Steel      |                | St. Steel       |                 |
| 17 | Stem Nut         | A439 D2        |                | A439 D2         |                 |
| 18 | Retaining Nut    | St. Steel      |                | St. Steel       |                 |
| 19 | Handwheel        | Steel          |                | Steel           |                 |
| 20 | Handwheel Nut    | St. Steel      |                | St. Steel       |                 |
| 21 | Bearings (1)     | Alloy Steel    |                | Alloy Steel     |                 |
| 22 | Yoke (2)         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 23 | Yoke Bolt (2)    | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 24 | Yoke Nut (2)     | A194 8         | A194 8M        | A194 8M         |                 |
| 25 | Lantern Ring (3) | A276 304       | A276 316       | A276 316        | A276 316L       |
| 26 | Gear             | Assembly       |                | Assembly        |                 |

(1) 8" and above; (2) 10" and above; (3) On request

## Main Valve Parameters - Class 300

## SERIES 90 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"       | 6"       | 8"         | 10"        | 12"        | 14"        | 16"        |
|-----------------------|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|------------|------------|------------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80       | 100      | 125      | 150      | 200        | 250        | 300        | 350        | 400        |
| End connection        | RF                         | L               | 216      | 241      | 282      | 305      | -        | 403      | 419        | 457        | 502        | 762        | 838        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25   | 152      | 203        | 254        | 305        | 337        | 387        |
|                       |                            | ØD              | 165      | 190      | 210      | 255      | 280      | 320      | 380        | 445        | 520        | 585        | 650        |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 200      | 235      | 269,9    | 330,2      | 387,4      | 450,8      | 514,4      | 571,5      |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7    | 215,9    | 269,9      | 323,8      | 381        | 412,8      | 469,9      |
|                       |                            | C               | 20,7     | 23,9     | 27       | 30,2     | 33,4     | 35       | 39,7       | 46,1       | 49,3       | 52,4       | 55,6       |
|                       |                            | f               | 2        | 2        | 2        | 2        | 2        | 2        | 2          | 2          | 2          | 2          | 2          |
|                       | n-Ød                       | 8 - 3/4         | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 7/8 | 12 - 1   | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |            |
|                       | BW                         | L1              | 216      | 241      | 282      | 305      | -        | 403      | 419        | 457        | 502        | 762        | 838        |
|                       |                            | Schedule No.(1) | 40       | -        | 40       | 40       | -        | 40       | 40         | 40         | STD        | STD        | STD        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25   | 152      | 203        | 254        | 305        | 337        | 387        |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117      | -        | 172      | 223        | 278        | 329        | 362        | 413        |
|                       |                            | ØB1             | 52,48    | -        | 78       | 102      | -        | 154      | 203        | 254,5      | 305        | 336,5      | 387,5      |
|                       | RTJ                        | L2              | 232      | 257      | 298      | 321      | -        | 419      | 435        | 473        | 518        | 778        | 854        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25   | 152      | 203        | 254        | 305        | 337        | 387        |
|                       |                            | ØD              | 165      | 190      | 210      | 255      | 280      | 320      | 380        | 445        | 520        | 585        | 650        |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 200      | 235      | 269,9    | 330,2      | 387,4      | 450,8      | 514,4      | 571,5      |
|                       |                            | ØG              | 108      | 127      | 146      | 175      | 210      | 241      | 302        | 356        | 413        | 457        | 508        |
|                       |                            | ØP              | 82,55    | 101,6    | 123,83   | 149,23   | 180,98   | 211,12   | 269,88     | 323,85     | 981        | 419,1      | 469,9      |
|                       |                            | C               | 20,7     | 23,9     | 27       | 30,2     | 33,4     | 35       | 39,7       | 46,1       | 49,3       | 52,4       | 55,6       |
|                       |                            | n-Ød            | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 7/8 | 12 - 1     | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                       |                            | T               | 11,91    | 11,91    | 11,91    | 11,91    | 11,91    | 11,91    | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      |
|                       |                            | S               | 7,92     | 7,92     | 7,92     | 7,92     | 7,92     | 7,92     | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        |
| Top works/Operation   |                            | Hand-wheel      | H (open) | 419      | 480      | 525      | 618      | 720      | 796        | 1033       | 1230       | 1403       | 1607       |
|                       | H (close)                  |                 | 359      | 408      | 445      | 503      | 581      | 639      | 817        | 963        | 1085       | 1245       | 1460       |
|                       | ØW                         |                 | 200      | 229      | 250      | 280      | 320      | 350      | 400        | 450        | 500        | 550        | 600        |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -        | -        | -        | 1091       | 1274       | 1459       | 1644       | 1806       |
|                       |                            | h1              | -        | -        | -        | -        | -        | -        | 270        | 320        | 378        | 415        | 464        |
|                       |                            | g               | -        | -        | -        | -        | -        | -        | 362        | 440        | 440        | 440        | 440        |
|                       |                            | ØW1             | -        | -        | -        | -        | -        | -        | 310        | 310        | 460        | 460        | 460        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 426      | 488      | 533      | 633      | 729      | 800      | 1033       | 1237       | 1423       | 1627       | 1885       |
|                       |                            | H2 (close)      | 366      | 416      | 453      | 518      | 590      | 643      | 817        | 970        | 1105       | 1265       | 1480       |
|                       |                            | h2              | 60       | 60       | 60       | 80       | 80       | 80       | 80         | 100        | 120        | 140        | 140        |
|                       |                            | ISO             | F10      | F10      | F10      | F14      | F14      | F14      | F14        | F16        | F25        | F30        | F30        |
|                       |                            | Tr              | Tr20×4LH | Tr24×5LH | Tr24×5LH | Tr26×5LH | Tr32×6LH | Tr32×6LH | Tr36×6LH   | Tr38×6LH   | Tr42×8LH   | Tr46×8LH   | Tr48×8LH   |
|                       |                            | Stroke          | 60       | 72       | 80       | 115      | 139      | 157      | 216        | 267        | 318        | 362        | 405        |
|                       |                            | No. of turns    | 15       | 14       | 16       | 23       | 23       | 26       | 36         | 45         | 40         | 45         | 51         |
|                       |                            | Torque (Nm) (2) | 52       | 61       | 68       | 134      | 196      | 241      | 394        | 681        | 918        | 1340       | 1703       |
| Kvs-value             |                            | 171             | 422      | 607      | 1111     | 1996     | 2650     | 4889     | 7641       | 11410      | 13910      | 18427      |            |
| Approx. Weight RF (3) |                            | 23              | 35       | 43       | 67       | 96       | 118      | 194      | 300        | 418        | 671        | 900        |            |
| Approx. Weight BW     |                            | 18              | 28       | 35       | 54       | 78       | 95       | 158      | 251        | 344        | 570        | 767        |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 90 ANSI RANGE



| Nominal Size        |                            | inch                  | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"       | 36"        | 40"        | 42"        |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|
|                     |                            | DN                    | 450        | 500        | 600        | 650        | 700        | 750        | 800       | 900        | 1000       | 1050       |
| End connection      | RF                         | L                     | 914        | 991        | 1143       | 1245       | 1346       | 1397       | 1524      | 1727       | 1955       | 2032       |
|                     |                            | ØB                    | 432        | 483        | 584        | 633        | 684        | 735        | 779       | 874        | 976        | 1020       |
|                     |                            | ØD                    | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150      | 1270       | 1240       | 1290       |
|                     |                            | ØK                    | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1    | 1168,4     | 1155,7     | 1206,5     |
|                     |                            | ØF                    | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914       | 1022       | 1086       | 1137       |
|                     |                            | C                     | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9      | 103,2      | 112,8      | 117,5      |
|                     |                            | f                     | 2          | 2          | 2          | 2          | 2          | 2          | 2         | 2          | 2          | 2          |
|                     |                            | n-Ød                  | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2    | 32 - 2 1/8 | 32 - 1 3/4 | 32 - 1 3/4 |
|                     | BW                         | L1                    | 914        | 991        | 1143       | 1245       | 1346       | 1397       | 1524      | 1727       | 1955       | 2032       |
|                     |                            | Schedule No.(1)       | STD        | STD        | STD        | 20         | 20         | 20         | 20        | 20         | XS         | XS         |
|                     |                            | ØB                    | 432        | 483        | 584        | 633        | 684        | 735        | 779       | 874        | 976        | 1020       |
|                     |                            | ØA1                   | 464        | 516        | 619        | 670        | 721        | 772        | 825       | 927        | 1029       | 1079       |
|                     |                            | ØB1                   | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5     | 889        | 990,5      | 1041,5     |
|                     | RTJ                        | L2                    | 930        | 1010       | 1165       | 1273       | 1371       | 1422       | 1552      | 1755       | -          | -          |
|                     |                            | ØB                    | 432        | 483        | 584        | 633        | 684        | 735        | 779       | 874        | -          | -          |
|                     |                            | ØD                    | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150      | 1270       | -          | -          |
|                     |                            | ØK                    | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1    | 1168,4     | -          | -          |
|                     |                            | ØG                    | 575        | 635        | 749        | 810        | 861        | 917        | 984       | 1092       | -          | -          |
|                     |                            | ØP                    | 533,4      | 584,2      | 692,15     | 749,3      | 800,1      | 857,25     | 914,4     | 1022,35    | -          | -          |
|                     |                            | C                     | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9      | 103,2      | -          | -          |
|                     |                            | n-Ød                  | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2    | 32 - 2 1/8 | -          | -          |
|                     |                            | T                     | 11,91      | 13,49      | 16,66      | 19,84      | 19,84      | 19,84      | 23,01     | 23,01      | -          | -          |
|                     |                            | S                     | 7,92       | 9,53       | 11,13      | 12,7       | 12,7       | 12,7       | 14,27     | 14,27      | -          | -          |
|                     |                            | R                     | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5       | 1,5        | -          | -          |
| Top works/Operation | Hand-wheel                 | H (open)              | 1964       | -          | -          | -          | -          | -          | -         | -          | -          | -          |
|                     |                            | H (close)             | 1516       | -          | -          | -          | -          | -          | -         | -          | -          | -          |
|                     |                            | ØW                    | 600        | -          | -          | -          | -          | -          | -         | -          | -          | -          |
|                     | Gear with handwheel        | H1                    | 1941       | 2430       | 2605       | 2880       | 3124       | 3279       | 3484      | 3888       | 4417       | 4640       |
|                     |                            | h1                    | 535        | 603        | 730        | 865        | 1015       | 1175       | 1353      | 1576       | 1829       | 2136       |
|                     |                            | g                     | 513        | 513        | 513        | 588        | 588        | 588        | 588       | 613        | 613        | 613        |
|                     |                            | ØW1                   | 530        | 530        | 600        | 600        | 600        | 600        | 600       | 800        | 800        | 1000       |
|                     |                            | H2 (open)             | 1981       | 2490       | 2673       | 2808       | 2958       | 3123       | 3289      | 3615       | -          | -          |
|                     | With ISO 5210 mounting pad | H2 (close)            | 1533       | 1990       | 2055       | 2158       | 2260       | 2372       | 2490      | 2715       | -          | -          |
|                     |                            | h2                    | 140        | 160        | 160        | 200        | 200        | 200        | 250       | 250        | -          | -          |
|                     |                            | ISO                   | F30        | F35        | F35        | F40        | F40        | F40        | F48       | F48        | -          | -          |
|                     |                            | Tr                    | Tr52×8LH   | Tr55×8LH   | Tr65×10LH  | Tr70×10LH  | Tr76×10LH  | Tr85×10LH  | Tr90×12LH | Tr100×12LH | -          | -          |
|                     |                            | Stroke                | 448        | 500        | 618        | 650        | 698        | 751        | 799       | 900        | -          | -          |
|                     |                            | No. of turns          | 56         | 63         | 62         | 65         | 70         | 75         | 67        | 75         | -          | -          |
|                     |                            | Torque (Nm) (2)       | 2059       | 2900       | 3500       | 4012       | 4500       | 4923       | 5230      | 5785       | -          | -          |
|                     |                            | Kvs-value             | 24607      | 29778      | 43632      | 53001      | 62432      | 72449      | 85966     | 107543     | 146786     | 185470     |
|                     |                            | Approx. Weight RF (3) | 1194       | 1670       | 2300       | 2800       | 3200       | 4050       | 5200      | 7500       | 9000       | 9750       |
|                     |                            | Approx. Weight BW     | 1028       | 1465       | 2004       | 2454       | 2792       | 3563       | 4638      | 6773       | 8521       | 9217       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

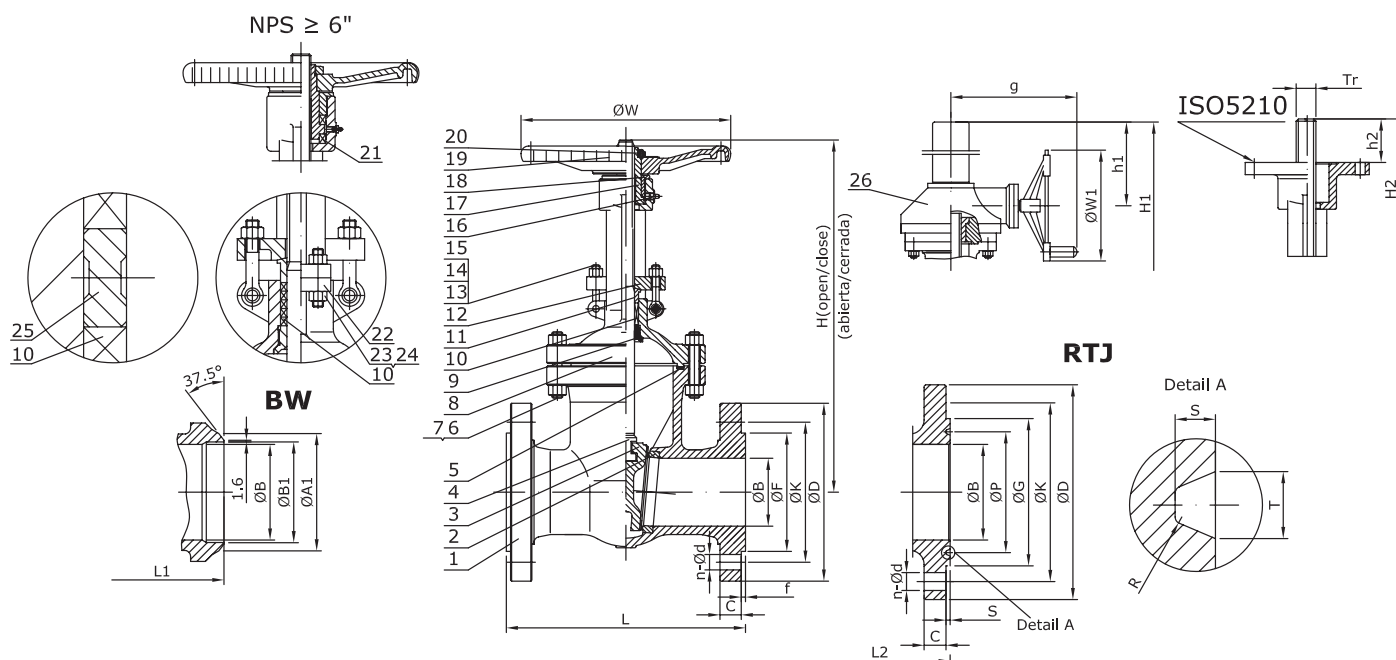
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES 90 ANSI RANGE**  
**Class 600**


| N° | Part name         | A216 WCB<br>(90A0_) | A352 LCB           |                     | A217 WC1<br>(90B1_) | A217 WC6<br>(90B8_) | A217 WC9<br>(90B9_) | A217 C5<br>(90C2_) | A217 C12<br>(90C4_) |
|----|-------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                   |                     | Trim 2<br>(90A82_) | Trim 12<br>(90A8G_) |                     |                     |                     |                    |                     |
| 1  | Body              | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring         | A105                | A182 F304          | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Wedge             | A216 WCB            | A351 CF8           | A351 CF8M           | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Stem              | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            | A182 F6a            | A182 F6a            | A182 F6a           | A182 F6a            |
| 5  | Gasket            | SS304<br>+Graphite  | SS304<br>+Graphite |                     | SS304<br>+Graphite  |                     | SS304+Graphite      |                    |                     |
| 6  | Bonnet Bolt (1)   | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 7  | Bonnet Nut (1)    | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 8  | Bonnet            | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 9  | Backseat Bushing  | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            |                     | A182 F6a            |                    |                     |
| 10 | Packing           | Graphite            | Graphite           |                     | Graphite            |                     | Graphite            |                    |                     |
| 11 | Packing Gland     | A182 F6a            | A182 F304          |                     | A182 F6a            |                     | A182 F6a            |                    |                     |
| 12 | Gland Flange      | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 13 | Eyebolt Pin       | AISI 1025           | AISI 1025          |                     | A276 410            |                     | A276 410            |                    |                     |
| 14 | Gland Eyebolt (1) | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 15 | Gland Nut (1)     | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 16 | Grease Nipple     | Carbon Steel        | Carbon Steel       |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 17 | Stem Nut          | A439 D2             | A439 D2            |                     | A439 D2             |                     | A439 D2             |                    |                     |
| 18 | Retaining Nut     | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 19 | Handwheel         | Steel               | Steel              |                     | Steel               |                     | Steel               |                    |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel        |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 22 | Yoke (2)          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 23 | Yoke Bolt (1) (2) | A193 B7             | A320 L7            |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 24 | Yoke Nut (1) (2)  | A194 2H             | A194 4             |                     | A194 4              |                     | A194 4              |                    |                     |
| 25 | Lantern Ring (3)  | A276 410            | A276 304           |                     | A276 410            |                     | A276 410            |                    |                     |
| 26 | Gear              | Assembly            | Assembly           |                     | Assembly            |                     | Assembly            |                    |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) 6" and above

(3) On request

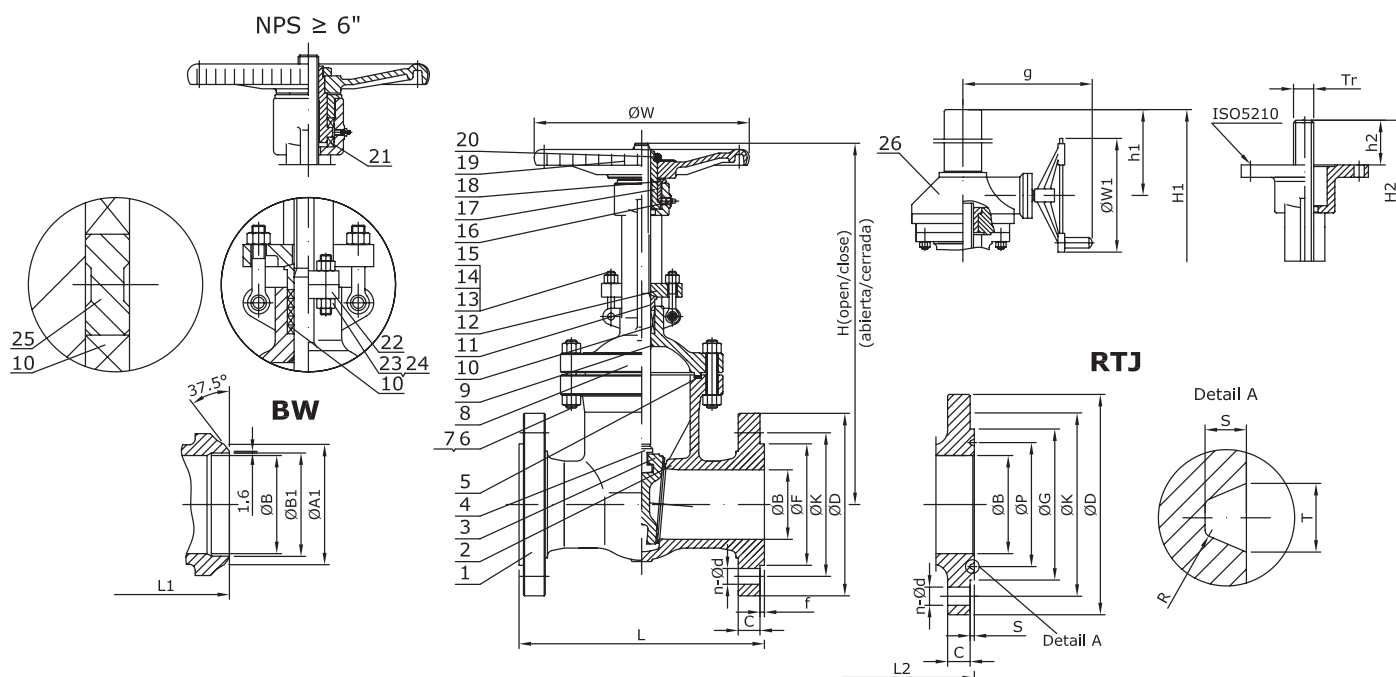
| Fig. 90A0_      | Seat Surface | Wedge Surface | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (90A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (90A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (90A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Parts and Materials

SERIES 90 ANSI RANGE  
Class 600


| Nº | Part name        | CF8 (9012_)    | CF8M (9010_)   | CF3 (9011_)     | CF3M (9017_)    |
|----|------------------|----------------|----------------|-----------------|-----------------|
| 1  | Body             | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat Ring        | Integral SS304 | Integral+HF    | Integral SS304L | Integral SS316L |
| 3  | Wedge            | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 4  | Stem             | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 5  | Gasket           | SS304+Graphite | SS316+Graphite | SS316+Graphite  | SS316L+Graphite |
| 6  | Bonnet Bolt      | A193 B8        | A193 B8M       | A193 B8M        | A193 B8M        |
| 7  | Bonnet Nut       | A194 8         | A194 8M        | A194 8M         | A194 8M         |
| 8  | Bonnet           | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 9  | Backseat Bushing | SS304          | SS316          | SS304L          | SS316L          |
| 10 | Packing          | Graphite       | Graphite       | Graphite        | Graphite        |
| 11 | Packing Gland    | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 12 | Gland Flange     | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 13 | Eyebolt Pin      | A276 304       | A276 316       | A276 316        | A276 316        |
| 14 | Gland Eyebolt    | A193 B8        | A193 B8M       | A193 B8M        | A193 B8M        |
| 15 | Gland Nut        | A194 8         | A194 8M        | A194 8M         | A194 8M         |
| 16 | Grease Nipple    | St. Steel      | St. Steel      | St. Steel       | St. Steel       |
| 17 | Stem Nut         | A439 D2        | A439 D2        | A439 D2         | A439 D2         |
| 18 | Retaining Nut    | St. Steel      | St. Steel      | St. Steel       | St. Steel       |
| 19 | Handwheel        | Steel          | Steel          | Steel           | Steel           |
| 20 | Handwheel Nut    | St. Steel      | St. Steel      | St. Steel       | St. Steel       |
| 21 | Bearings (1)     | Alloy Steel    | Alloy Steel    | Alloy Steel     | Alloy Steel     |
| 22 | Yoke (1)         | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 23 | Yoke Bolt (1)    | A193 B8        | A193 B8M       | A193 B8M        | A193 B8M        |
| 24 | Yoke Nut (1)     | A194 8         | A194 8M        | A194 8M         | A194 8M         |
| 25 | Lantern Ring (2) | A276 304       | A276 316       | A276 316        | A276 316L       |
| 26 | Gear             | Assembly       | Assembly       | Assembly        | Assembly        |

(1) 6" and above

(2) On request

## Main Valve Parameters - Class 600

## SERIES 90 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"        | 6"         | 8"       | 10"        | 12"        | 14"        | 16"        |
|-----------------------|----------------------------|-----------------|----------|----------|----------|----------|-----------|------------|----------|------------|------------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80       | 100      | 125       | 150        | 200      | 250        | 300        | 350        | 400        |
| End connection        | RF                         | L               | 292      | 330      | 356      | 432      | 508       | 559        | 660      | 787        | 838        | 889        | 991        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25    | 152        | 200      | 248        | 299        | 327        | 375        |
|                       |                            | ØD              | 165      | 190      | 210      | 275      | 330       | 355        | 420      | 510        | 560        | 605        | 685        |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    | 431,8      | 489        | 527        | 603,2      |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7     | 215,9      | 269,9    | 323,8      | 381        | 412,8      | 469,9      |
|                       |                            | C               | 25,4     | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     | 63,5       | 66,7       | 69,9       | 76,2       |
|                       |                            | f               | 7        | 7        | 7        | 7        | 7         | 7          | 7        | 7          | 7          | 7          | 7          |
|                       |                            | n-Ød            | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 |
|                       | BW                         | L1              | 292      | 330      | 356      | 432      | 508       | 559        | 660      | 787        | 838        | 889        | 991        |
|                       |                            | Schedule No.(1) | 80       | -        | 80       | 80       | -         | 80         | 80       | 80         | 80         | 80         | 80         |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25    | 152        | 200      | 248        | 299        | 327        | 375        |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117      | -         | 172        | 223      | 278        | 329        | 362        | 413        |
|                       |                            | ØB1             | 49,22    | -        | 73,5     | 97       | -         | 146,5      | 193,5    | 243        | 289        | 317,5      | 363,5      |
|                       | RTJ                        | L2              | 295      | 333      | 359      | 435      | 511       | 562        | 663      | 790        | 841        | 892        | 994        |
|                       |                            | ØB              | 51       | 65,375   | 76       | 102      | 128,25    | 152        | 200      | 248        | 299        | 327        | 375        |
|                       |                            | ØD              | 165      | 190      | 210      | 275      | 330       | 355        | 420      | 510        | 560        | 605        | 685        |
|                       |                            | ØK              | 127      | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    | 431,8      | 489        | 527        | 603,2      |
|                       |                            | ØG              | 108      | 127      | 146      | 175      | 210       | 241        | 302      | 356        | 413        | 457        | 508        |
|                       |                            | ØP              | 82,55    | 101,6    | 123,83   | 149,23   | 180,98    | 211,12     | 269,88   | 323,85     | 981        | 419,1      | 469,9      |
|                       |                            | C               | 25,4     | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     | 63,5       | 66,7       | 69,9       | 76,2       |
|                       |                            | n-Ød            | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 |
|                       |                            | T               | 11,91    | 11,91    | 11,91    | 11,91    | 11,91     | 11,91      | 11,91    | 11,91      | 11,91      | 11,91      | 11,91      |
|                       |                            | S               | 7,92     | 7,92     | 7,92     | 7,92     | 7,92      | 7,92       | 7,92     | 7,92       | 7,92       | 7,92       | 7,92       |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8       | 0,8        | 0,8      | 0,8        | 0,8        | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 428      | 491      | 537      | 641      | 773       | 871        | 1046     | 1289       | -          | -          | -          |
|                       |                            | H (close)       | 367      | 414      | 449      | 528      | 629       | 704        | 830      | 1019       | -          | -          | -          |
|                       |                            | ØW              | 220      | 255      | 280      | 300      | 329       | 350        | 450      | 600        | -          | -          | -          |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -        | -         | 913        | 1109     | 1325       | 1520       | 1730       | 1840       |
|                       |                            | h1              | -        | -        | -        | -        | -         | 222        | 278      | 326        | 378        | 453        | 505        |
|                       |                            | g               | -        | -        | -        | -        | -         | 440        | 440      | 440        | 513        | 513        | 513        |
|                       |                            | ØW1             | -        | -        | -        | -        | -         | 310        | 460      | 460        | 460        | 530        | 530        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 429      | 491      | 537      | 649      | 769       | 857        | 1046     | 1294       | 1520       | 1730       | 1830       |
|                       |                            | H2 (close)      | 368      | 415      | 449      | 536      | 625       | 690        | 830      | 1024       | 1220       | 1380       | 1435       |
|                       |                            | h2              | 60       | 60       | 60       | 80       | 80        | 80         | 100      | 120        | 140        | 140        | 160        |
|                       |                            | ISO             | F10      | F10      | F10      | F14      | F14       | F14        | F16      | F25        | F30        | F30        | F35        |
|                       |                            | Tr              | Tr22×5LH | Tr26×5LH | Tr26×5LH | Tr30×6LH | Tr38×6LH  | Tr38×6LH   | Tr42×8LH | Tr48×8LH   | Tr52×8LH   | Tr58×8LH   | Tr62×8LH   |
|                       |                            | Stroke          | 61       | 76,525   | 88       | 113      | 144,05    | 167        | 216      | 270        | 300        | 350        | 395        |
|                       |                            | No. of turns    | 12       | 15       | 18       | 19       | 24        | 28         | 27       | 34         | 38         | 44         | 49         |
|                       |                            | Torque (Nm) (2) | 60       | 78       | 91       | 158      | 291       | 389        | 639      | 1019       | 1492       | 1923       | 2256       |
| Kvs-value             |                            | 171             | 422      | 607      | 1111     | 1996     | 2650      | 4701       | 7252     | 10983      | 13137      | 17239      |            |
| Approx. Weight RF (3) |                            | 30              | 44       | 55       | 98       | 156      | 198       | 345        | 630      | 956        | 1150       | 1530       |            |
| Approx. Weight BW     |                            | 23              | 34       | 42       | 75       | 120      | 154       | 281        | 527      | 834        | 970        | 1302       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES 90 ANSI RANGE



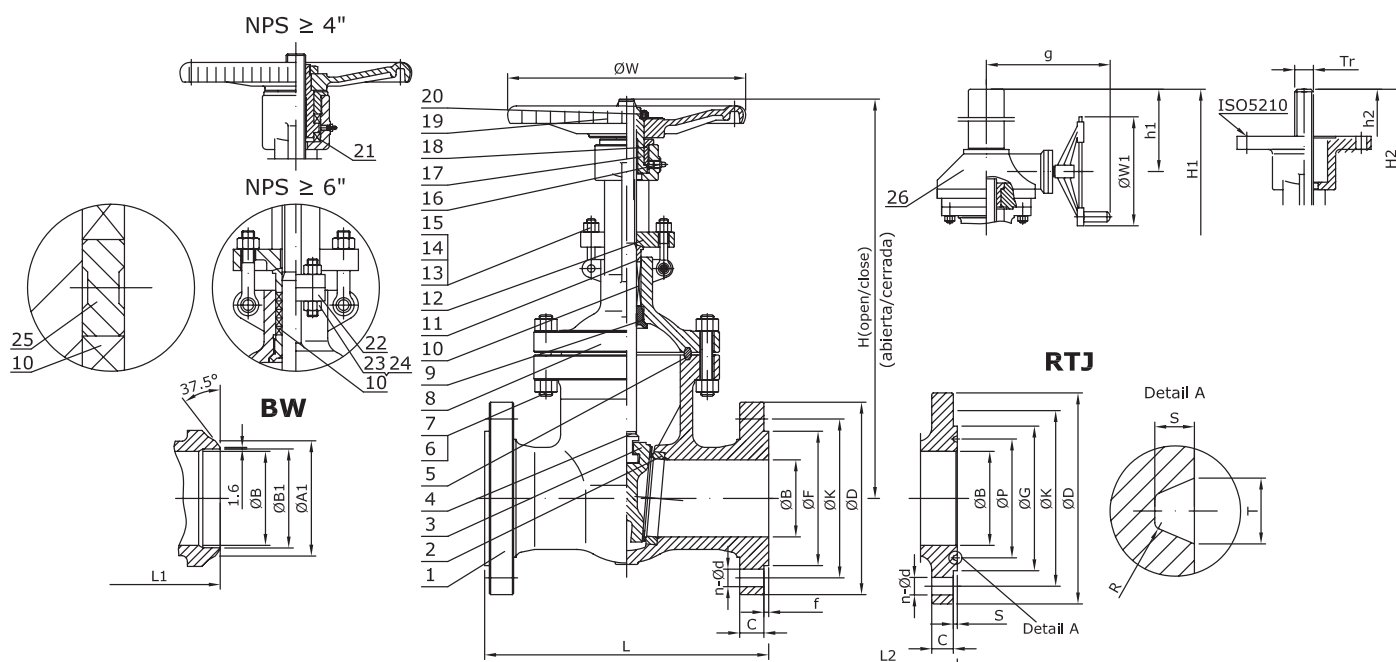
| Nominal Size        |                            | inch                  | 18"        | 20"        | 24"       | 26"       | 28"        | 30"        | 32"        | 36"        | 40"        | 42"        |
|---------------------|----------------------------|-----------------------|------------|------------|-----------|-----------|------------|------------|------------|------------|------------|------------|
|                     |                            | DN                    | 450        | 500        | 600       | 650       | 700        | 750        | 800        | 900        | 1000       | 1050       |
| End connection      | RF                         | L                     | 1092       | 1194       | 1397      | 1448      | 1549       | 1651       | 1778       | 2083       | 2149       | 2260       |
|                     |                            | ØB                    | 419        | 464        | 559       | 603       | 648        | 695        | 779        | 874        | 976        | 1020       |
|                     |                            | ØD                    | 745        | 815        | 940       | 1015      | 1075       | 1130       | 1195       | 1315       | 1320       | 1405       |
|                     |                            | ØK                    | 654        | 723,9      | 838,2     | 914,4     | 965,2      | 1022,4     | 1079,5     | 1193,8     | 1212,8     | 1282,7     |
|                     |                            | ØF                    | 533,4      | 584,2      | 692,2     | 749       | 800        | 857        | 914        | 1022       | 1111       | 1168       |
|                     |                            | C                     | 82,6       | 88,9       | 101,6     | 108       | 111,2      | 114,3      | 117,5      | 123,9      | 158,8      | 168,3      |
|                     |                            | f                     | 7          | 7          | 7         | 7         | 7          | 7          | 7          | 7          | 7          | 7          |
|                     |                            | n-Ød                  | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2    | 28 - 2    | 28 - 2 1/8 | 28 - 2 1/8 | 28 - 2 3/8 | 28 - 2 5/8 | 32 - 2 3/8 | 28 - 2 5/8 |
|                     | BW                         | L1                    | 1092       | 1193       | 1397      | 1448      | 1549       | 1651       | 1778       | 2083       | 2149       | 2260       |
|                     |                            | Schedule No.(1)       | 80         | 80         | 80        | -         | -          | -          | -          | -          | -          | -          |
|                     |                            | ØB                    | 419        | 464        | 559       | 603       | 648        | 695        | 779        | 874        | 976        | 1020       |
|                     |                            | ØA1                   | 464        | 516        | 619       | -         | -          | -          | -          | -          | -          | -          |
|                     |                            | ØB1                   | 409,5      | 455,5      | 547,5     | -         | -          | -          | -          | -          | -          | -          |
|                     | RTJ                        | L2                    | 1095       | 1200       | 1407      | 1461      | 1562       | 1664       | 1794       | 2099       | -          | -          |
|                     |                            | ØB                    | 419        | 464        | 559       | 603       | 648        | 695        | 779        | 874        | -          | -          |
|                     |                            | ØD                    | 745        | 815        | 940       | 1015      | 1075       | 1130       | 1195       | 1315       | -          | -          |
|                     |                            | ØK                    | 654        | 723,9      | 838,2     | 914,4     | 965,2      | 1022,4     | 1079,5     | 1193,8     | -          | -          |
|                     |                            | ØG                    | 575        | 635        | 749       | 810       | 861        | 917        | 984        | 1092       | -          | -          |
|                     |                            | ØP                    | 533,4      | 584,2      | 692,15    | 749,3     | 800,1      | 857,25     | 914,4      | 1022,35    | -          | -          |
|                     |                            | C                     | 82,6       | 88,9       | 101,6     | 108       | 111,2      | 114,3      | 117,5      | 123,9      | -          | -          |
|                     |                            | n-Ød                  | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2    | 28 - 2    | 28 - 2 1/8 | 28 - 2 1/8 | 28 - 2 3/8 | 28 - 2 5/8 | -          | -          |
|                     |                            | T                     | 11,91      | 13,49      | 16,66     | 19,84     | 19,84      | 19,84      | 23,01      | 23,01      | -          | -          |
|                     |                            | S                     | 7,92       | 9,53       | 11,13     | 12,7      | 12,7       | 12,7       | 14,27      | 14,27      | -          | -          |
|                     |                            | R                     | 0,8        | 1,5        | 1,5       | 1,5       | 1,5        | 1,5        | 1,5        | 1,5        | -          | -          |
| Top works/Operation | Hand-wheel                 | H (open)              | -          | -          | -         | -         | -          | -          | -          | -          | -          | -          |
|                     |                            | H (close)             | -          | -          | -         | -         | -          | -          | -          | -          | -          | -          |
|                     |                            | ØW                    | -          | -          | -         | -         | -          | -          | -          | -          | -          | -          |
|                     | Gear with handwheel        | H1                    | 2370       | 2600       | 3160      | 3358      | 3449       | 3650       | 3789       | 4175       | 4386       | 4496       |
|                     |                            | h1                    | 553        | 601        | 653       | 735       | 860        | 923        | 1015       | 1206       | 1459       | 1565       |
|                     |                            | g                     | 513        | 588        | 588       | 613       | 613        | 613        | 698        | 698        | 698        | 698        |
|                     |                            | ØW1                   | 530        | 600        | 600       | 800       | 800        | 800        | 800        | 800        | 1000       | 1000       |
|                     |                            | H2 (open)             | 2355       | 2580       | 2685      | 2949      | 3115       | 3260       | -          | -          | -          | -          |
|                     | With ISO 5210 mounting pad | H2 (close)            | 1915       | 2095       | 2155      | 2299      | 2403       | 2508       | -          | -          | -          | -          |
|                     |                            | h2                    | 160        | 160        | 200       | 200       | 250        | 250        | -          | -          | -          | -          |
|                     |                            | ISO                   | F35        | F35        | F40       | F40       | F48        | F48        | -          | -          | -          | -          |
|                     |                            | Tr                    | Tr65×10LH  | Tr70×10LH  | Tr76×10LH | Tr85×10LH | Tr90×12LH  | Tr100×12LH | -          | -          | -          | -          |
|                     |                            | Stroke                | 440        | 485        | 530       | 650       | 712        | 752        | -          | -          | -          | -          |
|                     |                            | No. of turns          | 44         | 49         | 53        | 65        | 59         | 63         | -          | -          | -          | -          |
|                     |                            | Torque (Nm) (2)       | 3082       | 3833       | 4652      | 5885      | 6300       | 6952       | -          | -          | -          | -          |
|                     |                            | Kvs-value             | 22393      | 27436      | 39957     | 48120     | 56325      | 64547      | 72803      | 97650      | 133442     | 168609     |
|                     |                            | Approx. Weight RF (3) | 2110       | 2500       | 3900      | 4600      | 5200       | 7000       | 9800       | 11200      | 14300      | 17200      |
|                     |                            | Approx. Weight BW     | 1822       | 2146       | 3462      | 4025      | 4554       | 6270       | 8973       | 10158      | 13326      | 16000      |

- (1) Other schedule nos. on request  
 (2) Torque includes 30% of safety factor  
 (3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
 Kvs-values in m³/h / Torques in Nm / Weights in kg  
 For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

## SERIES 90 ANSI RANGE Class 900



| Nº | Part name         | A216 WCB<br>(90A0_) | A352 LCB            |                     | A217 WC1<br>(90B1_) | A217 WC6<br>(90B8_) | A217 WC9<br>(90B9_) | A217 C5<br>(90C2_) | A217 C12<br>(90C4_) |
|----|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                   |                     | Trim 15<br>(90A8K_) | Trim 16<br>(90A8L_) |                     |                     |                     |                    |                     |
| 1  | Body              | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring         | A105                | A182 F304+HF        | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Wedge             | A216 WCB            | A351 CF8+HF         | A351 CF8M+HF        | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Stem              | A182 F6a            | A182 F304           | Nitronic 50         | A182 F6a            | A182 F6a            | A182 F6a            | A182 F6a           | A182 F6a            |
| 5  | Gasket            | SS304               | SS304               |                     | SS304               |                     | SS304+Graphite      |                    |                     |
| 6  | Bonnet Bolt (1)   | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 7  | Bonnet Nut (1)    | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 8  | Bonnet            | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 9  | Backseat Bushing  | A182 F6a            | A182 F304           | A182 F316           | A182 F6a            |                     | A182 F6a            |                    |                     |
| 10 | Packing           | Graphite            | Graphite            |                     | Graphite            |                     | Graphite            |                    |                     |
| 11 | Packing Gland     | A182 F6a            | A182 F304           |                     | A182 F6a            |                     | A182 F6a            |                    |                     |
| 12 | Gland Flange      | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 13 | Eyebolt Pin       | AISI 1025           | AISI 1025           |                     | A276 410            |                     | A276 410            |                    |                     |
| 14 | Gland Eyebolt (1) | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 15 | Gland Nut (1)     | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 16 | Grease Nipple     | Carbon Steel        | Carbon Steel        |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 17 | Stem Nut          | A439 D2             | A439 D2             |                     | A439 D2             |                     | A439 D2             |                    |                     |
| 18 | Retaining Nut     | Carbon Steel        | Carbon Steel        |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 19 | Handwheel         | Steel               | Steel               |                     | Steel               |                     | Steel               |                    |                     |
| 20 | Handwheel Nut     | Carbon Steel        | Carbon Steel        |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 21 | Bearings (2)      | Alloy Steel         | Alloy Steel         |                     | Alloy Steel         |                     | Alloy Steel         |                    |                     |
| 22 | Yoke (3)          | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 23 | Yoke Bolt (1) (3) | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 24 | Yoke Nut (1) (3)  | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 25 | Lantern Ring (4)  | A276 410            | A276 304            |                     | A276 410            |                     | A276 410            |                    |                     |
| 26 | Gear              | Assembly            | Assembly            |                     | Assembly            |                     | Assembly            |                    |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

(2) Class 900: 4" and above

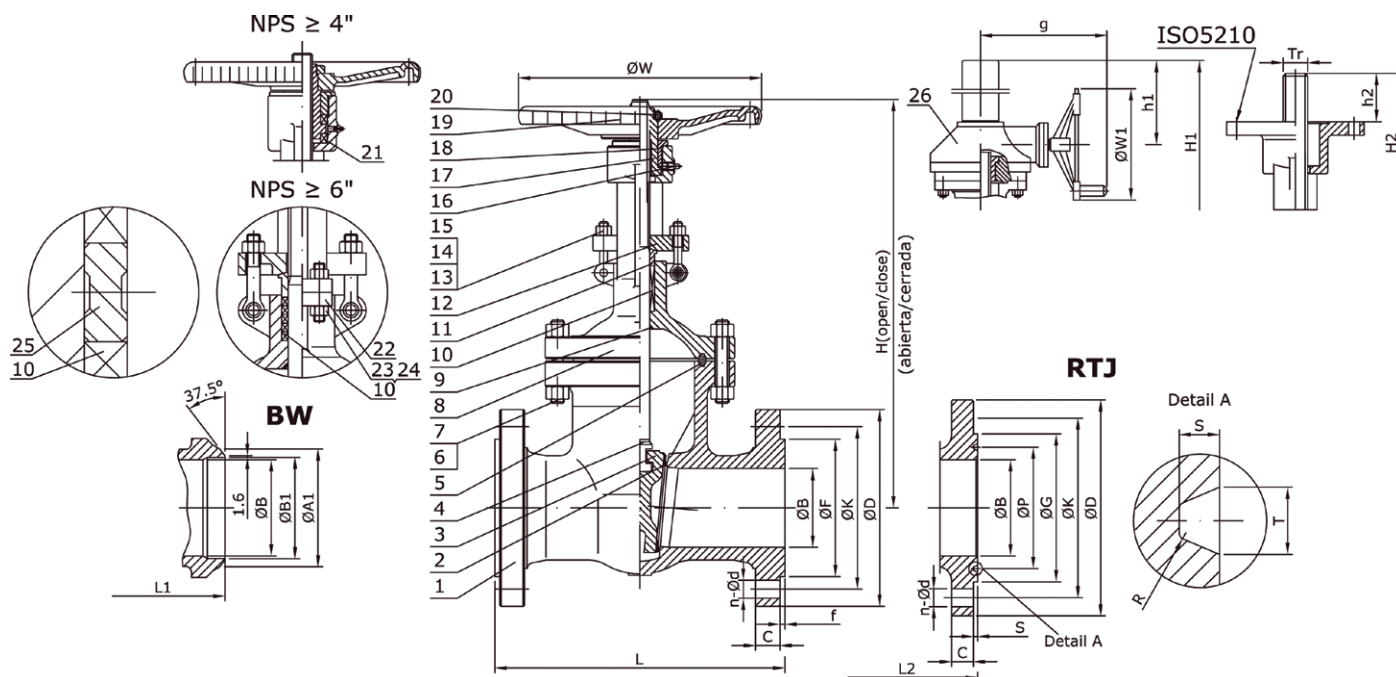
(3) Class 900: 6" and above

(4) On request

| Fig. 90A0_      | Seat Surface | Wedge Surface | Stem     |
|-----------------|--------------|---------------|----------|
| TRIM #1 (90A01) | A105+13Cr    | A216 WCB+13Cr | A182 F6a |
| TRIM #5 (90A05) | A105+HF      | A216 WCB+HF   | A182 F6a |
| TRIM #8 (90A08) | A105+HF      | A216 WCB+13Cr | A182 F6a |

HF = Hard faced

## Main Parts and Materials

**SERIES 90 ANSI RANGE**  
**Class 900**


| Nº | Part name        | CF8 (90I2_) | CF8M (90I0_) | CF3 (90I1_) | CF3M (90I7_) |
|----|------------------|-------------|--------------|-------------|--------------|
| 1  | Body             | A351 CF8    | A351 CF8M    | A351 CF3    | A351 CF3M    |
| 2  | Seat Ring        | Integral+HF | Integral+HF  | Integral+HF | Integral+HF  |
| 3  | Wedge            | A351 CF8+HF | A351 CF8M+HF | A351 CF3+HF | A351 CF3M+HF |
| 4  | Stem             | A182 F304   | Nitronic 50  | A182 F304L  | Nitronic 50  |
| 5  | Gasket           | SS304       | SS316        | SS316       | SS316L       |
| 6  | Bonnet Bolt      | A193 B8     | A193 B8M     | A193 B8M    |              |
| 7  | Bonnet Nut       | A194 8      | A194 8M      | A194 8M     |              |
| 8  | Bonnet           | A351 CF8    | A351 CF8M    | A351 CF3    | A351 CF3M    |
| 9  | Backseat Bushing | SS304       | SS316        | SS304L      | SS316L       |
| 10 | Packing          | Graphite    |              | Graphite    |              |
| 11 | Packing Gland    | A182 F304   | A182 F316    | A182 F304L  | A182 F316L   |
| 12 | Gland Flange     | A351 CF8    | A351 CF8M    | A351 CF3    | A351 CF3M    |
| 13 | Eyebolt Pin      | A276 304    | A276 316     | A276 316    |              |
| 14 | Gland Eyebolt    | A193 B8     | A193 B8M     | A193 B8M    |              |
| 15 | Gland Nut        | A194 8      | A194 8M      | A194 8M     |              |
| 16 | Grease Nipple    | St. Steel   |              | St. Steel   |              |
| 17 | Stem Nut         | A439 D2     |              | A439 D2     |              |
| 18 | Retaining Nut    | St. Steel   |              | St. Steel   |              |
| 19 | Handwheel        | Steel       |              | Steel       |              |
| 20 | Handwheel Nut    | St. Steel   |              | St. Steel   |              |
| 21 | Bearings (1)     | Alloy Steel |              | Alloy Steel |              |
| 22 | Yoke (2)         | A351 CF8    | A351 CF8M    | A351 CF3    | A351 CF3M    |
| 23 | Yoke Bolt (2)    | A193 B8     | A193 B8M     | A193 B8M    |              |
| 24 | Yoke Nut (2)     | A194 8      | A194 8M      | A194 8M     |              |
| 25 | Lantern Ring (3) | A276 304    | A276 316     | A276 316    | A276 316L    |
| 26 | Gear             | Assembly    |              | Assembly    |              |

(1) Class 900: 4" and above; (2) Class 900: 6" and above; (3) On request

## Main Valve Parameters - Class 900

## SERIES 90 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"       | 4"        | 5"        | 6"         | 8"         | 10"        | 12"        |
|-----------------------|----------------------------|-----------------|----------|----------|----------|-----------|-----------|------------|------------|------------|------------|
|                       |                            | DN              | 50       | 65       | 80       | 100       | 125       | 150        | 200        | 250        | 300        |
| End connection        | RF                         | L               | 368      | 419      | 381      | 457       | 559       | 610        | 737        | 838        | 965        |
|                       |                            | ØB              | 48       | 62,375   | 73       | 98        | 123,2     | 146        | 191        | 238        | 282        |
|                       |                            | ØD              | 215      | 245      | 240      | 290       | 350       | 380        | 470        | 545        | 610        |
|                       |                            | ØK              | 165,1    | 190,5    | 190,5    | 235       | 279,4     | 317,5      | 393,7      | 469,9      | 533,4      |
|                       |                            | ØF              | 92,1     | 104,8    | 127      | 157,2     | 185,7     | 215,9      | 269,9      | 323,8      | 381        |
|                       |                            | C               | 38,1     | 41,3     | 38,1     | 44,5      | 50,8      | 55,6       | 63,5       | 69,9       | 79,4       |
|                       |                            | f               | 7        | 7        | 7        | 7         | 7         | 7          | 7          | 7          | 7          |
|                       |                            | n-Ød            | 8 - 7/8  | 8 -1     | 8 - 7/8  | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 | 16 - 1 3/8 | 20 - 1 3/8 |
|                       | BW                         | L1              | 368      |          | 381      | 457       |           | 610        | 737        | 838        | 965        |
|                       |                            | Schedule No.(1) | 160      | -        | 160      | 120       | -         | 120        | 100        | 100        | 100        |
|                       |                            | ØB              | 48       | 62,375   | 73       | 98        | 123,2     | 146        | 191        | 238        | 282        |
|                       |                            | ØA1             | 60,3     | -        | 91       | 117       | -         | 172        | 223        | 278        | 329        |
|                       |                            | ØB1             | 38,16    | -        | 66,5     | 92        | -         | 140        | 189        | 236,5      | 281        |
|                       | RTJ                        | L2              | 371      | 422      | 384      | 460       | 562       | 613        | 740        | 841        | 968        |
|                       |                            | ØB              | 48       | 62,375   | 73       | 98        | 123,2     | 146        | 191        | 238        | 282        |
|                       |                            | ØD              | 215      | 245      | 240      | 290       | 350       | 380        | 470        | 545        | 610        |
|                       |                            | ØK              | 165,1    | 190,5    | 190,5    | 235       | 279,4     | 317,5      | 393,7      | 469,9      | 533,4      |
|                       |                            | ØG              | 124      | 137      | 156      | 181       | 216       | 241        | 308        | 362        | 419        |
|                       |                            | ØP              | 95,25    | 107,95   | 123,83   | 149,23    | 180,98    | 211,12     | 269,88     | 323,85     | 381        |
|                       |                            | C               | 38,1     | 41,3     | 38,1     | 44,5      | 50,8      | 55,6       | 63,5       | 69,9       | 79,4       |
|                       |                            | n-Ød            | 8 - 7/8  | 8 -1     | 8 - 7/8  | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 | 16 - 1 3/8 | 20 - 1 3/8 |
|                       |                            | T               | 11,91    | 11,91    | 11,91    | 11,91     | 11,91     | 11,91      | 11,91      | 11,91      | 11,91      |
|                       |                            | S               | 7,92     | 7,92     | 7,92     | 7,92      | 7,92      | 7,92       | 7,92       | 7,92       | 7,92       |
|                       |                            | R               | 0,8      | 0,8      | 0,8      | 0,8       | 0,8       | 0,8        | 0,8        | 0,8        | 0,8        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 516      | 601      | 663      | 770       | -         | -          | -          | -          | -          |
|                       |                            | H (close)       | 471      | 539      | 590      | 673       | -         | -          | -          | -          | -          |
|                       |                            | ØW              | 250      | 279      | 300      | 350       | -         | -          | -          | -          | -          |
|                       | Gear with handwheel        | H1              | -        | -        | -        | -         | -         | 1035       | 1195       | 1354       | 1562       |
|                       |                            | h1              | -        | -        | -        | -         | -         | 228        | 278        | 341        | 385        |
|                       |                            | g               | -        | -        | -        | -         | -         | 440        | 440        | 513        | 513        |
|                       |                            | ØW1             | -        | -        | -        | -         | -         | 460        | 460        | 530        | 530        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 510      | 611      | 686      | 770       | 825       | 865        | 965        | 1280       | 1482       |
|                       |                            | H2 (close)      | 466      | 551      | 613      | 673       | 697       | 715        | 768        | 1042       | 1175       |
|                       |                            | h2              | 60       | 72       | 80       | 80        | 103       | 120        | 120        | 140        | 140        |
|                       |                            | ISO             | F10      | F14      | F14      | F14       | F25       | F25        | F25        | F30        | F30        |
|                       |                            | Tr              | Tr26×5LH | Tr30×6LH | Tr30×6LH | Tr32×6LH  | Tr42×8LH  | Tr42×8LH   | Tr48×8LH   | Tr55×8LH   | Tr58×8LH   |
|                       |                            | Stroke          | 44       | 61       | 73       | 97        | 127       | 150        | 197        | 238        | 307        |
|                       |                            | No. of turns    | 9        | 10       | 12       | 16        | 16        | 19         | 25         | 30         | 38         |
|                       |                            | Torque (Nm) (2) | 105      | 128      | 145      | 240       | 565       | 805        | 1162       | 1485       | 1806       |
| Kvs-value             |                            | 132             | 376      | 556      | 1026     | 1837      | 2436      | 4295       | 6709       | 9829       |            |
| Approx. Weight RF (3) |                            | 100             | 114      | 125      | 170      | 311       | 415       | 620        | 880        | 1400       |            |
| Approx. Weight BW     |                            | 86              | 99       | 108      | 142      | 265       | 355       | 518        | 738        | 1204       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 900

## SERIES 90 ANSI RANGE



| Nominal Size        |                            | inch                  | 14"        | 16"        | 18"        | 20"       | 24"        | 26"        | 28"        | 30"        |
|---------------------|----------------------------|-----------------------|------------|------------|------------|-----------|------------|------------|------------|------------|
|                     |                            | DN                    | 350        | 400        | 450        | 500       | 600        | 650        | 700        | 750        |
| End connection      | RF                         | L                     | 1029       | 1130       | 1219       | 1321      | 1549       | 1574       | 1663       | 1778       |
|                     |                            | ØB                    | 311        | 356        | 400        | 445       | 533        | 578        | 622        | 667        |
|                     |                            | ØD                    | 640        | 705        | 785        | 855       | 1040       | 1085       | 1170       | 1230       |
|                     |                            | ØK                    | 558,8      | 616        | 685,8      | 749,3     | 901,7      | 952,5      | 1022,4     | 1085,8     |
|                     |                            | ØF                    | 412,8      | 469,9      | 533,4      | 584,2     | 692,2      | 749        | 800        | 857        |
|                     |                            | C                     | 85,8       | 88,9       | 101,6      | 108       | 139,7      | 139,7      | 142,9      | 149,3      |
|                     |                            | f                     | 7          | 7          | 7          | 7         | 7          | 7          | 7          | 7          |
|                     |                            | n-Ød                  | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2    | 20 - 2 1/2 | 20 - 2 7/8 | 20 - 3 1/8 | 20 - 3 1/8 |
|                     | BW                         | L1                    | 1029       | 1130       | 1219       | 1321      | 1549       | 1574       | 1663       | 1778       |
|                     |                            | Schedule No.(1)       | 100        | 100        | 100        | 100       | 100        | -          | -          | -          |
|                     |                            | ØB                    | 311        | 356        | 400        | 445       | 533        | 578        | 622        | 667        |
|                     |                            | ØA1                   | 362        | 413        | 464        | 516       | 619        | -          | -          | -          |
|                     |                            | ØB1                   | 308        | 354        | 398,5      | 443       | 532        | -          | -          | -          |
|                     | RTJ                        | L2                    | 1039       | 1140       | 1232       | 1334      | 1568       | -          | -          | -          |
|                     |                            | ØB                    | 311        | 356        | 400        | 445       | 533        | 578        | 622        | 667        |
|                     |                            | ØD                    | 640        | 705        | 785        | 855       | 1040       | 1085       | 1170       | 1230       |
|                     |                            | ØK                    | 558,8      | 616        | 685,8      | 749,3     | 901,7      | 952,5      | 1022,4     | 1085,8     |
|                     |                            | ØG                    | 467        | 524        | 594        | 648       | 772        | 832        | 889        | 946        |
|                     |                            | ØP                    | 419,1      | 469,9      | 533,4      | 584,2     | 692,15     | 749,3      | 800,1      | 857,25     |
|                     |                            | C                     | 85,8       | 88,9       | 101,6      | 108       | 139,7      | 139,7      | 142,9      | 149,3      |
|                     |                            | n-Ød                  | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2    | 20 - 2 1/2 | 20 - 2 7/8 | 20 - 3 1/8 | 20 - 3 1/8 |
|                     |                            | T                     | 16,66      | 16,66      | 19,84      | 19,84     | 26,97      | 30,18      | 33,32      | 33,32      |
|                     |                            | S                     | 11,13      | 11,13      | 12,7       | 12,7      | 15,88      | 17,48      | 17,48      | 17,48      |
|                     |                            | R                     | 1,5        | 1,5        | 1,5        | 1,5       | 2,4        | 2,3        | 2,3        | 2,3        |
| Top works/Operation | Hand-wheel                 | H (open)              | -          | -          | -          | -         | -          | -          | -          | -          |
|                     |                            | H (close)             | -          | -          | -          | -         | -          | -          | -          | -          |
|                     |                            | ØW                    | -          | -          | -          | -         | -          | -          | -          | -          |
|                     | Gear with handwheel        | H1                    | 1804       | 2062       | 2232       | 2334      | 2489       | 2946       | 3251       | 3454       |
|                     |                            | h1                    | 458        | 503        | 615        | 723       | 916        | 1015       | 1150       | 1235       |
|                     |                            | g                     | 513        | 513        | 588        | 588       | 613        | 613        | 698        | 698        |
|                     |                            | ØW1                   | 600        | 600        | 600        | 600       | 800        | 800        | 800        | 1000       |
|                     |                            | H2 (open)             | 1654       | 1917       | 2348       | 2452      | 2536       | -          | -          | -          |
|                     | With ISO 5210 mounting pad | H2 (close)            | 1343       | 1737       | 1997       | 2056      | 2142       | -          | -          | -          |
|                     |                            | h2                    | 160        | 160        | 160        | 200       | 200        | -          | -          | -          |
|                     |                            | ISO                   | F35        | F35        | F35        | F40       | F40        | -          | -          | -          |
|                     |                            | Tr                    | Tr62×8LH   | Tr65×10LH  | Tr70×10LH  | Tr76×10LH | Tr85×10LH  | -          | -          | -          |
|                     |                            | Stroke                | 311        | 180        | 351        | 396       | 394        | -          | -          | -          |
|                     |                            | No. of turns          | 39         | 18         | 35         | 40        | 39         | -          | -          | -          |
|                     |                            | Torque (Nm) (2)       | 2235       | 2980       | 3675       | 4555      | 5760       | -          | -          | -          |
|                     |                            | Kvs-value             | 11880      | 15513      | 20436      | 25256     | 36385      | 44587      | 51709      | 59361      |
|                     |                            | Approx. Weight RF (3) | 1620       | 2300       | 3800       | 5200      | 6300       | 7000       | 9800       | 14500      |
|                     |                            | Approx. Weight BW     | 1397       | 2031       | 3440       | 4752      | 5484       | 6087       | 8716       | 13264      |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

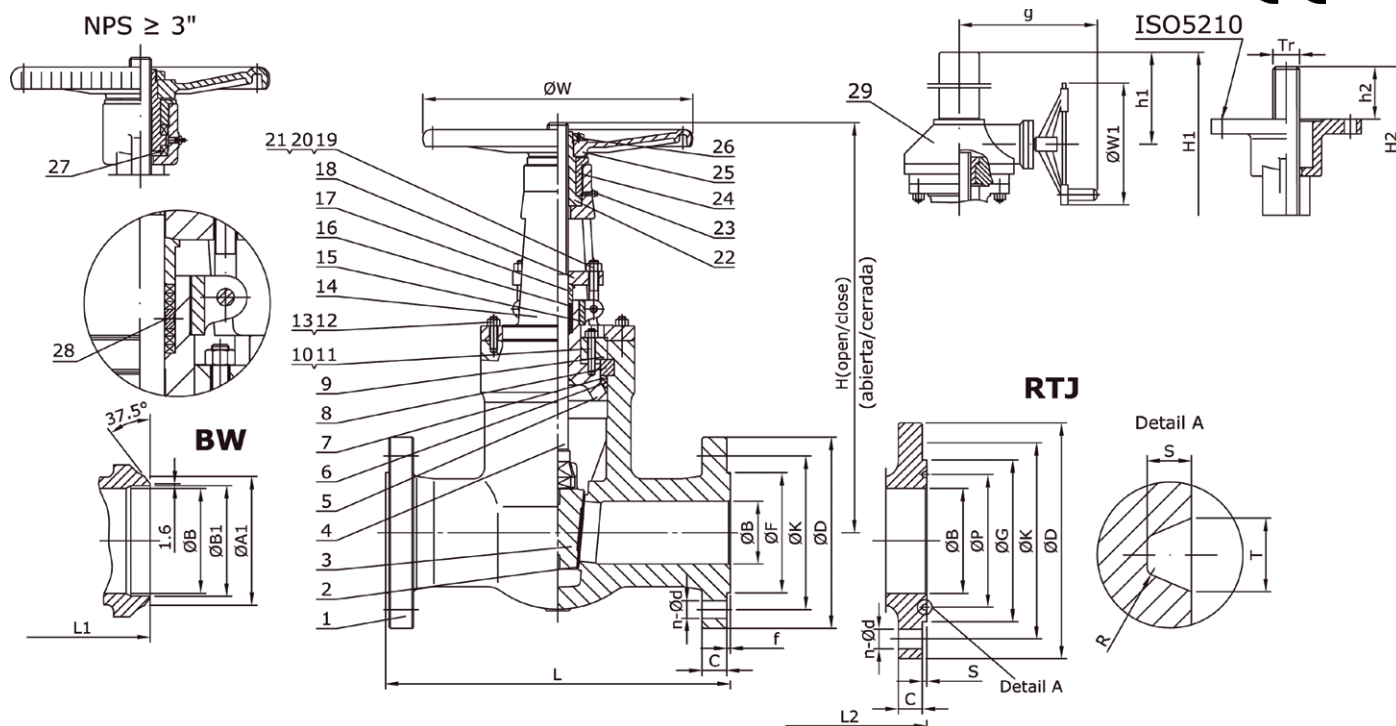
Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16



# Main Parts and Materials

## SERIES 91 ANSI RANGE Class 1500&2500



| Nº | Part name        | CF8 (9112_)    | CF8M (9110_)   | CF3 (9111_)    | CF3M (9117_)    |
|----|------------------|----------------|----------------|----------------|-----------------|
| 1  | Body             | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 2  | Seat Ring        | Integral+HF    | Integral SS316 | Integral+HF    |                 |
| 3  | Wedge            | A351 CF8+HF    | A351 CF8M      | A351 CF3+HF    | A351 CF3M+HF    |
| 4  | Stem             | A182 F304      | A182 F316      | A182 F304L     | Nitronic 50     |
| 5  | Bonnet           | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 6  | Gasket           | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 7  | Gasket Washer    | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 8  | Split Ring       | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 9  | Retainer Ring    | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 10 | Screw            | A193 B8        |                | A193 B8M       |                 |
| 11 | Nut              | A194 8         | A194 8M        | A194 8M        |                 |
| 12 | Bolt             | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 13 | Nut              | A194 8         | A194 8M        | A194 8M        |                 |
| 14 | Yoke             | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 15 | Ear Seat         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 16 | Packing          | Graphite       |                | Graphite       |                 |
| 17 | Packing Gland    | A182 F304      |                | A182 F304L     | A182 F316L      |
| 18 | Gland Flange     | A351 CF8       |                | A351 CF3       | A351 CF3M       |
| 19 | Eyebolt Pin      | A276 304       |                | A276 316       |                 |
| 20 | Gland Eyebolt    | A193 B8        |                | A193 B8M       |                 |
| 21 | Gland Nut        | A194 8         |                | A194 8M        |                 |
| 22 | Stem Nut         | A439 D2        |                | A439 D2        |                 |
| 23 | Grease Nipple    | St. Steel      |                | St. Steel      |                 |
| 24 | Retaining Nut    | St. Steel      |                | St. Steel      |                 |
| 25 | Handwheel        | Steel          |                | Steel          |                 |
| 26 | Handwheel Nut    | St. Steel      |                | St. Steel      |                 |
| 27 | Bearings (1)     | Alloy Steel    |                | Alloy Steel    |                 |
| 28 | Lantern Ring (2) | A276 304       |                | A276 316       | A276 316L       |
| 29 | Gear             | Assembly       |                | Assembly       |                 |

(1) 3" and above

(2) On request

## Main Valve Parameters - Class 1500

## SERIES 91 ANSI RANGE



| Nominal Size          |                            | inch            | 2"       | 2-1/2"   | 3"        | 4"        | 5"        | 6"         | 8"         | 10"       |
|-----------------------|----------------------------|-----------------|----------|----------|-----------|-----------|-----------|------------|------------|-----------|
|                       |                            | DN              | 50       | 65       | 80        | 100       | 125       | 150        | 200        | 250       |
| End connection        | RF                         | L               | 368      | 419      | 470       | 546       | 673       | 705        | 832        | 991       |
|                       |                            | ØB              | 48       | 60,65    | 70        | 92        | 115,1     | 136        | 178        | 222       |
|                       |                            | ØD              | 215      | 245      | 265       | 310       | 375       | 395        | 485        | 585       |
|                       |                            | ØK              | 165,1    | 190,5    | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6     |
|                       |                            | ØF              | 92,1     | 104,8    | 127       | 157,2     | 185,7     | 215,9      | 269,9      | 323,8     |
|                       |                            | C               | 38,1     | 41,3     | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108       |
|                       |                            | f               | 7        | 7        | 7         | 7         | 7         | 7          | 7          | 7         |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2    |
|                       | BW                         | L1              | 368      | 419      | 470       | 546       | 673       | 705        | 832        | 991       |
|                       |                            | Schedule No.(1) | 160      | -        | 160       | 120       | -         | 120        | 120        | 120       |
|                       |                            | ØB              | 48       | 60,65    | 70        | 92        | 115,1     | 136        | 178        | 222       |
|                       |                            | ØA1             | 60,3     | -        | 91        | 117       | -         | 172        | 223        | 278       |
|                       |                            | ØB1             | 38,16    | -        | 66,5      | 92        | -         | 140        | 182,5      | 230       |
|                       | RTJ                        | L2              | 371      | 422      | 473       | 549       | 676       | 711        | 842        | 1001      |
|                       |                            | ØB              | 48       | 60,65    | 70        | 92        | 115,1     | 136        | 178        | 222       |
|                       |                            | ØD              | 215      | 245      | 265       | 310       | 375       | 395        | 485        | 585       |
|                       |                            | ØK              | 165,1    | 190,5    | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6     |
|                       |                            | ØG              | 124      | 137      | 168       | 194       | 229       | 248        | 318        | 371       |
|                       |                            | ØP              | 95,25    | 107,95   | 136,53    | 161,93    | 193,68    | 211,14     | 269,88     | 323,85    |
|                       |                            | C               | 38,1     | 41,3     | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108       |
|                       |                            | n-Ød            | 8 - 7/8  | 8 - 1    | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2    |
|                       |                            | T               | 11,91    | 11,91    | 11,91     | 11,91     | 11,91     | 13,49      | 16,66      | 16,66     |
|                       |                            | S               | 7,92     | 7,92     | 7,92      | 7,92      | 7,92      | 9,53       | 11,13      | 11,13     |
|                       |                            | R               | 0,8      | 0,8      | 0,8       | 0,8       | 0,8       | 1,5        | 1,5        | 1,5       |
| Top works/Operation   | Hand-wheel                 | H (open)        | 516      | 629      | 713       | 853       | -         | -          | -          | -         |
|                       |                            | H (close)       | 471      | 549      | 607       | 756       | -         | -          | -          | -         |
|                       |                            | ØW              | 250      | 336      | 400       | 450       | -         | -          | -          | -         |
|                       | Gear with handwheel        | H1              | -        | -        | -         | 802       | 941       | 1043       | 1179       | 1419      |
|                       |                            | h1              | -        | -        | -         | 162       | 192       | 214        | 281        | 367       |
|                       |                            | g               | -        | -        | -         | 440       | 440       | 440        | 513        | 513       |
|                       |                            | ØW1             | -        | -        | -         | 310       | 396       | 460        | 530        | 600       |
|                       | With ISO 5210 mounting pad | H2 (open)       | 518      | 632      | 716       | 863       | 949       | 1012       | 1444       | 1635      |
|                       |                            | H2 (close)      | 476      | 553      | 610       | 766       | 851       | 914        | 1244       | 1385      |
|                       |                            | h2              | 60       | 72       | 80        | 80        | 103       | 120        | 140        | 180       |
|                       |                            | ISO             | F10      | F14      | F14       | F14       | F25       | F25        | F30        | F35       |
|                       |                            | Tr              | Tr26×5LH | Tr32×6LH | Tr32×6LH  | Tr36×6LH  | Tr46×8LH  | Tr46×8LH   | Tr55×8LH   | Tr65×10LH |
|                       |                            | Stroke          | 42       | 79       | 106       | 97        | 98        | 98         | 200        | 250       |
|                       |                            | No. of turns    | 8        | 13       | 18        | 16        | 12        | 12         | 25         | 25        |
|                       |                            | Torque (Nm) (2) | 189      | 241      | 279       | 555       | 748       | 890        | 1333       | 2851      |
| Kvs-value             |                            | 171             | 368      | 513      | 915       | 1617      | 2137      | 3735       | 5855       |           |
| Approx. Weight RF (3) |                            | 100             | 140      | 170      | 240       | 438       | 585       | 830        | 1650       |           |
| Approx. Weight BW     |                            | 86              | 119      | 144      | 204       | 375       | 501       | 687        | 1405       |           |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 1500

## SERIES 91 ANSI RANGE



| Nominal Size        |                            | inch                  | 12"        | 14"        | 16"        | 18"        | 20"        | 24"        | 26"   | 28"   |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|------------|-------|-------|
|                     |                            | DN                    | 300        | 350        | 400        | 450        | 500        | 600        | 650   | 700   |
| End connection      | RF                         | L                     | 1130       | 1257       | 1384       | 1537       | 1664       | 1943       | (4)   | (4)   |
|                     |                            | ØB                    | 263        | 289        | 330        | 371        | 416        | 498        | 540   | 584   |
|                     |                            | ØD                    | 675        | 750        | 825        | 915        | 985        | 1170       | (4)   | (4)   |
|                     |                            | ØK                    | 571,5      | 635        | 704,8      | 774,7      | 831,8      | 990,6      | (4)   | (4)   |
|                     |                            | ØF                    | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      | 749   | 800   |
|                     |                            | C                     | 123,9      | 133,4      | 146,1      | 162        | 177,8      | 203,2      | (4)   | (4)   |
|                     |                            | f                     | 7          | 7          | 7          | 7          | 7          | 7          | 7     | 7     |
|                     |                            | n-Ød                  | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 | 16 - 2 7/8 | 16 - 3 1/8 | 16 - 3 5/8 | (4)   | (4)   |
|                     | BW                         | L1                    | 1130       | 1257       | 1384       | 1537       | 1664       | 1943       | (4)   | (4)   |
|                     |                            | Schedule No.(1)       | 120        | 120        | 120        | 120        | 120        | 120        | -     | -     |
|                     |                            | ØB                    | 263        | 289        | 330        | 371        | 416        | 498        | 540   | 584   |
|                     |                            | ØA1                   | 329        | 362        | 413        | 464        | 516        | 619        | -     | -     |
|                     |                            | ØB1                   | 273        | 300        | 344,5      | 387,5      | 432        | 517,5      | -     | -     |
|                     | RTJ                        | L2                    | 1146       | 1276       | 1406       | 1559       | 1686       | 1971       | -     | -     |
|                     |                            | ØB                    | 263        | 289        | 330        | 371        | 416        | 498        | -     | -     |
|                     |                            | ØD                    | 675        | 750        | 825        | 915        | 985        | 1170       | -     | -     |
|                     |                            | ØK                    | 571,5      | 635        | 704,8      | 774,7      | 831,8      | 990,6      | -     | -     |
|                     |                            | ØG                    | 438        | 489        | 546        | 613        | 673        | 794        | -     | -     |
|                     |                            | ØP                    | 381        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15     | -     | -     |
|                     |                            | C                     | 123,9      | 133,4      | 146,1      | 162        | 177,8      | 203,2      | -     | -     |
|                     |                            | n-Ød                  | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 | 16 - 2 7/8 | 16 - 3 1/8 | 16 - 3 5/8 | -     | -     |
|                     |                            | T                     | 23,01      | 26,97      | 30,18      | 30,18      | 33,32      | 36,53      | -     | -     |
|                     |                            | S                     | 14,27      | 15,88      | 17,48      | 17,48      | 17,48      | 20,62      | -     | -     |
|                     |                            | R                     | 1,5        | 2,4        | 2,4        | 2,4        | 2,4        | 2,4        | -     | -     |
| Top works/Operation | Hand-wheel                 | H (open)              | -          | -          | -          | -          | -          | -          | -     | -     |
|                     |                            | H (close)             | -          | -          | -          | -          | -          | -          | -     | -     |
|                     |                            | ØW                    | -          | -          | -          | -          | -          | -          | -     | -     |
|                     | Gear with handwheel        | H1                    | 1910       | 1980       | 2035       | 2107       | 2209       | 2387       | 2794  | 2850  |
|                     |                            | h1                    | 408        | 436        | 477        | 518        | 625        | 736        | 888   | 1002  |
|                     |                            | g                     | 588        | 588        | 588        | 613        | 613        | 698        | 698   | 698   |
|                     |                            | ØW1                   | 600        | 600        | 600        | 600        | 800        | 800        | 1000  | 1000  |
|                     |                            | H2 (open)             | 1806       | 2081       | 2342       | 2619       | -          | -          | -     | -     |
|                     | With ISO 5210 mounting pad | H2 (close)            | 1506       | 1789       | 1981       | 2209       | -          | -          | -     | -     |
|                     |                            | h2                    | 180        | 220        | 220        | 220        | -          | -          | -     | -     |
|                     |                            | ISO                   | F35        | F40        | F40        | F40        | -          | -          | -     | -     |
|                     |                            | Tr                    | Tr70×10LH  | Tr76×10LH  | Tr76×10LH  | Tr85×12LH  | -          | -          | -     | -     |
|                     |                            | Stroke                | 300        | 292        | 361        | 410        | -          | -          | -     | -     |
|                     |                            | No. of turns          | 30         | 29         | 36         | 34         | -          | -          | -     | -     |
|                     |                            | Torque (Nm) (2)       | 3505       | 4322       | 4650       | 6500       | -          | -          | -     | -     |
|                     |                            | Kvs-value             | 8530       | 10256      | 13397      | 17641      | 22120      | 26645      | 38901 | 45573 |
|                     |                            | Approx. Weight RF (3) | 2100       | 2800       | 3850       | 5225       | 6310       | 9050       | -     | -     |
|                     |                            | Approx. Weight BW     | 1736       | 2289       | 3170       | 4341       | 5194       | 7238       | -     | -     |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

(4) NPS26 &amp; NPS28 acc.to the agreed between the customer and the supplier

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 2500

## SERIES 91 ANSI RANGE



| Nominal Size          |                            | inch            | 2"        | 2-1/2"    | 3"        | 4"        | 5"        | 6"        | 8"         | 10"        | 12"        |
|-----------------------|----------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
|                       |                            | DN              | 50        | 65        | 80        | 100       | 125       | 150       | 200        | 250        | 300        |
| End connection        | RF                         | L               | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |                            | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |                            | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |                            | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |                            | ØF              | 92,1      | 104,8     | 127       | 157,2     | 185,7     | 215,9     | 269,9      | 323,8      | 381        |
|                       |                            | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |                            | f               | 7         | 7         | 7         | 7         | 7         | 7         | 7          | 7          | 7          |
|                       |                            | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       | BW                         | L1              | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |                            | Schedule No.(1) | 160       | -         | 160       | 160       | -         | 160       | 160        | 160        | 160        |
|                       |                            | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |                            | ØA1             | 60,3      | -         | 91        | 117       | -         | 172       | 223        | 278        | 329        |
|                       |                            | ØB1             | 42,82     | -         | 66,5      | 87,5      | -         | 132       | 173        | 216        | 257        |
|                       | RTJ                        | L2              | 454       | 514       | 584       | 683       | 807       | 927       | 1038       | 1292       | 1444       |
|                       |                            | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |                            | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |                            | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |                            | ØG              | 133       | 149       | 168       | 203       | 241       | 279       | 340        | 425        | 495        |
|                       |                            | ØP              | 101,6     | 111,13    | 127       | 157,18    | 190,5     | 228,6     | 279,4      | 342,9      | 406,4      |
|                       |                            | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |                            | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       |                            | T               | 11,91     | 13,49     | 13,49     | 16,66     | 19,84     | 19,84     | 23,01      | 30,18      | 33,32      |
|                       |                            | S               | 7,92      | 9,53      | 9,53      | 11,13     | 12,7      | 12,7      | 14,27      | 17,48      | 17,48      |
|                       |                            | R               | 0,8       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5        | 2,4        | 2,4        |
| Top works/Operation   | Hand-wheel                 | H (open)        | 630       | 722       | 790       | 900       | -         | -         | -          | -          | -          |
|                       |                            | H (close)       | 590       | 661       | 713       | 806       | -         | -         | -          | -          | -          |
|                       |                            | ØW              | 400       | 458       | 500       | 600       | -         | -         | -          | -          | -          |
|                       | Gear with handwheel        | H1              | 590       | 701       | 783       | 915       | 1110      | 1254      | 1374       | 1685       | 1890       |
|                       |                            | h1              | 185       | 194       | 200       | 306       | 349       | 381       | 435        | 467        | 512        |
|                       |                            | g               | 325       | 346       | 362       | 362       | 407       | 440       | 513        | 588        | 613        |
|                       |                            | ØW1             | 310       | 310       | 310       | 460       | 460       | 460       | 530        | 530        | 600        |
|                       | With ISO 5210 mounting pad | H2 (open)       | 630       | 723       | 792       | 947       | 1046      | 1120      | 1202       | 1373       | 1542       |
|                       |                            | H2 (close)      | 590       | 662       | 715       | 853       | 921       | 971       | 1003       | 1125       | 1242       |
|                       |                            | h2              | 60        | 72        | 80        | 80        | 103       | 120       | 180        | 250        | 250        |
|                       |                            | ISO             | F10       | F14       | F14       | F14       | F25       | F25       | F35        | F40        | F40        |
|                       |                            | Tr              | Tr26×5LH  | Tr30×6LH  | Tr32×6LH  | Tr36×6LH  | Tr48×8LH  | Tr48×8LH  | Tr62×8LH   | Tr76×10LH  | Tr85×12LH  |
|                       |                            | Stroke          | 40        | 61        | 77        | 94        | 126       | 149       | 199        | 248        | 300        |
|                       |                            | No. of turns    | 8         | 10        | 13        | 16        | 16        | 19        | 25         | 25         | 25         |
|                       |                            | Torque (Nm) (2) | 170       | 217       | 251       | 583       | 943       | 1209      | 2445       | 4212       | 6205       |
| Kvs-value             |                            | 140             | 195       | 235       | 393       | 708       | 940       | 1684      | 2675       | 3876       |            |
| Approx. Weight RF (3) |                            | 121             | 164       | 195       | 230       | 512       | 720       | 1295      | 2250       | 4200       |            |
| Approx. Weight BW     |                            | 98              | 124       | 143       | 151       | 359       | 514       | 1264      | 1668       | 3370       |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

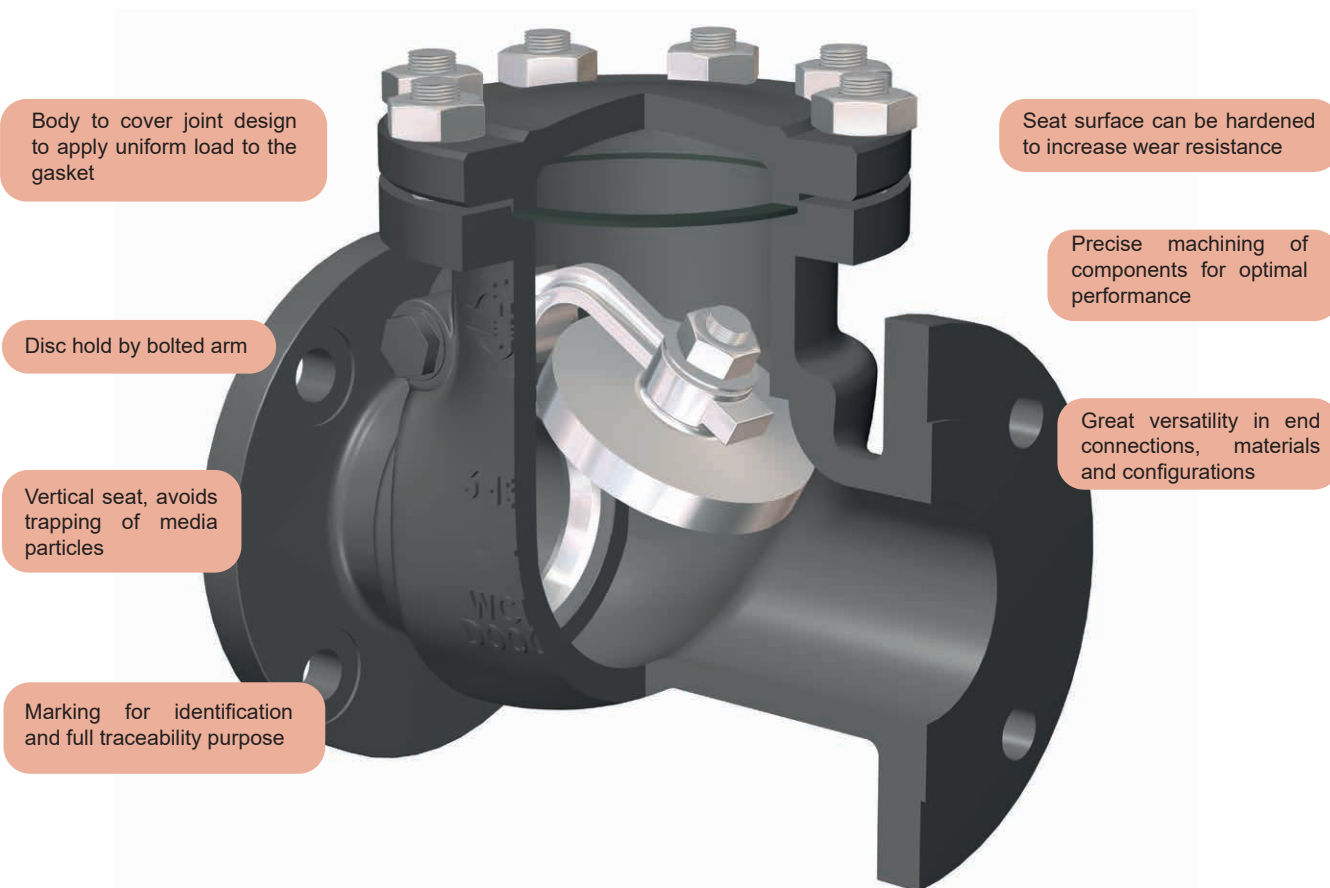
For more information about flanged and welded ends refer to page 16

## Gate Valve with AUMA Actuator



**SERIES 3S/31 ANSI RANGE**

Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Series 3S are Swing Check Valves that operate by means of its articulated disc. They are featured by its rugged and simple design and easy maintenance.

**Main Features / Reference Standards**

Design: API 6D / BS 1868

Pressure Rating: 150/300/600/900/1500/2500#

Face to face length: ASME B16.10

Valve end connections: Flanged RF or RTJ to ASME B16.5 (size ≤ 24") / ASME B16.47 (size > 24")

Welded BW to ASME B16.25

Marking: MSS SP-25

Inspections & Tests: API 598

Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)

Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)

for European Union territory

**Main Duties / Limits of use**

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us

Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"

For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III

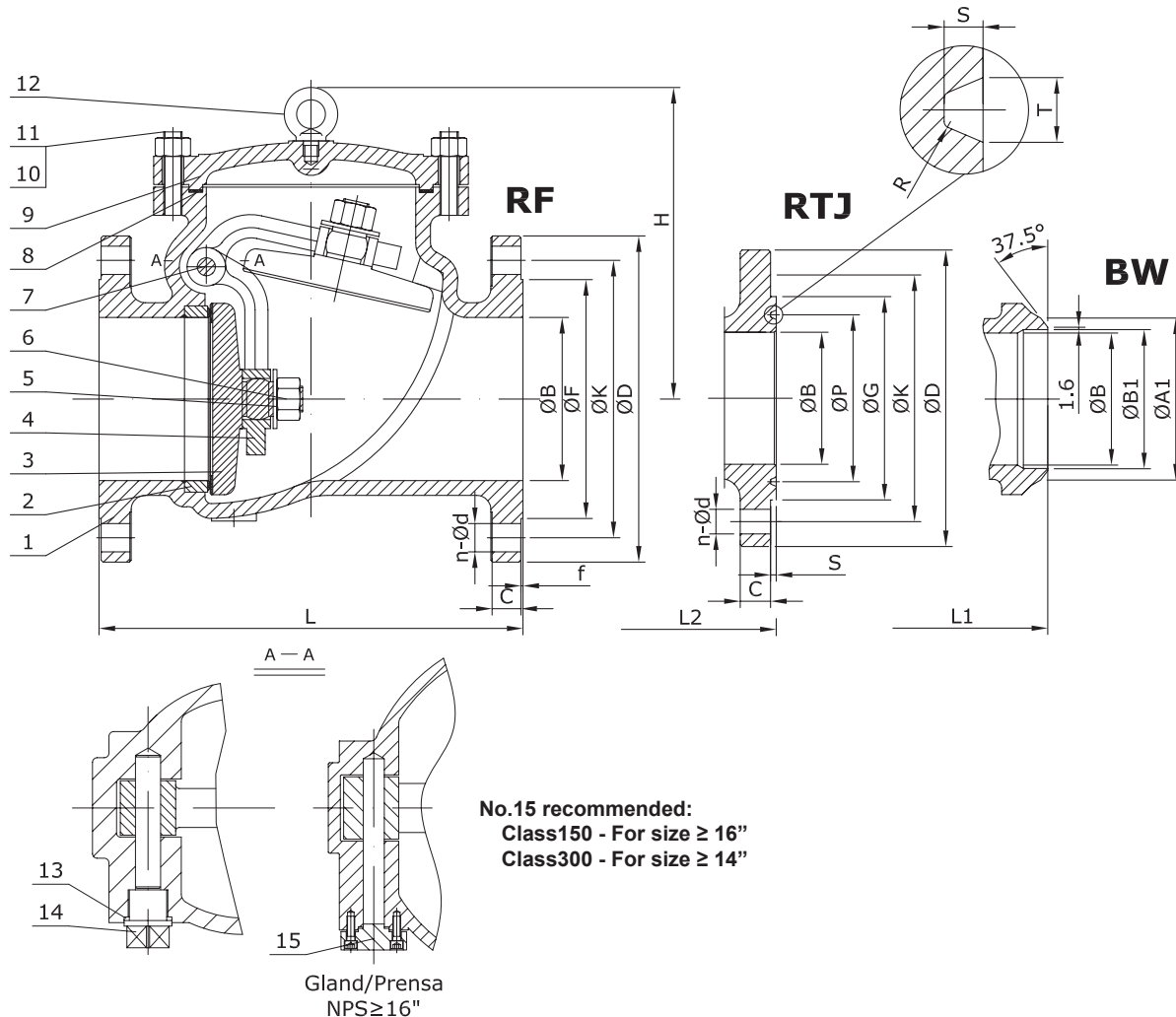
\*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

**Options**

Diverse materials of construction and trim combinations, special designs, execution for aggressive atmosphere, compliance with NACE MR0175, etc. Please consult us

## Main Parts and Materials

## SERIES 3S ANSI RANGE Class 150&300



| Nº | Part name      | A216 WCB<br>(3SA0_) | A352 LCB           |                     | A217 WC1<br>(3SB1_) | A217 WC6<br>(3SB8_) | A217 WC9<br>(3SB9_) | A217 C5<br>(3SC2_) | A217 C12<br>(3SC4_) |
|----|----------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                |                     | Trim 2<br>(3SA82_) | Trim 12<br>(3SA8G_) |                     |                     |                     |                    |                     |
| 1  | Body           | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring      | A105                | A182 F304          | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Disc           | A216 WCB            | A351 CF8           | A351 CF8M           | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Hinge          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 5  | Washer         | SS304               | SS304              | SS316               | SS304               |                     |                     | SS304              |                     |
| 6  | Disc Nut (1)   | A194 2H             | A194 4             |                     | A194 4              |                     |                     | A194 4             |                     |
| 7  | Hinge Pin      | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            |                     |                     | A182 F6a           |                     |
| 8  | Gasket         | SS304<br>+Graphite  | SS304<br>+Graphite | SS316<br>+Graphite  | SS304<br>+Graphite  |                     |                     | SS304<br>+Graphite |                     |
| 9  | Cover          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 10 | Cover Bolt (1) | A193 B7             | A320 L7            |                     | A193 B16            |                     |                     | A193 B16           |                     |
| 11 | Cover Nut (1)  | A194 2H             | A194 4             |                     | A194 4              |                     |                     | A194 4             |                     |
| 12 | Eye Bolt       | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     |                     | Carbon Steel       |                     |
| 13 | Gasket         | SS304               | SS304              | SS316               | SS304               |                     |                     | SS304              |                     |
| 14 | Plug           | A105                | A350 LF2           |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 15 | Gland          | A105                | A350 LF2           |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |

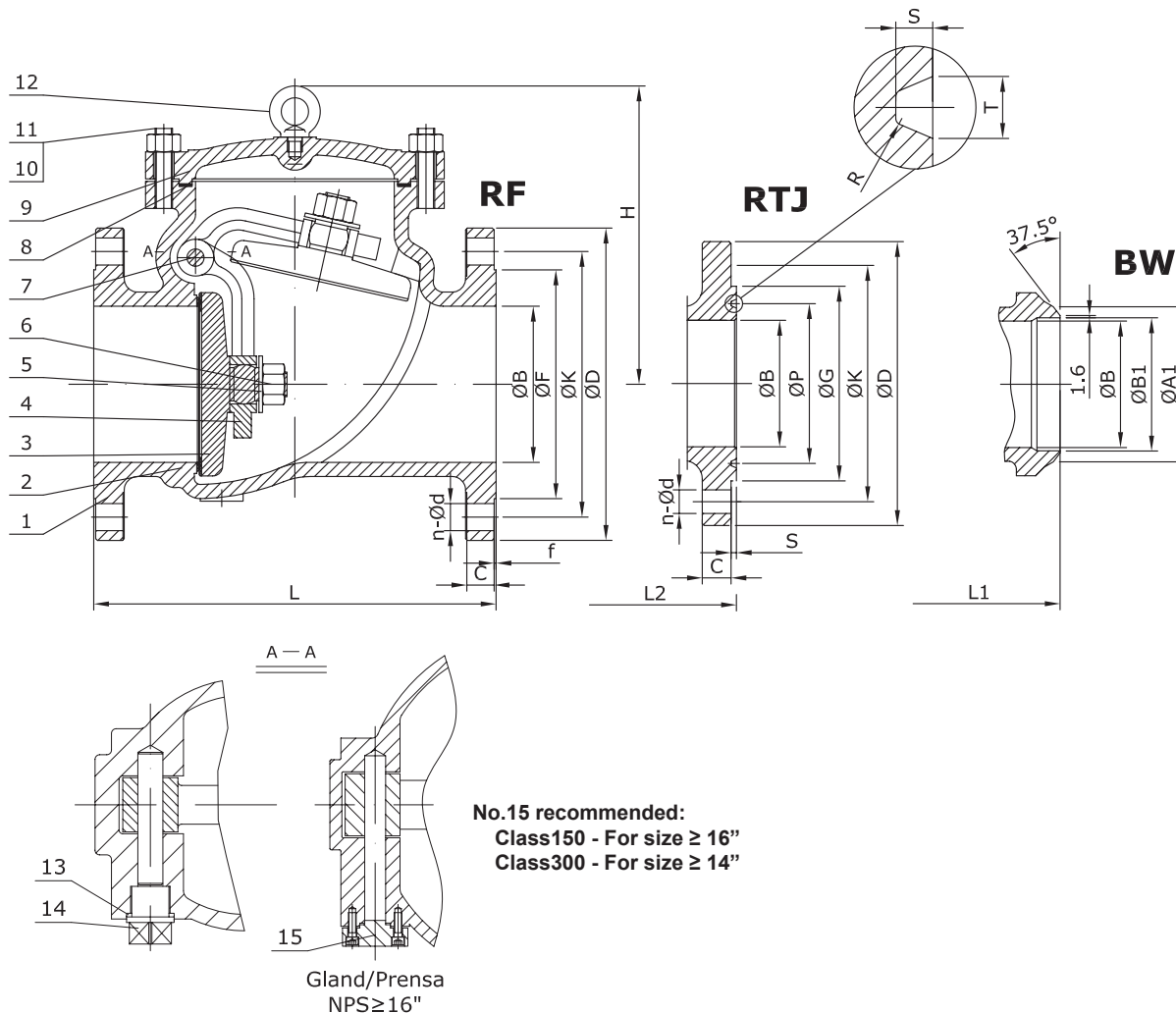
(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3SA0_      | Seat Surface | Disc Surface  |
|-----------------|--------------|---------------|
| TRIM #1 (3SA01) | A105+13Cr    | A216 WCB+13Cr |
| TRIM #5 (3SA05) | A105+HF      | A216 WCB+HF   |
| TRIM #8 (3SA08) | A105+HF      | A216 WCB+13Cr |

HF = Hard faced

## Main Parts and Materials

### SERIES 3S ANSI RANGE Class 150&300



| Nº | Part name  | CF8 (3SI2_)    | CF8M (3SI0_)   | CF3 (3SI1_)     | CF3M (3SI7_)    |
|----|------------|----------------|----------------|-----------------|-----------------|
| 1  | Body       | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat Ring  | Integral SS304 | Integral+HF    | Integral SS304L | Integral+HF     |
| 3  | Disc       | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 4  | Hinge      | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 5  | Washer     | SS304          | SS316          | SS304L          | SS316L          |
| 6  | Disc Nut   | A194 8         | A194 8M        | A194 8M         |                 |
| 7  | Hinge Pin  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 8  | Gasket     | SS304+Graphite | SS316+Graphite | SS316+Graphite  | SS316L+Graphite |
| 9  | Cover      | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 10 | Cover Bolt | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 11 | Cover Nut  | A194 8         | A194 8M        | A194 8M         |                 |
| 12 | Eye Bolt   | Carbon Steel   |                | Carbon Steel    |                 |
| 13 | Gasket     | SS304          | SS316          | SS304L          | SS316L          |
| 14 | Plug       | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 15 | Gland      | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |

## Main Valve Parameters - Class 150

## SERIES 3S ANSI RANGE



| Nominal Size   |     | inch                  | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"      | 8"      | 10"    | 12"    | 14"        |
|----------------|-----|-----------------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|------------|
|                |     | DN                    | 50      | 65      | 80      | 100     | 125     | 150     | 200     | 250    | 300    | 350        |
| End connection | RF  | L                     | 203     | 216     | 241     | 292     | 330     | 356     | 495     | 622    | 698    | 787        |
|                |     | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |
|                |     | ØD                    | 150     | 180     | 190     | 230     | 255     | 280     | 345     | 405    | 485    | 535        |
|                |     | ØK                    | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   | 362    | 431,8  | 476,3      |
|                |     | ØF                    | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9   | 269,9   | 323,8  | 381    | 412,8      |
|                |     | C                     | 14,3    | 15,9    | 17,5    | 22,3    | 22,3    | 23,9    | 27      | 28,6   | 30,2   | 33,4       |
|                |     | f                     | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2      | 2      | 2          |
|                |     | n-Ød                  | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 1 | 12 - 1 | 12 - 1 1/8 |
|                | BW  | L1                    | 203     | 216     | 241     | 292     | 330     | 356     | 495     | 622    | 698    | 787        |
|                |     | Schedule No.(1)       | 40      | -       | 40      | 40      | -       | 40      | 40      | 40     | STD    | STD        |
|                |     | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |
|                |     | ØA1                   | 60,3    | -       | 91      | 117     | -       | 172     | 223     | 278    | 329    | 362        |
|                |     | ØB1                   | 52,48   | -       | 78      | 102     | -       | 154     | 203     | 254,5  | 305    | 336,5      |
|                | RTJ | L2                    | 216     | 229     | 254     | 305     | 343     | 369     | 508     | 635    | 711    | 800        |
|                |     | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |
|                |     | ØD                    | 150     | 180     | 190     | 230     | 255     | 280     | 345     | 405    | 485    | 535        |
|                |     | ØK                    | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   | 362    | 431,8  | 476,3      |
|                |     | ØG                    | 102     | 121     | 133     | 171     | 194     | 219     | 273     | 330    | 406    | 425        |
|                |     | ØP                    | 82,55   | 101,6   | 114,3   | 149,23  | 171,45  | 193,68  | 247,65  | 304,8  | 381    | 396,88     |
|                |     | C                     | 17,5    | 20,7    | 22,3    | 22,3    | 22,3    | 23,9    | 27      | 28,6   | 30,2   | 33,4       |
|                |     | n-Ød                  | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 1 | 12 - 1 | 12 - 1 1/8 |
|                |     | T                     | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74   | 8,74   | 8,74       |
|                |     | S                     | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35   | 6,35   | 6,35       |
|                |     | R                     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8    | 0,8    | 0,8        |
|                |     | H                     | 127     | 144     | 156     | 177     | 210     | 235     | 340     | 410    | 456    | 475        |
|                |     | Kvs-value             | 86      | 177     | 244     | 444     | 801     | 1064    | 1949    | 3051   | 4530   | 5556       |
|                |     | Approx. Weight RF (2) | 13      | 19      | 23      | 36      | 51      | 62      | 115     | 180    | 275    | 351        |
|                |     | Approx. Weight BW     | 10      | 14      | 18      | 28      | 40      | 49      | 93      | 151    | 231    | 295        |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES 3S ANSI RANGE



| Nominal Size   |                       | inch            | 16"        | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"        | 36"        |
|----------------|-----------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                |                       | DN              | 400        | 450        | 500        | 600        | 650        | 700        | 750        | 800        | 900        |
| End connection | RF                    | L               | 864        | 978        | 978        | 1295       | 1295       | 1448       | 1524       | 1727 (3)   | 1956       |
|                |                       | ØB              | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                |                       | ØD              | 595        | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       |
|                |                       | ØK              | 539,8      | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     |
|                |                       | ØF              | 469,9      | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914        | 1022       |
|                |                       | C               | 35         | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       |
|                |                       | f               | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
|                |                       | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 |
|                | BW                    | L1              | 864        | 978        | 978        | 1295       | 1295       | 1448       | 1524       | 1727 (3)   | 1956       |
|                |                       | Schedule No.(1) | STD        | STD        | STD        | STD        | 20         | 20         | 20         | 20         | 20         |
|                |                       | ØB              | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                |                       | ØA1             | 413        | 464        | 516        | 619        | 670        | 721        | 772        | 825        | 927        |
|                |                       | ØB1             | 387,5      | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5      | 889        |
|                | RTJ                   | L2              | 877        | 991        | 991        | 1308       | -          | -          | -          | -          | -          |
|                |                       | ØB              | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                |                       | ØD              | 595        | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       |
|                |                       | ØK              | 539,8      | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     |
|                |                       | ØG              | 483        | 546        | 597        | 711        | 810        | 861        | 917        | 984        | 1092       |
|                |                       | ØP              | 454,03     | 517,53     | 558,8      | 673,1      | 749,3      | 800,1      | 857,25     | 914,4      | 1022,35    |
|                |                       | C               | 35         | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       |
|                |                       | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 |
|                |                       | T               | 8,74       | 8,74       | 8,74       | 8,74       | 19,84      | 19,84      | 19,84      | 23,01      | 23,01      |
|                |                       | S               | 6,35       | 6,35       | 6,35       | 6,35       | 12,7       | 12,7       | 12,7       | 14,27      | 14,27      |
|                |                       | R               | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        |
|                | H                     |                 | 552        | 572        | 660        | 740        | 785        | 838        | 889        | 1012       | 1090       |
|                | Kvs-value             |                 | 7363       | 9829       | 12222      | 17833      | 21509      | 25225      | 28983      | 36863      | 52624      |
|                | Approx. Weight RF (2) |                 | 460        | 575        | 740        | 1350       | 1800       | 2350       | 2650       | 3000       | 3690       |
|                | Approx. Weight BW     |                 | 390        | 498        | 648        | 1208       | 1628       | 2128       | 2411       | 2694       | 3250       |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

(3) Acc. to manufacturer standard

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 3S ANSI RANGE



| Nominal Size          |     | inch            | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"       | 8"     | 10"        | 12"        |
|-----------------------|-----|-----------------|---------|---------|---------|---------|---------|----------|--------|------------|------------|
|                       |     | DN              | 50      | 65      | 80      | 100     | 125     | 150      | 200    | 250        | 300        |
| End connection        | RF  | L               | 267     | 292     | 318     | 356     | 400     | 444      | 533    | 622        | 711        |
|                       |     | ØB              | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                       |     | ØD              | 165     | 190     | 210     | 255     | 280     | 320      | 380    | 445        | 520        |
|                       |     | ØK              | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  | 387,4      | 450,8      |
|                       |     | ØF              | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9    | 269,9  | 323,8      | 381        |
|                       |     | C               | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   | 46,1       | 49,3       |
|                       |     | f               | 2       | 2       | 2       | 2       | 2       | 2        | 2      | 2          | 2          |
|                       |     | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 | 16 - 1 1/8 | 16 - 1 1/4 |
|                       | BW  | L1              | 267     | 292     | 318     | 356     | 400     | 444      | 533    | 622        | 711        |
|                       |     | Schedule No.(1) | 40      | -       | 40      | 40      | -       | 40       | 40     | 40         | STD        |
|                       |     | ØB              | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                       |     | ØA1             | 60,3    | -       | 91      | 117     | -       | 172      | 223    | 278        | 329        |
|                       |     | ØB1             | 52,48   | -       | 78      | 102     | -       | 154      | 203    | 254,5      | 305        |
|                       | RTJ | L2              | 283     | 308     | 334     | 372     | 416     | 460      | 549    | 638        | 727        |
|                       |     | ØB              | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                       |     | ØD              | 165     | 190     | 210     | 255     | 280     | 320      | 380    | 445        | 520        |
|                       |     | ØK              | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  | 387,4      | 450,8      |
|                       |     | ØG              | 108     | 127     | 146     | 175     | 210     | 241      | 302    | 356        | 413        |
|                       |     | ØP              | 82,55   | 101,6   | 123,83  | 149,23  | 180,98  | 211,12   | 269,88 | 323,85     | 981        |
|                       |     | C               | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   | 46,1       | 49,3       |
|                       |     | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 | 16 - 1 1/8 | 16 - 1 1/4 |
|                       |     | T               | 11,91   | 11,91   | 11,91   | 11,91   | 11,91   | 11,91    | 11,91  | 11,91      | 11,91      |
|                       |     | S               | 7,92    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92     | 7,92   | 7,92       | 7,92       |
|                       |     | R               | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8      | 0,8    | 0,8        | 0,8        |
| H                     |     | 137             | 162     | 180     | 205     | 268     | 315     | 370      | 430    | 465        |            |
| Kvs-value             |     | 86              | 177     | 244     | 440     | 799     | 1064    | 1953     | 3056   | 4568       |            |
| Approx. Weight RF (2) |     | 17              | 27      | 34      | 55      | 83      | 104     | 176      | 258    | 420        |            |
| Approx. Weight BW     |     | 12              | 20      | 26      | 42      | 64      | 81      | 140      | 209    | 346        |            |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 3S ANSI RANGE



| Nominal Size   |                       | inch            | 14"        | 16"        | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"      |
|----------------|-----------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|
|                |                       | DN              | 350        | 400        | 450        | 500        | 600        | 650        | 700        | 750        | 800      |
| End connection | RF                    | L               | 838        | 864        | 978        | 1016       | 1346       | 1346       | 1499       | 1594       | 1727 (3) |
|                |                       | ØB              | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779      |
|                |                       | ØD              | 585        | 650        | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150     |
|                |                       | ØK              | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1   |
|                |                       | ØF              | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914      |
|                |                       | C               | 52,4       | 55,6       | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9     |
|                |                       | f               | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2        |
|                |                       | n-Ød            | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2   |
|                | BW                    | L1              | 838        | 864        | 978        | 1016       | 1346       | 1346       | 1499       | 1594       | 1727 (3) |
|                |                       | Schedule No.(1) | STD        | STD        | STD        | STD        | STD        | 20         | 20         | 20         | 20       |
|                |                       | ØB              | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779      |
|                |                       | ØA1             | 362        | 413        | 464        | 516        | 619        | 670        | 721        | 772        | 825      |
|                |                       | ØB1             | 336,5      | 387,5      | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5    |
|                | RTJ                   | L2              | 854        | 880        | 994        | 1035       | 1368       | 1374       | 1524       | 1619       | 1755     |
|                |                       | ØB              | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779      |
|                |                       | ØD              | 585        | 650        | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150     |
|                |                       | ØK              | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1   |
|                |                       | ØG              | 457        | 508        | 575        | 635        | 749        | 810        | 861        | 917        | 984      |
|                |                       | ØP              | 419,1      | 469,9      | 533,4      | 584,2      | 692,15     | 749,3      | 800,1      | 857,25     | 914,4    |
|                |                       | C               | 52,4       | 55,6       | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9     |
|                |                       | n-Ød            | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2   |
|                |                       | T               | 11,91      | 11,91      | 11,91      | 13,49      | 16,66      | 19,84      | 19,84      | 19,84      | 23,01    |
|                |                       | S               | 7,92       | 7,92       | 7,92       | 9,53       | 11,13      | 12,7       | 12,7       | 12,7       | 14,27    |
|                |                       | R               | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5      |
|                | H                     |                 | 505        | 554        | 620        | 680        | 770        | 770        | 889        | 977        | 1016     |
|                | Kvs-value             |                 | 5564       | 7368       | 9534       | 11910      | 17453      | 21368      | 24573      | 28983      | 36094    |
|                | Approx. Weight RF (2) |                 | 516        | 780        | 1150       | 1350       | 2100       | 2600       | 2900       | 3200       | 4900     |
|                | Approx. Weight BW     |                 | 415        | 647        | 984        | 1145       | 1804       | 2254       | 2492       | 2713       | 4338     |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

(3) Acc. to manufacturer standard

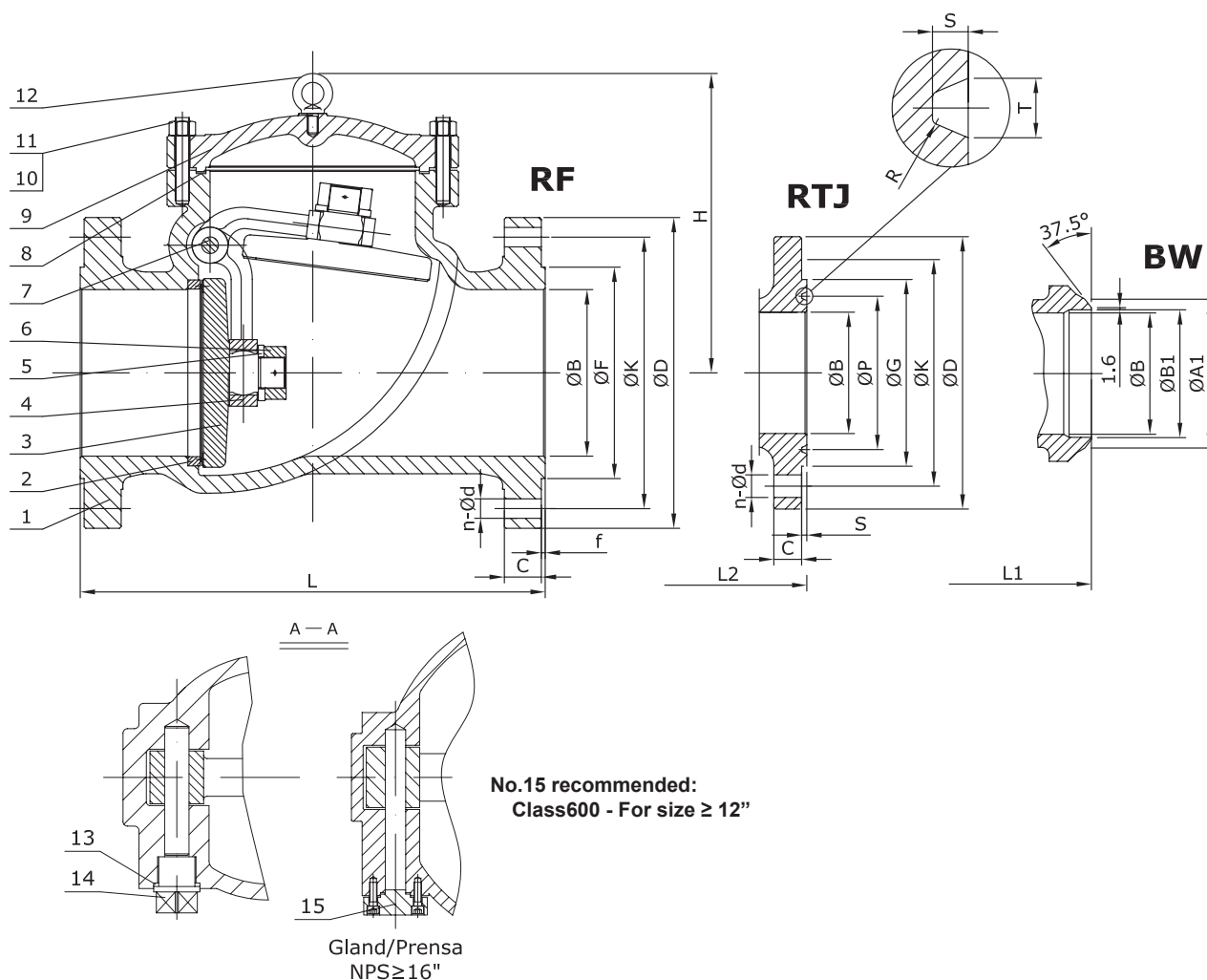
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

## SERIES 3S ANSI RANGE Class 600



No.15 recommended:  
Class600 - For size ≥ 12"

Gland/Prensa  
NPS≥16"

| Nº | Part name      | A216 WCB<br>(3SA0_) | A352 LCB           |                     | A217 WC1<br>(3SB1_) | A217 WC6<br>(3SB8_) | A217 WC9<br>(3SB9_) | A217 C5<br>(3SC2_) | A217 C12<br>(3SC4_) |
|----|----------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                |                     | Trim 2<br>(3SA82_) | Trim 12<br>(3SA8G_) |                     |                     |                     |                    |                     |
| 1  | Body           | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring      | A105                | A182 F304          | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Disc           | A216 WCB            | A351 CF8           | A351 CF8M           | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Hinge          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 5  | Washer         | SS304               | SS304              | SS316               | SS304               |                     |                     | SS304              |                     |
| 6  | Disc Nut (1)   | A194 2H             | A194 4             |                     | A194 4              |                     |                     | A194 4             |                     |
| 7  | Hinge Pin      | A182 F6a            | A182 F304          | A182 F316           | A182 F6a            |                     |                     | A182 F6a           |                     |
| 8  | Gasket         | SS304<br>+Graphite  | SS304<br>+Graphite | SS316<br>+Graphite  | SS304<br>+Graphite  |                     |                     | SS304<br>+Graphite |                     |
| 9  | Cover          | A216 WCB            | A352 LCB           |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 10 | Cover Bolt (1) | A193 B7             | A320 L7            |                     | A193 B16            |                     |                     | A193 B16           |                     |
| 11 | Cover Nut (1)  | A194 2H             | A194 4             |                     | A194 4              |                     |                     | A194 4             |                     |
| 12 | Eye Bolt       | Carbon Steel        | Carbon Steel       |                     | Carbon Steel        |                     |                     | Carbon Steel       |                     |
| 13 | Gasket         | SS304               | SS304              | SS316               | SS304               |                     |                     | SS304              |                     |
| 14 | Plug           | A105                | A350 LF2           |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 15 | Gland          | A105                | A350 LF2           |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |

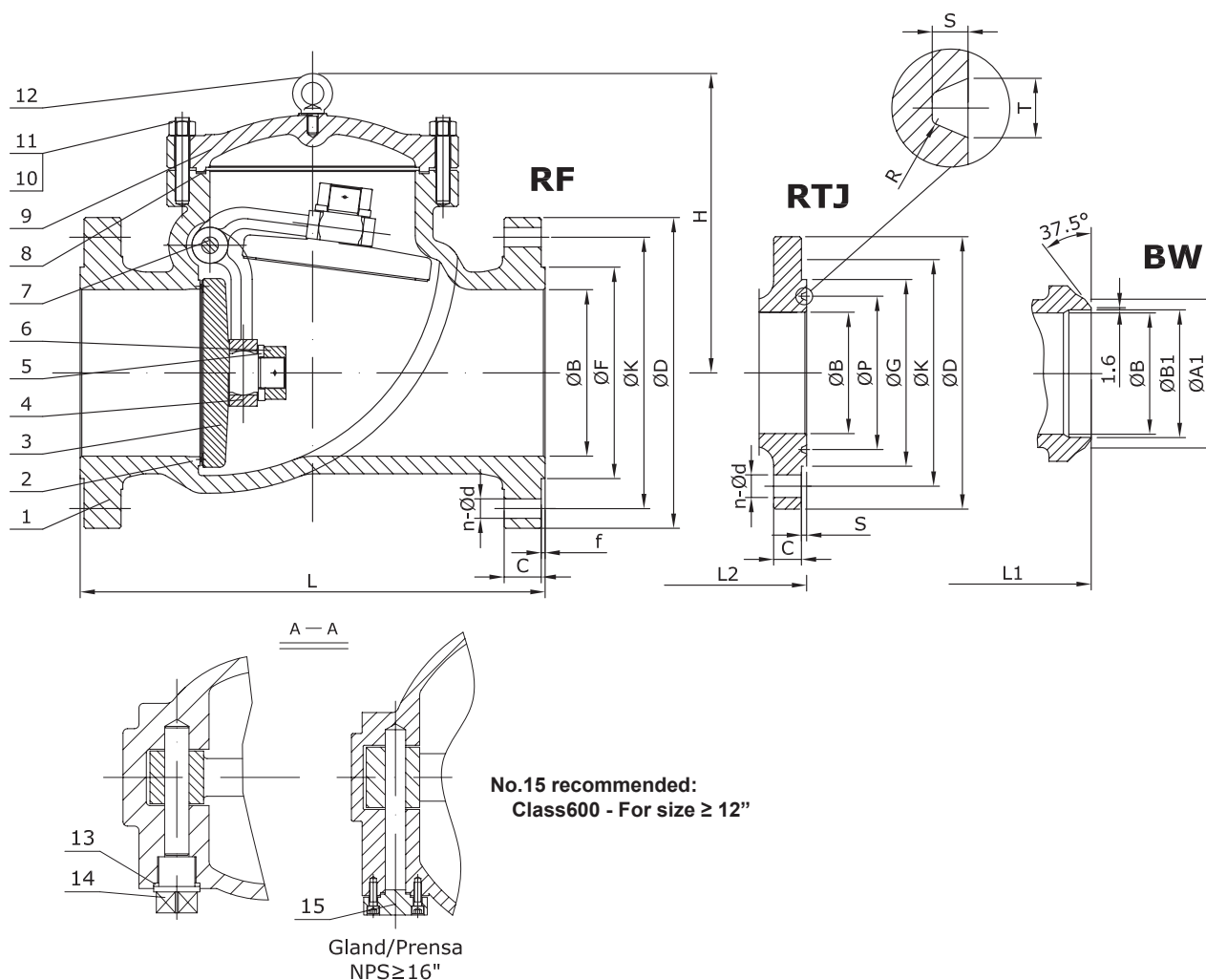
(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3SA0_      | Seat Surface | Disc Surface  |
|-----------------|--------------|---------------|
| TRIM #1 (3SA01) | A105+13Cr    | A216 WCB+13Cr |
| TRIM #5 (3SA05) | A105+HF      | A216 WCB+HF   |
| TRIM #8 (3SA08) | A105+HF      | A216 WCB+13Cr |

HF = Hard faced

## Main Parts and Materials

## SERIES 3S ANSI RANGE Class 600



No.15 recommended:  
Class600 - For size ≥ 12"

Gland/Prensa  
NPS≥16"

| Nº | Part name  | CF8 (3SI2_)    | CF8M (3SI0_)   | CF3 (3SI1_)     | CF3M (3SI7_)    |
|----|------------|----------------|----------------|-----------------|-----------------|
| 1  | Body       | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 2  | Seat Ring  | Integral SS304 | Integral+HF    | Integral SS304L | Integral+HF     |
| 3  | Disc       | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 4  | Hinge      | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 5  | Washer     | SS304          | SS316          | SS304L          | SS316L          |
| 6  | Disc Nut   | A194 8         | A194 8M        | A194 8M         |                 |
| 7  | Hinge Pin  | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 8  | Gasket     | SS304+Graphite | SS316+Graphite | SS316+Graphite  | SS316L+Graphite |
| 9  | Cover      | A351 CF8       | A351 CF8M      | A351 CF3        | A351 CF3M       |
| 10 | Cover Bolt | A193 B8        | A193 B8M       | A193 B8M        |                 |
| 11 | Cover Nut  | A194 8         | A194 8M        | A194 8M         |                 |
| 12 | Eye Bolt   | Carbon Steel   |                | Carbon Steel    |                 |
| 13 | Gasket     | SS304          | SS316          | SS304L          | SS316L          |
| 14 | Plug       | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |
| 15 | Gland      | A182 F304      | A182 F316      | A182 F304L      | A182 F316L      |

## Main Valve Parameters - Class 600

## SERIES 3S ANSI RANGE



| Nominal Size   |                       | inch            | 2"      | 2-1/2"  | 3"      | 4"     | 5"        | 6"         | 8"       | 10"        |
|----------------|-----------------------|-----------------|---------|---------|---------|--------|-----------|------------|----------|------------|
|                |                       | DN              | 50      | 65      | 80      | 100    | 125       | 150        | 200      | 250        |
| End connection | RF                    | L               | 292     | 330     | 356     | 432    | 508       | 559        | 660      | 787        |
|                |                       | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                |                       | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        |
|                |                       | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      |
|                |                       | ØF              | 92,1    | 104,8   | 127     | 157,2  | 185,7     | 215,9      | 269,9    | 323,8      |
|                |                       | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       |
|                |                       | f               | 7       | 7       | 7       | 7      | 7         | 7          | 7        | 7          |
|                |                       | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 |
|                | BW                    | L1              | 292     | 330     | 356     | 432    | 508       | 559        | 660      | 787        |
|                |                       | Schedule No.(1) | 80      | -       | 80      | 80     | -         | 80         | 80       | 80         |
|                |                       | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                |                       | ØA1             | 60,3    | -       | 91      | 117    | -         | 172        | 223      | 278        |
|                |                       | ØB1             | 49,22   | -       | 73,5    | 97     | -         | 146,5      | 193,5    | 243        |
|                | RTJ                   | L2              | 295     | 346     | 372     | 448    | 524       | 562        | 663      | 790        |
|                |                       | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                |                       | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        |
|                |                       | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      |
|                |                       | ØG              | 108     | 127     | 146     | 175    | 210       | 241        | 302      | 356        |
|                |                       | ØP              | 82,55   | 101,6   | 123,83  | 149,23 | 180,98    | 211,12     | 269,88   | 323,85     |
|                |                       | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       |
|                |                       | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 |
|                |                       | T               | 11,91   | 11,91   | 11,91   | 11,91  | 11,91     | 11,91      | 11,91    | 11,91      |
|                |                       | S               | 7,92    | 7,92    | 7,92    | 7,92   | 7,92      | 7,92       | 7,92     | 7,92       |
|                |                       | R               | 0,8     | 0,8     | 0,8     | 0,8    | 0,8       | 0,8        | 0,8      | 0,8        |
|                |                       | H               | 142     | 189     | 223     | 256    | 300       | 332        | 409      | 478        |
|                | Kvs-value             |                 | 86      | 177     | 244     | 444    | 801       | 1064       | 1889     | 2906       |
|                | Approx. Weight RF (2) |                 | 22      | 34      | 43      | 78     | 122       | 155        | 285      | 485        |
|                | Approx. Weight BW     |                 | 15      | 24      | 30      | 55     | 87        | 111        | 221      | 382        |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES 3S ANSI RANGE



| Nominal Size   |                       | inch            | 12"        | 14"        | 16"        | 18"        | 20"        | 24"    | 26"    | 28"        |
|----------------|-----------------------|-----------------|------------|------------|------------|------------|------------|--------|--------|------------|
|                |                       | DN              | 300        | 350        | 400        | 450        | 500        | 600    | 650    | 700        |
| End connection | RF                    | L               | 838        | 889        | 991        | 1092       | 1194       | 1397   | 1448   | 1600       |
|                |                       | ØB              | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                |                       | ØD              | 560        | 605        | 685        | 745        | 815        | 940    | 1015   | 1075       |
|                |                       | ØK              | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  | 914,4  | 965,2      |
|                |                       | ØF              | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2  | 749    | 800        |
|                |                       | C               | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  | 108    | 111,2      |
|                |                       | f               | 7          | 7          | 7          | 7          | 7          | 7      | 7      | 7          |
|                |                       | n-Ød            | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 | 28 - 2 | 28 - 2 1/8 |
|                | BW                    | L1              | 838        | 889        | 991        | 1092       | 1194       | 1397   | 1448   | 1600       |
|                |                       | Schedule No.(1) | 80         | 80         | 80         | 80         | 80         | 80     | -      | -          |
|                |                       | ØB              | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                |                       | ØA1             | 329        | 362        | 413        | 464        | 516        | 619    | -      | -          |
|                |                       | ØB1             | 289        | 317,5      | 363,5      | 409,5      | 455,5      | 547,5  | -      | -          |
|                |                       | L2              | 841        | 892        | 994        | 1095       | 1200       | 1407   | 1461   | 1613       |
|                |                       | ØB              | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                |                       | ØD              | 560        | 605        | 685        | 745        | 815        | 940    | 1015   | 1075       |
|                | RTJ                   | ØK              | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  | 914,4  | 965,2      |
|                |                       | ØG              | 413        | 457        | 508        | 575        | 635        | 749    | 810    | 861        |
|                |                       | ØP              | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15 | 749,3  | 800,1      |
|                |                       | C               | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  | 108    | 111,2      |
|                |                       | n-Ød            | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 | 28 - 2 | 28 - 2 1/8 |
|                |                       | T               | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66  | 19,84  | 19,84      |
|                |                       | S               | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13  | 12,7   | 12,7       |
|                |                       | R               | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5    | 1,5    | 1,5        |
|                | H                     |                 | 539        | 609        | 660        | 769        | 890        | 954    | 1025   | 1062       |
|                | Kvs-value             |                 | 4376       | 5256       | 6897       | 8983       | 10987      | 15966  | 21026  | 25598      |
|                | Approx. Weight RF (2) |                 | 615        | 920        | 1250       | 1800       | 2350       | 3300   | 3700   | 4500       |
|                | Approx. Weight BW     |                 | 493        | 740        | 1022       | 1512       | 1996       | 2862   | 3125   | 3854       |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

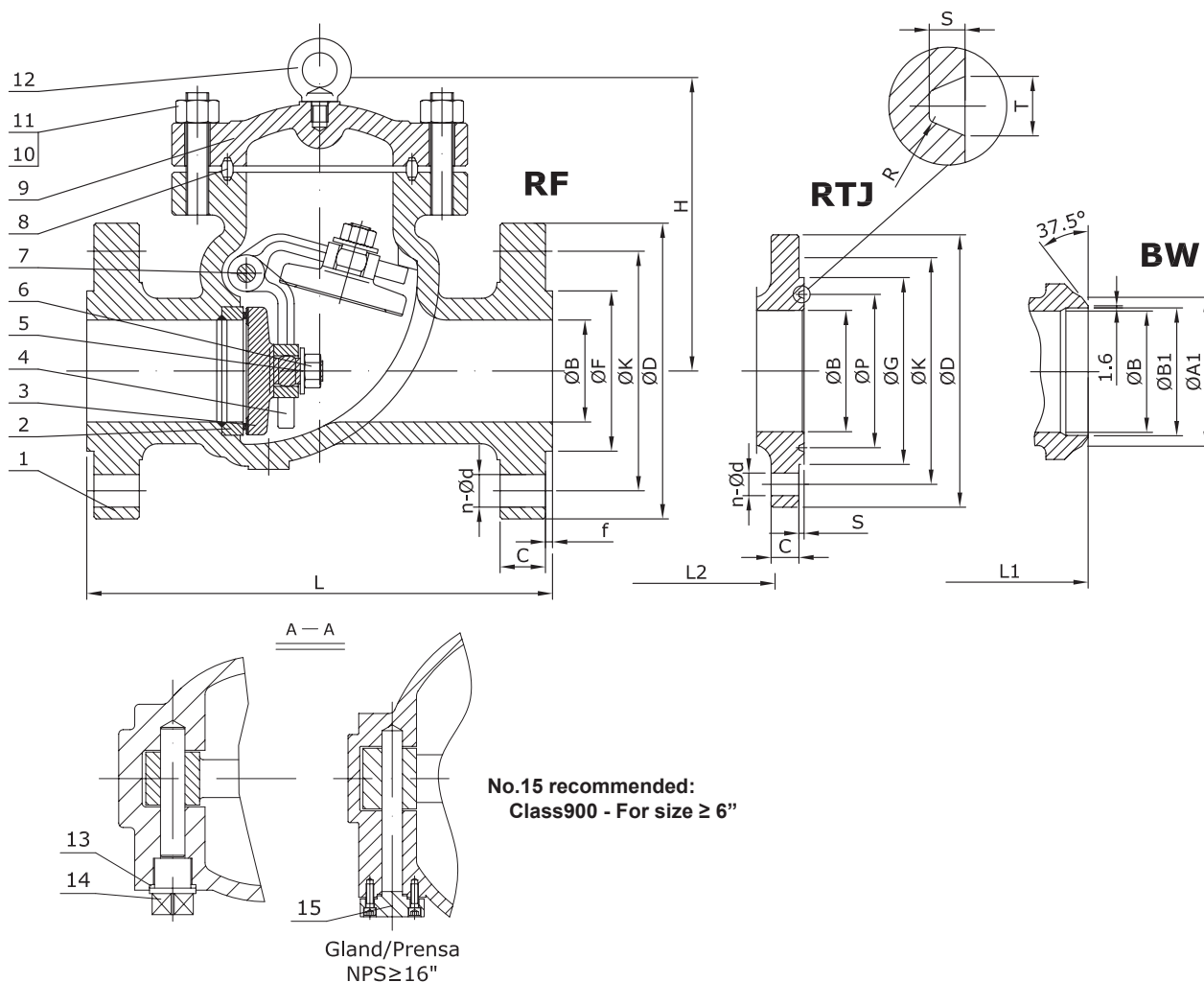
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

## SERIES 3S ANSI RANGE Class 900



| Nº | Part name      | A216 WCB<br>(3SA0_) | A352 LCB            |                     | A217 WC1<br>(3SB1_) | A217 WC6<br>(3SB8_) | A217 WC9<br>(3SB9_) | A217 C5<br>(3SC2_) | A217 C12<br>(3SC4_) |
|----|----------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |                |                     | Trim 15<br>(3SA8K_) | Trim 16<br>(3SA8L_) |                     |                     |                     |                    |                     |
| 1  | Body           | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring      | A105                | A182 F304+HF        | A182 F316+HF        | A182 F1+HF          | A182 F11+HF         | A182 F22+HF         | A182 F5+HF         | A182 F9+HF          |
| 3  | Disc           | A216 WCB            | A351 CF8+HF         | A351 CF8M+HF        | A217 WC1+HF         | A217 WC6+HF         | A217 WC9+HF         | A217 C5+HF         | A217 C12+HF         |
| 4  | Hinge          | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 5  | Washer         | SS304               | SS304               | SS316               | SS304               |                     | SS304               |                    |                     |
| 6  | Disc Nut (1)   | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 7  | Hinge Pin      | A182 F6a            | A182 F304           | Nitronic 50         | A182 F6a            |                     | A182 F6a            |                    |                     |
| 8  | Gasket         | SS304               | SS304               | SS316               | SS304               |                     | SS304               |                    |                     |
| 9  | Cover          | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 10 | Cover Bolt (1) | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 11 | Cover Nut (1)  | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 12 | Eye Bolt       | Carbon Steel        | Carbon Steel        |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |
| 13 | Gasket         | SS304               | SS304               | SS316               | SS304               |                     | SS304               |                    |                     |
| 14 | Plug           | A105                | A350 LF2            |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 15 | Gland          | A105                | A350 LF2            |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |

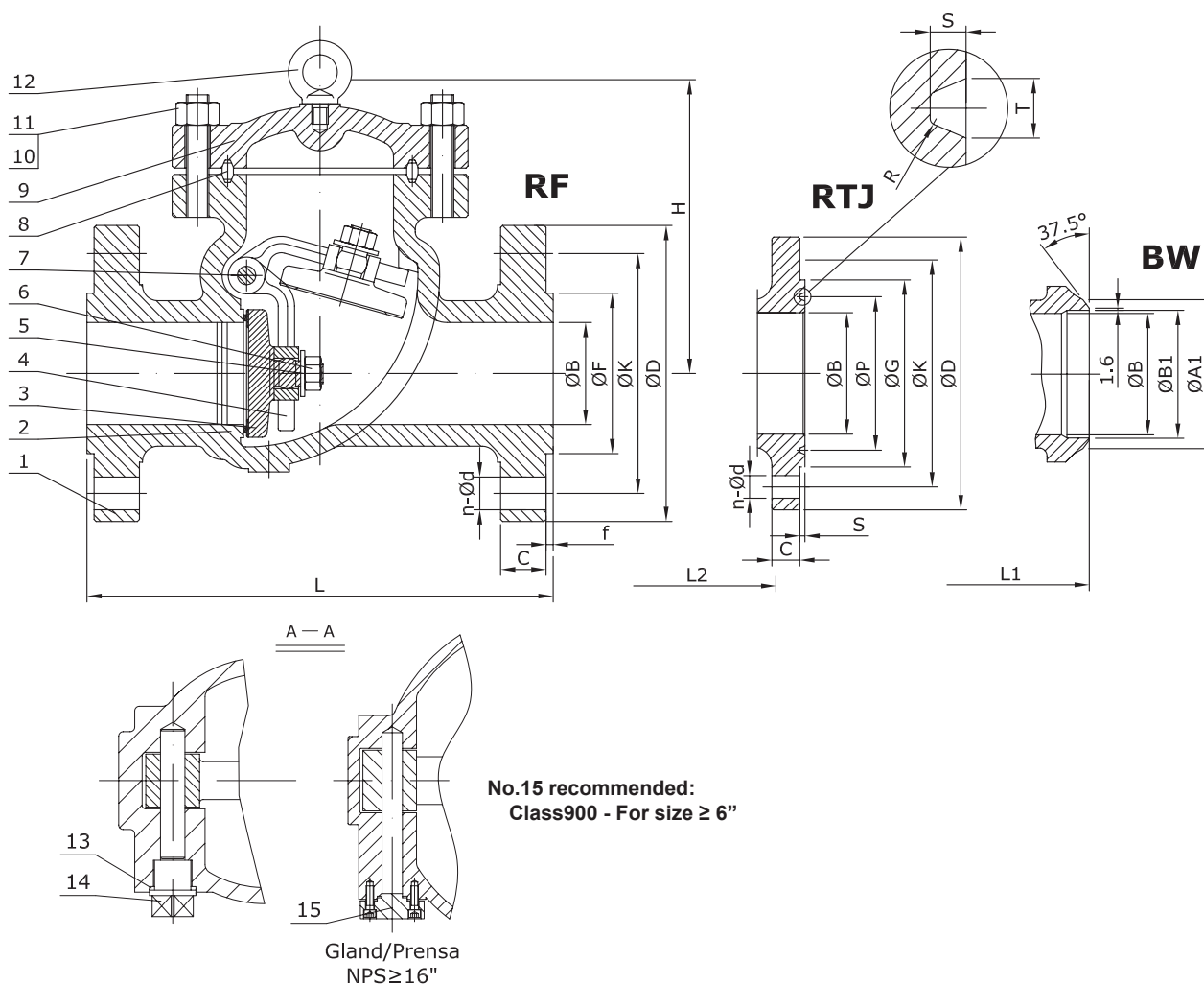
(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3SA0_      | Seat Surface | Disc Surface  |
|-----------------|--------------|---------------|
| TRIM #1 (3SA01) | A105+13Cr    | A216 WCB+13Cr |
| TRIM #5 (3SA05) | A105+HF      | A216 WCB+HF   |
| TRIM #8 (3SA08) | A105+HF      | A216 WCB+13Cr |

HF = Hard faced

## Main Parts and Materials

## SERIES 3S ANSI RANGE Class 900



**No.15 recommended:  
Class900 - For size ≥ 6"**

Gland/Prensa  
NPS≥16"

| Nº | Part name  | CF8 (3SI2_)  | CF8M (3SI0_) | CF3 (3SI1_)  | CF3M (3SI7_) |
|----|------------|--------------|--------------|--------------|--------------|
| 1  | Body       | A351 CF8     | A351 CF8M    | A351 CF3     | A351 CF3M    |
| 2  | Seat       | Integral+HF  | Integral+HF  | Integral+HF  | Integral+HF  |
| 3  | Disc       | A351 CF8+HF  | A351 CF8M+HF | A351 CF3+HF  | A351 CF3M+HF |
| 4  | Hinge      | A351 CF8     | A351 CF8M    | A351 CF3     | A351 CF3M    |
| 5  | Washer     | SS304        | SS316        | SS304L       | SS316L       |
| 6  | Disc Nut   | A194 8       | A194 8M      | A194 8M      | A194 8M      |
| 7  | Hinge Pin  | A182 F304    | Nitronic 50  | A182 F304L   | Nitronic 50  |
| 8  | Gasket     | SS304        | SS316        | SS316        | SS316L       |
| 9  | Cover      | A351 CF8     | A351 CF8M    | A351 CF3     | A351 CF3M    |
| 10 | Cover Bolt | A193 B8      | A193 B8M     | A193 B8M     | A193 B8M     |
| 11 | Cover Nut  | A194 8       | A194 8M      | A194 8M      | A194 8M      |
| 12 | Eye Bolt   | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel |
| 13 | Gasket     | SS304        | SS316        | SS304L       | SS316L       |
| 14 | Plug       | A182 F304    | A182 F316    | A182 F304L   | A182 F316L   |
| 15 | Gland      | A182 F304    | A182 F316    | A182 F304L   | A182 F316L   |

## Main Valve Parameters - Class 900

## SERIES 3S ANSI RANGE



| Nominal Size   |     | inch                  | 2"      | 2-1/2" | 3"      | 4"        | 5"        | 6"         | 8"         |
|----------------|-----|-----------------------|---------|--------|---------|-----------|-----------|------------|------------|
|                |     | DN                    | 50      | 65     | 80      | 100       | 125       | 150        | 200        |
| End connection | RF  | L                     | 368     | 419    | 381     | 457       | 559       | 610        | 737        |
|                |     | ØB                    | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                |     | ØD                    | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                |     | ØK                    | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                |     | ØF                    | 92,1    | 104,8  | 127     | 157,2     | 185,7     | 215,9      | 269,9      |
|                |     | C                     | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                |     | f                     | 7       | 7      | 7       | 7         | 7         | 7          | 7          |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                | BW  | L1                    | 368     | 419    | 381     | 457       | 559       | 610        | 737        |
|                |     | Schedule No.(1)       | 160     | -      | 160     | 120       | -         | 120        | 100        |
|                |     | ØB                    | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                |     | ØA1                   | 60,3    | -      | 91      | 117       | -         | 172        | 223        |
|                |     | ØB1                   | 38,16   | -      | 66,5    | 92        | -         | 140        | 189        |
|                |     | L2                    | 371     | 422    | 384     | 460       | 562       | 613        | 740        |
|                |     | ØB                    | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                |     | ØD                    | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                | RTJ | ØK                    | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                |     | ØG                    | 124     | 137    | 156     | 181       | 216       | 241        | 308        |
|                |     | ØP                    | 95,25   | 107,95 | 123,83  | 149,23    | 180,98    | 211,12     | 269,88     |
|                |     | C                     | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                |     | T                     | 11,91   | 11,91  | 11,91   | 11,91     | 11,91     | 11,91      | 11,91      |
|                |     | S                     | 7,92    | 7,92   | 7,92    | 7,92      | 7,92      | 7,92       | 7,92       |
|                |     | R                     | 0,8     | 0,8    | 0,8     | 0,8       | 0,8       | 0,8        | 0,8        |
|                |     | H                     | 175     | 220    | 254     | 314       | 353       | 381        | 533        |
|                |     | Kvs-value             | 86      | 164    | 222     | 415       | 736       | 974        | 1718       |
|                |     | Approx. Weight RF (2) | 70      | 86     | 98      | 135       | 201       | 250        | 450        |
|                |     | Approx. Weight BW     | 56      | 70     | 81      | 107       | 155       | 190        | 348        |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 900

## SERIES 3S ANSI RANGE



| Nominal Size   |                       | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"    | 24"        |
|----------------|-----------------------|-----------------|------------|------------|------------|------------|------------|--------|------------|
|                |                       | DN              | 250        | 300        | 350        | 400        | 450        | 500    | 600        |
| End connection | RF                    | L               | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                |                       | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |                       | ØD              | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                |                       | ØK              | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                |                       | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2  | 692,2      |
|                |                       | C               | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                |                       | f               | 7          | 7          | 7          | 7          | 7          | 7      | 7          |
|                |                       | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                | BW                    | L1              | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                |                       | Schedule No.(1) | 100        | 100        | 100        | 100        | 100        | 100    | 100        |
|                |                       | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |                       | ØA1             | 278        | 329        | 362        | 413        | 464        | 516    | 619        |
|                |                       | ØB1             | 236,5      | 281        | 308        | 354        | 398,5      | 443    | 532        |
|                |                       | L2              | 841        | 968        | 1039       | 1140       | 1232       | 1334   | 1568       |
|                |                       | ØB              | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |                       | ØD              | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                | RTJ                   | ØK              | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                |                       | ØG              | 362        | 419        | 467        | 524        | 594        | 648    | 772        |
|                |                       | ØP              | 323,85     | 381        | 419,1      | 469,9      | 533,4      | 584,2  | 692,15     |
|                |                       | C               | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                |                       | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                |                       | T               | 11,91      | 11,91      | 16,66      | 16,66      | 19,84      | 19,84  | 26,97      |
|                |                       | S               | 7,92       | 7,92       | 11,13      | 11,13      | 12,7       | 12,7   | 15,88      |
|                |                       | R               | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5    | 2,4        |
|                | H                     |                 | 558        | 609        | 736        | 762        | 863        | 939    | 1066       |
|                | Kvs-value             |                 | 2684       | 3923       | 4756       | 6214       | 8184       | 10103  | 14547      |
|                | Approx. Weight RF (2) |                 | 840        | 1180       | 1680       | 1980       | 2400       | 3200   | 5500       |
|                | Approx. Weight BW     |                 | 698        | 984        | 1457       | 1711       | 2040       | 2752   | 4684       |

(1) Other schedule nos. on request

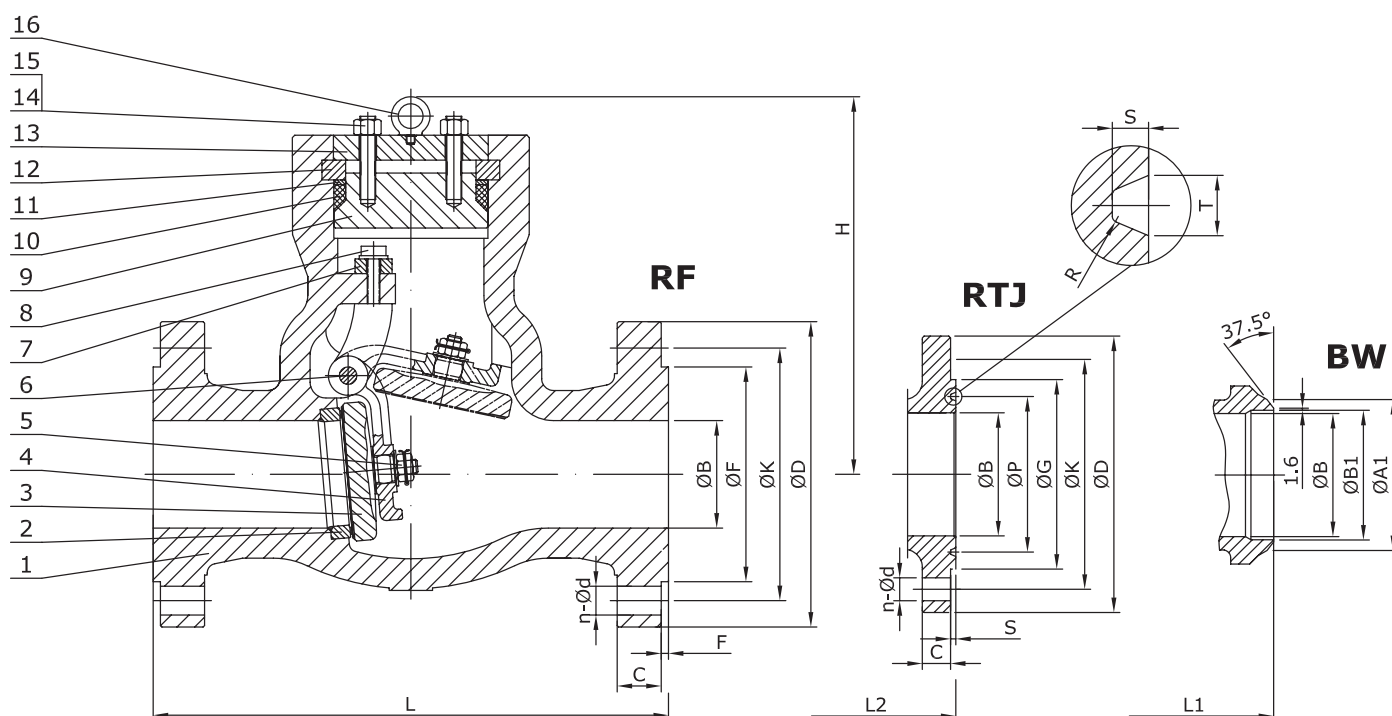
(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES 31 ANSI RANGE**  
**Class 1500&2500**


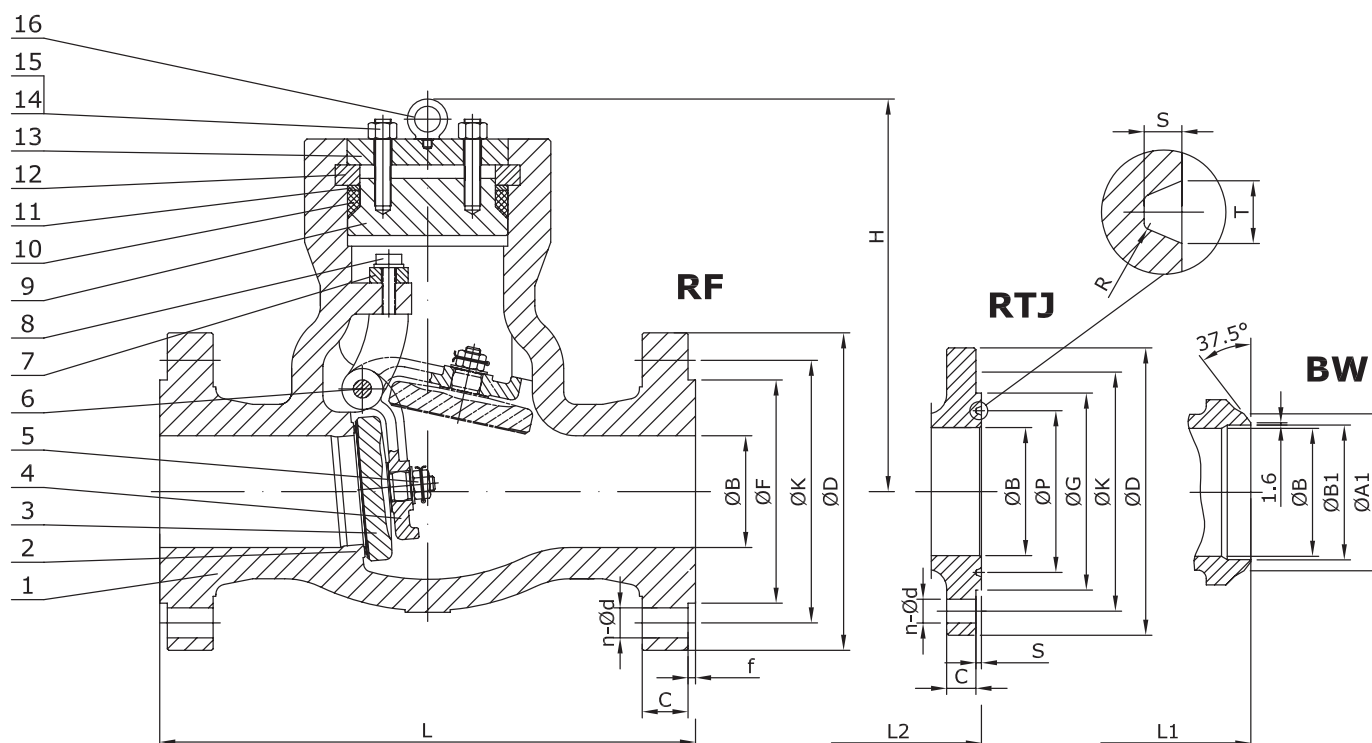
| N° | Part name     | A216 WCB<br>(31A0_) | A352 LCB            |                     | A217 WC1<br>(3SB1_) | A217 WC6<br>(3SB8_) | A217 WC9<br>(3SB9_) | A217 C5<br>(3SC2_) | A217 C12<br>(3SC4_) |
|----|---------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|
|    |               |                     | Trim 15<br>(31A8K_) | Trim 16<br>(31A8L_) |                     |                     |                     |                    |                     |
| 1  | Body          | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 2  | Seat Ring     | A105                | A182 F304<br>+HF    | A182 F316<br>+HF    | A182 F1<br>+HF      | A182 F11<br>+HF     | A182 F22<br>+HF     | A182 F5<br>+HF     | A182 F9<br>+HF      |
| 3  | Disc          | A216 WCB            | A351 CF8<br>+HF     | A351 CF8M<br>+HF    | A217 WC1<br>+HF     | A217 WC6<br>+HF     | A217 WC9<br>+HF     | A217 C5<br>+HF     | A217 C12<br>+HF     |
| 4  | Hinge         | A216 WCB            | A352 LCB            |                     | A217 WC1            | A217 WC6            | A217 WC9            | A217 C5            | A217 C12            |
| 5  | Disc Nut (1)  | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 6  | Hinge Pin     | A182 F6a            | A182 F304           | Nitronic 50         | A182 F6a            |                     | A182 F6a            |                    |                     |
| 7  | Gasket        | SS304               | SS304               | SS316               | SS304               |                     | SS304               |                    |                     |
| 8  | Bolt (1)      | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 9  | Cover         | A105                | A350 LF2            |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 10 | Gasket        | SS304<br>+Graphite  | SS304<br>+Graphite  | SS316<br>+Graphite  | SS304<br>+Graphite  |                     | SS304<br>+Graphite  |                    |                     |
| 11 | Gasket Washer | A182 F6a            | A182 F304           | A182 F316           | A182 F6a            |                     | A182 F6a            |                    |                     |
| 12 | Split Ring    | A105                | A350 LF2            |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 13 | Retainer Ring | A105                | A350 LF2            |                     | A182 F1             | A182 F11            | A182 F22            | A182 F5            | A182 F9             |
| 14 | Bolt (1)      | A193 B7             | A320 L7             |                     | A193 B16            |                     | A193 B16            |                    |                     |
| 15 | Nut (1)       | A194 2H             | A194 4              |                     | A194 4              |                     | A194 4              |                    |                     |
| 16 | Eye Bolt      | Carbon Steel        | Carbon Steel        |                     | Carbon Steel        |                     | Carbon Steel        |                    |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 31A0_      | Seat Surface | Disc Surface  |
|-----------------|--------------|---------------|
| TRIM #1 (31A01) | A105+13Cr    | A216 WCB+13Cr |
| TRIM #5 (31A05) | A105+HF      | A216 WCB+HF   |
| TRIM #8 (31A08) | A105+HF      | A216 WCB+13Cr |

HF = Hard faced

## Main Parts and Materials

**SERIES 31 ANSI RANGE**  
**Class 1500&2500**


| Nº | Part name     | CF8 (3112_)    | CF8M (3110_)   | CF3 (3111_)    | CF3M (3117_)    |
|----|---------------|----------------|----------------|----------------|-----------------|
| 1  | Body          | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 2  | Seat Ring     | Integral+HF    | Integral+HF    | Integral+HF    | Integral+HF     |
| 3  | Disc          | A351 CF8+HF    | A351 CF8M+HF   | A351 CF3+HF    | A351 CF3M+HF    |
| 4  | Hinge         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 5  | Disc Nut      | A194 8         | A194 8M        | A194 8M        | A194 8M         |
| 6  | Hinge Pin     | A182 F304      | Nitronic 50    | A182 F304L     | Nitronic 50     |
| 7  | Gasket        | SS304          | SS316          | SS304L         | SS316L          |
| 8  | Bolt          | A193 B8        | A193 B8M       | A193 B8M       | A193 B8M        |
| 9  | Cover         | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 10 | Gasket        | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 11 | Gasket Washer | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 12 | Split Ring    | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 13 | Retainer Ring | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 14 | Bolt          | A193 B8        | A193 B8M       | A193 B8M       | A193 B8M        |
| 15 | Nut           | A194 8         | A194 8M        | A194 8M        | A194 8M         |
| 16 | Eye Bolt      | Carbon Steel   | Carbon Steel   | Carbon Steel   | Carbon Steel    |

## Main Valve Parameters - Class 1500

## SERIES 31 ANSI RANGE



| Nominal Size          |     | inch            | 2"      | 2-1/2" | 3"        | 4"        | 5"        | 6"         | 8"         | 10"    | 12"        | 14"        | 16"        |
|-----------------------|-----|-----------------|---------|--------|-----------|-----------|-----------|------------|------------|--------|------------|------------|------------|
|                       |     | DN              | 50      | 65     | 80        | 100       | 125       | 150        | 200        | 250    | 300        | 350        | 400        |
| End connection        | RF  | L               | 368     | 419    | 470       | 546       | 673       | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                       |     | ØB              | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                       |     | ØD              | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                       |     | ØK              | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                       |     | ØF              | 92,1    | 104,8  | 127       | 157,2     | 185,7     | 215,9      | 269,9      | 323,8  | 381        | 412,8      | 469,9      |
|                       |     | C               | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                       |     | f               | 7       | 7      | 7         | 7         | 7         | 7          | 7          | 7      | 7          | 7          | 7          |
|                       | BW  | n-Ød            | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                       |     | L1              | 368     | 419    | 470       | 546       | 673       | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                       |     | Schedule No.(1) | 160     | -      | 160       | 120       | -         | 120        | 120        | 120    | 120        | 120        | 120        |
|                       |     | ØB              | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                       |     | ØA1             | 60,3    | -      | 91        | 117       | -         | 172        | 223        | 278    | 329        | 362        | 413        |
|                       |     | ØB1             | 38,16   | -      | 66,5      | 92        | -         | 140        | 182,5      | 230    | 273        | 300        | 344,5      |
|                       |     | L2              | 371     | 422    | 473       | 549       | 676       | 711        | 842        | 1001   | 1146       | 1276       | 1406       |
|                       | RTJ | ØB              | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                       |     | ØD              | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                       |     | ØK              | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                       |     | ØG              | 124     | 137    | 168       | 194       | 229       | 248        | 318        | 371    | 438        | 489        | 546        |
|                       |     | ØP              | 95,25   | 107,95 | 136,53    | 161,93    | 193,68    | 211,14     | 269,88     | 323,85 | 381        | 419,1      | 469,9      |
|                       |     | C               | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                       |     | n-Ød            | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                       |     | T               | 11,91   | 11,91  | 11,91     | 11,91     | 11,91     | 13,49      | 16,66      | 16,66  | 23,01      | 26,97      | 30,18      |
|                       |     | S               | 7,92    | 7,92   | 7,92      | 7,92      | 7,92      | 9,53       | 11,13      | 11,13  | 14,27      | 15,88      | 17,48      |
|                       |     | R               | 0,8     | 0,8    | 0,8       | 0,8       | 0,8       | 1,5        | 1,5        | 1,5    | 1,5        | 2,4        | 2,4        |
| H                     |     | 200             | 249     | 285    | 320       | 395       | 450       | 561        | 660        | 750    | 850        | 955        |            |
| Kvs-value             |     | 65              | 146     | 205    | 363       | 646       | 855       | 1496       | 2338       | 3410   | 4103       | 5355       |            |
| Approx. Weight RF (2) |     | 70              | 105     | 130    | 300       | 386       | 450       | 600        | 1190       | 1530   | 1854       | 2060       |            |
| Approx. Weight BW     |     | 56              | 83      | 104    | 264       | 323       | 366       | 457        | 945        | 1166   | 1343       | 1380       |            |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 2500

## SERIES 31 ANSI RANGE



| Nominal Size          |     | inch            | 2"        | 2-1/2"    | 3"        | 4"        | 5"        | 6"        | 8"         | 10"        | 12"        |
|-----------------------|-----|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
|                       |     | DN              | 50        | 65        | 80        | 100       | 125       | 150       | 200        | 250        | 300        |
| End connection        | RF  | L               | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |     | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |     | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |     | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |     | ØF              | 92,1      | 104,8     | 127       | 157,2     | 185,7     | 215,9     | 269,9      | 323,8      | 381        |
|                       |     | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |     | f               | 7         | 7         | 7         | 7         | 7         | 7         | 7          | 7          | 7          |
|                       | BW  | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       |     | L1              | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                       |     | Schedule No.(1) | 160       | -         | 160       | 160       | -         | 160       | 160        | 160        | 160        |
|                       |     | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |     | ØA1             | 60,3      | -         | 91        | 117       | -         | 172       | 223        | 278        | 329        |
|                       |     | ØB1             | 42,82     | -         | 66,5      | 87,5      | -         | 132       | 173        | 216        | 257        |
|                       |     | L2              | 454       | 511       | 581       | 676       | 797       | 918       | 1027       | 1276       | 1430       |
|                       | RTJ | ØB              | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                       |     | ØD              | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                       |     | ØK              | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                       |     | ØG              | 133       | 149       | 168       | 203       | 241       | 279       | 340        | 425        | 495        |
|                       |     | ØP              | 101,6     | 111,13    | 127       | 157,18    | 190,5     | 228,6     | 279,4      | 342,9      | 406,4      |
|                       |     | C               | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                       |     | n-Ød            | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                       |     | T               | 11,91     | 13,49     | 13,49     | 16,66     | 19,84     | 19,84     | 23,01      | 30,18      | 33,32      |
|                       |     | S               | 7,92      | 9,53      | 9,53      | 11,13     | 12,7      | 12,7      | 14,27      | 17,48      | 17,48      |
|                       |     | R               | 0,8       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5        | 2,4        | 2,4        |
| H                     |     | 280             | 297       | 310       | 370       | 436       | 485       | 544       | 710        | 800        |            |
| Kvs-value             |     | 41              | 74        | 98        | 167       | 304       | 406       | 726       | 1154       | 1684       |            |
| Approx. Weight RF (2) |     | 88              | 135       | 170       | 400       | 486       | 550       | 900       | 1600       | 2300       |            |
| Approx. Weight BW     |     | 65              | 96        | 118       | 321       | 334       | 344       | 869       | 1018       | 1470       |            |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

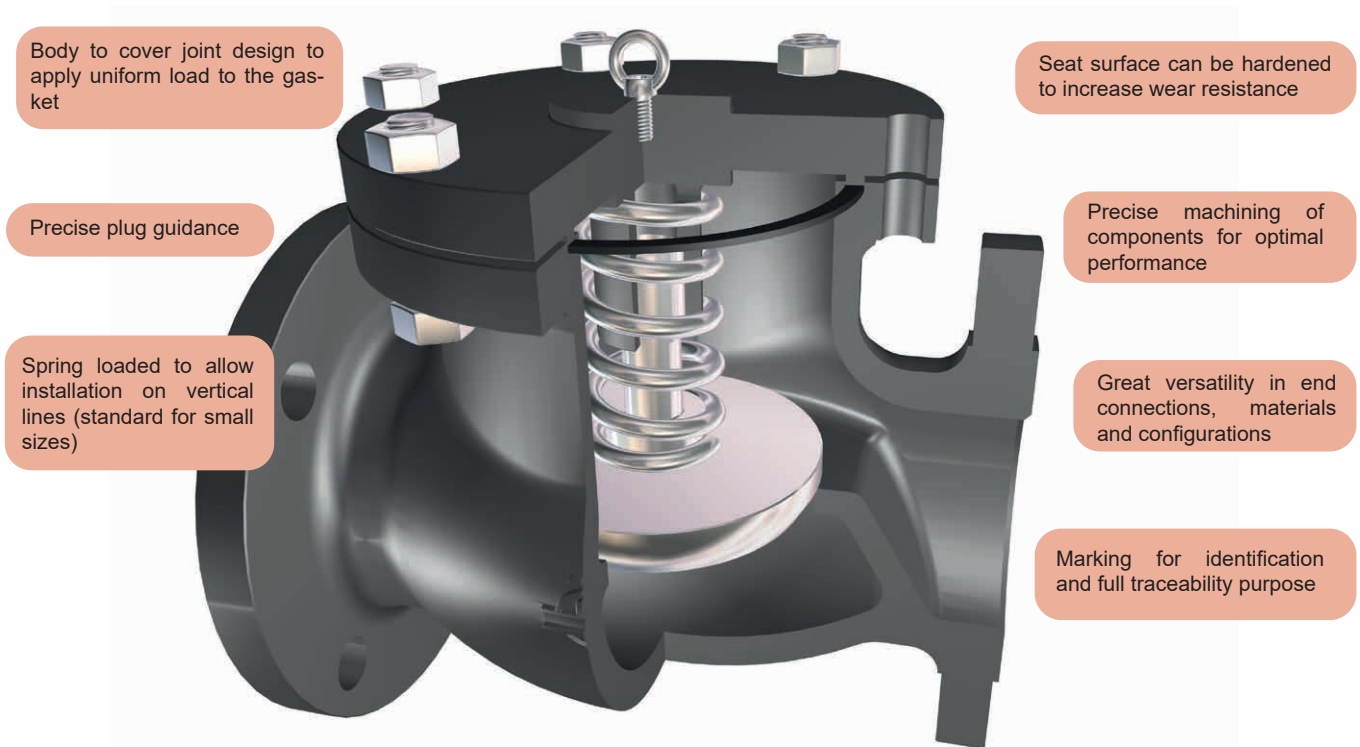
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## SERIES 3P ANSI RANGE

Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Series 3P are Piston Check Valves are provided with a guided piston which can be loaded by a spring and closes the disc against a horizontal valve seat. Piston Check Valves provide a larger pressure drop in the pipe line, this design permits a faster closure reaction and more tightness.



### Main Features / Reference Standards

Design: ASME B16.34 / BS 1868  
 Pressure Rating: 150/300/600/900/1500/2500#  
 Face to face length: ASME B16.10  
 Valve end connections: Flanged RF or RTJ to ASME B16.5  
 Welded BW to ASME B16.25  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)  
 for European Union territory

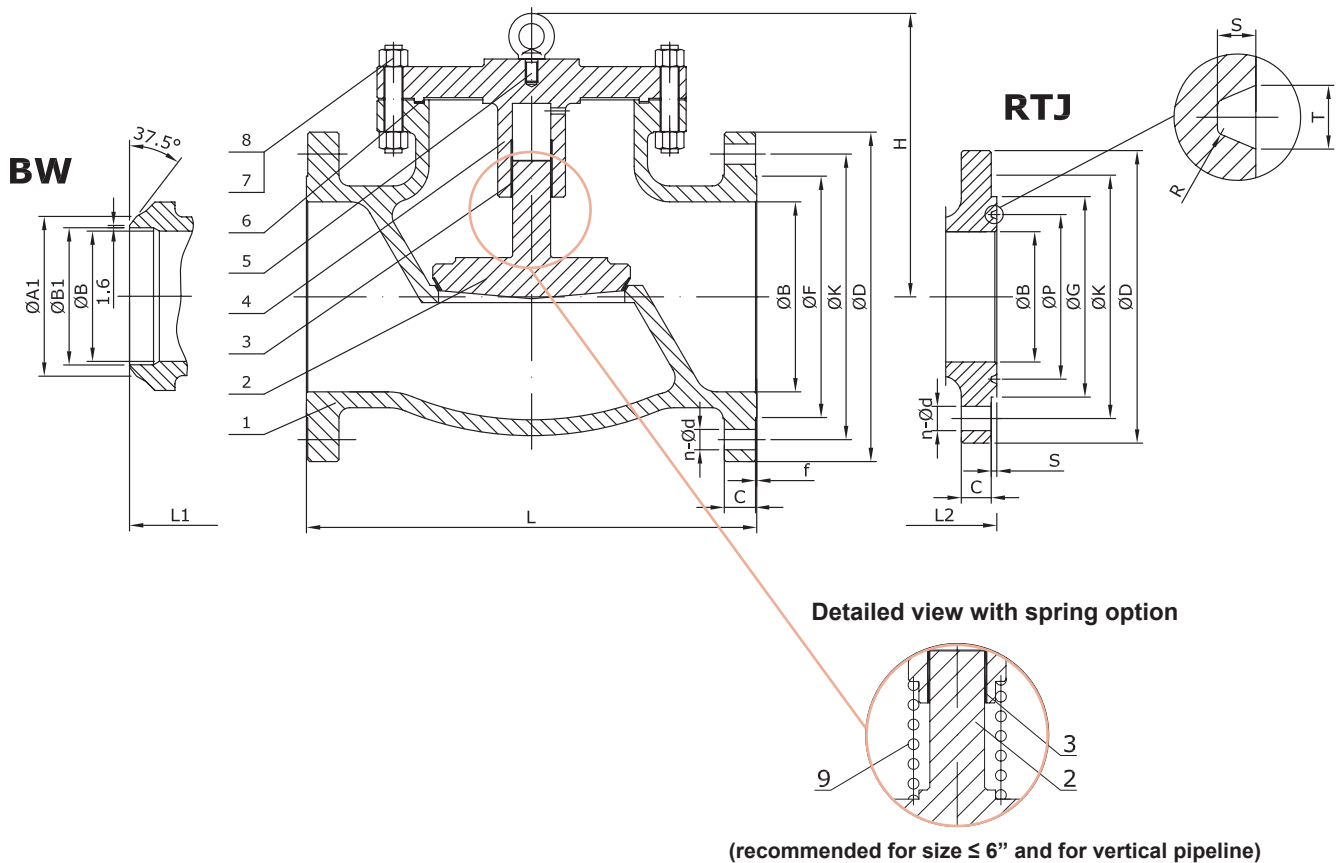
### Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*)  
 and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Diverse materials of construction and trim combinations, with or without spring, angle pattern, Y pattern, execution for turbulent flow or unstable condition, execution for aggressive atmosphere, compliance with NACE MR0175, etc. Please consult us

## Main Parts and Materials

**SERIES 3P ANSI RANGE**  
**Class 150&300**


| N° | Part name       | A216 WCB<br>(3PA0_) | A352 LCB        |                  | A217 WC1 (3PB1_) | A217 WC6 (3PB8_) | A217 WC9 (3PB9_) |
|----|-----------------|---------------------|-----------------|------------------|------------------|------------------|------------------|
|    |                 |                     | Trim 2 (3PA82_) | Trim 12 (3PA8G_) |                  |                  |                  |
| 1  | Body            | A216 WCB            | A352 LCB+SS304  | A352 LCB+SS316   | A217 WC1+HF      | A217 WC6+HF      | A217 WC9+HF      |
| 2  | Disc            | A105                | A182 F304       | A182 F316+HF     | A182 F1+HF       | A182 F11+HF      | A182 F22+HF      |
| 3  | Bushing         | SS304               | SS304           | SS316            |                  | SS304            |                  |
| 4  | Cover           | A105                | A350 LF2        |                  | A182 F1          | A182 F11         | A182 F22         |
| 5  | Eye Bolt        | Carbon Steel        | Carbon Steel    |                  | Carbon Steel     |                  |                  |
| 6  | Cover Gasket    | SS304+Graphite      | SS304+Graphite  | SS316+Graphite   | SS304+Graphite   |                  |                  |
| 7  | Cover Bolt (1)  | A193 B7             | A320 L7         |                  | A193 B16         | A193 B16         | A193 B16         |
| 8  | Cover Nut (1)   | A194 2H             | A194 4          |                  | A194 4           |                  |                  |
| 9  | Spring (Option) | 17-4PH              | 17-4PH          |                  | 17-4PH           |                  |                  |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3PA0_      | Body Surface  | Disc Surface |
|-----------------|---------------|--------------|
| TRIM #1 (3PA01) | A216 WCB+13Cr | A105+13Cr    |
| TRIM #5 (3PA05) | A216 WCB+HF   | A105+HF      |
| TRIM #8 (3PA08) | A216 WCB+HF   | A105+13Cr    |

HF = Hard faced

| N° | Part name       | A217 C5 (3PC2_) | A217 C12 (3PC4_) | CF8 (3SI2_)    | CF8M (3SI0_)   | CF3 (3SI1_)    | CF3M (3SI7_)    |
|----|-----------------|-----------------|------------------|----------------|----------------|----------------|-----------------|
| 1  | Body            | A217 C5+HF      | A217 C12+HF      | A351 CF8       | A351 CF8M+HF   | A351 CF3       | A351 CF3M+HF    |
| 2  | Disc            | A182 F5+HF      | A182 F9+HF       | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 3  | Bushing         | SS304           |                  | SS304          | SS316          | SS316          |                 |
| 4  | Cover           | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 5  | Eye Bolt        | Carbon Steel    |                  | Carbon Steel   |                | Carbon Steel   |                 |
| 6  | Cover Gasket    | SS304+Graphite  |                  | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 7  | Cover Bolt      | A193 B16        | A193 B16         | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 8  | Cover Nut       | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 9  | Spring (Option) | 17-4PH          |                  | SS304          | SS316          | SS304          | SS316           |

## Main Valve Parameters - Class 150

## SERIES 3P ANSI RANGE



| Nominal Size   |                       | inch            | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"      | 8"      |
|----------------|-----------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|
|                |                       | DN              | 50      | 65      | 80      | 100     | 125     | 150     | 200     |
| End connection | RF                    | L               | 203     | 216     | 241     | 292     | 356     | 406     | 495     |
|                |                       | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                |                       | ØD              | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                |                       | ØK              | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                |                       | ØF              | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9   | 269,9   |
|                |                       | C               | 14,3    | 15,9    | 17,5    | 22,3    | 22,3    | 23,9    | 27      |
|                |                       | f               | 2       | 2       | 2       | 2       | 2       | 2       | 2       |
|                |                       | n-Ød            | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                | BW                    | L1              | 203     | 216     | 241     | 292     | 356     | 403     | 419     |
|                |                       | Schedule No.(1) | 40      | -       | 40      | 40      | -       | 40      | 40      |
|                |                       | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                |                       | ØA1             | 60,3    | -       | 91      | 117     | -       | 172     | 223     |
|                |                       | ØB1             | 52,48   | -       | 78      | 102     | -       | 154     | 203     |
|                | RTJ                   | L2              | 216     | 229     | 254     | 305     | 369     | 419     | 508     |
|                |                       | ØB              | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                |                       | ØD              | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                |                       | ØK              | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                |                       | ØG              | 102     | 121     | 133     | 171     | 194     | 219     | 273     |
|                |                       | ØP              | 82,55   | 101,6   | 114,3   | 149,23  | 171,45  | 193,68  | 247,65  |
|                |                       | C               | 17,5    | 20,7    | 22,3    | 22,3    | 22,3    | 23,9    | 27      |
|                |                       | n-Ød            | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                |                       | T               | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    |
|                |                       | S               | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    |
|                |                       | R               | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     |
|                | H                     |                 | 130     | 147     | 160     | 175     | 212     | 240     | 350     |
|                | Kvs-value             |                 | -       | -       | -       | -       | -       | -       | -       |
|                | Approx. Weight RF (2) |                 | 13      | 19      | 24      | 40      | 48      | 54      | 98      |
|                | Approx. Weight BW     |                 | 10      | 15      | 19      | 32      | 37      | 41      | 76      |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES 3P ANSI RANGE



| Nominal Size   |                       | inch            | 10"    | 12"    | 14"        | 16"        | 18"        | 20"        | 24"        |
|----------------|-----------------------|-----------------|--------|--------|------------|------------|------------|------------|------------|
|                |                       | DN              | 250    | 300    | 350        | 400        | 450        | 500        | 600        |
| End connection | RF                    | L               | 622    | 698    | 787        | 914        | 978        | 978        | 1295       |
|                |                       | ØB              | 254    | 305    | 337        | 387        | 438        | 489        | 591        |
|                |                       | ØD              | 405    | 485    | 535        | 595        | 635        | 700        | 815        |
|                |                       | ØK              | 362    | 431,8  | 476,3      | 539,8      | 577,9      | 635        | 749,3      |
|                |                       | ØF              | 323,8  | 381    | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      |
|                |                       | C               | 28,6   | 30,2   | 33,4       | 35         | 38,1       | 41,3       | 46,1       |
|                |                       | f               | 2      | 2      | 2          | 2          | 2          | 2          | 2          |
|                |                       | n-Ød            | 12 - 1 | 12 - 1 | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                | BW                    | L1              | 457    | 502    | 572        | 610        | 660        | 711        | 813        |
|                |                       | Schedule No.(1) | 40     | STD    | STD        | STD        | STD        | STD        | STD        |
|                |                       | ØB              | 254    | 305    | 337        | 387        | 438        | 489        | 591        |
|                |                       | ØA1             | 278    | 329    | 362        | 413        | 464        | 516        | 619        |
|                |                       | ØB1             | 254,5  | 305    | 336,5      | 387,5      | 438        | 489        | 590,5      |
|                | RTJ                   | L2              | 635    | 711    | 800        | 927        | 991        | 991        | 1308       |
|                |                       | ØB              | 254    | 305    | 337        | 387        | 438        | 489        | 591        |
|                |                       | ØD              | 405    | 485    | 535        | 595        | 635        | 700        | 815        |
|                |                       | ØK              | 362    | 431,8  | 476,3      | 539,8      | 577,9      | 635        | 749,3      |
|                |                       | ØG              | 330    | 406    | 425        | 483        | 546        | 597        | 711        |
|                |                       | ØP              | 304,8  | 381    | 396,88     | 454,03     | 517,53     | 558,8      | 673,1      |
|                |                       | C               | 28,6   | 30,2   | 33,4       | 35         | 38,1       | 41,3       | 46,1       |
|                |                       | n-Ød            | 12 - 1 | 12 - 1 | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 |
|                |                       | T               | 8,74   | 8,74   | 8,74       | 8,74       | 8,74       | 8,74       | 8,74       |
|                |                       | S               | 6,35   | 6,35   | 6,35       | 6,35       | 6,35       | 6,35       | 6,35       |
|                |                       | R               | 0,8    | 0,8    | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        |
|                | H                     |                 | 420    | 439    | 480        | 565        | 590        | 670        | 760        |
|                | Kvs-value             |                 | -      | -      | -          | -          | -          | -          | -          |
|                | Approx. Weight RF (2) |                 | 211    | 310    | 578        | 748        | 978        | 1148       | 1445       |
|                | Approx. Weight BW     |                 | 182    | 266    | 522        | 678        | 901        | 1056       | 1303       |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"       | 8"     |
|----------------|-----|-----------------------|---------|---------|---------|---------|---------|----------|--------|
|                |     | DN                    | 50      | 65      | 80      | 100     | 125     | 150      | 200    |
| End connection | RF  | L                     | 267     | 292     | 318     | 356     | 400     | 444      | 559    |
|                |     | ØB                    | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                |     | ØD                    | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                |     | ØK                    | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                |     | ØF                    | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9    | 269,9  |
|                |     | C                     | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                |     | f                     | 2       | 2       | 2       | 2       | 2       | 2        | 2      |
|                |     | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                | BW  | L1                    | 267     | 292     | 318     | 356     | 400     | 444      | 559    |
|                |     | Schedule No.(1)       | 40      | -       | 40      | 40      | -       | 40       | 40     |
|                |     | ØB                    | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                |     | ØA1                   | 60,3    | -       | 91      | 117     | -       | 172      | 223    |
|                |     | ØB1                   | 52,48   | -       | 78      | 102     | -       | 154      | 203    |
|                | RTJ | L2                    | 283     | 308     | 334     | 372     | 416     | 460      | 575    |
|                |     | ØB                    | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                |     | ØD                    | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                |     | ØK                    | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                |     | ØG                    | 108     | 127     | 146     | 175     | 210     | 241      | 302    |
|                |     | ØP                    | 82,55   | 101,6   | 123,83  | 149,23  | 180,98  | 211,12   | 269,88 |
|                |     | C                     | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                |     | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                |     | T                     | 11,91   | 11,91   | 11,91   | 11,91   | 11,91   | 11,91    | 11,91  |
|                |     | S                     | 7,92    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92     | 7,92   |
|                |     | R                     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8      | 0,8    |
|                |     | H                     | 140     | 166     | 185     | 210     | 268     | 310      | 390    |
|                |     | Kvs-value             | -       | -       | -       | -       | -       | -        | -      |
|                |     | Approx. Weight RF (2) | 21      | 30      | 36      | 60      | 84      | 102      | 196    |
|                |     | Approx. Weight BW     | 16      | 23      | 28      | 47      | 65      | 79       | 160    |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 10"        | 12"        | 14"        | 16"        | 18"        | 20"        | 24"        |
|----------------|-----|-----------------------|------------|------------|------------|------------|------------|------------|------------|
|                |     | DN                    | 250        | 300        | 350        | 400        | 450        | 500        | 600        |
| End connection | RF  | L                     | 622        | 711        | 838        | 864        | 978        | 1016       | 1346       |
|                |     | ØB                    | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                |     | ØD                    | 445        | 520        | 585        | 650        | 710        | 775        | 915        |
|                |     | ØK                    | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      |
|                |     | ØF                    | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      |
|                |     | C                     | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62         | 68,3       |
|                |     | f                     | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
|                |     | n-Ød                  | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 |
|                | BW  | L1                    | 622        | 711        | -          | -          | -          | -          | -          |
|                |     | Schedule No.(1)       | 40         | STD        | STD        | STD        | STD        | STD        | STD        |
|                |     | ØB                    | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                |     | ØA1                   | 278        | 329        | 362        | 413        | 464        | 516        | 619        |
|                |     | ØB1                   | 254,5      | 305        | 336,5      | 387,5      | 438        | 489        | 590,5      |
|                | RTJ | L2                    | 638        | 727        | 854        | 880        | 994        | 1035       | 1368       |
|                |     | ØB                    | 254        | 305        | 337        | 387        | 432        | 483        | 584        |
|                |     | ØD                    | 445        | 520        | 585        | 650        | 710        | 775        | 915        |
|                |     | ØK                    | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      |
|                |     | ØG                    | 356        | 413        | 457        | 508        | 575        | 635        | 749        |
|                |     | ØP                    | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15     |
|                |     | C                     | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62         | 68,3       |
|                |     | n-Ød                  | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 |
|                |     | T                     | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66      |
|                |     | S                     | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13      |
|                |     | R                     | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        |
|                |     | H                     | 425        | 480        | 517        | 580        | 640        | 710        | 810        |
|                |     | Kvs-value             | -          | -          | -          | -          | -          | -          | -          |
|                |     | Approx. Weight RF (2) | 331        | 493        | 918        | 1020       | 1318       | 1658       | -          |
|                |     | Approx. Weight BW     | 282        | 419        | 817        | 887        | 1152       | 1453       | -          |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

(3) Acc. to manufacturer standard

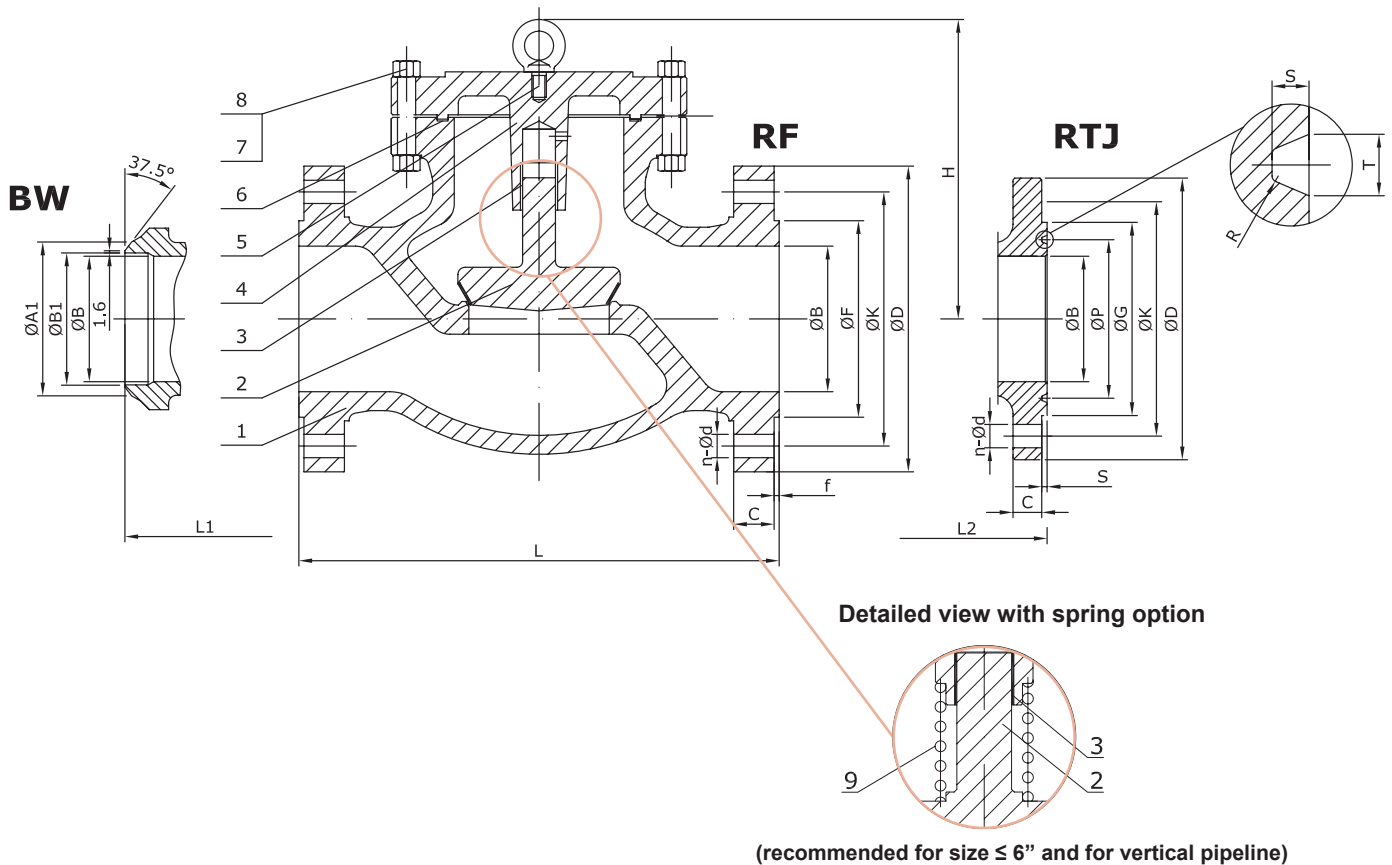
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

# Main Parts and Materials

**SERIES 3P ANSI RANGE**  
**Class 600**



| N° | Part name       | A216 WCB<br>(3PA0_) | A352 LCB        |                  | A217 WC1 (3PB1_) | A217 WC6 (3PB8_) | A217 WC9 (3PB9_) |
|----|-----------------|---------------------|-----------------|------------------|------------------|------------------|------------------|
|    |                 |                     | Trim 2 (3PA82_) | Trim 12 (3PA8G_) |                  |                  |                  |
| 1  | Body            | A216 WCB            | A352 LCB+SS304  | A352 LCB+SS316   | A217 WC1+HF      | A217 WC6+HF      | A217 WC9+HF      |
| 2  | Disc            | A105                | A182 F304       | A182 F316+HF     | A182 F1+HF       | A182 F11+HF      | A182 F22+HF      |
| 3  | Bushing         | SS304               | SS304           | SS316            |                  | SS304            |                  |
| 4  | Cover           | A105                | A350 LF2        |                  | A182 F1          | A182 F11         | A182 F22         |
| 5  | Eye Bolt        | Carbon Steel        | Carbon Steel    |                  | Carbon Steel     |                  |                  |
| 6  | Cover Gasket    | SS304+Graphite      | SS304+Graphite  | SS316+Graphite   | SS304+Graphite   |                  |                  |
| 7  | Cover Bolt (1)  | A193 B7             | A320 L7         |                  | A193 B16         | A193 B16         | A193 B16         |
| 8  | Cover Nut (1)   | A194 2H             | A194 4          |                  | A194 4           |                  |                  |
| 9  | Spring (Option) | 17-4PH              | 17-4PH          |                  | 17-4PH           |                  |                  |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3PA0_      | Body Surface  | Disc Surface |
|-----------------|---------------|--------------|
| TRIM #1 (3PA01) | A216 WCB+13Cr | A105+13Cr    |
| TRIM #5 (3PA05) | A216 WCB+HF   | A105+HF      |
| TRIM #8 (3PA08) | A216 WCB+HF   | A105+13Cr    |

HF = Hard faced

| N° | Part name       | A217 C5 (3PC2_) | A217 C12 (3PC4_) | CF8 (3SI2_)    | CF8M (3SI0_)   | CF3 (3SI1_)    | CF3M (3SI7_)    |
|----|-----------------|-----------------|------------------|----------------|----------------|----------------|-----------------|
| 1  | Body            | A217 C5+HF      | A217 C12+HF      | A351 CF8       | A351 CF8M+HF   | A351 CF3       | A351 CF3M+HF    |
| 2  | Disc            | A182 F5+HF      | A182 F9+HF       | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 3  | Bushing         | SS304           |                  | SS304          | SS316          | SS316          |                 |
| 4  | Cover           | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 5  | Eye Bolt        | Carbon Steel    |                  | Carbon Steel   |                | Carbon Steel   |                 |
| 6  | Cover Gasket    | SS304+Graphite  |                  | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 7  | Cover Bolt      | A193 B16        | A193 B16         | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 8  | Cover Nut       | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 9  | Spring (Option) | 17-4PH          |                  | SS304          | SS316          | SS304          | SS316           |

## Main Valve Parameters - Class 600

## SERIES 3P ANSI RANGE



| Nominal Size   |                       | inch            | 2"      | 2-1/2"  | 3"      | 4"     | 5"        | 6"         | 8"       |
|----------------|-----------------------|-----------------|---------|---------|---------|--------|-----------|------------|----------|
|                |                       | DN              | 50      | 65      | 80      | 100    | 125       | 150        | 200      |
| End connection | RF                    | L               | 292     | 330     | 356     | 432    | 508       | 559        | 660      |
|                |                       | ØB              | 51      | 65      | 76      | 102    | 128       | 152        | 200      |
|                |                       | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      |
|                |                       | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    |
|                |                       | ØF              | 92,1    | 104,8   | 127     | 157,2  | 185,7     | 215,9      | 269,9    |
|                |                       | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     |
|                |                       | f               | 7       | 7       | 7       | 7      | 7         | 7          | 7        |
|                |                       | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |
|                | BW                    | L1              | 292     | 330     | 356     | 432    | 508       | 559        | 660      |
|                |                       | Schedule No.(1) | 80      | -       | 80      | 80     | -         | 80         | 80       |
|                |                       | ØB              | 51      | 65      | 76      | 102    | 128       | 152        | 200      |
|                |                       | ØA1             | 60,3    | -       | 91      | 117    | -         | 172        | 223      |
|                |                       | ØB1             | 49,22   | -       | 73,5    | 97     | -         | 146,5      | 193,5    |
|                | RTJ                   | L2              | 295     | 346     | 372     | 448    | 524       | 562        | 663      |
|                |                       | ØB              | 51      | 65      | 76      | 102    | 128       | 152        | 200      |
|                |                       | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      |
|                |                       | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    |
|                |                       | ØG              | 108     | 127     | 146     | 175    | 210       | 241        | 302      |
|                |                       | ØP              | 82,55   | 101,6   | 123,83  | 149,23 | 180,98    | 211,12     | 269,88   |
|                |                       | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     |
|                |                       | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |
|                |                       | T               | 11,91   | 11,91   | 11,91   | 11,91  | 11,91     | 11,91      | 11,91    |
|                |                       | S               | 7,92    | 7,92    | 7,92    | 7,92   | 7,92      | 7,92       | 7,92     |
|                |                       | R               | 0,8     | 0,8     | 0,8     | 0,8    | 0,8       | 0,8        | 0,8      |
|                | H                     |                 | 145     | 194     | 230     | 265    | 314       | 350        | 415      |
|                | Kvs-value             |                 | -       | -       | -       | -      | -         | -          | -        |
|                | Approx. Weight RF (2) |                 | 26      | 38      | 47      | 85     | 151       | 200        | 349      |
|                | Approx. Weight BW     |                 | 19      | 28      | 34      | 62     | 116       | 156        | 285      |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 10"        | 12"        | 14"        | 16"        | 18"        | 20"        | 24"    |
|----------------|-----|-----------------------|------------|------------|------------|------------|------------|------------|--------|
|                |     | DN                    | 250        | 300        | 350        | 400        | 450        | 500        | 600    |
| End connection | RF  | L                     | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |
|                |     | ØB                    | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                |     | ØD                    | 510        | 560        | 605        | 685        | 745        | 815        | 940    |
|                |     | ØK                    | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |
|                |     | ØF                    | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2  |
|                |     | C                     | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |
|                |     | f                     | 7          | 7          | 7          | 7          | 7          | 7          | 7      |
|                |     | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 |
|                | BW  | L1                    | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |
|                |     | Schedule No.(1)       | 80         | 80         | 80         | 80         | 80         | 80         | 80     |
|                |     | ØB                    | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                |     | ØA1                   | 278        | 329        | 362        | 413        | 464        | 516        | 619    |
|                |     | ØB1                   | 243        | 289        | 317,5      | 363,5      | 409,5      | 455,5      | 547,5  |
|                | RTJ | L2                    | 790        | 841        | 892        | 994        | 1095       | 1200       | 1407   |
|                |     | ØB                    | 248        | 299        | 327        | 375        | 419        | 464        | 559    |
|                |     | ØD                    | 510        | 560        | 605        | 685        | 745        | 815        | 940    |
|                |     | ØK                    | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |
|                |     | ØG                    | 356        | 413        | 457        | 508        | 575        | 635        | 749    |
|                |     | ØP                    | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15 |
|                |     | C                     | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |
|                |     | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 |
|                |     | T                     | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66  |
|                |     | S                     | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13  |
|                |     | R                     | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5    |
|                |     | H                     | 485        | 560        | 620        | 670        | 780        | 910        | 965    |
|                |     | Kvs-value             | -          | -          | -          | -          | -          | -          | -      |
|                |     | Approx. Weight RF (2) | 497        | 893        | 1088       | 1360       | 2380       | 2975       | 3910   |
|                |     | Approx. Weight BW     | 394        | 771        | 908        | 1132       | 2092       | 2621       | 3472   |

(1) Other schedule nos. on request

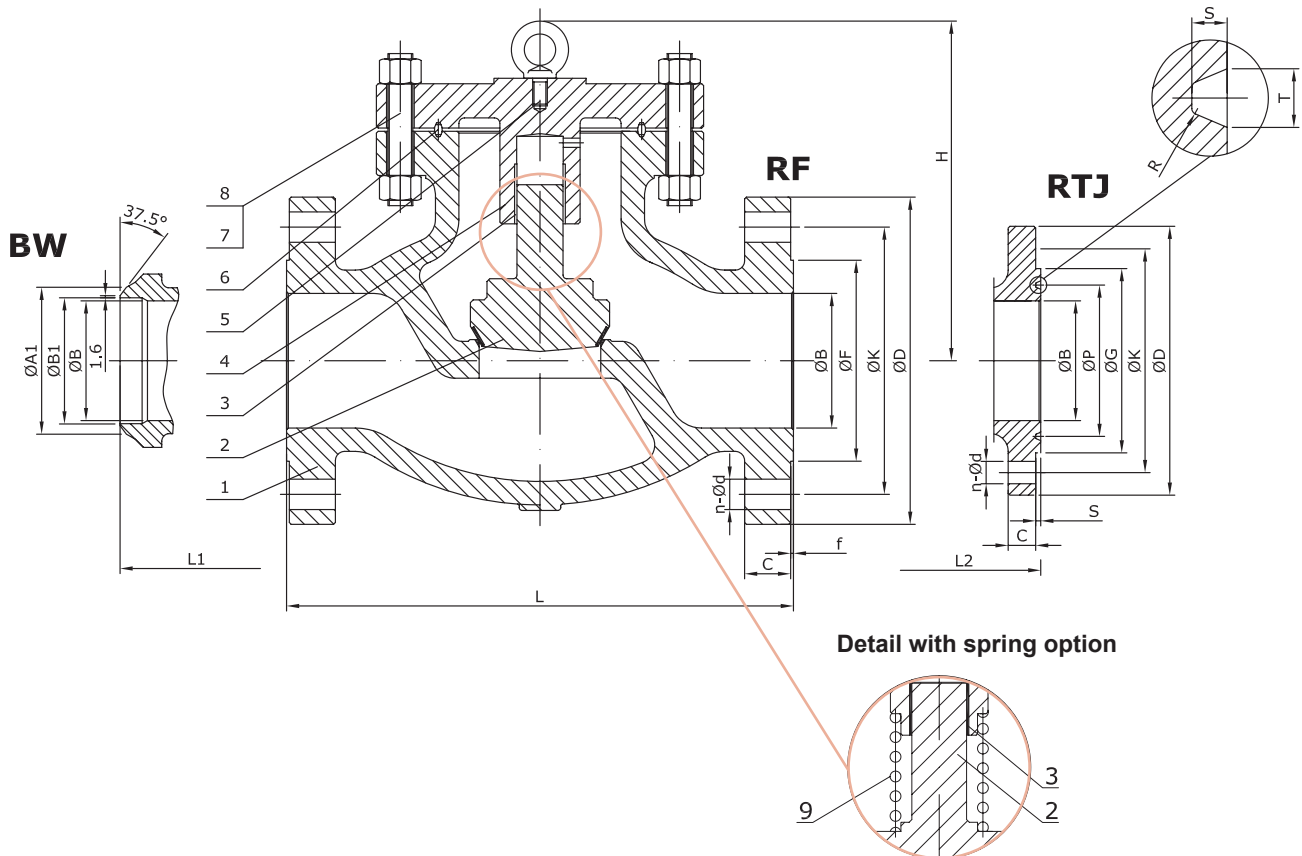
(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES 3P ANSI RANGE**  
**Class 900,1500&2500**


(recommended for size ≤ 6" and for vertical installation)

| Nº | Part name       | A216 WCB<br>(3PA0_) | A352 LCB         |                  | A217 WC1 (3PB1_) | A217 WC6 (3PB8_) | A217 WC9 (3PB9_) |
|----|-----------------|---------------------|------------------|------------------|------------------|------------------|------------------|
|    |                 |                     | Trim 15 (3PA8L_) | Trim 16 (3PA8K_) |                  |                  |                  |
| 1  | Body            | ASTM A216 WCB       | A352 LCB+HF      | A352 LCB+HF      | A217 WC1+HF      | A217 WC6+HF      | A217 WC9+HF      |
| 2  | Disc            | ASTM A105           | A182 F304+HF     | A182 F316+HF     | A182 F1+HF       | A182 F11+HF      | A182 F22+HF      |
| 3  | Bushing         | SS304               | SS304            | SS316            |                  | SS304            |                  |
| 4  | Cover           | ASTM A105           | A350 LF2         |                  | A182 F1          | A182 F11         | A182 F22         |
| 5  | Eye Bolt        | Carbon Steel        | Carbon Steel     |                  |                  | Carbon Steel     |                  |
| 6  | Cover Gasket    | SS304               | SS304            | SS316            |                  | SS304            |                  |
| 7  | Cover Bolt (1)  | ASTM A193 B7        | A320 L7          |                  |                  | A193 B16         |                  |
| 8  | Cover Nut (1)   | ASTM A194 2H        | A194 4           |                  |                  | A194 4           |                  |
| 9  | Spring (Option) | 17-4PH              | 17-4PH           |                  |                  | 17-4PH           |                  |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| Fig. 3PA0_      | Body Surface  | Disc Surface |
|-----------------|---------------|--------------|
| TRIM #1 (3PA01) | A216 WCB+13Cr | A105+13Cr    |
| TRIM #5 (3PA05) | A216 WCB+HF   | A105+HF      |
| TRIM #8 (3PA08) | A216 WCB+HF   | A105+13Cr    |

HF = Hard faced

| Nº | Part name       | A217 C5 (3PC2_) | A217 C12 (3PC4_) | CF8 (3SI2_)  | CF8M (3SI0_) | CF3 (3SI1_)   | CF3M (3SI7_)  |
|----|-----------------|-----------------|------------------|--------------|--------------|---------------|---------------|
| 1  | Body            | A217 C5+HF      | A217 C12+HF      | A351 CF8+HF  | A351 CF8M+HF | A351 CF3+HF   | A351 CF3M+HF  |
| 2  | Disc            | A182 F5+HF      | A182 F9+HF       | A182 F304+HF | A182 F316+HF | A182 F304L+HF | A182 F316L+HF |
| 3  | Bushing         | SS304           |                  | SS304        | SS316        | SS316         |               |
| 4  | Cover           | A182 F5         | A182 F9          | A182 F304    | A182 F316    | A182 F304L    | A182 F316L    |
| 5  | Eye Bolt        | Carbon Steel    |                  | Carbon Steel |              | Carbon Steel  |               |
| 6  | Cover Gasket    | SS304           |                  | SS304        | SS316        | SS316         | SS316L        |
| 7  | Cover Bolt      | A193 B16        |                  | A193 B8      | A193 B8M     | A193 B8M      |               |
| 8  | Cover Nut       | A194 4          |                  | A194 8       | A194 8M      | A194 8M       |               |
| 9  | Spring (Option) | 17-4PH          |                  | SS304        | SS316        | SS304         | SS316         |

## Main Valve Parameters - Class 900

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 2"      | 2-1/2" | 3"      | 4"        | 5"        | 6"         | 8"         |
|----------------|-----|-----------------------|---------|--------|---------|-----------|-----------|------------|------------|
|                |     | DN                    | 50      | 65     | 80      | 100       | 125       | 150        | 200        |
| End connection | RF  | L                     | 368     | 419    | 381     | 457       | 559       | 610        | 737        |
|                |     | ØB                    | 48      | 62     | 73      | 98        | 123       | 146        | 191        |
|                |     | ØD                    | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                |     | ØK                    | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                |     | ØF                    | 92,1    | 104,8  | 127     | 157,2     | 185,7     | 215,9      | 269,9      |
|                |     | C                     | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                |     | f                     | 7       | 7      | 7       | 7         | 7         | 7          | 7          |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                | BW  | L1                    | 368     | 419    | 381     | 457       | 559       | 610        | 737        |
|                |     | Schedule No.(1)       | 160     | -      | 160     | 120       | -         | 120        | 100        |
|                |     | ØB                    | 48      | 62     | 73      | 98        | 123       | 146        | 191        |
|                |     | ØA1                   | 60,3    | -      | 91      | 117       | -         | 172        | 223        |
|                |     | ØB1                   | 38,16   | -      | 66,5    | 92        | -         | 140        | 189        |
|                | RTJ | L2                    | 371     | 422    | 384     | 460       | 562       | 613        | 740        |
|                |     | ØB                    | 48      | 62     | 73      | 98        | 123       | 146        | 191        |
|                |     | ØD                    | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                |     | ØK                    | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                |     | ØG                    | 124     | 137    | 156     | 181       | 216       | 241        | 308        |
|                |     | ØP                    | 95,25   | 107,95 | 123,83  | 149,23    | 180,98    | 211,12     | 269,88     |
|                |     | C                     | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                |     | T                     | 11,91   | 11,91  | 11,91   | 11,91     | 11,91     | 11,91      | 11,91      |
|                |     | S                     | 7,92    | 7,92   | 7,92    | 7,92      | 7,92      | 7,92       | 7,92       |
|                |     | R                     | 0,8     | 0,8    | 0,8     | 0,8       | 0,8       | 0,8        | 0,8        |
|                |     | H                     | 180     | 226    | 260     | 320       | 360       | 390        | 540        |
|                |     | Kvs-value             | -       | -      | -       | -         | -         | -          | -          |
|                |     | Approx. Weight RF (2) | 72      | 82     | 89      | 136       | 253       | 340        | 608        |
|                |     | Approx. Weight BW     | 58      | 66     | 72      | 108       | 207       | 280        | 506        |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 900

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 10"        | 12"        | 14"        | 16"        | 18"        | 20"    | 24"        |
|----------------|-----|-----------------------|------------|------------|------------|------------|------------|--------|------------|
|                |     | DN                    | 250        | 300        | 350        | 400        | 450        | 500    | 600        |
| End connection | RF  | L                     | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                |     | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |     | ØD                    | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                |     | ØK                    | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                |     | ØF                    | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2  | 692,2      |
|                |     | C                     | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                |     | f                     | 7          | 7          | 7          | 7          | 7          | 7      | 7          |
|                |     | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                | BW  | L1                    | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                |     | Schedule No.(1)       | 100        | 100        | 100        | 100        | 100        | 100    | 100        |
|                |     | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |     | ØA1                   | 278        | 329        | 362        | 413        | 464        | 516    | 619        |
|                |     | ØB1                   | 236,5      | 281        | 308        | 354        | 398,5      | 443    | 532        |
|                | RTJ | L2                    | 841        | 968        | 1039       | 1140       | 1232       | 1334   | 1568       |
|                |     | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                |     | ØD                    | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                |     | ØK                    | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                |     | ØG                    | 362        | 419        | 467        | 524        | 594        | 648    | 772        |
|                |     | ØP                    | 323,85     | 381        | 419,1      | 469,9      | 533,4      | 584,2  | 692,15     |
|                |     | C                     | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                |     | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                |     | T                     | 11,91      | 11,91      | 16,66      | 16,66      | 19,84      | 19,84  | 26,97      |
|                |     | S                     | 7,92       | 7,92       | 11,13      | 11,13      | 12,7       | 12,7   | 15,88      |
|                |     | R                     | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5    | 2,4        |
|                |     | H                     | 570        | 605        | 745        | 770        | 875        | 935    | 1100       |
|                |     | Kvs-value             | -          | -          | -          | -          | -          | -      | -          |
|                |     | Approx. Weight RF (2) | 765        | 1233       | 2763       | 3570       | -          | -      | -          |
|                |     | Approx. Weight BW     | 623        | 1037       | 2540       | 3301       | -          | -      | -          |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 1500

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 2"      | 2-1/2" | 3"        | 4"        | 5"        | 6"         | 8"         | 10"    | 12"        | 14"        | 16"        |
|----------------|-----|-----------------------|---------|--------|-----------|-----------|-----------|------------|------------|--------|------------|------------|------------|
|                |     | DN                    | 50      | 65     | 80        | 100       | 125       | 150        | 200        | 250    | 300        | 350        | 400        |
| End connection | RF  | L                     | 368     | 419    | 470       | 546       | 673       | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                |     | ØB                    | 48      | 61     | 70        | 92        | 115       | 136        | 178        | 222    | 263        | 289        | 330        |
|                |     | ØD                    | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                |     | ØK                    | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                |     | ØF                    | 92,1    | 104,8  | 127       | 157,2     | 185,7     | 215,9      | 269,9      | 323,8  | 381        | 412,8      | 469,9      |
|                |     | C                     | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                |     | f                     | 7       | 7      | 7         | 7         | 7         | 7          | 7          | 7      | 7          | 7          | 7          |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                | BW  | L1                    | 368     | 419    | 470       | 546       | 673       | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                |     | Schedule No.(1)       | 160     | -      | 160       | 120       | -         | 120        | 120        | 120    | 120        | 120        | 120        |
|                |     | ØB                    | 48      | 61     | 70        | 92        | 115       | 136        | 178        | 222    | 263        | 289        | 330        |
|                |     | ØA1                   | 60,3    | -      | 91        | 117       | -         | 172        | 223        | 278    | 329        | 362        | 413        |
|                |     | ØB1                   | 38,16   | -      | 66,5      | 92        | -         | 140        | 182,5      | 230    | 273        | 300        | 344,5      |
|                | RTJ | L2                    | 371     | 422    | 473       | 549       | 676       | 711        | 842        | 1001   | 1146       | 1276       | 1406       |
|                |     | ØB                    | 48      | 61     | 70        | 92        | 115       | 136        | 178        | 222    | 263        | 289        | 330        |
|                |     | ØD                    | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                |     | ØK                    | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                |     | ØG                    | 124     | 137    | 168       | 194       | 229       | 248        | 318        | 371    | 438        | 489        | 546        |
|                |     | ØP                    | 95,25   | 107,95 | 136,53    | 161,93    | 193,68    | 211,14     | 269,88     | 323,85 | 381        | 419,1      | 469,9      |
|                |     | C                     | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                |     | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                |     | T                     | 11,91   | 11,91  | 11,91     | 11,91     | 11,91     | 13,49      | 16,66      | 16,66  | 23,01      | 26,97      | 30,18      |
|                |     | S                     | 7,92    | 7,92   | 7,92      | 7,92      | 7,92      | 9,53       | 11,13      | 11,13  | 14,27      | 15,88      | 17,48      |
|                |     | R                     | 0,8     | 0,8    | 0,8       | 0,8       | 0,8       | 1,5        | 1,5        | 1,5    | 1,5        | 2,4        | 2,4        |
|                |     | H                     | 220     | 260    | 290       | 330       | 405       | 460        | 575        | 655    | 780        | 875        | 975        |
|                |     | Kvs-value             | -       | -      | -         | -         | -         | -          | -          | -      | -          | -          | -          |
|                |     | Approx. Weight RF (2) | 72      | 111    | 140       | 238       | 385       | 493        | 765        | 1148   | 2890       | 3655       | -          |
|                |     | Approx. Weight BW     | 58      | 90     | 114       | 202       | 321       | 409        | 622        | 903    | 2526       | 3144       | -          |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 2500

## SERIES 3P ANSI RANGE



| Nominal Size   |     | inch                  | 2"        | 2-1/2"    | 3"        | 4"        | 5"        | 6"        | 8"         | 10"        | 12"        |
|----------------|-----|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
|                |     | DN                    | 50        | 65        | 80        | 100       | 125       | 150       | 200        | 250        | 300        |
| End connection | RF  | L                     | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                |     | ØB                    | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                |     | ØD                    | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                |     | ØK                    | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                |     | ØF                    | 92,1      | 104,8     | 127       | 157,2     | 185,7     | 215,9     | 269,9      | 323,8      | 381        |
|                |     | C                     | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                |     | f                     | 7         | 7         | 7         | 7         | 7         | 7         | 7          | 7          | 7          |
|                |     | n-Ød                  | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                | BW  | L1                    | 451       | 508       | 578       | 673       | 794       | 914       | 1022       | 1270       | 1422       |
|                |     | Schedule No.(1)       | 160       | -         | 160       | 160       | -         | 160       | 160        | 160        | 160        |
|                |     | ØB                    | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                |     | ØA1                   | 60,3      | -         | 91        | 117       | -         | 172       | 223        | 278        | 329        |
|                |     | ØB1                   | 42,82     | -         | 66,5      | 87,5      | -         | 132       | 173        | 216        | 257        |
|                | RTJ | L2                    | 454       | 511       | 581       | 676       | 797       | 918       | 1027       | 1276       | 1430       |
|                |     | ØB                    | 38        | 49        | 57        | 73        | 93        | 111       | 146        | 184        | 219        |
|                |     | ØD                    | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                |     | ØK                    | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                |     | ØG                    | 133       | 149       | 168       | 203       | 241       | 279       | 340        | 425        | 495        |
|                |     | ØP                    | 101,6     | 111,13    | 127       | 157,18    | 190,5     | 228,6     | 279,4      | 342,9      | 406,4      |
|                |     | C                     | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                |     | n-Ød                  | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                |     | T                     | 11,91     | 13,49     | 13,49     | 16,66     | 19,84     | 19,84     | 23,01      | 30,18      | 33,32      |
|                |     | S                     | 7,92      | 9,53      | 9,53      | 11,13     | 12,7      | 12,7      | 14,27      | 17,48      | 17,48      |
|                |     | R                     | 0,8       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5        | 2,4        | 2,4        |
|                |     | H                     | 290       | 310       | 325       | 395       | 453       | 495       | 565        | 730        | 825        |
|                |     | Kvs-value             | -         | -         | -         | -         | -         | -         | -          | -          | -          |
|                |     | Approx. Weight RF (2) | 85        | 139       | 179       | 425       | 792       | 1063      | 2040       | 2805       | 3570       |
|                |     | Approx. Weight BW     | 62        | 100       | 127       | 346       | 640       | 857       | 2009       | 2223       | 2740       |

(1) Other schedule nos. on request

(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Weights in kg

For more information about flanged and welded ends refer to page 16

## SERIES F0 ANSI RANGE

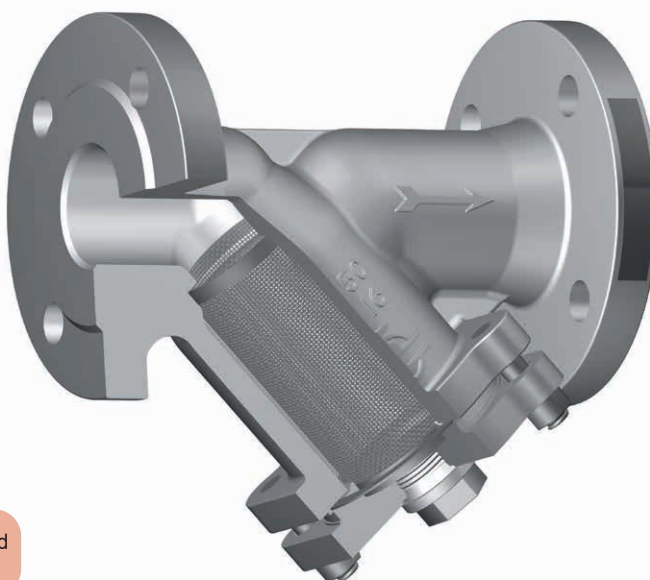
Y-Strainers are devices for mechanically removing solids from flowing media by means of a wired mesh or perforated basket, replaceable in line. They combine a rugged and compact design for indoors installation in industrial plants, building industry, etc.

St. steel screen, made out of high resistance wire, rugged and braided type or perforated basket

Precise machined seat slot, to accomodate the screen and avoid dirt to by-pass the strainer

Reinforced Graphite gasket, with. st. steel reinforcement

Standard gasket free threaded blow-off connection



Marking for identification and full traceability purpose

Great versatility in end connections, materials and configurations

Removable bolting cover, to ease maintenance

## Main Features / Reference Standards

Design: ASME B16.34  
 Pressure Rating: 150/300/600#  
 Face to face length: ASME B16.10 and manufacturer standard  
 Valve end connections: Flanged RF or RTJ to ASME B16.5  
 Welded BW to ASME B16.25  
 Standard mesh width: 1 mm (DN50); 1,25 mm (DN80); 1,6 mm (DN100-DN300)  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) for European Union territory

## Main Duties / Limits of use

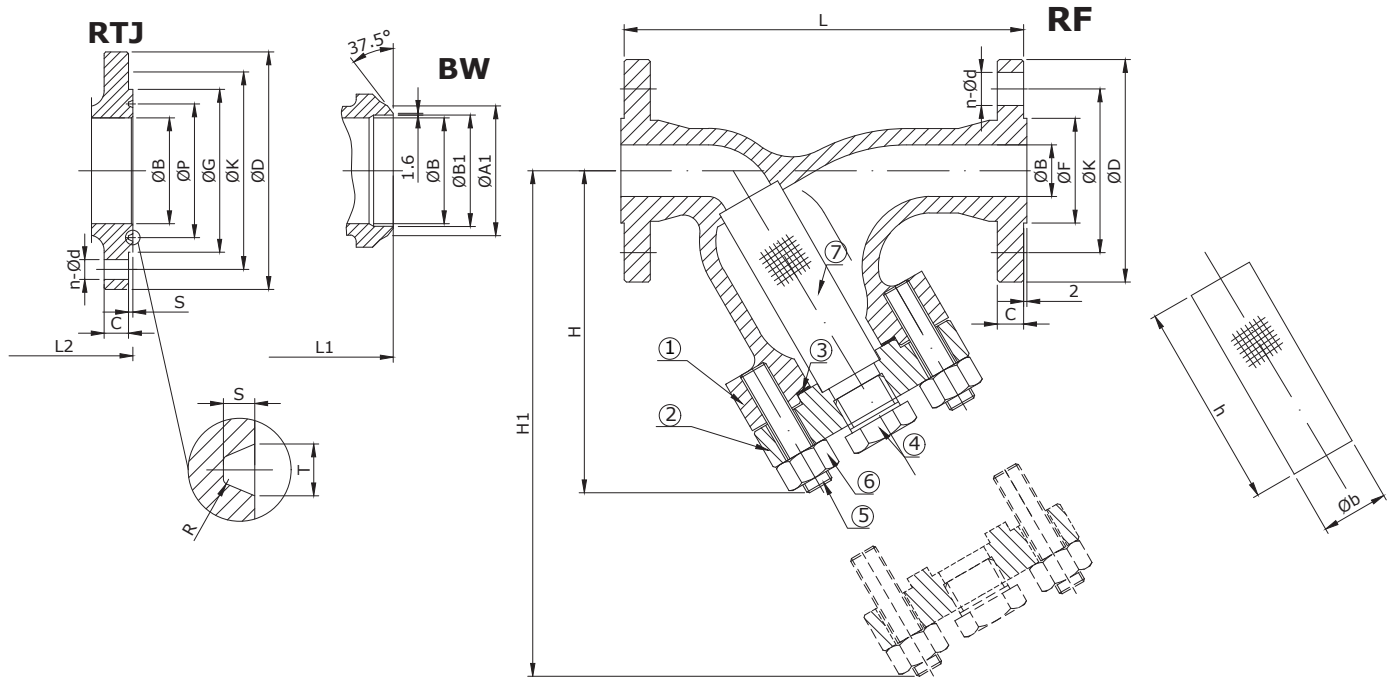
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

## Options

Diverse materials of construction and trim combinations, special designs, pressure seal cover for high pressure, perforated or wire mesh, other mesh width, special mesh for vacuum service or in suction side of pumps, execution for aggressive atmosphere, compliance with NACE MR0175, etc. Please consult us

# Main Parts and Materials

**SERIES F0 ANSI RANGE**  
**Class 150,300&600**



| N° | Part name      | A216 WCB<br>(F0A0_) | A352 LCB/SS304<br>(F0A81_) | A352 LCB/SS304<br>(F0A80_) | A217 WC1<br>(F0B1_) | A217 WC6<br>(F0B8_) | A217 WC9<br>(F0B9_) |
|----|----------------|---------------------|----------------------------|----------------------------|---------------------|---------------------|---------------------|
| 1  | Body           | A216 WCB            | A352 LCB                   |                            | A217 WC1            | A217 WC6            | A217 WC9            |
| 2  | Cover          | A105                | A350 LF2                   |                            | A182 F1             | A182 F11            | A182 F22            |
| 3  | Gasket         | SS304+Graphite      | SS304+Graphite             | SS316+Graphite             | SS304+Graphite      |                     |                     |
| 4  | Drain Plug     | A105                | A350 LF2                   |                            | A182 F304           |                     |                     |
| 5  | Cover Bolt (1) | A193 B7             | A320 L7                    |                            | A193 B16            |                     |                     |
| 6  | Cover Nut (1)  | A194 2H             | A194 4                     |                            | A194 4              |                     |                     |
| 7  | Mesh           | SS304               | SS304                      | SS316                      | SS304               |                     |                     |

(1) Bolting material for NACE MR0175 compliance available (i.e. B7M / 2HM for WCB bodies)

| N° | Part name  | A217 C5 (F0C2_) | A217 C12 (F0C4_) | CF8 (F0I2_)    | CF8M (F0I0_)   | CF3 (F0I1_)    | CF3M (F0I7_)    |
|----|------------|-----------------|------------------|----------------|----------------|----------------|-----------------|
| 1  | Body       | A217 C5         | A217 C12         | A351 CF8       | A351 CF8M      | A351 CF3       | A351 CF3M       |
| 2  | Cover      | A182 F5         | A182 F9          | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 3  | Gasket     | SS304+Graphite  |                  | SS304+Graphite | SS316+Graphite | SS316+Graphite | SS316L+Graphite |
| 4  | Drain Plug | A182 F304       |                  | A182 F304      | A182 F316      | A182 F304L     | A182 F316L      |
| 5  | Cover Bolt | A193 B16        |                  | A193 B8        | A193 B8M       | A193 B8M       |                 |
| 6  | Cover Nut  | A194 4          |                  | A194 8         | A194 8M        | A194 8M        |                 |
| 7  | Mesh       | SS304           |                  | SS304          | SS316          | SS316          | SS316L          |

## Main Valve Parameters - Class 150

## SERIES F0 ANSI RANGE



| Nominal Size          |                      | inch            | 2"       | 2-1/2"   | 3"       | 4"       | 5"       | 6"       | 8"       |
|-----------------------|----------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|
|                       |                      | DN              | 50       | 65       | 80       | 100      | 125      | 150      | 200      |
| End connection        | RF                   | L               | 203      | 216      | 241      | 292      | 356      | 406      | 495      |
|                       |                      | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                      | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      |
|                       |                      | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    |
|                       |                      | ØF              | 92,1     | 104,8    | 127      | 157,2    | 185,7    | 215,9    | 269,9    |
|                       |                      | C               | 14,3     | 15,9     | 17,5     | 22,3     | 22,3     | 23,9     | 27       |
|                       |                      | f               | 2        | 2        | 2        | 2        | 2        | 2        | 2        |
|                       |                      | n-Ød            | 4 - 3/4  | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  |
|                       | BW                   | L1              | 229      | 216      | 318      | 368      | 356      | 470      | 597      |
|                       |                      | Schedule No.(1) | 40       | -        | 40       | 40       | -        | 40       | 40       |
|                       |                      | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                      | ØA1             | 60,3     | -        | 91       | 117      | -        | 172      | 223      |
|                       |                      | ØB1             | 52,48    | -        | 78       | 102      | -        | 154      | 203      |
|                       | RTJ                  | L2              | 216      | 229      | 254      | 305      | 369      | 419      | 508      |
|                       |                      | ØB              | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                       |                      | ØD              | 150      | 180      | 190      | 230      | 255      | 280      | 345      |
|                       |                      | ØK              | 120,7    | 139,7    | 152,4    | 190,5    | 215,9    | 241,3    | 298,5    |
|                       |                      | ØG              | 102      | 121      | 133      | 171      | 194      | 219      | 273      |
|                       |                      | ØP              | 82,55    | 101,6    | 114,3    | 149,23   | 171,45   | 193,68   | 247,65   |
|                       |                      | C               | 17,5     | 20,7     | 22,3     | 22,3     | 22,3     | 23,9     | 27       |
|                       |                      | n-Ød            | 4 - 3/4  | 4 - 3/4  | 4 - 3/4  | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  |
|                       |                      | T               | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     | 8,74     |
|                       |                      | S               | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     | 6,35     |
|                       |                      | R               | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      |
|                       | H                    |                 | 140      | 177      | 205      | 245      | 294      | 330      | 400      |
|                       | H1                   |                 | 270      | 330      | 375      | 440      | 532      | 600      | 735      |
|                       | Plug (NPT)           |                 | 1/2" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT |
| Basket                | h                    | 92              | 99       | 114      | 142      |          | 226      | 283      |          |
|                       | Øb                   | Ø52             | Ø63      | Ø83      | Ø108     |          | Ø158     | Ø210     |          |
|                       | Standard perforation | 1               | 1,25     | 1,25     | 1,6      | 1,6      | 1,6      | 1,6      |          |
| Kvs-value             |                      | -               | -        | -        | -        |          | -        | -        |          |
| Approx. Weight RF (2) |                      | 12              | 16       | 19       | 33       | 49       | 60       | 93       |          |
| Approx. Weight BW     |                      | 9               | 12       | 13,6     | 24,6     | 38       | 47,04    | 71,4     |          |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES F0 ANSI RANGE



| Nominal Size          |                      | inch            | 10"    | 12"      | 14"        | 16"        | 18"        | 20"        | 24"         |        |
|-----------------------|----------------------|-----------------|--------|----------|------------|------------|------------|------------|-------------|--------|
|                       |                      | DN              | 250    | 300      | 350        | 400        | 450        | 500        | 600         |        |
| End connection        | RF                   | L               | 622    | 698      | 787        | 768 / 914  | 864 / 978  | 914 / 978  | 1067 / 1295 |        |
|                       |                      | ØB              | 254    | 305      | 337        | 387        | 438        | 489        | 591         |        |
|                       |                      | ØD              | 405    | 485      | 535        | 595        | 635        | 700        | 815         |        |
|                       |                      | ØK              | 362    | 431,8    | 476,3      | 539,8      | 577,9      | 635        | 749,3       |        |
|                       |                      | ØF              | 323,8  | 381      | 412,8      | 469,9      | 533,4      | 584,2      | 692,2       |        |
|                       |                      | C               | 28,6   | 30,2     | 33,4       | 35         | 38,1       | 41,3       | 46,1        |        |
|                       |                      | f               | 2      | 2        | 2          | 2          | 2          | 2          | 2           |        |
|                       |                      | n-Ød            | 12 - 1 | 12 - 1   | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8  |        |
|                       | BW                   | L1              | 673    | 775      | 787        | 914        | 978        | 978        | 1067        |        |
|                       |                      | Schedule No.(1) | 40     | STD      | STD        | STD        | STD        | STD        | STD         |        |
|                       |                      | ØB              | 254    | 305      | 337        | 387        | 438        | 489        | 591         |        |
|                       |                      | ØA1             | 278    | 329      | 362        | 413        | 464        | 516        | 619         |        |
|                       |                      | ØB1             | 254,5  | 305      | 336,5      | 387,5      | 438        | 489        | 590,5       |        |
|                       | RTJ                  | L2              | 635    | 711      | 800        | 927        | 991        | 991        | 1080        |        |
|                       |                      | ØB              | 254    | 305      | 337        | 387        | 438        | 489        | 591         |        |
|                       |                      | ØD              | 405    | 485      | 535        | 595        | 635        | 700        | 815         |        |
|                       |                      | ØK              | 362    | 431,8    | 476,3      | 539,8      | 577,9      | 635        | 749,3       |        |
|                       |                      | ØG              | 330    | 406      | 425        | 483        | 546        | 597        | 711         |        |
|                       |                      | ØP              | 304,8  | 381      | 396,88     | 454,03     | 517,53     | 558,8      | 673,1       |        |
|                       |                      | C               | 28,6   | 30,2     | 33,4       | 35         | 38,1       | 41,3       | 46,1        |        |
|                       |                      | n-Ød            | 12 - 1 | 12 - 1   | 12 - 1 1/8 | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8  |        |
|                       |                      | T               | 8,74   | 8,74     | 8,74       | 8,74       | 8,74       | 8,74       | 8,74        |        |
|                       |                      | S               | 6,35   | 6,35     | 6,35       | 6,35       | 6,35       | 6,35       | 6,35        |        |
|                       |                      | R               | 0,8    | 0,8      | 0,8        | 0,8        | 0,8        | 0,8        | 0,8         |        |
|                       |                      | H               |        | 475      | 540        | 600        | 675        | 720        | 790         | 950    |
|                       |                      | H1              |        | 850      | 1005       | 1090       | 1205       | 1320       | 1440        | 1700   |
|                       |                      | Plug (NPT)      |        | 3/4" NPT | 3/4" NPT   | 3/4" NPT   | 1" NPT     | 1" NPT     | 1" NPT      | 1" NPT |
| Basket                | h                    | 360             | 418    |          |            |            |            |            |             |        |
|                       | Øb                   | Ø262            | Ø295   |          |            |            |            |            |             |        |
|                       | Standard perforation | 1,6             | 1,6    | (3)      | (3)        | (3)        | (3)        | (3)        |             |        |
| Kvs-value             |                      | -               | -      | -        | -          | -          | -          | -          |             |        |
| Approx. Weight RF (2) |                      | 144             | 267    | 331      | 450        | 650        | 713        | 990        |             |        |
| Approx. Weight BW     |                      | 115,2           | 222,6  | 274,6    | 380,4      | 573,2      | 620,6      | 848,4      |             |        |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%  
(3) To be determined

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES F0 ANSI RANGE



| Nominal Size   |                       | inch                 | 2"       | 2-1/2"   | 3"       | 4"       | 5"       | 6"       | 8"       |
|----------------|-----------------------|----------------------|----------|----------|----------|----------|----------|----------|----------|
|                |                       | DN                   | 50       | 65       | 80       | 100      | 125      | 150      | 200      |
| End connection | RF                    | L                    | 267      | 292      | 318      | 356      | 400      | 444      | 559      |
|                |                       | ØB                   | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                |                       | ØD                   | 165      | 190      | 210      | 255      | 280      | 320      | 380      |
|                |                       | ØK                   | 127      | 149,2    | 168,3    | 200      | 235      | 269,9    | 330,2    |
|                |                       | ØF                   | 92,1     | 104,8    | 127      | 157,2    | 185,7    | 215,9    | 269,9    |
|                |                       | C                    | 20,7     | 23,9     | 27       | 30,2     | 33,4     | 35       | 39,7     |
|                |                       | f                    | 2        | 2        | 2        | 2        | 2        | 2        | 2        |
|                |                       | n-Ød                 | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 7/8 | 12 - 1   |
|                | BW                    | L1                   | 267      | 292      | 318      | 356      | 400      | 444      | 533      |
|                |                       | Schedule No.(1)      | 40       | -        | 40       | 40       | -        | 40       | 40       |
|                |                       | ØB                   | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                |                       | ØA1                  | 60,3     | -        | 91       | 117      | -        | 172      | 223      |
|                |                       | ØB1                  | 52,48    | -        | 78       | 102      | -        | 154      | 203      |
|                | RTJ                   | L2                   | 283      | 308      | 334      | 372      | 416      | 460      | 575      |
|                |                       | ØB                   | 51       | 65       | 76       | 102      | 128      | 152      | 203      |
|                |                       | ØD                   | 165      | 190      | 210      | 255      | 280      | 320      | 380      |
|                |                       | ØK                   | 127      | 149,2    | 168,3    | 200      | 235      | 269,9    | 330,2    |
|                |                       | ØG                   | 108      | 127      | 146      | 175      | 210      | 241      | 302      |
|                |                       | ØP                   | 82,55    | 101,6    | 123,83   | 149,23   | 180,98   | 211,12   | 269,88   |
|                |                       | C                    | 20,7     | 23,9     | 27       | 30,2     | 33,4     | 35       | 39,7     |
|                |                       | n-Ød                 | 8 - 3/4  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 8 - 7/8  | 12 - 7/8 | 12 - 1   |
|                |                       | T                    | 11,91    | 11,91    | 11,91    | 11,91    | 11,91    | 11,91    | 11,91    |
|                |                       | S                    | 7,92     | 7,92     | 7,92     | 7,92     | 7,92     | 7,92     | 7,92     |
|                |                       | R                    | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      | 0,8      |
|                |                       | H                    | 170      | 210      | 240      | 280      | 326      | 360      | 430      |
|                |                       | H1                   | 305      | 365      | 410      | 470      | 562      | 630      | 770      |
|                |                       | Plug (NPT)           | 1/2" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT |
|                | Basket                | h                    | 92       | 114      | 139      | 158      |          | 228      | 296      |
|                |                       | Øb                   | Ø52      | Ø63      | Ø83      | Ø98      |          | Ø145     | Ø200     |
|                |                       | Standard perforation | 1        | 1,25     | 1,25     | 1,6      | 1,6      | 1,6      | 1,6      |
|                | Kvs-value             |                      | -        | -        | -        | -        | -        | -        | -        |
|                | Approx. Weight RF (2) |                      | 16       | 26       | 33       | 46       | 71       | 89       | 153      |
|                | Approx. Weight BW     |                      | 11,2     | 19       | 24,6     | 32,8     | 52       | 66,2     | 117      |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES F0 ANSI RANGE



| Nominal Size          |                      | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"         | 24"         |        |
|-----------------------|----------------------|-----------------|------------|------------|------------|------------|------------|-------------|-------------|--------|
|                       |                      | DN              | 250        | 300        | 350        | 400        | 450        | 500         | 600         |        |
| End connection        | RF                   | L               | 622        | 711        | 762 / 838  | 838 / 863  | 914 / 978  | 991 / 1016  | 1143 / 1346 |        |
|                       |                      | ØB              | 254        | 305        | 337        | 387        | 432        | 483         | 584         |        |
|                       |                      | ØD              | 445        | 520        | 585        | 650        | 710        | 775         | 915         |        |
|                       |                      | ØK              | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8       | 812,8       |        |
|                       |                      | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2       | 692,2       |        |
|                       |                      | C               | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62          | 68,3        |        |
|                       |                      | f               | 2          | 2          | 2          | 2          | 2          | 2           | 2           |        |
|                       |                      | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8  | 24 - 1 5/8  |        |
|                       | BW                   | L1              | 622        | 711        | 762 / 838  | 838 / 863  | 914 / 978  | 991 / 1016  | 1143 / 1346 |        |
|                       |                      | Schedule No.(1) | 40         | STD        | STD        | STD        | STD        | STD         | STD         |        |
|                       |                      | ØB              | 254        | 305        | 337        | 387        | 432        | 483         | 584         |        |
|                       |                      | ØA1             | 278        | 329        | 362        | 413        | 464        | 516         | 619         |        |
|                       |                      | ØB1             | 254,5      | 305        | 336,5      | 387,5      | 438        | 489         | 590,5       |        |
|                       | RTJ                  | L2              | 638        | 727        | 778 / 854  | 853 / 879  | 930 / 994  | 1008 / 1035 | 1165 / 1368 |        |
|                       |                      | ØB              | 254        | 305        | 337        | 387        | 432        | 483         | 584         |        |
|                       |                      | ØD              | 445        | 520        | 585        | 650        | 710        | 775         | 915         |        |
|                       |                      | ØK              | 387,4      | 450,8      | 514,4      | 571,5      | 628,6      | 685,8       | 812,8       |        |
|                       |                      | ØG              | 356        | 413        | 457        | 508        | 575        | 635         | 749         |        |
|                       |                      | ØP              | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2       | 692,15      |        |
|                       |                      | C               | 46,1       | 49,3       | 52,4       | 55,6       | 58,8       | 62          | 68,3        |        |
|                       |                      | n-Ød            | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8  | 24 - 1 5/8  |        |
|                       |                      | T               | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49       | 16,66       |        |
|                       |                      | S               | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53        | 11,13       |        |
|                       |                      | R               | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5         | 1,5         |        |
|                       |                      | H               |            | 510        | 575        | 630        | 705        | 750         | 830         | 1020   |
|                       |                      | H1              |            | 875        | 1030       | 1120       | 1235       | 1350        | 1470        | 1735   |
|                       |                      | Plug (NPT)      |            | 3/4" NPT   | 3/4" NPT   | 3/4" NPT   | 1" NPT     | 1" NPT      | 1" NPT      | 1" NPT |
| Basket                | h                    | 371             | 418        |            |            |            |            |             |             |        |
|                       | Øb                   | Ø250            | Ø295       |            |            |            |            |             |             |        |
|                       | Standard perforation | 1,6             | 1,6        | (3)        | (3)        | (3)        | (3)        | (3)         |             |        |
| Kvs-value             |                      | -               | -          | -          | -          | -          | -          | -           |             |        |
| Approx. Weight RF (2) |                      | 262             | 400        | 485        | 570        | 750        | 920        | 1104        |             |        |
| Approx. Weight BW     |                      | 212,8           | 325,6      | 384,2      | 436,8      | 584,4      | 714,8      | 807,6       |             |        |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%  
(3) To be determined

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES F0 ANSI RANGE



| Nominal Size          |                      | inch            | 2"      | 2-1/2"   | 3"       | 4"       | 5"        | 6"         | 8"       |          |
|-----------------------|----------------------|-----------------|---------|----------|----------|----------|-----------|------------|----------|----------|
|                       |                      | DN              | 50      | 65       | 80       | 100      | 125       | 150        | 200      |          |
| End connection        | RF                   | L               | 292     | -        | 356      | 432      | -         | 559        | 660      |          |
|                       |                      | ØB              | 51      | 65       | 76       | 102      | 128       | 152        | 200      |          |
|                       |                      | ØD              | 165     | 190      | 210      | 275      | 330       | 355        | 420      |          |
|                       |                      | ØK              | 127     | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    |          |
|                       |                      | ØF              | 92,1    | 104,8    | 127      | 157,2    | 185,7     | 215,9      | 269,9    |          |
|                       |                      | C               | 25,4    | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     |          |
|                       |                      | f               | 7       | 7        | 7        | 7        | 7         | 7          | 7        |          |
|                       |                      | n-Ød            | 8 - 3/4 | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |          |
|                       | BW                   | L1              | 292     | -        | 356      | 432      | -         | 559        | 660      |          |
|                       |                      | Schedule No.(1) | 80      | -        | 80       | 80       | -         | 80         | 80       |          |
|                       |                      | ØB              | 51      | 65       | 76       | 102      | 128       | 152        | 200      |          |
|                       |                      | ØA1             | 60,3    | -        | 91       | 117      | -         | 172        | 223      |          |
|                       |                      | ØB1             | 49,22   | -        | 73,5     | 97       | -         | 146,5      | 193,5    |          |
|                       | RTJ                  | L2              | 295     | -        | 359      | 435      | -         | 562        | 663      |          |
|                       |                      | ØB              | 51      | 65       | 76       | 102      | 128       | 152        | 200      |          |
|                       |                      | ØD              | 165     | 190      | 210      | 275      | 330       | 355        | 420      |          |
|                       |                      | ØK              | 127     | 149,2    | 168,3    | 215,9    | 266,7     | 292,1      | 349,2    |          |
|                       |                      | ØG              | 108     | 127      | 146      | 175      | 210       | 241        | 302      |          |
|                       |                      | ØP              | 82,55   | 101,6    | 123,83   | 149,23   | 180,98    | 211,12     | 269,88   |          |
|                       |                      | C               | 25,4    | 28,6     | 31,8     | 38,1     | 44,5      | 47,7       | 55,6     |          |
|                       |                      | n-Ød            | 8 - 3/4 | 8 - 7/8  | 8 - 7/8  | 8 - 1    | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 |          |
|                       |                      | T               | 11,91   | 11,91    | 11,91    | 11,91    | 11,91     | 11,91      | 11,91    |          |
|                       |                      | S               | 7,92    | 7,92     | 7,92     | 7,92     | 7,92      | 7,92       | 7,92     |          |
|                       |                      | R               | 0,8     | 0,8      | 0,8      | 0,8      | 0,8       | 0,8        | 0,8      |          |
|                       |                      | H               |         | 205      | 248      | 280      | 320       | 363        | 395      | 465      |
|                       |                      | H1              |         | 340      | 400      | 445      | 510       | 599        | 665      | 805      |
|                       |                      | Plug (NPT)      |         | 1/2" NPT | 3/4" NPT | 3/4" NPT | 3/4" NPT  | 3/4" NPT   | 3/4" NPT | 3/4" NPT |
| Basket                | h                    | 133             |         |          | 177      |          |           | 351        |          |          |
|                       | Øb                   | Ø63             |         |          | Ø98      |          |           | Ø200       |          |          |
|                       | Standard perforation | 1               | 1,25    | 1,25     | 1,6      | 1,6      | 1,6       | 1,6        |          |          |
| Kvs-value             |                      | -               | -       | -        | -        | -        |           | -          |          |          |
| Approx. Weight RF (2) |                      | 19,5            | 31      | 39       | 68       | 135      | 185       | 275        |          |          |
| Approx. Weight BW     |                      | 12,9            | 21      | 26,4     | 45,2     | 100      | 140,6     | 211,4      |          |          |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES F0 ANSI RANGE



| Nominal Size          |                      | inch            | 10"        | 12"        | 14"        | 16"        | 18"        | 20"        | 24"    |        |
|-----------------------|----------------------|-----------------|------------|------------|------------|------------|------------|------------|--------|--------|
|                       |                      | DN              | 250        | 300        | 350        | 400        | 450        | 500        | 600    |        |
| End connection        | RF                   | L               | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |        |
|                       |                      | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |        |
|                       |                      | ØD              | 510        | 560        | 605        | 685        | 745        | 815        | 940    |        |
|                       |                      | ØK              | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |        |
|                       |                      | ØF              | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2  |        |
|                       |                      | C               | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |        |
|                       |                      | f               | 7          | 7          | 7          | 7          | 7          | 7          | 7      |        |
|                       |                      | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 |        |
|                       | BW                   | L1              | 787        | 838        | 889        | 991        | 1092       | 1194       | 1397   |        |
|                       |                      | Schedule No.(1) | 80         | 80         | 80         | 80         | 80         | 80         | 80     |        |
|                       |                      | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |        |
|                       |                      | ØA1             | 278        | 329        | 362        | 413        | 464        | 516        | 619    |        |
|                       |                      | ØB1             | 243        | 289        | 317,5      | 363,5      | 409,5      | 455,5      | 547,5  |        |
|                       | RTJ                  | L2              | 790        | 841        | 892        | 994        | 1095       | 1200       | 1407   |        |
|                       |                      | ØB              | 248        | 299        | 327        | 375        | 419        | 464        | 559    |        |
|                       |                      | ØD              | 510        | 560        | 605        | 685        | 745        | 815        | 940    |        |
|                       |                      | ØK              | 431,8      | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  |        |
|                       |                      | ØG              | 356        | 413        | 457        | 508        | 575        | 635        | 749    |        |
|                       |                      | ØP              | 323,85     | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15 |        |
|                       |                      | C               | 63,5       | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  |        |
|                       |                      | n-Ød            | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 |        |
|                       |                      | T               | 11,91      | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66  |        |
|                       |                      | S               | 7,92       | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13  |        |
|                       |                      | R               | 0,8        | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5    |        |
|                       |                      | H               |            | 550        | 615        | 660        | 740        | 785        | 870    | 1060   |
|                       |                      | H1              |            | 910        | 1065       | 1150       | 1270       | 1385       | 1505   | 1770   |
|                       |                      | Plug (NPT)      |            | 3/4" NPT   | 3/4" NPT   | 3/4" NPT   | 1" NPT     | 1" NPT     | 1" NPT | 1" NPT |
| Basket                | h                    | 433             | 441        |            |            |            |            |            |        |        |
|                       | Øb                   | Ø235            | Ø308       |            |            |            |            |            |        |        |
|                       | Standard perforation | 1,6             | 1,6        | (3)        | (3)        | (3)        | (3)        | (3)        |        |        |
| Kvs-value             |                      | -               | -          | -          | -          | -          | -          | -          |        |        |
| Approx. Weight RF (2) |                      | 410             | 500        | 620        | 775        | 870        | 1050       | 1340       |        |        |
| Approx. Weight BW     |                      | 306,8           | 377,6      | 440        | 547        | 582        | 696        | 902        |        |        |

- (1) Other schedule nos. on request  
(2) RTJ weight increases approx. by 10%  
(3) To be determined

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
Kvs-values in m³/h / Weights in kg  
For more information about flanged and welded ends refer to page 16

**SERIES 89 ANSI RANGE**

Series 89 Forged Globe Valves are linear motion valves devised for stopping the flow of the service fluid when necessary. They are of robust and compact design, bolted bonnet, outside screw and yoke, conventional port and rising handwheel, being the closure element a disc seating against a precisely machined seat thus achieving the positive closure. The atmospheric sealing is achieved by flexible graphite rings. The flow comes upwards underneath the seat, being unidirectional. Their shape leads to higher pressure drop compared to gate valves but operation is quicker and this feature allows to use the valve as regulating valve when arranged with throttling plug. Valves are of easy and safe operation being widely used in power, chemical and oil industry. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel, and they can also be arranged for automation with different kinds of actuators.

Outside screw and yoke

Precise machining of components for optimal performance

Back Seat feature

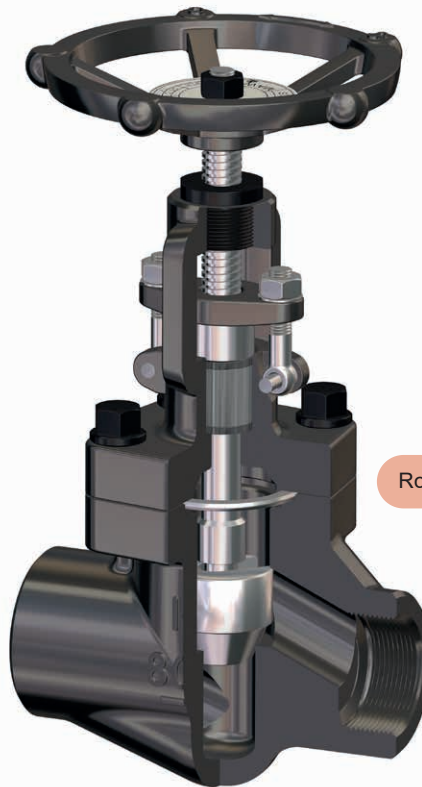
Seat surface can be hardened to increase wear resistance

Ergonomic rising handwheel

Marking for identification and full traceability purpose

Robust and compact construction

Great versatility in end connections, materials and configurations

**Main Features / Reference Standards**

Design: API 602  
 Pressure Rating: 800/1500/2500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
                                     Welded SW to ASME B16.11  
                                     Flanged to ANSI B16.5  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Unidirectional design. See the arrow on the body for normal flow direction  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

**Main Duties / Limits of use**

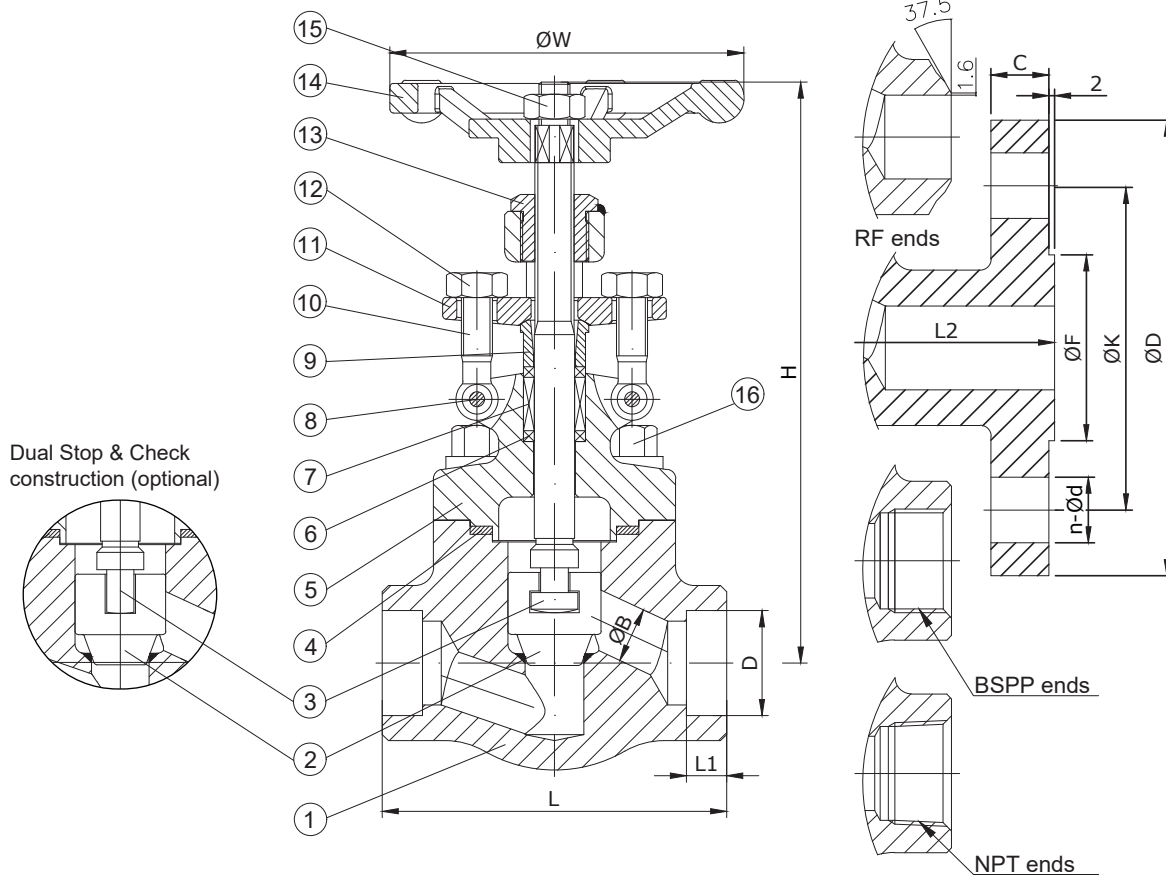
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

**Options**

Diverse body materials and trim combinations, different valve connections, Y-Pattern, regulating plug, extended bonnet, bellows seal, pressure seal, welded bonnet, different actuation, limit switches... Please consult us

# Main Parts and Materials

## SERIES 89 ANSI RANGE Class 150/300/600/800&1500 BW ends



|    |               | MATERIAL          |                   |                   |                    |                    |                         |                      |                      |                      |
|----|---------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------------|----------------------|----------------------|----------------------|
| N° | PART          | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304/F304L      | A182 F316/F316L      | A182 F51/F53         |
|    |               | Trim 1<br>(89A01) | Trim 5<br>(89A05) | Trim 8<br>(89A08) | Trim 2<br>(89A12)  | Trim 10<br>(89A1D) | Trim 5<br>(89B75/89B65) | (89I10/80I90)        | (89I00/89J10)        | (89K30/89K40)        |
| 1  | Body          | A105N+<br>13Cr    | A105N+<br>HF      | A105N+<br>HF      | A350 LF2<br>+SS304 | A350 LF2<br>+SS316 | A182 F11/<br>F22+HF     | A182 F304(L)         | A182 F316(L)         | A182 F51/F53         |
| 2  | Disc          | A182<br>F6a       | A182<br>F6a+HF    | A182<br>F6a       | A182 F304          | A182 F316          | A182 F6a+HF             | A182 F304(L)         | A182 F316(L)         | A182 F51/F53         |
| 3  | Stem          | A276 410          |                   |                   | A276 304           | A276 316           | A276 410                | A276 304(L)          | A276 316(L)          | A182 F51/F53         |
| 4  | Bonnet Gasket | SS304+Graphite    |                   |                   | SS304+<br>Graphite | SS316+<br>Graphite | SS304+<br>Graphite      | SS304+<br>Graphite   | SS316+<br>Graphite   | SS316+<br>Graphite   |
| 5  | Bonnet        | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)         | A182 F316(L)         | A182 F51/F53         |
| 6  | Packing       | SS304+Graphite    |                   |                   | SS304+Graphite     |                    | SS304+<br>Graphite      | SS304+<br>Graphite   | SS316+<br>Graphite   | SS316+<br>Graphite   |
| 7  | Packing       | Flexible Graphite |                   |                   | Flexible Graphite  |                    | Flexible<br>Graphite    | Flexible<br>Graphite | Flexible<br>Graphite | Flexible<br>Graphite |
| 8  | Eyebolt Pin   | A276 410          |                   |                   | A276 410           |                    | A276 410                | A276 304             | A276 304             | A276 304             |
| 9  | Packing Gland | A276 420          |                   |                   | A276 304           |                    | A276 420                | A276 304(L)          | A276 316(L)          | A182 F51/F53         |
| 10 | Eyebolt       | A193 B7           |                   |                   | A320 L7            |                    | A193 B16                | A193 B8(M)           | A193 B8M             | A193 B8M             |
| 11 | Gland Flange  | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)         | A182 F316(L)         | A182 F51/F53         |
| 12 | Eyebolt Nut   | A194 2H           |                   |                   | A194 4             |                    | A194 4                  | A194 8(M)            | A194 8M              | A194 8M              |
| 13 | Stem Nut      | A276 410          |                   |                   | A276 410           |                    | A276 410                | A276 410             | A276 410             | A276 410             |
| 14 | Handwheel     | A197              |                   |                   | A197               |                    | A197                    | A197                 | A197                 | A197                 |
| 15 | Handwheel Nut | AISI 1035         |                   |                   | AISI 1035          |                    | AISI 1035               | AISI 1035            | AISI 1035            | AISI 1035            |
| 16 | Bonnet Bolt   | A193 B7           |                   |                   | A320 L7            |                    | A193 B16                | A193 B8(M)           | A193 B8M             | A193 B8M             |

HF = Hard faced

**SERIES 89 ANSI RANGE**  
**Class 150/300/600/800&1500**
**Main Valve Parameters**

| Nominal Size | inch DN | 1/2" 15 | 3/4" 20 | 1" 25 | 1 1/4" 32 | 1 1/2" 40 | 2" 50 |
|--------------|---------|---------|---------|-------|-----------|-----------|-------|
| Class 150    | L2      | 108     | 117     | 127   | 140       | 165       | 203   |
|              | ØK      | 60,3    | 69,9    | 79,4  | 88,9      | 98,4      | 120,7 |
|              | ØD      | 90      | 100     | 110   | 115       | 125       | 150   |
|              | C       | 8       | 8,9     | 9,6   | 11,2      | 12,7      | 14,3  |
|              | n-Ød    | 4-Ø16   | 4-Ø16   | 4-Ø16 | 4-Ø16     | 4-Ø16     | 4-Ø19 |
| Class 300    | L2      | 152     | 178     | 203   | 216       | 229       | 267   |
|              | ØK      | 66,7    | 82,6    | 88,9  | 98,4      | 114,3     | 127   |
|              | ØD      | 95      | 115     | 125   | 135       | 155       | 165   |
|              | C       | 12,7    | 14,3    | 15,9  | 17,5      | 19,1      | 20,7  |
|              | n-Ød    | 4-Ø16   | 4-Ø19   | 4-Ø19 | 4-Ø19     | 4-Ø22     | 8-Ø19 |
| Class 600    | L2      | 165     | 190     | 216   | 229       | 241       | 292   |
|              | ØK      | 66,7    | 82,6    | 88,9  | 98,4      | 114,3     | 127   |
|              | ØD      | 95      | 115     | 125   | 135       | 155       | 165   |
|              | C       | 14,3    | 15,9    | 17,5  | 20,7      | 22,3      | 25,4  |
|              | n-Ød    | 4-Ø16   | 4-Ø19   | 4-Ø19 | 4-Ø19     | 4-Ø22     | 8-Ø19 |
| ØF           |         | 34,9    | 42,9    | 50,8  | 63,5      | 73        | 92,1  |
| H (open)     |         | 162     | 165     | 193   | 224       | 260       | 300   |
| H (close)    |         | 153     | 154     | 182   | 213       | 247       | 287   |
| ØW           |         | 80      | 80      | 105   | 130       | 130       | 155   |
| Kvs-value    |         | 1,7     | 3,1     | 4,9   | 7,5       | 12,2      | 18    |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h

**Class 800**

| Nominal Size               |             |                  | inch<br>DN | 3/8”<br>10 | 1/2”<br>15 | 3/4”<br>20 | 1”<br>25 | 1 1/4”<br>32 | 1 1/2”<br>40 | 2”<br>50 |
|----------------------------|-------------|------------------|------------|------------|------------|------------|----------|--------------|--------------|----------|
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L          | 79         | 79         | 92         | 111      | 120          | 152          | 172      |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            | Socket weld | SW               | L          | 79         | 79         | 92         | 111      | 120          | 120          | 140      |
|                            |             |                  | L1         | 9,6        | 9,6        | 12,7       | 12,7     | 12,7         | 12,7         | 16       |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            |             |                  | ØD         | 17,6       | 21,8       | 27,1       | 33,8     | 42,6         | 48,7         | 61,2     |
| Top works/<br>Operation    | Handwheel   | H (open)         | 162        | 162        | 165        | 193        | 224      | 260          | 300          |          |
|                            |             | H (close)        | 153        | 153        | 154        | 182        | 213      | 247          | 287          |          |
|                            |             | ØW               | 80         | 80         | 80         | 105        | 130      | 130          | 155          |          |
| Kvs-value                  |             |                  | -          | 1,7        | 3,1        | 4,9        | 7,5      | 12,2         | 18           |          |
| Approx. Weight Threaded/SW |             |                  | 2          | 2          | 2,2        | 3          | 5,2      | 6,3          | 11           |          |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

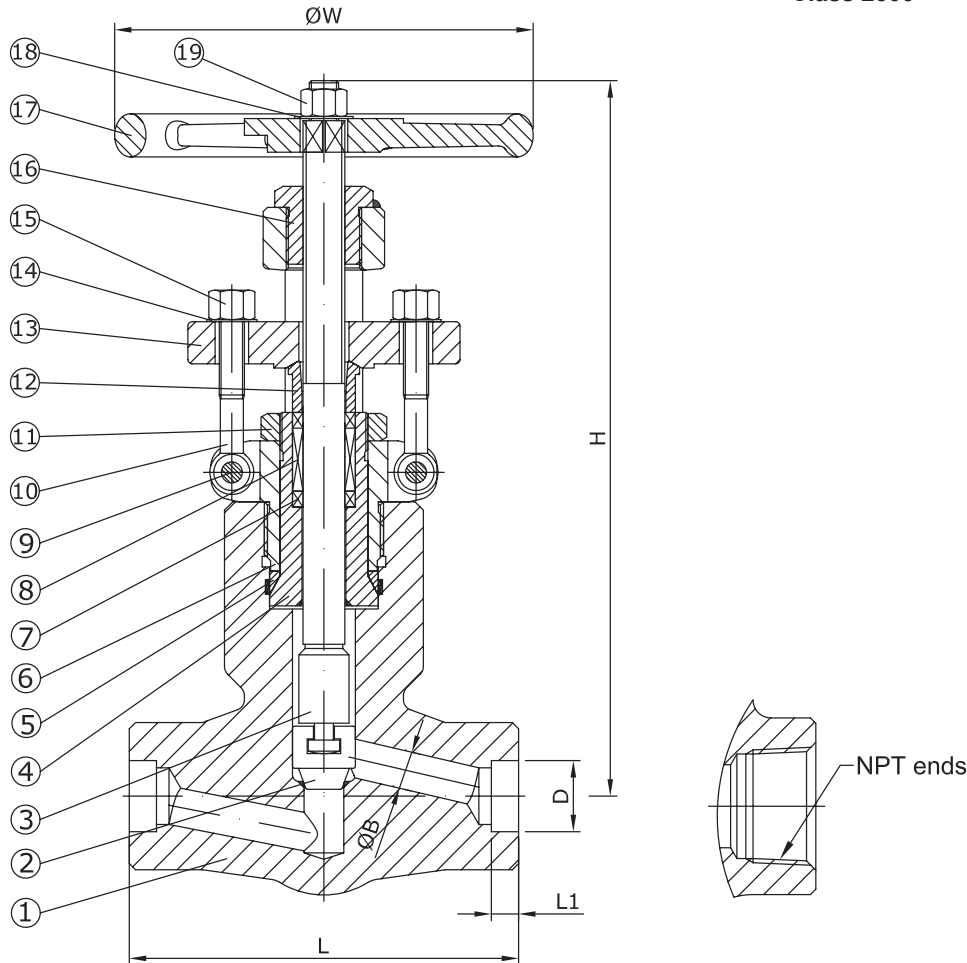
**Class 1500**

| Nominal Size               |             |                  | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|------------------|------|------|------|------|------|--------|--------|------|
|                            |             |                  | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW               | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |                  | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 16     |      |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |                  | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
| Top works/<br>Operation    | Handwheel   | H (open)         | 165  | 193  | 193  | 224  | 260  | 300    | 355    |      |
|                            |             | H (close)        | 154  | 182  | 182  | 213  | 247  | 287    | 340    |      |
|                            |             | ØW               | 105  | 105  | 105  | 130  | 130  | 155    | 200    |      |
| Kvs-value                  |             |                  | -    | 1,7  | 3,1  | 4,9  | 7,5  | 12,2   | 18     |      |
| Approx. Weight Threaded/SW |             |                  | 3.5  | 3.5  | 3.8  | 5.5  | 8    | 11     | 18.5   |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

Information / restriction of technical rules need to be observed!

Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

**Main Parts and Materials**
**SERIES 87 ANSI RANGE**  
**Class 2500**


| N° |               | PART              |             | MATERIAL          |                   |                   |                   |                    |                         |                   |                 |               |
|----|---------------|-------------------|-------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------------|-------------------|-----------------|---------------|
|    |               |                   |             | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304/F304L   | A182 F316/F316L | A182 F51/F53  |
|    |               |                   |             | Trim 1<br>(87A01) | Trim 5<br>(87A05) | Trim 8<br>(87A08) | Trim 2<br>(87A12) | Trim 10<br>(87A1D) | Trim 5<br>(87B75/87B65) | (87I10/80I90)     | (87I00/87J10)   | (87K30/87K40) |
| 1  | Body          | A105N+13Cr        | A105N+HF    | A105N+HF          | A350 LF2+SS304    | A350 LF2+SS316    | A182 F11/F22+HF   | A182 F304(L)       | A182 F316(L)            | A182 F51/F53      |                 |               |
| 2  | Disc          | A182 F6a          | A182 F6a+HF | A182 F6a          | A182 F304         | A182 F316         | A182 F6a+HF       | A182 F304(L)       | A182 F316(L)            | A182 F51/F53      |                 |               |
| 3  | Stem          | A276 410          |             |                   | A276 304          | A276 316          | A276 410          | A276 304(L)        | A276 316(L)             | A182 F51/F53      |                 |               |
| 4  | Seal Nut      | A276 420          |             |                   | A276 304          | A276 316          | A276 420          | A276 304(L)        | A276 316(L)             | A182 F51/F53      |                 |               |
| 5  | Gasket        | A276 304          |             |                   | A276 304          |                   | A276 304          | A276 304(L)        | A276 316(L)             | A182 F51/F53      |                 |               |
| 6  | Bonnet        | A105N             |             |                   | A350 LF2          |                   | A182 F11/F22      | A182 F304(L)       | A182 F316(L)            | A182 F51/F53      |                 |               |
| 7  | Packing       | SS304+Graphite    |             |                   | SS304+Graphite    | SS316+Graphite    | SS304+Graphite    | SS304+Graphite     | SS316+Graphite          | SS316+Graphite    |                 |               |
| 8  | Packing       | Flexible Graphite |             |                   | Flexible Graphite |                   | Flexible Graphite | Flexible Graphite  | Flexible Graphite       | Flexible Graphite |                 |               |
| 9  | Eyebolt Pin   | A276 410          |             |                   | A276 410          |                   | A276 410          | A276 304           | A276 304                | A276 304          |                 |               |
| 10 | Eyebolt       | A193 B7           |             |                   | A320 L7           |                   | A193 B16          | A193 B8(M)         | A193 B8M                | A193 B8M          |                 |               |
| 11 | Lock Nut      | Carbon Steel      |             |                   | Carbon Steel      |                   | Carbon Steel      | St.Steel           | St.Steel                | St.Steel          |                 |               |
| 12 | Packing Gland | A276 420          |             |                   | A276 304          | A276 316          | A276 420          | A276 304(L)        | A276 316(L)             | A182 F51/F53      |                 |               |
| 13 | Gland Flange  | A105N             |             |                   | A350 LF2          |                   | A182 F11/F22      | A182 F304(L)       | A182 F316(L)            | A182 F51/F53      |                 |               |
| 14 | Washer        | Carbon Steel      |             |                   | Carbon Steel      |                   | Carbon Steel      | St.Steel           | St.Steel                | St.Steel          |                 |               |
| 15 | Eyebolt Nut   | A194 2H           |             |                   | A194 4            |                   | A194 4            | A194 8(M)          | A194 8M                 | A194 8M           |                 |               |
| 16 | Stem Nut      | A276 410          |             |                   | A276 410          |                   | A276 410          | A276 410           | A276 410                | A276 410          |                 |               |
| 17 | Handwheel     | A197              |             |                   | A197              |                   | A197              | A197               | A197                    | A197              |                 |               |
| 18 | Gasket        | Carbon Steel      |             |                   | Carbon Steel      |                   | Carbon Steel      | St.Steel           | St.Steel                | St.Steel          |                 |               |
| 19 | Handwheel Nut | AISI 1035         |             |                   | AISI 1035         |                   | AISI 1035         | AISI 1035          | AISI 1035               | AISI 1035         |                 |               |

HF = Hard faced

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

**SERIES 87 ANSI RANGE**  
**Class 2500**

**Main Valve Parameters**
**Class 2500**

| Nominal Size               |             |                  | inch<br>DN | 3/8”<br>10 | 1/2”<br>15 | 3/4”<br>20 | 1”<br>25 | 1 1/4”<br>32 | 1 1/2”<br>40 | 2”<br>50 |
|----------------------------|-------------|------------------|------------|------------|------------|------------|----------|--------------|--------------|----------|
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L          | 186        | 186        | 186        | 186      | 230          | 230          | 275      |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            | Socket weld | SW               | L          | 186        | 186        | 186        | 186      | 230          | 230          | 275      |
|                            |             |                  | L1         | 9,6        | 9,6        | 12,7       | 12,7     | 12,7         | 12,7         | 16       |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            |             |                  | ØD         | 17,6       | 21,8       | 27,1       | 33,8     | 42,6         | 48,7         | 61,2     |
| Top works/<br>Operation    | Handwheel   | H (open)         | 317        | 317        | 317        | 321        | 467      | 480          | 540          |          |
|                            |             | H (close)        | 300        | 300        | 300        | 300        | 445      | 458          | 515          |          |
|                            |             | ØW               | 200        | 200        | 200        | 200        | 280      | 300          | 320          |          |
| Kvs-value                  |             |                  |            | -          | 1,7        | 3,1        | 4,9      | 7,5          | 12,2         | 18       |
| Approx. Weight Threaded/SW |             |                  |            | 12         | 12         | 12         | 12       | 28,4         | 30           | 50       |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## SERIES 88 ANSI RANGE

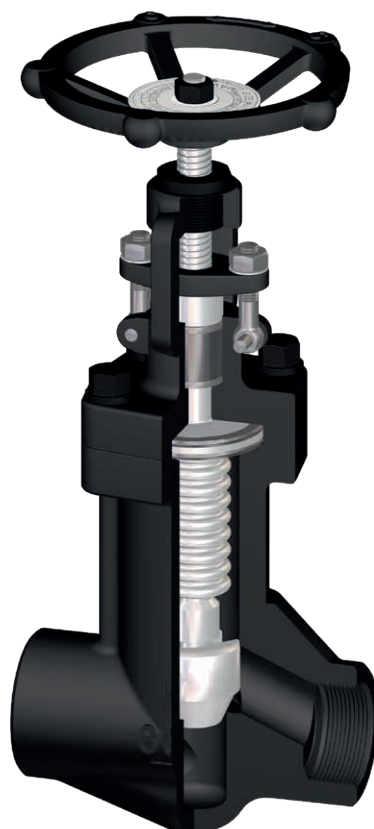
Series 88 Forged Globe Valves with bellows are linear motion valves devised for stopping the flow of the service fluid when necessary. They are of robust and compact design, bolted bonnet, outside screw and yoke, conventional port and rising handwheel, being the closure element a disc seating against a precisely machined seat thus achieving the positive closure. The atmospheric sealing is achieved by flexible graphite rings and moreover by a full tightness bellow. The flow comes upwards underneath the seat, being unidirectional. Their shape leads to higher pressure drop compared to gate valves but operation is quicker and this feature allows to use the valve as regulating valve when arranged with throttling plug. Valves are of easy and safe operation being widely used in power, chemical and oil industry. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel, and they can also be arranged for automation with different kinds of actuators.

Outside screw and yoke

Precise machining of components for optimal performance

Bellows feature for a full tightness

Seat surface can be hardened to increase wear resistance



Ergonomic rising handwheel

Marking for identification and full traceability purpose

Back Seat feature

Robust and compact construction

Great versatility in end connections, materials and configurations

### Main Features / Reference Standards

Design: API 602  
 Pressure Rating: Class 800/1500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
 Welded SW to ASME B16.11  
 Marking: MSS SP-117  
 Inspections & Tests: API 598  
 Unidirectional design. See the arrow on the body for normal flow direction  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

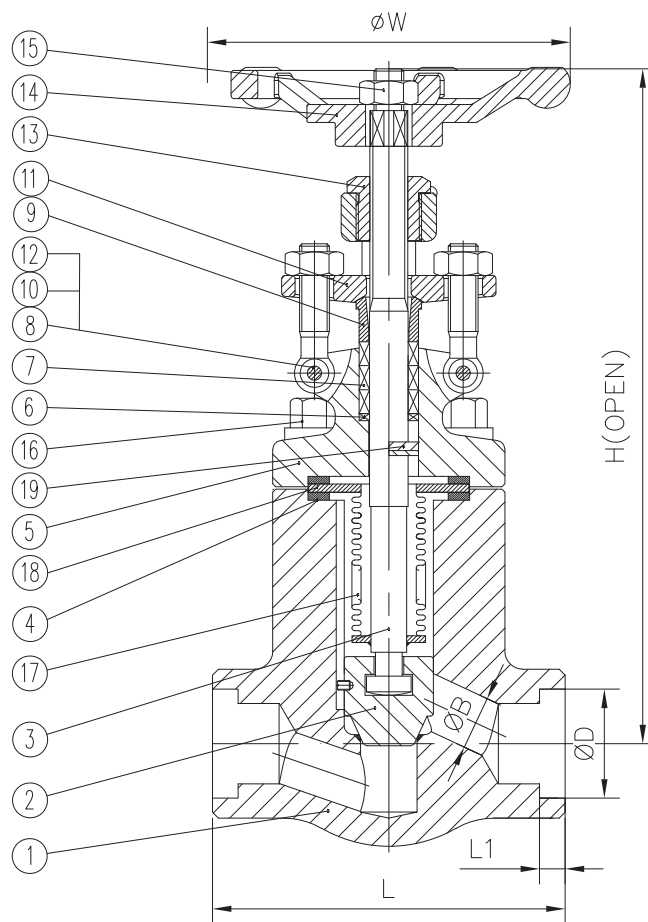
### Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Diverse body materials and trim combinations, different valve connections, Y-Pattern, regulating plug, extended bonnet, bellows seal, pressure seal, welded bonnet, different actuation, limit switches... Please consult us

## Main Parts and Materials

Series 88 ANSI RANGE  
Class 800/1500


## MATERIAL

| N° | PART          | MATERIAL          |                   |                   |  |
|----|---------------|-------------------|-------------------|-------------------|--|
|    |               | A105N             | A182 F304/F304L   | A182 F316/F316L   |  |
|    |               | Trim 8 (88A08)    | Trim 2 (88I102)   | Trim 10 (88I00D)  |  |
| 1  | Body          | A182 A105         | A182 F304         | A182 F316         |  |
| 2  | Disc          | A276 420 + 13%    | A182 F304         | A182 F316         |  |
| 3  | Stem          | A276 410          | A182 F304         | A182 F316         |  |
| 4  | Bonnet Gasket | SS316+Graphite    | SS316+Graphite    | SS316+Graphite    |  |
| 5  | Bonnet        | A182 A105         | A182 F304         | A182 F316         |  |
| 6  | Packing       | SS304             | SS304             | SS316L            |  |
| 7  | Packing       | Graphite          | Graphite          | Graphite          |  |
| 8  | Eyebolt Pin   | Carbon steel      | Stainless steel   | Stainless steel   |  |
| 9  | Packing Gland | 1Cr13             | SS 304            | SS 316            |  |
| 10 | Eyebolt       | A193 B8           | A193 B8           | A193 B8           |  |
| 11 | Gland Flange  | Carbon steel      | Stainless steel   | Stainless steel   |  |
| 12 | Eyebolt Nut   | A194 Gr.8         | A194 Gr.8         | A194 Gr.8         |  |
| 13 | Stem Nut      | 1Cr13             | 1Cr13             | 1Cr13             |  |
| 14 | Handwheel     | Nodular cast iron | Nodular cast iron | Nodular cast iron |  |
| 15 | Handwheel Nut | A194 Gr.8         | A194 Gr.8         | A194 Gr.8         |  |
| 16 | Bonnet Bolt   | A193 B7           | A193 B8           | A193 B8           |  |
| 17 | Bellows       | SS 316L           | SS 316L           | SS 316L           |  |
| 18 | End plate     | SS 316L           | SS 316L           | SS 316L           |  |
| 19 | Stop pin      | SS 304            | SS 304            | SS316L            |  |

**Series 88 ANSI RANGE**  
**Class 800/1500**

**Main Valve Parameters**
**Class 800**

| Nominal Size               |             |               | inch | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|---------------|------|------|------|------|--------|--------|------|
|                            |             |               | DN   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/ BSP/BSPT | L    | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |               | ØB   | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW            | L    | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |               | L1   | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |               | ØB   | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |               | ØD   | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
| Top works/ Operation       | Handwheel   | H (open)      | 200  | 210  | 230  | 240  | 295    | 474    |      |
|                            |             | H (close)     | 192  | 202  | 222  | 230  | 283    | 459    |      |
|                            |             | ØW            | 95   | 95   | 125  | 140  | 140    | 250    |      |
| Approx. Weight Threaded/SW |             |               | 5,2  | 7,3  | 10   | 15,6 | 18,5   | 58     |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

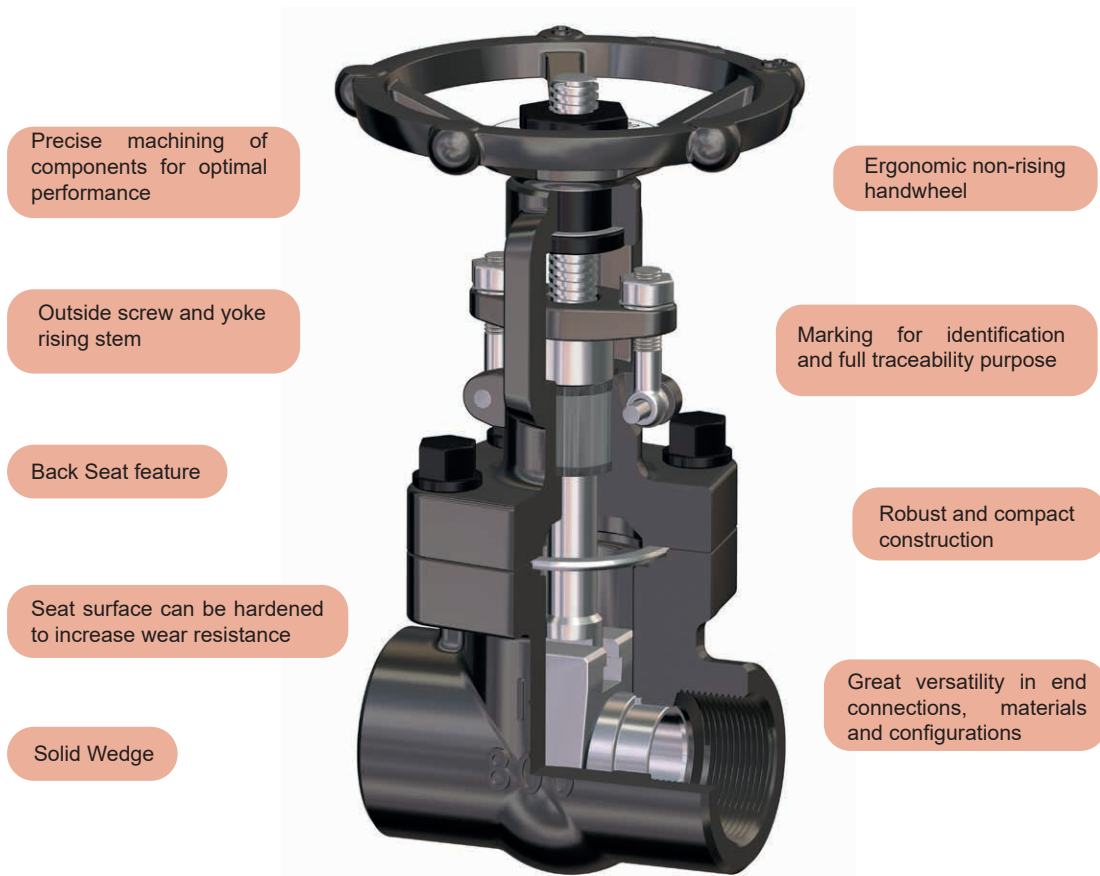
**Class 1500**

| Nominal Size               |             |           | inch | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|-----------|------|------|------|------|--------|--------|------|
|                            |             |           | DN   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/BSPT  | L    | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |           | ØB   | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW        | L    | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |           | L1   | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |           | ØB   | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |           | ØD   | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
| Top works/Operation        | Handwheel   | H (open)  | 210  | 230  | 240  | 295  | 474    | -      |      |
|                            |             | H (close) | 202  | 222  | 230  | 283  | 459    | -      |      |
|                            |             | ØW        | 95   | 95   | 125  | 140  | 140    | 250    |      |
| Approx. Weight Threaded/SW |             |           | 7    | 10   | 14,6 | 23   | 27     | 71     |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## SERIES 99/96 ANSI RANGE

Series 99 Forged Gate Valves are linear motion valves devised for stopping the flow of the service fluid when necessary, not being suitable for regulating purpose. They are of robust and compact design, conventional port, bolted bonnet, outside screw and yoke, rising stem and bidirectional. The atmospheric sealing is achieved by flexible graphite rings. The two vertical slightly sloped seats with solid wedge finely machined favor a tight shut off, being largely used in the power, chemical and oil industry sectors. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel, and they can also be arranged for automation with different kinds of actuators.



### Main Features / Reference Standards

Design: API 602  
 Pressure Rating: 800/1500/2500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
 Welded SW to ASME B16.11  
 Flanged to ANSI B16.5  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Bidirectional design  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

### Main Duties / Limits of use

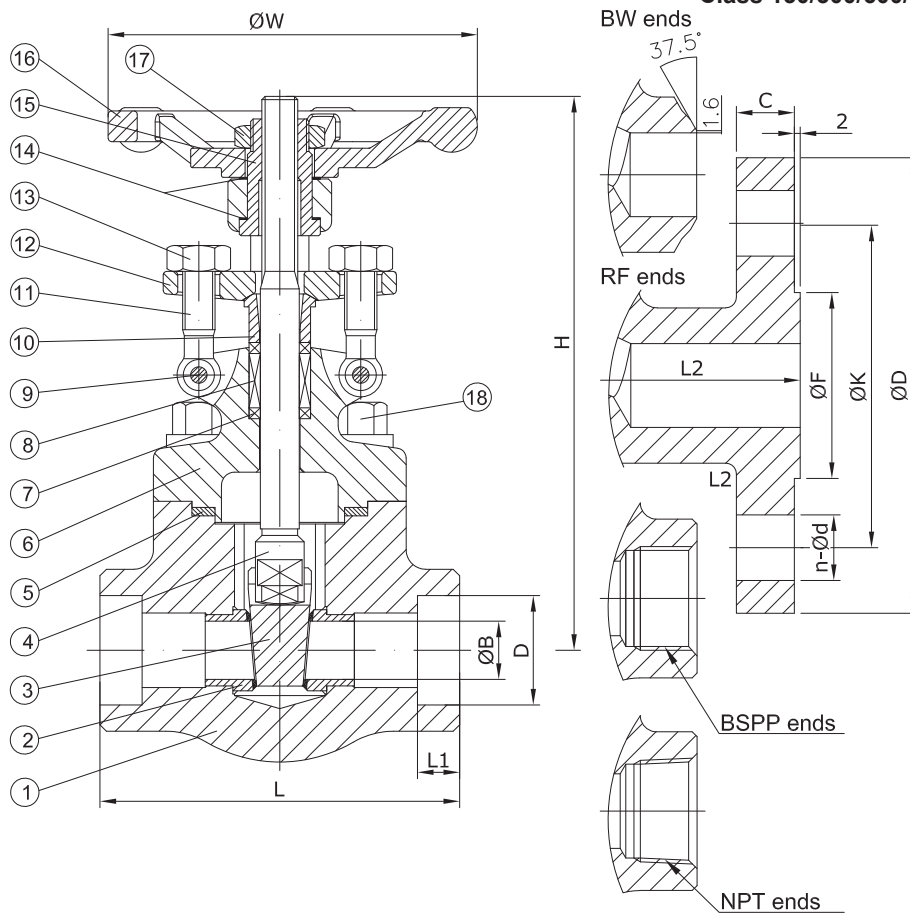
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Diverse body materials and trim combinations, different valve connections, extended bonnet, bellow seal, pressure seal, welded bonnet, different actuation, limit switches... Please consult us

# Main Parts and Materials

## SERIES 99 ANSI RANGE Class 150/300/600/800&1500



### MATERIAL

| N° | PART          | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304/F304L   | A182 F316/F316L   | A182 F51/F53      |
|----|---------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------------|-------------------|-------------------|-------------------|
|    |               | Trim 1<br>(99A01) | Trim 5<br>(99A05) | Trim 8<br>(99A08) | Trim 2<br>(99A12) | Trim 10<br>(99A1D) | Trim 5<br>(99B75/99B65) | (99I10/99I90)     | (99I00/99J10)     | (99K30/99K40)     |
| 1  | Body          | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)      | A182 F316(L)      | A182 F51/F53      |
| 2  | Seat          | A276 410          | A276 410+HF       | A276 410+HF       | A276 304          | A276 316           | A276 410+HF             | A276 304(L)       | A276 316(L)       | A182 F51/F53      |
| 3  | Wedge         | A182 F6a          | A182 F6a+HF       | A182 F6a          | A182 F304         | A182 F316          | A182 F6a+HF             | A182 F304(L)      | A182 F316(L)      | A182 F51/F53      |
| 4  | Stem          | A276 410          |                   |                   | A276 304          | A276 316           | A276 410                | A276 304(L)       | A276 316(L)       | A182 F51/F53      |
| 5  | Bonnet Gasket | SS304+Graphite    |                   |                   | SS304+ Graphite   | SS316+ Graphite    | SS304+ Graphite         | SS304+ Graphite   | SS316+ Graphite   | SS316+ Graphite   |
| 6  | Bonnet        | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)      | A182 F316(L)      | A182 F51/F53      |
| 7  | Packing       | SS304+Graphite    |                   |                   | SS304+ Graphite   | SS316+ Graphite    | SS304+ Graphite         | SS304+ Graphite   | SS316+ Graphite   | SS316+ Graphite   |
| 8  | Packing       | Flexible Graphite |                   |                   | Flexible Graphite |                    | Flexible Graphite       | Flexible Graphite | Flexible Graphite | Flexible Graphite |
| 9  | Eyebolt Pin   | A276 410          |                   |                   | A276 410          |                    | A276 410                | A276 304          | A276 304          | A276 304          |
| 10 | Packing Gland | A276 420          |                   |                   | A276 304          | A276 316           | A276 420                | A276 304(L)       | A276 316(L)       | A182 F51/F53      |
| 11 | Eyebolt       | A193 B7           |                   |                   | A320 L7           |                    | A193 B16                | A193 B8(M)        | A193 B8M          | A193 B8M          |
| 12 | Gland Flange  | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)      | A182 F316(L)      | A182 F51/F53      |
| 13 | Eyebolt Nut   | A194 2H           |                   |                   | A194 4            |                    | A194 4                  | A194 8(M)         | A194 8M           | A194 8M           |
| 14 | Gasket        | A276 410          |                   |                   | A276 410          |                    | A276 410                | A276 304          | A276 304          | A276 304          |
| 15 | Stem Nut      | A276 410          |                   |                   | A276 410          |                    | A276 410                | A276 410          | A276 410          | A276 410          |
| 16 | Handwheel     | A197              |                   |                   | A197              |                    | A197                    | A197              | A197              | A197              |
| 17 | Handwheel Nut | AISI 1035         |                   |                   | AISI 1035         |                    | AISI 1035               | AISI 1035         | AISI 1035         | AISI 1035         |
| 18 | Bonnet Bolt   | A193 B7           |                   |                   | A320 L7           |                    | A193 B16                | A193 B8(M)        | A193 B8M          | A193 B8M          |

HF = Hard faced

**SERIES 99 ANSI RANGE**  
**Class 150/300/600/800&1500**
**Main Valve Parameters**

| Nominal Size | inch DN | 1/2" 15 | 3/4" 20 | 1" 25 | 1 1/4" 32 | 1 1/2" 40 | 2" 50 |
|--------------|---------|---------|---------|-------|-----------|-----------|-------|
| Class 150    | L2      | 108     | 117     | 127   | 140       | 165       | 178   |
|              | ØK      | 60,3    | 69,9    | 79,4  | 88,9      | 98,4      | 120,7 |
|              | ØD      | 90      | 100     | 110   | 115       | 125       | 150   |
|              | C       | 8       | 8,9     | 9,6   | 11,2      | 12,7      | 14,3  |
|              | n-Ød    | 4-Ø16   | 4-Ø16   | 4-Ø16 | 4-Ø16     | 4-Ø16     | 4-Ø19 |
| Class 300    | L2      | 140     | 152     | 165   | 178       | 190       | 216   |
|              | ØK      | 66,7    | 82,6    | 88,9  | 98,4      | 114,3     | 127   |
|              | ØD      | 95      | 115     | 125   | 135       | 155       | 165   |
|              | C       | 12,7    | 14,3    | 15,9  | 17,5      | 19,1      | 20,7  |
|              | n-Ød    | 4-Ø16   | 4-Ø19   | 4-Ø19 | 4-Ø19     | 4-Ø22     | 8-Ø19 |
| Class 600    | L2      | 165     | 190     | 216   | 229       | 241       | 292   |
|              | ØK      | 66,7    | 82,6    | 88,9  | 98,4      | 114,3     | 127   |
|              | ØD      | 95      | 115     | 125   | 135       | 155       | 165   |
|              | C       | 14,3    | 15,9    | 17,5  | 20,7      | 22,3      | 25,4  |
|              | n-Ød    | 4-Ø16   | 4-Ø19   | 4-Ø19 | 4-Ø19     | 4-Ø22     | 8-Ø19 |
| ØF           |         | 34,9    | 42,9    | 50,8  | 63,5      | 73        | 92,1  |
| H (open)     |         | 159     | 164     | 188   | 223       | 238       | 265   |
| H (close)    |         | 135     | 137     | 160   | 193       | 208       | 234   |
| ØW           |         | 80      | 80      | 105   | 130       | 130       | 155   |
| Kvs-value    |         | 1,7     | 3,1     | 4,9   | 7,5       | 12,2      | 18    |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h

**Class 800**

| Nominal Size               |             |                  | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|------------------|------|------|------|------|------|--------|--------|------|
|                            |             |                  | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L    | 79   | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW               | L    | 79   | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |                  | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |                  | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
| Top works/<br>Operation    | Handwheel   | H (open)         | 159  | 159  | 164  | 188  | 223  | 238    | 265    |      |
|                            |             | H (close)        | 135  | 135  | 137  | 160  | 193  | 208    | 234    |      |
|                            |             | ØW               | 80   | 80   | 80   | 105  | 130  | 130    | 155    |      |
| Kvs-value                  |             |                  | -    | 3,2  | 5,5  | 9,7  | 18,8 | 29,9   | 46,1   |      |
| Approx. Weight Threaded/SW |             |                  | 2    | 2    | 2,2  | 3    | 5,2  | 5,8    | 8,2    |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

**Class 1500**

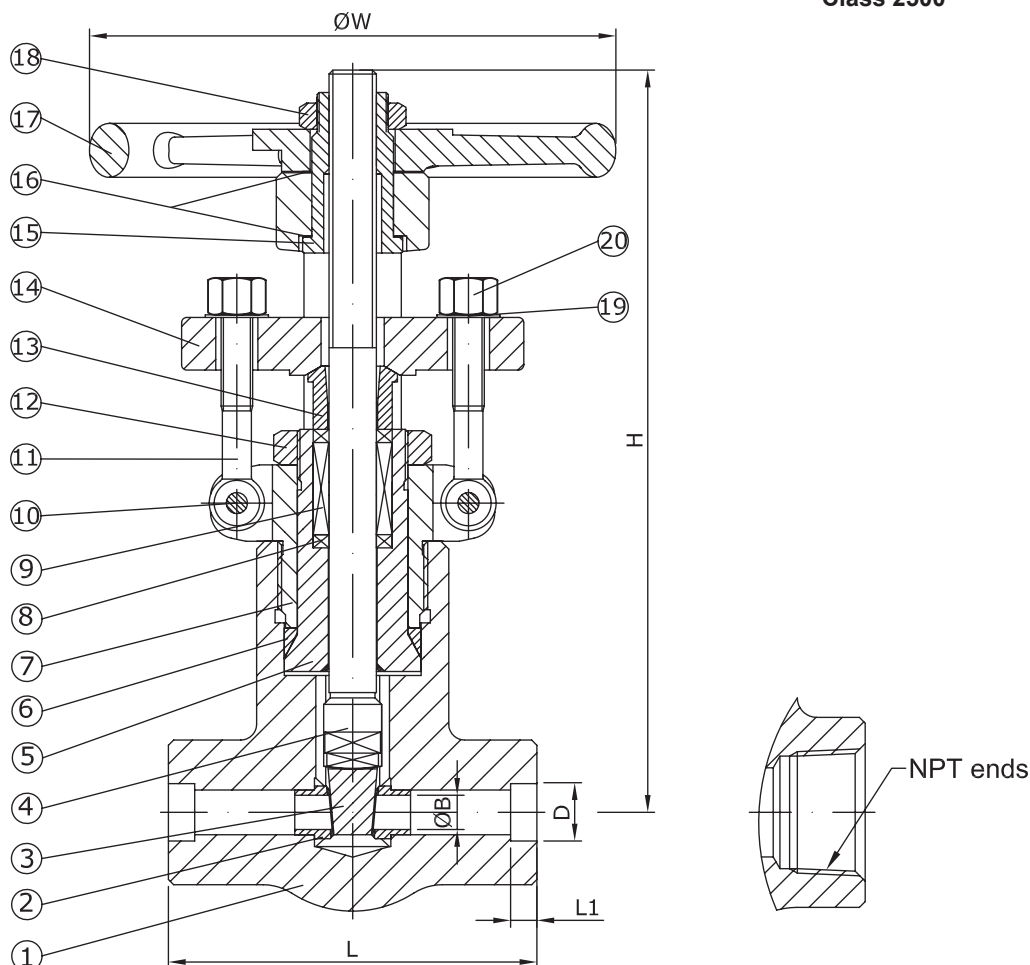
| Nominal Size               |             |                  | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|------------------|------|------|------|------|------|--------|--------|------|
|                            |             |                  | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW               | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |                  | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |                  | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
| Top works/<br>Operation    | Handwheel   | H (open)         | 180  | 180  | 180  | 223  | 238  | 265    | 316    |      |
|                            |             | H (close)        | 160  | 160  | 160  | 192  | 208  | 234    | 283    |      |
|                            |             | ØW               | 105  | 105  | 105  | 130  | 130  | 155    | 200    |      |
| Kvs-value                  |             |                  |      | -    | 3,2  | 5,5  | 9,7  | 18,8   | 29,9   | 46,1 |
| Approx. Weight Threaded/SW |             |                  |      | 3,5  | 3,5  | 3,8  | 5,5  | 7      | 9,5    | 18   |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

Information / restriction of technical rules need to be observed!

Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Parts and Materials

SERIES 96 ANSI RANGE  
Class 2500


## MATERIAL

| N° | PART          | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304/F304L    | A182 F316/F316L    | A182 F51/F53       |
|----|---------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------------|--------------------|--------------------|--------------------|
|    |               | Trim 1<br>(96A01) | Trim 5<br>(96A05) | Trim 8<br>(96A08) | Trim 2<br>(96A12)  | Trim 10<br>(96A1D) | Trim 5<br>(96B75/96B65) | (96I10/96I90)      | (96I00/96J10)      | (96K30/96K40)      |
| 1  | Body          | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 2  | Seat          | A276 410          | A276 410+HF       | A276 410+HF       | A276 304           | A276 316           | A276 410+HF             | A276 304(L)        | A276 316(L)        | A182 F51/F53       |
| 3  | Wedge         | A182 F6a          | A182 F6a+HF       | A182 F6a          | A182 F304          | A182 F316          | A182 F6a+HF             | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 4  | Stem          | A276 410          |                   |                   | A276 304           | A276 316           | A276 410                | A276 304(L)        | A276 316(L)        | A182 F51/F53       |
| 5  | Seal Nut      | A276 420          |                   |                   | A276 304           | A276 316           | A276 420                | A276 304(L)        | A276 316(L)        | A182 F51/F53       |
| 6  | Gasket        | A276 304          |                   |                   | A276 304           |                    | A276 304                | A276 304(L)        | A276 316(L)        | A182 F51/F53       |
| 7  | Bonnet        | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 8  | Packing       | SS304+Graphite    |                   |                   | SS304+<br>Graphite | SS316+<br>Graphite | SS304+<br>Graphite      | SS304+<br>Graphite | SS316+<br>Graphite | SS316+<br>Graphite |
| 9  | Packing       | Flexible Graphite |                   |                   | Flexible Graphite  |                    | Flexible Graphite       | Flexible Graphite  | Flexible Graphite  | Flexible Graphite  |
| 10 | Eyebolt Pin   | A276 410          |                   |                   | A276 410           |                    | A276 410                | A276 304           | A276 304           | A276 304           |
| 11 | Eyebolt       | A193 B7           |                   |                   | A320 L7            |                    | A193 B16                | A193 B8(M)         | A193 B8M           | A193 B8M           |
| 12 | Lock Nut      | Carbon Steel      |                   |                   | Carbon Steel       |                    | Carbon Steel            | St.Steel           | St.Steel           | St.Steel           |
| 13 | Packing Gland | A276 420          |                   |                   | A276 304           | A276 316           | A276 420                | A276 304(L)        | A276 316(L)        | A182 F51/F53       |
| 14 | Gland Flange  | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 15 | Stem Nut      | A276 410          |                   |                   | A276 410           |                    | A276 410                | A276 410           | A276 410           | A276 410           |
| 16 | Gasket        | A276 410          |                   |                   | A276 410           |                    | A276 410                | A276 304           | A276 304           | A276 304           |
| 17 | Handwheel     | A197              |                   |                   | A197               |                    | A197                    | A197               | A197               | A197               |
| 18 | Handwheel Nut | AISI 1035         |                   |                   | AISI 1035          |                    | AISI 1035               | AISI 1035          | AISI 1035          | AISI 1035          |
| 19 | Washer        | Carbon Steel      |                   |                   | Carbon Steel       |                    | Carbon Steel            | St.Steel           | St.Steel           | St.Steel           |
| 20 | Eyebolt Nut   | A194 2H           |                   |                   | A194 4             |                    | A194 4                  | A194 8(M)          | A194 8M            | A194 8M            |

HF = Hard faced

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

**SERIES 96 ANSI RANGE**  
**Class 2500**

**Main Valve Parameters**
**Class 2500**

| Nominal Size               |                         |                  | inch<br>DN | 3/8”<br>10 | 1/2”<br>15 | 3/4”<br>20 | 1”<br>25 | 1 1/4”<br>32 | 1 1/2”<br>40 | 2”<br>50 |
|----------------------------|-------------------------|------------------|------------|------------|------------|------------|----------|--------------|--------------|----------|
| End connection             | Threaded                | NPT/<br>BSP/BSPT | L          | 92         | 111        | 111        | 120      | 120          | 140          | 178      |
|                            |                         |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            | Socket weld             | SW               | L          | 92         | 111        | 111        | 120      | 120          | 140          | 178      |
|                            |                         |                  | L1         | 9,6        | 9,6        | 12,7       | 12,7     | 12,7         | 12,7         | 16       |
|                            |                         |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            |                         |                  | ØD         | 17,6       | 21,8       | 27,1       | 33,8     | 42,6         | 48,7         | 61,2     |
|                            | Top works/<br>Operation | Handwheel        | H (open)   | 180        | 180        | 180        | 223      | 238          | 265          | 316      |
| H (close)                  |                         |                  | 160        | 160        | 160        | 192        | 208      | 234          | 283          |          |
| ØW                         |                         |                  | 100        | 120        | 120        | 160        | 160      | 180          | 200          |          |
| Kvs-value                  |                         |                  |            | -          | 3,2        | 5,5        | 9.7      | 18,8         | 29,9         | 46,1     |
| Approx. Weight Threaded/SW |                         |                  |            | 3,5        | 3,5        | 3,8        | 5,5      | 7            | 9,5          | 18       |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

**SERIES 39/38 ANSI RANGE**

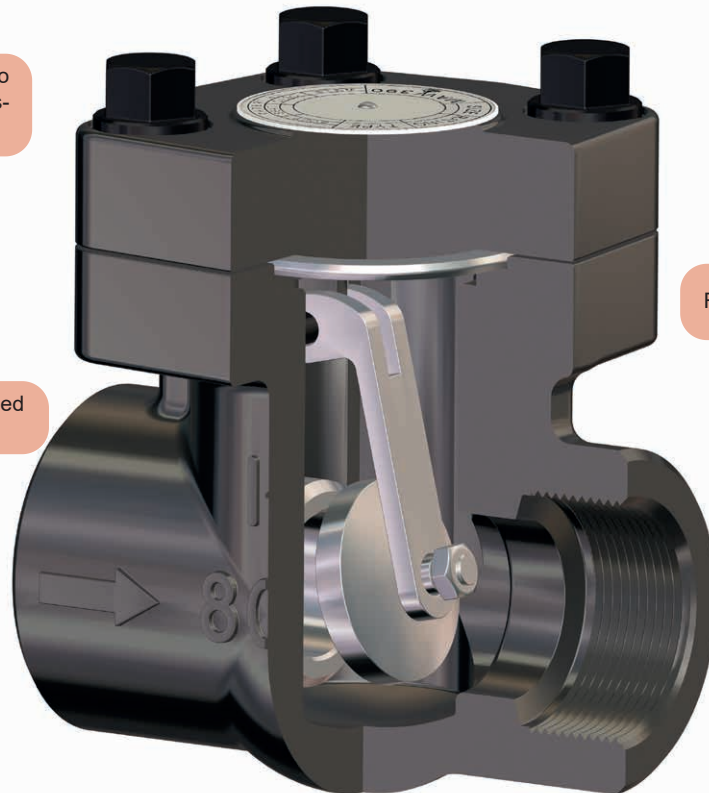
Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Series 39 are Forged Swing Check Valves that operate by means of its articulated disc. They are featured by its rugged and compact design and easy maintenance.

Body to cover joint design to apply uniform load to the gasket

Disc hold by bolted arm

Seat surface can be hardened to increase wear resistance

Vertical seat, avoids trapping of media particles



Marking for identification and full traceability purpose

Robust and compact construction

Precise machining of components for optimal performance

Great versatility in end connections, materials and configurations

**Main Features / Reference Standards**

Design: API 602  
 Pressure Rating: 800/1500/2500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
                                     Welded SW to ASME B16.11  
                                     Flanged to ANSI B16.5  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)  
 for European Union territory

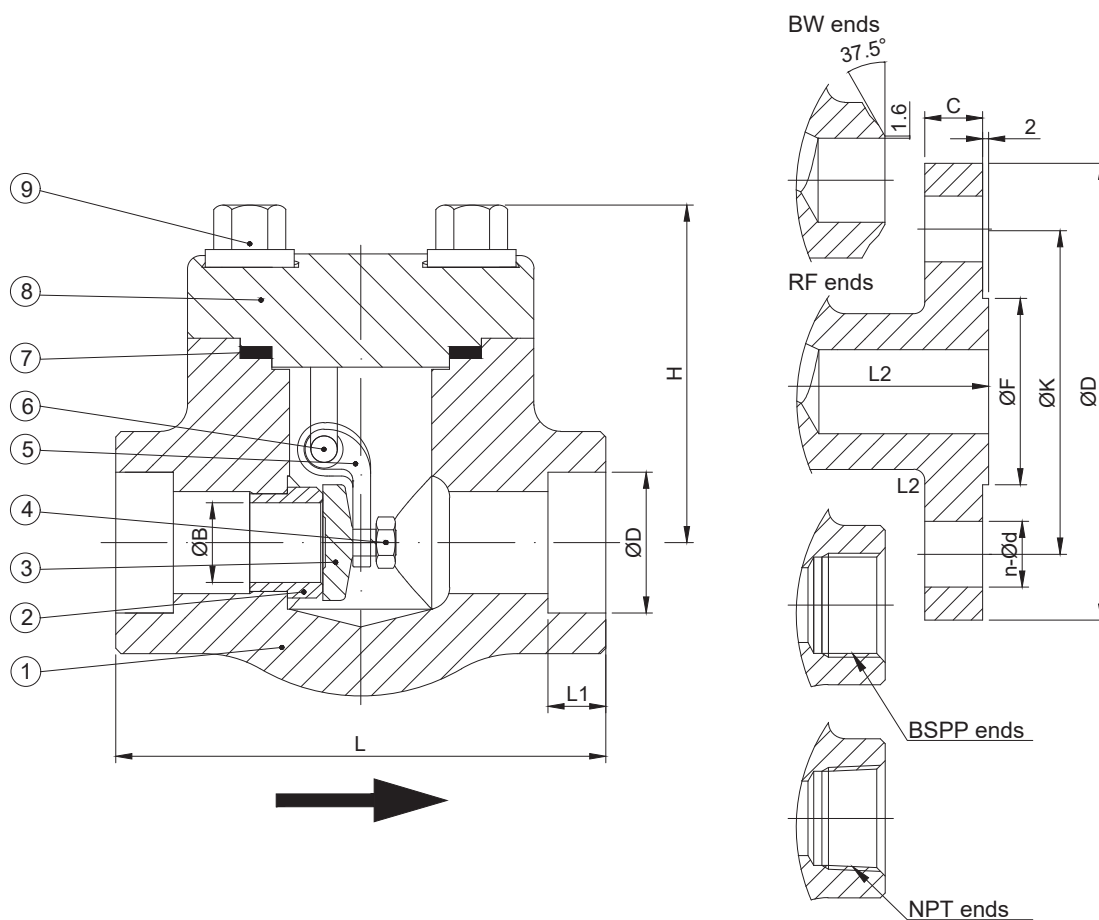
**Main Duties / Limits of use**

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*)  
 and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

**Options**

Diverse body materials and trim combinations, different valve connections, pressure seal, welded bonnet... Please consult us

**SERIES 39 ANSI RANGE**  
**Class 150/300/600/800&1500**

**Main Parts and Materials**


|    |              | MATERIAL          |                   |                   |                   |                    |                         |                 |                 |                 |
|----|--------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------------|-----------------|-----------------|-----------------|
| N° | PART         | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304/F304L | A182 F316/F316L | A182 F51/F53    |
|    |              | Trim 1<br>(39A01) | Trim 5<br>(39A05) | Trim 8<br>(39A08) | Trim 2<br>(39A12) | Trim 10<br>(39A1D) | Trim 5<br>(39B75/39B65) | (39I10/39I90)   | (39I00/39J10)   | (39K30/39K40)   |
| 1  | Body         | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)    | A182 F316(L)    | A182 F51/F53    |
| 2  | Seat         | A276 410          | A276 410+HF       | A276 410+HF       | A276 304          | A276 316           | A276 410+HF             | A276 304(L)     | A276 316(L)     | A182 F51/F53    |
| 3  | Disc         | A182 F6a          | A182 F6a+HF       | A182 F6a          | A182 F304         | A182 F316          | A182 F6a+HF             | A182 F304(L)    | A182 F316(L)    | A182 F51/F53    |
| 4  | Disc Nut     | A194 2H           |                   |                   | A194 4            |                    | A194 4                  | A194 8(M)       | A194 8M         | A194 8M         |
| 5  | Hinge        | SS304             |                   |                   | SS304             |                    | SS304                   | SS304           | SS316           | SS316           |
| 6  | Hinge Pin    | A276 410          |                   |                   | A276 304          |                    | A276 410                | A276 304(L)     | A276 316(L)     | A182 F51/F53    |
| 7  | Cover Gasket | SS304+Graphite    |                   |                   | SS304+ Graphite   | SS316+ Graphite    | SS304+ Graphite         | SS304+ Graphite | SS316+ Graphite | SS316+ Graphite |
| 8  | Cover        | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)    | A182 F316(L)    | A182 F51/F53    |
| 9  | Cover Bolt   | A193 B7           |                   |                   | A320 L7           |                    | A193 B16                | A193 B8(M)      | A193 B8M        | A193 B8M        |

HF = Hard faced

**SERIES 39 ANSI RANGE**  
**Class 150/300/600/800&1500**
**Main Valve Parameters**

| Nominal Size | inch | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 2"    |
|--------------|------|-------|-------|-------|--------|--------|-------|
|              | DN   | 15    | 20    | 25    | 32     | 40     | 50    |
| Class 150    | L2   | 108   | 117   | 127   | 140    | 165    | 203   |
|              | ØK   | 60,3  | 69,9  | 79,4  | 88,9   | 98,4   | 120,7 |
|              | ØD   | 90    | 100   | 110   | 115    | 125    | 150   |
|              | C    | 8     | 8,9   | 9,6   | 11,2   | 12,7   | 14,3  |
|              | n-Ød | 4-Ø16 | 4-Ø16 | 4-Ø16 | 4-Ø16  | 4-Ø16  | 4-Ø19 |
| Class 300    | L2   | 152   | 178   | 203   | 216    | 229    | 267   |
|              | ØK   | 66,7  | 82,6  | 88,9  | 98,4   | 114,3  | 127   |
|              | ØD   | 95    | 115   | 125   | 135    | 155    | 165   |
|              | C    | 12,7  | 14,3  | 15,9  | 17,5   | 19,1   | 20,7  |
|              | n-Ød | 4-Ø16 | 4-Ø19 | 4-Ø19 | 4-Ø19  | 4-Ø22  | 8-Ø19 |
| Class 600    | L2   | 165   | 190   | 216   | 229    | 241    | 292   |
|              | ØK   | 66,7  | 82,6  | 88,9  | 98,4   | 114,3  | 127   |
|              | ØD   | 95    | 115   | 125   | 135    | 155    | 165   |
|              | C    | 14,3  | 15,9  | 17,5  | 20,7   | 22,3   | 25,4  |
|              | n-Ød | 4-Ø16 | 4-Ø19 | 4-Ø19 | 4-Ø19  | 4-Ø22  | 8-Ø19 |
| ØF           |      | 34,9  | 42,9  | 50,8  | 63,5   | 73     | 92,1  |
| H            |      | 61    | 61    | 78    | 84     | 84     | 120   |
| Kvs-value    |      | 3,9   | 6,3   | 12,1  | 21,5   | 31,4   | 51    |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h

**Class 800**

| Nominal Size               |             |          | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|----------|------|------|------|------|------|--------|--------|------|
|                            |             |          | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/BSPT | L    | 79   | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |          | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW       | L    | 79   | 79   | 92   | 111  | 120    | 120    | 140  |
|                            |             |          | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |          | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |          | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
|                            | H           |          |      | 61   | 61   | 61   | 78   | 84     | 84     | 120  |
|                            | Kvs-value   |          |      | -    | 3,9  | 6,3  | 12,1 | 21,5   | 31,4   | 51   |
| Approx. Weight Threaded/SW |             |          | 1,4  | 1,5  | 1,7  | 3,3  | 4,2  | 4,2    | 8,5    |      |

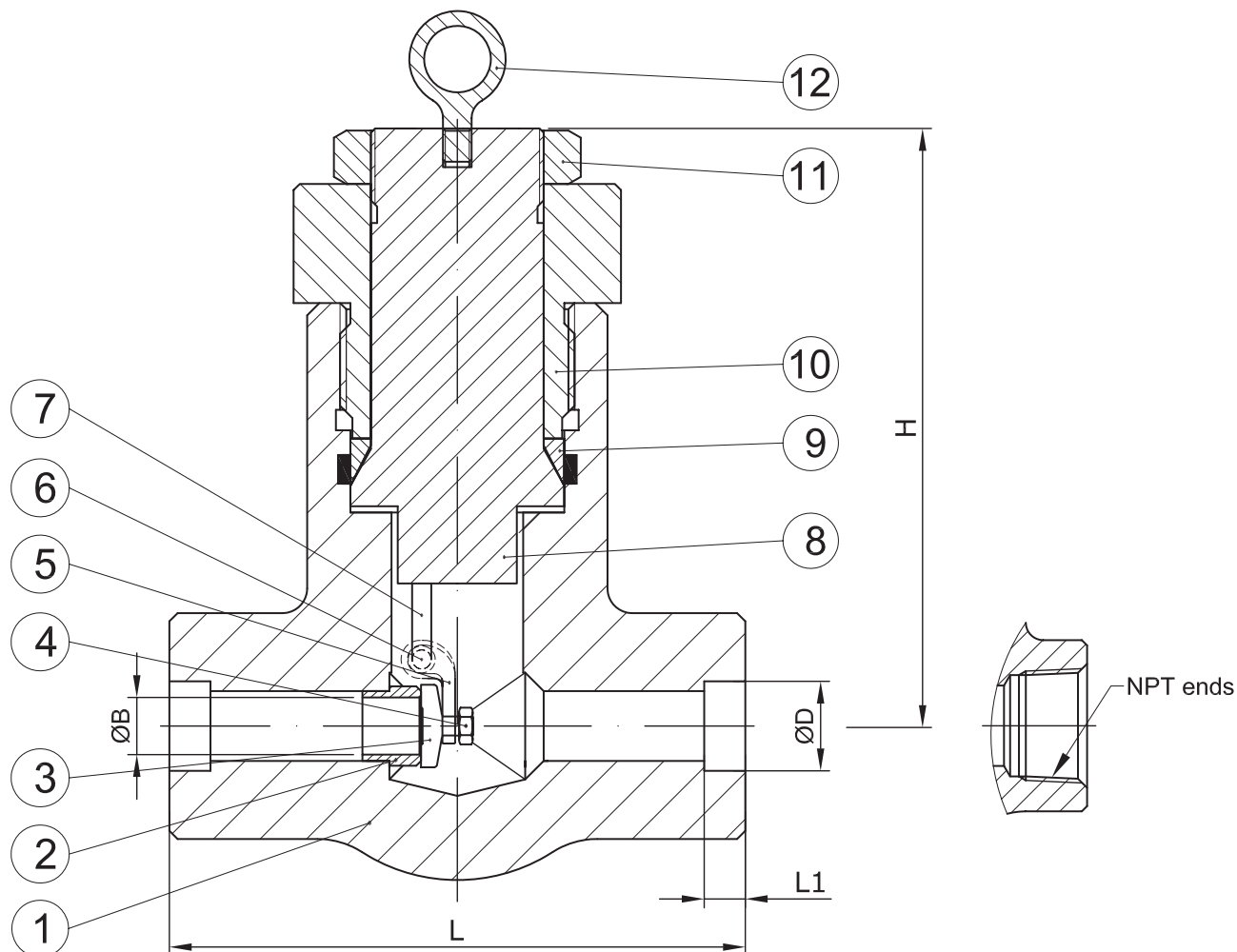
Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

**Class 1500**

| Nominal Size               |             |          | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|----------|------|------|------|------|------|--------|--------|------|
|                            |             |          | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/BSPT | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |          | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW       | L    | 92   | 111  | 111  | 120  | 120    | 140    | 178  |
|                            |             |          | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |          | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |          | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
|                            | H           |          |      | 61   | 78   | 78   | 84   | 103    | 120    | 133  |
|                            | Kvs-value   |          |      | -    | 3,9  | 6,3  | 12,1 | 21,5   | 31,4   | 51   |
| Approx. Weight Threaded/SW |             |          | 1,5  | 3,2  | 3,3  | 4,2  | 5    | 8,5    | 10,9   |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## Main Parts and Materials



| MATERIAL |            |                   |                   |                   |                   |                    |                         |                 |                 |               |
|----------|------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------------|-----------------|-----------------|---------------|
| N°       | PART       | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304/F304L | A182 F316/F316L | A182 F51/F53  |
|          |            | Trim 1<br>(38A01) | Trim 5<br>(38A05) | Trim 8<br>(38A08) | Trim 2<br>(38A12) | Trim 10<br>(38A1D) | Trim 5<br>(38B75/38B65) | (38I10/38I90)   | (38I00/38J10)   | (38K30/38K40) |
| 1        | Body       | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 2        | Seat       | A276 410          | A276 410+HF       | A276 410+HF       | A276 304          | A276 316           | A276 410+HF             | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 3        | Disc       | A182 F6a          | A182 F6a+HF       | A182 F6a          | A182 F304         | A182 F316          | A182 F6a+HF             | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 4        | Disc Nut   | A194 2H           |                   |                   | A194 4            |                    | A194 4                  | A194 8(M)       | A194 8M         | A194 8M       |
| 5        | Hinge      | SS304             |                   |                   | SS304             |                    | SS304                   | SS304           | SS316           | SS316         |
| 6        | Hinge Pin  | A276 410          |                   |                   | A276 304          | A276 316           | A276 410                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 7        | Positioner | A276 410          |                   |                   | A276 304          | A276 316           | A276 410                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 8        | Seal Nut   | A276 420          |                   |                   | A276 304          | A276 316           | A276 420                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 9        | Gasket     | A276 304          |                   |                   | A276 304          |                    | A276 304                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 10       | Cover      | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 11       | Lock Nut   | Carbon Steel      |                   |                   | Carbon Steel      |                    | Carbon Steel            | St.Steel        | St.Steel        | St.Steel      |
| 12       | Lift Ring  | Carbon Steel      |                   |                   | Carbon Steel      |                    | Carbon Steel            | Carbon Steel    | Carbon Steel    | Carbon Steel  |

HF = Hard faced

**SERIES 38 ANSI RANGE**  
**Class 2500**

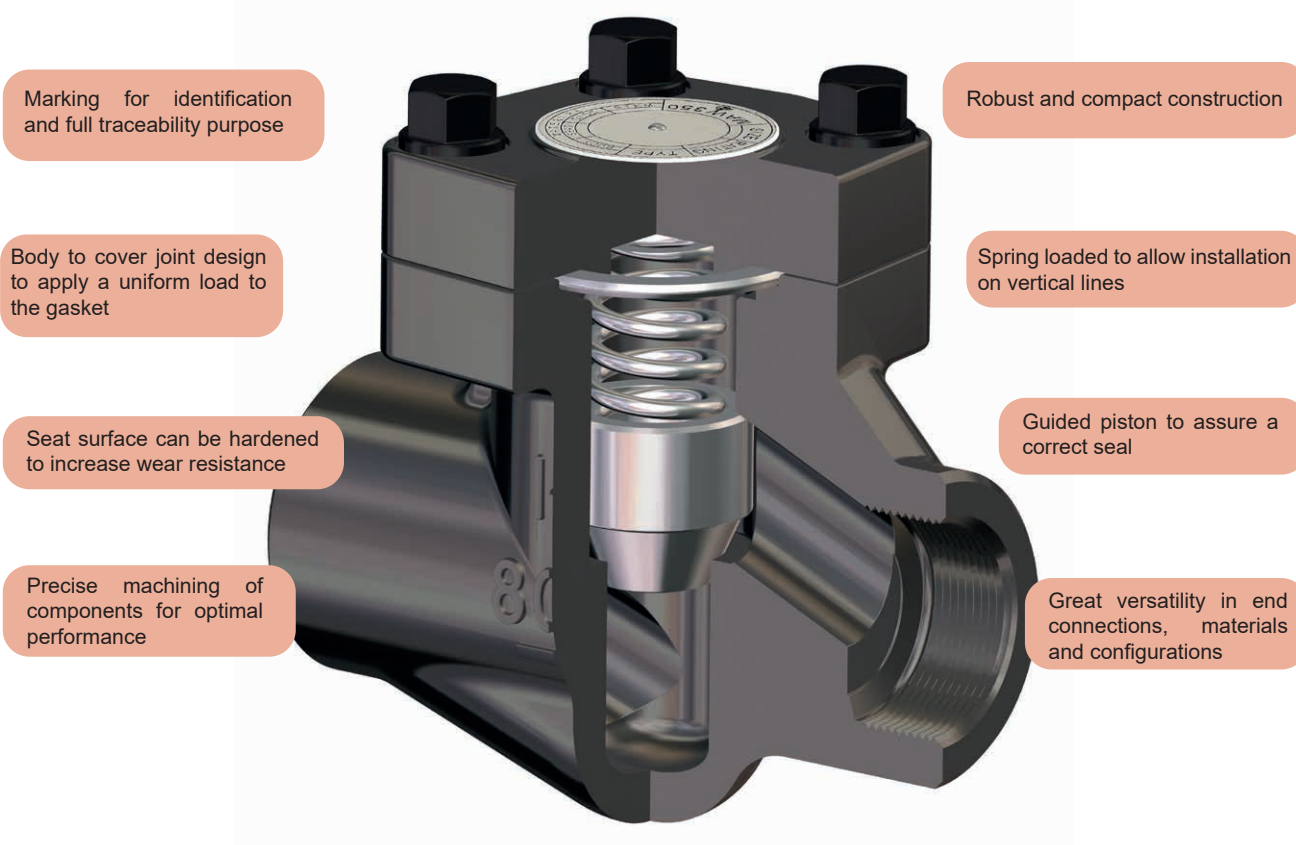
**Main Valve Parameters**
**Class 2500**

| Nominal Size               |             |                  | inch | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|-------------|------------------|------|------|------|------|------|--------|--------|------|
|                            |             |                  | DN   | 10   | 15   | 20   | 25   | 32     | 40     | 50   |
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L    | 186  | 186  | 186  | 186  | 230    | 230    | 275  |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            | Socket weld | SW               | L    | 186  | 186  | 186  | 186  | 230    | 230    | 275  |
|                            |             |                  | L1   | 9,6  | 9,6  | 12,7 | 12,7 | 12,7   | 12,7   | 16   |
|                            |             |                  | ØB   | 8    | 10,5 | 13,5 | 18   | 23     | 29     | 36,5 |
|                            |             |                  | ØD   | 17,6 | 21,8 | 27,1 | 33,8 | 42,6   | 48,7   | 61,2 |
|                            | H           |                  |      | 117  | 117  | 117  | 117  | 152    | 152    | 195  |
| Kvs-value                  |             |                  | -    | 3,9  | 6,3  | 12,1 | 21,5 | 31,4   | 51     |      |
| Approx. Weight Threaded/SW |             |                  | 9    | 9    | 9    | 9    | 21   | 23     | 39     |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## SERIES 35/34 ANSI RANGE

Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Forged Piston Check Valves Series 35 are featured by its rugged and compact design and easy maintenance. They are provided with a guided piston which is loaded by a spring and the disc closes against a horizontal valve seat. Compared with other check valves, they permit a faster closure reaction and more tightness, with higher pressure drop.



### Main Features / Reference Standards

Design: API 602  
 Pressure Rating: 800/1500/2500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
 Welded SW to ASME B16.11  
 Flanged to ANSI B16.5  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)  
 for European Union territory

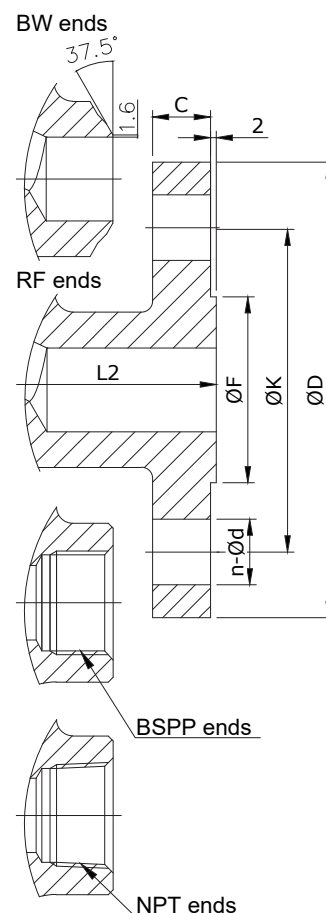
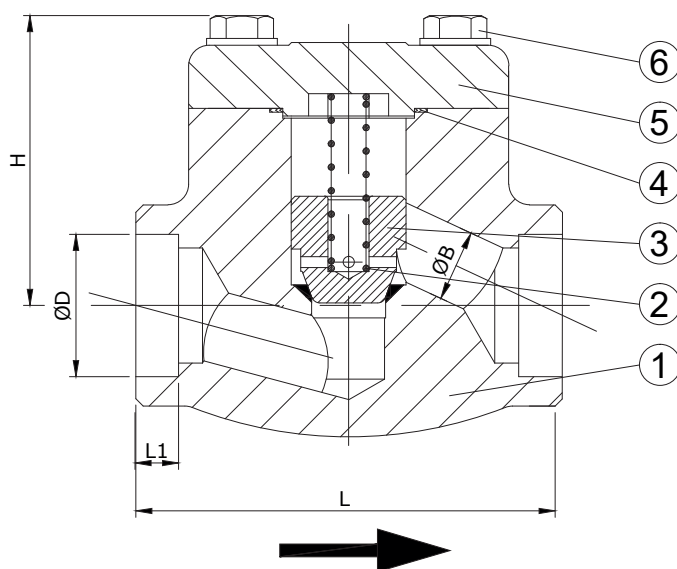
### Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*)  
 and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Diverse body materials and trim combinations, different valve connections, pressure seal, welded bonnet... Please consult us

## Main Parts and Materials



|    |              | MATERIAL          |                   |                   |                    |                    |                         |                    |                    |                    |
|----|--------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------------|--------------------|--------------------|--------------------|
| N° | PART         | A105N             |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304/F304L    | A182 F316/F316L    | A182 F51/F53       |
|    |              | Trim 1<br>(35A01) | Trim 5<br>(35A05) | Trim 8<br>(35A08) | Trim 2<br>(35A12)  | Trim 10<br>(35A1D) | Trim 5<br>(35B75/35B65) | (35I10/35I90)      | (35I00/35J10)      | (35K30/35K40)      |
| 1  | Body         | A105N+<br>13Cr    | A105N+<br>HF      | A105N+<br>HF      | A350<br>LF2+SS304  | A350<br>LF2+SS316  | A182<br>F11/F22+HF      | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 2  | Spring       | 17-7PH            |                   |                   | SS304              |                    | SS304                   | SS304              | SS316              | Inconel X-750      |
| 3  | Disc         | A182<br>F6a       | A182<br>F6a+HF    | A182<br>F6a       | A182 F304          | A182 F316          | A182 F6a+HF             | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 4  | Cover Gasket | SS304+Graphite    |                   |                   | SS304+<br>Graphite | SS316+<br>Graphite | SS304+<br>Graphite      | SS304+<br>Graphite | SS316+<br>Graphite | SS316+<br>Graphite |
| 5  | Cover        | ASTM A105N        |                   |                   | A350 LF2           |                    | A182 F11/F22            | A182 F304(L)       | A182 F316(L)       | A182 F51/F53       |
| 6  | Cover Bolt   | A193 B7           |                   |                   | A320 L7            |                    | A193 B16                | A193 B8(M)         | A193 B8M           | A193 B8M           |

HF = Hard faced

**SERIES 35 ANSI RANGE**  
**Class 800&1500**

**Main Valve Parameters**

| Nominal Size | inch | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 2"    |
|--------------|------|-------|-------|-------|--------|--------|-------|
|              | DN   | 15    | 20    | 25    | 32     | 40     | 50    |
| Class 150    | L2   | 108   | 117   | 127   | 140    | 165    | 203   |
|              | ØK   | 60,3  | 69,9  | 79,4  | 88,9   | 98,4   | 120,7 |
|              | ØD   | 90    | 100   | 110   | 115    | 125    | 150   |
|              | C    | 8     | 8,9   | 9,6   | 11,2   | 12,7   | 14,3  |
|              | n-Ød | 4-Ø16 | 4-Ø16 | 4-Ø16 | 4-Ø16  | 4-Ø16  | 4-Ø19 |
| Class 300    | L2   | 152   | 178   | 203   | 216    | 229    | 267   |
|              | ØK   | 66,7  | 82,6  | 88,9  | 98,4   | 114,3  | 127   |
|              | ØD   | 95    | 115   | 125   | 135    | 155    | 165   |
|              | C    | 12,7  | 14,3  | 15,9  | 17,5   | 19,1   | 20,7  |
|              | n-Ød | 4-Ø16 | 4-Ø19 | 4-Ø19 | 4-Ø19  | 4-Ø22  | 8-Ø19 |
| Class 600    | L2   | 165   | 190   | 216   | 229    | 241    | 292   |
|              | ØK   | 66,7  | 82,6  | 88,9  | 98,4   | 114,3  | 127   |
|              | ØD   | 95    | 115   | 125   | 135    | 155    | 165   |
|              | C    | 14,3  | 15,9  | 17,5  | 20,7   | 22,3   | 25,4  |
|              | n-Ød | 4-Ø16 | 4-Ø19 | 4-Ø19 | 4-Ø19  | 4-Ø22  | 8-Ø19 |
| ØF           |      | 34,9  | 42,9  | 50,8  | 63,5   | 73     | 92,1  |
| H            |      | 61    | 61    | 78    | 84     | 84     | 120   |
| Kvs-value    |      | 3,9   | 6,3   | 12,1  | 21,5   | 31,4   | 51    |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h

**Class 800**

| Nominal Size               |             |          |     | inch DN | 3/8" 10 | 1/2" 15 | 3/4" 20 | 1" 25 | 1 1/4" 32 | 1 1/2" 40 | 2" 50 |
|----------------------------|-------------|----------|-----|---------|---------|---------|---------|-------|-----------|-----------|-------|
| End connection             | Threaded    | NPT/BSPT | L   | 79      | 79      | 92      | 111     | 120   | 152       | 172       |       |
|                            |             |          | ØB  | 8       | 10,5    | 13,5    | 18      | 23    | 29        | 36,5      |       |
|                            | Socket weld | SW       | L   | 79      | 79      | 92      | 111     | 120   | 152       | 172       |       |
|                            |             |          | L1  | 9,6     | 9,6     | 12,7    | 12,7    | 12,7  | 12,7      | 16        |       |
|                            |             |          | ØB  | 8       | 10,5    | 13,5    | 18      | 23    | 29        | 36,5      |       |
|                            |             |          | ØD  | 17,6    | 21,8    | 27,1    | 33,8    | 42,6  | 48,7      | 61,2      |       |
|                            | H           |          |     | 61      | 61      | 61      | 78      | 84    | 84        | 118       |       |
|                            | Kvs-value   |          |     | -       | 1,7     | 3,1     | 4,9     | 7,5   | 12,2      | 18        |       |
| Approx. Weight Threaded/SW |             |          | 1,2 | 1,5     | 1,7     | 3,5     | 4       | 4     | 10,5      |           |       |

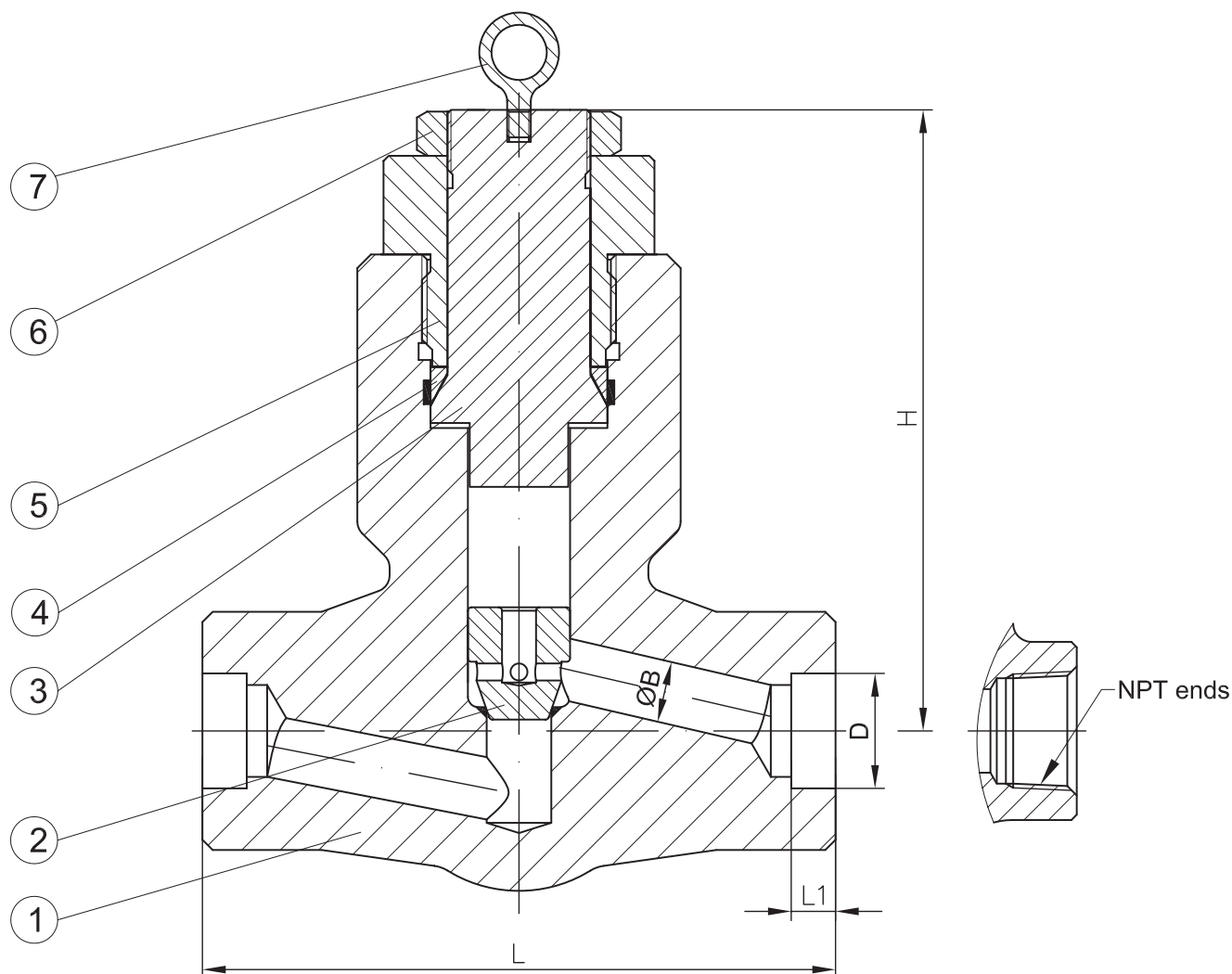
Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

**Class 1500**

| Nominal Size               |             |          |     | inch DN | 3/8” 10 | 1/2” 15 | 3/4” 20 | 1” 25 | 1 1/4” 32 | 1 1/2” 40 | 2” 50 |
|----------------------------|-------------|----------|-----|---------|---------|---------|---------|-------|-----------|-----------|-------|
| End connection             | Threaded    | NPT/BSPT | L   | 92      | 111     | 111     | 120     | 152   | 172       | 220       |       |
|                            |             |          | ØB  | 8       | 10,5    | 13,5    | 18      | 23    | 29        | 36,5      |       |
|                            | Socket weld | SW       | L   | 92      | 111     | 111     | 120     | 152   | 172       | 220       |       |
|                            |             |          | L1  | 9,6     | 9,6     | 12,7    | 12,7    | 12,7  | 12,7      | 16        |       |
|                            |             |          | ØB  | 8       | 10,5    | 13,5    | 18      | 23    | 29        | 36,5      |       |
|                            |             |          | ØD  | 17,6    | 21,8    | 27,1    | 33,8    | 42,6  | 48,7      | 61,2      |       |
|                            | H           |          |     | 61      | 78      | 78      | 84      | 103   | 118       | 132       |       |
|                            | Kvs-value   |          |     | -       | 1,7     | 3,1     | 4,9     | 7,5   | 12,2      | 18        |       |
| Approx. Weight Threaded/SW |             |          | 1,5 | 3       | 3,5     | 4       | 6       | 10,5  | 12,5      |           |       |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## Main Parts and Materials



|    |           | MATERIAL          |                   |                   |                   |                    |                         |                 |                 |               |
|----|-----------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------------|-----------------|-----------------|---------------|
| N° | PART      | A105N             |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304/F304L | A182 F316/F316L | A182 F51/F53  |
|    |           | Trim 1<br>(34A01) | Trim 5<br>(34A05) | Trim 8<br>(34A08) | Trim 2<br>(34A12) | Trim 10<br>(34A1D) | Trim 5<br>(34B75/34B65) | (34I10/34I90)   | (34I00/34J10)   | (34K30/34K40) |
| 1  | Body      | A105N+13Cr        | A105N+HF          | A105N+HF          | A350 LF2+SS304    | A350 LF2+SS316     | A182 F11/F22+HF         | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 2  | Disc      | A182 F6a          | A182 F6a+HF       | A182 F6a          | A182 F304         | A182 F316          | A182 F6a+HF             | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 3  | Seal Nut  | A276 420          |                   |                   | A276 304          | A276 316           | A276 420                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 4  | Gasket    | A276 304          |                   |                   | A276 304          |                    | A276 304                | A276 304(L)     | A276 316(L)     | A182 F51/F53  |
| 5  | Cover     | ASTM A105N        |                   |                   | A350 LF2          |                    | A182 F11/F22            | A182 F304(L)    | A182 F316(L)    | A182 F51/F53  |
| 6  | Lock Nut  | Carbon Steel      |                   |                   | Carbon Steel      |                    | Carbon Steel            | St.Steel        | St.Steel        | St.Steel      |
| 7  | Lift Ring | Carbon Steel      |                   |                   | Carbon Steel      |                    | Carbon Steel            | Carbon Steel    | Carbon Steel    | Carbon Steel  |

HF = Hard faced

**SERIES 34 ANSI RANGE**  
**Class 2500**



**Main Valve Parameters**

**Class 2500**

| Nominal Size               |             |                  | inch<br>DN | 3/8”<br>10 | 1/2”<br>15 | 3/4”<br>20 | 1”<br>25 | 1 1/4”<br>32 | 1 1/2”<br>40 | 2”<br>50 |
|----------------------------|-------------|------------------|------------|------------|------------|------------|----------|--------------|--------------|----------|
| End connection             | Threaded    | NPT/<br>BSP/BSPT | L          | 79         | 79         | 92         | 111      | 120          | 152          | 172      |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            | Socket weld | SW               | L          | 79         | 79         | 92         | 111      | 120          | 152          | 172      |
|                            |             |                  | L1         | 9,6        | 9,6        | 12,7       | 12,7     | 12,7         | 12,7         | 16       |
|                            |             |                  | ØB         | 8          | 10,5       | 13,5       | 18       | 23           | 29           | 36,5     |
|                            |             |                  | ØD         | 17,6       | 21,8       | 27,1       | 33,8     | 42,6         | 48,7         | 61,2     |
|                            | H           |                  |            | 61         | 61         | 61         | 78       | 84           | 84           | 118      |
|                            | Kvs-value   |                  |            | -          | 1,7        | 3,1        | 4,9      | 7,5          | 12,2         | 18       |
| Approx. Weight Threaded/SW |             |                  | 1,2        | 1,5        | 1,7        | 3,5        | 4        | 4            | 10,5         |          |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

**SERIES F9 ANSI RANGE**

Y-Strainers are devices for mechanically removing solids from flowing media by means of a wired mesh or perforated basket, replaceable in line. They combine a rugged and compact design for indoors installation in industrial plants, building industry, etc.



Great versatility in end connections, materials and configurations

Marking for identification and full traceability purpose

St. steel screen, made out of high resistance wire, rugged and braided type or perforated basket

Precise machined seat slot, to accommodate the screen and avoid dirt to by-pass the strainer

Reinforced Graphite gasket, with st. steel reinforcement

Standard gasket free threaded blow-off connection

Removable bolting cover, to ease maintenance

Robust and compact construction

**Main Features / Reference Standards**

Design: BS 5352  
 Pressure Rating: 800/1500#  
 Face to face length: Manufacturer standard  
 Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1  
 Welded SW to ASME B16.11  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Zinc phosphated surface protection for forged steel valves  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) for European Union territory

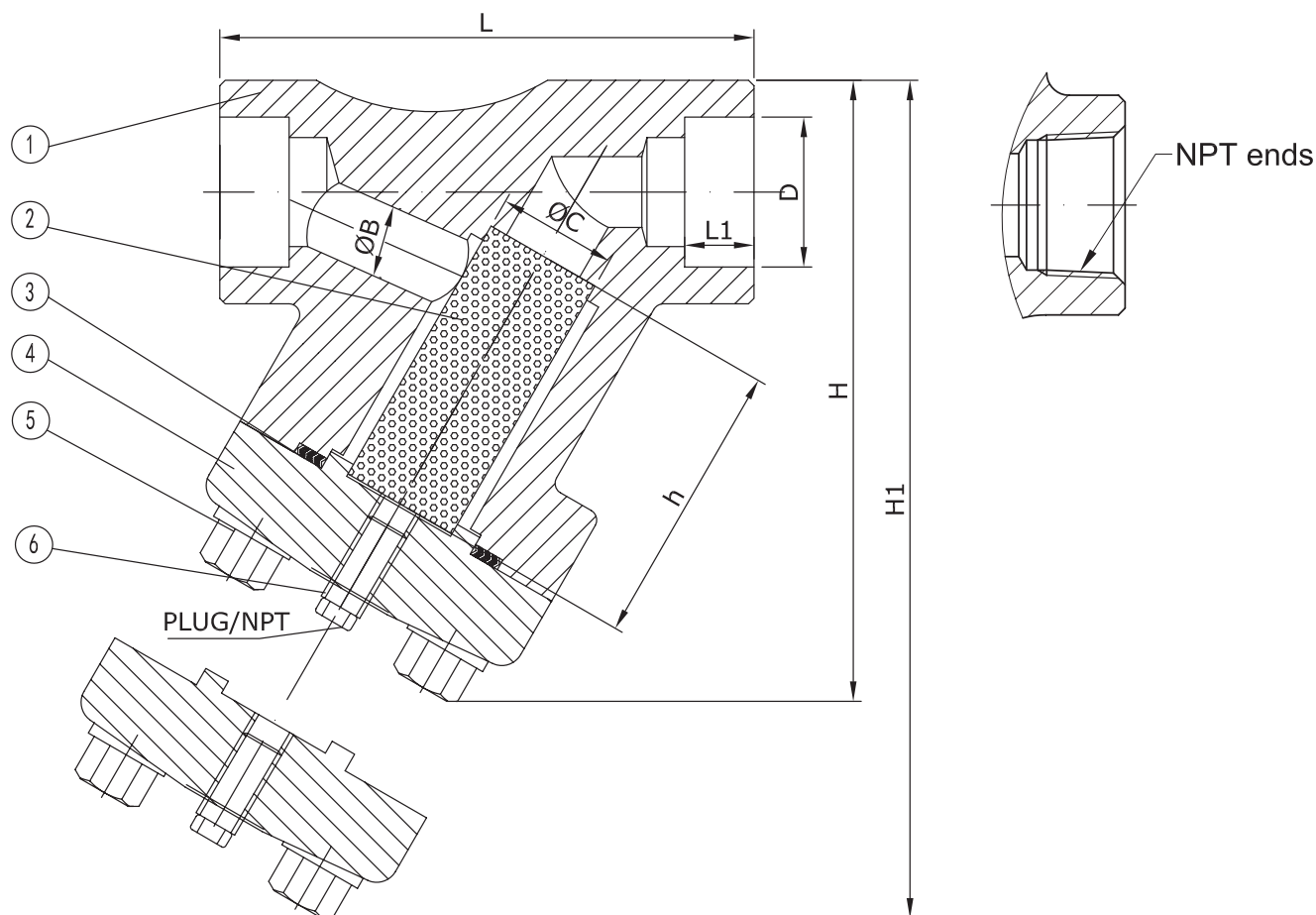
**Main Duties / Limits of use**

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

**Options**

Diverse body materials and trim combinations, different valve connections, pressure seal... Please consult us

## Main Parts and Materials



| N° | PART         | MATERIAL       |                 |                             |                                |                                |                             |
|----|--------------|----------------|-----------------|-----------------------------|--------------------------------|--------------------------------|-----------------------------|
|    |              | A105N (F9A0)   | A350 LF2 (F9A1) | A182 F11/F22<br>(F9B7/F9B6) | A182 F304/F304L<br>(F9I1/F9I9) | A182 F316/F316L<br>(F9J0/F9J1) | A182 F51/F53<br>(F9K3/F9K4) |
| 1  | Body         | ASTM A105N     | A350 LF2        | A182 F11/F22                | A182 F304(L)                   | A182 F316(L)                   | A182 F51/F53                |
| 2  | Mesh         | SS304          | SS304           | SS304                       | SS304                          | SS316                          | SS316                       |
| 3  | Cover Gasket | SS304+Graphite | SS304+Graphite  | SS304+Graphite              | SS304+Graphite                 | SS316+Graphite                 | SS316+Graphite              |
| 4  | Cover        | ASTM A105N     | A350 LF2        | A182 F11/F22                | A182 F304(L)                   | A182 F316(L)                   | A182 F51/F53                |
| 5  | Cover Bolt   | A193 B7        | A320 L7         | A193 B16                    | A194 8(M)                      | A194 8M                        | A194 8M                     |
| 6  | Drain Plug   | A276 410       | A276 304        | A276 304                    | A276 304                       | A276 316                       | A276 316                    |

HF = Hard faced

## Main Valve Parameters

## Class 800

| Nominal Size               |                      |                  | inch<br>DN | 3/8”<br>10 | 1/2”<br>15 | 3/4”<br>20 | 1”<br>25 | 1 1/4”<br>32 | 1 1/2”<br>40 | 2”<br>50 |
|----------------------------|----------------------|------------------|------------|------------|------------|------------|----------|--------------|--------------|----------|
| End connection             | Threaded             | NPT/<br>BSP/BSPT | L          | 98         | 98         | 98         | 120      | 140          | 140          | 172      |
|                            |                      |                  | ØB         | 10         | 15         | 20         | 25       | 32           | 40           | 50       |
|                            | Socket weld          | SW               | L          | 98         | 98         | 98         | 120      | 140          | 140          | 172      |
|                            |                      |                  | L1         | 9,6        | 9,6        | 12,7       | 12,7     | 12,7         | 12,7         | 16       |
|                            |                      |                  | ØB         | 10         | 15         | 20         | 25       | 32           | 40           | 50       |
|                            |                      |                  | ØD         | 17,6       | 21,8       | 27,1       | 33,8     | 42,6         | 48,7         | 61,2     |
|                            | H                    |                  |            | 70         | 70         | 70         | 100      | 110          | 120          | 120      |
| H1                         |                      |                  | 105        | 105        | 105        | 135        | 155      | 165          | 175          |          |
| Plug                       |                      |                  | 1/4"       | 1/4"       | 1/4"       | 1/4"       | 1/4"     | 1/4"         | 1/4"         |          |
| Basket                     | h                    |                  |            | 50         | 50         | 50         | 65       | 75           | 80           | 85       |
|                            | ØC                   |                  |            | 20         | 20         | 20         | 28       | 35           | 38           | 48       |
|                            | Standard perforation |                  |            | 0.8mm      | 0.8mm      | 0.8mm      | 0.8mm    | 0.8mm        | 0.8mm        | 0.8mm    |
| Kvs-value                  |                      |                  |            | 3,2        | 3,8        | 8,6        | 13,7     | 19,7         | 40,3         | 68,5     |
| Approx. Weight Threaded/SW |                      |                  |            | 2,2        | 2,2        | 2,1        | 4,2      | 8,9          | 8,9          | 10       |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## Class 1500

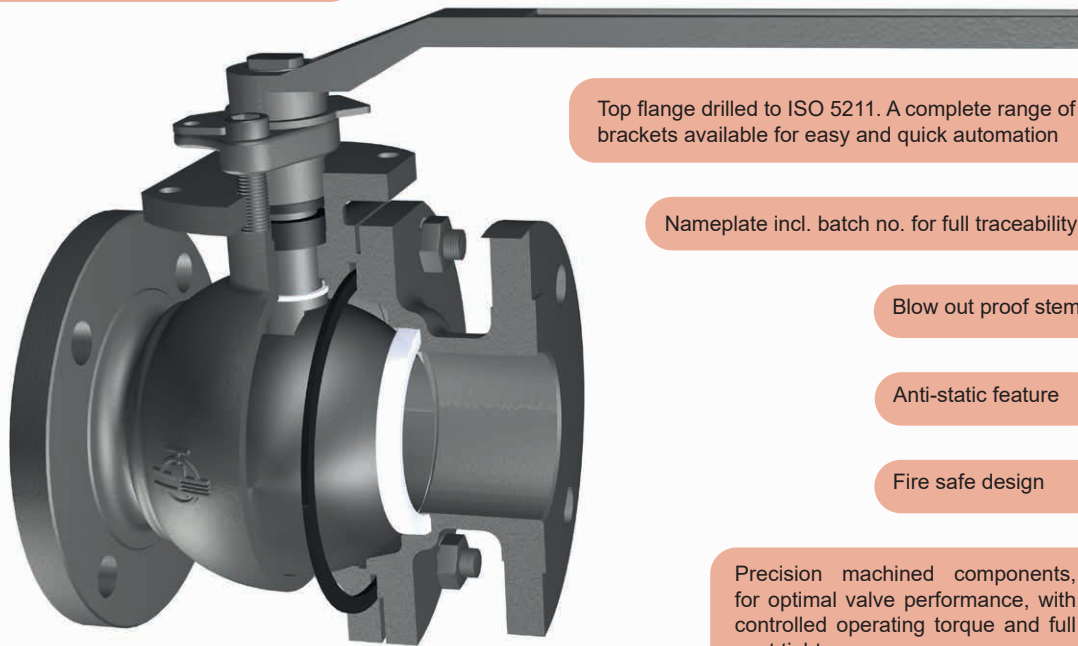
| Nominal Size               |                      |                  | inch  | 3/8"  | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 2"   |
|----------------------------|----------------------|------------------|-------|-------|-------|-------|-------|--------|--------|------|
|                            |                      |                  | DN    | 10    | 15    | 20    | 25    | 32     | 40     | 50   |
| End connection             | Threaded             | NPT/<br>BSP/BSPT | L     | 98    | 120   | 120   | 140   | 140    | 172    | 220  |
|                            |                      |                  | ØB    | 10    | 15    | 20    | 25    | 32     | 40     | 50   |
|                            | Socket weld          | SW               | L     | 98    | 120   | 120   | 140   | 140    | 172    | 220  |
|                            |                      |                  | L1    | 9,6   | 9,6   | 12,7  | 12,7  | 12,7   | 12,7   | 16   |
|                            |                      |                  | ØB    | 10    | 15    | 20    | 25    | 32     | 40     | 50   |
|                            |                      |                  | ØD    | 17,6  | 21,8  | 27,1  | 33,8  | 42,6   | 48,7   | 61,2 |
|                            | H                    |                  |       | 70    | 100   | 100   | 110   | 120    | 120    | 150  |
| H1                         |                      |                  | 105   | 105   | 135   | 155   | 165   | 175    | 210    |      |
| Plug                       |                      |                  | 1/4"  | 1/4"  | 1/4"  | 1/4"  | 1/4"  | 1/4"   | 1/4"   |      |
| Basket                     | h                    |                  | 50    | 50    | 65    | 75    | 80    | 85     | 100    |      |
|                            | ØC                   |                  | 20    | 20    | 20    | 28    | 35    | 38     | 48     |      |
|                            | Standard perforation |                  | 0.8mm | 0.8mm | 0.8mm | 0.8mm | 0.8mm | 0.8mm  | 0.8mm  |      |
| Kvs-value                  |                      |                  | 3,2   | 3,8   | 8,6   | 13,7  | 19,7  | 40,3   | 68,5   |      |
| Approx. Weight Threaded/SW |                      |                  | 2,2   | 4,2   | 4,2   | 8,9   | 8,9   | 10     | 18,6   |      |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg

## SERIES BV BF-B8 ANSI RANGE

Series BF are floating type, quick closing 90° rotary ball valves, bidirectional, with tightness achieved by friction of the ball blind ends to the seats, devised for stopping the flow of the service fluid when necessary and not being suitable for regulation purposes. Valve closes by turning the hand lever clockwise. They have a robust construction to offer reliable performance in standard services.

Floating ball, full bore, side entry, split body design, with integral flanges



Top flange drilled to ISO 5211. A complete range of brackets available for easy and quick automation

Nameplate incl. batch no. for full traceability

Blow out proof stem

### Anti-static feature

## Fire safe design

Precision machined components,  
for optimal valve performance, with  
controlled operating torque and full  
seat tightness

## Main Features / Reference Standards

Design: API 6D  
Pressure Rating: 150/300/600#  
Face to face length: API 6D  
Valve end connections: Flanged RF or RTJ to ASME B16.5  
Welded BW to ASME B16.25  
Fire safe design: API 6FA  
Bidirectional design  
Marking: MSS SP-25  
Inspections & Tests: API 598  
Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

### Main Duties / Limits of use

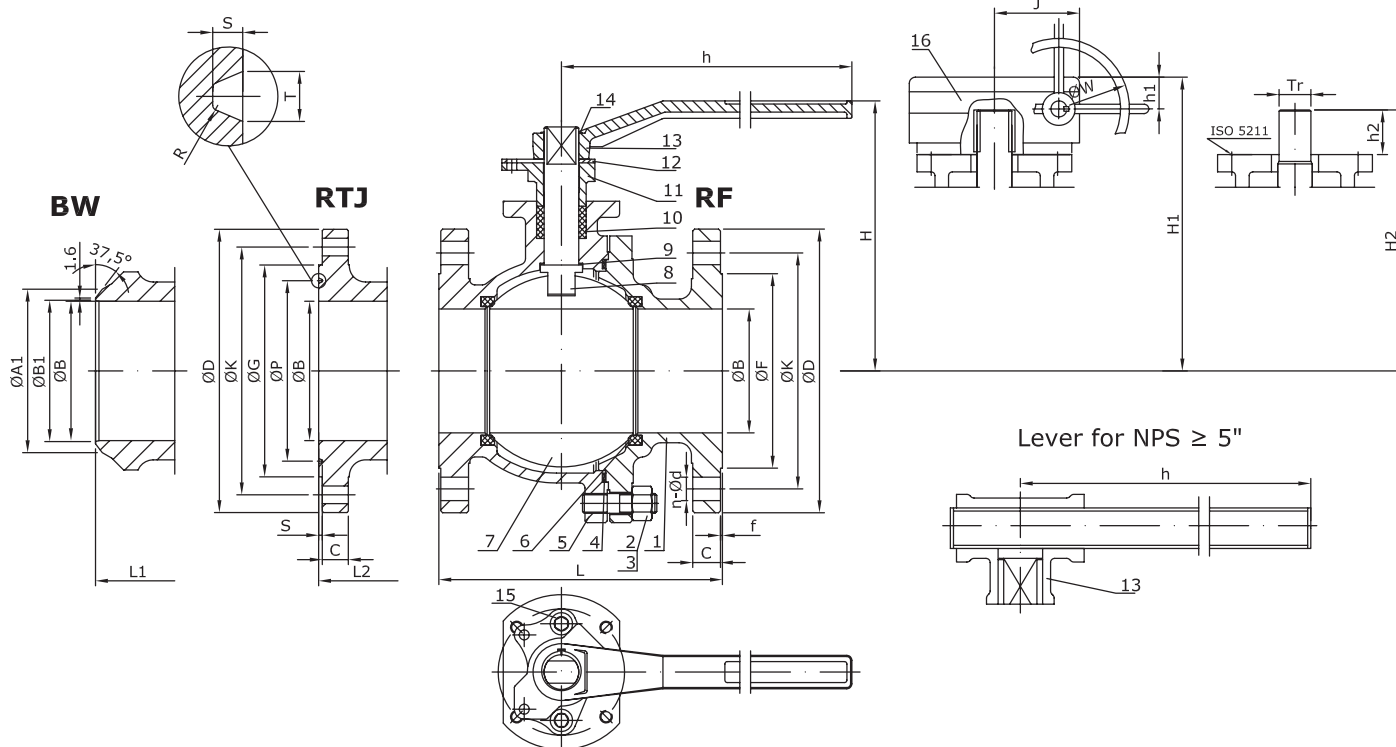
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*)  
and tables 7 & 9 (gases & liquids group 2\*) up to category III  
\*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

## Options

Different material combinations, different valve connections, worm gear, actuators, limit switches, cryogenic design, jacketed body, execution for aggressive atmosphere, compliance with NACE MR0175, etc. Please consult us

# Main Parts and Materials

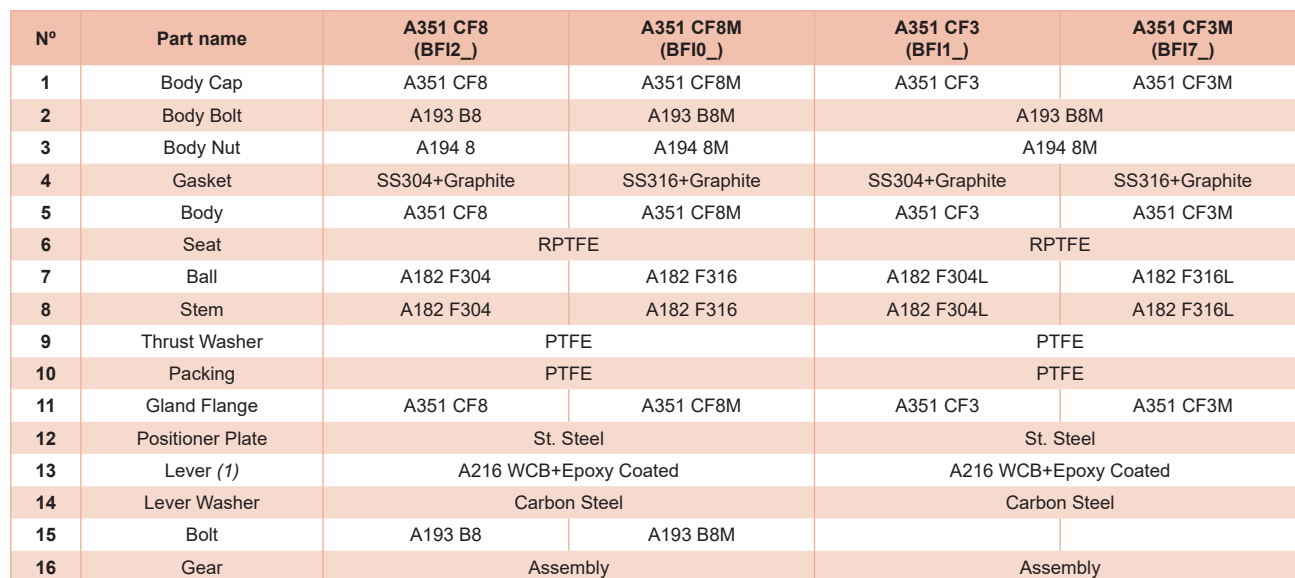
## SERIES BV BF ANSI RANGE Class 150&300



| Nº | Part name        | A216 WCB<br>(BFA02_) | A216 WCB/NACE<br>(BFA02_) | A352 LCB/SS304<br>(BFA82_) | A352 LCB/SS316<br>(BFA83_) |
|----|------------------|----------------------|---------------------------|----------------------------|----------------------------|
| 1  | Body Cap         | A216 WCB             |                           | A352 LCB                   |                            |
| 2  | Body Bolt        | A193 B7              | A193 B7M                  | A320 L7                    |                            |
| 3  | Body Nut         | A194 2H              | A194 2HM                  | A194 4                     |                            |
| 4  | Gasket           | SS304+Graphite       | SS316+Graphite            | SS304+Graphite             | SS316+Graphite             |
| 5  | Body             | A216 WCB             |                           | A352 LCB                   |                            |
| 6  | Seat             | RPTFE                |                           | RPTFE                      |                            |
| 7  | Ball             | SS304                |                           | A182 F304                  | A182 F316                  |
| 8  | Stem             | A182 F304            | A182 F316                 | A182 F304                  | A182 F316                  |
| 9  | Thrust Washer    | PTFE                 |                           | PTFE                       |                            |
| 10 | Packing          | Flexible Graphite    |                           | PTFE                       |                            |
| 11 | Gland Flange     | A216 WCB             |                           | A352 LCB                   |                            |
| 12 | Positioner Plate | Carbon Steel         |                           | AISI 1035                  |                            |
| 13 | Lever (1)        | A216 WCB             |                           | A216 WCB                   |                            |
| 14 | Lever Washer     | Carbon Steel         |                           | Carbon Steel               |                            |
| 15 | Bolt             | A193 B7              | A193 B7M                  | A320 L7                    |                            |
| 16 | Gear             | Assembly             |                           | Assembly                   |                            |

(1) T type lever for NPS≥5"

**SERIES BV BF ANSI RANGE**  
**Class 150&300**



Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Valve Parameters - Class 150

## SERIES BV BF ANSI RANGE



| Nominal Size          |                            | inch            | 1/2"    | 3/4"    | 1"      | 1 1/2"  | 2"      | 2 1/2"  | 3"      | 4"      | 5"      | 6"      | 8"      |
|-----------------------|----------------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                       |                            | DN              | 15      | 20      | 25      | 40      | 50      | 65      | 80      | 100     | 125     | 150     | 200     |
| End connection        | RF                         | L               | 108     | 117     | 127     | 165     | 178     | 190     | 203     | 229     | 356     | 394     | 457     |
|                       |                            | ØB              | 13      | 19      | 25      | 38      | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØD              | 90      | 100     | 110     | 125     | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                       |                            | ØK              | 60,3    | 69,9    | 79,4    | 98,4    | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                       |                            | ØF              | 34,9    | 42,9    | 50,8    | 73      | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9   | 269,9   |
|                       |                            | C               | 8       | 8,9     | 9,6     | 12,7    | 14,3    | 15,9    | 17,5    | 22,3    | 22,3    | 23,9    | 27      |
|                       |                            | f               | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       |
|                       |                            | n-Ød            | 4 - 5/8 | 4 - 5/8 | 4 - 5/8 | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                       | BW                         | L1              | -       | -       | -       | -       | 216     | 241     | 282     | 305     | -       | 457     | 521     |
|                       |                            | Schedule No.(1) | -       | -       | -       | -       | 40      | -       | 40      | 40      | -       | 40      | 40      |
|                       |                            | ØB              | -       | -       | -       | -       | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØA1             | -       | -       | -       | -       | 60,3    | -       | 91      | 117     | -       | 172     | 223     |
|                       |                            | ØB1             | -       | -       | -       | -       | 52,48   | -       | 78      | 102     | -       | 154     | 203     |
|                       | RTJ                        | L2              | -       | -       | 140     | 178     | 191     | 203     | 216     | 242     | 13      | 407     | 470     |
|                       |                            | ØB              | -       | -       | 25      | 38      | 51      | 65      | 76      | 102     | 128     | 152     | 203     |
|                       |                            | ØD              | -       | -       | 110     | 125     | 150     | 180     | 190     | 230     | 255     | 280     | 345     |
|                       |                            | ØK              | -       | -       | 79,4    | 98,4    | 120,7   | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   |
|                       |                            | ØG              | -       | -       | 63,5    | 82,5    | 102     | 121     | 133     | 171     | 194     | 219     | 273     |
|                       |                            | ØP              | -       | -       | 47,63   | 65,07   | 82,55   | 101,6   | 114,3   | 149,23  | 171,45  | 193,68  | 247,65  |
|                       |                            | C               | -       | -       | 9,6     | 12,7    | 17,5    | 20,7    | 22,3    | 22,3    | 22,3    | 23,9    | 27      |
|                       |                            | n-Ød            | -       | -       | 4 - 5/8 | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 |
|                       |                            | T               | -       | -       | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    |
|                       |                            | S               | -       | -       | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    |
|                       |                            | R               | -       | -       | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     |
| Top works/Operation   | Lever                      | H               | 85      | 88      | 95      | 124     | 137     | 176     | 205     | 218     | 276     | 318     | 347     |
|                       |                            | h               | 140     | 150     | 175     | 240     | 240     | 275     | 300     | 370     | 646     | 850     | 1200    |
|                       | Gear with handwheel        | H1              | -       | -       | -       | 208     | 213     | 252     | 281     | 301     | 362     | 407     | 424     |
|                       |                            | h1              | -       | -       | -       | 39      | 39      | 39      | 39      | 39      | 47      | 53      | 53      |
|                       |                            | J               | -       | -       | -       | 76      | 76      | 88      | 96      | 96      | 164     | 215     | 215     |
|                       | ØW                         | -               | -       | -       | 160     | 160     | 206     | 240     | 240     | 275     | 300     | 300     |         |
|                       | With ISO 5211 mounting pad | H2              | 103     | 105     | 115     | 162     | 173     | 213     | 242     | 267     | 320     | 360     | 387     |
|                       |                            | h2              | 15      | 16      | 20      | 24      | 30      | 33      | 35      | 40      | 46      | 50      | 60      |
|                       |                            | ISO             | F05     | F05     | F05     | F07     | F07     | F10     | F10     | F10     | F14     | F14     | F14     |
|                       |                            | Tr              | 12      | 14      | 16      | 20      | 20      | 24      | 24      | 28      | 36      | 36      | 40      |
|                       |                            | Torque (Nm) (2) | 3       | 5       | 11      | 16      | 25      | 48      | 65      | 125     | 289     | 410     | 700     |
| Kvs-value             |                            | -               | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |         |
| Approx. Weight RF (3) |                            | 4,1             | 5       | 5,6     | 8,3     | 13      | 20      | 26      | 41      | 67      | 86      | 151     |         |
| Approx. Weight BW     |                            | 3               | 4       | 4       | 6       | 10      | 16      | 21      | 33      | 56      | 73      | 129     |         |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES BV BF ANSI RANGE



| Nominal Size               |                 | inch                | 1/2"    | 3/4"    | 1"      | 1 1/2"  | 2"      | 2 1/2"  | 3"      | 4"      | 5"      | 6"       | 8"     |
|----------------------------|-----------------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|--------|
|                            |                 | DN                  | 15      | 20      | 25      | 40      | 50      | 65      | 80      | 100     | 125     | 150      | 200    |
| End connection             | RF              | L                   | 140     | 152     | 165     | 190     | 216     | 241     | 282     | 305     | -       | 403      | 502    |
|                            |                 | ØB                  | 13      | 19      | 25      | 38      | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                            |                 | ØD                  | 95      | 115     | 125     | 155     | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                            |                 | ØK                  | 66,7    | 82,6    | 88,9    | 114,3   | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                            |                 | ØF                  | 34,9    | 42,9    | 50,8    | 73      | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9    | 269,9  |
|                            |                 | C                   | 12,7    | 14,3    | 15,9    | 19,1    | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                            |                 | f                   | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2        | 2      |
|                            |                 | n-Ød                | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                            | BW              | L1                  | -       | -       | -       | -       | 216     | 241     | 282     | 305     |         | 457      | 521    |
|                            |                 | Schedule No.(1)     | -       | -       | -       | -       | 40      | -       | 40      | 40      | -       | 40       | 40     |
|                            |                 | ØB                  | -       | -       | -       | -       | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                            |                 | ØA1                 | -       | -       | -       | -       | 60,3    | -       | 91      | 117     | -       | 172      | 223    |
|                            |                 | ØB1                 | -       | -       | -       | -       | 52,48   | -       | 78      | 102     | -       | 154      | 203    |
|                            | RTJ             | L2                  | 151     | 165     | 178     | 203     | 232     | 257     | 298     | 321     | 16      | 419      | 518    |
|                            |                 | ØB                  | 13      | 19      | 25      | 38      | 51      | 65      | 76      | 102     | 128     | 152      | 203    |
|                            |                 | ØD                  | 95      | 115     | 125     | 155     | 165     | 190     | 210     | 255     | 280     | 320      | 380    |
|                            |                 | ØK                  | 66,7    | 82,6    | 88,9    | 114,3   | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  |
|                            |                 | ØG                  | 51      | 63,5    | 70      | 90,5    | 108     | 127     | 146     | 175     | 210     | 241      | 302    |
|                            |                 | ØP                  | 34,14   | 42,88   | 50,8    | 68,27   | 82,55   | 101,6   | 123,83  | 149,23  | 180,98  | 211,12   | 269,88 |
|                            |                 | C                   | 12,7    | 14,3    | 15,9    | 19,1    | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   |
|                            |                 | n-Ød                | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 |
|                            |                 | T                   | 7,14    | 8,74    | 8,74    | 8,74    | 11,91   | 11,91   | 11,91   | 11,91   | 11,91   | 11,91    | 11,91  |
|                            |                 | S                   | 5,54    | 6,35    | 6,35    | 6,35    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92     | 7,92   |
|                            |                 | R                   | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8      | 0,8    |
|                            |                 | Top works/Operation | Lever   | H       | 85      | 88      | 95      | 124     | 142     | 170     | 190     | 218      | 274    |
| h                          | 140             |                     |         | 150     | 175     | 240     | 240     | 292     | 330     | 370     | 646     | 850      | 1200   |
| Gear with handwheel        | H1              |                     | -       | -       | -       | 208     | 226     | 232     | 236     | 296     | 357     | 402      | 465    |
|                            | h1              |                     | -       | -       | -       | 39      | 39      | 39      | 39      | 39      | 47      | 53       | 68     |
|                            | J               |                     | -       | -       | -       | 76      | 76      | 88      | 96      | 96      | 164     | 215      | 254    |
|                            | ØW              |                     | -       | -       | -       | 160     | 160     | 206     | 240     | 240     | 275     | 300      | 350    |
| With ISO 5211 mounting pad | H2              |                     | 103     | 105     | 115     | 162     | 185     | 214     | 236     | 262     | 315     | 355      | 400    |
|                            | h2              |                     | 15      | 16      | 20      | 24      | 30      | 33      | 35      | 40      | 46      | 50       | 60     |
|                            | ISO             |                     | F05     | F05     | F05     | F07     | F07     | F10     | F10     | F10     | F14     | F14      | F16    |
|                            | Tr              |                     | 12      | 14      | 16      | 20      | 20      | 24      | 24      | 28      | 36      | 36       | 40     |
|                            | Torque (Nm) (2) | 7                   | 12      | 26      | 38      | 60      | 118     | 160     | 280     | 665     | 950     | 1550     |        |
|                            | Kvs-value       | -                   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -        |        |
| Approx. Weight RF (3)      |                 | 3,2                 | 5       | 6,2     | 12      | 17      | 27      | 35      | 61      | 96      | 121     | 215      |        |
| Approx. Weight BW          |                 | 2,2                 | 3,4     | 4,4     | 8,8     | 12      | 20      | 27      | 48      | 77      | 98      | 179      |        |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

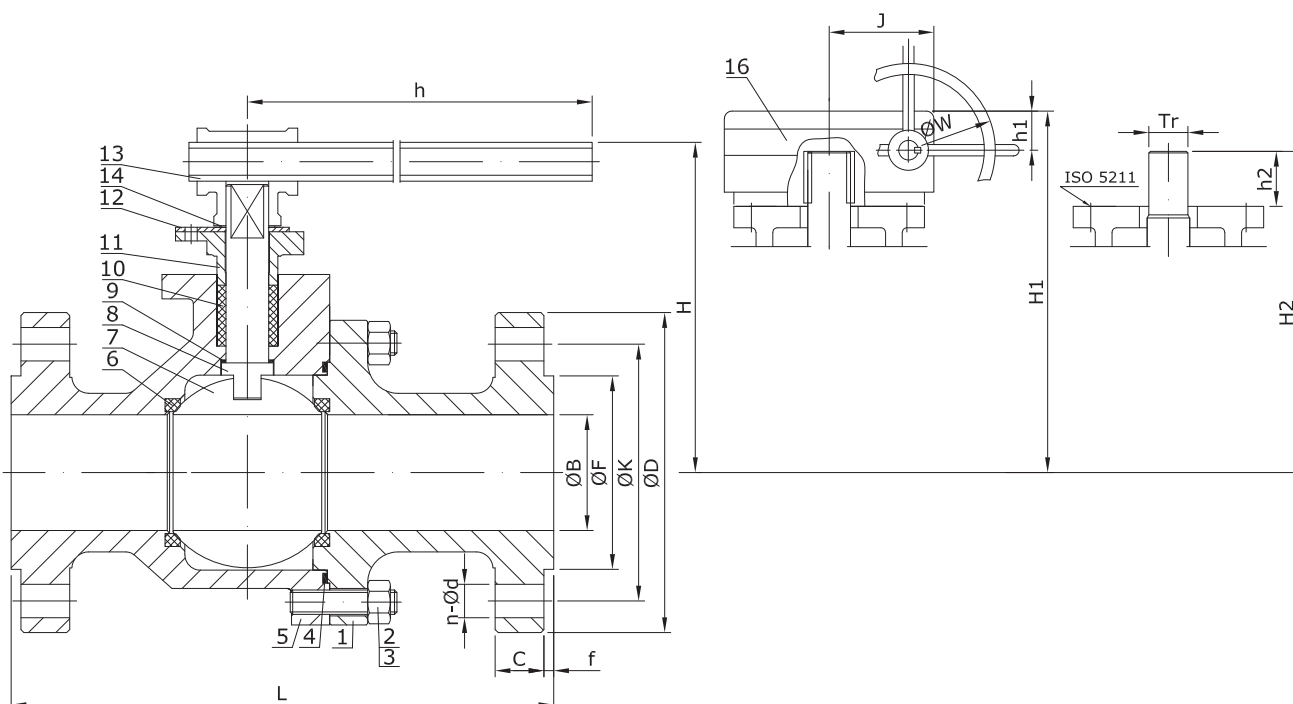
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

SERIES BV BF ANSI RANGE  
Class 600


| Nº | Part name        | A216 WCB<br>(BFA02_) | A216 WCB/NACE<br>(BFA02_) | A352 LCB2/SS304<br>(BFA82_) | A352 LCB3/SS316<br>(BFA83_) |
|----|------------------|----------------------|---------------------------|-----------------------------|-----------------------------|
| 1  | Body Cap         | A216 WCB             |                           | A352 LCB                    |                             |
| 2  | Body Bolt        | A193 B7              | A193 B7M                  | A320 L7                     |                             |
| 3  | Body Nut         | A194 2H              | A194 2HM                  | A194 4                      |                             |
| 4  | Gasket           | SS304+Graphite       | SS316+Graphite            | SS304+Graphite              | SS316+Graphite              |
| 5  | Body             | ASTM A216 WCB        |                           | A352 LCB                    |                             |
| 6  | Seat             | RPTFE                |                           |                             |                             |
| 7  | Ball             | A105.ENP             | A105N.ENP                 | A182 F304                   | A182 F316                   |
| 8  | Stem             | A182 F6a             | A182 F316                 | A182 F304                   | A182 F316                   |
| 9  | Thrust Washer    | PTFE                 |                           |                             |                             |
| 10 | Packing          | Flexible Graphite    |                           | PTFE                        |                             |
| 11 | Gland Flange     | A216 WCB             |                           | A352 LCB                    |                             |
| 12 | Positioner Plate | Carbon Steel         |                           | AISI 1035                   |                             |
| 13 | Lever            | A216 WCB             |                           |                             |                             |
| 14 | Lever Washer     | Carbon Steel         |                           |                             |                             |
| 16 | Gear             | Assembly             |                           |                             |                             |

| Nº | Part name        | A351 CF8<br>(BF12_)            | A351 CF8M<br>(BF10_) | A351 CF3<br>(BF11_) | A351 CF3M<br>(BF17_) |
|----|------------------|--------------------------------|----------------------|---------------------|----------------------|
| 1  | Body Cap         | A351 CF8                       | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Body Bolt        | A193 B8                        | A193 B8M             | A193 B8M            | A193 B8M             |
| 3  | Body Nut         | A194 8                         | A194 8M              | A194 8M             | A194 8M              |
| 4  | Gasket           | SS304+Graphite                 | SS316+Graphite       | SS304+Graphite      | SS316+Graphite       |
| 5  | Body             | A351 CF8                       | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 6  | Seat             | RPTFE                          |                      |                     |                      |
| 7  | Ball             | A182 F304                      | A182 F316            | A182 F304L          | A182 F316L           |
| 8  | Stem             | A182 F304                      | A182 F316            | A182 F304L          | A182 F316L           |
| 9  | Thrust Washer    | PTFE                           |                      |                     |                      |
| 10 | Packing          | PTFE                           |                      |                     |                      |
| 11 | Gland Flange     | A351 CF8                       | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 12 | Positioner Plate | St. Steel                      |                      |                     |                      |
| 13 | Lever            | A216 WCB+Epoxy Coated to Epoxy |                      |                     |                      |
| 14 | Lever Washer     | Carbon Steel                   |                      |                     |                      |
| 16 | Gear             | Assembly                       |                      |                     |                      |

Information / restriction of technical rules need to be observed!  
Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information



## Main Valve Parameters - Class 600

## SERIES BV BF ANSI RANGE

| Nominal Size        |                            | inch                  | 1/2"    | 3/4"    | 1"      | 1 1/2"  | 2"      | 2 1/2"  | 3"      | 4"     |
|---------------------|----------------------------|-----------------------|---------|---------|---------|---------|---------|---------|---------|--------|
|                     |                            | DN                    | 15      | 20      | 25      | 40      | 50      | 65      | 80      | 100    |
| End connection      | RF                         | L                     | 165     | 190     | 216     | 241     | 292     | 330     | 356     | 432    |
|                     |                            | ØB                    | 13      | 19      | 25      | 38      | 51      | 65      | 76      | 102    |
|                     |                            | ØD                    | 95      | 115     | 125     | 155     | 165     | 190     | 210     | 275    |
|                     |                            | ØK                    | 66,7    | 82,6    | 88,9    | 114,3   | 127     | 149,2   | 168,3   | 215,9  |
|                     |                            | ØF                    | 34,9    | 42,9    | 50,8    | 73      | 92,1    | 104,8   | 127     | 157,2  |
|                     |                            | C                     | 14,3    | 15,9    | 17,5    | 22,3    | 25,4    | 28,6    | 31,8    | 38,1   |
|                     |                            | f                     | 7       | 7       | 7       | 7       | 7       | 7       | 7       | 7      |
|                     |                            | n-Ød                  | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  |
|                     | BW                         | L1                    | 165     | 190     | 216     | 241     | 292     | 330     | 356     | 432    |
|                     |                            | Schedule No.(1)       | -       | -       | -       | -       | 80      | -       | 80      | 80     |
|                     |                            | ØB                    | -       | -       | -       | -       | 51      | 65      | 76      | 102    |
|                     |                            | ØA1                   | -       | -       | -       | -       | 60,3    | -       | 91      | 117    |
|                     |                            | ØB1                   | -       | -       | -       | -       | 49,22   | -       | 73,5    | 97     |
|                     | RTJ                        | L2                    | 163     | 190     | 216     | 241     | 295     | 333     | 359     | 435    |
|                     |                            | ØB                    | 13      | 19      | 25      | 38      | 51      | 65      | 76      | 102    |
|                     |                            | ØD                    | 95      | 115     | 125     | 155     | 165     | 190     | 210     | 275    |
|                     |                            | ØK                    | 66,7    | 82,6    | 88,9    | 114,3   | 127     | 149,2   | 168,3   | 215,9  |
|                     |                            | ØG                    | 51      | 63,5    | 70      | 90,5    | 108     | 127     | 146     | 175    |
|                     |                            | ØP                    | 34,14   | 42,88   | 50,8    | 68,27   | 82,55   | 101,6   | 123,83  | 149,23 |
|                     |                            | C                     | 14,3    | 15,9    | 17,5    | 22,3    | 25,4    | 28,6    | 31,8    | 38,1   |
|                     |                            | n-Ød                  | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  |
|                     |                            | T                     | 7,14    | 8,74    | 8,74    | 8,74    | 11,91   | 11,91   | 11,91   | 11,91  |
|                     |                            | S                     | 5,54    | 6,35    | 6,35    | 6,35    | 7,92    | 7,92    | 7,92    | 7,92   |
|                     |                            | R                     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8    |
|                     |                            | H                     | 85      | 88      | 95      | 133     | 179     | 206     | 226     | 274    |
| Top works/Operation | Lever                      | h                     | 140     | 150     | 175     | 240     | 400     | 458     | 500     | 600    |
|                     |                            | H1                    | -       | -       | 180     | 218     | 261     | 297     | 323     | 367    |
|                     | Gear with handwheel        | h1                    | -       | -       | 39      | 39      | 40      | 45      | 48      | 53     |
|                     |                            | J                     | -       | -       | 76      | 76      | 96      | 149     | 188     | 215    |
|                     |                            | ØW                    | -       | -       | 160     | 160     | 240     | 263     | 280     | 300    |
|                     |                            | H2                    | 103     | 105     | 130     | 172     | 217     | 250     | 275     | 315    |
|                     | With ISO 5211 mounting pad | h2                    | 15      | 16      | 20      | 24      | 30      | 36      | 40      | 45     |
|                     |                            | ISO                   | F05     | F05     | F07     | F07     | F10     | F12     | F12     | F14    |
|                     |                            | Tr                    | 12      | 14      | 16      | 20      | 22      | 26      | 26      | 30     |
|                     |                            | Torque (Nm) (2)       | 19      | 35      | 68      | 130     | 190     | 345     | 460     | 770    |
|                     |                            | Kvs-value             | -       | -       | -       | -       | -       | -       | -       | -      |
|                     |                            | Approx. Weight RF (3) | 5,7     | 6,5     | 10      | 18      | 26      | 42      | 54      | 91     |
|                     |                            | Approx. Weight BW     | 4,6     | 4,7     | 8,1     | 14      | 19      | 32      | 41      | 68     |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

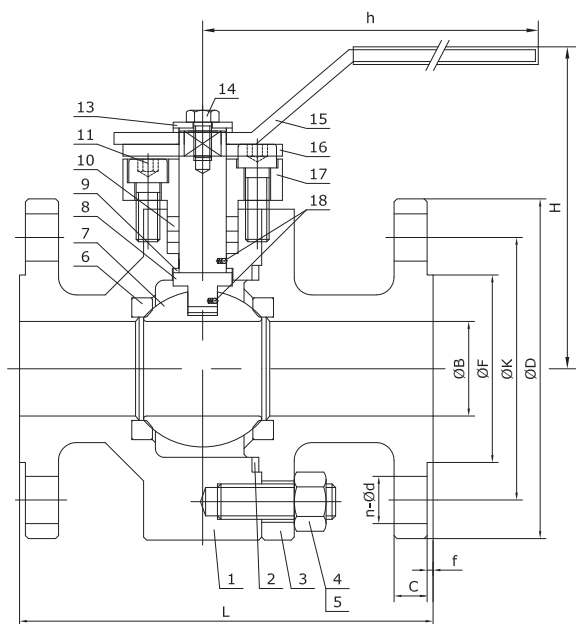
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

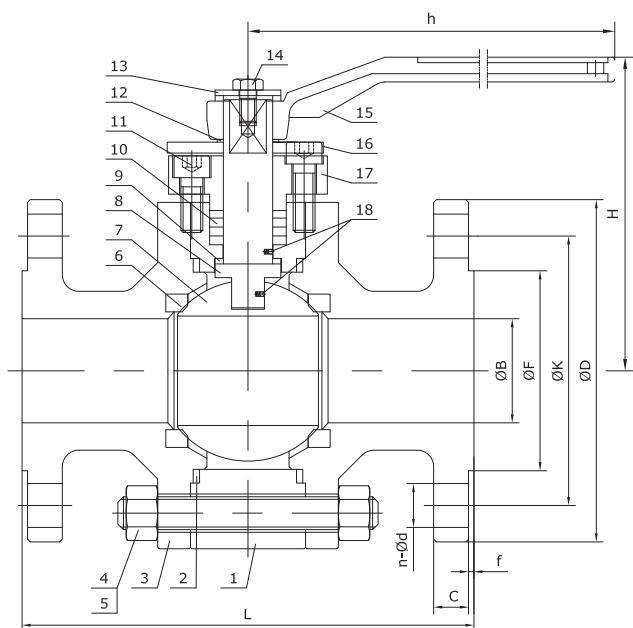
## Main Parts and Materials

### SERIES BV B8 ANSI RANGE Class 150 1/2" to 1-1/4"



| N° | Part name     | A105              | A182 F304         | A182 F316         |
|----|---------------|-------------------|-------------------|-------------------|
| 1  | Body          | ASTM A105         | A182 F304         | A182 F316         |
| 2  | Gasket        | SS304+Graphite    | SS304+Graphite    | SS316+Graphite    |
| 3  | Bonnet        | ASTM A105         | A182 F304         | A182 F316         |
| 4  | Bolt          | A193 B7           | A193 B8           | A193 B8M          |
| 5  | Nut           | A194 2H           | A194 8            | A194 8M           |
| 6  | Seat          | RPTFE             | RPTFE             | RPTFE             |
| 7  | Ball          | A182 F304         | A182 F304         | A182 F316         |
| 8  | Stem          | A182 F304         | A182 F304         | A182 F316         |
| 9  | Gasket        | RPTFE             | RPTFE             | RPTFE             |
| 10 | Packing       | Flexible Graphite | Flexible Graphite | Flexible Graphite |
| 11 | Screw         | A193 B7           | A193 B8           | A193 B8M          |
| 13 | Lever Holder  | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 14 | Bolt          | A193 B7           | A193 B7           | A193 B7           |
| 15 | Lever         | St. Steel         | St. Steel         | St. Steel         |
| 16 | Positioner    | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 17 | Packing Gland | ASTM A105         | A182 F304         | A182 F316         |
| 18 | Anti-Static   | SS304             | SS304             | SS316             |

### SERIES BV B8 ANSI RANGE Class 150 1-1/2" to 2"



| N° | Part name     | A105                       | A182 F304                  | A182 F316                  |
|----|---------------|----------------------------|----------------------------|----------------------------|
| 1  | Body          | ASTM A105                  | A182 F304                  | A182 F316                  |
| 2  | Gasket        | SS304+Graphite             | SS304+Graphite             | SS316+Graphite             |
| 3  | Bonnet        | ASTM A105                  | A182 F304                  | A182 F316                  |
| 4  | Bolt          | A193 B7                    | A193 B8                    | A193 B8M                   |
| 5  | Nut           | A194 2H                    | A194 8                     | A194 8M                    |
| 6  | Seat          | RPTFE                      | RPTFE                      | RPTFE                      |
| 7  | Ball          | A182 F304                  | A182 F304                  | A182 F316                  |
| 8  | Stem          | A182 F304                  | A182 F304                  | A182 F316                  |
| 9  | Gasket        | RPTFE                      | RPTFE                      | RPTFE                      |
| 10 | Packing       | Flexible Graphite          | Flexible Graphite          | Flexible Graphite          |
| 11 | Screw         | A193 B7                    | A193 B8                    | A193 B8M                   |
| 12 | Washer        | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 13 | Lever Holder  | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 14 | Bolt          | A193 B7                    | A193 B7                    | A193 B7                    |
| 15 | Lever         | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated |
| 16 | Positioner    | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 17 | Packing Gland | ASTM A105                  | A182 F304                  | A182 F316                  |
| 18 | Anti-Static   | SS304                      | SS304                      | SS316                      |

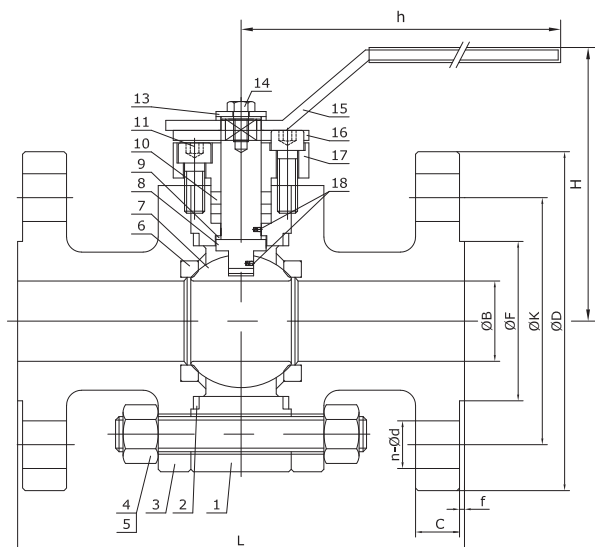
## Main Valve Parameters - Class 150

| Nominal Size   |    | inch<br>DN | 1/2"<br>15 | 3/4"<br>20 | 1"<br>25 | 1 1/4"<br>32 | 1 1/2"<br>40 | 2"<br>50 |
|----------------|----|------------|------------|------------|----------|--------------|--------------|----------|
| End connection | RF | L          | 108        | 117        | 127      | 140          | 165          | 178      |
|                |    | ØB         | 13         | 19         | 25       | 32           | 38           | 51       |
|                |    | ØD         | 90         | 100        | 110      | 115          | 125          | 150      |
|                |    | ØK         | 60,3       | 69,9       | 79,4     | 88,9         | 98,4         | 120,7    |
|                |    | ØF         | 34,9       | 42,9       | 50,8     | 63,5         | 73           | 92,1     |
|                |    | C          | 8          | 8,9        | 9,6      | 11,2         | 12,7         | 14,3     |
|                |    | f          | 2          | 2          | 2        | 2            | 2            | 2        |
|                |    | n-Ød       | 4 - 5/8    | 4 - 5/8    | 4 - 5/8  | 4 - 5/8      | 4 - 5/8      | 4 - 3/4  |
| Lever          |    | H          | 80         | 92         | 98       | 109          | 115          | 132      |
|                |    | h          | 136        | 174        | 185      | 185          | 210          | 242      |

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
For more information about flanged and welded ends refer to page 16

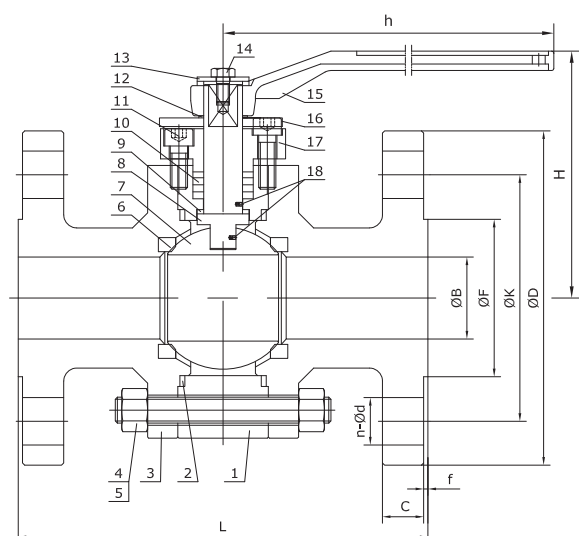
## Main Parts and Materials

### SERIES BV B8 ANSI RANGE Class 300 1/2" to 1-1/4"



| N° | Part name     | A105              | A182 F304         | A182 F316         |
|----|---------------|-------------------|-------------------|-------------------|
| 1  | Body          | ASTM A105         | A182 F304         | A182 F316         |
| 2  | Gasket        | SS304+Graphite    | SS304+Graphite    | SS316+Graphite    |
| 3  | Bonnet        | ASTM A105         | A182 F304         | A182 F316         |
| 4  | Bolt          | A193 B7           | A193 B8           | A193 B8M          |
| 5  | Nut           | A194 2H           | A194 8            | A194 8M           |
| 6  | Seat          | RPTFE             | RPTFE             | RPTFE             |
| 7  | Ball          | A182 F304         | A182 F304         | A182 F316         |
| 8  | Stem          | A182 F304         | A182 F304         | A182 F316         |
| 9  | Gasket        | RPTFE             | RPTFE             | RPTFE             |
| 10 | Packing       | Flexible Graphite | Flexible Graphite | Flexible Graphite |
| 11 | Screw         | A193 B7           | A193 B8           | A193 B8M          |
| 13 | Lever Holder  | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 14 | Bolt          | A193 B7           | A193 B7           | A193 B7           |
| 15 | Lever         | St. Steel         | St. Steel         | St. Steel         |
| 16 | Positioner    | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 17 | Packing Gland | ASTM A105         | A182 F304         | A182 F316         |
| 18 | Anti-Static   | SS304             | SS304             | SS316             |

### SERIES BV B8 ANSI RANGE Class 300 1-1/2" to 2"



| N° | Part name     | A105                       | A182 F304                  | A182 F316                  |
|----|---------------|----------------------------|----------------------------|----------------------------|
| 1  | Body          | ASTM A105                  | A182 F304                  | A182 F316                  |
| 2  | Gasket        | SS304+Graphite             | SS304+Graphite             | SS316+Graphite             |
| 3  | Bonnet        | ASTM A105                  | A182 F304                  | A182 F316                  |
| 4  | Bolt          | A193 B7                    | A193 B8                    | A193 B8M                   |
| 5  | Nut           | A194 2H                    | A194 8                     | A194 8M                    |
| 6  | Seat          | RPTFE                      | RPTFE                      | RPTFE                      |
| 7  | Ball          | A182 F304                  | A182 F304                  | A182 F316                  |
| 8  | Stem          | A182 F304                  | A182 F304                  | A182 F316                  |
| 9  | Gasket        | RPTFE                      | RPTFE                      | RPTFE                      |
| 10 | Packing       | Flexible Graphite          | Flexible Graphite          | Flexible Graphite          |
| 11 | Screw         | A193 B7                    | A193 B8                    | A193 B8M                   |
| 12 | Washer        | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 13 | Lever Holder  | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 14 | Bolt          | A193 B7                    | A193 B7                    | A193 B7                    |
| 15 | Lever         | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated |
| 16 | Positioner    | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 17 | Packing Gland | ASTM A105                  | A182 F304                  | A182 F316                  |
| 18 | Anti-Static   | SS304                      | SS304                      | SS316                      |

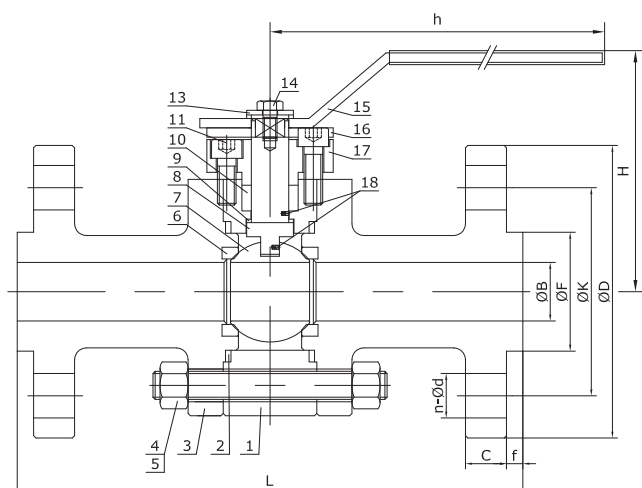
## Main Valve Parameters - Class 300

| Nominal Size   |    | inch | 1/2"    | 3/4"    | 1"      | 1 1/4"  | 1 1/2"  | 2"      |
|----------------|----|------|---------|---------|---------|---------|---------|---------|
|                |    | DN   | 15      | 20      | 25      | 32      | 40      | 50      |
| End connection | RF | L    | 140     | 152     | 165     | 178     | 190     | 216     |
|                |    | ØB   | 13      | 19      | 25      | 32      | 38      | 51      |
|                |    | ØD   | 95      | 115     | 125     | 135     | 155     | 165     |
|                |    | ØK   | 66,7    | 82,6    | 88,9    | 98,4    | 114,3   | 127     |
|                |    | ØF   | 34,9    | 42,9    | 50,8    | 63,5    | 73      | 92,1    |
|                |    | C    | 12,7    | 14,3    | 15,9    | 17,5    | 19,1    | 20,7    |
|                |    | f    | 2       | 2       | 2       | 2       | 2       | 2       |
|                |    | n-Ød | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 |
| Lever          |    | H    | 80      | 92      | 98      | 109     | 115     | 132     |
|                |    | h    | 136     | 174     | 185     | 185     | 210     | 242     |

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
For more information about flanged and welded ends refer to page 16

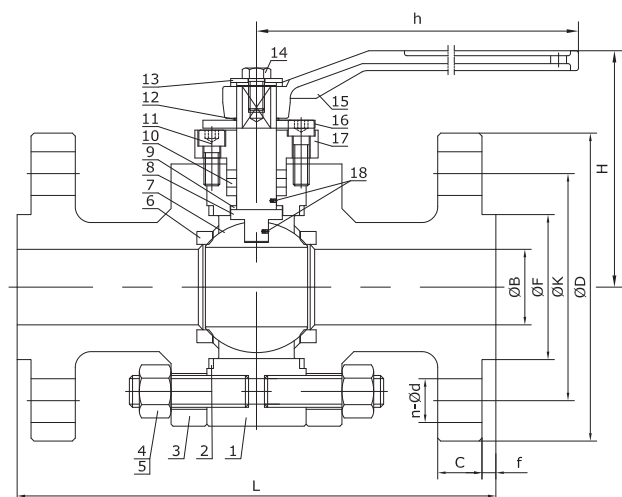
## Main Parts and Materials

### SERIES BV B8 ANSI RANGE Class 600 1/2" to 1"



| Nº | Part name     | A105              | A182 F304         | A182 F316         |
|----|---------------|-------------------|-------------------|-------------------|
| 1  | Body          | ASTM A105         | A182 F304         | A182 F316         |
| 2  | Gasket        | SS304+Graphite    | SS304+Graphite    | SS316+Graphite    |
| 3  | Bonnet        | ASTM A105         | A182 F304         | A182 F316         |
| 4  | Bolt          | A193 B7           | A193 B8           | A193 B8M          |
| 5  | Nut           | A194 2H           | A194 8            | A194 8M           |
| 6  | Seat          | RPTFE             | RPTFE             | RPTFE             |
| 7  | Ball          | A182 F304         | A182 F304         | A182 F316         |
| 8  | Stem          | A182 F304         | A182 F304         | A182 F316         |
| 9  | Gasket        | RPTFE             | RPTFE             | RPTFE             |
| 10 | Packing       | Flexible Graphite | Flexible Graphite | Flexible Graphite |
| 11 | Screw         | A193 B7           | A193 B8           | A193 B8M          |
| 13 | Lever Holder  | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 14 | Bolt          | A193 B7           | A193 B7           | A193 B7           |
| 15 | Lever         | St. Steel         | St. Steel         | St. Steel         |
| 16 | Positioner    | Carbon Steel      | Carbon Steel      | Carbon Steel      |
| 17 | Packing Gland | ASTM A105         | A182 F304         | A182 F316         |
| 18 | Anti-Static   | SS304             | SS304             | SS316             |

### SERIES BV B8 ANSI RANGE Class 600 1-1/4" to 2"



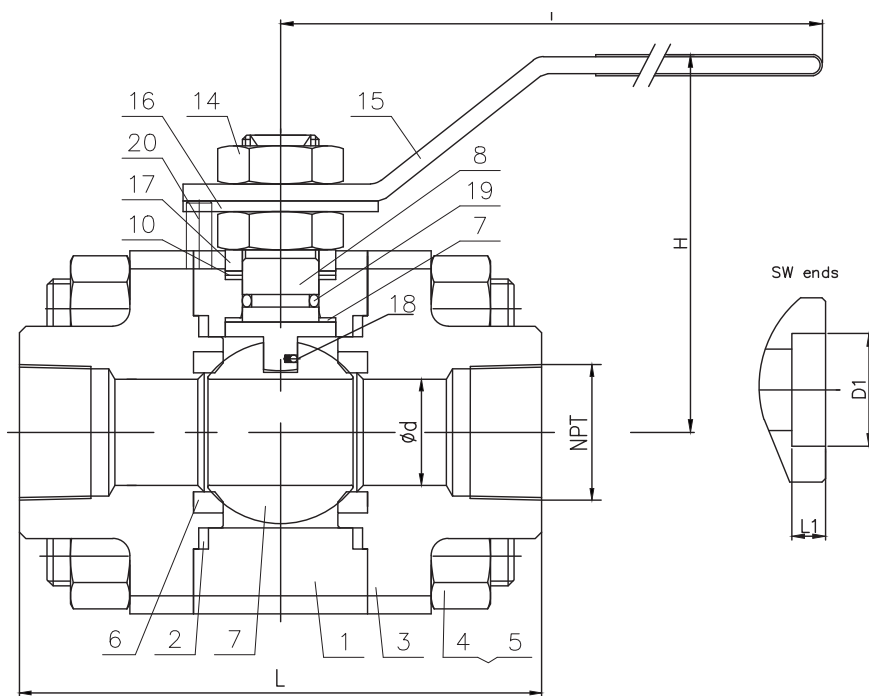
| Nº | Part name     | A105                       | A182 F304                  | A182 F316                  |
|----|---------------|----------------------------|----------------------------|----------------------------|
| 1  | Body          | ASTM A105                  | A182 F304                  | A182 F316                  |
| 2  | Gasket        | SS304+Graphite             | SS304+Graphite             | SS316+Graphite             |
| 3  | Bonnet        | ASTM A105                  | A182 F304                  | A182 F316                  |
| 4  | Bolt          | A193 B7                    | A193 B8                    | A193 B8M                   |
| 5  | Nut           | A194 2H                    | A194 8                     | A194 8M                    |
| 6  | Seat          | RPTFE                      | RPTFE                      | RPTFE                      |
| 7  | Ball          | A182 F304                  | A182 F304                  | A182 F316                  |
| 8  | Stem          | A182 F304                  | A182 F304                  | A182 F316                  |
| 9  | Gasket        | RPTFE                      | RPTFE                      | RPTFE                      |
| 10 | Packing       | Flexible Graphite          | Flexible Graphite          | Flexible Graphite          |
| 11 | Screw         | A193 B7                    | A193 B8                    | A193 B8M                   |
| 12 | Washer        | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 13 | Lever Holder  | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 14 | Bolt          | A193 B7                    | A193 B7                    | A193 B7                    |
| 15 | Lever         | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated | Carbon Steel+e-poxy coated |
| 16 | Positioner    | Carbon Steel               | Carbon Steel               | Carbon Steel               |
| 17 | Packing Gland | ASTM A105                  | A182 F304                  | A182 F316                  |
| 18 | Anti-Static   | SS304                      | SS304                      | SS316                      |

## Main Valve Parameters - Class 600

| Nominal Size   |    | inch | 1/2"    | 3/4"    | 1"      | 1 1/4"  | 1 1/2"  | 2"      |
|----------------|----|------|---------|---------|---------|---------|---------|---------|
|                |    | DN   | 15      | 20      | 25      | 32      | 40      | 50      |
| End connection | RF | L    | 165     | 190     | 216     | 229     | 241     | 292     |
|                |    | ØB   | 13      | 19      | 25      | 32      | 38      | 51      |
|                |    | ØD   | 95      | 115     | 125     | 135     | 155     | 165     |
|                |    | ØK   | 66,7    | 82,6    | 88,9    | 98,4    | 114,3   | 127     |
|                |    | ØF   | 34,9    | 42,9    | 50,8    | 63,5    | 73      | 92,1    |
|                |    | C    | 14,3    | 15,9    | 17,5    | 20,7    | 22,3    | 25,4    |
|                |    | f    | 7       | 7       | 7       | 7       | 7       | 7       |
|                |    | n-Ød | 4 - 5/8 | 4 - 3/4 | 4 - 3/4 | 4 - 3/4 | 4 - 7/8 | 8 - 3/4 |
| Lever          |    | H    | 80      | 93      | 103     | 106     | 119     | 139     |
|                |    | h    | 136     | 185     | 185     | 210     | 240     | 330     |

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance  
For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES BV B8 ANSI RANGE**  
**Class 800 1/2" to 2"**


| Nº | Part name     | A105 (B8A03_)     | F304 (B8I22)      |
|----|---------------|-------------------|-------------------|
| 1  | Body          | ASTM A105         | A182 F304         |
| 2  | Gasket        | SS316 + Graphite  | SS304 + Graphite  |
| 3  | Bonnet nut    | ASTM A105         | A182 F304         |
| 4  | Bonnet bolt   | A193 B7           | A193 B8           |
| 5  | Bonnet nut    | A194 2H           | A194 8            |
| 6* | Seat ring     | RPTFE             | RPTFE             |
| 7  | Ball          | A182 F316         | A182 F304         |
| 8  | Stem          | A182 F316         | A182 F304         |
| 9  | Gasket        | PTFE              | RPTFE             |
| 10 | Packing       | Flexible Graphite | Flexible Graphite |
| 14 | Lever nut     | A194 2H           | A193 B7           |
| 15 | Lever nut     | St. steel         | St. steel         |
| 16 | Positioner    | Carbon steel      | Carbon steel      |
| 17 | Packing gland | ASTM A105         | A182 F304         |
| 18 | Anti-static   | SS316             | SS304             |
| 19 | O-ring        | Viton             | Viton             |
| 20 | Pin           | Carbon steel      | Carbon steel      |

\*Option PTFE+Graphite

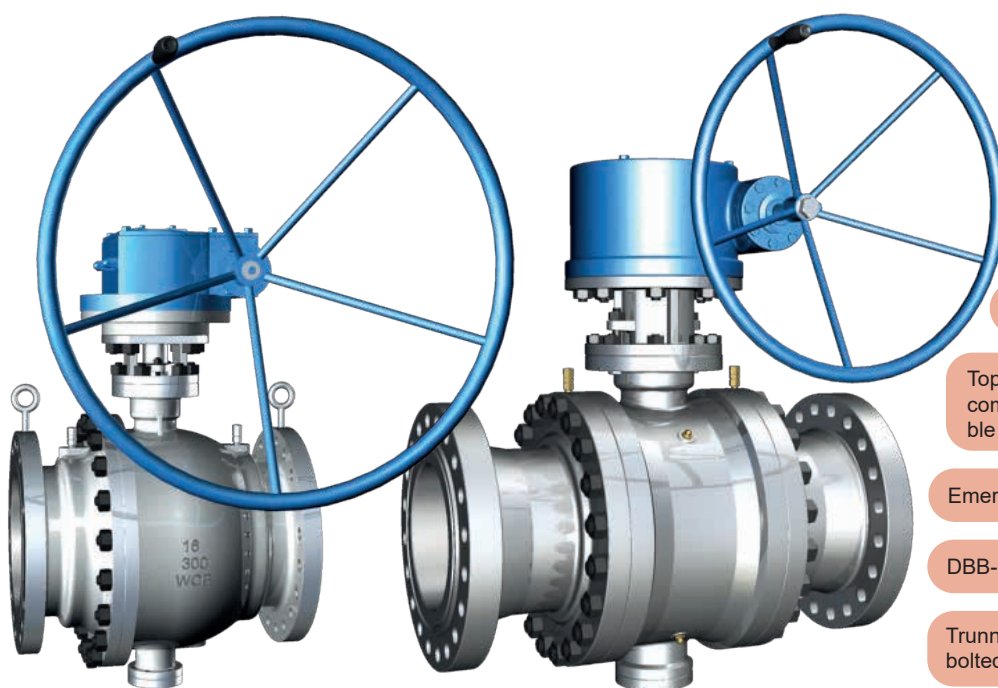
## Main Valve Parameters - Class 800

| Nominal Size | inch | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"   |
|--------------|------|------|------|-----|--------|--------|------|
|              | DN   | 15   | 20   | 25  | 32     | 40     | 50   |
| d            |      | 13   | 19   | 25  | 30     | 38     | 50   |
| L            |      | 94   | 110  | 123 | 134    | 147    | 170  |
| SW ends      | L1   | 10   | 13   | 13  | 13     | 13     | 16   |
|              | D1   | 22   | 27.1 | 34  | 42.6   | 50     | 61.2 |
| Lever        | H    | 72.5 | 82   | 90  | 94     | 105    | 115  |
|              | T    | 136  | 172  | 201 | 201    | 235    | 330  |

Dimensions in mm subject to manufacturing tolerance  
For more information about flanged and welded ends refer to page 16

## SERIES BV BT ANSI RANGE

Series BT are trunnion type, featured by the upper and lower ball guidance, quick closing 90° rotary ball valves, bidirectional, with tightness achieved by friction of the ball blind ends to the seats, devised for stopping the flow of the service fluid when necessary and not being suitable for regulation purposes. Valves can be operated by manual gear by handwheel (valve closes by turning the hand lever clockwise) or a choice of quarter turn electric, pneumatic or hydraulic actuators. They have a robust construction to offer reliable performance in standard services.



Fire safe design

Anti-static feature

Blow out proof stem

Self-relieving seat

Lifting lugs and supporting feet

Top flange drilled to ISO 5211. A complete range of brackets available for easy and quick automation

Emergency Sealant Injection System

DBB-Double block and bleed function

Trunnion ball, full bore, side entry, split bolted body (two-pieces, three-pieces)

Nameplate incl. batch no. for full traceability

## Main Features / Reference Standards

Design: API 6D  
 Pressure Rating: 150/300/600/900/1500/2500#  
 Face to face length: API 6D  
 Valve end connections: Flanged RF or RTJ to ASME B16.5 (size ≤ 24") / ASME B16.47 (size > 24")  
 Welded BW to ASME B16.25  
 Fire safe design: API 6FA  
 Bidirectional design  
 Marking: MSS SP-25  
 Inspections & Tests: API 598  
 Primer painted grey color similar to RAL 7037 for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

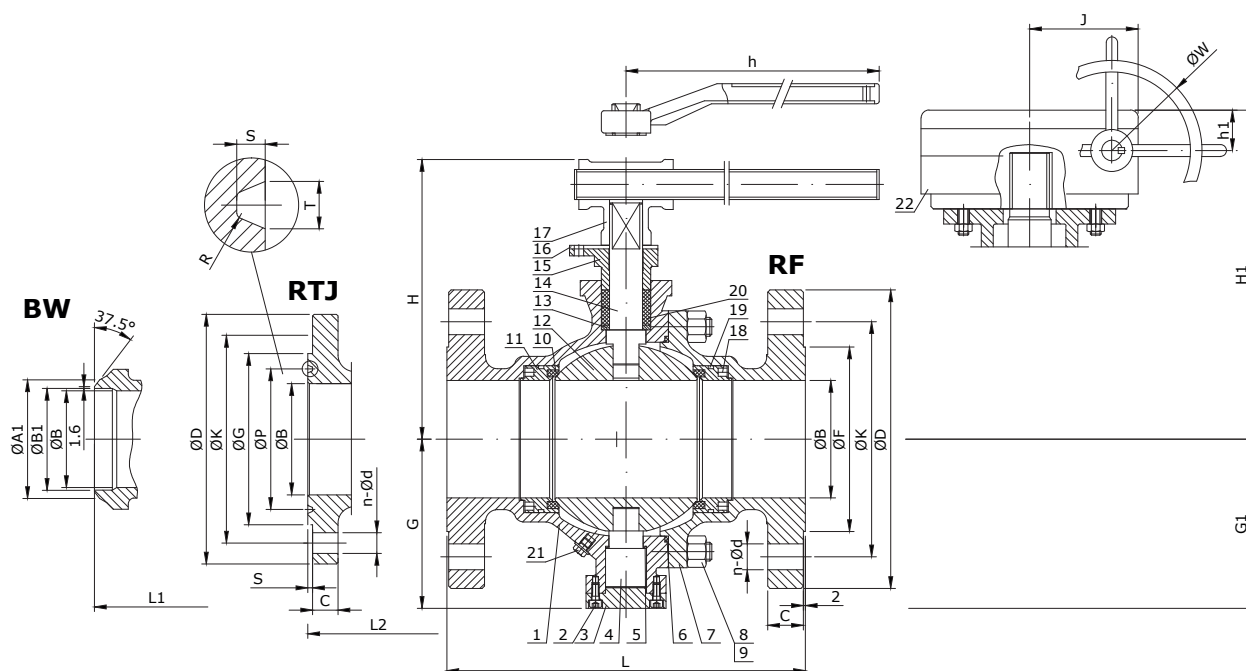
## Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature Rating to ASME B16.34. See section "Engineering & Performance Data"  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

## Options

Different material combinations, different valve connections, worm gear, actuators, limit switches, cryogenic design, 3-Way T or L type, DPE-Double piston effect function, jacketed body, execution for aggressive atmosphere, underground application structure, compliance with NACE MR0175, etc. Please consult us

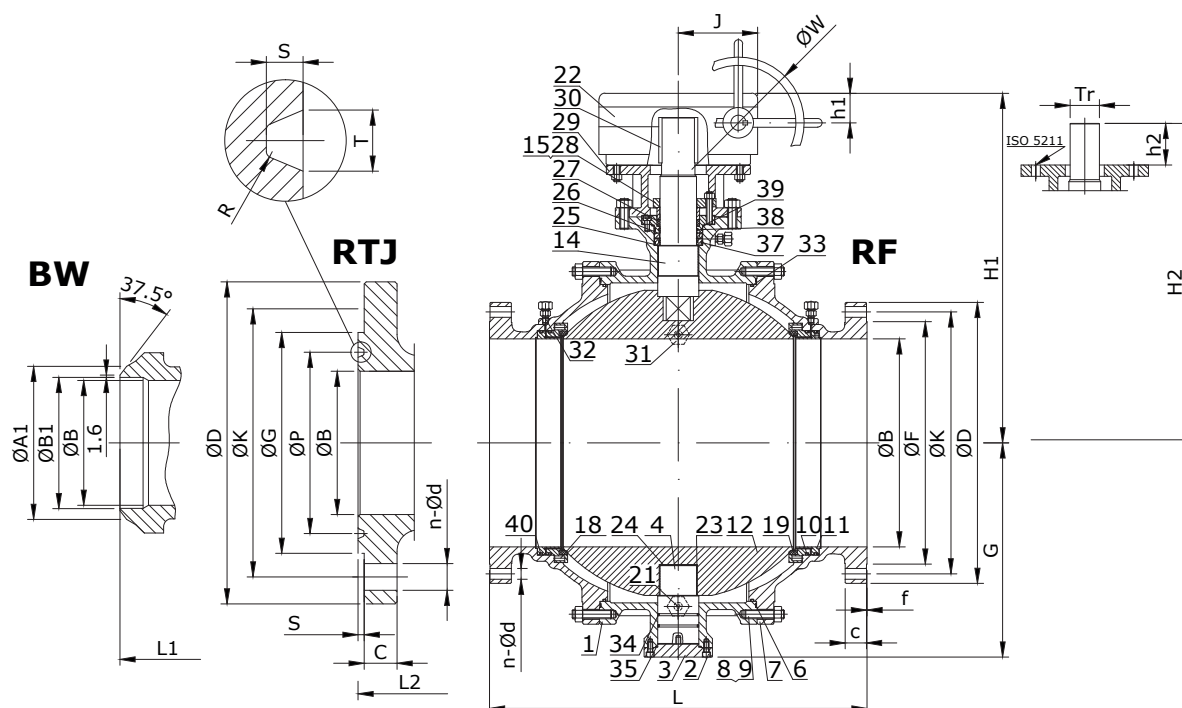
## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 150&300 NPS2-5"**


| Nº | Part name        | A216 WCB<br>(BTA02_) | A216 WCB<br>NACE<br>(BTA02_) | A352 LCB            | A352 LCB            | A351 CF8<br>(BT12_)         | A351 CF8M<br>(BT10_)        | A351 CF3<br>(BT11_)         | A351 CF3M<br>(BT17_)        |
|----|------------------|----------------------|------------------------------|---------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1  | Body             | A216 WCB             |                              | A352 LCB            |                     | A351 CF8                    | A351 CF8M                   | A351 CF3                    | A351 CF3M                   |
| 2  | Screw            | A193 B7              | A193 B7M                     | A320 L7             | A320 L7             | A193 B8                     | A193 B8M                    | A193 B8M                    |                             |
| 3  | Bottom Cover     | ASTM A105            |                              | A350 LF2            |                     | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 4  | Trunnion         | A182 F6a             | 17-4PH                       | A182 F304           | A182 F316           | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 5  | Gasket           | A276 410             | A276 316                     | A276 304            | A276 316            | A276 304                    | A276 316                    | A276 316                    |                             |
| 6  | Body Gasket      | SS304 +<br>Graphite  | SS316 +<br>Graphite          | SS304 +<br>Graphite | SS316 +<br>Graphite | SS304 +<br>Graphite         | SS316 +<br>Graphite         | SS304 +<br>Graphite         | SS316 +<br>Graphite         |
| 7  | Body Cap         | A216 WCB             |                              | A352 LCB            |                     | A351 CF8                    | A351 CF8M                   | A351 CF3                    | A351 CF3M                   |
| 8  | Body Bolt        | A193 B7              | A193 B7M                     | A320 L7             |                     | A193 B8                     | A193 B8M                    | A193 B8M                    |                             |
| 9  | Body Nut         | A194 2H              | A194 2HM                     | A194 4              |                     | A194 8                      | A194 8M                     | A194 8M                     |                             |
| 10 | Seat             | RPTFE                |                              | RPTFE               |                     | RPTFE                       |                             | RPTFE                       |                             |
| 11 | Seat Retainer    | ASTM A105            | ASTM A105N                   | A350 LF2            |                     | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 12 | Ball             | A105.ENP             | A105N.ENP                    | A182 F304           | A182 F316           | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 13 | Packing Gasket   | A276 410             | A276 316                     | A276 304            | A276 316            | A276 304                    | A276 316                    | A276 316                    |                             |
| 14 | Stem             | A182 F6a             | 17-4PH                       | A182 F304           | A182 F316           | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 15 | Gland Flange     | A216 WCB             |                              | A352 LCB            |                     | A351 CF8                    |                             | A351 CF3                    |                             |
| 16 | Positioner Plate | AISI 1035            |                              | AISI 1035           |                     | St. Steel                   |                             | St. Steel                   |                             |
| 17 | Lever            | A216 WCB             |                              | A216 WCB            |                     | A216<br>WCB+Epoxy<br>Coated | A216<br>WCB+Epoxy<br>Coated | A216<br>WCB+Epoxy<br>Coated | A216<br>WCB+Epoxy<br>Coated |
| 18 | Seat Spring      | 17-7PH               |                              | 17-7PH              |                     | Inconel X-750               |                             | Inconel X-750               |                             |
| 19 | O Ring           | VITON                |                              | VITON               |                     | VITON                       |                             | VITON                       |                             |
| 20 | Packing          | Flexible Graphite    |                              | Flexible Graphite   |                     | PTFE                        |                             | PTFE                        |                             |
| 21 | Drain Plug       | AISI 1035            | A182 F316                    | A182 F304           | A182 F316           | A182 F304                   | A182 F316                   | A182 F304L                  | A182 F316L                  |
| 22 | Worm Gear        | Assembly             |                              | Assembly            |                     | Assembly                    |                             | Assembly                    |                             |



## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 150&300 NPS18-36"**


| Nº | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BTI2_) | A351 CF8M<br>(BTI0_) | A351 CF3<br>(BTI1_) | A351 CF3M<br>(BTI7_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Bottom Cover    | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket     | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 9  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 10 | Seat            | RPTFE                |                               | RPTFE                          |                                | RPTFE               |                      | RPTFE               |                      |
| 11 | Seat Retainer   | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 18 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 19 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 21 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 23 | Slide Bearing   | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 24 | Thrust Bearing  | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 25 | Seal Ring       | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 26 | Top cover       | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 27 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 28 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 29 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 30 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 31 | Relief Valve    | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 32 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

## Main Valve Parameters - Class 150

## SERIES BV BT ANSI RANGE



| Nominal Size               |                 | inch                | 2"                  | 2-1/2"  | 3"      | 4"      | 5"      | 6"      | 8"      | 10"    | 12"    | 14"        |     |     |
|----------------------------|-----------------|---------------------|---------------------|---------|---------|---------|---------|---------|---------|--------|--------|------------|-----|-----|
|                            |                 | DN                  | 50                  | 65      | 80      | 100     | 125     | 150     | 200     | 250    | 300    | 350        |     |     |
| End connection             | RF              | L                   | 178                 | 190     | 203     | 229     | -       | 394     | 457     | 533    | 610    | 686        |     |     |
|                            |                 | ØB                  | 51                  | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |     |     |
|                            |                 | ØD                  | 150                 | 180     | 190     | 230     | 255     | 280     | 345     | 405    | 485    | 535        |     |     |
|                            |                 | ØK                  | 120,7               | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   | 362    | 431,8  | 476,3      |     |     |
|                            |                 | ØF                  | 92,1                | 104,8   | 127     | 157,2   | 185,7   | 215,9   | 269,9   | 323,8  | 381    | 412,8      |     |     |
|                            |                 | C                   | 14,3                | 15,9    | 17,5    | 22,3    | 22,3    | 23,9    | 27      | 28,6   | 30,2   | 33,4       |     |     |
|                            |                 | f                   | 2                   | 2       | 2       | 2       | 2       | 2       | 2       | 2      | 2      | 2          |     |     |
|                            |                 | n-Ød                | 4 - 3/4             | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 1 | 12 - 1 | 12 - 1 1/8 |     |     |
|                            | BW              | L1                  | 216                 | 241     | 282     | 305     | -       | 457     | 521     | 559    | 635    | 762        |     |     |
|                            |                 | Schedule No.(1)     | 40                  | -       | 40      | 40      | -       | 40      | 40      | 40     | STD    | STD        |     |     |
|                            |                 | ØB                  | 51                  | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |     |     |
|                            |                 | ØA1                 | 60,3                | -       | 91      | 117     | -       | 172     | 223     | 278    | 329    | 362        |     |     |
|                            |                 | ØB1                 | 52,48               | -       | 78      | 102     | -       | 154     | 203     | 254,5  | 305    | 336,5      |     |     |
|                            | RTJ             | L2                  | 191                 | 203     | 216     | 242     | -       | 407     | 470     | 546    | 623    | 699        |     |     |
|                            |                 | ØB                  | 51                  | 65,375  | 76      | 102     | 128,25  | 152     | 203     | 254    | 305    | 337        |     |     |
|                            |                 | ØD                  | 150                 | 180     | 190     | 230     | 255     | 280     | 345     | 405    | 485    | 535        |     |     |
|                            |                 | ØK                  | 120,7               | 139,7   | 152,4   | 190,5   | 215,9   | 241,3   | 298,5   | 362    | 431,8  | 476,3      |     |     |
|                            |                 | ØG                  | 102                 | 121     | 133     | 171     | 194     | 219     | 273     | 330    | 406    | 425        |     |     |
|                            |                 | ØP                  | 82,55               | 101,6   | 114,3   | 149,23  | 171,45  | 193,68  | 247,65  | 304,8  | 381    | 396,88     |     |     |
|                            |                 | C                   | 17,5                | 20,7    | 22,3    | 22,3    | 22,3    | 23,9    | 27      | 28,6   | 30,2   | 33,4       |     |     |
|                            |                 | n-Ød                | 4 - 3/4             | 4 - 3/4 | 4 - 3/4 | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 1 | 12 - 1 | 12 - 1 1/8 |     |     |
|                            |                 | T                   | 8,74                | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74    | 8,74   | 8,74   | 8,74       |     |     |
|                            |                 | S                   | 6,35                | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35    | 6,35   | 6,35   | 6,35       |     |     |
|                            |                 | R                   | 0,8                 | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8    | 0,8    | 0,8        |     |     |
|                            |                 | Top works/Operation | Lever               | H       | 157     | 189     | 212     | 230     | -       | -      | -      | -          | -   | -   |
|                            |                 |                     |                     | G       | 85      | 113     | 133     | 144     | -       | -      | -      | -          | -   | -   |
|                            |                 |                     |                     | h       | 240     | 332     | 400     | 500     | -       | -      | -      | -          | -   | -   |
|                            |                 |                     | Gear with handwheel | H1      | 238     | 262     | 280     | 295     | 365     | 416    | 482    | 545        | 618 | 651 |
| G                          | 85              |                     |                     | 113     | 133     | 144     | 178     | 203     | 250     | 294    | 343    | 383        |     |     |
| h1                         | 39              |                     |                     | 39      | 39      | 39      | 44      | 48      | 53      | 68     | 70     | 70         |     |     |
| J                          | 76              |                     |                     | 88      | 96      | 96      | 107     | 115     | 139     | 170    | 192    | 192        |     |     |
| ØW                         | 160             |                     |                     | 206     | 240     | 240     | 263     | 280     | 300     | 350    | 400    | 400        |     |     |
| With ISO 5211 mounting pad | H2              |                     | 198                 | 222     | 240     | 261     | 331     | 383     | 440     | 489    | 575    | 610        |     |     |
|                            | G               |                     | 85                  | 113     | 133     | 144     | 178     | 203     | 250     | 294    | 343    | 383        |     |     |
|                            | h2              |                     | 30                  | 33      | 35      | 40      | 49      | 55      | 55      | 69     | 85     | 87         |     |     |
|                            | ISO             |                     | F07                 | F10     | F10     | F10     | F12     | F12     | F14     | F16    | F20    | F20        |     |     |
|                            | Tr              |                     | 20                  | 24      | 24      | 28      | 35      | 35      | 40      | 48     | 60     | 60         |     |     |
|                            | Torque (Nm) (2) |                     | 23                  | 44      | 59      | 114     | 263     | 373     | 636     | 1000   | 1591   | 2364       |     |     |
|                            | Kvs-value       |                     | -                   | -       | -       | -       | -       | -       | -       | -      | -      | -          |     |     |
| Approx. Weight RF (3)      |                 |                     | 21                  | 30      | 36      | 58      | 86      | 106     | 159     | 292    | 478    | 630        |     |     |
| Approx. Weight BW          |                 |                     | 18                  | 25      | 31      | 50      | 75      | 93      | 137     | 263    | 434    | 574        |     |     |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 150

## SERIES BV BT ANSI RANGE



| Nominal Size        |                            | inch                  | 16"        | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"        | 36"        |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     |                            | DN                    | 400        | 450        | 500        | 600        | 650        | 700        | 750        | 800        | 900        |
| End connection      | RF                         | L                     | 762        | 864        | 914        | 1067       | -          | -          | -          | -          | -          |
|                     |                            | ØB                    | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                     |                            | ØD                    | 595        | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       |
|                     |                            | ØK                    | 539,8      | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     |
|                     |                            | ØF                    | 469,9      | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914        | 1022       |
|                     |                            | C                     | 35         | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       |
|                     |                            | f                     | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
|                     |                            | n-Ød                  | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 |
|                     | BW                         | L1                    | 838        | 914        | 991        | 1143       | 1245       | 1346       | 1397       | 1524       | 1727       |
|                     |                            | Schedule No.(1)       | STD        | STD        | STD        | STD        | 20         | 20         | 20         | 20         | 20         |
|                     |                            | ØB                    | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                     |                            | ØA1                   | 413        | 464        | 516        | 619        | 670        | 721        | 772        | 825        | 927        |
|                     |                            | ØB1                   | 387,5      | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5      | 889        |
|                     | RTJ                        | L2                    | 775        | 877        | 927        | 1080       | -          | -          | -          | -          | -          |
|                     |                            | ØB                    | 387        | 438        | 489        | 591        | 633        | 684        | 735        | 779        | 874        |
|                     |                            | ØD                    | 595        | 635        | 700        | 815        | 870        | 925        | 985        | 1060       | 1170       |
|                     |                            | ØK                    | 539,8      | 577,9      | 635        | 749,3      | 806,4      | 863,6      | 914,4      | 977,9      | 1085,8     |
|                     |                            | ØG                    | 483        | 546        | 597        | 711        | 810        | 861        | 917        | 984        | 1092       |
|                     |                            | ØP                    | 454,03     | 517,53     | 558,8      | 673,1      | 749,3      | 800,1      | 857,25     | 914,4      | 1022,35    |
|                     |                            | C                     | 35         | 38,1       | 41,3       | 46,1       | 66,7       | 69,9       | 73,1       | 79,4       | 88,9       |
|                     |                            | n-Ød                  | 16 - 1 1/8 | 16 - 1 1/4 | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 28 - 1 3/8 | 28 - 1 3/8 | 28 - 1 5/8 | 32 - 1 5/8 |
|                     |                            | T                     | 8,74       | 8,74       | 8,74       | 8,74       | 19,84      | 19,84      | 19,84      | 23,01      | 23,01      |
|                     |                            | S                     | 6,35       | 6,35       | 6,35       | 6,35       | 12,7       | 12,7       | 12,7       | 14,27      | 14,27      |
|                     |                            | R                     | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        |
|                     |                            | H                     | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| Top works/Operation | Lever                      | G                     | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                     |                            | h                     | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                     |                            | H1                    | 764        | 900        | 941        | 1055       | 1097       | 1180       | 1233       | 1325       | 1405       |
|                     | Gear with handwheel        | G                     | 440        | 465        | 500        | 611        | 663        | 706        | 754        | 795        | 870        |
|                     |                            | h1                    | 80         | 50         | 50         | 60         | 60         | 60         | 60         | 65         | 65         |
|                     |                            | J                     | 224        | 305        | 305        | 380        | 380        | 384        | 384        | 516        | 516        |
|                     |                            | ØW                    | 500        | 500        | 500        | 500        | 500        | 600        | 600        | 600        | 600        |
|                     | With ISO 5211 mounting pad | H2                    | 716        | 803        | 840        | 950        | 1007       | 1073       | 1150       | 1230       | 1340       |
|                     |                            | G                     | 440        | 465        | 500        | 611        | 663        | 706        | 754        | 795        | 870        |
|                     |                            | h2                    | 106        | 100        | 100        | 139        | 145        | 158        | 180        | 200        | 230        |
|                     |                            | ISO                   | F25        | F30        | F30        | F35        | F35        | F40        | F40        | F48        | F48        |
|                     |                            | Tr                    | 70         | 80         | 80         | 90         | 100        | 110        | 120        | 130        | 140        |
|                     |                            | Torque (Nm) (2)       | 3545       | 5636       | 6818       | 9545       | 10970      | 13182      | 17960      | 19091      | -          |
|                     |                            | Kvs-value             | -          | -          | -          | -          | -          | -          | -          | -          | -          |
|                     |                            | Approx. Weight RF (3) | 895        | 1190       | 1405       | 2576       | 3305       | 3960       | 4902       | 6170       | 7690       |
|                     |                            | Approx. Weight BW     | 825        | 1113       | 1313       | 2434       | 3133       | 3738       | 4663       | 5864       | 7250       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES BV BT ANSI RANGE



| Nominal Size        |                            | inch                  | 2"      | 2-1/2"  | 3"      | 4"      | 5"      | 6"       | 8"     | 10"        | 12"        |
|---------------------|----------------------------|-----------------------|---------|---------|---------|---------|---------|----------|--------|------------|------------|
|                     |                            | DN                    | 50      | 65      | 80      | 100     | 125     | 150      | 200    | 250        | 300        |
| End connection      | RF                         | L                     | 216     | 241     | 282     | 305     |         | 403      | 502    | 568        | 648        |
|                     |                            | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                     |                            | ØD                    | 165     | 190     | 210     | 255     | 280     | 320      | 380    | 445        | 520        |
|                     |                            | ØK                    | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  | 387,4      | 450,8      |
|                     |                            | ØF                    | 92,1    | 104,8   | 127     | 157,2   | 185,7   | 215,9    | 269,9  | 323,8      | 381        |
|                     |                            | C                     | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   | 46,1       | 49,3       |
|                     |                            | f                     | 2       | 2       | 2       | 2       | 2       | 2        | 2      | 2          | 2          |
|                     |                            | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 | 16 - 1 1/8 | 16 - 1 1/4 |
|                     | BW                         | L1                    | 216     | 241     | 282     | 305     | -       | 457      | 521    | 559        | 635        |
|                     |                            | Schedule No.(1)       | 40      | -       | 40      | 40      | -       | 40       | 40     | 40         | STD        |
|                     |                            | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                     |                            | ØA1                   | 60,3    | -       | 91      | 117     | -       | 172      | 223    | 278        | 329        |
|                     |                            | ØB1                   | 52,48   | -       | 78      | 102     | -       | 154      | 203    | 254,5      | 305        |
|                     | RTJ                        | L2                    | 232     | 257     | 298     | 321     | 16      | 419      | 518    | 584        | 664        |
|                     |                            | ØB                    | 51      | 65,375  | 76      | 102     | 128,25  | 152      | 203    | 254        | 305        |
|                     |                            | ØD                    | 165     | 190     | 210     | 255     | 280     | 320      | 380    | 445        | 520        |
|                     |                            | ØK                    | 127     | 149,2   | 168,3   | 200     | 235     | 269,9    | 330,2  | 387,4      | 450,8      |
|                     |                            | ØG                    | 108     | 127     | 146     | 175     | 210     | 241      | 302    | 356        | 413        |
|                     |                            | ØP                    | 82,55   | 101,6   | 123,83  | 149,23  | 180,98  | 211,12   | 269,88 | 323,85     | 981        |
|                     |                            | C                     | 20,7    | 23,9    | 27      | 30,2    | 33,4    | 35       | 39,7   | 46,1       | 49,3       |
|                     |                            | n-Ød                  | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 8 - 7/8 | 12 - 7/8 | 12 - 1 | 16 - 1 1/8 | 16 - 1 1/4 |
|                     |                            | T                     | 11,91   | 11,91   | 11,91   | 11,91   | 11,91   | 11,91    | 11,91  | 11,91      | 11,91      |
|                     |                            | S                     | 7,92    | 7,92    | 7,92    | 7,92    | 7,92    | 7,92     | 7,92   | 7,92       | 7,92       |
|                     |                            | R                     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8     | 0,8      | 0,8    | 0,8        | 0,8        |
| Top works/Operation | Lever                      | H                     | 157     | 189     | 212     | 230     | -       | -        | -      | -          | -          |
|                     |                            | G                     | 85      | 113     | 133     | 144     | -       | -        | -      | -          | -          |
|                     |                            | h                     | 240     | 332     | 400     | 500     | -       | -        | -      | -          | -          |
|                     | Gear with handwheel        | H1                    | 238     | 262     | 280     | 295     | 365     | 416      | 482    | 545        | 618        |
|                     |                            | G                     | 85      | 113     | 133     | 144     | 178     | 203      | 250    | 294        | 343        |
|                     |                            | h1                    | 39      | 39      | 39      | 39      | 44      | 48       | 53     | 68         | 70         |
|                     |                            | J                     | 76      | 88      | 96      | 96      | 107     | 115      | 139    | 170        | 192        |
|                     |                            | ØW                    | 160     | 206     | 240     | 240     | 263     | 280      | 300    | 350        | 400        |
|                     | With ISO 5211 mounting pad | H2                    | 198     | 222     | 240     | 261     | 331     | 383      | 440    | 489        | 575        |
|                     |                            | G                     | 85      | 113     | 133     | 144     | 178     | 203      | 250    | 294        | 343        |
|                     |                            | h2                    | 30      | 33      | 35      | 40      | 49      | 55       | 55     | 69         | 85         |
|                     |                            | ISO                   | F07     | F10     | F10     | F10     | F12     | F12      | F14    | F16        | F20        |
|                     |                            | Tr                    | 20      | 24      | 24      | 28      | 35      | 35       | 40     | 48         | 60         |
|                     |                            | Torque (Nm) (2)       | 55      | 107     | 145     | 255     | 605     | 864      | 1409   | 1818       | 3000       |
|                     |                            | Kvs-value             | -       | -       | -       | -       | -       | -        | -      | -          | -          |
|                     |                            | Approx. Weight RF (3) | 26      | 39      | 49      | 76      | 108     | 131      | 219    | 412        | 610        |
|                     |                            | Approx. Weight BW     | 21      | 32      | 41      | 63      | 89      | 108      | 183    | 363        | 536        |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 300

## SERIES BV BT ANSI RANGE



| Nominal Size        |                            | inch                  | 14"        | 16"        | 18"        | 20"        | 24"        | 26"        | 28"        | 30"        | 32"    |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|--------|
|                     |                            | DN                    | 350        | 400        | 450        | 500        | 600        | 650        | 700        | 750        | 800    |
| End connection      | RF                         | L                     | 762        | 838        | 914        | 991        | 1143       | 1245       | 1346       | 1397       | 1524   |
|                     |                            | ØB                    | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779    |
|                     |                            | ØD                    | 585        | 650        | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150   |
|                     |                            | ØK                    | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1 |
|                     |                            | ØF                    | 412,8      | 469,9      | 533,4      | 584,2      | 692,2      | 749        | 800        | 857        | 914    |
|                     |                            | C                     | 52,4       | 55,6       | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9   |
|                     |                            | f                     | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2      |
|                     |                            | n-Ød                  | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2 |
|                     | BW                         | L1                    | 762        | 838        | 914        | 991        | 1143       | 1245       | 1346       | 1397       | 1524   |
|                     |                            | Schedule No.(1)       | STD        | STD        | STD        | STD        | STD        | 20         | 20         | 20         | 20     |
|                     |                            | ØB                    | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779    |
|                     |                            | ØA1                   | 362        | 413        | 464        | 516        | 619        | 670        | 721        | 772        | 825    |
|                     |                            | ØB1                   | 336,5      | 387,5      | 438        | 489        | 590,5      | 635        | 686        | 736,5      | 787,5  |
|                     | RTJ                        | L2                    | 778        | 854        | 930        | 1010       | 1165       | 1273       | 1371       | 1422       | 1552   |
|                     |                            | ØB                    | 337        | 387        | 432        | 483        | 584        | 633        | 684        | 735        | 779    |
|                     |                            | ØD                    | 585        | 650        | 710        | 775        | 915        | 970        | 1035       | 1090       | 1150   |
|                     |                            | ØK                    | 514,4      | 571,5      | 628,6      | 685,8      | 812,8      | 876,3      | 939,8      | 997        | 1054,1 |
|                     |                            | ØG                    | 457        | 508        | 575        | 635        | 749        | 810        | 861        | 917        | 984    |
|                     |                            | ØP                    | 419,1      | 469,9      | 533,4      | 584,2      | 692,15     | 749,3      | 800,1      | 857,25     | 914,4  |
|                     |                            | C                     | 52,4       | 55,6       | 58,8       | 62         | 68,3       | 77,8       | 84,2       | 90,5       | 96,9   |
|                     |                            | n-Ød                  | 20 - 1 1/4 | 20 - 1 3/8 | 24 - 1 3/8 | 24 - 1 3/8 | 24 - 1 5/8 | 28 - 1 3/4 | 28 - 1 3/4 | 28 - 1 7/8 | 28 - 2 |
|                     |                            | T                     | 11,91      | 11,91      | 11,91      | 13,49      | 16,66      | 19,84      | 19,84      | 19,84      | 23,01  |
|                     |                            | S                     | 7,92       | 7,92       | 7,92       | 9,53       | 11,13      | 12,7       | 12,7       | 12,7       | 14,27  |
|                     |                            | R                     | 0,8        | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5        | 1,5    |
| Top works/Operation | Lever                      | H                     | -          | -          | -          | -          | -          | -          | -          | -          | -      |
|                     |                            | G                     | -          | -          | -          | -          | -          | -          | -          | -          | -      |
|                     |                            | h                     | -          | -          | -          | -          | -          | -          | -          | -          | -      |
|                     | Gear with handwheel        | H1                    | 651        | 764        | 900        | 941        | 1055       | 1097       | 1180       | 1233       | 1325   |
|                     |                            | G                     | 383        | 440        | 465        | 500        | 611        | 663        | 706        | 754        | 795    |
|                     |                            | h1                    | 70         | 80         | 50         | 50         | 60         | 60         | 60         | 60         | 65     |
|                     |                            | J                     | 192        | 224        | 305        | 305        | 380        | 380        | 384        | 384        | 516    |
|                     |                            | ØW                    | 400        | 500        | 500        | 500        | 500        | 500        | 600        | 600        | 600    |
|                     | With ISO 5211 mounting pad | H2                    | 610        | 716        | 803        | 840        | 950        | 1007       | 1073       | 1150       | 1230   |
|                     |                            | G                     | 383        | 440        | 465        | 500        | 611        | 663        | 706        | 754        | 795    |
|                     |                            | h2                    | 87         | 106        | 100        | 100        | 139        | 145        | 158        | 180        | 200    |
|                     |                            | ISO                   | F20        | F25        | F30        | F30        | F35        | F35        | F40        | F40        | F48    |
|                     |                            | Tr                    | 60         | 70         | 80         | 80         | 90         | 100        | 110        | 120        | 130    |
|                     |                            | Torque (Nm) (2)       | 4545       | 6818       | 10727      | 13091      | 17818      | 20509      | 25636      | 26795      | 27091  |
|                     |                            | Kvs-value             | -          | -          | -          | -          | -          | -          | -          | -          | -      |
|                     |                            | Approx. Weight RF (3) | 809        | 1260       | 1510       | 1690       | 3175       | 4390       | 6210       | 7590       | 9300   |
|                     |                            | Approx. Weight BW     | 708        | 1127       | 1344       | 1485       | 2879       | 4044       | 5802       | 7103       | 8738   |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

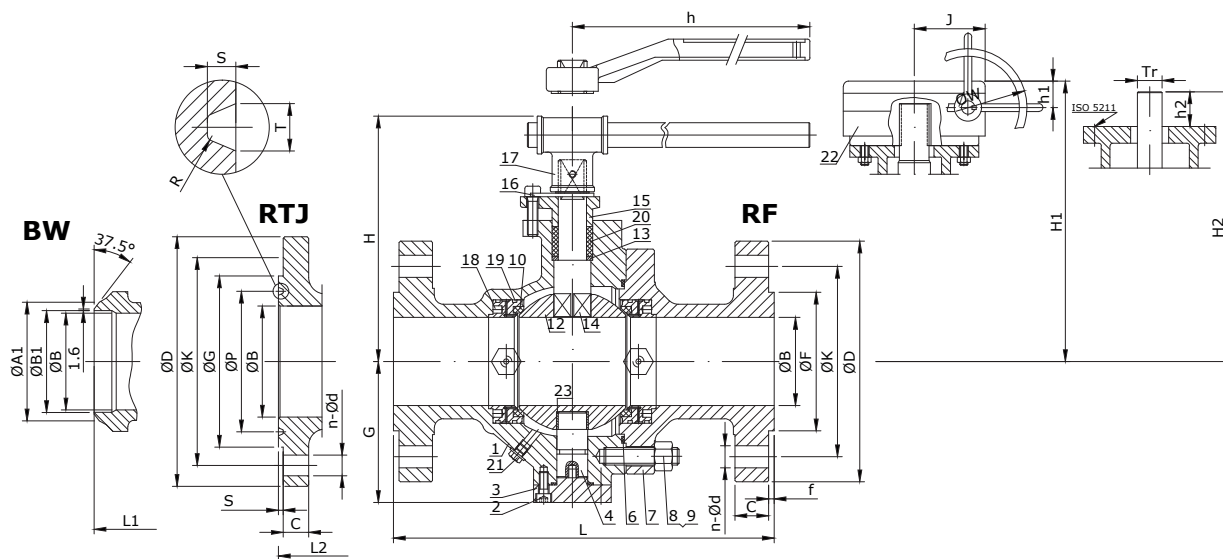
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

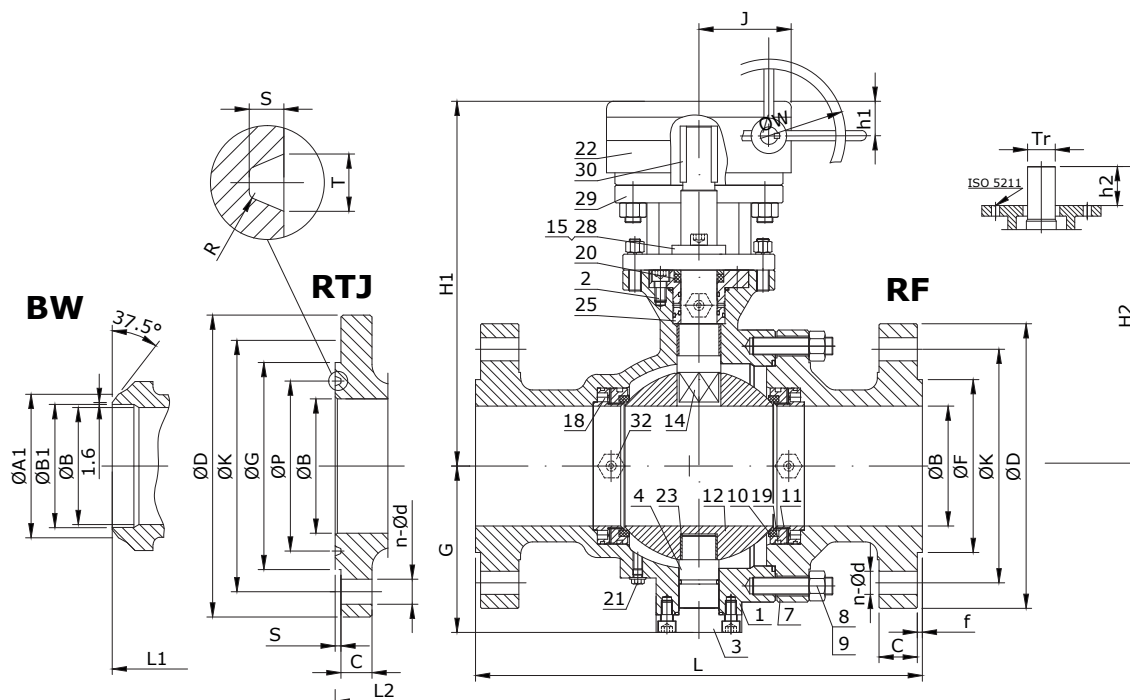
For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 600 NPS2-4"**


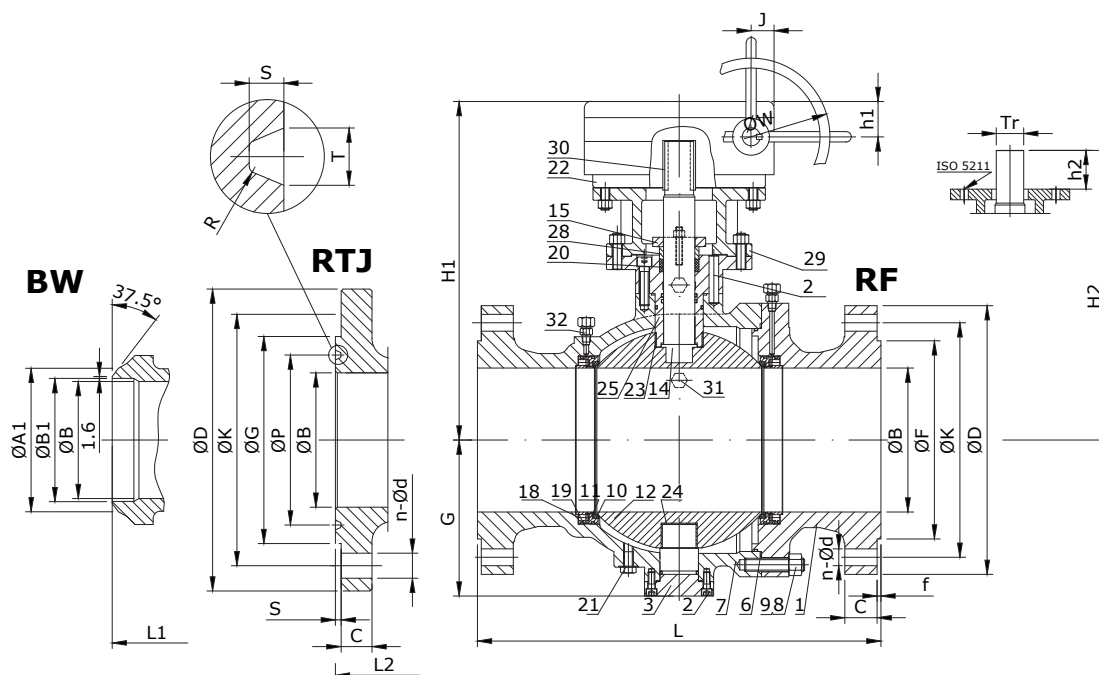
| N° | Part name        | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BTI2_)   | A351 CF8M<br>(BTI0_) | A351 CF3<br>(BTI1_) | A351 CF3M<br>(BTI7_) |
|----|------------------|----------------------|-------------------------------|--------------------------------|--------------------------------|-----------------------|----------------------|---------------------|----------------------|
| 1  | Body             | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw            | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8               | A193 B8M             | A193 B8M            | A193 B8M             |
| 3  | Bottom Cover     | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion         | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket      | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite   | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap         | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt        | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8               | A193 B8M             | A193 B8M            | A193 B8M             |
| 9  | Body Nut         | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8                | A194 8M              | A194 8M             | A194 8M              |
| 10 | Seat             | DEVLON               |                               | DEVLON                         |                                | PEEK                  |                      | PEEK                |                      |
| 11 | Seat Retainer    | ASTM A105            | ASTM A105N                    | A350 LF2                       | A350 LF2                       | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball             | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 13 | Packing Gasket   | A276 410             | A276 316                      | A276 304                       | A276 316                       | A276 304              | A276 316             | A276 316            |                      |
| 14 | Stem             | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange     | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 16 | Positioner Plate | AISI 1035            |                               | AISI 1035                      |                                | Stainless Steel       |                      | Stainless Steel     |                      |
| 17 | Lever            | A216 WCB             |                               | A216 WCB                       |                                | A216 WCB+Epoxy Coated |                      |                     |                      |
| 18 | Seat Spring      | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750         |                      | Inconel X-750       |                      |
| 19 | O Ring           | VITON                |                               | VITON                          |                                | VITON                 |                      | VITON               |                      |
| 20 | Packing          | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                  |                      | PTFE                |                      |
| 21 | Drain Plug       | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear        | Assembly             |                               | Assembly                       |                                | Assembly              |                      | Assembly            |                      |
| 23 | Slide Bearing    | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304(316)+PTFE       |                      | SS304(316)+PTFE     |                      |

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 600 NPS6-8"**


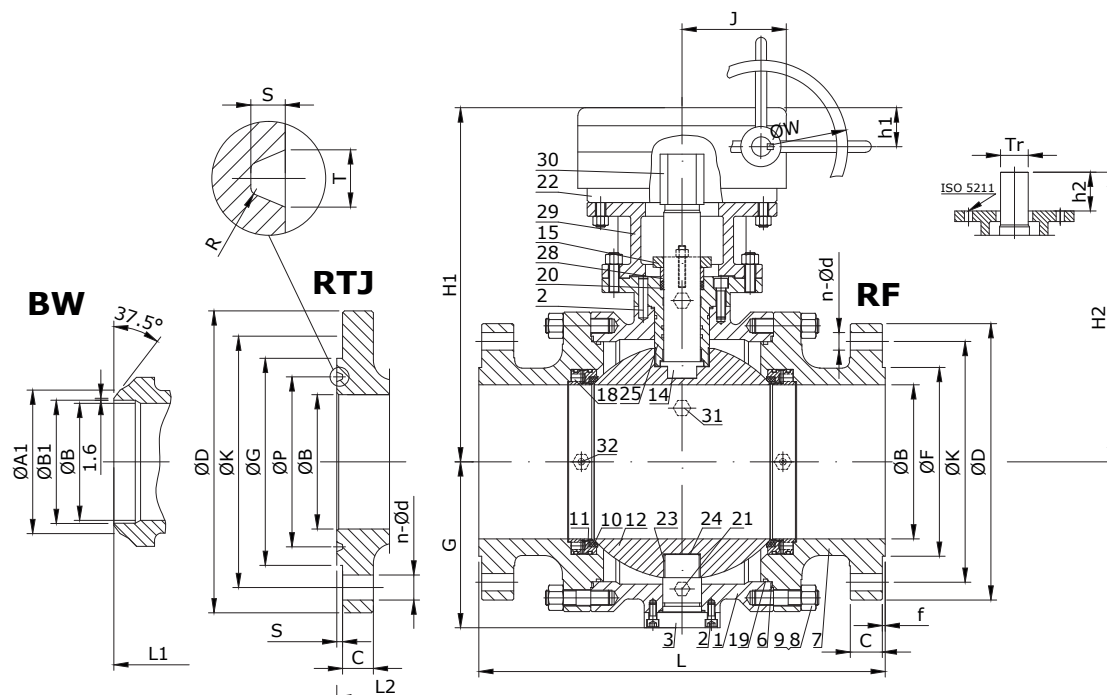
| N° | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BT12_) | A351 CF8M<br>(BT10_) | A351 CF3<br>(BT11_) | A351 CF3M<br>(BT17_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Bottom Cover    | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket     | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 9  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 10 | Seat            | DEVLON               |                               | DEVLON                         |                                | PEEK                |                      | PEEK                |                      |
| 11 | Seat Retainer   | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 18 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 19 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 20 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 21 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 23 | Slide Bearing   | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 24 | Thrust Bearing  | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 25 | Seal Ring       | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 28 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 29 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 30 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 31 | Relief Valve    | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 32 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 600 NPS10-12"**


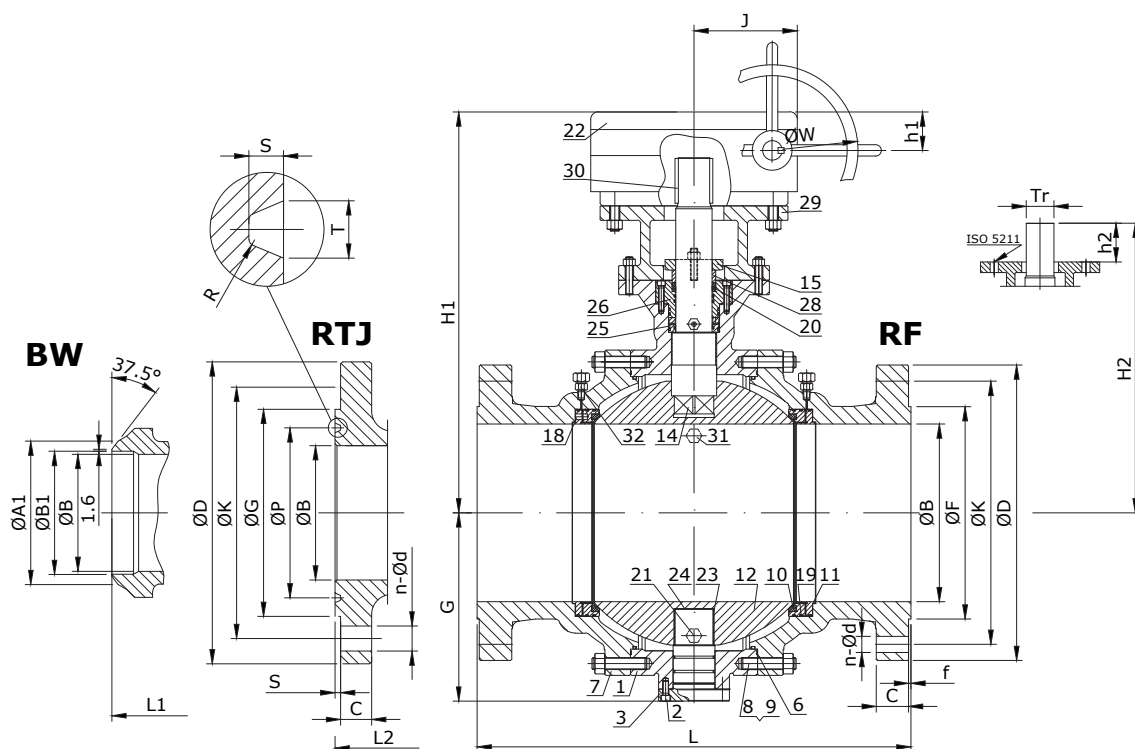
| N° | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BT12_) | A351 CF8M<br>(BT10_) | A351 CF3<br>(BT11_) | A351 CF3M<br>(BT17_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Bottom Cover    | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket     | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 9  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 10 | Seat            | DEVLOX               |                               | DEVLOX                         |                                | PEEK                |                      | PEEK                |                      |
| 11 | Seat Retainer   | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 18 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 19 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 20 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 21 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 23 | Slide Bearing   | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 24 | Thrust Bearing  | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 25 | Seal Ring       | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 28 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 29 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 30 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 31 | Relief Valve    | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 32 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 600 NPS14-18"**


| N° | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BT12_) | A351 CF8M<br>(BT10_) | A351 CF3<br>(BT11_) | A351 CF3M<br>(BT17_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Bottom Cover    | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket     | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 9  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 10 | Seat            | DEVLOK               |                               | DEVLOK                         |                                | PEEK                |                      | PEEK                |                      |
| 11 | Seat Retainer   | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 18 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 19 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 20 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 21 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 23 | Slide Bearing   | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 24 | Thrust Bearing  | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 25 | Seal Ring       | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 28 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 29 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 30 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 31 | Relief Valve    | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 32 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

**SERIES BV BT ANSI RANGE**  
**Class 600 NPS20-28"**



| N° | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BTI2_) | A351 CF8M<br>(BTI0_) | A351 CF3<br>(BTI1_) | A351 CF3M<br>(BTI7_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Bottom Cover    | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 4  | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 6  | Body Gasket     | SS304 +<br>Graphite  | SS316 +<br>Graphite           | SS304 +<br>Graphite            | SS316 +<br>Graphite            | SS304 +<br>Graphite | SS316 +<br>Graphite  | SS304 +<br>Graphite | SS316 +<br>Graphite  |
| 7  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 8  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 9  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 10 | Seat            | DEVLON               |                               | DEVLON                         |                                | PEEK                |                      | PEEK                |                      |
| 11 | Seat Retainer   | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 18 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 19 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 20 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 21 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 23 | Slide Bearing   | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 24 | Thrust Bearing  | SS304 +<br>PTFE      | SS316 +<br>PTFE               | SS304 +<br>PTFE                | SS316 +<br>PTFE                | SS304 +<br>PTFE     | SS316 +<br>PTFE      | SS304 +<br>PTFE     | SS316 +<br>PTFE      |
| 25 | Seal Ring       | ASTM A105            | ASTM A105N                    | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 26 | Top cover       | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 28 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 29 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 30 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 31 | Relief Valve    | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 32 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

The engineer, designing a system or a plant, is responsible for the selection of the correct valve  
Product suitability must be verified, contact manufacturer for information

## Main Valve Parameters - Class 600

## SERIES BV BT ANSI RANGE



| Nominal Size          |                            | inch            | 2"      | 2-1/2"  | 3"      | 4"     | 5"        | 6"         | 8"       | 10"        |
|-----------------------|----------------------------|-----------------|---------|---------|---------|--------|-----------|------------|----------|------------|
|                       |                            | DN              | 50      | 65      | 80      | 100    | 125       | 150        | 200      | 250        |
| End connection        | RF                         | L               | 292     | 330     | 356     | 432    |           | 559        | 660      | 787        |
|                       |                            | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                       |                            | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        |
|                       |                            | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      |
|                       |                            | ØF              | 92,1    | 104,8   | 127     | 157,2  | 185,7     | 215,9      | 269,9    | 323,8      |
|                       |                            | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       |
|                       |                            | f               | 7       | 7       | 7       | 7      | 7         | 7          | 7        | 7          |
|                       |                            | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 |
|                       | BW                         | L1              | 292     | 330     | 356     | 432    |           | 559        | 660      | 787        |
|                       |                            | Schedule No.(1) | 80      | -       | 80      | 80     | -         | 80         | 80       | 80         |
|                       |                            | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                       |                            | ØA1             | 60,3    | -       | 91      | 117    | -         | 172        | 223      | 278        |
|                       |                            | ØB1             | 49,22   | -       | 73,5    | 97     | -         | 146,5      | 193,5    | 243        |
|                       | RTJ                        | L2              | 295     | 333     | 359     | 435    | 3         | 562        | 663      | 790        |
|                       |                            | ØB              | 51      | 65,375  | 76      | 102    | 128,25    | 152        | 200      | 248        |
|                       |                            | ØD              | 165     | 190     | 210     | 275    | 330       | 355        | 420      | 510        |
|                       |                            | ØK              | 127     | 149,2   | 168,3   | 215,9  | 266,7     | 292,1      | 349,2    | 431,8      |
|                       |                            | ØG              | 108     | 127     | 146     | 175    | 210       | 241        | 302      | 356        |
|                       |                            | ØP              | 82,55   | 101,6   | 123,83  | 149,23 | 180,98    | 211,12     | 269,88   | 323,85     |
|                       |                            | C               | 25,4    | 28,6    | 31,8    | 38,1   | 44,5      | 47,7       | 55,6     | 63,5       |
|                       |                            | n-Ød            | 8 - 3/4 | 8 - 7/8 | 8 - 7/8 | 8 - 1  | 8 - 1 1/8 | 12 - 1 1/8 | 12 - 1/4 | 16 - 1 3/8 |
|                       |                            | T               | 11,91   | 11,91   | 11,91   | 11,91  | 11,91     | 11,91      | 11,91    | 11,91      |
|                       |                            | S               | 7,92    | 7,92    | 7,92    | 7,92   | 7,92      | 7,92       | 7,92     | 7,92       |
|                       |                            | R               | 0,8     | 0,8     | 0,8     | 0,8    | 0,8       | 0,8        | 0,8      | 0,8        |
|                       |                            |                 |         |         |         |        |           |            |          |            |
| Top works/Operation   | Lever                      | H               | 186     | 207     | 222     | 279    | -         | -          | -        | -          |
|                       |                            | G               | 101     | 117     | 129     | 160    | -         | -          | -        | -          |
|                       |                            | h               | 400     | 458     | 500     | 600    | -         | -          | -        | -          |
|                       | Gear with handwheel        | H1              | 260     | 277     | 290     | 353    | 424       | 476        | 555      | 618        |
|                       |                            | G               | 101     | 117     | 129     | 160    | 188       | 208        | 242      | 277        |
|                       |                            | h1              | 40      | 40      | 40      | 48     | 60        | 68         | 30       | 40         |
|                       |                            | J               | 96      | 96      | 96      | 115    | 147       | 170        | 215      | 237        |
|                       |                            | ØW              | 240     | 240     | 240     | 280    | 320       | 350        | 320      | 350        |
|                       | With ISO 5211 mounting pad | H2              | 221     | 241     | 256     | 310    | 376       | 425        | 475      | 530        |
|                       |                            | G               | 101     | 117     | 129     | 160    | 188       | 208        | 242      | 277        |
|                       |                            | h2              | 35      | 38      | 40      | 45     | 62        | 74         | 75       | 80         |
|                       |                            | ISO             | F10     | F10     | F10     | F12    | F16       | F16        | F16      | F20        |
|                       |                            | Tr              | 24      | 26      | 26      | 30     | 40        | 40         | 45       | 50         |
|                       |                            | Torque (Nm) (2) | 173     | 314     | 418     | 700    | 1333      | 1800       | 2982     | 4773       |
|                       |                            |                 |         |         |         |        |           |            |          |            |
| Kvs-value             |                            | -               | -       | -       | -       | -      | -         | -          | -        |            |
| Approx. Weight RF (3) |                            | 35              | 55      | 70      | 98      | 189    | 257       | 460        | 672      |            |
| Approx. Weight BW     |                            | 28              | 45      | 57      | 75      | 154    | 213       | 396        | 569      |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Main Valve Parameters - Class 600

## SERIES BV BT ANSI RANGE



| Nominal Size        |                            | inch                  | 12"        | 14"        | 16"        | 18"        | 20"        | 24"    | 26"    | 28"        |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|--------|--------|------------|
|                     |                            | DN                    | 300        | 350        | 400        | 450        | 500        | 600    | 650    | 700        |
| End connection      | RF                         | L                     | 838        | 889        | 991        | 1092       | 1194       | 1397   | 1448   | 1549       |
|                     |                            | ØB                    | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                     |                            | ØD                    | 560        | 605        | 685        | 745        | 815        | 940    | 1015   | 1075       |
|                     |                            | ØK                    | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  | 914,4  | 965,2      |
|                     |                            | ØF                    | 381        | 412,8      | 469,9      | 533,4      | 584,2      | 692,2  | 749    | 800        |
|                     |                            | C                     | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  | 108    | 111,2      |
|                     |                            | f                     | 7          | 7          | 7          | 7          | 7          | 7      | 7      | 7          |
|                     |                            | n-Ød                  | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 | 28 - 2 | 28 - 2 1/8 |
|                     | BW                         | L1                    | 838        | 889        | 991        | 1092       | 1194       | 1397   | 1448   | 1549       |
|                     |                            | Schedule No.(1)       | 80         | 80         | 80         | 80         | 80         | 80     | -      | -          |
|                     |                            | ØB                    | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                     |                            | ØA1                   | 329        | 362        | 413        | 464        | 516        | 619    | -      | -          |
|                     |                            | ØB1                   | 289        | 317,5      | 363,5      | 409,5      | 455,5      | 547,5  | -      | -          |
|                     | RTJ                        | L2                    | 841        | 892        | 994        | 1095       | 1200       | 1407   | 1461   | 1562       |
|                     |                            | ØB                    | 299        | 327        | 375        | 419        | 464        | 559    | 603    | 648        |
|                     |                            | ØD                    | 560        | 605        | 685        | 745        | 815        | 940    | 1015   | 1075       |
|                     |                            | ØK                    | 489        | 527        | 603,2      | 654        | 723,9      | 838,2  | 914,4  | 965,2      |
|                     |                            | ØG                    | 413        | 457        | 508        | 575        | 635        | 749    | 810    | 861        |
|                     |                            | ØP                    | 981        | 419,1      | 469,9      | 533,4      | 584,2      | 692,15 | 749,3  | 800,1      |
|                     |                            | C                     | 66,7       | 69,9       | 76,2       | 82,6       | 88,9       | 101,6  | 108    | 111,2      |
|                     |                            | n-Ød                  | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 3/4 | 24 - 1 3/4 | 24 - 2 | 28 - 2 | 28 - 2 1/8 |
|                     |                            | T                     | 11,91      | 11,91      | 11,91      | 11,91      | 13,49      | 16,66  | 19,84  | 19,84      |
|                     |                            | S                     | 7,92       | 7,92       | 7,92       | 7,92       | 9,53       | 11,13  | 12,7   | 12,7       |
|                     |                            | R                     | 0,8        | 0,8        | 0,8        | 0,8        | 1,5        | 1,5    | 1,5    | 1,5        |
|                     |                            | H                     | -          | -          | -          | -          | -          | -      | -      | -          |
| Top works/Operation | Lever                      | G                     | -          | -          | -          | -          | -          | -      | -      | -          |
|                     |                            | h                     | -          | -          | -          | -          | -          | -      | -      | -          |
|                     |                            | H1                    | 735        | 764        | 810        | 995        | 1055       | 1125   | 1155   | 1285       |
|                     | Gear with handwheel        | G                     | 325        | 363        | 415        | 480        | 518        | 661    | 685    | 764        |
|                     |                            | h1                    | 45         | 50         | 50         | 60         | 60         | 60     | 60     | 65         |
|                     |                            | J                     | 275        | 305        | 305        | 380        | 380        | 384    | 384    | 516        |
|                     |                            | ØW                    | 400        | 500        | 500        | 500        | 500        | 600    | 600    | 600        |
|                     | With ISO 5211 mounting pad | H2                    | 626        | 673        | 730        | 885        | 945        | 1040   | 1090   | 1203       |
|                     |                            | G                     | 325        | 363        | 415        | 480        | 518        | 661    | 685    | 764        |
|                     |                            | h2                    | 90         | 110        | 125        | 135        | 135        | 180    | 195    | 210        |
|                     |                            | ISO                   | F25        | F30        | F30        | F35        | F35        | F40    | F40    | F48        |
|                     |                            | Tr                    | 60         | 75         | 85         | 90         | 90         | 120    | 130    | 140        |
|                     |                            | Torque (Nm) (2)       | 6545       | 8964       | 13182      | 17818      | 26364      | 38636  | 43960  | 52727      |
|                     |                            | Kvs-value             | -          | -          | -          | -          | -          | -      | -      | -          |
|                     |                            | Approx. Weight RF (3) | 980        | 1330       | 1895       | 2513       | 3085       | 5610   | 7570   | 10190      |
|                     |                            | Approx. Weight BW     | 858        | 1150       | 1667       | 2225       | 2731       | 5172   | 6995   | 9544       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

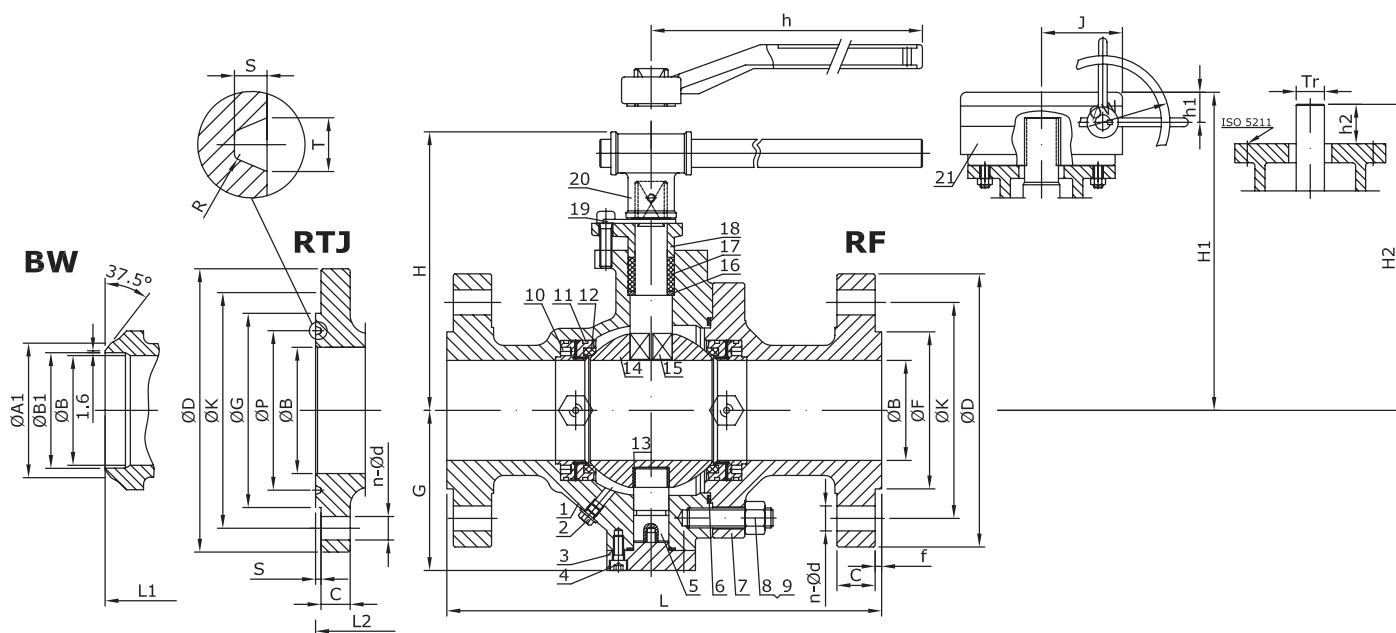
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

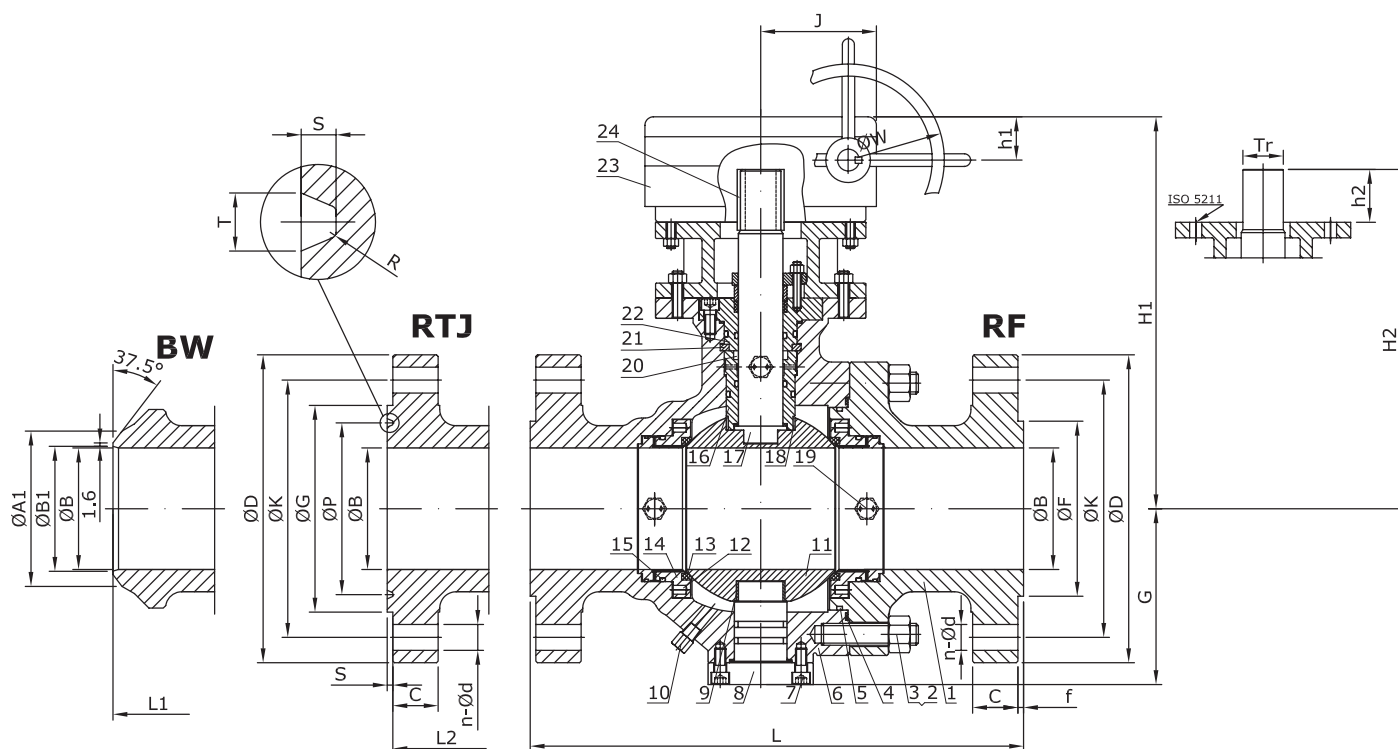
# Main Parts and Materials

## SERIES BV BT ANSI RANGE Class 900 NPS2-4"



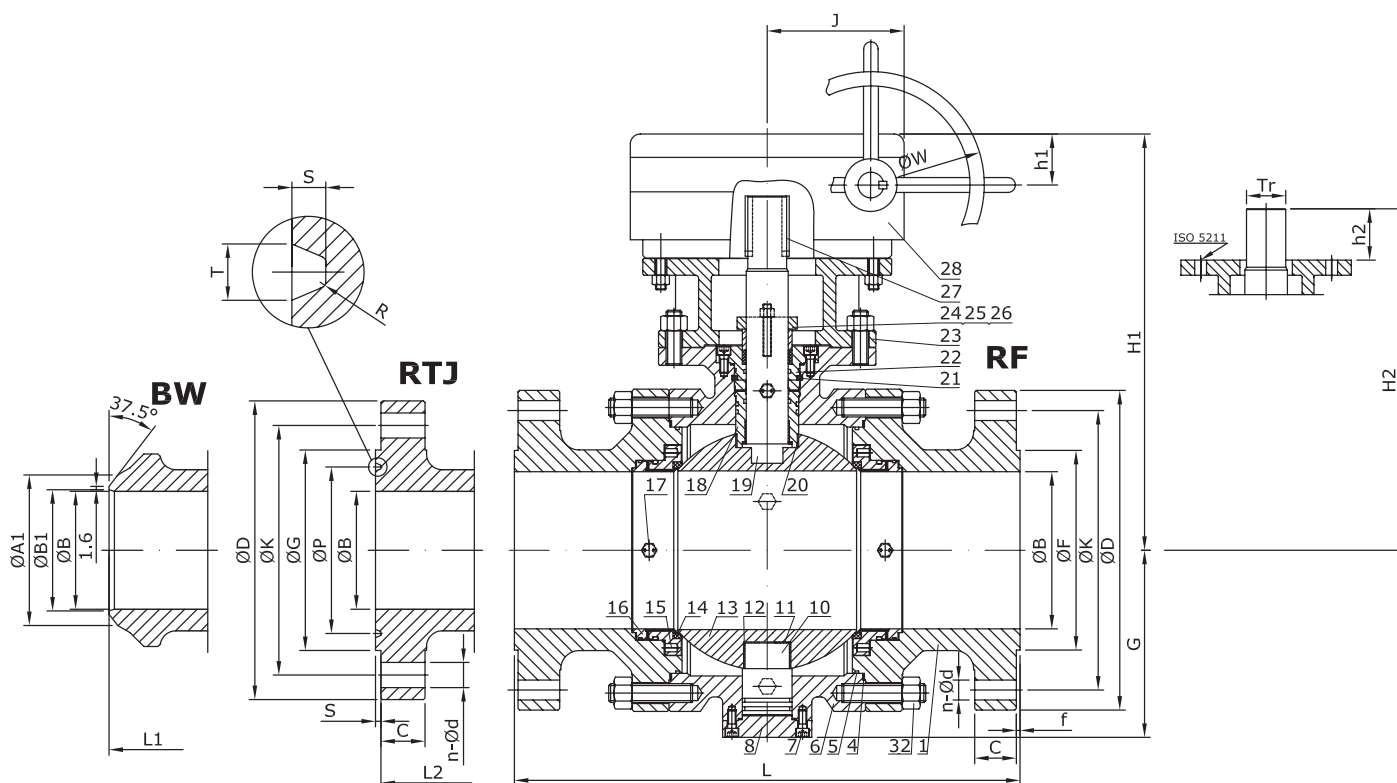
| N° | Part name      | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BTI2_)   | A351 CF8M<br>(BTI0_) | A351 CF3<br>(BTI1_)   | A351 CF3M<br>(BTI7_) |
|----|----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|-----------------------|----------------------|-----------------------|----------------------|
| 1  | Body           | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3              | A351 CF3M            |
| 2  | Drain Plug     | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 3  | Bottom Cover   | A105                 | A105N                         | A350 LF2                       |                                | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 4  | Screw          | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8               | A193 B8M             | A193 B8M              |                      |
| 5  | Trunnion       | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 6  | Body Gasket    | SS304+<br>Graphite   | SS316+<br>Graphite            | SS304+<br>Graphite             | SS316+<br>Graphite             | SS304+<br>Graphite    | SS316+<br>Graphite   | SS304+<br>Graphite    | SS316+<br>Graphite   |
| 7  | Body Cap       | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3              | A351 CF3M            |
| 8  | Body Bolt      | A193 B7              | A193 B7M                      | A320 L7                        | A320 L7                        | A193 B8               | A193 B8M             | A193 B8M              |                      |
| 9  | Body Nut/      | A194 2H              | A194 2HM                      | A194 4                         | A194 4                         | A194 8                | A194 8M              | A194 8M               |                      |
| 10 | Seat Spring    | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750         |                      | Inconel X-750         |                      |
| 11 | O Ring         | VITON                |                               | VITON                          |                                | VITON                 |                      | VITON                 |                      |
| 12 | Seat           | DEVLON               |                               | DEVLON                         |                                | PEEK                  |                      | PEEK                  |                      |
| 13 | Slide Bearing  | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE            | SS316+PTFE           | SS304+PTFE            | SS316+PTFE           |
| 14 | Ball           | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 15 | Stem           | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 16 | Packing Gasket | A276 410             | A276 316                      | A276 304                       | A276 316                       | A276 304              | A276 316             | A276 316              | A276 316             |
| 17 | Packing        | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                  |                      | PTFE                  |                      |
| 18 | Gland Flange   | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8              | A351 CF8M            | A351 CF3              | A351 CF3M            |
| 19 | Positioner     | AISI 1035            |                               | AISI 1035                      |                                | Stainless Steel       |                      | Stainless Steel       |                      |
| 20 | Lever          | A216 WCB             |                               | A216 WCB                       |                                | A216 WCB+Epoxy Coated |                      | A216 WCB+Epoxy Coated |                      |
| 21 | Worm Gear      | Assembly             |                               | Assembly                       |                                | Assembly              |                      | Assembly              |                      |

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 900 NPS6"**


| Nº | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BT12_) | A351 CF8M<br>(BT10_) | A351 CF3<br>(BT11_) | A351 CF3M<br>(BT17_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 4  | Body Gasket     | SS304+<br>Graphite   | SS316+<br>Graphite            | SS304+<br>Graphite             | SS316+<br>Graphite             | SS304+<br>Graphite  | SS316+<br>Graphite   | SS304+<br>Graphite  | SS316+<br>Graphite   |
| 5  | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 6  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 7  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 8  | Bottom Cover    | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 9  | Slide Bearing   | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 10 | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 11 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 12 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 13 | Seat            | DEVLON               |                               | DEVLON                         |                                | PEEK                |                      | PEEK                |                      |
| 14 | Seat Retainer   | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 15 | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 16 | Seal Ring       | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 17 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | Nitronic 50                    | A182 F304           | Nitronic 50          | A182 F304L          | Nitronic 50          |
| 18 | Slide Bearing   | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 19 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 20 | Gasket          | A276 410             | A276 316                      | A276 304                       | A276 316                       | A276 304            | A276 316             | A276 316            | A276 316             |
| 21 | Split Ring      | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Top cover       | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 23 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 24 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |

## Main Parts and Materials

**SERIES BV BT ANSI RANGE**  
**Class 900 NPS8-24"**


| N° | Part name       | A216 WCB<br>(BTA02_) | A216 WCB/<br>NACE<br>(BTA02_) | A352 LCB/<br>SS304<br>(BTA82_) | A352 LCB/<br>SS316<br>(BTA83_) | A351 CF8<br>(BT12_) | A351 CF8M<br>(BT10_) | A351 CF3<br>(BT11_) | A351 CF3M<br>(BT17_) |
|----|-----------------|----------------------|-------------------------------|--------------------------------|--------------------------------|---------------------|----------------------|---------------------|----------------------|
| 1  | Body Cap        | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 2  | Body Bolt       | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 3  | Body Nut        | A194 2H              | A194 2HM                      | A194 4                         |                                | A194 8              | A194 8M              | A194 8M             |                      |
| 4  | Body Gasket     | SS304+<br>Graphite   | SS316+<br>Graphite            | SS304+<br>Graphite             | SS316+<br>Graphite             | SS304+<br>Graphite  | SS316+<br>Graphite   | SS304+<br>Graphite  | SS316+<br>Graphite   |
| 5  | O Ring          | VITON                |                               | VITON                          |                                | VITON               |                      | VITON               |                      |
| 6  | Body            | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 7  | Screw           | A193 B7              | A193 B7M                      | A320 L7                        |                                | A193 B8             | A193 B8M             | A193 B8M            |                      |
| 8  | Bottom Cover    | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 9  | Drain Plug      | AISI 1035            | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 10 | Trunnion        | A182 F6a             | 17-4PH                        | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 11 | Thrust Bearing  | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 12 | Slide Bearing   | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 13 | Ball            | A105.ENP             | A105N.ENP                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 14 | Seat            | DEVLON               |                               | DEVLON                         |                                | PEEK                |                      | PEEK                |                      |
| 15 | Seat Spring     | 17-7PH               |                               | 17-7PH                         |                                | Inconel X-750       |                      | Inconel X-750       |                      |
| 16 | Seat Retainer   | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 17 | Grease Injector | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |
| 18 | Seal Ring       | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 19 | Stem            | A182 F6a             | 17-4PH                        | A182 F304                      | Nitronic 50                    | A182 F304           | Nitronic 50          | A182 F304L          | Nitronic 50          |
| 20 | Slide Bearing   | SS304+PTFE           | SS316+PTFE                    | SS304+PTFE                     | SS316+PTFE                     | SS304+PTFE          | SS316+PTFE           | SS304+PTFE          | SS316+PTFE           |
| 21 | Split Ring      | A105                 | A105N                         | A350 LF2                       |                                | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 22 | Top cover       | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 23 | Yoke            | A216 WCB             |                               | A216 WCB                       |                                | A351 CF8            |                      | A351 CF8            |                      |
| 24 | Packing         | Flexible Graphite    |                               | Flexible Graphite              |                                | PTFE                |                      | PTFE                |                      |
| 25 | Packing Gland   | A182 F6a             | A182 F316                     | A182 F304                      | A182 F316                      | A182 F304           | A182 F316            | A182 F304L          | A182 F316L           |
| 26 | Gland Flange    | A216 WCB             |                               | A352 LCB                       |                                | A351 CF8            | A351 CF8M            | A351 CF3            | A351 CF3M            |
| 27 | Key             | AISI 1035            |                               | AISI 1035                      |                                | A276 304            |                      | A276 304            |                      |
| 28 | Worm Gear       | Assembly             |                               | Assembly                       |                                | Assembly            |                      | Assembly            |                      |

## Main Valve Parameters - Class 900

## SERIES BV BT ANSI RANGE



| Nominal Size          |                            | inch            | 2"      | 2-1/2" | 3"      | 4"        | 5"        | 6"         | 8"         |
|-----------------------|----------------------------|-----------------|---------|--------|---------|-----------|-----------|------------|------------|
|                       |                            | DN              | 50      | 65     | 80      | 100       | 125       | 150        | 200        |
| End connection        | RF                         | L               | 368     | 419    | 381     | 457       |           | 610        | 737        |
|                       |                            | ØB              | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                       |                            | ØD              | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                       |                            | ØK              | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                       |                            | ØF              | 92,1    | 104,8  | 127     | 157,2     | 185,7     | 215,9      | 269,9      |
|                       |                            | C               | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                       |                            | f               | 7       | 7      | 7       | 7         | 7         | 7          | 7          |
|                       |                            | n-Ød            | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                       | BW                         | L1              | 368     | 419    | 381     | 457       |           | 610        | 737        |
|                       |                            | Schedule No.(1) | 160     | -      | 160     | 120       | -         | 120        | 100        |
|                       |                            | ØB              | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                       |                            | ØA1             | 60,3    | -      | 91      | 117       | -         | 172        | 223        |
|                       |                            | ØB1             | 38,16   | -      | 66,5    | 92        | -         | 140        | 189        |
|                       | RTJ                        | L2              | 371     | 422    | 384     | 460       | 3         | 613        | 740        |
|                       |                            | ØB              | 48      | 62,375 | 73      | 98        | 123,2     | 146        | 191        |
|                       |                            | ØD              | 215     | 245    | 240     | 290       | 350       | 380        | 470        |
|                       |                            | ØK              | 165,1   | 190,5  | 190,5   | 235       | 279,4     | 317,5      | 393,7      |
|                       |                            | ØG              | 124     | 137    | 156     | 181       | 216       | 241        | 308        |
|                       |                            | ØP              | 95,25   | 107,95 | 123,83  | 149,23    | 180,98    | 211,12     | 269,88     |
|                       |                            | C               | 38,1    | 41,3   | 38,1    | 44,5      | 50,8      | 55,6       | 63,5       |
|                       |                            | n-Ød            | 8 - 7/8 | 8 - 1  | 8 - 7/8 | 8 - 1 1/8 | 8 - 1 1/4 | 12 - 1 1/8 | 12 - 1 3/8 |
|                       |                            | T               | 11,91   | 11,91  | 11,91   | 11,91     | 11,91     | 11,91      | 11,91      |
|                       |                            | S               | 7,92    | 7,92   | 7,92    | 7,92      | 7,92      | 7,92       | 7,92       |
|                       |                            | R               | 0,8     | 0,8    | 0,8     | 0,8       | 0,8       | 0,8        | 0,8        |
|                       |                            |                 |         |        |         |           |           |            |            |
| Top works/Operation   | Lever                      | H               | 191     | 207    | 232     | -         | -         | -          | -          |
|                       |                            | G               | 107     | 117    | 137     | -         | -         | -          | -          |
|                       |                            | h               | 400     | 458    | 500     | -         | -         | -          | -          |
|                       | Gear with handwheel        | H1              | 265     | 277    | 304     | 377       | 424       | 559        | 661        |
|                       |                            | G               | 107     | 117    | 137     | 160       | 188       | 217        | 275        |
|                       |                            | h1              | 40      | 40     | 40      | 53        | 60        | 80         | 45         |
|                       |                            | J               | 96      | 96     | 96      | 139       | 147       | 224        | 275        |
|                       |                            | ØW              | 240     | 240    | 240     | 300       | 320       | 500        | 400        |
|                       | With ISO 5211 mounting pad | H2              | 226     | 241    | 270     | 337       | 376       | 480        | 577        |
|                       |                            | G               | 107     | 117    | 137     | 160       | 188       | 217        | 275        |
|                       |                            | h2              | 35      | 38     | 40      | 57        | 62        | 75         | 115        |
|                       |                            | ISO             | F10     | F10    | F10     | F14       | F16       | F25        | F25        |
|                       |                            | Tr              | 24      | 26     | 28      | 32        | 40        | 50         | 70         |
|                       |                            | Torque (Nm) (2) | 213     | 314    | 732     | 866       | 1333      | 2335       | 3792       |
|                       |                            |                 |         |        |         |           |           |            |            |
| Kvs-value             |                            | -               | -       | -      | -       | -         | -         | -          |            |
| Approx. Weight RF (3) |                            | 42              | 55      | 97     | 150     | 189       | 330       | 590        |            |
| Approx. Weight BW     |                            | 28              | 45      | 80     | 122     | 154       | 270       | 488        |            |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## SERIES BV BT ANSI RANGE



## Main Valve Parameters - Class 900

| Nominal Size        |                            | inch                  | 10"        | 12"        | 14"        | 16"        | 18"        | 20"    | 24"        |
|---------------------|----------------------------|-----------------------|------------|------------|------------|------------|------------|--------|------------|
|                     |                            | DN                    | 250        | 300        | 350        | 400        | 450        | 500    | 600        |
| End connection      | RF                         | L                     | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                     |                            | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                     |                            | ØD                    | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                     |                            | ØK                    | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                     |                            | ØF                    | 323,8      | 381        | 412,8      | 469,9      | 533,4      | 584,2  | 692,2      |
|                     |                            | C                     | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                     |                            | f                     | 7          | 7          | 7          | 7          | 7          | 7      | 7          |
|                     |                            | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                     | BW                         | L1                    | 838        | 965        | 1029       | 1130       | 1219       | 1321   | 1549       |
|                     |                            | Schedule No.(1)       | 100        | 100        | 100        | 100        | 100        | 100    | 100        |
|                     |                            | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                     |                            | ØA1                   | 278        | 329        | 362        | 413        | 464        | 516    | 619        |
|                     |                            | ØB1                   | 236,5      | 281        | 308        | 354        | 398,5      | 443    | 532        |
|                     | RTJ                        | L2                    | 841        | 968        | 1039       | 1140       | 1232       | 1334   | 1568       |
|                     |                            | ØB                    | 238        | 282        | 311        | 356        | 400        | 445    | 533        |
|                     |                            | ØD                    | 545        | 610        | 640        | 705        | 785        | 855    | 1040       |
|                     |                            | ØK                    | 469,9      | 533,4      | 558,8      | 616        | 685,8      | 749,3  | 901,7      |
|                     |                            | ØG                    | 362        | 419        | 467        | 524        | 594        | 648    | 772        |
|                     |                            | ØP                    | 323,85     | 381        | 419,1      | 469,9      | 533,4      | 584,2  | 692,15     |
|                     |                            | C                     | 69,9       | 79,4       | 85,8       | 88,9       | 101,6      | 108    | 139,7      |
|                     |                            | n-Ød                  | 16 - 1 3/8 | 20 - 1 3/8 | 20 - 1 1/2 | 20 - 1 5/8 | 20 - 1 7/8 | 20 - 2 | 20 - 2 1/2 |
|                     |                            | T                     | 11,91      | 11,91      | 16,66      | 16,66      | 19,84      | 19,84  | 26,97      |
|                     |                            | S                     | 7,92       | 7,92       | 11,13      | 11,13      | 12,7       | 12,7   | 15,88      |
|                     |                            | R                     | 0,8        | 0,8        | 1,5        | 1,5        | 1,5        | 1,5    | 2,4        |
| Top works/Operation | Lever                      | H                     | -          | -          | -          | -          | -          | -      | -          |
|                     |                            | G                     | -          | -          | -          | -          | -          | -      | -          |
|                     |                            | h                     | -          | -          | -          | -          | -          | -      | -          |
|                     | Gear with handwheel        | H1                    | 715        | 755        | 847        | 892        | 968        | 1023   | 1149       |
|                     |                            | G                     | 317        | 357        | 400        | 445        | 510        | 533    | 625        |
|                     |                            | h1                    | 50         | 50         | 60         | 60         | 60         | 60     | 60         |
|                     |                            | J                     | 305        | 305        | 380        | 380        | 380        | 384    | 384        |
|                     |                            | ØW                    | 500        | 500        | 500        | 500        | 500        | 600    | 600        |
|                     | With ISO 5211 mounting pad | H2                    | 619        | 672        | 747        | 797        | 872        | 900    | 1080       |
|                     |                            | G                     | 317        | 357        | 400        | 445        | 510        | 533    | 625        |
|                     |                            | h2                    | 115        | 120        | 145        | 150        | 150        | 165    | 195        |
|                     |                            | ISO                   | F30        | F30        | F35        | F35        | F35        | F40    | F40        |
|                     |                            | Tr                    | 70         | 75         | 90         | 105        | 115        | 115    | 130        |
|                     |                            | Torque (Nm) (2)       | 5713       | 6756       | 10777      | 16707      | 23223      | 35369  | 52377      |
|                     |                            | Kvs-value             | -          | -          | -          | -          | -          | -      | -          |
|                     |                            | Approx. Weight RF (3) | 812        | 1370       | 1680       | 2310       | 3140       | 3690   | 6494       |
|                     |                            | Approx. Weight BW     | 670        | 1174       | 1457       | 2041       | 2780       | 3242   | 5678       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

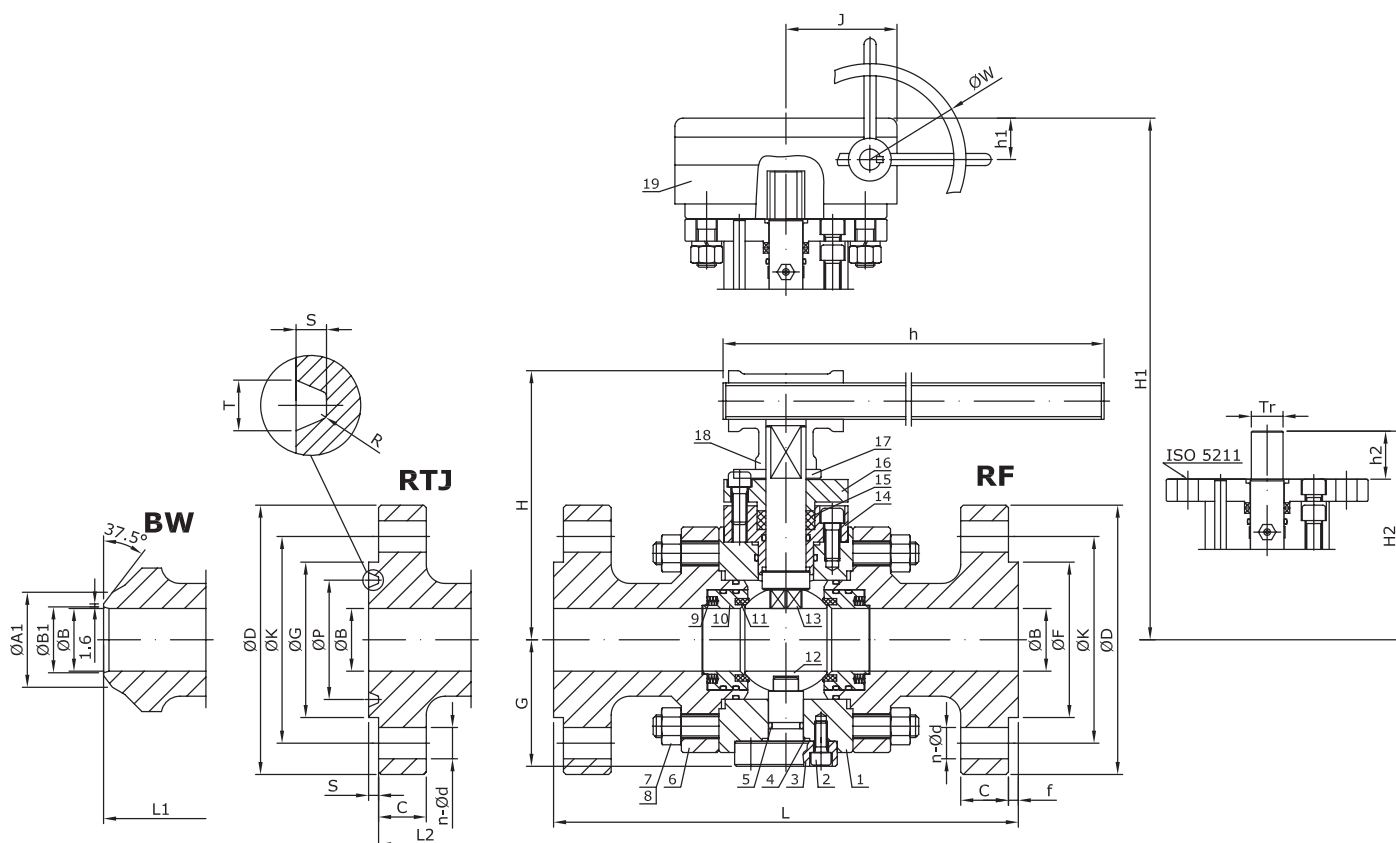
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

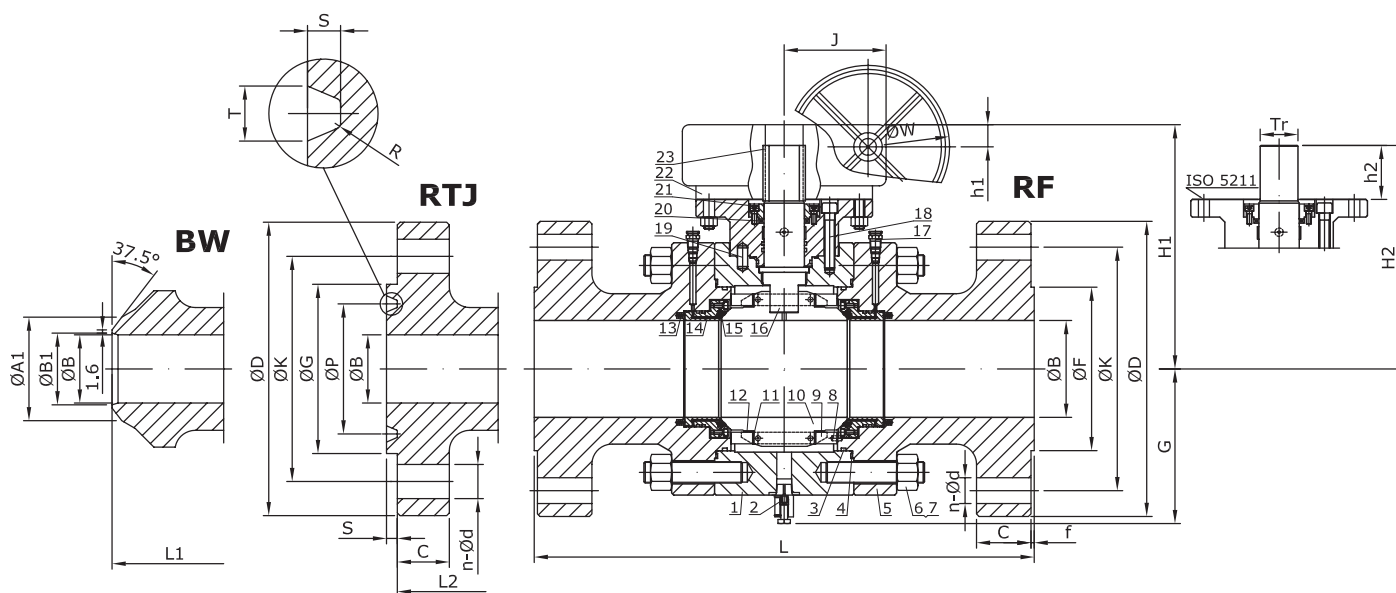
For more information about flanged and welded ends refer to page 16

## Main Parts and Materials

**SERIES BV B9 ANSI RANGE**  
**Class 1500 NPS2-4"**


| Nº | Part name     | A105<br>(B9A02_)  | A105/NACE<br>(B9A02_) | A350 LF2/<br>SS304<br>(B9A1_) | A350 LF2/<br>SS316<br>(B9A1_) | A182 F304<br>(B911_)  | A182 F316<br>(B910_) | A182 F304L<br>(B919_) | A182 F316<br>(B9J1_) |
|----|---------------|-------------------|-----------------------|-------------------------------|-------------------------------|-----------------------|----------------------|-----------------------|----------------------|
| 1  | Body          | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 2  | Screw         | A193 B7           | A193 B7M              | A320 L7                       | A320 L7                       | A193 B8               | A193 B8M             | A193 B8M              | A193 B8M             |
| 3  | Bottom Cover  | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 4  | Gasket        | A276 410          | A276 316              | A276 304                      | A276 316                      | A276 304              | A276 316             | A276 316              | A276 316             |
| 5  | O Ring        | VITON             |                       | VITON                         |                               | VITON                 |                      | VITON                 |                      |
| 6  | Body Cap      | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 7  | Body Bolt     | A193 B7           | A193 B7M              | A320 L7                       | A320 L7                       | A193 B8               | A193 B8M             | A193 B8M              | A193 B8M             |
| 8  | Body Nut      | A194 2H           | A194 2HM              | A194 4                        | A194 4                        | A194 8                | A194 8M              | A194 8M               | A194 8M              |
| 9  | Seat Spring   | 17-7PH            |                       | 17-7PH                        |                               | Inconel X-750         |                      | Inconel X-750         |                      |
| 10 | Seat Retainer | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 11 | Seat          | DEVLON            |                       | DEVLON                        |                               | PEEK                  |                      | PEEK                  |                      |
| 12 | Ball          | A105.ENP          | A105N.ENP             | A182 F304                     | A182 F316                     | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 13 | Stem          | A182 F6a          | 17-4PH                | A182 F304                     | Nitronic 50                   | A182 F304             | Nitronic 50          | A182 F304L            | Nitronic 50          |
| 14 | Top cover     | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 15 | Packing       | Flexible Graphite |                       | Flexible Graphite             |                               | PTFE                  |                      | PTFE                  |                      |
| 16 | Gland Flange  | A105              | A105N                 | A350 LF2                      | A350 LF2                      | A182 F304             | A182 F316            | A182 F304L            | A182 F316L           |
| 17 | Positioner    | AISI 1035         |                       | AISI 1035                     |                               | Stainless Steel       |                      | Stainless Steel       |                      |
| 18 | Lever         | A216 WCB          |                       | A216 WCB                      |                               | A216 WCB+Epoxy Coated |                      | A216 WCB+Epoxy Coated |                      |
| 19 | Worm Gear     | Assembly          |                       | Assembly                      |                               | Assembly              |                      | Assembly              |                      |

## Main Parts and Materials

**SERIES BV B9 ANSI RANGE**  
**Class 1500 NPS6-16"**


| Nº | Part name       | A105<br>(B9A02_)   | A105/NACE<br>(B9A02_) | A350 LF2/<br>SS304<br>(B9A1_) | A350 LF2/<br>SS316<br>(B9A1_) | A182 F304<br>(B9I1_) | A182 F316<br>(B9I0_) | A182 F304L<br>(B9I9_) | A182 F316<br>(B9J1_) |
|----|-----------------|--------------------|-----------------------|-------------------------------|-------------------------------|----------------------|----------------------|-----------------------|----------------------|
| 1  | Body            | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 2  | Drain Plug      | AISI 1035          | A182 F316             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 3  | O Ring          | VITON              |                       | VITON                         |                               | VITON                |                      | VITON                 |                      |
| 4  | Body Gasket     | SS304+<br>Graphite | SS316+<br>Graphite    | SS304+<br>Graphite            | SS316+<br>Graphite            | SS304+<br>Graphite   | SS316+<br>Graphite   | SS304+<br>Graphite    | SS316+<br>Graphite   |
| 5  | Body Cap        | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 6  | Body Bolt       | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 7  | Body Nut        | A194 2H            | A194 2HM              | A194 4                        |                               | A194 8               | A194 8M              | A194 8M               |                      |
| 8  | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 9  | Ball Supporter  | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 10 | Ball            | A105.ENP           | A105N.ENP             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 11 | Slide Bearing   | SS304+PTFE         | SS316+PTFE            | SS304+PTFE                    | SS316+PTFE                    | SS304+PTFE           | SS316+PTFE           | SS304+PTFE            | SS316+PTFE           |
| 12 | Thrust Bearing  | SS304+PTFE         | SS316+PTFE            | SS304+PTFE                    | SS316+PTFE                    | SS304+PTFE           | SS316+PTFE           | SS304+PTFE            | SS316+PTFE           |
| 13 | Seat Spring     | 17-7PH             |                       | 17-7PH                        |                               | Inconel X-750        |                      | Inconel X-750         |                      |
| 14 | Seat Retainer   | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 15 | Seat            | DEVILON            |                       | DEVILON                       |                               | PEEK                 |                      | PEEK                  |                      |
| 16 | Stem            | A182 F6a           | 17-4PH                | A182 F304                     | Nitronic 50                   | A182 F304            | Nitronic 50          | A182 F304L            | Nitronic 50          |
| 17 | Grease Injector | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 18 | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 19 | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 20 | Packing         | Flexible Graphite  |                       | Flexible Graphite             |                               | PTFE                 |                      | PTFE                  |                      |
| 21 | Gland Flange    | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 22 | Worm Gear       | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 23 | Key             | AISI 1035          |                       | AISI 1035                     |                               | A276 304             |                      | A276 304              |                      |

## SERIES BV B9 ANSI RANGE



## Main Valve Parameters - Class 1500

| Nominal Size        |                            | inch                  | 2"      | 2-1/2" | 3"        | 4"        | 5"        | 6"         | 8"         | 10"    | 12"        | 14"        | 16"        |
|---------------------|----------------------------|-----------------------|---------|--------|-----------|-----------|-----------|------------|------------|--------|------------|------------|------------|
|                     |                            | DN                    | 50      | 65     | 80        | 100       | 125       | 150        | 200        | 250    | 300        | 350        | 400        |
| End connection      | RF                         | L                     | 368     | 419    | 470       | 546       |           | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                     |                            | ØB                    | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                     |                            | ØD                    | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                     |                            | ØK                    | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                     |                            | ØF                    | 92,1    | 104,8  | 127       | 157,2     | 185,7     | 215,9      | 269,9      | 323,8  | 381        | 412,8      | 469,9      |
|                     |                            | C                     | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                     |                            | f                     | 7       | 7      | 7         | 7         | 7         | 7          | 7          | 7      | 7          | 7          | 7          |
|                     |                            | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                     | BW                         | L1                    | 368     | 419    | 470       | 546       |           | 705        | 832        | 991    | 1130       | 1257       | 1384       |
|                     |                            | Schedule No.(1)       | 160     | -      | 160       | 120       | -         | 120        | 120        | 120    | 120        | 120        | 120        |
|                     |                            | ØB                    | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                     |                            | ØA1                   | 60,3    | -      | 91        | 117       | -         | 172        | 223        | 278    | 329        | 362        | 413        |
|                     |                            | ØB1                   | 38,16   | -      | 66,5      | 92        | -         | 140        | 182,5      | 230    | 273        | 300        | 344,5      |
|                     | RTJ                        | L2                    | 371     | 422    | 473       | 549       | 3         | 711        | 842        | 1001   | 1146       | 1276       | 1406       |
|                     |                            | ØB                    | 48      | 60,65  | 70        | 92        | 115,1     | 136        | 178        | 222    | 263        | 289        | 330        |
|                     |                            | ØD                    | 215     | 245    | 265       | 310       | 375       | 395        | 485        | 585    | 675        | 750        | 825        |
|                     |                            | ØK                    | 165,1   | 190,5  | 203,2     | 241,3     | 292,1     | 317,5      | 393,7      | 482,6  | 571,5      | 635        | 704,8      |
|                     |                            | ØG                    | 124     | 137    | 168       | 194       | 229       | 248        | 318        | 371    | 438        | 489        | 546        |
|                     |                            | ØP                    | 95,25   | 107,95 | 136,53    | 161,93    | 193,68    | 211,14     | 269,88     | 323,85 | 381        | 419,1      | 469,9      |
|                     |                            | C                     | 38,1    | 41,3   | 47,7      | 54        | 73,1      | 82,6       | 92,1       | 108    | 123,9      | 133,4      | 146,1      |
|                     |                            | n-Ød                  | 8 - 7/8 | 8 - 1  | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 12 - 1 1/2 | 12 - 1 3/4 | 12 - 2 | 16 - 2 1/8 | 16 - 2 3/8 | 16 - 2 5/8 |
|                     |                            | T                     | 11,91   | 11,91  | 11,91     | 11,91     | 11,91     | 13,49      | 16,66      | 16,66  | 23,01      | 26,97      | 30,18      |
|                     |                            | S                     | 7,92    | 7,92   | 7,92      | 7,92      | 7,92      | 9,53       | 11,13      | 11,13  | 14,27      | 15,88      | 17,48      |
|                     |                            | R                     | 0,8     | 0,8    | 0,8       | 0,8       | 0,8       | 1,5        | 1,5        | 1,5    | 1,5        | 2,4        | 2,4        |
| Top works/Operation | Lever                      | H                     | 222     | -      | -         | -         | -         | -          | -          | -      | -          | -          | -          |
|                     |                            | G                     | 101     | -      | -         | -         | -         | -          | -          | -      | -          | -          | -          |
|                     |                            | h                     | 600     | -      | -         | -         | -         | -          | -          | -      | -          | -          | -          |
|                     | Gear with handwheel        | H1                    | 221     | 424    | 260       | 362       | 424       | 430        | 540        | 570    | 747        | 762        | 786        |
|                     |                            | G                     | 101     | 188    | 135       | 179       | 188       | 216        | 295        | 326    | 420        | 438        | 465        |
|                     |                            | h1                    | 48      | 60     | 48        | 70        | 60        | 45         | 50         | 50     | 60         | 60         | 60         |
|                     |                            | J                     | 115     | 147    | 115       | 192       | 147       | 275        | 305        | 305    | 380        | 380        | 380        |
|                     |                            | ØW                    | 280     | 320    | 280       | 400       | 320       | 400        | 500        | 500    | 500        | 500        | 500        |
|                     | With ISO 5211 mounting pad | H2                    | 178     | 376    | 226       | 304       | 376       | 352        | 443        | 470    | 637        | 650        | 695        |
|                     |                            | G                     | 101     | 188    | 135       | 179       | 188       | 216        | 295        | 326    | 420        | 438        | 465        |
|                     |                            | h2                    | 45      | 62     | 55        | 70        | 62        | 90         | 110        | 110    | 135        | 150        | 150        |
|                     |                            | ISO                   | F12     | F16    | F12       | F20       | F16       | F25        | F30        | F30    | F35        | F35        | F35        |
|                     |                            | Tr                    | 30      | 40     | 32        | 45        | 40        | 60         | 75         | 75     | 90         | 115        | 115        |
|                     |                            | Torque (Nm) (2)       | 339     | 1333   | 1201      | 1385      | 1333      | 3995       | 6274       | 9610   | 11336      | 18078      | 28165      |
|                     |                            | Kvs-value             | -       | -      | -         | -         | -         | -          | -          | -      | -          | -          | -          |
|                     |                            | Approx. Weight RF (3) | 72      | 189    | 125       | 207       | 189       | 480        | 815        | 1315   | 2090       | 3976       | 5560       |
|                     |                            | Approx. Weight BW     | 58      | 154    | 99        | 171       | 154       | 396        | 672        | 1070   | 1726       | 3465       | 4880       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

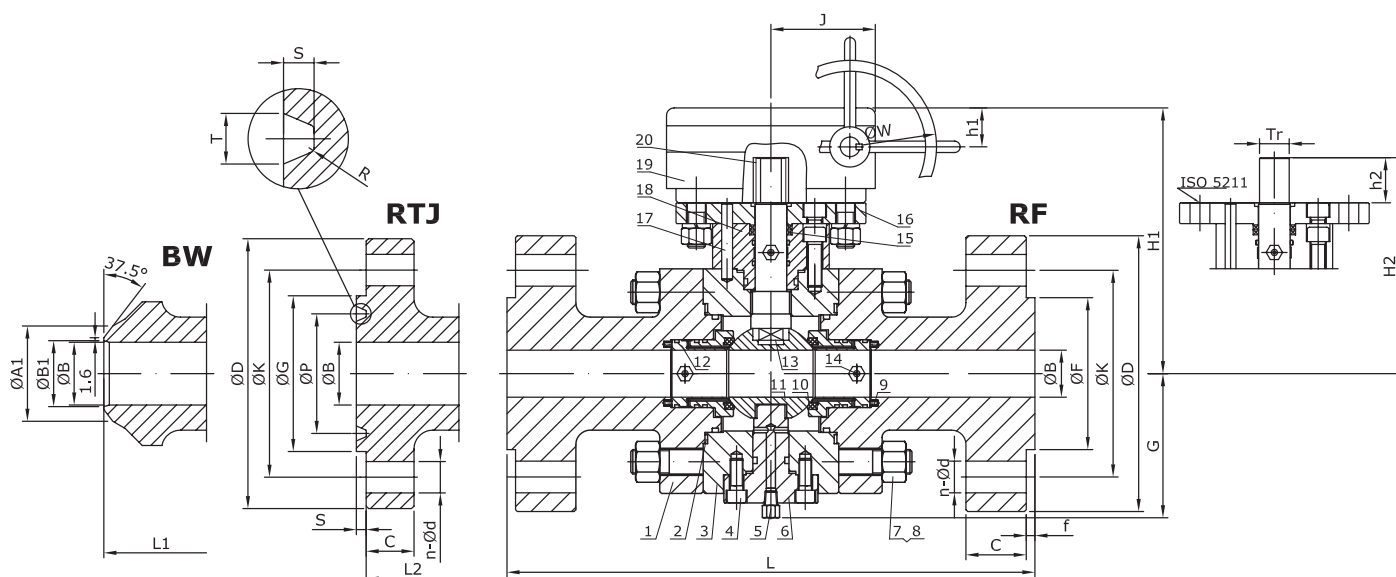
(3) RTJ weight increases approx. by 10%

Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

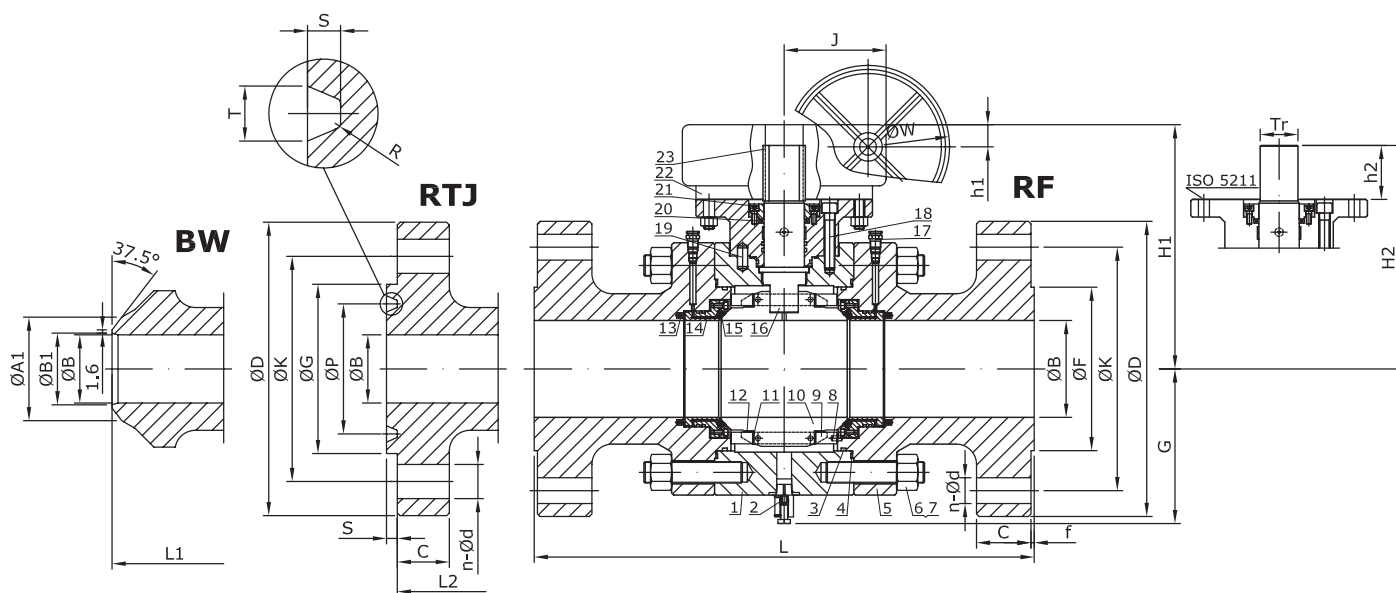
## Main Parts and Materials

**SERIES BV B9 ANSI RANGE**  
**Class 2500 NPS2-4"**


| N° | Part name       | A105<br>(B9A02_)   | A105/NACE<br>(B9A02_) | A350 LF2/<br>SS304<br>(B9A1_) | A350 LF2/<br>SS316<br>(B9A1_) | A182 F304<br>(B9I1_) | A182 F316<br>(B9I0_) | A182 F304L<br>(B9I9_) | A182 F316<br>(B9J1_) |
|----|-----------------|--------------------|-----------------------|-------------------------------|-------------------------------|----------------------|----------------------|-----------------------|----------------------|
| 1  | Body Cap        | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 2  | Body Gasket     | SS304+<br>Graphite | SS316+<br>Graphite    | SS304+<br>Graphite            | SS316+<br>Graphite            | SS304+<br>Graphite   | SS316+<br>Graphite   | SS304+<br>Graphite    | SS316+<br>Graphite   |
| 3  | Body            | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 4  | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 5  | Drain Plug      | AISI 1035          | A182 F316             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 6  | Bottom Cover    | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 7  | Body Bolt       | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 8  | Body Nut        | A194 2H            | A194 2HM              | A194 4                        |                               | A194 8               | A194 8M              | A194 8M               |                      |
| 9  | Seat Spring     | 17-7PH             |                       | 17-7PH                        |                               | Inconel X-750        |                      | Inconel X-750         |                      |
| 10 | Seat            | DEVLON             |                       | DEVLON                        |                               | PEEK                 |                      | PEEK                  |                      |
| 11 | Ball            | A105.ENP           | A105N.ENP             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 12 | Seat Retainer   | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 13 | Stem            | A182 F6a           | 17-4PH                | A182 F304                     | Nitronic 50                   | A182 F304            | Nitronic 50          | A182 F304L            | Nitronic 50          |
| 14 | Grease Injector | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 15 | Packing         | Flexible Graphite  |                       | Flexible Graphite             |                               | PTFE                 |                      | PTFE                  |                      |
| 16 | Gland Flange    | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 17 | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 18 | Top cover       | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 19 | Worm Gear       | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 20 | Key             | AISI 1035          |                       | AISI 1035                     |                               | A276 304             |                      | A276 304              |                      |

# Main Parts and Materials

**SERIES BV B9 ANSI RANGE**  
**Class 2500 NPS6-12"**



| Nº | Part name       | A105<br>(B9A02_)   | A105/NACE<br>(B9A02_) | A350 LF2/<br>SS304<br>(B9A1_) | A350 LF2/<br>SS316<br>(B9A1_) | A182 F304<br>(B9I1_) | A182 F316<br>(B9I0_) | A182 F304L<br>(B9I9_) | A182 F316<br>(B9J1_) |
|----|-----------------|--------------------|-----------------------|-------------------------------|-------------------------------|----------------------|----------------------|-----------------------|----------------------|
| 1  | Body            | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 2  | Drain Plug      | AISI 1035          | A182 F316             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 3  | O Ring          | VITON              |                       | VITON                         |                               | VITON                |                      | VITON                 |                      |
| 4  | Body Gasket     | SS304+<br>Graphite | SS316+<br>Graphite    | SS304+<br>Graphite            | SS316+<br>Graphite            | SS304+<br>Graphite   | SS316+<br>Graphite   | SS304+<br>Graphite    | SS316+<br>Graphite   |
| 5  | Body Cap        | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 6  | Body Bolt       | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 7  | Body Nut        | A194 2H            | A194 2HM              | A194 4                        |                               | A194 8               | A194 8M              | A194 8M               |                      |
| 8  | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 9  | Ball Supporter  | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 10 | Ball            | A105.ENP           | A105N.ENP             | A182 F304                     | A182 F316                     | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 11 | Slide Bearing   | SS304+PTFE         | SS316+PTFE            | SS304+PTFE                    | SS316+PTFE                    | SS304+PTFE           | SS316+PTFE           | SS304+PTFE            | SS316+PTFE           |
| 12 | Thrust Bearing  | SS304+PTFE         | SS316+PTFE            | SS304+PTFE                    | SS316+PTFE                    | SS304+PTFE           | SS316+PTFE           | SS304+PTFE            | SS316+PTFE           |
| 13 | Seat Spring     | 17-7PH             |                       | 17-7PH                        |                               | Inconel X-750        |                      | Inconel X-750         |                      |
| 14 | Seat Retainer   | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 15 | Seat            | DEVLON             |                       | DEVLON                        |                               | PEEK                 |                      | PEEK                  |                      |
| 16 | Stem            | A182 F6a           | 17-4PH                | A182 F304                     | Nitronic 50                   | A182 F304            | Nitronic 50          | A182 F304L            | Nitronic 50          |
| 17 | Grease Injector | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 18 | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 19 | Screw           | A193 B7            | A193 B7M              | A320 L7                       |                               | A193 B8              | A193 B8M             | A193 B8M              |                      |
| 20 | Packing         | Flexible Graphite  |                       | Flexible Graphite             |                               | PTFE                 |                      | PTFE                  |                      |
| 21 | Gland Flange    | ASTM A105          | ASTM A105N            | A350 LF2                      |                               | A182 F304            | A182 F316            | A182 F304L            | A182 F316L           |
| 22 | Worm Gear       | Assembly           |                       | Assembly                      |                               | Assembly             |                      | Assembly              |                      |
| 23 | Key             | AISI 1035          |                       | AISI 1035                     |                               | A276 304             |                      | A276 304              |                      |

## Main Valve Parameters - Class 2500

## SERIES BV B9 ANSI RANGE



| Nominal Size        |                            | inch                  | 2"        | 2-1/2"    | 3"        | 4"        | 5"        | 6"        | 8"         | 10"        | 12"        |
|---------------------|----------------------------|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
|                     |                            | DN                    | 50        | 65        | 80        | 100       | 125       | 150       | 200        | 250        | 300        |
| End connection      | RF                         | L                     | 451       | 508       | 578       | 673       |           | 914       | 1022       | 1270       | 1422       |
|                     |                            | ØB                    | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                     |                            | ØD                    | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                     |                            | ØK                    | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                     |                            | ØF                    | 92,1      | 104,8     | 127       | 157,2     | 185,7     | 215,9     | 269,9      | 323,8      | 381        |
|                     |                            | C                     | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                     |                            | f                     | 7         | 7         | 7         | 7         | 7         | 7         | 7          | 7          | 7          |
|                     |                            | n-Ød                  | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                     | BW                         | L1                    | 451       | 508       | 578       | 673       |           | 914       | 1022       | 1270       | 1422       |
|                     |                            | Schedule No.(1)       | 160       | -         | 160       | 160       | -         | 160       | 160        | 160        | 160        |
|                     |                            | ØB                    | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                     |                            | ØA1                   | 60,3      | -         | 91        | 117       | -         | 172       | 223        | 278        | 329        |
|                     |                            | ØB1                   | 42,82     | -         | 66,5      | 87,5      | -         | 132       | 173        | 216        | 257        |
|                     | RTJ                        | L2                    | 454       | 514       | 584       | 683       | 13        | 927       | 1038       | 1292       | 1444       |
|                     |                            | ØB                    | 38        | 48,925    | 57        | 73        | 92,95     | 111       | 146        | 184        | 219        |
|                     |                            | ØD                    | 235       | 265       | 305       | 355       | 420       | 485       | 550        | 675        | 760        |
|                     |                            | ØK                    | 171,4     | 196,8     | 228,6     | 273       | 323,8     | 368,3     | 438,2      | 539,8      | 619,1      |
|                     |                            | ØG                    | 133       | 149       | 168       | 203       | 241       | 279       | 340        | 425        | 495        |
|                     |                            | ØP                    | 101,6     | 111,13    | 127       | 157,18    | 190,5     | 228,6     | 279,4      | 342,9      | 406,4      |
|                     |                            | C                     | 50,9      | 57,2      | 66,7      | 76,2      | 92,1      | 108       | 127        | 165,1      | 184,2      |
|                     |                            | n-Ød                  | 8 - 1 1/8 | 8 - 1 1/4 | 8 - 1 3/8 | 8 - 1 5/8 | 8 - 1 7/8 | 8 - 2 1/8 | 12 - 2 1/8 | 12 - 2 5/8 | 12 - 2 7/8 |
|                     |                            | T                     | 11,91     | 13,49     | 13,49     | 16,66     | 19,84     | 19,84     | 23,01      | 30,18      | 33,32      |
|                     |                            | S                     | 7,92      | 9,53      | 9,53      | 11,13     | 12,7      | 12,7      | 14,27      | 17,48      | 17,48      |
|                     |                            | R                     | 0,8       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5       | 1,5        | 2,4        | 2,4        |
| Top works/Operation | Lever                      | H                     | -         | -         | -         | -         | -         | -         | -          | -          | -          |
|                     |                            | G                     | -         | -         | -         | -         | -         | -         | -          | -          | -          |
|                     |                            | h                     | -         | -         | -         | -         | -         | -         | -          | -          | -          |
|                     | Gear with handwheel        | H1                    | 288       | 424       | 330       | 497       | 424       | 591       | 667        | 765        | 780        |
|                     |                            | G                     | 121       | 188       | 152       | 205       | 188       | 301       | 390        | 425        | 445        |
|                     |                            | h1                    | 68        | 60        | 70        | 45        | 60        | 45        | 50         | 60         | 60         |
|                     |                            | J                     | 170       | 147       | 192       | 275       | 147       | 275       | 305        | 380        | 380        |
|                     |                            | ØW                    | 350       | 320       | 400       | 400       | 320       | 400       | 500        | 500        | 500        |
|                     | With ISO 5211 mounting pad | H2                    | 214       | 376       | 260       | 408       | 376       | 517       | 585        | 665        | 685        |
|                     |                            | G                     | 121       | 188       | 152       | 205       | 188       | 301       | 390        | 425        | 445        |
|                     |                            | h2                    | 50        | 62        | 60        | 110       | 62        | 125       | 140        | 150        | 150        |
|                     |                            | ISO                   | F16       | F16       | F20       | F25       | F16       | F25       | F30        | F35        | F35        |
|                     |                            | Tr                    | 34        | 40        | 43        | 70        | 40        | 85        | 90         | 110        | 120        |
|                     |                            | Torque (Nm) (2)       | 538       | 1333      | 1955      | 2242      | 1333      | 6579      | 10725      | 15874      | 18658      |
|                     |                            | Kvs-value             | -         | -         | -         | -         | -         | -         | -          | -          | -          |
|                     |                            | Approx. Weight RF (3) | 102       | 189       | 206       | 298       | 189       | 785       | 1375       | 2190       | 3320       |
|                     |                            | Approx. Weight BW     | 79        | 154       | 154       | 219       | 154       | 579       | 1344       | 1608       | 2490       |

(1) Other schedule nos. on request

(2) Torque includes 30% of safety factor

(3) RTJ weight increases approx. by 10%

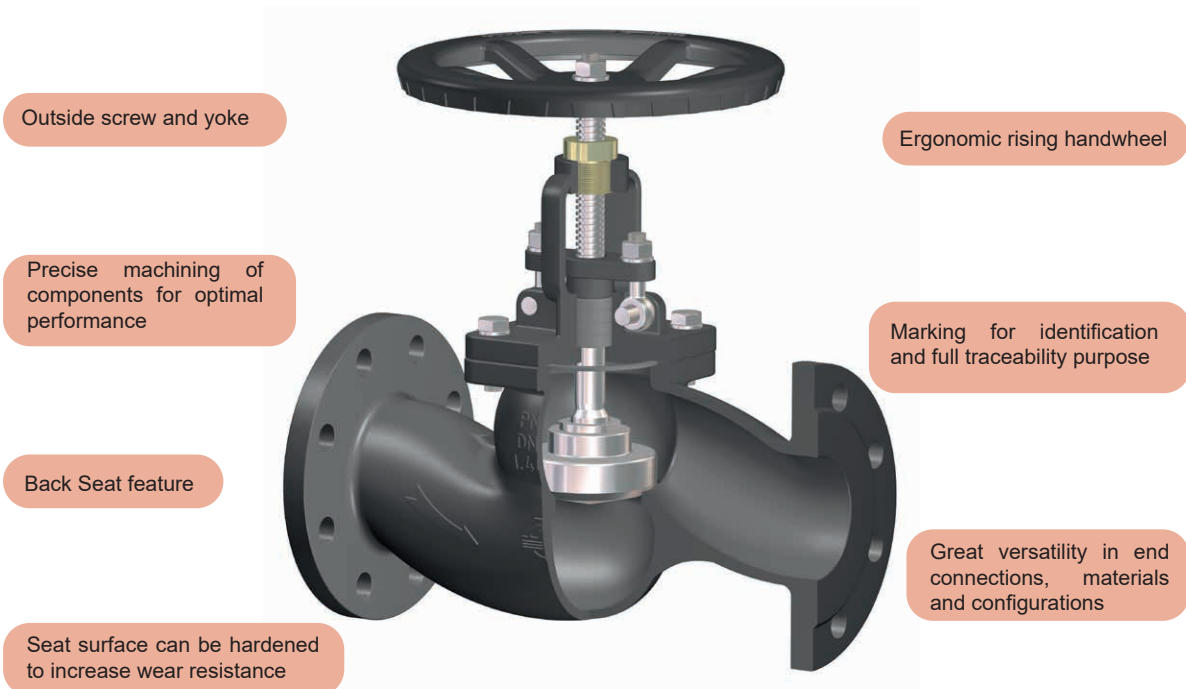
Dimensions in mm (except for bolt holes - Ød -, which are in inch units) subject to manufacturing tolerance

Kvs-values in m³/h / Torques in Nm / Weights in kg

For more information about flanged and welded ends refer to page 16

## Series 80 DIN RANGE

Series 80 Globe Valves are linear motion valves devised for stopping the flow of the service fluid when necessary. They are bolted bonnet, outside screw and yoke, rising handwheel, being the closure element a disc seating against a precisely machined seat thus achieving the positive closure. The atmospheric sealing is achieved by flexible graphite rings. The flow comes upwards underneath the seat, being an unidirectional valve. Weir body leads to higher pressure drop compared to gate valves but operation is quicker and this feature allows to use the valve as regulating valve when arranged with throttling plug. Valves are of easy and safe operation being widely used in power, chemical and oil industry. The range is also comprehensive of a wide offer of different versions and options. The standard operation is achieved by handwheel or gear, depending on valve size and working pressure.



### Main Features / Reference Standards

Design: EN 13709  
Pressure Design: PN40  
Face to face length: EN558 S1 (DIN 3202 F1)  
Valve end connections: Flanged to EN1092-1 type 21/B, PN40  
Marking: EN19  
Inspections & Tests: EN12266-1  
Unidirectional design. See the arrow on the body for normal flow direction  
Primer painted for protection during storage and transport (carbon steel body/bonnet)  
Product compliant with Pressure Equipment Directive PED, up to category III for European territory

### Main Duties / Limits of use

Fluids compatible with materials of construction  
Pressure / Temperature Rating to EN 1092-1, refers to page 3.  
For PED compliant products, limits also acc. to PED Annex II Tables 6, 7, 8 & 9, gases and liquids of fluid groups 1 & 2, up to category III  
Questions referring to chemical resistance, please consult us

### Options

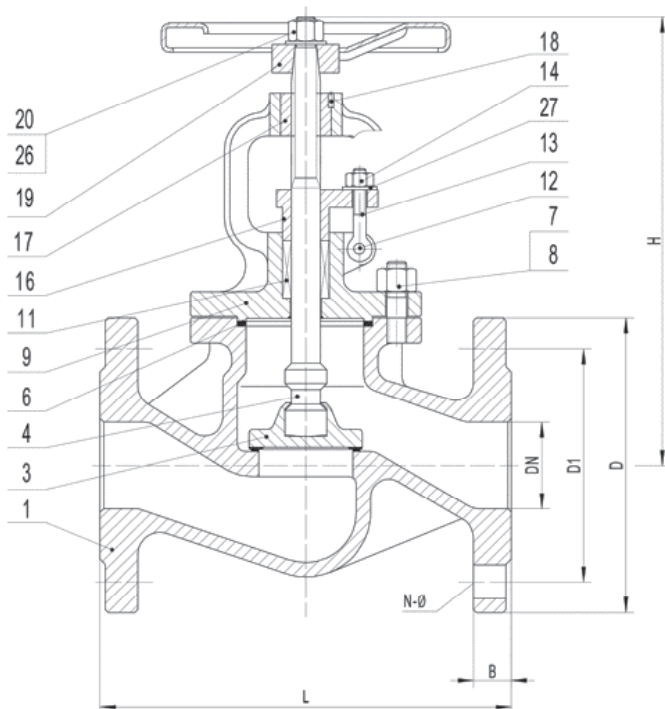
Different body materials and trim combinations, different valve connections, angle pattern, Y-Pattern, regulating plug, extended bonnet, bellow seal, pressure seal, welded bonnet, chained hand wheel, manual gear, limit switches, execution for aggressive atmosphere, etc. Please consult us

## Main Parts and Materials

### Series 80 DIN RANGE

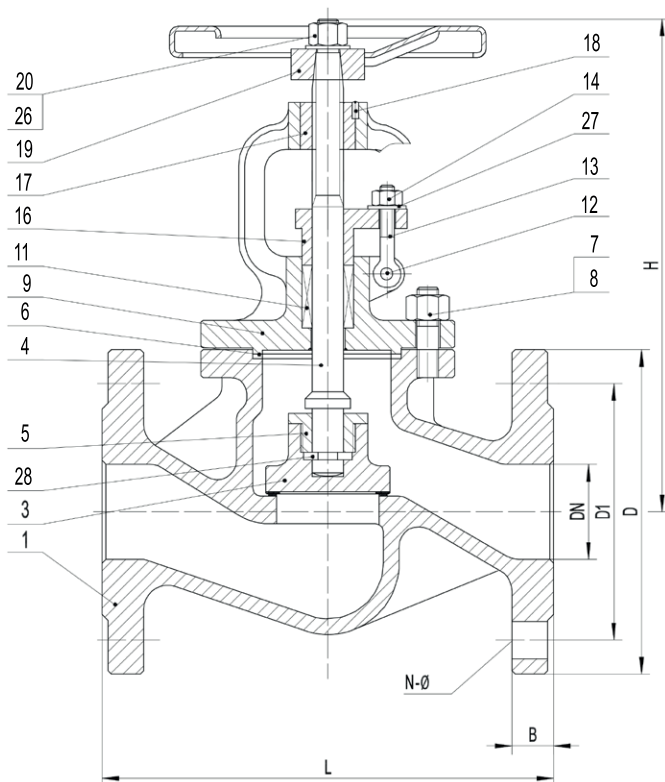


#### DN15 - DN50



| Nº | PART            | MATERIAL       |
|----|-----------------|----------------|
| 1  | Body            | 1.0619+N       |
| 3  | Disc            | CS+13Cr        |
| 4  | Stem            | 1.4021         |
| 6  | Gasket          | SS304+Graphite |
| 7  | Bonnet Bolt     | A193-B7        |
| 8  | Bonnet Nut      | A194-2H        |
| 9  | Bonnet          | 10619          |
| 11 | Packing         | Graphite       |
| 12 | Eyebolt Pin     | C. S           |
| 13 | Gland Eyebolt   | A193-B7        |
| 14 | Gland Nut       | A194-2H        |
| 16 | Gland Flange    | 10619          |
| 17 | Stem Nut        | GGG50.3        |
| 18 | Retaining Screw | A193-B7        |
| 19 | Handwheel       | C. S           |
| 20 | Handwheel Nut   | A194-2H        |
| 26 | Washer          | C. S           |
| 27 | Washer          | C. S           |

#### DN65 - DN150

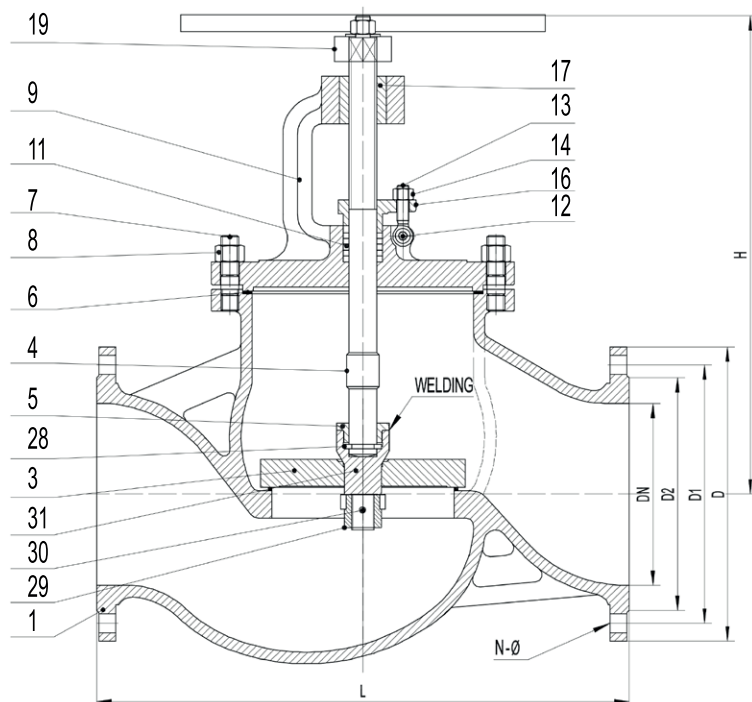


| Nº | PART            | MATERIAL       |
|----|-----------------|----------------|
| 1  | Body            | 1.0619+N       |
| 3  | Disc            | CS+13Cr        |
| 4  | Stem            | 1.4021         |
| 5  | Disc Nut        | 13Cr           |
| 6  | Gasket          | SS304+Graphite |
| 7  | Bonnet Bolt     | A193-B7        |
| 8  | Bonnet Nut      | A194-2H        |
| 9  | Bonnet          | 1.0619         |
| 11 | Packing         | Graphite       |
| 12 | Eyebolt Pin     | C. S           |
| 13 | Gland Eyebolt   | A193-B7        |
| 14 | Gland Nut       | A194-2H        |
| 16 | Gland Flange    | 1.0619         |
| 17 | Stem Nut        | GGG50.3        |
| 18 | Retaining Screw | A193-B7        |
| 19 | Handwheel       | C. S           |
| 20 | Handwheel Nut   | A194-2H        |
| 26 | Washer          | C. S           |
| 27 | Washer          | C. S           |
| 28 | Split ring      | 13Cr           |

## Main Parts and Materials

Series 80 DIN RANGE **CE**

### DN200-400



| Nº | PART          | MATERIAL       |
|----|---------------|----------------|
| 1  | Body          | 1.0619+N       |
| 3  | Disc          | 13Cr           |
| 4  | Stem          | 1.4021         |
| 5  | Disc Nut      | 13Cr           |
| 6  | Gasket        | SS304+Graphite |
| 7  | Bonnet Bolt   | A193-B7        |
| 8  | Bonnet Nut    | A194-2H        |
| 9  | Bonnet        | 1.0619         |
| 11 | Packing       | Graphite       |
| 12 | Eyebolt Pin   | C. S           |
| 13 | Gland Eyebolt | A193-B7        |
| 14 | Gland Nut     | A194-2H        |
| 16 | Gland Flange  | 1.0619         |
| 17 | Stem Nut      | GGG50.3        |
| 19 | Handwheel     | C. S           |
| 28 | Split ring    | 13Cr           |
| 29 | Lock nut      | 13Cr           |
| 30 | Lock screw    | 13Cr           |
| 31 | Balance disc  | CS+13Cr        |

### Main Valve Parameters

| DN             | 15   | 20   | 25   | 32   | 40   | 50   | 65   | 80   | 100  | 125  | 150  | 200   | 250   | 300   | 350   | 400   |
|----------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| L              | 130  | 150  | 160  | 180  | 200  | 230  | 290  | 310  | 350  | 400  | 480  | 600   | 730   | 850   | 980   | 1100  |
| D              | 95   | 105  | 115  | 140  | 150  | 165  | 185  | 200  | 235  | 270  | 300  | 375   | 450   | 515   | 580   | 660   |
| D1             | 65   | 75   | 85   | 100  | 110  | 125  | 145  | 160  | 190  | 220  | 250  | 320   | 385   | 450   | 510   | 585   |
| N-Ø            | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x22 | 8x26 | 8x26 | 12x30 | 12x33 | 16x33 | 16x36 | 16x39 |
| H              | 180  | 190  | 220  | 222  | 252  | 263  | 295  | 330  | 350  | 420  | 455  | 530   | 665   | 720   | 880   | 1030  |
| Kvs-value      | 4,2  | 7,4  | 12   | 19   | 31   | 47   | 77   | 120  | 188  | 288  | 410  | 725   | 1145  | 1635  | 2220  | 3180  |
| Approx. Weight | 4,4  | 5,4  | 6,3  | 7    | 10,5 | 13,8 | 21   | 27,5 | 40   | 61   | 84   | 160   | 265   | 377   | 510   | 780   |

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg  
Other dimensions on request

### Pressure / Temperature Rating

| -10°C to 120°C | 150°C    | 200°C  | 250°C  | 300°C  | 350°C    | 400°C    | 450°C    |
|----------------|----------|--------|--------|--------|----------|----------|----------|
| 40 bar         | 38,1 bar | 35 bar | 32 bar | 28 bar | 25,7 bar | 23,8 bar | 13,1 bar |







## Series 90 DIN RANGE

## Main Valve Parameters - PN16

| Nominal Size        |                     | DN                         | 50        | 65       | 80       | 100      | 125      | 150      | 200      | 250      |
|---------------------|---------------------|----------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|
| End connection      | RF                  | L                          | 250       | 270      | 280      | 300      | 325      | 350      | 400      | 450      |
|                     |                     | ØD                         | 165       | 185      | 200      | 220      | 250      | 285      | 340      | 405      |
|                     |                     | ØK                         | 125       | 145      | 160      | 180      | 210      | 240      | 295      | 355      |
|                     |                     | ØF                         | 102       | 122      | 138      | 158      | 188      | 212      | 268      | 320      |
|                     |                     | C                          | 18        | 18       | 20       | 20       | 22       | 22       | 24       | 26       |
|                     |                     | f                          | 3         | 3        | 3        | 3        | 3        | 3        | 3        | 3        |
|                     |                     | n-Ød                       | 4-18      | 8-18     | 8-18     | 8-18     | 8-18     | 8-22     | 12-22    | 12-26    |
| Top works/operation | BW                  | ØA1                        | 62        | 77       | 91       | 117      | 144      | 172      | 223      | 278      |
|                     | Hand-wheel          | H (open)                   | 393       | 430      | 500      | 580      | 655      | 795      | 950      | 1141     |
|                     |                     | H (close)                  | 340       | 360      | 415      | 475      | 525      | 599      | 740      | 857      |
|                     |                     | ØW                         | 200       | 200      | 220      | 250      | 280      | 300      | 350      | 400      |
|                     |                     | H1                         | -         | -        | -        | -        | -        | -        | -        | 1180     |
|                     |                     | h1                         | -         | -        | -        | -        | -        | -        | -        | 335      |
|                     |                     | g                          | -         | -        | -        | -        | -        | -        | -        | 262      |
|                     |                     | ØW1                        | -         | -        | -        | -        | -        | -        | -        | 310      |
|                     | Gear with handwheel | H2 (open)                  | 405       | 460      | 516      | 611      | 658      | 765      | 970      | 1114     |
|                     |                     | H2 (close)                 | 340       | 380      | 425      | 498      | 520      | 607      | 755      | 860      |
|                     |                     | h2                         | 45        | 45       | 60       | 60       | 60       | 60       | 80       | 80       |
|                     |                     | ISO                        | F07       | F07      | F10      | F10      | F10      | F10      | F14      | F14      |
|                     |                     | Tr                         | Tr20x4LH  | Tr22x5LH | Tr24x5LH | Tr26x5LH | Tr28x5LH | Tr30x6LH | Tr32x6LH | Tr36x6LH |
|                     |                     | Stroke                     | 65        | 80       | 91       | 113      | 138      | 158      | 215      | 254      |
|                     |                     | No. of turns               | 16        | 16       | 18       | 23       | 28       | 26       | 36       | 42       |
|                     |                     | Torque                     | 32        | 35       | 42       | 77       | 88       | 98       | 172      | 227      |
|                     |                     | With ISO 5210 mounting pad | Kvs-value | 168      | 413      | 595      | 1089     | 1956     | 2597     | 4791     |
|                     | Approx. Weight RF   |                            | 20        | 28       | 32       | 45       | 62       | 85       | 125      | 190      |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

| Nominal Size        |                     | DN                         | 300       | 350      | 400      | 450      | 500      | 600      | 700       |
|---------------------|---------------------|----------------------------|-----------|----------|----------|----------|----------|----------|-----------|
| End connection      | RF                  | L                          | 500       | 550      | 600      | 650      | 700      | 800      | 900       |
|                     |                     | ØD                         | 460       | 520      | 580      | 640      | 715      | 840      | 910       |
|                     |                     | ØK                         | 410       | 470      | 525      | 585      | 650      | 770      | 840       |
|                     |                     | ØF                         | 378       | 438      | 490      | 550      | 610      | 725      | 795       |
|                     |                     | C                          | 28        | 30       | 32       | 40       | 44       | 54       | (1)       |
|                     |                     | f                          | 4         | 4        | 4        | 4        | 4        | 5        | 5         |
|                     | n-Ød                | 12-26                      | 16-26     | 16-30    | 20-30    | 20-33    | 20-36    | 24-36    |           |
| BW                  | ØA1                 | 329                        | 362       | 413      | 464      | 516      | 619      | 721      |           |
| Top works/operation | Hand-wheel          | H (open)                   | 1335      | 1535     | 1670     | 1620     | 2135     | 2325     | (2)       |
|                     |                     | H (close)                  | 1025      | 1175     | 1260     | 1420     | 1620     | 1825     | (2)       |
|                     | Gear with handwheel | ØW                         | 450       | 500      | 500      | 600      | 600      | 700      | (2)       |
|                     |                     | H1                         | 1320      | 1523     | 1770     | 1640     | 2189     | 2410     | 2865      |
|                     |                     | h1                         | 385       | 443      | 493      | 525      | 598      | 630      | 788       |
|                     |                     | g                          | 262       | 340      | 340      | 340      | 340      | 413      | 413       |
|                     |                     | ØW1                        | 310       | 460      | 460      | 460      | 460      | 530      | 530       |
|                     |                     | With ISO 5210 mounting pad | H2 (open) | 1353     | 1465     | 1741     | -        | 2132     | 2550      |
|                     | H2 (close)          |                            | 1045      | 1125     | 1335     | -        | 1625     | 1940     | -         |
|                     | h2                  |                            | 80        | 100      | 100      | 120      | 120      | 140      | 180       |
|                     | ISO                 |                            | F14       | F16      | F16      | F25      | F25      | F30      | F35       |
|                     | Tr                  |                            | Tr38x6LH  | Tr42x8LH | Tr46x8LH | Tr50x8LH | Tr50x8LH | Tr55x8LH | Tr65×10LH |
|                     | Stroke              |                            | 308       | 340      | 406      | -        | 507      | 610      | -         |
|                     | No. of turns        |                            | 51        | 43       | 51       | -        | 63       | 76       | -         |
|                     | Torque              |                            | 298       | 410      | 550      | 650      | 864      | 1528     | 2105      |
|                     | Kvs-value           |                            | 11182     | 13632    | 18059    | 24056    | 29953    | 43694    | 62653     |
|                     | Approx. Weight RF   |                            | 270       | 390      | 460      | 650      | 850      | 1450     | 2320      |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

(2) It works with gear with handwheel



## Series 90 DIN RANGE

## Main Valve Parameters - PN25

| Nominal Size        |                            | DN           | 50       | 65       | 80       | 100      | 125      | 150      | 200      | 250      |
|---------------------|----------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|
| End connection      | RF                         | L            | 250      | 270      | 280      | 300      | 325      | 350      | 400      | 450      |
|                     |                            | ØD           | 165      | 185      | 200      | 235      | 270      | 300      | 360      | 425      |
|                     |                            | ØK           | 125      | 145      | 160      | 190      | 220      | 250      | 310      | 370      |
|                     |                            | ØF           | 102      | 122      | 138      | 162      | 188      | 218      | 278      | 335      |
|                     |                            | C            | 20       | 22       | 24       | 24       | 26       | 28       | 30       | 32       |
|                     |                            | f            | 3        | 3        | 3        | 3        | 3        | 3        | 3        | 3        |
|                     |                            | n-Ød         | 4-18     | 8-18     | 8-18     | 8-22     | 8-26     | 8-26     | 12-26    | 12-30    |
| Top works/operation | BW                         | ØA1          | 62       | 77       | 91       | 117      | 144      | 172      | 223      | 278      |
|                     | Gear with handwheel        | H (open)     | 393      | 430      | 500      | 580      | 655      | 795      | 950      | 1141     |
|                     |                            | H (close)    | 340      | 360      | 415      | 475      | 525      | 599      | 740      | 857      |
|                     |                            | ØW           | 200      | 200      | 220      | 250      | 280      | 300      | 350      | 400      |
|                     |                            | H1           | -        | -        | -        | -        | -        | -        | -        | 1180     |
|                     |                            | h1           | -        | -        | -        | -        | -        | -        | -        | 335      |
|                     |                            | g            | -        | -        | -        | -        | -        | -        | -        | 262      |
|                     |                            | ØW1          | -        | -        | -        | -        | -        | -        | -        | 310      |
|                     | With ISO 5210 mounting pad | H2 (open)    | 405      | 460      | 516      | 611      | 658      | 765      | 970      | 1114     |
|                     |                            | H2 (close)   | 340      | 380      | 425      | 498      | 520      | 607      | 755      | 860      |
|                     |                            | h2           | 45       | 45       | 60       | 60       | 60       | 60       | 80       | 80       |
|                     |                            | ISO          | F07      | F07      | F10      | F10      | F10      | F10      | F14      | F14      |
|                     |                            | Tr           | Tr20x4LH | Tr22x5LH | Tr24x5LH | Tr26x5LH | Tr28x5LH | Tr30x6LH | Tr32x6LH | Tr36x6LH |
|                     |                            | Stroke       | 65       | 80       | 91       | 113      | 138      | 158      | 215      | 254      |
|                     |                            | No. of turns | 16       | 16       | 18       | 23       | 28       | 26       | 36       | 42       |
|                     |                            | Torque       | 32       | 35       | 42       | 77       | 88       | 98       | 172      | 227      |
|                     | Kvs-value                  |              | 168      | 413      | 595      | 1089     | 1956     | 2597     | 4791     | 7450     |
|                     | Approx. Weight RF          |              | 20       | 29       | 33       | 48       | 65       | 90       | 132      | 225      |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

| Nominal Size        |                     | DN                         | 300       | 350      | 400      | 450      | 500      | 600      | 700       |
|---------------------|---------------------|----------------------------|-----------|----------|----------|----------|----------|----------|-----------|
| End connection      | RF                  | L                          | 500       | 550      | 600      | 650      | 700      | 800      | 900       |
|                     |                     | ØD                         | 485       | 555      | 620      | 670      | 730      | 845      | 960       |
|                     |                     | ØK                         | 430       | 490      | 550      | 600      | 660      | 770      | 875       |
|                     |                     | ØF                         | 395       | 450      | 505      | 555      | 615      | 720      | 820       |
|                     |                     | C                          | 34        | 38       | 40       | 46       | 48       | 58       | (1)       |
|                     |                     | f                          | 4         | 4        | 4        | 4        | 4        | 5        | 5         |
|                     |                     | n-Ød                       | 16-30     | 16-33    | 16-36    | 20-36    | 20-36    | 20-39    | 24-42     |
|                     | BW                  | ØA1                        | 329       | 362      | 413      | 464      | 516      | 619      | 721       |
| Top works/operation | Hand-wheel          | H (open)                   | 1335      | 1535     | 1670     | 1620     | 2135     | 2325     | (2)       |
|                     |                     | H (close)                  | 1025      | 1175     | 1260     | 1420     | 1620     | 1825     | (2)       |
|                     |                     | ØW                         | 450       | 500      | 500      | 600      | 600      | 700      | (2)       |
|                     | Gear with handwheel | H1                         | 1320      | 1523     | 1770     | 1640     | 2189     | 2410     | 2865      |
|                     |                     | h1                         | 385       | 443      | 493      | 525      | 598      | 630      | 788       |
|                     |                     | g                          | 262       | 340      | 340      | 340      | 340      | 413      | 413       |
|                     |                     | ØW1                        | 310       | 460      | 460      | 460      | 460      | 530      | 530       |
|                     |                     | With ISO 5210 mounting pad | H2 (open) | 1353     | 1465     | 1741     | -        | 2132     | 2550      |
|                     | H2 (close)          |                            | 1045      | 1125     | 1335     | -        | 1625     | 1940     | -         |
|                     | h2                  |                            | 80        | 100      | 100      | 120      | 120      | 140      | 180       |
|                     | ISO                 |                            | F14       | F16      | F16      | F25      | F25      | F30      | F35       |
|                     | Tr                  |                            | Tr38x6LH  | Tr42x8LH | Tr46x8LH | Tr50x8LH | Tr50x8LH | Tr55x8LH | Tr65×10LH |
|                     | Stroke              |                            | 308       | 340      | 406      | -        | 507      | 610      | -         |
|                     | No. of turns        |                            | 51        | 43       | 51       | -        | 63       | 76       | -         |
|                     | Torque              |                            | 298       | 410      | 550      | 650      | 864      | 1528     | 2105      |
|                     | Kvs-value           |                            | 11125     | 13563    | 17967    | 23933    | 29800    | 43471    | 62333     |
|                     | Approx. Weight RF   |                            | 285       | 420      | 490      | 690      | 900      | 1580     | 2500      |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

(2) It works with gear with handwheel



## Series 90 DIN RANGE

## Main Valve Parameters - PN40

| Nominal Size        |                     | DN                         | 50        | 65       | 80       | 100      | 125      | 150      | 200      |
|---------------------|---------------------|----------------------------|-----------|----------|----------|----------|----------|----------|----------|
| End connection      | RF                  | L                          | 250       | 290      | 310      | 350      | 400      | 450      | 550      |
|                     |                     | ØD                         | 165       | 185      | 200      | 235      | 270      | 300      | 375      |
|                     |                     | ØK                         | 125       | 145      | 160      | 190      | 220      | 250      | 320      |
|                     |                     | ØF                         | 102       | 122      | 138      | 162      | 188      | 218      | 285      |
|                     |                     | C                          | 20        | 22       | 24       | 24       | 26       | 28       | 34       |
|                     |                     | f                          | 3         | 3        | 3        | 3        | 3        | 3        | 3        |
|                     |                     | n-Ød                       | 4-18      | 8-18     | 8-18     | 8-22     | 8-26     | 8-26     | 12-30    |
| BW                  | ØA1                 | 62                         | 77        | 91       | 117      | 144      | 172      | 223      |          |
| Top works/operation | Hand-wheel          | H (open)                   | 405       | 430      | 500      | 575      | 640      | 745      | 1000     |
|                     |                     | H (close)                  | 350       | 360      | 415      | 470      | 510      | 585      | 790      |
|                     |                     | ØW                         | 200       | 200      | 220      | 250      | 280      | 300      | 400      |
|                     | Gear with handwheel | H1                         | -         | -        | -        | -        | -        | -        | -        |
|                     |                     | h1                         | -         | -        | -        | -        | -        | -        | -        |
|                     |                     | g                          | -         | -        | -        | -        | -        | -        | -        |
|                     |                     | ØW1                        | -         | -        | -        | -        | -        | -        | -        |
|                     |                     | With ISO 5210 mounting pad | H2 (open) | 405      | 460      | 516      | 611      | 658      | 765      |
|                     | H2 (close)          |                            | 340       | 380      | 425      | 498      | 520      | 607      | 788      |
|                     | h2                  |                            | 60        | 60       | 60       | 80       | 80       | 80       | 80       |
|                     | ISO                 |                            | F10       | F10      | F10      | F14      | F14      | F14      | F14      |
|                     | Tr                  |                            | Tr20x4LH  | Tr22x5LH | Tr24x5LH | Tr26x5LH | Tr28x5LH | Tr30x6LH | Tr36x6LH |
|                     | Stroke              |                            | 65        | 80       | 91       | 113      | 138      | 158      | 215      |
|                     | No. of turns        |                            | 16        | 16       | 18       | 23       | 28       | 26       | 36       |
|                     | Torque              |                            | 47        | 53       | 61       | 121      | 182      | 205      | 342      |
|                     | Kvs-value           |                            | 168       | 413      | 595      | 1089     | 1956     | 2597     | 4791     |
| Approx. Weight RF   |                     | 20                         | 29        | 35       | 50       | 72       | 105      | 189      |          |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

| Nominal Size        |                            | DN           | 250      | 300      | 350      | 400      | 450      | 500      | 600      |
|---------------------|----------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|
| End connection      | RF                         | L            | 650      | 750      | 850      | 950      | 1050     | 1150     | 1350     |
|                     |                            | ØD           | 450      | 515      | 580      | 660      | 685      | 755      | 890      |
|                     |                            | ØK           | 385      | 450      | 510      | 585      | 610      | 670      | 795      |
|                     |                            | ØF           | 345      | 410      | 465      | 535      | 560      | 615      | 735      |
|                     |                            | C            | 38       | 42       | 46       | 50       | 57       | 57       | 72       |
|                     |                            | f            | 3        | 4        | 4        | 4        | 4        | 4        | 5        |
|                     |                            | n-Ød         | 12-33    | 16-33    | 16-36    | 16-39    | 20-39    | 20-42    | 20-48    |
| Top works/operation | BW                         | ØA1          | 278      | 329      | 362      | 413      | 464      | 516      | 619      |
|                     | Hand-wheel                 | H (open)     | 1278     | 1510     | 1670     | 1898     | (2)      | (2)      | (2)      |
|                     |                            | H (close)    | 1006     | 1201     | 1308     | 1483     |          |          |          |
|                     |                            | ØW           | 450      | 500      | 550      | 600      |          |          |          |
|                     | Gear with handwheel        | H1           | 1274     | 1620     | 1791     | 2092     | 2192     | 2257     | 2724     |
|                     |                            | h1           | 355      | 392      | 445      | 498      | 570      | 632      | 730      |
|                     |                            | g            | 340      | 340      | 340      | 340      | 413      | 413      | 413      |
|                     |                            | ØW1          | 460      | 460      | 460      | 460      | 530      | 530      | 530      |
|                     | With ISO 5210 mounting pad | H2 (open)    | 1161     | 1365     | 1541     | 1801     | -        | 2315     | 2762     |
|                     |                            | H2 (close)   | 900      | 105      | 1185     | 1395     | -        | 1768     | 2140     |
|                     |                            | h2           | 80       | 80       | 100      | 100      | 120      | 120      | 140      |
|                     |                            | ISO          | F16      | F25      | F25      | F30      | F30      | F30      | F35      |
|                     |                            | Tr           | Tr38x6LH | Tr42x8LH | Tr46x8LH | Tr48x8LH | Tr52x8LH | Tr52x8LH | Tr60x8LH |
|                     |                            | Stroke       | 261      | 315      | 356      | 406      | -        | 547      | 622      |
|                     |                            | No. of turns | 44       | 39       | 45       | 51       | -        | 68       | 77.75    |
|                     |                            | Torque       | 579      | 786      | 1139     | 1448     | 1945     | 2483     | 3910     |
| Kvs-value           |                            | 7450         | 11125    | 13563    | 17782    | 23688    | 29494    | 43025    |          |
| Approx. Weight RF   |                            | 345          | 460      | 650      | 980      | 1330     | 1865     | 2470     |          |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Torques in Nm / Weights in kg

(2) It works with gear with handwheel



## Series 90 DIN RANGE

## Main Valve Parameters - PN63

| Nominal Size        |                            | DN         | 50        | 65        | 80        | 100       | 125       | 150       | 200       | 250       | 300       | 350       | 400       |
|---------------------|----------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| End connection      | RF                         | L          | 250       | 290       | 310       | 350       | 400       | 450       | 550       | 650       | 750       | 850       | 950       |
|                     |                            | ØD         | 180       | 205       | 215       | 250       | 295       | 345       | 415       | 470       | 530       | 600       | 670       |
|                     |                            | ØK         | 135       | 160       | 170       | 200       | 240       | 280       | 345       | 400       | 460       | 525       | 585       |
|                     |                            | ØF         | 102       | 122       | 138       | 162       | 188       | 218       | 285       | 345       | 410       | 465       | 535       |
|                     |                            | C          | 26        | 26        | 28        | 30        | 34        | 36        | 42        | 46        | 52        | 56        | 60        |
|                     |                            | f          | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 4         | 4         | 4         |
|                     |                            | n-Ød       | 4-M22     | 8-M22     | 8-M22     | 8-M26     | 8-M30     | 8-M33     | 12-M36    | 12-M36    | 16-M36    | 16-M39    | 16-M42    |
| Top works/operation | Hand-wheel                 | H (open)   | 426       | 463       | 530       | 611       | 725       | 833       | 1038      | (2)       | (2)       | (2)       | (2)       |
|                     |                            | H (close)  | 371       | 393       | 442       | 496       | 588       | 668       | 823       |           |           |           |           |
|                     |                            | ØW         | 200       | 200       | 220       | 250       | 350       | 350       | 450       |           |           |           |           |
|                     |                            |            |           |           |           |           |           |           |           |           |           |           |           |
|                     | Gear with handwheel        | H1         | -         | -         | -         | -         | -         | -         | -         | 1765      | 2135      | 2575      | 2838      |
|                     |                            | h1         | -         | -         | -         | -         | -         | -         | -         | 348       | 398       | 448       | 523       |
|                     |                            | g          | -         | -         | -         | -         | -         | -         | -         | 340       | 340       | 340       | 413       |
|                     |                            | ØW1        | -         | -         | -         | -         | -         | -         | -         | 460       | 460       | 460       | 530       |
|                     | With ISO 5210 mounting pad | H2 (open)  | 426       | 463       | 545       | 622       | 725       | 833       | 1035      | 1750      | 2125      | 2562      | 2810      |
|                     |                            | H2 (close) | 371       | 393       | 460       | 507       | 588       | 668       | 820       | 1490      | 1810      | 2197      | 2395      |
|                     |                            | h2         | 60        | 60        | 60        | 80        | 80        | 100       | 110       | 120       | 120       | 140       | 140       |
|                     |                            | ISO        | F10       | F10       | F10       | F12       | F12       | F14       | F16       | F25       | F25       | F30       | F30       |
|                     |                            | Tr         | Tr20x4-LH | Tr22x5-LH | Tr24x5-LH | Tr26x5-LH | Tr32x6-LH | Tr32x6-LH | Tr38x6-LH | Tr42x8-LH | Tr46x8-LH | Tr52x8-LH | Tr55x8-LH |
| Stroke              |                            | 55         | 70        | 85        | 115       | 137       | 165       | 215       | 260       | 315       | 365       | 415       |           |
| No. of turns        |                            | 14         | 14        | 17        | 23        | 23        | 28        | 36        | 33        | 40        | 46        | 52        |           |
| Torque              |                            | (3)        | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       |           |
| Kvs-value           |                            | (3)        | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       |           |
| Approx. Weight RF   |                            | 92         | 108       | 120       | 156       | 290       | 389       | 558       | 801       | 1148      | 1543      | 2214      |           |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Torques in Nm / Weights in kg

(2) It works with gear with handwheel

(3) Under request

## Main Valve Parameters - PN100

| Nominal Size        |                            | DN           | 50        | 65        | 80        | 100       | 125       | 150       | 200       | 250       | 300       | 350       |
|---------------------|----------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| End connection      | RF                         | L            | 250       | 290       | 310       | 350       | 400       | 450       | 550       | 650       | 750       | 850       |
|                     |                            | ØD           | 195       | 220       | 230       | 265       | 315       | 355       | 430       | 505       | 585       | 655       |
|                     |                            | ØK           | 145       | 170       | 180       | 210       | 250       | 290       | 360       | 430       | 500       | 560       |
|                     |                            | ØF           | 102       | 122       | 138       | 162       | 188       | 218       | 285       | 345       | 410       | 465       |
|                     |                            | C            | 30        | 34        | 36        | 40        | 40        | 44        | 52        | 60        | 68        | 74        |
|                     |                            | f            | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 4         | 4         |
|                     |                            | n-Ød         | 4-M24     | 8-M24     | 8-M24     | 8-M27     | 8-M30     | 12-M30    | 12-M33    | 12-M36    | 16-M39    | 16-M45    |
| Top works/operation | Hand-wheel                 | H (open)     | 440       | 470       | 538       | 617       | 720       | 855       | (2)       | (2)       | (2)       | (2)       |
|                     |                            | H (close)    | 385       | 396       | 450       | 507       | 585       | 695       |           |           |           |           |
|                     |                            | ØW           | 220       | 250       | 350       | 350       | 400       | 450       |           |           |           |           |
|                     |                            |              |           |           |           |           |           |           |           |           |           |           |
|                     | Gear with handwheel        | H1           | -         | -         | -         | -         | -         | -         | 1260      | 1655      | 1985      | 2195      |
|                     |                            | h1           | -         | -         | -         | -         | -         | -         | 293       | 348       | 418       | 473       |
|                     |                            | g            | -         | -         | -         | -         | -         | -         | 340       | 340       | 413       | 413       |
|                     |                            | ØW1          | -         | -         | -         | -         | -         | -         | 460       | 460       | 530       | 530       |
|                     | With ISO 5210 mounting pad | H2 (open)    | 440       | 470       | 538       | 610       | 727       | 850       | 1185      | 1565      | 1876      | 1925      |
|                     |                            | H2 (close)   | 385       | 396       | 450       | 510       | 592       | 690       | 970       | 1300      | 1561      | 1560      |
|                     |                            | h2           | 60        | 60        | 80        | 80        | 100       | 110       | 110       | 120       | 140       | 140       |
|                     |                            | ISO          | F10       | F10       | F12       | F12       | F14       | F16       | F16       | F25       | F30       | F30       |
|                     |                            | Tr           | Tr20x4-LH | Tr22x5-LH | Tr26x5-LH | Tr30x6-LH | Tr36x6-LH | Tr38x6-LH | Tr42x8-LH | Tr48x8-LH | Tr52x8-LH | Tr58x8-LH |
|                     |                            | Stroke       | 55        | 74        | 88        | 100       | 135       | 160       | 215       | 265       | 315       | 365       |
|                     |                            | No. Of turns | 14        | 15        | 18        | 17        | 23        | 27        | 27        | 34        | 40        | 46        |
|                     |                            | Torque       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       |
|                     | Kvs-value                  |              | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       | (3)       |
| Approx. Weight RF   |                            | 98           | 130       | 154       | 231       | 410       | 542       | 778       | 1321      | 2015      | 2676      |           |

(1) To be specified by the purchaser

Dimensions in mm subject to manufacturing tolerance / Torques in Nm / Weights in kg

(2) It works with gear with handwheel

(3) Under request

**Series 3P DIN RANGE**

Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Series 3P are Piston Check Valves are provided with a guided piston which can be loaded by a spring and closes the disc against a horizontal valve seat. Piston Check Valves provide a larger pressure drop in the pipe line, this design permits a faster closure reaction and more tightness.

Body to cover joint design to apply uniform load to the gasket

Seat surface can be hardened to increase wear resistance

Spring loaded to allow installation on vertical lines (standard for small sizes)

Precise plug guidance



Great versatility in end connections, materials and configurations

Marking for identification and full traceability purpose

Precise machining of components for optimal performance

**Main Features / Reference Standards**

Design: EN 13709  
 Pressure Design: PN40  
 Face to face length: EN558 S1 (DIN 3202 F1)  
 Valve end connections: Flanged to EN1092-1 type 21/B, PN40  
 Marking: EN19  
 Inspections & Tests: EN12266-1  
 Unidirectional design. See the arrow on the body for normal flow direction  
 Primer painted for protection during storage and transport (carbon steel body/bonnet)  
 Product compliant with Pressure Equipment Directive PED, up to category III for European territory

**Main Duties / Limits of use**

Fluids compatible with materials of construction  
 Pressure / Temperature Rating to EN 1092-1, refers to page 3.  
 For PED compliant products, limits also acc. to PED Annex II Tables 6, 7, 8 & 9, gases and liquids of fluid groups 1 & 2, up to category III  
 Questions referring to chemical resistance, please consult us

**Options**

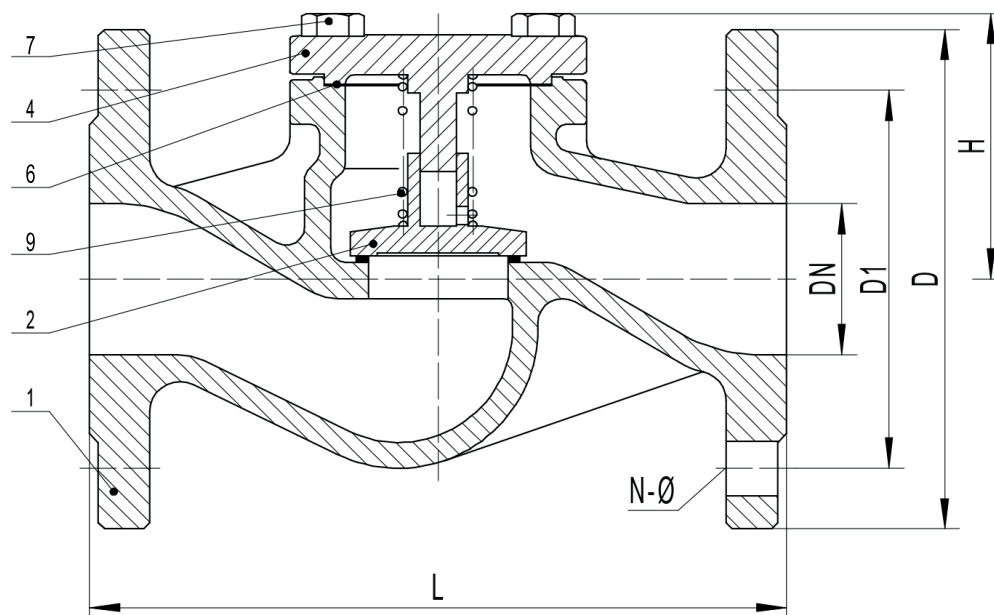
Diverse materials of construction and trim combinations, with or without spring, angle pattern, Y pattern, execution for turbulent flow or unstable condition, execution for aggressive atmosphere, etc. Please consult us

## Main Parts and Materials

## Series 3P DIN RANGE



## DN15-400



| Nº | PART   | MATERIAL             |
|----|--------|----------------------|
| 1  | BODY   | 1.0619+13Cr          |
| 2  | DISC   | CS+13 Cr             |
| 4  | COVER  | 1.0619               |
| 6  | SPACER | St. Steel + Graphite |
| 7  | BOLT   | A194-B7              |
| 9  | SPRING | St. Steel            |

## Main Valve Parameters

| DN      | 15   | 20   | 25   | 32   | 40   | 50   | 65   | 80   | 100  | 125  | 150  | 200   | 250   | 300   | 350   | 400   |
|---------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| L       | 130  | 150  | 160  | 180  | 200  | 230  | 290  | 310  | 350  | 400  | 480  | 600   | 730   | 850   | 980   | 1100  |
| D       | 95   | 105  | 115  | 140  | 150  | 165  | 185  | 200  | 220  | 250  | 285  | 340   | 405   | 460   | 520   | 580   |
| PN16 D1 | 65   | 75   | 85   | 100  | 110  | 125  | 145  | 160  | 180  | 210  | 240  | 295   | 355   | 410   | 470   | 580   |
| N-Ø     | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4X18 | 8x18 | 8X18 | 8X18 | 8X22 | 12X22 | 12X26 | 12X26 | 16X26 | 16X30 |
| H       | 70   | 70   | 80   | 80   | 85   | 95   | 110  | 130  | 155  | 165  | 215  | 285   | 325   | 365   | 440   | 630   |
| L       | 130  | 150  | 160  | 180  | 200  | 230  | 290  | 310  | 350  | 400  | 480  | 600   | 730   | 850   | 980   | 1100  |
| D       | 95   | 105  | 115  | 140  | 150  | 165  | 185  | 200  | 235  | 270  | 300  | 360   | 425   | 485   | 555   | 620   |
| PN25 D1 | 65   | 75   | 85   | 100  | 110  | 125  | 145  | 160  | 190  | 220  | 250  | 310   | 370   | 430   | 490   | 555   |
| N-Ø     | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4X18 | 8x18 | 8X22 | 8X26 | 8X26 | 12X26 | 12X30 | 16X30 | 16X33 | 16X36 |
| H       | 70   | 70   | 80   | 80   | 85   | 95   | 110  | 130  | 155  | 165  | 215  | 285   | 325   | 365   | 440   | 630   |
| L       | 130  | 150  | 160  | 180  | 200  | 230  | 290  | 310  | 350  | 400  | 480  | 600   | 730   | 850   | 980   | 1100  |
| D       | 95   | 105  | 115  | 140  | 150  | 165  | 185  | 200  | 235  | 270  | 300  | 375   | 450   | 515   | 585   | 660   |
| PN40 D1 | 65   | 75   | 85   | 100  | 110  | 125  | 145  | 160  | 190  | 220  | 250  | 320   | 385   | 450   | 510   | 585   |
| N-Ø     | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4X18 | 8x18 | 8X22 | 8X26 | 8X26 | 12X30 | 12X33 | 16X33 | 16X36 | 16X39 |
| H       | 70   | 70   | 80   | 80   | 85   | 95   | 110  | 130  | 155  | 165  | 215  | 285   | 325   | 365   | 440   | 630   |

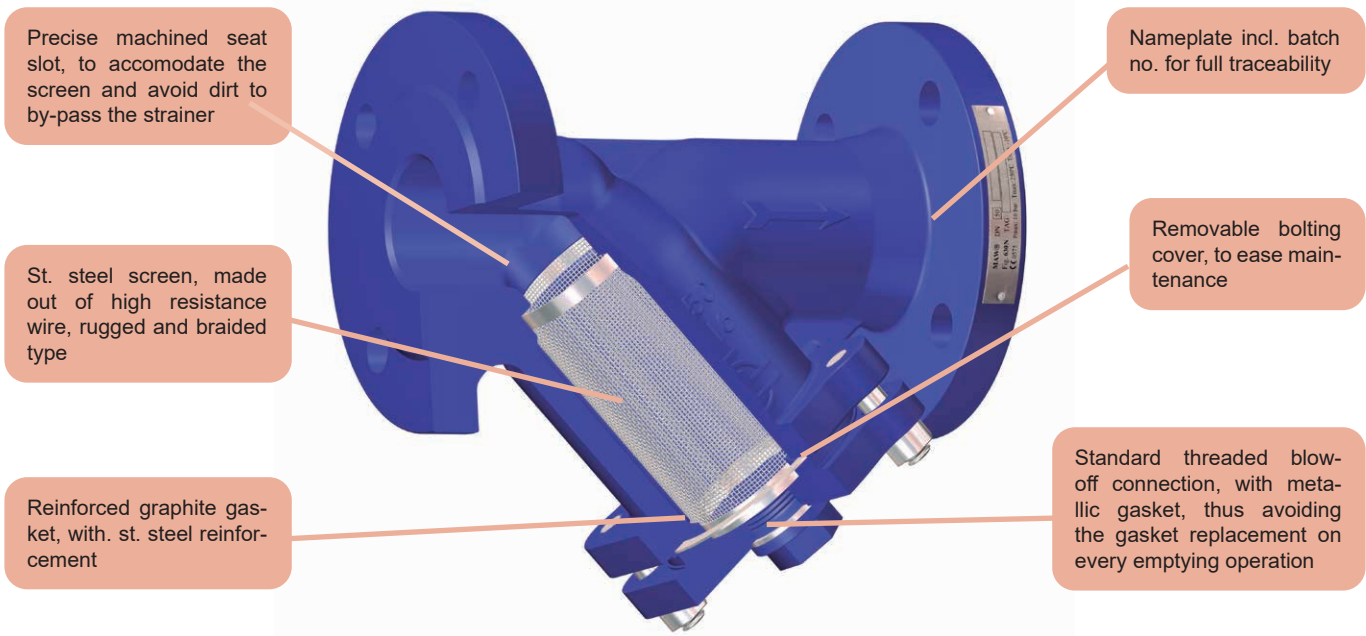
Dimensions in mm subject to manufacturing tolerance / Kvs-values in m³/h / Weights in kg  
 Other dimensions on request

## Pressure / Temperature Rating

| -10°C to 120°C | 150°C    | 200°C  | 250°C  | 300°C  | 350°C    | 400°C    | 450°C    |
|----------------|----------|--------|--------|--------|----------|----------|----------|
| 40 bar         | 38,1 bar | 35 bar | 32 bar | 28 bar | 25,7 bar | 23,8 bar | 13,1 bar |

## SERIES F0A0 DIN RANGE

Y-Strainers type F0A0 DIN are devices for mechanically removing solids from flowing media by means of a wired mesh, replaceable in line. They combine a rugged and compact design for indoors installation in industrial plants, building industry, etc.



### Main Features

Valve design: EN 12516  
 Nominal pressure: PN40  
 Face to face length: EN 558 S1 (DIN 3202 F1)  
 End connections: Flanged to EN 1092-1 type 21/B PN40  
 Marking: EN 19  
 Pressure Tests: EN 12266-1  
 Inside and outside primer paint layer blue color similar to RAL5002  
 Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)

### Main Duties / Limits of use

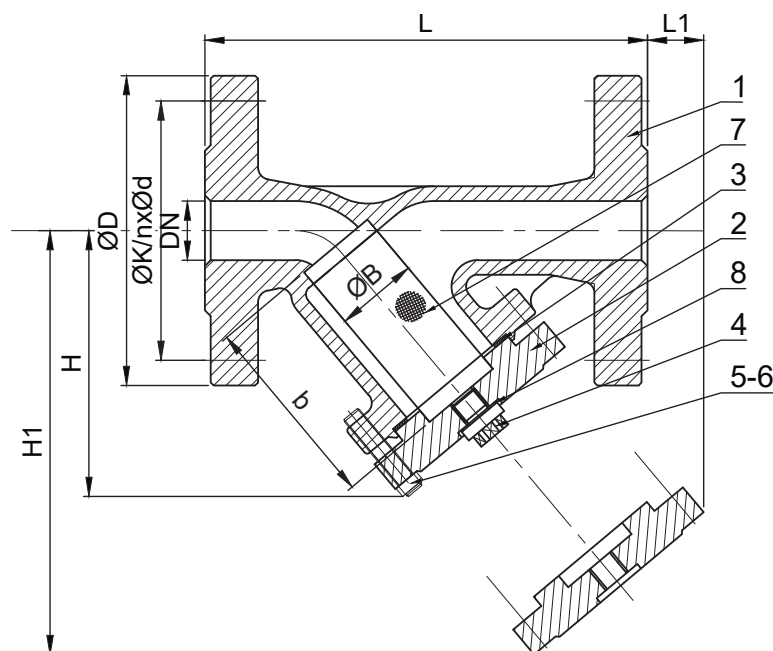
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature rating acc. to EN 1092-1 .  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

### Options

Other screen width, special screen for vacuum service or in suction side of pumps, etc.  
 Other designs and approvals, please consult us.

# Main Parts and Materials

## SERIES F0A0 DIN RANGE



| Nº  | PART                 | MATERIAL               |
|-----|----------------------|------------------------|
| 1   | BODY                 | Cast steel 1.0619+N    |
| 2   | COVER                | Cast steel 1.0619+N    |
| 3   | GASKET               | Graphite+St. steel 304 |
| 4   | DRAINING PLUG        | Cast steel 1.0619+N    |
| 5-6 | STUDS-NUTS           | Steel A307B/A503A      |
| 7   | SCREEN               | St. steel 304          |
| 8   | DRAINING PLUG GASKET | Cu alloy               |

# Main Valve Parameters

| DN                          | 15      | 20      | 25      | 32      | 40      | 50      | 65      | 80      | 100   |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| ØK                          | 65      | 75      | 85      | 100     | 110     | 125     | 145     | 160     | 190   |
| nxØd                        | 4xØ14   | 4xØ14   | 4xØ14   | 4xØ18   | 4xØ18   | 4xØ18   | 8xØ18   | 8xØ18   | 8xØ22 |
| ØD                          | 95      | 105     | 115     | 140     | 150     | 165     | 185     | 200     | 235   |
| L                           | 130     | 150     | 160     | 180     | 200     | 230     | 290     | 310     | 350   |
| H                           | 90      | 116     | 122     | 140     | 145     | 170     | 179     | 212     | 243   |
| L1                          | 65      | 103     | 110     | 77      | 78      | 93      | 73      | 88      | 97    |
| H1                          | 123     | 158     | 171     | 198     | 206     | 237     | 259     | 297     | 344   |
| Draining plug               | M10x1.5 | M10x1.5 | M16x1.5 | M16x1.5 | M27x1.5 | M27x1.5 | M27x1.5 | M27x1.5 | M33x2 |
| Basket standard perforation | 1       | 1       | 1       | 1       | 1       | 1       | 1,25    | 1,25    | 1,6   |
| Kvs                         | 6       | 9       | 14      | 21      | 29      | 49      | 79      | 117     | 187   |

Dimensions in mm subject to manufacturing tolerance

| DN                          | 125   | 150   | 200    | 250    | 300    | 350    | 400    | 500    | 600    |
|-----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| ØK                          | 220   | 250   | 320    | 385    | 450    | 510    | 585    | 670    | 795    |
| nxØd                        | 8xØ26 | 8xØ26 | 12xØ30 | 12xØ33 | 16xØ33 | 16xØ36 | 16xØ39 | 20xØ42 | 20xØ48 |
| ØD                          | 270   | 300   | 375    | 450    | 515    | 580    | 660    | 755    | 890    |
| L                           | 400   | 480   | 600    | 730    | 850    | 980    | 1100   | 1200   | 1450   |
| H                           | 281   | 321   | 404    | 482    | 560    | -      | -      | -      | -      |
| L1                          | 103   | 92    | 112    | 193    | 252    | -      | -      | -      | -      |
| H1                          | 399   | 451   | 574    | 747    | 899    | -      | -      | -      | -      |
| Draining plug               | M33x2 | M33x2 | M33x2  | M33x2  | M48x2  | M48x2  | M48x2  | M48x2  | M48x2  |
| Basket standard perforation | 1,6   | 1,6   | 1,6    | 1,6    | 1,6    | -      | -      | -      | -      |
| Kvs                         | 301   | 315   | 522    | 980    | 1498   | -      | -      | -      | -      |

DN350-600 acc. to customer specifications

Dimensions in mm subject to manufacturing tolerance

Information / restriction of technical rules need to be observed!

Installation, Operating and Maintenance Manual can be downloaded at [www.comeval.es](http://www.comeval.es)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve

Product suitability must be verified, contact manufacturer for information

## SERIES F010 DIN RANGE

Y-strainers are devices for mechanically removing solids from flowing liquids or gases by means of a perforated wire mesh straining element. Series F010 DIN are compact, of cylindrical shape and designed to handle a vast majority of fluids encountered in the process industry such as demineralized water, ammonia, chemicals and gases. They protect equipment downstream and can be either horizontally or vertically installed. Maintenance is easy thanks to the removing screen. These strainers show low pressure drop across thanks to their shape and similarity to pipe line configuration. These Series are made in investment cast stainless steel which adds considerable quality finish to the surface avoiding roughness and pinholes risk.

Marking and tagging, positive flow marking by an arrow, raised symbols denoting heat numbers, Design Pressure and Nominal Diameter. Riveted steel plate in compliance with PED rules

High quality surface made out in investment cast stainless steel

Rugged stainless steel basket screen

Removable bolted cover, to ease maintenance



Raised flange ends and machined slots to better accommodating the assembling gaskets

Drainage screw, leakage proof for blow off maintenance operations

PTFE gasket to avoid deterioration by corrosive media, temperature constrains to PTFE

## Main Features / Reference Standards

Valve design: EN 12516  
 Nominal pressure: PN16  
 Face to face length: EN 558 S1  
 Valve end connections: Flanges EN 1092-1 PN40 (DN15-DN50); PN16 (DN65-DN200)  
 Marking: EN 19  
 Inspections & Tests: EN 12266-1  
 Product compliant with Directive 2014/68/EU Pressure Equipment (PED)

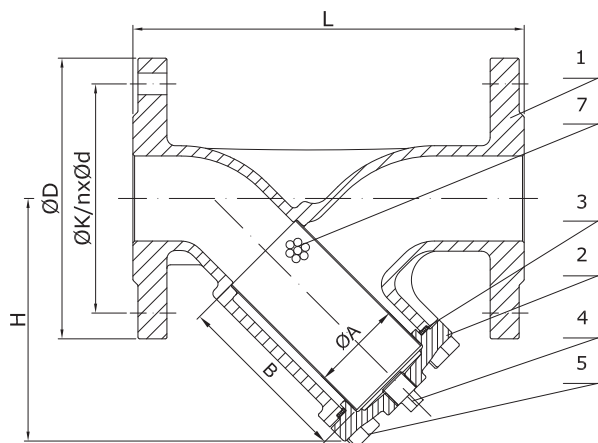
## Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us  
 Pressure / Temperature rating acc. to EN 1092-1  
 Pressure Rating: 16 bar (option 40 bar DN15-50)  
 For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1\*) and tables 7 & 9 (gases & liquids group 2\*) up to category III  
 \*Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

## Options

Other screen perforation, special screen for vacuum service, or in suction side of pumps, etc.  
 Other designs and approvals, please consult us.

### Main Parts and Materials



| Nº | Part    | Material           | Specification |
|----|---------|--------------------|---------------|
| 1  | Body    | St. steel          | 1.4408        |
| 2  | Cover   | St. steel          | 1.4408        |
| 3  | Gasket  | Graphite+St. steel |               |
| 4  | Plug    | St. steel          | SS30416       |
| 5  | Bolting | St. steel          | A2-70         |
| 7  | Screen  | St. steel          | SS316         |

### Main Parameters

| DN  | L      | H   | ØD  | ØK  | nxØd | Screen Perforation | Approx. Weight |     |
|-----|--------|-----|-----|-----|------|--------------------|----------------|-----|
| 15  | 1/2"   | 130 | 75  | 95  | 65   | 4 x 14             | 1,5            | 2   |
| 20  | 3/4"   | 150 | 75  | 105 | 75   | 4 x 14             | 1,5            | 3   |
| 25  | 1"     | 160 | 100 | 115 | 85   | 4 x 14             | 1,5            | 4   |
| 32  | 1 1/4" | 180 | 120 | 140 | 100  | 4 x 18             | 1,5            | 6   |
| 40  | 1 1/2" | 200 | 120 | 150 | 110  | 4 x 18             | 2              | 6,5 |
| 50  | 2"     | 230 | 140 | 165 | 125  | 4 x 18             | 2              | 9   |
| 65  | 2 1/2" | 290 | 175 | 185 | 145  | 4 x 18             | 2              | 12  |
| 80  | 3"     | 310 | 196 | 200 | 160  | 8 x 18             | 2              | 1,5 |
| 100 | 4"     | 350 | 244 | 220 | 180  | 8 x 18             | 2              | 20  |
| 125 | 5"     | 400 | 277 | 250 | 210  | 8 x 18             | 2              | 32  |
| 150 | 6"     | 480 | 320 | 285 | 240  | 8 x 22             | 2              | 45  |
| 200 | 8"     | 600 | 390 | 340 | 295  | 12x22              | 2              | 85  |

Dimensions in mm subject to manufacturing tolerance / Weights in kg  
Other dimensions on request

## Conversion table: inch to mm

| Inches | 0<br>mm | 1/16<br>mm | 1/8<br>mm | 3/16<br>mm | 1/4<br>mm | 5/16<br>mm | 3/8<br>mm | 7/16<br>mm | 1/2<br>mm | 9/16<br>mm | 5/8<br>mm | 11/16<br>mm | 3/4<br>mm | 13/16<br>mm | 7/8<br>mm | 15/16<br>mm |
|--------|---------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0      | 0,0     | 1,6        | 3,2       | 4,8        | 6,4       | 7,9        | 9,5       | 11,1       | 12,7      | 14,3       | 15,9      | 17,5        | 19,1      | 20,6        | 22,2      | 23,8        |
| 1      | 25,4    | 27,0       | 28,6      | 30,2       | 31,8      | 33,3       | 34,9      | 36,5       | 38,1      | 39,7       | 41,3      | 42,9        | 44,5      | 46,0        | 47,6      | 49,2        |
| 2      | 50,8    | 52,4       | 54,0      | 55,6       | 57,2      | 58,7       | 60,3      | 61,9       | 63,5      | 65,1       | 66,7      | 68,3        | 69,9      | 71,4        | 73,0      | 74,6        |
| 3      | 76,2    | 77,8       | 79,4      | 81,0       | 82,6      | 84,1       | 85,7      | 87,3       | 88,9      | 90,5       | 92,1      | 93,7        | 95,3      | 96,8        | 98,4      | 100,0       |
| 4      | 101,6   | 103,2      | 104,8     | 106,4      | 108,0     | 109,5      | 111,1     | 112,7      | 114,3     | 115,9      | 117,5     | 119,1       | 120,7     | 122,2       | 123,8     | 125,4       |
| 5      | 127,0   | 128,6      | 130,2     | 131,8      | 133,4     | 134,9      | 136,5     | 138,1      | 139,7     | 141,3      | 142,9     | 144,5       | 146,1     | 147,6       | 149,2     | 150,8       |
| 6      | 152,4   | 154,0      | 155,6     | 157,2      | 158,8     | 160,3      | 161,9     | 163,5      | 165,1     | 166,7      | 168,3     | 169,9       | 171,5     | 173,0       | 174,6     | 176,2       |
| 7      | 177,8   | 179,4      | 181,0     | 182,6      | 184,2     | 185,7      | 187,3     | 188,9      | 190,5     | 192,1      | 193,7     | 195,3       | 196,9     | 198,4       | 200,0     | 201,6       |
| 8      | 203,2   | 204,8      | 206,4     | 208,0      | 209,6     | 211,1      | 212,7     | 214,3      | 215,9     | 217,5      | 219,1     | 220,7       | 222,3     | 223,8       | 225,4     | 227,0       |
| 9      | 228,6   | 230,2      | 231,8     | 233,4      | 235,0     | 236,5      | 238,1     | 239,7      | 241,3     | 242,9      | 244,5     | 246,1       | 247,7     | 249,2       | 250,8     | 252,4       |
| 10     | 254,0   | 255,6      | 257,2     | 258,8      | 260,4     | 261,9      | 263,5     | 265,1      | 266,7     | 268,3      | 269,9     | 271,5       | 273,1     | 274,6       | 276,2     | 277,8       |
| 11     | 279,4   | 281,0      | 282,6     | 284,2      | 285,8     | 287,3      | 288,9     | 290,5      | 292,1     | 293,7      | 295,3     | 296,9       | 298,5     | 300,0       | 301,6     | 303,2       |
| 12     | 304,8   | 306,4      | 308,0     | 309,6      | 311,2     | 312,7      | 314,3     | 315,9      | 317,5     | 319,1      | 320,7     | 322,3       | 323,9     | 325,4       | 327,0     | 328,6       |
| 13     | 330,2   | 331,8      | 333,4     | 335,0      | 336,6     | 338,1      | 339,7     | 341,3      | 342,9     | 344,5      | 346,1     | 347,7       | 349,3     | 350,8       | 352,4     | 354,0       |
| 14     | 355,6   | 357,2      | 358,8     | 360,4      | 362,0     | 363,5      | 365,1     | 366,7      | 368,3     | 369,9      | 371,5     | 373,1       | 374,7     | 376,2       | 377,8     | 379,4       |
| 15     | 381,0   | 382,6      | 384,2     | 385,8      | 387,4     | 388,9      | 390,5     | 392,1      | 393,7     | 395,3      | 396,9     | 398,5       | 400,1     | 401,6       | 403,2     | 404,8       |
| 16     | 406,4   | 408,0      | 409,6     | 411,2      | 412,8     | 414,3      | 415,9     | 417,5      | 419,1     | 420,7      | 422,3     | 423,9       | 425,5     | 427,0       | 428,6     | 430,2       |
| 17     | 431,8   | 433,4      | 435,0     | 436,6      | 438,2     | 439,7      | 441,3     | 442,9      | 444,5     | 446,1      | 447,7     | 449,3       | 450,9     | 452,4       | 454,0     | 455,6       |
| 18     | 457,2   | 458,8      | 460,4     | 462,0      | 463,6     | 465,1      | 466,7     | 468,3      | 469,9     | 471,5      | 473,1     | 474,7       | 476,3     | 477,8       | 479,4     | 481,0       |
| 19     | 482,6   | 484,2      | 485,8     | 487,4      | 489,0     | 490,5      | 492,1     | 493,7      | 495,3     | 496,9      | 498,5     | 500,1       | 501,7     | 503,2       | 504,8     | 506,4       |
| 20     | 508,0   | 509,6      | 511,2     | 512,8      | 514,4     | 515,9      | 517,5     | 519,1      | 520,7     | 522,3      | 523,9     | 525,5       | 527,1     | 528,6       | 530,2     | 531,8       |
| 21     | 533,4   | 535,0      | 536,6     | 538,2      | 539,8     | 541,3      | 542,9     | 544,5      | 546,1     | 547,7      | 549,3     | 550,9       | 552,5     | 554,0       | 555,6     | 557,2       |
| 22     | 558,8   | 560,4      | 562,0     | 563,6      | 565,2     | 566,7      | 568,3     | 569,9      | 571,5     | 573,1      | 574,7     | 576,3       | 577,9     | 579,4       | 581,0     | 582,6       |
| 23     | 584,2   | 585,8      | 587,4     | 589,0      | 590,6     | 592,1      | 593,7     | 595,3      | 596,9     | 598,5      | 600,1     | 601,7       | 603,3     | 604,8       | 606,4     | 608,0       |
| 24     | 609,6   | 611,2      | 612,8     | 614,4      | 616,0     | 617,5      | 619,1     | 620,7      | 622,3     | 623,9      | 625,5     | 627,1       | 628,7     | 630,2       | 631,8     | 633,4       |
| 25     | 635,0   | 636,6      | 638,2     | 639,8      | 641,4     | 642,9      | 644,5     | 646,1      | 647,7     | 649,3      | 650,9     | 652,5       | 654,1     | 655,6       | 657,2     | 658,8       |
| 26     | 660,4   | 662,0      | 663,6     | 665,2      | 666,8     | 668,3      | 669,9     | 671,5      | 673,1     | 674,7      | 676,3     | 677,9       | 679,5     | 681,0       | 682,6     | 684,2       |
| 27     | 685,8   | 687,4      | 689,0     | 690,6      | 692,2     | 693,7      | 695,3     | 696,9      | 698,5     | 700,1      | 701,7     | 703,3       | 704,9     | 706,4       | 708,0     | 709,6       |
| 28     | 711,2   | 712,8      | 714,4     | 716,0      | 717,6     | 719,1      | 720,7     | 722,3      | 723,9     | 725,5      | 727,1     | 728,7       | 730,3     | 731,8       | 733,4     | 735,0       |
| 29     | 736,6   | 738,2      | 739,8     | 741,4      | 743,0     | 744,5      | 746,1     | 747,7      | 749,3     | 750,9      | 752,5     | 754,1       | 755,7     | 757,2       | 758,8     | 760,4       |
| 30     | 762,0   | 763,6      | 765,2     | 766,8      | 768,4     | 769,9      | 771,5     | 773,1      | 774,7     | 776,3      | 777,9     | 779,5       | 781,1     | 782,6       | 784,2     | 785,8       |
| 31     | 787,4   | 789,0      | 790,6     | 792,2      | 793,8     | 795,3      | 796,9     | 798,5      | 800,1     | 801,7      | 803,3     | 804,9       | 806,5     | 808,0       | 809,6     | 811,2       |
| 32     | 812,8   | 814,4      | 816,0     | 817,6      | 819,2     | 820,7      | 822,3     | 823,9      | 825,5     | 827,1      | 828,7     | 830,3       | 831,9     | 833,4       | 835,0     | 836,6       |
| 33     | 838,2   | 839,8      | 841,4     | 843,0      | 844,6     | 846,1      | 847,7     | 849,3      | 850,9     | 852,5      | 854,1     | 855,7       | 857,3     | 858,8       | 860,4     | 862,0       |
| 34     | 863,6   | 865,2      | 866,8     | 868,4      | 870,0     | 871,5      | 873,1     | 874,7      | 876,3     | 877,9      | 879,5     | 881,1       | 882,7     | 884,2       | 885,8     | 887,4       |
| 35     | 889,0   | 890,6      | 892,2     | 893,8      | 895,4     | 896,9      | 898,5     | 900,1      | 901,7     | 903,3      | 904,9     | 906,5       | 908,1     | 909,6       | 911,2     | 912,8       |
| 36     | 914,4   | 916,0      | 917,6     | 919,2      | 920,8     | 922,3      | 923,9     | 925,5      | 927,1     | 928,7      | 930,3     | 931,9       | 933,5     | 935,0       | 936,6     | 938,2       |
| 37     | 939,8   | 941,4      | 943,0     | 944,6      | 946,2     | 947,7      | 949,3     | 950,9      | 952,5     | 954,1      | 955,7     | 957,3       | 958,9     | 960,4       | 962,0     | 963,6       |
| 38     | 965,2   | 966,8      | 968,4     | 970,0      | 971,6     | 973,1      | 974,7     | 976,3      | 977,9     | 979,5      | 981,1     | 982,7       | 984,3     | 985,8       | 987,4     | 989,0       |
| 39     | 990,6   | 992,2      | 993,8     | 995,4      | 997,0     | 998,5      | 1000,1    | 1001,7     | 1003,3    | 1004,9     | 1006,5    | 1008,1      | 1009,7    | 1011,2      | 1012,8    | 1014,4      |
| 40     | 1016,0  | 1017,6     | 1019,2    | 1020,8     | 1022,4    | 1023,9     | 1025,5    | 1027,1     | 1028,7    | 1030,3     | 1031,9    | 1033,5      | 1035,1    | 1036,6      | 1038,2    | 1039,8      |
| 41     | 1041,4  | 1043,0     | 1044,6    | 1046,2     | 1047,8    | 1049,3     | 1050,9    | 1052,5     | 1054,1    | 1055,7     | 1057,3    | 1058,9      | 1060,5    | 1062,0      | 1063,6    | 1065,2      |
| 42     | 1066,8  | 1068,4     | 1070,0    | 1071,6     | 1073,2    | 1074,7     | 1076,3    | 1077,9     | 1079,5    | 1081,1     | 1082,7    | 1084,3      | 1085,9    | 1087,4      | 1089,0    | 1090,6      |
| 43     | 1092,2  | 1093,8     | 1095,4    | 1097,0     | 1098,6    | 1100,1     | 1101,7    | 1103,3     | 1104,9    | 1106,5     | 1108,1    | 1109,7      | 1111,3    | 1112,8      | 1114,4    | 1116,0      |
| 44     | 1117,6  | 1119,2     | 1120,8    | 1122,4     | 1124,0    | 1125,5     | 1127,1    | 1128,7     | 1130,3    | 1131,9     | 1133,5    | 1135,1      | 1136,7    | 1138,2      | 1139,8    | 1141,4      |
| 45     | 1143,0  | 1144,6     | 1146,2    | 1147,8     | 1149,4    | 1150,9     | 1152,5    | 1154,1     | 1155,7    | 1157,3     | 1158,9    | 1160,5      | 1162,1    | 1163,6      | 1165,2    | 1166,8      |
| 46     | 1168,4  | 1170,0     | 1171,6    | 1173,2     | 1174,8    | 1176,3     | 1177,9    | 1179,5     | 1181,1    | 1182,7     | 1184,3    | 1185,9      | 1187,5    | 1189,0      | 1190,6    | 1192,2      |
| 47     | 1193,8  | 1195,4     | 1197,0    | 1198,6     | 1200,2    | 1201,7     | 1203,3    | 1204,9     | 1206,5    | 1208,1     | 1209,7    | 1211,3      | 1212,9    | 1214,4      | 1216,0    | 1217,6      |
| 48     | 1219,2  | 1220,8     | 1222,4    | 1224,0     | 1225,6    | 1227,1     | 1228,7    | 1230,3     | 1231,9    | 1233,5     | 1235,1    | 1236,7      | 1238,3    | 1239,8      | 1241,4    | 1243,0      |

## Conversion table: mm to inches

| mm  | 0        | 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|     | inches   | inches   | inches   | inches   | inches   | inches   | inches   | inches   | inches   | inches   |
| 0   | 0,00000  | 0,03937  | 0,07874  | 0,11811  | 0,15748  | 0,19685  | 0,23622  | 0,27559  | 0,31496  | 0,35433  |
| 10  | 0,39370  | 0,43307  | 0,47244  | 0,51181  | 0,55118  | 0,59055  | 0,62992  | 0,66929  | 0,70866  | 0,74803  |
| 20  | 0,78740  | 0,82677  | 0,86614  | 0,90551  | 0,94488  | 0,98425  | 1,02362  | 1,06299  | 1,10236  | 1,14173  |
| 30  | 1,18110  | 1,22047  | 1,25984  | 1,29921  | 1,33858  | 1,37795  | 1,41732  | 1,45669  | 1,49606  | 1,53543  |
| 40  | 1,57480  | 1,61417  | 1,65354  | 1,69291  | 1,73228  | 1,77165  | 1,81102  | 1,85039  | 1,88976  | 1,92913  |
| 50  | 1,96850  | 2,00787  | 2,04724  | 2,08661  | 2,12598  | 2,16535  | 2,20472  | 2,24409  | 2,28346  | 2,32283  |
| 60  | 2,36220  | 2,40157  | 2,44094  | 2,48031  | 2,51969  | 2,55906  | 2,59843  | 2,63780  | 2,67717  | 2,71654  |
| 70  | 2,75591  | 2,79528  | 2,83465  | 2,87402  | 2,91339  | 2,95276  | 2,99213  | 3,03150  | 3,07087  | 3,11024  |
| 80  | 3,14961  | 3,18898  | 3,22835  | 3,26772  | 3,30709  | 3,34646  | 3,38583  | 3,42520  | 3,46457  | 3,50394  |
| 90  | 3,54331  | 3,58268  | 3,62205  | 3,66142  | 3,70079  | 3,74016  | 3,77953  | 3,81890  | 3,85827  | 3,89764  |
| 100 | 3,93701  | 3,97638  | 4,01575  | 4,05512  | 4,09449  | 4,13386  | 4,17323  | 4,21260  | 4,25197  | 4,29134  |
| 110 | 4,33071  | 4,37008  | 4,40945  | 4,44882  | 4,48819  | 4,52756  | 4,56693  | 4,60630  | 4,64567  | 4,68504  |
| 120 | 4,72441  | 4,76378  | 4,80315  | 4,84252  | 4,88189  | 4,92126  | 4,96063  | 5,00000  | 5,03937  | 5,07874  |
| 130 | 5,11811  | 5,15748  | 5,19685  | 5,23622  | 5,27559  | 5,31496  | 5,35433  | 5,39370  | 5,43307  | 5,47244  |
| 140 | 5,51181  | 5,55118  | 5,59055  | 5,62992  | 5,66929  | 5,70866  | 5,74803  | 5,78740  | 5,82677  | 5,86614  |
| 150 | 5,90551  | 5,94488  | 5,98425  | 6,02362  | 6,06299  | 6,10236  | 6,14173  | 6,18110  | 6,22047  | 6,25984  |
| 160 | 6,29921  | 6,33858  | 6,37795  | 6,41732  | 6,45669  | 6,49606  | 6,53543  | 6,57480  | 6,61417  | 6,65354  |
| 170 | 6,69291  | 6,73228  | 6,77165  | 6,81102  | 6,85039  | 6,88976  | 6,92913  | 6,96850  | 7,00787  | 7,04724  |
| 180 | 7,08661  | 7,12598  | 7,16535  | 7,20472  | 7,24409  | 7,28346  | 7,32283  | 7,36220  | 7,40157  | 7,44094  |
| 190 | 7,48031  | 7,51969  | 7,55906  | 7,59843  | 7,63780  | 7,67717  | 7,71654  | 7,75591  | 7,79528  | 7,83465  |
| 200 | 7,87402  | 7,91339  | 7,95276  | 7,99213  | 8,03150  | 8,07087  | 8,11024  | 8,14961  | 8,18898  | 8,22835  |
| 210 | 8,26772  | 8,30709  | 8,34646  | 8,38583  | 8,42520  | 8,46457  | 8,50394  | 8,54331  | 8,58268  | 8,62205  |
| 220 | 8,66142  | 8,70079  | 8,74016  | 8,77953  | 8,81890  | 8,85827  | 8,89764  | 8,93701  | 8,97638  | 9,01575  |
| 230 | 9,05512  | 9,09449  | 9,13386  | 9,17323  | 9,21260  | 9,25197  | 9,29134  | 9,33071  | 9,37008  | 9,40945  |
| 240 | 9,44882  | 9,48819  | 9,52756  | 9,56693  | 9,60630  | 9,64567  | 9,68504  | 9,72441  | 9,76378  | 9,80315  |
| 250 | 9,84252  | 9,88189  | 9,92126  | 9,96063  | 10,00000 | 10,03937 | 10,07874 | 10,11811 | 10,15748 | 10,19685 |
| 260 | 10,23622 | 10,27559 | 10,31496 | 10,35433 | 10,39370 | 10,43307 | 10,47244 | 10,51181 | 10,55118 | 10,59055 |
| 270 | 10,62992 | 10,66929 | 10,70866 | 10,74803 | 10,78740 | 10,82677 | 10,86614 | 10,90551 | 10,94488 | 10,98425 |
| 280 | 11,02362 | 11,06299 | 11,10236 | 11,14173 | 11,18110 | 11,22047 | 11,25984 | 11,29921 | 11,33858 | 11,37795 |
| 290 | 11,41732 | 11,45669 | 11,49606 | 11,53543 | 11,57480 | 11,61417 | 11,65354 | 11,69291 | 11,73228 | 11,77165 |
| 300 | 11,81102 | 11,85039 | 11,88976 | 11,92913 | 11,96850 | 12,00787 | 12,04724 | 12,08661 | 12,12598 | 12,16535 |
| 310 | 12,20472 | 12,24409 | 12,28346 | 12,32283 | 12,36220 | 12,40157 | 12,44094 | 12,48031 | 12,51969 | 12,55906 |
| 320 | 12,59843 | 12,63780 | 12,67717 | 12,71654 | 12,75591 | 12,79528 | 12,83465 | 12,87402 | 12,91339 | 12,95276 |
| 330 | 12,99213 | 13,03150 | 13,07087 | 13,11024 | 13,14961 | 13,18898 | 13,22835 | 13,26772 | 13,30709 | 13,34646 |
| 340 | 13,38583 | 13,42520 | 13,46457 | 13,50394 | 13,54331 | 13,58268 | 13,62205 | 13,66142 | 13,70079 | 13,74016 |
| 350 | 13,77953 | 13,81890 | 13,85827 | 13,89764 | 13,93701 | 13,97638 | 14,01575 | 14,05512 | 14,09449 | 14,13386 |
| 360 | 14,17323 | 14,21260 | 14,25197 | 14,29134 | 14,33071 | 14,37008 | 14,40945 | 14,44882 | 14,48819 | 14,52756 |
| 370 | 14,56693 | 14,60630 | 14,64567 | 14,68504 | 14,72441 | 14,76378 | 14,80315 | 14,84252 | 14,88189 | 14,92126 |
| 380 | 14,96063 | 15,00000 | 15,03937 | 15,07874 | 15,11811 | 15,15748 | 15,19685 | 15,23622 | 15,27559 | 15,31496 |
| 390 | 15,35433 | 15,39370 | 15,43307 | 15,47244 | 15,51181 | 15,55118 | 15,59055 | 15,62992 | 15,66929 | 15,70866 |
| 400 | 15,74803 | 15,78740 | 15,82677 | 15,86614 | 15,90551 | 15,94488 | 15,98425 | 16,02362 | 16,06299 | 16,10236 |
| 410 | 16,14173 | 16,18110 | 16,22047 | 16,25984 | 16,29921 | 16,33858 | 16,37795 | 16,41732 | 16,45669 | 16,49606 |
| 420 | 16,53543 | 16,57480 | 16,61417 | 16,65354 | 16,69291 | 16,73228 | 16,77165 | 16,81102 | 16,85039 | 16,88976 |
| 430 | 16,92913 | 16,96850 | 17,00787 | 17,04724 | 17,08661 | 17,12598 | 17,16535 | 17,20472 | 17,24409 | 17,28346 |
| 440 | 17,32283 | 17,36220 | 17,40157 | 17,44094 | 17,48031 | 17,51969 | 17,55906 | 17,59843 | 17,63780 | 17,67717 |
| 450 | 17,71654 | 17,75591 | 17,79528 | 17,83465 | 17,87402 | 17,91339 | 17,95276 | 17,99213 | 18,03150 | 18,07087 |
| 460 | 18,11024 | 18,14961 | 18,18898 | 18,22835 | 18,26772 | 18,30709 | 18,34646 | 18,38583 | 18,42520 | 18,46457 |
| 470 | 18,50394 | 18,54331 | 18,58268 | 18,62205 | 18,66142 | 18,70079 | 18,74016 | 18,77953 | 18,81890 | 18,85827 |
| 480 | 18,89764 | 18,93701 | 18,97638 | 19,01575 | 19,05512 | 19,09449 | 19,13386 | 19,17323 | 19,21260 | 19,25197 |
| 490 | 19,29134 | 19,33071 | 19,37008 | 19,40945 | 19,44882 | 19,48819 | 19,52756 | 19,56693 | 19,60630 | 19,64567 |

### Conversion table: mm to inches

| mm   | 0<br>inches | 10<br>inches | 20<br>inches | 30<br>inches | 40<br>inches | 50<br>inches | 60<br>inches | 70<br>inches | 80<br>inches | 90<br>inches |
|------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 500  | 19,68504    | 20,07874     | 20,47244     | 20,86614     | 21,25984     | 21,65354     | 22,04724     | 22,44094     | 22,83465     | 23,22835     |
| 600  | 23,62205    | 24,01575     | 24,40945     | 24,80315     | 25,19685     | 25,59055     | 25,98425     | 26,37795     | 26,77165     | 27,16535     |
| 700  | 27,55906    | 27,95276     | 28,34646     | 28,74016     | 29,13386     | 29,52756     | 29,92126     | 30,31496     | 30,70866     | 31,10236     |
| 800  | 31,49606    | 31,88976     | 32,28346     | 32,67717     | 33,07087     | 33,46457     | 33,85827     | 34,25197     | 34,64567     | 35,03937     |
| 900  | 35,43307    | 35,82677     | 36,22047     | 36,61417     | 37,00787     | 37,40157     | 37,79528     | 38,18898     | 38,58268     | 38,97638     |
| 1000 | 39,37008    | 39,76378     | 40,15748     | 40,55118     | 40,94488     | 41,33858     | 41,73228     | 42,12598     | 42,51969     | 42,91339     |
| 1100 | 43,30709    | 43,70079     | 44,09449     | 44,48819     | 44,88189     | 45,27559     | 45,66929     | 46,06299     | 46,45669     | 46,85039     |
| 1200 | 47,24409    | 47,63780     | 48,03150     | 48,42520     | 48,81890     | 49,21260     | 49,60630     | 50,00000     | 50,39370     | 50,78740     |
| 1300 | 51,18110    | 51,57480     | 51,96850     | 52,36220     | 52,75591     | 53,14961     | 53,54331     | 53,93701     | 54,33071     | 54,72441     |
| 1400 | 55,11811    | 55,51181     | 55,90551     | 56,29921     | 56,69291     | 57,08661     | 57,48031     | 57,87402     | 58,26772     | 58,66142     |
| 1500 | 59,05512    | 59,44882     | 59,84252     | 60,23622     | 60,62992     | 61,02362     | 61,41732     | 61,81102     | 62,20472     | 62,59843     |
| 1600 | 62,99213    | 63,38583     | 63,77953     | 64,17323     | 64,56693     | 64,96063     | 65,35433     | 65,74803     | 66,14173     | 66,53543     |

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