

STAINLESS STEEL VALVE

Stainless steel valve are utilized in the chemical, petrochemical, food, paper, and pharmaceutical processing industries all over the world.

Stainless steel valve are designed and manufactured in conformity with API, ANSI, BS and other standards recognized with quality meeting the stringent requirements for such industrial applications.

Stainless steel valve are specialized products through the processes of design, material selection, manufacturing, quality control, and experiences to final product.

PRODUCTION RANGE

UNIT : NPS

| TYPE \ CLASS | 150 | 300 |
|--------------|--------|--------|
| GATE | 1/2-24 | 1/2-24 |
| GLOBE | 1/2-12 | 1/2-12 |
| SWING CHECK | 1/2-24 | 1/2-24 |

INVESTMENT CASTING

Investment casting shall be manufactured up to 1 1/2" for class 150 and 300.

VALVE SHELL MATERIALS

Shell materials shall be in accordance with ASTM A351 Grade CF8M & CF8 and the others are optional.

| ASTM DESIGNATION | MAXIMUM WORKING TEMPERATURE°F (°C) |
|---------------------------|------------------------------------|
| A351 Gr. CF8 | 1500°F (816°C) * |
| A351 Gr. CF8M | 1500°F (816°C) * |
| A351 Gr. CF3 | 800°F (427°C) |
| A351 Gr. CF3M | 850°F (454°C) |
| A351 Gr. CF8C | 1500°F (816°C) * |
| A351 Gr. CN7M | 300°F (149°C) |
| A890 Gr 4A (UNS J92205) | 600°F (316°C) |
| A890 Gr 6A (UNS J93380) | 600°F (316°C) |

※ At temperatures over 1000°F, use the material only when the carbon contents is 0.04% or higher.

OPTIONAL BONNET FLANGE GASKET MATERIAL

Depending on service conditions, various materials are available optionally for flange gasket and stem packing.

A. Gasket materials

1. Glass fiber sheet
2. Spiral wound material (Graphite or PTFE)
3. PTFE
4. Metal ring
5. Graphite

B. Packing materials

1. PTFE
2. Graphite
3. Glass fiber sheet

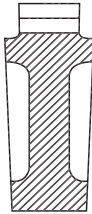
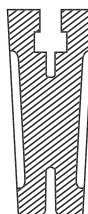
DESIGN FEATURES OF PK STAINLESS STEEL GATE VALVE WEDGES

PK adopts an H-shaped flexible wedge of which the size is 3" and larger for Class 150 and 2" and higher for Class 300/600. The H-shaped flexible wedges are featured with mechanical flexibility to be able to adjust to the shape of body seat for secure mutual contacts.

It has a particular importance when large gate valve is applied to extremely high pressure and temperature that temporary deformation may occur in valve all the time.

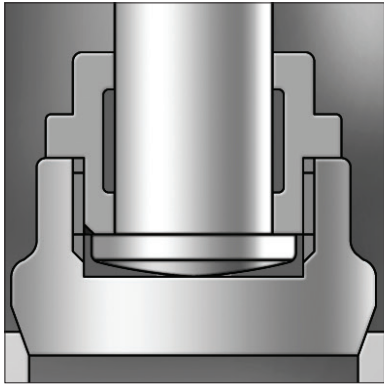
If the H-shape wedge is provided, operating torque would get smaller, seat wear less, and valve closing tighter.

UNIT: NPS

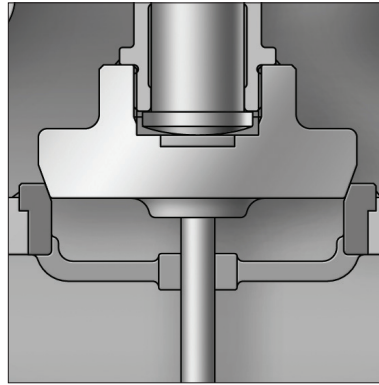
| | ONE PIECE SOLID WEDGE | FLEXIBLE ONE PIECE WEDGE |
|-------|---|---|
| CLASS |  |  |
| 150 | 2 1/2 & SMALLER | 3 & LARGER |
| 300 | 1 & SMALLER | 1 1/2 & LARGER |
| 600 | - | 2 & LARGER |

DESIGN FEATURES OF GLOBE VALVE DISC

Globe valve adopts plug type disc. The bottom guide type plug disc shall be applied following the range shown below.



PLUG DISC



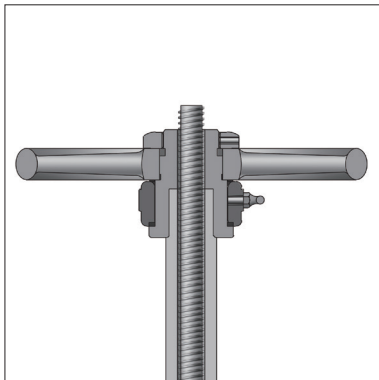
BOTTOM GUIDE
TYPE
PLUG DISC

UNIT : NPS

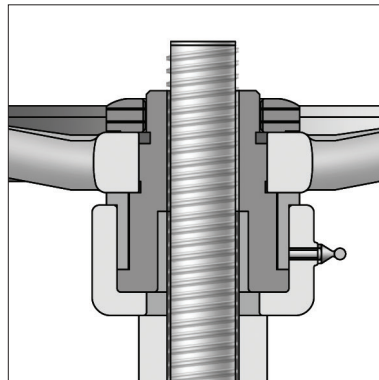
| CLASS | SIZE |
|-------|---------------|
| 150 | 10 AND LARGER |
| 300 | 8 AND LARGER |

DESIGN FEATURES OF GATE VALVE YOKE SLEEVE

It is manufactured by two different ways depending on the valve size.



TYPE A



TYPE B

UNIT : NPS

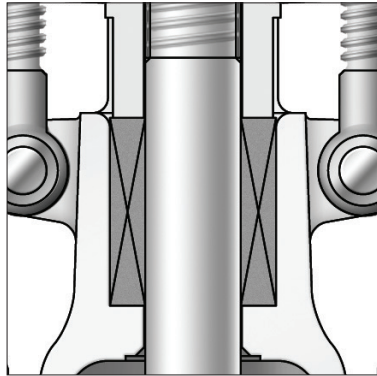
| TYPE A | TYPE B |
|---------------|--------------|
| 5 AND SMALLER | 6 AND LARGER |

Yoke caps type B is made of CS 1020+Zn plating.

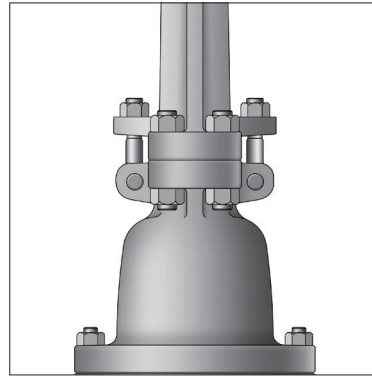
DESIGN FEATURES OF GATE VALVE YOKE

On 10" and smaller valve, the yoke is integrated with bonnet.

On 12" and larger valve, the yoke is separated from bonnet.



INTEGRAL YOKE



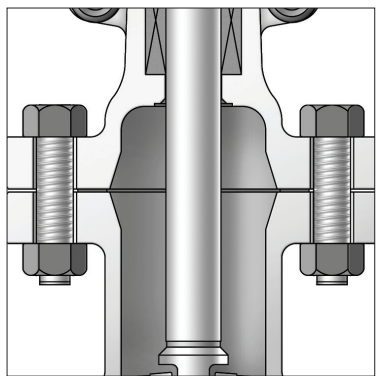
SEPARATE YOKE

DESIGN FEATURES OF VALVE BONNET BOLTS

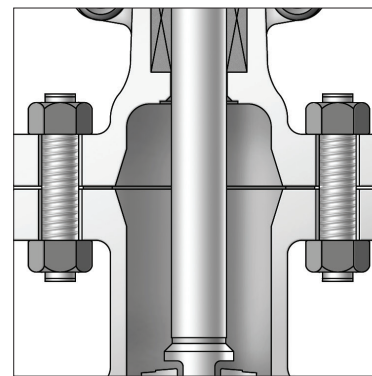
It is manufactured by two different ways depending on valve class and size.

UNIT : NPS

| | CLASS | SIZE | BOLT |
|--------|-------|-------------------|----------------------------|
| Type A | 150 | 5 AND SMALLER | HEX. HEAD |
| | 300 | 2 1/2 AND SMALLER | |
| Type B | 150 | 6 AND LARGER | FULL THREAD. BOLT & NUT |
| | 300 | 3 AND LARGER | |



TYPE A
HEX. HEADED BOLT

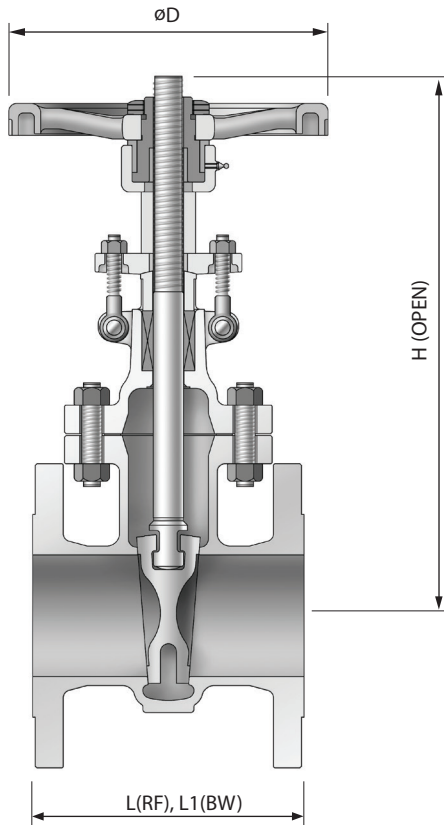


TYPE B
STUD BOLT

DESIGN FEATURES OF VALVE HAND WHEELS

Hand wheels are made in accordance with ASTM A 197 for external dimension 560mm and ASTM A216 WCB for over 560mm. A hammer blow type hand wheel of ASTM A216 WCB is provided for Class 150 (size 8) VALVE and Class 300 and over valve (size 6")

GATE VALVE



STANDARD MATERIAL SPECIFICATIONS

| NO. | PART NAME | MATERIAL | |
|-----|---------------|-------------------------------------|----------------|
| 1 | BODY | A351 - CF8 | A351 - CF8M |
| 2 | BONNET | A351 - CF8 | A351 - CF8M |
| 3 | WEDGE | A351 - CF8 | A351 - CF8M |
| 4 | STEM | A479 - 304 | A479 - 316 |
| 5 | HAND WHEEL | A197 | A197 |
| 6 | BODY SEAT | A351 - CF8 | A351 - CF8M |
| 7 | BACK SEAT | A351 - CF8 | A351 - CF8M |
| 8 | GASKET | SPIRAL WOUND / GRAPHITE+316+316 | |
| 9 | PACKING | GRAPHITE+GRAPHITE WITH INCONEL WIRE | |
| 10 | GLAND FLANGE | A351 - CF8 | A351 - CF8 |
| 11 | HINGE BOLT | A193 - B8 | A193 - B8 |
| 12 | HINGE NUT | A194 - 8 | A194 - 8 |
| 13 | HINGE PIN | A479 - 304 | A479 - 304 |
| 14 | PACKING GLAND | A479 - 304 | A479 - 316 |
| 15 | BONNET BOLT | A193 - B8 | A193 - B8 |
| 16 | BONNET NUT | A194 - 8 | A194 - 8 |
| 17 | YOKE CAP | A576 - 1020+Zn | A576 - 1020+Zn |
| 18 | YOKE SLEEVE | A439 - D2C | A439 - D2C |
| 19 | HANDLE NUT | 304 S.S | 304 S.S |
| 20 | SET SCREW | STEEL+ Cr | STEEL+ Cr |
| 21 | NIPPLE | STEEL+ Cr | STEEL+ Cr |

END CONNECTION - R.F FLANGED ENDS TO ASME B16.5
 - B.W. ENDS TO ASME B16.25
 - R.T.J FLANGED ENDS TO ASME B16.5
 - CONSULT US FOR LARGER SIZE

DIMENSION AND WEIGHT

CLASS 150

UNIT : mm

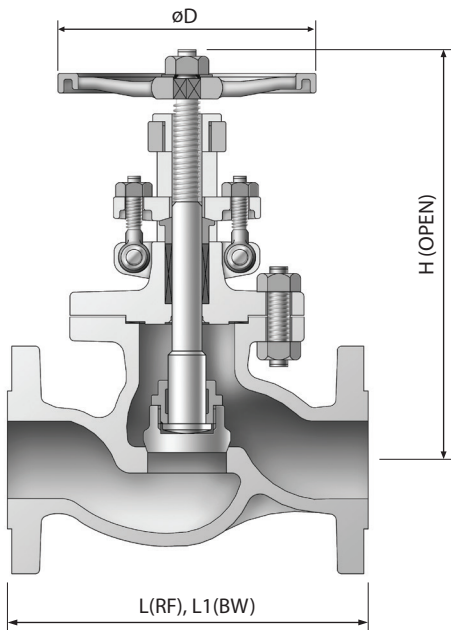
| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 108.0 | 117.3 | 127.0 | 165.1 | 177.8 | 190.5 | 203.2 | 228.6 | 266.7 | 292.1 | 330.2 | 355.6 |
| L1 | 108.0 | 117.3 | 127.0 | 165.1 | 215.9 | 241.3 | 282.4 | 304.8 | 403.4 | 419.1 | 457.2 | 501.7 |
| D | 120 | 120 | 120 | 140 | 160 | 160 | 200 | 250 | 315 | 355 | 355 | 400 |
| H | 208 | 208 | 226 | 285 | 333 | 384 | 424 | 531 | 730 | 938 | 1114 | 1317 |
| WEIGHT(kg) | 6 | 6 | 6 | 9 | 12 | 18 | 23 | 35 | 62 | 102 | 147 | 213 |

CLASS 300

UNIT : mm

| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 139.7 | 152.4 | 165.1 | 190.5 | 215.9 | 241.3 | 282.4 | 304.8 | 403.4 | 419.1 | 457.2 | 501.7 |
| L1 | 139.7 | 152.4 | 165.1 | 190.5 | 215.9 | 241.3 | 282.4 | 304.8 | 403.4 | 419.1 | 457.2 | 501.7 |
| D | 120 | 120 | 120 | 200 | 200 | 200 | 224 | 250 | 355 | 400 | 450 | 500 |
| H | 208 | 211 | 279 | 306 | 346 | 388 | 447 | 542 | 758 | 949 | 1152 | 1417 |
| WEIGHT(kg) | 8 | 8 | 8 | 16 | 18 | 29 | 39 | 54 | 112 | 202 | 253 | 390 |

GLOBE VALVE



STANDARD MATERIAL SPECIFICATIONS

| NO. | PART NAME | MATERIAL | |
|-----|---------------|-------------------------------------|-------------|
| 1 | BODY | A351 - CF8 | A351 - CF8M |
| 2 | BONNET | A351 - CF8 | A351 - CF8M |
| 3 | DISC | A351 - CF8 | A351 - CF8M |
| 4 | STEM | A479 - 304 | A479 - 316 |
| 5 | HAND WHEEL | A197 | A197 |
| 6 | BODY SEAT | A351 - CF8 | A351 - CF8M |
| 7 | BACK SEAT | A351 - CF8 | A351 - CF8M |
| 8 | GASKET | SPIRAL WOUND / GRAPHITE+316+316 | |
| 9 | PACKING | GRAPHITE+GRAPHITE WITH INCONEL WIRE | |
| 10 | GLAND FLANGE | A351 - CF8 | A351 - CF8 |
| 11 | HINGE BOLT | A193 - B8 | A193 - B8 |
| 12 | HINGE NUT | A194 - 8 | A194 - 8 |
| 13 | HINGE PIN | A479 - 304 | A479 - 304 |
| 14 | PACKING GLAND | A479 - 304 | A479 - 316 |
| 15 | BONNET BOLT | A193 - B8 | A193 - B8 |
| 16 | BONNET NUT | A194 - 8 | A194 - 8 |
| 17 | YOKE BUSH | A439 - D2C | A439 - D2C |
| 18 | LOCK NUT | A479 - 304 | A479 - 316 |
| 19 | HANDLE NUT | A194 - 8 | A194 - 8 |
| 20 | WASHER | 304 S.S | 304 S.S |

END CONNECTION

- R.F FLANGED ENDS TO ASME B16.5
- B.W. ENDS TO ASME B16.25
- R.T.J FLANGED ENDS TO ASME B16.5
- CONSULT US FOR LARGER SIZE

DIMENSION AND WEIGHT

CLASS 150

UNIT : mm

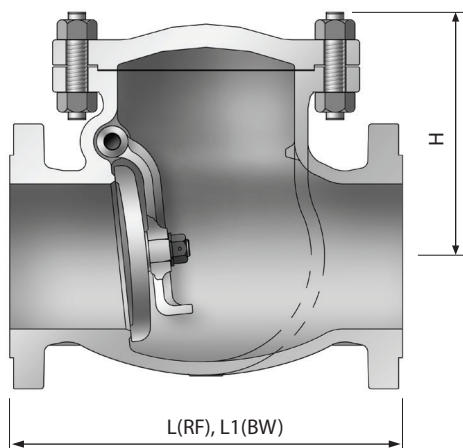
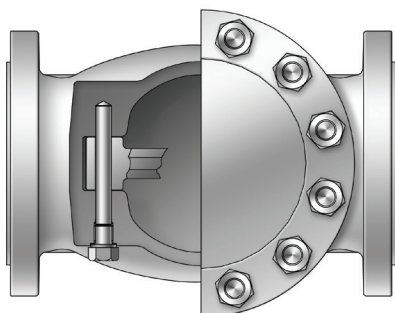
| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 108.0 | 117.3 | 127.0 | 165.1 | 203.2 | 215.9 | 241.3 | 292.1 | 406.4 | 495.3 | 622.3 | 698.5 |
| L1 | 108.0 | 117.3 | 127.0 | 165.1 | 203.2 | 215.9 | 241.3 | 292.1 | 406.4 | 495.3 | 622.3 | 698.5 |
| D | 100 | 100 | 140 | 160 | 160 | 200 | 224 | 280 | 355 | 355 | 400 | 400 |
| H | 174 | 174 | 224 | 259 | 266 | 281 | 342 | 377 | 429 | 558 | 740 | 803 |
| WEIGHT(kg) | 4 | 4 | 4 | 10 | 13 | 21 | 27 | 42 | 76 | 149 | 241 | 395 |

CLASS 300

UNIT : mm

| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 152.4 | 177.8 | 203.2 | 228.6 | 266.7 | 292.1 | 317.5 | 355.6 | 444.5 | 558.8 | 622.3 | 711.2 |
| L1 | 152.4 | 177.8 | 203.2 | 228.6 | 266.7 | 292.1 | 317.5 | 355.6 | 444.5 | 558.8 | 622.3 | 711.2 |
| D | 100 | 100 | 140 | 160 | 160 | 200 | 224 | 280 | 355 | 400 | 450 | 500 |
| H | 185 | 194 | 224 | 267 | 329 | 354 | 383 | 443 | 567 | 625 | 881 | 989 |
| WEIGHT(kg) | 9 | 9 | 9 | 15 | 17 | 33 | 34 | 46 | 125 | 218 | 367 | 521 |

SWING CHECK VALVE



STANDARD MATERIAL SPECIFICATIONS

| NO. | PART NAME | MATERIAL | |
|-----|----------------|---------------------------------|-------------|
| 1 | BODY | A351 - CF8 | A351 - CF8M |
| 2 | BONNET | A351 - CF8 | A351 - CF8M |
| 3 | DISC | A351 - CF8 | A351 - CF8M |
| 4 | ARM | A351 - CF8 | A351 - CF8M |
| 5 | ROD PIN | A479 - 304 | A479 - 304 |
| 6 | BODY SEAT RING | A351 - CF8 | A351 - CF8M |
| 7 | PLUG BOLT | A479 - 304 | A479 - 304 |
| 8 | GASKET | SPIRAL WOUND / GRAPHITE+316+316 | |
| 9 | PLUG GASKET | 304 S.S | 304 S.S |
| 10 | BONNET BOLT | A193 - B8 | A193 - B8 |
| 11 | BONNET NUT | A194 - 8 | A194 - 8 |
| 12 | DISC NUT | A194 - 8 | A194 - 8M |
| 13 | PIN | 304 S.S | 304 S.S |
| 14 | WASHER | A240 - 304 | A240 - 304 |

END CONNECTION

- R.F FLANGED ENDS TO ASME B16.5
- B.W. ENDS TO ASME B16.25
- R.T.J FLANGED ENDS TO ASME B16.5
- CONSULT US FOR LARGER SIZE

DIMENSION AND WEIGHT

CLASS 150

UNIT : mm

| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 108.0 | 117.3 | 127.0 | 165.1 | 203.2 | 215.9 | 241.3 | 292.1 | 355.6 | 495.3 | 622.3 | 698.5 |
| L1 | 108.0 | 117.3 | 127.0 | 165.1 | 203.2 | 215.9 | 241.3 | 292.1 | 355.6 | 495.3 | 622.3 | 698.5 |
| H | 85 | 89 | 102 | 120 | 138 | 155 | 160 | 201 | 248 | 293 | 330 | 354 |
| WEIGHT(kg) | 5 | 5 | 5 | 11 | 13 | 18 | 22 | 36 | 62 | 119 | 155 | 235 |

CLASS 300

UNIT : mm

| SIZE | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 | 10 | 12 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L | 152.4 | 177.8 | 215.9 | 241.3 | 266.7 | 292.1 | 317.5 | 355.6 | 444.5 | 533.4 | 622.3 | 711.2 |
| L1 | 152.4 | 177.8 | 215.9 | 241.3 | 266.7 | 292.1 | 317.5 | 355.6 | 444.5 | 533.4 | 622.3 | 711.2 |
| H | 93 | 96 | 112 | 126 | 152 | 164 | 176 | 186 | 262 | 312 | 355 | 393 |
| WEIGHT(kg) | 10 | 10 | 10 | 14 | 19 | 25 | 33 | 53 | 109 | 199 | 231 | 308 |