# CAST STEEL VALVES

## CLASS 150/300/600
## GATE, GLOBE and SWING CHECK

CRAFT

A general engineering group dealing with valves for petroleum refining, petrochemical, thermal power plants, and other process industries

**Ishida Valve Mfg. Co., Ltd.**
**Ishida Valve Engineering Co., Ltd.**

# INDEX



## FIGURE NUMBERS

BODY/BONNET MATERIAL
C — ASTM A216 WCB
F — ASTM A217 WC1
H — ASTM A217 WC6
I — ASTM A217 C5
S — ASTM A352 LCB
W — ASTM A352 LC3

FIG. C-2240-H

TRIM
H — HALF STELLITE
B — FULL STELLITE
C — 304 SS
C1— 316 SS
M — MONEL

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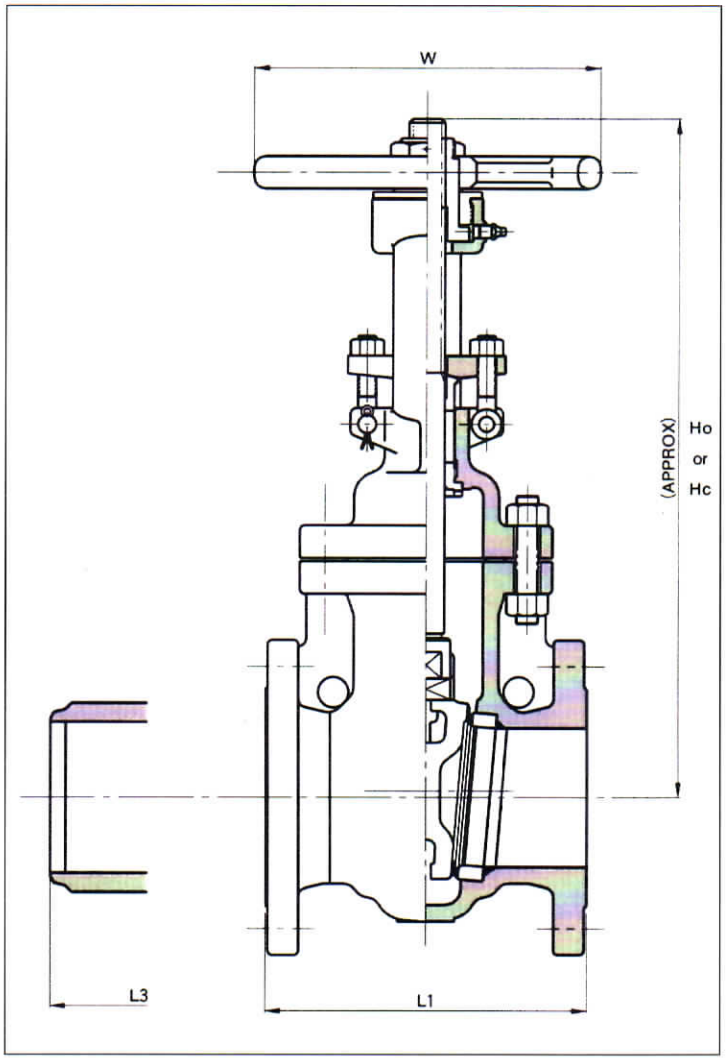
# CAST STEEL GATE VALVES — ASME CLASS 150

**SIZE 2 "to 48 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C2240**
**B.W. End Type. Fig. No. C2230**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC | *A216 WCB | *SCPH2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | REIN FORCED GRAPHITE | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE | A216 WCB | SCPH2 |
| YOKE SLEEVE | A439 D2 | FCDA NiCr |
| SLEEVE NUT | A576 1025 | S25C |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

Note: (1) Disc of valves 2½ inch and under are solid wedge. 3 inch and over are flexible wedge.
(2) Valves 12 inch and over have thrust bearing.
(3) Operation of valves 18 inch and over have bevel gear unit.

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" | 26" | 28" | 30" | 32" | 34" | 36" | 38" | 40" | 42" | 48" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 178 | 190 | 203 | 229 | 267 | 292 | 330 | 356 | 384 | 406 | 432 | 457 | 508 | 559 | 610 | 610 | 660 | 711 | 711 | 736 | 762 | 787 | 864 |
| | B.W. | L3 | 216 | 241 | 283 | 305 | 403 | 418 | 457 | 502 | 572 | 610 | 660 | 711 | 813 | 864 | 914 | 914 | 965 | 1016 | 1016 | 1041 | 1041 | 1118 | 1168 |
| Center to Top (mm) | Open | Ho | 383 | 418 | 472 | 576 | 801 | 1012 | 1232 | 1427 | 1550 | 1734 | 1928 | 2167 | 2533 | 2818 | 3078 | 3202 | 3465 | 3480 | 4052 | 4120 | 4340 | 4583 | 5200 |
| | Close | Hc | 324 | 346 | 387 | 464 | 635 | 701 | 960 | 1103 | 1192 | 1330 | 1928 | 2167 | 2533 | 2818 | 3078 | 3202 | 3465 | 3480 | 4052 | 4120 | 4340 | 4583 | 5200 |
| Diam. of Handwheel(mm) | | W | 200 | 200 | 250 | 250 | 300 | 355 | 400 | 520 | 550 | 600 | 460 | 460 | 610 | | | | | | | | | | |
| Weight Approx.(kg) | | R.F. | 18 | 24 | 32 | 50 | 84 | 130 | 198 | 280 | 370 | 496 | 655 | 836 | 1186 | | | | | | | | | | |
| | | B.W. | 16 | 20 | 39 | 44 | 79 | 110 | 187 | 270 | 335 | 480 | 625 | 760 | 1000 | | | | | | | | | | |

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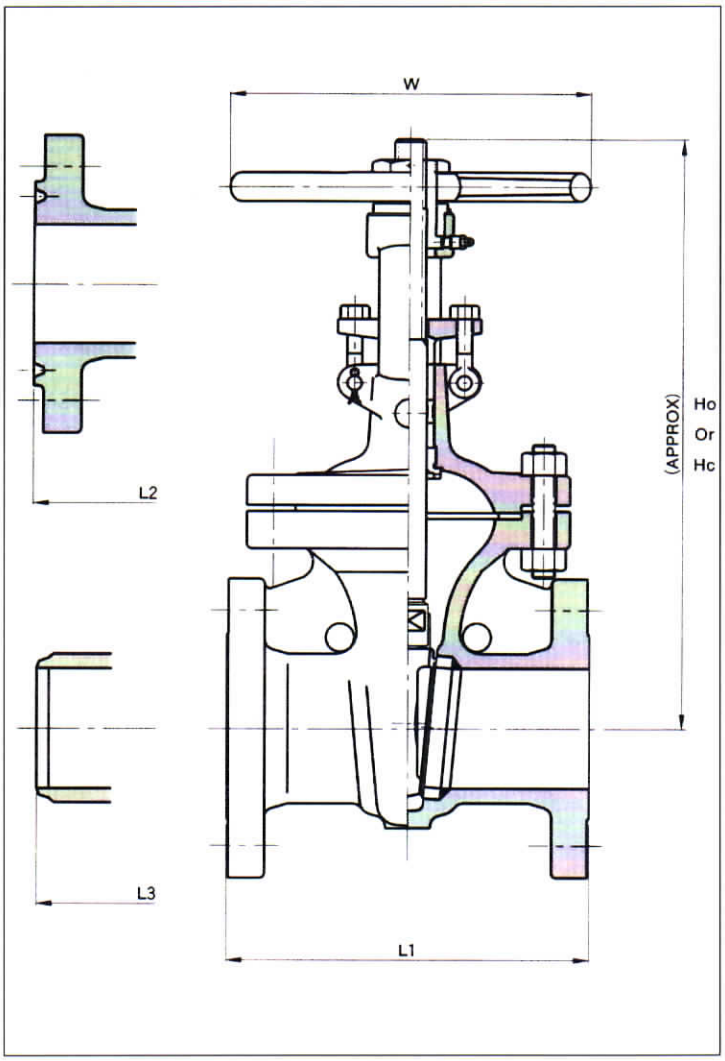
# CAST STEEL GATE VALVES — ASME CLASS 300

**SIZE 2 "to 36 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C2240**
**R.J. End Type. Fig. No. C2270**
**B.W. End Type. Fig. No. C2230**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC | *A216 WCB | *SCPH2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | SPIRAL WOUND GRAPHOIL | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| LANTERN RING | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE | A216 WCB | SCPH2 |
| YOKE SLEEVE | A439 D2 | FCDA NiCr |
| SLEEVE NUT | A576 1025 | S25C |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

Note: (1) Disc of valves 2½ inch and under are solid wedge. 3 inch and over are flexible wedge.
(2) Valves 10 inch and over have thrust bearing.
(3) Operation of valves 14 inch and over have bevel gear unit.

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" | 26" | 28" | 30" | 32" | 34" | 36" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 216 | 241 | 283 | 305 | 403 | 419 | 457 | 502 | 762 | 838 | 914 | 991 | 1143 | 1245 | 1346 | 1397 | 1524 | 1626 | 1727 |
| | R.J. | L2 | 232 | 257 | 298 | 321 | 419 | 435 | 473 | 518 | 778 | 854 | 930 | 1010 | 1165 | 1270 | 1371 | 1422 | 1553 | 1655 | 1756 |
| | B.W. | L3 | 216 | 241 | 283 | 305 | 403 | 419 | 457 | 502 | 762 | 838 | 914 | 991 | 1143 | 1245 | 1346 | 1397 | 1524 | 1626 | 1727 |
| Center to Top (mm) | Open | Ho | 416 | 456 | 496 | 614 | 846 | 1080 | 1285 | 1486 | 1643 | 1820 | 2032 | 2220 | 2635 | 2844 | 3021 | 3481 | 3630 | 3780 | 3920 |
| | Close | Hc | 357 | 384 | 421 | 502 | 680 | 1013 | 1162 | 520 | 1643 | 1820 | 2032 | 2220 | 2635 | 2844 | 3021 | 3481 | 3630 | 3780 | 3920 |
| Diam. of Handwheel(mm) | | W | 200 | 200 | 250 | 300 | 355 | 450 | 500 | 600 | 460 | 460 | 460 | 610 | 610 | 610 | 610 | 610 | 610 | 762 | 762 |
| Weight Approx.(kg) | | R.F. | 28 | 43 | 53 | 75 | 152 | 232 | 340 | 480 | 725 | 1000 | 1270 | 1500 | 2400 | | | | | | |
| | | R.J. | 28 | 43 | 53 | 75 | 152 | 232 | 340 | 480 | 725 | 1000 | 1270 | 1500 | 2400 | | | | | | |
| | | B.W. | 23 | 34 | 48 | 60 | 125 | 196 | 265 | 396 | 620 | 810 | 1076 | 1450 | 2100 | | | | | | |

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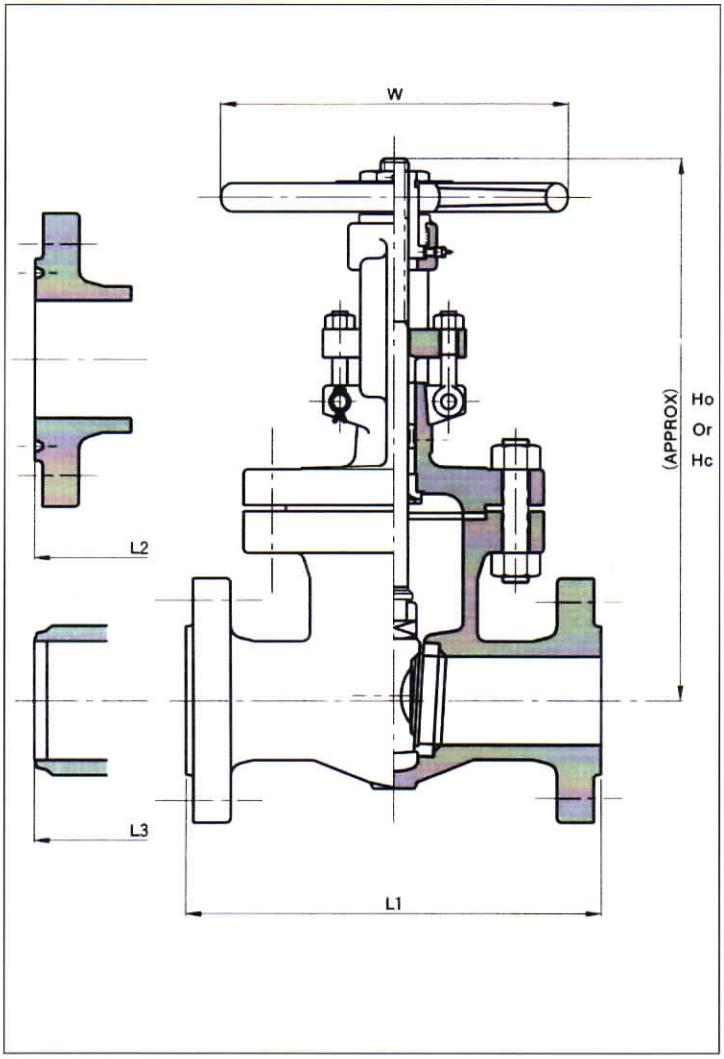
# CAST STEEL GATE VALVES — ASME CLASS 600

**SIZE 2 "to 26 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C2640**
**R.J. End Type. Fig. No. C2670**
**B.W. End Type. Fig. No. C2630**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC | *A216 WCB | *SCPH2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | SPIRAL WOUND GRAPHOIL | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| LANTERN RING | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE | A216 WCB | SCPH2 |
| YOKE SLEEVE | A439 D2 | FCDA NiCr |
| SLEEVE NUT | A576 1025 | S25C |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

Note: (1) Disc of valves 2½ inch and under are solid wedge. 3 inch and over are flexible wedge.
(2) Valves 6 inch and over have thrust bearing.
(3) Operation of valves 12 inch and over have bevel gear unit.

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" | 26" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 | 1092 | 1194 | 1397 | 1448 |
| | R.J. | L2 | 295 | 333 | 359 | 435 | 562 | 664 | 791 | 841 | 892 | 994 | 1095 | 1200 | 1407 | 1458 |
| | B.W. | L3 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 | 1092 | 1194 | 1397 | 1448 |
| Center to Top (mm) | Open | Ho | 473 | 505 | 555 | 692 | 1006 | 1188 | 1402 | 1633 | 1772 | 2038 | 2218 | 2392 | 2822 | 3050 |
| | Close | Hc | 414 | 433 | 471 | 580 | 843 | 973 | 1136 | 1633 | 1772 | 2038 | 2218 | 2392 | 2822 | 3050 |
| Diam. of Handwheel(mm) | | W | 250 | 250 | 300 | 355 | 500 | 600 | 685 | 457 | 610 | 610 | 610 | 610 | 760 | 760 |
| Weight Approx.(kg) | | R.F. | 46 | 63 | 75 | 125 | 285 | 475 | 757 | 1015 | 1400 | 1710 | 2210 | 3220 | 4250 | |
| | | R.J. | 48.5 | 64 | 78 | 140 | 285 | 475 | 757 | 1015 | 1400 | 1710 | 2210 | 3220 | 4250 | |
| | | B.W. | 45 | 56 | 67 | 110 | 208 | 385 | 610 | 840 | 1150 | 1530 | 2000 | 2600 | 4100 | |

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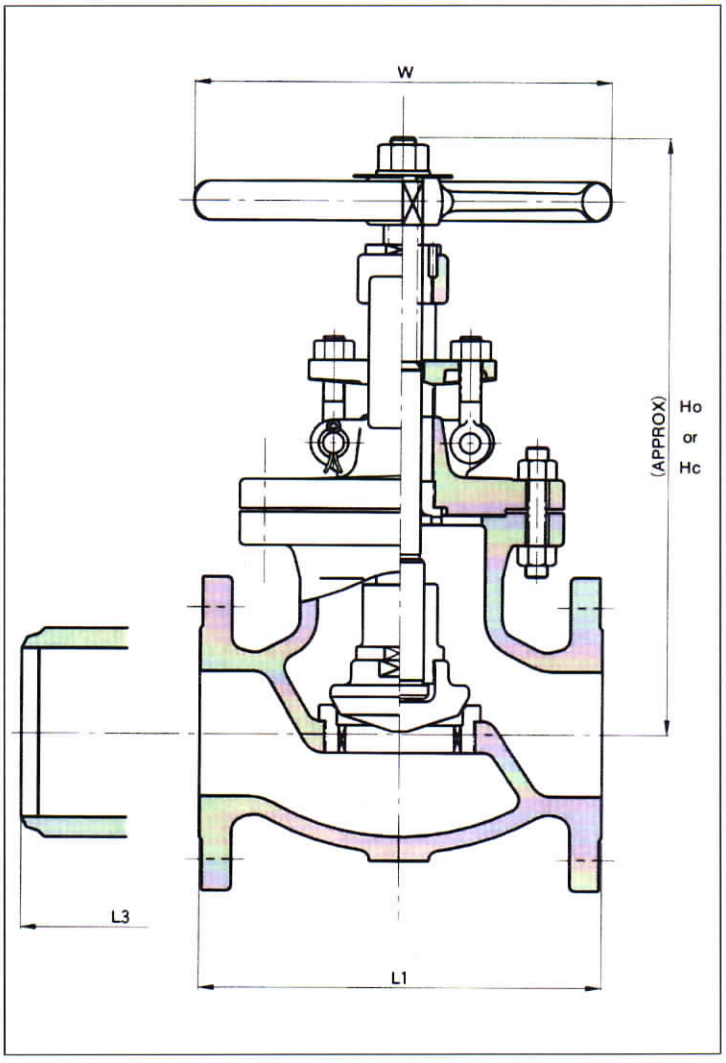
# CAST STEEL GLOBE VALVES — ASME CLASS 150

**SIZE 2 "to 20 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C1240**
**B.W. End Type. Fig. No. C1230**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC STEM RING | A276 420 | SUS420J2 |
| DISC | A276 420 | SUS420J2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | SPIRAL WOUND GRAPHOIL | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE SLEEVE | A439 D2 | FCDA NiCr |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

* BODY SEAT RING: STELLITE FACE
* DISC: 12 INCH AND OVER ARE WCB WITH 13Cr FACE

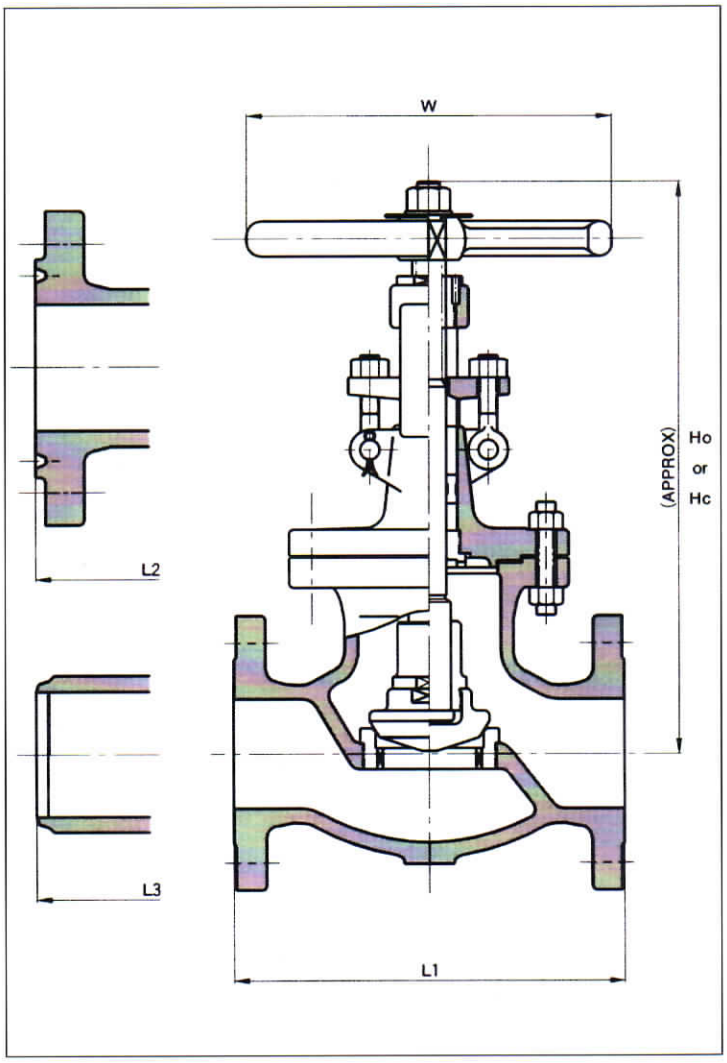
Note: (1) Stem of valves 10 inch and over are non-rotating type

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 203 | 216 | 241 | 292 | 406 | 495 | 622 | 698 | 787 | 914 | 978 | 978 |
| | B.W. | L3 | 203 | 216 | 241 | 292 | 406 | 495 | 622 | 698 | 787 | 914 | 978 | 978 |
| Center to Top (mm) | Open | Ho | 338 | 347 | 388 | 424 | 485 | 598 | 698 | 837 | 1031 | 1121 | 1200 | 1250 |
| | Close | Hc | 320 | 325 | 362 | 389 | 438 | 538 | 623 | 752 | 926 | 1101 | 1200 | 1250 |
| Diam. of Handwheel(mm) | | W | 200 | 200 | 250 | 280 | 355 | 450 | 450 | 560 | 685 | 685 | 610 | 610 |
| Weight Approx.(kg) | | R.F. | 20.5 | 33.0 | 34.5 | 52 | 94 | 150 | 305 | 476 | 620 | 766 | 1000 | 1300 |
| | | B.W. | 19 | 30 | 33 | 49 | 90 | 173 | 275 | 430 | 560 | 690 | 690 | 1170 |

# CAST STEEL GLOBE VALVES — ASME CLASS 300

**SIZE 2 "to 16 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C1440**
**R.J. End Type. Fig. No. C1470**
**B.W. End Type. Fig. No. C1430**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC STEM RING | A276 420 | SUS420J2 |
| DISC | A276 420 | SUS420J2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | SPIRAL WOUND GRAPHOIL | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| LANTERN RING | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE BUSH | A439 D2 | FCDA NiCr |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

*BODY SEAT RING: STELLITE FACE
*DISC: 12 INCH AND OVER ARE WCB WITH 13Cr FACE

Note: (1) Stem of valves 8 inch and over are non-rotating type

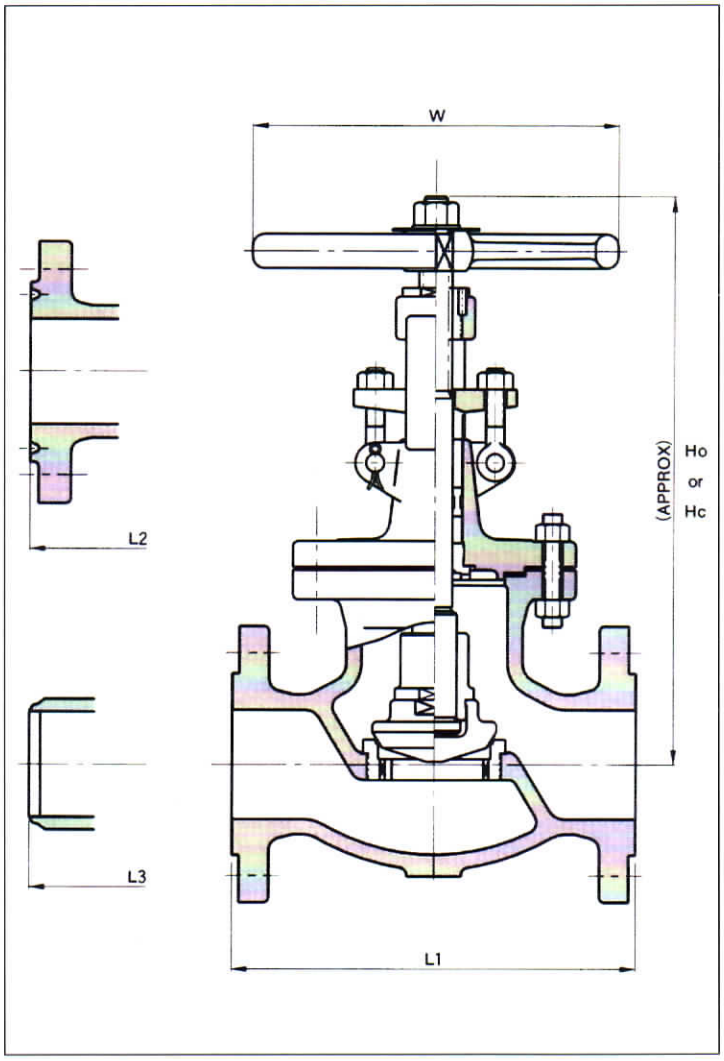
## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 267 | 292 | 318 | 356 | 444 | 559 | 622 | 711 | 800 | 940 |
| | R.J. | L2 | 283 | 308 | 333 | 371 | 460 | 575 | 638 | 727 | 816 | 956 |
| | B.W. | L3 | 267 | 292 | 318 | 356 | 444 | 559 | 622 | 711 | 800 | 940 |
| Center to Top (mm) | Open | Ho | 380 | 416 | 444 | 525 | 668 | 830 | 992 | 1136 | 1298 | 1400 |
| | Close | Hc | 362 | 394 | 418 | 490 | 621 | 770 | 920 | 1046 | 1298 | 1400 |
| Diam. of Handwheel(mm) | | W | 200 | 250 | 280 | 355 | 450 | 560 | 610 | 685 | 610 | 610 |
| Weight Approx.(kg) | | R.F. | 25.5 | 47 | 51 | 84 | 148 | 230 | 450 | 650 | 940 | 1280 |
| | | R.J. | 28 | 53 | 57 | 91 | 187 | 332 | 500 | 714 | 987 | 1344 |
| | | B.W. | 24 | 45 | 49 | 78 | 160 | 285 | 428 | 610 | 846 | 1150 |

CRAFT

# CAST STEEL GLOBE VALVES — ASME CLASS 600

**SIZE 2 "to 16 "**
**Flanged and Butt weld Ends**
**Bolted Bonnet, O.S. & Y.**
**R.F. End Type. Fig. No. C1640**
**R.J. End Type. Fig. No. C1670**
**B.W. End Type. Fig. No. C1630**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | ASTM | JIS |
|---|---|---|
| BODY | A216 WCB | SCPH2 |
| BODY SEAT RING | *A105 | *SFVC2A |
| DISC STEM RING | A276 420 | SUS420J2 |
| DISC | A276 420 | SUS420J2 |
| STEM | A182 F6a | SUS403 |
| BONNET GASKET | SPIRAL WOUND GRAPHOIL | |
| BONNET | A216 WCB | SCPH2 |
| BONNET BOLT | A193 B7 | SNB7 |
| BONNET BOLT NUT | A194 2H | S45C |
| BONNET BUSH | A276 420 | SUS420J2 |
| LANTERN RING | A276 420 | SUS420J2 |
| GLAND PACKING | FLEXIBLE GRAPHITE | |
| GLAND | A276 420 | SUS420J2 |
| GLAND FLANGE | A105 | SFVC2A |
| GLAND EYE BOLT | A193 B7 | SNB7 |
| GL. EYE BOLT NUT | A194 2H | S45C |
| YOKE BUSH | A439 D2 | FCDA NiCr |
| HAND WHEEL | A536 | FCD450 |
| LOCK NUT | A36 | SS400 |
| NAME PLATE | B209M | ALP |

*BODY SEAT RING: STELLITE FACE
*DISC: 8 INCH AND OVER ARE WCB WITH 13Cr FACE

Note: (1) Stem of valves 8 inch and over are non-rotating type

## WEIGHT AND DIMENSIONS

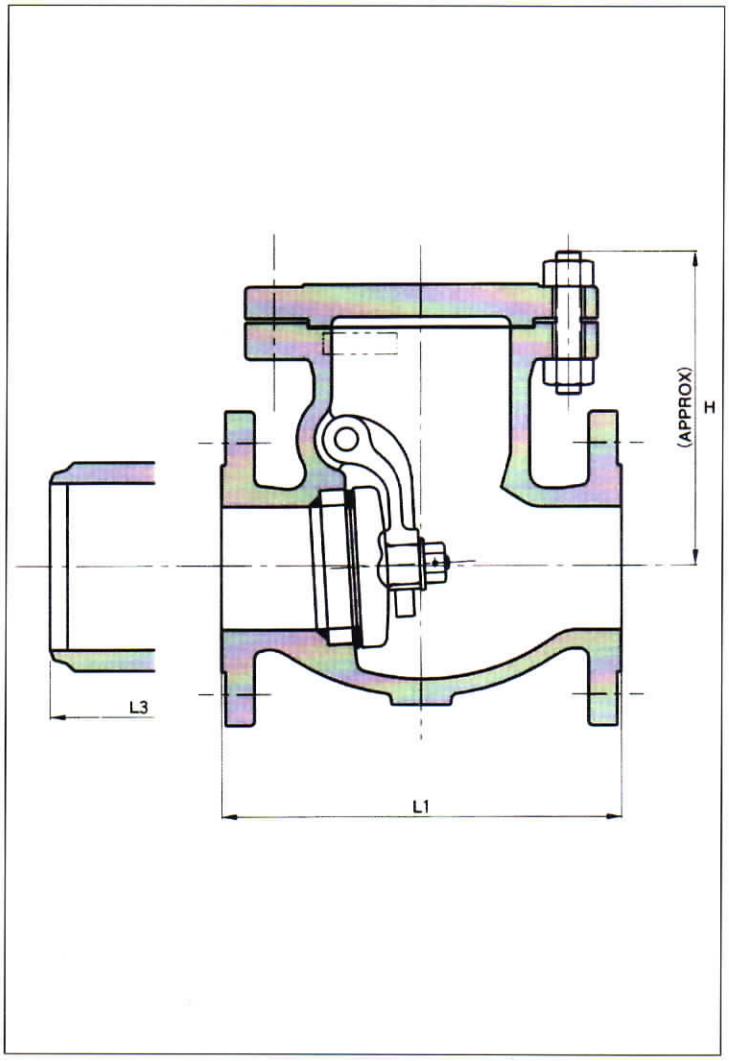
| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 |
| | R.J. | L2 | 295 | 333 | 359 | 435 | 562 | 664 | 791 | 841 | 892 | 994 |
| | B.W. | L3 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 |
| Center to Top (mm) | Open | Ho | 493 | 469 | 630 | 704 | 852 | 1072 | 1100 | 1300 | 1400 | 1500 |
| | Close | Hc | 435 | 435 | 589 | 654 | 792 | 997 | 1000 | 1300 | 1400 | 1500 |
| Diam. of Handwheel(mm) | | W | 280 | 280 | 355 | 450 | 560 | 685 | 760 | 610 | 610 | 610 |
| Weight Approx.(kg) | | R.F. | 45 | 60 | 83 | 150 | 327 | 552 | 910 | 1150 | 1600 | 2160 |
| | | R.J. | 45.5 | 65 | 83 | 155 | 327 | 520 | 910 | 1150 | 1600 | 2160 |
| | | B.W. | 36 | 47 | 58 | 114 | 258 | 460 | 720 | 850 | 1400 | 1900 |

ISHIDA VALVE MFG. CO.,LTD.

CRAFT

# CAST STEEL SWING CHECK VALVES — ASME CLASS 150

**SIZE 2 "to 30 "**
**Flanged and Butt weld Ends**
**Bolted Cover Type.**
**R.F. End Type. Fig. No. C4240**
**B.W. End Type. Fig. No. C4230**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | | ASTM | JIS |
|---|---|---|---|
| BODY | | A216 WCB | SCPH2 |
| BODY SEAT RING | | *A105 | *SFVC2A |
| DISC | 4"& UNDER | *A105 | *SFVC2A |
| | 6"& OVER | *A216 WCB | *SCPH2 |
| HINGE | | A216 WCB | SCPH2 |
| HINGE PIN | | A276 410/420 | SUS403 |
| COVER | | A216 WCB | SCPH2 |
| COVER BOLT | | A193 B7 | SNB7 |
| COVER BOLT NUT | | A194 2H | S45C |
| COVER GASKET | | SPIRAL WOUND GRAPHOIL | |
| KNOCK PIN | | A276 304 | SUS304 |
| DISC NUT | | A276 410/420 | SUS403 |
| DISC WASHER | | A276 410/420 | SUS403 |
| PLUG | | A276 410/420 | SUS403 |
| NAME PLATE | | B209M | ALP |
| PLUG GASKET | | A576 | MILD STEEL |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

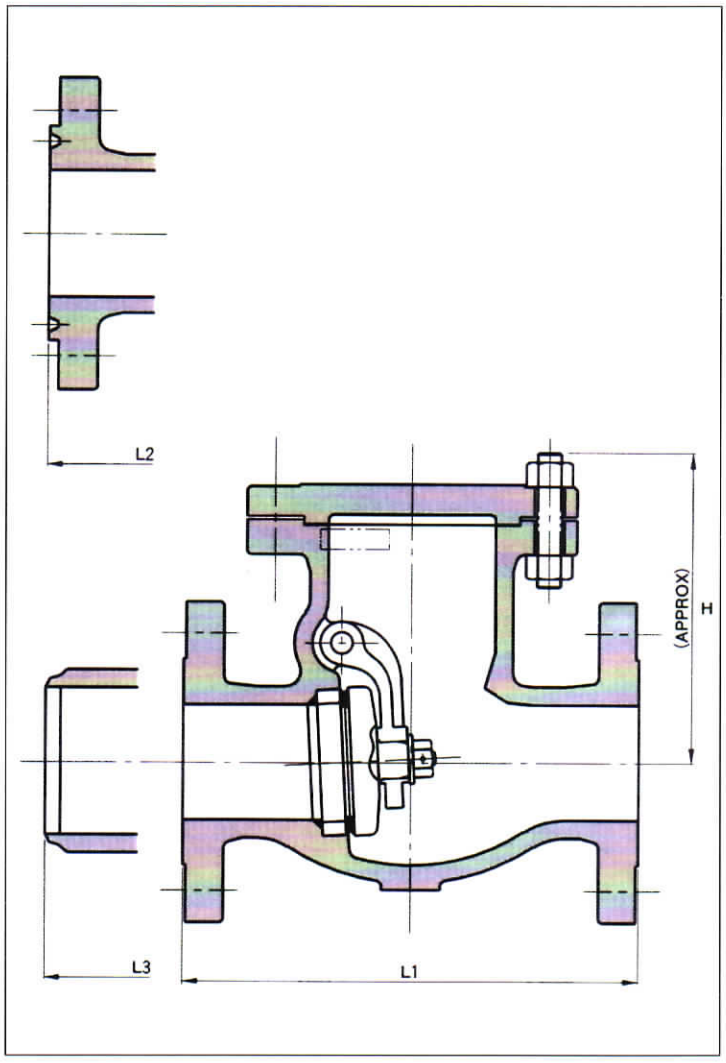
Note: (1) Valves 6 inch and over are equipped with eye-bolts.(Mild Steel)

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" | 26" | 28" | 30" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 203 | 216 | 241 | 292 | 356 | 495 | 622 | 698 | 787 | 864 | 978 | 978 | 1295 | 1295 | 1448 | 1524 |
| | B.W. | L3 | 203 | 216 | 241 | 292 | 356 | 495 | 622 | 698 | 787 | 864 | 978 | 978 | 1295 | 1295 | 1448 | 1524 |
| Center to Top(mm) | | H | 163 | 180 | 190 | 220 | 300 | 335 | 389 | 435 | 511 | 540 | 599 | 614 | 817 | 870 | 950 | 1000 |
| Weight Approx.(kg) | | R.F. | 20 | 26 | 35 | 55 | 87 | 150 | 270 | 380 | 475 | 575 | 770 | 820 | 1383 | | | |
| | | B.W. | 16 | 23 | 30 | 47 | 74 | 119 | 195 | 270 | 400 | 467 | 655 | 800 | 1280 | | | |

# CAST STEEL SWING CHECK VALVES — ASME CLASS 300

**SIZE 2 "to 24 "**
**Flanged and Butt weld Ends**
**Bolted Cover Type.**
**R.F. End Type. Fig. No. C4440**
**R.J. End Type. Fig. No. C4470**
**B.W. End Type. Fig. No. C4430**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | | ASTM | JIS |
|---|---|---|---|
| BODY | | A216 WCB | SCPH2 |
| BODY SEAT RING | | *A105 | *SFVC2A |
| DISC | 4"& UNDER | *A105 | *SFVC2A |
| | 6"& OVER | *A216 WCB | *SCPH2 |
| HINGE | | A216 WCB | SCPH2 |
| HINGE PIN | | A276 410/420 | SUS403 |
| COVER | | A216 WCB | SCPH2 |
| COVER BOLT | | A193 B7 | SNB7 |
| COVER BOLT NUT | | A194 2H | S45C |
| COVER GASKET | | SPIRAL WOUND GRAPHOIL | |
| KNOCK PIN | | A276 304 | SUS304 |
| DISC NUT | | A276 410/420 | SUS403 |
| DISC WASHER | | A276 410/420 | SUS403 |
| PLUG | | A276 410/420 | SUS403 |
| NAME PLATE | | B209M | ALP |
| PLUG GASKET | | A576 | MILD STEEL |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

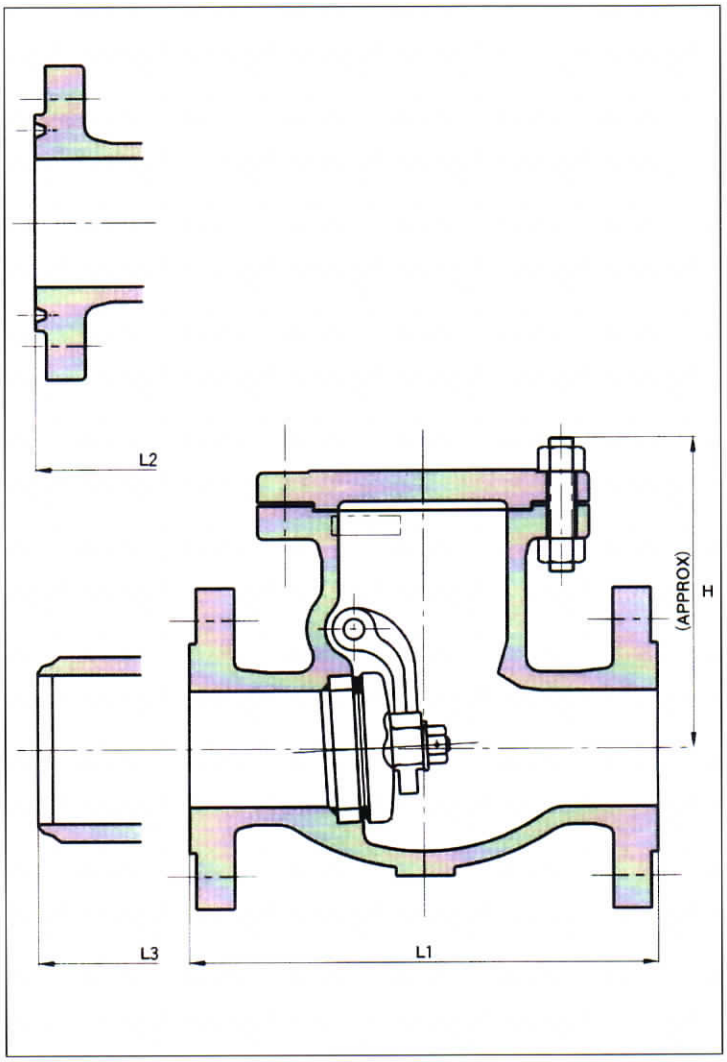
Note: (1) Valves 6 inch and over are equipped with eye-bolts.(Mild Steel)

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 267 | 292 | 318 | 356 | 444 | 533 | 622 | 711 | 838 | 864 | 978 | 1016 | 1346 |
| | R.J. | L2 | 283 | 308 | 333 | 371 | 460 | 549 | 638 | 727 | 854 | 879 | 994 | 1035 | 1368 |
| | B.W. | L3 | 267 | 292 | 318 | 356 | 444 | 533 | 622 | 711 | 838 | 864 | 978 | 1016 | 1346 |
| Center to Top(mm) | | H | 181 | 202 | 219 | 282 | 332 | 391 | 427 | 481 | 513 | 655 | 679 | 703 | 843 |
| Weight Approx.(kg) | | R.F. | 30 | 49 | 54 | 76.5 | 143 | 220 | 343 | 468 | 665 | 840 | 1095 | 1283 | 2200 |
| | | R.J. | 30 | 49 | 54 | 76.5 | 143 | 220 | 343 | 468 | 665 | 840 | 1095 | 1283 | 2200 |
| | | B.W. | 26 | 39 | 50 | 60 | 120 | 195 | 290 | 350 | 565 | 715 | 930 | 1100 | 1870 |

# CAST STEEL SWING CHECK VALVES — ASME CLASS 600

**SIZE 2 "to 20 "**
**Flanged and Butt weld Ends**
**Bolted Cover Type.**
**R.F. End Type. Fig. No. C4640**
**R.J. End Type. Fig. No. C4670**
**B.W. End Type. Fig. No. C4630**




PRESSURE TEST: As per API 598

## MATERIAL

| NAME OF PART | | ASTM | JIS |
|---|---|---|---|
| BODY | | A216 WCB | SCPH2 |
| BODY SEAT RING | | *A105 | *SFVC2A |
| DISC | 4"& UNDER | *A105 | *SFVC2A |
| | 6"& OVER | *A216 WCB | *SCPH2 |
| HINGE | | A216 WCB | SCPH2 |
| HINGE PIN | | A276 410/420 | SUS403 |
| COVER | | A216 WCB | SCPH2 |
| COVER BOLT | | A193 B7 | SNB7 |
| COVER BOLT NUT | | A194 2H | S45C |
| COVER GASKET | | SPIRAL WOUND GRAPHOIL | |
| KNOCK PIN | | A276 304 | SUS304 |
| DISC NUT | | A276 410/420 | SUS403 |
| DISC WASHER | | A276 410/420 | SUS403 |
| PLUG | | A276 410/420 | SUS403 |
| NAME PLATE | | B209M | ALP |
| PLUG GASKET | | A576 | MILD STEEL |

*BODY SEAT RING: STELLITE FACE
*DISC: 13Cr FACE

Note: (1) Valves 6 inch and over are equipped with eye-bolts.(Mild Steel)

## WEIGHT AND DIMENSIONS

| Valve Size | | | 2" | 2½" | 3" | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| End to End (mm) | R.F. | L1 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 | 1092 | 1194 |
| | R.J. | L2 | 295 | 333 | 359 | 435 | 562 | 664 | 791 | 841 | 892 | 994 | 1095 | 1200 |
| | B.W. | L3 | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 | 1092 | 1194 |
| Center to Top(mm) | | H | 181 | 202 | 219 | 282 | 332 | 391 | 427 | 481 | 513 | 655 | 679 | 703 |
| Weight Approx.(kg) | | R.F. | 38 | 55 | 63 | 116 | 212 | 310 | 590 | 800 | 1110 | 1500 | 2000 | 2600 |
| | | R.J. | 45 | 55 | 64 | 116 | 201 | 369 | 590 | 800 | 1110 | 1500 | 2000 | 2600 |
| | | B.W. | 34 | 42 | 50 | 85 | 167 | 281 | 430 | 620 | 940 | 1250 | 1700 | 2200 |

## Main Products

**Gate valves / Globe valves / Check valves / Soft seat valves / Twin-Pack valves / Jacketed valves / Electric-motor operated valves / Air-motor operated valves / Air-cylinder operated valves / High pressure and high temperature service valves / Low temperature service valves**


CRAFT

Ishida Valve Group

**Ishida Valve Mfg. Co., Ltd.**

**Ishida Valve Engineering Co., Ltd.**

Head Office : Fujishima Bldg.,13-4 Shiba 4-chome, Minato-ku,Tokyo 108-0014 Japan

TEL:03(3455)5271 FAX:03(3455)8690


WARRANTY.. Ishida Valve Mfg. Co., Ltd. warrants its products included parts to the original purchaser for a period of one year from and after the date of shipment against defects in material and workmanship under proper and normal use and service and not caused or resulting from improper application or usage, improper installation, improper maintenance and repairs, modifications or alternation.

Purchaser shall give notice to Ishida upon finding of any defect, or assuming defect, and Ishida has privilege to check the facts and defect

Ishida sole obligation under this warranty shall be limited to the following,

(1) repair of the material or,

(2) replacement of the materials or,

(3) refund the purchase price on receipt of the defective product.

Ishida is not responsible to any kind of claims for consequential damage, loss or expense arising out of the defect.

'09.11 | 50(N)

## Main Products

**Gate valves / Globe valves / Check valves / Soft seat valves / Twin-Pack valves / Jacketed valves / Electric-motor operated valves / Air-motor operated valves / Air-cylinder operated valves / High pressure and high temperature service valves / Low temperature service valves**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Purchaser shall give notice to Ishida upon finding of any defect, or assuming defect, and Ishida has privilege to check the facts and defect

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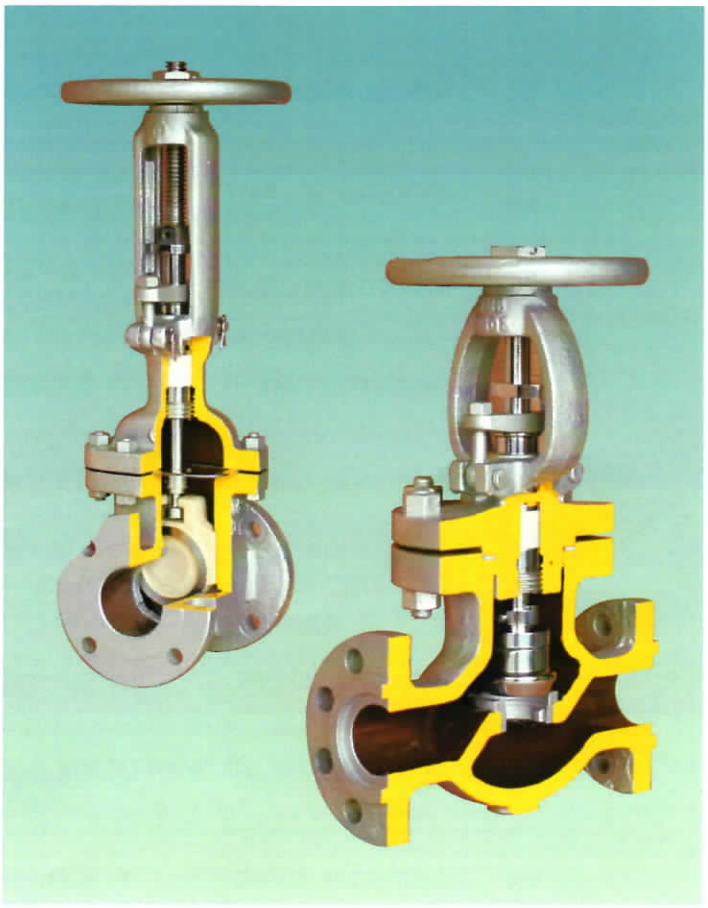
Ishida is not responsible to any kind of claims for consequential damage, loss or expense arising out of the defect.

'09.11 | 50(N)

# TWIN PACK VALVES

## CLASS 150/300/600
GATE, and GLOBE



CRAFT

A general engineering group dealing with valves for petroleum refining, petrochemical, thermal power plants, and other process industries

**Ishida Valve Mfg. Co., Ltd.**
**Ishida Valve Engineering Co., Ltd.**

# TWIN PACK VALVES

The life of a valve is mainly determined by packing leaks to the exterior thru failure of grand. The design of the TWIN PACK VALVE prevents these possible problems extending the valve life. This is especially important today' s concern with pollution and product quality control.

## INDEX



### INSTALATION OF ISHIDA TWIN PACK VALVES

Twin Pack Valves are installed on poisonous gas line in a plant in Saudi Arabia. This project required the use of 1,200 Twin Pack Valves

# FEATURES OF TWIN PACK VALVES

## 1. IMPROVED STUFFING BOX DESIGN

### About the conventional stuffing box type valve.

In a conventional stuffing box design (Fig.1) when the gland bolt is tightened, the packing is not tightened as a concentric force and, a portion of the force is diverted at a right angle to the stem. The actual tightening force is reduced (see Fig.2, "Distribution of Clamping force.) The result is the sealing pressure is effective in only the first 2 or 3 rings where the clamping force is sufficient. However, even those upper rings, if the sealant of binder etc. disappears, will cause leakage. It is difficult under these conditions, no matter how tighten the gland packing is tightened, to obtain a permanent leak-proof condition.

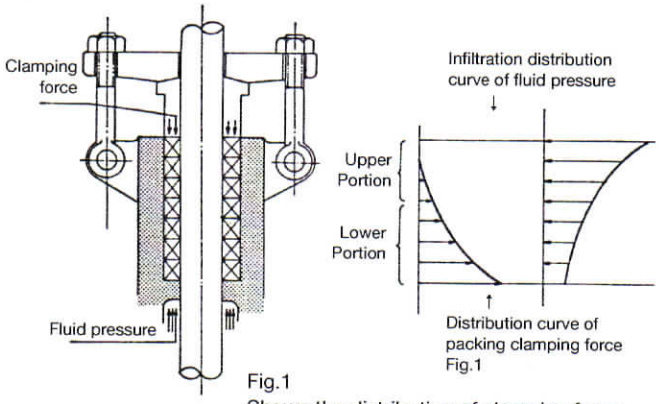



Fig.1
Shows the distribution of clamping force, and infiltration curve of fluid pressure for a conventional stuffing box.

New stuffing box type valves which Ishida Valve Mfg. Co. Ltd proposes, are "Twin Pack Valves". The design of the Ishida Twin Pack stuffing box eliminates these problems. The design accomplishes this with the use of a two stage sealing system. Fig.2 shows the design of an upper and lower stuffing box gland.

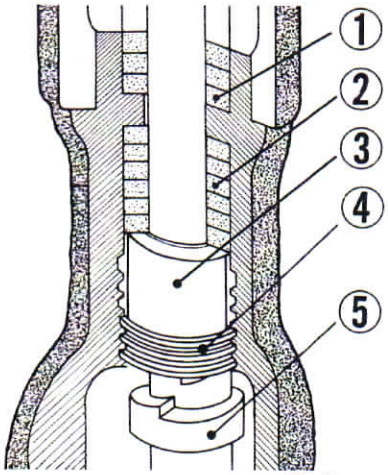



Fig.2
①Secondary packing chamber
②Primary Packing chamber
③Packing Washer
④Clamping device
⑤Clutch

CONSTRUCION AND CHARACTERISTICS OF PERFECT GLAND LEAK PREVENTION SYSTEM

The features of Stuffing box of Twin Pack Valve,

(1) Complete Sealing (Perfect Leak-Free)

The TWIN PACK design provide perfect leak-proof sealing design by clamping the primary packing box from the fluid side... By use of a clutch ⑤ and gearing ④, the primary is compressed as the stem is turned to provide a leak proof scale...The upper secondary Packing is tightened the conventional way and will prevent a stem leak under an abnormal condition where a leak occurs at the primary packing... (see Fig.2 and Fig.3)

(2) Long-term Durability

Upper secondary stuffing box is same construction as conventional type, and there is hardly any penetration of liquid into secondary stuffing box. By above reason, long-term durability is possible, because of the difficulty to be deteriorated.

(3)Easy Maintenance

The back-seat of conventional valve tends to be prone to damage and to be unstable. To replace packing can be difficult. In the Twin Pack design, the gland packing substitutes for the back-seat, and, if necessary, the secondary packing can be easily replaced even though the valve is at an intermediate open/closed position.

(4) Smooth Operation

In operation, gland packing is clamped by the leading of a screw, so the valve can be operated more easily than the conventional design because it prevents eccentric positioning of the stem that could occur when clamped on one side.

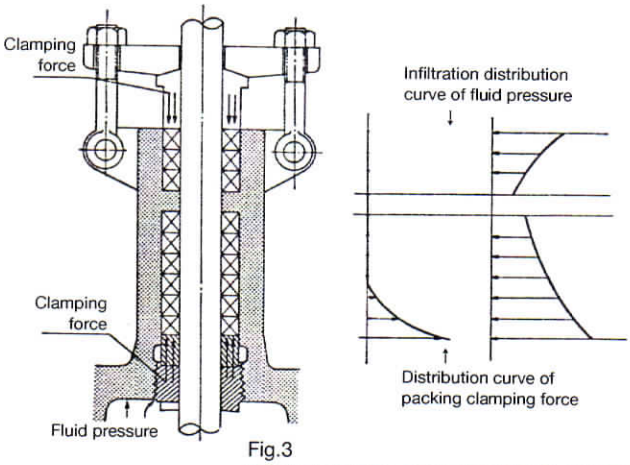



Fig.3
STUFFING BOX OF INTERIOR-CLAMPED-GLAND TYPE VALVE

## 2. Operation of Twin Pack Valves

(1)The primary packing of the Twin Pack valve should be tightened under these conditions:

1) Before fluid runs in the lines after the construction pressure test, the primary packing should be tightened.
2) At any sign of a small leak during plant operation, tighten the packing.
3) At the annual plant maintenance shut down, the packing should be tightened.

(2) Procedure to apply pressure to the primary packing

1) For a gate valve (Fig.4)
   a. Open valve wide open by turning counter clockwise.
   b. Discontinue turning when the wheel stops.
   c. Release the lock nut to free the stopper
   d. Turn the step top lever clockwise 30 to 45 degrees and the packing is clamped.
   e. Tighten the lock nut and place the stopper in the original positions. It is important to return to the initial state.
2) For a globe valve (Fig.5) and a forged valve (1 1/2" and smaller)
   a. Open valve wide open by turning counter clockwise.
   b. Discontinue turning when the wheel stops.
   c. Turn further in the same direction (counter clockwise) 30 to 45 degrees and the packing has been clamped.

(3)Maintenance instructions should call attention to the following:

1) In case of these valves for control valves, isolation valves, or drain valves, the valves are not normally opened to the full open position which would have tightened the packing...So, during maintenance Shut-down, the valve should be opened to the full open position to tighten the primary packing.
2) It is good practice include the above maintenance information on the name plate of each valve.
3) Any small leak is important and should not be ignored...Tighten the primary packing and also tighten the secondary packing to insure a sure seal.
4) For the gate valve, do not turn the lever to the left after the primary packing has been clamped. The screw of the clutch returns to the original position and, if the lever is turned to the left, the clamped packing can become loose.
5) For the globe valve and forged valve (1 1/2" and smaller), do not use a hacker (a wheel key), If the valve is opened with the wheel key, the primary packing may be closed too much.
6) To replace the primary packing with new packing, disassemble the clutch from the bonnet with the tools.

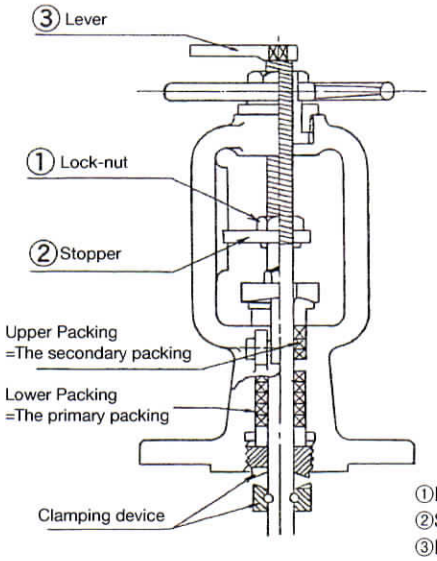



Fig.4 GATE VALVE

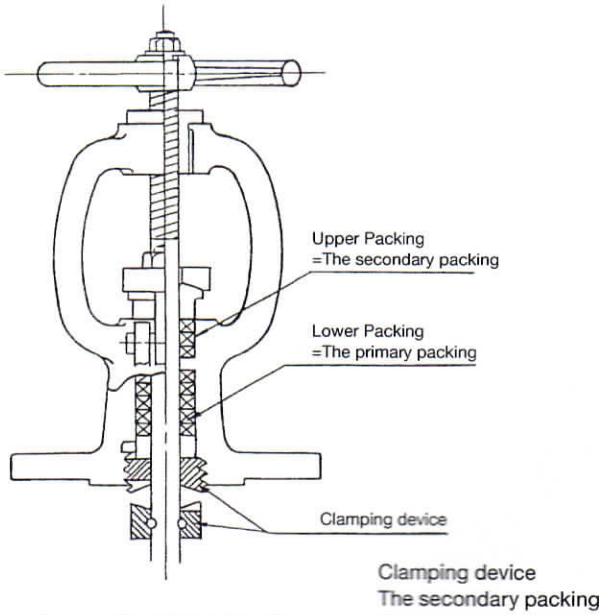



Fig.5 GLOBE VALVE

## 3. Twin Pack valves can be used on special fluids and special

(1) For heating media

Dowtherm A, Therm S, S-K Oil, Marlotherm, Essotherm, HTS, Hygrotherm, Fused Lead, Fused Sodium, Fused Potassium, etc

(2) For high pressure, high temperature steam

(3) For hazardous gas and liquids such as hydrogen

chloride (refer to the Yellow Twin Pack), hydrogen sulfide, phosgene, carbon monoxide, etc.

(4) For prevention of pollution by preventing leaks of sulfurous acid gas, acetic acid, carbon dioxide

(5) For use for vacuum to a maximum $10^{-2}$mm Hg

(6) For low molecular weight gases

Hydrogen, Oxygen, Freon, Gas, LPG etc.

(7) For nuclear power plant

## 4. Specifications

Twin Pack Valves are designed, the same as common valves, to conform to API 600, and ANSI B16.5 and the same pressure/temperature ratings apply. Please refer to attached tables for 150#, 300#, 10K, and 20k, standard valves.

(1) Nominal pressure class

150#, 300#, 600#, 900#, 1500#,
10K, 20K, 40K, 63K

(2) Nominal bore size

1/2" to 36"

(3) Available as gate valves or globe valves

## 5. Materials

(1) Body material for Twin Pack valves is in acc ordance

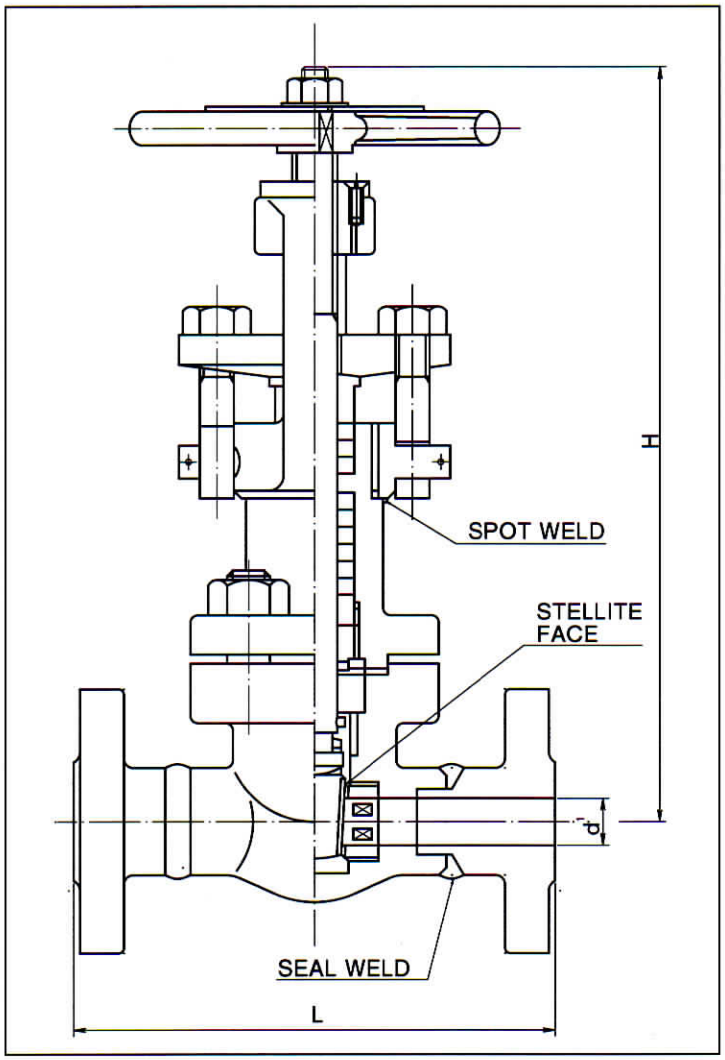
with API 600. Common materials are carbon steel, alloy steel, and stainless steel. Other materials like monel can be supplied as required by the customer. Standard trim materials are 13 Cr and 18-8 stainless steel. Monel and other materials are available.

(2) Material for trim

13Cr and 18-8 stainless steels, etc are used in conformity with API STD 600. Special material, such as Monel metal, may be used when so requested by customer, as well.

# *Twin-Pack* FORGED STEEL FLANGED ENDS GATE VALVES

## ■150LB, 300LB (10K, 20K)




## MATERIAL

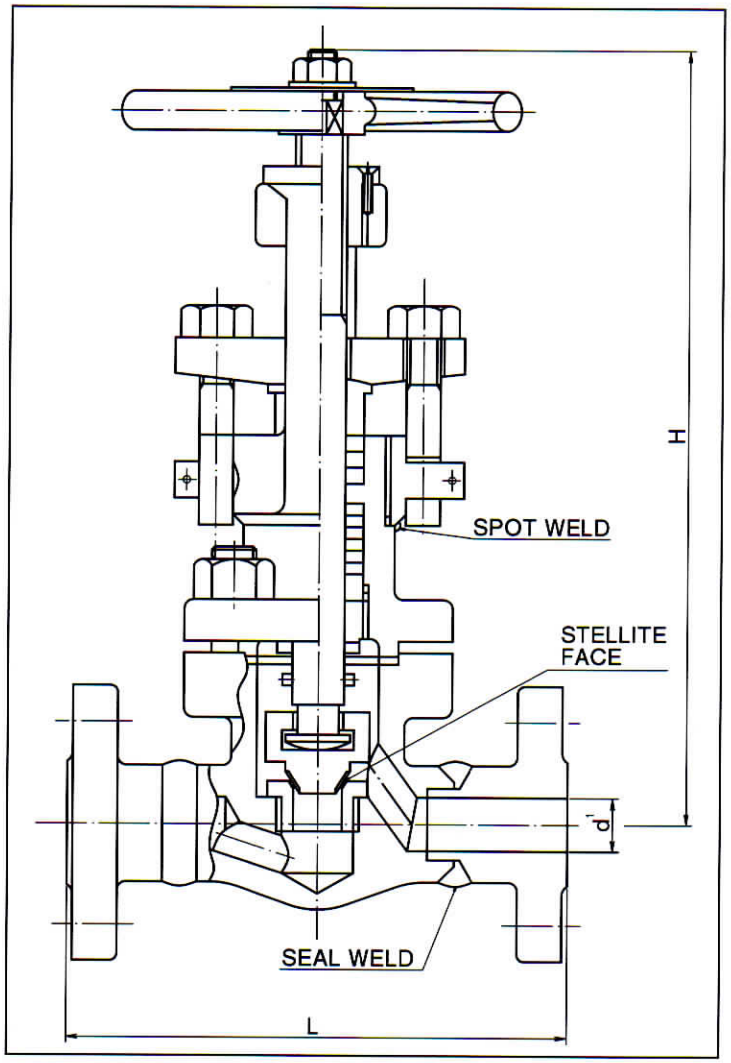
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | S25C | A105 |
| 2 | BODY SEAT | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | S25C | A105 |
| 7 | STUD BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GLAND PACKING | | |
| 10 | GLAND | SUS420J2 | 13%Cr S.S |
| 11 | GLAND FLANGE | SCPH2 | CARBON STEEL |
| 12 | GLAND EYE BOLT | SNB7 | A193-B7 |
| 13 | NUT | S45C | A194-2H |
| 14 | SPLIT PIN | SWRM3 | CARBON STEEL |
| 15 | YOKE | SCPH2 | CARBON STEEL |
| 16 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 17 | SET SCREW | SUS304 | 304 S.S |
| 18 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | WASHER | SS41 | CARBON STEEL |
| 21 | LOCK NUT | SS41 | CARBON STEEL |
| 22 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 23 | CLAMPING DEVICE | SUS420J2 | 13%Cr S.S |
| 24 | KNOCK PIN | SUS304 | 304 S.S |

## WEIGHT AND DIMENSIONS

| SIZE | 150Lb (10K) | | | | | 300Lb (20K) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | DIMENSIONS mm | | | NET WEIGHTS kg | | DIMENSIONS mm | | | NET WEIGHTS kg | |
| | b | L | H | 150Lb | 10K | b | L | H | 300Lb | 20K |
| 1/2" | 16 | 140 | 280 | 7.4 | 7.6 | 16 | 140 | 280 | 7.8 | 7.8 |
| 3/4" | 21 | 152 | 280 | 7.6 | 7.8 | 21 | 152 | 280 | 8.0 | 8.0 |
| 1" | 26 | 178 | 308 | 9.1 | 9.3 | 26 | 165 | 308 | 9.5 | 9.1 |
| 1 1/2" | 38 | 190 | 374 | 18.0 | 18.1 | 38 | 190 | 374 | 18.5 | 18.2 |

# *Twin-Pack* FORGED STEEL FLANGED ENDS GLOBE VALVES

## ■150LB, 300LB (10K, 20K)




## MATERIAL

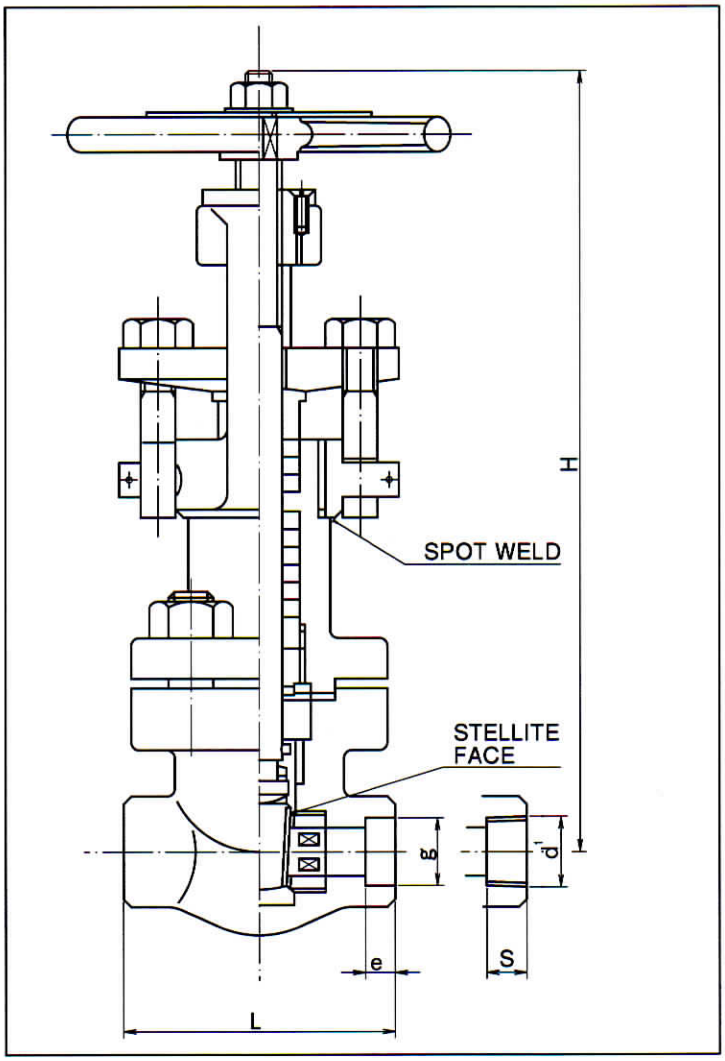
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | S25C | A105 |
| 2 | BODY SEAT | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | S25C | A105 |
| 7 | STUD BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GLAND PACKING | | |
| 10 | GLAND | SUS420J2 | 13%Cr S.S |
| 11 | GLAND FLANGE | SCPH2 | CARBON STEEL |
| 12 | GLAND EYE BOLT | SNB7 | A193-B7 |
| 13 | NUT | S45C | A194-2H |
| 14 | SPLIT PIN | SWRM3 | CARBON STEEL |
| 15 | YOKE | SCPH2 | CARBON STEEL |
| 16 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 17 | SET SCREW | SUS304 | 304 S.S |
| 18 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | WASHER | SS41 | CARBON STEEL |
| 21 | LOCK NUT | SS41 | CARBON STEEL |
| 22 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 23 | CLAMPING DEVICE | SUS420J2 | 13%Cr S.S |
| 24 | KNOCK PIN | SUS304 | 304 S.S |

## WEIGHT AND DIMENSIONS

| SIZE | 150Lb (10K) | | | | | 300Lb (20K) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | DIMENSIONS mm | | | NET WEIGHTS kg | | DIMENSIONS mm | | | NET WEIGHTS kg | |
| | b | L | H | 150Lb | 10K | b | L | H | 300Lb | 20K |
| 1/2" | 16 | 140 | 270 | 7.4 | 7.6 | 16 | 152 | 270 | 7.8 | 7.8 |
| 3/4" | 21 | 152 | 270 | 7.6 | 7.8 | 21 | 178 | 270 | 8.0 | 8.0 |
| 1" | 26 | 178 | 294 | 8.7 | 8.8 | 26 | 203 | 294 | 9.0 | 9.0 |
| 1 1/2" | 38 | 190 | 323 | 17.6 | 18.0 | 38 | 229 | 323 | 18.0 | 18.0 |

# Twin-Pack FORGED STEEL SOCKET WELDING ENDS SCREWED ENDS GATE VALVES

## ■300LB, 600LB (20K, 40K)




## MATERIAL

| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | S25C | A105 |
| 2 | BODY SEAT | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | S25C | A105 |
| 7 | STUD BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GLAND PACKING | | |
| 10 | GLAND | SUS420J2 | 13%Cr S.S |
| 11 | GLAND FLANGE | SCPH2 | CARBON STEEL |
| 12 | GLAND EYE BOLT | SNB7 | A193-B7 |
| 13 | NUT | S45C | A194-2H |
| 14 | SPLIT PIN | SWRM3 | CARBON STEEL |
| 15 | YOKE | SCPH2 | CARBON STEEL |
| 16 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 17 | SET SCREW | SUS304 | 304 S.S |
| 18 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | WASHER | SS41 | CARBON STEEL |
| 21 | LOCK NUT | SS41 | CARBON STEEL |
| 22 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 23 | CLAMPING DEVICE | SUS420J2 | 13%Cr S.S |
| 24 | KNOCK PIN | SUS304 | 304 S.S |

## WEIGHT AND DIMENSIONS

SOCKET WELDING ENDS (SW)

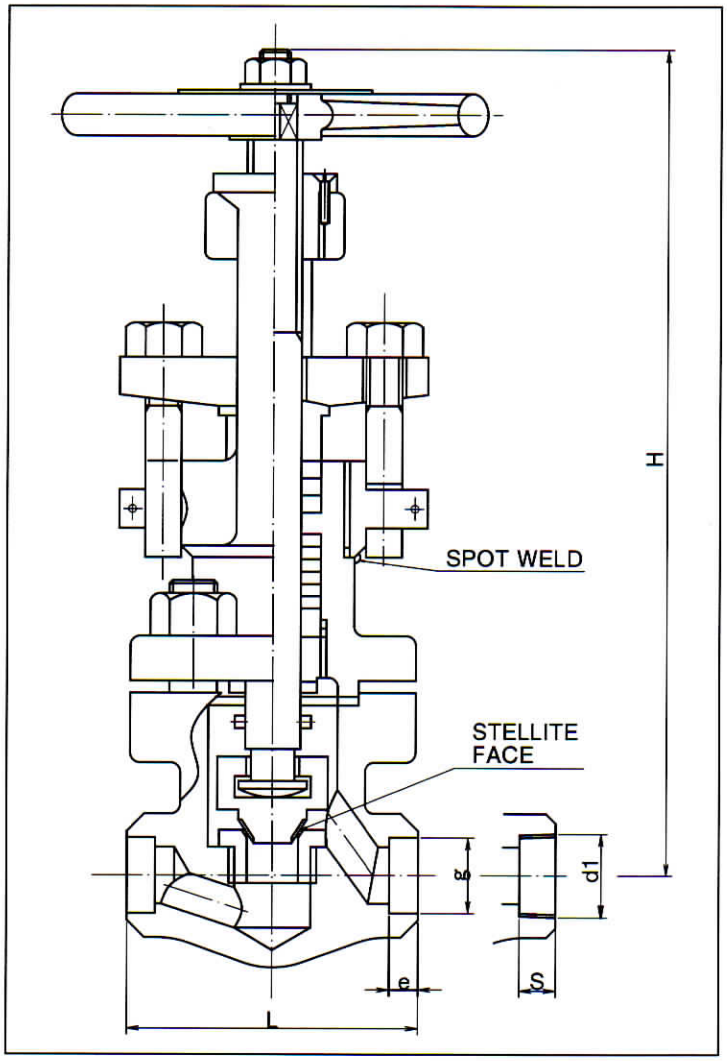
| SIZE | 300Lb (20K) DIMENSIONS mm | | | | NET WEIGHT kg | 600Lb (40K) DIMENSIONS mm | | | | NET WEIGHT kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | g | e | H | | L | g | e | H | |
| 1/2" | 79 | 22.2 | 9.6 | 280 | 5.3 | 92 | 22.2 | 9.6 | 280 | 5.5 |
| 3/4" | 92 | 27.7 | 12.7 | 280 | 5.5 | 111 | 27.7 | 12.7 | 308 | 7.2 |
| 1" | 111 | 34.5 | 12.7 | 308 | 7.2 | 127 | 34.5 | 12.7 | 340 | 10.4 |
| 1 1/2" | 152 | 49.1 | 12.7 | 374 | 13.0 | 171 | 49.1 | 12.7 | 395 | 16.9 |

SCREWED ENDS (S)

| SIZE | 300Lb (20K) DIMENSIONS mm | | | | NET WEIGHT kg | 600Lb (40K) DIMENSIONS mm | | | | NET WEIGHT kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | d1 | S | H | | L | d1 | S | H | |
| 1/2" | 79 | PT1/2 | 12 | 280 | 5.3 | 92 | PT1/2 | 12 | 280 | 5.5 |
| 3/4" | 92 | PT3/4 | 14 | 280 | 5.5 | 111 | PT3/4 | 14 | 308 | 7.2 |
| 1" | 111 | PT1 | 16 | 308 | 7.2 | 127 | PT1 | 16 | 340 | 10.4 |
| 1 1/2" | 152 | PT1 1/2 | 18 | 374 | 13.0 | 171 | PT1 1/2 | 18 | 395 | 16.9 |

# Twin-Pack FORGED STEEL SOCKET WELDING ENDS SCREWED ENDS GLOBE VALVES

## ■300LB, 600LB (20K, 40K)




## MATERIAL

| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | S25C | A105 |
| 2 | BODY SEAT | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | S25C | A105 |
| 7 | STUD BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GLAND PACKING | | |
| 10 | GLAND | SUS420J2 | 13%Cr S.S |
| 11 | GLAND FLANGE | SCPH2 | CARBON STEEL |
| 12 | GLAND EYE BOLT | SNB7 | A193-B7 |
| 13 | NUT | S45C | A194-2H |
| 14 | SPLIT PIN | SWRM3 | CARBON STEEL |
| 15 | YOKE | SCPH2 | CARBON STEEL |
| 16 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 17 | SET SCREW | SUS304 | 304 S.S |
| 18 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | WASHER | SS41 | CARBON STEEL |
| 21 | LOCK NUT | SS41 | CARBON STEEL |
| 22 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 23 | CLAMPING DEVICE | SUS420J2 | 13%Cr S.S |
| 24 | KNOCK PIN | SUS304 | 304 S.S |

## WEIGHT AND DIMENSIONS

SOCKET WELDING ENDS (SW)

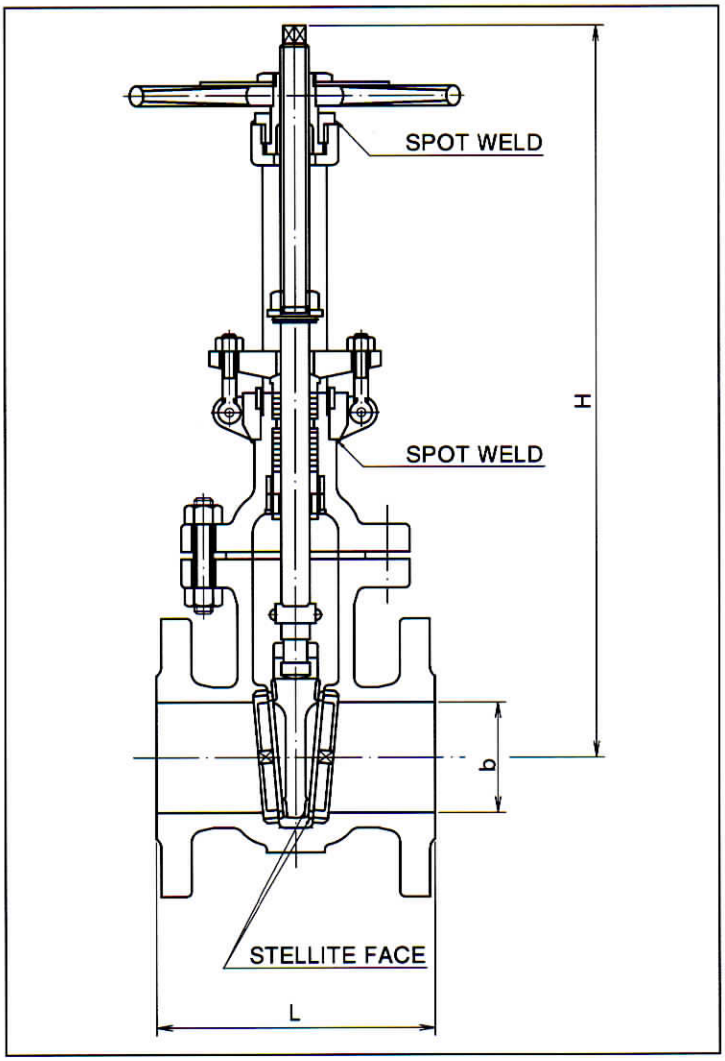
| SIZE | 300Lb (20K) DIMENSIONS mm | | | | NET WEIGHT kg | 600Lb (40K) DIMENSIONS mm | | | | NET WEIGHT kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | g | e | H | | L | g | e | H | |
| 1/2" | 92 | 22.2 | 9.6 | 270 | 5.0 | 92 | 22.2 | 9.6 | 270 | 5.0 |
| 3/4" | 92 | 27.7 | 12.7 | 270 | 5.5 | 111 | 27.7 | 12.7 | 270 | 7.0 |
| 1" | 111 | 34.5 | 12.7 | 294 | 7.2 | 127 | 34.5 | 12.7 | 294 | 10.0 |
| 1 1/2" | 152 | 49.1 | 12.7 | 323 | 13.0 | 171 | 49.1 | 12.7 | 323 | 16.0 |

SCREWED ENDS (S)

| SIZE | 300Lb (20K) DIMENSIONS mm | | | | NET WEIGHT kg | 600Lb (40K) DIMENSIONS mm | | | | NET WEIGHT kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | d1 | S | H | | L | d1 | S | H | |
| 1/2" | 92 | PT1/2 | 12 | 270 | 5.0 | 92 | PT1/2 | 12 | 270 | 5.0 |
| 3/4" | 92 | PT3/4 | 14 | 270 | 5.5 | 111 | PT3/4 | 14 | 270 | 7.0 |
| 1" | 111 | PT1 | 16 | 294 | 7.2 | 127 | PT1 | 16 | 294 | 10.0 |
| 1 1/2" | 152 | PT1 1/2 | 18 | 323 | 13.0 | 171 | PT1 1/2 | 18 | 323 | 16.0 |

# Twin-Pack CAST STEEL FLANGED ENDS GATE VALVES

## ■150LB (10K)




## MATERIAL

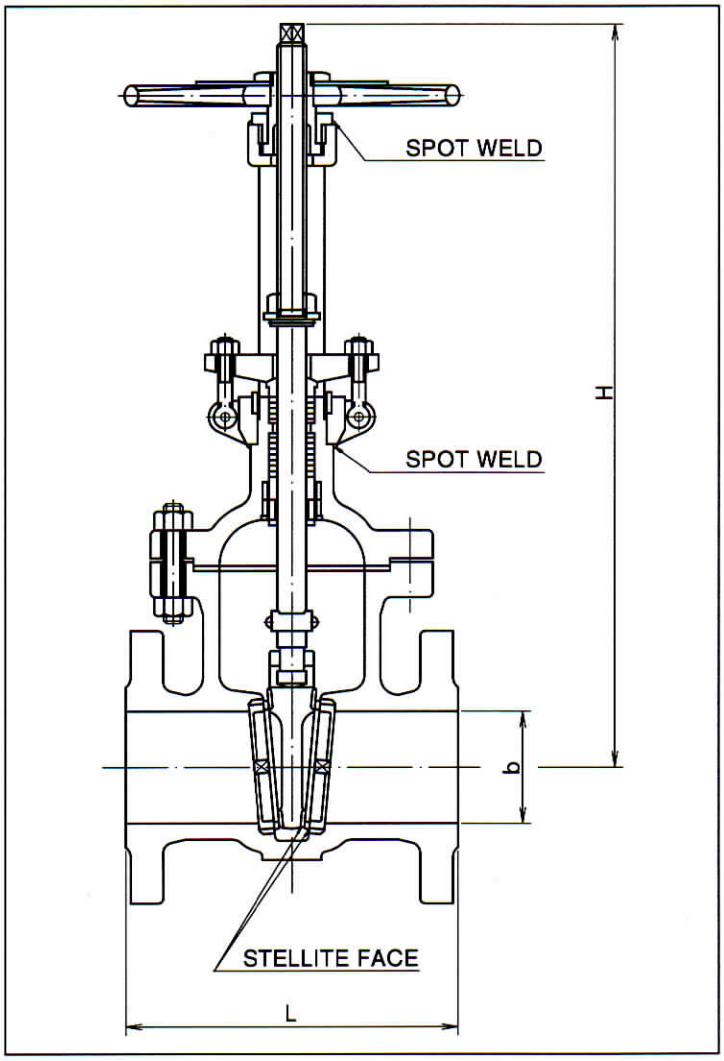
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | SCPH2 | A216-WCB |
| 2 | BODY SEAT RING | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | SCPH2 | A216-WCB |
| 7 | BONNET BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | BONNET BUSH | SUS420J2 | 13%Cr S.S |
| 10 | GLAND PACKING | | |
| 11 | GLAND | SUS420J2 | 13%Cr S.S |
| 12 | GLAND FLANGE | S25C | CARBON STEEL |
| 13 | GLAND EYE BOLT | S25C | CARBON STEEL |
| 14 | NUT | S20C | CARBON STEEL |
| 15 | YOKE SLEEVE | NiBC | Ni-Cu ALLOY |
| 16 | SLEEVE RETAINING NUT | S25C | CARBON STEEL |
| 17 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 18 | LOCK NUT | SS41 | CARBON STEEL |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | SET SCREW | SUS304 | 304 S.S |
| 21 | YOKE | SCPH2 | A216-WCB |
| 22 | YOKE RETAINING NUT | S25C | CARBON STEEL |
| 23 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 24 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 25 | CLUTCH | SUS420J2 | 13%Cr S.S |
| 26 | KNOCK PIN | SUS304 | 304 S.S |
| 27 | STOPPER | SS41 | CARBON STEEL |
| 28 | KNOCK PIN | SUS304 | 304 S.S |
| 29 | LOCK NUT | SS41 | CARBON STEEL |
| 30 | BALL-BEARING | | |

## WEIGHT AND DIMENSIONS

| SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | | SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | L | H | 150Lb | 10K | | b | L | H | 150Lb | 10K |
| 2" | 51 | 178 | 552 | 23.5 | 23.7 | 8" | 203 | 292 | 1280 | 135.0 | 132.0 |
| 2 1/2" | 64 | 190 | 630 | 27.0 | 26.8 | 10" | 254 | 330 | 1538 | 208.0 | 206.0 |
| 3" | 76 | 203 | 673 | 33.0 | 32.5 | 12" | 305 | 356 | 1755 | 285.0 | 271.0 |
| 4" | 102 | 229 | 777 | 49.0 | 46.5 | 14" | 337 | 381 | 1876 | 385.0 | 366.0 |
| 6" | 152 | 267 | 1049 | 90.0 | 90.2 | 16" | 387 | 406 | 2091 | 505.0 | 486.0 |

# Twin-Pack CAST STEEL FLANGED ENDS GATE VALVES

## ■300LB (20K)




## MATERIAL

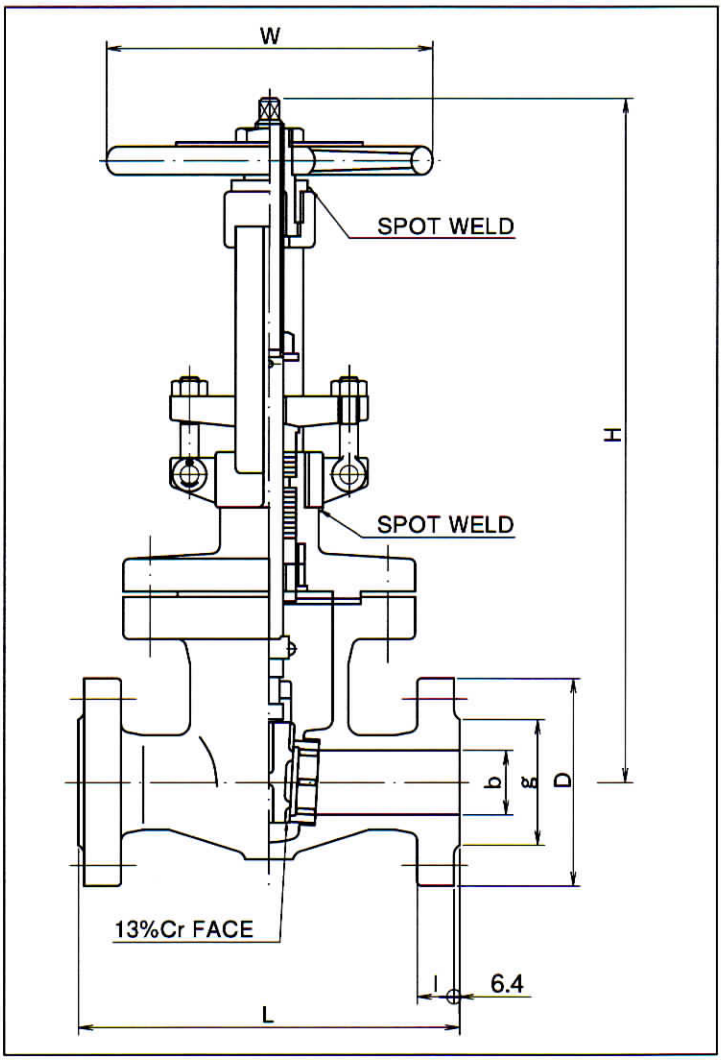
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | SCPH2 | A216-WCB |
| 2 | BODY SEAT RING | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | STEM | SUS403 | 13%Cr S.S |
| 5 | GASKET | | |
| 6 | BONNET | SCPH2 | A216-WCB |
| 7 | BONNET BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | BONNET BUSH | SUS420J2 | 13%Cr S.S |
| 10 | GLAND PACKING | | |
| 11 | GLAND | SUS420J2 | 13%Cr S.S |
| 12 | GLAND FLANGE | S25C | CARBON STEEL |
| 13 | GLAND EYE BOLT | S25C | CARBON STEEL |
| 14 | NUT | S20C | CARBON STEEL |
| 15 | YOKE SLEEVE | NiBC | Ni-Cu ALLOY |
| 16 | SLEEVE RETAINING NUT | S25C | CARBON STEEL |
| 17 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 18 | LOCK NUT | SS41 | CARBON STEEL |
| 19 | NAME PLATE | AL. P | ALUMINIUM |
| 20 | SET SCREW | SUS304 | 304 S.S |
| 21 | YOKE | SCPH2 | A216-WCB |
| 22 | YOKE RETAINING NUT | S25C | CARBON STEEL |
| 23 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 24 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 25 | CLUTCH | SUS420J2 | 13%Cr S.S |
| 26 | KNOCK PIN | SUS304 | 304 S.S |
| 27 | STOPPER | SS41 | CARBON STEEL |
| 28 | KNOCK PIN | SUS304 | 304 S.S |
| 29 | LOCK NUT | SS41 | CARBON STEEL |
| 30 | BALL-BEARING | | |

## WEIGHT AND DIMENSIONS

| SIZE | DIMENSIONS mm | | | NET WEIGHT kg | | SIZE | DIMENSIONS mm | | | NET WEIGHT kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | L | H | 300Lb | 20K | | b | L | H | 300Lb | 20K |
| 2" | 51 | 216 | 548 | 30.0 | 29.0 | 6" | 152 | 403 | 1054 | 160.0 | 156.0 |
| 2 1/2" | 64 | 241 | 588 | 46.0 | 44.5 | 8" | 203 | 419 | 1331 | 240.0 | 229.0 |
| 3" | 76 | 283 | 668 | 56.0 | 54.5 | 10" | 254 | 457 | 1505 | 350.0 | 343.0 |
| 4" | 102 | 305 | 777 | 84.0 | 79.0 | 12" | 305 | 502 | 1798 | 540.0 | 515.0 |
| 6" | 152 | 267 | 1049 | 90.0 | 90.2 | 16" | 387 | 406 | 2091 | 505.0 | 486.0 |

# *Twin-Pack* CAST STEEL FLANGED ENDS GATE VALVES

## ■600LB (30K)




## MATERIAL

| No. | NAME OF PART | | MATERIALS | REMARK |
|---|---|---|---|---|
| 1 | BODY | | A216-WCB | |
| 2 | BODY SEAT RING | | | |
| 3 | DISC | 4" & UNDER | A182-F6a | |
| | | 5" & UNDER | A216-WCB | 13Cr FACE |
| 4 | DISC STEM RING | | A182-F6a | |
| 4 | STEM | | A182-F6a | HARD-Cr PLATED |
| 5 | BONNET BUSH | | A182-F6a | |
| 6 | BONNET | | A216-WCB | |
| 7 | BONNET GASKET | | SPIRAL-WOUND STAINLESS GRAFOIL FILLED(V#6592) | |
| 8 | BONNET BOLT | | A193-B7 | |
| 9 | BONNET BOLT NUT | | A194-2H | |
| 10 | YOKE | | A216-WCB | |
| 11 | GLAND | | A182-F6a | |
| 12 | GLAND PACKING | | GRAPHAITE &CARBON FIBER PACKING(P#6527+P#6610) | |
| 13 | GLAND FLANGE | | A105 | |
| 14 | GRAND EYE BOLT | | A193-B7 | |
| 15 | GRAND EYE BOLT NUT | | A194-2H | |
| 16 | EYE BOLT PIN | | 13%Cr STEEL | |
| 17 | EYE BOLT PIN WASHER | | CARBON STEEL | |
| 18 | COTTER PIN | | MILD STEEL | |
| 19 | YOKE SLEEVE | | AL-BRONZE | |
| 20 | SLEEVE NUT | | CARBON STEEL | |
| 21 | HAND WHEEL | | DUCTILE IRON | |
| 22 | LOCK NUT | | CARBON STEEL | |
| 23 | SET SCREW | | TYPE 304 | |
| 24 | NAME PLATE | | ALUMINUM | |
| 25 | CLUTCH | | A182-F6a | |
| 26 | PACKING WASHER | | A182-F6a | |
| 27 | PACKING WASHER | | A182-F6a | |
| 28 | GLAND PACKING | | CARBON FIBER PACKING(P#6527) | |
| 29 | KNOCK PIN | | TYPE 304 | |
| 30 | STOPPER | | CARBON STEEL | |
| 31 | LOCK NUT | | CARBON STEEL | |
| 32 | KNOCK PIN | | TYPE 304 | |
| 33 | GREASE NIPPLE | | BRASS | 6" & OVER |
| 34 | STOPPER | | CARBON STEEL | 6" & OVER |
| 35 | SET PIN | | MILD STEEL | 6" & OVER |
| 36 | THRUST BEARING | | STEEL | |

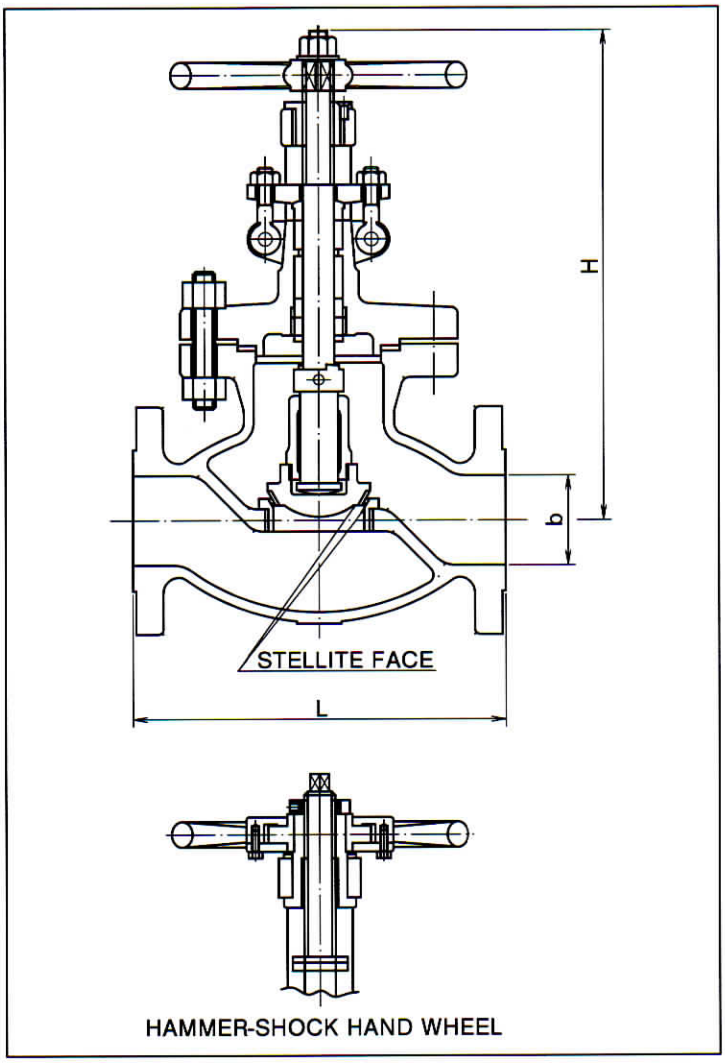
## WEIGHT AND DIMENSIONS

DIMENSIONS: mm

| SIZE | L | b | t | D | g | C | N - d | H | | W | Q'TY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | SHUT | OPEN | | |
| 4" | 432 | 102 | 38.1 | 273 | 157 | 216 | 8-25 | 780 | 897 | 355 | |
| 6" | 559 | 152 | 47.8 | 356 | 216 | 292 | 12-29 | 1067 | 1230 | 500 | |
| 8" | 660 | 200 | 55.7 | 419 | 270 | 349 | 12-32 | | | | |

# Twin-Pack CAST STEEL FLANGED ENDS GLOBE VALVES

## ■150LB (10K)




HAMMER-SHOCK HAND WHEEL

## MATERIAL

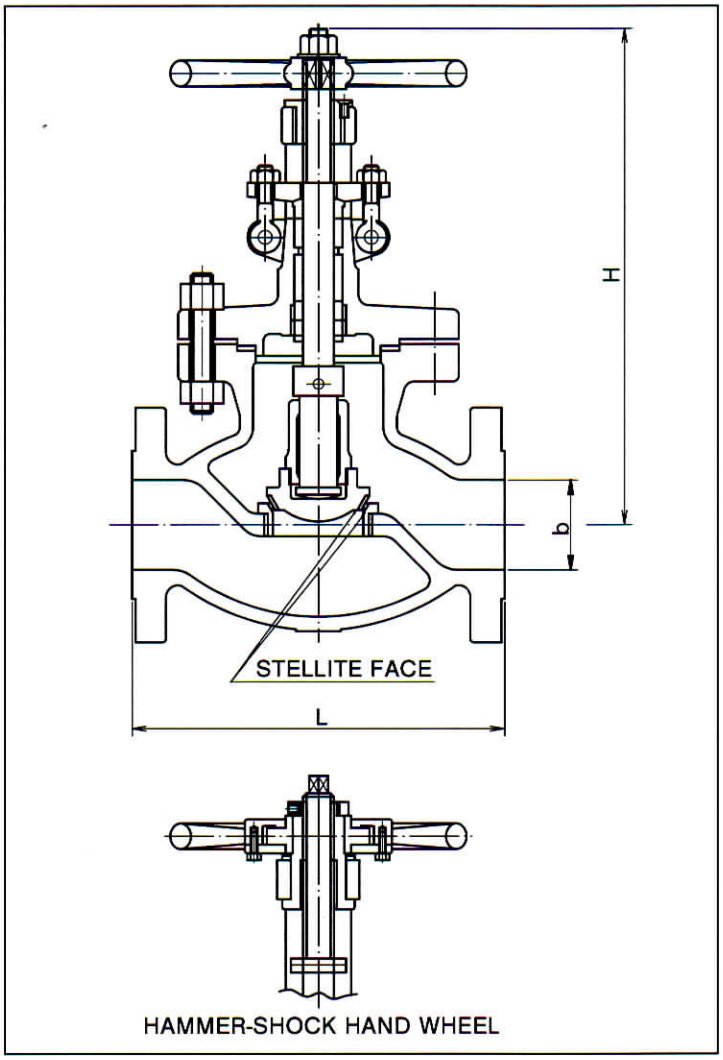
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | SCPH2 | A216-WCB |
| 2 | BODY SEAT RING | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | DISC NUT | SUS403 | 13%Cr S.S |
| 5 | STEM | SUS403 | 13%Cr S.S |
| 6 | BONNET | SCPH2 | A216-WCB |
| 7 | BONNET BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GASKET | | |
| 10 | BONNET BUSH | SUS420J2 | 13%Cr S.S |
| 11 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 12 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 13 | GLAND PACKING | | |
| 14 | GLAND | SUS420J2 | 13%Cr S.S |
| 15 | GLAND FLANGE | S25C | CARBON STEEL |
| 16 | EYE BOLT | S25C | CARBON STEEL |
| 17 | NUT | S20C | CARBON STEEL |
| 18 | PIN | SUS403 | 13%Cr S.S |
| 19 | WASHER | SS41 | CARBON STEEL |
| 20 | SPLIT PIN | SWRM3 | CARBON STEEL |
| 21 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 22 | SET SCREW | SUS304 | 304 S.S |
| 23 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 24 | WASHER | SS41 | CARBON STEEL |
| 25 | LOCK NUT | SS41 | CARBON STEEL |
| 26 | NAME PLATE | AL P | ALUMINIUM |
| 27 | CLUTCH | SUS420J2 | 13%Cr S.S |
| 28 | KNOCK PIN | SUS304 | 304 S.S |

## WEIGHT AND DIMENSIONS

| SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | | SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | L | H | 150Lb | 10K | | b | L | H | 150Lb | 10K |
| 2" | 51 | 203 | 400 | 27.0 | 27.2 | 6" | 152 | 406 | 598 | 115.0 | 115.2 |
| 2 1/2" | 64 | 216 | 425 | 36.0 | 35.8 | 8" | 203 | 495 | 719 | 200.0 | 197.0 |
| 3" | 76 | 241 | 455 | 41.0 | 40.5 | 10" | 254 | 622 | 1040 | 315.0 | 313.0 |
| 4" | 102 | 292 | 509 | 65.0 | 62.5 | 12" | 305 | 698 | 1201 | 495.0 | 481.0 |

# *Twin-Pack* CAST STEEL FLANGED ENDS GLOBE VALVES

## ■300LB (20K)




HAMMER-SHOCK HAND WHEEL

## MATERIAL

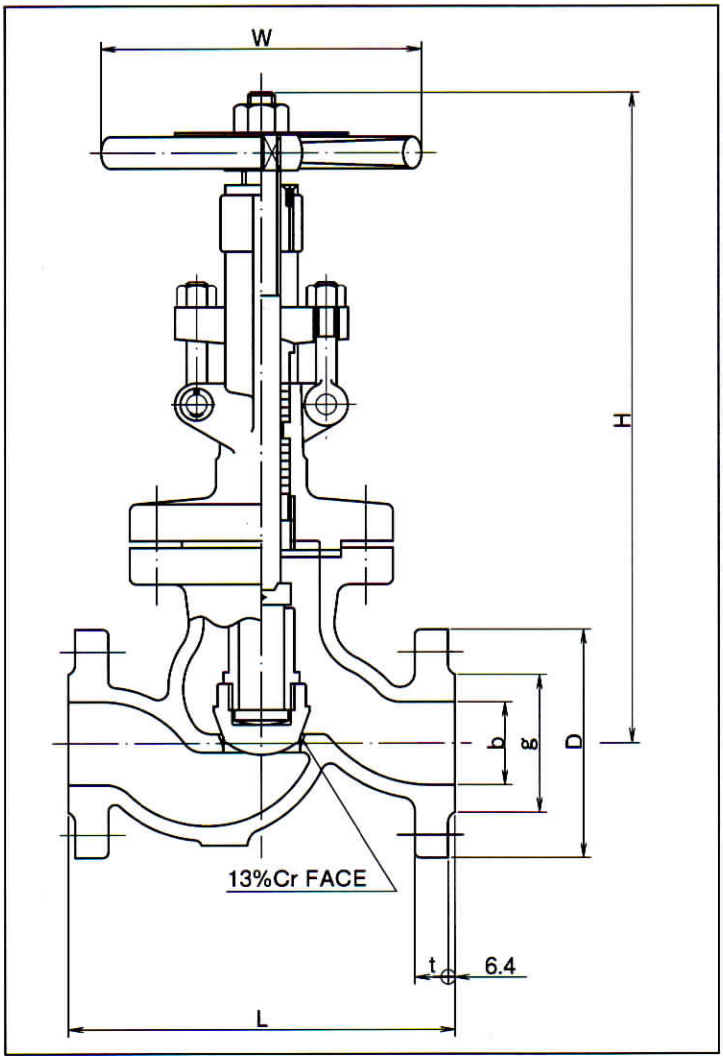
| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | SCPH2 | A216-WCB |
| 2 | BODY SEAT RING | S25C | CARBON STEEL |
| 3 | DISC | S25C | CARBON STEEL |
| 4 | DISC NUT | SUS403 | 13%Cr S.S |
| 5 | STEM | SUS403 | 13%Cr S.S |
| 6 | BONNET | SCPH2 | A216-WCB |
| 7 | BONNET BOLT | SNB7 | A193-B7 |
| 8 | NUT | S45C | A194-2H |
| 9 | GASKET | | |
| 10 | BONNET BUSH | SUS420J2 | 13%Cr S.S |
| 11 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 12 | PACKING WASHER | SUS420J2 | 13%Cr S.S |
| 13 | GLAND PACKING | | |
| 14 | GLAND | SUS420J2 | 13%Cr S.S |
| 15 | GLAND FLANGE | S25C | CARBON STEEL |
| 16 | EYE BOLT | S25C | CARBON STEEL |
| 17 | NUT | S20C | CARBON STEEL |
| 18 | PIN | SUS403 | 13%Cr S.S |
| 19 | WASHER | SS41 | CARBON STEEL |
| 20 | SPLIN PIN | SWRM3 | CARBON STEEL |
| 21 | YOKE BUSH | NiBC | Ni-Cu ALLOY |
| 22 | SET SCREW | SUS304 | 304S.S |
| 23 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 24 | WASHER | SS41 | CARBON STEEL |
| 25 | LOCK NUT | SS41 | CARBON STEEL |
| 26 | NAME PLATE | AL. P | ALUMINIUM |
| 27 | CLUTCH | SUS420J2 | 13%Cr S.S |
| 28 | KNOCK PIN | SUS304 | 304S.S |

## WEIGHT AND DIMENSIONS

| SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | | SIZE | DIMENSIONS mm | | | NET WEIGHTS kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | L | H | 300Lb | 20K | | b | L | H | 300Lb | 20K |
| 1 1/2" | 38 | 229 | 376 | 29.0 | 28.5 | 6" | 152 | 444 | 717 | 208.0 | 205.0 |
| 2" | 51 | 267 | 397 | 36.0 | 35.0 | 8" | 203 | 559 | 812 | 330.0 | 319.0 |
| 2 1/2" | 64 | 292 | 438 | 59.0 | 58.0 | 10" | 254 | 622 | 1015 | 495.0 | 488.0 |
| 3" | 76 | 318 | 464 | 70.0 | 69.0 | 12" | 305 | 711 | 1100 | 710.0 | 685.0 |
| 4" | 102 | 356 | 565 | 103.0 | 98.0 | | | | | | |

# *Twin-Pack* CAST STEEL FLANGED ENDS GLOBE VALVES

## ■600LB (30K)




## MATERIAL

| No. | NAME OF PART | MATERIALS | REMARK |
|---|---|---|---|
| 1 | BODY | A216-WCB | 13Cr FACE |
| 2 | | | |
| 3 | DISC | A182-F6a | |
| 4 | DISC STEM RING | A182-F6a | |
| 5 | STEM | A182-F6a | HARD-Cr PLATED |
| 6 | BONNET | A216-WCB | |
| 7 | BONNET BOLT | A193-B7 | |
| 8 | BONNET BOLT NUT | A194-2H | |
| 9 | BONNET GASKET | SPIRAL-WOUND STAINLESS GRAFOIL FILLED(V#6590) | |
| 10 | GLAND PACKING | GRAPHAITE &CARBON FIBER PACKING(P#6527+P#6610) | |
| 11 | PACKING WASHER | A182-F6a | |
| 12 | GLAND | A182-F6a | |
| 13 | GLAND FLANGE | A105 | |
| 14 | GRAND EYE BOLT | A193-B7 | |
| 15 | GRAND EYE BOLT NUT | A194-2H | |
| 16 | EYE BOLT PIN | 13%Cr STEEL | |
| 17 | EYE BOLT PIN WASHER | CARBON STEEL | |
| 18 | COTTER PIN | MILD STEEL | |
| 19 | | | |
| 20 | SET SCREW | TYPE 304 | |
| 21 | BUSHING | AL-BRONZE | |
| 22 | HAND WHEEL | DUCTILE IRON | |
| 23 | WASHER | CARBON STEEL | |
| 24 | LOCK NUT | CARBON STEEL | |
| 25 | | | |
| 26 | | | |
| 27 | BONNET BUSH | A182-F6a | |
| 28 | PACKING WASHER | A182-F6a | |
| 29 | GLAND PACKING | CARBON FIBER PACKING(P#6527) | |
| 30 | STOPPER | CARBON STEEL | |
| 31 | KNOCK PIN | TYPE 304 | |
| 32 | NAME PLATE | ALUMINUM | |

## WEIGHT AND DIMENSIONS

DIMENSIONS: mm

| SIZE | L | b | t | D | g | C | N - d | H | | W | Q'TY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | SHUT | OPEN | | |
| 1 1/2" | 241 | 38 | 22.4 | 15 | 73 | 114.5 | 4-22 | 420 | 439 | 250 | |
| 2" | 292 | 51 | 25.4 | 165 | 92 | 127.0 | 8-19 | 433 | 461 | 280 | |
| 2 1/2" | 330 | 64 | 28.5 | 190 | 105 | 149.0 | 8-22 | 437 | 471 | 280 | |
| 3" | 356 | 76 | 31.8 | 210 | 127 | 168.0 | 8-22 | 596 | 637 | 355 | |

# Yellow Twin Pack Valves

## 1. GENERAL

(1) The use of valves on chlorine gas or liquid can cause many problems. Chlorine gas and liquid are, for the most part, non-corrosive when contained in a vessel. But, if there is leakage at the gland packing, water or moisture in the air can from hypochlorous and hydrochloric acid. The upper portion of the gland packing, contacting surface of stem and gland packing, threaded portion of the stem, gland bolt and nut can be corroded. The purpose of the Ishida Yellow Twin Pack valve is to prevent the leakage and resultant corrosion.

(2) Attached chloride on the stem and other valve parts can cause seat leakage, damage of the gland packing and defective operation of the valve.

(3) As we know, chlorine gas is toxic and used by the military and causes environmental pollution. Ishida designed the YELLOW TWIN PACK VALVE using long experience in the production, application, and service of valves applied to chorine applications. Data from our Repair and Service factories in Chiba, Kashima and Tokuyama was especially useful. The valve uses materials specific for chlorine and the body is painted yellow for easy identification.

## 2. CONSTRUCTION AND MATERIALS

(1) The Yellow Twin Pack utilized a unique stuffing box design that resulazts in a valve that can be used successfully in chlorine application. (For detail of construction, refer to page 4-5).

(2) The special type of lip-packing is used for gland packing.

(3) The design of both the gate and the globe valve are of the non-rising stem type.

(4) Seat surface and body seat surface contacting the sliding surface of the stem are specially treated to prevent corrosion.

(5) Body materials used for low temperature chlorine service are;

Forged Steel Valves (1 1/2" and smaller):

ASTM A350-LF1

Cast Steel Valves, (2" and lager):

ASTM A352-LCB

or JIS G5152 SCPL1

# 3. FEATURES

(1) The Yellow Twin Pack Valve prevents leakage thru the gland packing and is most suitable where prevention of environmental pollution is important.

(2) The life of the gland packing is several times longer because of the Twin Pack mechanism to valve repair cost is reduced greatly.

(3) Both gate and globe valve in the Twin Pack are designed with a non-rising stem so the possibility of gland packing damage is minimal. The valve will remain maintenance free for a longer period.

(4) Ishida has cooperated with the manufacturer of packing to develop a suitable chlorine resistant packing for the Yellow Twin Pack valve.

(5) Areas of critical parts of the valve have special surface treatment to prevent attachment of chlorine. This provides smooth opening/closing of the valve and helps prevent seat leakage.

(6) Ishida has many years of manufacturing and repair of general purposes valves. We believe we are competent to select suitable materials for low temperature service.

**Comparison Table between Yellow Twin Pack Valves & Conventional valves**

| Service, Specification etc. | Yellow Twin Pack Valves | General Valves | Bellows Valves |
|---|---|---|---|
| 1) Prevention for Toxic / bad smell pollution. | ○ | × | ○ |
| 2) Grade of maintenance-free of a gland-portion | ○ | × | ○ |
| 3) Facility of manufacturing of large-size valve | ○ | ○ | × |
| 4) Safety for corrosive fluid | ○ | × | × |
| 5) Safety for abnormal pressure-raise | ○ | ○ | × |
| 6) Superiority for fluid-resistance | ○ | ○ | × |
| 7) Economy of a price | ○ | ○ | × |

# 4. SPECIFICATIONS

(1) Nominal Pressure Class

JIS 10K and JIS 20K

(2) Nominal Bore Size

3/8" thru 1 1/2" ·····Forged Steel

2" thru 12" ····· Cast Steel

(3) Standard types of valve are 3 types of gate, globe

(incl. Needle valves) and angle valves

(4) Dimension

①Standard face-to-face dimensions are shown in the dimension table of Twin Pack Valve.

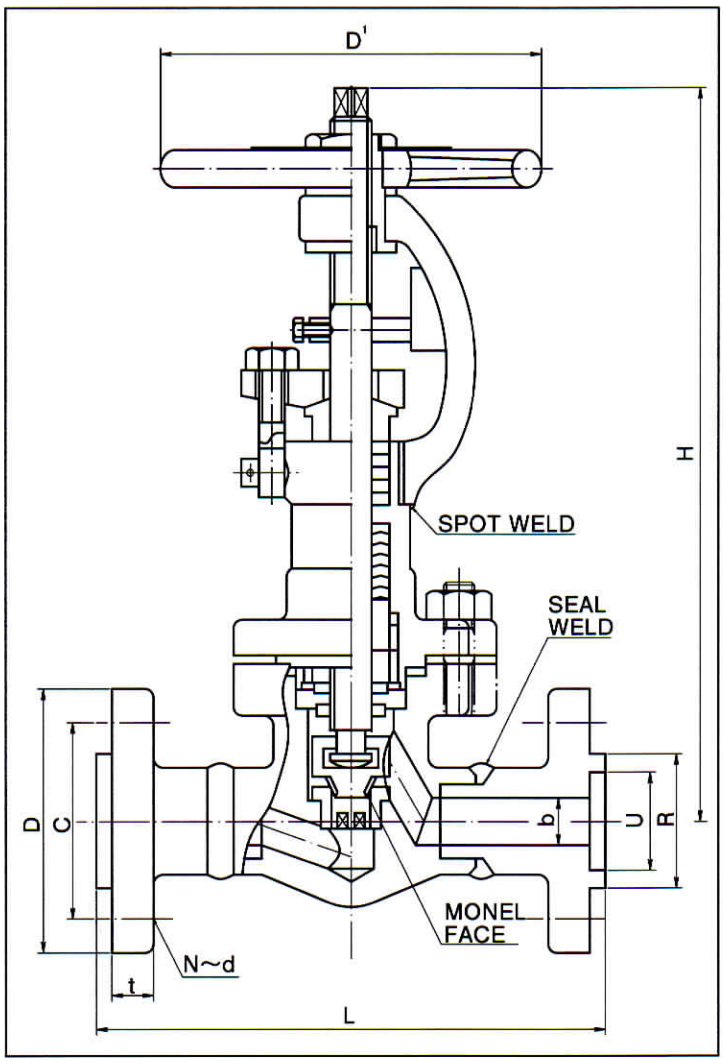
②Standard flange types are JIS 10K, JIS 20K, And ANSI Class150# & 300#.

③Special valves...In addition to the specifications shown, Ishida can design and manufacture valves to meet your requirements...

Please contact our Sales Department with the details of your application.

# *Yellow Twin-Pack Valves* FORGED STEEL FLANGED ENDS

## ■300LB (20K)




## MATERIAL

| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | S25C | CARBON STEEL |
| 2 | BODY SEAT RING | R-MONEL | CARBON STEEL |
| 3 | DISC | SUS316 | 316 S.S |
| 4 | STEM * | SUS304 | 304 S.S |
| 5 | BONNET BUSH * | SUS304 | 304 S.S |
| 6 | BONNET * | S25C | CARBON STEEL |
| 7 | YOKE | SCPH2 | CARBON STEEL |
| 8 | BONNET GASKET | PILLER #4400 | |
| 9 | BONNET BOLT | SUS304 | 304 S.S |
| 10 | BONNET BOLT NUT | SUS304 | 304 S.S |
| 11 | GLAND PACKING | PILLER #4260 | |
| 12 | GLAND PACKING | PILLER #4533+#4513 | |
| 13 | PACKING WASHER | SUS304 | 304 S.S |
| 14 | GLAND * | SUS304 | 304 S.S |
| 15 | GLAND FLANGE | SUS403 | 13%Cr S.S. |
| 16 | GLAND EYE BOLT | SUS304 | 304 S.S |
| 17 | GLAND EYE BOLT NUT | SUS304 | 304 S.S |
| 18 | COTTER PIN | SUS304 | 304 S.S |
| 19 | YOKE SLEEVE | Ni-RESIST | A439-D2 |
| 20 | SLEEVE WASHER | SUS304 | 304 S.S |
| 21 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 22 | LOCK NUT | S25C | CARBON STEEL |
| 23 | SET SCREW | SUS304 | 304 S.S |
| 24 | NAME PLATE | SUS304 | 304 S.S |
| 25 | SET BOLT | SUS304 | 304 S.S |
| 26 | FLANG | S25C | CARBON STEEL |
| 27 | KNOCK PIN | SUS304 | 304 S.S |
| 28 | STOPPER | SUS304 | CARBON STEEL |

*SURFACE TREATMENT

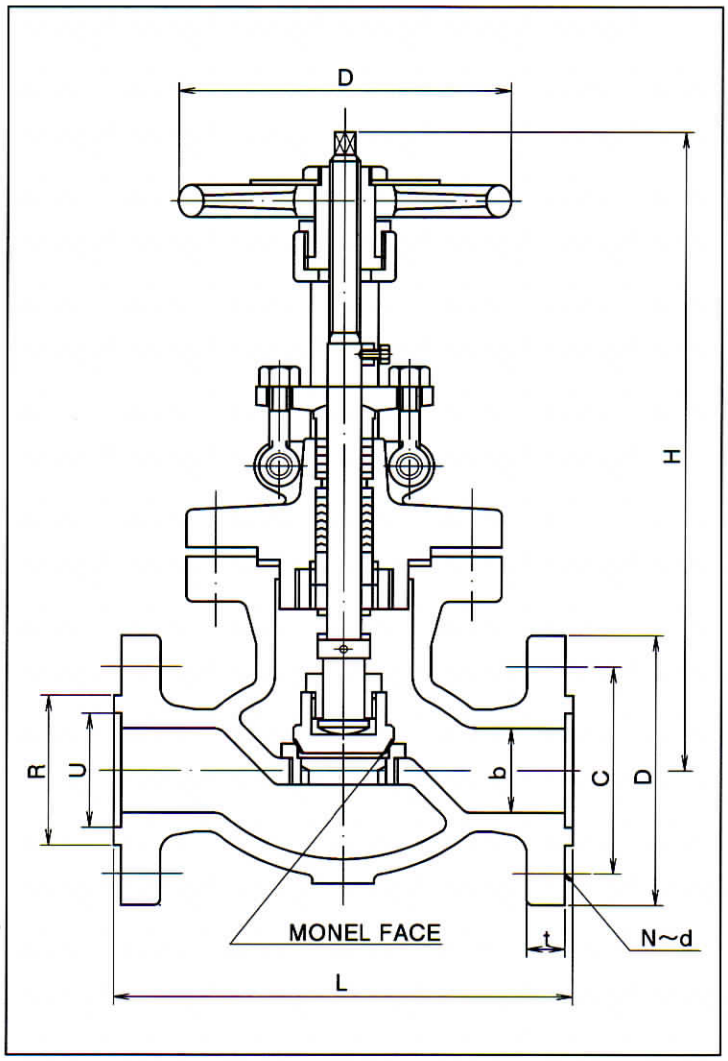
## WEIGHT AND DIMENSIONS

DIMENSIONS mm

| SIZE | L | b | t | D | C | N~d | U | R | H | OPEN SHUT (APROX) | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2" | 140 | 15 | 14 | 95 | 70 | 4~15 | 32 | 42 | 294 / 283 | | 140 |
| 3/4" | 160 | 20 | 16 | 100 | 75 | 4~15 | 38 | 50 | 294 / 283 | | 140 |
| 1" | 180 | 25 | 16 | 125 | 90 | 4~19 | 45 | 60 | 324 / 314 | | 160 |
| 1 1/2" | 240 | 40 | 18 | 140 | 105 | 4~19 | 60 | 75 | 359 / 340 | | 180 |

# *Yellow Twin-Pack Valves* CAST STEEL FLANGED ENDS

## ■300LB (20K)




## MATERIAL

| No. | NAME OF PART | MATERIALS | |
|---|---|---|---|
| | | JIS | ASTM |
| 1 | BODY | SCPH2 | A216-WCB |
| 2 | BODY SEAT RING | R-MONEL | R-MONEL |
| 3 | DISC | SUS316 | 316 S.S |
| 4 | DISC STEM RING | SUS304 | 304 S.S |
| 5 | STEM * | SUS304 | 304 S.S |
| 6 | CLUTCH | SUS304 | 304 S.S |
| 7 | BONNET BUSH * | SUS304 | 304 S.S |
| 8 | BONNET | SCPH2 | A216-WCB |
| 9 | BONNET GASKET | PILLER #4400 | |
| 10 | BONNET BOLT | SUS304 | 304 S.S |
| 11 | BONNET BOLT NUT | SUS304 | 304 S.S |
| 12 | PACKING WASHER | SUS304 | 304 S.S |
| 13 | GLAND PACKING | PILLER #4260 | |
| 14 | PACKING WASHER | SUS304 | 304 S.S |
| 15 | GLAND PACKING | PILLER #4533+#4513 | |
| 16 | GLAND # | SUS304 | 304 S.S |
| 17 | GLAND FLANGE | SUS403 | 13%Cr S.S. |
| 18 | EYE BOLT | SUS304 | 304 S.S |
| 19 | EYE BOLT NUT | SUS304 | 304 S.S |
| 20 | EYE BOLT PIN | SUS304 | 304 S.S |
| 21 | YOKE SLEEVE | Ni-RESIST | A439-D2 |
| 22 | SLEEVE NUT | S25C | CARBON STEEL |
| 23 | HAND WHEEL | FCD45 | DUCTILE IRON |
| 24 | NAME PLATE | SUS304 | 304 S.S |
| 25 | LOCK NUT | SS41 | CARBON STEEL |
| 26 | SET SCREW | SUS304 | 304 S.S |
| 27 | KNOCK PIN * | SUS304 | 304 S.S |
| 28 | BONNET COLLAR | SUS304 | 304 S.S |
| 29 | SET BOLT | SUS304 | 304 S.S |
| 30 | STOPPER | SS41 | CARBON STEEL |

*SURFACE TREATMENT

## WEIGHT AND DIMENSIONS

DIMENSIONS mm

| SIZE | L | b | t | D | C | N~d | U | R | H OPEN SHUT (APROX) | D1 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2" | 300 | 51 | 18 | 155 | 120 | 8~19 | 70 | 90 | 404 / 385 | 200 |
| 3" | 310 | 76 | 22 | 200 | 160 | 8~23 | 100 | 120 | 487 / 462 | 300 |
| 4" | 350 | 102 | 24 | 225 | 185 | 8~23 | 125 | 145 | 595 / 560 | 355 |
| 5" | 400 | 127 | 26 | 270 | 225 | 8~25 | 150 | 175 | 695 / 655 | 400 |
| 6" | 440 | 152 | 28 | 305 | 260 | 8~25 | 190 | 215 | 750 / 700 | 500 |

## Main Products

**Gate valves / Globe valves / Check valves / Soft seat valves / Twin Pack valves / Jacketed valves / Plug valves / Electrically operated valves / Air-motor operated valves / Air-cylinder operated valves / High pressure and high temperature service valves / Low temperature service valves**


CRAFT

Ishida Valve Group

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WARRANTY..Ishida Valve Mfg.Co., Ltd.warrants its products to the original purchaser for a period of one year from and after the date of shipment against defects in material and workmanship under proper and normal use and service and not caused or resulting from improper application or usage, improper installation, improper maintenance and repairs, modifications or alteration.

Purchaser shall give notice to Ishida upon finding any defect, or assumed defect, and Ishida has privilege to check the facts and defect.

Ishida sole obligation under this warranty shall be limited to the following,

(1) repair of the material or,

(2) replacement of the materials or,

(3) refund the purchase price on receipt of the defective product.

Ishida is not responsible to any kind of claims for consequential damage, loss or expense arising out of the defect.