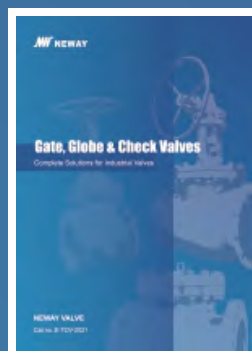




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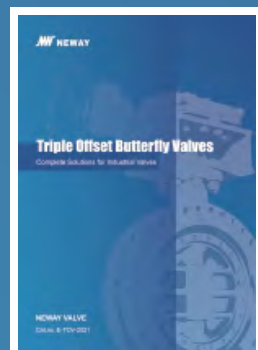
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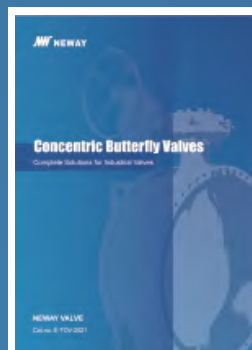
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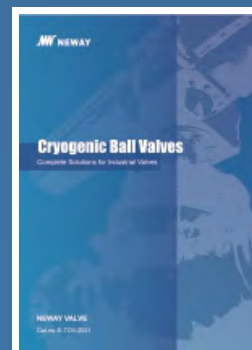
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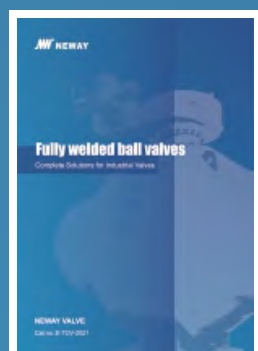
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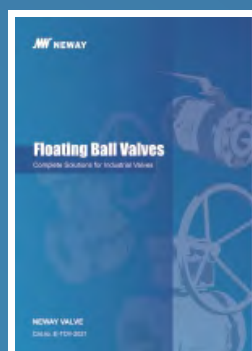
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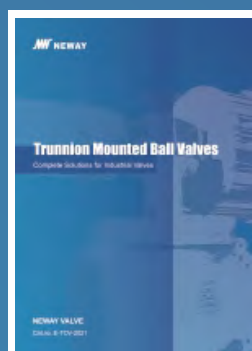
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Cat.no.:E-FWBV



Cat.no.:E-FBV



Cat.no.:E-TMBV



Cat.no.:E-MSBV



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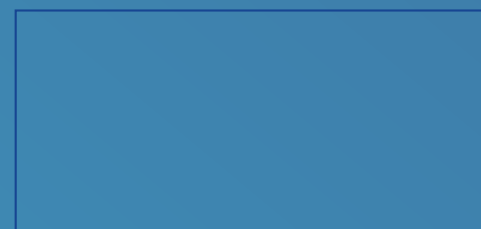
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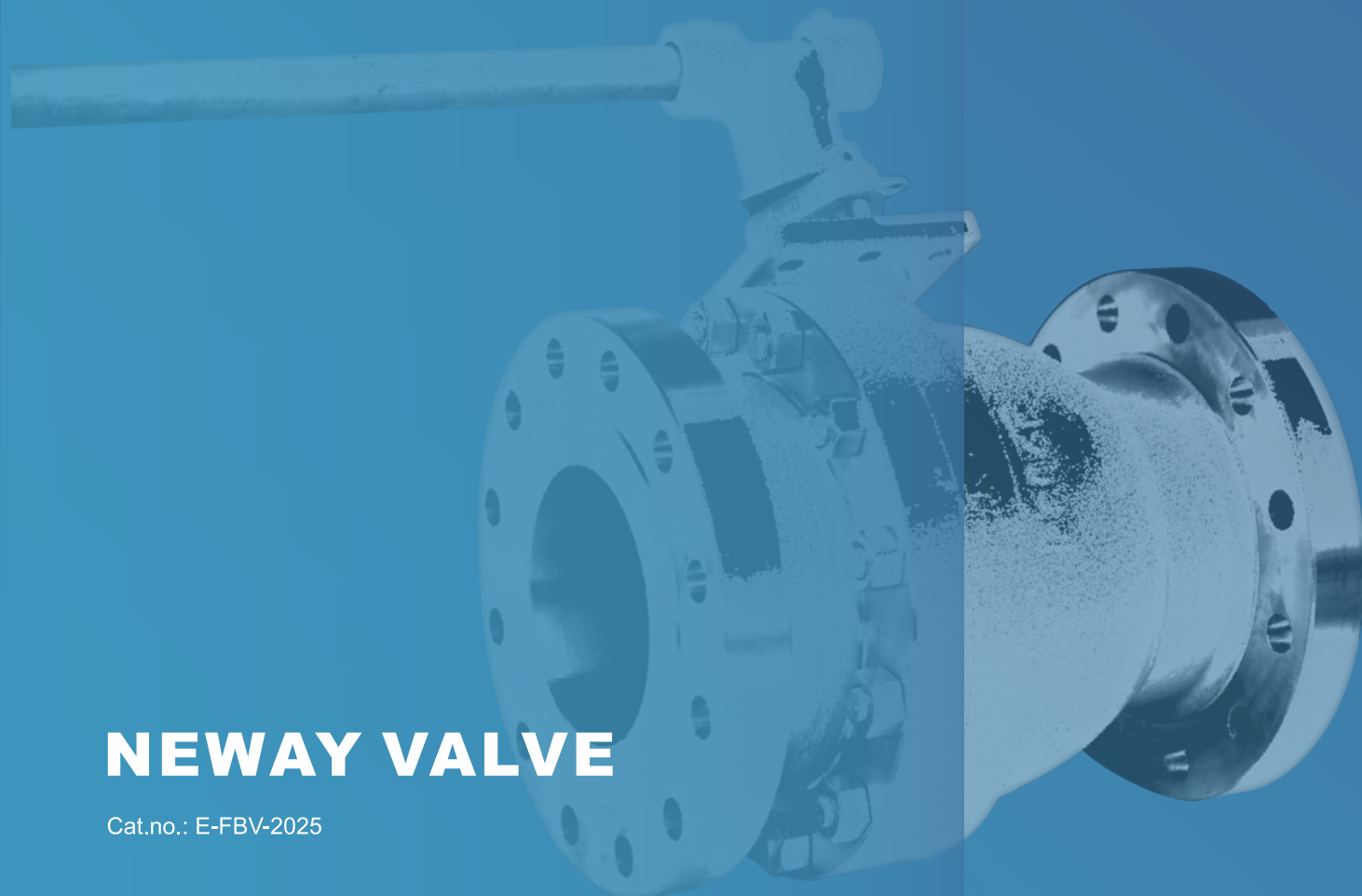
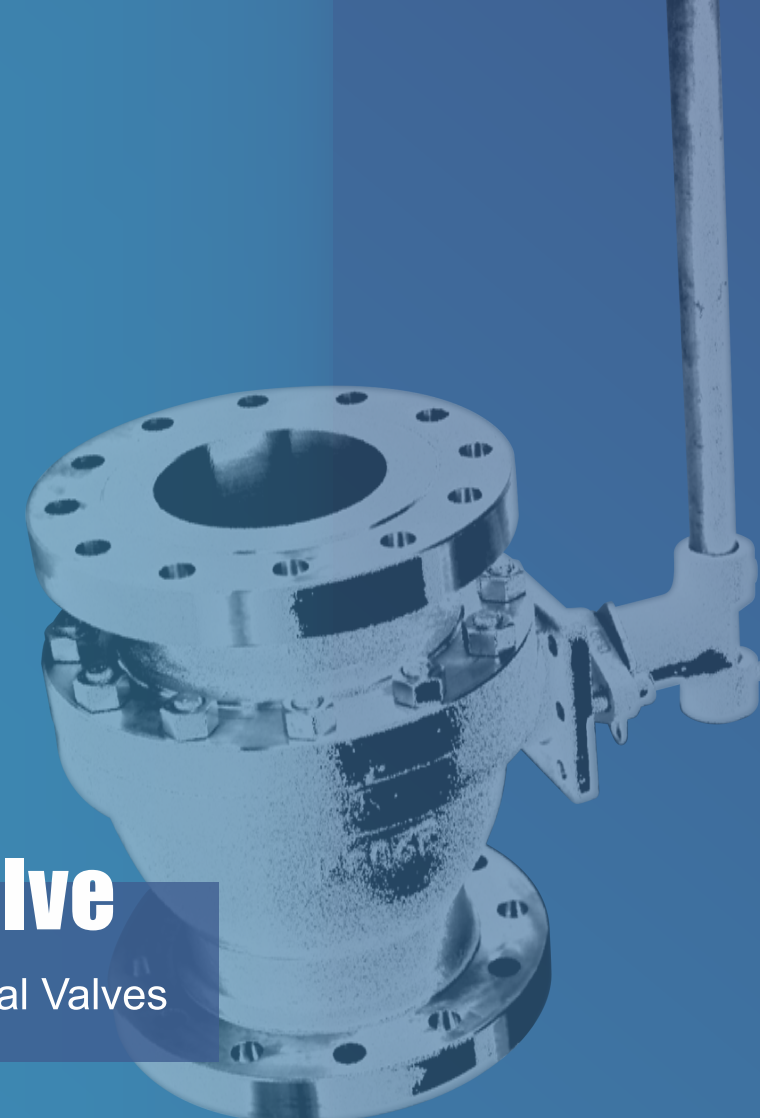


# Floating Ball Valve

Complete Solutions for Industrial Valves

# NEWAY VALVE

Cat.no.: E-FBV-2025



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## Complete Solutions for Industrial Valves

As a global leader of valve manufacturing, Neway (SSE:603699) is dedicated to the production, research, and development of industrial valves. Neway is committed to providing complete valve solutions to all industries through advanced engineering and innovation.

Neway's product line includes Ball, Butterfly, Gate, Globe, Check, Nuclear, Control, Subsea, Safety valves. Our high quality standards and innovative ability are recognized by many global end users and EPCs. Neway valves are utilized in a wide variety of industries and working conditions such as Refining, Chemical, Coal Chemical, Offshore(including subsea), Air Separation, LNG, Nuclear Power, Power Generation, and Pipeline Transmission applications.

## Facilities & Service

Neway has developed a sophisticated multi-plant management system operating one valve assembly plant, one API6A valve plant, three foundries, and one R&D center. Our largest assembly plant was expanded in 2013, and it now covers 35,000 square meters.

Advanced software (ANSYS, FE-Safe, CF-Design, Siemens PLM and NX) is applied here at Neway for the Research & Development of products. We use SAP to control the traceability and status of all products during the manufacturing process. In order to ensure the safety, eco-friendliness, and reliability of our products, we use the most advanced fire-safe, cryogenic, high pressure, and fugitive emission test equipment.

As part of Neway's global strategy, to provide better service to our customers, we have established our overseas subsidiaries in USA, Netherlands, Italy, Singapore, and Dubai along with over 80 agents and distributors worldwide.

## High Quality, High Value

Neway is dedicated to continuous improvement. We maintain a quality management system that encompasses our entire operation from order entry to final inspection. Through continuous efforts, Neway's products have successfully obtained industry certifications, including ASME UV & NB, NBBI, KGS, CE, CCS and BV approvals.

## Introduction

In this catalogue, you will find the latest developed NEWAY Ball Valves, which include 4 different designs:

- BA series 1PC uni-body floating type
- B series 2PC cast steel floating type
- BB series 2PC forged steel floating type
- BC series 3PC forged steel floating type

## Quality Commitment

Neway recognizes the importance of valve quality for the safety and protection of personnel health and property. It

is our quality commitment to focus our resources to provide our customers with first class products at a competitive price, that are designed, manufactured, inspected and tested in accordance with our customer's specifications and that comply with all international standards.

With respect to the facts that the current industrial standards do not always take into consideration the likelihood and consequences of possible deterioration in service, related to specific service fluids or the external environment in which they operate. Our customers are requested to keep an open line of communication with our engineering department to identify and implement standards, that will provide valves with the possibility of deterioration in service, so as to ensure safety over the valves expected lifetime.



## Technical Innovation

NEWAY Technical Center focuses on providing outstanding quality products and developing new lines. We have a internat well-trained engineering team, supported by a comprehensive network to link the entire operations of design, manufacturing and administration.

NEWAY design philosophy is to provide safe and cost-efficient valves. We introduce the Ansys, Fe-safe, CF-design and NX software into all our new product design research which include the advanced finite element analysis, fluid and fatigue analysis to virtually verify the new design prior to production, which has resulted in dramatically shortening development duration and assure a safe and cost-efficient final product.

NEWAY technical personnel are always ready to offer on line or on site technical training and support for all of its distributors, agents and end users.



## Advanced Manufacturing & Quality Control

The latest computer technology has been extensively applied in NEWAY manufacturing, which includes a large number of numeric control machines (machining center, CNC horizontal and vertical lathe and CNC drilling machine) and ERP management system. Additionally, the data through all factories have been connected and shared. These facilitate resource integration, boost productivity, evidently enhancing machining quality and tightening process control.



NEWAY developed comprehensive and advanced inspection and test facilities to control the quality from rough castings or forgings to final products, which enable us to perform radiographic test, liquid penetrant test, magnetic-particle test, spectrum analysis, Material Positive Identification (MPI), impact test, tensile test, hardness test, fire safe test, cryogenic test, vacuum test, low fugitive emission test, high pressure gas test, ultrasonic testing and hydrostatic test.



Fire Safe Test

Fire safe is Neway's standard design. All series of Neway floating soft-seated valves has been witnessed and certified by Lloyd's Register. The certifications and test reports are available upon request. Approved by Lloyd's, the computer-controlled facility collects data of fire-safe test, capable of testing and verifying Neway's all floating ball valves per API6FA and API607.



How to order

Example:

8X6

①

BA

②

1

③

R

④

-

G

⑤

,

WCB

⑥

/

2G2626

⑦

Neway part numbers are designed to cover essential features. When ordering, please show the part numbers and a detailed description to avoid misunderstanding of your requirements.

Following descriptions provide a basic guideline in valve specification:

① Valve Size

Full bore:

| NPS | 3/8 | 1 / 2 | 3 / 4 | 1  | 1-1/4 | 1-1/2 | 2  | 2-1/2 | 3  | 3-1/2 | 4   | 5   | 6   | 8   | 10  | 12  |
|-----|-----|-------|-------|----|-------|-------|----|-------|----|-------|-----|-----|-----|-----|-----|-----|
| DN  | 10  | 15    | 20    | 25 | 32    | 40    | 50 | 65    | 80 | 90    | 100 | 125 | 150 | 200 | 250 | 300 |

Reduced bore:

| NPS | 3/8*1/4 | 1/2*3/8 | 3/4*1/2 | 1*3/4 | 1-1/2*1 | 2*1-1/2 | 2-1/2*2 | 3*2   | 4*3    | 6*4     | 8*6     | 10*8    | 12*10   |
|-----|---------|---------|---------|-------|---------|---------|---------|-------|--------|---------|---------|---------|---------|
| DN  | 10*6.4  | 15*10   | 20*15   | 25*20 | 40*25   | 50*40   | 65*60   | 80*50 | 100*80 | 150*100 | 200*150 | 250*200 | 300*250 |

② Valve Type

| Symbol | Valve Type                          | Symbol | Valve Type                         |
|--------|-------------------------------------|--------|------------------------------------|
| BA     | Uni-body Floating ball valve - cast | BC     | 3-pcs floating ball valve - forged |
| B      | 2-pcs Floating ball valve - cast    | BB     | 2-pcs floating ball valve - forged |

③ ASME Class

| Code       | 1   | 3   | 4   | 6   | 8   | 9   | 15   | 25   |
|------------|-----|-----|-----|-----|-----|-----|------|------|
| Class (LB) | 150 | 300 | 400 | 600 | 800 | 900 | 1500 | 2500 |

④ End Connection

| Symbol | End                     | Symbol | End                     |
|--------|-------------------------|--------|-------------------------|
| R      | Raised face flanged end | S      | Socket weld end         |
| J      | RTJ flanged end         | N      | Screwed end             |
| B      | Butt-weld end           | SN     | Socket Weld/Screwed End |
| F      | Flat Face Flanged End   | NC     | 55° Taper Screwed End   |

⑤ Operator

| Symbol | Description        | Symbol | Description                |
|--------|--------------------|--------|----------------------------|
|        | Lever              | BS     | Bare shaft                 |
| G      | Gear operator      | H      | Hydraulic actuator         |
| M      | Electric actuator  | L      | Gas over oil actuator      |
| P      | Pneumatic actuator | D      | Electro-hydraulic actuator |

⑥ Body Material

| Material | C40   | L70      | S40       | S41       | S42        | S43        | N50      | D40      |
|----------|-------|----------|-----------|-----------|------------|------------|----------|----------|
| ASTM Ref | A105N | A350 LF2 | A182 F304 | A182 F316 | A182 F304L | A182 F316L | Alloy 20 | A182 F51 |

| Material | C00      | L20      | S00      | S01       | S02      | S03       | N04       | D01     |
|----------|----------|----------|----------|-----------|----------|-----------|-----------|---------|
| ASTM Ref | A216 WCB | A352 LCB | A351 CF8 | A351 CF8M | A351 CF3 | A351 CF3M | A351 CN7M | A890 4A |

⑦ Trim Code

| Seat |          | Sealing |                          | Stem |            | Ball |            |
|------|----------|---------|--------------------------|------|------------|------|------------|
| Code | Material | Code    | Material                 | Code | Material   | Code | Material   |
| 1    | RPTFE    | 2       | PTFE                     | 11   | F6A        | 11   | F6A        |
| 2    | MPTFE    | 3       | FKM                      | 14   | 17-4PH     | 14   | 17-4PH     |
| 3    | PEEK     | 5       | HNBR                     | 22   | F304       | 22   | F304       |
| 5    | DEVLON   | 8       | FKM LT                   | 26   | F316/F316L | 26   | F316/F316L |
| 7    | NYLON 12 | G       | Graphite                 | 30   | F304/F304L | 30   | F304/F304L |
| 8    | PCTFE    | H       | FKM LT AED               | 2X   | FXM-19     | 2X   | FXM-19     |
|      |          | J       | FKM AED                  | 40   | F51-NC     | 40   | F51-NC     |
|      |          | K       | HNBR AED                 | 41   | F53        | 41   | F53        |
|      |          | L       | Lipseal+Graphite Packing | 42   | F55        | 42   | F55        |

Note: Other materials upon request.

# Compliance Standard

# Product Range

| Design and Inspection Standard |                   |                                             |
|--------------------------------|-------------------|---------------------------------------------|
| Pressure-Temperature Ratings   |                   | ASME B16.34, API 602(Class 800)             |
| Shell Wall Thickness           |                   | ISO 17292/ASME B16.34                       |
| Face-to-face Dimensions        | Flange            | ASME B16.10                                 |
|                                | Socket Weld & NPT | Manufacture Std.                            |
| End Connection Dimensions      | Flange            | ASME B16.5                                  |
|                                | Butt-Weld         | ASME B16.25                                 |
|                                | Socket Weld       | ASME B16.11                                 |
|                                | NPT               | ASME B1.20.1                                |
| Pressure Test                  |                   | API 598 or API 6D (Option)                  |
| Fire Test                      |                   | ISO 10497/API 607/API 6FA                   |
| Marking                        |                   | MSP-SP 25                                   |
| Surface Quality                |                   | MSP-SP 55                                   |
| Sour Service                   |                   | NACE Std. (MR 0175 or MR 0103 or ISO 15156) |
| Low Fugitive Emission          |                   | ISO 15848, TA-Luft,SPE 77/312, API641       |

| Product Coding | Class | Size |      |    |        |    |        |    |    |    |    |     |
|----------------|-------|------|------|----|--------|----|--------|----|----|----|----|-----|
|                |       | 1/2" | 3/4" | 1" | 1-1/2" | 2" | 2-1/2" | 3" | 4" | 6" | 8" | 10" |
| BA             | 150   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
|                | 300   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
| B              | 150   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
|                | 300   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
| BB             | 150   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
|                | 300   | ●    | ●    | ●  | ●      | ●  | ●      | ●  | ●  | ●  | ●  | ●   |
|                | 400   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 600   | ●    | ●    | ●  | ●      | ●  |        | ●  | ●  |    |    |     |
|                | 900   | ●    | ●    | ●  | ●      | ●  |        | ●  |    |    |    |     |
|                | 1500  | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 2500  | ●    | ●    | ●  |        |    |        |    |    |    |    |     |
| BC             | 150   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 300   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 600   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 800   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 900   | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 1500  | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |
|                | 2500  | ●    | ●    | ●  | ●      | ●  |        |    |    |    |    |     |

- Design Standard: ASME B16.34, ISO 17292, API 608
- Design Standard: ASME B16.34
- Design Standard: ASME B16.34, API 6D
- Design Standard: ASME B16.34, ISO17292,API 608,API 6D

## Blow-out Proof Stem

The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention at any pressure and acts as backseat. (Fig.1)

## Anti-static Device

A spring-loaded plunger fitted on stem keeps constant contact between ball, stem and body to create an electric path to transfer charges, avoiding acceleration of static electricity as a result of friction during valve on-off. Such build-up is utterly hazardous to some services. (Fig.2)

## Position Indicator

Double D stem head design provides mounting of the lever always in parallel to the flow passage. Misalignment of the lever is thus prevented. (Fig.3)

## Locking Device

Facility for mounting a locking device for prevention of accidental valve operation is provide.

## ISO 5211 Actuator Mounting Pad

Ball valves always furnished with integral actuator mounting pad designed according to ISO 5211. (Fig.4)

## Fire Safe - Metal to Metal Sealing

When soft seats are decomposed or ruined by fire, the ball, driven by pressure, comes into contact with the metal lip seal seat of original soft seat, creating a metal-to-metal seal to shut off service fluids and minimize internal leakage.

Additionally, the fire safe metal seat prevents damage the medium imposed on soft seat and minimizes creep of nonmetal materials. All the NEWAY floating valves are designed to be fire safe per API 607 and are tested and certified by the third party.

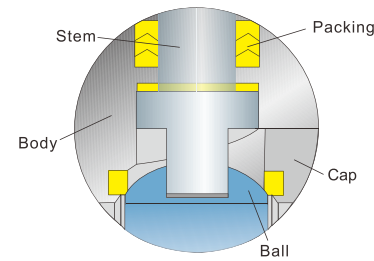


Fig.1

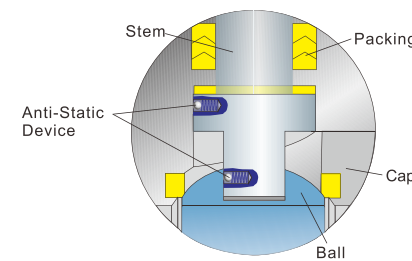
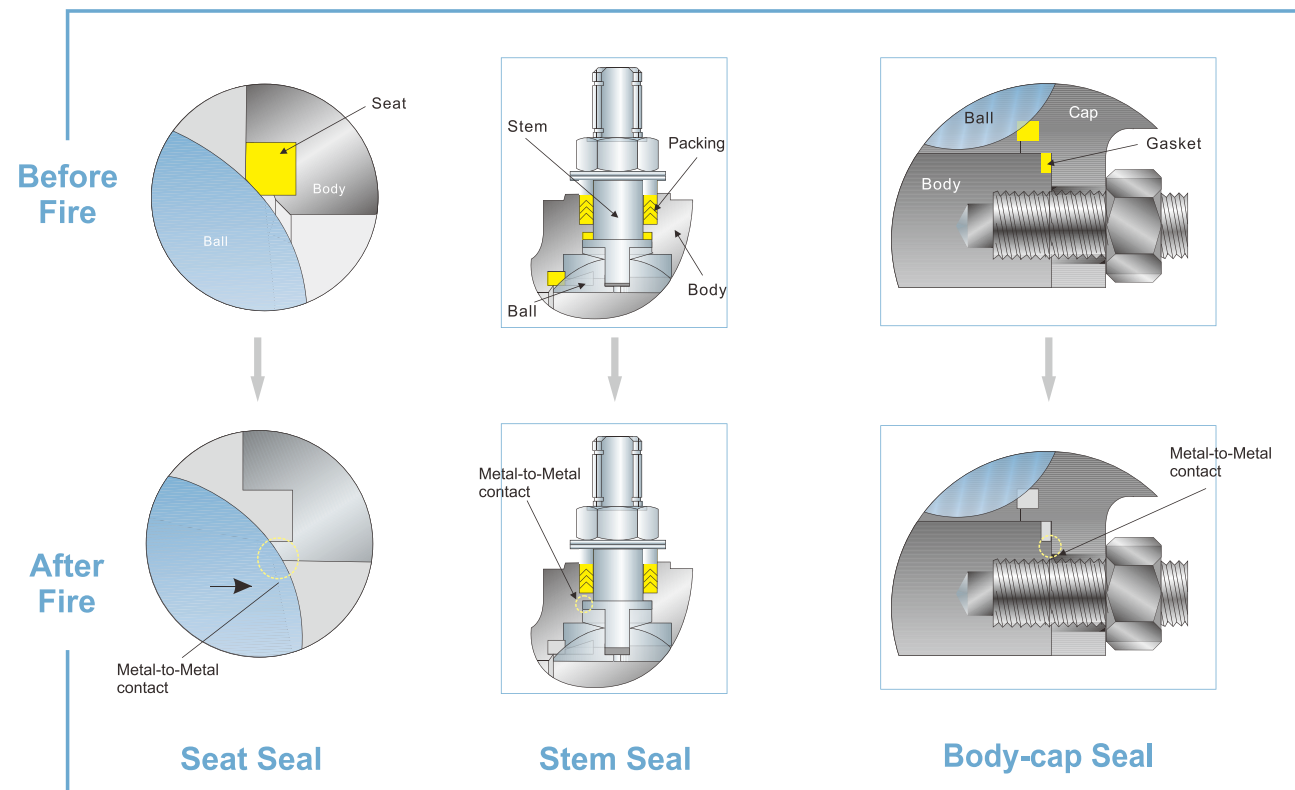


Fig.2



Modern industry sectors are challenged by valve fugitive emission to control service fluids released from the valve and curb environmental degradation. Therefore, emission control features NEWAY floating ball valves of B, BA, BB and BC Series. Low emission packing is assembled, whose max. leaking rate of design and test stands at 100 PPM (Test is performed according to ISO15848)

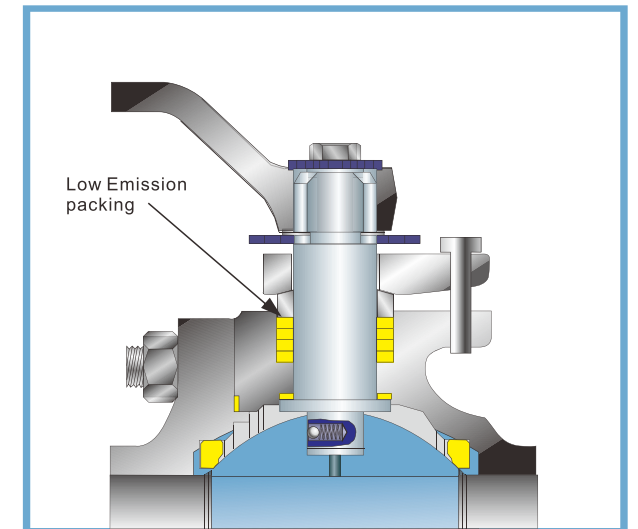
## Roughness control over stem and packing

Stem surface roughness is strictly restricted between Ra0.4 and Ra0.8, which ensures entry of graphite packing powder into tiny stem scratches to function as a lubricator, minimizing leakages around stem. Max. roughness of stuffing box is RA3.2, which is a proper value to hold packing ring in place and result in better sealing performance.

## Low Emission Packing

The packing is combination of parallel and vertical layer which is made of die-formed graphite ring processed by flexible graphite, characterizing heat resistance, less stress relaxation and low creep. The special structure means low friction on rotary stem, providing stabilized seal capability for the valve for a long time under frequent functioning.

For low-temperature and cryogenic service, the standard V shape PTFE packing rings are installed for low emission control.



Low Emission Test

Neway offers four series of floating ball valves:

- BA Series, one piece, side-entry, cast steel
- B Series, two-piece, side-entry, cast steel
- BB Series, two-piece, side-entry, forged steel
- BC Series, three-piece, side-entry, forged steel

NEWAY floating ball valves function in service ranging from -50°C to 200°C (from -58°F to 392°F), with size which varies from 1/2 inch to 12 inch (15mm~300mm) and pressure range of ASME Class150~Class 2500 (2.0Mpa~25.0Mpa). Our floating ball valves are capable of fulfilling sour service requirements stated in NACE MR0175.



Pneumatic Actuator Ball valve



Pneumatic Actuated Ball Valve



1PC Cast Steel Design



Stainless Steel



3 PC Floating Ball Valve



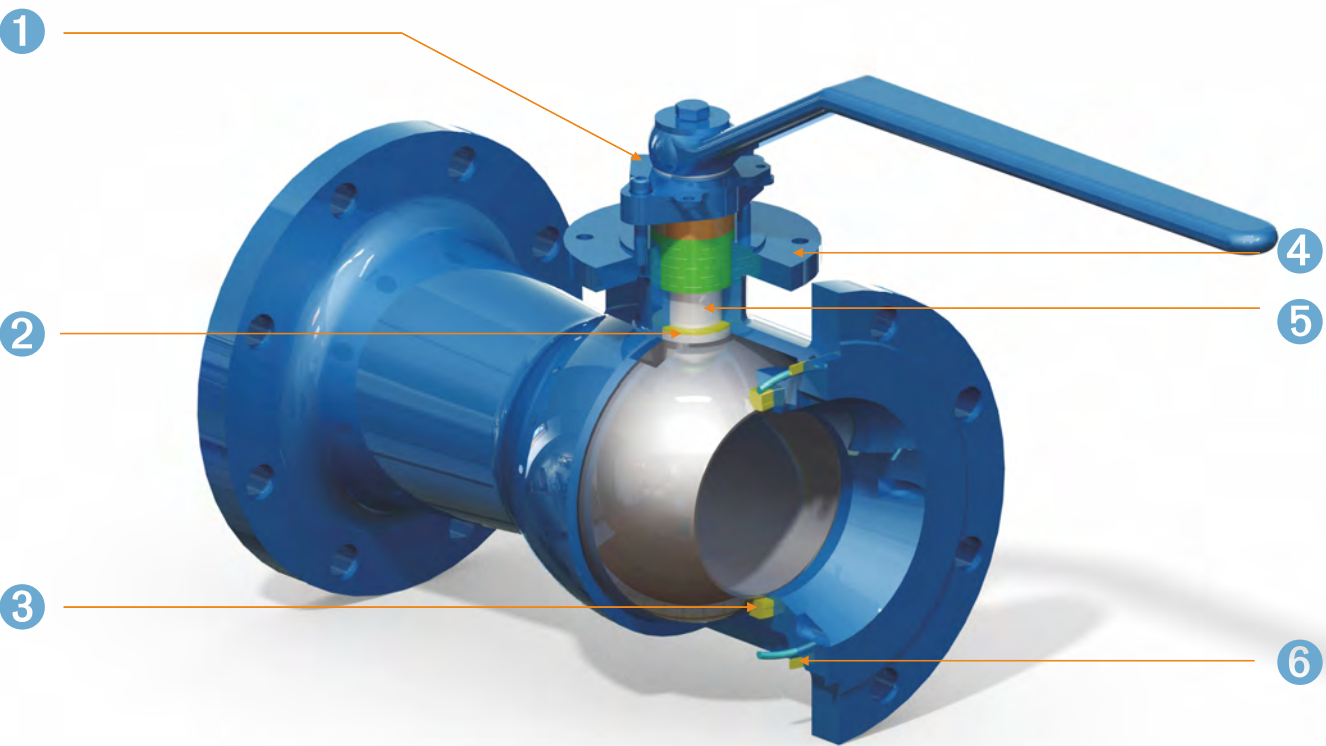
2PC Forged Steel Design



Hastelloy Ball Valve

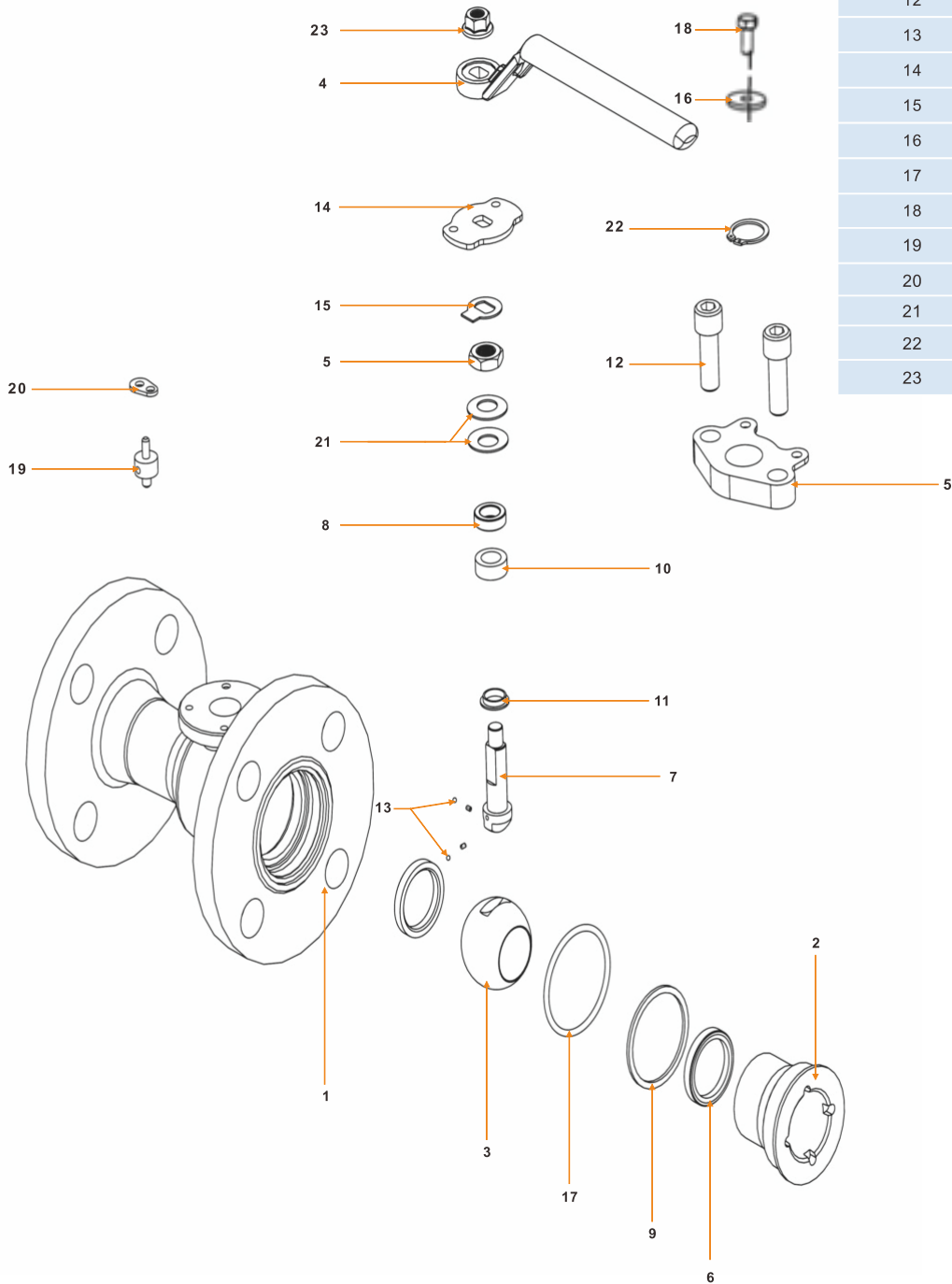


2PC Cast Steel Design



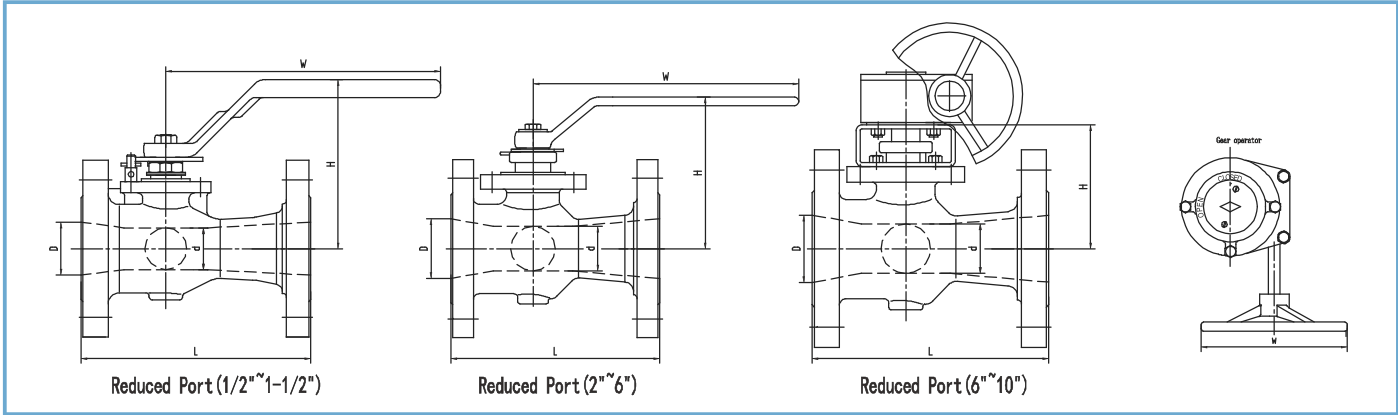
- 1 Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
- 2 Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
- 3 Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.
- 4 ISO5211 connection dimension: actuator installation is simplified by using connection dimension recognized in international standards.
- 5 Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
- 6 Emission-free Gasket: Low-emission graphite is employed in gasket to eliminate leakage.

| Index No | Part               |
|----------|--------------------|
| 1        | Body               |
| 2        | Body Insert        |
| 3        | Ball               |
| 4        | Handle             |
| 5        | Gland Flange       |
| 6        | Seat               |
| 7        | Stem               |
| 8        | Gland              |
| 9        | Gasket             |
| 10       | Packing            |
| 11       | Thrust Washer      |
| 12       | Screw              |
| 13       | Anti-Static Device |
| 14       | Stop Plate         |
| 15       | Retainer           |
| 16       | Washer             |
| 17       | O-ring(optional)   |
| 18       | Bolt               |
| 19       | Stop Pin           |
| 20       | Locking Plate      |
| 21       | Disc Spring        |
| 22       | Retainer           |
| 23       | Nut                |



| No | Part               | Carbon Steel (Non-Sour) | Stainless Steel   | Carbon Steel (Sour Service) | Low Temperature Carbon Steel |
|----|--------------------|-------------------------|-------------------|-----------------------------|------------------------------|
| 1  | Body               | ASTM A216-WCB           | ASTMA351-CF8M     | ASTMA216-WCB                | ASTMA352-LCB                 |
| 2  | Body Insert        | ASTMA216-WCB            | ASTMA351-CF8M     | ASTMA216-WCB                | ASTMA352-LCB                 |
| 3  | Ball               | ASTM A182 F6a           | ASTMA182-F316     | ASTM A182 F6a               | ASTMA182-F316                |
| 4  | Handle             | Carbon Steel            | Carbon Steel      | Carbon Steel                | Carbon Steel                 |
| 5  | Gland Flange       | ASTMA216-WCB            | ASTMA351-CF8      | ASTMA216-WCB                | ASTMA352-LCB                 |
| 6  | Seat               | PTFE                    | PTFE              | PTFE                        | PTFE                         |
| 7  | Stem               | ASTMA182-F6a            | ASTMA182-F316     | ASTMA182-F6a                | ASTMA182-F316                |
| 8  | Gland              | ASTM A276-304L          | ASTM A276-304L    | ASTM A276-304L              | ASTM A276-304L               |
| 9  | Gasket             | Flexible Graphite       | Flexible Graphite | Flexible Graphite           | Flexible Graphite            |
| 10 | Packing            | Graphite                | Graphite          | Graphite                    | Graphite                     |
| 11 | Thrust Washer      | PTFE                    | PTFE              | PTFE                        | PTFE                         |
| 12 | Screw              | ASTMA193-B7             | ASTM A193-B8 Cl2  | ASTMA193-B7M                | ASTMA320-L7M                 |
| 13 | Anti-Static Device | S.S.                    | S.S.              | S.S.                        | S.S.                         |
| 14 | Stop Plate         | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 15 | Retainer           | S.S.                    | S.S.              | S.S.                        | S.S.                         |
| 16 | Washer             | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 17 | O-ring(optional)   | Viton A                 | Viton A           | Viton A                     | HNBR                         |
| 18 | Bolt               | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 19 | Stop Pin           | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 20 | Locking Plate      | Carbon Steel            | S.S.              | Carbon Steel                | S.S.                         |
| 21 | Disc Spring        | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 22 | Retainer           | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |
| 23 | Nut                | Carbon Steel            | S.S.              | Carbon Steel                | Carbon Steel                 |

ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.



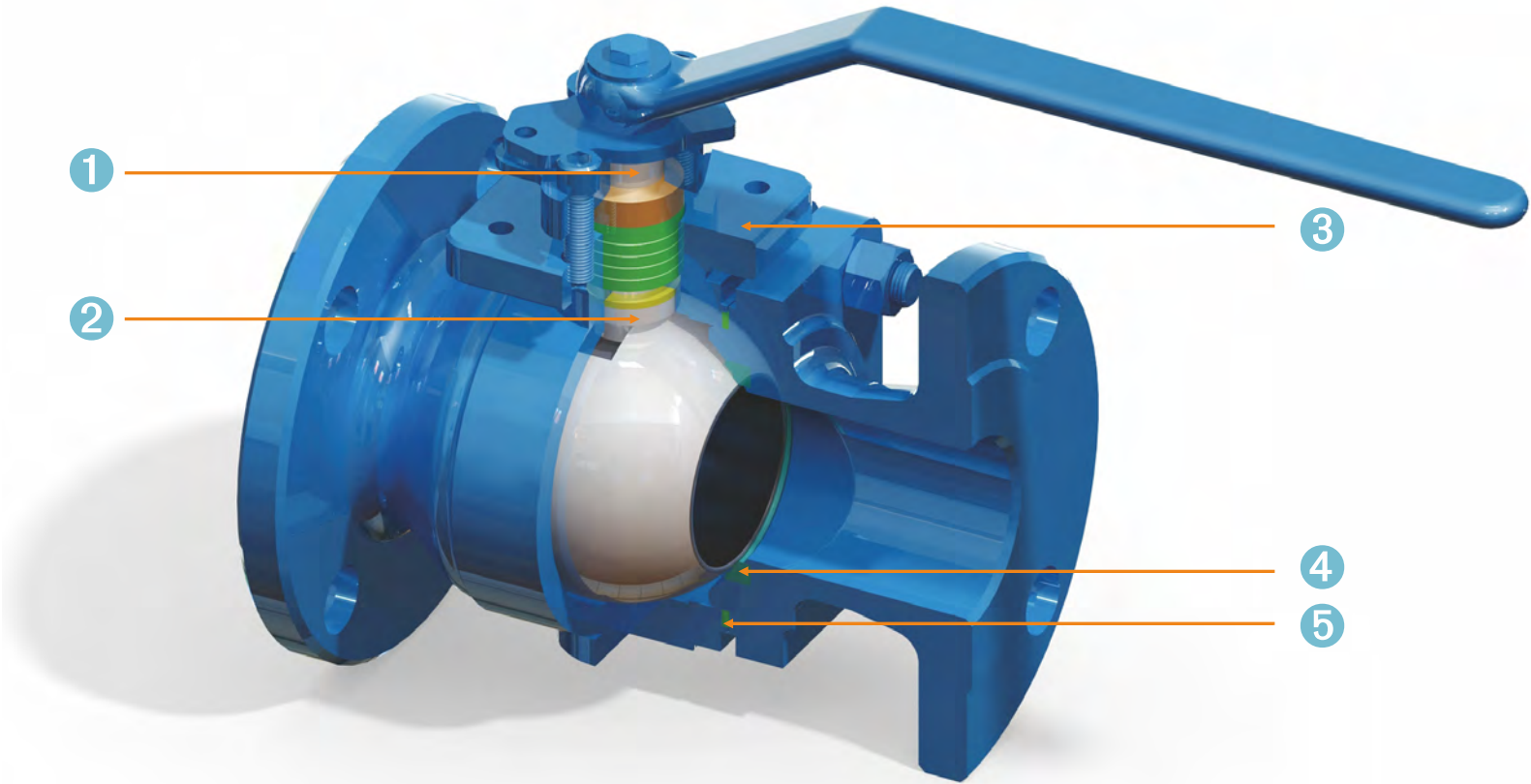
Class 150 Dimension and Weight

| Size    |         | d    |     | D     |     | L     |     | H     |       | W     |      | Weight |       |
|---------|---------|------|-----|-------|-----|-------|-----|-------|-------|-------|------|--------|-------|
| NPS     | DN      | in   | mm  | in    | mm  | in    | mm  | in    | mm    | in    | mm   | lb     | KG    |
| 1/2*3/8 | 15*10   | 0.37 | 10  | 0.50  | 13  | 4.25  | 108 | 1.75  | 44.50 | 4.72  | 145  | 3.3    | 1.5   |
| 3/4*1/2 | 20*15   | 0.50 | 13  | 0.75  | 19  | 4.61  | 117 | 2.11  | 53.50 | 5.51  | 165  | 5.5    | 2.5   |
| 1*3/4   | 25*20   | 0.75 | 19  | 1.00  | 25  | 5.00  | 127 | 2.42  | 61.50 | 5.51  | 165  | 6.6    | 3.0   |
| 1-1/2*1 | 40*25   | 1.18 | 30  | 1.50  | 38  | 6.50  | 165 | 3.15  | 80    | 6.30  | 215  | 11.0   | 5.0   |
| 2*1-1/2 | 50*40   | 1.50 | 38  | 2.00  | 51  | 7.01  | 178 | 4.17  | 106   | 10.43 | 265  | 19.2   | 8.7   |
| 2-1/2*2 | 65*50   | 2.00 | 51  | 2.50  | 64  | 7.52  | 191 | 4.72  | 120   | 10.43 | 265  | 27.3   | 12.4  |
| 3*2-1/2 | 80*65   | 2.50 | 64  | 3.00  | 76  | 7.99  | 203 | 5.67  | 144   | 10.43 | 285  | 36.8   | 16.7  |
| 4*3     | 100*80  | 3.00 | 76  | 4.00  | 102 | 9.02  | 229 | 6.54  | 166   | 11.81 | 300  | 53.8   | 24.4  |
| 6*4     | 150*100 | 4.50 | 114 | 6.00  | 152 | 10.51 | 267 | 8.39  | 213   | 15.75 | *300 | 110.2  | 50.0  |
| 8*6     | 200*150 | 6.00 | 152 | 8.00  | 203 | 11.50 | 292 | 20.71 | 526   | 11.81 | *400 | 222.7  | 101.0 |
| 10*8    | 250*200 | 7.36 | 187 | 10.00 | 254 | 12.99 | 330 | 21.65 | 550   | 16    | *400 | 330.7  | 150.0 |

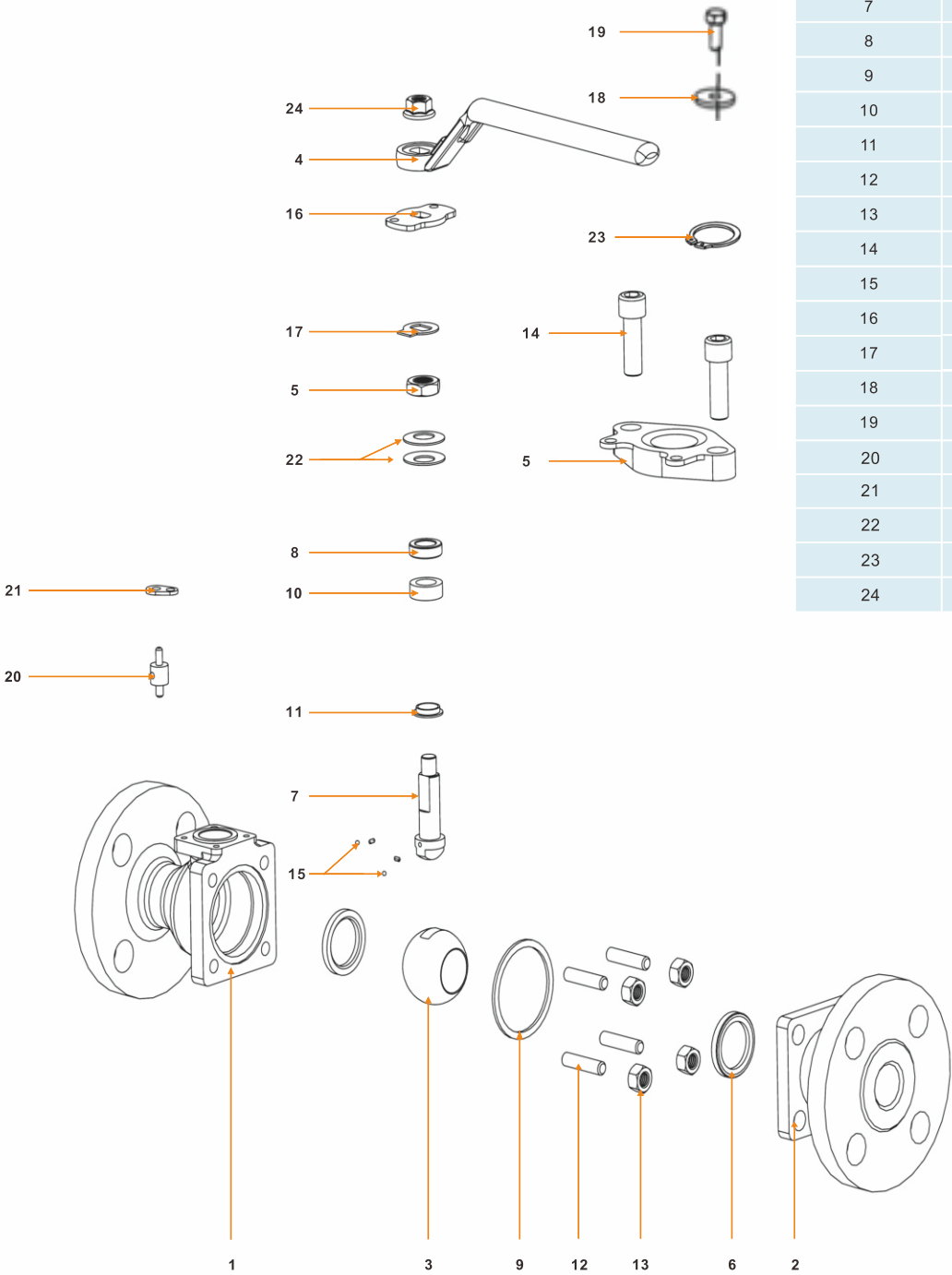
Class 300 Dimension and Weight

| Size    |         | d    |     | D     |     | L     |     | H     |       | W     |      | Weight |       |
|---------|---------|------|-----|-------|-----|-------|-----|-------|-------|-------|------|--------|-------|
| NPS     | DN      | in   | mm  | in    | mm  | in    | mm  | in    | mm    | in    | mm   | lb     | KG    |
| 1/2*3/8 | 15*10   | 0.37 | 10  | 0.50  | 13  | 5.51  | 140 | 1.75  | 44.50 | 4.72  | 145  | 6.2    | 2.8   |
| 3/4*1/2 | 20*15   | 0.50 | 13  | 0.75  | 19  | 5.98  | 152 | 2.11  | 53.50 | 5.51  | 165  | 7.9    | 3.6   |
| 1*3/4   | 25*20   | 0.75 | 19  | 1.00  | 25  | 6.50  | 165 | 2.42  | 61.50 | 5.51  | 165  | 10.6   | 4.8   |
| 1-1/2*1 | 40*25   | 1.18 | 30  | 1.50  | 38  | 7.48  | 190 | 3.15  | 80    | 6.30  | 215  | 21.2   | 9.6   |
| 2*1-1/2 | 50*40   | 1.50 | 38  | 2.00  | 51  | 8.50  | 216 | 4.17  | 106   | 10.43 | 265  | 24.3   | 11.0  |
| 2-1/2*2 | 65*50   | 2.00 | 51  | 2.50  | 64  | 9.49  | 241 | 4.72  | 120   | 10.43 | 265  | 33.3   | 15.1  |
| 3*2-1/2 | 80*65   | 2.50 | 64  | 3.00  | 76  | 11.14 | 283 | 5.67  | 144   | 10.43 | 285  | 49.6   | 22.5  |
| 4*3     | 100*80  | 3.00 | 76  | 4.00  | 102 | 12.01 | 305 | 6.54  | 166   | 11.81 | 300  | 81.6   | 37.0  |
| 6*4     | 150*100 | 4.50 | 114 | 6.00  | 152 | 15.87 | 403 | 8.39  | 213   | 11.81 | *300 | 159.8  | 72.5  |
| 8*6     | 200*150 | 5.67 | 144 | 8.00  | 203 | 16.50 | 419 | 20.71 | 526   | 15.75 | *400 | 275.6  | 125.0 |
| 10*8    | 250*200 | 7.36 | 187 | 10.00 | 254 | 17.99 | 457 | 21.65 | 550   | 15.75 | *400 | 451.9  | 205.0 |

\*Gearbox operated

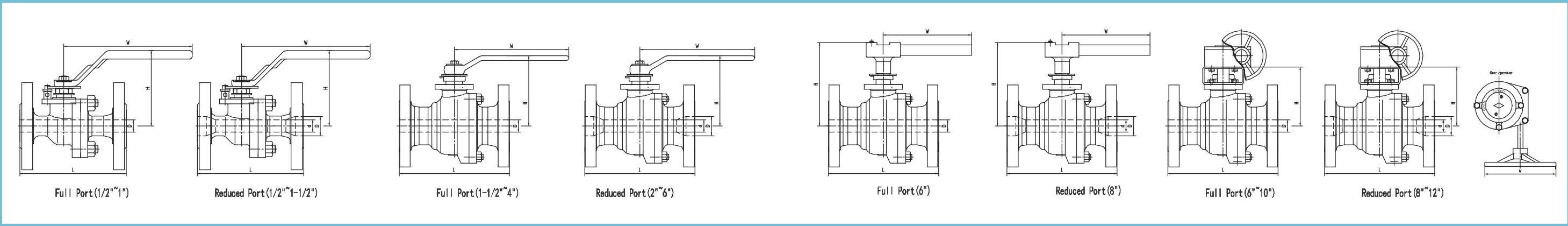


- 1 Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
- 2 Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
- 3 ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
- 4 Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.
- 5 Emission-free Gasket: Low-emission graphite is employed in gasket to eliminate leakage.



| Index No | Part               |
|----------|--------------------|
| 1        | Body               |
| 2        | Bonnet             |
| 3        | Ball               |
| 4        | Handle             |
| 5        | Gland Flange       |
| 6        | Seat               |
| 7        | Stem               |
| 8        | Gland              |
| 9        | Gasket             |
| 10       | Packing            |
| 11       | Thrust Washer      |
| 12       | Stud               |
| 13       | Nut                |
| 14       | Screw              |
| 15       | Anti-Static Device |
| 16       | Stop Plate         |
| 17       | Retainer           |
| 18       | Washer             |
| 19       | Bolt               |
| 20       | Stop Pin           |
| 21       | Locking Plate      |
| 22       | Disc Spring        |
| 23       | Retainer           |
| 24       | Nut                |

| No | Part               | Carbon Steel (Non-Sour)                  | Stainless Steel                          | Carbon Steel (Sour Service)              | Low Temperature Carbon Steel             |
|----|--------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| 1  | Body               | ASTMA216-WCB                             | ASTMA351-CF8M                            | ASTMA216-WCB                             | ASTMA352-LCB                             |
| 2  | Bonnet             | ASTMA216-WCB                             | ASTMA351-CF8M                            | ASTMA216-WCB                             | ASTMA352-LCB                             |
| 3  | Ball               | ASTMA182 F6a                             | ASTMA182-F316                            | ASTMA182 F6a                             | ASTMA182-F316                            |
| 4  | Handle             | Carbon Steel                             | Carbon Steel                             | Carbon Steel                             | Carbon Steel                             |
| 5  | Gland Flange       | ASTMA216-WCB                             | ASTMA351-CF8                             | ASTMA216-WCB                             | ASTMA352-LCB                             |
| 6  | Seat               | PTFE                                     | PTFE                                     | PTFE                                     | PTFE                                     |
| 7  | Stem               | ASTMA182-F6a                             | ASTMA182-F316                            | ASTMA182-F6a                             | ASTMA182-F316                            |
| 8  | Gland              | ASTM A276-304L                           | ASTM A276-304L                           | ASTM A276-304L                           | ASTM A276-304L                           |
| 9  | Gasket             | Flexible Graphite≤1" 316 L+Graphite > 1" | Flexible Graphite≤1" 316 L+Graphite > 1" | Flexible Graphite≤1" 316 L+Graphite > 1" | Flexible Graphite≤1" 316 L+Graphite > 1" |
| 10 | Packing            | Graphite                                 | Graphite                                 | Graphite                                 | Graphite                                 |
| 11 | Thrust Washer      | PTFE                                     | PTFE                                     | PTFE                                     | PTFE                                     |
| 12 | Stud               | ASTMA193-B7                              | ASTM A193-B8 Cl2                         | ASTMA193-B7M                             | ASTMA320-L7M                             |
| 13 | Nut                | ASTMA194-2H                              | ASTMA194-8                               | ASTMA194-2HM                             | ASTMA194-7M                              |
| 14 | Screw              | ASTMA193-B7                              | ASTM A193-B8 Cl2                         | ASTMA193-B7M                             | ASTMA320-L7M                             |
| 15 | Anti-Static Device | S.S.                                     | S.S.                                     | S.S.                                     | S.S.                                     |
| 16 | Stop Plate         | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 17 | Retainer           | S.S.                                     | S.S.                                     | S.S.                                     | S.S.                                     |
| 18 | Washer             | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 19 | Bolt               | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 20 | Stop Pin           | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 21 | Locking Plate      | S.S.                                     | S.S.                                     | S.S.                                     | S.S.                                     |
| 22 | Disc Spring        | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 23 | Retainer           | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |
| 24 | Nut                | Carbon Steel                             | S.S.                                     | Carbon Steel                             | Carbon Steel                             |



Class 150 Dimension and Weight

| Full Port |     |       |     |       |     |       |       |       |        |        |       |
|-----------|-----|-------|-----|-------|-----|-------|-------|-------|--------|--------|-------|
| Size      |     | D     |     | L     |     | H     |       | W     |        | Weight |       |
| NPS       | DN  | in    | mm  | in    | mm  | in    | mm    | in    | mm     | lb     | kg    |
| 1/2       | 15  | 0.50  | 13  | 4.25  | 108 | 3.35  | 85    | 6.50  | 165    | 4.0    | 1.8   |
| 3/4       | 20  | 0.75  | 19  | 4.62  | 117 | 3.54  | 90    | 6.50  | 165    | 4.4    | 2.0   |
| 1         | 25  | 1.00  | 25  | 5.00  | 127 | 4.27  | 108.5 | 8.46  | 215    | 7.9    | 3.6   |
| 1-1/2     | 40  | 1.50  | 38  | 6.50  | 165 | 5.24  | 133   | 10.43 | 265    | 15.9   | 7.2   |
| 2         | 50  | 2.00  | 51  | 7.00  | 178 | 5.87  | 149   | 10.43 | 265    | 24.5   | 11.1  |
| 2-1/2     | 65  | 2.50  | 64  | 7.50  | 190 | 6.48  | 164.5 | 11.22 | 285    | 30.9   | 14.0  |
| 3         | 80  | 3.00  | 76  | 8.00  | 203 | 7.22  | 183.5 | 11.81 | 300    | 48.5   | 22.0  |
| 4         | 100 | 4.00  | 102 | 9.00  | 229 | 8.46  | 215   | 17.72 | 450    | 88.2   | 40.0  |
| 6         | 150 | 6.00  | 152 | 15.50 | 394 | 13.52 | 343.5 | 55.12 | **1400 | 202.8  | 92.0  |
| 6         | 150 | 6.00  | 152 | 15.50 | 394 | 11.30 | 287   | 15.75 | *400   | 238.1  | 108.0 |
| 8         | 200 | 8.00  | 203 | 18.00 | 457 | 12.83 | 326   | 19.69 | *500   | 429.9  | 195.0 |
| 10        | 250 | 10.00 | 254 | 21.00 | 533 | 14.49 | 368   | 19.69 | *500   | 687.8  | 312.0 |

| Reduced Port |         |       |     |       |     |       |     |       |       |       |        |        |       |
|--------------|---------|-------|-----|-------|-----|-------|-----|-------|-------|-------|--------|--------|-------|
| Size         |         | d     |     | D     |     | L     |     | H     |       | W     |        | Weight |       |
| NPS          | DN      | in    | mm  | in    | mm  | in    | mm  | in    | mm    | in    | mm     | lb     | kg    |
| 3/4*1/2      | 20*15   | 0.50  | 13  | 0.75  | 19  | 4.62  | 117 | 3.35  | 85    | 6.50  | 165    | 6.6    | 3.0   |
| 1*3/4        | 25*20   | 0.75  | 19  | 1.00  | 25  | 5.00  | 127 | 3.54  | 90    | 6.50  | 165    | 8.8    | 4.0   |
| 1-1/2*1      | 40*25   | 1.00  | 25  | 1.50  | 38  | 6.50  | 165 | 4.27  | 108.5 | 8.46  | 215    | 15.4   | 7.0   |
| 2*1-1/2      | 50*40   | 1.50  | 38  | 2.00  | 51  | 7.00  | 178 | 5.24  | 133   | 10.43 | 265    | 29.8   | 13.5  |
| 3*2          | 80*50   | 2.00  | 51  | 2.50  | 64  | 8.00  | 203 | 5.87  | 149   | 10.43 | 265    | 44.1   | 20.0  |
| 4*3          | 100*80  | 3.00  | 76  | 4.00  | 102 | 9.00  | 229 | 7.22  | 183.5 | 11.81 | 300    | 83.8   | 38.0  |
| 6*4          | 150*100 | 4.00  | 102 | 6.00  | 152 | 15.50 | 394 | 8.46  | 215   | 17.72 | 450    | 158.7  | 72.0  |
| 8*6          | 200*150 | 6.00  | 152 | 8.00  | 203 | 18.00 | 457 | 13.52 | 343.5 | 55.12 | **1400 | 231.5  | 105.0 |
| 8*6          | 200*150 | 6.00  | 152 | 8.00  | 203 | 18.00 | 457 | 11.30 | 287   | 15.75 | *400   | 271.2  | 123.0 |
| 10*8         | 250*200 | 8.00  | 203 | 10.00 | 254 | 21.00 | 533 | 12.83 | 326   | 19.69 | *500   | 480.6  | 218.0 |
| 12*10        | 300*250 | 10.00 | 254 | 12.00 | 305 | 24.00 | 610 | 14.49 | 368   | 19.69 | *500   | 507.1  | 230.0 |

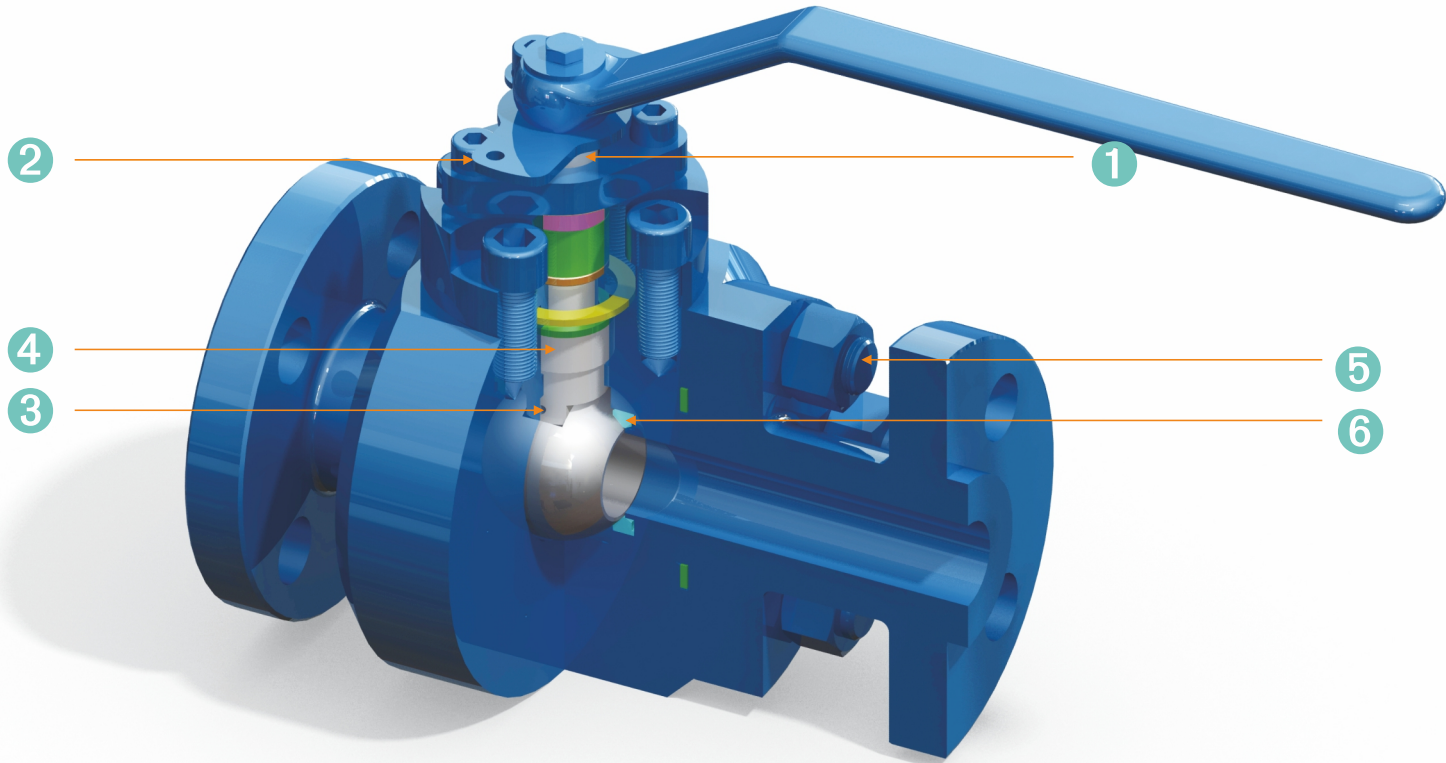
\*\* T-Bar Operator  
\* Gear Operator

Class 300 Dimension and Weight

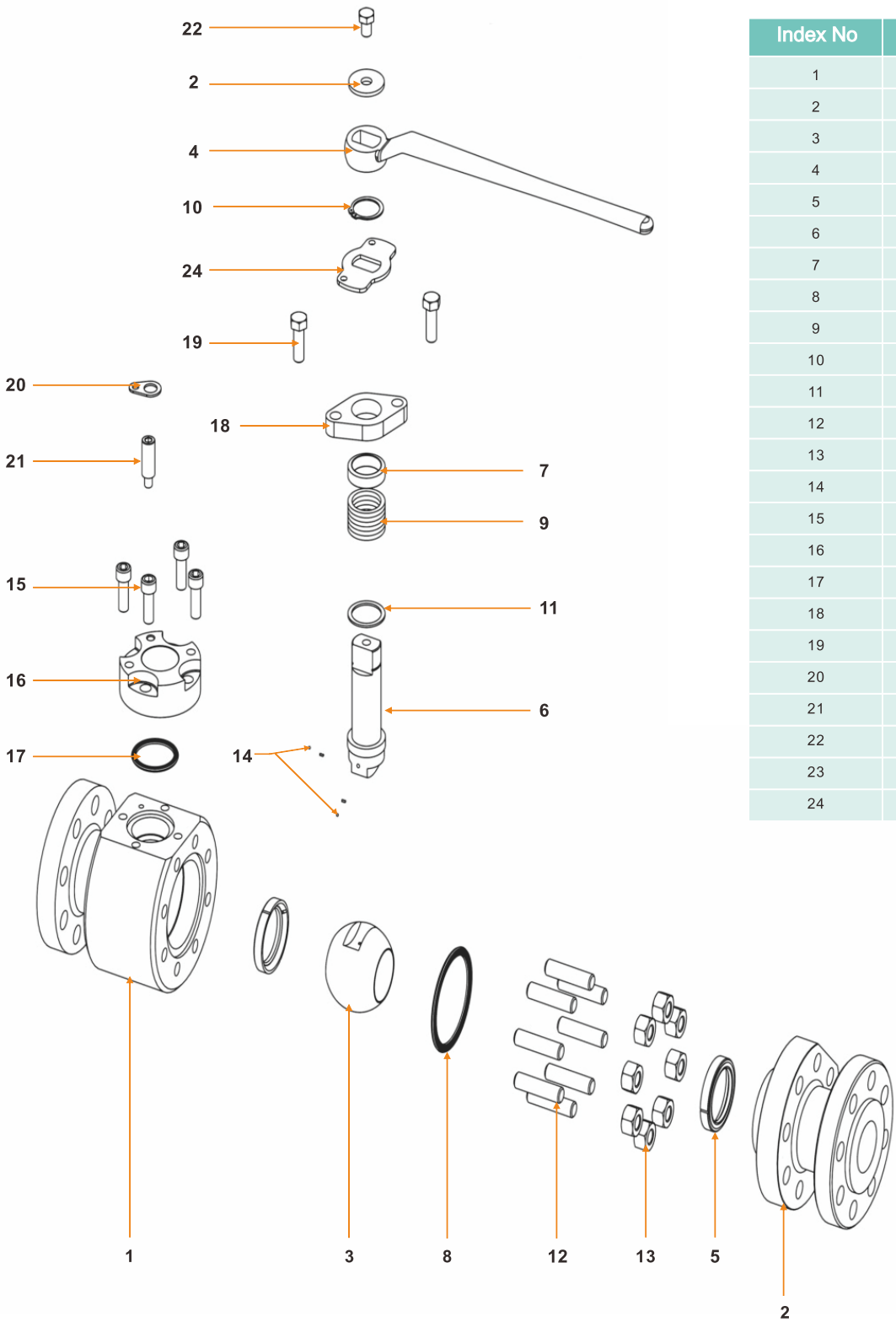
| Full Port |     |       |     |       |     |       |       |       |       |        |       |
|-----------|-----|-------|-----|-------|-----|-------|-------|-------|-------|--------|-------|
| Size      |     | D     |     | L     |     | H     |       | W     |       | Weight |       |
| NPS       | DN  | in    | mm  | in    | mm  | in    | mm    | in    | mm    | lb     | kg    |
| 1/2       | 15  | 0.50  | 13  | 5.50  | 140 | 3.35  | 85    | 6.50  | 165   | 6.6    | 3.0   |
| 3/4       | 20  | 0.75  | 19  | 6.00  | 152 | 3.54  | 90    | 6.50  | 165   | 8.8    | 4.0   |
| 1         | 25  | 1.00  | 25  | 6.50  | 165 | 4.27  | 108.5 | 8.46  | 215   | 15.4   | 7.0   |
| 1-1/2     | 40  | 1.50  | 38  | 7.50  | 190 | 5.24  | 133   | 10.43 | 265   | 30.9   | 14.0  |
| 2         | 50  | 2.00  | 51  | 8.50  | 216 | 5.87  | 149   | 10.43 | 265   | 39.7   | 18.0  |
| 2-1/2     | 65  | 2.50  | 64  | 9.50  | 241 | 6.48  | 164.5 | 11.22 | 285   | 63.9   | 29.0  |
| 3         | 80  | 3.00  | 76  | 11.12 | 283 | 7.22  | 183.5 | 11.81 | 300   | 88.2   | 40.0  |
| 4         | 100 | 4.00  | 102 | 12.00 | 305 | 10.75 | 273   | 32.09 | **815 | 163.1  | 74.0  |
| 6         | 150 | 6.00  | 152 | 15.88 | 403 | 11.30 | 287   | 15.75 | *400  | 238.1  | 108.0 |
| 8         | 200 | 8.00  | 203 | 19.75 | 502 | 13.23 | 336   | 19.69 | *500  | 429.9  | 195.0 |
| 10        | 250 | 10.00 | 254 | 22.38 | 568 | 17.01 | 432   | 19.69 | *500  | 687.8  | 312.0 |

| Reduced Port |         |      |     |       |     |       |     |       |       |       |      |        |       |
|--------------|---------|------|-----|-------|-----|-------|-----|-------|-------|-------|------|--------|-------|
| Size         |         | d    |     | D     |     | L     |     | H     |       | W     |      | Weight |       |
| NPS          | DN      | in   | mm  | in    | mm  | in    | mm  | in    | mm    | in    | mm   | lb     | kg    |
| 3/4*1/2      | 20*15   | 0.50 | 13  | 0.75  | 19  | 6.00  | 152 | 3.35  | 85    | 6.50  | 165  | 8.8    | 4.0   |
| 1*3/4        | 25*20   | 0.75 | 19  | 1.00  | 25  | 6.50  | 165 | 3.54  | 90    | 6.50  | 165  | 11.0   | 5.0   |
| 1-1/2*1      | 40*25   | 1.00 | 25  | 1.50  | 38  | 7.50  | 190 | 4.27  | 108.5 | 8.46  | 215  | 19.8   | 9.0   |
| 2*1-1/2      | 50*40   | 1.50 | 38  | 2.00  | 51  | 8.50  | 216 | 5.24  | 133   | 10.43 | 265  | 32.0   | 14.5  |
| 3*2          | 80*50   | 2.00 | 51  | 2.50  | 64  | 11.12 | 283 | 5.87  | 149   | 10.43 | 265  | 55.1   | 25.0  |
| 4*3          | 100*80  | 3.00 | 76  | 4.00  | 102 | 12.00 | 305 | 7.22  | 183.5 | 11.81 | 300  | 110.2  | 50.0  |
| 6*4          | 150*100 | 4.00 | 102 | 6.00  | 152 | 15.88 | 403 | 10.75 | 273   | 32.09 | *815 | 211.6  | 96.0  |
| 8*6          | 200*150 | 6.00 | 152 | 8.00  | 203 | 19.75 | 502 | 11.30 | 287   | 15.75 | *400 | 271.2  | 123.0 |
| 10*8         | 250*200 | 8.00 | 203 | 10.00 | 254 | 22.38 | 568 | 13.23 | 336   | 19.69 | *500 | 480.6  | 218.0 |

\*\* T-Bar Operator  
\* Gear Operator

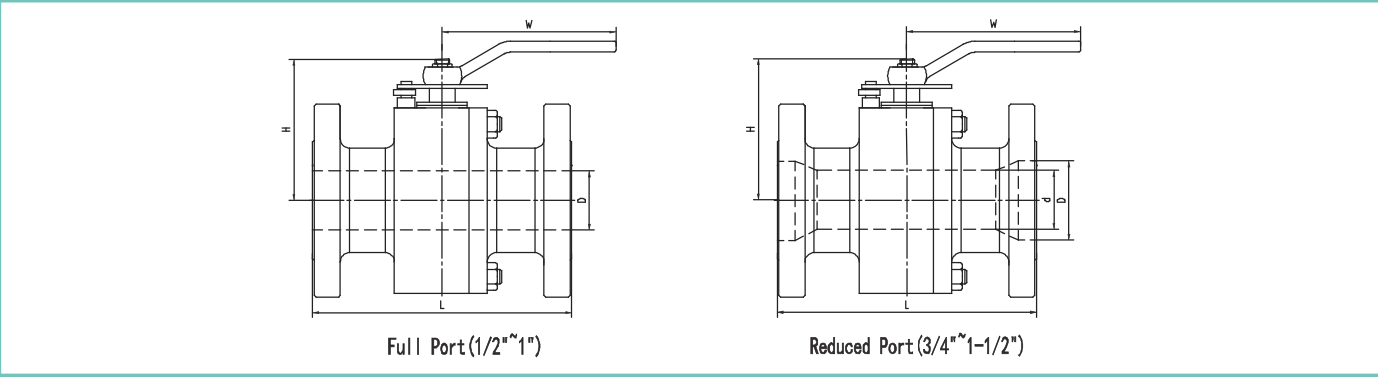


- 1 Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
- 2 Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
- 3 Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
- 4 Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
- 5 Bolted body-cap configuration: Properly torqued nut is used to maintain seal performance.
- 6 Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.



| Index No | Part               |
|----------|--------------------|
| 1        | Body               |
| 2        | Bonnet             |
| 3        | Ball               |
| 4        | Handle             |
| 5        | Seat               |
| 6        | Stem               |
| 7        | Gland              |
| 8        | Gasket Gland       |
| 9        | Packing            |
| 10       | Retainer           |
| 11       | Thrust Washer      |
| 12       | Stud               |
| 13       | Nut                |
| 14       | Anti-Static Device |
| 15       | Screw              |
| 16       | Gland Cap          |
| 17       | Gasket             |
| 18       | Gland Flange       |
| 19       | Bolt               |
| 20       | Locking Plate      |
| 21       | Stop Pin           |
| 22       | Bolt               |
| 23       | Washer             |
| 24       | Stop Plate         |

| No | Part               | Carbon Steel<br>(Non-Sour) | Stainless Steel  | Carbon Steel<br>(Sour Service) | Low Temperature<br>Carbon Steel |
|----|--------------------|----------------------------|------------------|--------------------------------|---------------------------------|
| 1  | Body               | ASTMA105N                  | ASTMA182-F316    | ASTMA105N                      | ASTMA350-LF2                    |
| 2  | Bonnet             | ASTMA105N                  | ASTMA182-F316    | ASTMA105N                      | ASTMA350-LF2                    |
| 3  | Ball               | ASTM A182 F6a              | ASTMA182-F316    | ASTM A182 F6a                  | ASTMA182-F316                   |
| 4  | Handle             | Carbon Steel               | Carbon Steel     | Carbon Steel                   | Carbon Steel                    |
| 5  | Seat               | PTFE                       | PTFE             | PTFE                           | PTFE                            |
| 6  | Stem               | ASTMA182-F6a               | ASTMA182-F316    | ASTMA182-F6a                   | ASTMA182-F316                   |
| 7  | Gland              | ASTM A276-304L             | ASTM A276-304L   | ASTM A276-304L                 | ASTM A276-304L                  |
| 8  | Gasket Gland       | 316 L+Graphite             | 316 L+Graphite   | 316 L+Graphite                 | 316 L+Graphite                  |
| 9  | Packing            | Graphite                   | Graphite         | Graphite                       | Graphite                        |
| 10 | Retainer           | Carbon Steel               | S.S.             | Carbon Steel                   | S.S.                            |
| 11 | Thrust Washer      | PTFE                       | PTFE             | PTFE                           | PTFE                            |
| 12 | Stud               | ASTMA193-B7                | ASTM A193-B8 Cl2 | ASTMA193-B7M                   | ASTMA320-L7M                    |
| 13 | Nut                | ASTMA194-2H                | ASTMA194-8       | ASTMA194-2HM                   | ASTMA194-7M                     |
| 14 | Anti-Static Device | S.S.                       | S.S.             | S.S.                           | S.S.                            |
| 15 | Screw              | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |
| 16 | Gland Cap          | ASTMA105N                  | ASTMA182-F316    | ASTMA105N                      | ASTMA350-LF2                    |
| 17 | Gasket             | 316 L+Graphite             | 316 L+Graphite   | 316 L+Graphite                 | 316 L+Graphite                  |
| 18 | Gland Flange       | ASTMA216-WCB               | ASTMA351-CF8     | ASTMA216-WCB                   | ASTMA352-LCB                    |
| 19 | Bolt               | ASTMA193-B7                | ASTM A193-B8 Cl2 | ASTMA193-B7M                   | ASTMA320-L7M                    |
| 20 | Locking Plate      | S.S.                       | S.S.             | S.S.                           | S.S.                            |
| 21 | Stop Pin           | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |
| 22 | Bolt               | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |
| 23 | Washer             | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |
| 24 | Stop Plate         | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |



Class 150 Dimension and Weight

| Full Port |    |      |    |      |     |      |       |      |     |        |      |
|-----------|----|------|----|------|-----|------|-------|------|-----|--------|------|
| Size      |    | D    |    | L    |     | H    |       | W    |     | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm    | in   | mm  | lb     | Kg   |
| 1/2       | 15 | 0.50 | 13 | 4.25 | 108 | 3.35 | 85    | 6.50 | 165 | 5.50   | 2.50 |
| 3/4       | 20 | 0.75 | 19 | 4.62 | 117 | 3.54 | 90    | 6.50 | 165 | 7.70   | 3.50 |
| 1         | 25 | 1.00 | 25 | 5.00 | 127 | 4.27 | 108.5 | 8.46 | 215 | 11.00  | 5.00 |

| Reduced Port |       |      |    |      |    |      |     |      |       |      |     |
|--------------|-------|------|----|------|----|------|-----|------|-------|------|-----|
| Size         |       | d    |    | D    |    | L    |     | H    |       | W    |     |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm    | in   | mm  |
| 3/4*1/2      | 20*15 | 0.50 | 13 | 0.75 | 19 | 4.62 | 117 | 3.35 | 85    | 6.50 | 165 |
| 1*3/4        | 25*20 | 0.75 | 19 | 1.00 | 25 | 5.00 | 127 | 3.54 | 90    | 6.50 | 165 |
| 1-1/2*1      | 40*25 | 1.00 | 25 | 1.50 | 38 | 6.50 | 165 | 4.27 | 108.5 | 8.46 | 215 |

Class 300 Dimension and Weight

| Full Port |    |      |    |      |     |      |       |      |     |        |      |
|-----------|----|------|----|------|-----|------|-------|------|-----|--------|------|
| Size      |    | D    |    | L    |     | H    |       | W    |     | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm    | in   | mm  | lb     | Kg   |
| 1/2       | 15 | 0.50 | 13 | 5.50 | 140 | 3.35 | 85    | 6.50 | 165 | 6.60   | 3.00 |
| 3/4       | 20 | 0.75 | 19 | 6.00 | 152 | 3.54 | 90    | 6.50 | 165 | 8.80   | 4.00 |
| 1         | 25 | 1.00 | 25 | 6.50 | 165 | 4.27 | 108.5 | 8.46 | 215 | 15.40  | 7.00 |

| Reduced Port |       |      |    |      |    |      |     |      |       |      |     |
|--------------|-------|------|----|------|----|------|-----|------|-------|------|-----|
| Size         |       | d    |    | D    |    | L    |     | H    |       | W    |     |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm    | in   | mm  |
| 3/4*1/2      | 20*15 | 0.50 | 13 | 0.75 | 19 | 6.00 | 152 | 3.35 | 85    | 6.50 | 165 |
| 1*3/4        | 25*20 | 0.75 | 19 | 1.00 | 25 | 6.50 | 165 | 3.54 | 90    | 6.50 | 165 |
| 1-1/2*1      | 40*25 | 1.00 | 25 | 1.50 | 38 | 7.50 | 190 | 4.27 | 108.5 | 8.46 | 215 |

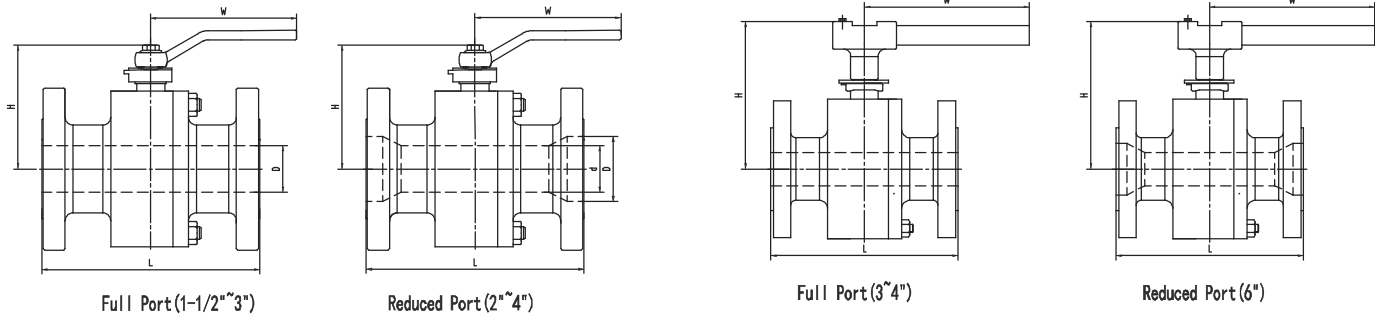
Class 600 Dimension and Weight

| Full Port |    |      |    |       |     |      |     |       |     |        |       |
|-----------|----|------|----|-------|-----|------|-----|-------|-----|--------|-------|
| Size      |    | D    |    | L     |     | H    |     | W     |     | Weight |       |
| NPS       | DN | in   | mm | in    | mm  | in   | mm  | in    | mm  | lb     | Kg    |
| 3         | 80 | 3.00 | 76 | 14.00 | 356 | 7.09 | 180 | 15.75 | 400 | 136.70 | 62.00 |

| Reduced Port |        |      |    |      |     |       |     |      |     |       |     |
|--------------|--------|------|----|------|-----|-------|-----|------|-----|-------|-----|
| Size         |        | d    |    | D    |     | L     |     | H    |     | W     |     |
| NPS          | DN     | in   | mm | in   | mm  | in    | mm  | in   | mm  | in    | mm  |
| 4*3          | 100*80 | 3.00 | 76 | 4.00 | 102 | 17.00 | 432 | 7.09 | 180 | 15.75 | 400 |

BB Series Ball Valve

Two-piece, Split Body, Forged Steel, Side Entry Design



Class 150 Dimension and Weight

| Full Port |     |      |     |      |     |      |       |       |     |        |       |
|-----------|-----|------|-----|------|-----|------|-------|-------|-----|--------|-------|
| Size      |     | D    |     | L    |     | H    |       | W     |     | Weight |       |
| NPS       | DN  | in   | mm  | in   | mm  | in   | mm    | in    | mm  | lb     | Kg    |
| 1-1/2     | 40  | 1.50 | 38  | 6.50 | 165 | 5.24 | 133   | 10.43 | 265 | 24.30  | 11.00 |
| 2         | 50  | 2.00 | 51  | 7.00 | 178 | 5.87 | 149   | 10.43 | 265 | 35.30  | 16.00 |
| 2-1/2     | 65  | 2.50 | 64  | 7.50 | 190 | 6.48 | 164.5 | 11.22 | 285 | 57.30  | 26.00 |
| 3         | 80  | 3.00 | 76  | 8.00 | 203 | 7.22 | 183.5 | 11.81 | 300 | 70.50  | 32.00 |
| 4         | 100 | 4.00 | 102 | 9.00 | 229 | 8.46 | 215   | 17.72 | 450 | 116.80 | 53.00 |

| Reduced Port |         |      |     |      |     |       |     |      |       |       |     |        |       |
|--------------|---------|------|-----|------|-----|-------|-----|------|-------|-------|-----|--------|-------|
| Size         |         | d    |     | D    |     | L     |     | H    |       | W     |     | Weight |       |
| NPS          | DN      | in   | mm  | in   | mm  | in    | mm  | in   | mm    | in    | mm  | lb     | Kg    |
| 2*1-1/2      | 50*40   | 1.50 | 38  | 2.00 | 51  | 7.00  | 178 | 5.24 | 133   | 10.43 | 265 | 29.80  | 13.50 |
| 3*2          | 80*50   | 2.00 | 51  | 2.50 | 64  | 8.00  | 203 | 5.87 | 149   | 10.43 | 265 | 44.10  | 20.00 |
| 4*3          | 100*80  | 3.00 | 76  | 4.00 | 102 | 9.00  | 229 | 7.22 | 183.5 | 11.81 | 300 | 83.80  | 38.00 |
| 6*4          | 150*100 | 4.00 | 102 | 6.00 | 152 | 15.50 | 394 | 8.46 | 215   | 17.72 | 450 | 158.70 | 72.00 |

Class 300 Dimension and Weight

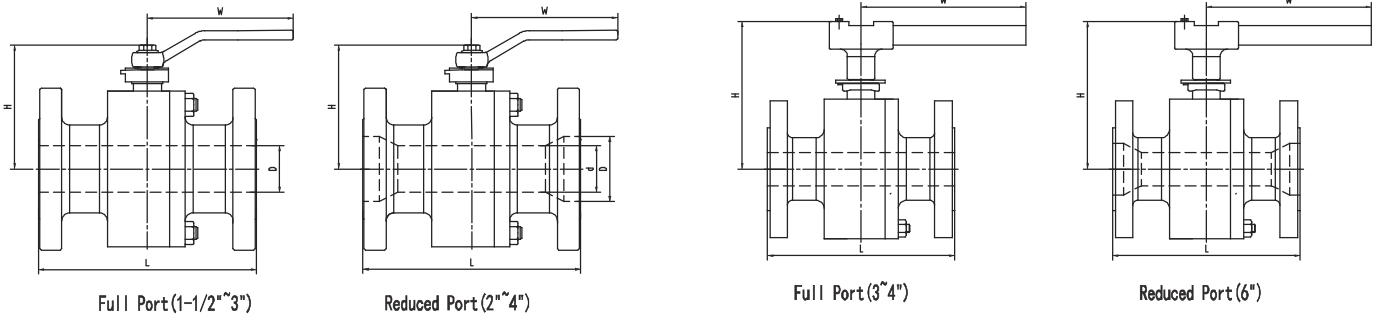
| Full Port |     |      |     |       |     |       |       |       |       |        |       |
|-----------|-----|------|-----|-------|-----|-------|-------|-------|-------|--------|-------|
| Size      |     | D    |     | L     |     | H     |       | W     |       | Weight |       |
| NPS       | DN  | in   | mm  | in    | mm  | in    | mm    | in    | mm    | lb     | Kg    |
| 1-1/2     | 40  | 1.50 | 38  | 7.50  | 190 | 5.24  | 133   | 10.43 | 265   | 30.90  | 14.00 |
| 2         | 50  | 2.00 | 51  | 8.50  | 216 | 5.87  | 149   | 10.43 | 265   | 39.70  | 18.00 |
| 2-1/2     | 65  | 2.50 | 64  | 9.50  | 241 | 6.48  | 164.5 | 11.22 | 285   | 63.90  | 29.00 |
| 3         | 80  | 3.00 | 76  | 11.12 | 283 | 7.22  | 183.5 | 11.81 | 300   | 88.20  | 40.00 |
| 4         | 100 | 4.00 | 102 | 12.00 | 305 | 10.75 | 273   | 32.09 | **815 | 163.10 | 74.00 |

| Reduced Port |         |      |     |      |     |       |     |       |       |       |       |        |       |
|--------------|---------|------|-----|------|-----|-------|-----|-------|-------|-------|-------|--------|-------|
| Size         |         | d    |     | D    |     | L     |     | H     |       | W     |       | Weight |       |
| NPS          | DN      | in   | mm  | in   | mm  | in    | mm  | in    | mm    | in    | mm    | lb     | Kg    |
| 2*1-1/2      | 50*40   | 1.50 | 38  | 2.00 | 51  | 8.50  | 216 | 5.24  | 133   | 10.43 | 265   | 32.00  | 14.50 |
| 3*2          | 80*50   | 2.00 | 51  | 2.50 | 64  | 11.12 | 283 | 5.87  | 149   | 10.43 | 265   | 55.10  | 25.00 |
| 4*3          | 100*80  | 3.00 | 76  | 4.00 | 102 | 12.00 | 305 | 7.22  | 183.5 | 11.81 | 300   | 110.20 | 50.00 |
| 6*4          | 150*100 | 4.00 | 102 | 6.00 | 152 | 15.88 | 403 | 10.75 | 273   | 32.09 | **815 | 211.60 | 96.00 |

\*\* T-Bar Operator

BB Series Ball Valve

Two-piece, Split Body, Forged Steel, Side Entry Design



Class 600 Dimension and Weight

| Full Port |     |      |     |       |     |       |     |       |        |        |        |
|-----------|-----|------|-----|-------|-----|-------|-----|-------|--------|--------|--------|
| Size      |     | D    |     | L     |     | H     |     | W     |        | Weight |        |
| NPS       | DN  | in   | mm  | in    | mm  | in    | mm  | in    | mm     | lb     | Kg     |
| 4         | 100 | 4.00 | 102 | 17.00 | 432 | 11.93 | 303 | 41.73 | **1060 | 297.60 | 135.00 |

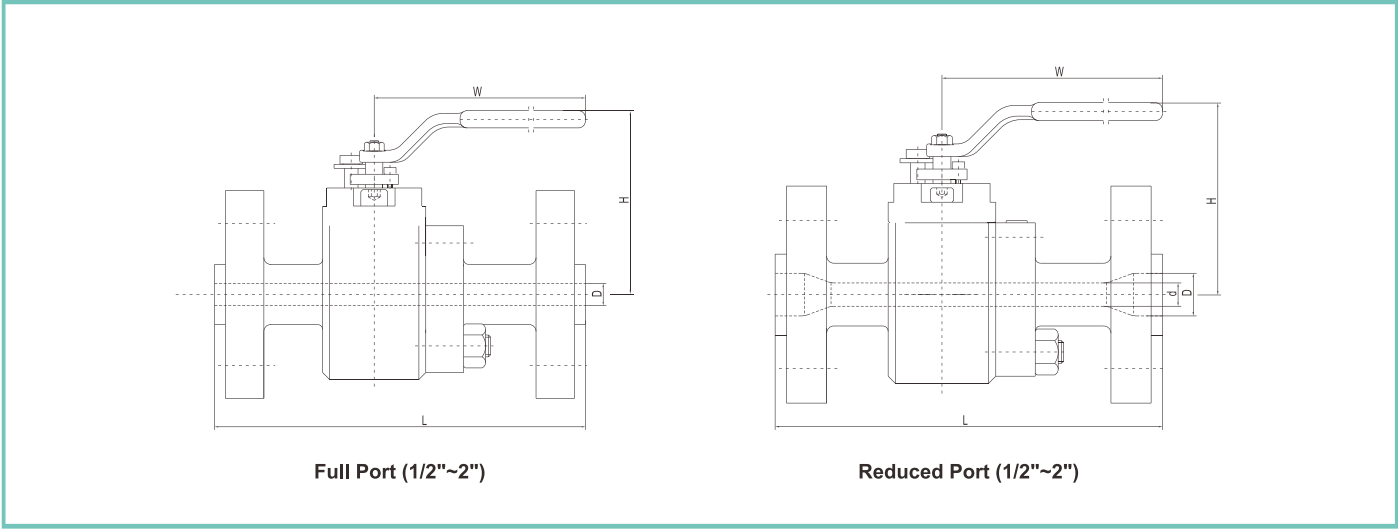
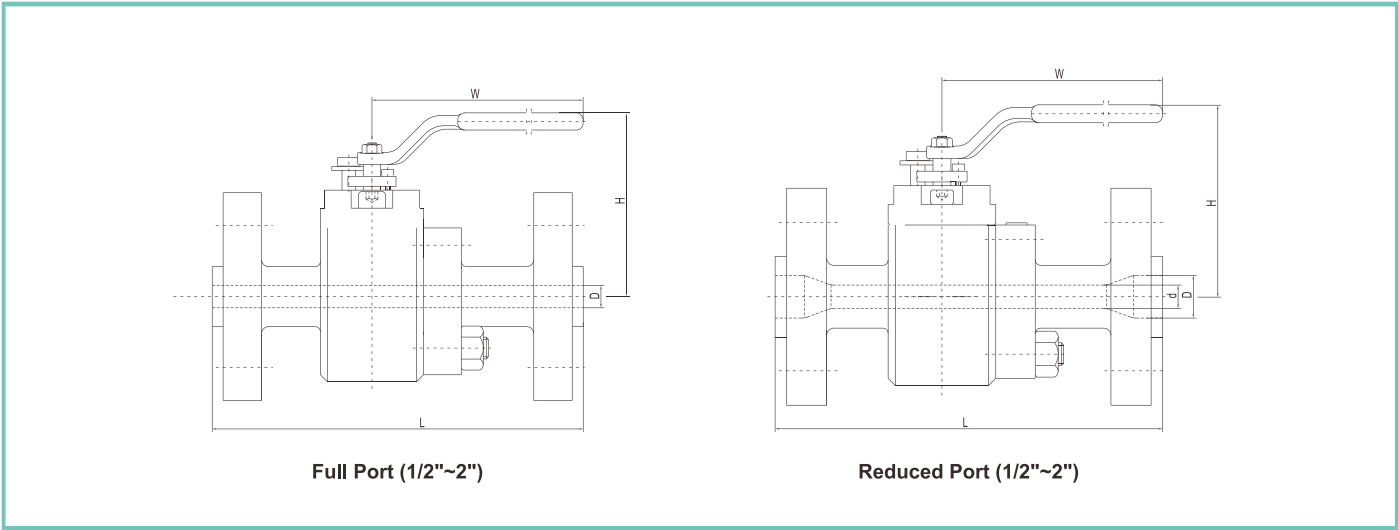
\*\* T-Bar Operator

Class 900 Dimension and Weight

| Full Port |    |      |    |       |     |      |     |       |       |        |       |
|-----------|----|------|----|-------|-----|------|-----|-------|-------|--------|-------|
| Size      |    | D    |    | L     |     | H    |     | W     |       | Weight |       |
| NPS       | DN | in   | mm | in    | mm  | in   | mm  | in    | mm    | lb     | Kg    |
| 3         | 80 | 3.00 | 76 | 15.00 | 381 | 9.80 | 249 | 32.09 | **815 | 198.40 | 90.00 |

| Reduced Port |        |      |    |      |     |       |     |      |     |       |       |        |        |
|--------------|--------|------|----|------|-----|-------|-----|------|-----|-------|-------|--------|--------|
| Size         |        | d    |    | D    |     | L     |     | H    |     | W     |       | Weight |        |
| NPS          | DN     | in   | mm | in   | mm  | in    | mm  | in   | mm  | in    | mm    | lb     | Kg     |
| 4*3          | 100*80 | 3.00 | 76 | 4.00 | 102 | 18.00 | 457 | 9.80 | 249 | 32.09 | **815 | 249.10 | 113.00 |

\*\* T-Bar Operator



Class 400/600 Dimension and Weight

| Full Port |    |      |      |       |     |      |        |       |     |        |       |
|-----------|----|------|------|-------|-----|------|--------|-------|-----|--------|-------|
| Size      |    | D    |      | L     |     | H    |        | W     |     | Weight |       |
| NPS       | DN | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg    |
| 1/2"      | 15 | 0.50 | 12.7 | 6.50  | 165 | 4.59 | 116.50 | 5.91  | 150 | 7.70   | 3.50  |
| 3/4"      | 20 | 0.75 | 19   | 7.52  | 191 | 5.14 | 130.50 | 7.09  | 180 | 12.80  | 5.80  |
| 1"        | 25 | 1.00 | 25.4 | 8.50  | 216 | 5.83 | 148    | 10.43 | 265 | 28.66  | 13.00 |
| 1-1/2"    | 40 | 1.50 | 38   | 9.49  | 241 | 6.32 | 160.50 | 11.81 | 300 | 50.71  | 23.00 |
| 2"        | 50 | 2.00 | 51   | 11.50 | 292 | 7.56 | 192    | 15.75 | 400 | 63.90  | 29.00 |

| Reduced Port |       |      |      |      |      |       |     |      |        |       |     |        |       |
|--------------|-------|------|------|------|------|-------|-----|------|--------|-------|-----|--------|-------|
| Size         |       | d    |      | D    |      | L     |     | H    |        | W     |     | Weight |       |
| NPS          | DN    | in   | mm   | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg    |
| 1/2*3/8      | 15*10 | 0.37 | 9.5  | 0.50 | 12.7 | 6.50  | 165 | 4.59 | 116.50 | 5.91  | 150 | 11.02  | 5.00  |
| 3/4**1/2     | 20*15 | 0.50 | 12.7 | 0.75 | 19   | 7.52  | 191 | 4.59 | 116.50 | 5.91  | 150 | 17.64  | 8.00  |
| 1*3/4        | 25*20 | 0.75 | 19   | 1.00 | 25.4 | 8.50  | 216 | 5.14 | 130.50 | 7.09  | 180 | 26.46  | 12.00 |
| 1-1/2*1      | 40*25 | 1.00 | 25.4 | 1.50 | 38   | 9.49  | 241 | 5.83 | 148    | 10.43 | 265 | 37.48  | 17.00 |
| 2*1-1/2      | 50*40 | 1.50 | 38   | 2.00 | 51   | 11.50 | 292 | 6.32 | 160.50 | 11.81 | 300 | 59.52  | 27.00 |

Class 900 Dimension and Weight

| Full Port |    |      |      |       |     |      |        |       |     |        |    |
|-----------|----|------|------|-------|-----|------|--------|-------|-----|--------|----|
| Size      |    | D    |      | L     |     | H    |        | W     |     | Weight |    |
| NPS       | DN | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg |
| 1/2"      | 15 | 0.50 | 12.7 | 8.50  | 216 | 4.59 | 116.50 | 5.91  | 150 | 22.04  | 10 |
| 3/4"      | 20 | 0.75 | 19   | 9.02  | 229 | 5.35 | 136    | 7.09  | 180 | 28.66  | 13 |
| 1"        | 25 | 1.00 | 25.4 | 10.00 | 254 | 6.20 | 157.50 | 10.43 | 265 | 44.09  | 20 |
| 1-1/2"    | 40 | 1.50 | 38   | 12.01 | 305 | 6.99 | 177.50 | 11.81 | 300 | 90.39  | 41 |
| 2"        | 50 | 2.00 | 51   | 14.49 | 368 | 8.35 | 212    | 15.75 | 400 | 132.28 | 60 |

Class 900 Dimension and Weight

| Reduced port |       |      |      |      |      |       |     |      |        |       |     |        |    |
|--------------|-------|------|------|------|------|-------|-----|------|--------|-------|-----|--------|----|
| Size         |       | d    |      | D    |      | L     |     | H    |        | W     |     | Weight |    |
| NPS          | DN    | in   | mm   | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg |
| 1/2*3/8      | 15*10 | 0.37 | 9.5  | 0.50 | 12.7 | 8.50  | 216 | 4.59 | 116.50 | 5.91  | 150 | 19.84  | 9  |
| 3/4*1/2      | 20*15 | 0.50 | 12.7 | 0.75 | 19   | 9.02  | 229 | 4.59 | 116.50 | 5.91  | 150 | 24.25  | 11 |
| 1*3/4        | 25*20 | 0.75 | 19   | 1.00 | 25.4 | 10.00 | 254 | 5.35 | 136    | 7.09  | 180 | 35.27  | 16 |
| 1-1/2*1      | 40*25 | 1.00 | 25.4 | 1.50 | 38   | 12.01 | 305 | 6.20 | 157.50 | 10.43 | 265 | 55.12  | 25 |
| 2*1-1/2      | 50*40 | 1.50 | 38   | 2.00 | 51   | 14.49 | 368 | 6.99 | 177.50 | 11.81 | 300 | 123.46 | 56 |

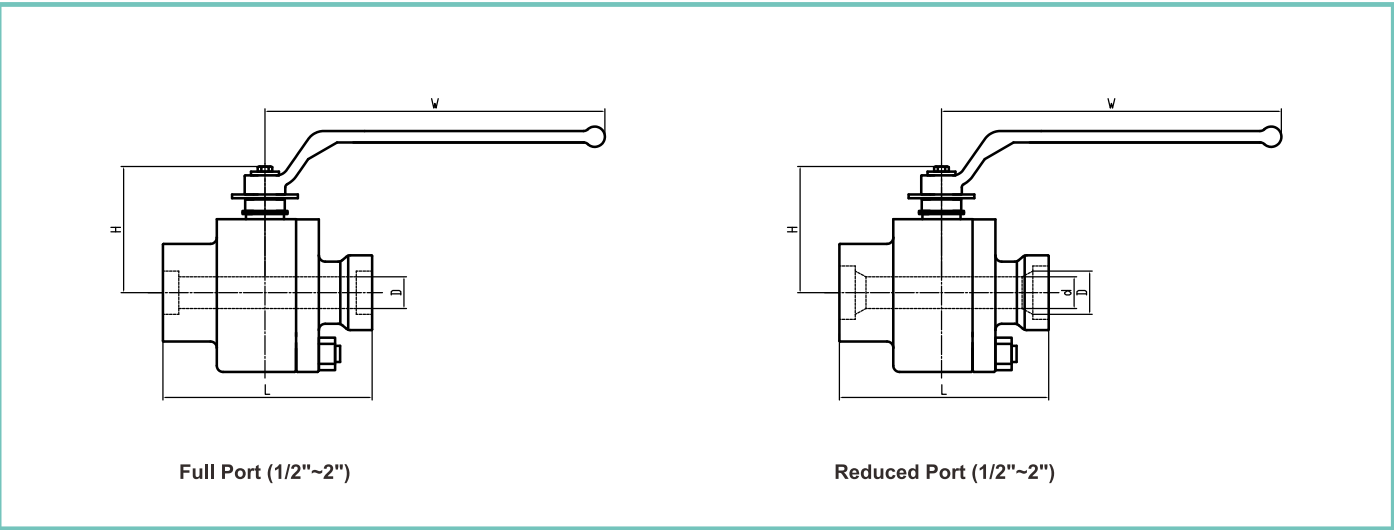
Class 1500 Dimension and Weight

| Full Port |    |      |      |       |     |      |        |       |     |        |    |
|-----------|----|------|------|-------|-----|------|--------|-------|-----|--------|----|
| Size      |    | D    |      | L     |     | H    |        | W     |     | Weight |    |
| NPS       | DN | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg |
| 1/2"      | 15 | 0.50 | 12.7 | 8.50  | 216 | 4.59 | 116.50 | 5.91  | 150 | 22.04  | 10 |
| 3/4"      | 20 | 0.75 | 19   | 9.02  | 229 | 5.35 | 136    | 7.09  | 180 | 28.66  | 13 |
| 1"        | 25 | 1.00 | 25.4 | 10.00 | 254 | 6.20 | 157.50 | 10.43 | 265 | 44.09  | 20 |
| 1-1/2"    | 40 | 1.50 | 38   | 12.01 | 305 | 6.99 | 177.50 | 11.81 | 300 | 90.39  | 41 |
| 2"        | 50 | 2.00 | 51   | 14.49 | 368 | 8.35 | 212    | 15.75 | 400 | 132.28 | 60 |

| Reduced port |       |      |      |      |      |       |     |      |        |       |     |        |    |
|--------------|-------|------|------|------|------|-------|-----|------|--------|-------|-----|--------|----|
| Size         |       | d    |      | D    |      | L     |     | H    |        | W     |     | Weight |    |
| NPS          | DN    | in   | mm   | in   | mm   | in    | mm  | in   | mm     | in    | mm  | lb     | Kg |
| 1/2*3/8      | 15*10 | 0.37 | 9.5  | 0.50 | 12.7 | 8.50  | 216 | 4.59 | 116.50 | 5.91  | 150 | 19.84  | 9  |
| 3/4*1/2      | 20*15 | 0.50 | 12.7 | 0.75 | 19   | 9.02  | 229 | 4.59 | 116.50 | 5.91  | 150 | 24.25  | 11 |
| 1*3/4        | 25*20 | 0.75 | 19   | 1.00 | 25.4 | 10.00 | 254 | 5.35 | 136    | 7.09  | 180 | 35.27  | 16 |
| 1-1/2*1      | 40*25 | 1.00 | 25.4 | 1.50 | 38   | 12.01 | 305 | 6.20 | 157.50 | 10.43 | 265 | 55.12  | 25 |
| 2*1-1/2      | 50*40 | 1.50 | 38   | 2.00 | 51   | 14.49 | 368 | 6.99 | 177.50 | 11.81 | 300 | 123.46 | 56 |

BB Series Ball Valve

Two-piece, Split Body, Forged Steel, Side Entry Design



Class 150 Dimension and Weight

| Full Port |    |      |    |      |     |      |     |       |     |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 3.74 | 95  | 2.28 | 58  | 7.01  | 178 | 4.0    | 1.8  |
| 3/4"      | 20 | 0.75 | 19 | 4.33 | 110 | 2.42 | 62  | 7.01  | 178 | 5.5    | 2.5  |
| 1"        | 25 | 0.98 | 25 | 4.92 | 125 | 2.93 | 75  | 7.01  | 178 | 8.4    | 3.8  |
| 1-1/2"    | 32 | 1.50 | 38 | 5.71 | 145 | 3.76 | 96  | 9.88  | 251 | 18.0   | 8.2  |
| 2"        | 50 | 2.01 | 51 | 6.89 | 175 | 5.08 | 129 | 10.55 | 268 | 27.9   | 12.7 |

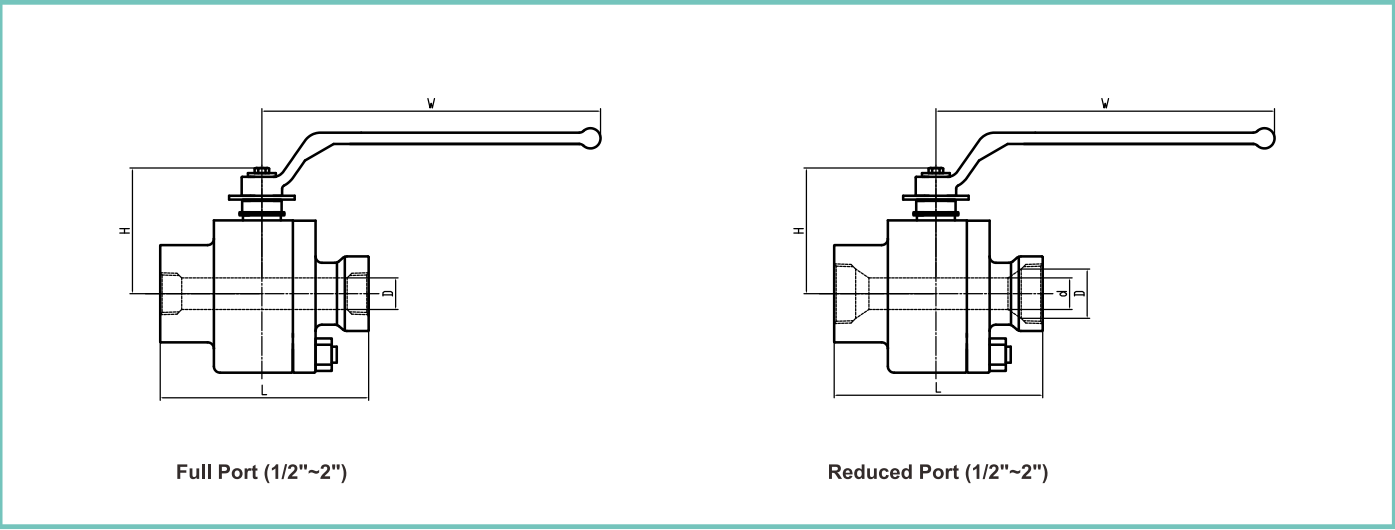
| Reduced Port |       |      |    |      |    |      |     |      |    |      |     |        |     |
|--------------|-------|------|----|------|----|------|-----|------|----|------|-----|--------|-----|
| Size         |       | d    |    | D    |    | L    |     | H    |    | W    |     | Weight |     |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm | in   | mm  | lb     | Kg  |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 4.33 | 110 | 2.28 | 58 | 7.01 | 178 | 4.4    | 2.0 |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 4.92 | 125 | 2.42 | 62 | 7.01 | 178 | 6.4    | 2.9 |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 5.71 | 145 | 2.93 | 75 | 7.01 | 178 | 9.7    | 4.4 |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 6.89 | 175 | 3.76 | 96 | 9.88 | 251 | 20.7   | 9.4 |

Class 300 Dimension and Weight

| Full Port |    |      |    |      |     |      |     |       |     |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 3.74 | 95  | 2.28 | 58  | 7.01  | 178 | 4.0    | 1.8  |
| 3/4"      | 20 | 0.75 | 19 | 4.33 | 110 | 2.42 | 62  | 7.01  | 178 | 5.5    | 2.5  |
| 1"        | 25 | 0.98 | 25 | 4.92 | 125 | 2.93 | 75  | 7.01  | 178 | 8.4    | 3.8  |
| 1-1/2"    | 32 | 1.50 | 38 | 5.71 | 145 | 3.76 | 96  | 9.88  | 251 | 18.0   | 8.2  |
| 2"        | 50 | 2.01 | 51 | 6.89 | 175 | 5.08 | 129 | 10.55 | 268 | 27.9   | 12.7 |

| Reduced Port |       |      |    |      |    |      |     |      |    |      |     |        |     |
|--------------|-------|------|----|------|----|------|-----|------|----|------|-----|--------|-----|
| Size         |       | d    |    | D    |    | L    |     | H    |    | W    |     | Weight |     |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm | in   | mm  | lb     | Kg  |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 4.33 | 110 | 2.28 | 58 | 7.01 | 178 | 4.4    | 2.0 |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 4.92 | 125 | 2.42 | 62 | 7.01 | 178 | 6.4    | 2.9 |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 5.71 | 145 | 2.93 | 75 | 7.01 | 178 | 9.7    | 4.4 |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 6.89 | 175 | 3.76 | 96 | 9.88 | 251 | 20.7   | 9.4 |

Two-piece, Split Body, Forged Steel, Side Entry Design



Class 600 Dimension and Weight

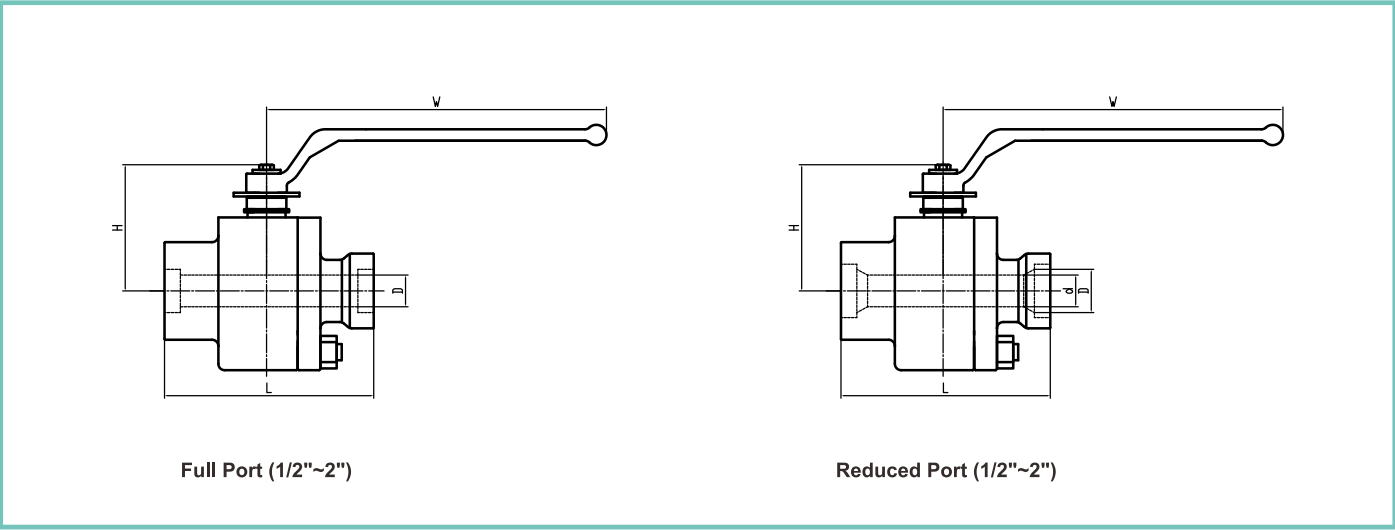
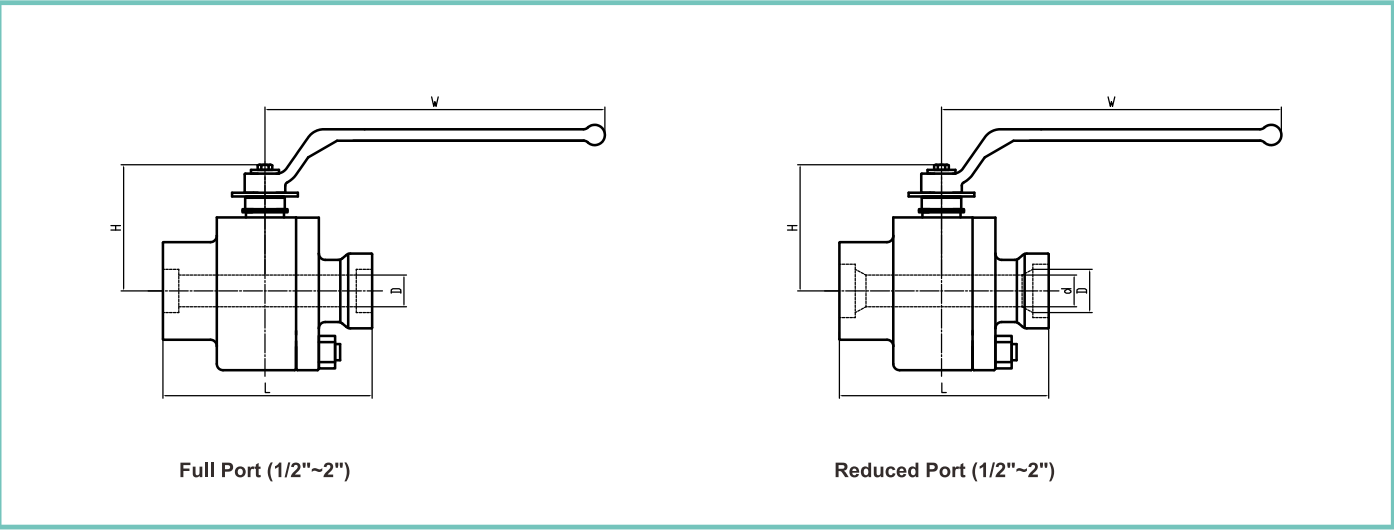
| Full Port |    |      |    |      |     |      |     |       |     |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 5.12 | 130 | 2.34 | 60  | 7.01  | 178 | 9.7    | 4.4  |
| 3/4"      | 20 | 0.75 | 19 | 5.71 | 145 | 2.87 | 73  | 9.88  | 251 | 12.3   | 5.6  |
| 1"        | 25 | 0.98 | 25 | 6.50 | 165 | 3.92 | 100 | 10.55 | 268 | 21.6   | 9.8  |
| 1-1/2"    | 32 | 1.50 | 38 | 7.87 | 200 | 4.64 | 118 | 17.09 | 434 | 39.8   | 18.1 |
| 2"        | 50 | 2.01 | 51 | 9.06 | 230 | 5.01 | 127 | 17.09 | 434 | 51.7   | 23.5 |

| Reduced Port |       |      |    |      |    |      |     |      |     |       |     |        |      |
|--------------|-------|------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size         |       | d    |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 5.71 | 145 | 2.34 | 60  | 7.01  | 178 | 9.9    | 4.5  |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 6.50 | 165 | 2.87 | 73  | 9.88  | 251 | 13.4   | 6.1  |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 7.87 | 200 | 3.92 | 100 | 10.55 | 268 | 23.3   | 10.6 |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 9.06 | 230 | 4.64 | 118 | 17.09 | 434 | 41.8   | 19.0 |

Class 800 Dimension and Weight

| Full Port |    |      |    |      |     |      |     |       |      |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|------|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |      | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm   | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 5.12 | 130 | 2.34 | 60  | 7.01  | 178  | 9.7    | 4.4  |
| 3/4"      | 20 | 0.75 | 19 | 5.71 | 145 | 2.87 | 73  | 9.88  | 251  | 12.3   | 5.6  |
| 1"        | 25 | 0.98 | 25 | 6.50 | 165 | 3.92 | 100 | 10.55 | 268  | 21.6   | 9.8  |
| 1-1/2"    | 32 | 1.50 | 38 | 7.87 | 200 | 4.64 | 118 | 17.09 | 434  | 39.8   | 18.1 |
| 2"        | 50 | 2.01 | 51 | 9.06 | 230 | 5.01 | 127 | 39.61 | 1006 | 51.7   | 23.5 |

| Reduced Port |       |      |    |      |    |      |     |      |     |       |     |        |      |
|--------------|-------|------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size         |       | d    |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 5.71 | 145 | 2.34 | 60  | 7.01  | 178 | 9.9    | 4.5  |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 6.50 | 165 | 2.87 | 73  | 9.88  | 251 | 13.4   | 6.1  |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 7.87 | 200 | 3.92 | 100 | 10.55 | 268 | 23.3   | 10.6 |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 9.06 | 230 | 4.64 | 118 | 17.09 | 434 | 41.8   | 19   |



Class 900 Dimension and Weight

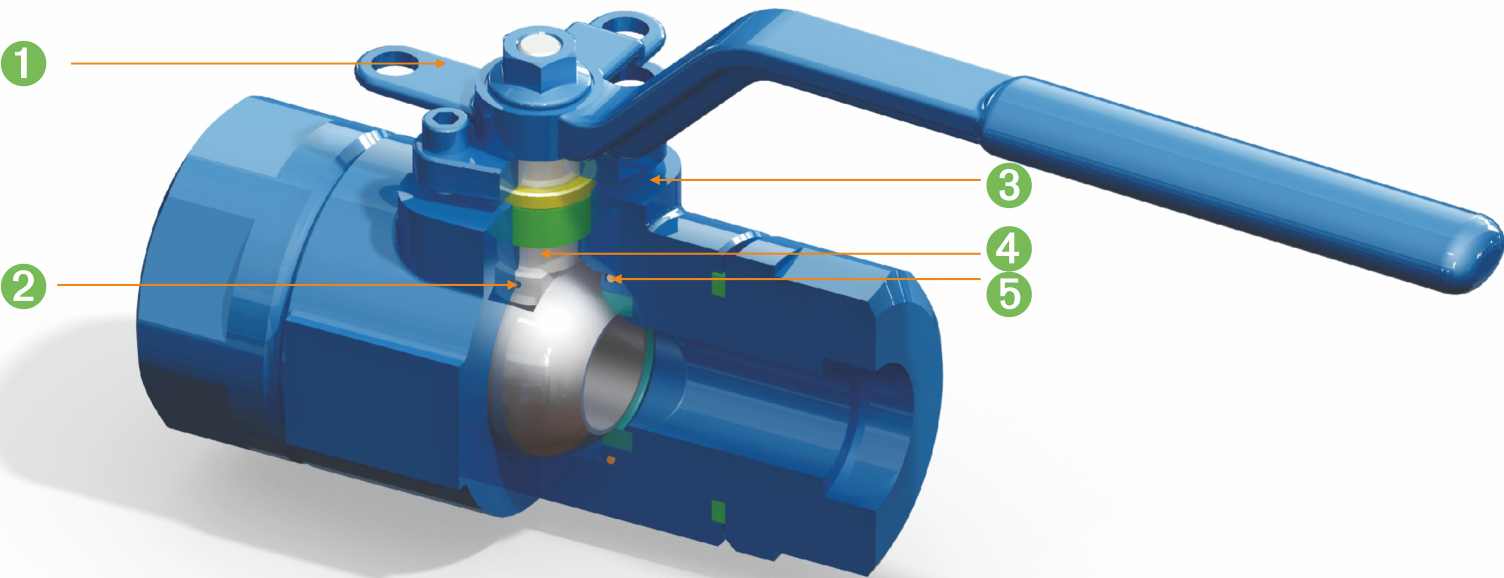
| Full Port |    |      |    |      |     |      |     |       |      |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|------|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |      | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm   | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 5.91 | 150 | 2.34 | 60  | 7.01  | 178  | 10.1   | 4.6  |
| 3/4"      | 20 | 0.75 | 19 | 5.91 | 150 | 2.81 | 72  | 9.88  | 251  | 12.8   | 5.8  |
| 1"        | 25 | 0.98 | 25 | 6.50 | 165 | 4.06 | 103 | 10.55 | 268  | 22.2   | 10.1 |
| 1-1/2"    | 32 | 1.50 | 38 | 8.66 | 220 | 4.83 | 123 | 17.09 | 434  | 41.6   | 18.9 |
| 2"        | 50 | 2.01 | 51 | 9.84 | 250 | 7.56 | 192 | 39.61 | 1006 | 54.1   | 24.6 |

| Reduced Port |       |      |    |      |    |      |     |      |     |       |     |        |      |
|--------------|-------|------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size         |       | d    |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 5.91 | 150 | 2.34 | 60  | 7.01  | 178 | 10.1   | 4.6  |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 6.50 | 165 | 2.81 | 72  | 9.88  | 251 | 13.4   | 6.1  |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 8.66 | 220 | 4.06 | 103 | 10.55 | 268 | 24.2   | 11   |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 9.84 | 250 | 4.83 | 123 | 17.09 | 434 | 42.9   | 19.5 |

Class 1500 Dimension and Weight

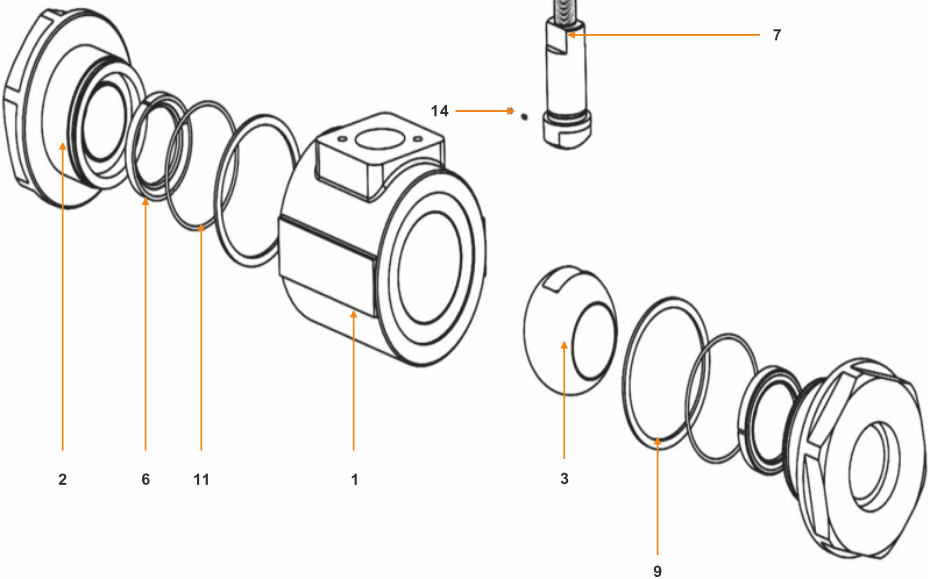
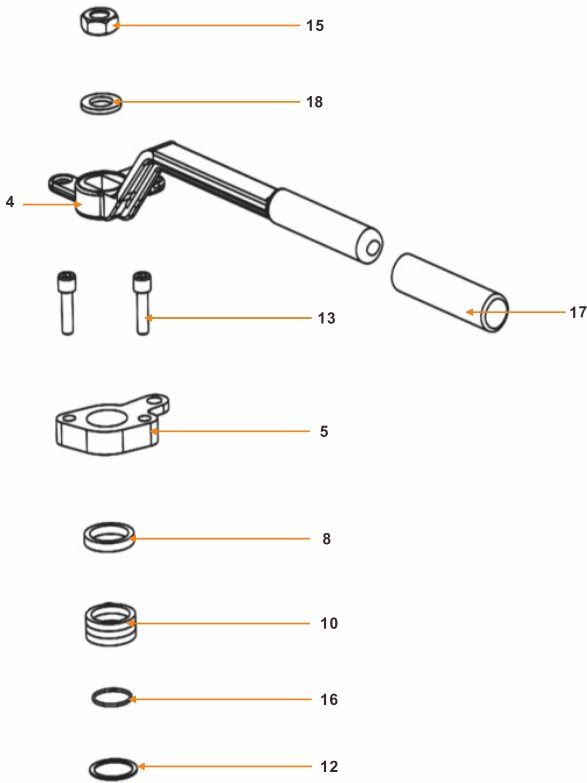
| Full Port |    |      |    |      |     |      |     |       |      |        |      |
|-----------|----|------|----|------|-----|------|-----|-------|------|--------|------|
| Size      |    | D    |    | L    |     | H    |     | W     |      | Weight |      |
| NPS       | DN | in   | mm | in   | mm  | in   | mm  | in    | mm   | lb     | Kg   |
| 1/2"      | 15 | 0.51 | 13 | 5.91 | 150 | 2.34 | 60  | 7.01  | 178  | 10.1   | 4.6  |
| 3/4"      | 20 | 0.75 | 19 | 5.91 | 150 | 2.81 | 72  | 9.88  | 251  | 12.8   | 5.8  |
| 1"        | 25 | 0.98 | 25 | 6.50 | 165 | 4.25 | 108 | 15.75 | 400  | 22.2   | 10.1 |
| 1-1/2"    | 32 | 1.50 | 38 | 8.66 | 220 | 6.77 | 172 | 21.50 | 546  | 41.6   | 18.9 |
| 2"        | 50 | 2.01 | 51 | 9.84 | 250 | 7.56 | 192 | 39.61 | 1006 | 54.1   | 24.6 |

| Reduced Port |       |      |    |      |    |      |     |      |     |       |     |        |      |
|--------------|-------|------|----|------|----|------|-----|------|-----|-------|-----|--------|------|
| Size         |       | d    |    | D    |    | L    |     | H    |     | W     |     | Weight |      |
| NPS          | DN    | in   | mm | in   | mm | in   | mm  | in   | mm  | in    | mm  | lb     | Kg   |
| 3/4*1/2      | 20*15 | 0.51 | 13 | 0.75 | 19 | 5.91 | 150 | 2.34 | 60  | 7.01  | 178 | 10.1   | 4.6  |
| 1*3/4        | 25*20 | 0.75 | 19 | 0.98 | 25 | 6.50 | 165 | 2.81 | 72  | 9.88  | 251 | 13.4   | 6.1  |
| 1-1/2*1      | 32*25 | 0.98 | 25 | 1.50 | 38 | 8.66 | 220 | 4.25 | 108 | 15.75 | 400 | 24.2   | 11   |
| 2*1-1/2      | 50*32 | 1.50 | 38 | 2.01 | 51 | 9.84 | 250 | 6.77 | 172 | 21.50 | 546 | 42.9   | 19.5 |

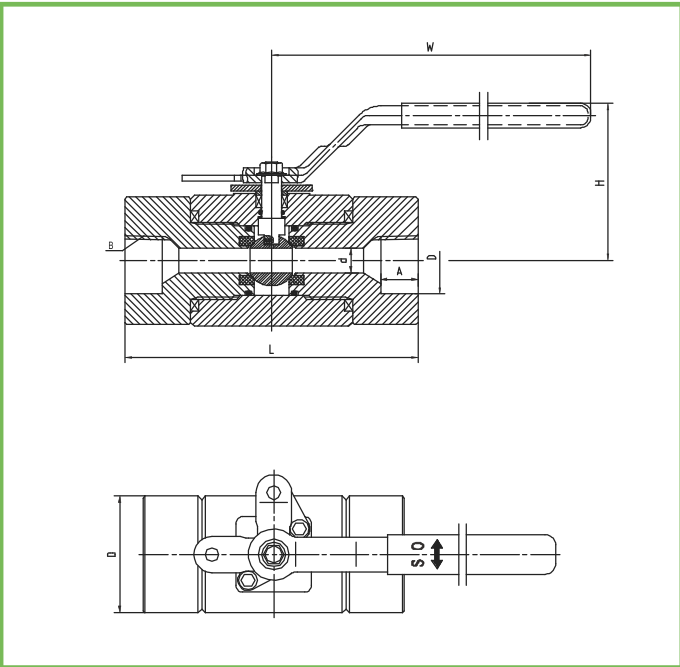


- 1 Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
- 2 Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
- 3 ISO5211 connection dimension: actuator installation is simplified by using connection dimension recognized in international standards.
- 4 Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
- 5 O-ring Seal Design: Protects threads from crevice corrosion.

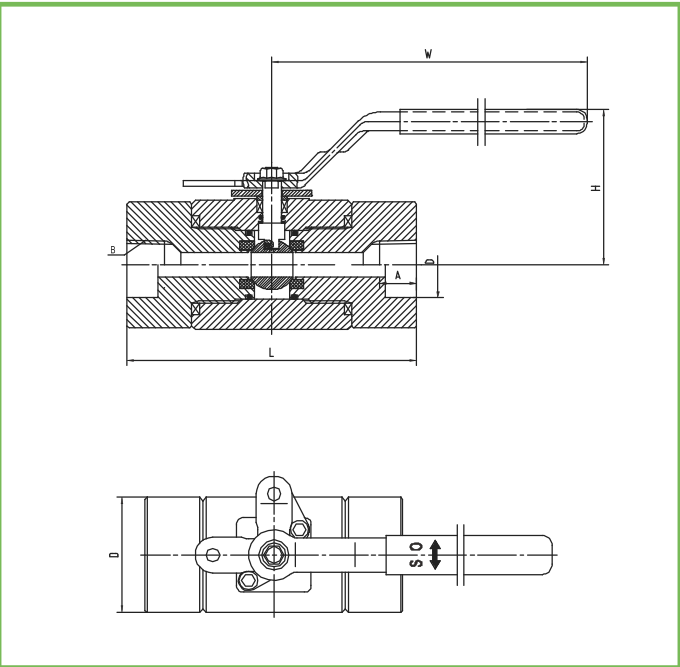
| Index No | Part               |
|----------|--------------------|
| 1        | Body               |
| 2        | Bonnet             |
| 3        | Ball               |
| 4        | Handle             |
| 5        | Gland Flange       |
| 6        | Seat               |
| 7        | Stem               |
| 8        | Gland              |
| 9        | Gasket             |
| 10       | Packing            |
| 11       | O-ring             |
| 12       | Thrust Washer      |
| 13       | Screw              |
| 14       | Anti-Static Device |
| 15       | Nut                |
| 16       | O-ring             |
| 17       | Handle Cover       |
| 18       | Washer             |



| No | Part               | Carbon Steel<br>(Non-Sour) | Stainless Steel  | Carbon Steel<br>(Sour Service) | Low Temperature<br>Carbon Steel |
|----|--------------------|----------------------------|------------------|--------------------------------|---------------------------------|
| 1  | Body               | ASTM A105N                 | ASTM A182-F316   | ASTM A105N                     | ASTM A350-LF2                   |
| 2  | Bonnet             | ASTM A105N                 | ASTM A182-F316   | ASTM A105N                     | ASTM A350-LF2                   |
| 3  | Ball               | ASTM A182 F6a              | ASTM A182-F316   | ASTM A182 F6a                  | ASTM A182-F316                  |
| 4  | Handle             | Carbon Steel               | Carbon Steel     | Carbon Steel                   | Carbon Steel                    |
| 5  | Gland Flange       | ASTM A216-WCB              | ASTM A351-CF8    | ASTM A216-WCB                  | ASTM A352-LCB                   |
| 6  | Seat               | PTFE                       | PTFE             | PTFE                           | PTFE                            |
| 7  | Stem               | ASTM A182-F6a              | ASTM A182-F316   | ASTM A182-F6a                  | ASTM A182-F316                  |
| 8  | Gland              | ASTM A276-304L             | ASTM A276-304L   | ASTM A276-304L                 | ASTM A276-304L                  |
| 9  | Gasket             | 316 L+Graphite             | 316 L+Graphite   | 316 L+Graphite                 | 316 L+Graphite                  |
| 10 | Packing            | Graphite                   | Graphite         | Graphite                       | Graphite                        |
| 11 | O-ring             | Viton AED                  | Viton AED        | Viton AED                      | HNBR                            |
| 12 | Thrust Washer      | PTFE                       | PTFE             | PTFE                           | PTFE                            |
| 13 | Screw              | ASTM A193-B7               | ASTM A182-B8 CI2 | ASTM A193-B7M                  | ASTM A320-L7M                   |
| 14 | Anti-Static Device | S.S.                       | S.S.             | S.S.                           | S.S.                            |
| 15 | Nut                | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |
| 16 | O-ring             | Viton AED                  | Viton AED        | Viton AED                      | HNBR                            |
| 17 | Handle Cover       | Plastic                    | Plastic          | Plastic                        | Plastic                         |
| 18 | Washer             | Carbon Steel               | S.S.             | Carbon Steel                   | Carbon Steel                    |



Full Bore (1/2"-2")

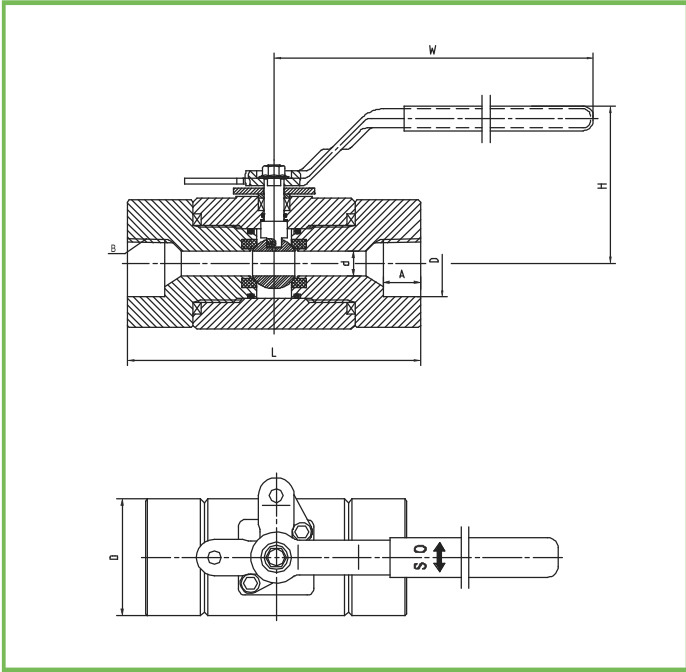


Reduced Bore (1/2"-2")

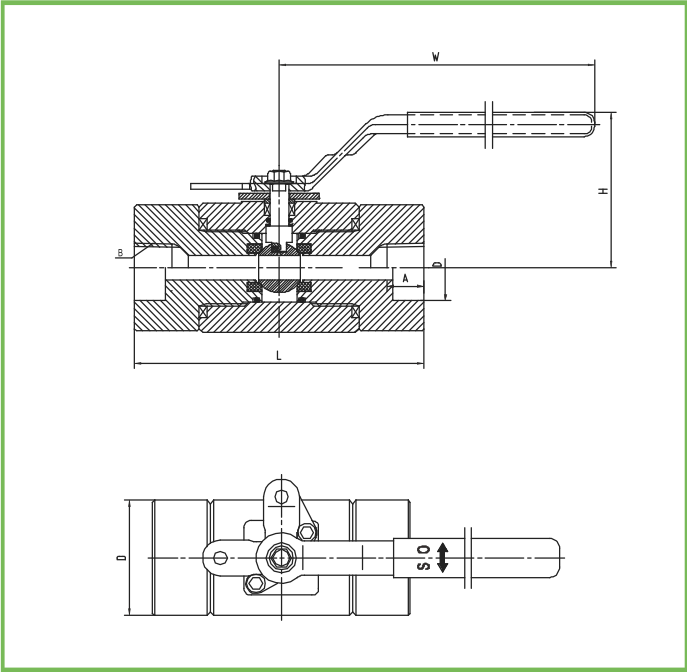
Class 150/300/600/800/900 Dimension and weight

| Full Bore |    |       |      |        |     |       |     |      |     |       |     |      |       |      |       |      |     |               |        |       |
|-----------|----|-------|------|--------|-----|-------|-----|------|-----|-------|-----|------|-------|------|-------|------|-----|---------------|--------|-------|
| Size      |    | d     |      | L(NPT) |     | L(SW) |     | H    |     | L1    |     | A    |       | D    |       | D1   |     | B             | Weight |       |
| NPS       | DN | in    | mm   | in     | mm  | in    | mm  | in   | mm  | in    | mm  | in   | mm    | in   | mm    | in   | mm  |               | lb     | kg    |
| 3/8       | 10 | 0.375 | 9.50 | 4.09   | 104 | 7.72  | 196 | 2.44 | 62  | 6.5   | 165 | 0.37 | 9.50  | 0.69 | 17.60 | 1.65 | 42  | 3/8-18NPT     | 3.30   | 1.50  |
| 1/2       | 15 | 0.50  | 13   | 4.09   | 104 | 7.72  | 196 | 2.44 | 62  | 6.5   | 165 | 0.37 | 9.50  | 0.86 | 21.80 | 1.65 | 42  | 1/2-14NPT     | 3.30   | 1.50  |
| 3/4       | 20 | 0.75  | 19   | 5.00   | 127 | 8.43  | 214 | 3.23 | 82  | 6.5   | 165 | 0.49 | 12.50 | 1.07 | 27.20 | 2.28 | 58  | 3/4-14NPT     | 6.40   | 2.90  |
| 1         | 25 | 1.00  | 25   | 4.53   | 115 | 9.53  | 242 | 3.94 | 100 | 8.46  | 215 | 0.49 | 12.50 | 1.33 | 33.90 | 2.68 | 68  | 1-11.5NPT     | 7.70   | 3.50  |
| 1-1/2     | 40 | 1.50  | 38   | 5.63   | 143 | 10.24 | 260 | 5.31 | 135 | 10.43 | 265 | 0.49 | 12.50 | 1.92 | 48.80 | 3.66 | 93  | 1-1/2-11.5NPT | 16.50  | 7.50  |
| 2         | 50 | 2.00  | 51   | 6.30   | 160 | 8.82  | 224 | 6.50 | 165 | 10.43 | 265 | 0.63 | 16.00 | 2.41 | 61.20 | 4.49 | 114 | 2-11.5NPT     | 28.70  | 13.00 |

| Reduced Bore |       |       |      |        |     |       |     |      |     |       |     |      |       |      |       |      |    |               |        |      |
|--------------|-------|-------|------|--------|-----|-------|-----|------|-----|-------|-----|------|-------|------|-------|------|----|---------------|--------|------|
| Size         |       | d     |      | L(NPT) |     | L(SW) |     | H    |     | L1    |     | A    |       | D    |       | D1   |    | B             | Weight |      |
| NPS          | DN    | in    | mm   | in     | mm  | in    | mm  | in   | mm  | in    | mm  | in   | mm    | in   | mm    | in   | mm |               | lb     | kg   |
| 1/2*3/8      | 15*10 | 0.375 | 9.50 | 4.09   | 104 | 7.72  | 196 | 2.44 | 62  | 6.5   | 165 | 0.37 | 9.50  | 0.69 | 17.60 | 1.65 | 42 | 1/2-14NPT     | 3.30   | 1.50 |
| 3/4*1/2      | 20*15 | 0.50  | 13   | 4.09   | 104 | 7.72  | 196 | 2.44 | 62  | 6.5   | 165 | 0.37 | 9.50  | 0.86 | 21.80 | 1.65 | 42 | 3/4-14NPT     | 3.30   | 1.50 |
| 1*3/4        | 25*20 | 0.75  | 19   | 5.00   | 127 | 8.43  | 214 | 3.23 | 82  | 6.5   | 165 | 0.49 | 12.50 | 1.07 | 27.20 | 2.28 | 58 | 1-11.5NPT     | 6.40   | 2.90 |
| 1-1/2*1      | 40*25 | 1.00  | 25   | 4.53   | 115 | 9.53  | 242 | 3.94 | 100 | 8.46  | 215 | 0.49 | 12.50 | 1.33 | 33.90 | 2.68 | 68 | 1-1/2-11.5NPT | 7.70   | 3.50 |
| 2*1-1/2      | 50*40 | 1.50  | 38   | 5.63   | 143 | 10.24 | 260 | 5.31 | 135 | 10.43 | 265 | 0.49 | 12.50 | 1.92 | 48.80 | 3.66 | 93 | 2-11.5NPT     | 16.50  | 7.50 |



Full Bore (1/2"-2")



Reduced Bore (1/2"-2")

Cv - Full Bore Ball Valves

| BORE<br>Size<br>(inches) | ANSI Class |       |      |     |      |      |
|--------------------------|------------|-------|------|-----|------|------|
|                          | 150        | 300   | 600  | 900 | 1500 | 2500 |
| 0.5                      | 17         | 15    | 14   | 12  | 12   | 11   |
| 0.75                     | 43         | 38    | 34   | 31  | 31   | 28   |
| 1                        | 86         | 76    | 66   | 64  | 61   | 56   |
| 1.25                     | 156        | 139   | 122  | 111 | 111  | 99   |
| 1.5                      | 227        | 211   | 187  | 167 | 167  | 148  |
| 2                        | 423        | 384   | 330  | 294 | 294  |      |
| 3                        | 1139       | 965   | 860  | 832 |      |      |
| 4                        | 2416       | 2093  | 1759 |     |      |      |
| 6                        | 5241       | 5183  |      |     |      |      |
| 8                        | 10471      | 9991  |      |     |      |      |
| 10                       | 17709      | 17154 |      |     |      |      |
| 12                       | 26241      | 25460 |      |     |      |      |

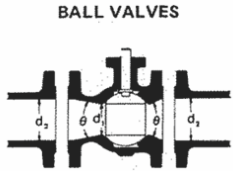
Cv - Reduced Bore Ball Valves

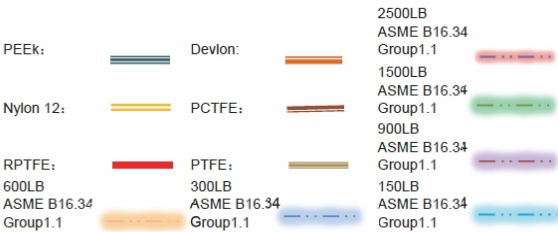
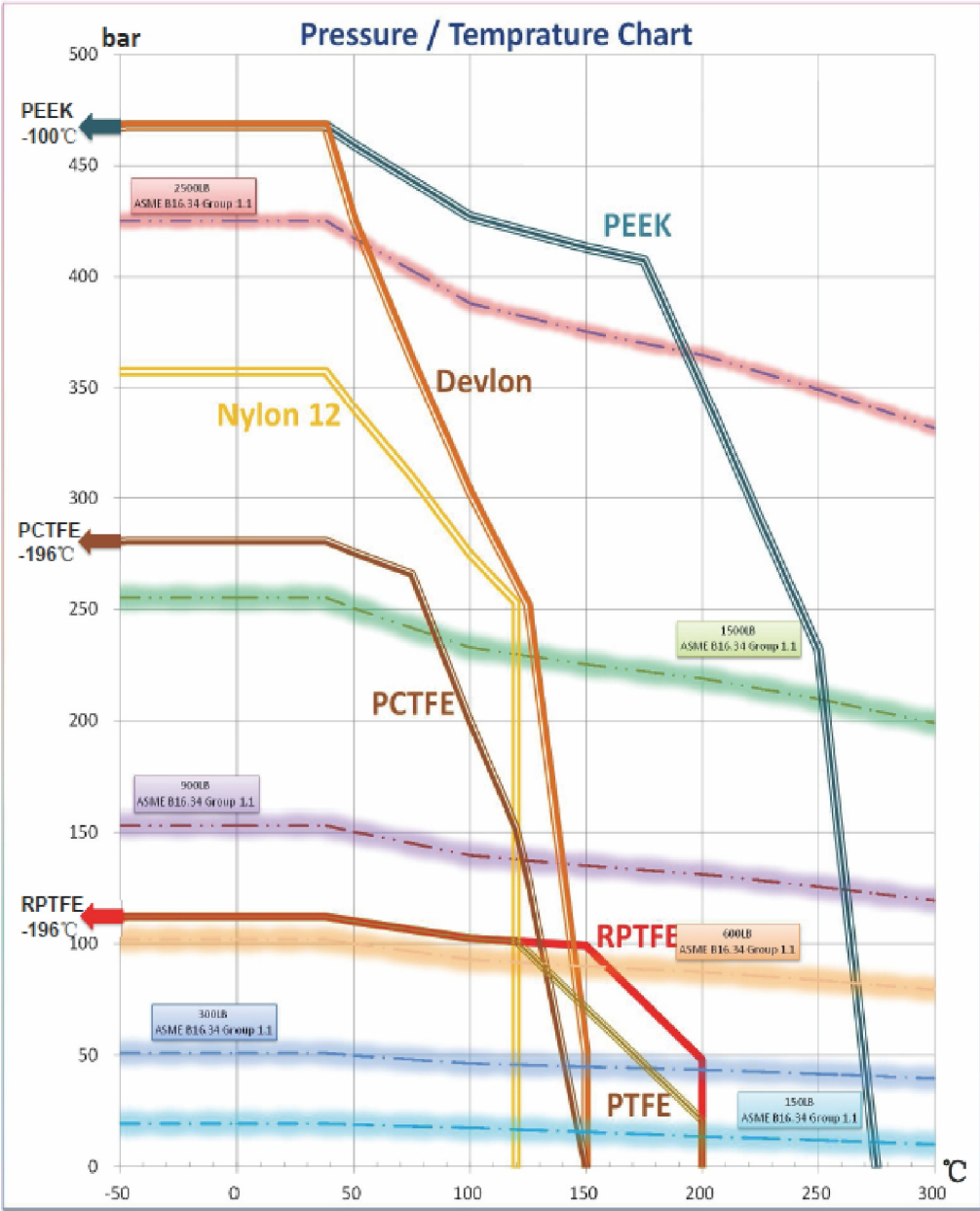
| BORE<br>Size<br>(inches)<br><small>API 6D(E24-2014)</small> | ANSI Class |      |     |     |      |      |
|-------------------------------------------------------------|------------|------|-----|-----|------|------|
|                                                             | 150        | 300  | 600 | 900 | 1500 | 2500 |
| 3/4*1/2                                                     | 14         | 14   | 14  | 14  | 14   | 14   |
| 1*3/4                                                       | 35         | 35   | 35  | 35  | 35   | 35   |
| 1-1/2*1                                                     | 50         | 50   | 50  | 50  | 50   | 50   |
| 2*1-1/2                                                     | 133        | 133  | 133 | 133 | 133  | 238  |
| 3*2                                                         | 150        | 155  | 155 | 155 | 194  |      |
| 4*3                                                         | 403        | 526  | 458 | 458 |      |      |
| 6*4                                                         | 708        | 661  | 708 |     |      |      |
| 8*6                                                         | 1715       | 1913 |     |     |      |      |
| 10*8                                                        | 3657       | 3657 |     |     |      |      |
| 12*10                                                       | 6645       | 7145 |     |     |      |      |

Cv =1.156Kv

$K_v = \frac{0.04d^2}{\sqrt{K}}$

d: dimension of bore -mm  
K: resistance coefficient





Note: Other materials are available upon request.  
If the operating condition is beyond the range above, please contact NEWAY's technical team.  
NEWAY reserves the right to update without notice.

Operating Torque

| Size  | Class 150 |         | Class 300 |         | Class 400 |        | Class 600 |        |
|-------|-----------|---------|-----------|---------|-----------|--------|-----------|--------|
|       | N.m       | Ft/Lbs  | N.m       | Ft/Lbs  | N.m       | Ft/Lbs | N.m       | Ft/Lbs |
| 1/2   | 5         | 3.69    | 6         | 4.43    | 11        | 8.12   | 16        | 11.81  |
| 3/4   | 8         | 5.90    | 10        | 7.38    | 14        | 10.33  | 20        | 14.76  |
| 1     | 15        | 11.07   | 17        | 12.55   | 29        | 21.40  | 42        | 31.00  |
| 1-1/4 | 30        | 22.14   | 45        | 33.21   | 50        | 36.90  | 72        | 53.14  |
| 1-1/2 | 35        | 25.83   | 45        | 33.21   | 62        | 45.76  | 90        | 66.42  |
| 2     | 40        | 29.52   | 55        | 40.59   | 90        | 66.42  | 130       | 95.94  |
| 2-1/2 | 70        | 51.67   | 90        | 66.42   | 104       | 76.75  | 150       | 110.70 |
| 3     | 90        | 66.42   | 120       | 88.56   | 138       | 101.84 | 200       | 147.60 |
| 4     | 180       | 132.84  | 230       | 169.74  | 265       | 188.19 | 370       | 273.06 |
| 6     | 480       | 354.27  | 930       | 686.34  |           |        |           |        |
| 8     | 900       | 664.26  | 1930      | 1424.34 |           |        |           |        |
| 10    | 1800      | 1328.51 | 4000      | 2952.25 |           |        |           |        |

| Size  | Class 800 |        | Class 900 |        | Class 1500 |        | Class 2500 |        |
|-------|-----------|--------|-----------|--------|------------|--------|------------|--------|
|       | N.m       | Ft/Lbs | N.m       | Ft/Lbs | N.m        | Ft/Lbs | N.m        | Ft/Lbs |
| 1/2   | 19        | 14.02  | 25        | 18.45  | 32         | 23.62  | 56         | 41.33  |
| 3/4   | 33        | 24.35  | 40        | 29.52  | 60         | 44.28  | 95         | 70.12  |
| 1     | 65        | 47.97  | 80        | 59.05  | 140        | 103.33 | 175        | 129.16 |
| 1-1/4 | 100       | 73.81  | 115       | 84.88  | 155        | 114.40 |            |        |
| 1-1/2 | 130       | 95.94  | 140       | 103.32 | 171        | 126.21 |            |        |
| 2     | 187       | 138.01 | 336       | 247.99 | 420        | 309.96 |            |        |
| 3     |           |        | 431       | 318.08 |            |        |            |        |

- Note:
- Torque is calculated based on ambient temperature, with RPTFE seat for Class 150~Class 800, NYLON for Class 900~1500, PEEK for Class 2500, NYLON (4" in size) for Class 600.
  - Torque shown in this table is the reference for actuator selection. A safety factor of 1.3~1.5 is recommended for identifying actuator sizing.
  - For cryogenic service, torque shall be increased about 2~2.5 times.
  - Torque may vary with fluids and trim materials. Contact NEWAY Ball Valve Engineering Department for specific requirements.



**NEWAY Head Office**      Founded in 2014  
Total area: 2,295sqm  
Office area: 6,885sqm



**NEWAY Manufacturing Base**      Founded in 2006  
Expanded in 2013  
Main products: Ball Valve, Butterfly Valve, Gate Valve,  
Globe Valve, Check Valve, Control Valve  
Building area: 230,000 sqm  
Work shop: 140,061 sqm



**NEWAY Foundry (Suzhou)**      Founded in 2008  
Expanded in 2015  
Main products: Sand Casting  
Building area: 112,500 sqm  
Work shop: 98,000 sqm



**NEWAY Foundry (Dafeng)**      Founded in 2008  
Main products: Lost wax investment casting  
Building area: 40,000 sqm  
Work shop: 20,000 sqm



**Neway Precision Forging(Liyang),.LTD**      Founded in 2017  
Main products: Hammer forging, annular forging  
Office area: 3,000 sqm  
Work shop: 30,000 sqm



**Neway Butterfly Valve Plant**      Founded in 2020  
Main products: Butterfly Valve  
Building area: 30,000 sqm  
Work shop: 19,000 sqm (first floor)  
7,000 sqm (second floor)

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Seller will replace without charge or refund the purchase price of products provided by Seller which prove to be defective in material or workmanship, provided in each case that the product is properly installed and is used in the service for which Seller recommends it and that written claim, specifying the alleged defect, is presented to the Seller within 18 months from the date of shipment or 12 months after installation, whichever occurs first. Seller shall in no event bear any labor, equipment, engineering or other costs incurred in connection with repair or replacement. The warranty stated in this paragraph is in lieu of all other warranties, either expressed or implied. With respect to warranties, this paragraph states Buyer's exclusive remedy and seller's exclusive liability.