



General service gate, globe and check valves

Technical brochure



Commitment made of steel

1. COMPANY PROFILE

AMPO is an **international leader** in highly engineered valves and Integrated Smart Solutions for the most severe applications and industries as well as in stainless steel and high alloy castings.

Through our AMPO SERVICE team **we guarantee a prompt response** to customer needs wherever they are throughout the world: technical support in start-up stages, equipment selection, predictive and preventive maintenance, training, etc.



Fully inhouse manufacturing process



Worldwide references



Project based on people



Innovative spirit



700+ people



In more than 60 countries



Most important partners in the industry



Cutting edge technologies



Our commitment: the best service



Customer focus



Since 1964



2. APPLICATION

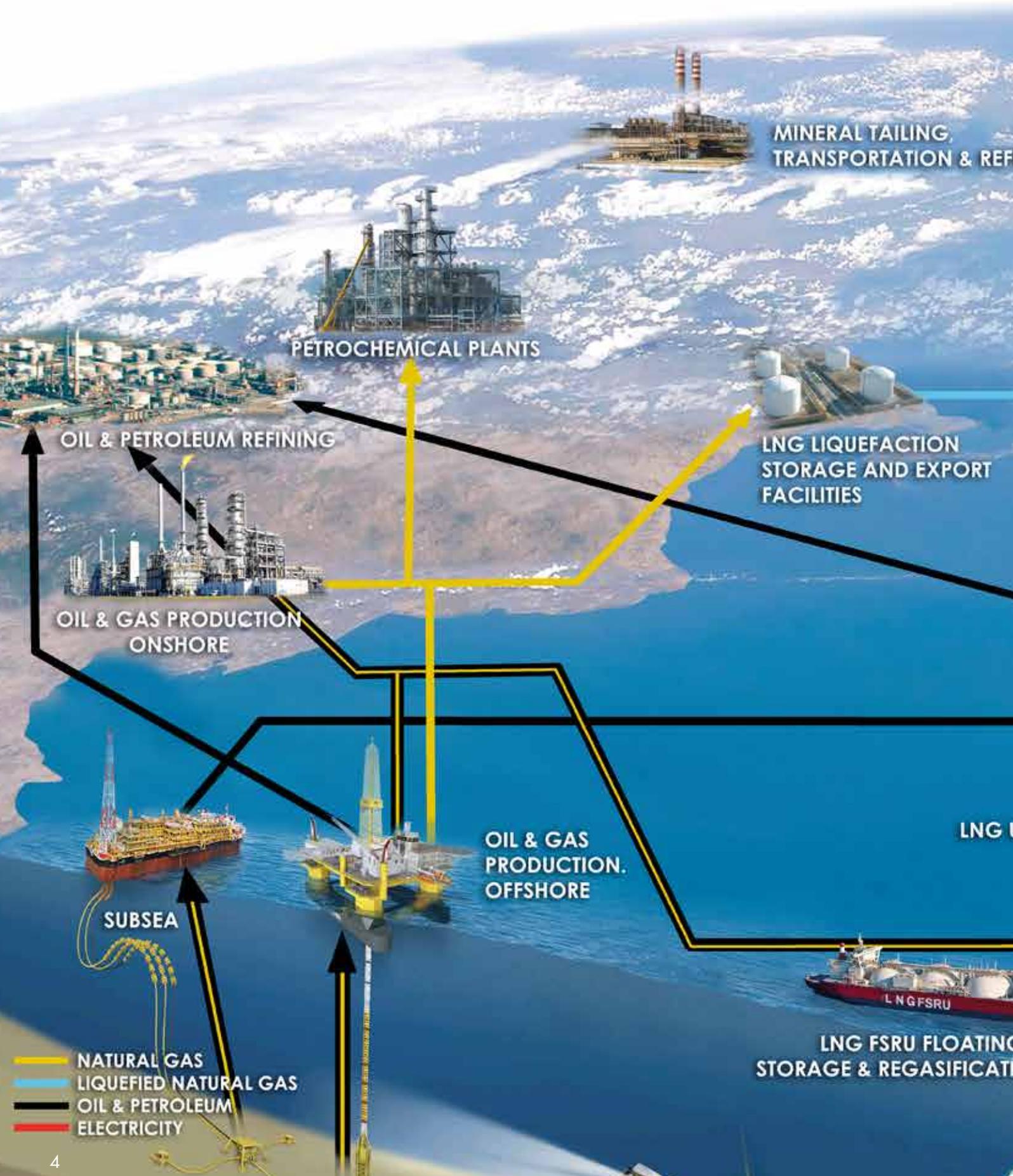
AMPO POYAM VALVES offers highly engineered gate, globe and check valves, which are **tailored designed for all types of applications where reliability and safety are both ours and our clients primary concern.**

Our wide range of general service gate, globe and check valves **covers a variety of service applications in the energy industry such as refineries, petrochemical plants, offshore platforms, gas processing plants, mining, etc.** and create complete reliability due to the valves' robust design and optimum performance, backed by over 50 years' history.

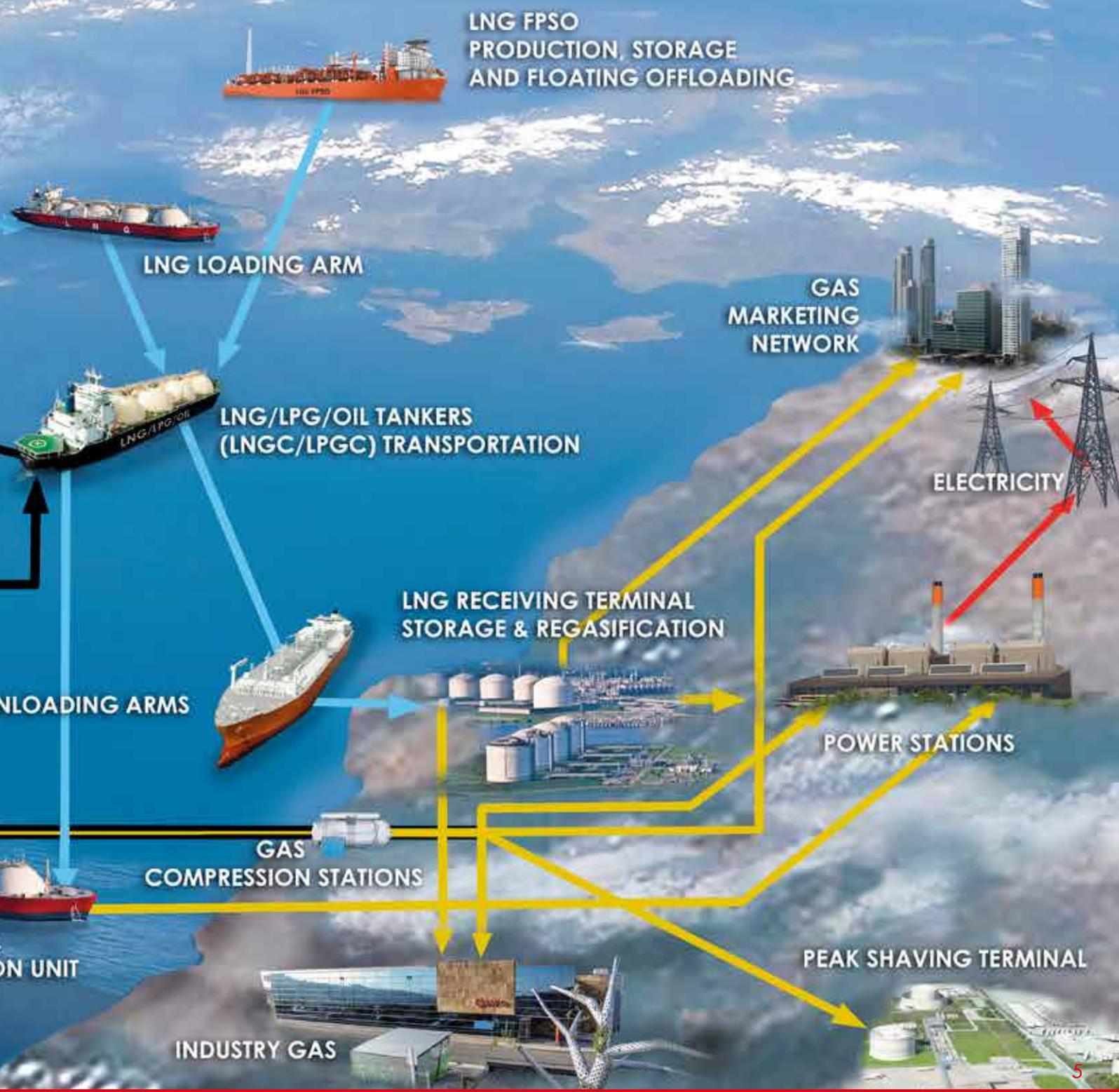
AMPO POYAM VALVES is one of the world's leading manufacturers of high specification gate, globe and check valves for the energy sector, recognized as a top leader in quality and innovation. Our company's advanced engineering capabilities and innovation-driven focus, has led to the continuous expansion of our offer of highly engineered gate, globe and check valves.



AMPO POYAM VALVES IN THE COMPLETE ENERGY CHAIN



NING



3. GENERAL SERVICE GATE, GLOBE & CHECK VALVES

GENERAL SERVICE GATE VALVES

Sizes: 2" up to 72".

Pressure class: 150 LBS to 2500 LBS.

Temperature: Down to -46°C.

Bonnet type: Bolted bonnet or Pressure seal bonnet.

Wedge type: Flexible wedge, solid wedge or parallel seats.

Standards: API 600, API 602, API 603, ASME B16.34, ISO 15761, EN 12516.

Materials: WCB, LCB, LCC, WC6, WC9, C12, CA15, CF3, CF3M, CF8, CF8M, CK3MCuN, A995 4A, A995 5A, HAST C, ALLOY 625, TITANIUM...

Seats: Metallic, stellite, soft seat.

Seals: Gaskets: Innoxgraf, spiral wound, RTJ, graphoil.
Packing: Graphite, PTFE.

Ends: RF, BW, RTJ, FF, NPT, SW; CLAMPS

Actuation: Actuator, gearbox, handwheel.

Industries and applications: Natural gas processing, oil & petroleum refining, petrochemical, chemical and power.



GENERAL SERVICE GLOBE VALVES

Sizes: 2" up to 48".

Pressure class: 150 LBS to 2500 LBS.

Temperature: Down to -46°C.

Bonnet type: Bolted bonnet or Pressure seal bonnet.

Opening type: Linear, slow opening, quick opening & stop-check.

Construction: Straight pattern, Y-type pattern, angle pattern.

Standards: API 623, API 602, ASME B16.34, BS 1873, ISO 15761, EN 12516.

Materials: WCB, LCB, LCC, WC6, WC9, C12, CA15, CF3, CF3M, CF8, CF8M, CK3MCuN, A995 4A, A995 5A, HAST C, ALLOY 625, TITANIUM...

Seats: Metallic, stellite, soft seat.

Seals: Gaskets: Spiral wound, RTJ, graphoil.
Packing: Graphite, PTFE.

Ends: RF, BW, RTJ, FF, NPT, SW; CLAMPS

Actuation: Actuator, gearbox, handwheel.

Industries and applications: Natural gas processing, Oil & petroleum refining, petrochemical, chemical and power.



GENERAL SERVICE CHECK VALVES

Sizes: 2" up to 48".

Pressure class: 150 LBS to 2500 LBS.

Temperature: Down to to -46°C.

Bonnet type: Bolted bonnet or Pressure seal bonnet.

Construction: Swing type, lift type, axial type.

Closure type: Swing disc, tilting disc, conical plug.

Standards: API 6D, API 602, API 594, ASME B16.34, BS 1868, ISO 15761, EN 12516.

Materials: WCB, LCB, LCC, WC6, WC9, C12, CA15, CF3, CF3M, CF8, CF8M, CK3MCuN, A995 4A, A995 5A, HAST C, ALLOY 625, TITANIUM...

Seats: Metallic, stellite, soft seat.

Seals: Gaskets: Spiral wound, RTJ, graphoil.
Packing: N/A

Ends: RF, BW, RTJ, FF, NPT, SW; CLAMPS

Actuation: N/A.

Industries and applications: Natural gas processing, oil & petroleum refining, petrochemical, chemical and power.



4. WHY CHOOSE OUR GENERAL SERVICE GATE, GLOBE & CHECK VALVES?



More than 200k general service gate, globe and check valves in safe and reliable operation.



LONG SERVICE LIFE due to our proven sealing technology of more than 40 years.



The valve construction is in compliance with **INTERNATIONAL STANDARDS**.



MINIMUM PRESSURE-DROP is ensured.



FIRE SAFE DESIGN in compliance with API 607 and API 6FA.



TAILOR MADE DESIGN: Body and TRIM components can be selected and designed for each project and application, considering fluid/flow properties of each service.



LOW OPERATION TORQUE with consequent cost savings. Moreover, torque remains consistent.



ZERO LEAKAGE with preferential and non-preferential flow. Precision ground seating surface assuring zero leakages.



LOW FUGITIVE EMISSIONS, achieving a **CLASS A** level solution and increasing plant safety.



EASY MAINTENANCE AND HIGH INTERCHANGEABILITY, due to components' standardization.

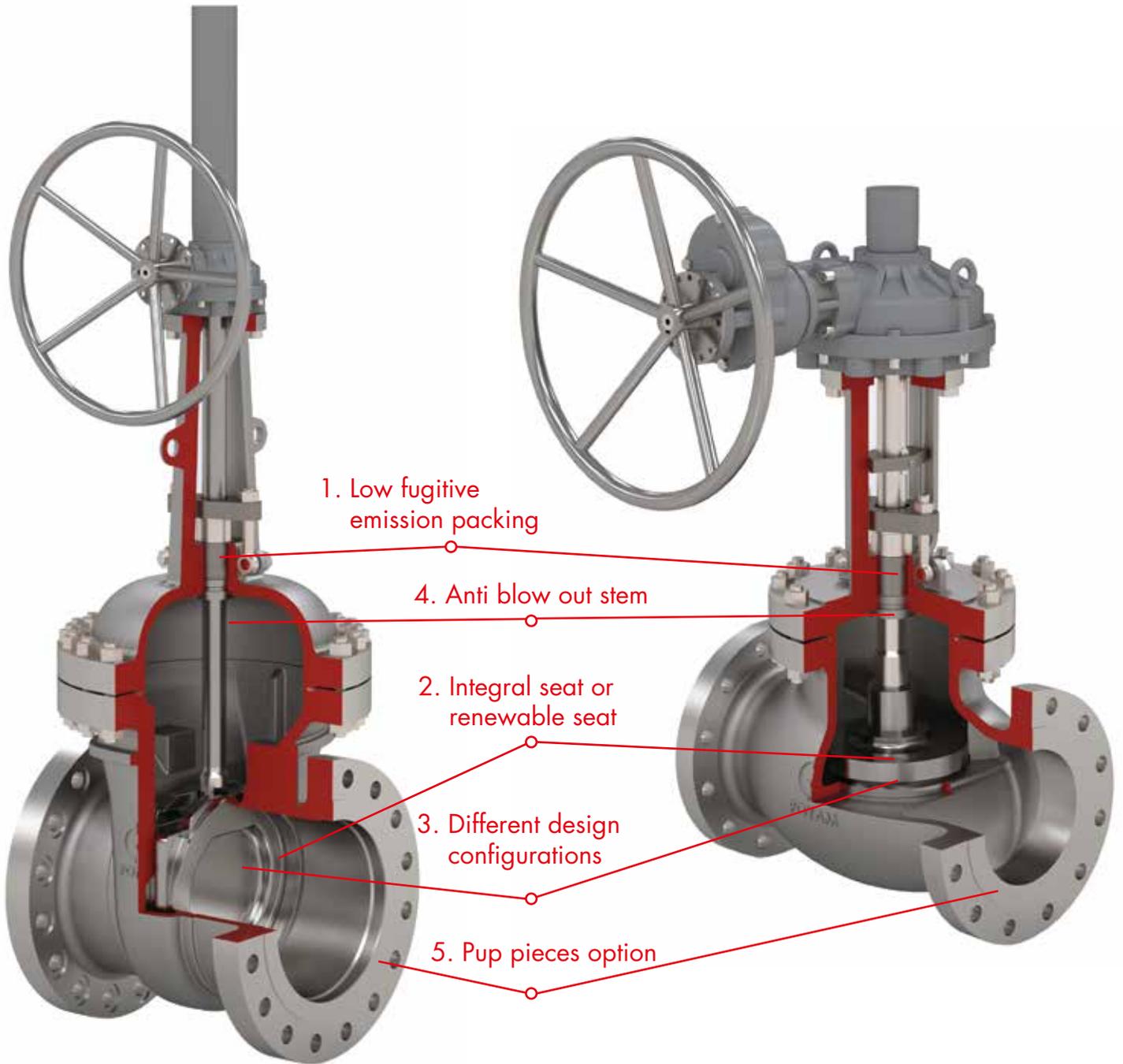


SAFE AND FLEXIBLE valve handling systems, even with large actuators.



5. TECHNICAL FEATURES

5.1 GENERAL SERVICE GATE & GLOBE VALVES



GENERAL SERVICE GATE VALVE

GENERAL SERVICE GLOBE VALVE

5.1.1 LOW FUGITIVE EMISSION PACKING:

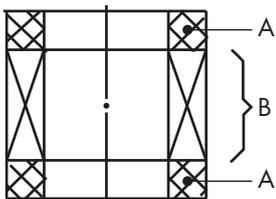
In severe service conditions, the graphite material parts suffer more than in other processes. Stem sealing is an extremely important valve performance feature, since seal leakage can represent safety hazard, a potential environmental risk, energy loss or a loss of product.

The packing area design optimization is critical in gate and globe valves, since it is the key location for the possible external leakages that valves in this service can suffer due to the rising stem design.



- **GRAPHITE RINGS:**

- Braided Graphite Inner and Upper rings → A
- Die Formed Corrosion Inhibited graphite rings → B



- This configuration is defined by international standards.
- Low-emission packing as per API 622 is AMPO's standard packing choice.

The following design options can be considered depending on the client's requirements:

- **GRINDING** in the stem and stuffing box for a better surface finishing and extra sealing performance (lip seal + graphite packing).

- **LIVE-LOADING SYSTEM:**

A live-loading system is also available with belleville springs, to avoid any preload relaxation in the bolting.

- **LIP-SEAL** can be applied in our designs before graphite packing (two sealing points).



5.1.2. INTEGRAL SEAT OR RENEWABLE SEAT:

Valve working conditions require performing a fluid process analysis, where the seating solution is defined. While it is a common practice to use renewable seats, some services may require the design solution to be reconsidered, obtaining a reliable sealing for a lifetime without extra parts.

AMPO POYAM VALVES can offer welded, threaded, and integral seats and different hardfacing options.



Renewable seat



Integral seat



Renewable seat



Integral seat

5.1.3. DIFFERENT DESIGN CONFIGURATIONS:

5.1.3.1. GATE VALVES:

The main constructions of general service gate valves are:

- **WEDGE GATE:**

In this type of valve, the seating element is wedge-shaped. Therefore, the wedge closes against two inclined seats.

The purpose of the wedge shape is to introduce a high supplementary seating load that enables metal-sealed wedge gate valves to seal against not only high but also low fluid pressure.

Wedge valves' sealing is performed by the closing manual (or actuated) force. This means that the force applied by the operator has direct impact on valve sealing performance.

The wedge can be either flexible or solid. Flexible wedge gate valves are considered a higher performance solution than solid wedge gate valves: they require lower closing force and due to its flexibility, the sealing performance increases with pressure drop. Manufacturing adjustments are higher in solid wedge designs.



Flexible wedge



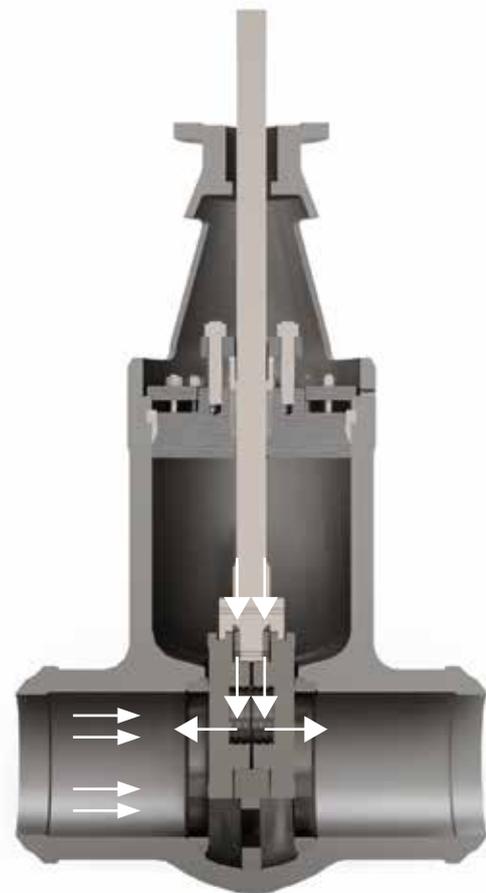
Solid wedge

Soft seated wedge gate valves can be manufactured upon request.

- **PARALLEL SLIDE GATE:**

The parallel slide gate valve is designed to obtain a sealing with a correct positioning of the wedge, avoiding over-torque. This is achieved with an open and close mechanical stopper, that guarantees the correct location of the wedge in both positions.

Parallel slide gate valves are generally used in high pressure condition, as they take advantage of the line pressure to push the closure member against the seats. As shown in the below figure, when the line pressure enters the cavity, it helps pushing the wedges against the seats, assuring that the valve closes properly. Under low pressure conditions, a spring system guarantees the valve sealing.



Parallel slide gate valve working principle

In high-pressure and temperature severe applications, the closure member of gate valves is more likely to deform or expand. In such cases, parallel slide configuration can be a more suitable option.

5.1.3.2. GLOBE VALVES:

The main constructions of general service globe valves are:

- Straight pattern or "T" form.
- "Y" pattern with inclined bonnet design.

Angle pattern is also available upon request.



Straight pattern



Y-pattern



Angle pattern

Some of the highlights on the comparison of these designs are:

- Drop pressure depends on the body configuration.
- The different body pattern configurations allow the valve installation in every orientation possible: straight lines ("T" pattern), inclined lines ("Y" pattern) and 90° lines (angle pattern).

The design of the disc against the seating surfaces can warranty a quick opening, linear opening, or slow opening operation, providing higher control of the flow during the operation of the valve. Cv / Opening % charts are available upon request. Throttling option is also available as per request.

The closure member can be either conical or parabolic:



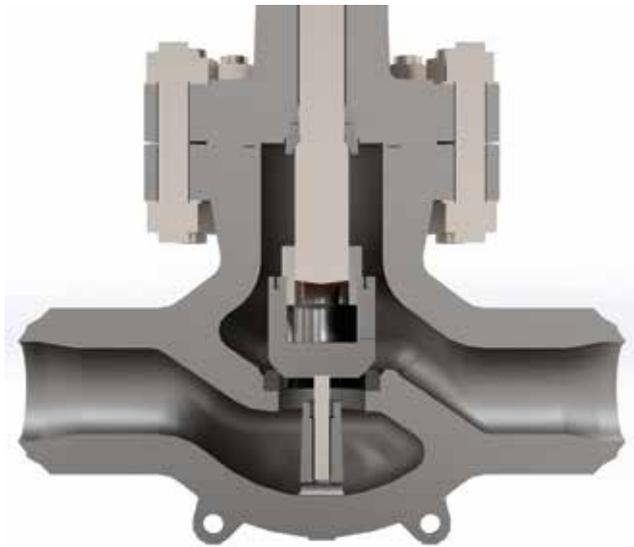
Conical disc



Parabolic disc

Soft seated globe valves can also be manufactured upon request.

Globe valves can be designed as stop check valves. A stop check valve design has the advantages of the check valve, working as a non-return when it is in open position and the advantage of the globe valve for shut-off when closed.



When the stem is in open position the disc can move freely

5.1.4. ANTI BLOW OUT STEM:

The stem is inserted from inside the valve body to prevent any possible blowout. When the gland flange is removed, the stem is held securely by the backseat even when the valve is under pressure.



Backseat in contact with the stem when the valve is in open position

The backseat is a critical area of the valve. Not only it holds the stem against the bonnet but also it prevents leaks. The backseat is the first barrier of any possible stem leakage. Moreover, it is an important performance checkpoint of the valve.

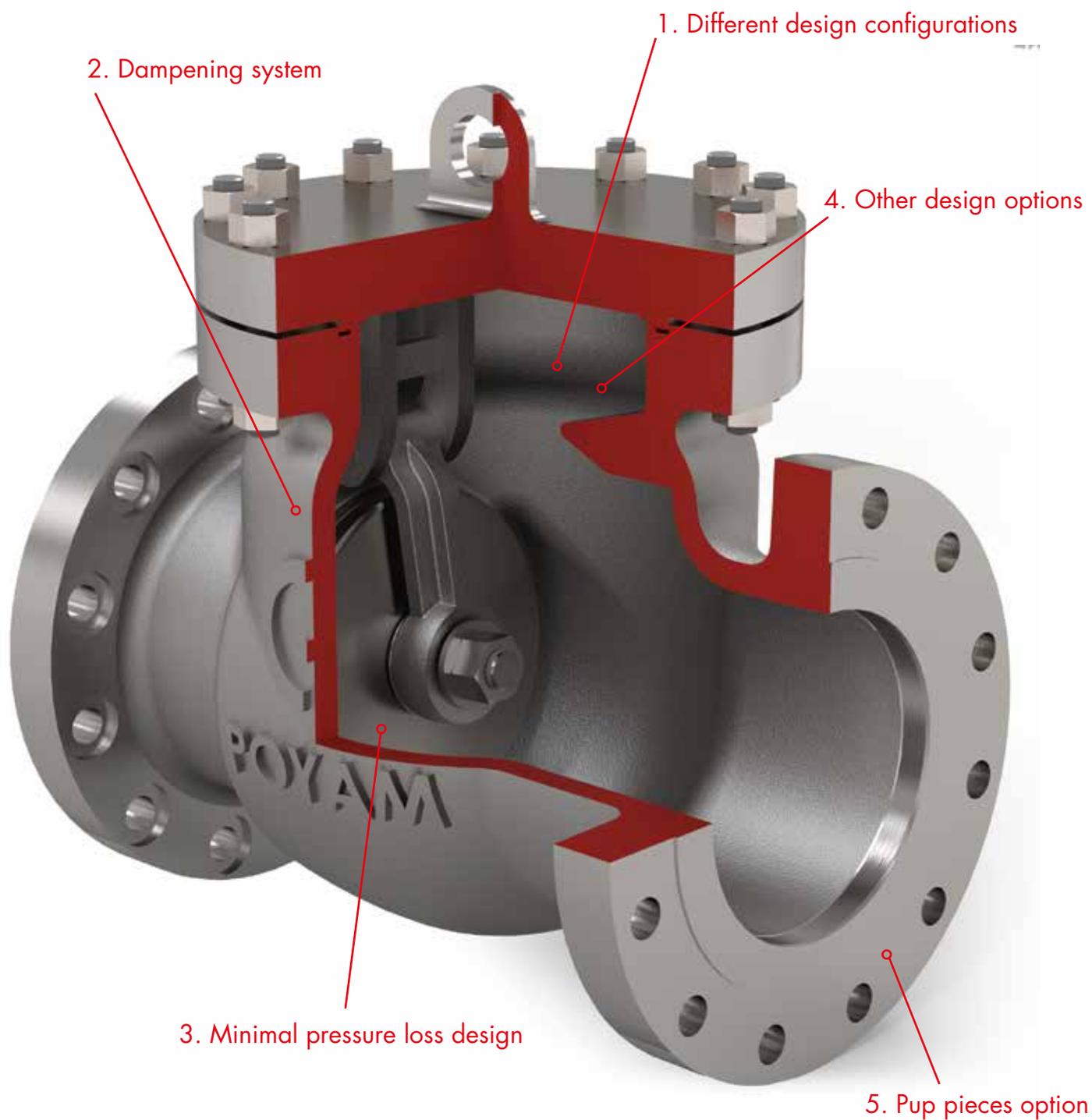
AMPO offers welded, threaded, and integral backseat configuration depending on the client's needs. Multiple hardfacing options are available upon request.

5.1.5. PUP PIECES:

Transition pieces are available upon request.



5.2. GENERAL SERVICE CHECK VALVES



5.2.1. DIFFERENT DESIGN CONFIGURATIONS:

AMPO POYAM VALVES offers three main check valve construction types:

- **SWING CHECK VALVES:**

It is the most common check valve construction. The fluid flows straight through the valve, pushing a swing plate that swings freely on a hinge. Swing check valves have low pressure drop and are best suitable for moderate velocity applications.

- **LIFT CHECK VALVES:**

The closure member is lifted from the seat during forward flow. The valve construction is similar to stop-check globe valve, but, in this case, the valve opening cannot be manually limited.

- **AXIAL FLOW CHECK VALVES:**

The closure member moves in the line of the flow. The closure member is spring assisted, avoiding water hammer effect when the valve closes due to fluid velocity decrease. Either too low line velocity or too high velocity can damage valve internals and shorten valve life. In these cases, non-slam axial check valves can be used, which offer a rapid self-dampening response to flow reductions. Axial flow check technical brochure is available on demand.



Swing check valve



Lift check valve



Axial flow check valve

5.2.2. DAMPENING SYSTEM:

As standard, check valves are designed as swing check valves. These valves come with an internal hinge, but external hinge swing check valves are also available with an optional outside gearbox, counterweight, or damper. This feature can be used to make smoother or assist closing of the check valve disc depending on orientation.

5.2.3. MINIMAL PRESSURE LOSS DESIGN:

Swing check valves' straight through design allows lower pressure-drop compared to other check valves. The disc can move/swing freely, requiring low pressure to move up. By the use of a counterweight for counterbalancing the disc, the valve can be opened requiring even lower flow rates.

The internal profile of axial check valve body and disc is designed to closely follow the precisely contoured surface of the diffuser, minimizing the pressure loss.

5.2.4. OTHER DESIGN OPTIONS:

Soft seated check valves can be manufactured upon request. Also, swing Check valves can be manufactured with gearbox to make the valve piggable. This kind of valve works as a common swing check valve but when a reverse flow is required by plant process, it can be operated and opened by means of the handwheel.

5.2.5. PUP PIECES:

Transition pieces are available upon request.



6. QUALIFICATION

AMPO POYAM VALVES values quality and therefore our operating and production processes are implemented and controlled by a quality assurance system, certified since 1991 under the ISO 9001 Standard and accredited by the most important external organizations. Moreover AMPO POYAM VALVES holds international standard approvals and completely fulfills international standard requirements, reinforcing its leading position on the energy sector.

A summary of the most demanded standards is presented hereafter, although the qualification list can be extended upon each customer request:

General Standards:

ASME B16.34, JIS, SIL, B16.5, MSS SP-44, B16.47, B16.10, ISO 5752, B16.25, B16.11, ISO 5210/5211, etc.

Fire Safe: API 6FA.

Fugitive Emission: API 624, API 622, ISO 15848 Part 1&2 up to Class A.

Testing: API 6D, ISO 14313, API 598, ISO 5208, MSS SP-134, etc.

Type Approvals (for marine service too): Bureau Veritas, ABS, Lloyds, TUV, DNV, NORSOK, etc.

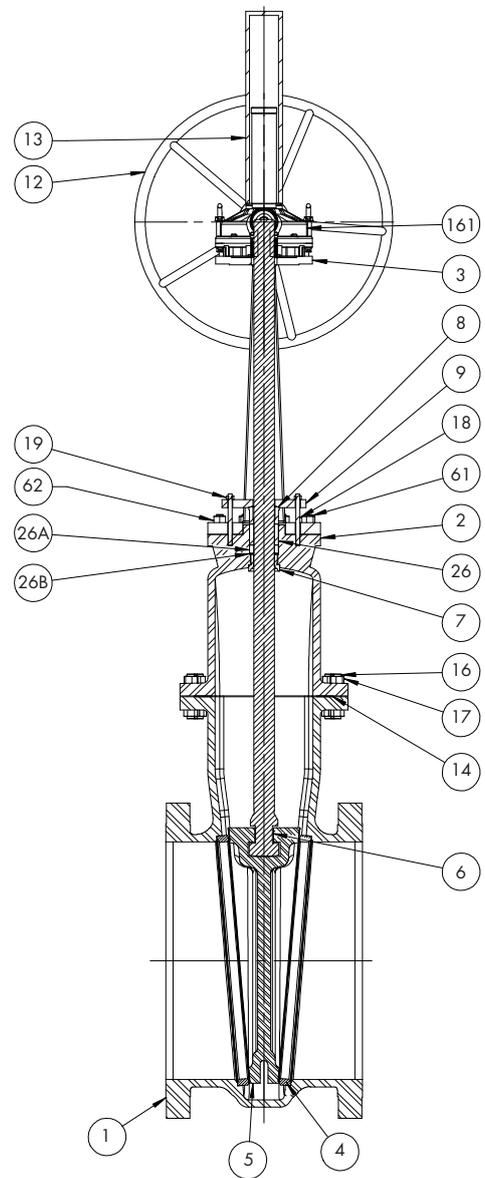
Country based certifications: 2014/68/UE (CE), GOST, TSG, CRN, KGS, 2014/34/EU (ATEX), PESO, etc.



7. MATERIAL SELECTION

GENERAL SERVICE GATE VALVES

Sample drawing

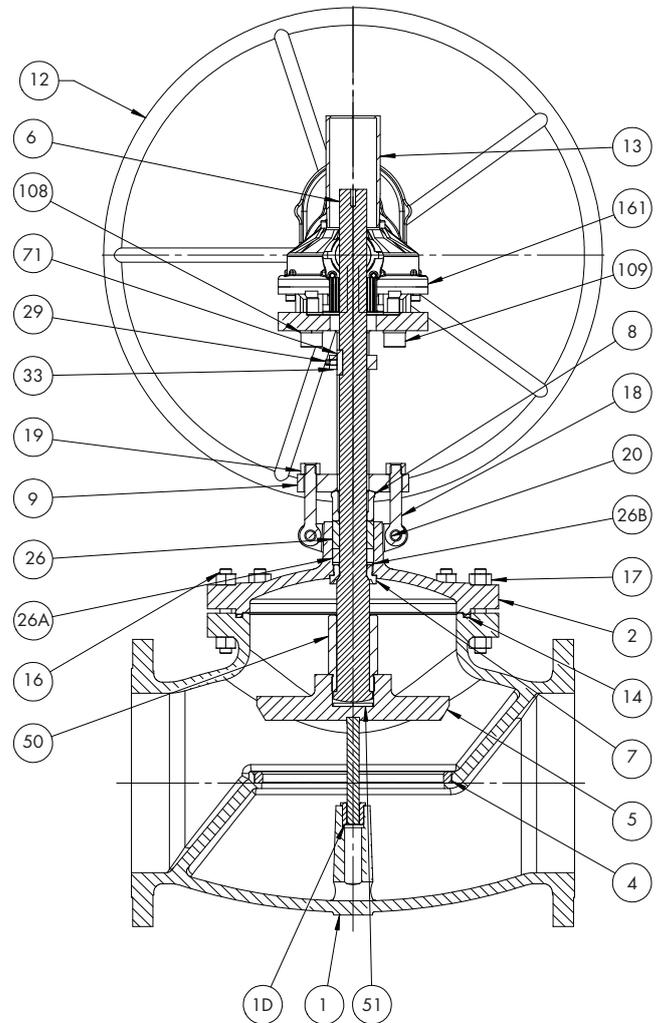


WCB-F6, WCB-316, LCB-F6, LCB-316 & CF8M-316 MATERIALS

| NO. | PART | WCB - F6 MATERIAL | WCB - 316 MATERIAL | LCB - F6 MATERIAL | LCB - 316 MATERIAL | CF8M - 316 MATERIAL |
|-----|-------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|
| 1 | BODY | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 2 | BONNET | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 3 | YOKE | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8 |
| 4 | SEAT | ASTM A 182 F6A CL. 2 + STELL.-6 | ASTM A 182 F-316 + STELL.-6 | ASTM A 182 F6A CL. 2 + STELL.-6 | ASTM A 182 F-316 + STELL.-6 | ASTM A 182 F-316 + STELL.-6 |
| 5 | WEDGE | ASTM A 217 CA15 | ASTM A 351 CF8M | ASTM A 217 CA15 | ASTM A 351 CF8M | ASTM A 351 CF8M |
| 6 | STEM | ASTM A 182 F6A CL. 2 | ASTM A 182 F-316 | ASTM A 182 F6A CL. 2 | ASTM A 182 F-316 | ASTM A 182 F-316 |
| 7 | BACK SEAT BUSHING | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | N/A |
| 8 | GLAND BUSHING | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 316 |
| 9 | GLAND FLANGE | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 12 | HANDWHEEL | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB |
| 13 | PIPE | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 |
| 14 | GASKET | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE |
| 16 | STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 17 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 18 | STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 19 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 26 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE | GRAPHITE | GRAPHITE |
| 26A | PACKING BUSHING | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON |
| 26B | PACKING WASHER | ASTM A 516 Gr. 70 | ASTM A 240 Gr. 316 | ASTM A 516 Gr. 70 | ASTM A 240 Gr. 316 | ASTM A 240 Gr. 316 |
| 61 | STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 62 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 161 | GEAR | COMMERCIAL | COMMERCIAL | COMMERCIAL | COMMERCIAL | COMMERCIAL |

GENERAL SERVICE GLOBE VALVES

Sample drawing



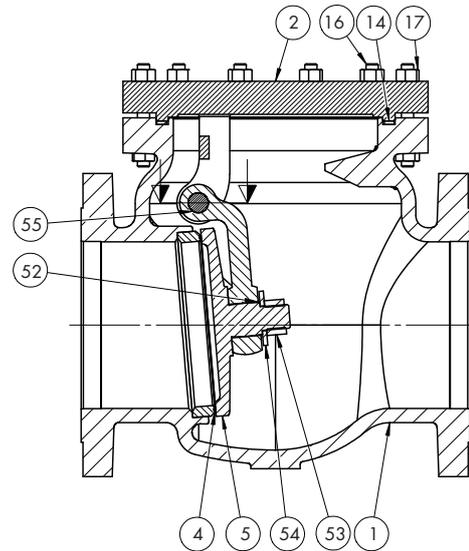
WCB-F6, WCB-316, LCB-F6, LCB-316 & CF8M-316 MATERIALS

| NO. | PART | WCB - F6 MATERIAL | WCB - 316 MATERIAL | LCB - F6 MATERIAL | LCB - 316 MATERIAL | CF8M - 316 MATERIAL |
|-----|-------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|-----------------------------|
| 1 | BODY | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 1D | BUSHING | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | A STM A 479 Gr. 316 |
| 2 | BONNET | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 4 | SEAT | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F-316 + STELL-6 |
| 5 | DISC | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F-316 |
| 6 | STEM | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F-316 |
| 7 | BACK SEAT BUSHING | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | N/A |
| 8 | GLAND BUSHING | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 316 |
| 9 | GLAND FLANGE | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 12 | HANDWHEEL | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 216 WCB |
| 13 | PIPE | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 | ASTM A 29 Gr. 1015 |
| 14 | GASKET | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE |
| 16 | STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 17 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 18 | EYE BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 19 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 20 | STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 26 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE | GRAPHITE | GRAPHITE |
| 26A | PACKING BUSHING | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON | GRAPHITE + CARBON |
| 26B | PACKING WASHER | ASTM A 516 Gr. 70 | ASTM A 240 Gr. 316 | ASTM A 516 Gr. 70 | ASTM A 240 Gr. 316 | ASTM A 240 Gr. 316 |
| 29 | SET SCREW | ASTM A 29 Gr. 4340 | ASTM A 29 Gr. 4340 | ASTM A 29 Gr. 4340 | ASTM A 29 Gr. 4340 | ASTM A 479 Gr. 316 |
| 33 | STEM GUIDE | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 50 | DISC THRUST PLATE | ASTM A 479 Gr. 410 | ASTM A 240 Gr. 316 | ASTM A 479 Gr. 410 | ASTM A 240 Gr. 316 | ASTM A 240 Gr. 316 |
| 51 | DISC NUT | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | ASTM A 479 Gr. 410 | A STM A 479 Gr. 316 | A STM A 479 Gr. 316 |
| 71 | KEY | ASTM A 29 Gr. 1045 | ASTM A 29 Gr. 1045 | ASTM A 29 Gr. 1045 | ASTM A 29 Gr. 1045 | ASTM A 29 Gr. 1045 |
| 108 | GROWER WASHER | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 479 Gr. 316 |
| 109 | SOCKET BOLT | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 | ASTM A 29 Gr. 1518 |
| 161 | GEAR | COMMERCIAL | COMMERCIAL | COMMERCIAL | COMMERCIAL | COMMERCIAL |

GENERAL SERVICE CHECK VALVES

Sample drawings

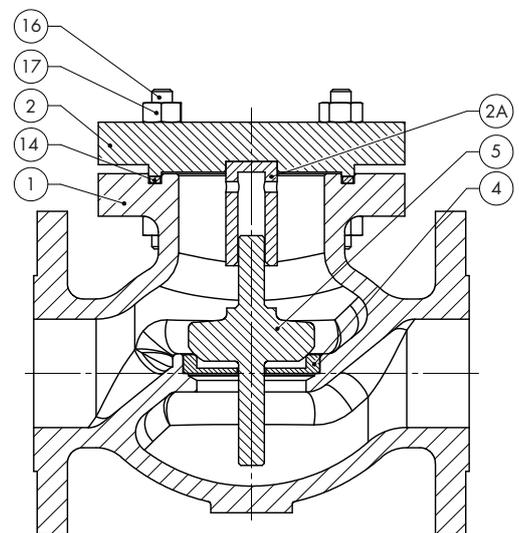
Swing check valve:



WCB-F6, WCB-316, LCB-F6, LCB-316 & CF8M-316 MATERIALS

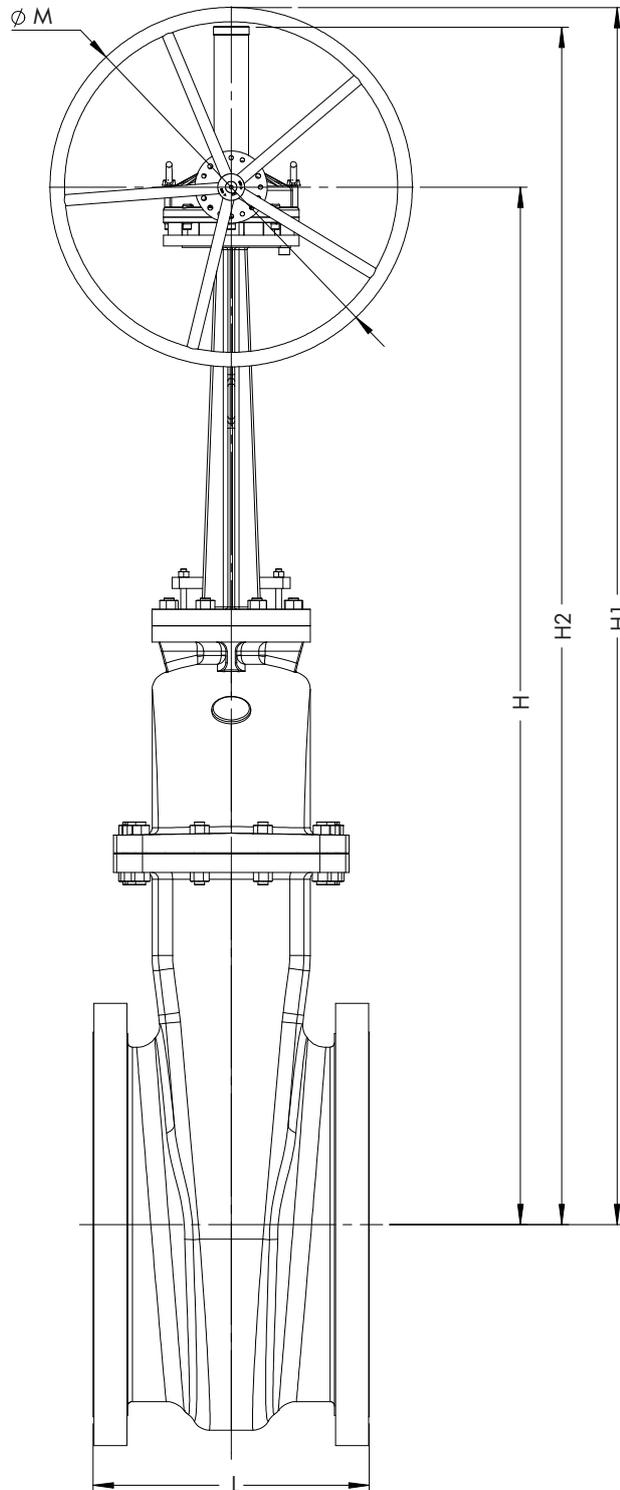
| NO. | PART | WCB + F6 MATERIAL | WCB + 316 MATERIAL | LCB + F6 MATERIAL | LCB + 316 MATERIAL | CF8M + 316 MATERIAL |
|-----|-----------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|-----------------------------|
| 1 | BODY | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 2 | BONNET | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 4 | SEAT | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F-316 + STELL-6 |
| 5 | DISC | ASTM A 217 CA 15 | ASTM A 351 CF8M | ASTM A 217 CA 15 | ASTM A 351 CF8M | ASTM A 351 CF8M |
| 14 | BODY BONNET GASKET | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE |
| 16 | BODY BONNET STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 17 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |
| 52 | HINGE | ASTM A 217 CA 15 | ASTM A 351 CF8M | ASTM A 217 CA 15 | ASTM A 351 CF8M | ASTM A 351 CF8M |
| 53 | NUT | ASTM A 29 Gr. 1518 | ASTM A 479 Gr. 316 | ASTM A 29 Gr. 1518 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 316 |
| 54 | WAS HER | ASTM A 29 Gr. 1518 | ASTM A 240 Gr. 316 | ASTM A 29 Gr. 1518 | ASTM A 240 Gr. 316 | ASTM A 240 Gr. 316 |
| 55 | DISC PIN | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 410 | ASTM A 479 Gr. 316 | ASTM A 479 Gr. 316 |

Lift check valve:



WCB-F6, WCB-316, LCB-F6, LCB-316 & CF8M-316 MATERIALS

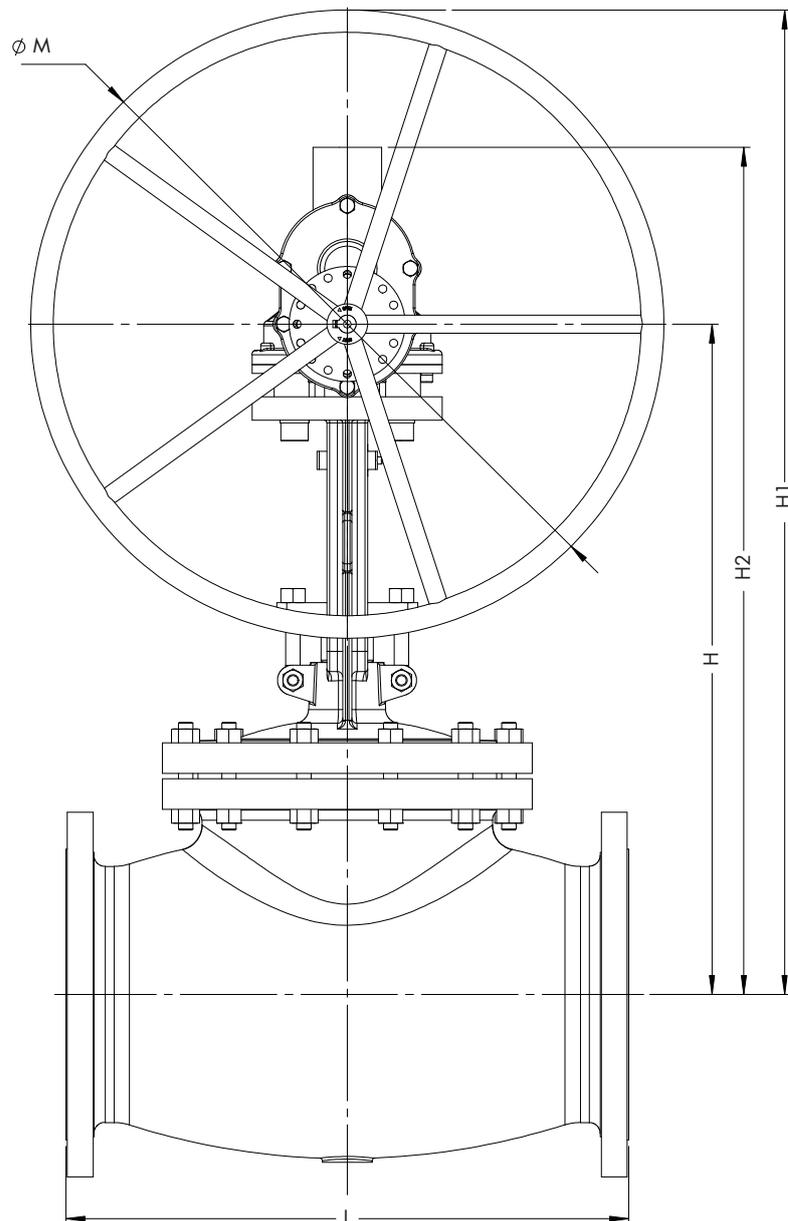
| NO. | PART | WCB + F6 MATERIAL | WCB + 316 MATERIAL | LCB + F6 MATERIAL | LCB + 316 MATERIAL | CF8M + 316 MATERIAL |
|-----|-----------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|-----------------------------|
| 1 | BODY | ASTM A 216 WCB | ASTM A 216 WCB | ASTM A 352 LCB | ASTM A 352 LCB | ASTM A 351 CF8M |
| 2 | BONNET | ASTM A 105 | ASTM A 105 | ASTM A 305 LF2 | ASTM A 305 LF2 | ASTM A 182 F-316 |
| 2A | DISC GUIDE | ASTM A 105 | ASTM A 105 | ASTM A 305 LF2 | ASTM A 305 LF2 | ASTM A 182 F-316 |
| 4 | SEAT | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F6A CLASS 2 + STELL-6 | ASTM A 182 F-316 + STELL-6 | ASTM A 182 F-316 + STELL-6 |
| 5 | DISC | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F6A CLASS 2 | ASTM A 182 F-316 | ASTM A 182 F-316 |
| 14 | BODY BONNET GASKET | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE | SPIRAL WOUND 316 + GRAPHITE |
| 16 | BODY BONNET STUD BOLT | ASTM A 193 B7 | ASTM A 193 B7 | ASTM A 320 L7 | ASTM A 320 L7 | ASTM A 320 B8 CL. 2 |
| 17 | NUT | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 2H | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 7 | ASTM A 194 Gr. 8 |



| SIZE | L (RF or BW) | D | M | H | H1 | H2 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|-----------------|------|------|------|-------|------|-------------------|-------------------|--------|
| 150 LBS | | | | | | | | | |
| 2 | 178 | 51 | 200 | 348 | - | - | 22 | 19 | 307 |
| 3 | 203 | 76 | 325 | 441 | - | - | 36 | 30 | 715 |
| 4 | 229 | 102 | 325 | 536 | - | - | 60 | 55 | 1331 |
| 6 | 267 | 152 | 380 | 737 | - | - | 107 | 101 | 3088 |
| 8 | 292 | 203 | 380 | 924 | - | - | 170 | 165 | 5676 |
| 10 | 330 | 254 | 500 | 1142 | - | - | 289 | 265 | 9092 |
| 12 | 256 | 305 | 400 | 1020 | 1220 | 1460 | 395 | 381 | 13352 |
| 14 | 381 | 337 | 500 | 1142 | 1392 | 1646 | 495 | 483 | 16461 |
| 16 | 406 | 388 | 700 | 1327 | 1677 | 1921 | 651 | 622 | 22003 |
| 18 | 432 | 438 | 300 | 1455 | 1605 | 2014 | 737 | 725 | 28521 |
| 20 | 457 | 490 | 800 | 1677 | 2077 | 2336 | 975 | 904 | 35924 |
| 24 | 508 | 591 | 940 | 1936 | 2406 | 2694 | 1437 | 1318 | 53413 |
| 26 | 559 | 643 | 800 | 2036 | 2436 | 2823 | 1837 | 1700 | 62074 |
| 28 | 610 | 694 | 700 | 2189 | 2539 | 3045 | 2244 | 2087 | 72961 |
| 30 | 610 | 743 | 900 | 2303 | 2753 | 3114 | 2452 | 2278 | 84766 |
| 32 | 711 | 799 | 800 | 2463 | 2863 | 3426 | 3006 | 2860 | 95692 |
| 34 | 762 | 832 | 700 | 2597 | 2947 | 3592 | 3627 | 3442 | 109219 |
| 36 | 711 | 879 | 800 | 2693 | 3093 | 3773 | 4316 | 4247 | 121638 |
| 38 | 832 | 936 | 900 | 2961 | 3411 | 4236 | 4901 | 4563 | 136904 |
| 40 | 813 | 984 | 600 | 3129 | 3429 | 4413 | 5434 | 4974 | 153110 |
| 42 | 889 | 1030 | 900 | 3216 | 3666 | 4377 | 6110 | 5988 | 167164 |
| 44 | 921 | 1082 | 1000 | 3332 | 6624 | 4735 | 6585 | 6468 | 185454 |
| 46 | 946 | 1130 | 800 | 3475 | 7321 | 4791 | 7692 | 7042 | 203593 |
| 48 | 864 | 1180 | 500 | 3670 | 3920 | 5128 | 9074 | 8728 | 221818 |
| 50 | 1092 | 1232 | 900 | 3869 | 4319 | 5182 | 9926 | 9633 | 242099 |
| 52 | 1054 | 1283 | 1000 | 4014 | 4514 | 5380 | 11006 | 10816 | 262869 |
| 54 | 1067 | 1328 | 1200 | 4182 | 4782 | 5735 | 13650 | 13060 | 283626 |
| 56 | 1118 | 1377 | 600 | 4307 | 4607 | 5980 | 15145 | 14538 | 306609 |
| 58 | 1160 | 1430 | 700 | 4502 | 4852 | 6261 | 16731 | 15815 | 330034 |
| 60 | 1187 | 1473 | 800 | 4695 | 5095 | 6787 | 17030 | 16765 | 353850 |
| 62 | 1261 | 1530 | 800 | 4790 | 5190 | 6794 | 19686 | 19376 | 379051 |
| 64 | 1299 | 1574 | 800 | 4805 | 5205 | 6807 | 21515 | 20153 | 404612 |
| 66 | 1338 | 1651 | 800 | 5246 | 5646 | 7495 | 23426 | 21849 | 431598 |
| 68 | 1376 | 1671 | 600 | 5484 | 5784 | 7617 | 25419 | 23122 | 458911 |
| 70 | 1414 | 1726 | 700 | 5520 | 19266 | 7705 | 27492 | 25574 | 487690 |
| 72 | 1426 | 1770 | 1000 | 5639 | 6139 | 7887 | 29900 | 28314 | 516764 |
| 600 LBS | | | | | | | | | |
| 2 | 295 | 51 | 200 | 394 | - | - | 43 | 40 | 307 |
| 3 | 356 | 76 | 325 | 506 | - | - | 81 | 74 | 715 |
| 4 | 435 | 102 | 380 | 649 | - | - | 146 | 137 | 1331 |
| 6 | 562 | 152 | 500 | 864 | - | - | 286 | 264 | 3088 |
| 8 | 660 | 200 | 630 | 768 | 1017 | 1111 | 498 | 460 | 5501 |
| 10 | 787 | 248 | 800 | 969 | 1386 | 1331 | 835 | 783 | 8647 |
| 12 | 838 | 298 | 800 | 1184 | 1773 | 1751 | 1179 | 1100 | 12717 |
| 14 | 889 | 327 | 630 | 1275 | 2026 | 1884 | 1503 | 1441 | 15453 |
| 16 | 991 | 375 | 710 | 1415 | 2384 | 2027 | 1937 | 1902 | 20596 |
| 18 | 1092 | 420 | 710 | 1571 | 2805 | 2182 | 2467 | 2444 | 25990 |
| 20 | 1194 | 464 | 710 | 1697 | 3281 | 2303 | 3168 | 2947 | 32184 |
| 24 | 1397 | 559 | 710 | 1907 | 4234 | 2568 | 4654 | 4569 | 47539 |
| 26 | 1448 | 607 | 800 | 2104 | 4829 | 2843 | 5451 | 5262 | 55708 |
| 28 | 1549 | 652 | 800 | 2229 | 5432 | 3007 | 6405 | 6154 | 64762 |
| 30 | 1651 | 696 | 1000 | 2408 | 6406 | 3510 | 7995 | 7771 | 74977 |
| 32 | 1778 | 743 | 800 | 2661 | 8052 | 3490 | 10782 | 9833 | 85731 |
| 34 | 1930 | 781 | 900 | 2566 | 8570 | 3623 | 12008 | 11481 | 98011 |
| 36 | 2083 | 830 | 710 | 2920 | 10226 | 4080 | 14612 | 13681 | 108945 |
| 38 | 2172 | 984 | 700 | 3137 | 11519 | 4051 | 16765 | 15305 | 122510 |
| 40 | 2261 | 933 | 800 | 3269 | 12875 | 4232 | 19212 | 18650 | 136904 |
| 42 | 2318 | 968 | 900 | 3382 | 14083 | 4386 | 21402 | 19992 | 149535 |
| 44 | 2394 | 1016 | 800 | 3582 | 15627 | 4694 | 24091 | 22311 | 165798 |
| 46 | 2470 | 1073 | 800 | 3755 | 16690 | 4994 | 25870 | 23700 | 181860 |
| 48 | 2540 | 1118 | 800 | 3947 | 19872 | 5272 | 31850 | 30865 | 198320 |
| 1500 LBS | | | | | | | | | |
| 2 | 368 | 48 | 325 | 503 | - | - | 91 | 84 | 270 |
| 3 | 470 | 74 | 600 | 602 | - | - | 200 | 190 | 601 |
| 4 | 546 | 93 | 700 | 604 | 750 | -936 | 291 | 281 | 1071 |
| 6 | 705 | 137 | 710 | 839 | 1203 | 1106 | 728 | 669 | 2481 |
| 8 | 832 | 183 | 400 | 941 | 1715 | 1213 | 1548 | 1473 | 4305 |
| 10 | 991 | 222 | 800 | 1082 | 2116 | 1830 | 2068 | 1888 | 6851 |
| 12 | 1130 | 248 | 400 | 1336 | 2960 | 1780 | 3247 | 2959 | 9861 |
| 14 | 1257 | 289 | 700 | 1294 | 3179 | 1737 | 3770 | 3656 | 11924 |
| 16 | 1384 | 333 | 1000 | 1568 | 4279 | 2011 | 5421 | 5001 | 15752 |
| 18 | 1537 | 373 | 600 | 1766 | 6154 | 2224 | 8775 | 8074 | 20138 |
| 20 | 1664 | 420 | 1000 | 1876 | 7401 | 2545 | 11050 | 10771 | 25601 |
| 24 | 1971 | 503 | 1000 | 2257 | 11227 | 3070 | 17940 | 16668 | 37323 |
| 26 | 2147 | 542 | 900 | 1373 | 11451 | 1801 | 20158 | 19220 | 44219 |
| 28 | 2203 | 590 | 1000 | 2451 | 13866 | 3171 | 22830 | 21271 | 52098 |
| 30 | 2378 | 632 | 900 | 1709 | 14020 | 3540 | 24622 | 23930 | 60046 |
| 32 | 2590 | 665 | 800 | 1877 | 18420 | 2291 | 33087 | 32721 | 67938 |
| 34 | 2738 | 706 | 1000 | 2213 | 21273 | 2617 | 38121 | 37391 | 77481 |
| 36 | 3051 | 742 | 700 | 3174 | 26143 | 4076 | 45939 | 41954 | 86215 |

| SIZE | L (RF or BW) | D | M | H | H1 | H2 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|-----------------|------|------|------|-------|------|-------------------|-------------------|--------|
| 300 LBS | | | | | | | | | |
| 2 | 216 | 51 | 200 | 350 | - | - | 29 | 27 | 307 |
| 3 | 283 | 76 | 225 | 492 | - | - | 56 | 49 | 715 |
| 4 | 305 | 102 | 225 | 559 | - | - | 75 | 69 | 1331 |
| 6 | 403 | 152 | 380 | 820 | - | - | 174 | 167 | 3088 |
| 8 | 419 | 203 | 400 | 807 | 945 | 1151 | 276 | 263 | 5676 |
| 10 | 457 | 254 | 400 | 930 | 1143 | 1320 | 426 | 408 | 9092 |
| 12 | 502 | 305 | 710 | 1086 | 1380 | 1526 | 588 | 577 | 13352 |
| 14 | 762 | 337 | 400 | 1186 | 1600 | 1665 | 827 | 777 | 16461 |
| 16 | 838 | 388 | 900 | 1341 | 1875 | 1893 | 1067 | 985 | 22003 |
| 18 | 914 | 432 | 630 | 1509 | 2284 | 2097 | 1550 | 1427 | 28521 |
| 20 | 991 | 483 | 630 | 1653 | 2583 | 2362 | 1859 | 1709 | 35924 |
| 24 | 1143 | 584 | 710 | 1952 | 3428 | 2764 | 2951 | 2827 | 53413 |
| 26 | 1245 | 641 | 700 | 2166 | 3980 | 2856 | 3628 | 3320 | 62074 |
| 28 | 1346 | 690 | 900 | 2223 | 4113 | 3022 | 3780 | 3577 | 72961 |
| 30 | 1397 | 740 | 710 | 2403 | 4614 | 3267 | 4422 | 4157 | 84766 |
| 32 | 1524 | 789 | 800 | 2517 | 5131 | 3419 | 5228 | 5086 | 95692 |
| 34 | 1626 | 836 | 900 | 2662 | 5654 | 3592 | 5983 | 5926 | 109219 |
| 36 | 1727 | 879 | 800 | 2683 | 6157 | 3780 | 6949 | 6833 | 121638 |
| 40 | 1930 | 977 | 900 | 3040 | 7697 | 4138 | 9313 | 8950 | 136904 |
| 42 | 1986 | 1029 | 1000 | 3324 | 8916 | 4707 | 11184 | 10726 | 153110 |
| 44 | 1817 | 1080 | 800 | 3530 | 9565 | 4686 | 12070 | 11322 | 167164 |
| 46 | 2108 | 1130 | 800 | 3557 | 10590 | 4882 | 14066 | 13878 | 185454 |
| 48 | 1862 | 1181 | 800 | 3802 | 11269 | 5058 | 14936 | 14331 | 203593 |
| 50 | 1885 | 1232 | 700 | 3864 | 11665 | 5118 | 15601 | 15163 | 221818 |
| 52 | 1907 | 1283 | 700 | 4148 | 13493 | 5443 | 18690 | 17528 | 242099 |
| 54 | 1930 | 1327 | 900 | 4412 | 14933 | 5699 | 21042 | 20345 | 262869 |
| 900 LBS | | | | | | | | | |
| 2 | 368 | 48 | 325 | 503 | - | - | 91 | 90 | 307 |
| 3 | 381 | 76 | 380 | 640 | - | - | 174 | 164 | 657 |
| 4 | 457 | 99 | 380 | 725 | - | - | 212 | 205 | 1224 |
| 6 | 610 | 147 | 500 | 683 | 880 | 933 | 394 | 385 | 2836 |
| 8 | 737 | 194 | 900 | 849 | 1258 | 1086 | 817 | 743 | 4939 |
| 10 | 838 | 238 | 800 | 1138 | 1733 | 1574 | 1191 | 1135 | 7931 |
| 12 | 965 | 289 | 800 | 1161 | 2108 | 1713 | 1895 | 1884 | 11410 |
| 14 | 1029 | 311 | 630 | 1264 | 2317 | 2070 | 2106 | 2004 | 13909 |
| 16 | 1130 | 364 | 800 | 1427 | 2984 | 1884 | 3114 | 3034 | 18469 |
| 18 | 1219 | 400 | 500 | 1716 | 3812 | 2285 | 4193 | 3856 | 23581 |
| 20 | 1321 | 456 | 900 | 1742 | 4454 | 2543 | 5425 | 5385 | 29346 |
| 24 | 1549 | 538 | 1000 | 2146 | 6501 | 2809 | 8710 | 8125 | 43027 |
| 26 | 1651 | 578 | 800 | 2301 | 7450 | 3000 | 10297 | 9510 | 50984 |
| 28 | 1765 | 629 | 800 | 2356 | 8217 | 3085 | 11721 | 10966 | 59444 |
| 30 | 1886 | 679 | 700 | 2662 | 10096 | 3379 | 14868 | 14223 | 68798 |
| 32 | 2038 | 686 | 900 | 2785 | 11676 | 3526 | 17782 | 17216 | 72517 |
| 34 | 2217 | 730 | 1000 | 2893 | 13345 | 3707 | 20905 | 19529 | 82616 |
| 36 | 2235 | 800 | 800 | 3208 | 14661 | 4215 | 22906 | 22811 | 91890 |
| 38 | 2515 | 847 | 800 | 3300 | 16950 | 4227 | 27300 | 25924 | 110044 |
| 2500 LBS | | | | | | | | | |
| 2 | 451 | 38 | 500 | 626 | - | - | 156 | 153 | 165 |
| 3 | 578 | 57 | 500 | 696 | - | - | 311 | 0 | 389 |
| 4 | 673 | 74 | 400 | 714 | -1023 | 817 | 619 | 580 | 657 |
| 6 | 914 | 111 | 940 | 822 | 1564 | 1431 | 1485 | 1479 | 1592 |
| 8 | 1022 | 147 | 900 | 1116 | 2149 | 1604 | 2066 | 1997 | 2836 |
| 10 | 1270 | 185 | 1000 | 1145 | 2752 | 1705 | 3215 | 3061 | 4616 |
| 12 | 1422 | 220 | 800 | 1283 | 3701 | 1728 | 4836 | 4809 | 6658 |
| 14 | 1471 | 244 | 900 | 1509 | 4322 | 2146 | 5626 | 5248 | 8142 |
| 16 | 1500 | 276 | 800 | 1578 | 5059 | 2246 | 6962 | 6628 | 10825 |
| 18 | 1675 | 311 | 800 | 1692 | 6759 | 2409 | 10134 | 9470 | 13909 |

GENERAL SERVICE GLOBE VALVES



| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|----------------|-----------------|------|------|------|------|-------------------|-------------------|-------|
| 150 LBS | | | | | | | | |
| 2 | 203 | 51 | 225 | 366 | - | 24 | 21 | 46 |
| 3 | 241 | 76 | 325 | 451 | - | 46 | 38 | 110 |
| 4 | 292 | 90 | 380 | 524 | - | 56 | 50 | 204 |
| 6 | 406 | 135 | 380 | 606 | - | 67 | 56 | 474 |
| 8 | 495 | 182 | 500 | 677 | 927 | 119 | 104 | 871 |
| 10 | 622 | 224 | 710 | 749 | 1104 | 171 | 152 | 1395 |
| 12 | 698 | 275 | 500 | 827 | 1077 | 244 | 212 | 2048 |
| 14 | 787 | 303 | 700 | 899 | 1249 | 320 | 287 | 2525 |
| 16 | 914 | 349 | 700 | 978 | 1328 | 453 | 384 | 3375 |
| 18 | 978 | 396 | 700 | 1038 | 1388 | 586 | 517 | 4375 |
| 20 | 978 | 444 | 700 | 1104 | 1454 | 720 | 632 | 5510 |
| 24 | 1168 | 539 | 700 | 1282 | 1632 | 1138 | 977 | 8193 |
| 26 | 1295 | 643 | 800 | 1440 | 1840 | 2437 | 2086 | 9711 |
| 28 | 1558 | 692 | 700 | 1491 | 1841 | 2937 | 2452 | 11397 |
| 30 | 1524 | 743 | 600 | 1625 | 1925 | 3120 | 2642 | 13225 |
| 32 | 1651 | 781 | 500 | 1680 | 1930 | 4237 | 3793 | 14678 |
| 34 | 1803 | 832 | 600 | 1743 | 2043 | 4845 | 4349 | 16753 |
| 36 | 1956 | 876 | 800 | 1961 | 2361 | 5703 | 4756 | 18658 |
| 38 | 1956 | 945 | 900 | 1979 | 2429 | 6311 | 5312 | 21000 |
| 40 | 2033 | 978 | 1000 | 2149 | 2649 | 7019 | 5883 | 23486 |
| 42 | 2152 | 1042 | 1000 | 2161 | 2661 | 8129 | 7356 | 25642 |
| 44 | 2250 | 1094 | 900 | 2251 | 2701 | 9123 | 7933 | 28447 |
| 46 | 2348 | 1150 | 1000 | 2342 | 2842 | 10175 | 9013 | 31230 |
| 48 | 2446 | 1200 | 900 | 2432 | 2882 | 11284 | 9539 | 34025 |

| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|----------------|-----------------|-----|------|------|------|-------------------|-------------------|-------|
| 600 LBS | | | | | | | | |
| 2 | 292 | 51 | 225 | 500 | - | 51 | 46 | 47 |
| 3 | 356 | 76 | 380 | 573 | - | 88 | 76 | 110 |
| 4 | 432 | 90 | 380 | 680 | - | 100 | 87 | 204 |
| 6 | 559 | 135 | 500 | 789 | 1039 | 220 | 193 | 474 |
| 8 | 660 | 182 | 600 | 894 | 1194 | 462 | 418 | 871 |
| 10 | 787 | 222 | 630 | 1010 | 1325 | 730 | 620 | 1395 |
| 12 | 838 | 250 | 700 | 1088 | 1438 | 850 | 768 | 2048 |
| 14 | 889 | 294 | 1000 | 1127 | 1627 | 1139 | 987 | 2525 |
| 16 | 991 | 337 | 710 | 1242 | 1597 | 1385 | 1180 | 3375 |
| 18 | 1092 | 377 | 1000 | 1355 | 1855 | 1581 | 1350 | 4250 |
| 20 | 1194 | 417 | 800 | 1436 | 1836 | 2020 | 1753 | 5347 |
| 24 | 1397 | 503 | 600 | 1557 | 1857 | 2844 | 2429 | 7991 |
| 26 | 1448 | 603 | 700 | 1849 | 2199 | 7831 | 6659 | 9522 |
| 28 | 1600 | 648 | 700 | 2284 | 2634 | 9533 | 8603 | 11192 |
| 30 | 1651 | 695 | 700 | 2345 | 2695 | 10601 | 9332 | 13002 |
| 32 | 1796 | 739 | 900 | 2354 | 2804 | 12393 | 10647 | 14678 |
| 34 | 1893 | 781 | 700 | 2466 | 2816 | 14593 | 12367 | 16753 |
| 36 | 2083 | 831 | 800 | 2691 | 3091 | 16956 | 14617 | 18658 |

| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|-----------------|-----|-----|------|------|-------------------|-------------------|------|
| 1500 LBS | | | | | | | | |
| 2 | 368 | 48 | 325 | 578 | - | 98 | 87 | 41 |
| 3 | 470 | 70 | 380 | 676 | - | 254 | 229 | 92 |
| 4 | 546 | 92 | 400 | 781 | 981 | 338 | 305 | 164 |
| 6 | 705 | 135 | 500 | 1024 | 1274 | 1001 | 880 | 381 |
| 8 | 832 | 178 | 750 | 1124 | 1499 | 1551 | 1388 | 660 |
| 10 | 991 | 222 | 700 | 1342 | 1692 | 2776 | 2437 | 1051 |
| 12 | 1130 | 264 | 800 | 1546 | 1946 | 4438 | 3767 | 1513 |
| 14 | 1257 | 289 | 900 | 1653 | 2103 | 5280 | 4757 | 1829 |
| 16 | 1384 | 330 | 800 | 1859 | 2259 | 7533 | 6648 | 2416 |
| 18 | 1537 | 371 | 700 | 2003 | 2353 | 9520 | 8068 | 3089 |
| 20 | 1667 | 416 | 800 | 2502 | 2902 | 11736 | 10091 | 3927 |
| 24 | 1943 | 498 | 700 | 2576 | 2926 | 18931 | 15815 | 5725 |
| 26 | 2098 | 541 | 900 | 2833 | 3283 | 21963 | 19930 | 6783 |

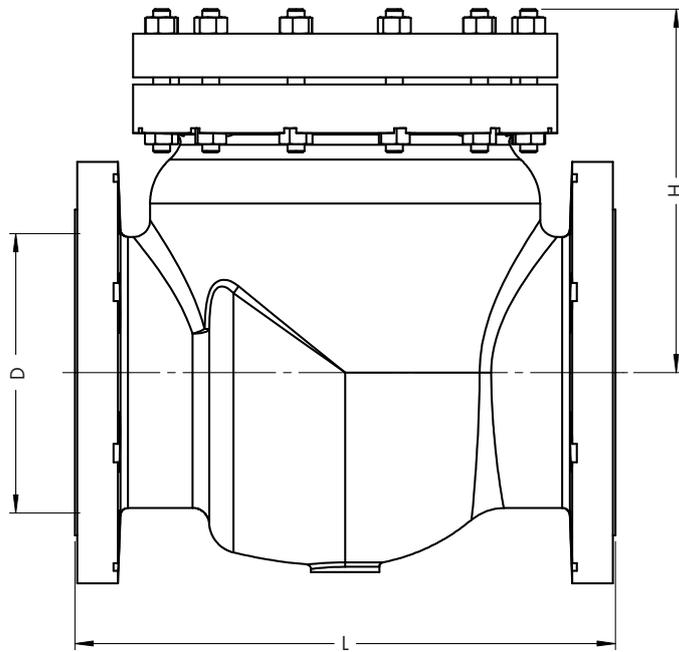
| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|----------------|-----------------|------|------|------|------|-------------------|-------------------|-------|
| 300 LBS | | | | | | | | |
| 2 | 267 | 51 | 225 | 395 | - | 33 | 28 | 47 |
| 3 | 318 | 76 | 225 | 506 | - | 60 | 50 | 110 |
| 4 | 356 | 90 | 380 | 615 | - | 67 | 61 | 204 |
| 6 | 444 | 135 | 710 | 663 | 1018 | 114 | 103 | 474 |
| 8 | 559 | 182 | 630 | 764 | 1079 | 202 | 174 | 871 |
| 10 | 622 | 224 | 630 | 870 | 1185 | 328 | 296 | 1395 |
| 12 | 711 | 275 | 700 | 971 | 1321 | 470 | 409 | 2048 |
| 14 | 838 | 303 | 700 | 1025 | 1375 | 624 | 565 | 2525 |
| 16 | 864 | 349 | 700 | 1137 | 1487 | 806 | 729 | 3375 |
| 18 | 978 | 389 | 800 | 1160 | 1560 | 968 | 841 | 4375 |
| 20 | 1016 | 434 | 800 | 1372 | 1772 | 1327 | 1189 | 5510 |
| 24 | 1346 | 526 | 700 | 1419 | 1769 | 1818 | 1619 | 8193 |
| 26 | 1346 | 635 | 700 | 1729 | 2079 | 4268 | 3724 | 9711 |
| 28 | 1499 | 692 | 800 | 1857 | 2257 | 5506 | 4698 | 11397 |
| 30 | 1594 | 737 | 800 | 1964 | 2364 | 6445 | 5435 | 13225 |
| 32 | 1854 | 781 | 800 | 2081 | 2481 | 8272 | 7288 | 14678 |
| 34 | 1968 | 832 | 700 | 2150 | 2500 | 8978 | 7513 | 16753 |
| 36 | 2083 | 876 | 1000 | 2283 | 2783 | 10769 | 9316 | 18658 |
| 38 | 2121 | 927 | 1000 | 2488 | 2988 | 11849 | 10224 | 21000 |
| 40 | 2230 | 991 | 900 | 2501 | 2951 | 13864 | 12258 | 23486 |
| 42 | 2337 | 1044 | 900 | 2612 | 3062 | 15703 | 13946 | 25642 |

| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|----------------|-----------------|-----|------|------|------|-------------------|-------------------|-------|
| 900 LBS | | | | | | | | |
| 2 | 368 | 48 | 325 | 578 | - | 98 | 83 | 42 |
| 3 | 381 | 73 | 380 | 721 | - | 153 | 131 | 101 |
| 4 | 457 | 98 | 500 | 547 | 797 | 223 | 198 | 188 |
| 6 | 610 | 147 | 500 | 1091 | 1341 | 668 | 575 | 435 |
| 8 | 737 | 190 | 800 | 1106 | 1506 | 1014 | 889 | 758 |
| 10 | 838 | 238 | 1000 | 1156 | 1656 | 1541 | 1377 | 1216 |
| 12 | 965 | 283 | 630 | 1226 | 1541 | 1999 | 1707 | 1750 |
| 14 | 1029 | 311 | 700 | 1305 | 1655 | 2782 | 2471 | 2134 |
| 16 | 1130 | 356 | 900 | 1521 | 1971 | 3657 | 3254 | 2833 |
| 18 | 1219 | 400 | 700 | 1611 | 1961 | 4964 | 4246 | 3617 |
| 20 | 1321 | 444 | 800 | 1823 | 2223 | 6534 | 5824 | 4501 |
| 24 | 1549 | 533 | 700 | 2185 | 2535 | 10508 | 8890 | 6600 |
| 26 | 1663 | 579 | 800 | 2287 | 2687 | 12135 | 10883 | 7821 |
| 28 | 1765 | 622 | 700 | 2511 | 2861 | 15404 | 13234 | 9118 |
| 30 | 1886 | 667 | 1000 | 2585 | 3085 | 18348 | 15886 | 10553 |

| SIZE | L (RF or BW) | D | M | H | H1 | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|-----------------|-----|------|------|------|-------------------|-------------------|------|
| 2500 LBS | | | | | | | | |
| 2 | 451 | 38 | 600 | 630 | 930 | 218 | 186 | 25 |
| 3 | 578 | 57 | 600 | 807 | 1107 | 352 | 317 | 60 |
| 4 | 673 | 73 | 600 | 931 | 1231 | 803 | 672 | 101 |
| 6 | 914 | 111 | 900 | 1245 | 1695 | 1962 | 1766 | 244 |
| 8 | 1022 | 146 | 1000 | 1421 | 1921 | 2799 | 2544 | 435 |
| 10 | 1270 | 184 | 800 | 1820 | 2220 | 4919 | 4436 | 708 |
| 12 | 1422 | 219 | 1000 | 1996 | 2496 | 6929 | 5999 | 1021 |
| 14 | 1568 | 241 | 800 | 2075 | 2475 | 9175 | 7862 | 1249 |
| 16 | 1730 | 276 | 700 | 2149 | 2499 | 11253 | 10047 | 1661 |
| 18 | 1797 | 311 | 700 | 2686 | 3036 | 16413 | 13945 | 2134 |
| 20 | 2080 | 343 | 700 | 2871 | 3221 | 20551 | 17416 | 2620 |

GENERAL SERVICE CHECK VALVES

Swing check

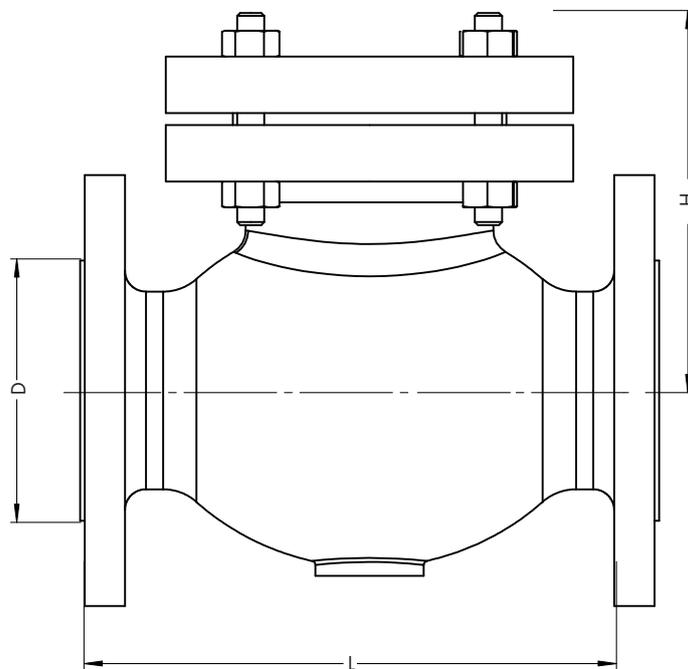


| SIZE | L (RForBW) | D | H | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|------------|------|------|----------------|----------------|-------|
| 150 LBS | | | | | | |
| 2 | 203 | 52 | 151 | 18 | 16 | 123 |
| 3 | 241 | 77 | 196 | 42 | 36 | 286 |
| 4 | 292 | 103 | 209 | 59 | 51 | 533 |
| 6 | 356 | 154 | 240 | 92 | 80 | 1235 |
| 8 | 495 | 205 | 303 | 161 | 140 | 2271 |
| 10 | 622 | 257 | 353 | 268 | 233 | 3637 |
| 12 | 698 | 308 | 391 | 390 | 339 | 5341 |
| 14 | 787 | 340 | 441 | 525 | 457 | 6585 |
| 16 | 914 | 391 | 488 | 686 | 597 | 8801 |
| 18 | 978 | 438 | 553 | 920 | 800 | 11408 |
| 20 | 978 | 489 | 575 | 1040 | 904 | 14370 |
| 24 | 1295 | 597 | 658 | 1690 | 1470 | 21365 |
| 28 | 1448 | 692 | 782 | 2464 | 2142 | 29184 |
| 30 | 1524 | 744 | 827 | 2847 | 2476 | 33906 |
| 32 | 1651 | 789 | 873 | 3474 | 3021 | 38277 |
| 34 | 1803 | 845 | 884 | 3928 | 3416 | 43688 |
| 36 | 1956 | 885 | 964 | 4677 | 4067 | 48655 |
| 38 | 1981 | 933 | 995 | 5430 | 4721 | 54762 |
| 40 | 2030 | 985 | 1045 | 6335 | 5509 | 61244 |
| 42 | 2126 | 1034 | 1091 | 7142 | 6210 | 66866 |
| 44 | 2221 | 1083 | 1138 | 7998 | 6955 | 74182 |
| 46 | 2250 | 1132 | 1184 | 8903 | 7742 | 81437 |
| 48 | 2273 | 1180 | 1214 | 10238 | 8902 | 88727 |
| 600 LBS | | | | | | |
| 2 | 292 | 52 | 189 | 36 | 32 | 123 |
| 3 | 356 | 77 | 249 | 79 | 68 | 286 |
| 4 | 432 | 103 | 291 | 137 | 119 | 533 |
| 6 | 559 | 153 | 364 | 273 | 237 | 1235 |
| 8 | 660 | 202 | 446 | 517 | 450 | 2201 |
| 10 | 787 | 252 | 522 | 884 | 769 | 3459 |
| 12 | 838 | 301 | 585 | 1126 | 979 | 5087 |
| 14 | 889 | 327 | 593 | 1398 | 1215 | 6181 |
| 16 | 991 | 381 | 625 | 1749 | 1520 | 8239 |
| 18 | 1092 | 423 | 735 | 2317 | 2014 | 10396 |
| 20 | 1194 | 489 | 785 | 3185 | 2770 | 12874 |
| 24 | 1397 | 559 | 841 | 4531 | 3940 | 19015 |
| 28 | 1600 | 648 | 1033 | 6146 | 5345 | 25905 |
| 30 | 1651 | 702 | 1082 | 7797 | 6780 | 29991 |
| 32 | 1778 | 748 | 1110 | 9257 | 8050 | 34292 |
| 34 | 1930 | 798 | 1185 | 10726 | 9327 | 39205 |
| 36 | 2083 | 847 | 1222 | 11973 | 10411 | 43578 |
| 38 | 2121 | 895 | 1324 | 14443 | 12559 | 49004 |
| 40 | 2261 | 935 | 1410 | 15272 | 13280 | 54762 |
| 42 | 2394 | 965 | 1562 | 18850 | 16391 | 59814 |
| 44 | 2438 | 1026 | 1515 | 20138 | 17511 | 66319 |
| 46 | 2521 | 1080 | 1566 | 22873 | 19889 | 72744 |
| 48 | 2570 | 1118 | 1636 | 26614 | 23142 | 79328 |
| 1500 LBS | | | | | | |
| 2 | 368 | 49 | 242 | 92 | 80 | 108 |
| 3 | 470 | 71 | 286 | 147 | 134 | 240 |
| 4 | 546 | 93 | 345 | 280 | 243 | 428 |
| 6 | 705 | 137 | 467 | 741 | 644 | 992 |
| 8 | 832 | 180 | 569 | 985 | 857 | 1722 |
| 10 | 991 | 222 | 643 | 1963 | 1707 | 2741 |
| 12 | 1130 | 267 | 753 | 2932 | 2549 | 3944 |
| 14 | 1257 | 289 | 809 | 3922 | 3411 | 4770 |
| 16 | 1384 | 333 | 954 | 5350 | 4652 | 6301 |
| 18 | 1537 | 371 | 977 | 7201 | 6261 | 8055 |
| 20 | 1664 | 420 | 1087 | 9186 | 7988 | 10241 |
| 24 | 1943 | 502 | 1250 | 13462 | 11706 | 14929 |
| 28 | 2115 | 592 | 1354 | 19994 | 17386 | 20839 |
| 30 | 2134 | 651 | 1373 | 23711 | 20618 | 24018 |

| SIZE | L (RForBW) | D | H | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|------------|------|------|----------------|----------------|-------|
| 300 LBS | | | | | | |
| 2 | 267 | 52 | 170 | 26 | 23 | 123 |
| 3 | 318 | 77 | 212 | 55 | 46 | 286 |
| 4 | 356 | 102 | 230 | 83 | 72 | 533 |
| 6 | 444 | 154 | 281 | 155 | 135 | 1235 |
| 8 | 533 | 205 | 334 | 255 | 222 | 2271 |
| 10 | 622 | 257 | 405 | 420 | 365 | 3637 |
| 12 | 711 | 308 | 453 | 623 | 542 | 5341 |
| 14 | 838 | 340 | 498 | 809 | 704 | 6585 |
| 16 | 864 | 387 | 551 | 1075 | 935 | 8801 |
| 18 | 978 | 436 | 595 | 1330 | 1156 | 11030 |
| 20 | 1016 | 483 | 612 | 1703 | 1481 | 13942 |
| 24 | 1346 | 584 | 640 | 2600 | 2261 | 20839 |
| 28 | 1499 | 686 | 689 | 4120 | 3582 | 29184 |
| 30 | 1594 | 743 | 899 | 5252 | 4567 | 33906 |
| 32 | 1854 | 789 | 981 | 5386 | 4683 | 38277 |
| 34 | 1968 | 840 | 999 | 7020 | 6104 | 43688 |
| 36 | 2083 | 885 | 1024 | 7233 | 6290 | 48655 |
| 38 | 2072 | 934 | 1109 | 9763 | 6872 | 54762 |
| 40 | 2214 | 988 | 1151 | 8464 | 7360 | 61244 |
| 42 | 2267 | 1030 | 1267 | 9520 | 8278 | 66866 |
| 44 | 2382 | 1081 | 1289 | 10756 | 9353 | 74182 |
| 46 | 2486 | 1130 | 1346 | 11805 | 10265 | 81437 |
| 48 | 2513 | 1180 | 1458 | 12864 | 11186 | 88727 |
| 900 LBS | | | | | | |
| 2 | 368 | 51 | 278 | 64 | 55 | 118 |
| 3 | 381 | 76 | 286 | 135 | 113 | 263 |
| 4 | 457 | 102 | 300 | 234 | 203 | 489 |
| 6 | 610 | 146 | 427 | 387 | 337 | 1135 |
| 8 | 737 | 192 | 468 | 671 | 583 | 1976 |
| 10 | 838 | 255 | 657 | 1054 | 917 | 3172 |
| 12 | 965 | 286 | 640 | 1596 | 1388 | 4564 |
| 14 | 1029 | 311 | 645 | 1742 | 1515 | 5564 |
| 16 | 1130 | 356 | 678 | 2535 | 2204 | 7387 |
| 18 | 1219 | 404 | 738 | 3299 | 2869 | 9432 |
| 20 | 1321 | 448 | 895 | 5511 | 4792 | 11738 |
| 24 | 1549 | 538 | 1070 | 7431 | 6462 | 17211 |
| 28 | 1766 | 628 | 1130 | 10286 | 8944 | 23778 |
| 30 | 1804 | 672 | 1139 | 12025 | 10457 | 27519 |
| 32 | 2057 | 706 | 1271 | 14963 | 13011 | 29007 |
| 34 | 2173 | 749 | 1339 | 17265 | 15013 | 33046 |
| 36 | 2237 | 818 | 1495 | 19751 | 17175 | 36756 |
| 38 | 2404 | 835 | 1474 | 22372 | 19454 | 41308 |
| 40 | 2658 | 863 | 1508 | 25527 | 22197 | 46137 |
| 42 | 2690 | 920 | 1609 | 28151 | 24479 | 50412 |
| 44 | 2800 | 944 | 1642 | 31426 | 27327 | 55754 |
| 46 | 2868 | 1006 | 1745 | 34601 | 30088 | 61244 |
| 48 | 2984 | 1049 | 1812 | 38078 | 33111 | 66729 |
| 2500 LBS | | | | | | |
| 2 | 451 | 53 | 291 | 153 | 133 | 66 |
| 3 | 578 | 64 | 370 | 361 | 320 | 156 |
| 4 | 673 | 80 | 439 | 536 | 466 | 263 |
| 6 | 914 | 111 | 574 | 1164 | 1012 | 637 |
| 8 | 1022 | 148 | 699 | 2111 | 1836 | 1135 |
| 10 | 1270 | 184 | 838 | 3949 | 3434 | 1847 |
| 12 | 1422 | 219 | 843 | 4664 | 4056 | 2663 |
| 14 | 1546 | 248 | 1034 | 7179 | 6243 | 3257 |
| 16 | 1718 | 281 | 1154 | 9588 | 8337 | 4330 |
| 18 | 1797 | 314 | 1240 | 12139 | 10556 | 5564 |
| 20 | 2080 | 346 | 1432 | 15692 | 13645 | 6833 |
| 24 | 2403 | 414 | 1634 | 22811 | 19835 | 10086 |

GENERAL SERVICE CHECK VALVES

Lift check



| SIZE | L (RForBW) | D | H | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|---------------|-----|------|-------------------|-------------------|------|
| 150 LBS | | | | | | |
| 2 | 203 | 51 | 138 | 19 | 17 | 37 |
| 3 | 241 | 77 | 198 | 39 | 36 | 83 |
| 4 | 292 | 90 | 200 | 62 | 53 | 118 |
| 6 | 406 | 135 | 229 | 101 | 85 | 278 |
| 8 | 495 | 182 | 289 | 177 | 153 | 521 |
| 10 | 622 | 224 | 345 | 287 | 254 | 806 |
| 12 | 698 | 275 | 384 | 420 | 357 | 1241 |
| 14 | 787 | 303 | 422 | 555 | 506 | 1521 |
| 16 | 914 | 349 | 467 | 755 | 640 | 2046 |
| 18 | 978 | 396 | 516 | 996 | 862 | 2666 |
| 20 | 978 | 444 | 533 | 1093 | 994 | 3389 |
| 24 | 1168 | 539 | 636 | 1843 | 1589 | 5086 |
| 600 LBS | | | | | | |
| 2 | 292 | 51 | 187 | 40 | 34 | 37 |
| 3 | 356 | 77 | 257 | 83 | 69 | 83 |
| 4 | 432 | 90 | 276 | 144 | 132 | 118 |
| 6 | 559 | 135 | 354 | 300 | 262 | 278 |
| 8 | 660 | 182 | 445 | 572 | 468 | 521 |
| 10 | 787 | 222 | 503 | 968 | 810 | 791 |
| 12 | 838 | 250 | 583 | 1241 | 1084 | 1016 |
| 14 | 889 | 294 | 583 | 1535 | 1315 | 1427 |
| 16 | 991 | 337 | 572 | 1897 | 1633 | 1901 |
| 18 | 1092 | 377 | 722 | 2537 | 2225 | 2405 |
| 20 | 1194 | 417 | 749 | 3469 | 3017 | 2971 |
| 24 | 1397 | 503 | 812 | 4947 | 4233 | 4401 |
| 1500 LBS | | | | | | |
| 2 | 368 | 48 | 241 | 97 | 88 | 31 |
| 3 | 470 | 71 | 293 | 174 | 147 | 71 |
| 4 | 546 | 92 | 336 | 299 | 258 | 124 |
| 6 | 705 | 135 | 464 | 776 | 676 | 278 |
| 8 | 832 | 178 | 530 | 1058 | 914 | 497 |
| 10 | 991 | 222 | 616 | 2155 | 1863 | 791 |
| 12 | 1130 | 264 | 721 | 3182 | 2745 | 1139 |
| 14 | 1257 | 289 | 762 | 4190 | 3705 | 1377 |
| 16 | 1384 | 330 | 930 | 5676 | 4932 | 1819 |
| 18 | 1537 | 371 | 905 | 7658 | 6681 | 2325 |
| 20 | 1667 | 416 | 996 | 9852 | 8368 | 2956 |
| 24 | 1943 | 498 | 1227 | 14887 | 12597 | 4310 |

| SIZE | L (RForBW) | D | H | WEIGHT RF (KG) | WEIGHT BW (KG) | CV |
|-----------------|---------------|-----|------|-------------------|-------------------|------|
| 300 LBS | | | | | | |
| 2 | 267 | 51 | 157 | 29 | 24 | 37 |
| 3 | 318 | 77 | 212 | 60 | 53 | 83 |
| 4 | 356 | 90 | 215 | 88 | 80 | 118 |
| 6 | 444 | 135 | 267 | 163 | 142 | 278 |
| 8 | 559 | 182 | 306 | 269 | 239 | 521 |
| 10 | 622 | 224 | 390 | 465 | 396 | 806 |
| 12 | 711 | 275 | 427 | 657 | 567 | 1241 |
| 14 | 838 | 303 | 455 | 865 | 763 | 1521 |
| 16 | 864 | 349 | 525 | 1150 | 1015 | 2046 |
| 18 | 978 | 389 | 589 | 1475 | 1251 | 2668 |
| 20 | 1016 | 434 | 582 | 1859 | 1581 | 3231 |
| 24 | 1346 | 526 | 588 | 2797 | 2460 | 4833 |
| 900 LBS | | | | | | |
| 2 | 368 | 48 | 259 | 68 | 59 | 31 |
| 3 | 381 | 76 | 264 | 147 | 125 | 80 |
| 4 | 457 | 98 | 275 | 257 | 215 | 141 |
| 6 | 610 | 147 | 426 | 429 | 353 | 332 |
| 8 | 737 | 190 | 440 | 713 | 628 | 570 |
| 10 | 838 | 238 | 638 | 1163 | 1006 | 916 |
| 12 | 965 | 283 | 631 | 1741 | 1513 | 1316 |
| 14 | 1029 | 311 | 589 | 1882 | 1635 | 1606 |
| 16 | 1130 | 356 | 635 | 2801 | 2446 | 2133 |
| 18 | 1219 | 400 | 692 | 3592 | 3184 | 2723 |
| 20 | 1321 | 444 | 831 | 5850 | 5131 | 3389 |
| 24 | 1549 | 533 | 1061 | 7825 | 6905 | 4968 |
| 2500 LBS | | | | | | |
| 2 | 451 | 38 | 282 | 166 | 145 | 19 |
| 3 | 578 | 64 | 386 | 381 | 339 | 57 |
| 4 | 673 | 73 | 439 | 594 | 498 | 76 |
| 6 | 914 | 111 | 542 | 1215 | 1064 | 184 |
| 8 | 1022 | 146 | 691 | 2285 | 1928 | 328 |
| 10 | 1270 | 184 | 816 | 4297 | 3701 | 533 |
| 12 | 1422 | 219 | 801 | 5028 | 4424 | 769 |
| 14 | 1568 | 241 | 963 | 7793 | 6750 | 940 |
| 16 | 1730 | 276 | 1077 | 10404 | 9247 | 1250 |
| 18 | 1797 | 311 | 1199 | 13004 | 11711 | 1606 |
| 20 | 2080 | 343 | 1367 | 16681 | 14783 | 1973 |
| 24 | 2403 | 414 | 1559 | 24817 | 21587 | 2937 |

“Due to engineering activities, all the above dimensions and weights could be subjected to changes by AMPO POYAM VALVES without any notification. Therefore, please consult us for confirmation on the above data as well as for other dimensions and weights not reported in the tables”.

9. AMPO SERVICE

AMPO SERVICE has a wide experience in guaranteeing a **prompt response** (72 hours at site if needed) to customer needs **all over the world** with a highly experienced, customer oriented and specialized team. It provides a wide range of **ad-hoc and high added value services**:

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- **PREDICTIVE MAINTENANCE SERVICE:** Patented AMPO RCM system (Remote Valve Condition Monitoring Service)
- **PREVENTIVE MAINTENANCE SERVICE:** Maintenance Plan developments.
- **WORLDWIDE REPAIR AND MAINTENANCE CENTERS**
- **TAILORED ENGINEERING SOLUTIONS**
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