Product design

We've been aiming for the perfect product design all the time
Strict design and manufacture

Quality guarantee

A complete quality control system ensures that the whole design and manfacturing process

Technical consultation

RST can provide consultations in technology or application for you. Please contact our regional customer service representatives.

Quick maintenance service

RST Service Center can help you solve possible technical or quality problems and also provide professional maintenance/replacement service for you as soon as possible.

Customized in formatior service

RST can provide technical support at the installation and adjusting stages for customers as required.


**KCM TECHNOLOGY GROUP**

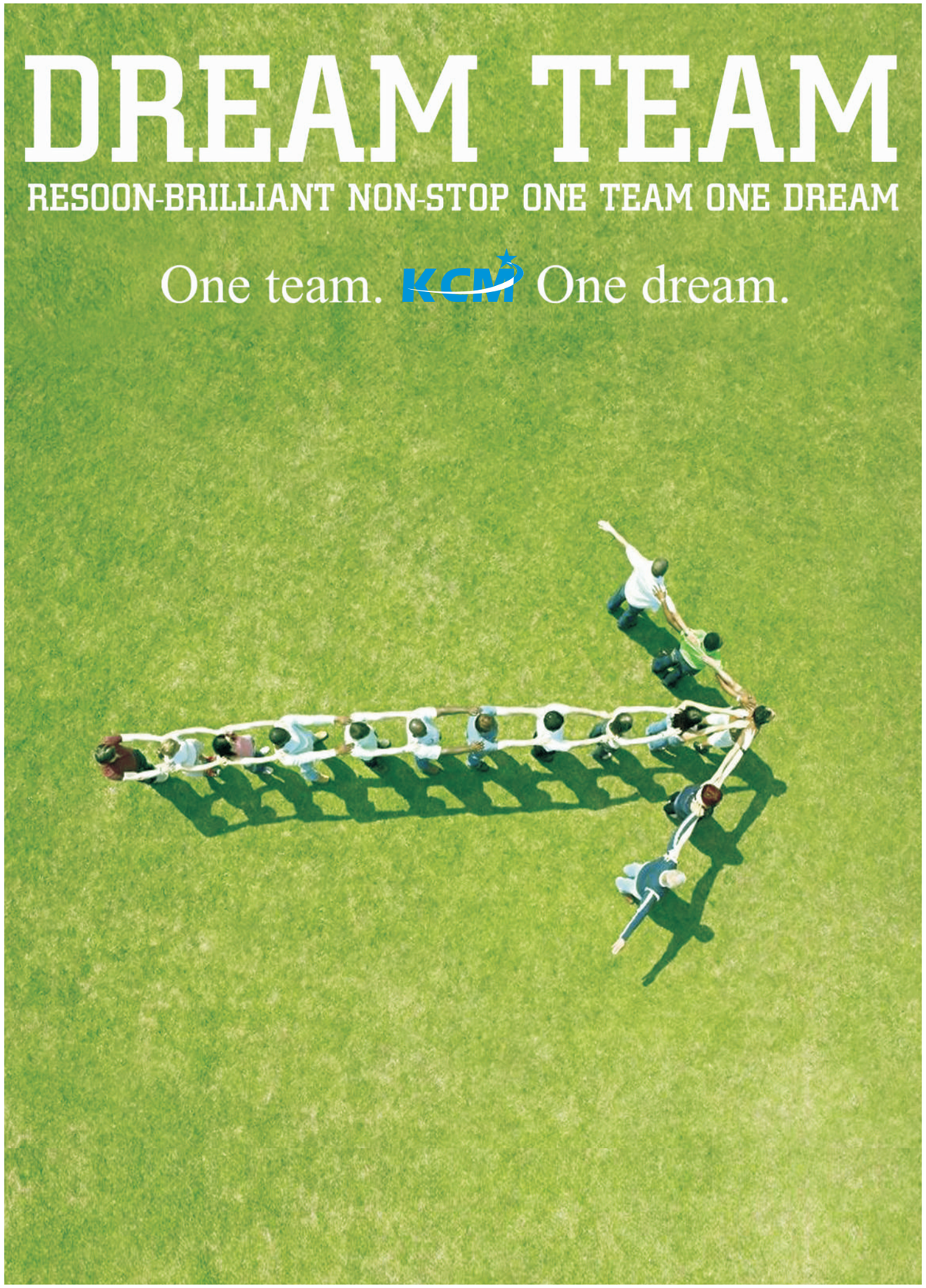
Add: No.1555 Tianzhong RD, Yongqiang High-tech Park, Longwan District, Wenzhou City, Zhejiang Province, China.325024
Oversea Dept.: 0086-577-86879200
Fax: 0086-577-86917828
E-mail: sales@kcmtech-valve.com
Http: www.kcmtech-valve.com


MADE IN CHINA
FOCUS ON WORLD

www.kcmtech-valve.com

# CAST STEEL VALVE SERIES

KCM TECHNOLOGY GROUP




# BRIEF INTRODUCTIION

Situated in Yongqiang Hi-tech Park, Longwan District, Wenzhou, a China hometown for valves where is the origin of Chinese private economy, KCM technology group Co., Ltd is an innovative high-tech key enterprise integrating R&D, design, production, sales and service.

Now KCM has five branch companies. has more than 500 staff.involving 3 senior engineers and 2 senior administrator of professional title. And the group has established EPR management system and advanced examination and test center of valve performance, as well as CAD valve design center, 3D analogue design system of manufacture, and introduced some special equipments including direct reading spectrograph, stress test bench, chemical composition analyzer, mechanical performance tester, hardness tester, spectrograph, ultrasonic thickness gage and so on, which forms a first class capacity of production and test of valves to ensure the powerful guarantee for producing high quality valves. In this case, the company has obtained ISO9001, ISO14001, OHSAS18001, CE, TS and so on; and fulfilled the confirmation of standardized good system and metering examination system; and got the self-support right to import and export.

Products in the company cover high, low-pressure valves including flanged end ball valve, gate valve, globe valve, y-strainer, check valve, camlock coupling, pipe fittings,etc., in accordance with domestic and foreign advanced standards like ANSI, API, JIS, BS, DIN, GOST. They are widely used in industries like petroleum, chemicals, nature gas, food industry, power supply, pharmacy, metallurgy, water supply and so on.

Since the establishment of KCM, the products are w sold to Europe, USA, and Middle East, Africa and many other countries and regions, and win the trust and praise of domestic and foreign customers. The company meets the needs of vast customers with reasonable price and thorough pre-sale, in-sale, after-sale service abiding by the goal of creating a first-brand brand of KCM. KCM forges ahead with broad minds, and warmly welcome domestic and foreign customers to visit and negotiate business with us. KCM is looking forward to strengthening cooperation with various sectors of society to create brilliancy together.

www.kcmtech-valve.com

KCM TECHNOLOGY GROUP CO.,LTD

## MADE IN CHINA
## FOCUS ON WORLD

We own advanced production equipment and produce high-quality products with international standard. We hope that every product can exert their performances during effective life by our perfect design, manufacture and service.

# contents


| | |
|---|---|
| Globe Valve | 01-02 |
| Cast Steel Globe Valve | 03-06 |
| DIN Globe Valve F1 Series PN16/PN25/PN40 | 07-08 |
| DIN Bellows Globe Valve F1 Series PN16/PN25/PN40 | 09 |
| Gate Valve | 10 |
| Cast Steel Gate Valve | 11-16 |
| DIN Rising Stem Gate Valve F5-F7 Series | 17 |
| Gast Steel Swing Check Valve | 18-20 |
| Cast Steel Lift Check Valve | 21 |
| DINSwing (Lift) Check Valve F1-F6 Series | 22 |
| Materials Characteristic | 23 |

## Technical Specification

Design and Manufacture: Cast steel globe valve to BS 1873 and ASME B16.34; Forged steel globe valve to API 602.

Inspection and Test: API 598.

End flange dimension: ASME B16.5 .

BW end dimension: ASME B16.25.

Socket–weld dimension: ASME B16.11.

Face to face and end to end: ASME B16.10.

Pressure–temperature ratings: ASME B16.34.

## The features of globe valve

Bolted Bonnet; Outside Screw and Yoke; Rising stems; Metallic seating surfaces.

## Body and Bonnet Connection

The body and bonnet of Class 150 ~ Class 900 globe valves are usually with studs and nuts. And the body and bonnet of Class 1500 ~ Class 2500 globe valves are usually of pressurized seal design.

## Gasket of Cover Flange

Stainless steel + flexible graphite wounded gasket is used for Class 150 and Class 300 globe valve; Stainless steel + flexible graphite wounded gasket is used for Class 600, and ring joint gasket is also optional for Class 600. Ring joint gasket is used for Class 900 globe valve; Pressurized seal design is used for Class 1500 ~ Class 2500 globe valve.

## Actuation

Hand wheel, impact hand wheel & gear box is usually used for globe valve actuation. Chain wheel and electric actuator can be also used for globe valve actuation if being requested by the customers.

## Packing Seal

Molded flexible graphite is used for packing material. PTFE or combined packing material can be also used if being requested by the customer. The internal surface of the stuffing box, of which area is contacted with the packing, is of excellent finish (Ra 3.2 μm). The stem surface, contacting with the packing, should be rolled and pressed after being precisely machined, so as to reach to the high finish and compactness (Ra 0.8 μm) and ensure the relizble tightness of the stem area.

## Belleville Spring Loaded Packing Impacting System

If being requested by the customer, the Belleville spring loaded packing impacting system can be adopted for enhancing the durability and reliability of the packing seal.



Globe Valve

## Back Seating Design

All our globe valves have the back seating design. In most cases, the carbon steel globe valve is fitted with a renewable back seat. For stainless steel globe valve, the back seat is machined directly in the bonnet or is machined after welding. When the globe valve is at fully open position, the sealing of the back seat can be very reliable. However, as per the requirement of API, it is not advisable to add or change packing by the mean of back seating when the valve is pressure containing.

## Seat

For carbon steel globe valve, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by the customer. Renewable threaded seat is used for NPS≤10 globe valves, and welded on seat can be also optional if being requested by the customer. Welded on seat is used for NPS≥12 carbon steel globe valves. For Stainless steel globe valve, integral seat is usually adopted, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel globe valve if being requested by the customer.

## Stem Design

The stem is of integral forged design. The minimum diameter of the stem shall per the standard requirement.

## Stem Nut

Usually, the stem nut is made of ASTM A439 D2. it is also can be made of copper ally if being requested by the customer. For large sized globe valve, rolling bearing is fitted at the two sides of stem nut in order to minimize the open and close torque of the globe valve.

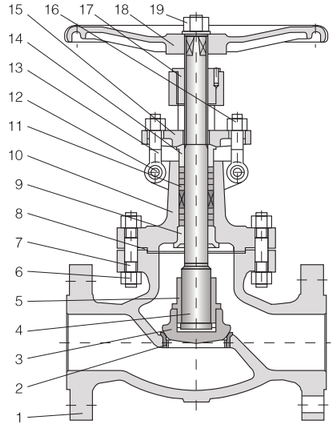
## Special Gate Valve

Besides the common globe valves, Our company also makes cryogenic globe valve, Bellow sealed globe valve, Jacketed globe valve, etc.

Bellow Sealed Globe Valve

Forged Steel Globe Valve

Cast Steel Globe Valve


## Technical Specification

Design and Manufacture: BS1873 or ASME B16.34

Inspection and Test: API 598

End flange dimension: ASME B16.5

BW end dimension: ASME B16.25

Socket–weld dimension: ASME B16.11

Face to face and end to end: ASME B16.10

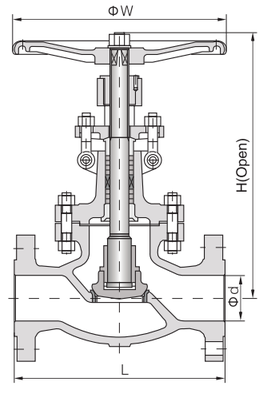
Pressure–temperature ratings: ASME B16.34

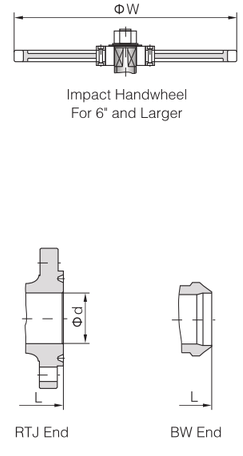
## Form of Major Part Material

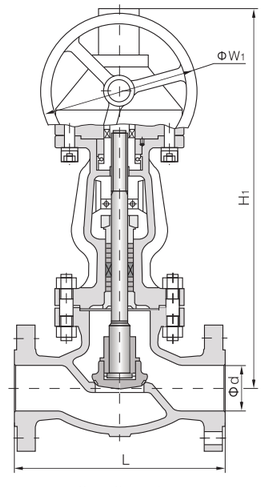
| Parts No. | Parts Name | Materials | | | | |
|---|---|---|---|---|---|---|
| | | WCB/Trim 1 | WCB/Trim 5 | WCB/Trim 8 | CF8/304 | CF8M/316 |
| 1 | Body | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 2 | Seat ring | A105 + 13Cr | A105 + STL | A105 + STL | ASTM A351 CF8 | ASTM A351 CF8M |
| 3 | Disc | ASTM A216 WCB + 13Cr | ASTM A216 WCB + STL | ASTM A216 WCB + 13Cr | ASTM A351 CF8 | ASTM A351 CF8M |
| 4 | Stem | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F304 | ASTM A182 F316 |
| 5 | Disc nut | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 6 | Bonnet nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 7 | Bonnet bolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 8 | Gasket | 304 sheet + Graphite | 304 sheet + Graphite | 304 sheet + Graphite | 304 + Graphite | 316 + Graphite |
| 9 | Backseat bushing | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A351 CF8 | ASTM A351 CF8M |
| 10 | Bonnet | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 11 | Packing | Graphite | Graphite | Graphite | Graphite | Graphite |
| 12 | Eyebolt pin | ASTM A36 | ASTM A36 | ASTM A36 | 304ss | 316ss |
| 13 | Gland eyebolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 14 | Gland | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F304 | ASTM A182 F316 |
| 15 | Gland flange | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 16 | Eyebolt nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 17 | Stem nut | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 |
| 18 | Hand wheel | Ductile Iron | Ductile Iron | Ductile Iron | Ductile Iron | Ductile Iron |
| 19 | Hand wheel nut | Carbon steel | Carbon steel | Carbon steel | Carbon steel | Carbon steel |

Note: The chart above only lists out some common composition of steel check valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

## Cast Steel Globe Valve Class 150



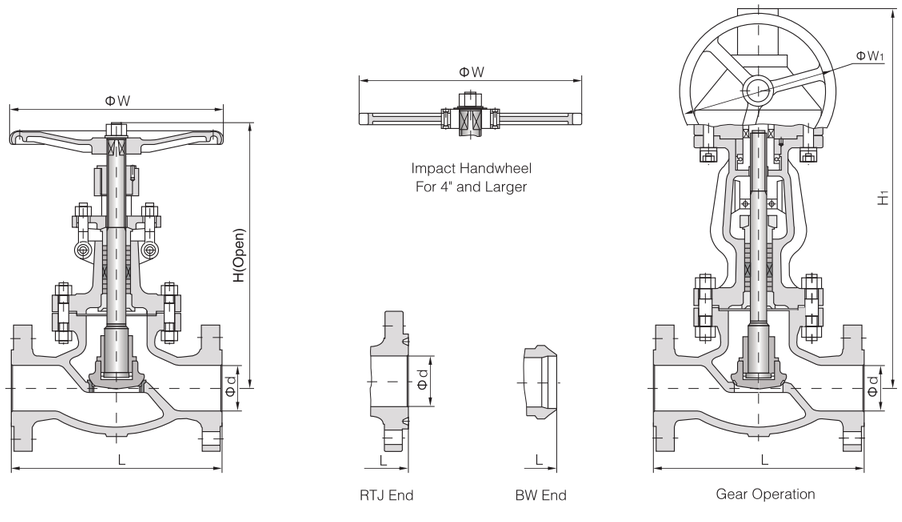




| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| 150 | 1/2 | 15 | 108 | 119 | 108 | 13 | 182 | – | 100 | – | 4 | – |
| | 3/4 | 20 | 117 | 130 | 117 | 19 | 193 | – | 100 | – | 6 | – |
| | 1 | 25 | 127 | 140 | 127 | 25 | 217 | – | 100 | – | 8 | – |
| | 1 1/4 | 32 | 140 | 152 | 140 | 32 | 235 | – | 135 | – | 12 | – |
| | 1 1/2 | 40 | 165 | 178 | 165 | 38 | 258 | – | 135 | – | 16 | – |
| | 2 | 50 | 203 | 216 | 203 | 51 | 330 | – | 200 | – | 25 | – |
| | 2 1/2 | 65 | 216 | 229 | 216 | 64 | 360 | – | 250 | – | 42 | – |
| | 3 | 80 | 241 | 254 | 241 | 76 | 390 | – | 280 | – | 46 | – |
| | 4 | 100 | 292 | 305 | 292 | 102 | 445 | – | 300 | – | 74 | – |
| | 5 | 125 | 356 | 369 | 356 | 127 | 480 | – | 350 | – | 111 | – |
| | 6 | 150 | 406 | 419 | 406 | 152 | 520 | 556 | 350 | 310 | 165 | 258 |
| | 8 | 200 | 495 | 508 | 495 | 203 | 600 | 658 | 400 | 310 | 275 | 300 |
| | 10 | 250 | 622 | 635 | 622 | 254 | 773 | 805 | 450 | 460 | 400 | 450 |
| | 12 | 300 | 698 | 711 | 698 | 305 | 880 | 955 | 500 | 460 | 624 | 725 |

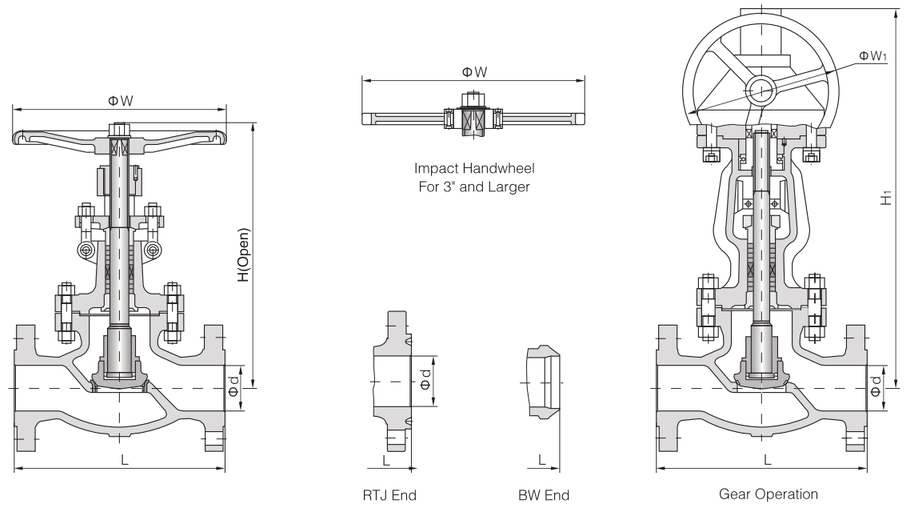
Cast Steel Globe Valve

## Cast Steel Globe Valve Class 300

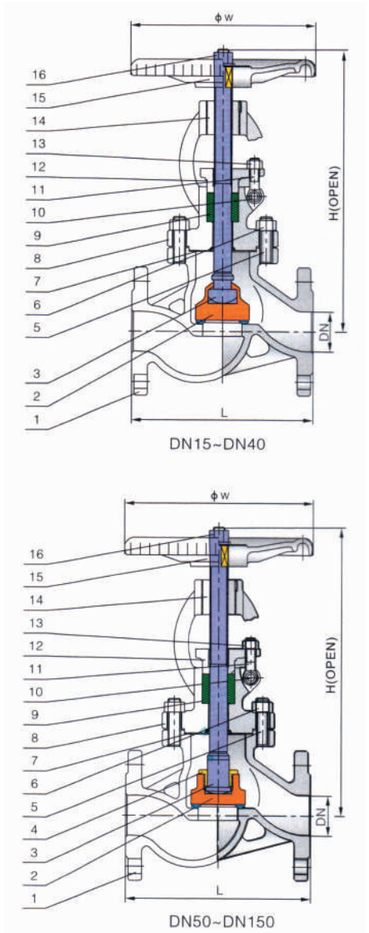



| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| 300 | 1/2 | 15 | 152 | 164 | 152 | 14 | 185 | – | 100 | – | 5 | – |
| | 3/4 | 20 | 178 | 191 | 178 | 19 | 195 | – | 100 | – | 7 | – |
| | 1 | 25 | 203 | 216 | 203 | 25 | 220 | – | 135 | – | 10 | – |
| | 1 1/4 | 32 | 216 | 229 | 216 | 32 | 240 | – | 135 | – | 14 | – |
| | 1 1/2 | 40 | 229 | 241 | 229 | 38 | 260 | – | 160 | – | 19 | – |
| | 2 | 50 | 267 | 283 | 267 | 51 | 385 | – | 200 | – | 25 | – |
| | 2 1/2 | 65 | 292 | 308 | 292 | 64 | 420 | – | 200 | – | 42 | – |
| | 3 | 80 | 318 | 333 | 318 | 76 | 440 | – | 280 | – | 46 | – |
| | 4 | 100 | 356 | 371 | 356 | 102 | 515 | – | 350 | – | 74 | – |
| | 5 | 125 | 400 | 416 | 400 | 127 | 580 | – | 350 | – | 111 | – |
| | 6 | 150 | 444 | 460 | 444 | 152 | 660 | 690 | 400 | 310 | 165 | 195 |
| | 8 | 200 | 559 | 575 | 559 | 203 | 900 | 950 | 550 | 460 | 275 | 327 |
| | 10 | 250 | 622 | 638 | 622 | 254 | 950 | 990 | 600 | 460 | 400 | 452 |
| | 12 | 300 | 711 | 727 | 711 | 305 | 1030 | 1080 | 700 | 460 | 624 | 725 |

## Cast Steel Globe Valve Class 600/900




| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| 600 | 2 | 50 | 292 | 295 | 292 | 51 | 360 | – | 250 | – | 32 | – |
| | 2 1/2 | 65 | 330 | 333 | 330 | 64 | 410 | – | 280 | – | 42 | – |
| | 3 | 80 | 356 | 359 | 356 | 76 | 465 | – | 300 | – | 63 | – |
| | 4 | 100 | 432 | 435 | 432 | 102 | 545 | 575 | 400 | 310 | 107 | 138 |
| | 5 | 125 | 508 | 511 | 508 | 127 | 625 | 660 | 500 | 310 | 185 | 215 |
| | 6 | 150 | 559 | 562 | 559 | 152 | 785 | 820 | 550 | 460 | 290 | 342 |
| | 8 | 200 | 660 | 664 | 660 | 200 | 930 | 960 | 650 | 460 | 540 | 645 |
| 900 | 2 | 50 | 368 | 371 | 368 | 51 | 480 | – | 350 | – | 55 | – |
| | 2 1/2 | 65 | 419 | 422 | 419 | 64 | 520 | – | 350 | – | 68 | – |
| | 3 | 80 | 381 | 384 | 381 | 76 | 564 | 630 | 400 | 310 | 95 | 128 |
| | 4 | 100 | 457 | 460 | 457 | 102 | 685 | 720 | 450 | 310 | 160 | 210 |
| | 5 | 125 | 559 | 562 | 559 | 127 | 780 | 840 | 550 | 460 | 270 | 325 |
| | 6 | 150 | 610 | 613 | 610 | 152 | 950 | 1015 | 650 | 460 | 410 | 480 |




## Applicable standards:

Design And Manufacture: DIN3356
Face To Face: DIN3202–F1,EN558–1
End Flange Dimensions: DIN2543(PN16),DIN2544(PN25),
DIN2545(PN40),EN1092–1
Pressure Test: DIN3230,EN12266–1

## Materials of parts

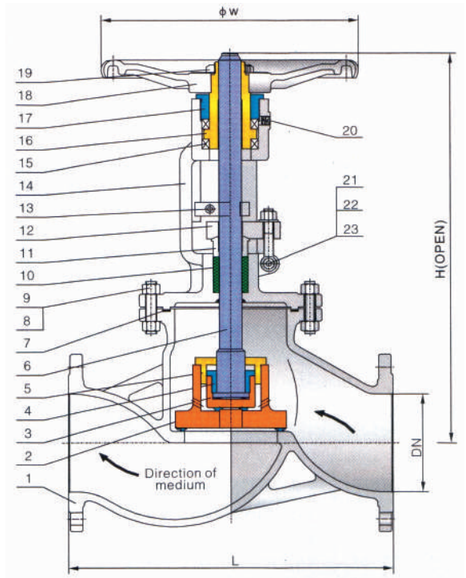
| NO. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Wedge | A105+13Cr |
| 3 | Stem | A182 F6 |
| 4 | Disc Nut | A105 |
| 5 | Bolt | A193 B7 |
| 6 | Nut | A 194 2H |
| 7 | Gasket | Graphite |
| 8 | Bonnet | GS–C25 |
| 9 | Packing | Graphite |
| 10 | Pin | Carbon Steel |
| 11 | Bolt | A193 B7 |
| 12 | Gland | GS–C25 |
| 13 | Nut | A194 2H |
| 14 | Stem Nut | Bronze |
| 15 | Handwheel | A105 |
| 16 | Nut | A194 2H |

## Dimensions data

| DN | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| H | | 210 | 230 | 250 | 275 | 300 | 325 | 385 | 410 | 455 | 510 | 560 |
| W | PN16 | 120 | 120 | 140 | 160 | 180 | 200 | 220 | 250 | 300 | 350 | 400 |
| | PN25 | 120 | 120 | 160 | 160 | 200 | 200 | 220 | 250 | 300 | 350 | 400 |
| | PN40 | 120 | 120 | 160 | 160 | 200 | 240 | 280 | 320 | 360 | 400 | 450 |
| Weight (kg) | PN16 | 6 | 7.5 | 8 | 8.6 | 13 | 20 | 25 | 34 | 45 | 65 | 70 |
| | PN25 | 6 | 7.5 | 8 | 9 | 14 | 22 | 29 | 35 | 47 | 70 | 80 |
| | PN40 | 6 | 7.5 | 8 | 9 | 15 | 24 | 30 | 35 | 48 | 75 | 95 |








## Applicable standards:

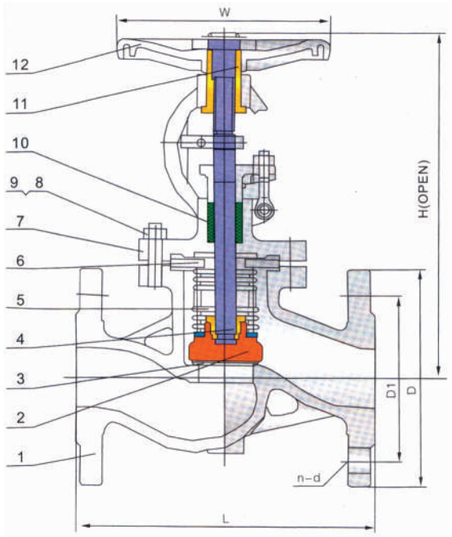
Design And Manufacture: DIN3356
Face To Face: DIN3202–F1, EN558–1
End Flange Dimensions: DIN2543(PN16),DIN2544(PN25),
DIN2545(PN40),EN1092–1
Pressure Test: DIN3230, EN12266–1

## Materials of parts

| No. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Big Disc | A105+13Cr |
| 3 | Small Disc | A105+13Cr |
| 4 | Small Disc Nut | A105 |
| 5 | Big Disc Nut | A105 |
| 6 | Stem | A182F6a |
| 7 | Gasket | Graphite |
| 8 | Nut | A194 2H |
| 9 | Bolt | A193 B7 |
| 10 | Packing | Graphite |
| 11 | Gland | A182 F6a |
| 12 | Gland Flange | GS–C25 |
| 13 | Splint | Carbon Steel |
| 14 | Bonnet | GS–C25 |
| 15 | Bearings | Alloy Steel |
| 16 | Stem Nut | A439 D2 |
| 17 | Retaining Nut | 1035 |
| 18 | Handwheel | A536 |
| 19 | Nut | Carbon Steel |
| 20 | Nipple | Brass |
| 21 | Pin | Carbon Steel |
| 22 | Bolt | A193 B7 |
| 23 | Nut | A194 2H |

## Dimensions data

| DN | 200 | 250 | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|---|
| L | 600 | 730 | 850 | 980 | 1100 | 1250 |
| H | 785 | 928 | 1030 | 1170 | 1220 | 1450 |
| W | 450 | 500 | 600 | 700 | 800 | 800 |




## Applicable standards:

Design And Manufacture: DIN3356
Face To Face: DIN3202–F1, EN558–1
End Flange Dimensions: DIN2543(PN16), DIN2544(PN25), DIN2545(PN40), EN1092–1
Pressure Test: DIN3230, EN12266–1

## Materials of parts

| No. | Part Name | KWJH41–16/25 | KWJH41–40 |
|---|---|---|---|
| 1 | Body | GS–C25N Carbon Steel | GS–C25N Carbon Steel |
| 2 | Disc | 2Cr13/3Cr13 | |
| 3 | Seat | 2Cr13/3Cr13 | |
| 4 | Stem | 2Cr13 –304 | |
| 5 | Bellows | 304/316 | |
| 6 | Gasket | 304+Flexible graphite | |
| 7 | Bonnet | GS–C25N Carbon Steel | GS–C25N Carbon Steel |
| 8 | Nut | A194 2H | |
| 9 | Bolt | A193 B7 | |
| 10 | Packing | Flecible graphite | |
| 11 | Stem Nut | A439 D2 | |
| 12 | Handwheel | KTH330 | |

## Dimensions data

| DN | L | H | W | | PN16 | | | PN25 | | | PN40 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PN16–PN25 | PN40 | D | D1 | n–d | D | D1 | n–d | D | D1 | n–d |
| 15 | 130 | 191 | 125 | 125 | 95 | 65 | 4×14 | 95 | 65 | 4×14 | 95 | 65 | 4×14 |
| 20 | 150 | 191 | 125 | 125 | 105 | 75 | 4×14 | 105 | 75 | 4×14 | 105 | 75 | 4×14 |
| 25 | 160 | 197 | 125 | 125 | 115 | 85 | 4×14 | 115 | 85 | 4×14 | 115 | 85 | 4×14 |
| 32 | 180 | 200 | 125 | 125 | 140 | 100 | 4×18 | 140 | 100 | 4×18 | 140 | 100 | 4×18 |
| 40 | 200 | 218 | 150 | 150 | 150 | 110 | 4×18 | 150 | 110 | 4×18 | 150 | 110 | 4×18 |
| 50 | 239 | 220 | 150 | 150 | 165 | 125 | 4×18 | 165 | 125 | 4×18 | 165 | 125 | 4×18 |
| 65 | 290 | 238 | 175 | 175 | 185 | 145 | 4×18 | 185 | 145 | 8×18 | 185 | 145 | 8×18 |
| 80 | 310 | 257 | 175 | 225 | 200 | 160 | 8×18 | 200 | 160 | 8×18 | 200 | 160 | 8×18 |
| 100 | 350 | 340 | 225 | 300 | 220 | 180 | 8×18 | 235 | 190 | 8×22 | 235 | 190 | 8×22 |
| 125 | 400 | 360 | 225 | 300 | 250 | 210 | 8×18 | 270 | 220 | 8×22 | 270 | 220 | 8×26 |
| 150 | 480 | 390 | 300 | 300 | 285 | 240 | 8×22 | 300 | 250 | 8×26 | 300 | 250 | 8×26 |
| 178 | 550 | 505 | 400 | – | 315 | 270 | 8×22 | 330 | 280 | 12×26 | – | – | – |
| 200 | 600 | 530 | 400 | – | 340 | 295 | 12×22 | 360 | 310 | 12×26 | – | – | – |
| 250 | 730 | 665 | 520 | – | 405 | 355 | 12×26 | 425 | 370 | 12×30 | – | – | – |
| 300 | 850 | 720 | 520 | – | 460 | 410 | 12×26 | 485 | 430 | 16×30 | – | – | – |
| 350 | 980 | 860 | 520 | – | 520 | 470 | 16×26 | 555 | 490 | 16×33 | – | – | – |
| 400 | 1110 | 1010 | 520 | – | 580 | 525 | 16×30 | 620 | 550 | 16×36 | – | – | – |

## Back Seating Design

All our gate valves have the back seating design. In most cases, the carbon steel gate valve is fitted with a renewable back seat. For stainless steel gate valve, the back seat is machined directly in the bonnet or is machined after welding. When the gate valve is at fully open position, the sealing of the back seat can be very reliable. However, as per the requirement of API 600, it is not advisable to add or change packing by the mean of back seating when the valve is pressure containing.

## Seat

For carbon steel gate valve, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by the customer. Renewable threaded seat is used for NPS⩽10 gate valves, and welded on seat can be also optional if being requested by the customer. Welded on seat is used for NPS⩽10 carbon steel gate valves. For Stainless steel gate valve, integral seat is usually adopted, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel gate valve if being requested by the customer.

## Stem Design

The stem is of integral forged design. The minimum diameter of the stem shall per the standard requirement. The connection of the stem and disc is T type. The strength of the connecting area is bigger than that of the T threaded part of the stem. The strength test of that area conforms to API 591.

## Stem Nut

Usually, the stem nut is made of ASTM A439 D2. It is also can be made of copper ally if being requested by the customer. For large sized gate valves (NPS 10 for Class 150, NPS 8 for Class 300, NPS 6 for Class 600, NPS 5 for Class 900), rolling bearing is fitted at the two sides of the stem nut in order to minimize the open and close torque of the gate valve.

## Special Gate Valve

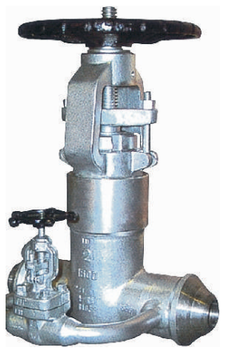
Besides the common gate valves, Our Company also makes cryogenic gate valve, Jacketed Gate Valve, Bellow Sealed Gate Valve, EXtension Stem Gate Valve for underground application, Flat Gate Valve, etc.


Flat Gate Valve


Cryogenic Gate Valve


Bellow Sealed Gate Valve


Extension Stem Gate Valve for Underground Application



## Technical Specification

Design and Manufacture: API 600 (ISO 10434) or API 6D

Inspection and Test: API 598, API 600 or API 6D

End flange dimension: ASME B16.5 (for NPS≤24)、ASME B16.47 series B、API 605 or ASME B16.47 series A、MSS SP–44 (for NPS＞24)

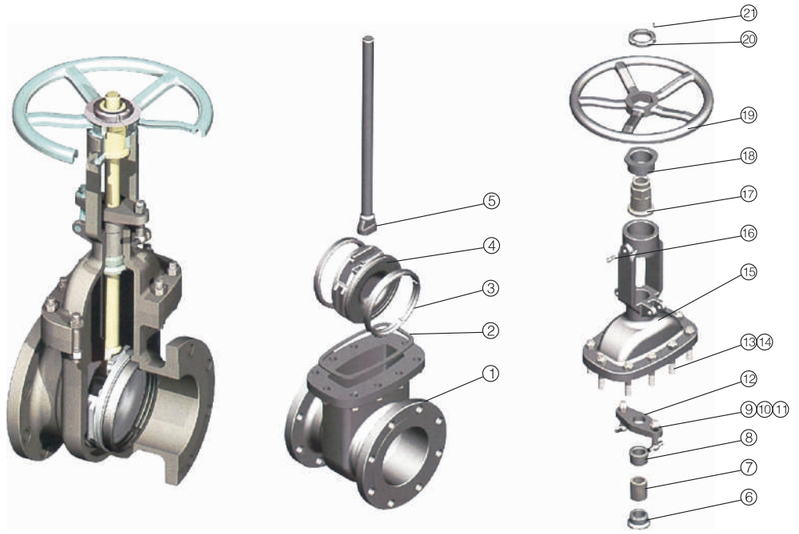
BW end dimension: ASME B16.25

Face to face and end to end: ASME B16.10

Pressure–temperature ratings: ASME B16.34







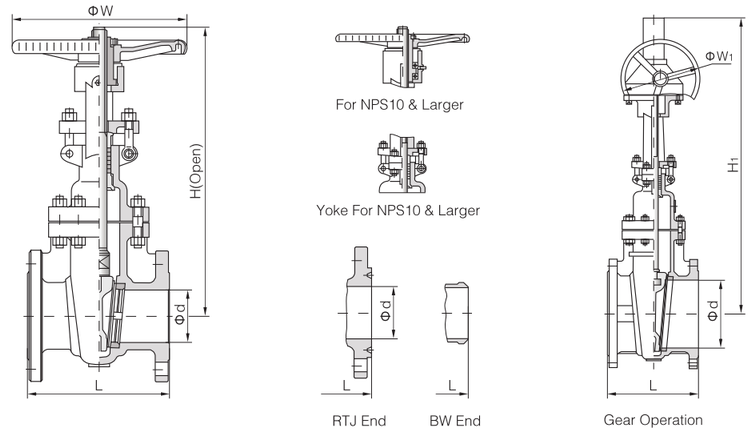

## Form of Major Part Material

| Parts No. | Parts Name | Materials | | | | |
|---|---|---|---|---|---|---|
| | | WCB/Trim 1 | WCB/Trim 5 | WCB/Trim 8 | CF8/304 | CF8M/316 |
| 1 | Body | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 2 | Gasket | Soft Iron + Graphite or 304 + Graphite | | | 304 + Graphite | 316 + Graphite |
| 3 | Seat ring | A105 + 13Cr | A105 + STL | A105 + STL | ASTM A351 CF8 | ASTM A351 CF8M |
| 4 | Gate | ASTM A216 WCB + 13Cr | ASTM A216 WCB + STL | ASTM A216 WCB + 13Cr | ASTM A351 CF8 | ASTM A351 CF8M |
| 5 | Stem | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F304 | ASTM A182 F316 |
| 6 | Backseat bushing | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A351 CF8 | ASTM A351 CF8M |
| 7 | Packing | Graphite | Graphite | Graphite | Graphite | Graphite |
| 8 | Gland | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F304 | ASTM A182 F316 |
| 9 | Gland eyebolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 10 | Eyebolt nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 11 | Eyebolt pin | ASTM A36 | ASTM A36 | ASTM A36 | 304ss | 316ss |
| 12 | Gland flange | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 13 | Bonnet bolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 14 | Bonnet nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 15 | Bonnet | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 16 | Nipple | Carbon steel | Carbon steel | Carbon steel | Carbon steel | Carbon steel |
| 17 | Stem nut | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 | ASTM A439 D2 |
| 18 | Yoke sleeve nut | Carbon steel | Carbon steel | Carbon steel | Carbon steel | Carbon steel |
| 19 | Hand wheel | Ductile Iron | Ductile Iron | Ductile Iron | Ductile Iron | Ductile Iron |
| 20 | Hand wheel nut | Carbon steel | Carbon steel | Carbon steel | Carbon steel | Carbon steel |
| 21 | Set screw | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 |

Note: The chart above only lists out some common composition of steel gate valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

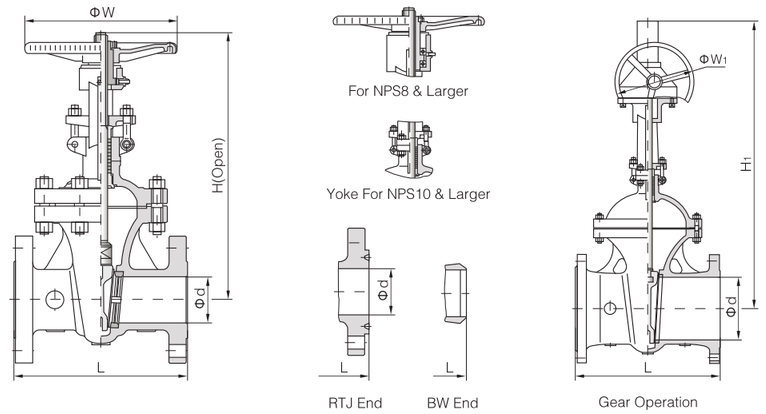
Cast Steel Gate Valve

## Class150 Cast Steel Gate Valve




| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| Class150 | 1/2 | 15 | 108 | 119 | 108 | 14 | 195 | – | 120 | – | 4 | – |
| | 3/4 | 20 | 117 | 130 | 117 | 19 | 210 | – | 120 | – | 5 | – |
| | 1 | 25 | 127 | 140 | 127 | 25 | 240 | – | 140 | – | 7 | – |
| | 1 1/4 | 32 | 140 | 153 | 140 | 32 | 300 | – | 180 | – | 10 | – |
| | 1 1/2 | 40 | 165 | 178 | 165 | 38 | 395 | – | 200 | – | 14 | – |
| | 2 | 50 | 178 | 191 | 216 | 51 | 400 | – | 200 | – | 19 | – |
| | 2 1/2 | 65 | 191 | 203 | 241 | 64 | 435 | – | 200 | – | 25 | – |
| | 3 | 80 | 203 | 216 | 283 | 76 | 515 | – | 250 | – | 33 | – |
| | 4 | 100 | 229 | 241 | 305 | 102 | 595 | – | 280 | – | 49 | – |
| | 5 | 125 | 254 | 267 | 381 | 127 | 725 | – | 280 | – | 62 | – |
| | 6 | 150 | 267 | 279 | 403 | 152 | 780 | 820 | 300 | 310 | 77 | 104 |
| | 8 | 200 | 292 | 305 | 419 | 203 | 975 | 1020 | 350 | 310 | 123 | 150 |
| | 10 | 250 | 330 | 343 | 457 | 254 | 1150 | 1200 | 400 | 310 | 188 | 215 |
| | 12 | 300 | 356 | 368 | 502 | 305 | 1380 | 1430 | 450 | 310 | 288 | 315 |
| | 14 | 350 | 381 | 394 | 572 | 337 | 1545 | 1580 | 500 | 310 | 385 | 435 |
| | 16 | 400 | 406 | 419 | 610 | 387 | 1733 | 1780 | 500 | 460 | 500 | 552 |
| | 18 | 450 | 432 | 445 | 660 | 438 | 1915 | 1990 | 500 | 460 | 601 | 653 |
| | 20 | 500 | 457 | 470 | 711 | 489 | 2122 | 2220 | 600 | 460 | 764 | 816 |
| | 24 | 600 | 508 | 521 | 813 | 591 | 2520 | 2600 | 600 | 460 | 1007 | 1185 |
| | 26 | 650 | 559 | – | 864 | 633 | – | 2800 | – | 600 | – | 1550 |
| | 28 | 700 | 610 | – | 914 | 684 | – | 3050 | – | 600 | – | 1880 |
| | 30 | 750 | 610 | – | 914 | 735 | – | 3130 | – | 600 | – | 2300 |
| | 32 | 800 | 711 | – | 965 | 779 | – | 3280 | – | 600 | – | 2550 |
| | 34 | 850 | 762 | – | 1016 | 830 | – | 3500 | – | 600 | – | 2950 |
| | 36 | 900 | 711 | – | 1016 | 874 | – | 3720 | – | 600 | – | 3390 |

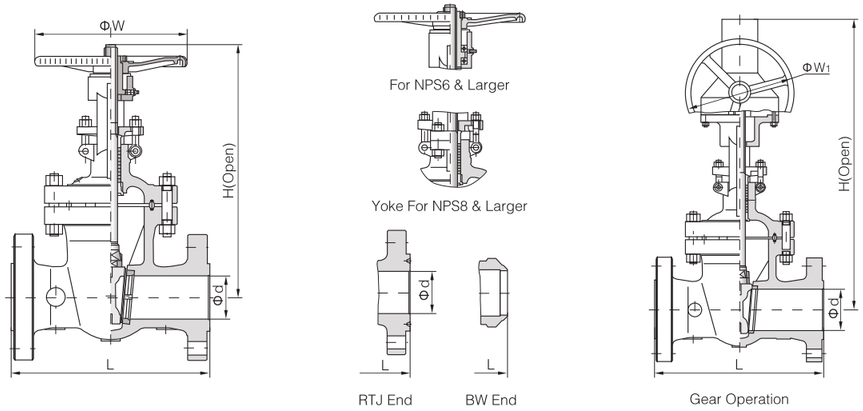
## Class300 Cast Steel Gate Valve




| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| Class300 | 1/2 | 15 | 140 | 151 | 140 | 14 | 198 | – | 120 | – | 6 | – |
| | 3/4 | 20 | 152 | 165 | 152 | 19 | 215 | – | 140 | – | 7 | – |
| | 1 | 25 | 165 | 178 | 165 | 25 | 245 | – | 160 | – | 10 | – |
| | 1 1/4 | 32 | 178 | 191 | 178 | 32 | 306 | – | 180 | – | 15 | – |
| | 1 1/2 | 40 | 190 | 203 | 190 | 38 | 400 | – | 200 | – | 21 | – |
| | 2 | 50 | 216 | 232 | 216 | 51 | 420 | – | 200 | – | 25 | – |
| | 2 1/2 | 65 | 241 | 257 | 241 | 64 | 446 | – | 200 | – | 30 | – |
| | 3 | 80 | 283 | 298 | 283 | 76 | 537 | – | 250 | – | 48 | – |
| | 4 | 100 | 305 | 321 | 305 | 102 | 619 | 650 | 280 | 310 | 73 | 100 |
| | 5 | 125 | 381 | 397 | 381 | 127 | 722 | 750 | 300 | 310 | 99 | 126 |
| | 6 | 150 | 403 | 419 | 403 | 152 | 806 | 835 | 350 | 310 | 130 | 186 |
| | 8 | 200 | 419 | 435 | 419 | 203 | 1000 | 1030 | 400 | 310 | 208 | 235 |
| | 10 | 250 | 457 | 473 | 457 | 254 | 1240 | 1280 | 450 | 310 | 334 | 386 |
| | 12 | 300 | 502 | 518 | 502 | 305 | 1425 | 1460 | 500 | 310 | 450 | 502 |
| | 14 | 350 | 762 | 778 | 762 | 337 | 1585 | 1620 | 600 | 460 | 704 | 756 |
| | 16 | 400 | 838 | 854 | 838 | 387 | 1790 | 1830 | 500 | 460 | 923 | 965 |
| | 18 | 450 | 914 | 930 | 914 | 438 | 1960 | 2000 | 650 | 460 | 1131 | 1224 |
| | 20 | 500 | 991 | 1010 | 991 | 489 | 2158 | 2220 | 750 | 460 | 1345 | 1400 |
| | 24 | 600 | 1143 | 1165 | 1143 | 591 | 2576 | 2620 | 900 | 600 | 2122 | 2385 |
| | 26 | 650 | 1245 | 1270 | 1245 | 633 | – | 2850 | – | 600 | – | 3000 |
| | 28 | 700 | 1346 | 1372 | 1346 | 684 | – | 3080 | – | 600 | – | 3300 |
| | 30 | 750 | 1397 | 1422 | 1397 | 735 | – | 3180 | – | 600 | – | 3550 |
| | 32 | 800 | 1524 | 1553 | 1524 | 779 | – | 3300 | – | 600 | – | 4400 |
| | 34 | 850 | 1626 | 1654 | 1626 | 830 | – | 3550 | – | 600 | – | 5200 |
| | 36 | 900 | 1727 | 1756 | 1727 | 874 | – | 3760 | – | 600 | – | 6050 |

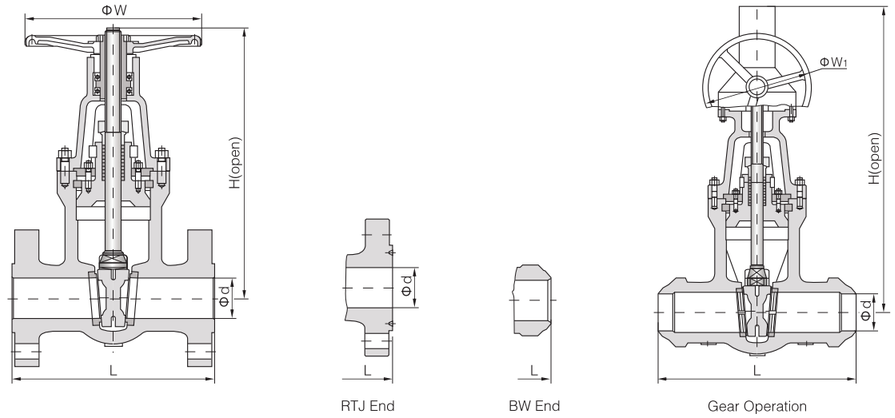
Cast Steel Gate Valve

## Class600 & Class900 Cast Steel Gate Valve

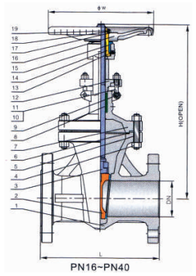



| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| Class600 | 2 | 50 | 292 | 295 | 292 | 51 | 444 | – | 200 | – | 32 | – |
| | 2½ | 65 | 330 | 333 | 330 | 64 | 500 | – | 250 | – | 52 | – |
| | 3 | 80 | 356 | 359 | 356 | 76 | 558 | 585 | 280 | 310 | 60 | 87 |
| | 4 | 100 | 432 | 435 | 432 | 102 | 665 | 695 | 300 | 310 | 107 | 134 |
| | 5 | 125 | 508 | 511 | 508 | 127 | 760 | 790 | 350 | 310 | 175 | 227 |
| | 6 | 150 | 559 | 562 | 559 | 152 | 868 | 900 | 450 | 310 | 216 | 268 |
| | 8 | 200 | 660 | 664 | 660 | 203 | 1073 | 1110 | 500 | 310 | 399 | 451 |
| | 10 | 250 | 787 | 791 | 787 | 254 | 1263 | 1300 | 650 | 460 | 605 | 657 |
| | 12 | 300 | 838 | 841 | 838 | 305 | 1600 | 1650 | 700 | 460 | 851 | 893 |
| | 14 | 350 | 889 | 892 | 889 | 337 | 1705 | 1750 | 900 | 460 | 1177 | 1232 |
| | 16 | 400 | 991 | 994 | 991 | 387 | 1835 | 1900 | 900 | 460 | 1513 | 1568 |
| | 18 | 450 | 1092 | 1095 | 1092 | 438 | – | 2020 | – | 600 | – | 1980 |
| | 20 | 500 | 1194 | 1200 | 1194 | 489 | – | 2172 | – | 600 | – | 2460 |
| | 24 | 600 | 1397 | 1407 | 1397 | 591 | – | 2650 | – | 600 | – | 3650 |
| Class900 | 2 | 50 | 368 | 371 | 368 | 51 | 500 | – | 280 | – | 70 | – |
| | 2½ | 65 | 419 | 422 | 419 | 64 | 550 | – | 280 | – | 110 | – |
| | 3 | 80 | 381 | 384 | 381 | 76 | 610 | 660 | 300 | 310 | 140 | 167 |
| | 4 | 100 | 457 | 460 | 457 | 102 | 702 | 750 | 350 | 310 | 200 | 227 |
| | 5 | 125 | 559 | 562 | 559 | 127 | 850 | 900 | 400 | 310 | 258 | 285 |
| | 6 | 150 | 610 | 613 | 610 | 152 | 980 | 1060 | 500 | 460 | 358 | 410 |
| | 8 | 200 | 737 | 740 | 737 | 203 | 1100 | 1140 | 650 | 460 | 550 | 600 |
| | 10 | 250 | 838 | 841 | 838 | 254 | 1320 | 1370 | 700 | 460 | 1000 | 1100 |
| | 12 | 300 | 965 | 968 | 965 | 305 | 1500 | 1560 | 900 | 460 | 1215 | 1310 |
| | 14 | 350 | 1029 | 1038 | 1029 | 322 | 1900 | 1950 | 900 | 600 | 1600 | 1700 |
| | 16 | 400 | 1130 | 1140 | 1130 | 373 | 2050 | 2100 | 900 | 600 | 2150 | 2330 |

## Class1500 & Class2500 Cast Steel Gate Valve

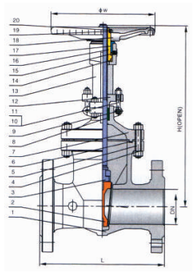



| Class | Size | | Dimensions(mm) | | | | | | | | Weight(kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NPS | DN | L | | | d | H | H1 | W | W1 | H.W | G.O |
| | | | RF | RTJ | BW | | | | | | | |
| Class 1500 | 2 | 50 | 368 | 371 | 368 | 51 | 510 | – | 280 | – | 70 | – |
| | 2½ | 65 | 419 | 422 | 419 | 64 | 560 | – | 300 | – | 110 | – |
| | 3 | 80 | 470 | 473 | 470 | 76 | 620 | 670 | 350 | 310 | 175 | 202 |
| | 4 | 100 | 546 | 549 | 546 | 102 | 728 | 770 | 400 | 310 | 270 | 300 |
| | 5 | 125 | 673 | 676 | 673 | 127 | 870 | 920 | 450 | 310 | 378 | 405 |
| | 6 | 150 | 705 | 711 | 705 | 144 | 1000 | 1070 | 500 | 460 | 520 | 575 |
| | 8 | 200 | 832 | 841 | 832 | 192 | 1130 | 1180 | 750 | 460 | 820 | 915 |
| | 10 | 250 | 991 | 1000 | 991 | 239 | 1360 | 1410 | 900 | 600 | 1560 | 1750 |
| | 12 | 300 | 1130 | 1146 | 1130 | 287 | – | 1620 | – | 600 | – | 2120 |
| | 14 | 350 | 1257 | 1276 | 1257 | 315 | – | 2020 | – | 600 | – | 2600 |
| | 16 | 400 | 1384 | 1407 | 1384 | 360 | – | 2180 | – | 600 | – | 3450 |
| Class 2500 | 2 | 50 | 451 | 454 | 451 | 42 | 530 | 580 | 280 | 310 | 100 | 130 |
| | 2½ | 65 | 508 | 514 | 508 | 52 | 580 | 630 | 300 | 310 | 150 | 180 |
| | 3 | 80 | 578 | 584 | 578 | 62 | 650 | 700 | 350 | 310 | 245 | 275 |
| | 4 | 100 | 673 | 683 | 673 | 87 | 750 | 800 | 400 | 310 | 390 | 420 |
| | 5 | 125 | 794 | 807 | 794 | 96 | 900 | 960 | 500 | 460 | 550 | 580 |
| | 6 | 150 | 914 | 927 | 914 | 131 | 1040 | 1100 | 600 | 460 | 780 | 835 |
| | 8 | 200 | 1022 | 1038 | 1022 | 179 | 1150 | 1200 | 750 | 460 | 1260 | 1355 |
| | 10 | 250 | 1270 | 1292 | 1270 | 223 | 1400 | 1460 | 900 | 600 | 2380 | 2565 |
| | 12 | 300 | 1422 | 1445 | 1422 | 265 | – | 1660 | – | 600 | – | 3250 |




## Applicable standards:

Design And Manufacture: DIN3352
Face To Face: DIN3202–F5, EN558–1
End Flange Dimensions: DIN2543(PN16), DIN2544(PN25), DIN2545(PN40), EN1092–1
Pressure Test: DIN3230, EN12266–1



## Applicable standards:

Design And Manufacture: DIN3352
Face To Face: DIN3202–F7,EN558–1
End Flange Dimensions: DIN2546(PN63),DIN2547(PN100), DIN2548(PN160),EN1092–1
Pressure Test: DIN3230,EN12266–1

## Materials of parts

| No. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Wedge | GS–C25+13Cr |
| 3 | Stem | A182 F6 |
| 4 | Nut | A194 2H |
| 5 | Bolt | A193 B7 |
| 6 | Gasket | Graphite |
| 7 | Bonnet | GS–C25 |
| 8 | Packing | Graphite |
| 9 | Pin | Carbon Steel |
| 10 | Gland Eyebolt | A193 B7 |
| 11 | Nut | A194 2H |
| 12 | Gland | GS–C25 |
| 13 | Nipple | Brass |
| 14 | Stem Nut | A439 D2 |
| 15 | Retaining Nut | Carbon Steel |
| 16 | Hand Wheel | A536 |
| 17 | Name Plate | Stainless Steel |
| 18 | Nut | Carbon Steel |
| 19 | Grub Screw | Carbon Steel |

## Materials of parts

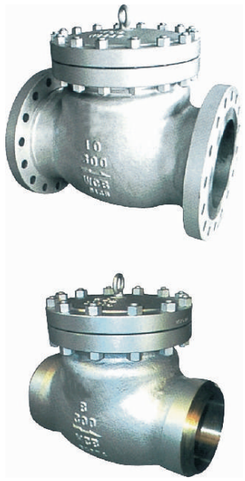
| No. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Wedge | GS–C25+13Cr |
| 3 | Stem | A182 F6 |
| 4 | Nut | A194 2H |
| 5 | Bolt | A193 B7 |
| 6 | Gasket | Graphite |
| 7 | Bonnet | GS–C25 |
| 8 | Packing | Graphite |
| 9 | Pin | Carbon Steel |
| 10 | Gland EyeBolt | A193 B7 |
| 11 | Nut | A194 2H |
| 12 | Gland | GS–C25 |
| 13 | Yoke | GS–C25 |
| 14 | Bearings | Alloy Steel |
| 15 | Nipple | Brass |
| 16 | Stem Nut | A439 D2 |
| 17 | Retaining Nut | Carbon Steel |
| 18 | Hand Wheel | A536 |
| 19 | Nut | Carbon Steel |
| 20 | Grub Screw | Carbon Steel |

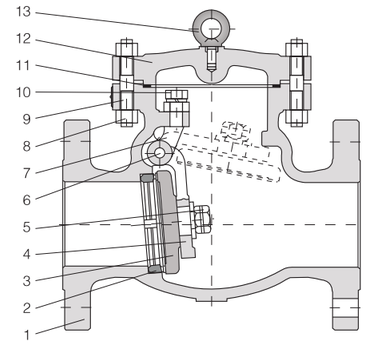
## Dimensions data

| PN | DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | L | 240 | 250 | 270 | 280 | 300 | 325 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 |
| | H | 365 | 410 | 432 | 498 | 565 | 378 | 790 | 980 | 1190 | 1410 | 1550 | 1750 | 1900 | 1600 |
| | W | 180 | 200 | 220 | 250 | 280 | 300 | 300 | 350 | 400 | 450 | 500 | 550 | 700 | 800 |
| | Weight(kg) | 15 | 20 | 29 | 34 | 45 | 65 | 90 | 135 | 205 | 330 | 450 | 689 | 948 | 1420 |
| 25 | L | 240 | 250 | 270 | 280 | 300 | 325 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 |
| | H | 365 | 410 | 440 | 488 | 585 | 395 | 802 | 990 | 1200 | 1420 | 1560 | 1760 | 2180 | 2610 |
| | W | 180 | 200 | 220 | 250 | 280 | 300 | 300 | 350 | 400 | 450 | 500 | 550 | 700 | 800 |
| | Weight(kg) | 17 | 21 | 32 | 35 | 50 | 75 | 95 | 155 | 242 | 345 | 472 | 695 | 1142 | 1450 |
| 40 | L | 240 | 250 | 290 | 310 | 350 | 400 | 450 | 550 | 650 | 750 | 850 | 950 | 1150 | 1350 |
| | H | 365 | 420 | 452 | 198 | 595 | 708 | 810 | 1010 | 1220 | 1440 | 1580 | 1780 | 2200 | 2630 |
| | W | 180 | 200 | 220 | 250 | 280 | 300 | 350 | 400 | 500 | 550 | 600 | 700 | 750 | 800 |
| | Weight(kg) | 18 | 22 | 30 | 38 | 51 | 70 | 110 | 223 | 270 | 500 | 665 | 850 | 1350 | 1609 |
| PN | DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 |
| 63 | L | 240 | 250 | 290 | 310 | 350 | 400 | 450 | 550 | 650 | 750 | 850 | 950 | 1150 | 1350 |
| | H | 385 | 440 | 480 | 525 | 625 | 740 | 810 | 1045 | 1260 | 1490 | 1630 | 1840 | 2260 | 2720 |
| | W | 180 | 200 | 250 | 250 | 280 | 400 | 450 | 500 | 500 | 600 | 650 | 700 | 800 | 900 |
| 100 | L | – | 250 | 290 | 310 | 350 | 400 | 450 | 550 | 650 | 750 | 750 | 950 | – | – |
| | H | – | 460 | 500 | 550 | 660 | 765 | 850 | 1090 | 1310 | 1550 | 1710 | 1920 | – | – |
| | W | – | 220 | 250 | 280 | 300 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | – | – |
| 160 | L | – | 300 | 360 | 390 | 450 | 525 | 600 | 750 | – | – | – | – | – | – |
| | H | – | 612 | 677 | 686 | 751 | 868 | 997 | 1224 | – | – | – | – | – | – |
| | W | – | 350 | 400 | 400 | 500 | 550 | 650 | 750 | – | – | – | – | – | – |










## Technical Specification

Design and Manufacture: BS1868 or API 6D
Inspection and Test: API 598 or API 6D
End flange dimension: ASME B16.5、ASME B16.47 A、MSS SP–44; ASME B16.47 B、API 605
BW end dimension: ASME B16.25
Face to face and end to end: ASME B16.10
Pressure–temperature ratings: ASME B16.34
Wall thickness dimension: API 600 and BS 1868

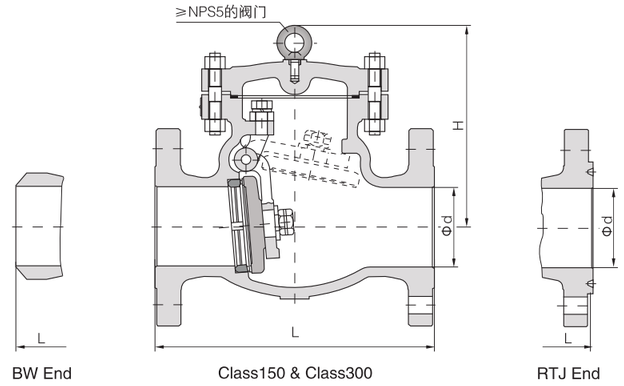
## Form of Major Part Material

| Parts No. | Parts Name | Materials | | | | |
|---|---|---|---|---|---|---|
| | | WCB/Trim 1 | WCB/Trim 5 | WCB/Trim 8 | CF8/304 | CF8M/316 |
| 1 | Body | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 2 | Seat ring | A105 + 13Cr | A105 + STL | A105 + STL | ASTM A351 CF8 | ASTM A351 CF8M |
| 3 | Disc | ASTM A216 WCB + 13Cr | ASTM A216 WCB + STL | ASTM A216 WCB + 13Cr | ASTM A351 CF8 | ASTM A351 CF8M |
| 4 | Arm | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 5 | Nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 6 | Arm pin | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F6a | ASTM A182 F304 | ASTM A182 F316 |
| 7 | Yoke | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 8 | Bonnet nut | ASTM A194 2H | ASTM A194 2H | ASTM A194 2H | ASTM A194 8 | ASTM A194 8M |
| 9 | Bonnet bolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 10 | Bolt | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B7 | ASTM A193 B8 | ASTM A193 B8M |
| 11 | Gasket | 304 sheet + Graphite | 304 sheet + Graphite | 304 sheet + Graphite | 304 + Graphite | 316 + Graphite |
| 12 | Bonnet | ASTM A216 WCB | ASTM A216 WCB | ASTM A216 WCB | ASTM A351 CF8 | ASTM A351 CF8M |
| 13 | Eye bolt | ASTM A181 | ASTM A181 | ASTM A181 | ASTM A181 | ASTM A181 |

Note: The chart above only lists out some common composition of steel check valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

Cast Steel Swing Check Valve

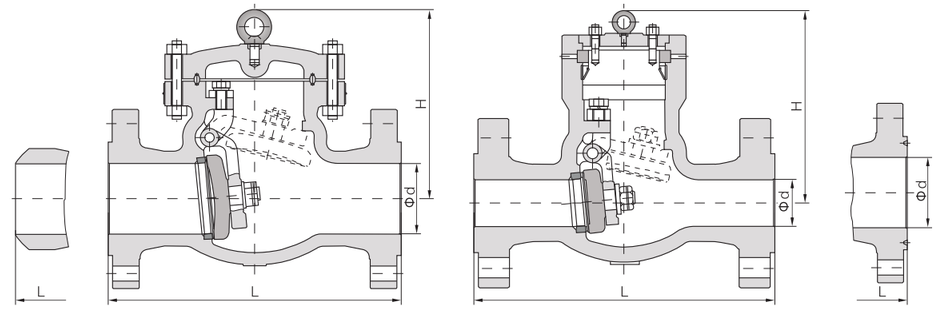
## Class 150 & Class 300 Cast Steel Swing Check Valve




BW End　　Class150 & Class300　　RTJ End

| Size | | Class 150 | | | | | | Class 300 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | Dimensions(mm) | | | | | Weight (kg) | Dimensions(mm) | | | | | Weight (kg) |
| | | L | | | d | H | | L | | | d | H | |
| | | RF | RTJ | BW | | | | RF | RTJ | BW | | | |
| 2 | 50 | 203 | 216 | 203 | 51 | 132 | 15 | 267 | 283 | 267 | 51 | 144 | 20 |
| 2½ | 65 | 216 | 229 | 216 | 64 | 147 | 20 | 292 | 308 | 292 | 64 | 149 | 35 |
| 3 | 80 | 241 | 254 | 241 | 76 | 176 | 27 | 318 | 333 | 318 | 76 | 210 | 40 |
| 4 | 100 | 292 | 305 | 292 | 102 | 198 | 45 | 356 | 371 | 356 | 102 | 260 | 61 |
| 5 | 125 | 330 | 343 | 330 | 127 | 255 | 58 | 400 | 416 | 400 | 127 | 295 | 80 |
| 6 | 150 | 356 | 368 | 356 | 152 | 320 | 69 | 445 | 460 | 445 | 152 | 326 | 130 |
| 8 | 200 | 495 | 508 | 495 | 203 | 380 | 131 | 533 | 549 | 533 | 203 | 380 | 190 |
| 10 | 250 | 622 | 635 | 622 | 254 | 440 | 219 | 622 | 638 | 622 | 254 | 440 | 296 |
| 12 | 300 | 699 | 711 | 699 | 305 | 480 | 321 | 711 | 727 | 711 | 305 | 520 | 450 |
| 14 | 350 | 787 | 800 | 787 | 337 | 530 | 380 | 838 | 854 | 838 | 337 | 540 | 640 |
| 16 | 400 | 864 | 876 | 864 | 387 | 580 | 560 | 864 | 879 | 864 | 387 | 588 | 850 |
| 18 | 450 | 978 | 991 | 978 | 438 | 618 | 630 | 978 | 994 | 978 | 438 | 670 | 1030 |
| 20 | 500 | 978 | 991 | 978 | 489 | 657 | 770 | 1016 | 1035 | 1016 | 489 | 720 | 1330 |
| 24 | 600 | 1295 | 1308 | 1295 | 591 | 760 | 960 | 1346 | 1368 | 1346 | 591 | 850 | 1950 |
| 26 | 650 | 1295 | – | 1295 | 633 | 840 | 1250 | 1346 | 1372 | 1346 | 633 | 920 | 2300 |
| 28 | 700 | 1448 | – | 1448 | 684 | 920 | 1580 | 1499 | 1524 | 1499 | 684 | 1150 | 2600 |
| 30 | 750 | 1524 | – | 1524 | 735 | 980 | 1950 | 1594 | 1619 | 1594 | 735 | 1260 | 3200 |

## Class 600～Class 2500 Cast Steel Swing Check Valve

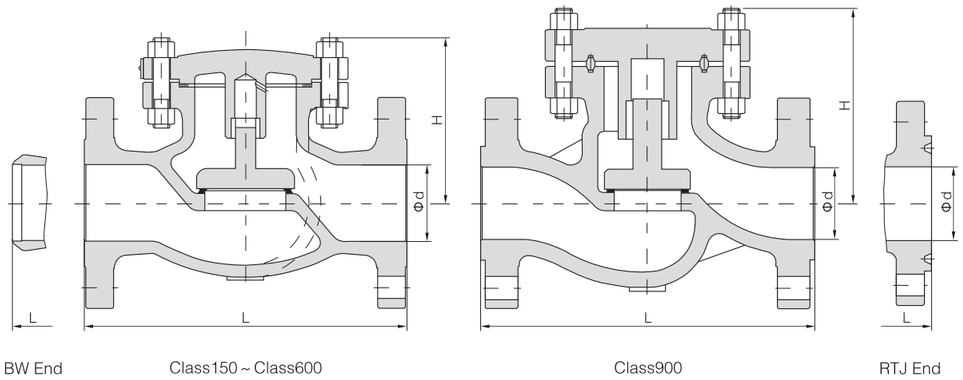



对焊端　　Class600 & Class900　　Class1500 & Class2500　　环连接法兰

| Size | | Class 600 | | | | | | Class 900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | Dimensions(mm) | | | | | Weight (kg) | Dimensions(mm) | | | | | Weight (kg) |
| | | L | | | d | H | | L | | | d | H | |
| | | RF | RTJ | BW | | | | RF | RTJ | BW | | | |
| 2 | 50 | 292 | 295 | 292 | 51 | 170 | 28 | 368 | 371 | 368 | 51 | 200 | 48 |
| 2½ | 65 | 330 | 333 | 330 | 64 | 178 | 40 | 419 | 422 | 419 | 64 | 220 | 75 |
| 3 | 80 | 356 | 359 | 356 | 76 | 246 | 68 | 381 | 384 | 381 | 76 | 280 | 95 |
| 4 | 100 | 432 | 435 | 432 | 102 | 290 | 117 | 457 | 460 | 457 | 102 | 320 | 135 |
| 5 | 125 | 508 | 511 | 508 | 127 | 320 | 155 | 559 | 562 | 559 | 127 | 360 | 200 |
| 6 | 150 | 559 | 562 | 559 | 152 | 360 | 192 | 610 | 613 | 610 | 152 | 400 | 264 |
| 8 | 200 | 660 | 664 | 660 | 203 | 430 | 340 | 737 | 740 | 737 | 203 | 480 | 424 |
| 10 | 250 | 787 | 791 | 787 | 254 | 502 | 515 | 838 | 841 | 838 | 254 | 560 | 730 |
| 12 | 300 | 838 | 841 | 838 | 305 | 554 | 750 | 965 | 968 | 965 | 305 | 632 | 1070 |
| 14 | 350 | 889 | 892 | 889 | 337 | 595 | 890 | 1029 | 1038 | 1029 | 322 | 680 | 1180 |
| 16 | 400 | 991 | 994 | 991 | 387 | 680 | 1303 | 1130 | 1140 | 1130 | 373 | 780 | 1790 |
| 18 | 450 | 1092 | 1095 | 1092 | 438 | 778 | 1800 | 1219 | 1232 | 1219 | 423 | 880 | 250 |
| 20 | 500 | 1194 | 1200 | 1194 | 489 | 970 | 2150 | 1321 | 1334 | 1321 | 471 | 1050 | 3080 |
| 24 | 600 | 1397 | 1407 | 1397 | 591 | 1100 | 3200 | 1549 | 1568 | 1549 | 522 | 1200 | 4600 |

| Size | | Class 1500 | | | | | | Class 2500 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | Dimensions(mm) | | | | | Weight (kg) | Dimensions(mm) | | | | | Weight (kg) |
| | | L | | | d | H | | L | | | d | H | |
| | | RF | RTJ | BW | | | | RF | RTJ | BW | | | |
| 2 | 50 | 368 | 371 | 368 | 51 | 210 | 48 | 451 | 454 | 451 | 42 | 230 | 68 |
| 2½ | 65 | 419 | 422 | 419 | 64 | 240 | 75 | 508 | 514 | 508 | 52 | 260 | 100 |
| 3 | 80 | 470 | 473 | 470 | 76 | 303 | 120 | 578 | 584 | 578 | 62 | 330 | 165 |
| 4 | 100 | 546 | 549 | 546 | 102 | 340 | 180 | 673 | 683 | 673 | 87 | 370 | 260 |
| 5 | 125 | 673 | 676 | 673 | 127 | 380 | 294 | 794 | 807 | 794 | 96 | 410 | 440 |
| 6 | 150 | 705 | 711 | 705 | 144 | 430 | 385 | 914 | 927 | 914 | 131 | 460 | 580 |
| 8 | 200 | 832 | 841 | 832 | 192 | 500 | 634 | 1022 | 1038 | 1022 | 179 | 530 | 970 |
| 10 | 250 | 991 | 1000 | 991 | 239 | 590 | 1140 | 1270 | 1292 | 1270 | 223 | 620 | 1700 |
| 12 | 300 | 1130 | 1146 | 1130 | 287 | 660 | 1650 | 1422 | 1445 | 1422 | 265 | 690 | 2600 |
| 14 | 350 | 1257 | 1276 | 1257 | 315 | 710 | 2000 | – | – | – | – | – | – |
| 16 | 400 | 1384 | 1407 | 1384 | 360 | 820 | 2700 | – | – | – | – | – | – |

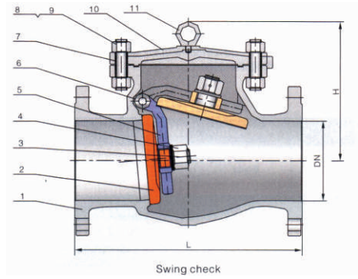
## Class 150～Class 900 Cast Steel Lift Check Valve




BW End　Class150～Class600　Class900　RTJ End

| Size | | Class 150 | | | | | | Class 300 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | Dimensions(mm) | | | | | Weight (kg) | Dimensions(mm) | | | | | Weight (kg) |
| | | L | | | d | H | | L | | | d | H | |
| | | RF | RTJ | BW | | | | RF | RTJ | BW | | | |
| 1/2 | 15 | 108 | 119 | 108 | 13 | 76 | 3 | 152 | 162 | 152 | 13 | 78 | 5 |
| 3/4 | 20 | 117 | 130 | 117 | 19 | 76 | 4 | 178 | 191 | 178 | 19 | 82 | 6 |
| 1 | 25 | 127 | 140 | 127 | 25 | 98 | 5 | 203 | 216 | 203 | 25 | 102 | 8 |
| 1 1/4 | 32 | 140 | 153 | 140 | 32 | 102 | 7 | 216 | 229 | 216 | 32 | 106 | 11 |
| 1 1/2 | 40 | 165 | 178 | 165 | 38 | 115 | 8 | 229 | 242 | 229 | 38 | 118 | 13 |
| 2 | 50 | 203 | 216 | 203 | 51 | 140 | 15 | 267 | 283 | 267 | 51 | 140 | 26 |
| 2 1/2 | 65 | 216 | 229 | 216 | 64 | 162 | 22 | 292 | 308 | 292 | 64 | 164 | 33 |
| 3 | 80 | 241 | 254 | 241 | 76 | 168 | 28 | 318 | 333 | 318 | 76 | 178 | 50 |
| 4 | 100 | 292 | 305 | 292 | 102 | 194 | 42 | 356 | 371 | 356 | 102 | 195 | 86 |
| 5 | 125 | 356 | 368 | 356 | 127 | 210 | 60 | 400 | 416 | 400 | 127 | 223 | 120 |
| 6 | 150 | 406 | 419 | 406 | 152 | 226 | 75 | 445 | 460 | 445 | 152 | 245 | 180 |
| 8 | 200 | 495 | 508 | 495 | 203 | 250 | 118 | 533 | 549 | 533 | 203 | 280 | 220 |
| 10 | 250 | 622 | 635 | 622 | 254 | 275 | 194 | 622 | 638 | 622 | 254 | 336 | 310 |
| 12 | 300 | 699 | 711 | 699 | 305 | 332 | 320 | 711 | 727 | 711 | 305 | 380 | 510 |

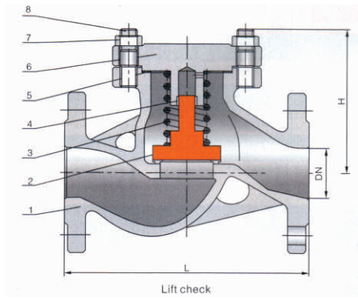
| Size | | Class 600 | | | | | | Class 900 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | Dimensions(mm) | | | | | Weight (kg) | Dimensions(mm) | | | | | Weight (kg) |
| | | L | | | d | H | | L | | | d | H | |
| | | RF | RTJ | BW | | | | RF | RTJ | BW | | | |
| 2 | 50 | 292 | 295 | 292 | 51 | 152 | 32 | 368 | 371 | 368 | 50 | 180 | 50 |
| 2 1/2 | 65 | 330 | 333 | 330 | 64 | 167 | 45 | 419 | 422 | 419 | 64 | 200 | 65 |
| 3 | 80 | 356 | 359 | 356 | 76 | 178 | 68 | 381 | 384 | 381 | 74 | 235 | 88 |
| 4 | 100 | 432 | 435 | 432 | 102 | 215 | 98 | 457 | 460 | 457 | 100 | 270 | 140 |
| 5 | 125 | 508 | 511 | 508 | 125 | 240 | 155 | 559 | 562 | 559 | 125 | 300 | 210 |
| 6 | 150 | 559 | 562 | 559 | 152 | 279 | 230 | 610 | 613 | 610 | 150 | 350 | 300 |
| 8 | 200 | 660 | 664 | 660 | 200 | 328 | 300 | 737 | 740 | 737 | 200 | 400 | 390 |




Swing check

### Applicable standards:

Design And Manufacture: DIN3840
Face To Face: DIN3202-F6, EN558-1
End Flange Dimensions: DIN2543(PN16), DIN2544(PN25), DIN2545(PN40), EN1092-1
Pressure Test: DIN3230, EN12266-1




Lift check

### Applicable standards:

Design And Manufacture: DIN3356
Face To Face: DIN3202–F1, EN558–1
End Flange Dimensions: DIN2545,EN1092–1
Pressure Test: DIN3230, EN12266–1

### Materials of parts

| No. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Disc | GS–C25+13Cr |
| 3 | Pin | Carbon Steel |
| 4 | Nut | A194 2H |
| 5 | Hinge | GS–C25 |
| 6 | Pin | A182 F6 |
| 7 | Gasket | Graphite |
| 8 | Bolt | A193 B7 |
| 9 | Nut | A194 2H |
| 10 | Bonnet | GS–C25 |
| 11 | HookScrew | Carbon Steel |

### Materials of parts

| No. | Part Name | Material |
|---|---|---|
| 1 | Body | GS–C25+13Cr |
| 2 | Disc | A105+13Cr |
| 3 | Spring | 6150 |
| 4 | Bush | Bronze |
| 5 | Gasket | Graphite |
| 6 | Bonnet | GS–C25 |
| 7 | Nut | A 194 2H |
| 8 | Bolt | A193 B7 |

### Dimensions data

| PN | DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIN3202–F6 | | | | | | | | | | | | | | | |
| 16 | L | 180 | 200 | 240 | 260 | 300 | 350 | 400 | 500 | 600 | 700 | 800 | 900 | 1100 | 1300 |
| | H | 140 | 150 | 168 | 180 | 210 | 230 | 275 | 340 | 355 | 410 | 475 | 552 | 660 | 740 |
| | Weight(kg) | 14 | 15 | 19 | 28 | 35 | 48 | 66 | – | – | – | – | – | – | – |
| 25 | L | 180 | 200 | 240 | 260 | 300 | 350 | 400 | 500 | 600 | 700 | 800 | 900 | 1100 | 1300 |
| | H | 140 | 150 | 168 | 180 | 210 | 230 | 275 | 340 | 355 | 410 | 475 | 552 | 660 | 740 |
| | Weight(kg) | 14 | 15 | 19 | 29 | 35 | 52 | 70 | – | – | – | – | – | – | – |
| 40 | L | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 600 | 850 | 980 | 1100 | 1250 | 1450 |
| | H | 140 | 155 | 172 | 185 | 215 | 235 | 285 | 350 | 350 | 425 | 490 | 565 | 680 | 760 |
| | Weight(kg) | 14 | 15 | 20 | 32 | 42 | 58 | 80 | – | – | – | – | – | – | – |

| PN | DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 126 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIN3202–F1 | | | | | | | | | | | | |
| 40 | L | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| | H | 90 | 102 | 105 | 120 | 140 | 155 | 172 | 185 | 215 | 235 | 285 |

## Materials Characteristic

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Chemical Requirements | | | | | | | | | | Tensile Requirements | | | | |
| ASTM Specification | | C | Mn | Si | P | S | Cr | Ni | Mo | Cu | V | Tensils | Yield | Elongation | Reduction of area,% | Hardness |
| | | Carbon | Manganese | Silicon | Phosphorus | Sulfur | Chromium | Nickel | Molybdenum | Copper | Vanadium | Mpa | Mpa | % | | HB |
| | | Nominal Or Maximum,% | | | | | | | | | | Min. | | | | Max. |
| | | | | | | | | | | | | | | | | Cast Steel |
| Carbon Steel | A216–WCA | 0.25 | 0.70 | 0.60 | 0.040 | 0.045 | 0.50 | 0.50 | 0.20 | 0.30 | 0.03 | 415–585 | 205 | 24 | 35 | |
| | A216–WCB | 0.30 | 1.00 | 1.60 | 0.040 | 0.045 | 0.50 | 0.50 | 0.20 | 0.30 | 0.03 | 485–655 | 250 | 22 | 35 | |
| | A216–WCC | 0.25 | 1.20 | 1.60 | 0.040 | 0.045 | 0.50 | 0.50 | 0.20 | 0.30 | 0.03 | 485–655 | 275 | 22 | 35 | |
| | | | | | | | | | | | | | | | | Cast Steel |
| Chrome–Molybdenum Steel | A217–WC1 | 0.25 | 0.50–0.80 | 0.60 | 0.040 | 0.045 | 0.35 | 0.45–0.65 | 0.45–0.65 | 0.50 | – | 450–620 | 240 | 24 | 35 | |
| | A217–WC6 | 0.05–0.20 | 0.50–0.80 | 0.60 | 0.040 | 0.045 | 1.00–1.50 | 0.50 | 0.45–0.65 | 0.50 | – | 485–655 | 275 | 20 | 35 | |
| | A217–WC9 | 0.05–0.18 | 0.40–0.70 | 0.60 | 0.040 | 0.045 | 2.00–2.75 | 0.50 | 0.90–1.20 | 0.50 | – | 485–655 | 275 | 20 | 35 | |
| | A217–C5 | 0.20 | 0.40–0.70 | 0.75 | | 0.045 | 4.00–6.50 | 0.50 | 0.45–0.65 | 0.50 | – | 620–795 | 415 | 18 | 35 | |
| | A217–C12 | 0.20 | 0.35–0.65 | 1.00 | | 0.045 | 8.00–10.0 | 0.50 | 0.90–1.20 | 0.50 | – | 620–795 | 415 | 18 | 35 | |
| | | | | | | | | | | | | | | | | Cast Steel |
| Ni Alloy Steel | A494M–35–1 | 0.35 | 1.50 | 1.25 | 0.030 | 0.030 | – | Allowance | – | 26.0–33.0 | Fe≤3.50 | 450 | 170 | 25 | – | |
| | A494CW–6M | 0.07 | 1.00 | 1.00 | 0.040 | 0.030 | 17.0–20.0 | Allowance | 17.0–20.0 | – | Fe≤3.00 | 495 | 275 | 25 | – | |
| | A494CY–40 | 0.40 | 1.50 | 3.00 | 0.030 | 0.030 | 14.0–17.0 | Allowance | – | – | Fe≤11.0 | 185 | 195 | 30 | – | |
| | | | | | | | | | | | | | | | | Cast Steel |
| Stainless Steel | A351–CF8 | 0.08 | 1.50 | 2.00 | 0.040 | 0.040 | 18.0–21.0 | 8.0–11.0 | 0.50 | – | – | 485 | 205 | 35 | 35 | |
| | A351–CF8M | 0.08 | 1.50 | 1.50 | 0.040 | 0.040 | 18.0–21.0 | 9.0–12.0 | 2.0–3.0 | – | – | 485 | 205 | 30 | 30 | |
| | A351–CF3 | 0.03 | 1.50 | 2.00 | 0.040 | 0.040 | 17.0–21.0 | 8.0–12.0 | 0.50 | – | – | 485 | 205 | 35 | 35 | |
| | A351–CF3M | 0.03 | 1.50 | 1.50 | 0.040 | 0.040 | 17.0–21.0 | 9.0–13.0 | 2.0–3.0 | – | – | 485 | 205 | 30 | 30 | |
| | A351–CN7M | 0.07 | 1.50 | 1.50 | 0.040 | 0.040 | 19.0–22.0 | 27.0–30.5 | 2.0–3.0 | 3.0–4.0 | – | 450 | 170 | 35 | 35 | |
| | | | | | | | | | | | | | | | | Cast Steel |
| Carbon Steel | A352–LCB | 0.30 | 1.00 | 0.60 | 0.040 | 0.045 | 0.50 | 0.50 | 0.20 | 0.30 | 0.03 | 450–650 | 240 | 24 | 35 | |
| | A352–LCC | 0.25 | 1.20 | 0.60 | 0.040 | 0.045 | 0.50 | 0.50 | 0.20 | 0.30 | 0.03 | 485–655 | 275 | 22 | 35 | |
| | A352–LC1 | 0.25 | 0.50–0.80 | 0.60 | 0.040 | 0.045 | – | – | 0.45–0.65 | – | – | 450–620 | 240 | 24 | 35 | |
| | A352–LC2 | 0.25 | 0.50–0.80 | 0.60 | 0.040 | 0.045 | – | 2.00–3.00 | – | – | – | 485–655 | 275 | 24 | 35 | |
| | A352–LC3 | 0.15 | 0.50–0.80 | 0.60 | 0.040 | 0.045 | – | 3.00–4.00 | – | – | – | 485–655 | 275 | 24 | 35 | |
| | | | | | | | | | | | | | | | | Forged Steel |
| Carbon Steel | A105(N) | 0.35 | 0.60–1.05 | 0.35 | 0.040 | 0.050 | 0.30 | 0.40 | 0.12 | 0.40 | 0.03 | 485 | 250 | 30 | 30 | 187 |
| | A350–LF1 | 0.30 | 1.35 | 0.15–0.3 | 0.035 | 0.040 | 0.30 | 0.40 | 0.12 | 0.40 | 0.03 | 415–585 | 205 | 25 | 38 | |
| | A350–LF2 | 0.30 | 1.35 | 0.15–0.30 | 0.035 | 0.040 | 0.30 | 0.40 | 0.12 | 0.40 | 0.03 | 485–655 | 250 | 22 | 30 | |
| | A350–LF3 | 0.20 | 0.90 | 0.20–0.35 | 0.035 | 0.040 | 0.30 | 3.25–3.7 | 0.12 | 0.40 | 0.03. | 485–655 | 160 | 22 | 35 | |
| | A350–LF9 | 0.20 | 0.40–1.06 | – | 0.035 | 0.040 | 0.30 | 1.60–2.24 | 0.12 | 0.75–1.25 | 0.03 | 435–605 | 315 | 25 | 38 | |
| | | | | | | | | | | | | | | | | Forged Steel |
| Stainless Steel | A182–F304 | 0.08 | 2.00 | 1.00 | 0.040 | 0.030 | 18.0–20.0 | 8.0–11.0 | – | – | – | 515 | 205 | 30 | 50 | |
| | A182–F316 | 0.08 | 2.00 | 1.00 | 0.040 | 0.030 | 16.0–18.0 | 10.0–14.0 | 2.0–3.0 | – | – | 515 | 205 | 30 | 50 | |
| | A182–F304L | 0.03 | 2.00 | 1.00 | 0.045 | 0.030 | 18.0–20.0 | 8.0–13.0 | – | – | – | 485 | 170 | 30 | 50 | |
| | A182–F316L | 0.03 | 2.00 | 1.00 | 0.045 | 0.030 | 16.0–18.0 | 10.0–15.0 | 2.0–3.0 | – | – | 485 | 170 | 30 | 50 | |
| | | | | | | | | | | | | | | | | Component Part |
| Trim | A276–304 | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 18.0–20.0 | 8.0–10.5 | – | – | – | 515 | 205 | 40 | 50 | |
| | A276–316 | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 16.0–18.0 | 10.0–14.0 | 2.0–3.0 | – | – | 485 | 170 | 40 | 50 | |
| | A276–410 | 0.15 | 1.00 | 1.00 | 0.040 | 0.030 | 18.5–13.5 | – | – | – | – | 480 | 275 | 20 | 45 | |
| | A276–420 | 0.15 | 1.00 | 1.00 | 0.040 | 0.030 | 12.0–14.0 | – | – | – | – | – | – | – | – | 241 |
| | A182–F6a | 0.15 | 1.00 | 1.00 | 0.040 | 0.030 | 11.5–13.5 | 0.50 | – | – | – | 585 | 380 | 18 | 35 | 167~229 |
| | | | | | | | | | | | | | | | | |
| Stud | A193–B7 | 0.37–0.49 | 0.65–1.10 | 0.15–0.35 | 0.035 | 0.040 | 0.75–1.20 | – | 0.15–0.25 | – | – | 860 | 720 | 16 | 50 | |
| | A193–B7M | 0.37–0.49 | 0.65–1.10 | 0.15–0.35 | 0.035 | 0.040 | 0.75–1.20 | – | 0.15–0.25 | – | – | 690 | 550 | 18 | 50 | 235 |
| | A193–B8 | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 18.0–20.0 | 8.0–10.50 | – | – | – | 515 | 205 | 30 | 50 | 223 |
| | A193–B8A | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 18.0–20.0 | 8.0–10.50 | – | – | – | 515 | 205 | 30 | 50 | 223 |
| | A193–B8M | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 16.0–18.0 | 10.0–14.0 | 2.0–3.0 | – | – | 515 | 205 | 30 | 50 | 192 |
| | A320–L7 | 0.38–0.48 | 0.75–1.00 | 0.15–0.35 | 0.035 | 0.040 | 0.80–1.10 | – | 0.15–0.25 | – | – | 860 | 725 | 16 | 50 | |
| Nut | A194–2H | ≥0.40 | 1.00 | 0.40 | 0.040 | 0.050 | – | – | – | – | – | – | – | – | – | 248~352 |
| | A194–2HM | ≥0.40 | 1.00 | 0.40 | 0.040 | 0.050 | – | – | – | – | – | – | – | – | – | 159~237 |
| | A194–7 | 0.37–0.49 | 0.65–1.10 | 0.15–0.35 | 0.045 | 0.040 | 0.75–1.20 | – | 0.15–0.25 | – | – | – | – | – | – | 248~352 |
| | A194–8 | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 18.0–20.0 | 8.0–10.5 | –1 | – | – | – | – | – | – | 126~300 |
| | A194–8M | 0.08 | 2.00 | 1.00 | 0.045 | 0.030 | 16.0–18.0 | 10.0–14.0 | 2.0–3.0 | – | – | – | – | – | – | 126~300 |