

Forged Pressure Seal Valves



B.F.E. s.r.l.

BONNEY FORGE

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BONNEY FORGE



RP&C Valve

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SECTION A

PRESSURE SEAL GATE VALVES

B-1

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P&ID SYMBOL

Gate valves are primarily designed for on-off services when a straight-line flow of fluid and minimum restriction is desired. The closure member of gate valves either stops or allows flow

through the valve and acts somewhat like the opening or closing of a gate and is called, appropriately, the gate valve.



SECTION B

PRESSURE SEAL GLOBE VALVES

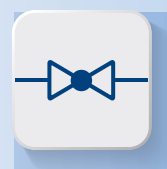
C-1

C-6

P&ID SYMBOL

Globe valves are used for flow regulation, frequent operation, increased flow resistance or for positive shut off when closed. Globe valves are closing-down valves in which the closure member is moved squarely on and off the seat. By this mode of disc travel, the seat opening varies in

direct proportion to the travel of the disc. This proportional relationship between valve opening and disc travel is ideally suited for duties involving regulation of flow rate. Globe valves can also be used for on-off duty, the seating load can be positively controlled with high sealing capacity.



SECTION C

PRESSURE SEAL CHECK VALVES

D-1

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P&ID SYMBOL

Check valves, are used to prevent back flow in the line. The pressure of the fluid passing through a system opens the valve, while any reversal of flow will close the valve.



SECTION D

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- PRESSURE SEAL ANGLE PATTERN GLOBE VALVES
- PRESSURE SEAL ANGLE PATTERN PISTON CHECK VALVES

SECTION E

PRESSURE SEAL VALVE DESCRIPTION

Pressure seal design is an alternative design to the traditional bolted-bonnet approach to sealing the body/bonnet joint.

Pressure seal valves are the best option for the high-pressure steam industry and for all applications where designers continue to push boiler, HRSG, and piping system pressure/temperature envelopes.

It is the perfect technological match for the welding expertise that now make excellent, high integrity butt-weld ends common place.

The beauty of the pressure seal design is that as system pressure builds, so does the load on the bonnet and, consequently, the pressure seal gasket. Therefore, in pressure seal valves, as the system pressure increases, potential leakage through the body/bonnet joint decreases: the higher the internal pressure, the tighter the seal.

The pressure seal bonnet joint also eliminates the body/bonnet flanges reducing weight and simplifying the application of exterior insulation.

However, due to its reliance on system pressure to aid in sealing, pressure seal valves are best applied in high pressure systems, the design is typically available in pressure classes from ASME 600.

PRODUCT FEATURES

1. No pressure retaining body-bonnet flanges or bolting.
2. Forged structure for all pressure containing parts. Optimized design for thermal fatigue required for power plant where frequent start-ups & shut-downs are the must.
3. Flanged valves are provided with flanges integral to the valve body forging or full penetration welded.
4. Lighter weight design compared to bolted bonnet.
5. High quality packing for reliable tightness and low emission performance.
6. Sealing surfaces are machined to the tightest tolerances and lowest roughness and to ensure reliable sealing & long service life.
7. Best-in-Class CV values.
8. Outside Screw and Yoke (OS&Y).
9. Low operation torque design.
10. Self aligning two piece packing gland.
11. Graphite based Pressure seal gasket with metal anti-extrusion caps.
12. Low fugitive emission design.

Applicable Standards

DESIGN	ASME B16.34
INSPECTION & TESTING	API 598
MARKING	MSS SP-25
RATING	ASME B16.34
FUGITIVE EMISSION	ISO 15848

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BFE AVAILABLE CATALOGUES

BFE - BONNEY FORGE: VALVE PRODUCTS FOR EVERY INDUSTRY INFRASTRUCTURE

BFE is proud to offer the widest variety of high-quality products and unmatched services. Search our catalogs, search for a product, or contact us for help with your order.



Forged Valves

Forged Pressure Seal Valves

API 6A Valves



Cast Steel Valves

Trunnion Mounted Ball Valves



Forged Floating Ball Valves

Double Block & Bleed Valves

THE COMPANY BEHIND THE BRAND

BFE: EXPERIENCE AND EXPERTISE AT YOUR SERVICE

More than 50 years of experience, expertise and know how strengthen BFE's leadership in the production and commercialization of valves for oil and gas, mining industry, petrochemical, power generation and utilities. This solid and dynamic business strategy allows BFE to identify and provide solutions to meet specific needs, and aims to achieve complete customer satisfaction which today turns out to be of great value.

BONNEY FORGE: THE NAME YOU TRUST FOR FORGED STEEL VALVES

Bonney Forge's forged steel valves and piping components have led the way for over eighty years in state-of-the-art design and dependable performance. It is qualities like these, combined with a customer-driven culture, that maintains Bonney Forge's leadership position within the industry for exceeding customer expectations. Our goal is to make Bonney Forge your number one world-wide choice for forged valves.

OUR MISSION

To be, today and in the future, the recognized leader in our industry, marketing and manufacturing forged steel valves, cast steel valves, forged fittings, branch connections and other related products to satisfy our customer's expectations.

To be cost effective through Total Quality performance of these operations, and thus provide the resources required to support our commitment to improve our products, processes and customer service.

To be a law abiding corporate citizen respecting the rights of individuals, contributing to the needs of the community and conserving the state of the environment.

OUR CREED

- Continuously improving quality, processes and customer service.
- Eliminating delays, errors and defects in materials and workmanship.
- Providing customers with access to statistical evidence that quality is incorporated in our products and production processes.
- Requiring suppliers to provide statistical evidence of quality in products and process capabilities.
- Sharing with the organization the cost of poor quality in products and services.
- Driving out fear and bringing problems to light for all to see.
- Working together to address specific problems and establish goals and solutions as a team.
- Controlling manufacturing processes which determine the final cost and quality of our products.
- Removing barriers which stand between employees and their pride of workmanship, and implementing ongoing training, supervision and employee development programs.
- Good housekeeping, which reflects on the company, its operating philosophy and our people.



BFE is specialized in the production of industrial valves for use in oil & gas, chemical, petrochemical, power, onshore and offshore industries. BFE has two main divisions:

- Albano Sant'Alessandro - BG - Italy: The management sales and operative offices are located here, as well as the machining, assembly and final testing workshop for forged valves
- BFE forging plant - BG - Italy: The main components for forged valves are forged and represent BFE's first basic factor of global quality, seeing that the entire manufacturing process is controlled and guaranteed by the Company Quality System.



Bonney Forge is an industry leader in marketing and manufacturing forged steel fittings and unions, branch connections, forged steel valves, cast steel valves and specialty products.

For more than a century, Bonney Forge has achieved manufacturing excellence through the detailed attention to customer's needs and producing consistently superior flow control products. Today, the Bonney Forge name is synonymous with quality that exceeds all industry standards.



WFI International, a Bonney Forge Company, is a leading manufacturer of ferrous and non-ferrous branch connection fittings, specialty flanges, and seamless fittings for use in piping systems and on pressure vessels. WFI and Bonney Forge are the world's leading manufacturers of integrally reinforced branch connection fittings.



Bonney Forge acquired RP&C Valve in 2004. RP&C traces its' origin back to 1878 with the Steam Boiler Appliance Company. RP&C products consist of Forged Steel Valves used in the chemical processing, pulp and paper, petroleum, power, and residential and commercial construction markets.

COMPANY BACKGROUND

BONNEY FORGE CORPORATION ACQUIRES BFE

Bonney Forge Corporation has expanded its global footprint in manufacturing industrial valves and fittings by completing the purchase of BFE. As one of the world's leading manufacturers of forged steel valves, cast steel valves, forged steel fittings, unions and branch connections, our commitment to excellence in producing the highest quality products makes this acquisition a significant alliance in the international market.

2013

SECURING OUR GLOBAL PRESENCE BY INVESTING IN OURSELVES.



BONNEY FORGE

ENHANCED APPROACHES TO ENVIRONMENTAL AND ECOLOGICAL MANAGEMENT

As well as guaranteeing maximum functionality, all valves made by B.F.E. S.p.A. fully comply with international and EU norms to reduce atmospheric pollution and leakage also under critical conditions such as high pressures, temperatures and the presence of aggressive products, etc.

2004



DYNAMISM, INNOVATION AND GROWTH

A significant year for B.F.E. S.p.A. Bonney Forge Valve Licensee as Acciaierie Valbruna di Vicenza, one of the world's largest steel companies, comes in as controlling shareholder. The US-based Bonney Forge Corporation continues to maintain its position as a shareholder and licensor.

1996

BONNEY FORGE EUROPE BECOMES B.F.E. S.P.A.

In 1987 the current B.F.E. S.p.A. Bonney Forge Valve Licensee is created: the company was acquired from Bonney Forge Corporation; however the latter remains a shareholder and licensor.

1987



1966

BONNEY FORGE EUROPE IS FOUNDED

December 1966. Bonney Forge Europe S.p.A. is officially incorporated. The Firm continues to operate mainly in energy production and the petrolchemical industry. In order to meet increasingly sophisticated and complex market demands, Bonney Forge Europe buys a production plant exclusively dedicated to forging.

FIRST DAYS, A PROMISE OF QUALITY AND COMMITMENT

Forged valves production first started as long ago as 1955 in a converted warehouse in Albano S. Alessandro originally built as a barn. The production was the responsibility of four people but in just a few years there were thirty on the payroll - thanks to a policy of steadfast commitment and the winning of a series of important orders from Italy's fast growing chemical and petrolchemical industries.

1955

O.M.B.A.
Bergamo

VALVOLE &
RACCORDI
FORGIATI

B A-3

... in questo Catalogo

TAKING QUALITY TO THE NEXT LEVEL

ENGINEERING IN A QUALITY DRIVEN MARKET

Our extensive, uncompromising, company-wide quality control system carefully monitors our manufacturing processes to assure a product that performs to the highest industry standards.

Quality assurance procedures include 100% hydrostatic and pneumatic testing of all valves in full conformance to applicable API standards and industry codes.



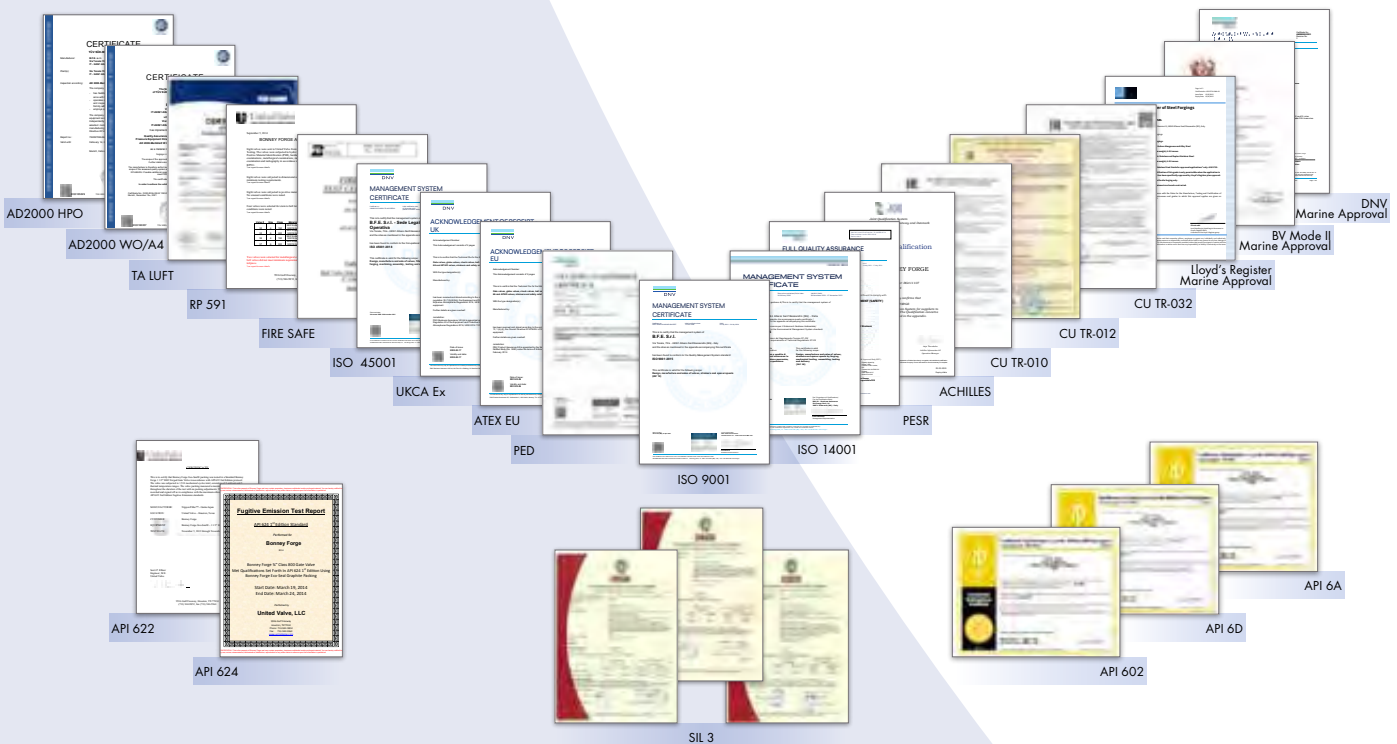
QUALITY THAT YOU CAN COUNT ON

BFE products are manufactured and tested in strict accordance to ASTM, ASME, ANSI, API and other applicable industry codes and specifications.

Chemical and mechanical properties of all Bonney Forge products are fully traceable to the original forging lot and raw material heat. Requirements of the market are in a state of constant evolution, and customers' quality needs are met and exceeded by the complete business process.

THE ASSURANCE YOU NEED

It is our policy to supply only quality products that conform fully to customer and statutory or regulatory requirements including codes and standards. To help meet our objective we operate an exacting quality control system, which has been audited and assessed by numerous customers and external authorities for compliance with all market standards.



CONFIDENCE IN STEEL FORGING

WHY FORGINGS?

Forging offers uniformity of composition and structure. Forging results in metallurgical recrystallisation and grain refinement as a result of the thermal cycle and deformation process.

This strengthens the resulting steel product particularly in terms of impact and shear strength. Forged steel is generally stronger and more reliable than castings and plate steel due to the fact that the grain flows of the steel are altered, conforming to the shape of the part.

WHAT YOU GAIN WHEN YOU SELECT OUR FORGING

- Dimensional uniformity and close dimensional tolerances.
- High Strength.
- Tougher than alternatives.
- Better response to heat treatment than alternatives.
- Will handle impact better than alternatives.
- The nature of forging excludes the occurrence of porosity, shrinkage, cavities and cold pour issues.
- The tight grain structure of forgings making it mechanically strong.
- The tight grain structure offers great wear resistance.

IN-HOUSE FORGING PRODUCTION

Thanks to constant search of efficient solutions the plant has the most modern forging production built on basis of semi-automatic and continuous forging line. High quality of forging is provided by the modern production accessories of the plant and usage of software for modeling the process of forging.



HIGHEST POSSIBLE MATERIAL QUALITY

BFE uses only high-quality materials inspected & tested to International Standards and utilizes advanced manufacturing technology with special emphasis on safety, quality, and long service life of our products, to ensure that our clients receive the "best in class" products available from us at a competitive price and delivered on time.

CHALLENGING MATERIALS FOR THE MOST CRITICAL APPLICATIONS

Forging material has increased strength under maximum rated operation pressure compared with cast. Other forging properties include greater impact resistance, resistance to fatigue cracking, particularly when cycling at either high or cryogenic temperature.



UNIQUE EXPERTISE FOR VALVE ENGINEERING

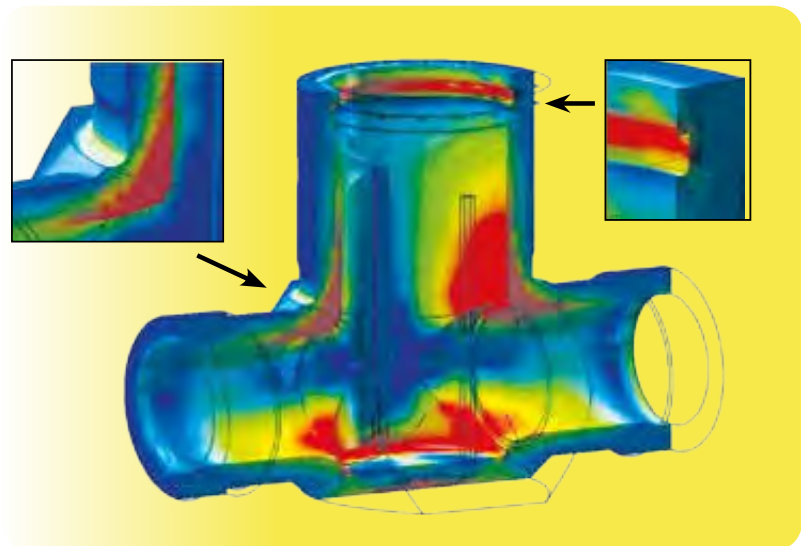
BFE offers extensive expertise in the design that provide the advantage of sophisticated product development with fast and cost-effective manufacturing capabilities.

Our approach ensures that you receive the lowest cost, and highest efficiency solution with a quick turn-around.

Bonney Forge represent decades of design experience across all market sectors. Using the latest software and design technologies, our Engineering can take your requirements and develop a specific custom solution.

BFE Engineering Department operates state of the art design tools with last generation solid modeling, linear and non linear finite element analysis and computational fluid dynamic analysis.

FMEA and FMECA tools are used to minimize the development risks and increase product reliability during the development of new products.



PRODUCTION CAPABILITIES THAT MEET YOUR DEMANDS

BFE is an integrated supplier with in-house forging, machining and assembly-test operations.

Continuous investment in computerized systems and integrated machining centres ensure the highest level of component repeatability, high volume capabilities with uncompromising quality.

BFE experience in managing the complete production process for complex and highly variable requirements benefits our customers by achieving a high rate of on-time delivery and the ability to meet some of the most demanding fast track shipments.

Combined with unlimited local qualified third party capabilities,

BFE production system is constantly expanding to handle steady growth rates and complex customer requirements.

PRESSURE SEAL GATE VALVES

PRESSURE SEAL GATE WEDGE VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	1SH	165 ⁽¹⁾	6.5 ⁽¹⁾	14	0.6	97	3.8	273	10.7	5.9	13	6PS 103
	3/4"	20	1SH	190 ⁽¹⁾	7.5 ⁽¹⁾	18	0.7	138	5.4	312	12.3	9.3	21	6PS 104
	1"	25	1SH	216 ⁽¹⁾	8.5 ⁽¹⁾	24	0.9	138	5.4	344	13.5	11.7	26	6PS 105
	1-1/2"	40	1SH	241 ⁽¹⁾	9.5 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	20	44	6PS 107
	2"	50	1SH	292 ⁽¹⁾	11.5 ⁽¹⁾	51	2.0	234	9.2	406	16.0	40	88	6PS 108
	3"	80	1SG	356 ⁽¹⁾	14.0 ⁽¹⁾	62	2.4	300	11.8	650	25.6	80	176	6PS 1010
	4"	100	1SG	432 ⁽¹⁾	17.0 ⁽¹⁾	80	3.1	400	15.7	900	35.4	160	353	6PS 1011
	6"	150	1CG	559 ⁽¹⁾	22.0 ⁽¹⁾	120	4.7	600	23.6	1130	44.5	350	772	6PS 1013
	8"	200	1CG	660 ⁽¹⁾	26.0 ⁽¹⁾	160	6.3	600	23.6	1300	51.2	620	1367	6PS 1014
	10"	250	2CG	711	31.0	230	9.1	600	23.6	1710	67.3	1150	2535	6PS 1015
	12"	300	2CG	813	33.0	270	10.6	600	23.6	1950	76.8	1800	3968	6PS 1016
	14"	350	2CG	889	35.0	295	11.6	600	23.6	2000	78.7	2000	4409	6PS 1017
	16"	400	2CG	991	39.0	337	13.3	600	23.6	2100	82.7	2900	6393	6PS 1018
	18"	450	2CG	1092	43.0	380	15.0	600	23.6	2650	104.3	3900	8598	6PS 1019
	20"	500	2CG	1194	47.0	418	16.5	600	23.6	2700	106.3	4300	9480	6PS 1020
	22"	550	2CG	1295 ⁽²⁾	51.0 ⁽²⁾	420	16.5	600	23.6	2750	108.3	6800	14991	6PS 1022
24"	600	2CG	1397	55.0	504	19.8	600	23.6	2800	110.2	9000	19842	6PS 1024	
ASME 900 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	216 ⁽³⁾	8.5 ⁽³⁾	14	0.6	97	3.8	273	10.7	6.5	14	9PS 103
	3/4"	20	1SH	229 ⁽³⁾	9.0 ⁽³⁾	18	0.7	138	5.4	312	12.3	10.5	23	9PS 104
	1"	25	1SH	254 ⁽¹⁾	10.0 ⁽¹⁾	24	0.9	138	5.4	344	13.5	13	29	9PS 105
	1-1/2"	40	1SH	305 ⁽¹⁾	12.0 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	23	51	9PS 107
	2"	50	1SH	368 ⁽¹⁾	14.5 ⁽¹⁾	47	1.9	234	9.2	520	20.5	45	99	9PS 108
	3"	80	1SG	305	12.0	62	2.4	300	11.8	650	25.6	75	165	9PS 1010
	4"	100	1SG	356	14.0	80	3.1	400	15.7	900	35.4	150	331	9PS 1011
	6"	150	1CG	508	20.0	120	4.7	600	23.6	1130	44.5	340	750	9PS 1013
	8"	200	1CG	660	26.0	160	6.3	600	23.6	1300	51.2	620	1367	9PS 1014
	10"	250	2CG	787	31.0	210	8.3	600	23.6	1710	67.3	1180	2601	9PS 1015
	12"	300	2CG	914	36.0	245	9.6	600	23.6	1950	76.8	1850	4079	9PS 1016
	14"	350	2CG	991	39.0	260	10.2	600	23.6	2050	80.7	2050	4519	9PS 1017
	16"	400	2CG	1092	43.0	330	13.0	600	23.6	2300	90.6	2950	6504	9PS 1018
	18"	450	2CG	1219 ⁽²⁾	48.0 ⁽²⁾	350	13.8	600	23.6	2600	102.4	4010	8841	9PS 1019
	20"	500	2CG	1321 ⁽²⁾	52.0 ⁽²⁾	370	14.6	600	23.6	2850	112.2	4450	9811	9PS 1020
	22"	550	2CG	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	600	23.6	3300	129.9	7100	15653	9PS 1022
24"	600	2CG	1549 ⁽²⁾	61.0 ⁽²⁾	480	18.9	600	23.6	3600	141.7	9250	20393	9PS 1024	
ASME 1500 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	216 ⁽³⁾	8.5 ⁽³⁾	14	0.6	97	3.8	273	10.7	6.5	14	15PS 103
	3/4"	20	1SH	229 ⁽³⁾	9.0 ⁽³⁾	18	0.7	138	5.4	312	12.3	10.5	23	15PS 104
	1"	25	1SH	254 ⁽¹⁾	10.0 ⁽¹⁾	24	0.9	138	5.4	344	13.5	13	29	15PS 105
	1-1/2"	40	1SH	305 ⁽¹⁾	12.0 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	23	51	15PS 107
	2"	50	1SH	368 ⁽¹⁾	14.5 ⁽¹⁾	47	1.9	234	9.2	520	20.5	45	99	15PS 108
	3"	80	1SG	305	12.0	62	2.4	300	11.8	650	25.6	75	165	15PS 1010
	4"	100	1SG	406	16.0	80	3.1	400	15.7	900	35.4	155	342	15PS 1011
	6"	150	1CG	559	22.0	120	4.7	600	23.6	1130	44.5	350	772	15PS 1013
	8"	200	1CG	711	28.0	160	6.3	600	23.6	1300	51.2	630	1389	15PS 1014
	10"	250	2CG	864	34.0	210	8.3	600	23.6	1710	67.3	1215	2679	15PS 1015
	12"	300	2CG	991	39.0	245	9.6	600	23.6	1950	76.8	1900	4189	15PS 1016
	14"	350	2CG	1067	42.0	260	10.2	600	23.6	2050	80.7	2100	4630	15PS 1017
	16"	400	2CG	1194	47.0	310	12.2	600	23.6	2350	92.5	3000	6614	15PS 1018
	18"	450	2CG	1346	53.0	350	13.8	600	23.6	2600	102.4	4120	9083	15PS 1019
	20"	500	2CG	1473	58.0	370	14.6	600	23.6	2850	112.2	4600	10141	15PS 1020
	22"	550	2CG	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	600	23.6	3300	129.9	7400	16314	15PS 1022
24"	600	2CG	1943 ⁽²⁾	76.5 ⁽²⁾	480	18.9	600	23.6	3600	141.7	9500	20944	15PS 1024	
ASME 2500 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	264 ⁽²⁾	10.4 ⁽²⁾	11.5	0.5	138	5.4	370	14.6	14.5	32	25PS 103
	3/4"	20	1SH	273 ⁽²⁾	10.8 ⁽²⁾	15	0.6	138	5.4	416	16.4	15	33	25PS 104
	1"	25	1SH	308 ⁽¹⁾	12.1 ⁽¹⁾	19.5	0.8	172	6.8	422	16.6	26	57	25PS 105
	1-1/2"	40	1SH	384 ⁽¹⁾	15.1 ⁽¹⁾	28	1.1	234	9.2	507	20.0	56	123	25PS 107
	2"	50	1SH	451 ⁽¹⁾	17.8 ⁽¹⁾	38	1.5	320	12.6	559	22.0	60	132	25PS 108
	3"	80	1SG	368	14.5	57	2.2	400	15.7	800	31.5	160	353	25PS 1010
	4"	100	1SG	457	18.0	72	2.8	400	15.7	800	31.5	165	364	25PS 1011
	6"	150	1CG	610	24.0	110	4.3	600	23.6	1250	49.2	570	1257	25PS 1013
	8"	200	2CG	762	30.0	147	5.8	600	23.6	1610	63.4	1130	2491	25PS 1014
	10"	250	2CG	914	36.0	185	7.3	600	23.6	1860	73.2	1800	3968	25PS 1015
	12"	300	2CG	1041	41.0	218	8.6	600	23.6	1950	76.8	2100	4630	25PS 1016
	14"	350	2CG	1118	44.0	241	9.5	600	23.6	2100	82.7	2300	5071	25PS 1017
	16"	400	2CG	1245	49.0	260	10.2	600	23.6	2500	98.4	3800	8378	25PS 1018
	18"	450	2CG	1397	55.0	280	11.0	600	23.6	3200	126.0	5500	12125	25PS 1019
	20"	500	2CG	1500 ⁽³⁾	59.0 ⁽³⁾	310	12.2	600	23.6	2850	112.2	7000	15432	25PS 1020
	22"	550	2CG	1750 ⁽³⁾	69.0 ⁽³⁾	340	13.4	600	23.6	3500	137.8	9000	19842	25PS 1022
24"	600	2CG	2100 ⁽³⁾	83.0 ⁽³⁾	370	14.6	600	23.6	4000	157.5	13000	28660	25PS 1024	

PRODUCT FEATURES:

- End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.
- NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.
- NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

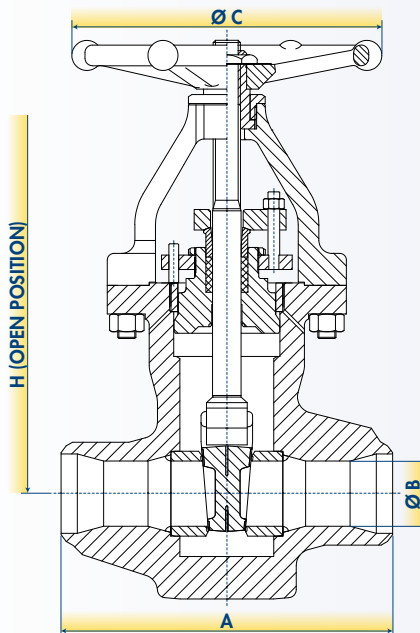
B/E reserves the right to change designs, dimensions or specifications without notice.

PRESSURE SEAL GATE VALVES

PRESSURE SEAL GATE WEDGE VALVES SKETCHES

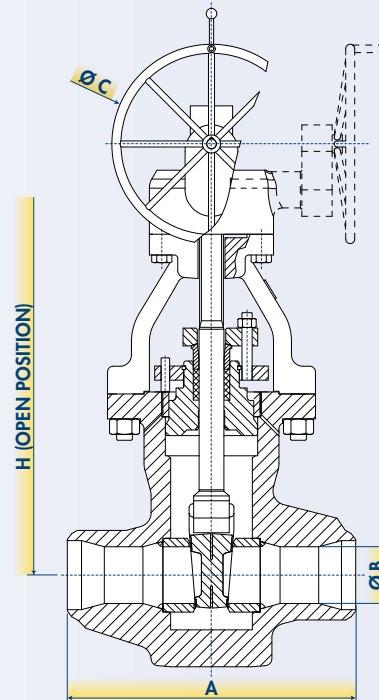
DESIGN TYPE 1SH

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- HANDWHEEL OPERATED



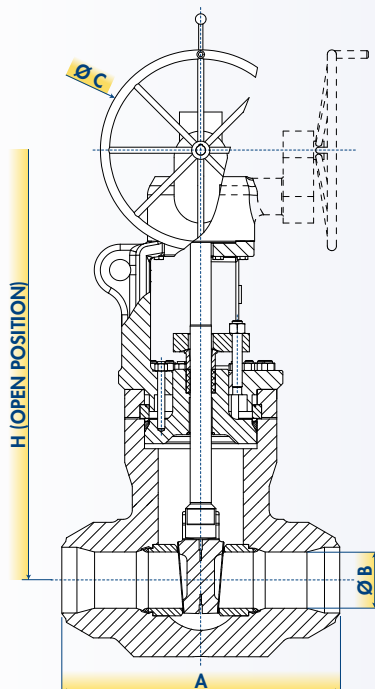
DESIGN TYPE 1SG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- GEAR OPERATED



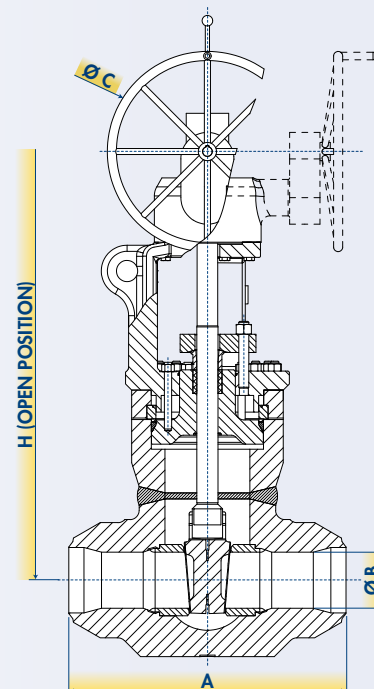
DESIGN TYPE 1CG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



DESIGN TYPE 2CG

- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



PRESSURE SEAL GATE VALVES

PRESSURE SEAL PARALLEL SLIDE VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	1SH	165 ⁽¹⁾	6.5 ⁽¹⁾	14	0.6	97	3.8	273	10.7	5.9	13	6PS 103DD
	3/4"	20	1SH	190 ⁽¹⁾	7.5 ⁽¹⁾	18	0.7	138	5.4	312	12.3	9.3	21	6PS 104DD
	1"	25	1SH	216 ⁽¹⁾	8.5 ⁽¹⁾	24	0.9	138	5.4	344	13.5	11.7	26	6PS 105DD
	1-1/2"	40	1SH	241 ⁽¹⁾	9.5 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	20	44	6PS 107DD
	2"	50	1SH	292 ⁽¹⁾	11.5 ⁽¹⁾	51	2.0	234	9.2	406	16.0	40	88	6PS 108DD
	3"	80	1SG	356 ⁽¹⁾	14.0 ⁽¹⁾	62	2.4	300	11.8	650	25.6	80	176	6PS 1010DD
	4"	100	1SG	432 ⁽¹⁾	17.0 ⁽¹⁾	80	3.1	400	15.7	900	35.4	160	353	6PS 1011DD
	6"	150	1CG	559 ⁽¹⁾	22.0 ⁽¹⁾	120	4.7	600	23.6	1130	44.5	350	772	6PS 1013DD
	8"	200	1CG	660 ⁽¹⁾	26.0 ⁽¹⁾	160	6.3	600	23.6	1300	51.2	620	1367	6PS 1014DD
	10"	250	2CG	711	31.0	230	9.1	600	23.6	1710	67.3	1150	2535	6PS 1015DD
	12"	300	2CG	813	33.0	270	10.6	600	23.6	1950	76.8	1800	3968	6PS 1016DD
	14"	350	2CG	889	35.0	295	11.6	600	23.6	2000	78.7	2000	4409	6PS 1017DD
	16"	400	2CG	991	39.0	337	13.3	600	23.6	2100	82.7	2900	6393	6PS 1018DD
	18"	450	2CG	1092	43.0	380	15.0	600	23.6	2650	104.3	3900	8598	6PS 1019DD
	20"	500	2CG	1194	47.0	418	16.5	600	23.6	2700	106.3	4300	9480	6PS 1020DD
	22"	550	2CG	1295 ⁽²⁾	51.0 ⁽²⁾	420	16.5	600	23.6	2750	108.3	6800	14991	6PS 1022DD
24"	600	2CG	1397	55.0	504	19.8	600	23.6	2800	110.2	9000	19842	6PS 1024DD	
ASME 900 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	216 ⁽³⁾	8.5 ⁽³⁾	14	0.6	97	3.8	273	10.7	6.5	14	9PS 103DD
	3/4"	20	1SH	229 ⁽³⁾	9.0 ⁽³⁾	18	0.7	138	5.4	312	12.3	10.5	23	9PS 104DD
	1"	25	1SH	254 ⁽¹⁾	10.0 ⁽¹⁾	24	0.9	138	5.4	344	13.5	13	29	9PS 105DD
	1-1/2"	40	1SH	305 ⁽¹⁾	12.0 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	23	51	9PS 107DD
	2"	50	1SH	368 ⁽¹⁾	14.5 ⁽¹⁾	47	1.9	234	9.2	520	20.5	45	99	9PS 108DD
	3"	80	1SG	305	12.0	62	2.4	300	11.8	650	25.6	75	165	9PS 1010DD
	4"	100	1SG	356	14.0	80	3.1	400	15.7	900	35.4	150	331	9PS 1011DD
	6"	150	1CG	508	20.0	120	4.7	600	23.6	1130	44.5	340	750	9PS 1013DD
	8"	200	1CG	660	26.0	160	6.3	600	23.6	1300	51.2	620	1367	9PS 1014DD
	10"	250	2CG	787	31.0	210	8.3	600	23.6	1710	67.3	1180	2601	9PS 1015DD
	12"	300	2CG	914	36.0	245	9.6	600	23.6	1950	76.8	1850	4079	9PS 1016DD
	14"	350	2CG	991	39.0	260	10.2	600	23.6	2050	80.7	2050	4519	9PS 1017DD
	16"	400	2CG	1092	43.0	330	13.0	600	23.6	2300	90.6	2950	6504	9PS 1018DD
	18"	450	2CG	1219 ⁽²⁾	48.0 ⁽²⁾	350	13.8	600	23.6	2600	102.4	4010	8841	9PS 1019DD
	20"	500	2CG	1321 ⁽²⁾	52.0 ⁽²⁾	370	14.6	600	23.6	2850	112.2	4450	9811	9PS 1020DD
	22"	550	2CG	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	600	23.6	3300	129.9	7100	15653	9PS 1022DD
24"	600	2CG	1549 ⁽²⁾	61.0 ⁽²⁾	480	18.9	600	23.6	3600	141.7	9250	20393	9PS 1024DD	
ASME 1500 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	216 ⁽³⁾	8.5 ⁽³⁾	14	0.6	97	3.8	273	10.7	6.5	14	15PS 103DD
	3/4"	20	1SH	229 ⁽³⁾	9.0 ⁽³⁾	18	0.7	138	5.4	312	12.3	10.5	23	15PS 104DD
	1"	25	1SH	254 ⁽¹⁾	10.0 ⁽¹⁾	24	0.9	138	5.4	344	13.5	13	29	15PS 105DD
	1-1/2"	40	1SH	305 ⁽¹⁾	12.0 ⁽¹⁾	36.6	1.4	172	6.8	448	17.6	23	51	15PS 107DD
	2"	50	1SH	368 ⁽¹⁾	14.5 ⁽¹⁾	47	1.9	234	9.2	520	20.5	45	99	15PS 108DD
	3"	80	1SG	305	12.0	62	2.4	300	11.8	650	25.6	75	165	15PS 1010DD
	4"	100	1SG	406	16.0	80	3.1	400	15.7	900	35.4	155	342	15PS 1011DD
	6"	150	1CG	559	22.0	120	4.7	600	23.6	1130	44.5	350	772	15PS 1013DD
	8"	200	1CG	711	28.0	160	6.3	600	23.6	1300	51.2	630	1389	15PS 1014DD
	10"	250	2CG	864	34.0	210	8.3	600	23.6	1710	67.3	1215	2679	15PS 1015DD
	12"	300	2CG	991	39.0	245	9.6	600	23.6	1950	76.8	1900	4189	15PS 1016DD
	14"	350	2CG	1067	42.0	260	10.2	600	23.6	2050	80.7	2100	4630	15PS 1017DD
	16"	400	2CG	1194	47.0	310	12.2	600	23.6	2350	92.5	3000	6614	15PS 1018DD
	18"	450	2CG	1346	53.0	350	13.8	600	23.6	2600	102.4	4120	9083	15PS 1019DD
	20"	500	2CG	1473	58.0	370	14.6	600	23.6	2850	112.2	4600	10141	15PS 1020DD
	22"	550	2CG	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	600	23.6	3300	129.9	7400	16314	15PS 1022DD
24"	600	2CG	1943 ⁽²⁾	76.5 ⁽²⁾	480	18.9	600	23.6	3600	141.7	9500	20944	15PS 1024DD	
ASME 2500 (SEE NOTE 1, 2, 3)	1/2"	15	1SH	264 ⁽²⁾	10.4 ⁽²⁾	11.5	0.5	138	5.4	370	14.6	14.5	32	25PS 103DD
	3/4"	20	1SH	273 ⁽²⁾	10.8 ⁽²⁾	15	0.6	138	5.4	416	16.4	15	33	25PS 104DD
	1"	25	1SH	308 ⁽¹⁾	12.1 ⁽¹⁾	19.5	0.8	172	6.8	422	16.6	26	57	25PS 105DD
	1-1/2"	40	1SH	384 ⁽¹⁾	15.1 ⁽¹⁾	28	1.1	234	9.2	507	20.0	56	123	25PS 107DD
	2"	50	1SH	451 ⁽¹⁾	17.8 ⁽¹⁾	38	1.5	320	12.6	559	22.0	60	132	25PS 108DD
	3"	80	1SG	368	14.5	57	2.2	400	15.7	800	31.5	160	353	25PS 1010DD
	4"	100	1SG	457	18.0	72	2.8	400	15.7	800	31.5	165	364	25PS 1011DD
	6"	150	1CG	610	24.0	110	4.3	600	23.6	1250	49.2	570	1257	25PS 1013DD
	8"	200	2CG	762	30.0	147	5.8	600	23.6	1610	63.4	1130	2491	25PS 1014DD
	10"	250	2CG	914	36.0	185	7.3	600	23.6	1860	73.2	1800	3968	25PS 1015DD
	12"	300	2CG	1041	41.0	218	8.6	600	23.6	1950	76.8	2100	4630	25PS 1016DD
	14"	350	2CG	1118	44.0	241	9.5	600	23.6	2100	82.7	2300	5071	25PS 1017DD
	16"	400	2CG	1245	49.0	260	10.2	600	23.6	2500	98.4	3800	8378	25PS 1018DD
	18"	450	2CG	1397	55.0	280	11.0	600	23.6	3200	126.0	5500	12125	25PS 1019DD
	20"	500	2CG	1500 ⁽³⁾	59.0 ⁽³⁾	310	12.2	600	23.6	2850	112.2	7000	15432	25PS 1020DD
	22"	550	2CG	1750 ⁽³⁾	69.0 ⁽³⁾	340	13.4	600	23.6	3500	137.8	9000	19842	25PS 1022DD
24"	600	2CG	2100 ⁽³⁾	83.0 ⁽³⁾	370	14.6	600	23.6	4000	157.5	13000	28660	25PS 1024DD	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

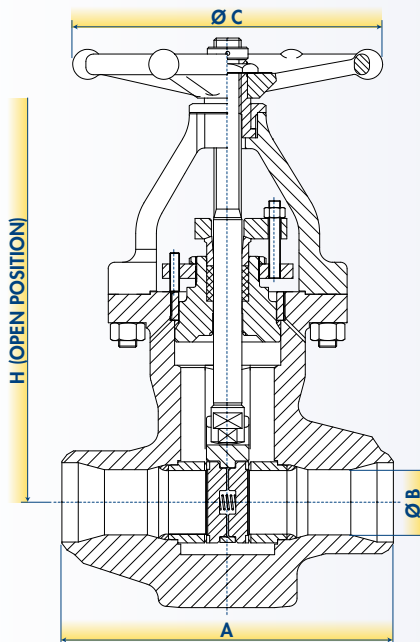
B/E reserves the right to change designs, dimensions or specifications without notice.

PRESSURE SEAL GATE VALVES

PRESSURE SEAL PARALLEL SLIDE VALVES SKETCHES

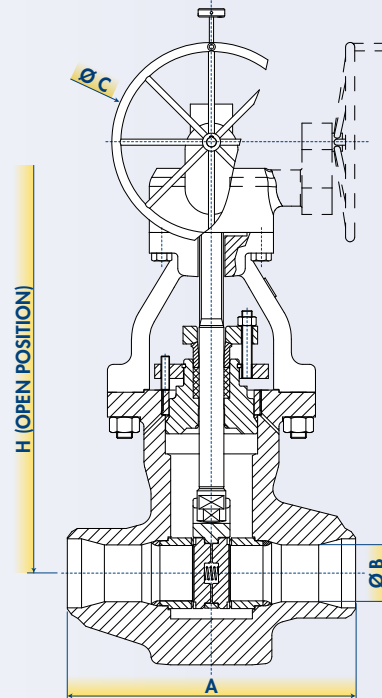
DESIGN TYPE 1SH

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- HANDWHEEL OPERATED



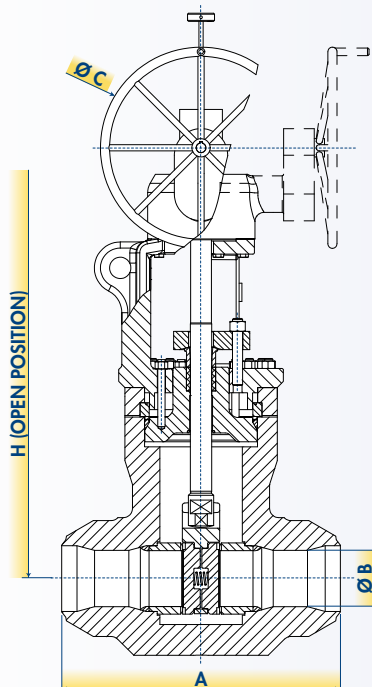
DESIGN TYPE 1SG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- GEAR OPERATED



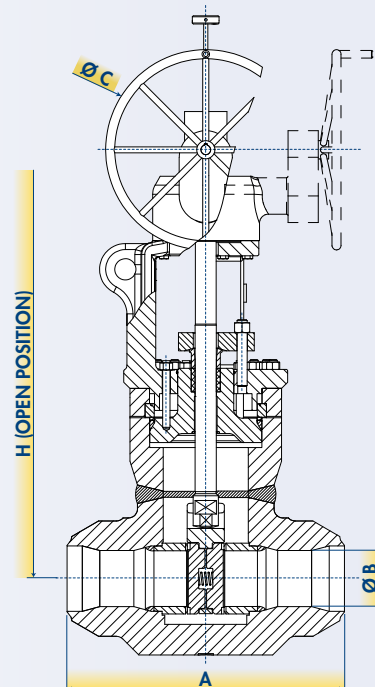
DESIGN TYPE 1CG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



DESIGN TYPE 2CG

- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



PRESSURE SEAL GATE VALVES

AVAILABLE OPTIONS FOR GATE VALVES

OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

WELDED CONNECTIONS

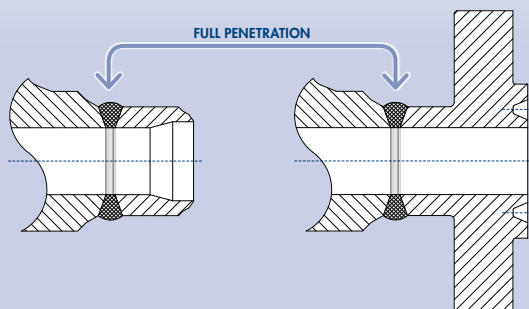
The choice of end connections for connecting a valve to its associated pipework is dependent upon the pressure and temperature of the working fluid, for this reason pressure seal valves are usually requested with butt welding end (because the high pressure/temperature applications). BFE standard design is available with body integral ends for all range and butt welding ends and with integral flanges up to NPS 2. However all sizes can be supplied with welded flanges, pups or transition pieces. The type of weld is full penetration with butt weld arrangement with NDE performed acc.to the applicable standards and/or customer request.

PUPS AND TRANSITION PIECES

All valves can be furnished with pups or transition pieces of different length to facilitate the installation of valve and piping on site or can be required in accordance with existing standards/specifications for welding between the valve and the pipeline. Transition piece can be needed due to thickness difference between the valve and pup piece, or welding between two different materials. The pup or transition piece length is to be specified by the customer, including end wall thickness and material.

FLANGES

Pressure seal valves are normally installed in lines where flange connections are avoided, pressure seal valves are available with butt welding ends as standard, however welded flanges connections are available. A full penetration weld ensures a fully welded interface between the two parts and is generally the strongest joint.



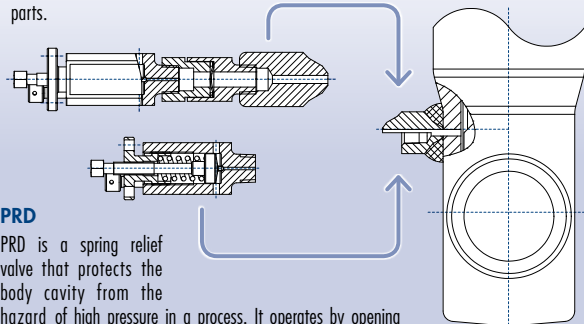
PRESSURE RELIEF DEVICE (PRD)

Pressure Relief Devices are used to help prevent overpressure with a pressure discharge to the atmosphere or to a secondary line. There are two main types of mechanical relief devices: Pressure Relief Device (springloaded valve) and rupture/bursting disc. For body cavity overpressure of pressure seal valves there are the following two main standard configurations available. Devices can be screwed or welded directly to a nipple connected to the body cavity or customer can install a secondary line (pipe) between the main valve and the device in order to locate the PRD somewhere else.

PRD & ROPTURE DISC

The use of a rupture disk device in combination with a Pressure Relief Device is now very common because it can isolate the relief safety valve with the following benefit:

- Zero process leakage to the atmosphere.
- Longer periods between major overhauls.
- Relief valves can be checked in place.
- Less expensive relief valve trim material can be used.
- Valve life is extended by isolating corrosive fluids from internal valve parts.



PRD

PRD is a spring relief valve that protects the body cavity from the hazard of high pressure in a process. It operates by opening at a designated pressure and ejecting mass from the process. The ejected mass contains energy, the removal of energy reduces the body cavity pressure. The device can eject the mass to the atmosphere or to a secondary line as per customer request.

OVERPRESSURE SYSTEMS

Body cavity overpressure occurs when the pressure in the body cavity, when the valve is closed, increases or when the line pressure decreases without decreases in the body bonnet area. Typical cases of body cavity overpressure are for example in response to heat up during plant operation or due to condensation being trapped in the body cavity. Body cavity overpressure may make the valve inoperable and can be dangerous because of over pressure of the bonnet cavity and may anticipate a serious accident of the pressure retaining wall that can break in the worst case. Simple solution used by customers is cycling the valve during start-up in this case the trapped condensation in the body cavity will be flushed away. Following equalizing devices should be provided to prevent over pressure by the pressure locking.

OVERPRESSURE PIPE

Equalizing pipe from the bonnet to the high pressure side of the valve. The valve will only seal in one direction when the valve is closed, Uni-Directional Design.

OVERPRESSURE VALVE

Equalizing line from the bonnet to the high pressure side of the valve with a globe valve. The valve must be open to provide relief, Uni-Directional Design.

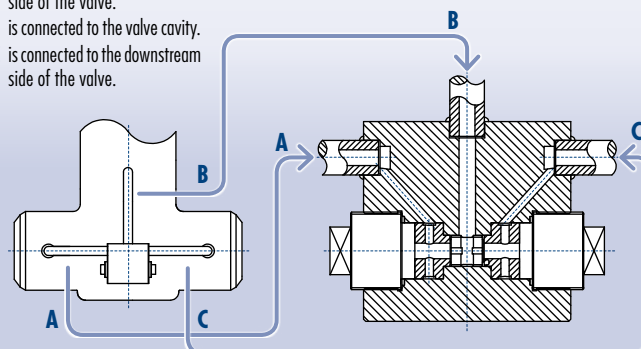
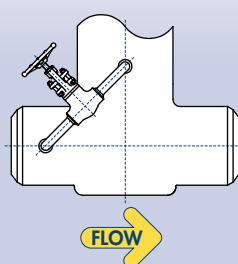
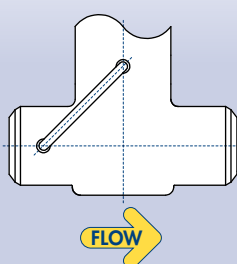
AUTOMATIC PRESSURE BALANCE DEVICE

Purpose of this device is to equalize the pressure between valve bonnet cavity, gate valve inlet/outlet depending on the pressure acting on inlet/outlet side. This can be achieved by connecting the valve cavity, valve inlet and outlet through an automatic pressure balancer. Bi-Directional Design. As shown in the sketch:

Port A is connected to the upstream side of the valve.

Port B is connected to the valve cavity.

Port C is connected to the downstream side of the valve.

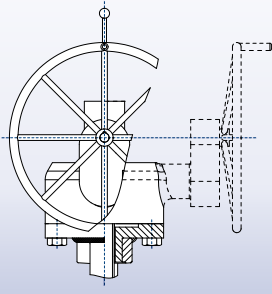


AVAILABLE OPTIONS FOR GATE VALVES

OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

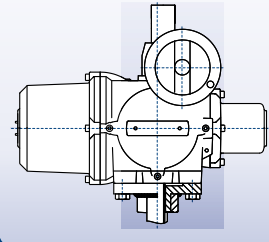
BEVEL GEAR OPERATOR

Gearing can be applied to handwheel operated valves instead of the standard handwheel to make operation easier.



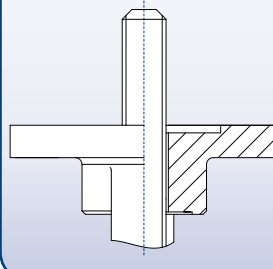
ELECTRIC, PNEUMATIC OR HYDRAULIC ACTUATORS

Motorized controls may be applied to valves of any size for operation in any position or location.



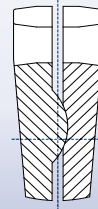
ACTUATOR-READY

Valves can be supplied ready for actuation without the handwheel or gear box. The mounting connection can be BFE Standard or can suit the choice or type of actuator.



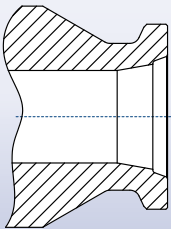
SPLIT WEDGE CLOSURE MEMBER

The split wedge is self-adjusting to both seal sides and consists of two-piece construction. This type of wedge is suitable for the treatment of non-condensing gases and liquids at normal temperatures, particularly corrosive liquids.



SPECIAL END FINISH

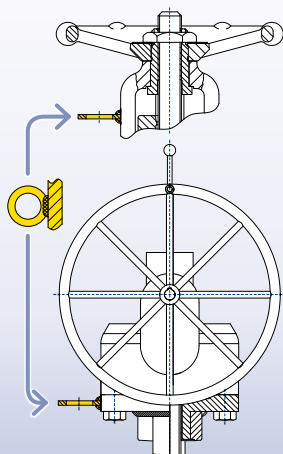
The choice of end connections for connecting a valve to its associated pipe is performed by customers. Common end finishes in the catalogue are butt weld. BFE is basically able to perform any end finish as required by the customers and other end finishes as follows: threaded, socketed, hub, compact flange, any ASME B16.5 end finish etc.



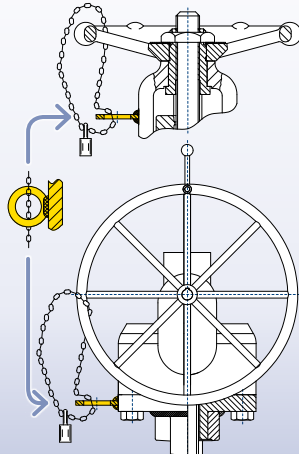
LOCKING DEVICE

Locking devices designed to help prevent accidental or unwanted operation are built to resist excessive force. All BFE locking device options are simple but secure. Chain and Padlock available on request.

LOCKING FACILITY

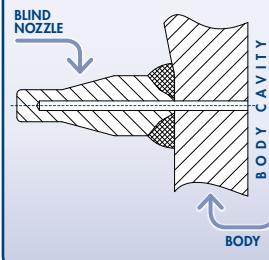


LOCKING FACILITY WITH C&P



WELDED BLIND NOZZLE

Blind nozzles can be supplied welded to the valve body at any location for easy future line modification (e.g. add a by-pass line). Standard nozzle size is NPS 1/2 - Schedule XXS, other dimensions available on request.

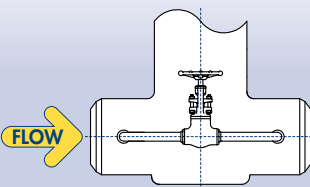


BY-PASS

By-passes are used mainly in steam services as a means to warm the line before the main valve is opened or they are used to balance the pressure on both sides of the main valve as an aid to reduce the torque required to open the main valve. BFE piping and by-pass valves have as standard the pressure-temperature rating and corrosion resistance equal to or exceeding that of the main valve.

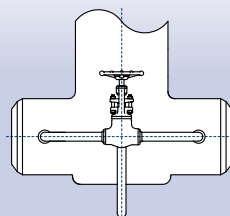
BY-PASS BASIC CONFIGURATION

Single globe valve by-pass attached to the side of the main valve with the same orientation of the stems for both valves. Uni-Directional Design.



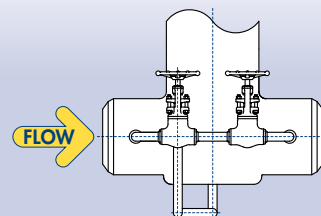
BY-PASS CONFIGURATION WITH INTEGRATED OVERPRESSURE SYSTEM

Single parallel slide valve by-pass attached to the side of the main valve with the same orientation of the stems for both valves. Overpressure pipe that connects the main valve body cavity with the by-pass valve body cavity. Because of the parallel slide by-pass valve features, the main valve keeps the bi-directional capacity.



BY-PASS DOUBLE CONFIGURATION WITH INTEGRATED OVERPRESSURE SYSTEM

Single parallel slide valve by-pass attached to upstream side of the main valve and an additional globe valve with the same orientation of the stems. Overpressure pipe that connects the main valve body cavity with the by-pass valve body cavity. Uni-Directional Design.



PRESSURE SEAL GLOBE VALVES

PRESSURE SEAL "T" - PATTERN GLOBE VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE	
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb		
ASME 600 (SEE NOTE 1, 2)	1/2"	15	1SH	165 ⁽¹⁾	6.50 ⁽¹⁾	13	0.5	88	3.5	233	9.2	6	13.2	6PS 303	
	3/4"	20	1SH	191 ⁽¹⁾	7.50 ⁽¹⁾	17.5	0.7	97	3.8	250	9.8	7.8	17.2	6PS 304	
	1"	25	1SH	216 ⁽¹⁾	8.50 ⁽¹⁾	22.5	0.9	138	5.4	250	9.8	10	22.0	6PS 305	
	1-1/2"	40	1SH	241 ⁽¹⁾	9.50 ⁽¹⁾	35	1.4	172	6.8	365	14.4	15	33.1	6PS 307	
	2"	50	1SH	292 ⁽¹⁾	11.50 ⁽¹⁾	45	1.8	172	6.8	430	16.9	29	63.9	6PS 308	
	3"	80	1SG	356 ⁽¹⁾	14.00 ⁽¹⁾	60	2.4	400	15.7	720	28.3	78	172	6PS 3010	
	4"	100	1SG	432 ⁽¹⁾	17.00 ⁽¹⁾	78	3.1	600	23.6	960	37.8	180	397	6PS 3011	
	6"	150	1CG	559 ⁽¹⁾	22.00 ⁽¹⁾	105	4.1	600	23.6	1200	47.2	380	838	6PS 3013	
	8"	200	1CG	660 ⁽¹⁾	26.00 ⁽¹⁾	140	5.5	600	23.6	1450	57.1	840	1852	6PS 3014	
	10"	250	2CG	711	28.00	178	7.0	600	23.6	1700	66.9	1400	3086	6PS 3015	
	12"	300	2CG	813	32.00	220	8.7	600	23.6	1950	76.8	1800	3968	6PS 3016	
	14"	350	2CG	889 ⁽²⁾	35.00 ⁽²⁾	235	9.3	600	23.6	2050	80.7	2300	5071	6PS 3017	
	16"	400	2CG	991 ⁽²⁾	39.00 ⁽²⁾	270	10.6	600	23.6	2550	100.4	3100	6834	6PS 3018	
	18"	450	2CG	1092 ⁽²⁾	43.00 ⁽²⁾	300	11.8	600	23.6	2650	104.3	4400	9700	6PS 3019	
	20"	500	2CG	1194 ⁽²⁾	47.00 ⁽²⁾	335	13.2	600	23.6	2850	112.2	6100	13448	6PS 3020	
	22"	550	2CG	1295 ⁽²⁾	51.00 ⁽²⁾	370	14.6	600	23.6	3200	126.0	8100	17857	6PS 3022	
	24"	600	2CG	1397 ⁽²⁾	55.00 ⁽²⁾	400	15.7	600	23.6	3500	137.8	12000	26455	6PS 3024	
	ASME 900 (SEE NOTE 1, 3)	1/2"	15	1SH	216 ⁽³⁾	8.50 ⁽³⁾	14	0.6	97	3.8	233	9.2	8.5	18.7	9PS 303
		3/4"	20	1SH	229 ⁽³⁾	9.00 ⁽³⁾	18	0.7	138	5.4	250	9.8	13	28.7	9PS 304
		1"	25	1SH	254 ⁽³⁾	10.00 ⁽³⁾	24	0.9	138	5.4	250	9.8	18	39.7	9PS 305
1-1/2"		40	1SH	305 ⁽³⁾	12.00 ⁽³⁾	36.6	1.4	172	6.8	365	14.4	31	68	9PS 307	
2"		50	1SH	368 ⁽³⁾	14.50 ⁽³⁾	47	1.9	234	9.2	430	16.9	58	128	9PS 308	
3"		80	1SG	305	12.00	60	2.4	400	15.7	720	28.3	90	198	9PS 3010	
4"		100	1SG	356	14.00	78	3.1	600	23.6	960	37.8	230	507	9PS 3011	
6"		150	1CG	508	20.00	105	4.1	600	23.6	1200	47.2	380	838	9PS 3013	
8"		200	1CG	660	26.00	140	5.5	600	23.6	1450	57.1	850	1874	9PS 3014	
10"		250	2CG	787	31.00	178	7.0	600	23.6	1700	66.9	2200	4850	9PS 3015	
12"		300	2CG	914	36.00	220	8.7	600	23.6	1950	76.8	2800	6173	9PS 3016	
14"		350	2CG	991	39.00	235	9.3	600	23.6	2050	80.7	3700	8157	9PS 3017	
16"		400	2CG	1092	43.00	270	10.6	600	23.6	2550	100.4	4200	9259	9PS 3018	
18"		450	2CG	1346 ⁽³⁾	53.00 ⁽³⁾	300	11.8	600	23.6	2650	104.3	5100	11244	9PS 3019	
20"		500	2CG	1473 ⁽³⁾	58.00 ⁽³⁾	335	13.2	600	23.6	2850	112.2	7200	15873	9PS 3020	
22"		550	2CG	1550 ⁽³⁾	61.00 ⁽³⁾	370	14.6	600	23.6	3200	126.0	10400	22928	9PS 3022	
24"		600	2CG	1650 ⁽³⁾	65.00 ⁽³⁾	400	15.7	600	23.6	3500	137.8	15600	34392	9PS 3024	
ASME 1500 (SEE NOTE 1, 3)		1/2"	15	1SH	216 ⁽¹⁾	8.50 ⁽¹⁾	12	0.5	97	3.8	233	9.2	9	19.8	15PS 303
		3/4"	20	1SH	229 ⁽¹⁾	9.00 ⁽¹⁾	14	0.6	138	5.4	250	9.8	13	28.7	15PS 304
		1"	25	1SH	254 ⁽¹⁾	10.00 ⁽¹⁾	19	0.7	138	5.4	250	9.8	18	39.7	15PS 305
	1-1/2"	40	1SH	305 ⁽¹⁾	12.00 ⁽¹⁾	31	1.2	172	6.8	365	14.4	31	68	15PS 307	
	2"	50	1SH	368 ⁽¹⁾	14.50 ⁽¹⁾	38	1.5	234	9.2	430	16.9	58	128	15PS 308	
	3"	80	1SG	305	12.00	60	2.4	400	15.7	720	28.3	90	198	15PS 3010	
	4"	100	1SG	406	16.00	78	3.1	600	23.6	950	37.4	240	529	15PS 3011	
	6"	150	1CG	559	22.00	105	4.1	600	23.6	1200	47.2	400	882	15PS 3013	
	8"	200	1CG	711	28.00	140	5.5	600	23.6	1450	57.1	880	1940	15PS 3014	
	10"	250	2CG	864	34.00	178	7.0	600	23.6	1700	66.9	2500	5512	15PS 3015	
	12"	300	2CG	991	39.00	220	8.7	600	23.6	1950	76.8	3400	7496	15PS 3016	
	14"	350	2CG	1067	42.00	235	9.3	600	23.6	2050	80.7	4000	8818	15PS 3017	
	16"	400	2CG	1194	47.00	270	10.6	600	23.6	2200	86.6	4600	10141	15PS 3018	
	18"	450	2CG	1346 ⁽³⁾	53.00 ⁽³⁾	300	11.8	600	23.6	2500	98.4	5500	12125	15PS 3019	
	20"	500	2CG	1473 ⁽³⁾	58.00 ⁽³⁾	335	13.2	600	23.6	2850	112.2	7500	16535	15PS 3020	
	22"	550	2CG	1550 ⁽³⁾	61.00 ⁽³⁾	370	14.6	600	23.6	3200	126.0	10800	23810	15PS 3022	
	24"	600	2CG	1650 ⁽³⁾	65.00 ⁽³⁾	400	15.7	600	23.6	3500	137.8	16000	35274	15PS 3024	
	ASME 2500 (SEE NOTE 1, 3)	1/2"	15	1SH	264 ⁽¹⁾	10.38 ⁽¹⁾	11	0.4	138	5.4	304	12.0	13	28.7	25PS 303
		3/4"	20	1SH	273 ⁽¹⁾	10.75 ⁽¹⁾	14.5	0.6	138	5.4	304	12.0	15	33.1	25PS 304
		1"	25	1SH	308 ⁽¹⁾	12.12 ⁽¹⁾	19	0.7	172	6.8	362	14.3	24	53	25PS 305
1-1/2"		40	1SH	384 ⁽¹⁾	15.12 ⁽¹⁾	28	1.1	234	9.2	412	16.2	41	90	25PS 307	
2"		50	1SH	451 ⁽¹⁾	17.75 ⁽¹⁾	38	1.5	234	9.2	436	17.2	90	198	25PS 308	
3"		80	1SG	368	14.50	53	2.1	400	15.7	950	37.4	190	419	25PS 3010	
4"		100	1SG	457	18.00	56	2.2	600	23.6	950	37.4	250	551	25PS 3011	
6"		150	1CG	610	24.00	100	3.9	600	23.6	1450	57.1	820	1808	25PS 3013	
8"		200	2CG	762	30.00	132	5.2	600	23.6	1600	63.0	2000	4409	25PS 3014	
10"		250	2CG	914	36.00	150	5.9	600	23.6	1850	72.8	3000	6614	25PS 3015	
12"		300	2CG	1041	41.00	184	7.2	600	23.6	2000	78.7	3900	8598	25PS 3016	
14"		350	2CG	1118 ⁽³⁾	44.00 ⁽³⁾	200	7.9	600	23.6	2100	82.7	5100	11244	25PS 3017	
16"		400	2CG	1245 ⁽³⁾	49.00 ⁽³⁾	225	8.9	600	23.6	2400	94.5	5800	12787	25PS 3018	
18"		450	2CG	1397 ⁽³⁾	55.00 ⁽³⁾	250	9.8	600	23.6	2700	106.3	6500	14330	25PS 3019	
20"		500	2CG	1450 ⁽³⁾	57.00 ⁽³⁾	280	11.0	600	23.6	3000	118.1	9100	20062	25PS 3020	
22"		550	2CG	1600 ⁽³⁾	63.00 ⁽³⁾	305	12.0	600	23.6	3400	133.9	13000	28660	25PS 3022	
24"		600	2CG	1800 ⁽³⁾	71.00 ⁽³⁾	335	13.2	600	23.6	3800	149.6	19500	42990	25PS 3024	

PRODUCT FEATURES:

- End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.
- NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.
- NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

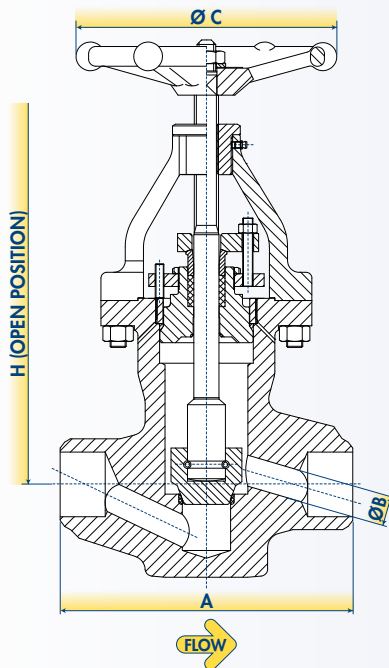
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PRESSURE SEAL GLOBE VALVES

PRESSURE SEAL "T" PATTERN GLOBE VALVES SKETCHES

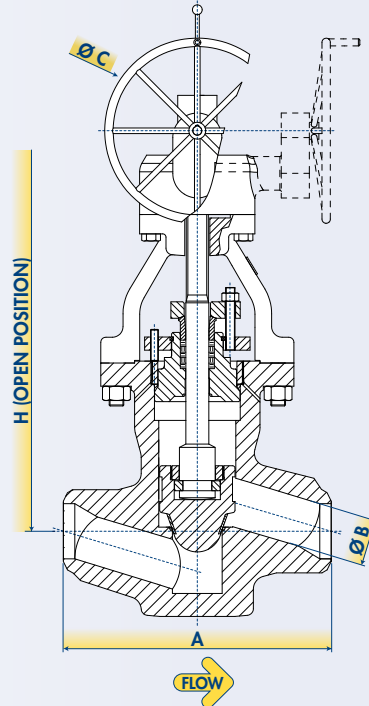
DESIGN TYPE 1SH

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- HANDWHEEL OPERATED



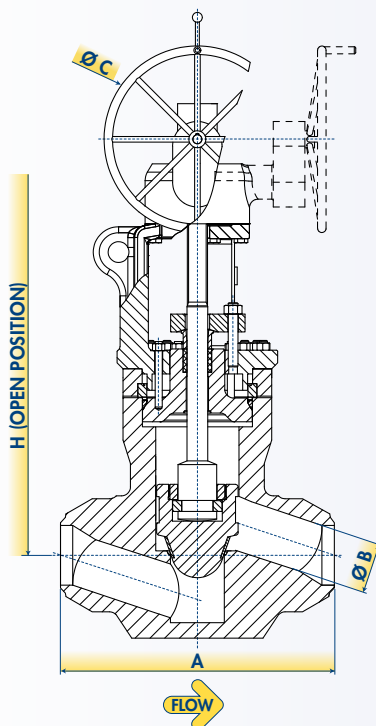
DESIGN TYPE 1SG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- GEAR OPERATED



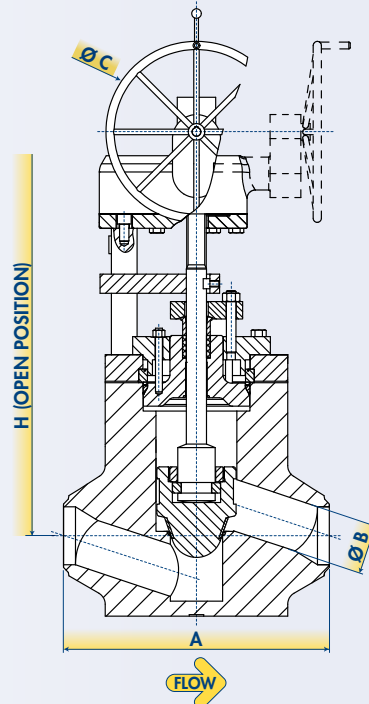
DESIGN TYPE 1CG

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



DESIGN TYPE 3CG

- OPEN DIE FORGED BODY
PILLAR YOKE TYPE
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



PRESSURE SEAL GLOBE VALVES

PRESSURE SEAL "Y" - PATTERN GLOBE VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE	
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb		
ASME 600 (SEE NOTE 1, 2)	1/2"	15	1SH	165 ⁽¹⁾	6.50 ⁽¹⁾	13	0.5	88	3.5	191	7.5	5.3	11.7	6PSY 303	
	3/4"	20	1SH	190 ⁽¹⁾	7.50 ⁽¹⁾	17.5	0.7	97	3.8	218	8.6	6.9	15.2	6PSY 304	
	1"	25	1SH	216 ⁽¹⁾	8.50 ⁽¹⁾	22.5	0.9	138	5.4	240	9.4	8.5	18.7	6PSY 305	
	1-1/2"	40	1SH	241 ⁽¹⁾	9.50 ⁽¹⁾	35	1.4	172	6.8	313	12.3	11	24.3	6PSY 307	
	2"	50	1SH	292 ⁽¹⁾	11.50 ⁽¹⁾	45	1.8	172	6.8	364	14.3	24	52.9	6PSY 308	
	3"	80	2SG	356 ⁽¹⁾	14.00 ⁽¹⁾	60	2.4	400	15.7	500	19.7	140	309	6PSY 3010	
	4"	100	2SG	432 ⁽¹⁾	17.00 ⁽¹⁾	78	3.1	600	23.6	620	24.4	350	772	6PSY 3011	
	6"	150	2CG	559 ⁽¹⁾	22.00 ⁽¹⁾	105	4.1	600	23.6	1000	39.4	600	1323	6PSY 3013	
	8"	200	2CG	660 ⁽¹⁾	26.00 ⁽¹⁾	140	5.5	600	23.6	1180	46.5	800	1764	6PSY 3014	
	10"	250	3CG	711	28.00	178	7.0	600	23.6	1550	61.0	1200	2646	6PSY 3015	
	12"	300	3CG	813	32.00	220	8.7	600	23.6	1650	65.0	1450	3197	6PSY 3016	
	14"	350	3CG	889 ⁽²⁾	35.00 ⁽²⁾	235	9.3	600	23.6	1900	74.8	1900	4189	6PSY 3017	
	16"	400	3CG	991 ⁽²⁾	39.00 ⁽²⁾	270	10.6	600	23.6	1950	76.8	2600	5732	6PSY 3018	
	18"	450	3CG	1092 ⁽²⁾	43.00 ⁽²⁾	300	11.8	600	23.6	2050	80.7	3800	8378	6PSY 3019	
	20"	500	3CG	1194 ⁽²⁾	47.00 ⁽²⁾	335	13.2	600	23.6	2200	86.6	5400	11905	6PSY 3020	
	22"	550	3CG	1295 ⁽²⁾	51.00 ⁽²⁾	370	14.6	600	23.6	2400	94.5	7300	16094	6PSY 3022	
	24"	600	3CG	1397 ⁽²⁾	55.00 ⁽²⁾	400	15.7	600	23.6	2700	106.3	10500	23149	6PSY 3024	
	ASME 900 (SEE NOTE 1, 3)	1/2"	15	1SH	216 ⁽³⁾	8.50 ⁽³⁾	14	0.6	97	3.8	191	7.5	6	13.2	9PSY 303
		3/4"	20	1SH	229 ⁽³⁾	9.00 ⁽³⁾	18	0.7	138	5.4	218	8.6	10	22.0	9PSY 304
		1"	25	1SH	254 ⁽³⁾	10.00 ⁽³⁾	24	0.9	138	5.4	240	9.4	12	26.5	9PSY 305
		1-1/2"	40	1SH	305 ⁽³⁾	12.00 ⁽³⁾	36.6	1.4	172	6.8	313	12.3	15	33	9PSY 307
		2"	50	1SH	368 ⁽³⁾	14.50 ⁽³⁾	47	1.9	234	9.2	364	14.3	30	66	9PSY 308
		3"	80	2SG	305	12.00	60	2.4	400	15.7	500	19.7	150	331	9PSY 3010
		4"	100	2SG	356	14.00	78	3.1	600	23.6	620	24.4	370	816	9PSY 3011
6"		150	2CG	508	20.00	105	4.1	600	23.6	1000	39.4	650	1433	9PSY 3013	
8"		200	2CG	660	26.00	140	5.5	600	23.6	1180	46.5	950	2094	9PSY 3014	
10"		250	3CG	787	31.00	178	7.0	600	23.6	1550	61.0	1500	3307	9PSY 3015	
12"		300	3CG	914	36.00	220	8.7	600	23.6	1650	65.0	2100	4630	9PSY 3016	
14"		350	3CG	991	39.00	235	9.3	600	23.6	1900	74.8	2700	5952	9PSY 3017	
16"		400	3CG	1092	43.00	270	10.6	600	23.6	1950	76.8	3500	7716	9PSY 3018	
18"		450	3CG	1346 ⁽³⁾	53.00 ⁽³⁾	300	11.8	600	23.6	2050	80.7	4800	10582	9PSY 3019	
20"		500	3CG	1473 ⁽³⁾	58.00 ⁽³⁾	335	13.2	600	23.6	2200	86.6	6500	14330	9PSY 3020	
22"		550	3CG	1550 ⁽³⁾	61.00 ⁽³⁾	370	14.6	600	23.6	2400	94.5	8500	18739	9PSY 3022	
24"		600	3CG	1650 ⁽³⁾	65.00 ⁽³⁾	400	15.7	600	23.6	2700	106.3	12000	26455	9PSY 3024	
ASME 1500 (SEE NOTE 1, 3)		1/2"	15	1SH	216 ⁽¹⁾	8.50 ⁽¹⁾	12	0.5	97	3.8	211	8.3	6	13.2	15PSY 303
		3/4"	20	1SH	229 ⁽¹⁾	9.00 ⁽¹⁾	14	0.6	138	5.4	227	8.9	10	22.0	15PSY 304
		1"	25	1SH	254 ⁽¹⁾	10.00 ⁽¹⁾	19	0.7	138	5.4	227	8.9	12	26.5	15PSY 305
		1-1/2"	40	1SH	305 ⁽¹⁾	12.00 ⁽¹⁾	31	1.2	172	6.8	331	13.0	14	31	15PSY 307
		2"	50	1SH	368 ⁽¹⁾	14.50 ⁽¹⁾	38	1.5	234	9.2	391	15.4	28	62	15PSY 308
		3"	80	2SG	305	12.00	60	2.4	400	15.7	500	19.7	150	331	15PSY 3010
		4"	100	2SG	406	16.00	78	3.1	600	23.6	620	24.4	400	882	15PSY 3011
	6"	150	2CG	559	22.00	105	4.1	600	23.6	1000	39.4	630	1389	15PSY 3013	
	8"	200	2CG	711	28.00	140	5.5	600	23.6	1180	46.5	900	1984	15PSY 3014	
	10"	250	3CG	864	34.00	178	7.0	600	23.6	1550	61.0	1900	4189	15PSY 3015	
	12"	300	3CG	991	39.00	220	8.7	600	23.6	1650	65.0	2600	5732	15PSY 3016	
	14"	350	3CG	1067	42.00	235	9.3	600	23.6	1900	74.8	3120	6878	15PSY 3017	
	16"	400	3CG	1194	47.00	270	10.6	600	23.6	1950	76.8	3560	7848	15PSY 3018	
	18"	450	3CG	1346 ⁽³⁾	53.00 ⁽³⁾	300	11.8	600	23.6	2050	80.7	4040	8907	15PSY 3019	
	20"	500	3CG	1473 ⁽³⁾	58.00 ⁽³⁾	335	13.2	600	23.6	2200	86.6	5600	12346	15PSY 3020	
	22"	550	3CG	1550 ⁽³⁾	61.00 ⁽³⁾	370	14.6	600	23.6	2400	94.5	8000	17637	15PSY 3022	
	24"	600	3CG	1650 ⁽³⁾	65.00 ⁽³⁾	400	15.7	600	23.6	2700	106.3	12000	26455	15PSY 3024	
	ASME 2500 (SEE NOTE 1, 3)	1/2"	15	1SH	264 ⁽¹⁾	10.38 ⁽¹⁾	11	0.4	138	5.4	291	11.5	11.5	25.4	25PSY 303
		3/4"	20	1SH	273 ⁽¹⁾	10.75 ⁽¹⁾	14.5	0.6	138	5.4	295	11.6	13	28.7	25PSY 304
		1"	25	1SH	308 ⁽¹⁾	12.12 ⁽¹⁾	19	0.7	172	6.8	327	12.9	21	46	25PSY 305
		1-1/2"	40	1SH	384 ⁽¹⁾	15.12 ⁽¹⁾	28	1.1	234	9.2	409	16.1	38	84	25PSY 307
		2"	50	1SH	451 ⁽¹⁾	17.75 ⁽¹⁾	38	1.5	234	9.2	422	16.6	86	190	25PSY 308
		3"	80	2SG	368	14.50	53	2.1	400	15.7	600	23.6	280	617	25PSY 3010
		4"	100	2SG	457	18.00	56	2.2	600	23.6	720	28.3	420	926	25PSY 3011
6"		150	2CG	610	24.00	100	3.9	600	23.6	1150	45.3	900	1984	25PSY 3013	
8"		200	3CG	762	30.00	132	5.2	600	23.6	1300	51.2	1500	3307	25PSY 3014	
10"		250	3CG	914	36.00	150	5.9	600	23.6	1650	65.0	2300	5071	25PSY 3015	
12"		300	3CG	1041	41.00	184	7.2	600	23.6	1800	70.9	3000	6614	25PSY 3016	
14"		350	3CG	1118 ⁽³⁾	44.00 ⁽³⁾	200	7.9	600	23.6	2100	82.7	3900	8598	25PSY 3017	
16"		400	3CG	1245 ⁽³⁾	49.00 ⁽³⁾	225	8.9	600	23.6	2150	84.6	4450	9811	25PSY 3018	
18"		450	3CG	1397 ⁽³⁾	55.00 ⁽³⁾	250	9.8	600	23.6	2250	88.6	5050	11133	25PSY 3019	
20"		500	3CG	1450 ⁽³⁾	57.00 ⁽³⁾	280	11.0	600	23.6	2400	94.5	7000	15432	25PSY 3020	
22"		550	3CG	1600 ⁽³⁾	63.00 ⁽³⁾	305	12.0	600	23.6	2600	102.4	10000	22046	25PSY 3022	
24"		600	3CG	1800 ⁽³⁾	71.00 ⁽³⁾	335	13.2	600	23.6	2900	114.2	15000	33069	25PSY 3024	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

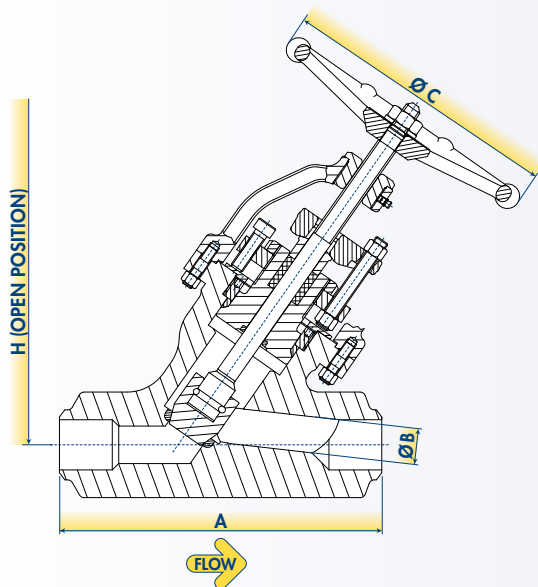
B/E reserves the right to change designs, dimensions or specifications without notice.

PRESSURE SEAL GLOBE VALVES

PRESSURE SEAL "Y" PATTERN GLOBE VALVES SKETCHES

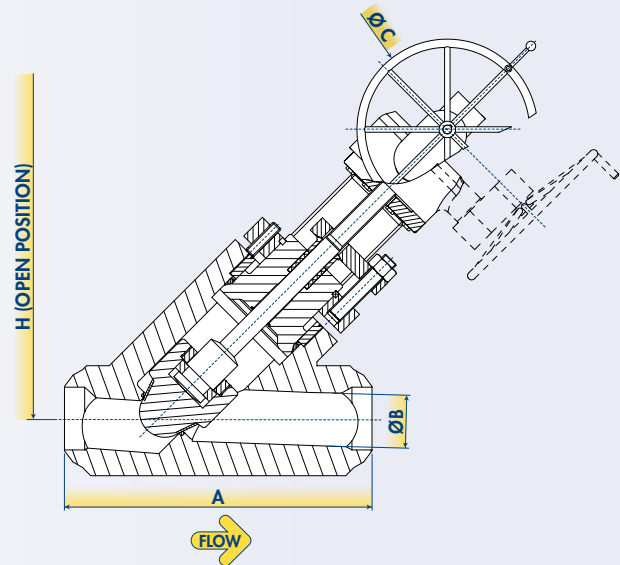
DESIGN TYPE 1SH

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- HANDWHEEL OPERATED



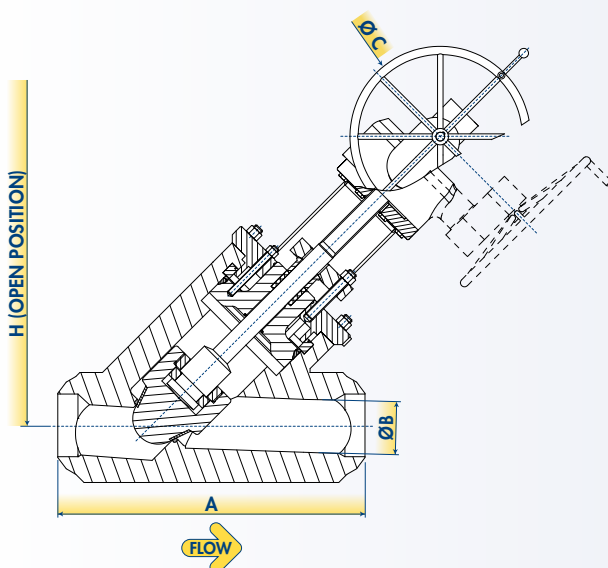
DESIGN TYPE 2SG

- OPEN DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER
- GEAR OPERATED



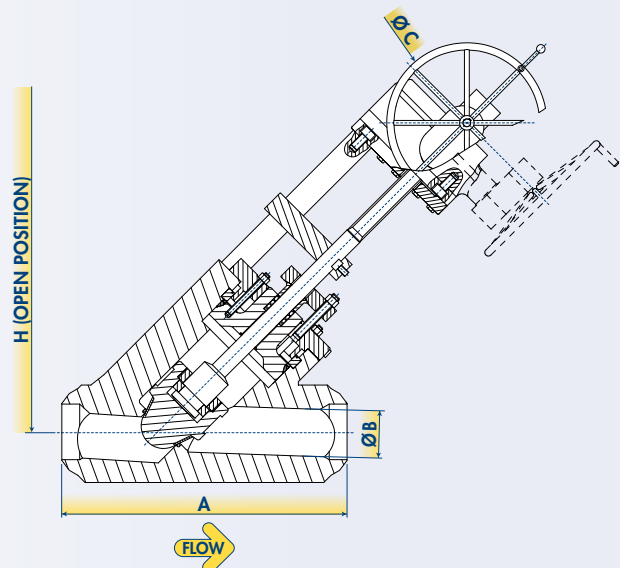
DESIGN TYPE 2CG

- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



DESIGN TYPE 3CG

- OPEN DIE FORGED BODY
PILLAR YOKE TYPE
- PRESSURE SEAL SEGMENTAL RING
- GEAR OPERATED



PRESSURE SEAL GLOBE VALVES

AVAILABLE OPTIONS FOR GLOBE VALVES

OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

WELDED CONNECTIONS

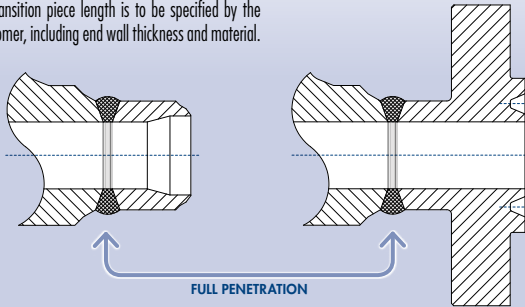
The choice of end connections for connecting a valve to its associated pipework is dependent upon the pressure and temperature of the working fluid, for this reason pressure seal valves are usually requested with butt welding end (because the high pressure/temperature applications). BFE standard design is available with body integral ends for all range and butt welding ends and with integral flanges up to NPS 2. However all sizes can be supplied with welded flanges, pups or transition pieces. The type of weld is full penetration with butt weld arrangement with NDE performed acc.to the applicable standards and/or customer request.

PUPS AND TRANSITION PIECES

All valves can be furnished with pups or transition pieces of different length to facilitate the installation of valve and piping on site or can be required in accordance with existing standards/specifications for welding between the valve and the pipeline. Transition piece can be needed due to thickness difference between the valve and pup piece, or welding between two different materials. The pup or transition piece length is to be specified by the customer, including end wall thickness and material.

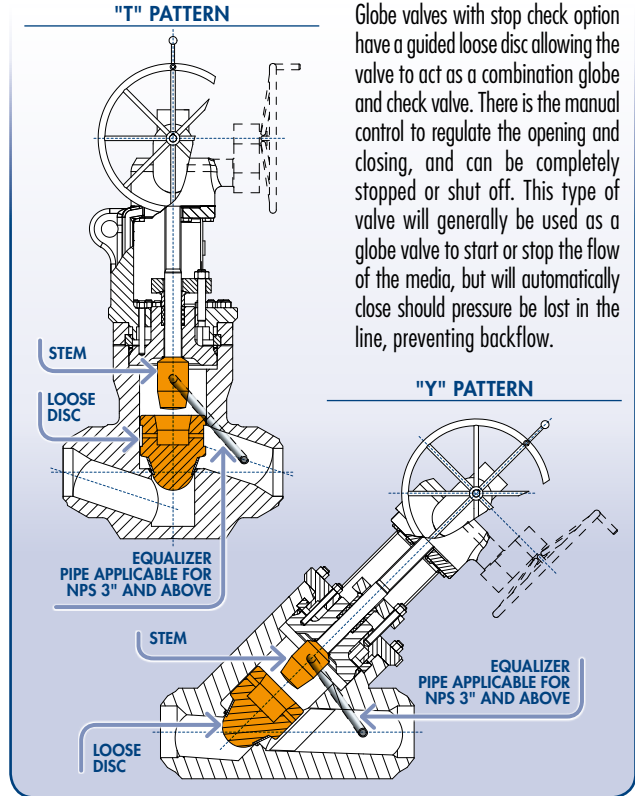
FLANGES

Pressure seal valves are normally installed in lines where flange connections are avoided, pressure seal valves are available with butt welding ends as standard, however welded flanges connections are available. A full penetration weld ensures a fully welded interface between the two parts and is generally the strongest joint.



STOP CHECK

Globe valves with stop check option have a guided loose disc allowing the valve to act as a combination globe and check valve. There is the manual control to regulate the opening and closing, and can be completely stopped or shut off. This type of valve will generally be used as a globe valve to start or stop the flow of the media, but will automatically close should pressure be lost in the line, preventing backflow.



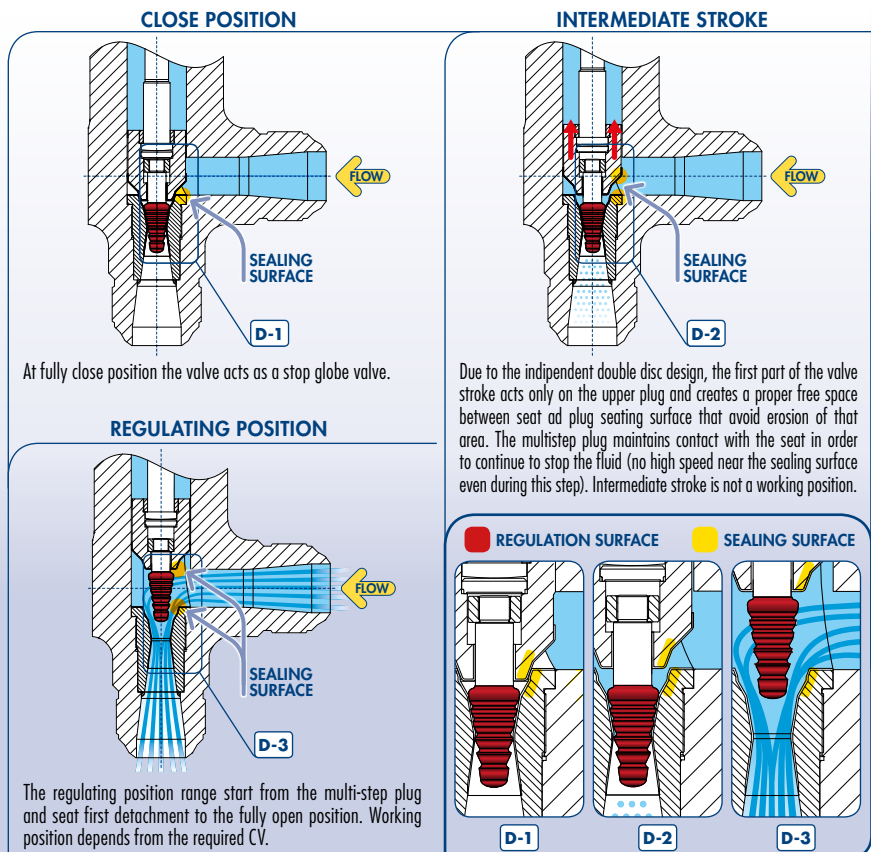
ADVANCED BLOW OFF VALVE DESIGN

This special valve/trim is designed for continuous blowdown service combined with the need of tight seal in case of blowoff operation stop for the most critical application with typical water phase changes through the valve trim. Such conditions can cause early erosion and cavitation which can destroy conventional globe valves. It incorporates:

1. Low noise, extended stellite overlay and replaceable trim.
2. Minimize the effects of a fluid stream in condition of flashing even with water containing abrasive particles.
3. Orifice dimensions depending on the capacity required.
4. Multi-Step Trim only
5. Two-Stroke Design in order to protect the seal surface during service.

This configuration can be performed by two different valves (continuous blowdown and stop valve). The trim is multi-stage type with a number of stage customized each time with the operating pressure. There are basically two different closure members, each dis performs one function of the valve:

- A. The multi-step plug regulates the flow.
 - B. The upper plug perform the stop function.
- Plug A and B have independent stroke in order to protect the sealing surface of the stop function from erosion. This design is possible only for Angle-Pattern globe valves and reverse flow configuration.

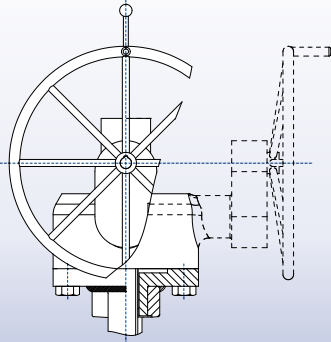


AVAILABLE OPTIONS FOR GLOBE VALVES

OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

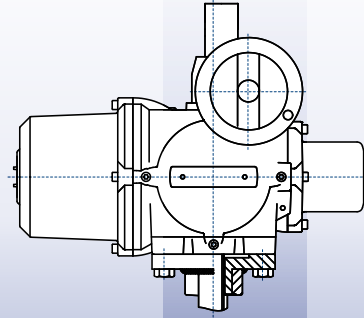
BEVEL GEAR OPERATOR

Gearing can be applied to handwheel operated valves instead of the standard handwheel to make operation easier.



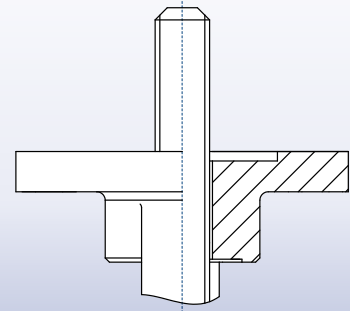
ELECTRIC, PNEUMATIC OR HYDRAULIC ACTUATORS

Motorized controls may be applied to valves of any size for operation in any position or location.



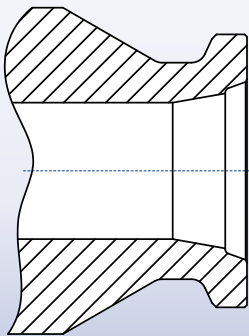
ACTUATOR-READY

Valves can be supplied ready for actuation without the handwheel or gear box. The mounting connection can be BFE Standard or can suit the choice or type of actuator.



SPECIAL END FINISH

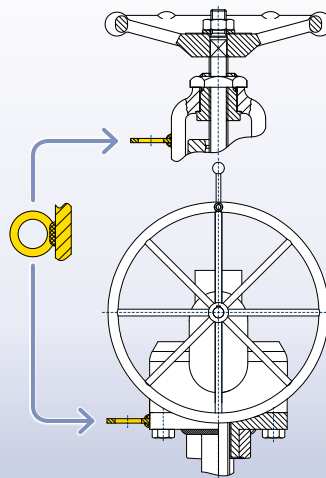
The choice of end connections for connecting a valve to its associated pipe is performed by customers. Common end finish stated in the catalogue are butt weld. BFE is basically able to perform any end finish as required by the customers and other end finish as follows: threaded, socked, hub, compact flange, any ASME B16.5 end finish etc.



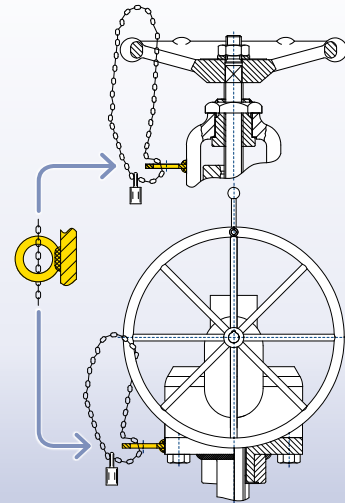
LOCKING DEVICE

Locking devices designed to help prevent accidental or unwanted operation are built to resist excessive force. All BFE locking device option are simple but secure. Chain and Padlock available on request.

LOCKING FACILITY



LOCKING FACILITY WITH C&P

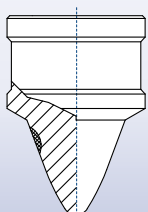


DISC AND TRIM TYPE

BFE standard plug has a quick opening characteristic, this plug provides maximum flow with minimum pressure drop and is ideal when large flows are required just after opening. All BFE standard plugs require a flow direction FTO type. BFE trim variations can offer maximum versatility in flow control application within the capability of globe valve design.

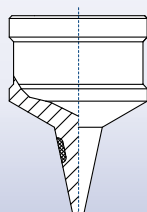
PARABOLIC DISC TRIM TYPE

Characteristic: Linear. This plug covers all Cv ranges and is especially suitable for low differential pressures.



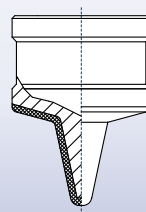
NEEDLE TRIM TYPE

Needle trim design is suitable for use where low valve CV values or low flows are required.



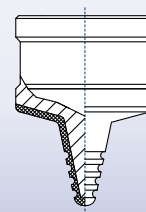
BLOW DOWN TRIM STANDARD TYPE

Blow Down trim design is suitable for use where high differential pressures are present. The high pressure drop causes erosion and cavitation which can destroy conventional globe valves.



BLOW DOWN TRIM MULTI-STEP TYPE

Improved blow-down trim developed to provide a high number of pressure letdown steps to minimise the potential for excessive noise, cavitation, vibration and erosion. Multi-Step trim has been designed for all fluid combinations, both clean and dirty service. This range of trims is normally customized and designed on the customer design data.



PRESSURE SEAL CHECK VALVES

PRESSURE SEAL SWING CHECK VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	150	165 ⁽¹⁾	6.5 ⁽¹⁾	14	0.6	N.A.	N.A.	105	4.1	5	11	6PS 603
	3/4"	20	150	190 ⁽¹⁾	7.5 ⁽¹⁾	18	0.7	N.A.	N.A.	125	4.9	8	18	6PS 604
	1"	25	150	216 ⁽¹⁾	8.5 ⁽¹⁾	24	0.9	N.A.	N.A.	135	5.3	10	22	6PS 605
	1-1/2"	40	150	241 ⁽¹⁾	9.5 ⁽¹⁾	36.6	1.4	N.A.	N.A.	155	6.1	12	26	6PS 607
	2"	50	150	292 ⁽¹⁾	11.5 ⁽¹⁾	51	2.0	N.A.	N.A.	195	7.7	23	51	6PS 608
	3"	80	150	356 ⁽¹⁾	14.0 ⁽¹⁾	62	2.4	N.A.	N.A.	320	12.6	35	77	6PS 6010
	4"	100	150	432 ⁽¹⁾	17.0 ⁽¹⁾	80	3.1	N.A.	N.A.	320	12.6	98	216	6PS 6011
	6"	150	150	559 ⁽¹⁾	22.0 ⁽¹⁾	120	4.7	N.A.	N.A.	430	16.9	220	485	6PS 6013
	8"	200	150	660 ⁽¹⁾	26.0 ⁽¹⁾	160	6.3	N.A.	N.A.	550	21.7	440	970	6PS 6014
	10"	250	200	711	31.0	230	9.1	N.A.	N.A.	600	23.6	750	1653	6PS 6015
	12"	300	200	813	33.0	270	10.6	N.A.	N.A.	620	24.4	1000	2205	6PS 6016
	14"	350	200	889 ⁽²⁾	35.0 ⁽²⁾	295	11.6	N.A.	N.A.	650	25.6	1300	2866	6PS 6017
	16"	400	200	991 ⁽²⁾	39.0 ⁽²⁾	337	13.3	N.A.	N.A.	680	26.8	1800	3968	6PS 6018
	18"	450	200	1092 ⁽²⁾	43.0 ⁽²⁾	380	15.0	N.A.	N.A.	700	27.6	2400	5291	6PS 6019
	20"	500	200	1194 ⁽²⁾	47.0 ⁽²⁾	418	16.5	N.A.	N.A.	700	27.6	2800	6173	6PS 6020
	22"	550	200	1295 ⁽²⁾	51.0 ⁽²⁾	420	16.5	N.A.	N.A.	750	29.5	3000	6614	6PS 6022
24"	600	200	1397 ⁽²⁾	55.0 ⁽²⁾	504	19.8	N.A.	N.A.	800	31.5	3200	7055	6PS 6024	
ASME 900 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	14	0.6	N.A.	N.A.	105	4.1	6	13	9PS 603
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	18	0.7	N.A.	N.A.	125	4.9	10	22	9PS 604
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	24	0.9	N.A.	N.A.	135	5.3	12	26	9PS 605
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	36.6	1.4	N.A.	N.A.	155	6.1	14	31	9PS 607
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	47	1.9	N.A.	N.A.	195	7.7	28	62	9PS 608
	3"	80	150	305	12.0	62	2.4	N.A.	N.A.	260	10.2	40	88	9PS 6010
	4"	100	150	356	14.0	80	3.1	N.A.	N.A.	320	12.6	95	209	9PS 6011
	6"	150	150	508	20.0	120	4.7	N.A.	N.A.	430	16.9	215	474	9PS 6013
	8"	200	150	660	26.0	160	6.3	N.A.	N.A.	550	21.7	440	970	9PS 6014
	10"	250	200	787	31.0	210	8.3	N.A.	N.A.	650	25.6	700	1543	9PS 6015
	12"	300	200	914	36.0	245	9.6	N.A.	N.A.	700	27.6	1100	2425	9PS 6016
	14"	350	200	991	39.0	260	10.2	N.A.	N.A.	750	29.5	1400	3086	9PS 6017
	16"	400	200	1092	43.0	330	13.0	N.A.	N.A.	800	31.5	1900	4189	9PS 6018
	18"	450	200	1219 ⁽²⁾	48.0 ⁽²⁾	350	13.8	N.A.	N.A.	900	35.4	2500	5512	9PS 6019
	20"	500	200	1321 ⁽²⁾	52.0 ⁽²⁾	370	14.6	N.A.	N.A.	1000	39.4	3400	7496	9PS 6020
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	N.A.	N.A.	1100	43.3	4700	10362	9PS 6022
24"	600	200	1549 ⁽²⁾	61.0 ⁽²⁾	480	18.9	N.A.	N.A.	1200	47.2	6400	14110	9PS 6024	
ASME 1500 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	14	0.6	N.A.	N.A.	105	4.1	6	13	15PS 606
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	18	0.7	N.A.	N.A.	125	4.9	10	22	15PS 604
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	24	0.9	N.A.	N.A.	135	5.3	12	26	15PS 605
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	36.6	1.4	N.A.	N.A.	155	6.1	14	31	15PS 607
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	47	1.9	N.A.	N.A.	195	7.7	28	62	15PS 608
	3"	80	150	305	12.0	62	2.4	N.A.	N.A.	260	10.2	40	88	15PS 6010
	4"	100	150	406	16.0	80	3.1	N.A.	N.A.	320	12.6	100	220	15PS 6011
	6"	150	150	559	22.0	120	4.7	N.A.	N.A.	430	16.9	220	485	15PS 6013
	8"	200	150	711	28.0	160	6.3	N.A.	N.A.	550	21.7	450	992	15PS 6014
	10"	250	200	864	34.0	210	8.3	N.A.	N.A.	650	25.6	800	1764	15PS 6015
	12"	300	200	991	39.0	245	9.6	N.A.	N.A.	700	27.6	1200	2646	15PS 6016
	14"	350	200	1067	42.0	260	10.2	N.A.	N.A.	750	29.5	1500	3307	15PS 6017
	16"	400	200	1194	47.0	310	12.2	N.A.	N.A.	800	31.5	2000	4409	15PS 6018
	18"	450	200	1537	60.5	350	13.8	N.A.	N.A.	900	35.4	2600	5732	15PS 6019
	20"	500	200	1664	65.5	370	14.6	N.A.	N.A.	1000	39.4	3500	7716	15PS 6020
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	N.A.	N.A.	1100	43.3	4800	10582	15PS 6022
24"	600	200	1943 ⁽²⁾	76.5 ⁽²⁾	480	18.9	N.A.	N.A.	1200	47.2	6500	14330	15PS 6024	
ASME 2500 (SEE NOTE 2, 3)	1/2"	15	150	264 ⁽²⁾	10.4 ⁽²⁾	11.5	0.5	N.A.	N.A.	145	5.7	11.5	25	25PS 606
	3/4"	20	150	273 ⁽²⁾	10.8 ⁽²⁾	15	0.6	N.A.	N.A.	150	5.9	13	29	25PS 604
	1"	25	150	308 ⁽²⁾	12.1 ⁽²⁾	19.5	0.8	N.A.	N.A.	170	6.7	21	46	25PS 605
	1-1/2"	40	150	384 ⁽²⁾	15.1 ⁽²⁾	28	1.1	N.A.	N.A.	195	7.7	38	84	25PS 607
	2"	50	150	451 ⁽²⁾	17.8 ⁽²⁾	38	1.5	N.A.	N.A.	210	8.3	57	126	25PS 608
	3"	80	150	368	14.5	57	2.2	N.A.	N.A.	320	12.6	80	176	25PS 6010
	4"	100	150	457	18.0	72	2.8	N.A.	N.A.	320	12.6	100	220	25PS 6011
	6"	150	150	610	24.0	110	4.3	N.A.	N.A.	450	17.7	420	926	25PS 6016
	8"	200	200	762	30.0	147	5.8	N.A.	N.A.	630	24.8	900	1984	25PS 6014
	10"	250	200	914	36.0	185	7.3	N.A.	N.A.	650	25.6	1100	2425	25PS 6015
	12"	300	200	1041	41.0	218	8.6	N.A.	N.A.	670	26.4	1500	3307	25PS 6016
	14"	350	200	1118 ⁽³⁾	44.0 ⁽³⁾	241	9.5	N.A.	N.A.	700	27.6	1800	3968	25PS 6017
	16"	400	200	1245 ⁽³⁾	49.0 ⁽³⁾	260	10.2	N.A.	N.A.	900	35.4	2500	5512	25PS 6018
	18"	450	200	1397 ⁽³⁾	55.0 ⁽³⁾	280	11.0	N.A.	N.A.	1000	39.4	3400	7496	25PS 6019
	20"	500	200	1500 ⁽³⁾	59.0 ⁽³⁾	310	12.2	N.A.	N.A.	1200	47.2	5000	11023	25PS 6020
	22"	550	200	1750 ⁽³⁾	69.0 ⁽³⁾	340	13.4	N.A.	N.A.	1400	55.1	7000	15432	25PS 6022
24"	600	200	2100 ⁽³⁾	83.0 ⁽³⁾	370	14.6	N.A.	N.A.	1500	59.1	9500	20944	25PS 6024	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

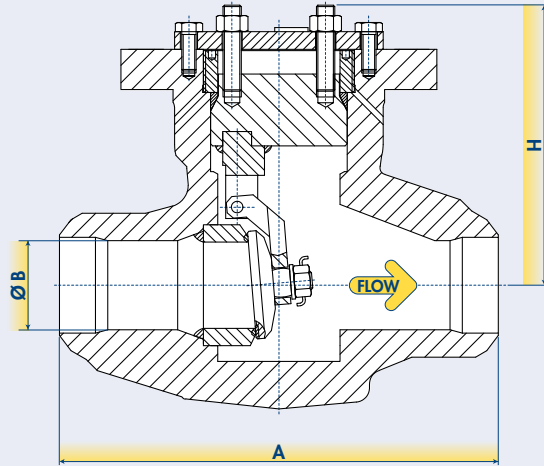
B/E reserves the right to change designs, dimensions or specifications without notice.



PRESSURE SEAL CHECK VALVES

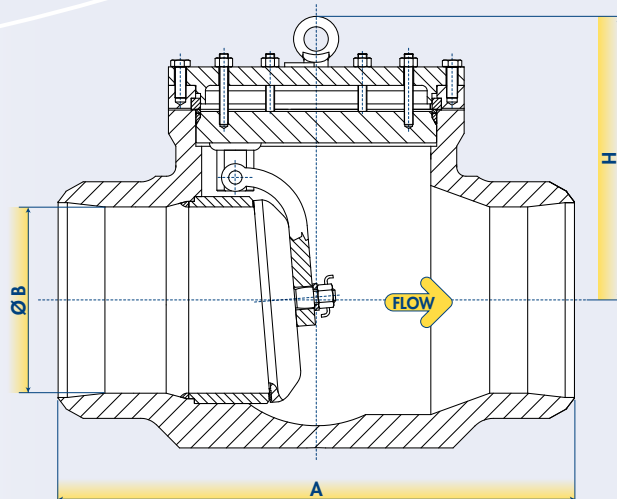
PRESSURE SEAL SWING CHECK VALVES SKETCHES

DESIGN TYPE 1S0



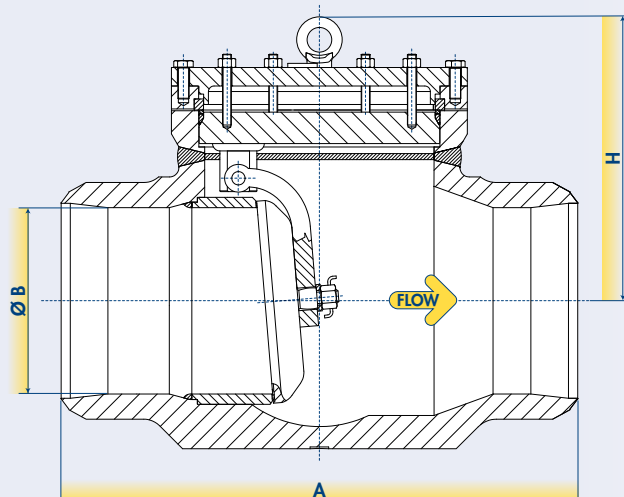
- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING



DESIGN TYPE 1C0

DESIGN TYPE 2C0



- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING

PRESSURE SEAL CHECK VALVES

PRESSURE SEAL TILTING DISC CHECK VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	150	165 ⁽¹⁾	6.5 ⁽¹⁾	14	0.6	N.A.	N.A.	105	4.1	5	11	6PS 603-TILT
	3/4"	20	150	190 ⁽¹⁾	7.5 ⁽¹⁾	18	0.7	N.A.	N.A.	125	4.9	8	18	6PS 604-TILT
	1"	25	150	216 ⁽¹⁾	8.5 ⁽¹⁾	24	0.9	N.A.	N.A.	135	5.3	10	22	6PS 605-TILT
	1-1/2"	40	150	241 ⁽¹⁾	9.5 ⁽¹⁾	36.6	1.4	N.A.	N.A.	155	6.1	12	26	6PS 607-TILT
	2"	50	150	292 ⁽¹⁾	11.5 ⁽¹⁾	51	2.0	N.A.	N.A.	195	7.7	23	51	6PS 608-TILT
	3"	80	150	356 ⁽¹⁾	14.0 ⁽¹⁾	62	2.4	N.A.	N.A.	320	12.6	35	77	6PS 6010-TILT
	4"	100	150	432 ⁽¹⁾	17.0 ⁽¹⁾	80	3.1	N.A.	N.A.	320	12.6	98	216	6PS 6011-TILT
	6"	150	150	559 ⁽¹⁾	22.0 ⁽¹⁾	120	4.7	N.A.	N.A.	430	16.9	220	485	6PS 6013-TILT
	8"	200	150	660 ⁽¹⁾	26.0 ⁽¹⁾	160	6.3	N.A.	N.A.	550	21.7	440	970	6PS 6014-TILT
	10"	250	200	711	31.0	230	9.1	N.A.	N.A.	600	23.6	750	1653	6PS 6015-TILT
	12"	300	200	813	33.0	270	10.6	N.A.	N.A.	620	24.4	1000	2205	6PS 6016-TILT
	14"	350	200	889 ⁽²⁾	35.0 ⁽²⁾	295	11.6	N.A.	N.A.	650	25.6	1300	2866	6PS 6017-TILT
	16"	400	200	991 ⁽²⁾	39.0 ⁽²⁾	337	13.3	N.A.	N.A.	680	26.8	1800	3968	6PS 6018-TILT
	18"	450	200	1092 ⁽²⁾	43.0 ⁽²⁾	380	15.0	N.A.	N.A.	700	27.6	2400	5291	6PS 6019-TILT
	20"	500	200	1194 ⁽²⁾	47.0 ⁽²⁾	418	16.5	N.A.	N.A.	700	27.6	2800	6173	6PS 6020-TILT
	22"	550	200	1295 ⁽²⁾	51.0 ⁽²⁾	420	16.5	N.A.	N.A.	750	29.5	3000	6614	6PS 6022-TILT
24"	600	200	1397 ⁽²⁾	55.0 ⁽²⁾	504	19.8	N.A.	N.A.	800	31.5	3200	7055	6PS 6024-TILT	
ASME 900 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	14	0.6	N.A.	N.A.	105	4.1	6	13	9PS 603-TILT
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	18	0.7	N.A.	N.A.	125	4.9	10	22	9PS 604-TILT
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	24	0.9	N.A.	N.A.	135	5.3	12	26	9PS 605-TILT
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	36.6	1.4	N.A.	N.A.	155	6.1	14	31	9PS 607-TILT
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	47	1.9	N.A.	N.A.	195	7.7	28	62	9PS 608-TILT
	3"	80	150	305	12.0	62	2.4	N.A.	N.A.	260	10.2	40	88	9PS 6010-TILT
	4"	100	150	356	14.0	80	3.1	N.A.	N.A.	320	12.6	95	209	9PS 6011-TILT
	6"	150	150	508	20.0	120	4.7	N.A.	N.A.	430	16.9	215	474	9PS 6013-TILT
	8"	200	150	660	26.0	160	6.3	N.A.	N.A.	550	21.7	440	970	9PS 6014-TILT
	10"	250	200	787	31.0	210	8.3	N.A.	N.A.	650	25.6	700	1543	9PS 6015-TILT
	12"	300	200	914	36.0	245	9.6	N.A.	N.A.	700	27.6	1100	2425	9PS 6016-TILT
	14"	350	200	991	39.0	260	10.2	N.A.	N.A.	750	29.5	1400	3086	9PS 6017-TILT
	16"	400	200	1092	43.0	330	13.0	N.A.	N.A.	800	31.5	1900	4189	9PS 6018-TILT
	18"	450	200	1219 ⁽²⁾	48.0 ⁽²⁾	350	13.8	N.A.	N.A.	900	35.4	2500	5512	9PS 6019-TILT
	20"	500	200	1321 ⁽²⁾	52.0 ⁽²⁾	370	14.6	N.A.	N.A.	1000	39.4	3400	7496	9PS 6020-TILT
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	N.A.	N.A.	1100	43.3	4700	10362	9PS 6022-TILT
24"	600	200	1549 ⁽²⁾	61.0 ⁽²⁾	480	18.9	N.A.	N.A.	1200	47.2	6400	14110	9PS 6024-TILT	
ASME 1500 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	14	0.6	N.A.	N.A.	105	4.1	6	13	15PS 606-TILT
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	18	0.7	N.A.	N.A.	125	4.9	10	22	15PS 604-TILT
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	24	0.9	N.A.	N.A.	135	5.3	12	26	15PS 605-TILT
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	36.6	1.4	N.A.	N.A.	155	6.1	14	31	15PS 607-TILT
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	47	1.9	N.A.	N.A.	195	7.7	28	62	15PS 608-TILT
	3"	80	150	305	12.0	62	2.4	N.A.	N.A.	260	10.2	40	88	15PS 6010-TILT
	4"	100	150	406	16.0	80	3.1	N.A.	N.A.	320	12.6	100	220	15PS 6011-TILT
	6"	150	150	559	22.0	120	4.7	N.A.	N.A.	430	16.9	220	485	15PS 6013-TILT
	8"	200	150	711	28.0	160	6.3	N.A.	N.A.	550	21.7	450	992	15PS 6014-TILT
	10"	250	200	864	34.0	210	8.3	N.A.	N.A.	650	25.6	800	1764	15PS 6015-TILT
	12"	300	200	991	39.0	245	9.6	N.A.	N.A.	700	27.6	1200	2646	15PS 6016-TILT
	14"	350	200	1067	42.0	260	10.2	N.A.	N.A.	750	29.5	1500	3307	15PS 6017-TILT
	16"	400	200	1194	47.0	310	12.2	N.A.	N.A.	800	31.5	2000	4409	15PS 6018-TILT
	18"	450	200	1537	60.5	350	13.8	N.A.	N.A.	900	35.4	2600	5732	15PS 6019-TILT
	20"	500	200	1664	65.5	370	14.6	N.A.	N.A.	1000	39.4	3500	7716	15PS 6020-TILT
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	415	16.3	N.A.	N.A.	1100	43.3	4800	10582	15PS 6022-TILT
24"	600	200	1943 ⁽²⁾	76.5 ⁽²⁾	480	18.9	N.A.	N.A.	1200	47.2	6500	14330	15PS 6024-TILT	
ASME 2500 (SEE NOTE 2, 3)	1/2"	15	150	264 ⁽²⁾	10.4 ⁽²⁾	11.5	0.5	N.A.	N.A.	145	5.7	11.5	25	25PS 606-TILT
	3/4"	20	150	273 ⁽²⁾	10.8 ⁽²⁾	15	0.6	N.A.	N.A.	150	5.9	13	29	25PS 604-TILT
	1"	25	150	308 ⁽²⁾	12.1 ⁽²⁾	19.5	0.8	N.A.	N.A.	170	6.7	21	46	25PS 605-TILT
	1-1/2"	40	150	384 ⁽²⁾	15.1 ⁽²⁾	28	1.1	N.A.	N.A.	195	7.7	38	84	25PS 607-TILT
	2"	50	150	451 ⁽²⁾	17.8 ⁽²⁾	38	1.5	N.A.	N.A.	210	8.3	57	126	25PS 608-TILT
	3"	80	150	368	14.5	57	2.2	N.A.	N.A.	320	12.6	80	176	25PS 6010-TILT
	4"	100	150	457	18.0	72	2.8	N.A.	N.A.	320	12.6	100	220	25PS 6011-TILT
	6"	150	150	610	24.0	110	4.3	N.A.	N.A.	450	17.7	420	926	25PS 6013-TILT
	8"	200	200	762	30.0	147	5.8	N.A.	N.A.	630	24.8	900	1984	25PS 6014-TILT
	10"	250	200	914	36.0	185	7.3	N.A.	N.A.	650	25.6	1100	2425	25PS 6015-TILT
	12"	300	200	1041	41.0	218	8.6	N.A.	N.A.	670	26.4	1500	3307	25PS 6016-TILT
	14"	350	200	1118 ⁽³⁾	44.0 ⁽³⁾	241	9.5	N.A.	N.A.	700	27.6	1800	3968	25PS 6017-TILT
	16"	400	200	1245 ⁽³⁾	49.0 ⁽³⁾	260	10.2	N.A.	N.A.	900	35.4	2500	5512	25PS 6018-TILT
	18"	450	200	1397 ⁽³⁾	55.0 ⁽³⁾	280	11.0	N.A.	N.A.	1000	39.4	3400	7496	25PS 6019-TILT
	20"	500	200	1500 ⁽³⁾	59.0 ⁽³⁾	310	12.2	N.A.	N.A.	1200	47.2	5000	11023	25PS 6020-TILT
	22"	550	200	1750 ⁽³⁾	69.0 ⁽³⁾	340	13.4	N.A.	N.A.	1400	55.1	7000	15432	25PS 6022-TILT
24"	600	200	2100 ⁽³⁾	83.0 ⁽³⁾	370	14.6	N.A.	N.A.	1500	59.1	9500	20944	25PS 6024-TILT	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

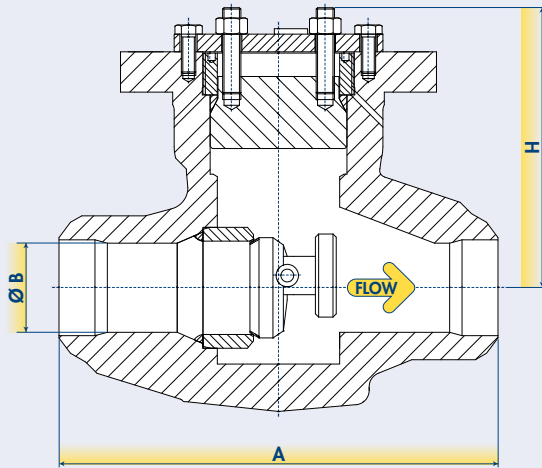
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PRESSURE SEAL CHECK VALVES

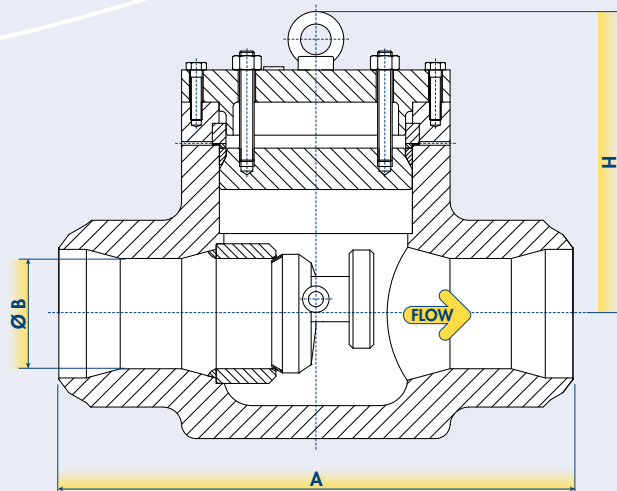
PRESSURE SEAL TILTING DISC CHECK VALVES SKETCHES

DESIGN TYPE 1S0



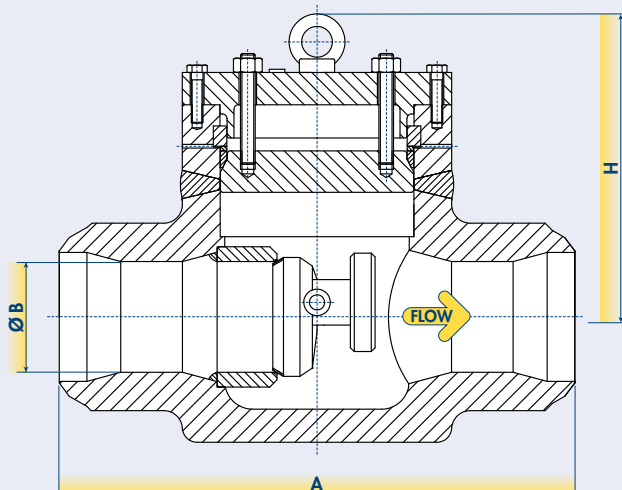
- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING



DESIGN TYPE 1C0

DESIGN TYPE 2C0



- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING

PRESSURE SEAL CHECK VALVES

PRESSURE SEAL "T"-PATTERN PISTON CHECK VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	150	165 ⁽¹⁾	6.5 ⁽¹⁾	233	9.2	N.A.	N.A.	105	4.1	5.1	11.2	6PS 403
	3/4"	20	150	190 ⁽¹⁾	7.5 ⁽¹⁾	250	9.8	N.A.	N.A.	125	4.9	6.7	14.8	6PS 404
	1"	25	150	216 ⁽¹⁾	8.5 ⁽¹⁾	250	9.8	N.A.	N.A.	135	5.3	8.5	19	6PS 405
	1-1/2"	40	150	241 ⁽¹⁾	9.5 ⁽¹⁾	365	14.4	N.A.	N.A.	155	6.1	14	31	6PS 407
	2"	50	150	292 ⁽¹⁾	11.5 ⁽¹⁾	430	16.9	N.A.	N.A.	195	7.7	17	38	6PS 408
	3"	80	150	356 ⁽¹⁾	14.0 ⁽¹⁾	720	28.3	N.A.	N.A.	320	12.6	35	77	6PS 4010
	4"	100	150	432 ⁽¹⁾	17.0 ⁽¹⁾	958	37.7	N.A.	N.A.	320	12.6	90	199	6PS 4011
	6"	150	150	559 ⁽¹⁾	22.0 ⁽¹⁾	1212	47.7	N.A.	N.A.	430	16.9	251	554	6PS 4013
	8"	200	150	660 ⁽¹⁾	26.0 ⁽¹⁾	1443	56.8	N.A.	N.A.	550	21.7	601	1325	6PS 4014
	10"	250	200	711	31.0	1710	67.3	N.A.	N.A.	600	23.6	1212	2672	6PS 4015
	12"	300	200	813	33.0	1950	76.8	N.A.	N.A.	620	24.4	1125	2479	6PS 4016
	14"	350	200	889 ⁽²⁾	35.0 ⁽²⁾	2050	80.7	N.A.	N.A.	650	25.6	1529	3371	6PS 4017
	16"	400	200	991 ⁽²⁾	39.0 ⁽²⁾	2540	100.0	N.A.	N.A.	680	26.8	1793	3953	6PS 4018
	18"	450	200	1092 ⁽²⁾	43.0 ⁽²⁾	2620	103.1	N.A.	N.A.	700	27.6	2433	5364	6PS 4019
	20"	500	200	1194 ⁽²⁾	47.0 ⁽²⁾	2840	111.8	N.A.	N.A.	700	27.6	3753	8273	6PS 4020
	22"	550	200	1295 ⁽²⁾	51.0 ⁽²⁾	3140	123.6	N.A.	N.A.	750	29.5	3478	7669	6PS 4022
24"	600	200	1397 ⁽²⁾	55.0 ⁽²⁾	3485	137.2	N.A.	N.A.	800	31.5	4420	9744	6PS 4024	
ASME 900 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	233	9.2	N.A.	N.A.	105	4.1	8.3	18.3	9PS 403
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	250	9.8	N.A.	N.A.	125	4.9	12	27	9PS 404
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	250	9.8	N.A.	N.A.	135	5.3	17	37	9PS 405
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	365	14.4	N.A.	N.A.	155	6.1	19	42	9PS 407
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	430	16.9	N.A.	N.A.	195	7.7	36	80	9PS 408
	3"	80	150	305	12.0	720	28.3	N.A.	N.A.	260	10.2	49	107	9PS 4010
	4"	100	150	356	14.0	958	37.7	N.A.	N.A.	320	12.6	144	317	9PS 4011
	6"	150	150	508	20.0	1212	47.7	N.A.	N.A.	430	16.9	238	524	9PS 4013
	8"	200	150	660	26.0	1443	56.8	N.A.	N.A.	550	21.7	593	1308	9PS 4014
	10"	250	200	787	31.0	1710	67.3	N.A.	N.A.	650	25.6	1380	3043	9PS 4015
	12"	300	200	914	36.0	1950	76.8	N.A.	N.A.	700	27.6	1957	4314	9PS 4016
	14"	350	200	991	39.0	2050	80.7	N.A.	N.A.	750	29.5	2784	6139	9PS 4017
	16"	400	200	1092	43.0	2540	100.0	N.A.	N.A.	800	31.5	2960	6525	9PS 4018
	18"	450	200	1219 ⁽²⁾	48.0 ⁽²⁾	2620	103.1	N.A.	N.A.	900	35.4	3234	7130	9PS 4019
	20"	500	200	1321 ⁽²⁾	52.0 ⁽²⁾	2840	111.8	N.A.	N.A.	1000	39.4	5448	12012	9PS 4020
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	3140	123.6	N.A.	N.A.	1100	43.3	6456	14233	9PS 4022
24"	600	200	1549 ⁽²⁾	61.0 ⁽²⁾	3485	137.2	N.A.	N.A.	1200	47.2	10610	23391	9PS 4024	
ASME 1500 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	233	9.2	N.A.	N.A.	105	4.1	8.3	18	15PS 403
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	250	9.8	N.A.	N.A.	125	4.9	12	27	15PS 404
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	250	9.8	N.A.	N.A.	135	5.3	17	37	15PS 405
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	365	14.4	N.A.	N.A.	155	6.1	19	42	15PS 407
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	430	16.9	N.A.	N.A.	195	7.7	36	80	15PS 408
	3"	80	150	305	12.0	720	28.3	N.A.	N.A.	260	10.2	49	107	15PS 4010
	4"	100	150	406	16.0	958	37.7	N.A.	N.A.	320	12.6	155	341	15PS 4011
	6"	150	150	559	22.0	1212	47.7	N.A.	N.A.	430	16.9	251	554	15PS 4013
	8"	200	150	711	28.0	1443	56.8	N.A.	N.A.	550	21.7	614	1354	15PS 4014
	10"	250	200	864	34.0	1710	67.3	N.A.	N.A.	650	25.6	1626	3585	15PS 4015
	12"	300	200	991	39.0	1950	76.8	N.A.	N.A.	700	27.6	2169	4782	15PS 4016
	14"	350	200	1067	42.0	2050	80.7	N.A.	N.A.	750	29.5	3045	6713	15PS 4017
	16"	400	200	1194	47.0	2540	100.0	N.A.	N.A.	800	31.5	3085	6802	15PS 4018
	18"	450	200	1537	60.5	2620	103.1	N.A.	N.A.	900	35.4	3314	7307	15PS 4019
	20"	500	200	1664	65.5	2840	111.8	N.A.	N.A.	1000	39.4	5539	12212	15PS 4020
	22"	550	200	1664 ⁽³⁾	65.5 ⁽³⁾	3140	123.6	N.A.	N.A.	1100	43.3	6746	14872	15PS 4022
24"	600	200	1943 ⁽²⁾	76.5 ⁽²⁾	3485	137.2	N.A.	N.A.	1200	47.2	10674	23531	15PS 4024	
ASME 2500 (SEE NOTE 2, 3)	1/2"	15	150	264 ⁽²⁾	10.4 ⁽²⁾	304	12.0	N.A.	N.A.	145	5.7	10	23	25PS 403
	3/4"	20	150	273 ⁽²⁾	10.8 ⁽²⁾	304	12.0	N.A.	N.A.	150	5.9	13	29	25PS 404
	1"	25	150	308 ⁽²⁾	12.1 ⁽²⁾	362	14.3	N.A.	N.A.	170	6.7	19	43	25PS 405
	1-1/2"	40	150	384 ⁽²⁾	15.1 ⁽²⁾	412	16.2	N.A.	N.A.	195	7.7	28	61	25PS 407
	2"	50	150	451 ⁽²⁾	17.8 ⁽²⁾	436	17.2	N.A.	N.A.	210	8.3	86	188	25PS 408
	3"	80	150	368	14.5	898	35.4	N.A.	N.A.	320	12.6	95	209	25PS 4010
	4"	100	150	457	18.0	958	37.7	N.A.	N.A.	320	12.6	157	347	25PS 4011
	6"	150	150	610	24.0	1447	57.0	N.A.	N.A.	450	17.7	601	1324	25PS 4013
	8"	200	200	762	30.0	1610	63.4	N.A.	N.A.	630	24.8	1560	3439	25PS 4014
	10"	250	200	914	36.0	1860	73.2	N.A.	N.A.	650	25.6	1827	4028	25PS 4015
	12"	300	200	1041	41.0	1950	76.8	N.A.	N.A.	670	26.4	2786	6141	25PS 4016
	14"	350	200	1118 ⁽³⁾	44.0 ⁽³⁾	2100	82.7	N.A.	N.A.	700	27.6	3968	8748	25PS 4017
	16"	400	200	1245 ⁽³⁾	49.0 ⁽³⁾	2210	87.0	N.A.	N.A.	900	35.4	3616	7971	25PS 4018
	18"	450	200	1397 ⁽³⁾	55.0 ⁽³⁾	2275	89.6	N.A.	N.A.	1000	39.4	4058	8947	25PS 4019
	20"	500	200	1500 ⁽³⁾	59.0 ⁽³⁾	2470	97.2	N.A.	N.A.	1200	47.2	6500	14330	25PS 4020
	22"	550	200	1750 ⁽³⁾	69.0 ⁽³⁾	2730	107.5	N.A.	N.A.	1400	55.1	10111	22291	25PS 4022
24"	600	200	2100 ⁽³⁾	83.0 ⁽³⁾	3030	119.3	N.A.	N.A.	1500	59.1	14250	31416	25PS 4024	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

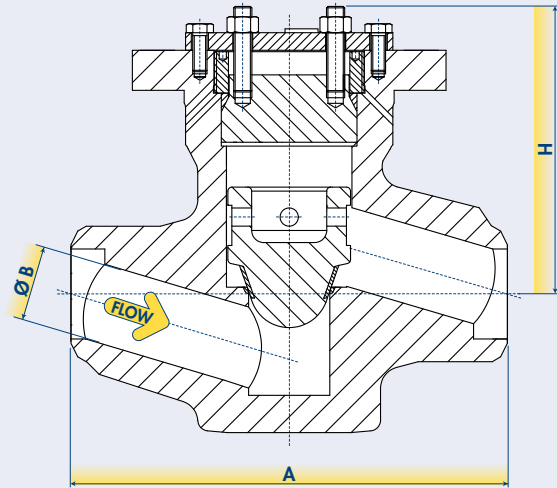
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PRESSURE SEAL CHECK VALVES

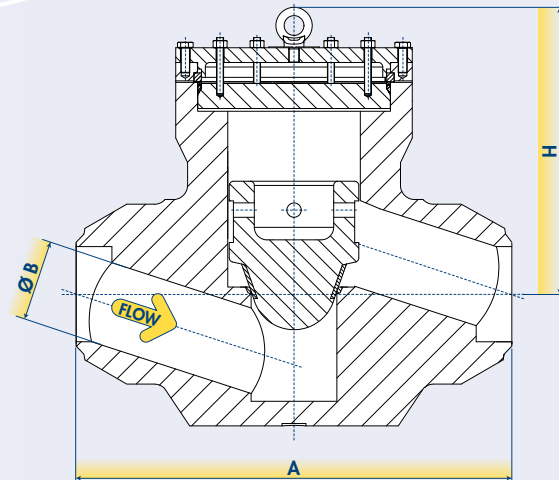
PRESSURE SEAL "T"-PATTERN PISTON CHECK VALVES SKETCHES

DESIGN TYPE 1S0



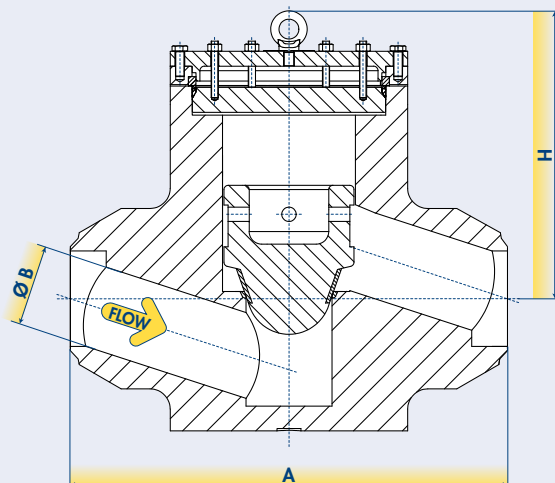
- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER

- CLOSE DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING



DESIGN TYPE 1C0

DESIGN TYPE 2C0



- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING

PRESSURE SEAL CHECK VALVES

PRESSURE SEAL "Y"-PATTERN PISTON CHECK VALVES BASIC CONFIGURATION WELDING ENDS

WORKING PRESSURE RATING	SIZE		STANDARD DESIGN TYPE	A		B		C		H		WEIGHT		FIGURE
	NPS	DN		mm	in	mm	in	mm	in	mm	in	kg	lb	
ASME 600 (SEE NOTE 1, 2)	1/2"	15	150	165 ⁽¹⁾	6.5 ⁽¹⁾	13	0.5	N.A.	N.A.	170	6.7	4.9	10.7	6PSY 403
	3/4"	20	150	190 ⁽¹⁾	7.5 ⁽¹⁾	17.5	0.7	N.A.	N.A.	202	8.0	8.1	17.9	6PSY 404
	1"	25	150	216 ⁽¹⁾	8.5 ⁽¹⁾	22.5	0.9	N.A.	N.A.	235	9.3	9.7	21	6PSY 405
	1-1/2"	40	150	241 ⁽¹⁾	9.5 ⁽¹⁾	35	1.4	N.A.	N.A.	287	11.3	11	25	6PSY 407
	2"	50	150	292 ⁽¹⁾	11.5 ⁽¹⁾	45	1.8	N.A.	N.A.	331	13.0	14	31	6PSY 408
	3"	80	250	356 ⁽¹⁾	14.0 ⁽¹⁾	60	2.4	N.A.	N.A.	300	11.8	138	304	6PSY 4010
	4"	100	250	432 ⁽¹⁾	17.0 ⁽¹⁾	78	3.1	N.A.	N.A.	320	12.6	209	462	6PSY 4011
	6"	150	250	559 ⁽¹⁾	22.0 ⁽¹⁾	105	4.1	N.A.	N.A.	390	15.4	265	584	6PSY 4013
	8"	200	250	660 ⁽¹⁾	26.0 ⁽¹⁾	140	5.5	N.A.	N.A.	500	19.7	540	1190	6PSY 4014
	10"	250	250	711	31.0	178	7.0	N.A.	N.A.	590	23.2	945	2083	6PSY 4015
	12"	300	250	813	33.0	220	8.7	N.A.	N.A.	640	25.2	803	1770	6PSY 4016
	14"	350	250	889 ⁽²⁾	35.0 ⁽²⁾	235	9.3	N.A.	N.A.	680	26.8	1096	2417	6PSY 4017
	16"	400	250	991 ⁽²⁾	39.0 ⁽²⁾	270	10.6	N.A.	N.A.	730	28.7	1753	3864	6PSY 4018
	18"	450	250	1092 ⁽²⁾	43.0 ⁽²⁾	300	11.8	N.A.	N.A.	820	32.3	2935	6470	6PSY 4019
	20"	500	250	1194 ⁽²⁾	47.0 ⁽²⁾	335	13.2	N.A.	N.A.	910	35.8	4050	8929	6PSY 4020
	22"	550	250	1295 ⁽²⁾	51.0 ⁽²⁾	370	14.6	N.A.	N.A.	1000	39.4	5400	11905	6PSY 4022
24"	600	250	1397 ⁽²⁾	55.0 ⁽²⁾	400	15.7	N.A.	N.A.	1090	42.9	6825	15047	6PSY 4024	
ASME 900 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	14	0.6	N.A.	N.A.	170	6.7	5.4	11.9	9PSY 403
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	18	0.7	N.A.	N.A.	202	8.0	9.0	20	9PSY 404
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	24	0.9	N.A.	N.A.	235	9.3	11	24	9PSY 405
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	36.6	1.4	N.A.	N.A.	287	11.3	13	28	9PSY 407
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	47	1.9	N.A.	N.A.	331	13.0	25	56	9PSY 408
	3"	80	250	305	12.0	60	2.4	N.A.	N.A.	300	11.8	150	331	9PSY 4010
	4"	100	250	356	14.0	78	3.1	N.A.	N.A.	320	12.6	210	463	9PSY 4011
	6"	150	250	508	20.0	105	4.1	N.A.	N.A.	390	15.4	265	584	9PSY 4013
	8"	200	250	660	26.0	140	5.5	N.A.	N.A.	500	19.7	540	1190	9PSY 4014
	10"	250	250	787	31.0	178	7.0	N.A.	N.A.	590	23.2	960	2116	9PSY 4015
	12"	300	250	914	36.0	220	8.7	N.A.	N.A.	640	25.2	1440	3175	9PSY 4016
	14"	350	250	991	39.0	235	9.3	N.A.	N.A.	680	26.8	1800	3968	9PSY 4017
	16"	400	250	1092	43.0	270	10.6	N.A.	N.A.	730	28.7	2400	5291	9PSY 4018
	18"	450	250	1219 ⁽²⁾	48.0 ⁽²⁾	300	11.8	N.A.	N.A.	820	32.3	3120	6878	9PSY 4019
	20"	500	250	1321 ⁽²⁾	52.0 ⁽²⁾	335	13.2	N.A.	N.A.	910	35.8	4200	9259	9PSY 4020
	22"	550	250	1664 ⁽³⁾	65.5 ⁽³⁾	370	14.6	N.A.	N.A.	1000	39.4	5760	12699	9PSY 4022
24"	600	250	1549 ⁽²⁾	61.0 ⁽²⁾	400	15.7	N.A.	N.A.	1090	42.9	7800	17196	9PSY 4024	
ASME 1500 (SEE NOTE 2, 3)	1/2"	15	150	216 ⁽²⁾	8.5 ⁽²⁾	12	0.5	N.A.	N.A.	200	7.9	5.4	11.9	15PSY 403
	3/4"	20	150	229 ⁽²⁾	9.0 ⁽²⁾	14	0.6	N.A.	N.A.	216	8.5	9.0	20	15PSY 404
	1"	25	150	254 ⁽²⁾	10.0 ⁽²⁾	19	0.7	N.A.	N.A.	216	8.5	11	24	15PSY 405
	1-1/2"	40	150	305 ⁽²⁾	12.0 ⁽²⁾	31	1.2	N.A.	N.A.	314	12.4	13	28	15PSY 407
	2"	50	150	368 ⁽²⁾	14.5 ⁽²⁾	38	1.5	N.A.	N.A.	372	14.6	25	56	15PSY 408
	3"	80	250	305	12.0	60	2.4	N.A.	N.A.	300	11.8	150	331	15PSY 4010
	4"	100	250	406	16.0	78	3.1	N.A.	N.A.	320	12.6	220	485	15PSY 4011
	6"	150	250	559	22.0	105	4.1	N.A.	N.A.	390	15.4	265	584	15PSY 4013
	8"	200	250	711	28.0	140	5.5	N.A.	N.A.	500	19.7	540	1190	15PSY 4014
	10"	250	250	864	34.0	178	7.0	N.A.	N.A.	590	23.2	960	2116	15PSY 4015
	12"	300	250	991	39.0	220	8.7	N.A.	N.A.	640	25.2	1440	3175	15PSY 4016
	14"	350	250	1067	42.0	235	9.3	N.A.	N.A.	680	26.8	1800	3968	15PSY 4017
	16"	400	250	1194	47.0	270	10.6	N.A.	N.A.	730	28.7	2400	5291	15PSY 4018
	18"	450	250	1537	60.5	300	11.8	N.A.	N.A.	820	32.3	3120	6878	15PSY 4019
	20"	500	250	1664	65.5	335	13.2	N.A.	N.A.	910	35.8	4200	9259	15PSY 4020
	22"	550	250	1664 ⁽³⁾	65.5 ⁽³⁾	370	14.6	N.A.	N.A.	1000	39.4	5760	12699	15PSY 4022
24"	600	250	1943 ⁽²⁾	76.5 ⁽²⁾	400	15.7	N.A.	N.A.	1090	42.9	7800	17196	15PSY 4024	
ASME 2500 (SEE NOTE 2, 3)	1/2"	15	150	264 ⁽²⁾	10.4 ⁽²⁾	11	0.4	N.A.	N.A.	285	11	10	23	25PSY 403
	3/4"	20	150	273 ⁽²⁾	10.8 ⁽²⁾	14.5	0.6	N.A.	N.A.	291	11	12	26	25PSY 404
	1"	25	150	308 ⁽²⁾	12.1 ⁽²⁾	19	0.7	N.A.	N.A.	310	12	19	42	25PSY 405
	1-1/2"	40	150	384 ⁽²⁾	15.1 ⁽²⁾	28	1.1	N.A.	N.A.	408	16	34	75	25PSY 407
	2"	50	150	451 ⁽²⁾	17.8 ⁽²⁾	38	1.5	N.A.	N.A.	415	16	77	171	25PSY 408
	3"	80	250	368	14.5	53	2.1	N.A.	N.A.	330	13	200	441	25PSY 4010
	4"	100	250	457	18.0	56	2.2	N.A.	N.A.	350	14	270	595	25PSY 4011
	6"	150	250	610	24.0	100	3.9	N.A.	N.A.	430	17	505	1113	25PSY 4013
	8"	200	250	762	30.0	132	5.2	N.A.	N.A.	575	23	1080	2381	25PSY 4014
	10"	250	250	914	36.0	150	5.9	N.A.	N.A.	590	23	1320	2910	25PSY 4015
	12"	300	250	1041	41.0	184	7.2	N.A.	N.A.	590	23	1440	3175	25PSY 4016
	14"	350	250	1118 ⁽³⁾	44.0 ⁽³⁾	200	7.9	N.A.	N.A.	640	25	1920	4233	25PSY 4017
	16"	400	250	1245 ⁽³⁾	49.0 ⁽³⁾	225	8.9	N.A.	N.A.	820	32	3000	6614	25PSY 4018
	18"	450	250	1397 ⁽³⁾	55.0 ⁽³⁾	250	9.8	N.A.	N.A.	910	36	4080	8995	25PSY 4019
	20"	500	250	1500 ⁽³⁾	59.0 ⁽³⁾	280	11.0	N.A.	N.A.	1090	43	6000	13228	25PSY 4020
	22"	550	250	1750 ⁽³⁾	69.0 ⁽³⁾	305	12.0	N.A.	N.A.	1275	50	8400	18519	25PSY 4022
24"	600	250	2100 ⁽³⁾	83.0 ⁽³⁾	335	13.2	N.A.	N.A.	1365	54	11400	25133	25PSY 4024	

PRODUCT FEATURES:

• End-to-End acc. to ASME B16.10 - Short Pattern. • Butt welding ends acc. to ASME B16.25.

NOTE 1: End-to-End acc. to ASME B16.10 Long Pattern. NOTE 2: ASME B16.10 does not specify any value for Short Pattern, selected End-to-End acc. to ASME B16.10 Long Pattern.

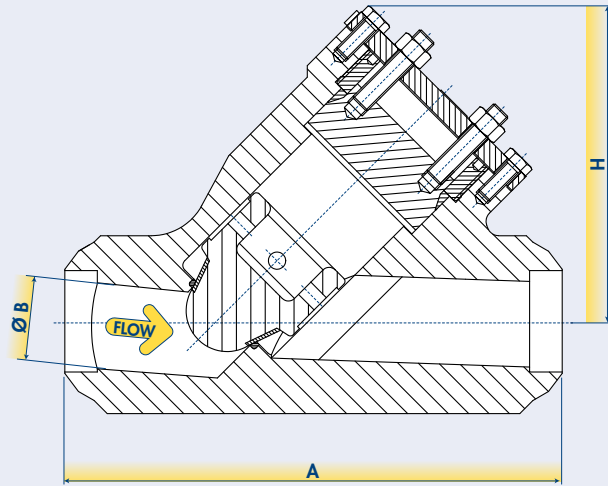
NOTE 3: ASME B16.10 does not specify any value, selected End-to-End acc. to Manufacturer Standard.

B/E reserves the right to change designs, dimensions or specifications without notice.

PRESSURE SEAL CHECK VALVES

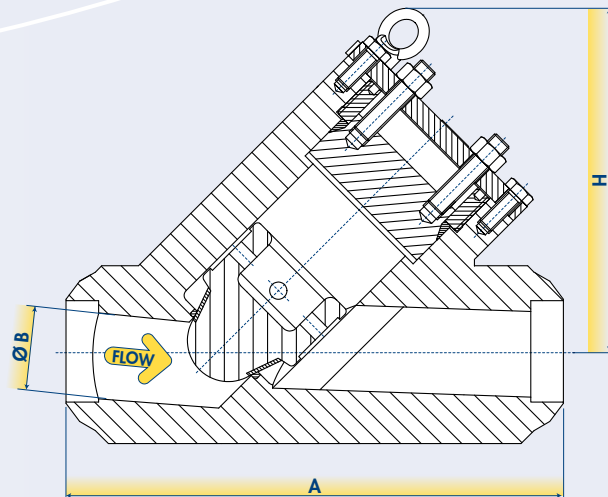
PRESSURE SEAL "Y"-PATTERN PISTON CHECK VALVES SKETCHES

DESIGN TYPE 150



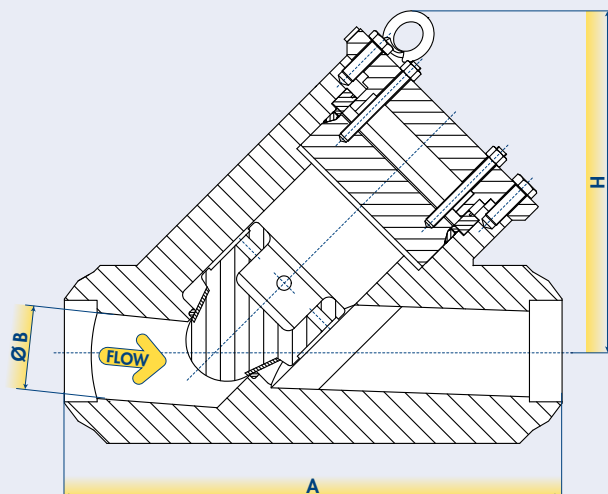
- CLOSE DIE FORGED BODY
- PRESSURE SEAL SCREWED RETAINER

- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING



DESIGN TYPE 250

DESIGN TYPE 200



- OPEN DIE FORGED BODY
- PRESSURE SEAL SEGMENTAL RING

PRESSURE SEAL CHECK VALVES

AVAILABLE OPTIONS FOR CHECK VALVES OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

WELDED CONNECTIONS

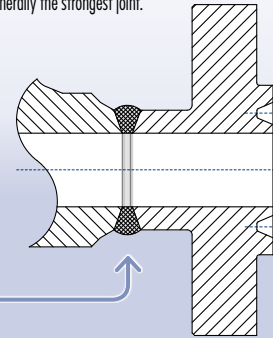
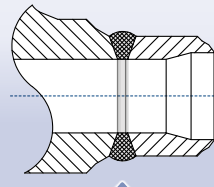
The choice of end connections for connecting a valve to its associated pipework is dependent upon the pressure and temperature of the working fluid, for this reason pressure seal valves are usually requested with butt welding end (because the high pressure/temperature applications). BFE standard design is available with body integral ends for all range and butt welding ends and with integral flanges up to NPS 2. However all sizes can be supplied with welded flanges, pups or transition pieces. The type of weld is full penetration with butt weld arrangement with NDE performed acc.to the applicable standards and/or customer request.

PUPS AND TRANSITION PIECES

All valves can be furnished with pups or transition pieces of different length to facilitate the installation of valve and piping on site or can be required in accordance with existing standards/specifications for welding between the valve and the pipeline. Transition piece can be needed due to thickness difference between the valve and pup piece, or welding between two different materials. The pup or transition piece length is to be specified by the customer, including end wall thickness and material.

FLANGES

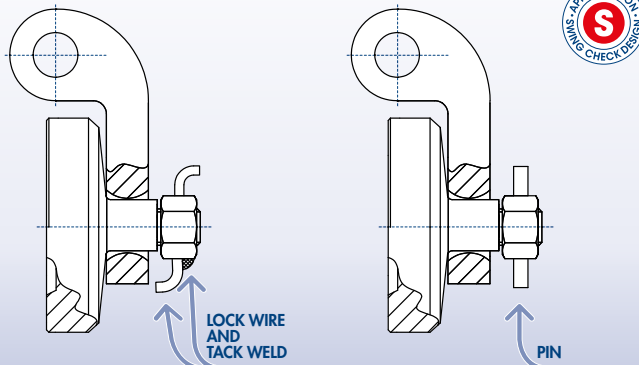
Pressure seal valves are normally installed in lines where flange connections are avoided, pressure seal valves are available with butt welding ends as standard, however welded flanges connections are available. A full penetration weld ensures a fully welded interface between the two parts and is generally the strongest joint.



FULL PENETRATION

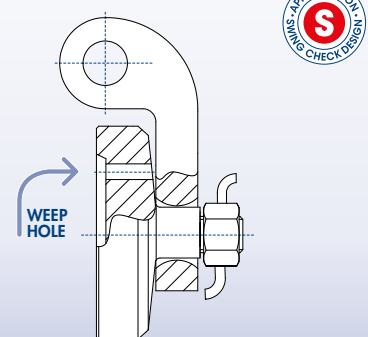
ALTERNATIVE CLOSURE MEMBER ANTI-LOOSENING SYSTEM

Swing check design must prevent possible unscrewing of the swing check closure member nut. BFE standard design achieves this goal by a lock wire. Alternative solutions are available as option, the most common alternative solution is obtained by an additional weld or pin that prevents loosening in service.



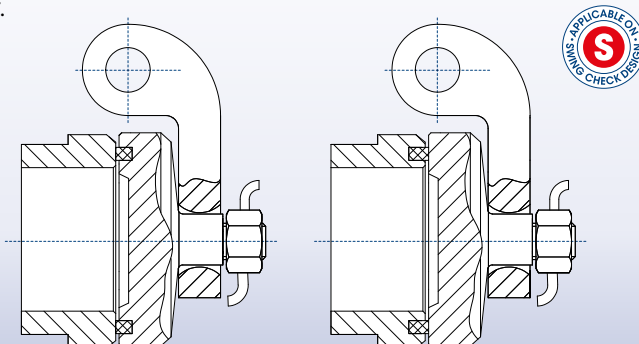
WEEP HOLE

The weep hole, is a small opening that allows the fluid to drain from the downstream side to the upstream in case of closed valve. Purpose of weep hole can depend on the application. In case of weep hole option the valve does not achieve leak-tight closing or keep the differential pressure.



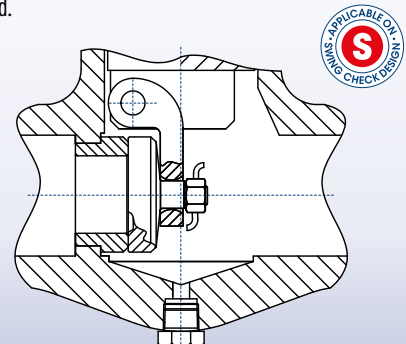
SOFT SEATED TRIM

In applications that require positive shut-off such as in chemical and petrochemical services, soft-seated swing check valve is a suitable solution because the use of soft-seat materials imparts excellent sealing ability. Soft seat inserts provide the necessary soft-seating to improve the leakproof design. Soft Insert can be obtained on the sealing on the closure member.



AUXILIARY STANDARD DRAIN

Swing check valves can be furnished with drain. Standard drain connections consist of a drilled, tapped, and plugged hole at the ASME B16.34 "G" location. Other types of drains, including welding, or threaded nipples, can also be furnished when specified.



AVAILABLE OPTIONS FOR CHECK VALVES

OTHER VALVE OPTIONS OR CUSTOMISED VERSIONS ARE AVAILABLE ON REQUEST, CONTACT BFE FOR SPECIAL REQUIREMENTS.

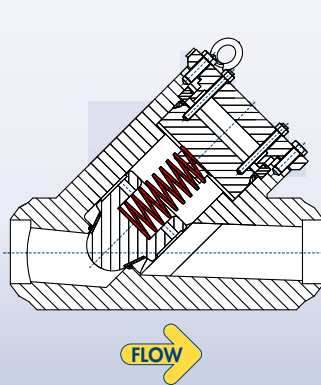
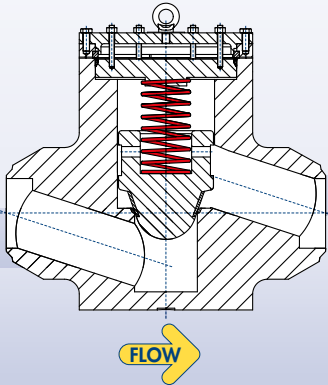
■ SPRING ASSISTED CHECK VALVES

Standard valves have no spring and depend on the weight of the disc to start closure. These are called "horizontal check valves", as they will only function properly when installed in a horizontal line. Spring loaded check valves may be installed in any position, both in horizontal and vertical piping applications. The spring helps reduce noise, minimize the effect of pulsating flow and "water hammer" line shock and assists the closure member in seating faster.



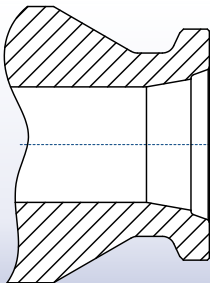
SPRING ASSISTED "T"-PATTERN PISTON CHECK VALVE

SPRING ASSISTED "Y"-PATTERN PISTON CHECK VALVE



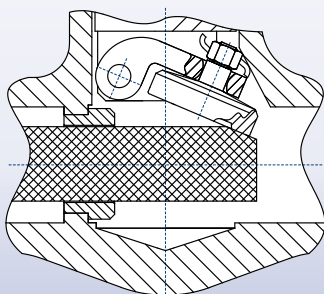
■ SPECIAL END FINISH

The choice of end connections for connecting a valve to its associated pipe is performed by customers. Common end finish stated in the catalogue are butt weld. BFE is basically able to perform any end finishes as required by the customers and other end finish as follows: threaded, socked, hub, compact flange, any ASME B16.5 end finish etc.



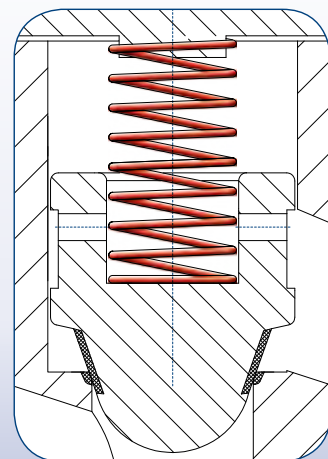
■ TIE ROD PACKAGING SET

A tie rod is a slender structural unit used as a tie and (in most applications) capable of carrying tensile loads only. Tie Rod Packaging is used to help protect trim of check valves during shipment. It is common for a transport package to be dropped, kicked, and impacted: These events may produce potentially damaging shocks to the seal surfaces. Shock and vibration are controlled by the tie rod geometry that block the closure member in open position so that the chance of product damage is greatly reduced. The soft insert can be manufactured from elastomer, polymers and similar resilient or semi-resilient materials.



■ CUSTOMIZED CRACKING PRESSURE

An important concept in check valves is the cracking pressure which is the minimum upstream pressure at which the valve will operate. Static cracking pressure is the minimum pressure at which fluid is bypassed through the valve at the rate of 0.1cc per minute during conditions of increasing pressure supplied by means of a hand pump. Valve cracking pressure can be customized to meet unique performance requirements through the modification of the trim design (closure member geometry, spring force and materials).



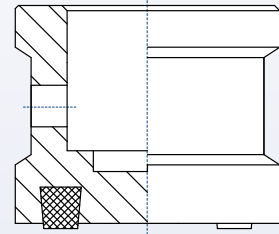
■ DISC AND TRIM TYPE FOR PISTON CHECK VALVES

BFE standard plug has a quick opening characteristic, this plug provides maximum flow with minimum pressure drop and is ideal when large flows are required just after opening. All BFE standard plugs require a flow direction FTO type. BFE trim variations can offer maximum versatility in flow control application within the capability of piston check valve design.



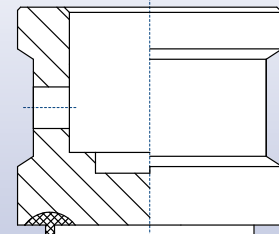
SOFT SEATED PLUG

Soft seated trim provides improved seat tightness at low differential pressures. This design feature includes a plastic sealing member on the valve closure element to supplement the basic metal-to-metal seating function. The design and material selection for these sealing members are based on customer pressure, temperature and compatibility with the line fluid.



FLAT SEATED TRIM

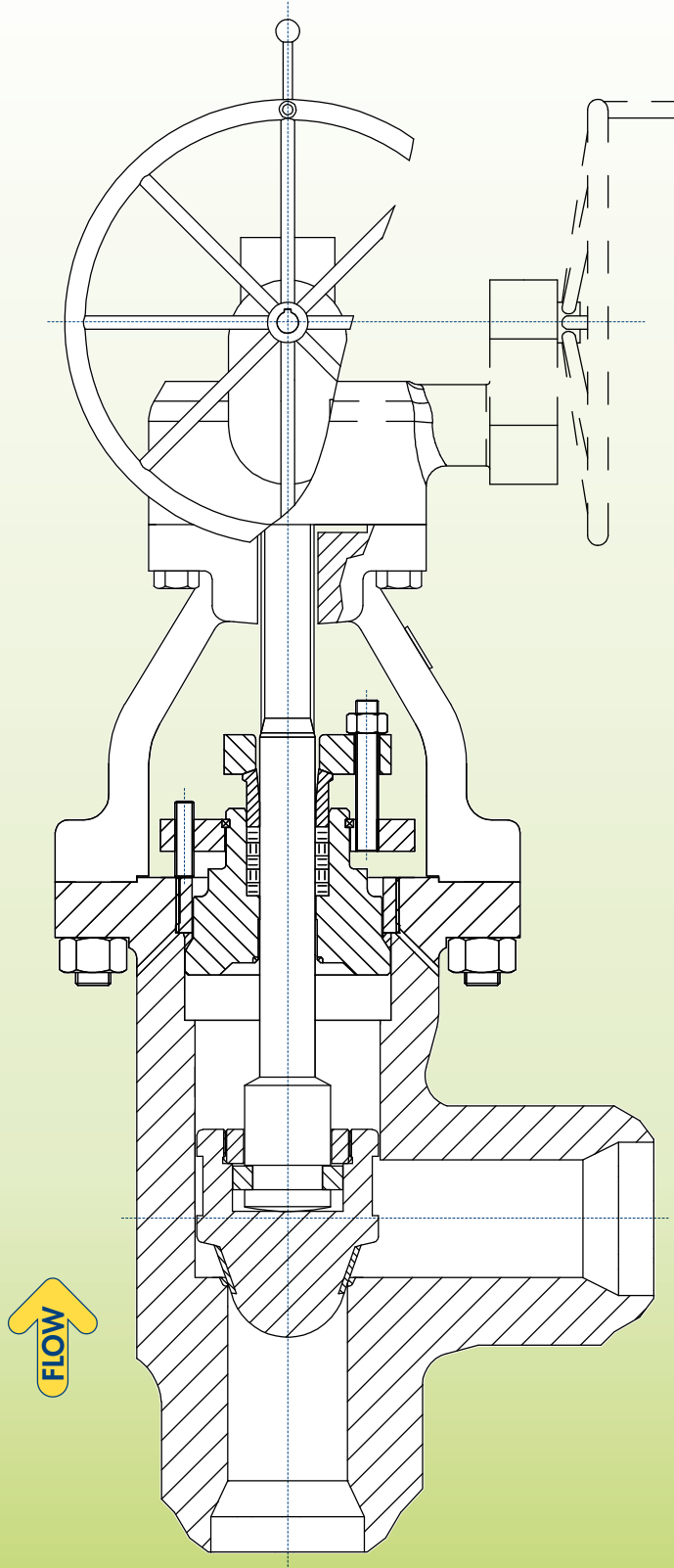
Metal to metal flat seated trim provides improved seat tightness with air/gas service. This design feature is required when additional or special test are required (e.g. API 598 air test or high pressure gas test).



ALTERNATIVE DESIGN SOLUTIONS

There are a large variety of available valves and valve configurations for a wide variety of purposes and conditions not tabulated in this catalogue. Some example are listed below. Other valve designs or customised configurations are available on request, contact bfe for special requirements.

PRESSURE SEAL ANGLE PATTERN GLOBE VALVES



The Angle pattern globe valve is a modified version of "T"-Pattern Globe valve with inlet and outlet at right angles. When fitted at a change in piping direction, this valve eliminates a bend and has the advantage of smaller pressure drop than a conventional "T" pattern globe valve.

Angle valves have the same features of stem, disc and seat ring design as the globe valve. The fundamental difference between the two is that the fluid flow through the angle valve makes a 90° turn.

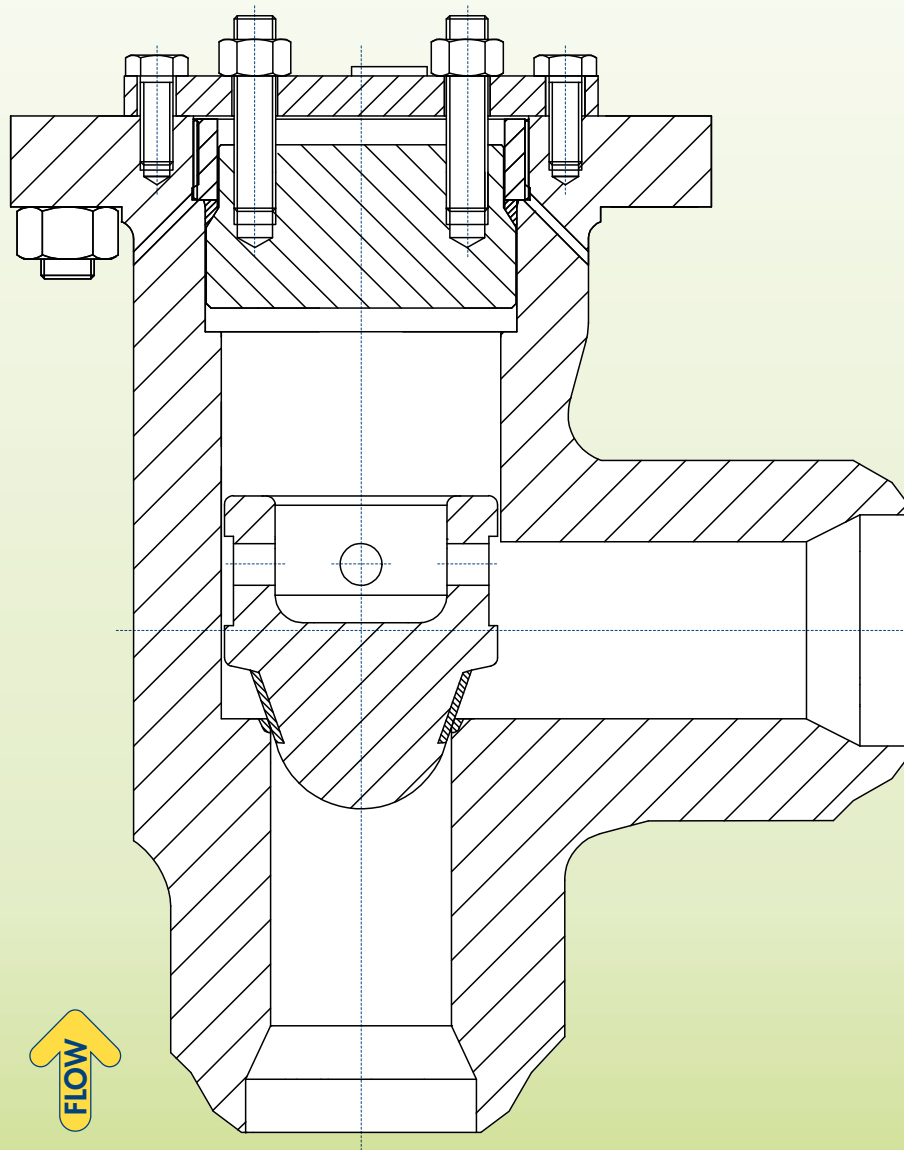
These valves offer less resistance to flow than a globe valve with an elbow which it would replace.

An angle valve reduces the number joints in a line, in addition to saving installation time.

They are also used in applications that have periods of pulsating flow because of their capability to handle the slugging effect of this type of flow.

PRESSURE SEAL ANGLE PATTERN PISTON CHECK VALVES

The Angle pattern check valve is a modified version of a standard check valve with inlet and outlet at right angles. When fitted at a change in piping direction, this valve eliminates a bend and has the advantage of smaller pressure drop than a conventional check valve. The fundamental difference between the two is that the fluid flow through the angle valve makes a 90° turn. These valves offer less resistance to flow than a standard check valve with an elbow which it would replace. An angle valve reduces the number joints in a line, in addition to saving installation time.



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GENERAL SALE CONDITIONS

QUOTATION VALIDITY

Unless otherwise agreed, quotations are valid for four weeks from date of issue. The delivery terms are always "ex-works" unless otherwise stated. Prices and sale conditions can be changed without any previous notice.

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Orders are considered accepted at our general sale conditions clearly mentioned on order acknowledgment.

GOODS DELIVERY

The Company does not accept any responsibility for delays in delivery which are always intended as indicative and not binding. Transport risks are at receiver's charge also in case of CIF delivery.

GUARANTEE

The Company warrants all its products, from material and/or manufacturing defects, to be used as recommended by standards, and in accordance with approved piping practice and technique, for a period of one year from shipping date, unless otherwise agreed.

The Company liability covers eventual "free of charge" replacements for defective parts or products, providing it has not failed in the observance of above mentioned conditions and in use in compliance with standards, and, anyway, after return of defective goods. Any other liability, neither objective nor subjective will be accepted.

CLAIMS AND ORDER CANCELLATIONS

Claims will be considered only if made within 10 days from goods receipt. Partial or complete cancellations of order can be accepted only upon previous agreement or by written consent and, however, not later than 15 days from order date. Any controversy will be handled by the Court of Milan.

The material in this catalog is for general information. For specific performance data and proper product selection, consult BFE or your BFE representative. BFE reserves the right to change designs, dimensions or specifications without notice.





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