



SMIT[®]

VALVES



www.smitvalves.com



M5551114IN

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Welcome to Smit Valves

We are pleased to introduce ourselves as Manufacturer and Distributors of SMIT™ make High quality industrial valves for Chemical, Pharmaceutical, Power Station, Petroleum, Fertilizer, Dairy and Paper industries, Water department, Infrastructure etc.

We are the biggest manufacture of Ball valve, High Pressure Ball Valve, Gate Valve, Globe Valve, Check Valve, Flush Bottom Ball Valves, Flush Bottom Tank Valve, Butterfly Valve, Strainer, Flange etc in Forge steel, Cast steel, Investment casting, Cast iron, as well as various cast steel grade such as Carbon steel, Low alloy, High alloy, Stainless steel in various pressure ratings and sizes since last 12 years. We are regularly doing job under third party inspection. We can manufacture and supply all types of valves as per the Indian and International standard such as API 6D, Standard 5159, BS 5351, API 600-602-6D, BS 873, BS 1868, BS 5352, BS 5155. We are also registered with ISO – 9001 – 2015 for Quality System.

The company is committed to product innovation, engineering excellence, precision manufacturing, 100% quality testing and hand-on technical assistance to the customers. We are also distributors of all types of Pipes and Fittings in S.S., M.S. ERW-SEAMLESS, and also distributors for 'Klinger' make Gauge Glasses.

Common Test / Inspection methods

SMIT valves undergo a range of destructive and nondestructive tests according to the requirements of the standard, relevant code, service conditions and specific customer requirements.

| Test / Inspection | Method | Acceptance Criteria |
|----------------------------------------|-------------------------------|-------------------------------|
| Visual Inspection | MSS SP55 | MSS SP55 |
| Chemical Analysis | ASTM E350 | Relevant ASTM |
| Mechanical Properties | ASTM A370 | Relevant ASTM |
| Radiographic Inspection | ASME B16.34 | ASME B16.34 |
| Magnetic Particle Inspection | ASTM E709 | ASME B16.34 |
| Liquid Penetrate Inspection | ASTM E165 | ASME B16.34 |
| Ultrasonic Inspection | ASTM A388 | ASME B16.34 |
| Positive Material Identification (PMI) | Spectrometer | Customer Specification |
| Pressure Testing | API 598 / BS 17292 | API 598 / BS 17292 |
| Helium Leak Test | ASTM E 499 | ASTM E 499 / ASME Sec. II |
| Impact Test | ASTM A370 | Relevant ASTM |
| Seismic qualification Test | ASME - QME | ASCE-7-02 |
| Cryogenic Test | BS 6364 | BS 6364 / ASME B16.34 |
| Fire safe Test | API 6FA / API 607 / ISO 10497 | API 6FA / API 607 / ISO 10497 |
| Dimensional Inspection | Valve Standard | Valve Standard |
| Cycle Test | Customer Specification | Customer Specification |
| Vacuum Test | Customer Specification | Customer Specification |
| Fugitive Emission Test | Customer Specification | Customer Specification |

Test Pressure Chart

Test Pressures for standard Carbon Steel Valves. Every individual valve manufactured, is inspected and pressure – tested to API 598 / BS EN 12266-1 / ISO 17292 requirements, for which test certificates are provided.

| ASME Class | Hydrostatic Test Pressure in kg/cm ² (Psig) | | | Pneumatic low pressure closure test pressure in kg/cm ² (psig) |
|------------|--------------------------------------------------------|------------|------------|---------------------------------------------------------------------------|
| | Shell | Back Seat | Closure | |
| 150 | 32 (450) | 23 (315) | 23 (315) | 7 (100) |
| 300 | 79 (1125) | 58 (815) | 58 (815) | 7 (100) |
| 600 | 156 (2225) | 115 (1630) | 115 (1630) | 7 (100) |
| 900 | 238 (3350) | 174(2445) | 174(2445) | 7 (100) |
| 1500 | 392 (5575) | 289 (4080) | 289(4080) | 7 (100) |
| 2500 | 653 (9275) | 478 (6790) | 478(6790) | 7 (100) |

Compliance Standards

SMIT Valves are designed in accordance with key international standards. They also meet the requirements of major Oil - Gas industry and power industry standard with customer specification.

| Parameter | Description | Standard |
|-------------------|---------------------------------------------------------|---------------------------------------------|
| Design | Gate Valve | API 600 |
| | Globe Valve | BS1873 |
| | Check Valve | BS 1868 |
| | Ball Valve | API 6D/ ASME B 16.34 / BS 5351 |
| | Butterfly Valve | BS 5155 / API 609 |
| | Cryogenic Valve | ASME B 16.34 / BS 6364 |
| P-T Rating | -- | ASME B 16.34 |
| Ends | Face to Face / End to End Dimension | ASME B16.10 |
| | Flange End Dimensions | ASME B16.5 / ASM B 16.47 |
| | Butt - weld End Dimensions | ASME B16.25 |
| | Forge fittings, socket welding and threading Dimensions | ASME B 16.11 |
| Testing | Valve Inspection & Testing | API 598/ BS EN 12266-1 / ISO 17292 / API 6D |
| | Fire safe testing | API 607 / API 6FA / BS 6755-II |
| Mounting position | Gear and actuator mounting | ISO 5211 |

GATE, GLOBE & CHECK VALVES



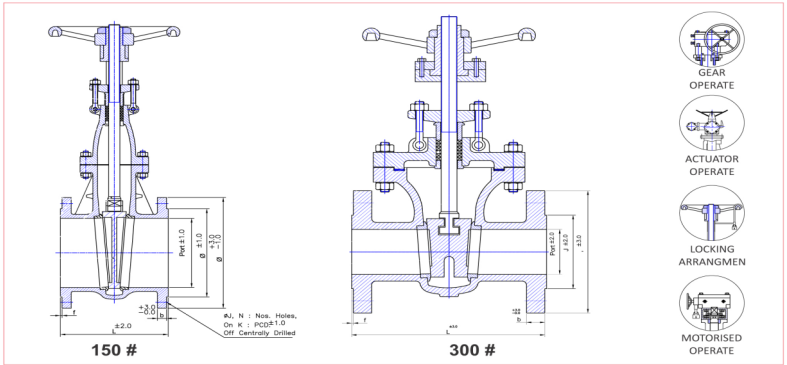
Gate Valve : Special Features

- SMIT Gate Valves are heavy duty, outside screw & yoke type, bolted bonnet, rising stem with non rising hand wheel.
- Straight through bore design assures streamlined, minimum turbulence, less erosion, lower pressure drop, & resistance to flow.
- Anti-friction bearings are provided in higher sizes and classes.
- Bi-directional shut-off.
- Deep stuffing box.
- The Seat rings are cylindrical bottom seated type having ample cross section for strength will provided with welded in and threaded Seat-rings will be supplied on request. Integral seat ring provides in SS valves.
- Gate Valves are available in 150#, 300# & 600#.
- Universal trim: 13Cr stem, wedge in CA 15 or 13Cr faced is also available.
- Flexible wedge with low center stem wedge contact, in solid CA15 (13 % Cr) or hard faced with 13% Cr, SS 316, & Monel. Wedge is ground and lapped to a mirror finish and tightly guided to prevent dragging and seat damage, Non-rotating stem with precision Acme threads and burnished finish.
- The two inclined seats allow for tight shut off even against high pressures. Renewable Seat Rings Welded or Threaded.
- Gate Valves are of flexible wedge, outside screw and-yoke and bolted-bonnet construction. The valves confirm to API 600.

Options in Gate Valves

- Locking arrangement.
- Valve Bypass arrangements is optionally available.
- Different types of operating selections are available in Gear, Electrical, Hydraulic or Pneumatic actuator, and Lever or gear with chain operated.
- Solid, flexible, split wedge, double disc and parallel Slide Gate configurations.
- For low temperature and cryogenic services (cold box and non-cold box applications) extended bonnet as per BS 6364.
- Gate valves are adequate for all service media along with NACE applications.
- Other flange drilling are also available on request.





| Part Name | Materials |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Material Option |
| Body | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Bonnet | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Wedge | ASTM A 216 WCB + 13% Cr / ASTM A 276 410 / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Stem | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Seat Ring | ASTM A 216 WCB + 13% Cr / ASTM A 276 410 / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Back Seat Bushing | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Gland | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Gland Flange | Carbon Steel / Stainless Steel |
| Stem Nut | ASTM A 439 Gr. D2 / Al. Bronze |
| Lock Nut | Carbon Steel / SS 304 |
| Gland Packing | Graphite Asbestos / Graphoil / PTFE |
| Bonnet Gasket | Corrugated Soft Iron / Corrugated SS / Spiral Wound SS 304 with Asbestos or Graph oil / Octagonal Ring |
| Gland Eye Bolt & Nut | Carbon Steel / Stainless Steel |
| Cross Bolts & Nuts | Carbon Steel / Stainless Steel |
| Hand Wheel | Carbon Steel / Malleable Iron |
| Hand Wheel Nut | Carbon Steel |
| Grease Nipple | Carbon Steel |
| Grub Screw | Carbon Steel |
| Studs / Bolts | ASTM A 193 B7 / A 193 B7M / A 193 BBM / A 320 L7 |
| Nut | ASTM A 194 2H / A 194 8 / A 194 8M / A 194 4 / 7 |

Dimension

GATE VALVE (150 #)

| SIZE | 1" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" | 12" | 14" | 16" |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
| Port | 25 | 38 | 51 | 64 | 76 | 102 | 127 | 152 | 203 | 254 | 305 | 337 | 387 |
| Face To Face - R.F | 127 | 165 | 178 | 190 | 203 | 229 | 254 | 267 | 292 | 330 | 356 | 381 | 406 |
| Flange O.D. (ØD) | 110.0 | 125.0 | 150.0 | 180.0 | 190.0 | 230.0 | 255.0 | 280.0 | 345.0 | 405.0 | 485.0 | 535.0 | 595.0 |
| Flange Thick. (T) | 12.7 | 15.9 | 17.5 | 20.7 | 22.3 | 22.3 | 22.3 | 23.9 | 27.0 | 28.6 | 30.2 | 33.4 | 35.0 |
| P.C.D. (K) | 79.4 | 98.4 | 120.7 | 139.7 | 152.4 | 190.5 | 215.9 | 241.3 | 298.5 | 362.0 | 431.8 | 476.3 | 539.8 |
| No. of Holes | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 16 |
| Hole Dia. | 15.9 | 15.9 | 19.1 | 19.1 | 19.1 | 19.1 | 22.2 | 22.2 | 22.2 | 25.0 | 25.0 | 28.6 | 28.6 |

GATE VALVE (300 #)

| SIZE | 1" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" | 12" |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
| Port | 24 | 37 | 49 | 64 | 75 | 98 | 127 | 148 | 198 | 248 | 298 |
| Face To Face - R.F | 165 | 190 | 216 | 241 | 282 | 305 | 381 | 403 | 419 | 457 | 502 |
| Flange O.D. (ØD) | 125.0 | 155.0 | 165.0 | 190.0 | 210.0 | 255.0 | 280.0 | 320.0 | 380.0 | 445.0 | 520.0 |
| Flange Thick. (T) | 15.9 | 19.1 | 20.7 | 23.9 | 27.0 | 30.2 | 33.4 | 35.0 | 39.7 | 46.1 | 49.3 |
| P.C.D. (K) | 88.9 | 114.3 | 127.0 | 149.2 | 168.3 | 200.0 | 235.0 | 269.9 | 330.2 | 387.4 | 450.8 |
| No. of Holes | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 12 | 12 | 16 | 16 |
| Hole Dia. | 19.1 | 22.2 | 19.1 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 25.0 | 28.6 | 31.8 |

Globe Valve : Special Features

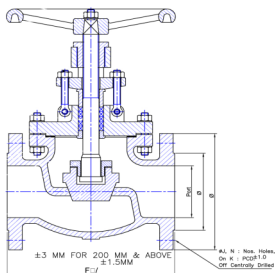
- Rational structure, reliable sealing & sturdy construction to ensure excellent performance.
- Anti-friction bearings are provided in higher sizes and classes.
- Universal trim: 13Cr stem, wedge in CA 15 or 13% Cr faced is also available.
- Our globe Valves are heavy duty, outside screw & yoke type, bolted bonnet, rising stem with rising hand wheel.
- Straight through bore design assures streamlined, minimum turbulence, less erosion, lower pressure drop, & resistance to flow.
- Deep stuffing box.
- The Seat rings are cylindrical bottom seated type having ample cross section for strength are provided with welded in and threaded Seat-rings will be supplied on request. Integral seat ring provides in SS valves.
- Globe Valves are available in 150#, 300# & 600#.
- Back Seat arrangement to provide isolation of Stuffing Box for On-Line serviceability.
- Excellent sealing against increased line pressure.

Options in Globe Valves

- Locking arrangement.
- Valve Bypass arrangements is optionally available.
- Different types of operating selections are available in Gear, Electrical, Hydraulic or Pneumatic actuator, and Lever or gear with chain operated.
- For low temperature and cryogenic services (cold box and non-cold box applications) extended bonnet as per BS 6364.
- Angle and Y type design.
- Spiral wound Gasket for critical service and hazardous media.
- Regulating, guided and soft seated plug available. Quick Lead Times.



Globe valves are adequate for all service media. Valves are marked with flow direction since they are recommended to install with flow and pressure under the disc. It can also be installed in reverse condition depending upon the conditions. The globe valve is generally faster to operate due to less travel.


 GEAR
 OPERATE

 ACTUATOR
 OPERATE

 LOCKING
 ARRANGEMEN

 MOTORISED
 OPERATE

| | Materials |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Part Name | Material Option |
| Body | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Bonnet | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Disc | ASTM A 216 WCB+ 13% Cr / ASTM A 276 410 / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Disc Nut | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Stem | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Seat Ring | ASTM A 216 WCB+ 13% Cr / ASTM A 276 410 / A 217 WC6 / A 217 WC9 / A217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Back Seat Bushing | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Gland | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L |
| Gland Flange | Carbon Steel / Stainless Steel |
| Stem Nut | ASTM A 439 Gr. D2 / Al. Bronze |
| Gland Packing | Graphite Asbestos / Graphoil / PTFE |
| Bonnet Gasket | Corrugated Soft Iron / Corrugated SS / Spiral Wound SS 304 with Asbestos or Graphoil / Octagonal Ring |
| Gland Eye Bolt & Nut | Carbon Steel / Stainless Steel |
| Cross Bolts & Nuts | Carbon Steel / Stainless Steel |
| Hand Wheel | Carbon Steel / Malleable Iron |
| Hand Wheel Nut | Carbon Steel |
| Grub Screw | Carbon Steel |
| Studs / Bolts | ASTM A 193 B7 / A 193 B7M / A 193 BBM / A 320 L7 |
| Nut | ASTM A 194 2H / A 194 8 / A 194 8M / A 194 4 / 7 |

Dimension

/// GLOBE VALVE (150 #)

| SIZE | 1" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" | 12" | 14" |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 |
| Port | 25 | 38 | 51 | 64 | 76 | 102 | 127 | 152 | 203 | 254 | 305 | 337 |
| Face To Face - R.F | 127 | 165 | 203 | 216 | 241 | 292 | 356 | 406 | 495 | 622 | 698 | 787 |
| Flange O.D. (∅D) | 110.0 | 125.0 | 150.0 | 180.0 | 190.0 | 230.0 | 255.0 | 280.0 | 345.0 | 405.0 | 485.0 | 535.0 |
| Flange Thick. (T) | 12.7 | 15.9 | 17.5 | 20.7 | 22.3 | 22.3 | 22.3 | 23.9 | 27.0 | 28.6 | 30.2 | 33.4 |
| P.C.D. (K) | 79.4 | 98.4 | 120.7 | 139.7 | 152.4 | 190.5 | 215.9 | 241.3 | 298.5 | 362.0 | 431.8 | 476.3 |
| No. of Holes | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 12 | 12 | 12 |
| Hole Dia. | 15.9 | 15.9 | 19.1 | 19.1 | 19.1 | 19.1 | 22.2 | 22.2 | 22.2 | 25.0 | 25.0 | 28.6 |

/// GLOBE VALVE (300 #)

| SIZE | 1" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| Port | 25 | 38 | 51 | 64 | 76 | 102 | 127 | 152 | 203 | 254 |
| Face To Face - R.F | 203 | 229 | 267 | 292 | 318 | 359 | 400 | 444 | 559 | 622 |
| Flange O.D. (∅D) | 125.0 | 155.0 | 165.0 | 190.0 | 210.0 | 255.0 | 280.0 | 320.0 | 380.0 | 445.0 |
| Flange Thick. (T) | 15.9 | 19.1 | 20.7 | 23.9 | 27.0 | 30.2 | 33.4 | 35.0 | 39.7 | 46.1 |
| P.C.D. (K) | 88.9 | 114.3 | 127.0 | 149.2 | 168.3 | 200.0 | 235.0 | 269.9 | 330.0 | 387.4 |
| No. of Holes | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 12 | 12 | 16 |
| Hole Dia. | 19.1 | 22.2 | 19.1 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 25.0 | 28.6 |

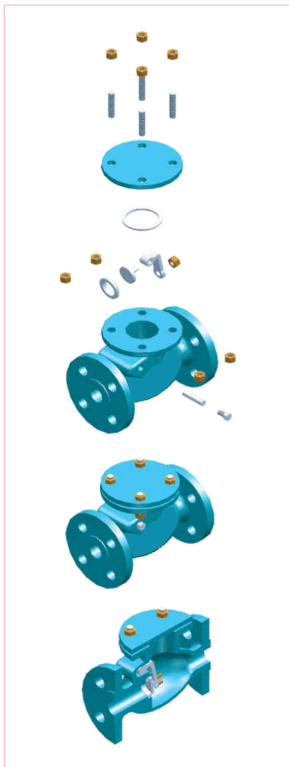
Swing Check Valve : Special Features

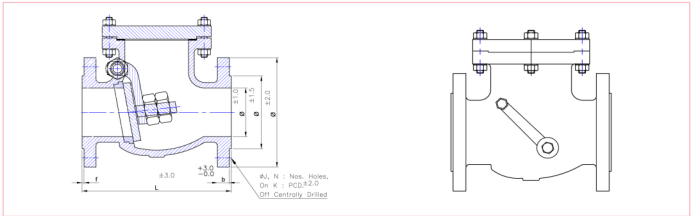
- The Body to Bonnet joint is a male & female as per ASME 1501.3001 & 6001 and ring joint is used in higher classes valves.
- Valves meet the requirements of fugitive emission levels Shell category-B as per MECSCPE 77 / 312
- Low Friction Losses
- Drip Tight Seating
- Low Maintenance
- No Hinge Pin or spring to Wear
- Easy in-line serviceability

Options in Swing Check Valves

- Check Valves can be supplied with counter weight or dash pot arrangement
- Available in tilting disc design

| Part Name | Material Option |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Body | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Cover | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Disc@ | ASTM A 216 WCB+13% Cr/ A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Hine | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Hine Bracket | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Hine Pin | ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316 / A 276 316L |
| Seat Rings@ | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Disc nut | Carbon Steel / Stainless Steel |
| Washer | Carbon Steel / Stainless Steel |
| Gasket | Soft Iron / SS 304 / Graphoil |
| Studs / Bolts | ASTM A 193 B7 / A 193 B7M / A 193 B8 / A 193 B8M / A 320 L7 |
| Nut | ASTM A 194 2H / A 194 B7M / A 194 B / A 194 8M / A 194 4 / 7 |





Dimension

SWING CHECK VALVE (150 #)

| SIZE | 1" | 1.1/2" | 2" | 2.1/2" | 3" | 4" | 5" | 6" | 8" | 10" | 12" | 14" | 16" |
|--------------|------|--------|------|--------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| | PORT | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 |
| FACE TO FACE | 127 | 165 | 203 | 216 | 241 | 292 | 356 | 406 | 495 | 622 | 698 | 787 | 914 |
| FLANGE OD | 110 | 125 | 150 | 180 | 190 | 230 | 255 | 280 | 345 | 405 | 485 | 535 | 595 |
| FLANGE THIK | 12.7 | 15.9 | 17.5 | 20.7 | 22.3 | 22.3 | 22.3 | 23.9 | 27 | 28.6 | 30.2 | 33.4 | 35 |
| P.C.D.(K) | 79.4 | 98.4 | 12.7 | 139.7 | 152.4 | 190.5 | 215.9 | 241.3 | 298.5 | 362 | 431.8 | 476.3 | 539.8 |
| NO. OF HOLES | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 16 |
| HOLE DIA. | 15.9 | 15.9 | 19.1 | 19.1 | 19.1 | 19.1 | 22.2 | 22.2 | 22.2 | 25 | 25 | 28.6 | 28.6 |

SWING CHECK VALVE (300 #)

| SIZE | 1" | 1.1/2" | 2" | 2.1/2" | 3" | 4" | 5" | 6" | 8" | 10" | 12" |
|--------------|------|--------|------|--------|-------|------|------|-------|-------|-------|-------|
| | PORT | 25 | 38 | 51 | 64 | 76 | 102 | 127 | 152 | 203 | 254 |
| FACE TO FACE | 203 | 229 | 267 | 292 | 318 | 356 | 400 | 444 | 559 | 622 | 711 |
| FLANGE OD | 125 | 155 | 165 | 190 | 210 | 255 | 280 | 320 | 380 | 445 | 520 |
| FLANGE THIK | 15.9 | 19.1 | 20.7 | 23.9 | 27 | 30.2 | 33.4 | 35 | 39.7 | 46.1 | 49.3 |
| P.C.D.(K) | 88.9 | 114.3 | 127 | 149.2 | 168.3 | 200 | 235 | 269.9 | 330.2 | 387.4 | 450.8 |
| NO. OF HOLES | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 12 | 12 | 16 | 16 |
| HOLE DIA. | 19.1 | 22.2 | 19.1 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 25 | 28.6 | 31.8 |

**FORGED STEEL
GATE, GLOBE &
CHECK VALVE**



FORGED STEEL GATE VALVE / GLOBE VALVE / CHECK VALVE

FEATURES

- Forged Steel Valves have been designed to meet the requirements of API 602/BS 5352/ASME B 16.34
- Socket weld ends dimensions confirm to ASME B 16.11
- Screwed ends dimensions confirm to ASME B 1.20.1
- Outside screw and yoke construction
- The gland is of two piece self aligning type
- Back seat arrangement for Gate and Globe Valves.
- Valves meet the requirements of fugitive emission levels Shell category B as per MESC SPE 77 / 312

OPTIONS

- For low temperature and cryogenic service (cold box and non cold box) extended bonnet as per BS 6364 available
- Welded bonnet construction
- Locking arrangement
- Welded on flanges

| Part Name | Material Option |
|----------------------|-------------------------------------------------------------------------------------------|
| Body | ASTM A 105 / 182 F304 / 182 F316 / 182 304L / 182 316L / 182 F11 / 182 F22 / 350 LF2 |
| Bonnet | ASTM A 105 / 182 F304 / 182 F316 / 182 304L / 182 316L / 182 F11 / 182 F22 / 350 LF2 |
| Wedge / Plug@ | ASTM A 182 F6a / 182 F304 / 182 F304L / 182 F316 / 182 F316L / 182 F11 / 182 F22 350 LF2 |
| Stem | ASTM A 276 T410 / 182 F304 / 182 F304L / 182 F316 / 182 F316L / 182 F11 / 182 F22 350 LF2 |
| Stem Rings@ | ASTM A 182 F6a / 182 F304 / 182 F304L / 182 F316 / 182 F316L / 182 F11 / 182 F22 350 LF2 |
| Back Seat | Bushing Integral |
| Gland | ASTM A 276 T410 / 182 F304 / 182 F304L / 182 F316 / 182 F316L / 182 F11 / 182 F22 350 LF2 |
| Gland Flange | ASTM A 105 / 182 F304 / 182 F316 / 182 304L / 182 316L / 182 F11 / 182 F22 / 350 LF2 |
| Stem Nut | ASTM A 439 Gr. D2 / AL. Bronze |
| Lock Nut | Carbon Steel / SS 304 |
| Gland Packing | Graphite Asbestos / Graf-oil / PTFE |
| Bonnet Gasket | Spiral Wound SS 304 / 304I / 316 / 316I with Asbestos / Teflon Or Graf-oil |
| Gland Eye Bolt & Nut | Aa410 / AA304 |
| Hand Wheel | Carbon Steel |
| Hand Wheel Nut | Carbon Steel |
| Studs / Bolts | ASTM A 193 B7 / A 193 B7M / A 193 B8 / A 193 B8M / A 320 L7 |
| Nut | ASTM A 194 2H / A 194 2HM / A 194 8 / A 194 8M / A 194 4 / 7 |

Disc Seats and Body Seats

Following are the Trims as per API 600, Table 3 available as our standard. Other material combination available on request.

| Trim No. | Nominal Trim | Trim Material | Stem Material | Temperature |
|----------|---------------|-------------------------------------|---------------|-------------|
| 1. | F6 / F6 | a) ASTM A 182 F6/13% Cr Steel | 13% Cr (410) | 1100°F |
| | | b) 13% Cr Deposit | | |
| 2. | 304 / 304 | a) ASTM A 182(F304) or A 351(CF8) | 304 SS | 1200°F |
| | | b) 304 Deposit | | |
| 3. | HF / HF | Co-Cr- W Alloy (Stellite 6) Deposit | 13%Cr(410) | 1200°F |
| 4. | F6 / HF | Trim No. 1 + No. 5 | 13%Cr(410) | 1100°F |
| 5. | Monel / Monel | a) Money Deposit | Monel | 450°F |
| | | b) B 164 | | |
| 6. | 316 / 316 | a) ASTM A 182(F316) or 351 (CF8m) | 316 SS | 850°F |
| | | b) 316 Deposit | | |
| 7. | Monel / HF | Trim No. 5 + No. 9 | Monel | 450°F |
| 8. | 316 / HF | Trim No.5 + No. 10 | 316 SS | 850°F |

*Available Optionally

Trim Parts are Defined as follows

Gate Valve- Body & Wedge seating surface, stem, back seat surface

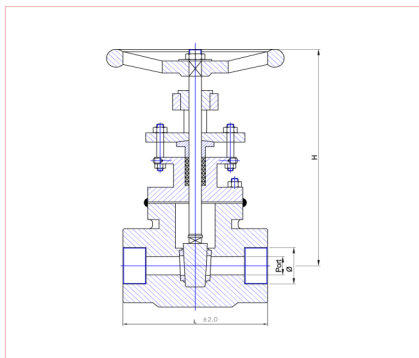
Globe Valve- Body & Disc seating surface, stem, back seat surface

Check Valve- Body & Disc seating surface, Hinge pin

Sour Gas Service Materials

For servicing sour gases or other hydrocarbon fluids, SMIT cast steel valves may be furnished with materials specially heat treated and hardness controlled in compliance with NACE MR 0175. The shell are WCB with double tempered trim 2 and class II bolting. Other materials and trims are also available on request

GATE VALVE



Dimension

GATE VALVE (800 #)

| | | | | | | |
|------|----|------|-----|-----|-----|-----|
| SIZE | 15 | 20 | 25 | 32 | 40 | 50 |
| L | 85 | 93 | 104 | 127 | 127 | 140 |
| P | 15 | 17.5 | 22 | 28 | 35 | 40 |
| øW | 90 | 90 | 90 | 150 | 150 | 150 |

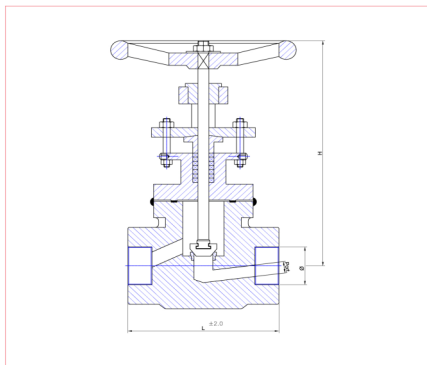
GATE VALVE (1500 #)

| | | | | |
|------|----|-----|-----|-----|
| SIZE | 15 | 20 | 25 | 40 |
| L | 93 | 104 | 127 | 140 |
| P | 15 | 17 | 22 | 35 |
| øW | 90 | 90 | 150 | 150 |

GATE VALVE (2500 #)

| | | | |
|------|-----|-----|-----|
| SIZE | 15 | 20 | 25 |
| L | 104 | 127 | 140 |
| P | 15 | 11 | 25 |
| øW | 90 | 150 | 150 |

* Dimension and other engineering data are subjected to change without notice.

GLOBE VALVE

Dimension
GLOBE VALVE (800 #)

| | | | | | | |
|------|----|------|------|-----|-----|-----|
| SIZE | 15 | 20 | 25 | 32 | 40 | 50 |
| L | 85 | 93 | 104 | 127 | 127 | 140 |
| P | 10 | 12.5 | 17.5 | 22 | 26 | 30 |
| øW | 90 | 90 | 90 | 150 | 150 | 150 |

GLOBE VALVE (1500 #)

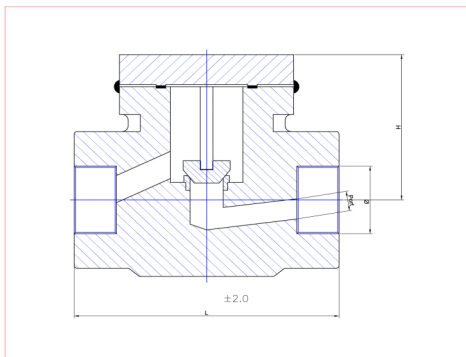
| | | | | |
|------|----|------|------|-----|
| SIZE | 15 | 20 | 25 | 40 |
| L | 93 | 104 | 127 | 140 |
| P | 10 | 12.5 | 17.5 | 26 |
| øW | 90 | 90 | 150 | 150 |

GLOBE VALVE (2500 #)

| | | | |
|------|-----|-----|-----|
| SIZE | 15 | 20 | 25 |
| L | 104 | 127 | 140 |
| P | 10 | 20 | 22 |
| øW | 90 | 150 | 150 |

* Dimension and other engineering data are subjected to change without notice.

LIFT CHECK VALVE



Dimension

LIFT CHECK VALVE (800 #)

| SIZE | 15 | 20 | 25 | 32 | 40 | 50 |
|------|----|------|------|-----|-----|-----|
| L | 85 | 93 | 104 | 127 | 127 | 140 |
| P | 10 | 12.5 | 17.5 | 22 | 26 | 30 |
| ∅W | - | - | - | - | - | - |

LIFT CHECK VALVE (1500 #)

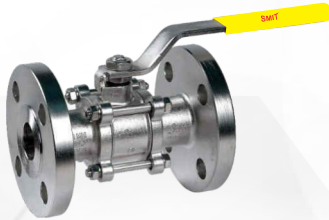
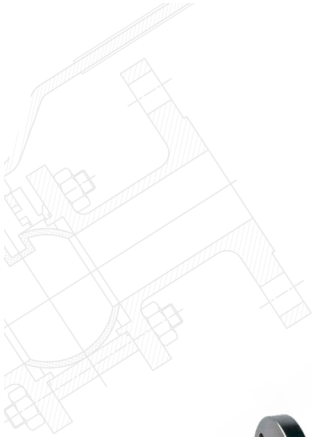
| SIZE | 15 | 20 | 25 | 40 |
|------|----|------|------|-----|
| L | 93 | 104 | 127 | 140 |
| P | 10 | 12.5 | 17.5 | 26 |
| ∅W | - | - | - | - |

LIFT CHECK VALVE (2500 #)

| SIZE | 15 | 20 | 25 |
|------|-----|-----|-----|
| L | 104 | 127 | 140 |
| P | 10 | 20 | 22 |
| ∅W | - | - | - |

* Dimension and other engineering data are subjected to change without notice.

BALL VALVES



Special Features of Floating Ball Valves

- Free floating ball design provides seat wear compensation and longer life.
- Provide fire safe design as per APO 607 / API 6FA / BS 6755-II with single point contact seat design.
- Blow out proof and Anti blow out stem construction.
- Micro-finished ball provides a positive seal.
- Straight through flow path for minimum pressure drop.
- Bi-directional flow.
- 90° (Quarter-turn) actuation.
- Wide selection of seat materials.
- Extended stem/extended bonnet design as per customer's specific pipe line usage.
- Antistatic devices ensure electrical continuity between Body, ball & stem.
- Triple stem seal with accurate stem.
- Handle indicates flow direction.
- Valves meet the requirements of fugitive emission levels shell category B as per MESC SPE 77/312.
- ISO 5211 top mounting pad for simplified gear / actuator in 150#, 300# & 600# as optional in only flanged end design.
- Variety of end connections.

Design Feature

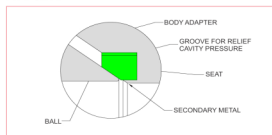
Fire Safe :

- Fire safe conforming to API 607 / API 6FA / BS-6755 part II assures highest standard of safety.
- Certified by customer's inspectors and independent certifying authorities.

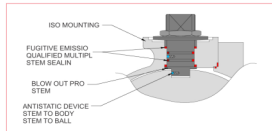
Antistatic Device :

- Antistatic devices are built in the valve stem to ensure electrical continuity between ball, stem and body. Thus providing greater safety while handling volatile media.
- Higher size ball valves are designed with stem bearing to absorb radial loading on the stem.
- Multiple stem sealing ensures high degree of sealing.

Fire Safe



Antistatic Device



Technical Details of Seat Material

| Material | Temperature Range | General Use | Not Recommended For | Properties |
|----------|-------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------|
| PTFE | -40°C TO 205°C | Most of the chemicals, acids, alkalis | High abrasive media, Fluorides, Chlorides, High mechanical loading | Self lubrication, Low friction, thermal stability. |
| CPTFE | -100°C TO 200°C | Same as PTFE, better mechanical loading compound to PTFE | High abrasive media, Fluorides, Chlorides, High mechanical loading | Self lubrication, Low friction, thermal stability. |
| NYLON | -50°C TO 120°C | Hydrocarbons, ether, weak alkali acids, acetone | Strong acids, alkali, Sodium hydroxide, Ammonia | High strength, rigidity, self lubricating, good abrasion resistance |
| PEEK | -50°C TO 260°C | Good chemical resistance for most of the chemicals, including alcohols, acids, ammonia, organic, hydrocarbons | Nitric, sulfuric acids, aqullegia, bromine, chlorine, fluorine | Very good high temperature performance, wear resistance, low toxic emission. |

BALL VALVE FLANGED END

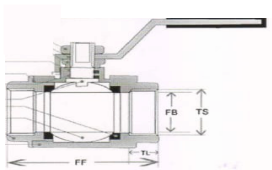


| Part Name | Material Option |
|---------------|-----------------------------------------------------------------------------------------------------------------------------|
| Body | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| SIDE PIECE | ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB |
| Ball | ASTM A 351 CF8 / A 351 CF8M / A 182 F304 / A 182 F316 / A 182 F 6a |
| Body Seal | PTFE / Graphoil / Spiral Wound SS 316 with Graphoil |
| Seats | PTFE / PTFE / GFT / CFT |
| Stem | ASTM A 182 F304 / A 182 F316 / A 182 F 6a |
| Gland Bush | ASTM A 182 F304 / A 182 F316 / A 182 F 6a |
| Gland Packing | Graphoil / PTFE |
| Stem Packing | Graphite filled PTFE / Graphoil |
| Gland Nut | Stainless Steel |
| Stem Nut | Stainless Steel |
| Lever | Carbon Steel with PVC / Stainless Steel |
| Disc Spring | Carbon Steel |
| Studs / Bolts | ASTM A 193 B7 / A 193 B7M / A 193 B8 / A 193 B8M / A 320 L7 |
| Nut | ASTM A 194 2H / A 194 B7M / A 194 B / A 194 8M / A 194 4/7 |

- For low temperature and cryogenic services extended bonnet available as per BS 6364. Locking arrangement.
- Different types of operating selections are available in Gear, Electrical and Hydraulic or Pneumatic actuator.
- Soft seats are recommended for service temperature up to 260°C

IC Single Piece Screw end Ball Valve

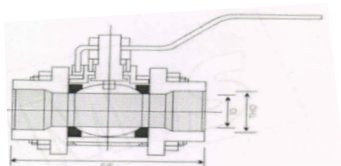
SMIT
VALVES



| SIZE | | A |
|--------|-----|-----|
| INCH | MM | |
| 1/2" | 15 | 62 |
| 3/4" | 20 | 69 |
| 1" | 25 | 81 |
| 1.1/4" | 32 | 90 |
| 1.1/2" | 40 | 100 |
| 2" | 50 | 117 |
| 2.1/2" | 65 | 141 |
| 3" | 80 | 171 |
| 4" | 100 | 175 |

| | PART NAME | MATERIAL | QTY |
|----|----------------|-------------------------------|-----|
| 1 | BODY | ASTM A351Gr.CF8 / CF8M / C.I. | 1 |
| 2 | BODY CONNECTOR | ASTM A351Gr.CF8 / CF8M / C.I. | 1 |
| 3 | BALL | DO/ASIS304/316 | 1 |
| 4 | STEM | AISI 304/316 | 1 |
| 5 | GLAND | AISI 304/316 | 1 |
| 6 | STEAM SEALS | PTFE / GFT | 2 |
| 7 | HANDLE NUT | SS202, 304 | 1 |
| 8 | BALL SEAL | PTFE, GFT, CARBON | 1 |
| 9 | GLAND PACKING | PTFE, GFT, CARBON | 2 |
| 10 | BODY JOINT | SS304 / 316 | 1 |
| 11 | WRENCH | SS202 / 304 / 316 | 1 |

IC Three Piece Screw end Ball Valve



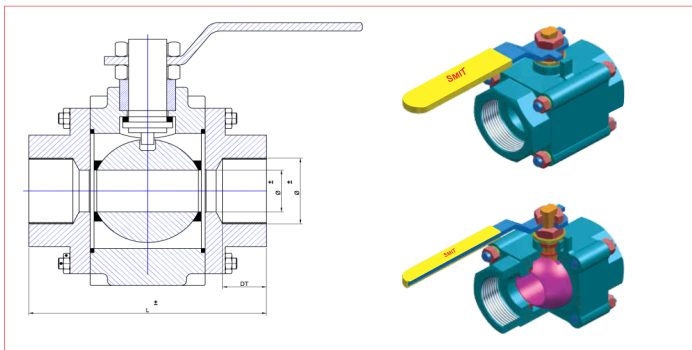
| SIZE | | A |
|--------|-----|-----|
| INCH | MM | |
| 1/2" | 15 | 67 |
| 3/4" | 20 | 71 |
| 1" | 25 | 82 |
| 1.1/4" | 32 | - |
| 1.1/2" | 40 | 96 |
| 2" | 50 | 120 |
| 2.1/2" | 65 | - |
| 3" | 80 | - |
| 4" | 100 | - |

| | PART NAME | MATERIAL | QTY |
|----|----------------|-------------------------------|-----|
| 1 | BODY | ASTM A351Gr.CF8 / CF8M / C.I. | 1 |
| 2 | BODY CONNECTOR | ASTM A351Gr.CF8 / CF8M / C.I. | 1 |
| 3 | BALL | DO/ASIS304/316 | 1 |
| 4 | STEM | AISI 304/316 | 1 |
| 5 | GLAND | AISI 304/316 | 1 |
| 6 | STEAM SEALS | PTFE / GFT | 2 |
| 7 | HANDLE NUT | SS202, 304 | 1 |
| 8 | BALL SEAL | PTFE, GFT, CARBON | 1 |
| 9 | GLAND PACKING | PTFE, GFT, CARBON | 2 |
| 10 | BODY JOINT | SS304 / 316 | 1 |
| 11 | WRENCH | SS202 / 304 / 316 | 1 |

| Class | Working Pressure | Hyd. Test Pressure | | |
|-----------------------------------------------------------------|------------------|--------------------|---------|------|
| | | Body | Seat | Temp |
| 150 | 150 Psi | 425 Psi | 300 Psi | 150c |
| Pneumatic air test pressure - 7 kg / cm ² 100 (Psig) | | | | |

*Dimensions and other engineering data are subjected to change without notice.

Socket End & Screwed End Ball Valve



Forged Steel High Pressure Ball Valve Pressure Rating: 800# / 1500# / 2500#

| Part Name | Material Option |
|----------------|-------------------------------------------------------------------------------------|
| Body | ASTM A 105 / 182 F304 / 182 F316 /182 304L / 182 316L / 182 F11 / 182 F22 /350 LF2 |
| Body Connector | ASTM A 105 / 182 F304 / 182 F316 / 182 304L / 182 316L / 182 F11 / 182 F22 /350 LF2 |
| Connector seal | PTFE / GFT |
| Ball Seal | PTFE / GFT |
| Ball | AISI304 / AISI316 / AISI304L / AISI316L |
| Stem | AISI304 / AISI316 / AISI304L / AISI316L / ALLOY20 / HAST - B / HAST - C |
| Stem Seal | PTFE / GFT |
| Gland Packing | PTFE |
| Gland | AISI304 / AISI316 / AISI304L / AISI316L |
| Gland Nut | SS - 304 |
| Lever | SS - 304 / MS |
| Lever Nut | SS - 304 / MS |
| Lever Sleeve | PVC |

Dimension

FORGED STEEL 3 PC BALL VALVE (800 #)

| SIZE | ØB | L | ØS | DT |
|----------------|----|-----|-------|----|
| ½" (15 mm) | 13 | 66 | 19 | 16 |
| ¾" (20 mm) | 19 | 75 | 24.5 | 16 |
| 1" (25 mm) | 24 | 85 | 30.75 | 17 |
| 1.1/4" (32 mm) | 30 | 95 | 39 | 17 |
| 1.1/2" (40 mm) | 37 | 105 | 45 | 20 |
| 2" (50 mm) | 37 | 125 | 57 | 20 |

FORGED STEEL 3 PC BALL VALVE (1500 #)

| SIZE | ØB | L | ØS | DT |
|----------------|----|-----|-------|----|
| ½" (15 mm) | 13 | 75 | 19 | 16 |
| ¾" (20 mm) | 19 | 85 | 24.5 | 16 |
| 1" (25 mm) | 24 | 95 | 30.75 | 17 |
| 1.1/4" (32 mm) | 30 | 105 | 39 | 17 |
| 1.1/2" (40 mm) | 37 | 125 | 45 | 20 |

FORGED STEEL 3 PC BALL VALVE (2500 #)

| SIZE | L | ØB | ØS | DT |
|------------|-----|----|-------|----|
| ½" (15 mm) | 85 | 13 | 19 | 16 |
| ¾" (20 mm) | 105 | 19 | 24.5 | 16 |
| 1" (25 mm) | 125 | 24 | 30.75 | 18 |

* Dimension and other engineering data are subjected to change without notice.

BUTTERFLY VALVES



Butterfly Valves

SMIT butterfly valves have been very commonly used in various water supply and other industrial services, irrespective of sizes, pressure ratings, fluids handled, type of operators etc. our BF valves are the most preferred choice of the discerning customers. We have also kept our valves in tune with the latest technological advancements in materials,

manufacturing, pattern making & foundry & operators fields.

This has enabled us to offer valves in Cast / fabricated constructions in Cast Iron, Carbon & Alloy Steels & Stainless Steels & also rubber-lined variety. The types of operators offered are Manual, Electrical, and Pneumatic & Electro- Hydraulic.

Special Features of Center Disc Design

- Lower Torque: There is no frictional contact between disc and rubber seat, which makes frictional resistance almost close to zero, thus markedly reducing operating torque.
- Low Torque with any fluid: There is no point at which frictional resistance occurs. Therefore, torque is always low regardless of the fluid, air water or Oil.
- Long Service Life: When the disc contacts the tapered projection of the rubber seat, a complete seal, is attained, which results in long service life.
- Greater Sealing Capacity: The dynamic seat means the greater pressure and betters the sealing.
- Bi- directional zero leakage butterfly valve.
- Accurate Dual stem sealing and Quarter turn operation for excellence flow control.
- Compact space saving design.
- Seat integrally moulded with the body.
- Sturdy & robust construction.
- Disc assembly perfectly centered & secured in valve Body bore.
- Flow through disc ensuring minimum pressure drop.
- Compliance with: IS 13095, AWWA C504, BS 5155 standards.

Wafer-lined Butterfly Valves

- Liner locked in precision machined grooves in valve body.
- Sealing ribs on end faces with enough protrusion to ensure drop-tight end face joints.
- Sturdy & long shaft bearings ensuring precise rotation of the disc assembly in the body.
- Double shaft seal which precludes leakage possibility.
- Robust Hand Lever mechanism without backlash & possibility of over-travel due to provision of in-built, positive travel limit stops.
- Possibility of offering Electrical / Pneumatic actuator.
- Optimized liner dimensions ensuring efficient sealing performance.
- Critically controlled interference between the Rubber liner & the Disc sealing surface ensuring leak-tightness & lower operating torque at the same time leading to long seal life.

Wafer Type

SMIT valves are designed to meet the demanding requirements of the general utility valve market. These valves are truly fit & forget valve, which requires minimal maintenance.

The body liner which also functions as the soft seat comes in an integrally molded (bonded) version and offers 100% bi-directional sealing against vacuum to rated pressures of PN10. The wafer style body has universal design to fit between pipe flanges of almost all popular flange standards.

Confirmation of codes & Standards

| | |
|----------------------------------|----------------------------------------------------------------|
| General design and manufacturing | : API 609 category A / BS 5155 / MSS SP-67 |
| Valve face to face dimension | : Short wafer as per ISO 5752 Tab 5 / API 609 category A |
| Top flange drilling | : ISO 5211 part II |
| Valve inspection and testing | : API 598 |
| Flange standard conformity | : ANSI 150 , DIN PN6 / 10,BS10 Tab D & E, IS 6392 NP 0.6 / 1.0 |

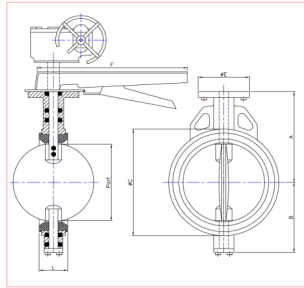
Technical Specification

| | |
|---------------------------------------------|----------------------------------------------------------------------------------|
| 1. Valve type | : Centric Disc Butterfly valve with a single piece Rubber lined body |
| 2. Body type | : Short wafer (sandwiched between flanges) |
| 3. Seat type | : Integrally moulded with the body. |
| 4. End Connection | : Wafer Sandwiched |
| 5. Size range | : 40 NB to 300 NB |
| 6. Pressure rating | : PN 10 / PN 16 |
| 7. Operating temperature range | : -25°C to 130°C (depending on MOC) |
| 8. Seat leakage | : Tight shut off |
| 9. Operation | : Hand lever for sizes from 40 NB to 250 NB Worm gear boxes for 40 NB to 300 NB. |
| 10. Standard Material of Construction (MOC) | Valve |
| Body | : CI / SGI / WCB |
| Disc | : SGI / WCB / CF8 / CF8M |
| Seat | : Nitrile / EDPM / Neoprene / Hypalon |
| Bearing | : AISI410 / SS 17.4 PH / SS 316 Steel+PTFE or SS316+PTFE |

Key Features

- Integrally molded seat liner on the body, which ensures excellent dimensional stability & guaranteed seat tightness.
- Seat liner extending on to the contact faces ensures perfect sealing and eliminates the need for separate flange gaskets.
- Narrow land disc ensures perfect sealing with least operating torque requirements.
- A fully universal body design ensures fitment of the valve between companion flanges of all popular standards (viz: ANSI, BS, DIN, JIS, IS etc)
- A ten position notch disc and hand lever ensures locking of the valve in 8 intermediate positions in addition to closed and open position. Hand lever lockable through pad lock for tamper proof positioning.
- Valve disc made of ductile cast iron instead of cast iron to withstand against possible water hammer or pressure surges.
- A truly line size body bore to ensure maximum flow capacity with the lowest pressure drop.
- Shafts made of martensitic stainless steel to ensure maximum strength and torsional rigidity.
- Both top and bottom shaft swiveling are guided by self - lubricated PTFE bearings.

WAFER TYPE BUTTER FLY VALVE



Dimension

Butter Fly Valve With Pressed Steel Lever Operated

| SIZE | | A | B | C | D | E | F | G | FLANGE MOUNTING (I.S.O. 5211) |
|------|-------|----|-----|-----|-----|----|-----|----|-------------------------------|
| MM | INCH | | | | | | | | |
| 50 | 2 | 43 | 103 | 70 | 28 | 65 | 180 | 15 | F05 |
| 65 | 2.1/2 | 46 | 110 | 76 | 48 | 65 | 180 | 15 | F05 |
| 80 | 3 | 46 | 118 | 85 | 67 | 65 | 215 | 15 | F05 |
| 100 | 4 | 52 | 148 | 102 | 88 | 65 | 215 | 15 | F05 |
| 125 | 5 | 56 | 164 | 115 | 114 | 65 | 265 | 15 | F05 |
| 150 | 6 | 56 | 176 | 130 | 142 | 65 | 265 | 15 | F05 |
| 200 | 8 | 60 | 230 | 156 | 194 | 75 | 325 | 15 | F07 |

Butter Fly Valve With Warm Gear Operated

| SIZE | | A | B | C | D | E | F | G | FLANGE MOUNTING (I.S.O. 5211) |
|------|------|-----|-----|-----|-----|-----|-----|----|-------------------------------|
| MM | INCH | | | | | | | | |
| 100 | 4 | 52 | 157 | 100 | 88 | 180 | 200 | 15 | F07 |
| 125 | 5 | 56 | 164 | 115 | 114 | 180 | 200 | 15 | F07 |
| 150 | 6 | 56 | 181 | 133 | 142 | 240 | 250 | 15 | F07 |
| 200 | 8 | 60 | 230 | 156 | 194 | 285 | 350 | 15 | F10 |
| 250 | 10 | 68 | 266 | 196 | 243 | 285 | 350 | 18 | F10 |
| 300 | 12 | 78 | 300 | 230 | 292 | 285 | 350 | 18 | F10 |
| 350 | 14 | 92 | 320 | 272 | 330 | 300 | 350 | 22 | F12 |
| 400 | 16 | 102 | 385 | 302 | 375 | 305 | 500 | 22 | F14 |
| 450 | 18 | 114 | 405 | 325 | 425 | 305 | 500 | 24 | F14 |
| 500 | 20 | 127 | 465 | 405 | 470 | 370 | 450 | 26 | F16 |
| 600 | 24 | 154 | 540 | 460 | 570 | 350 | 600 | 26 | F16 |

* Dimensions and other engineering data are subjected to change without notice.

* Dimensions are as per standard API 609

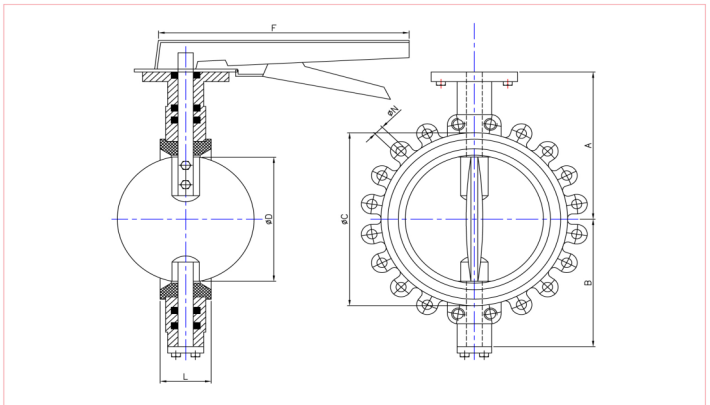
Lug Type Butterfly Valve Technical data

- Face-to-face: EN 558 Series 20 / ISO 5752 Series 20 / API 609 Table 1 / BS 5155 Series 4.
- Flange accommodation: DINE EN 1092 PN 10 / PN 16 / ANSI B 16.5, Class 150
- Flange surface design: DIN 2526 Form A-E / DIN 2642 / ASME B 16.5 RF, FF.
- Top flange: EN ISO 5211
- Marking: DIN / EN 19
- Tightness check: DIN EN 12266, Leakage rate, ISO 5208, Category 3 / API 598 Table 5 / ASME B 16-104, Class VI
- Standard of fitness for use: EN 593 (DIN 3354)
- Temperature range: -4°F bis $+320^{\circ}\text{F}$ (depending on pressure, medium and material)

Features:

- One piece disc/shaft, centric bearing
- Split body with stainless steel screws on request
- Can be installed in any desired position
- Disc sealing surface mirror polished
- Materials complying with FDA standards available

LUG TYPE BUTTERFLY VALVE WITH LEVER & GEAR OPERATED



Dimension

Butterfly Valve Lug Type with Lever Operated

| SIZE | | CATEGORY 'A' FACE TO FACE | A CATEGORY 'B' | | D | E | F | G | FLANGE MOUNTING (ISO 5211) |
|------|-------|------------------------------|-------------------|------|-----|----|-----|----|----------------------------|
| MM | INCH | | FACE TO FACE | | | | | | |
| | | | 150# | 300# | | | | | |
| 50 | 2 | 43 | - | - | 28 | 65 | 180 | 15 | F05 |
| 65 | 2.1/2 | 46 | - | - | 48 | 65 | 180 | 15 | F05 |
| 80 | 3 | 46 | 48 | 48 | 67 | 65 | 215 | 15 | F05 |
| 100 | 4 | 52 | 54 | 54 | 88 | 65 | 215 | 15 | F05 |
| 125 | 5 | 56 | 57 | 59 | 114 | 65 | 265 | 15 | F05 |
| 150 | 6 | 56 | 57 | 59 | 142 | 65 | 265 | 15 | F05 |
| 200 | 8 | 60 | 64 | 73 | 194 | 75 | 325 | 15 | F07 |

Butterfly Valve Lug Type with Warm Gear Operated

| SIZE | | CATEGORY 'A' FACE TO FACE | A CATEGORY 'B' | | D | E | F | G | FLANGE MOUNTING (ISO 5211) |
|------|-------|------------------------------|-------------------|------|-----|-----|-----|----|----------------------------|
| MM | INCH | | FACE TO FACE | | | | | | |
| | | | 150# | 300# | | | | | |
| 50 | 2 | 43 | - | - | 28 | 180 | 200 | 15 | F07 |
| 65 | 2.1/2 | 46 | - | - | 48 | 180 | 200 | 15 | F07 |
| 80 | 3 | 46 | 48 | 48 | 67 | 180 | 200 | 15 | F07 |
| 100 | 4 | 52 | 54 | 54 | 88 | 180 | 200 | 15 | F07 |
| 125 | 5 | 56 | 57 | 59 | 114 | 180 | 200 | 15 | F07 |
| 150 | 6 | 56 | 57 | 59 | 142 | 240 | 250 | 15 | F07 |
| 200 | 8 | 60 | 64 | 73 | 194 | 285 | 350 | 15 | F10 |
| 250 | 10 | 68 | 71 | 83 | 243 | 285 | 350 | 18 | F10 |
| 300 | 12 | 78 | 81 | 92 | 292 | 285 | 350 | 18 | F10 |
| 350 | 14 | 92 | 92 | 117 | 330 | 300 | 350 | 22 | F12 |
| 400 | 16 | 102 | 102 | 133 | 375 | 305 | 500 | 22 | F14 |
| 450 | 18 | 114 | 114 | 149 | 425 | 305 | 500 | 24 | F14 |
| 500 | 20 | 127 | 127 | 159 | 470 | 370 | 450 | 26 | F16 |
| 600 | 24 | 154 | 154 | 181 | 570 | 350 | 600 | 26 | F16 |

- * Dimensions and other engineering data are subjected to change without notice.
- * Dimensions are as per standard API 609

Pneumatic / Electric actuator operated butterfly valve

SMIT
VALVES

TECHNICAL STANDARDS

Manufacturing Standard : API 609 Category A/BS 5155 / C-504

Face to Face : Short wafer as per ISO 5752 / API 609 Category A

Top Flange Drilling : ISO 5211 Part II

Inspection and Testing Standard : API 598 / BS 6755

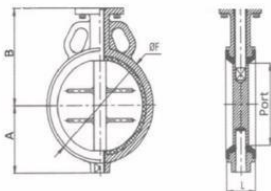
Flange standard conformity : ANSI 150, DIN Pn6 / 10, JIS 5K / 10K Bs10 Tab D & E, IS 6392 PN1.0/1.6

KEY FEATURES

- Integrally moulded seat liner on the body, which ensures excellent dimensional stability & guaranteed seat tightness.
- Seat liner extending on to the contact faces ensures perfect sealing and eliminates the need to separate flange gaskets.
- Narrow land disc ensures perfect sealing with least operating torque requirements.
- A fully universal body design ensures fitting of the valve between companion flanges of all popular standards (viz, ANSI, BS, DIN, JIS, IS etc.)
- The notch disc and band lever ensures locking of the valve in 8 intermediate position in addition to close and open position.
- Body casting made of superior FG 260 grade cast iron in to ensure additional strength.
- Valve disc made of stainless steel / ductile cast iron which enable protection against possible water hammer or pressure surges.
- A truly line size body bone to ensure maximum flow capacity with lowest pressure drop.

MATERIALS

| PART NAME | MATERIAL OPTION |
|-------------------|--------------------------------------------------------------------------------|
| Design | Centric Disc Design Butterfly Valves |
| Body | CI (IS 210, Gr.FG 200/200) / ASTM A 216 WCB / ASTM A 351 CF8 / ASTM A 351 CF8M |
| Disc | CF 8 / CF8M / SG1 |
| Seat | Nitrile / EPDM / Silicon |
| Shaft | AISI 410 |
| Valve Type | Centric Disc Butterfly Valve with a single pcs rubber lined body. |
| Body Type | Short wafer (Sandwich between flanges) |
| Seat Type | Integral Moulded with the body |
| End Connection | Wafer Sandwiched |
| Pressure Rating | PN 10 / PN 16 |
| Oper. Temp. Range | -25°C to 120°C (Depending on Seat) |
| Seat leakage | Tight shut off |



ACCESSORIES

- On / Off Indicator
- Namur standard 5/2 & 3/2 way SOV in all standard coil voltage (Flame proof solenoid coil on request)
- Pneumatic & Electro Pneumatic valve positioner
- Deductible manual over ride.
- Limit switch for on / off indication at panel board
- FRL Set with pressure gauge.
- Volume Booster
- Air Lock Valve
- Quick Exhaust Valve

PTL MODEL ELECTRIC ACTUATOR

- Type : On / Off type
- Voltage : 24v, 36v, 110v, 220v, 380v, 415v
- Protection : IP 67
- L N Key type manual over ride.
- In Built Position monitor

Options available.

- Hand wheel type manual over ride
- Modulating type with LCD
- Intelligent control for remote/local operation
- Explosion Proof - OHQ series.



DIMENSIONS (All dimensions are in mm)

| MODEL | Size (MM) | A | B | L | ØF | Port |
|-------------|-----------|-------|-------|-----|-----|------|
| PTBFV - 40 | 40 | 61 | 106 | 34 | 80 | 40 |
| PTBFV - 50 | 50 | 65 | 121 | 44 | 95 | 50 |
| PTBFV - 65 | 65 | 71 | 124 | 46 | 108 | 65 |
| PTBFV - 80 | 80 | 80 | 130 | 46 | 124 | 80 |
| PTBFV - 100 | 100 | 98.5 | 146.5 | 52 | 150 | 100 |
| PTBFV - 125 | 125 | 112.5 | 162 | 56 | 186 | 125 |
| PTBFV - 150 | 150 | 125 | 177 | 56 | 205 | 150 |
| PTBFV - 200 | 200 | 152.5 | 202 | 60 | 258 | 200 |
| PTBFV - 250 | 250 | 193 | 262 | 68 | 316 | 241 |
| PTBFV - 300 | 300 | 218 | 287 | 78 | 365 | 286 |
| PTBFV - 350 | 350 | 255 | 332 | 78 | 435 | 333 |
| PTBFV - 400 | 400 | 310 | 363 | 102 | 488 | 382 |
| PTBFV - 450 | 450 | 340 | 388 | 114 | 540 | 433 |
| LECTO - 500 | 500 | 370 | 425 | 127 | 600 | 476 |
| LECTO - 600 | 600 | 449 | 495 | 154 | 695 | 590 |

Pneumatic / Electric actuator operated ball valve

SMIT®

MATERIALS

| PART NAME | MATERIAL OPTION |
|--------------------|-------------------------------|
| Body | WCB / CF8 / CF8M / CF3M |
| End Connector | WCB / CF8 / CF8M / CF3M |
| Ball | CF8 / CF8M / CF3M |
| Ball Seat | PTFE / GFT |
| Stem Pin | AISI S.S. 304 / S.S. 316 |
| Gland with Bush | S.S. 304 |
| Body Seat | PTFE / CFT / GFT / PEEK / TFM |
| Stem Seat | PTFE / CFT / GFT / PEEK / TFM |
| Nut | M.S. / S.S. |
| Stud | M.S. / S.S. |
| Washer | M.S. / S.S. |
| Gland Fitting Bolt | S.S. |
| Actuator | STD |

TECHNICAL STANDARDS

- Manufacturing Standard : BS 5351
- Face to Face : ANSI B16.10
- End Connection : Flanged Ends to ANSI B16.5 RF 150#
- Inspection And Testing Standard : BS 6755
- Fire Safe Design as per BS 6755 / API 607

KEY FEATURES

- Compact and simple construction provides ease in maintenance without disturbing insulations and piping.
- Easy Operation even under high pressure.
- Full circular passages.
- Easily replaceable PTFE seats & packing.
- Prolonged successful operation even under high pressure.

TEST PRESSURE 150# / 300#

| TESTING | CLASS | BODY | SEAT |
|-----------|-------|-----------|----------|
| Hydraulic | 150 # | 425 psig | 300 psig |
| Pneumatic | 150 # | ----- | 100 psig |
| Hydraulic | 300 # | 1100 psig | 800 psig |
| Pneumatic | 300 # | ----- | 100 psig |

DIMENSIONS

(All dimensions are in mm)

| MODEL | Valve Size (MM) | L | Flanged 150# | | | | | | | | | |
|------------|-----------------|-----|--------------|------|---|------|-------|-----|-------|---|-------|--|
| | | | L1 | OT | f | Port | OR | OF | ØJ | N | K-PCD | |
| PTBV - 15 | 15 | 64 | 108 | 8 | 2 | 13 | 34.9 | 90 | 15.9 | 4 | 60.3 | |
| PTBV - 20 | 20 | 70 | 117 | 8.9 | 2 | 19 | 42.9 | 100 | 15.9 | 4 | 69.9 | |
| PTBV - 25 | 25 | 88 | 127 | 9.6 | 2 | 25 | 50.8 | 110 | 15.9 | 4 | 79.4 | |
| PTBV - 32 | 32 | 105 | 140 | 11.2 | 2 | 32 | 63.5 | 115 | 15.9 | 4 | 88.9 | |
| PTBV - 40 | 40 | 114 | 165 | 12.7 | 2 | 38 | 73 | 125 | 15.9 | 4 | 98.4 | |
| PTBV - 50 | 50 | 130 | 178 | 14.3 | 2 | 49 | 92.1 | 150 | 19.05 | 4 | 120.7 | |
| PTBV - 65 | 65 | 170 | 190 | 15.9 | 2 | 62 | 104.8 | 180 | 19.05 | 4 | 139.7 | |
| PTBV - 80 | 80 | 200 | 203 | 17.5 | 2 | 74 | 127 | 190 | 19.05 | 4 | 152.4 | |
| PTBV - 100 | 100 | 210 | 229 | 22.3 | 2 | 100 | 157.2 | 230 | 19.05 | 8 | 190.5 | |
| PTBV - 125 | 125 | - | 254 | 22.3 | 2 | 125 | 185.7 | 255 | 22.2 | 8 | 215.9 | |
| PTBV - 150 | 150 | - | 267 | 23.9 | 2 | 150 | 215.9 | 280 | 22.2 | 8 | 241.3 | |
| PTBV - 200 | 200 | - | 292 | 27 | 2 | 201 | 269.9 | 345 | 22.2 | 8 | 298.5 | |

OPTIONAL ACCESSORY

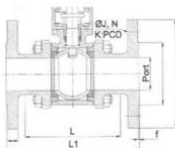
- On / Off Indicator
- Namur standard 5/2 & 3/2 way Solenoid Valve in all standard coil voltage (Flame proof solenoid coil on request)
- Pneumatic & Electro Pneumatic valve positioner.
- Declutchable manual override.
- Limit switch for on / off indication at panel board.
- FRL Set with pressure gauge.
- Volume Booster
- Air Lock Valve.
- Quick Exhaust Valve.

PTL MODEL ELECTRIC ACTUATOR

- Type : On / Off type
- Voltage : 24v, 36v, 110v, 220v, 380v, 415v
- Protection : IP 67
- LN Key type manual over ride.
- In Built Position monitor

Options available.

- Hand wheel type manual over ride
- Modulating type with LCD
- Intelligent control for remote/local operation
- Explosion Proof - OHQ series.



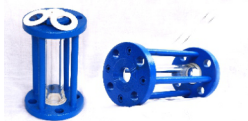
DIMENSIONS

(All dimensions are in mm)

| MODEL | Valve Size (MM) | L1 | OT | f | Flanged 300# | | | | | | |
|------------|-----------------|-----|------|---|--------------|-------|-----|-------|----|-------|--|
| | | | | | Port | OR | OF | ØJ | N | K-PCD | |
| PTBV - 15 | 15 | 140 | 12.7 | 2 | 13 | 34.9 | 95 | 15.9 | 4 | 66.7 | |
| PTBV - 20 | 20 | 152 | 14.3 | 2 | 19 | 42.9 | 115 | 19.05 | 4 | 82.6 | |
| PTBV - 25 | 25 | 165 | 15.9 | 2 | 25 | 50.8 | 125 | 19.05 | 4 | 88.9 | |
| PTBV - 32 | 32 | 178 | 17.5 | 2 | 32 | 63.5 | 135 | 19.05 | 4 | 98.4 | |
| PTBV - 40 | 40 | 190 | 19.1 | 2 | 38 | 73 | 155 | 22.2 | 4 | 114.3 | |
| PTBV - 50 | 50 | 216 | 20.7 | 2 | 49 | 92.1 | 165 | 19.05 | 8 | 127 | |
| PTBV - 65 | 65 | 241 | 23.9 | 2 | 62 | 104.8 | 190 | 22.2 | 8 | 149.2 | |
| PTBV - 80 | 80 | 282 | 27 | 2 | 74 | 127 | 210 | 22.2 | 8 | 168.3 | |
| PTBV - 100 | 100 | 305 | 30.2 | 2 | 100 | 157.2 | 255 | 22.2 | 8 | 200 | |
| PTBV - 125 | 125 | 381 | 33.4 | 2 | 125 | 185.7 | 280 | 22.2 | 8 | 235 | |
| PTBV - 150 | 150 | 403 | 35 | 2 | 150 | 215.9 | 320 | 22.2 | 12 | 269.9 | |

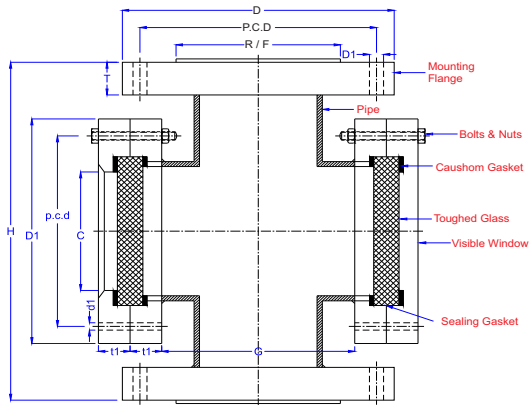
 Full View Sight Glass

| Size | Port | L | |
|------|------|---------|-----------|
| | | Face ID | Face - RF |
| | | 4" LONG | 6" LONG |
| 15 | 13 | 120 | 170 |
| 20 | 19 | 120 | 170 |
| 25 | 25 | 120 | 170 |
| 40 | 38 | 120 | 170 |
| 50 | 51 | 120 | 170 |
| 80 | 76 | 120 | 170 |
| 100 | 102 | 120 | 170 |



*Dimensions and other engineering data are subjected to change without notice.

 Double Window Sight Glass



| | 1/2" | 1" | 1.5" | 2" | 3" | 4" | 6" |
|---------------------------------|------|------|-------|-------|--------|--------|--------|
| Flange To Flange (Total Height) | 130 | 160 | 195 | 230 | 308 | 350 | 350 |
| P C D | 60.5 | 79 | 98 | 119 | 151 | 190 | 241.5 |
| OD of Flange | 89 | 113 | 125 | 150 | 189 | 227 | 280 |
| Thickness of Flange | 11 | 11.5 | 13.5 | 14.5 | 15 | 16.8 | 25 |
| Toughned Glass (oxmm Thick) | 50x8 | 59x8 | 79x12 | 89x12 | 123x12 | 125x15 | 180x15 |

*Dimensions and other engineering data are subjected to change without notice.

Specification & Properties of Materials

| Specifications ASTM | COMPOSITION | | | | | | | | | MECHANICAL CHARACTERISTICS | | | | |
|--------------------------|-------------|-----------|-------|-------|-----------|-------------|-----------|-------------|------------------------------------------|----------------------------|-----------------|-----------------|--------------|-------------|
| | C max | Mn max | P max | S max | Si max | Cr max | Mo max | Ni max | Others | UTS min. | Y 5 min. Mpa | Elong % min. | RA % min. | HARDNESS |
| A 216 WCB | 0.30 | 1.00 | 0.04 | 0.045 | 0.60 | 0.50 | 0.20 | 0.50 | Cu < 0.3 | 485-655 | 250 | 22 | 35 | |
| A 216 WCC | 0.25 | 1.20 | 0.04 | 0.045 | 0.60 | 0.5 | 0.20 | 0.50 | Cu < 0.3 | 485-655 | 275 | 22 | 35 | |
| A 351 CF8 | 0.08 | 1.50 | 0.04 | 0.04 | 2.00 | 18.00-21.00 | 0.50 | 8.00-11.00 | - | 485 | 205 | 35 | - | |
| A 351 CF8 C | 0.08 | 1.50 | 0.04 | 0.04 | 2.00 | 18.00-21.00 | 0.50 | 9.00-12.00 | Cb + min 0.8 x | 485 | 205 | 30 | - | |
| A 351 CF8 M | 0.08 | 1.50 | 0.04 | 0.04 | 1.50 | 18.00-21.00 | 2.00-3.00 | 9.00-12.00 | C max 1.00 | 485 | 205 | 30 | - | |
| A 351 CF3 | 0.03 | 1.50 | 0.04 | 0.04 | 2.00 | 17.00-21.00 | 0.50 | 8.00-12.00 | - | 485 | 205 | 35 | - | |
| A 351 C3M | 0.03 | 1.50 | 0.04 | 0.04 | 1.50 | 17.00-21.00 | 2.00-3.00 | 9.00-13.00 | - | 485 | 205 | 30 | - | |
| A 351 CN 7M | 0.07 | 1.50 | 0.04 | 0.04 | 1.50 | 19.00-22.00 | 2.00-3.00 | 27.5-30.5 | Cu 3.00- 4.00 | 425 | 170 | 35 | - | |
| A 352 LCB | 0.30 | 1.00 | 0.04 | 0.05 | 0.60 | 0.50 | 0.20 | 0.50 | Cu < 0.3 | 450-620 | 240 | 24 | 35 | |
| A 352 LCC | 0.25 | 1.20 | 0.04 | 0.05 | 0.60 | 0.50 | 0.20 | 0.50 | - | 485-655 | 275 | 22 | 35 | |
| A 217 WC 6 | 0.05-0.20 | 0.50-0.80 | 0.04 | 0.045 | 0.60 | 1.00-1.50 | 0.45-0.65 | 0.50 | Cu < 0.5 | 485-655 | 275 | 20 | 35 | |
| A 217 WC 9 | 0.05-0.18 | 0.40-0.70 | 0.04 | 0.045 | 0.60 | 2.00-2.75 | 0.90-1.20 | 0.50 | Cu < 0.5 | 485-655 | 275 | 20 | 35 | |
| A 217 C 5 | 0.20 | 0.40-0.70 | 0.04 | 0.045 | 0.75 | 4.00-6.50 | 0.45-0.65 | 0.50 | Cu < 0.5 | 620-795 | 415 | 18 | 35 | |
| A 217 C 12 | 0.20 | 0.35-0.65 | 0.04 | 0.05 | 1.00 | 8.00-10.00 | 0.90-1.20 | 0.50 | Cu < 0.5 | 620-795 | 415 | 18 | 35 | |
| A 217 CA 15 | 0.15 | 1.00 | 0.04 | 0.04 | 1.50 | 11.50-14.00 | 0.50 | 1.00 | - | 620-795 | 450 | 18 | 30 | |
| A 105 | 0.35 | 0.60-1.05 | 0.035 | 0.04 | 0.10-0.35 | 0.30 | 0.12 | 0.40 | Cu < 0.4 | 485 | 250 | 22 | 30 | max 187 HB |
| A 182 F 5 | 0.15 | 0.30-0.60 | 0.03 | 0.03 | 0.50 | 4.00-6.00 | 0.44-0.65 | 0.50 | - | 485 | 275 | 20 | 35 | 143-217 BHN |
| A 182 F 6 A | 0.15 | 1.00 | 0.04 | 0.03 | 1.00 | 11.50-13.50 | - | 0.50 | - | 585 | 380 | 18 | 35 | 167-229 BHN |
| A 182 F 11 | 0.10-0.20 | 0.30-0.80 | 0.04 | 0.04 | 0.50-1.00 | 1.00-1.50 | 0.44-0.65 | - | - | 485 | 275 | 20 | 30 | 143-207 BHN |
| A 182 F 12 | 0.10-0.20 | 0.30-0.80 | 0.04 | 0.04 | 0.10-0.60 | 0.80-1.25 | 0.44-0.65 | - | - | 485 | 275 | 20 | 30 | 143-207 BHN |
| A 182 F 22 | 0.05-0.15 | 0.30-0.60 | 0.04 | 0.04 | 0.50 | 2.00-2.50 | 0.87-1.13 | - | - | 515 | 310 | 20 | 30 | 156-207 BHN |
| A 182 F 304 | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 18.00-20.00 | - | 8.00-11.00 | N < 0.1 | 515 | 205 | 30 | 50 | |
| A 182 F 316 | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 16.00-18.00 | 2.00-3.00 | 10.00-14.00 | N < 0.1 | 515 | 205 | 30 | 50 | |
| A 350 LF2 | 0.35 | 0.60-1.35 | 0.035 | 0.040 | 0.15-0.30 | 0.30 | 0.12 | 0.40 | Cu < 0.4 | 485 - 655 | 250 | 22 | 30 | |
| A 276 TP 410 | 0.15 | 1.00 | 0.04 | 0.03 | 1.00 | 11.50-13.50 | - | - | - | 480 | 275 | 20 | 45 | |
| A 276 TP 304 | 0.08 | 2.00 | 0.045 | 0.030 | 1.00 | 18.00-20.00 | - | 8.00-10.50 | N < 0.1 | 515 | 205 | 30 | 40 | |
| A 276 TP 304L | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 16.00-18.00 | 2.00-3.00 | 10.00-14.00 | N < 0.1 | 515 | 205 | 30 | 40 | |
| A 276 TP 316L | 0.03 | 2.00 | 0.045 | 0.030 | 1.00 | 18.00-20.00 | - | 8.00-12.00 | N < 0.1 | 485 | 170 | 40 | 50 | |
| B 164 - MONEL | 0.30 | 2.00 | - | 0.024 | 0.50 | - | - | 63.00 | Cu 28-34 Al max 3.00 | 550 | 275 | 30 | - | |
| STELLITE - 6 | 0.90-1.40 | 1.00 | 0.04 | 0.04 | 1.50 | 27.00-31.00 | 1.50 | 3.00 | W 3.5-5.5 Fe 3.00 bal Co | 895 | | 1 | | 344 BHN MIN |
| 439 D2C | 2.9 | 1.80-2.40 | 0.08 | - | 1.00-3.00 | 0.50 | - | 21.00-24.00 | - | 400 | 193 | 20 | | 121-171 BHN |
| AL - BRONZE-B 148 Gr 955 | | 3.50 | | | | | | 3.00-5.50 | Cu min 78.00 Fe 3.00-5.00 Al 10.00-11.50 | 620 | 275 | 6 | | 190 BHN |
| A 193 GR.B7 | 0.37-0.49 | 0.65-1.10 | 0.035 | 0.04 | 0.15-0.35 | 0.75-1.20 | 0.15-0.25 | | | 860 | 725 | 16 | 50 | 35 HRC max |
| A 193 GR.B7M | 0.37-0.49 | 0.65-1.10 | 0.035 | 0.04 | 0.15-0.35 | 0.75-1.20 | 0.15-0.25 | | | 690 | 552 | 18 | 50 | 99 HRB max |
| A 193 GR.B16 | 0.36-0.47 | 0.45-0.70 | 0.035 | 0.04 | 0.15-0.35 | 0.80-1.15 | 0.50-0.65 | | Va 0.25 - 0.35 Al 0.015 | 860 | 725 | 18 | 50 | 35 HRB max |
| A 193 GR.B8 | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 18.00-20.00 | | 8.00-11.00 | | 517 | 207 | 30 | 50 | 96 HRB max |
| A 193 GR.B8M | 0.08 | 2.00 | 0.045 | 0.030 | 1.00 | 16.00-18.00 | 2.00-3.00 | 10.00-14.00 | | 517 | 207 | 30 | 50 | 96 HRB max |
| A 320 GR.L7 | 0.38-0.48 | 0.75-1.00 | 0.035 | 0.04 | 0.15-0.35 | 0.80-1.10 | 0.15-0.25 | | | 860 | 725 | 16 | 50 | |
| A 194 GR.2H | min 0.40 | 1.00 | 0.040 | 0.05 | 0.40 | | | | | | | | | 24-38 HRC |
| A 194 GR.2HM | min 0.40 | 1.00 | 0.040 | 0.05 | 0.40 | | | | | | | | | 22 HRC max |
| A 194 GR.8 | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 18.00-20.00 | | 8.00-11.00 | | | | | | 126-300 BHN |
| A 194 GR.8M | 0.08 | 2.00 | 0.045 | 0.03 | 1.00 | 16.00-18.00 | 2.00-3.00 | 10.00-14.00 | | | | | | 126-300 BHN |
| A 194 GR.7 | 0.37-0.49 | 0.65-1.10 | 0.040 | 0.04 | 0.15-0.35 | 0.75-1.20 | 0.15-0.25 | | | | | | | 24-38 HRC |
| A 194 GR.4 | 0.40-0.50 | 0.70-0.90 | 0.035 | 0.04 | 0.15-0.35 | | 0.20-0.30 | | | | | | | 24-38 HRC |



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