PERSTA



A 182 Gr. F22 Cl.3 [4]

Temp. °F	Working pressure in PSIG classes 600	725	900	1500	1850	2500	3200	Temp. °C	1850	2500	3200
100	1500.0	1812.5	2250.0	3750.0	4625.0	6250.0	8000.0		318.9	430.9	551.6
200	1500.0	1813.0	2250.0	3750.0	4625.0	6250.0	8000.0		318.9	430.9	551.6
300	1455.0	1759.0	2185.0	3640.0	4490.5	6070.0			317.7	429.4	549.7
400	1410.0	1704.0	2115.0	3530.0	4352.5	5880.0			309.4	418.2	535.3
500	1330.0	1607.0	1995.0	3325.0	4100.3	5540.0				405.4	518.9
600	1210.0	1462.0	1815.0	3025.0	3730.3	5040.0					494.0
650	1175.0	1421.0	1765.0	2940.0	3627.8	4905.0					457.0

ASME
High pressure valves

- CLASS 600 - 4500

▪ About PERSTA

Industrial valves made by company Stahl-Armaturen PERSTA GmbH are designed according to DIN-Standards, EN-Standards and according to the technical rules like AD the European Pressure Vessel Guideline 97/23/EG and the ASME B16.34 Code.

Design, manufacture and testing of these valves was carried out on condition that the valves are operated under normal operating conditions. Normal operating conditions contain for example the following:

- Operation with liquid or gaseous media, without special corrosive, chemical or abrasive influences
- Frequency of temperature-change of app. 3 – 6 °K per minute
- Usual flow rates, depending on the kind of medium and the range of application of the valve
- Operation without additional outer influences like pipeline-forces, vibrations, wind load stressing, earth-quake, corrosive environment, fire, operation load stressing, disintegration pressure of unstable fluide, etc



If the purchaser expects stresses deviating from the normal operating conditions he has to indicate these requirements unambiguously and completely in the inquiry as well as in the order. This would allow us, as the valve manufacturer, to work out corresponding measures and to suggest them to the customer. These measures could be for example:

- Special choose of the body material
- Higher wall-thickness
- Protection of areas which are endangered by wear
- Special gaskets and bolt connections
- Special operation instructions depending on the medium and the kind of operation
- Special coatings
- Additional equipment to avoid excessive overpressure
- Special design for control operation, etc

During planning and installation of the pipeline the customer should take measures which minimize additional dangers and pressures on the valves, on the piping system and on the environment, for example by:

- Installation of vibration dampers
- Consideration of a security final position in case of breakdown of energy
- Taking measures to ensure the safe drainage of dangerous media in case of leakage, etc

By marking the product with the CE-mark we declare the conformity with the European Pressure Equipment Directive 97/23/EG.

Please see our relevant IOM for further information and warnings which have to be considered for the operation of industrial valves.

Impressum
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▪ High pressure valves ▪ High pressure globe valves

The PERSTA HD 91 and HD 2000
This valves have been developed for use at high pressures. In order to simplify maintenance procedures, the high pressure valve is constructed with a separate body bonnet, so that the complete bonnet can be removed from the body if repairs are necessary. All pressure parts are die-forged. The technical deformation which is applied to the material during the forging process guarantees an optimal fibre run and results in maximum non-deformability and hardness, even under application of different loads.

Body
The body, which is die-forged in one piece, is hard-faced with stellite, fine-polished and lapped (special facings available on request).

Bonnet
Like the body, the bonnet is die-forged in one piece.
It is fitted to the body by means of studs and nuts.
The bonnet holds the threaded bushing with needle bearing which is protected against dirt by a locking cap.

Gland / stuffing box
The gland packing consists of a Ni-Resist support ring and high-pressed, closed pure graphite rings and two special chamber packing rings. The gland packing is tightened by means of a forged gland flange via the separate gland ring. A dirt scraper in the gland flange prevents dirt from the gland section. The eye bolts with extensible shaft transfer the tightening force of the gland directly to the body. Consequently, the screw connection between the body and the bonnet is only responsible for the stop and reaction forces resulting from the stem.

Stem
The one-piece stem with integrated cone is manufactured out of corrosion-resistant Cr-steel. The seat of the cone is hard-faced with stellite at temperatures greater than 1058 °F (570 °C), fine-polished and lapped. The whole stem shaft is polished.

- **High pressure globe valve**
- **200 JM**
- **HD 91**
- **Class 1850**
- **(PN 320)**
- **NPS ⅜ - 2 ½**
- **(DN 10-50/65)**



▪ High pressure globe valve ▪ 200 JM ▪ HD 91
▪ Class 1850 ▪ (PN 320) ▪ NPS 3/8 - 2 1/2 ▪ (DN 10-50/65)

Standard features

- Disc and stem in one piece
- Die-forged valve body
- Non-turning, rising stem
- Position indicator
- Throttle disc
- Yoke sleeve supported by needle bearings
- Possibility to add an actuator-flange

Pressure and temperature ratings

- Up to standard class or special class 1850

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3

Further materials on request.

Media

Depending on the material the globe valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries, power plants

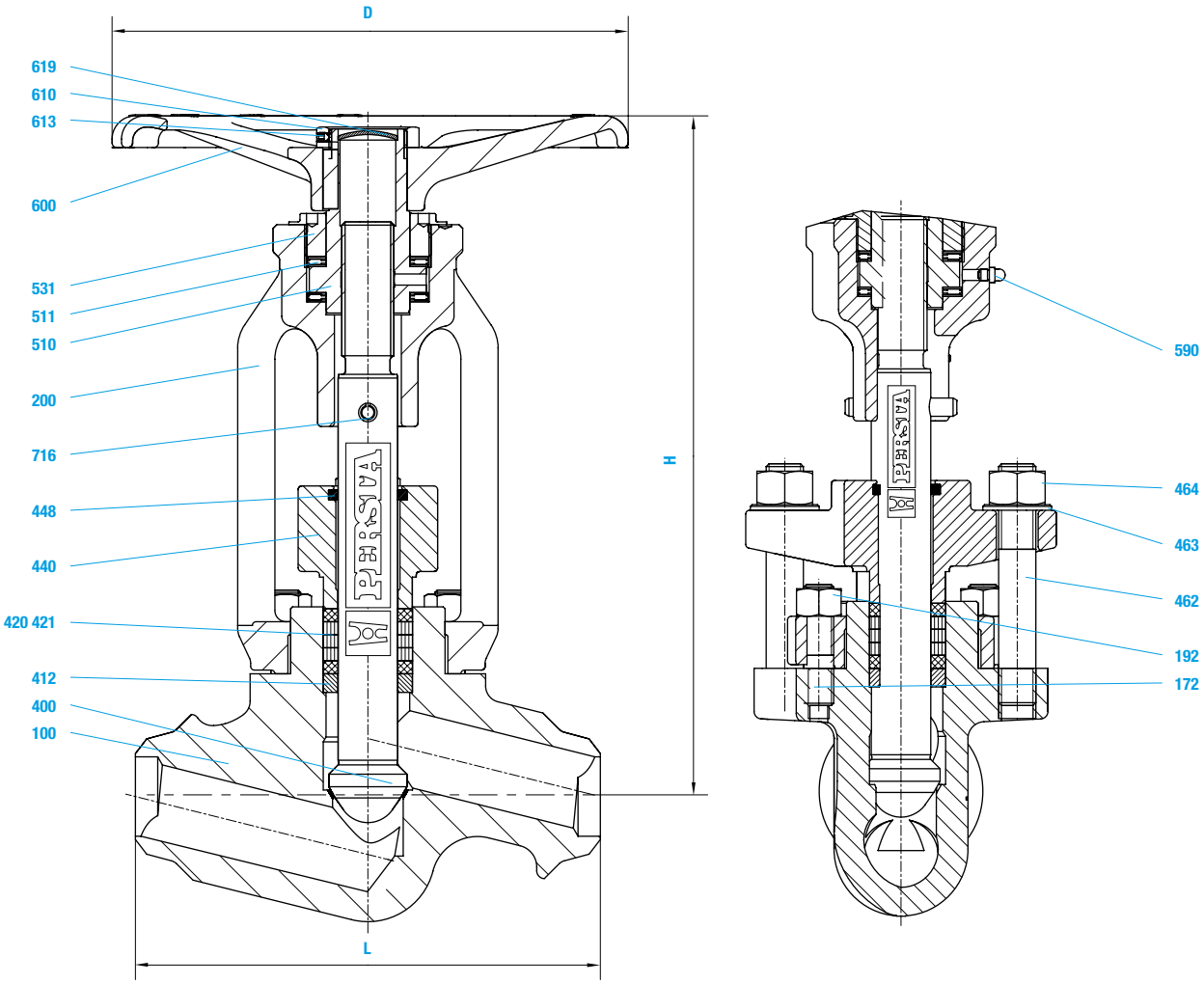
Design Highlights

- Body seat: edge seat welded on integratedly with stellite
- Disc / stem single piece of material > 570 °C with stellited edge seat
- Sealing to the outside only means of the gland packing
- Body and bonnet in two separate pieces with bolted connection
- Yoke sleeve supported by needle bearings (axial type)
- Possibility to add an actuator-flange

Benefits

- No pressed in or screwed seat ring, therefore no crevice corrosion or loosening
- No damages between disc and stem because of high flow velocity
- No bonnet gaskets, therefore reduction of possible leakage areas
- To ease maintenance work, e.g. regrinding of the body seats
- To minimize the expenditure of effort when operating valve
- Simple retrofitting of an electric actuator possible

- **High pressure globe valve** ▪ **200 JM** ▪ **HD 91**
- **Class 1850** ▪ **(PN 320)** ▪ **NPS ³⁄₈ - 2 ¹⁄₂** ▪ **(DN 10-50/65)**



▪ High pressure globe valve ▪ 200 JM ▪ HD 91

▪ Class 1850 ▪ (PN 320) ▪ NPS 3/8 - 2 1/2 ▪ (DN 10-50/65)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3
	welded on with	Stellite	Stellite	Stellite
172	Stud	A 193 B16	A 193 B16	A 193 B16
192	Hexagonal nut	A 194 4	A 194 4	A 194 4
200	Bonnet	1.7379	1.7379	1.7379
400	▸ Stem	1.4122 [1)]	1.4122 [1)]	1.4122 [1)2)]
412	Guide sleeve	0.7660	0.7660	0.7660
420 / 421	▸ Packing	Pure graphite	Pure graphite	Pure graphite [2)]
440	Gland flange	1.7379	1.7379	1.7379
448	▸ Dirt scraper	Graphite plait	Graphite plait	Graphite plait
462	Stud	A 193 B16	A 193 B16	A 193 B16
463	Washer	St	St	St
464	Hexagonal nut	A 194 4	A 194 4	A 194 4
510	▸ Yoke sleeve	CW 713 R	CW 713 R	CW 713 R
510	▸ Yoke sleeve (Handwheel)	1.0718	1.0718	1.0718
511	▸ Bearing	WLSt	WLSt	WLSt
531	Screwing	1.0460	1.0460	1.0460
590	Grease nipple	5.8	5.8	5.8
600	Handwheel	5.3106	5.3106	5.3106
610	Hexagonal nut	St	St	St
613	Screw pin	45H	45H	45H
619	Lock washer	ST	ST	ST
716	▸ Tension pin	1.0904	1.0904	1.0904

▸ Spare parts

1) On request stem in 1.4923 with stellited seats
2) For temperatures > 570 °C stem with stellited seats in 1.4923 and hightemperature-packing

Dimensions

NPS	DN	BW / SW L		H		Stroke		Rotation/ Stroke	D		Flange F ISO 5210
3/8	10	5.9	150.0	8.19	208.0	0.4	10.0	5	5.5	140.0	F07/F10
1/2	15	5.9	150.0	8.19	208.0	0.4	10.0	5	5.5	140.0	F07/F10
3/4	20	6.3	160.0	9.84	250.0	0.6	16.0	8	7.0	180.0	F10
1	25	6.3	160.0	9.84	250.0	0.6	16.0	8	7.0	180.0	F10
1 1/4	32	9.8	250.0	16.34	415.0	1.1	27.0	9	11.0	280.0	F10/F14
1 1/2	40	9.8	250.0	16.34	415.0	1.1	27.0	9	11.0	280.0	F10/F14
2	50	9.8	250.0	16.34	415.0	1.1	27.0	9	11.0	280.0	F10/F14
2 1/2	65/50	9.8	250.0	16.34	415.0	1.1	27.0	9	11.0	280.0	F10/F14

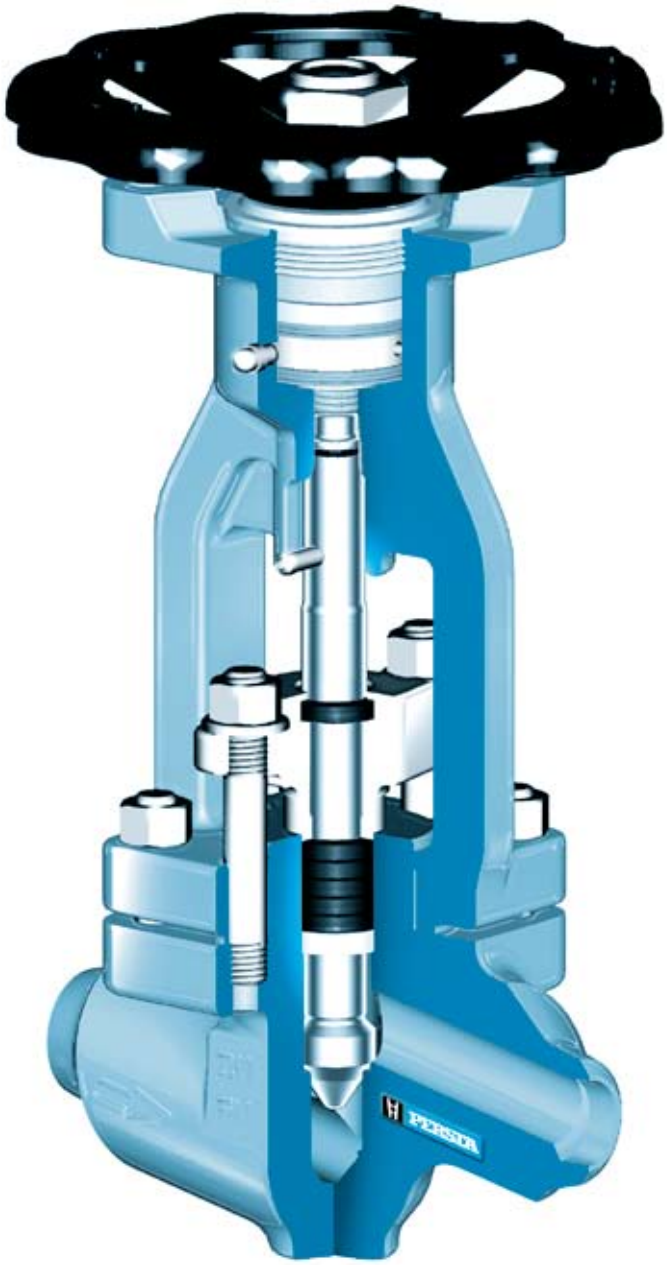
Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

NPS	DN	BW / SW lb	BW / SW kg	Flow Coefficient Cv	Flow Coefficient Kv
3/8	10	8.8	4.0	2.7	2.3
1/2	15	8.8	4.0	4.0	3.4
3/4	20	15.2	6.9	7.3	6.2
1	25	15.2	6.9	9.3	7.9
1 1/4	32	50.7	23.0	17.6	15.0
1 1/2	40	50.7	23.0	21.3	18.1
2	50	50.7	23.0	34.0	28.9
2 1/2	65/50	50.7	23.0	34.0	28.9

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- High pressure globe valve
- 200 LM
- HD 2000
- Class 3200
- (PN 500)
- NPS 3/8 - 2 1/2
- (DN 10-65)



■ High pressure globe valve ■ 200 LM ■ HD 2000
■ Class 3200 ■ (PN 500) ■ NPS 3/8 - 2 1/2 ■ (DN 10-65)

Standard features

- Disc and stem in one piece
- Die-forged valve body
- Non-turning, rising stem
- Position indicator / Anti-rotation device
- Throttle disc
- Yoke sleeve supported by needle bearings
- Greater than NPS 3/4 with integral actuator flange
- Back seat type available (200 LS / 200 LJ)
- All HD 2000 valves also available in angle pattern (e.g. 202 LM)

Pressure and temperature ratings

- Up to standard class or special class 3200
- Socket welding limited to class 2850

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92
- A 182 F347 H

Further materials on request.

Media

Depending on the material the valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers, petrochemical and chemical industries

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Design Highlights

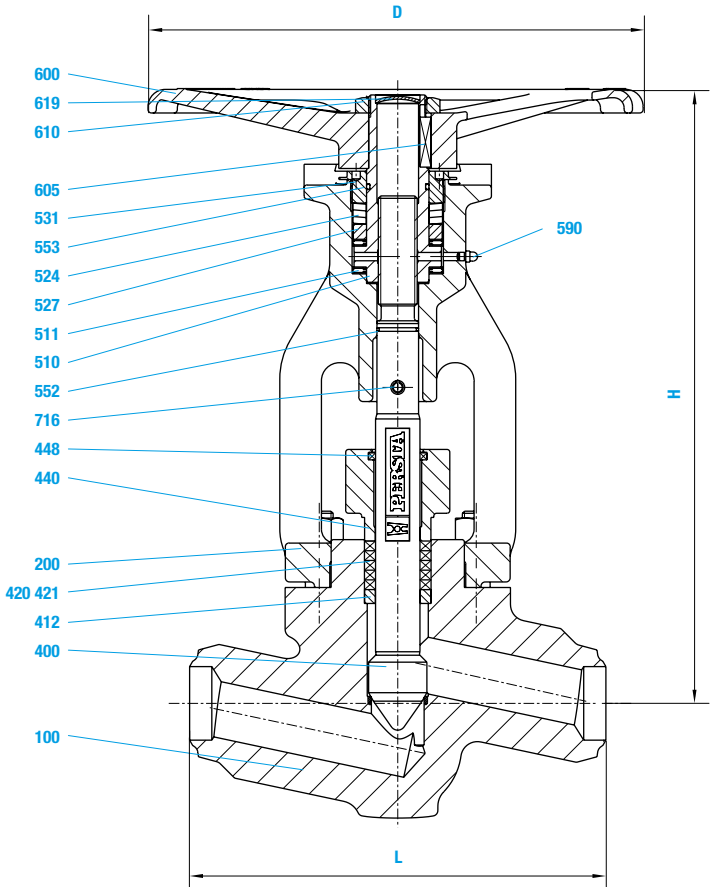
- Body seat: tapered seat welded on integratedly with stellite
- Disc and stem in one piece; up from 570 °C with stellited tapered seat
- Sealing to the outside only by means of the gland packing
- Body and bonnet in two separate pieces with bolted connection
- Yoke sleeve made of bronze
- Cup springs above the upper needle bearing

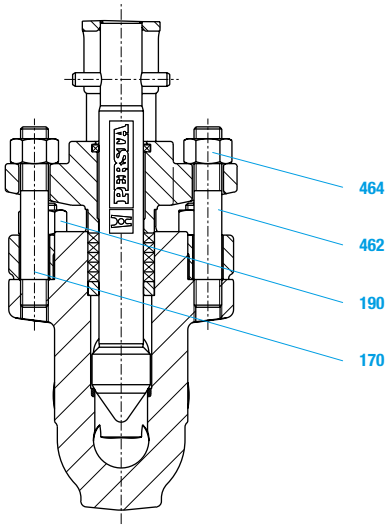
Benefits

- No pressed in or screwed seat ring, therefore no crevice corrosion or loosening
- Damage between disc and stem duo to high flowrates is prevented
- No bonnet gasket, therefore reduction of possible leakage areas
- To ease maintenance work, e.g. regrinding of the body seats
- Good emergency running properties
- To maintain the necessary closing forces when dimensions change between stem and yoke arms due to thermal fluctuation

- Globe valves
- High pressure globe valve HD 2000
- 200 LM
- PN 500
- DN 10-65
- Class 3200
- (PN 500)
- NPS 3/8 - 2 1/2
- (DN 10-65)

200 LM Shut-off globe valve

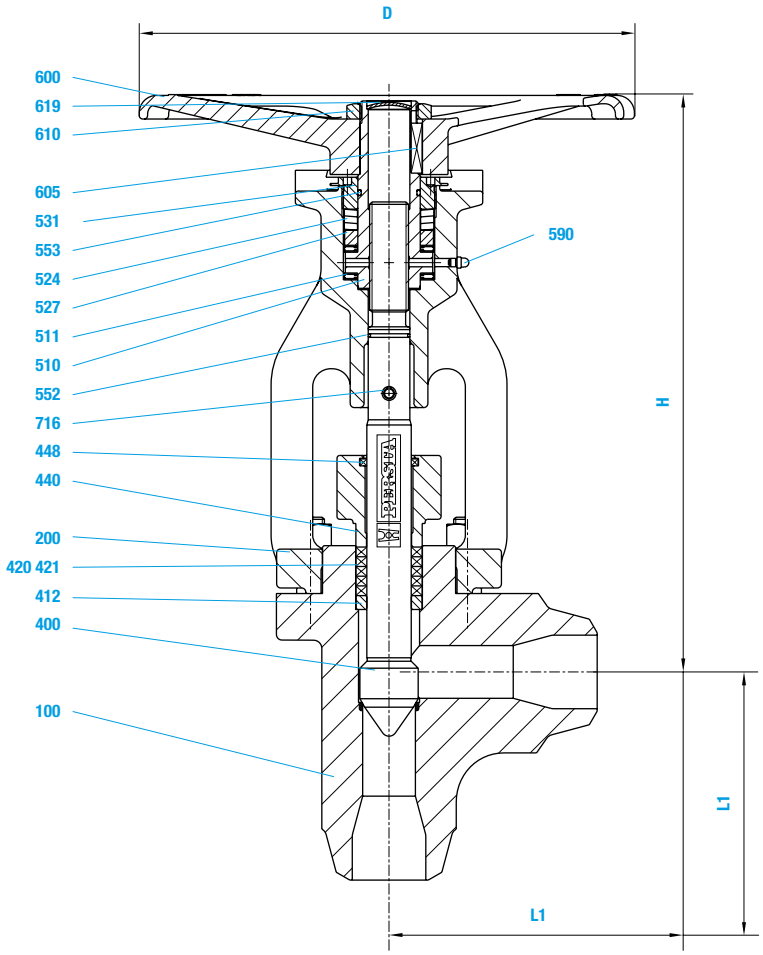




■ Globe valves ■ High pressure globe valve HD 2000 ■ 202 LM ■ PN 500 ■ DN 10-65

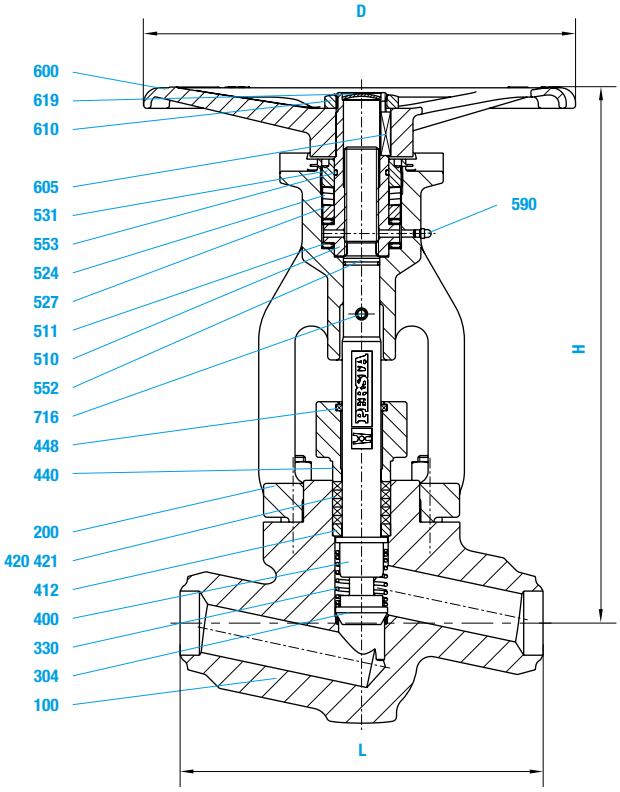
■ Class 3200 ■ (PN 500) ■ NPS 3/8 - 2 1/2 ■ (DN 10-65)

202 LM Shut-off globe valve

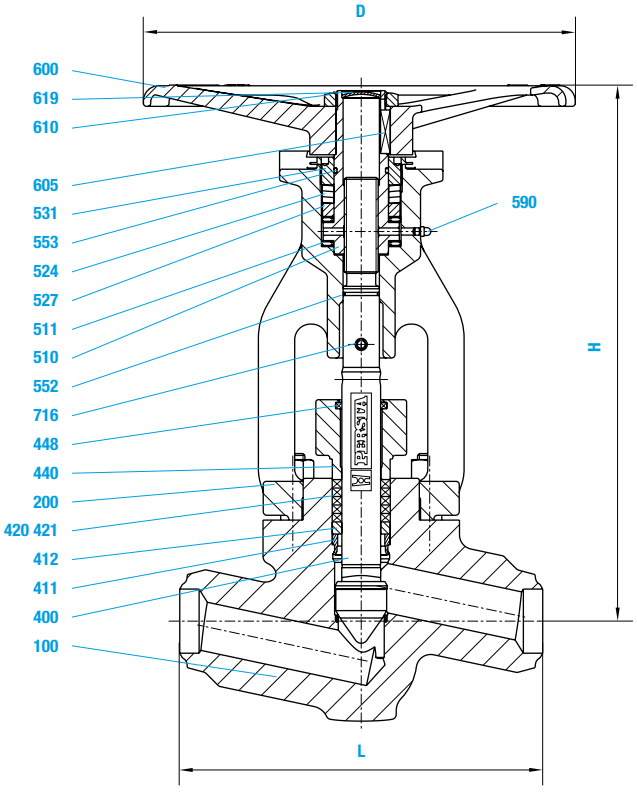


▪ High pressure globe valve ▪ HD 2000 ▪ Class 3200 ▪ (PN 500) ▪ NPS ³/₈ - 2 ¹/₂ ▪ (DN 10-65) ▪ 200 LS ▪ 240 MM ▪ 240 MT ▪ 990 ST

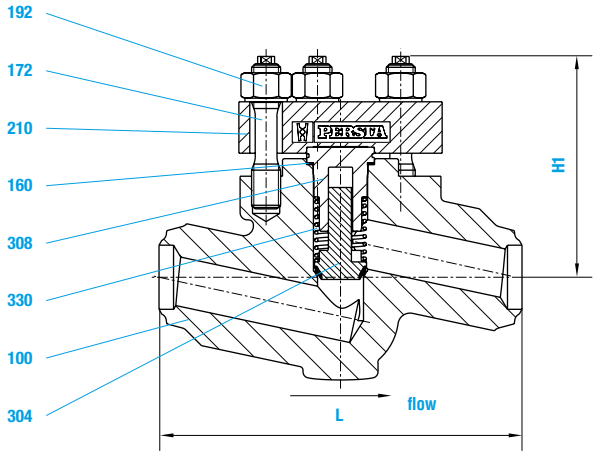
240 MM Stop check valve
also available in angle pattern



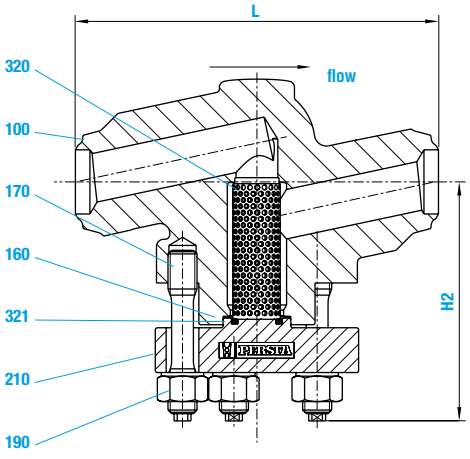
200 LS globe valve with back seat
also available in angle pattern



240 MT Lift check valve
also available in angle pattern



990 ST Strainer
also available in angle pattern



■ High pressure globe valve ■ HD 2000 ■ Class 3200 ■ (PN 500) ■ NPS 3/8 - 2 1/2 ■ (DN 10-65)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)	A 182 F347 H (H9)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92	A 182 F347 H
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
170	Stud	A193 B16	A193 B16	A193 B16	A 193 B16	A 193 B16	A 182 F347 H
172	Stud	A193 B16	A193 B16	A193 B16	A 453 Grade 660	A 453 Grade 660	A 453 Grade 660
190	Hexagonal nut	A 194 4	A 194 4	A 194 4	A 194 4	A 193 B16	A 453 Grade 660
192	Hexagonal nut	A 194 4	A 194 4	A 194 4	A 453 Grade 660	A 453 Grade 660	A 453 Grade 660
200	Bonnet	1.7379	1.7379	1.7379	1.7379	1.7379	1.7379 [3]
210	Cover	A 182 F22	A 182 F22	A 182 F22	A 182 F91	A 182 F92	A 182 F347 H
304	▸ Disc	1.4923	1.4923	1.4923	1.4923	1.4923	1.4980
308	Guide bush	1.4923	1.4923	1.4923	1.4980	1.4980	1.4980
320	▸ Filter cylinder	1.4571	1.4571	1.4571	1.4571	1.4571	1.4571
321	▸ Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
330	Pressure spring	2.4669	2.4669	2.4669	2.4699	2.4699	2.4669
400	▸ Stem	1.4122 [1]	1.4122 [1]	1.4122 [1)2)]	1.4122 [1)2)]	1.4122 [1)2)]	1.4980 [1]
411	Back seat ring	1.4980	1.4980	1.4980	1.4980	1.4980	1.4980
412	Guide sleeve	0.7660	0.7660	0.7660	0.7660	0.7660	0.7660
420	▸ Packing	Pure graphite	Pure graphite	Pure graphite	Pure graphite	Pure graphite	Pure graphite
421	▸ Thrust ring	Pure graphite	Pure graphite	Pure graphite	Pure graphite	Pure graphite	Pure graphite
440	Gland flange	1.7379	1.7379	1.7379	1.7379	1.7379	1.7379 [3]
448	▸ Dirt scraper	Graphite plait	Graphite plait	Graphite plait	Graphite plait	Graphite plait	Graphite plait
462	Stud	A 193 B16	A 193 B16	A 193 B16	A 193 B16	A 453 Grade 660	A 453 Grade 660
464	Hexagonal nut	A 194 4	A 194 4	A 194 4	A 194 4	A 453 Grade 660	A 453 Grade 660
510	▸ Yoke sleeve	CW 713 R	CW 713 R	CW 713 R	CW 713 R	CW 713 R	CW 713 R
511	▸ Bearing	WLSt	WLSt	WLSt	WLSt	WLSt	WLSt
524	Spring	1.8159	1.8159	1.8159	1.8159	1.8159	1.8159
527	Supporting ring	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021
531	Screwing	1.0460	1.0460	1.0460	1.0460	1.4122	1.0460
552	▸ O-Ring	Viton	Viton	Viton	Viton	Viton	Viton
553	▸ O-Ring	Viton	Viton	Viton	Viton	Viton	Viton
590	Grease nipple	5.8	5.8	5.8	5.8	5.8	5.8
600	Handwheel	5.3106	5.3106	5.3106	5.3106	5.3106	5.3106
605	Key	1.0060	1.0060	1.0060	1.0060	1.0060	1.0060
610	Hexagonal nut	St	St	St	St	St	St
619	Lock washer	St	St	St	St	St	St
716	Tension pin	1.0904	1.0904	1.0904	1.0904	1.0904	1.0904

▸ Spare parts

1) On request stem with stellited seats 2) For temperatures > 570 °C stem with stellited seats in 1.4980 and hightemperature-packing. 3) Nickel plated

Dimensions

NPS	DN	BW / SW L		L1		H		H1		H2		Rotation/ Stroke		Stroke	D		Flange F DIN/ISO 5210
3/8	10	5.9	150.0	3.0	75.0	9.0	228.0	3.9	99.0	3.9	100.0	0.4	10.0	5	5.5	140.0	F07
1/2	15	5.9	150.0	3.0	75.0	9.0	228.0	3.9	99.0	3.9	100.0	0.4	10.0	5	5.5	140.0	F07
3/4	20	7.1	180.0	3.5	90.0	11.0	280.0	4.8	122.0	5.0	127.0	0.6	16.0	8	8.9	225.0	F10
1	25	7.1	180.0	3.5	90.0	11.0	280.0	4.8	122.0	5.0	127.0	0.6	16.0	8	8.9	225.0	F10
1 1/4	32	11.8	300.0	3.9	150.0	17.5	445.0	7.2	182.0	7.8	198.0	1.1	27.0	9	14.2	360.0	F10/F14
1 1/2	40	11.8	300.0	5.9	150.0	17.5	445.0	7.2	182.0	7.8	198.0	1.1	27.0	9	14.2	360.0	F10/F14
2	50	11.8	300.0	5.9	150.0	17.5	445.0	7.2	182.0	7.8	198.0	1.1	27.0	9	14.2	360.0	F10/F14
2 1/2	65	11.8	360.0	7.9	200.0	17.5	591.0	8.2	208.0	9.9	251.0	1.4	36.0	12	17,7	450.0	F14/F16

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient BW / SW

NPS	DN	200 LM / LS / 240 MM lb	kg	Cv	Kv	240 MT lb	kg	990 ST lb	kg
3/8	10	13.2	6.0	2.7	2.3	8.4	3.8	8.1	3.7
1/2	15	13.2	6.0	4.0	3.4	8.4	3.8	8.1	3,7
3/4	20	25.4	11.5	7.3	6.2	17.4	7.9	16.8	7.6
1	25	24.9	11.3	9.3	7.9	17.0	7.7	16.3	7.4
1 1/4	32	104.7	47.5	17.6	20.0	67.2	30.5	65.7	29.8
1 1/2	40	103.6	47.0	21.3	18.1	66.1	30.0	64.6	29.3
2	50	102.5	46.5	34.0	28.9	65.0	29.5	63.5	28.8
2 1/2	65	236.0	107.0	48.5	28.9	158.7	72.0	143.3	65.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- Gate valve ▪ 700 HJ / JJ ▪ S 2000
- Class 600 ▪ (PN 100) ▪ NPS 2 - 6 ▪ (DN 50-150)





▪ Gate valve ▪ 700 HJ / JJ ▪ S 2000
▪ Class 600 ▪ (PN 100) ▪ NPS 2 - 6 ▪ (DN 50-150)

Standard features

- Split disc gate valve / 2 disc-design = Type JJ
- Wedge gate valve / Flexible wedge design = Type HJ
- Die-forged body and bonnet
- Full bore, exception NPS 2 1/2 and NPS 5
- Outside screw and yoke
- Non turning, rising stem
- Yoke sleeve
- Available with flange and buttweld ends

Option standard features GA

- Wedge gate valve / Flexible wedge design
- Inside screw
- Non-rising turning stem

Pressure and temperature ratings

- Up to standard or special class 600

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3

Further materials on request.

Media

Depending on the material the gate valves are suitable for water, gas, oil and other non aggressive media

Fields of application

Chemical industries, power plants, ship building and other

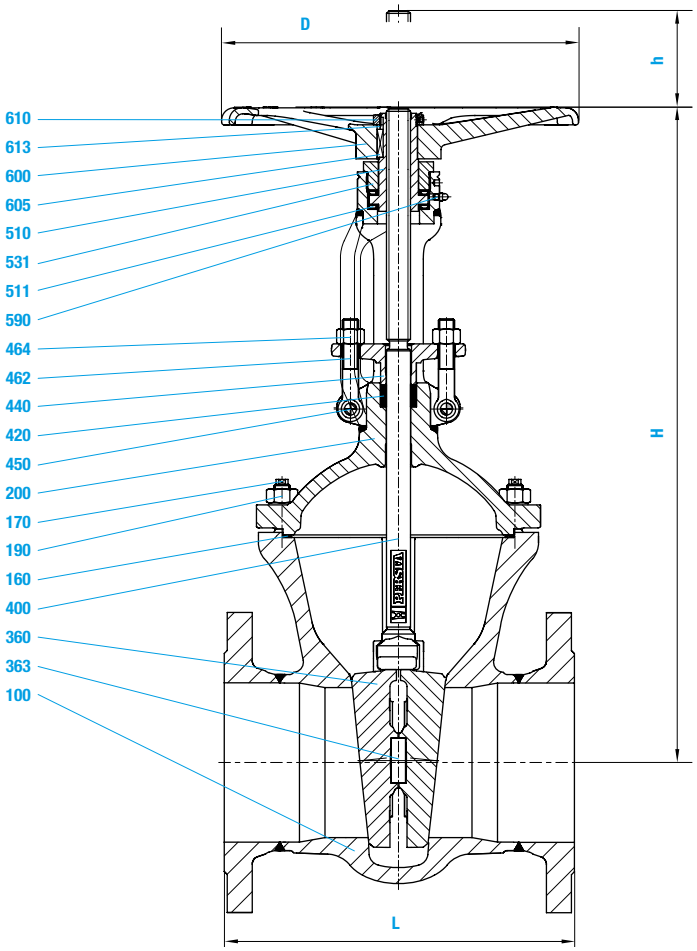
Design Highlights

- The main valve body is one-piece die-forged incorporating the bonnet flange and the guide for the shut-off device
- Hard faced seats (valve body and shut-off device). Hardness app. 35-37 HRC
- Bolted bonnet with reduced shaft bolts
- Full bore, except NPS 2 1/2 and NPS 5
- Non - turning rising stem
- Type GA, turning non-rising stem

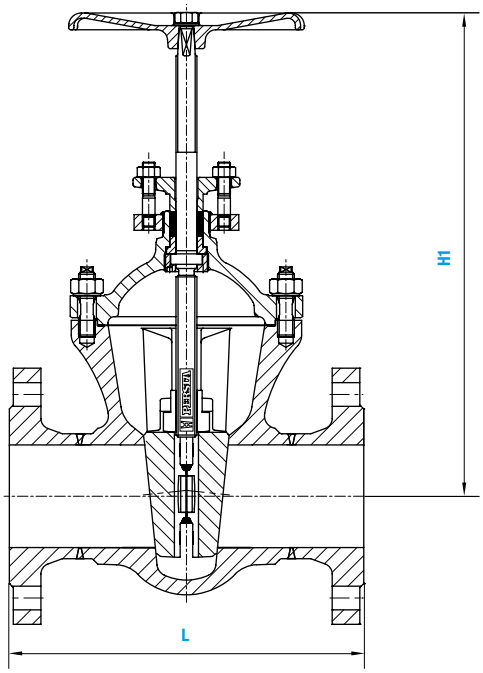
Benefits

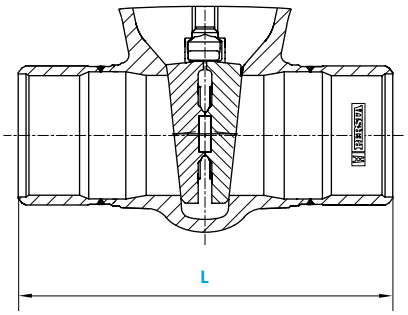
- Die-forged parts, compared with cast steel parts are generally free from porosity and shrink holes. The special of the valve body minimizes the existance of welding seams
- Extremely resistant to wear
- To improve the stress capability when temperature and pressure fluctuate
- No reduction in seat area
- Minimum wear to the gland packing compared with ground stem surfaces
- Small dimensions

- Gate valve ▪ 700 HJ / JJ ▪ S 2000
- Class 600 ▪ (PN 100) ▪ NPS 2 - 6 ▪ (DN 50-150)



700 GA





▪ Gate valve ▪ 700 HJ / JJ ▪ S 2000

▪ Class 600 ▪ (PN 100) ▪ NPS 2 - 6 ▪ (DN 50-150)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)
100	Body	A 105 [1]	A 182 F12 Cl.2 [2]	A 182 F22 Cl.3 [2]
160	▸ Gasket	Graphite [4]	Graphite [4]	Graphite [4]
170	Stud	A 193 B7	A 193 B7	A 193 B7
190	Hexagonal nut	A 193 2H	A 194 2H	A 194 2H
200	Bonnet	1.0460	A 182 F12 Cl.2	A 193 B7
360	▸ Disc	A 105 [3]	A 182 F12 Cl.2 [2]	A 182 F22 Cl.3
363	Pressure piece	1.4021	1.4021	A 182 F22 Cl.3 [2]
400	▸ Stem	1.4021	1.4122	1.4122
420	▸ Packing	Graphite	Graphite	Graphite
440	Gland flange	1.0460	1.0460	1.0460
450	Grooved pin	St	St	St
462	Eye bolt	1.1181	A 193 B7	A 193 B7
464	Hexagonal nut	1.1181	A 194 2H	A 194 2H
510	▸ Yoke sleeve	1.0718	1.0718	1.0718
511	▸ Bearing	WLSt	WLSt	WLSt
531	Screwing	1.0718	1.0718	1.0718
590	Grease nipple	5.8	5.8	5.8
600	Handwheel	5.3106	5.3106	5.3106
605	Key	1.0060	1.0060	1.0060
610	Hexagonal nut	St	St	St
613	Screw pin	45H	45H	45H

▸ Spare parts

1) Welded on with Cr17
2) Welded on with Stellite
3) Welded on with 18/8
4) DN 150 grooved with graphite layer

Dimensions

NPS	DN	BW L		RF L1		H (closed)		H1 (open)		rotation/ stroke	D	
2	50	11.5	292.1	11.5	292.1	13.3	337.0	15.8	400.0	15	7.1	180.0
2 1/2	65/50	13.0	330.2	13.0	330.2	13.3	337.0	15.8	400.0	15	7.1	180.0
3	80	14.0	355.6	14.0	355.6	16.1	410.0	19.7	500.0	22	8.9	225.0
4	100	17.0	431.8	17.0	431.8	19.9	505.0	24.2	615.0	22	14.2	360.0
5	125/100	20.0	508.0	20.0	508.0	19.9	505.0	24.2	615.0	22	14.2	360.0
6	150	22.0	558.8	22.0	558.8	27.0	685.0	33.5	850.0	27.5	14.2	360.0

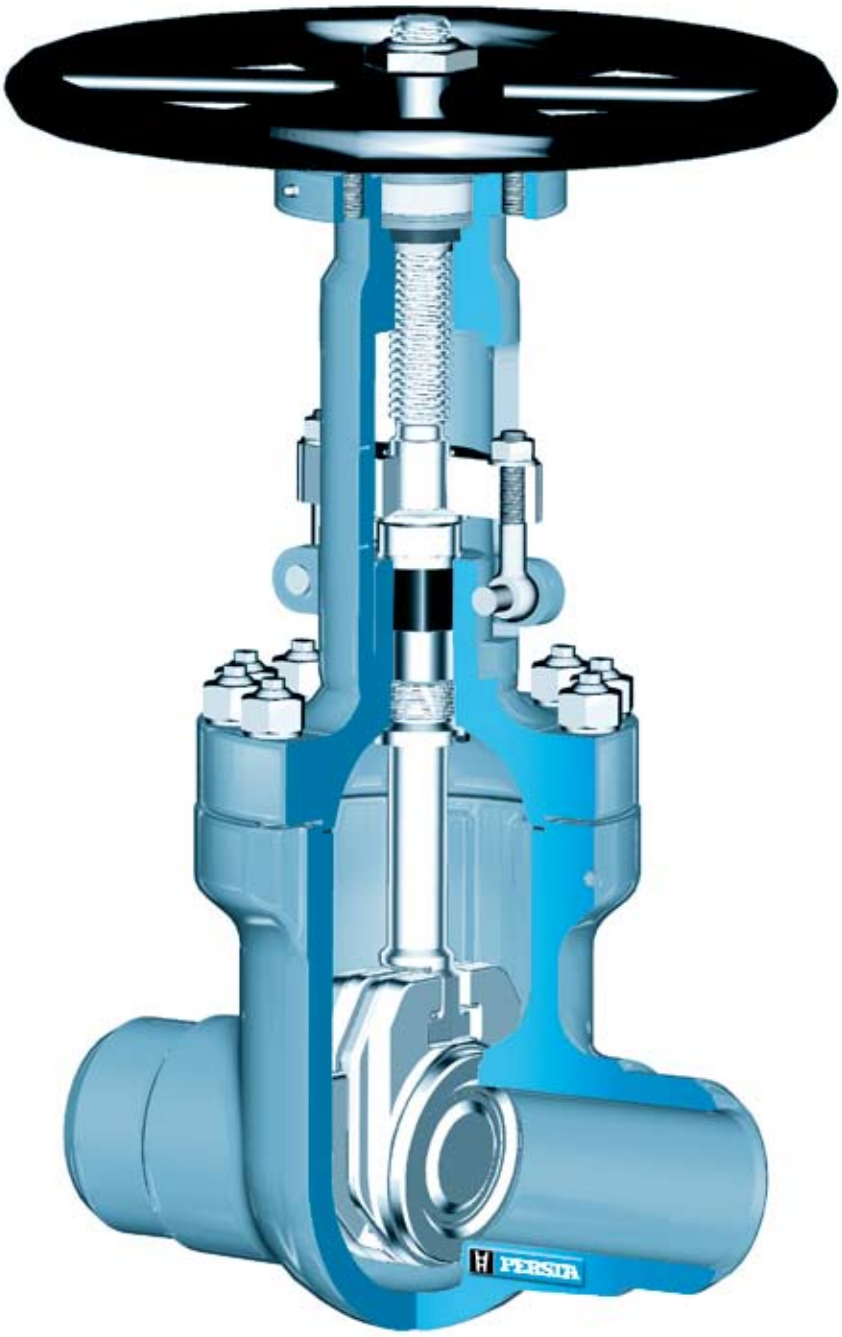
Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

NPS	DN	BW lb	BW kg	RF lb	RF kg	Flow Coefficient Cv	Flow Coefficient Kv
2	50	34.2	15.5	58.4	26.5	304	258
2 1/2	65/50	35.3	16.0	67.2	30.5	304	258
3	80	68.3	31.0	99.2	45.0	739	628
4	100	103.6	47.0	156.5	71.0	1166	991
5	125/100	108.0	49.0	196.2	89.0	1166	991
6	150	220.5	100.0	341.7	155.0	2733	2323

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- Gate valve ▪ 700 JJ ▪ (PD 18)
- Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)



▪ Gate valve ▪ 700 JJ ▪ (PD 18)
▪ Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)

Standard features

- Die-forged body
- Split disc type
- Incorporated seats
- Outside screw
- Gasket located in a groove
- Yoke sleeve with needle bearings
- Universal valve head for mounting actuators

Media

Depending on the material the gate valves are suitable for water, gas, oil and other non aggressive medi

Fields of application

Chemical industries, power plants, ship building and other

Pressure and temperature ratings

- Up to standard class or special class 900

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3

Further materials on request.

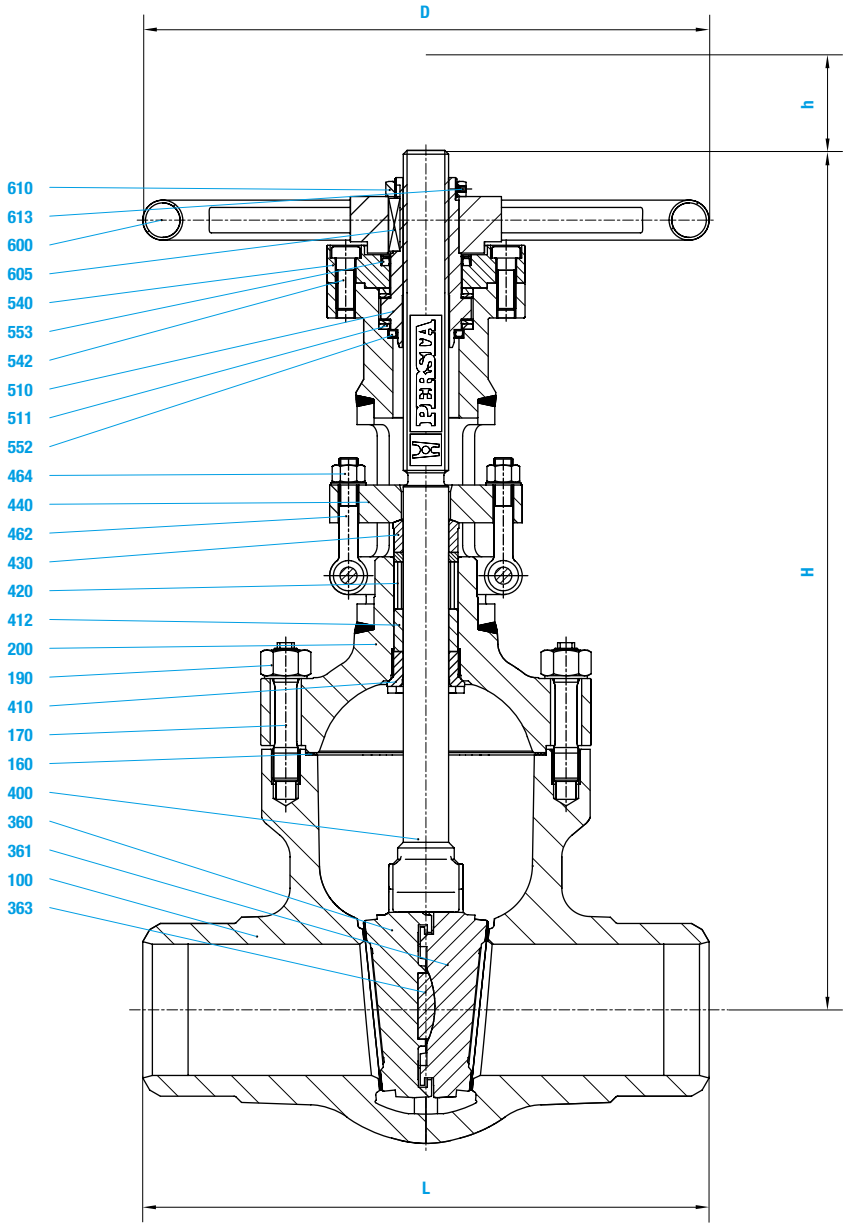
Design Highlights

- Die-forged valve body with incorporated seats
- Seats and disc faced with stellite
- Non-rising handwheel
- Non-turning, rising stem and burnished stem
- Hammer head connection between wedge and stem
- Gland ring and gland flange in two separate pieces
- Yoke sleeve supported at the top and at the bottom by means of needle bearings (axial type)
- Valve head equipped with dirt scrapers below and above the bearings

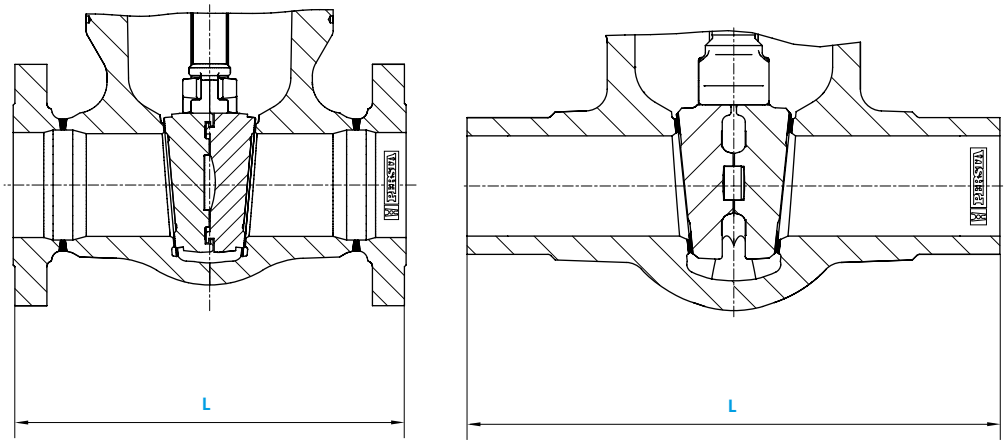
Benefits

- Free from porosity and shrink holes
- Best possible sliding performance, minimum wear
- Small dimensions
- Minimum wear to the gland packing
- The wedges are able to move parallel to the axis of the pipeline within the guiding groove. This protects the stem against bending moments
- Damage to the stem by irregular tightening of gland bolts is avoided
- To minimize the expenditure of effort when opening and closing the valve
- To protect against dirt and to avoid the loss of lubricants

- Gate valve ▪ 700 JJ ▪ (PD 18)
- Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)



Version DN 50 - 80



▪ Gate valve ▪ 700 JJ ▪ (PD 18)

▪ Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)
100	Body	A 105 1)	A 182 F12 Cl.2 1)	A 182 F22 Cl.3 1)
160	▸ Gasket	Grooved with graphite layer	Grooved with graphite layer	Grooved with graphite layer
170	Stud	A 193 B7	A 193 B7	A 193 B7
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H
200	Bonnet	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3
360 / 361	▸ Disc	A 182 F22 Cl.3 1)	A 182 F22 Cl.3 1)	A 182 F22 Cl.3 1)
363	▸ Pressure piece	1.4122	1.4122	1.4122
400	▸ Stem	1.4923	1.4923	1.4923
410	Back seat bushing	1.4006	1.4006	1.4006
412	Guide sleeve	1.0718	1.0718	1.0718
420	▸ Packing	Graphite	Graphite	Graphite
430	Gland ring	1.5415	1.5415	1.5415
440	Gland flange	1.5415	1.5415	1.5415
462	Eye bolt	A 193 B7	A 193 B7	A 193 B7
464	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H
510	▸ Yoke sleeve	CW 713 R	CW 713 R	CW 713 R
511	▸ Bearing	WLSt	WLSt	WLSt
540	Flange	1.0425	1.0460	1.0460
542	Headcap screw	8.8	8.8	8.8
552 / 553	▸ Gasket	NBR	Viton	Viton
600	Handwheel	St	St	St
605	Key	1.0060	1.0060	1.0060
610	Hexagonal nut	St	St	St
613	Screw pin	45H	45H	45H

▸ Spare parts

1) Welded on with Stellite

Dimensions

NPS	DN	BW L		RF L1		H (closed)		H1 (open)		rotation/ stroke	D		Flange F DIN/ISO 5210
2	50	8.5	215.9	14.5	368.3	19.3	490.0	22.4	570.0	16.0	14.2	360.0	F10
2 1/2	65 / 50	10.0	254.0	16.5	419.1	19.3	490.0	22.4	570.0	16.0	14.2	360.0	F10
3	80	12.0	304.8	15.0	381.0	24.0	610.0	28.4	720.0	18.0	15.7	400.0	F14
4	100	14.0	355.6	18.0	457.2	27.4	695.0	32.7	830.0	18.0	19.7	500.0	F14
5	125 / 100	17.0	431.8	22.0	558.8	27.4	695.0	32.7	830.0	22.0	19.7	500.0	F14
6	150	20.0	508.0	24.0	609.6	35.0	890.0	41.7	1060.0	21.0	31.5	800.0	F16
8	200	26.0	660.4	29.0	736.6	42.9	1090.0	51.8	1315.0	25.0	39.4	1000.0	F25
10	250	31.0	787.4	33.0	838.2	50.2	1275.0	60.8	1545.0	29.5	39.4	1000.0	F25

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

NPS	DN	BW lb	BW kg	RF lb	RF kg	Flow Coefficient Cv	Flow Coefficient Kv
2	50	99.2	45.0	14.5	368.3	268.2	228.0
2 1/2	65 / 50	114.6	52.0	16.5	419.1	268.2	228.0
3	80	220.5	100.0	15.0	381.0	664.7	565.0
4	100	275.6	125.0	18.0	457.2	1094.1	930.0
5	125 / 100	286.6	130.0	22.0	558.8	1094.1	930.0
6	150	595.2	270.0	24.0	609.6	2347.1	1995.0
8	200	1146.4	520.0	29.0	736.6	4068.2	3458.0
10	250	2050.3	930.0	33.0	838.2	6314.1	5367.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- **High pressure gate valve**
- **Design Highlights**

Body
As a pressure-retaining component, the body, including the bonnet, determines the ranges in which the valves can be used. The demand for valves to withstand higher pressure and temperatures calls for special materials and production processes. In high-pressure applications, pressure ratings, nominal sizes and quantities require different production processes which take account of different conditions of use. Designs therefore vary according to the particular applications.

PERSTA forged valve bodies, particularly those designed for power stations, are die-forged or produced as open-die forgings which are then machined. Specific rolling and forming processes give the parts and dense, uniform, fine-structure with no bubbles or pores, and with a grain orientation that is ideal for their intended use.

The modern production methods have increased the use of forged steel for high-pressure applications. However, the development of die-forged bodies has been restricted by the high forming forces and the associated size and cost of the forgings. Machined open-die forgings are therefore used for large bodies.

For PERSTA high pressure valves the following production methods proved excellent results:

1. Hollow one-piece-forgings, mainly for valve bodies in the DRA, DRI, DSK, DVA, range, NPS 2 ½ - 16. Connecting flanges or butt-welding ends are welded on with a circumferential seam.

2. Bodies for gate valves and swing check valves in the DSK 27 range, NPS 2 ½ - 24 are produced as solid, open-die forgings which are then machined. Valves are subjected to stress in the following ways:
   - mechanically by
     - operating pressure
     - operating temperature
     - temperature gradients during starting up and shut down
     - erosion and cavitation by the medium
   - due to the forces exerted by the connected pipes, fastening devices and the weight of mechanical actuators, and
   - chemically
     - due to corrosion

In PERSTA valve bodies, thermal stress is limited by smooth transitions between different wall thicknesses.

Gate valves are sealed on the downstream side of the body. The required sealing force is provided by the medium by means of the differential pressure. For pressure ratings class 900 - 4500, PERSTA DSK 27 gate valves are fitted with a mechanical stembarel stop to limit the stress on the stems and the sealing faces caused by the actuation forces.

Ledges or grooves are guiding the wedge or the split wedge in the body after about 10 % of the opening lift. The forces which have to be absorbed from the guides are relatively low because there has already been a large degree of pressure compensation at this point.

The weld seams are designed for easy radiographic or ultrasonic testing.

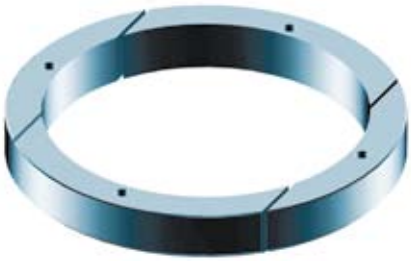
All PERSTA gate valves and swing check valves can be delivered with buttwelding ends to match the corresponding material and pipe diameter.

Stem sealing
The gland packing seals the stem guide onto outside. Operational demands of this sealing arise by reason of stem travel, pressure and friction at the gland packing, by thermal cycle stress and by the medium. The design of the gland follower resp. gland ring assures a smooth contact pressure of the packing rings even in the case of an easily irregular tightening of the gland bolts and prevents a seizing of the stem.

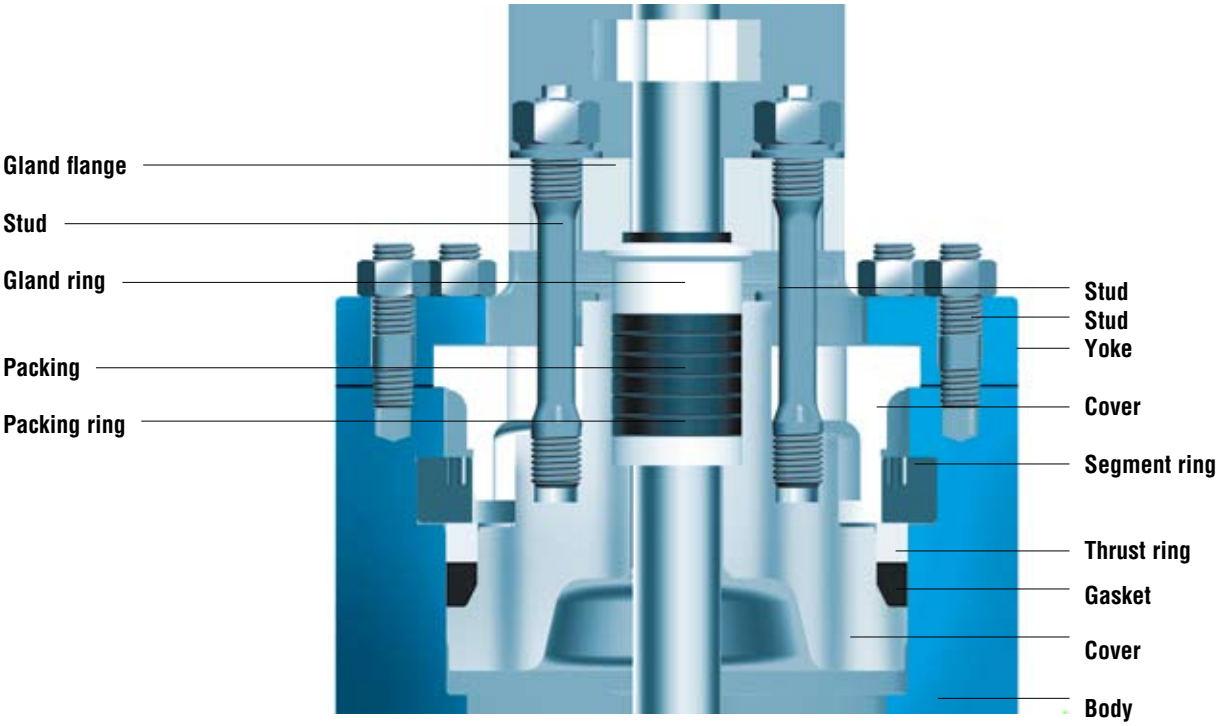
Mode of operation
A power applied by the stud bolts onto the gland follower will be transmitted via the gland ring resp. chamber ring to the packing rings. Thereby the packing rings are compressed. Upcoming surface pressure towards the wall of the stuffing box chamber and towards the stem surface tightens against the medium.

Pressure seal bonnet

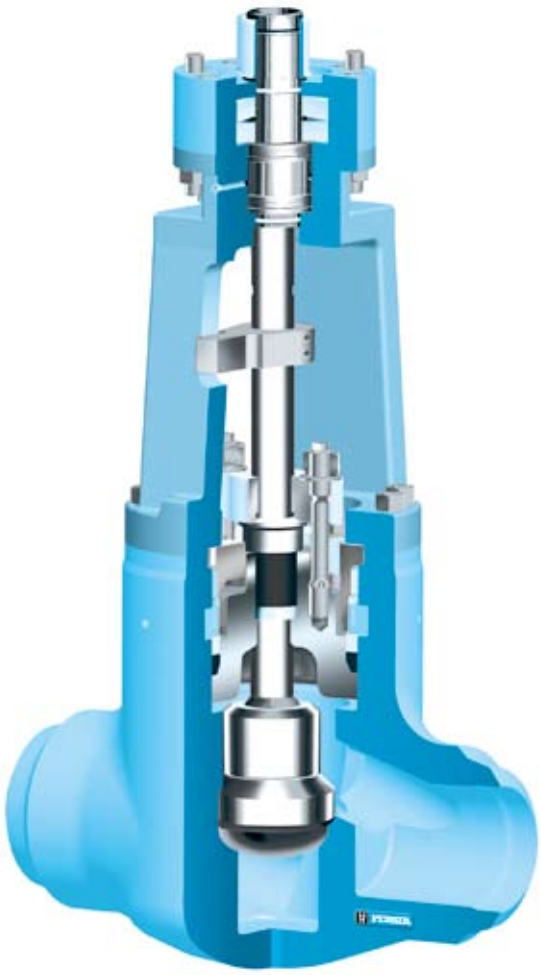
Operating characteristics:
An axial force which increases as the internal pressure increases is applied to the elastic gasket. This force compresses the elastic gasket which deforms radially and axially. In the radial direction it is pressed against the wall of the body and the cover, thus achieving the required surface pressure and associated sealing force. The ring on the gasket absorbs axial force and transfers it to the segment ring. The segment ring is fitted in a groove in the body, thus transferring the axial force to the body. The segment ring consisting of four parts is held in the groove by the centring cover. The cover is pre-stressed by studs so that the gasket is deformed and the sealing effect achieved even when the internal pressure is low. Moreover the cover is centered by means of the supporting cap.



Segment ring



- High pressure globe valve DVA 25 / DVA 40 ▪ 200 BZ
- Class 1500 - 2500 ▪ (PN 250 - 420) ▪ NPS 3 - 10 ▪ (DN 80-250)



▪ High pressure globe valve DVA 25 / DVA 40 ▪ 200 BZ
▪ Class 1500 - 2500 ▪ (PN 250 - 420) ▪ NPS 3 - 10 ▪ (DN 80-250)

Standard features

- Straight pattern
- Die-forged valve body and bonnet
- Pressure sealing bonnet acc. to VGB-guidelines
- Throttle disc
- Body seat welded on integratedly
- Outside screw and yoke
- Position indicator / Anti-rotation device
- Yoke sleeve supported at the top and the bottom by means of needle bearings
- Non-turning, rising stem
- Universal valve head for mounting actuators

Pressure and temperature ratings

- Up to standard class or special class 2500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials and sizes on request.

Media

Depending on the material the globe valves are suitable for water, gas, oil and other non aggressive media

Fields of application

Chemical industries, industries and power plant.

Design Highlights

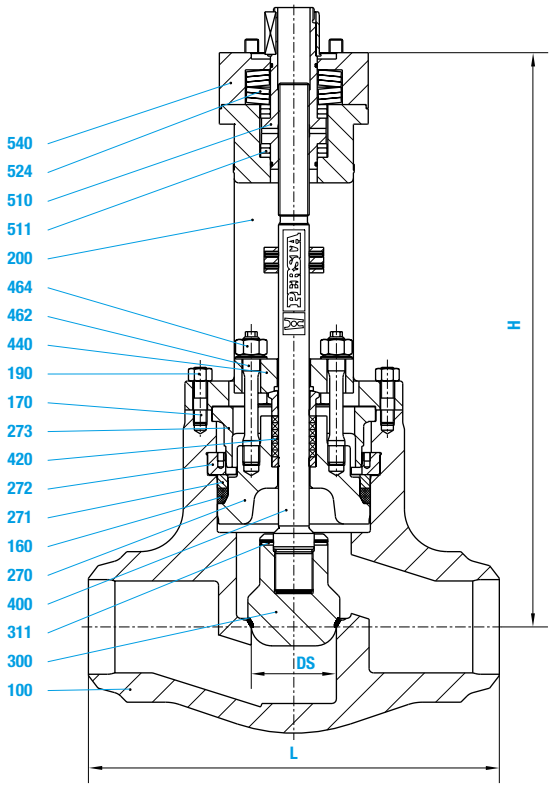
- Die-forged body and bonnet
- Pressure sealing bonnet
- Body seat welded on integratedly with stellite
- Extended bonnet
- Outside located anti twist device
- Non-turning, rising stem
- Gland flange and gland ring in two separate pieces
- Yoke sleeve supported by needle bearings
- Cup springs above the upper needle bearing

Benefits

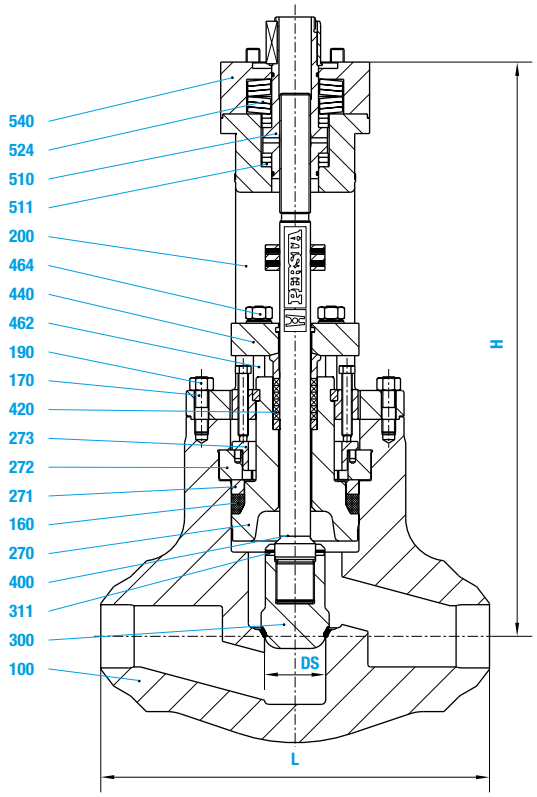
- Free from porosity and shrink holes
- Best possible sealing function
- Extremely resistant to wear
- To reduce temperatures
- Usable as position indicator
- Minimum packing wear
- Damage to the stem by irregular tightening of gland bolts is avoided
- To minimize the expenditure of effort when operating the valve
- To maintain the necessary closing forces at elongation changes between stem and yoke arms due to thermal changes. Also to protect against excess torsion when electric actuators are fitted.

- High pressure globe valve DVA 25 / DVA 40 ▪ 200 BZ
- Class 1500 - 2500 ▪ (PN 250 - 420) ▪ NPS 3 - 10 ▪ (DN 80-250)

DVA 25 ▪ Class 1500 ▪ NPS 3 - 10



DVA 40 ▪ Class 2500 ▪ NPS 3 - 8



▪ High pressure globe valve DVA 25 / DVA 40 ▪ 200 BZ

▪ Class 1500 - 2500 ▪ (PN 250 - 420) ▪ NPS 3 - 10 ▪ (DN 80-250)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
170	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4	A 194 4
200	Bonnet	1.7379	1.7379	1.7379	1.7379	1.7379
270	Cover	A 182 F22	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
271	Thrust ring	A 182 F22	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
272	Segmentring	A 182 F22	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
273	Cover	1.5419	1.5419	1.5419	1.5419	1.5419
300	▸ Disc	A 182 F91	A 182 F91	A 182 F91	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
311	Grooved pin	1.4571	1.4571	1.4571	1.4571	1.4571
400	▸ Stem	1.4122	1.4122	1.4122	1.4923	1.4980
400	▸ Stem up to 500 °C		1.4980*	1.4980	1.4980	
420	▸ Packing	Graphite	Graphite	Graphite	Graphite	Graphite
440	Gland flange	1.7380	1.7380	1.7380	1.7380	1.7380
462	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
464	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4	A 194 4
510	▸ Yoke sleeve	CW713R	CW713R	CW713R	CW713R	CW713R
511	▸ Bearing	WLSt	WLSt	WLSt	WLSt	WLSt
524	Spring	Spring Steel	Spring Steel	Spring Steel	Spring Steel	Spring Steel
540	Flange	1.0460	1.0460	1.0460	1.0460	1.0460

▸ Spare parts

* Class 1500 up to DN 150
* Class 2500 up to DN 125

Dimensions

Class 1500 NPS	DN	DS		BW L	H (closed)			stroke	rotation/ stroke	Flange F DIN/ISO 5210
3	80	64	12.0	304.8	17.7	450.0	1.3	32.0	11	F10 (F14)
4	100	82	16.0	406.4	22.6	575.0	1.7	42.0	14	F14
5	125	100	19.0	482.6	26.6	675.0	2.0	51.0	17	F14 (F16)
6	150	122	22.0	558.8	31.5	800.0	2.4	62.0	21	F16 (F25)
8	200	160	28.0	711.2	37.4	950.0	3.2	82.0	27	F25 (F30)
10	250	190	34.0	863.6	42.3	1075.0	3,7	96.0	24	F30 (F35)
3										

Class 2500 NPS	DN	DS		BW L	H (closed)			stroke	rotation/ stroke	Flange F DIN/ISO 5210
3	80	57	14.5	368.3	22.6	575.0	1.1	28.0	9	F14
4	100	72	18.0	457.2	26.6	675.0	1.5	38.0	13	F14 (F16)
5	125	90	21.0	533.4	31.5	800.0	1.8	45.0	15	F16 (F25)
6	150	111	24.0	609.6	37.4	950.0	2.2	57.0	19	F25 (F30)
8	200	146	30.0	762.0	42.3	1075.0	3.0	75.0	19	F30 (F35)

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

Class 1500 NPS	DN		lb	kg	Flow Coefficient Cv	Kv
3	80		152	69	83	71
4	100		291	132	111	95
5	125		440	200	164	141
6	150		833	378	245	210
8	200		1355	615	425	363
10	250		2469	1120	597	510

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

Class 2500 NPS	DN		lb	kg	Flow Coefficient Cv	Kv
3	80		319	145	53	45
4	100		496	225	85	73
5	125		947	430	133	114
6	150		1576	715	208	178
8	200		2513	1140	351	300

Black in inches,lb,Us gal/min. Blue in mm, kg, m^3/h

- High pressure gate valve
- 700 JT
- DSK 10
- Class 725
- (PN 100)
- NPS 14 - 28
- (DN 350-700)



▪ High pressure gate valve ▪ 700 JT ▪ DSK 10
▪ Class 725 ▪ (PN 100) ▪ NPS 14 - 28 ▪ (DN 350-700)

Standard features

- Split disc gate valve
- Outside screw and yoke
- Non-turning, rising stem
- Yoke sleeve supported by needle bearings
- Pressure sealing bonnet acc. VGB-guidelines
- Easy assembly of an E-actuator

Pressure and temperature ratings

- Design acc. ASME B31.3 - 304.7.2
  max. rating similate to standard class 725

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91

Further materials on request.

Media

Depending on the material the gate valves are suitable for water, gas, oil and other non aggressive media

Fields of application

Chemical industries, power plants, ship building and other

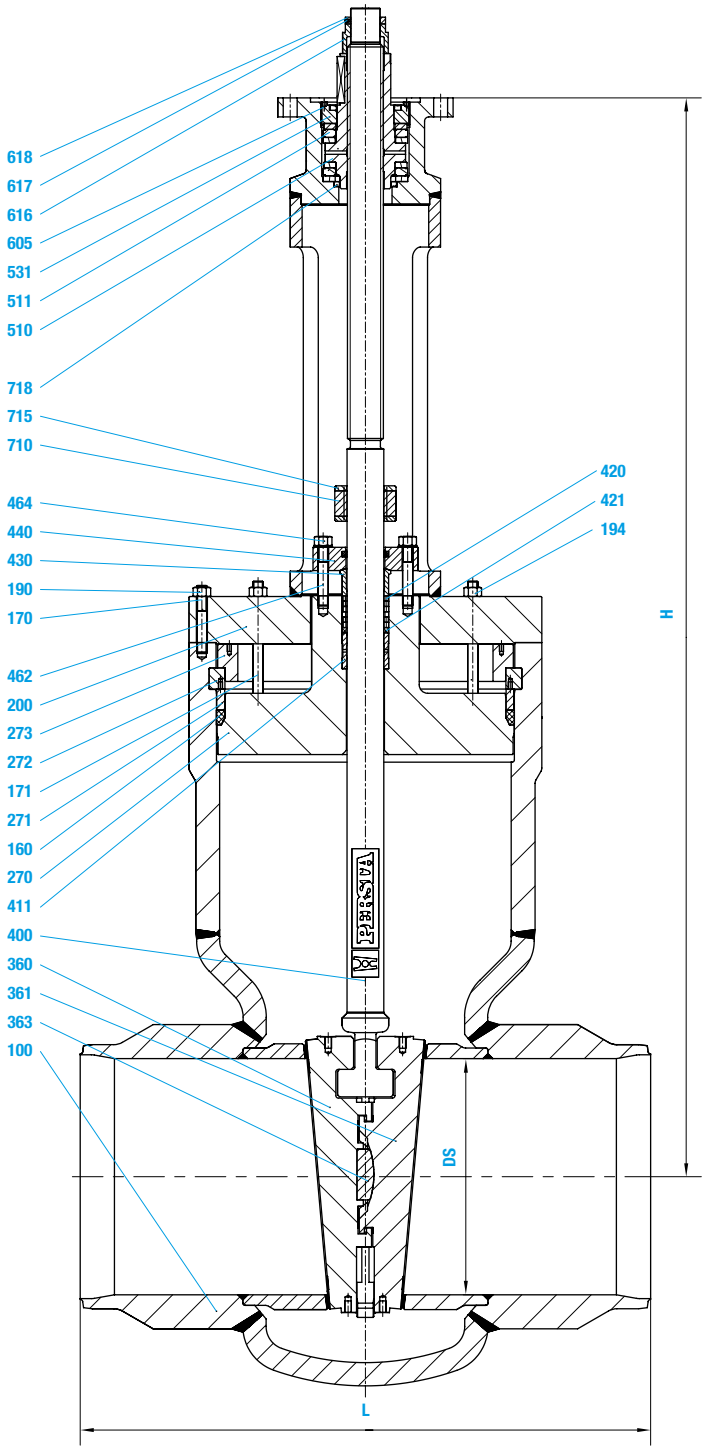
Design Highlights

- Seats and disc faced with stellite
- Non-turning, rising stem
- Gland ring and gland flange in two separate pieces
- Yoke sleeve supported by needle bearing
- Pressure sealed bonnet

Benefits

- Best possible sliding performance, minimum wear
- Minimum wear to the gland packing
- Damage to the stem by irregular tightening of gland bolts is avoided
- Minimize the expenditure of effort when operating valve
- Best possible sealing function

- High pressure gate valve
- 700 JT
- DSK 10
- Class 725
- (PN 100)
- NPS 14 - 28
- (DN 350-700)



▪ High pressure gate valve ▪ 700 JT ▪ DSK 10

▪ Class 725 ▪ (PN 100) ▪ NPS 14 - 28 ▪ (DN 350-700)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91
	welded on with	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite
170	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B7
171	Stud	1.7709	1.7709	1.7709	1.7709
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 2H
194	Hexagonal nut	1.7255	1.7218	1.7218	1.7218
200	Bonnet	1.5415	1.5415	1.5415	1.5415
270	Cover	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91
271	Ring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91
272	Segmentring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91
273	Cover	A 105	A 105	A 105	A 105
360 / 361	▸ Disc	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91
	welded on with	Stellite	Stellite	Stellite	Stellite
363	▸ Pressure piece	1.4122	1.4122	1.4122	1.4122
400	▸ Stem	1.4021	1.4923	1.4923	1.4923 / 1.4980
411	▸ Guide bushing	1.8507	1.8507	1.8507	1.8507
420	▸ Packing	Graphite	Graphite	Graphite	Graphite
430	Gland ring	1.5415	1.5415	1.5415	1.5415
440	Gland flange	1.0460	1.7335	1.7383	1.7383
462	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16
464	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4
510	▸ Yoke sleeve	CW 713 R	CW 713 R	CW 713 R	CW 713 R
511	▸ Bearing	WLSt	WLSt	WLSt	WLSt
531	Yoke nut	1.7335	1.7335	1.7335	1.7335
605	Key	1.0060	1.0060	1.0060	1.0060
616	Screw pin	1.0460	1.0460	1.0460	1.0460
617	Screw pin	45H	45H	45H	45H
618	Hexagonal nut	St	St	St	St
710	Switch bracket	1.0425	1.0425	1.0425	1.0425
715	Key	1.4021	1.4021	1.4021	1.4021
718	Washer	1.0038	1.0038	1.0038	1.0038

▸ Spare parts

Dimensions

Class 725 NPS	DN	DS	BW L		H (closed)		Stroke	
14	350	330	33.5	850.0	68.1	1730.0	14.4	365.0
16	400	375	37.4	950.0	72.8	1850.0	16.3	415.0
18	450	419	41.3	1050.0	81.5	2070.0	18.3	465.0
20	500	464	45.3	1150.0	90.6	2300.0	20.3	515.0
24	600	559	53.2	1350.0	108.9	2765.0	24.6	625.0
28	700	640	61.0	1550.0	114.0	2895.0	23.2	690.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m3/h.

Weight / Flow Coefficent

Class 725 NPS	DN	BW lb	BW kg	Flow Coefficient Cv	Flow Coefficient Kv
14	350	2194	995	13227	11243
16	400	3527	1600	17084	14521
18	450	4409	2000	21300	18105
20	500	5489	2490	26298	22353
24	600	10031	4550	37868	32188
28	700	12676	5750	49145	41773

Black in inches, lb, Us gal/min. Blue in mm, kg, m3/h.

- High pressure gate valve
- 700 JT
- DSK 26
- Class 1500-2500
- (PN 250-420)
- NPS 2 ½ - 12
- (DN 65-300)



▪ High pressure gate valve ▪ 700 JT ▪ DSK 26
▪ Class 1500-2500 ▪ (PN 250-420) ▪ NPS 2 ½ - 12 ▪ (DN 65-300)

Standard features

- Body made of forged steel
- Disc guided in groove
- Welded seat rings
- Outside screw and yoke
- Position indicator / Switch bracket
- Pressure sealing bonnet acc. to VGB-guidelines
- Yoke sleeve supported by needle bearing
- Possibility to add an actuator

Pressure and temperature ratings

- Up to standard or special class 2500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials on request.

Media

Depending on the material the gate valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries

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Design Highlights

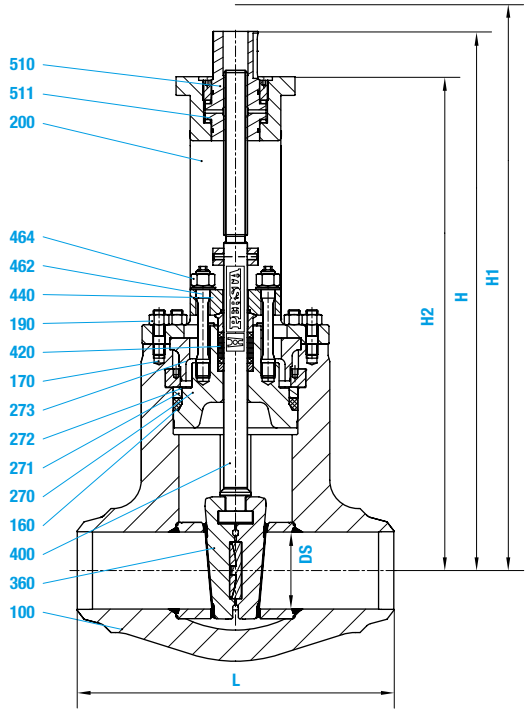
- Long bonnet
- Seats of the shut-off device and of the valve body generally faced with stellite
- Non-rising handwheel
- Non-turning, rising stem and burnished stem
- Outside located switch-bracket
- Hammer head connection between shut-off device and stem
- Gland ring and gland flange in two separate pieces
- Yoke sleeve supported at the top and at the bottom by means of needle bearings (axial type)

Benefits

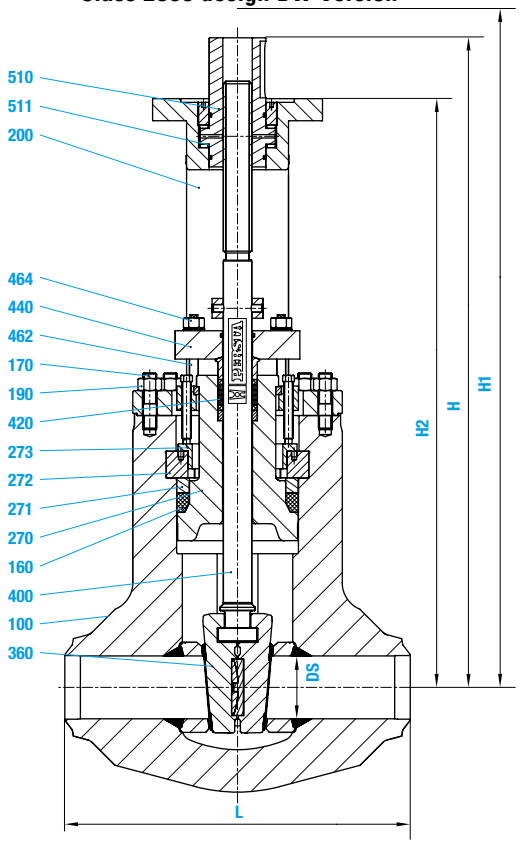
- To reduce temperatures
- Best possible sliding performance and minimum wear
- Small dimensions
- Minimum wear to the gland packing
- Protects against torsion of the stem
- The wedges are able to move parallel to the axis of the pipeline within the guiding groove. This protects the stem against bending moments
- Damage to the stem by irregular tightening of gland bolts is avoided
- Minimize the expenditure of effort when operating valve

- High pressure gate valve
- 700 JT
- DSK 26
- Class 1500-2500
- (PN 250-420)
- NPS 2 ½ - 12
- (DN 65-300)

Class 1500 design BW Version



Class 2500 design BW Version



▪ High pressure gate valve ▪ 700 JT ▪ DSK 26

▪ Class 1500-2500 ▪ (PN 250-420) ▪ NPS 2 ½ - 12 ▪ (DN 65-300)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
170	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 193 4	A 193 4
200	Bonnet	1.5419	1.5419	1.5419	1.5419	1.5419
270	Cover	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
271	Ring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
272	Segmentring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
273	Cover	1.5419	1.5419	1.5419	1.5419	1.5419
360	▸ Disc	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
400	▸ Stem	1.4122	1.4122	1.4122	1.4923	1.4980
400	▸ Stem from 570 °C			1.4980	1.4980	
420	▸ Packing	Graphite	Graphite	Graphite	Graphite	Graphite
440	Gland flange	1.7380	1.7380	1.7380	1.7380	1.7380
462	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
464	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4	A 194 4
510	▸ Yoke sleeve	CW713R	CW713R	CW713R	CW713R	CW713R
511	▸ Bearing	WLSt	WLSt	WLSt	WLSt	WLSt

▸ Spare parts

Dimensions

Class 1500 NPS	DN	DS	BW L		RF L1		H (closed)		H1 (open)		H2		rotation/ stroke	Flange F DIN/ISO 5210
3	80	70	12.0	304.8	18.5	469.9	21.9	556.0	23.8	605.0	20.1	511.0	16	F10 (F14)
4	100	90	16.0	406.4	21.5	546.1	25.9	658.0	28.5	725.0	23.9	606.0	18	F14
5	125	111	19.0	482.6	26.5	673.1	30.7	781.0	33.9	861.0	28.3	720.0	21	F14
6	150	136	22.0	558.8	27.8	704.9	37.5	952.0	41.1	1045.0	34.3	872.0	22	(F14) F16
8	200	178	28.0	711.2	32.8	831.9	42.4	1078.0	50.0	1270.0	41.1	1045.0	24	(F16) F25
10	250	222	34.0	863.6	39.0	990.6	49.9	1267.0	59.6	1515.0	48.8	1240.0	28	(F25) F30
12	300	263	39.0	990.6	44.5	1130.3	60.2	1528.0	71.5	1815.0	58.9	1497.0	29	F30

Class 2500 NPS	DN	DS	BW L		RF L1		H (closed)		H1 (open)		H2		rotation/ stroke	Flange F DIN/ISO 5210
2 1/2	65	50	13.0	330.2	20.0	508.0	20.4	518.0	23.4	594.0	18.3	466.0	19	(F10) F14
3	80	57	14.5	368.3	22.8	577.9	25.1	638.0	26.6	675.0	23.0	585.0	21	F14
4	100	72	18.0	457.2	26.5	673.1	28.1	713.0	32.9	836.0	25.8	656.0	15	F14
5	125	90	21.0	533.4	31.3	793.8	31.3	795.0	34.3	870.0	28.5	725.0	15	F16
6	150	111	24.0	609.6	36.0	914.4	42.9	1090.0	48.4	1230.0	40.9	1040.0	15	(F16) F25
8	200	146	30.0	782.0	40.3	1022.4	47.0	12.0	53.9	1370.0	45.9	1165.0	18	(F25) F30
10	250	185	36.0	1270.0	50.0	1270.0	58.1	1475.0	66.3	1685.0	56.7	1440.0	21	(F30) F35

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

Class 1500 NPS	DN		lb	BW kg	Flow Coefficient Cv	Kv
3	80		159	72	591	505
4	100		282	128	1024	875
5	125		458	208	1486	1270
6	150		838	380	2235	1910
8	200		1356	615	3826	3270
10	250		2557	1160	5944	5080
12	300		4046	1835	8354	7140

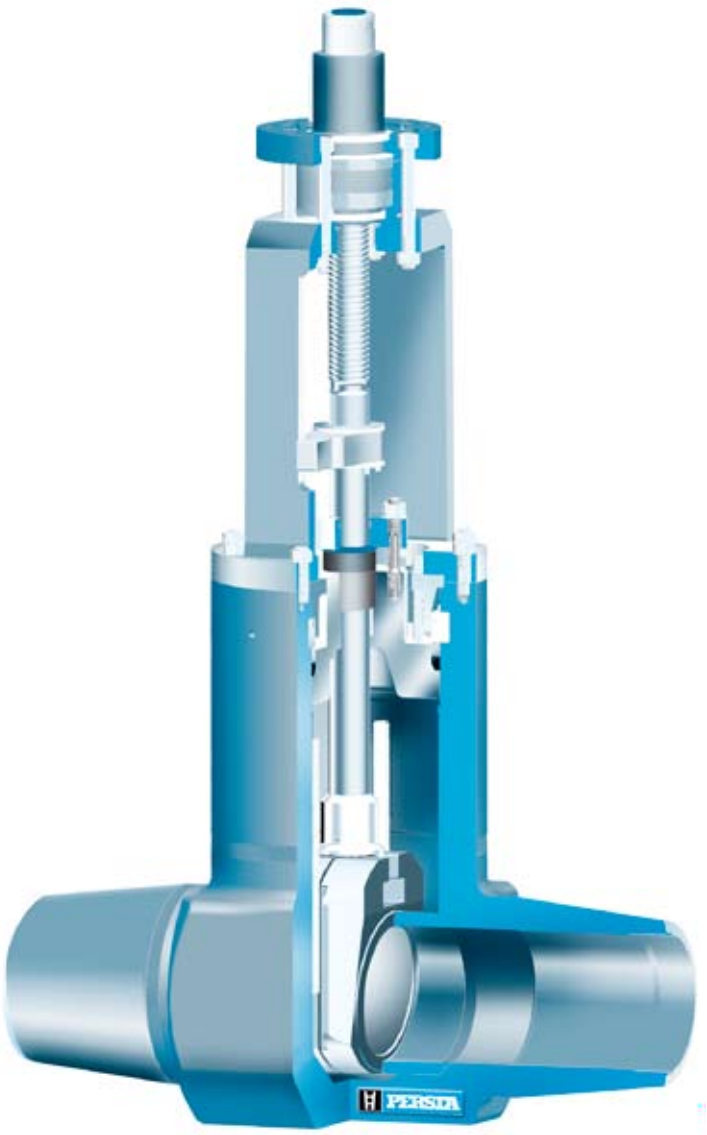
Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

Class 2500 NPS	DN		lb	BW kg	Flow Coefficient Cv	Kv
2 1/2	65		183.0	83.0	246	210
3	80		330.7	135.0	363	310
4	100		546,7	219.0	591	505
5	125		950.2	411.0	977	835
6	150		1545.4	676.0	1738	1485
8	200		2766.8	1188.0	2574	2200
10	250		4515.0	2048.0	4130	3530

Black in inches,lb,Us gal/min. Blue in mm,kg,m^3/h

- High pressure gate valve
- 700 JT
- DSK 27
- Class 900-4500
- (PN 100-720)
- NPS 2 ½ - 24
- (DN 65-600)



▪ High pressure gate valve ▪ 700 JT ▪ DSK 27
▪ Class 900-4500 ▪ (PN 100-720) ▪ NPS 2 ½ - 24 ▪ (DN 65-600)

Standard features

- Valve body made of forged steel
- Split disc type
- Welded seatrings and guide bars
- Outside screw and yoke
- Position indicator / non-rotating device
- Pressure sealing bonnet acc. VGB-guidelines
- Yoke sleeve supported by needle bearing
- Possibility to add an actuator

Pressure and temperature ratings

- Up to standard class or special class 4500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials on request.

Media

Depending on the material the gate valves are suitable for water, gas, oil and other non aggressive media

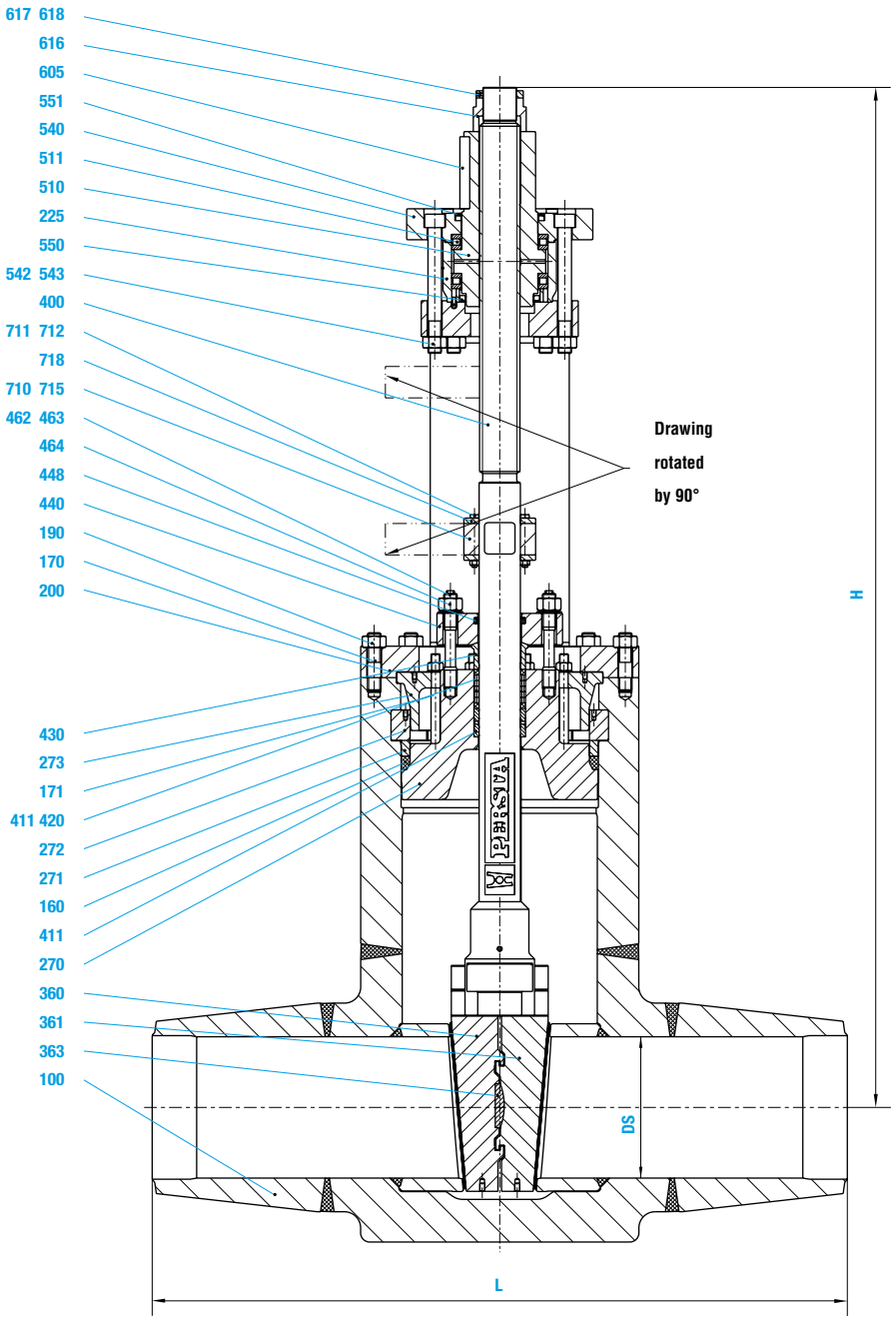
Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries

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Design Highlights	Benefits
▪ Long bonnet	▪ To reduce temperatures
▪ Seats and discs faced with stellite	▪ Best possible sliding performance and minimum wear
▪ Non-turning, rising stem and burnished stem	▪ Minimum wear to the gland packing
▪ Outside located switch bracket	▪ Protects against torsion
▪ Hammer head connection between shut-off device and stem	▪ Wedge are able to aligne parallel to the axis of the pipe shut-off device and stem within the guiding groove. This protects the stem against bending moments
▪ Gland flange and gland ring in two separate pieces	▪ Damage to the stem by irregular tightening of gland bolts is avoided
▪ Yoke sleeve supported by needle bearing	▪ Minimize the expenditure of effort when operating valve

- High pressure gate valve ▪ 700 JT ▪ DSK 27
- Class 900-4500 ▪ (PN 100-720) ▪ NPS 2 ½ - 24 ▪ (DN 65-600)



▪ High pressure gate valve ▪ 700 JT ▪ DSK 27

▪ Class 900-4500 ▪ (PN 100-720) ▪ NPS 2 ½ - 24 ▪ (DN 65-600)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
170	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
171	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 193 B16
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4	A 194 4
200	Bonnet	1.5415	1.5415	1.5415	1.5415	1.5415
225	Yoke head	A 105	A 105	A 105	A 105	A 105
270	Cover	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
271	Ring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
272	Segmentring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
273	Cover	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
360 / 361	▸ Disc	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
363	▸ Pressure piece	1.4122	1.4122	1.4122	1.4122	1.4122
400	▸ Stem	1.4921	1.4923	1.4923	1.4923	1.4980
411	▸ Guide bushing	1.8507	1.8507	1.8507	1.8507	1.8507
420	▸ Packing	Graphite	Graphite	Graphite	Graphite	Graphite
421	▸ Ring	Graphite	Graphite	Graphite	Graphite	Graphite
430	Gland ring	1.5415	1.5415	1.5415	1.5415	1.5415
440	Gland flange	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F91
448	▸ Dirt scraper	Graphite	Graphite	Graphite	Graphite	Graphite
462	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B16	A 453 Grade 660
463	Washer	St	St	St	St	St
464	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 4	A 453 Grade 660
510	▸ Yoke sleeve	CW 713 R	CW 713 R	CW 713 R	CW 713 R	CW 713 R
511	▸ Bearing	WLSt	WLSt	WLSt	WLSt	WLSt
540	Flange	1.0425	1.0425	1.0425	1.0425	1.0425
542	Headcap screw	8.8	8.8	8.8	8.8	8.8
543	Hexagonal nut	8	8	8	8	8
550 / 551	▸ Gasket	NBR	NBR	NBR	NBR	NBR
605	Key	1.0060	1.0060	1.0060	1.0060	1.0060
616	Screw ring	1.0460	1.0460	1.0460	1.0460	1.0460
617	Screw pin	45H	45H	45H	45H	45H
618	Hexagonal pipe nut	St	St	St	St	St
710	Switch bracket	1.0425	1.0425	1.0425	1.0425	1.0425
711	Hexagonal screw	8.8	8.8	8.8	8.8	8.8
712	Hexagonal nut	8	8	8	8	8
715	Key	1.4021	1.4021	1.4021	1.4021	1.4021
718	Washer	1.0038	1.0038	1.0038	1.0038	1.0038

▸ Spare parts

Dimensions / Weights / Flow coefficients

Class 900 NPS	DN	DS	BW L		H (closed)		stroke		Weight lb	Weight kg	Flow Coefficient Cv	Flow Coefficient Kv
14	350	315	53.1	1200.0	84.3	2140.0	13.8	350.0	4916.3	2230.0	11950.4	10214.0
16	400	360	53.1	1350.0	91.3	2320.0	15.7	400.0	6613.9	3000.0	15607.8	13340.0
18	450	405	59.1	1500.0	97.8	2485.0	17.5	445.0	8675.2	3935.0	19754.3	16884.0
20	500	450	65.0	1650.0	112.2	2850.0	19.5	495.0	11904.9	5400.0	24387.5	20844.0
22	550	495	on request									
24	600	540	on request									

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Dimensions / Weights / Flow coefficients

Class 1500 NPS	DN	DS	BW L		H (closed)		stroke		Weight lb	Weight kg	Flow Coefficient Cv	Flow Coefficient Kv
14	350	315	61.0	1550.0	89.8	2280.0	13.8	350.0	8267.3	3750.0	11950.4	10214.0
16	400	360	68.9	1750.0	101.0	2565.0	16.1	410.0	12125.4	5500.0	15607.8	13340.0
18	450	405	76.8	1950.0	112.2	2850.0	18.1	460.0	16975.6	7700.0	19754.3	16884.0
20	500	450	on request									
22	550	495	on request									
24	600	540	on request									

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Class 2500 and above on request. Intermediate class on request. Larger sizes on request

If a closed gate valve filled with a medium (e.g. water) (fig. 1) is heated, an unacceptably high pressure may develop inside the body. The level of increase in pressure that may occur depends upon the percentage volumes of the fluid and vapour phases and on the increase in the temperature of the medium. Overpressure inside the body can adversely affect the operation of the gate valve. Moreover an unacceptably high pressure load can result in the failure of the pressure-retaining components.
closed nozzle

Figure 2 shows the increase of pressure according to percentage volume and temperature changes, when water is in the body.

Attention: If there is a possibility of an unacceptable pressure load of this kind developing inside the valve because of the way it has been fitted or the way it is used, the piping designer or operator must provide a suitable safety device.

Simple and effective protection against overpressure can be achieved by means of a hole in the seat ring or in the wedge on the side facing the pressure (Fig. 4). This hole prevents the pressure inside the body from exceeding the operating pressure; however, the gate valve can then only provide a seal in one direction. If this is the case, the direction of flow is shown by an arrow on the body. Another possibility is an equalizing pipe connection to the third room (Fig. 5) with the pressurized side.

In case an outside overpressure safety device should be assigned body has to be ordered with an appropriate closed stud (Fig. 1 and 3).

Fig. 6 includes a pressure equalizing pipe to reduce the opening torque with differential pressure, this configuration also enables the „3rd chamber“ to be relieved to the high pressure side. Bi-directional flow characteristics are achivable with this design.

Fig. 1

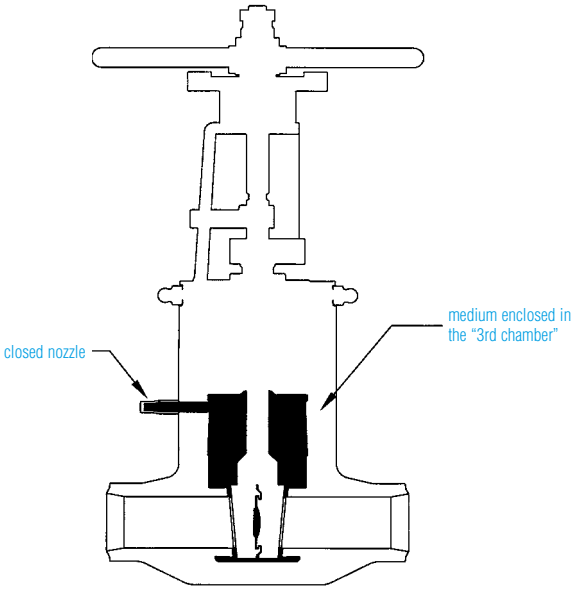


Fig. 2

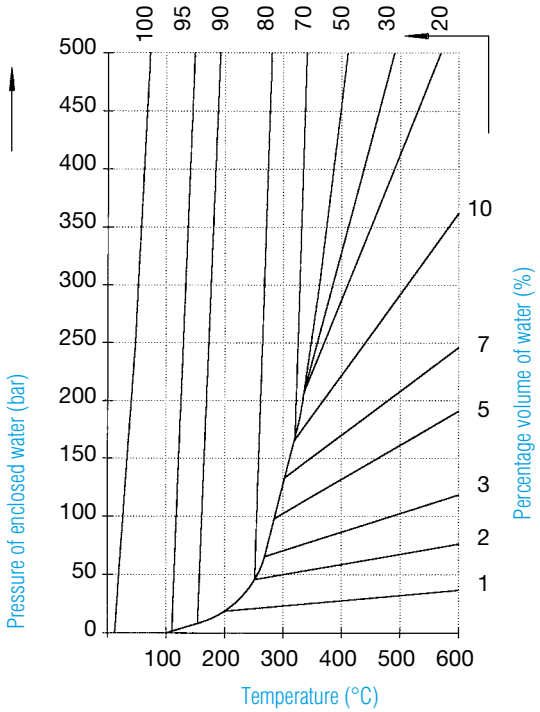


Fig. 3: With safety valve

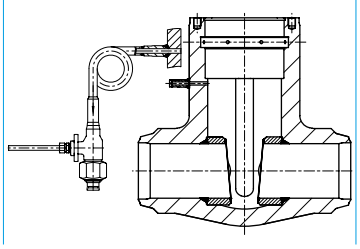


Fig. 4: With hole in the disc or seatring

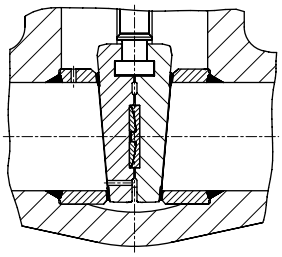


Fig. 5: With equalizing pipe to the 3rd chamber

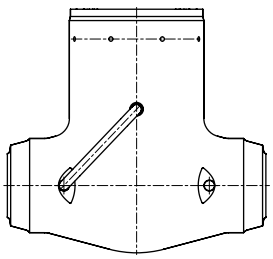
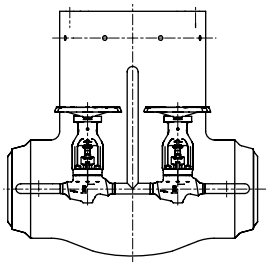
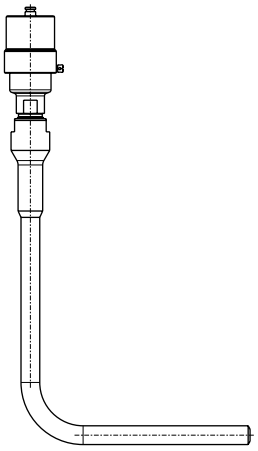
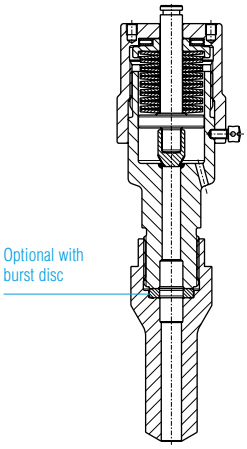


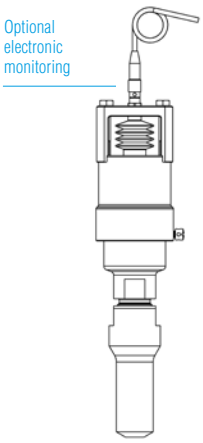
Fig. 6: With equalizing pipe and bypass valves



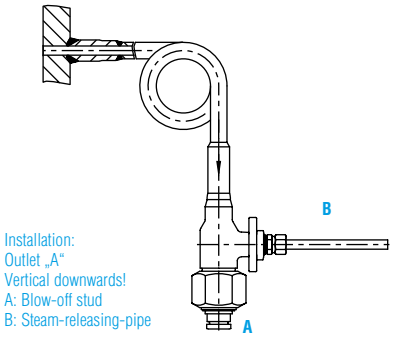
Assembly Sketch SV 97

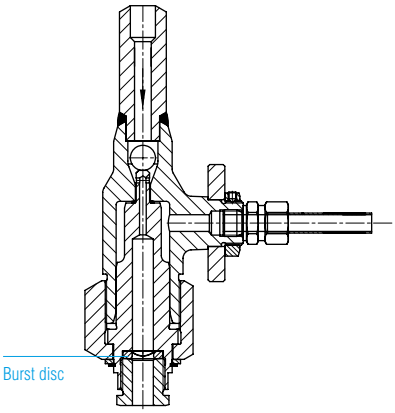


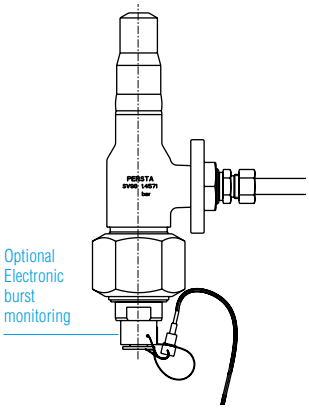




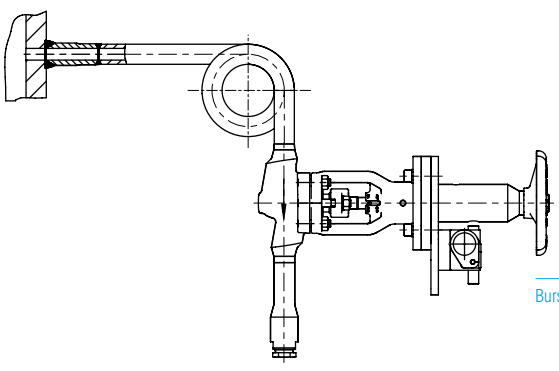
Assembly Sketch SV 98

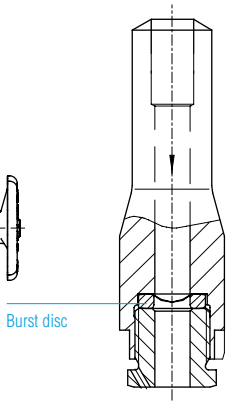


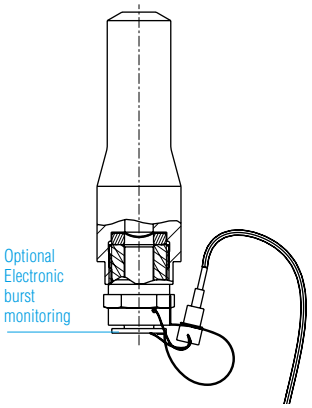




Assembly Sketch SV 99 with lockable high pressure globe valve

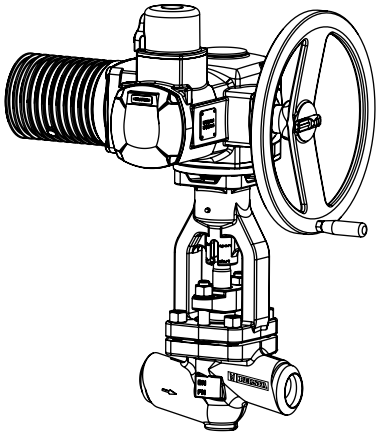


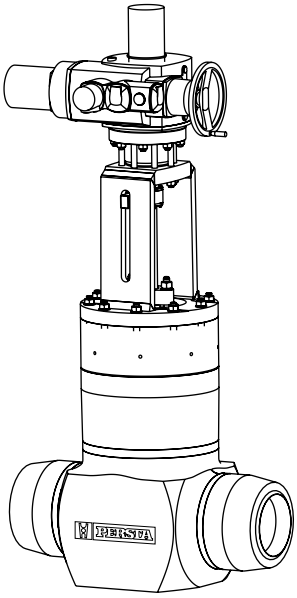


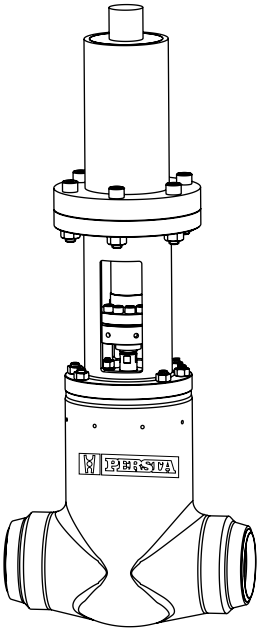


▪ Valves automation and accessories

Example

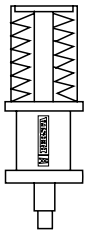




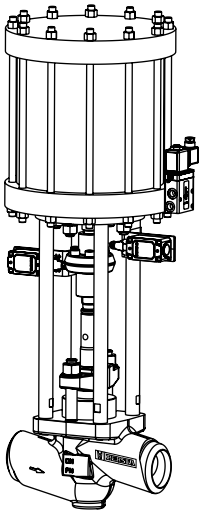


PERCON piston drive

Spring opening

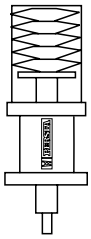


Example



PERCON piston drive

Spring closing



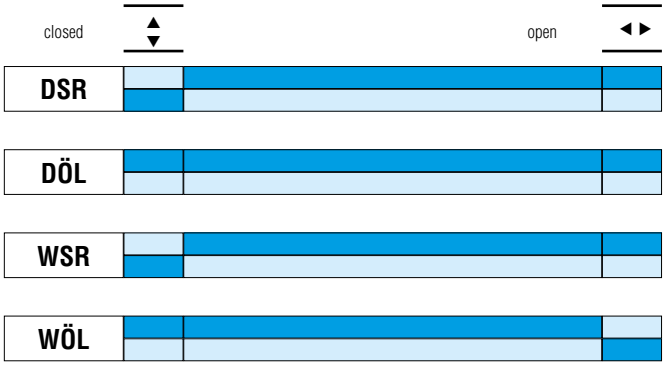
Standard electric actuator setting and wiring

PERSTA globe valves

In direction CLOSED (clockwise) the actuator is switched off by the torque switch **(DSR)**. In direction OPEN (counterclockwise) the actuator is switched off by the limit switch **(WÖL)**.

The torque switch **(DÖL)** acts as an overload protection over full travel and should therefore also be connected.

Valves with electric actuators are set according to the operating requirements and undergo a test run at the PERSTA plant.



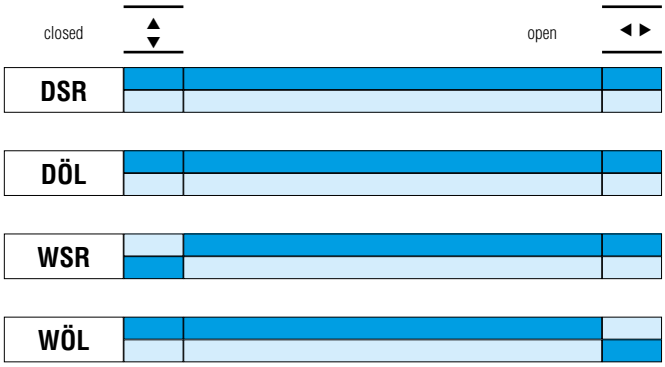
Switch wiring over full travel

PERSTA high pressure gate valves and stop check valve 640 type ST

In direction CLOSED (clockwise) the actuator is switched off by the limit switch **(WSR)**. In direction OPEN (counterclockwise) the actuator is also switched off by the limit switch **(WÖL)**.

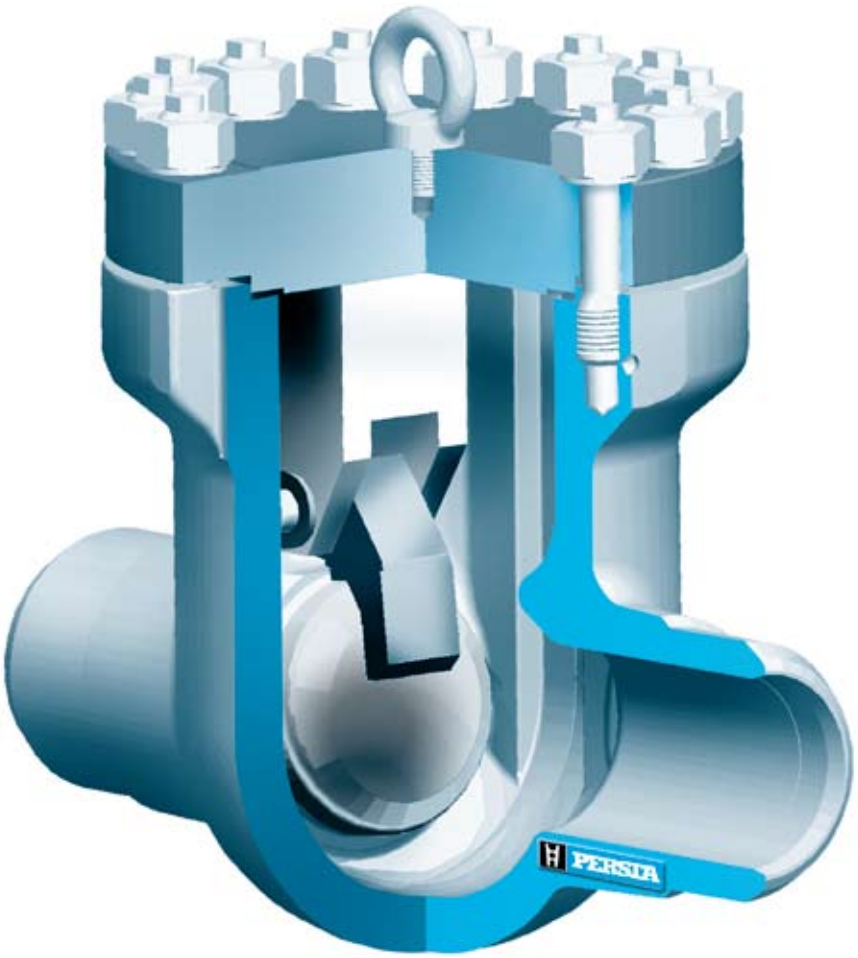
The torque switch in direction CLOSED **(clockwise DSR)** and in direction OPEN **(counterclockwise, DÖL)** act as overload protection over full travel and should also be connected.

Valves with electric actuators are set according to the operating requirements and undergo a test run at the PERSTA plant.



Switch wiring over full travel

- High pressure swing check valve
- PD 18
- 640 AA
- Class 900
- (PN 160)
- NPS 2 - 10
- (DN 50-250)



▪ High pressure swing check valve ▪ PD 18 ▪ 640 AA
▪ Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)

Standard features

- Die-forged body
- Disc with inside shaft
- Fastening of the disc at the cover
- Available with flange and buttweld ends

Pressure and temperature ratings

- Up to standard class or special class 900

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3

Further materials on request.

Media

Depending on the material swing check valves are suitable for water, gas, oil and other non aggressive media

Fields of application

Chemical industries, power plants, ship building and other

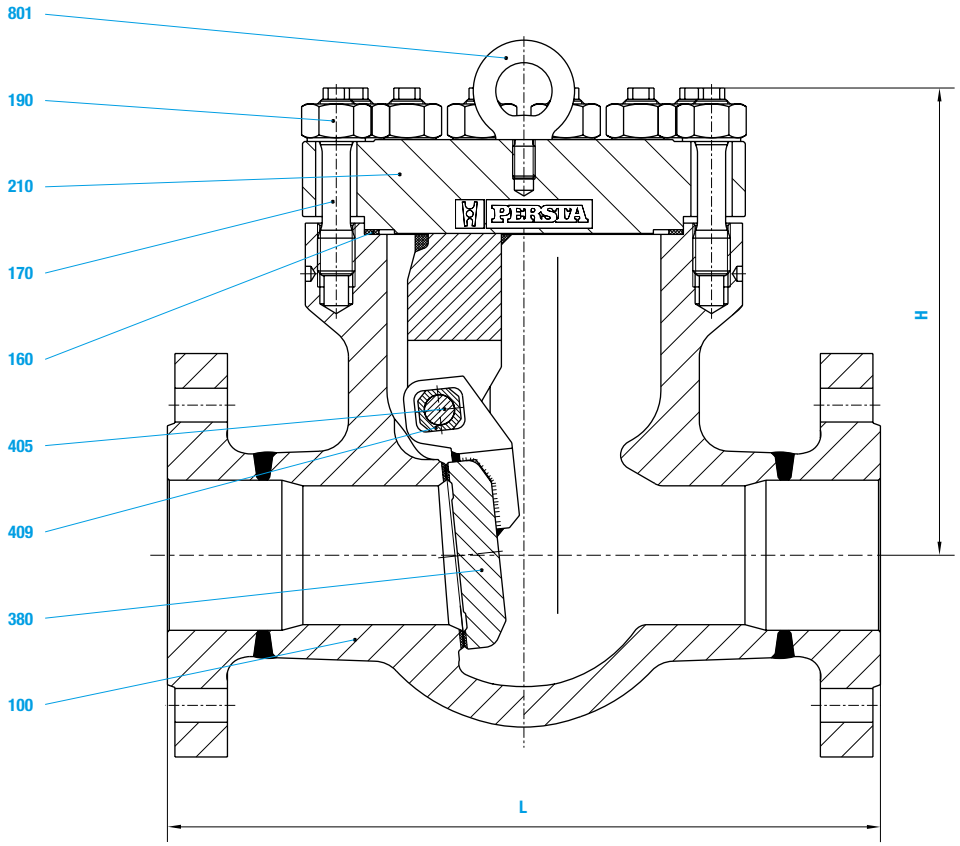
Design Highlights

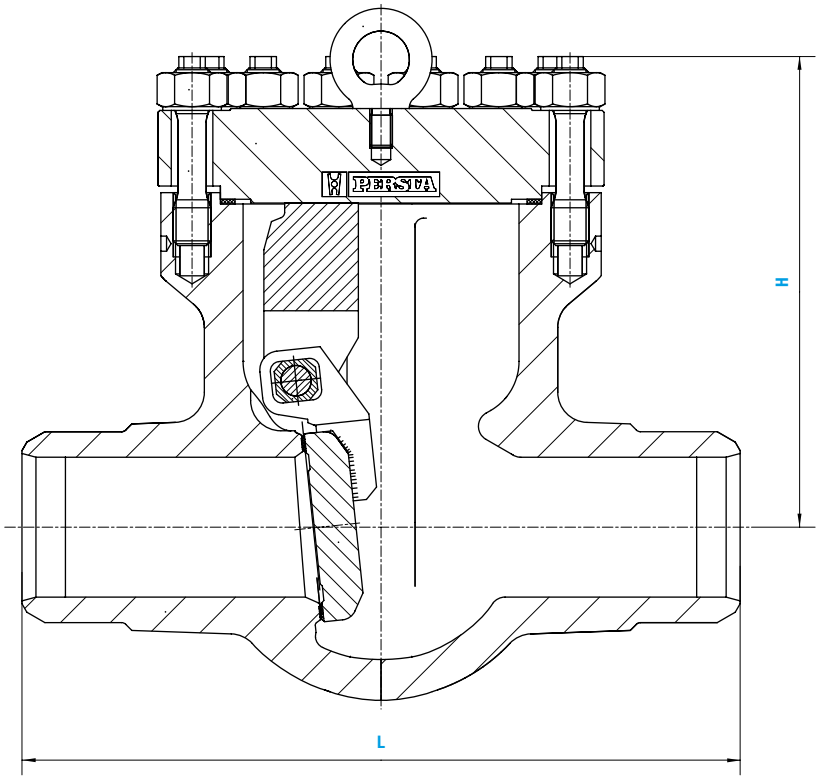
- Die-forged body
- Integral seat
- Lever rests on the hinge pin by means of the guide bush
- Bolted bonnet with reduced-shaft bolts
- Fastening of the disc at the cover

Benefits

- Free from porosity and shrink holes
- No contact corrosion
- Optimum adjustment of the disc to the body seat by means of the movability the guide bushing
- To improve the stress capacity when temperature and pressure changes
- Easy to assemble and disassemble

- High pressure swing check valve
- PD 18
- 640 AA
- Class 900
- (PN 160)
- NPS 2 - 10
- (DN 50-250)





▪ High pressure swing check valve ▪ PD 18 ▪ 640 AA

▪ Class 900 ▪ (PN 160) ▪ NPS 2 - 10 ▪ (DN 50-250)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F12 (D5)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22
	welded on with	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite
170	Stud	A 193 B7	A 193 B7	A 193 B7
190	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H
210	Bonnet	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3
380	▸ Disc	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3
	welded on with	Stellite	Stellite	Stellite
405	▸ Hinge pin	1.4021	1.4021	1.4021
409	▸ Guide bush	5.3106	5.3106	5.3106
801	Lifting eye bolt	1.0401	1.0401	1.0401

▸ Spare parts

Dimensions / Weights

Class 900 NPS	DN	BW L		RF L1		H		BW lb	BW kg	RF lb	RF kg
2	50	8.5	215.9	14.5	368.3	8.7	220.0	77.2	35.0	2.2	55.0
2 1/2	65/50	10.0	254.0	16.5	419.1	8.7	220.0	83.8	38.0	2.6	65.0
3	80	12.0	304.8	15.0	381.0	11.0	280.0	138.9	63.0	3.5	89.0
4	100	14.0	355.6	18.0	457.2	12.6	320.0	220.5	100.0	5.7	145.0
5	125/100	17.0	431.8	22.0	558.8	12.6	320.0	233.7	106.0	7.1	180.0
6	150	20.0	508.0	24.0	609.6	16.1	410.0	485.0	220.0	12.2	310.0
8	200	26.0	660.4	29.0	736.6	20.0	510.0	804.7	365.0	20.5	520.0
10	250	31.0	787.4	33.0	838.2	23.4	595.0	1653.5	750.0	38.6	980.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- High pressure swing check valve
- 640 AB
- DRI 26
- Class 1500-2500
- (PN 250-420)
- NPS 2 ½ - 12
- (DN 65-300)



Technical alterations reserved

▪ High pressure swing check valve ▪ 640 AB ▪ DRI 26

▪ Class 1500-2500 ▪ (PN 250-420) ▪ NPS 2 ½ - 12 ▪ (DN 65-300)

Standard features

- Valve body made of forged steel
- Swing check valve with internal hinge pin
- Lever rests in separate support ring
- Pressure sealing bonnet acc. VGB-guidelines

Pressure ratings

- Up to standard class or special class 2500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials on request.

Media

Depending on the material swing check valves are suitable for water, gas, oil and other non aggressive media

Fields of application

Chemical industries, power plants, ship building and other

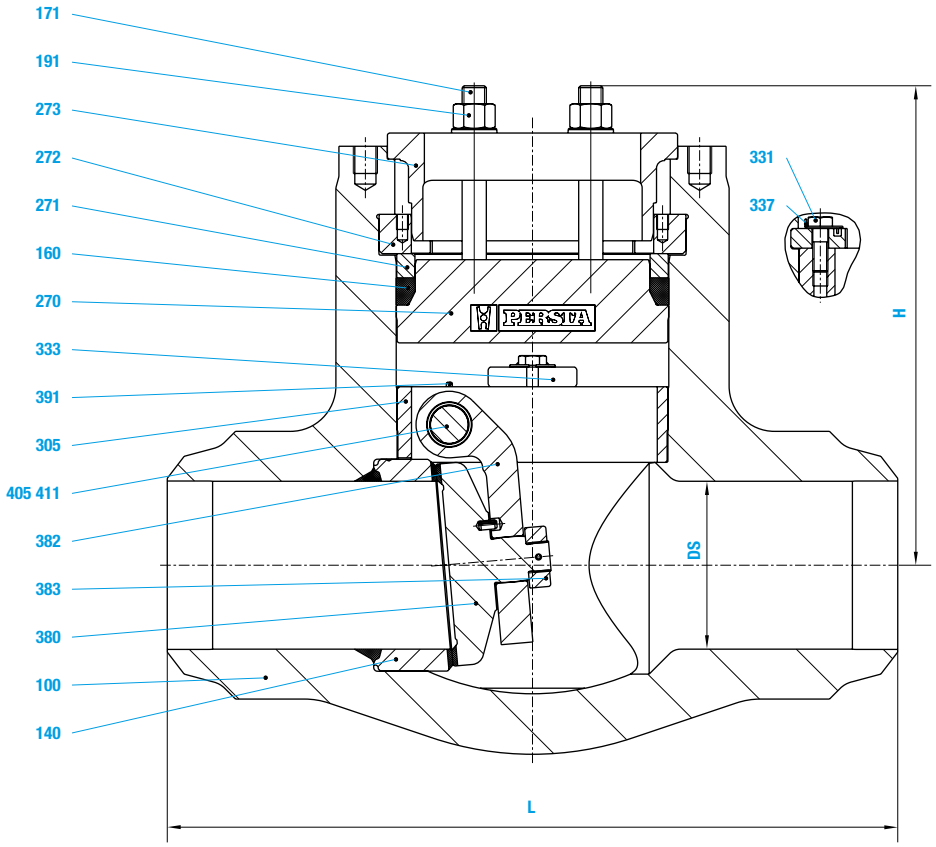
Design Highlights

- Valve body made of forged steel
- Tubular forged body
- Seats faced with stellite
- Lever rests in a separate support ring
- Shut-off disc with curved journal
- Pressure sealing bonnet
- Cover can be used for dismantling of the cover fastener

Benefits

- Free from porosity and shrink holes
- No pressure retaining weldseams
- Extremely resistant to wear
- The setting of the disc can be examined before installing the bonnet cover
- Optimum adjustment of the disc to the body seat
- Best possible sealing function
- No special tools are necessary for dismantling the disc fastener

- High pressure swing check valve ▪ 640 AB ▪ DRI 26
- Class 1500-2500 ▪ (PN 250-420) ▪ NPS 2 ½ - 12 ▪ (DN 65-300)



▪ High pressure swing check valve ▪ 640 AB ▪ DRI 26

▪ Class 1500-2500 ▪ (PN 250-420) ▪ NPS 2 ½ - 12 ▪ (DN 65-300)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
140	Seat ring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
171	Stud	A 193 B7	A 193 B7	A 193 B7	A 193 B7	A 193 B7
191	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 2H	A 194 2H
270	Cover	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
271	Ring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
272	Segmentring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
273	Cover	A 105	A 105	A 105	A 105	A 105
305	Supportring	A 182 F22 Cl.3	A 182 F22	A 182 F22	A 182 F91	A 182 F91
331	Hexagonal screw	A4	A4	A4	A4	A4
333	▸ Flange	A 182 F91	A 182 F91	A 182 F91	A 182 F91	A 182 F91
337	▸ Retaining ring	1.4301	1.4301	1.4301	1.4301	1.4301
380	▸ Disc	1.7383	1.7383	1.7383	1.4903	1.4901
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
382	Hinge	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F91
383	▸ Washer	1.4923	1.4923	1.4923	1.4923	1.4923
391	▸ Tension pin	1.4310	1.4310	1.4310	1.4310	1.4310
405	▸ Hinge pin	1.4923	1.4923	1.4923	1.4923	1.4923
411	▸ Guide bushing	5.3106	5.3106	5.3106	5.3106	5.3106

▸ Spare parts

Dimensions

Class 1500 NPS	DN	DS	BW L		RF L1		H	
3	80	70	12.0	304.8	18.5	469.9	9.6	230.0
4	100	90	16.0	406.4	21.5	546.1	10.1	257.0
5	125	111	19.0	482.6	26.5	673.1	12.5	317.0
6	150	136	22.0	558.8	27.8	704.9	14.1	357.0
8	200	178	28.0	711.2	32.8	831.9	17.5	445.0
10	250	222	34.0	863.6	39.0	990.6	20.9	530.0
12	300	269	39.0	990.6	44.5	1130.3	23.7	603.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Weight / Flow Coefficient

Class 1500 NPS	DN	lb	BW kg	Flow Coefficient Cv	Kv
3	80	108.0	49.0	250.0	215.0
4	100	183.0	83.0	435.0	375.0
5	125	302.0	137.0	635.0	550.0
6	150	582.0	264.0	950.0	820.0
8	200	888.5	403.0	1640.0	1410.0
10	250	1642.4	745.0	2545.0	2200.0
12	300	1642.4	1182.0	3570.0	3090.0

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Dimensions

Class 2500 NPS	DN	DS	BW L		RF L1		H	
2 1/2	65	50	13.0	330.2	20.0	508.0	9.1	231.0
3	80	57	14.5	368.3	22.8	577.9	9.7	246.0
4	100	72	18.0	457.2	26.5	673.1	10.9	278.0
5	125	90	21.0	533.4	31.3	793.8	13.3	337.0
6	150	111	24.0	609.6	36.0	914.4	17.0	431.0
8	200	146	30.0	762.0	40.3	1022.4	18.9	479.0
10	250	185	36.0	1270.0	50.0	1270.0	23.1	587.0

14 Intermediate class on request

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

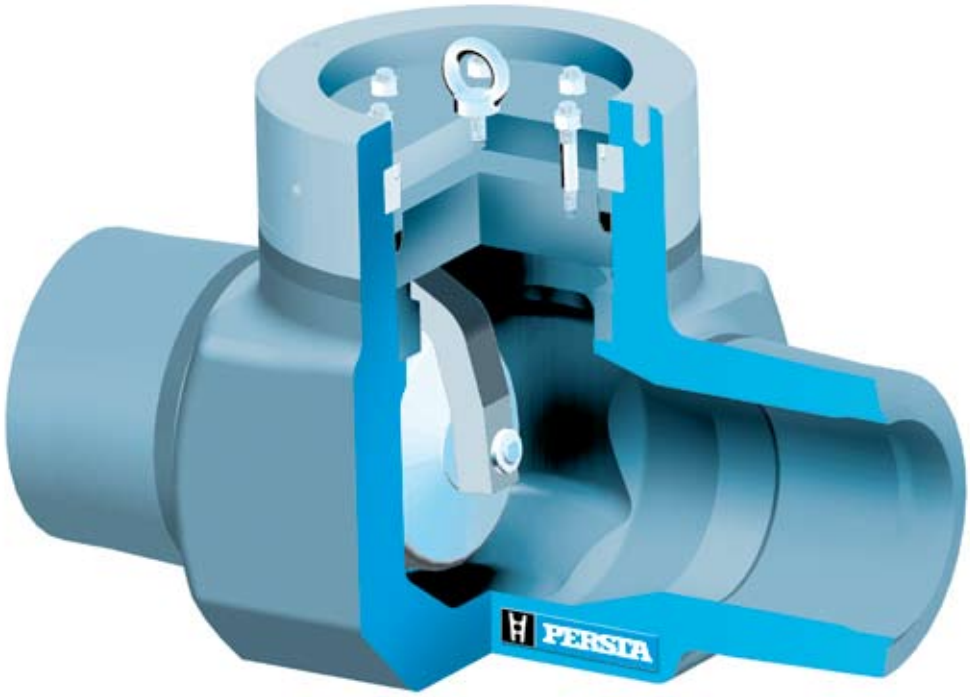
Weight / Flow Coefficient

Class 2500 NPS	DN	lb	BW kg	Flow Coefficient Cv	Kv
2 1/2	65	127.9	58.0	100.0	90.0
3	80	198.4	90.0	155.0	135.0
4	100	328.5	149.0	250.0	215.0
5	125	632.7	287.0	415.0	360.0
6	150	981.0	445.0	740.0	640.0
8	200	1752.7	795.0	1100.0	950.0
10	250	3395.1	1540.2	1765.0	1530.0

14 Intermediate class on request

Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

- High pressure swing check valve
- 640 AB
- DRI 27
- Class 900-4500
- (PN 100-720)
- NPS 2 ½ - 24
- (DN 65-600)



Technical alterations reserved

▪ High pressure swing check valve ▪ 640 AB ▪ DRI 27
▪ Class 900-4500 ▪ (PN 100-720) ▪ NPS 2 ½ - 24 ▪ (DN 65-600)

Standard features

- Valve body made of forged steel
- Swing check valve with internal hinge pin
- Lever rests in a separate support ring
- Welded seat ring
- Pressure sealing bonnet acc. VGB-guidelines

Pressure and temperature ratings

- Up to standard class or special class 4500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials on request.

Media

Depending on the material swing check valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries

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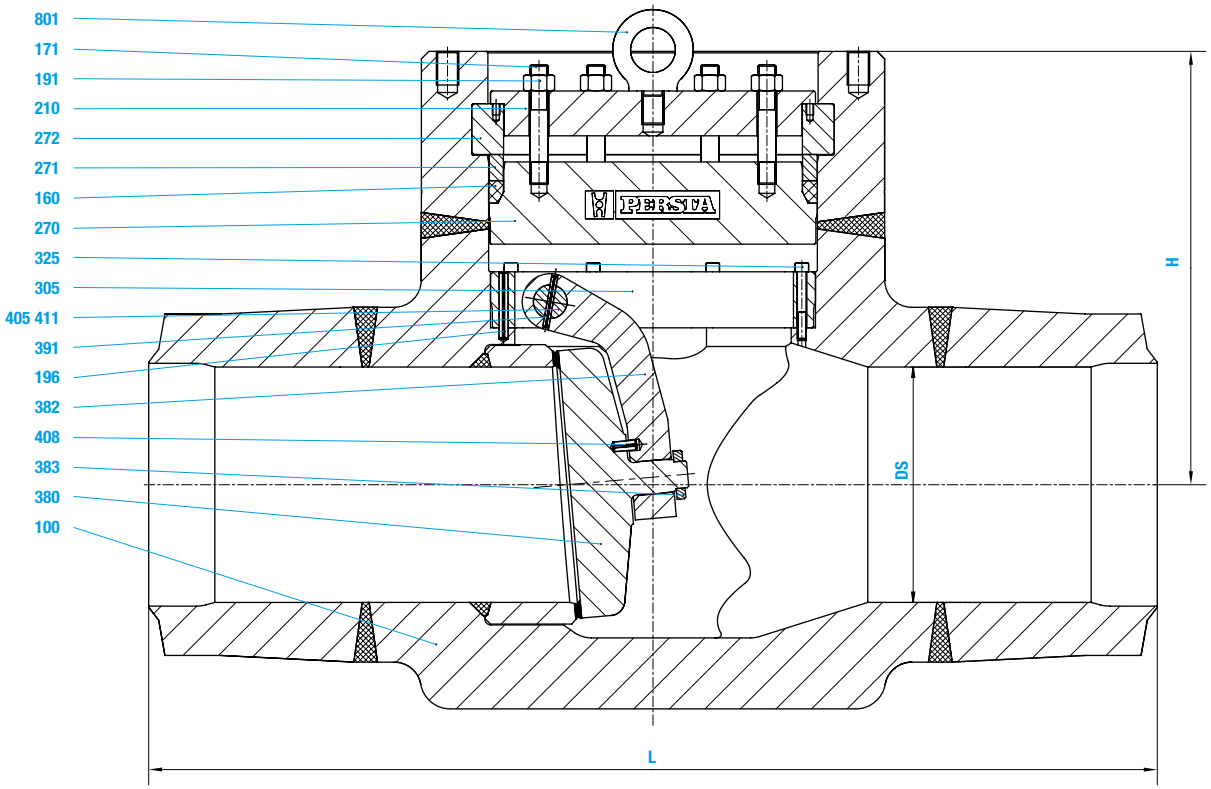
Design Highlights

- Valve body made of forged steel
- Seats faced with stellite
- Lever rests in a separate support ring
- Shut-off device with curved journal
- Pressure sealing bonnet

Benefits

- Free from porosity and shrink holes
- Extremely resistant to wear
- The setting of the disc can be examined before installing the bonnet cover
- Optimum alignment of the disc to the body seat
- Best possible sealing function

- High pressure swing check valve
- 640 AB
- DRI 27
- Class 900-4500
- (PN 100-720)
- NPS 2 ½ - 24
- (DN 65-600)



▪ High pressure swing check valve ▪ 640 AB ▪ DRI 27

▪ Class 900-4500 ▪ (PN 100-720) ▪ NPS 2 ½ - 24 ▪ (DN 65-600)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
171	Stud	A 182 B7	A 182 B7	A 182 B7	A 182 B7	A 182 B7
191	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 2H	A 194 2H
196	▸ Tension pin	1.4310	1.4310	1.4310	1.4310	1.4310
210	Bonnet	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F91
270	Cover	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
271	Ring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
272	Segmentring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
305	▸ Supportring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
325	Headcap screw	A4	A4	A4	A4	A4
380	▸ Disc	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
382	▸ Hinge	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F91
383	▸ Washer	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	1.4923	1.4923
391	▸ Tension pin	1.4310	1.4310	1.4310	1.4310	1.4310
405	▸ Hinge pin	1.4923	1.4923	1.4923	1.4923	1.4923
408	▸ Tension pin	1.4310	1.4310	1.4310	1.4310	1.4310
411	▸ Guide bushing	5.3106	5.3106	5.3106	5.3106	5.3106
801	Lifting eye bolt	1.0401	1.0401	1.0401	1.0401	1.0401

▸ Spare parts

Dimensions

Class 900 NPS	DN	DS		BW L		H	lb	Weight kg
14	350	315	47.3	1200.0	21.3	540.0	5060.0	2300.0
16	400	360	53.2	1350.0	23.6	600.0	7920.0	3600.0
18	450	405	59.0	1500.0	27.2	690.0	11880.0	5400.0
20	500	450	on request					
22	550	500	on request					
24	600	540	on request					

Black in inches, lb. Blue in mm, kg.

Class 1500 NPS	DN	DS		BW L		H	lb	Weight kg
14	350	315	61.0	1550.0	22.8	580.0	5060.0	2300.0
16	400	360	68.9	1750.0	26.0	660.0	7920.0	3600.0
18	450	405	76.8	1950.0	29.5	750.0	11880.0	5400.0
20	500	450	on request					
22	550	500	on request					
24	600	540	on request					

Black in inches, lb. Blue in mm, kg.

Class 2500 and above on request. Intermediate class on request. Larger sizes on request

▪ High pressure stop check valve ▪ DRA 26 / 27 ▪ 640 ST ▪ Class 900 - 2500 ▪ NPS 3 - 16



■ High pressure stop check valve ■ DRA 26 / 27 ■ 640 ST ■ Class 900 - 2500 ■ NPS 3 - 16

Standard features

- Body hollow-forged in a closed die (DRA 26) or made of forged steel (DRA 27)
- Double-sided high-pressure shut-off system
  - Function of a check valve
  - Function of a gate valve
- Internal hinge pin, pivoted in a separate retaining ring
- Movable shut-off system guided in a groove
- Defined stop of the check disc
- Pressure sealing bonnet acc. to VGB-guidelines
- Generally stellited seats

Pressure ratings

- Up to standard class or special class 2500

Materials

■ A 105 ■ A 182 F12 Cl.2 ■ A 182 F22 Cl.3
■ A 182 F91 ■ A 182 F92

Further materials and nominal sizes on request

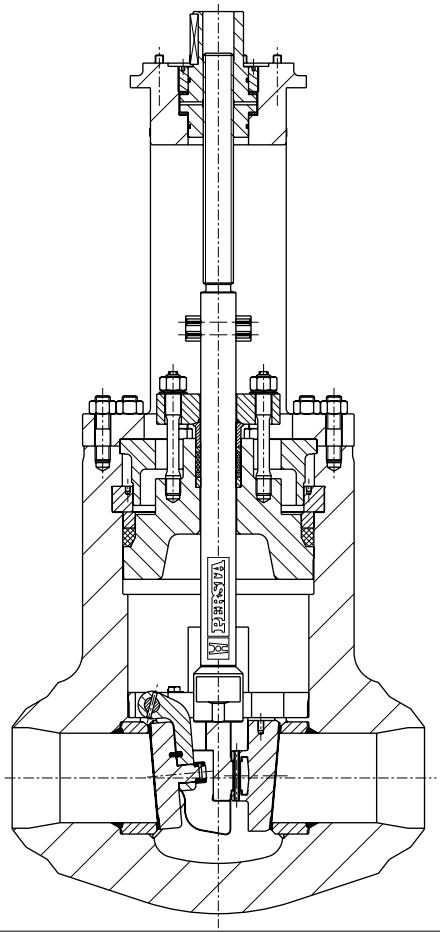
Media

Depending on the material the globe valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries

High pressure stop check valve



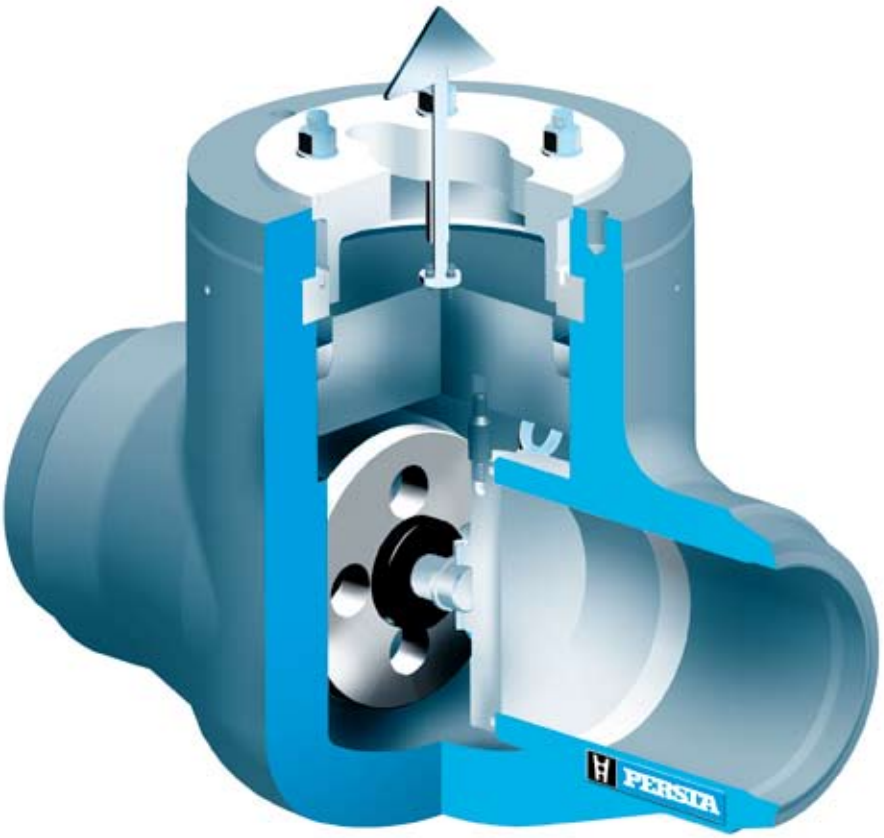
Design-Highlights

- Operating mode as a check valve and a gate valve
- Sealing in both flow directions
- Full straight seat passage
- Full opening angle of the check disk
- Flexible-mounted non-return and shut-off disc
- Shut-off system guided in a groove
- Shut-off discs with anti-twist safeguard

Benefits

- Possible savings:
  - One valve
  - Two welding seams in pipeline
  - Space and weights
  - Less insulation time and effort
  - Less maintenance and inspection equirements
- Secure protection of relevant and complex parts of the plant
- Better flow characteristics than non-return valves
- Minimizing pressure drop
- Better smoothness of running and adjustment of the valves in the body seats
- Prevention of positional deviations of the shut-off disc and protection against damage
- Effective adjustment to the body seats with constant repetitive contact

- **High pressure line blind valve DPV 10-27** ▪ **990 VW**
- **Class 900-4500** ▪ **(PN 100-630)** ▪ **NPS 2 ½ - 28** ▪ **(DN 65-600)**



Technical alterations reserved

▪ High pressure line blind valve DPV 10-27 ▪ 990 VW

▪ Class 900-4500 ▪ (PN 100-630) ▪ NPS 2 ½ - 28 ▪ (DN 65-600)

Standard features

- Valve body made of forged steel with welded seat rings
- Position indicator
- Pressure sealing bonnet acc. to VGB-guidelines

Pressure and temperature ratings

- Up to standard class or special class 4500

Materials

- A 105
- A 182 F12 Cl.2
- A 182 F22 Cl.3
- A 182 F91
- A 182 F92

Further materials on request.

Media

Depending on the material line blind valves are suitable for water, gas, oil and other non aggressive media

Fields of application

High temperature steam and water, refining (catalytic reformers and hydrocrackers), petrochemical and chemical industries

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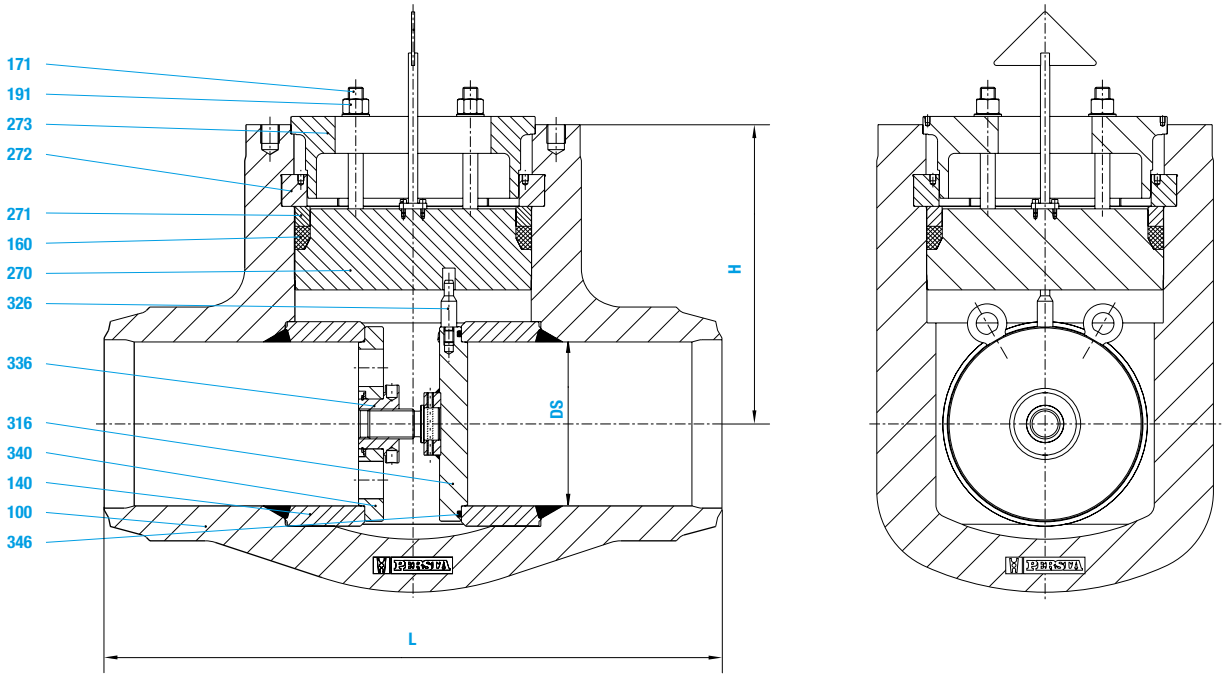
Design Highlights

- Valve body and cover made of forged steel
- Position indicator
- Pressure sealing bonnet
- Cover can be used for dismantling of the cover fastener

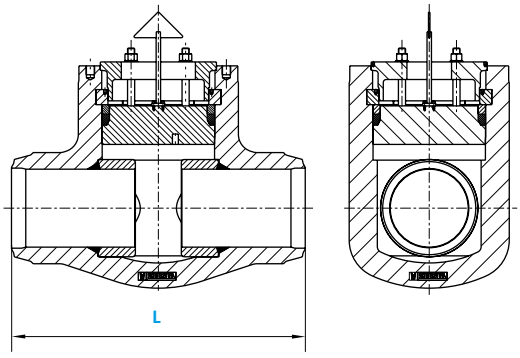
Benefits

- Free from porosity and shrink holes
- Indicates if seal plate is mounted or dismantled
- Best possible sealing function
- No special tools are necessary for dismantling

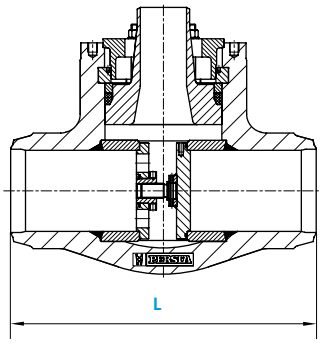
- **High pressure line blind valve DPV 10-27** ▪ **990 VW**
- **Class 900-4500** ▪ **(PN 100-630)** ▪ **NPS 2 ½ - 28** ▪ **(DN 65-600)**



Free passage
(seal plate dismantled)



With blow-out attachment
(seal plate mounted)



▪ High pressure line blind valve DPV 10-27 ▪ 990 VW

▪ Class 900-4500 ▪ (PN 100-630) ▪ NPS 2 ½ - 28 ▪ (DN 65-600)

Materials

Pos.	Component	A 105 (B1)	A 182 F12 (D4)	A 182 F22 (D5)	A 182 F91 (F3)	A 182 F92 (F6)
100	Body	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
140	Seat ring	A 105	A 182 F12 Cl.2	A 182 F22 Cl.3	A 182 F91	A 182 F92
	welded on with	Stellite	Stellite	Stellite	Stellite	Stellite
160	▸ Gasket	Graphite	Graphite	Graphite	Graphite	Graphite
171	Tension screw	A 193 B7	A 193 B7	A 193 B7	A 193 B7	A 193 B7
191	Hexagonal nut	A 194 2H	A 194 2H	A 194 2H	A 194 2H	A 194 2H
270	Cover	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22	A 182 F91	A 182 F92
271	Ring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22	A 182 F91	A 182 F92
272	Segmentring	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
273	Cover	A 105	A 105	A 105	A 105	A 105
316	Cone plate	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F91	A 182 F92
326	Tension pin	1.4021	1.4021	1.4021	1.4021	1.4021
336	Yoke sleeve	CW 713 R	CW 713 R	CW 713 R	CW 713 R	CW 713 R
340	Plate	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3	A 182 F22 Cl.3
346	▸ O-Ring	Viton	Viton	Viton	VViton	Viton

▸ Spare parts

Dimensions / Weight / Flow coefficent

Class 1500 NPS	DN	DS	BW L		RF L1		H		BW lb	kg	Flow Coefficient Cv	Kv
3	80	70	12,0	304,8	18,5	469,9	8,2	207.0	108,0	49,0	250,0	215,0
4	100	90	16,0	406,4	21,5	546,1	9,1	231.0	183,0	83,0	435,0	375,0
5	125	111	19,0	482,6	26,5	673,1	11,2	285.0	302,0	137,0	635,0	550,0
6	150	136	22,0	558,8	27,8	704,9	12,7	321.0	582,0	264,0	950,0	820,0
8	200	178	28,0	711,2	32,8	831,9	15,8	401.0	888,5	403,0	1640,0	1410,0
10	250	222	34,0	863,6	39,0	990,6	18,8	477.0	1642,4	745,0	2545,0	2200,0
12	300	263	39,0	990,6	44,5	1130,3	23,7	543.0	2570,6	1166,0	3570,0	3090,0

Intermediate class on request. Larger sizes on request. Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

Class 2500 NPS	DN	DS	BW L		RF L1		H		BW lb	kg	Flow Coefficient Cv	Kv
2 1/2	65	50	13,0	330,2	20,0	508,0	8,2	208.0	127,9	58,0	100,0	90,0
3	80	57	14,5	368,3	22,8	577,9	8,7	221.0	198,4	90,0	155,0	135,0
4	100	72	18,0	457,2	26,5	673,1	9,9	250.0	328,5	149,0	250,0	215,0
5	125	90	21,0	533,4	31,3	793,8	11,9	303.0	632,7	287,0	415,0	360,0
6	150	111	24,0	609,6	36,0	914,4	15,3	388.0	981,0	445,0	740,0	640,0
8	200	146	30,0	762,0	40,3	1022,4	17,0	431.0	1752,7	795,0	1100,0	950,0
10	250	185	36,0	914,4	50,0	1270,0	20,8	528.0	3395,1	1540,0	1765,0	1530,0

Intermediate class on request. Larger sizes on request. Black in inches, lb, Us gal/min. Blue in mm, kg, m^3/h.

▪ Technical Appendix ▪ Pressure-temperature ratings

Pressure-temperature ratings

A 105 [1]

Working pressure in psig classes								Gage working pressure by rating number, bar							
Temp.°F	600	725	900	1500	1850	2500	3200	Temp. °C	600	725	900	1500	1850	2500	3200
100	1480.0	1788.3	2220.0	3705.0	4567.7	6170.0	7897.6	38	102.1	123.4	153.2	255.3	314.9	425.5	544.6
200	1360.0	1641.0	2035.0	3395.0	4186.0	5655.0	7238.4	50	100.2	121.1	150.4	250.6	309.1	417.7	534.7
300	1310.0	1583.0	1965.0	3270.0	4033.0	5450.0	6976.0	100	93.2	112.6	139.8	233.0	287.4	388.3	497.0
400	1265.0	1530.0	1900.0	3170.0	3908.5	5280.0	6758.4	150	90.2	109.0	135.2	225.4	278.0	375.6	480.8
500	1205.0	1457.0	1810.0	3015.0	3718.5	5025.0	6432.0	200	87.6	105.9	131.4	219.0	270.1	365.0	467.2
600	1135.0	1373.0	1705.0	2840.0	3501.5	4730.0	6054.4	250	83.9	101.4	125.8	209.7	258.6	349.5	447.4
650	1100.0	1329.0	1650.0	2745.0	3385.5	4575.0	5856.0	300	79.6	96.2	119.5	199.1	245.5	331.8	424.7
700	1060.0	1281.0	1590.0	2665.0	3281.0	4425.0	5664.0	325	77.4	93.5	116.1	193.6	238.8	322.6	412.9
750	1015.0	1225.0	1520.0	2535.0	3128.2	4230.0	5414.4	350	75.1	90.8	112.7	187.8	231.6	313.0	400.7
800	825.0	996.0	1235.0	2055.0	2536.2	3430.0	4390.4	375	72.7	87.9	109.1	181.8	224.3	303.1	387.9
850	640.0	771.0	955.0	1595.0	1966.0	2655.0	3398.4	400	69.4	83.9	104.2	173.6	214.1	289.3	370.3
900	460.0	556.0	690.0	1150.0	1417.7	1915.0	2451.2	425	57.5	69.5	86.3	143.8	177.4	239.7	306.8
950	275.0	331.0	410.0	685.0	846.0	1145.0	1465.6	450	46.0	55.6	69.0	115.0	141.8	191.7	245.4
1000	170.0	205.0	255.0	430.0	529.7	715.0	915.0	475	34.9	42.2	52.3	87.2	107.5	145.3	186.0
								500	23.5	28.4	35.3	58.8	72.5	97.9	125.3
								538	11.8	14.3	17.7	29.5	36.4	49.2	63.0

Notes: (1) Upon prolonged exposure to temperatures above 800 °F (425 °C), the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800 °F (425 °C).

A 182 Gr. F12 Cl.2 [3]

Working pressure in psig classes								Gage working pressure by rating number, bar							
Temp.°F	600	725	900	1500	1850	2500	3200	Temp.°C	600	725	900	1500	1850	2500	3200
100	1500.0	1812.5	2250.0	3750.0	4625.0	6250.0	8000.0	38	103.4	124.9	155.1	258.6	318.9	430.9	551.6
200	1470.0	1778.0	2210.0	3680.0	4539.3	6135.0	8000.0	50	103.0	124.5	154.5	257.5	317.6	429.2	551.6
300	1400.0	1692.0	2100.0	3495.0	4312.3	5830.0	7699.0	100	100.9	121.9	151.3	252.2	311.1	420.4	549.7
400	1335.0	1614.0	2005.0	3345.0	4123.8	5570.0	7392.0	150	96.4	116.4	144.5	240.9	297.1	401.5	535.3
500	1290.0	1516.0	1940.0	3230.0	3984.3	5385.0	7091.0	200	92.5	111.8	138.8	231.3	285.3	385.6	518.9
600	1210.0	1462.0	1815.0	3025.0	3730.3	5040.0	6451.0	250	89.6	108.3	134.5	224.1	276.4	373.5	494.0
650	1175.0	1421.0	1765.0	2940.0	3627.8	4905.0	6278.0	300	85.7	103.6	128.6	214.4	264.3	357.1	457.0
700	1135.0	1373.0	1705.0	2840.0	3501.5	4730.0	6054.0	350	82.6	97.2	124.0	206.6	248.1	344.3	429.1
750	1065.0	1286.0	1595.0	2660.0	3279.5	4430.0	5670.0	375	80.4	93.8	120.7	201.1	239.3	335.3	413.7
800	1015.0	1228.0	1525.0	2540.0	3131.5	4230.0	5414.0	400	77.6	88.5	116.5	194.1	225.7	323.2	390.2
850	975.0	1177.0	1460.0	2435.0	3003.8	4060.0	5197.0	425	73.3	84.6	109.8	183.1	215.9	304.9	373.2
900	745.0	901.0	1120.0	1870.0	2305.8	3115.0	4794.0	450	70.0	81.7	105.1	175.1	208.5	291.6	360.6
950	550.0	665.0	825.0	1370.0	1690.3	2285.0	3398.0	475	67.7	67.3	101.4	169.0	171.8	281.8	337.7
1000	400.0	481.0	595.0	995.0	1226.0	1655.0	2304.0	500	55.7	51.7	83.6	139.3	131.9	232.1	274.4
1050	290.0	348.0	430.0	720.0	888.0	1200.0	1536.0	538	42.8	33.1	64.1	106.9	84.6	178.2	158.9
1100	190.0	232.0	290.0	480.0	592.0	800.0	1024.0	550	27.4	29.1	41.1	68.6	74.3	114.3	135.5
1150	125.0	150.0	185.0	310.0	381.8	515.0	698.0	575	24.1	21.3	36.1	60.2	54.3	100.4	93.9
1200	70.0	84.6	105.0	170.0	210.3	285.0	442.0	600	17.6	14.6	26.4	44.0	37.3	73.4	65.1

Notes: (3) Permissible, but not recommended for prolonged use above 1100 °F (593,3 °C).

A 182 Gr. F22 Cl.3 [4]

Working pressure in psig classes								Gage working pressure by rating number, bar							
Temp.°F	600	725	900	1500	1850	2500	3200	Temp.°C	600	725	900	1500	1850	2500	3200
100	1500.0	1812.5	2250.0	3750.0	4625.0	6250.0	8000.0	38	103.4	124.9	155.1	258.6	318.9	430.9	551.6
200	1500.0	1813.0	2250.0	3750.0	4625.0	6250.0	8000.0	50	103.4	124.9	155.1	258.6	318.9	430.9	551.6
300	1455.0	1759.0	2185.0	3640.0	4490.5	6070.0	7769.6	100	103.0	124.5	154.6	257.6	317.7	429.4	549.7
400	1410.0	1704.0	2115.0	3530.0	4352.5	5880.0	7526.4	150	100.3	121.3	150.6	250.8	309.4	418.2	535.3
500	1330.0	1607.0	1995.0	3325.0	4100.3	5540.0	7091.2	200	97.2	117.5	145.8	243.4	300.1	405.4	518.9
600	1210.0	1462.0	1815.0	3025.0	3730.3	5040.0	6451.2	250	92.7	112.0	139.0	231.8	285.8	386.2	494.0
650	1175.0	1421.0	1765.0	2940.0	3627.8	4905.0	6278.4	300	85.7	103.6	128.6	214.4	264.3	357.1	457.0
700	1135.0	1373.0	1705.0	2840.0	3501.5	4730.0	6054.4	350	80.4	97.2	120.7	201.1	248.1	335.3	429.1
750	1065.0	1286.0	1595.0	2660.0	3279.5	4430.0	5670.4	375	77.6	93.8	116.5	194.1	239.3	323.2	413.7
800	1015.0	1228.0	1525.0	2540.0	3131.5	4230.0	5414.4	400	73.3	88.5	109.8	183.1	225.7	304.9	390.2
850	975.0	1177.0	1460.0	2435.0	3003.8	4060.0	5196.8	425	70.0	84.6	105.1	175.1	215.9	291.6	373.2
900	900.0	1088.0	1350.0	2245.0	2770.0	3745.0	4793.6	450	67.7	81.7	101.4	169.0	208.5	281.8	360.6
950	755.0	924.0	1160.0	1930.0	2381.5	3220.0	4121.6	475	63.4	76.6	95.1	158.2	195.2	263.9	337.7
1000	535.0	645.0	800.0	1335.0	1648.3	2230.0	2854.4	500	56.5	68.3	84.7	140.9	173.8	235.0	300.8
1050	350.0	423.0	525.0	875.0	1078.0	1455.0	1862.4	538	36.9	44.6	55.3	92.2	113.7	153.7	196.7
1100	220.0	266.0	330.0	550.0	677.8	915.0	1171.2	550	31.3	37.8	46.9	78.2	96.4	130.3	166.8
1150	135.0	164.0	205.0	345.0	423.8	570.0	730.0	575	21.1	25.5	31.6	52.6	64.9	87.7	112.2
1200	80.0	98.8	125.0	205.0	254.0	345.0	442.0	600	13.8	16.7	20.7	34.4	42.5	57.4	73.5

Notes: (4) Permissible, but not recommended for prolonged use above 1100 °F (593,3 °C).

Pressure-Temperature Ratings Standard Class Valves,
Note: For special class valves, which have higher ratings contact PERSTA.
Forged ASTM Material Standard - to ASME B16.34

▪ Technical Appendix ▪ Pressure-temperature ratings

Pressure-temperature ratings

A 182 Gr. F91

Working pressure in psig classes							Gage working pressure by rating number, bar						
Temp.°F	600	725	900	1500	2500	3200	Temp.°C	600	725	900	1500	2500	3200
100	1500.0	1812.5	2250.0	3750.0	6250.0	8000.0	38	103.4	124.9	155.1	258.6	430.9	551.6
200	1500.0	1813.0	2250.0	3750.0	6250.0	8000.0	50	103.4	124.9	155.1	258.6	430.9	551.6
300	1455.0	1759.0	2185.0	3640.0	6070.0	7769.6	100	103.0	124.5	154.6	257.6	429.4	549.7
400	1410.0	1704.0	2115.0	3530.0	5880.0	7526.4	150	100.3	121.3	150.6	250.8	418.2	535.3
500	1330.0	1607.0	1995.0	3325.0	5540.0	7091.2	200	97.2	117.5	145.8	243.4	405.4	518.9
600	1210.0	1462.0	1815.0	3025.0	5040.0	6451.2	250	92.7	112.0	139.0	231.8	386.2	494.0
650	1175.0	1421.0	1765.0	2940.0	4905.0	6278.4	300	85.7	103.6	128.6	214.4	357.1	457.0
700	1135.0	1373.0	1705.0	2840.0	4730.0	6054.4	350	80.4	97.2	120.7	201.1	335.3	429.1
750	1065.0	1286.0	1595.0	2660.0	4430.0	5670.4	375	77.6	93.8	116.5	194.1	323.2	413.7
800	1015.0	1228.0	1525.0	2540.0	4230.0	5414.4	400	73.3	88.5	109.8	183.1	304.9	390.2
850	975.0	1177.0	1460.0	2435.0	4060.0	5196.8	425	70.0	84.6	105.1	175.1	291.6	373.2
900	900.0	1088.0	1350.0	2245.0	3745.0	4793.6	450	67.7	81.7	101.4	169.0	281.8	360.6
950	775.0	935.0	1160.0	1930.0	3220.0	4121.6	475	63.4	76.6	95.1	158.2	263.9	337.7
1000	725.0	877.0	1090.0	1820.0	3030.0	3878.4	500	56.5	68.3	84.7	140.9	235.0	300.8
1050	720.0	870.0	1080.0	1800.0	3000.0	3840.0	538	50.0	60.5	75.2	125.5	208.9	267.3
1100	605.0	730.0	905.0	1510.0	2515.0	3219.2	550	49.8	60.2	74.8	124.9	208.0	266.2
1150	445.0	539.0	670.0	1115.0	1855.0	2374.4	575	47.9	57.9	71.8	119.7	199.5	255.4
1200	290.0	348.0	430.0	720.0	1200.0	1536.0	600	39.0	58.4	58.5	97.5	162.5	208.0
							625	29.2	35.3	43.8	73.0	121.7	155.8
							650	19.9	24.0	29.8	49.6	82.7	105.9

A 182 Gr. F92 [5)]

Working pressure in psig classes						Gage working pressure by rating number, bar					
Temp.°F	600	900	1500	2500	3200	Temp.°C	600	900	1500	2500	3200
100	1500.0	2250.0	3750.0	6250.0	8000.0	38	103.4	155.1	258.6	430.9	551.6
200	1500.0	2250.0	3750.0	6250.0	8000.0	50	103.4	155.1	258.6	430.9	551.6
300	1455.0	2185.0	3640.0	6070.0	7770.0	100	103.0	154.6	257.6	429.4	549.7
400	1410.0	2115.0	3530.0	5880.0	7526.0	150	100.3	150.6	250.8	418.2	535.3
500	1330.0	1995.0	3325.0	5540.0	7091.0	200	97.2	145.8	243.4	405.4	519.0
600	1210.0	1815.0	3025.0	5040.0	6451.0	250	92.7	139.0	231.8	386.2	494.2
650	1175.0	1765.0	2940.0	4905.0	6278.0	300	85.7	128.6	214.4	357.1	457.0
700	1135.0	1705.0	2840.0	4730.0	6054.0	325	82.6	124.0	206.6	344.3	440.7
750	1065.0	1595.0	2660.0	4430.0	5670.0	350	80.4	120.7	201.1	335.3	429.1
800	1015.0	1525.0	2540.0	4230.0	5414.0	375	77.6	116.5	194.1	323.3	413.7
850	975.0	1460.0	2435.0	4060.0	5197.0	400	73.3	109.8	183.1	304.9	390.2
900	900.0	1350.0	2245.0	3745.0	4794.0	425	70.0	105.1	175.1	291.6	373.2
950	775.0	1160.0	1930.0	3220.0	4122.0	450	67.7	101.4	169.0	281.8	360.6
1000	725.0	1090.0	1820.0	3030.0	3878.0	475	63.4	95.1	158.2	263.9	337.7
1050	720.0	1080.0	1800.0	3000.0	3840.0	500	56.5	84.7	140.9	235.0	300.8
1100	645.0	965.0	1610.0	2685.0	3437.0	538	50.0	75.2	125.5	208.9	267.3
1150	550.0	825.0	1370.0	2285.0	2925.0	550	49.8	74.8	124.9	208.0	266.2
1200	385.0	575.0	960.0	1600.0	2048.0	575	47.9	71.8	119.7	199.5	255.4
						600	42.9	64.2	107.0	178.5	228.5
						625	36.6	54.9	91.2	152.0	194.6
						650	26.6	39.7	66.2	110.3	141.2

Notes: (5) Application above 620 °C is limited to tubing of maximum outside diameter of 88.9 mm.

Pressure-Temperature Ratings Standard Class Valves,
Note: For special class valves, which have higher ratings contact PERSTA.
Forged ASTM Material Standard - to ASME B16.34

▪ Technical Appendix ▪ Endpreparations buttwelding ends

Buttwelding ends

Features are per ASME B16.25

NPS	DN	Pipe Sch. No.	A outside diameter inches	A outside diameter mm	B inside diameter inches	B inside diameter mm	C bore of welding lip inches	C bore of welding lip mm	t wall thickness inches	t wall thickness mm
1/2	15	40	0.840	21.3	0.622	15.760	0.608	15.413	0.109	2.770
		80	0.840	21.3	0.546	13.840	0.542	13.733	0.147	3.730
		160	0.840	21.3	0.464	11.740	0.470	11.895	0.188	4.780
		XXS	0.840	21.3	0.252	6.360	0.285	7.188	0.294	7.470
3/4	20	40	1.050	26.7	0.824	20.960	0.811	20.638	0.113	2.870
		80	1.050	26.7	0.742	18.880	0.740	18.818	0.154	3.910
		160	1.050	26.7	0.612	15.580	0.626	15.930	0.219	5.560
		XXS	1.050	26.7	0.434	11.060	0.470	11.975	0.308	7.820
1	25	40	1.315	33.4	1.049	26.640	1.041	26.445	0.133	3.380
		80	1.315	33.4	0.957	24.300	0.961	24.398	0.179	4.550
		160	1.315	33.4	0.815	20.700	0.837	21.248	0.250	6.350
		XXS	1.315	33.4	0.599	15.220	0.648	16.453	0.358	9.090
1 1/4	32	40	1.660	42.2	1.380	35.080	1.374	34.930	0.140	3.560
		80	1.660	42.2	1.278	32.500	1.285	32.673	0.191	4.850
		160	1.660	42.2	1.160	29.500	1.182	30.048	0.250	6.350
		XXS	1.660	42.2	0.896	22.800	0.951	24.185	0.382	9.700
1 1/2	40	40	1.900	48.3	1.610	40.940	1.605	40.820	0.145	3.680
		80	1.900	48.3	1.500	38.140	1.509	38.370	0.200	5.080
		160	1.900	48.3	1.338	34.020	1.367	34.765	0.281	7.140
		XXS	1.900	48.3	1.100	28.000	1.159	29.498	0.400	10.150
2	50	40	2.375	60.3	2.067	52.480	2.065	52.418	0.154	3.910
		80	2.375	60.3	1.939	49.220	1.953	49.565	0.218	5.540
		160	2.375	60.3	1.687	42.820	1.732	43.965	0.344	8.740
		XXS	2.375	60.3	1.503	38.160	1.571	39.888	0.436	11.070
2 1/2	65	40	2.875	73.0	2.469	62.50	2.479	62.93	0.203	5.160
		80	2.875	73.0	2.323	59.00	2.351	59.69	0.276	7.010
		160	2.875	73.0	2.125	54.00	2.178	55.28	0.375	9.530
		XXS	2.875	73.0	1.771	45.00	1.868	47.43	0.552	14.020
3	80	40	3.500	88.9	3.068	78.00	3.081	78.25	0.216	5.490
		80	3.500	88.9	2.900	73.50	2.934	74.53	0.300	7.620
		160	3.500	88.9	2.624	66.50	2.692	68.38	0.438	11.130
		XXS	3.500	88.9	2.300	58.50	2.409	61.19	0.600	15.240
4	100	40	4.500	114.3	4.026	102.00	4.044	102.73	0.237	6.020
		80	4.500	114.3	3.826	97.00	3.869	98.28	0.337	8.560
		160	4.500	114.3	3.438	87.50	3.530	89.65	0.531	13.490
		XXS	4.500	114.3	3.152	80.00	3.280	83.30	0.674	17.120
5	125	40	5.563	141.3	5.047	128.00	5.070	128.80	0.258	6.550
		80	5.563	141.3	4.813	122.00	4.866	123.58	0.375	9.530
		160	5.563	141.3	4.313	109.50	4.428	112.47	0.625	15.880
		XXS	5.563	141.3	4.063	103.00	4.209	106.92	0.750	19.050
6	150	40	6.625	168.3	6.065	154.00	6.094	154.82	0.280	7.110
		80	6.625	168.3	5.761	146.50	5.828	148.06	0.432	10.970
		160	6.625	168.3	5.187	132.00	5.326	135.31	0.719	18.260
		XXS	6.625	168.3	4.897	124.50	5.072	128.85	0.864	21.950
8	200	40	8.625	219.1	7.981	203.00	8.020	203.75	0.322	8.180
		80	8.625	219.1	7.625	193.50	7.709	195.84	0.500	12.700
		100	8.625	219.1	7.44	189.00	7.544	191.65	0.59	15.09
		120	8.625	219.1	7.19	182.50	7.326	186.11	0.72	18.26
		140	8.625	219.1	7.001	178.00	7.163	181.98	0.812	20.620
		XXS	8.625	219.1	6.875	174.50	7.053	179.16	0.875	22.230
		160	8.625	219.1	6.813	173.00	6.998	177.79	0.906	23.010

Black numerals are in inch. Blue numerals are in millimeter.

▪ Technical Appendix ▪ Endpreparations buttwelding ends

Buttwelding ends

Features are per ASME B16.25

NPS	DN	Pipe Sch. No.	A outside diameter inches	A outside diameter mm	B inside diameter inches	B inside diameter mm	C bore of welding lip inches	C bore of welding lip mm	t wall thickness inches	t wall thickness mm
10	250	40	10.750	273.0	10.020	254.50	10.070	255.74	0.365	9.27
		80	10.750	273.0	9.562	243.00	9.670	245.55	0.594	15.09
		100	10.750	273.0	9.312	236.50	9.451	240.01	0.72	18.26
		120	10.750	273.0	9.062	230.00	9.232	234.44	0.84	21.44
		140	10.750	273.0	8.750	222.00	8.959	227.51	1.000	25.40
		160	10.750	273.0	8.500	216.00	8.740	221.95	1.125	28.58
12	300	40	12.750	323.8	11.938	303.00	11.999	304.72	0.406	10.31
		80	12.750	323.8	11.374	289.00	11.505	292.17	0.688	17.48
		100	12.750	323.8	11.062	281.00	11.232	285.24	0.844	21.44
		120	12.750	323.8	10.750	273.00	10.959	278.31	1.000	25.40
		140	12.750	323.8	10.500	266.50	10.740	272.75	1.125	28.58
		160	12.750	323.8	10.126	257.00	10.413	264.45	1.312	33.32
14	350	40	14.000	355.6	13.124	333.50	13.192	335.08	0.438	11.13
		80	14.000	355.6	12.500	317.50	12.646	321.22	0.750	19.05
		100	14.000	355.6	12.124	308.00	12.318	312.86	0.938	23.83
		120	14.000	355.6	11.812	300.00	12.044	305.93	1.094	27.79
		140	14.000	355.6	11.500	292.00	11.771	299.00	1.250	31.75
		160	14.000	355.6	11.188	284.00	11.498	292.07	1.406	35.71
16	400	40	16.000	406.4	15.000	381.00	15.084	383.14	0.500	12.70
		80	16.000	406.4	14.312	363.50	14.482	367.84	0.844	21.44
		100	16.000	406.4	13.938	354.00	14.155	359.53	1.031	26.19
		120	16.000	406.4	13.562	344.50	13.826	351.18	1.219	30.96
		140	16.000	406.4	13.124	333.50	13.442	341.43	1.438	36.53
		160	16.000	406.4	12.812	325.50	13.170	334.50	1.594	40.49
18	450	40	18.000	457.2	16.876	428.50	16.975	431.19	0.562	14.27
		80	18.000	457.2	16.124	409.50	16.318	414.46	0.938	23.83
		100	18.000	457.2	15.688	398.50	15.936	404.78	1.156	29.36
		120	18.000	457.2	15.250	387.50	15.553	395.03	1.375	34.93
		140	18.000	457.2	14.876	378.00	15.225	386.77	1.562	39.67
		160	18.000	457.2	14.438	366.50	14.842	376.99	1.781	45.24
20	500	40	20.000	508.0	18.812	489.00	18.920	480.55	0.594	15.09
		80	20.000	508.0	17.938	455.50	18.155	461.13	1.031	26.19
		100	20.000	508.0	17.438	443.00	17.717	450.02	1.281	32.54
		120	20.000	508.0	17.000	432.00	17.334	440.29	1.500	38.10
		140	20.000	508.0	16.500	419.00	16.896	429.17	1.750	44.45
		160	20.000	508.0	16.062	408.00	16.513	419.44	1.969	50.01

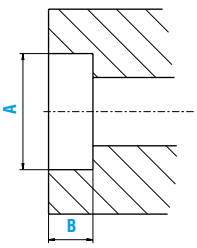
Black numerals are in inch. Blue numerals are in millimeter

End Configurations Socket Welding - Ends ASME B16.11

	NPS	DN	NPS	DN	NPS	DN	NPS	DN	NPS	DN	NPS	DN
Valve Sizes	1/2	15	3/4	20	1	25	1 1/4	32	1 1/2	40	2	50
A - Socket Diameter - min.	0.855	22	1.065	27	1.330	34	1.675	43	1.915	49	2.406	61
B - Depth of Socket - min.	0.38	10	0.50	13	0.50	13	0.50	13	0.50	13	0.62	16

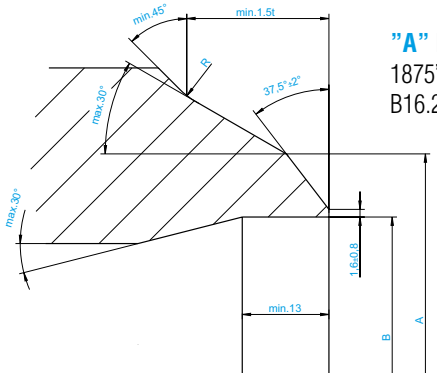
Black numerals are in inch. Blue numerals are in millimeter

Attention:
The material in this catalog is for general information. For specific performance data and proper material selection, consult your PERSTA representative. Although every attempt has been made to ensure that the information contained in this catalog is correct, PERSTA reserves the right to change designs, materials or specifications without notice.

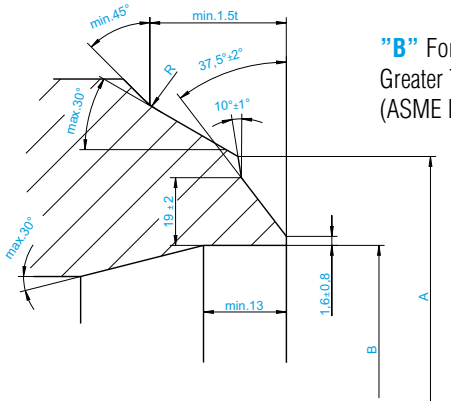


Socket Welding Ends
Conforming to requirements of ASME B16.11

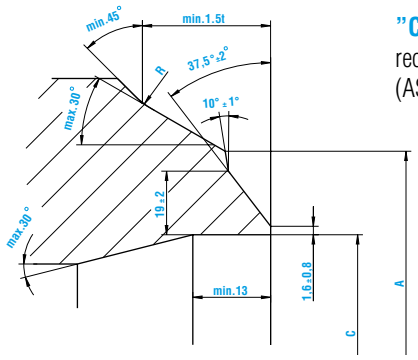
▪ Technical Appendix ▪ Endpreparations buttwelding ends ▪ Approvals



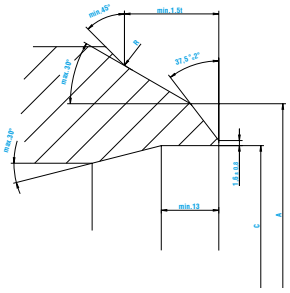
"A" For Wall Thickness (t). 1875" to. 875" inclusive (ASME B16.25 - Fig. 2A, 2B or 4)



"B" For Wall Thickness (t). Greater Than .875" inclusive (ASME B16.25 - Fig. 3A, 3B or 4)



"C" Inside contour for use with rectangular racking ring (ASME B16.25 - Fig. 2C, 3C)



"t" Inside contour for use with taper backing ring (ASME B16.25 - Fig. 2D, 3D)

A - Nominal outside diameter of pipe **B** - Nominal inside diameter of pipe
C - A - 0.031" - 1.75 t **t** - Nominal outside diameter of pipe

Important
When ordering buttwelding end valves; indicate type of weld prep desired from this page and give pipe schedule to be used from pages 52 and 53, or provide other complete instructions, missing or incomplete weld prep information may delay shipment of valves.

Inside and outside of welding ends of both cast and forged steel valves to be finish machined and carefully inspected where the thickness of these ends less than 1.15t. Runout of machined surface diameter of valve to have no abrupt change in section. Inside diameter of valve may be either larger or smaller than pipe inside diameter.

Approvals

Name of testing firm or auditing company	Specification
FRAMATOME/Siemens/AREVA	AVS D 100/50
FRAMATOME/Siemens/AREVA	KTA 1401
TÜV Cert	DIN EN ISO 9001:2000
Forsmark/Vattenfall	DIN EN ISO 9001:2000
TÜV Nord	CE 0045, DGRL97/23/EG
FSPO Moscow	Goststandard Russia
FSPO Moscow	RTN
Promatomnadzor Minsk	GOSPROMNADZOR (Belarus)
Alstom Power	Alstom QS-System
Shell Nederland Raffin.BV	Service group 77DAAB
	Service group 77DPBA
Shell Nederland Chemie BV	Service group 77DAAB
	Service group 77DPBA
Canada	Canadian Registration; CSA B51

Design	ASME B16.34 / ASME B31.3
Pressure Rating	ASME B16.34
Testing	API 598 and MSS-SP61
Marking	MSS-SP 25 and CE-PED
Certificate	EN 10204-3.1

▪ Technical Appendix ▪ Figure number code

Valve type	
Valve type	**PERSTA Code**
High pressure globe valve, type HD 91	200 JM
High pressure globe valve, type HD 2000	200 LM / LS
High pressure stop check valve	240 MM
High pressure lift ckeck valve	240 MT
High pressure gate valve, type S 2000 and PD 18	700 JJ
High pressure gate valve, type DSK 26 and DSK 27	700 JT
High pressure swing check valve	640 AA
High pressure swing check valve, type DRI 26 and DRI 27	640 AB
High pressure stop check valve, type DRA 26 and 27	640 ST
High pressure line blind valve	990 VW
High pressure strainer	990 ST

Material	
ASTM-No.	**PERSTA Code**
A 105	B1
A 182 F1	D2
A 182 F12	D4
A 182 F22	D5
A 182 F91	F3
A 182 F92	F6
A 182 F347	H9

Connection	
Connection	**PERSTA Code**
Flanges (RF) acc. to ASME B16.5, Face to Face dimensions acc. to ASME B16.10 (except HD 91, HD 2000)	1
Butt welded ends (BW) acc. to ASME B16.25, Face to Face dimensions to ASME B16.1 (except HD 91, HD 2000)	2
Socket welded ends (SW) acc. to ASME B16.11, Face to Face dimensions to PERSTA standard	8
Special ends	9

Figure number code **Example**

XXX XX XX. X

Valve type
Material
Connection

700 JT B1. 2



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