

GLS[®]

**GLOBE
CONTROL VALVE
BODY SUBASSEMBLY**



**VALTEK[™]
SULAMERICANA**

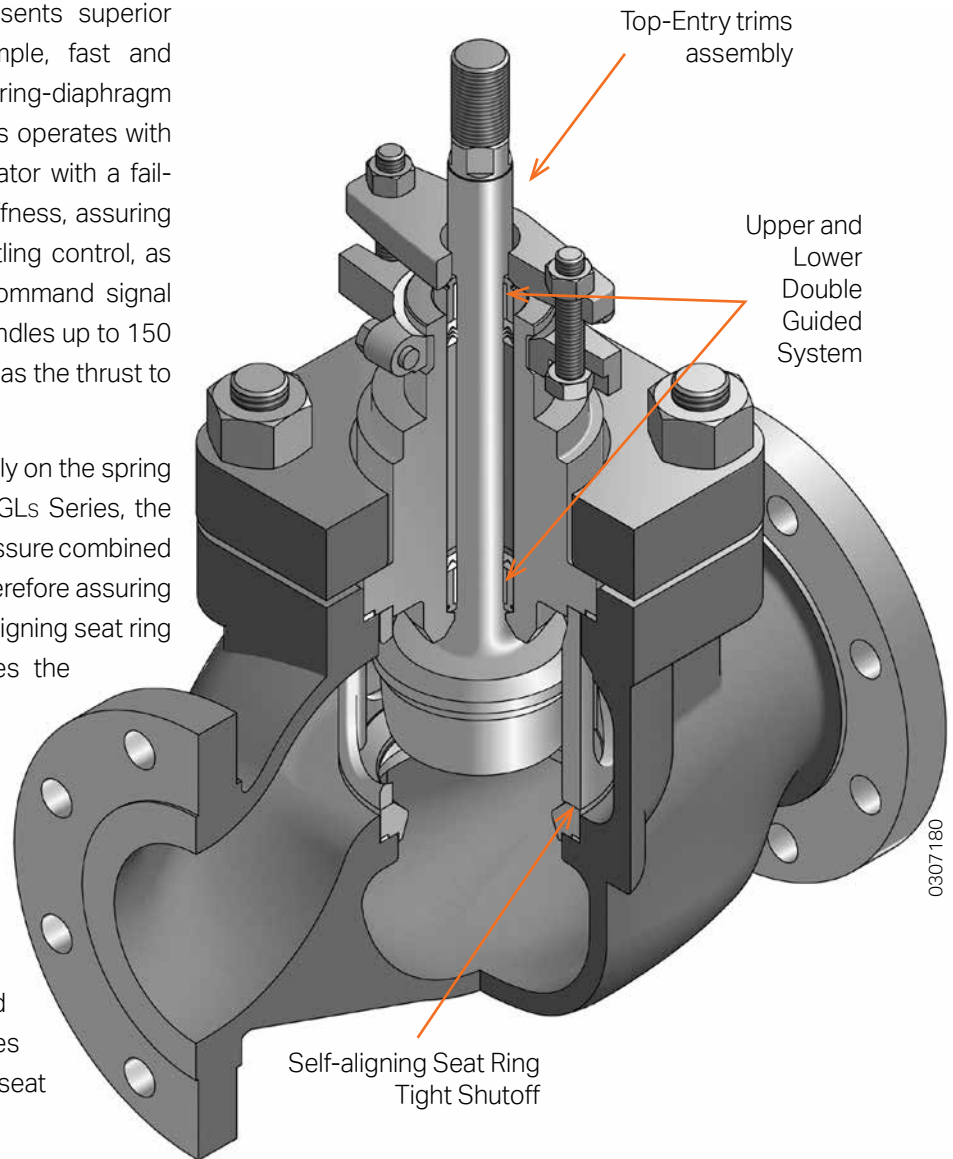
GLS[®] Globe Control Valve

GLs Series Globe control valve presents superior performance, and also permits simple, fast and inexpensive maintenance. Unlike the spring-diaphragm actuator control valves, the GLs Series operates with a double guided piston-cylinder actuator with a fail-safe spring. It provides pneumatic stiffness, assuring excellent alignment precision in throttling control, as well as fast and reliable replies to command signal variation. The GLs Series actuators handles up to 150 psi (10.3 Bar) supply air pressure and has the thrust to shut off against higher fluid pressures.

Spring-diaphragm actuators rely entirely on the spring thrust to shut the valve, while in the GLs Series, the spring, supply air pressure and fluid pressure combined produce exceptionally tight shutoff, therefore assuring exceptional tightness. Due to its self-aligning seat ring design, the GLs valve easily achieves the tightness required.

The most current problems associated to control valves can be associated to cage-guiding. The close contact of the seat retainer and plug metal surfaces often results in galling and sticking. The superior double guided system of the GLs Series is located out of the flow stream and eliminates direct contact between the plug and seat retainer.

The actuator is more compact, lighter and easier to handle when compared to conventional spring-diaphragm actuators. Due to its modern design, the valve-actuator set presents great toughness, what makes the GLs Series a world reference in its category.



GLs Series - Body Sub Assembly

Typical Rangeability 30:1
Tightness ANSI Class IV— Metal Seat Ring*
Tightness ANSI Class VI — Soft Seat Ring*

* Unbalanced trims standard

GLs - Body Subassembly

Body Styles

Conventional Globe style body

The GLs Series Globe style bodies present smooth flow stream. The internal area allows for constant stroke, without pockets, allowing high flow capacity with minimum turbulence.

These bodies are built with uniform wall thickness, resulting in less weight and cheaper costs, especially when manufactured in expensive stainless steel and special alloys.

Angle-style Body

The angle-style body of the GLs Series Valve is completely interchangeable with the conventional globe style; saving the body, all other valve elements remain the same.

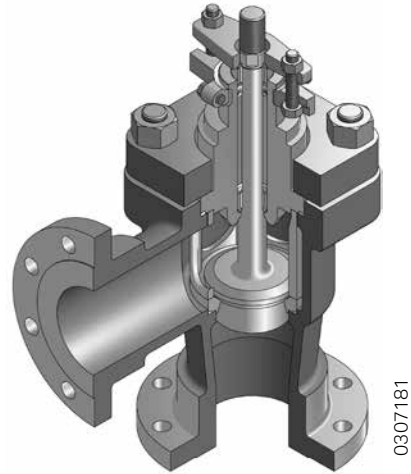
Depending on the application it will be used for, the GLs angle-style body valve can be supplied with a special venturi seat ring, which extends to the outlet flange providing additional protection against corrosive flow.

Three-way Body

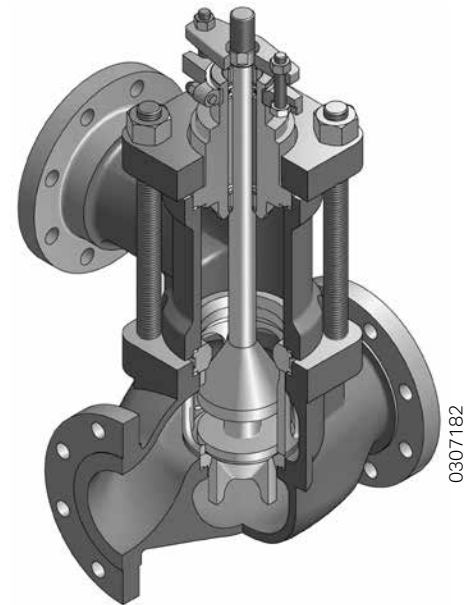
Three-way bodies are used for either combining or diverting services. Due to the great interchangeability of the GLs Series design, a standard globe valve can easily be converted to a three-way, by simply adding a three-way adaptor, an upper seat ring, two gaskets and a special three-way plug.

Steam-jacketed Body

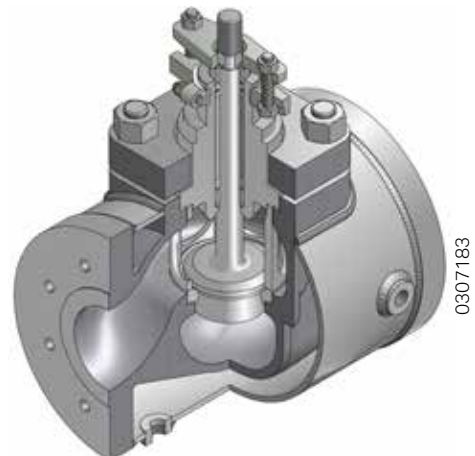
The steam-jacketed GLs Series valve uses a globe style body equipped with blind flanges, which are used for partial jacket, or oversized, for full jacket. Usually the jacket is designed for 150 psi (10.3 Bar) saturated steam maximum pressure and is equipped with NPT screwed connections (other types available under request). When ordering a steam-jacketed valve, the client should specify the type of jacket required, as well as the steam specification, quantity and type of connections.



Angle-style Valve



Three-way Valve



Steam-jacketed Valve

GLs - Body Subassembly Characteristics

In the control of modern industrial processes, the GLs Series always comes to mind when considering strength, versatility and performance:

Strength

The design of the GLs valve makes it less susceptible to fluid corrosion when compared to conventional globe valves. The heavy-duty plug stem, as well as the other valve elements, was designed for severe services and can operate on high pressure drops.

For sizes up to 3 inches diameter, versions equipped with separable flanges cover all ANSI Class 600 applications, by simply changing the end flanges. When required, valves can be supplied with anti-cavitation and noise-trim options.

Sealing

Besides providing precise control, the GLs valve design with self-aligning seat ring also provides exceptional sealing, which is reinforced by the flow pressure. With normal air supply, the piston-cylinder actuator guarantees tight shutoff, while in airless condition the actuator spring and the flow thrust drive the plug into desired fail position.

Easy, fast and inexpensive maintenance

Top-entry trims service. Once the bonnet flange nuts are taken out, the bonnet and plug can be removed from the valve, clearing the access to other internal components.

The seat ring, fitted and fixed by the retainer, can be dismantled and reassembled without the use of tools, as well as all the other valve and actuator components. The valves compact size and light weight facilitates its handling at maintenance tasks and assembly.

Guiding and Packing

The GLs Series guiding system deserves a special mention. In addition to eliminating the disadvantages of the guiding system at the seat retainer, the GLs Series guides are widely spaced and display a large supporting surface, eliminating vibration related problems in control valves.

As a result of using this advanced guiding system, the heavy duty GLs valve plug stem can be submitted to twice the force produced by the oversized actuators available, without the risk of buckling.

The GLs Series packing box great depth allows the use of all packing available at ValtekSul, while the perfect finishing of the bonnet's inner area and plug stem provides longer service life of the packing, without leaks.

Trims that do not stick

The superior double-stem guiding system, located out of flow steam, ensures perfect alignment of the plug stem, at the same time that provides a generous clearance between plughead and seat retainer, eliminating galling associated with cage-guiding.

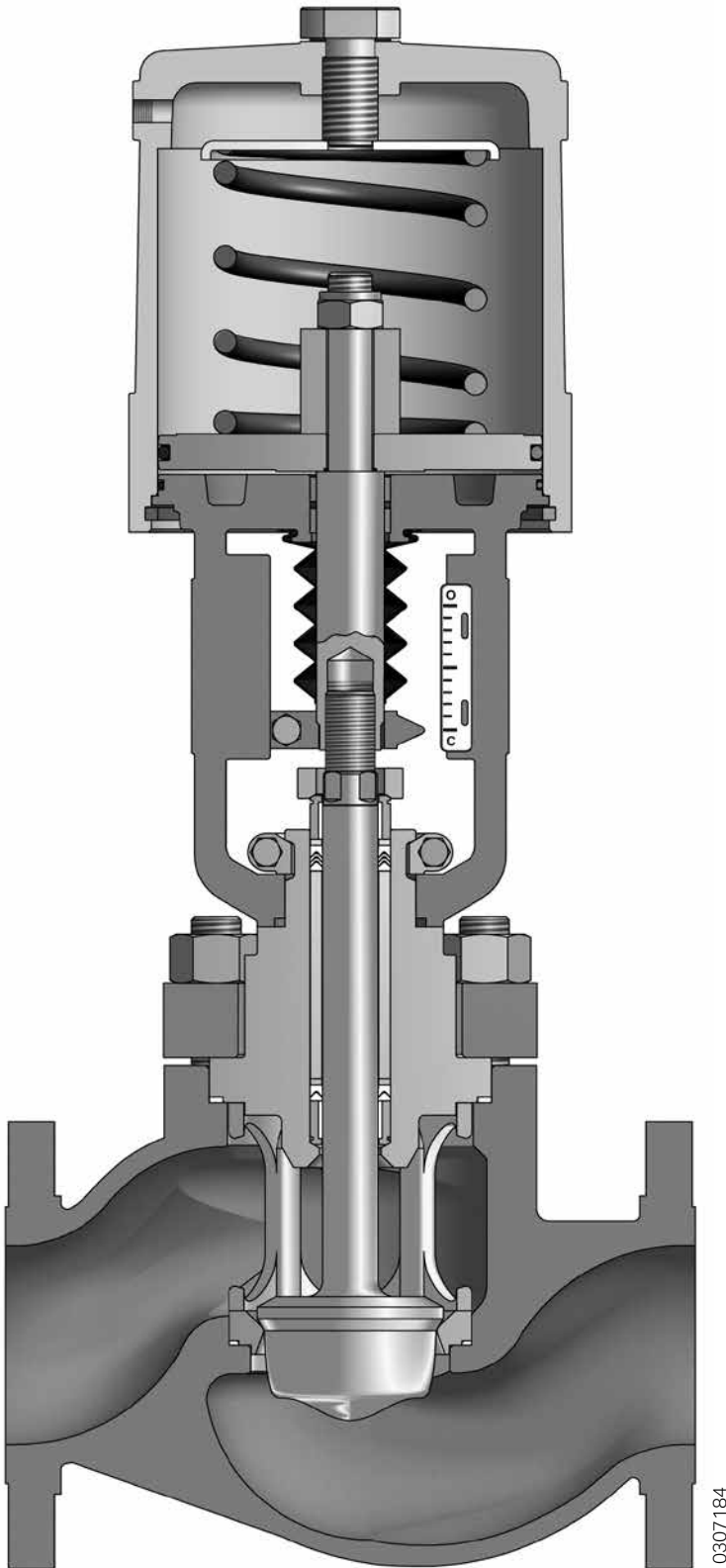
Versatile

Besides the conventional Globe bodies, angle-style, threeways and steam-jacketed bodies are available and meet the diverse face-to-face standards.

The modular concept of the design ensures high degree of interchangeability between the different versions and diameters, substantially reducing the need of spare parts.

The GLs is the largest of the valves available on the market.

GLs - Body Subassembly Additional Advantages



GLs Control Valve

Piston-cylinder actuators - Advantages:

- » High thrust cylinder actuator and pneumatic stiffness;
- » Field reversible, no need for spare parts;
- » Trustworthy operation;
- » Smaller than spring-cylinder actuators of similar force;
- » Controlled high speed;
- » Accurate positioning, with faithful response;
- » High repeatability;
- » Allows the assembly of various types of positioners and parts;
- » Optionally can be supplied with various types of manual handwheels and limit stops;
- » Admits supply air pressure of up to 150 psi (10.3 Bar), without the need of a pressure regulator.

GLs - Body Subassembly Connections, Flanges, Bolts

As standard, the GLs Series valves are supplied with integral flanges and raised face. To achieve better sealing with mating piping, the flange face is machined with spiral grooved serration. Other optional facings include smooth face, flat face, ring-joint, large and small tongue and large and small groove.

Separable end flanges

Interchangeable separable flanges are standard supply for valve bodies of up to 4 inches diameter, in ANSI Class 150, 300 and 600. With separable flanges, an ANSI Class 600 body can be adapted for operating in ANSI Class 150, 300 or 600 by simply changing the end flanges.

Separable flanges are usually furnished in carbon steel, aiming at maximum cost savings, although stainless steel can be ordered if the service temperature or pressure requires.

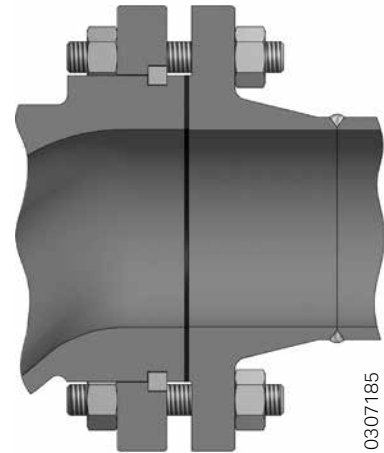
Bonnet flange

The bonnet flange design follows the same concept of the separable flanges of the GLs valve bodies. The bonnet flange is usually furnished in carbon steel, but can be supplied in stainless steel when needed.

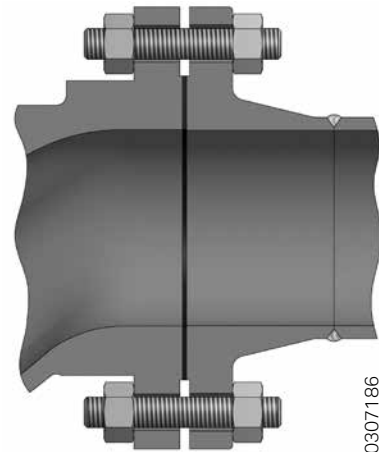
Bonnet flange assembly

The GLs Series standard bonnet is assembled to the body using stud bolts and nuts. The studs standard material is the ASTM A193 Gr. B7 and the nuts material is the ASTM A 194 Gr. 2H, suitable for -20 to 800°F (-28 to 426°C).

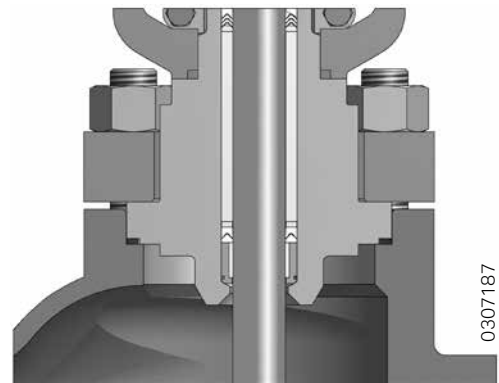
Optionally, the stud bolts and nuts can be furnished in stainless steel, supporting temperatures of -425 to 1500°F (-253 to 815°C). These temperature limits are for maximum pressure permitted by ANSI B16.34, latest edition.



Separable Flange



Integral Flange



Separable Bonnet Flange

End Connections

End Connection	Valve Nominal Diameter (in.)	ANSI Standard	(ANSI/ISA) Face-to-Face Standard
Separable Flange	0.5 to 4	150-600	75.08.07
Integral Flange	0.5 to 36	150-600	75.08.01 ⁽¹⁾
Screwed (NPT)	0.5 to 2	150-600	75.08.03 ⁽²⁾
Socketweld	0.5 to 4	150-600	75.08.03 ⁽²⁾
Buttweld	0.5 to 36	150-600	75.08.05 ⁽²⁾⁽³⁾

⁽¹⁾ For diameters larger than 16 in., face-to-face dimension will follow Valtek Sulamericana standard.

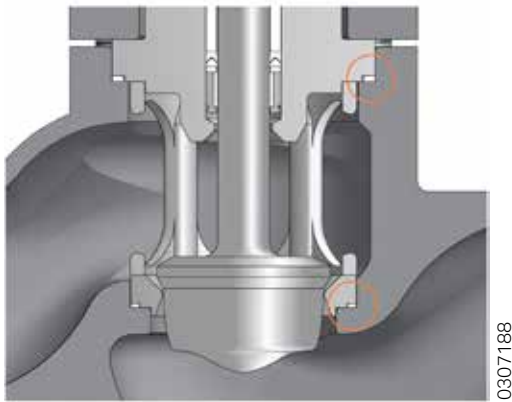
⁽²⁾ Long pattern.

⁽³⁾ For diameters larger than 16 in., face-to-face dimension will follow Valtek Sulamericana standard.

GLs - Body Subassembly Gaskets, Clamps

Gaskets

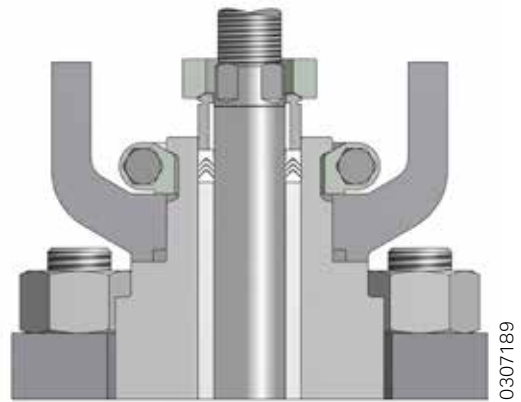
The GLs Series was designed with the bonnet and the seat ring gaskets fully retained. The valve bonnet has a step that acts as mechanic stop and limits gasket compression. In this way, the bonnet gasket remains completely sealed and its compression is determined by the gasket step on the bonnet. The GLs Series was designed with the bonnet and the seat ring gaskets fully retained. The body, seat retainer and seat ring are all machined to close tolerances to provide the proper gasket compression. Unlike the bonnet, the seat ring does not always bottom in the body (metal-to-metal), allowing this small clearance to compensate for manufacturing tolerances and thermal expansion.



Body Gaskets

Clamps

The GLs Series actuator is usually attached to the body with two precision-cast, stainless steel yoke clamps. Each clamp has an inclined plane surface which, when bolted together, securely fastens the actuator yoke to the bonnet. Unlike conventional threaded clamps, the clamp design of the GLs valve permits easy removal, even under extremely corrosive conditions. In bigger valves with higher pressure classes, the yoke is directly fixed to the bonnet using bolts.



Yoke Clamps

Standard Gasket Specifications - ASME B 16.20

	Type	Gasket Material	Temperature Limits		Pressure Limits
			°F	°C	
Standard Gaskets	Flat	PTFE	-200 to 350	-130 to 177	6000 psi @ -200°F (415 Bar @ -130°C) / 1000 psi @ 350°F (69 Bar @ 177°C)
	Spiral-wound	304/AFG SS ⁽²⁾	-320 to 750	-196 to 400	6250 psi (431 Bar)
	Spiral-wound	316/AFG SS ⁽²⁾	-320 to 1500	-196 to 815	6250 psi (431 Bar)
Alternate Gaskets	Flat	AFG ⁽²⁾	-20 to 600	-28 to 315	CF ⁽³⁾
	Flat	KEL-F	-320 ⁽⁴⁾ to 350	-196 ⁽⁴⁾ to 177	6000 psi @ -320°F (415 Bar @ -196°C) / 1000 psi @ 350°F (69 Bar @ 177°C)
	Flat	PTFEG	-200 to 450	-130 to 232	6000 psi @ -200°F (415 Bar @ -130°C) / 500 psi @ 450°F (35 Bar @ 232°C)
	Spiral-wound	316 SS/Graphite ⁽¹⁾	-320 to 1500 ⁽¹⁾	-196 to 815 ⁽¹⁾	6250 psi (431 Bar)
	O-Ring	Inconel X-750	-20 to 1500	-28 to 815	15000 psi (1034 Bar)

⁽¹⁾ Limited to 800°F (426°C) for oxidizing service. ⁽²⁾ Gasket material asbestos free. ⁽³⁾ Contact ValtekSul for information on pressure limits according to material.

⁽⁴⁾ Lower temperatures available upon request.

⁽⁵⁾ For more information, consult www.literature.valteksul.com - Bulletin number 13 of the catalogue Valve Sizing and Selection.

GLs - Body Subassembly Bonnet Types

Standard Bonnet

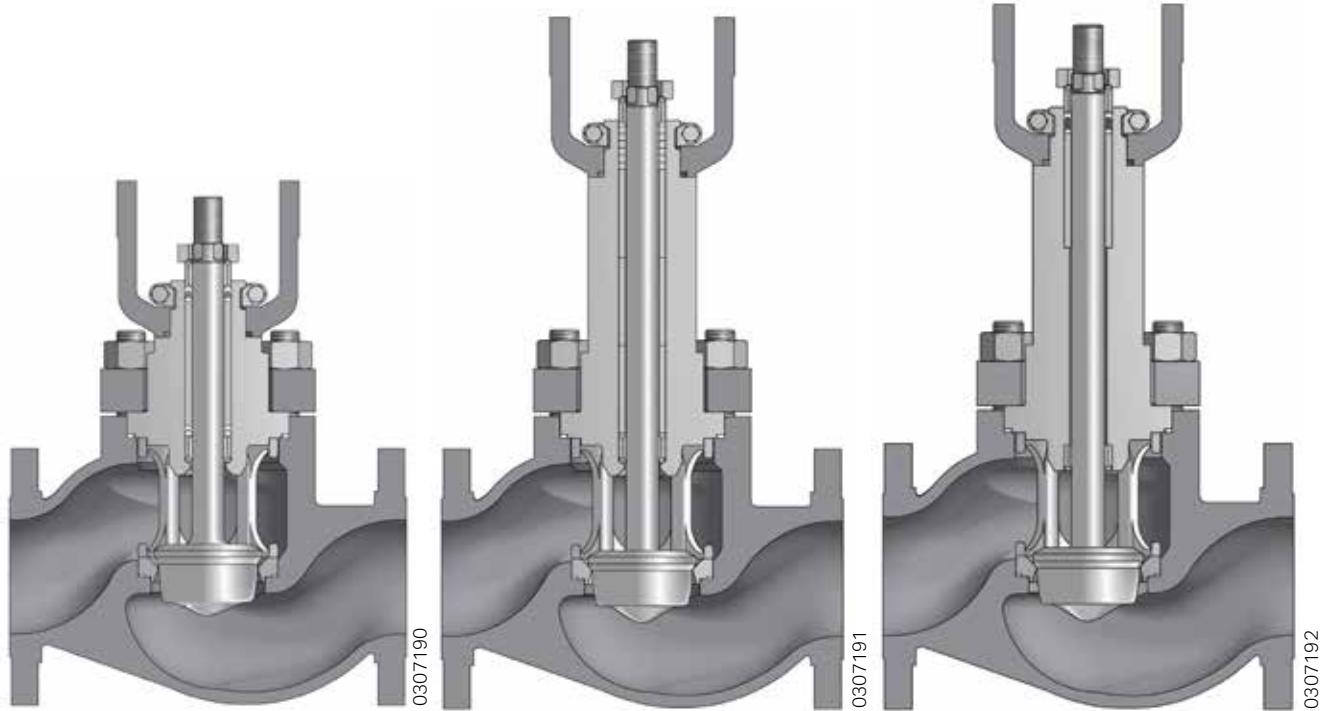
The GLs Series standard bonnet is usually constructed of the same material as the body and handles temperatures from -20 to 750°F (-29 to 400°C), depending on the packing material. (See page 9 for temperature limits of different packing materials.)

Extended Bonnet

The extended bonnet protects the packing from excessive heat or cold, which may inhibit valve performance. The extended bonnet manufactured in carbon steel handles temperatures from -20 to 800°F (-29 to 426°C), while the extended bonnet in 304 or 316 stainless steel can handle temperatures from -150 to 1500°F (-100 to 815°C).

Extended bonnet for cryogenics

The design of the GLs Series extended bonnet for cryogenics permits that a small amount of the cryogenics fluid be vaporized and remain stagnated inside, at moderate temperature, which protects the packing. It is usually manufactured from 304 or 316 stainless steel, handling temperatures down to -423°F (-253°C). Standard construction consists of stainless steel bonnet flange and bolting.



GLs Series Bonnet Types

Bonnet Flange and Studs Materials

Bonnet Flange (Standard)	Bonnet Flange (Optional)	Studs and Bolts (Standard)	Studs and Bolts (Optional)
Carbon Steel	Stainless Steel ⁽¹⁾ or the same body material.	ASTM A193 Gr. B7 / ASTM A 194 Gr. 2H ⁽²⁾	Stainless Steel 304 or Stainless Steel 316 ^{(1) (3) (4)}

⁽¹⁾The optional materials for the flange and the bonnet assembly elements are required when the temperature and pressure limits of the carbon steel and the assembly elements in B7/2H are exceeded.

⁽²⁾Temperatures from -20 to 800°F (-28 to 426°C), provided that the body class pressure is complied.

⁽³⁾Temperatures from -425 to 1500°F (-253 to 815°C), provided that the body class pressure is complied.

⁽⁴⁾Other materials under request, depending on the project requirements.

GLs - Body Subassembly Packing and Guides

Packing Box

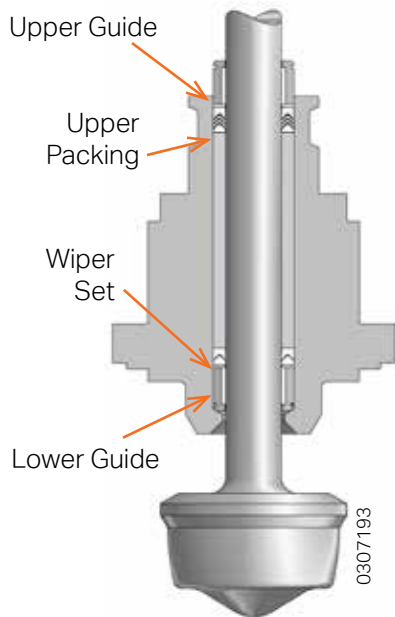
The GLs valve packing box is deep and presents perfect superficial finishing, allowing the assembly of all ValtekSul standard packing options, with the following additional advantages:

1. The spacing between the wiper set and the main upper packing set prevents contact with the wet parts of the plug stem.
2. Two widely spaced guides, placed out of the flow stream, combined to the plug stem, form the advanced guiding system of the GLs Series. The upper packing also acts as gland packing, and the lower guide is situated close to the plug head, ensuring accurate alignment of plug and seat ring.
3. The guide options cover all applications and eliminate galling between the metal parts.

Packing Set Temperature Limits

Bonnet Type	Packing Material	Temperature Limits ⁽²⁾	
		°F	°C
Standard ⁽¹⁾	PTFE Vee Ring	-20 to 450	-29 to 232
	PT and PTG	-20 to 450	-29 to 232
	Braided PTFE	-20 to 500	-29 to 260
	PTFE w/ fiber glass (PTFEG)	-20 to 500	-29 to 260
	PTG-XT	-20 to 550	-29 to 288
	Graphite/AFP ⁽³⁾	-20 to 750	-29 to 400
	Graphite/AFP ⁽³⁾ with Inconel wire	-20 to 750 ⁽⁴⁾	-29 to 400 ⁽⁴⁾
	Graphite ⁽⁵⁾	-20 to 750 ⁽⁴⁾	-29 to 400 ⁽⁴⁾
Extended ⁽¹⁾	PTFE Vee Ring	-150 to 600	-100 to 316
	PT and PTG	-20 to 600	-29 to 316
	Braided PTFE	-150 to 600	-100 to 316
	PTFE w/ fiber glass (PTFEG)	-150 to 600	-100 to 316
	PTG-XT	-20 to 700	-29 to 371
	Graphite/AFP ⁽³⁾	-20 to 1200	-29 to 650
	Graphite/AFP ⁽³⁾ with Inconel wire	-20 to 1200	-29 to 650
	Graphite ⁽⁵⁾	-20 to 1500	-29 to 815
Criogenics ⁽¹⁾	PTFE, with 15 or 18 inches extension	-320	-196
	PTFE, with 24 or 27 inches extension	-425	-253

⁽¹⁾The ANSI B16.34 standard specifies acceptable pressure and temperature limits for pressure retaining materials. Contact the manufacturer for additional information on pressure/ temperature limits of the packing materials. ⁽²⁾Acceptable limits once the pressure/temperature limits of the valve body, bonnet and components are respected. ⁽³⁾Asbestos free packing. ⁽⁴⁾For diameters of 8 to 12 inches, the maximum temperature limit is 850°F (454°C). ⁽⁵⁾Do not use graphite above 750°F (400°C) in oxidizing service such as air or oxygen. The use of graphite packing may require oversize actuators or heavier springs due to added friction.



**Guides and Packing Set
Typical Arrangement**

Temperature and Pressure Guides Limitation

Guide Materials	Temperature Limits		Pressure Limits
	°F	°C	
Stainless Steel Graphite Lined ⁽¹⁾⁽²⁾	-320 to 1500 ⁽³⁾	-196 to 815 ⁽³⁾	Up to 1000 psi (69.0 Bar) up to 2 in.
			Up to 600 psi (41.4 Bar) to 3 and 4 in.
			Up to 500 psi (34.5 Bar) to 6 in. and bigger
Stainless Steel PTFEG Lined	-20 to 300	-28 to 150	850 psi @ 100°F (58.6 Bar to 38°C); 100 psi to 300°F (6.9 Bar @ 150°C)
Bronze (Solid Guide) ⁽⁴⁾	-425 to 500 ⁽⁵⁾	- 253 to 260 ⁽⁵⁾	Same as Body
Alloy #6 (Solid Guide) ⁽⁶⁾	-425 to 1500	- 253 to 815	Same as Body

⁽¹⁾ For any diameter, the valve ΔP admissible limit should be complied. Contact the manufacturer. ⁽²⁾ Do not use in oxygen rich services. When using in cavitation regime, the use of graphite lining lower guides is not recommended. ⁽³⁾ For oxidizing or air services, the maximum service temperature is 800°F (426°C). ⁽⁴⁾ Bronze solid guides should not be used in corrosive applications or where the NACE certification is required. ⁽⁵⁾ For the upper guide, the temperature limit is 900°F (482°C). ⁽⁶⁾ Valves assembled with 300 series stainless steel trims and Alloy #6 inferior guide , the plug Guides and Packing Set stem must be hardened with Alloy #6 application at the area in contact with the guide.

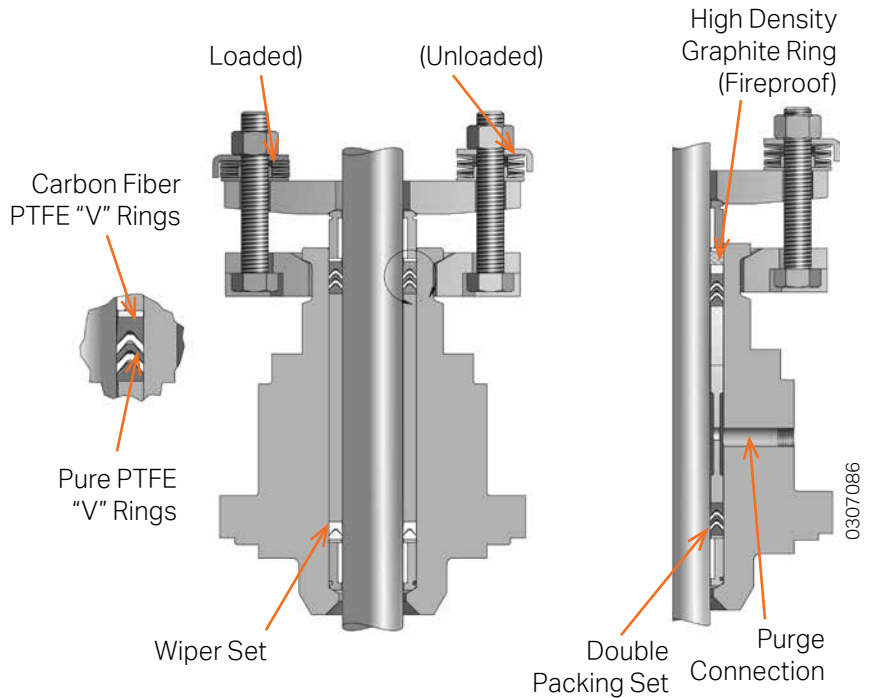
GLs - Body Subassembly Fugitive Emissions Control

PT Packing set

The GLs Series PT packing set meets EPA* regulations in reference to fugitive emissions.

Composed of pure PTFE "V" rings combined with carbon fiber PTFE "V" rings, the PT packing set is compressed by a set of spring washers that causes a "live-loaded effect" and it is available for most of ValtekSul control valves, ensuring emissions levels lower than 500 ppm.

With a simple and easy to replace setting, the PT packing reduces the need for packing retighten caused by temperature and pressure variations. A fireproof version of the PT packing set is available as option, which ensures stem tightness even facing the damages that the excess heat can cause to the "V" rings.



Standard Assembly

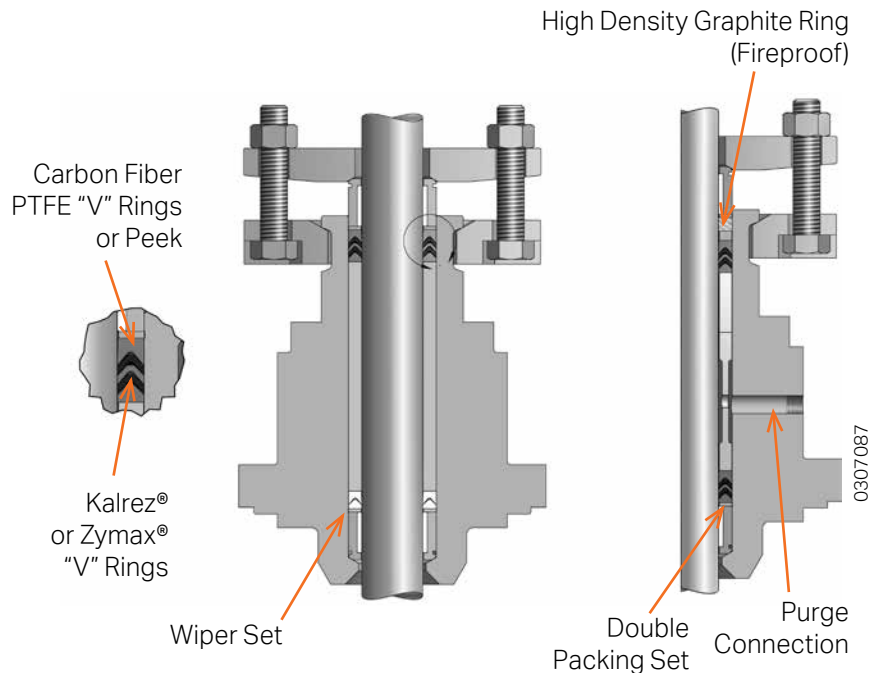
Options

PT Packing Set

PTG and PTG-XT Packing Set
When the service temperature exceeds the required limits for PT packing or when it is expected greater reliability, the PTG packing is the ideal choice.

In response to EPA's regulations, the PTG packing ensures emissions even lower than 500 ppm (usually 10 ppm), making it a highly reliable and economic option to the use of metal sealed bellows. The PTG packing set can be assembled in all ValtekSul valves, providing longer service life with reduced need for packing retighten.

Optionally, the PTG packing can be supplied in a fireproof version, according to the API 607 standards. For higher service temperatures, the PTG XT version is indicated, the application limits are recorded in table IV.



Standard Assembly

Options

PTG & PTG XT Packing Set

* EPA = Environmental Protection Agency

GLs - Body Subassembly

Seat Rings, Trim

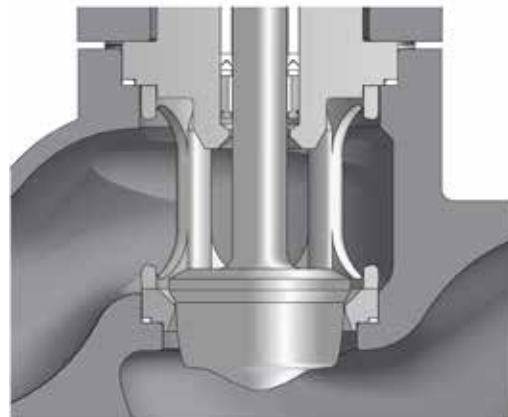
Trim

The GLs Series trims are designed to avoid the difficulties associated with screwed-in seats and cage-guiding. The seat ring is not screwed-in but clamped into the body by the bonnet and seat retainer; thus its removal is simple, even when the valve is under extremely corrosive conditions.

Unlike cage-guided trims that easily gall and stick, GLs trims are guided by a double-stem system, avoiding contact between the seat retainer and plug; allowing the retainer to be constructed of stainless steel, rather than other hardened materials of high cost. In the GLs Series, the stroke characteristic is determined by the plug shape, rather than by the opening in the seat retainer. For services with high-pressure drops, balanced trims are used to reduce the thrust necessary to stroke the plug by reducing the trim unbalanced areas.

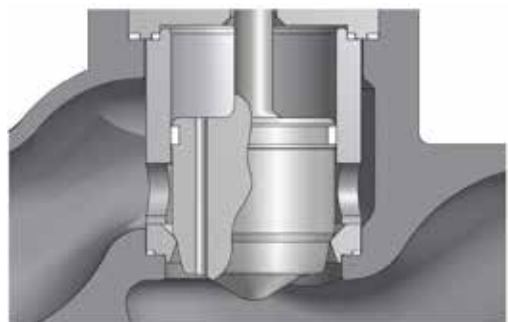
The balanced trims can only be used in clean services; as the flow direction for fail-closed is under-the-plug and for fail-open is over-the-plug.

As an option, the GLs Series can be supplied with special trims for noise reductions and for cavitation regime services.



0307194

Unbalanced Trims



0307195

Balanced Trims

Balanced Plugs Seal Rings Materials Specification

Plugs Seal Rings Materials ⁽¹⁾		Temperature Limits ⁽²⁾		Sealing	
		°F	°C	Metal Seat	Soft Seat
PTFE Rings		0 to 350	-18 to 176	Up to 10% of Class IV	Up to 1% of Class IV
Reinforced PTFE O-Ring		0 to 400	-18 to 204	Up to 10% of Class IV	Up to 1% of Class IV
Buna N, O-Ring		-40 to 200	-40 to 93	Class IV or V	Class VI
Viton A, O-Ring		-10 to 400	-23 to 204	Class IV or V	Class VI
VMG	from 2 to 4 inches	300 to 1600	149 to 871	Class III	N/A
	6 inches and bigger	300 to 1600	149 to 871	Class IV	N/A

⁽¹⁾ When using VMG seal rings, the balanced retainer should be manufactured in hardened material. ⁽²⁾ Temperatures above are for guidance only. Contact ValtekSul to confirm the maximum temperature admitted in relation to the service pressure.

Metal Seat Rings

The standard GLs valve setting, with unbalanced trims and metal seat ring, handles Class IV shutoff (ANSI B16.104/FCI 70.2), which calls for maximum permissible seat leakage of 0.01% of rated valve capacity.

The exceptional tightness of the GLs Series is achieved due to the self-aligning seat ring design. As an option, metal seat valves can be supplied for additional seat tightness.

Soft Seat Rings

Soft seats are used in applications that require extra tightness, according to ANSI Class VI (B16.104/FCI 70.2). The GLs Series soft seat set consists of a polymer placed between two metal pieces, and it is interchangeable with the metal seat. Inserts are often manufactured of PTFE; therefore, the maximum temperature and pressure should be 300°F @ 290 psi (150°C @ 20 Bar). For temperatures below -85°F (-65°C), PTFE soft seats can be used in high-pressure applications.

GLs - Body Subassembly Seat Rings, Trim

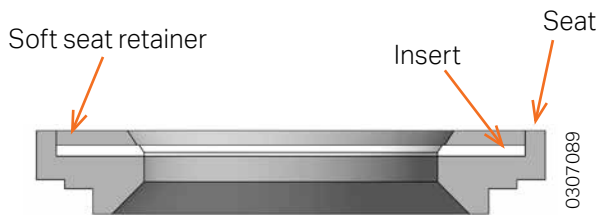
Unbalanced Trim and Standard Actuator Data

Valve Nominal Diameter (in.)	ANSI Class	Full Area Trim Size		Seat Area		Stem Diameter		Stem Area		Stroke		Standard Actuator
		in.	mm	in. ²	cm ²	in.	mm	in. ²	cm ²	in.	mm	
0.5	150-600	0.50	13	0.196	1.267	0.575	14.6	0.259	1.674	0.75	19.05	25
0.75	150-600	0.71	18	0.405	2.612	0.575	14.6	0.259	1.674	0.75	19.05	25
1	150-600	0.81	20	0.518	3.345	0.575	14.6	0.259	1.674	0.75	19.05	25
1.5	150-600	1.25	32	1.227	7.917	0.890	22.6	0.622	4.011	1.00	25.40	25
2	150-600	1.63	41	2.074	13.38	0.890	22.6	0.622	4.011	1.50	38.10	25
3	150-600	2.63	67	5.412	34.92	1.138	28.9	1.017	6.560	2.00	50.80	50
4	150-600	3.50	90	9.621	62.07	1.138	28.9	1.017	6.560	2.50	63.50	50
6	150	5.00	125	19.63	126.7	1.138	28.9	1.017	6.560	3.00	76.20	50
	300-600	5.00	125	19.63	126.7	2.024	51.4	3.216	20.75	3.00	76.20	100
8	150	6.25	160	30.68	198.0	1.520	38.6	1.814	11.70	4.00	101.6	100
	300-600	6.25	160	30.68	198.0	2.024	51.4	3.216	20.75	4.00	101.6	100
10	150	8.00	203	50.27	324.3	2.024	51.4	3.216	20.75	4.00	101.6	100
	300-600	8.00	203	50.27	324.3	2.524	64.1	5.002	32.27	4.00	101.6	100
12	150	9.50	240	70.88	457.3	2.024	51.4	3.216	20.75	4.00	101.6	100
	300-600	9.50	240	70.88	457.3	3.024	76.8	7.180	46.32	4.00	101.6	100

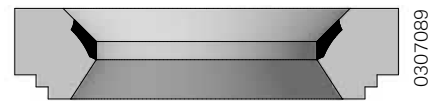
Balanced Trim and Standard Actuator Data

Valve Nominal Diameter (in.)	ANSI Class	Full Area Trim Size		Seat Area		Stem Diameter		Stem Area		Retainer Area	Unbalanced Area				Stroke		Standard Actuator	
		in.	mm	in. ²	cm ²	in.	mm	in. ²	cm ²		in. ²	cm ²	Flow-under to Close		Flow-under to Open			
										in. ²			cm ²	in. ²	cm ²	in.		mm
2	150-600	1.63	41	2.074	13.38	0.575	14.6	0.259	1.674	2.58	16.65	0.25	1.60	0.51	3.28	1.00	25.4	25
3	150-600	2.63	67	5.412	34.92	0.890	22.6	0.622	4.011	6.77	43.68	0.74	4.75	1.36	8.78	1.50	38.1	50
4	150-600	3.50	90	9.621	62.07	0.890	22.6	0.622	4.011	11.41	73.61	1.17	7.53	1.79	11.6	2.00	50.8	50
6	150	5.00	125	19.63	126.7	1.138	28.9	1.017	6.560	22.69	146.4	2.04	13.1	3.06	19.7	2.50	63.5	50
	300-600	5.00	125	19.63	126.7	1.520	38.6	1.814	11.70	23.76	153.3	2.32	14.9	4.13	26.6	2.50	63.5	100
8	150-600	6.25	160	30.68	198.0	1.520	38.6	1.814	11.70	35.78	230.8	3.29	21.1	5.10	32.9	3.00	76.2	100
10	150-600	8.00	203	50.27	324.3	2.024	51.4	3.216	20.75	58.36	376.5	4.87	31.5	8.09	52.2	3.00	76.2	100
12	150-600	9.50	240	70.88	457.3	2.524	64.1	5.002	32.27	82.52	532.4	6.64	42.8	11.6	75.1	4.00	102	100

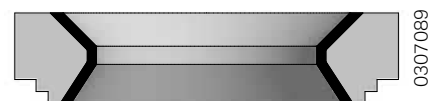
Seat Rings



Soft Seat Assembly



Seat Surface Hardening



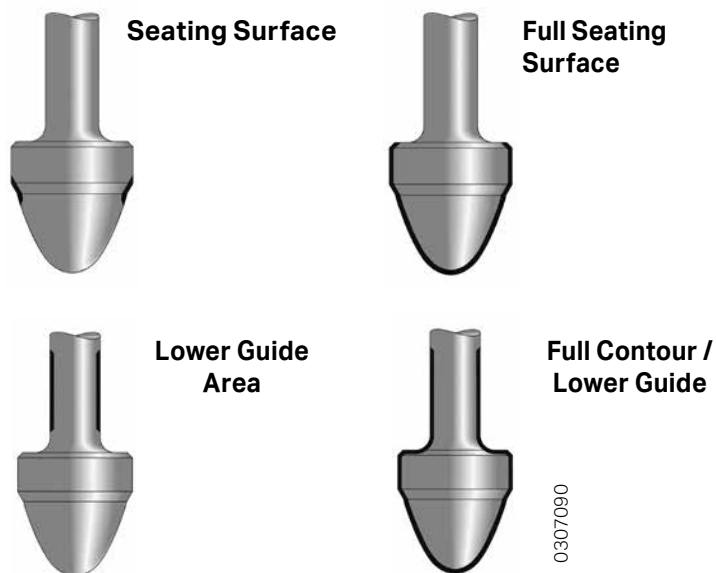
Full Surface Hardening

GLs Series - Seat Rings Options

GLs - Body Subassembly Seat Rings, Trim

Standard material for GLs Series plug, seat ring and seat retainer is 316 stainless steel, except for special alloy valves where trims are manufactured with the same material as the body.

A wide variety of fluid is suitable to 316 stainless steel trims. Still, the general rule is that hardened trims should be employed for all conditions of critical flow or for temperatures above 60°F (316°C). For these cases, ValtekSul keeps a large stock of Alloy #6 trims, a material that offers a good combination of hardness and corrosion resistance. Special alloys, such as Alloy 20, Monel, Hastelloy C, Hastelloy B and others are also available under request.



Plug Hard-facing Options

Differential Pressure Values that Require the Use of Hard-Facing Trim

Valve Nominal Diameter (in.)	Water				Saturated Steam				Superheated Steam				General Process Fluids				Clean Gases			
	Control		On-Off		Control		On-Off		Control		On-Off		Control		On-Off		Control		On-Off	
	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar	psi	Bar
0.5 to 1.5	175	12.1	250	17.2	100	6.9	200	13.8	300	20.7	600	41.4	175	12.1	250	17.2	600	41.4	900	62.1
2 & 3	150	10.3	200	13.8	25	1.7	50	3.4	200	13.8	300	20.7	150	10.3	200	13.8	350	24.1	600	41.4
4 & 6	100	6.9	125	8.6	All		25	1.7	100	6.9	150	10.3	75	5.2	125	8.6	200	13.8	300	20.7
8 to 12	50	3.4	100	6.9	All		All		50	3.4	100	6.9	50	3.4	100	6.9	125	8.6	175	12.1

Trim Materials Characteristics

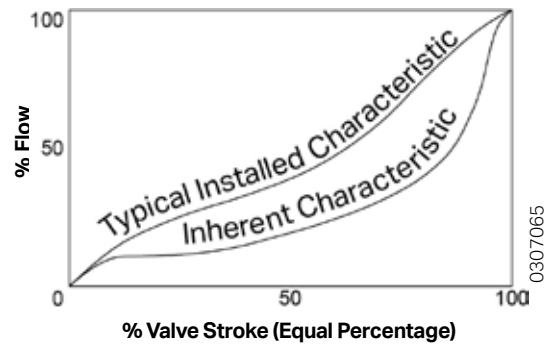
Trim Materials	Hardness (R _c)	Temperature Limitation		Impact Resistance	Corrosion Resistance	Erosion Resistance	Abrasion Resistance
		°C	°F				
Stainless Steel 316	8	316	600	Excellent	Excellent	Reasonable	Reasonable
Alloy #6	44	815	1500	Excellent	Excellent	Good	Good
Stainless Steel 416	40	427	800	Good	Reasonable	Good	Good
17-4 PH (H900)	44	427	800	Good	Good to Excellent	Good	Good
Stainless Steel 440C	55-60	427	800	Reasonable	Reasonable	Excellent	Excellent
Monel K-500	32	316	600	Good	Good to Excellent	Reasonable to Good	Good
Tungsten	72	650	1200	Reasonable	Good with bases, Poor with acids	Excellent	Excellent
Colmonoy #5	45-50	650	1200	Good	Reasonable	Good	Good

GLs - Body Subassembly Flow Characteristics

Equal Percentage

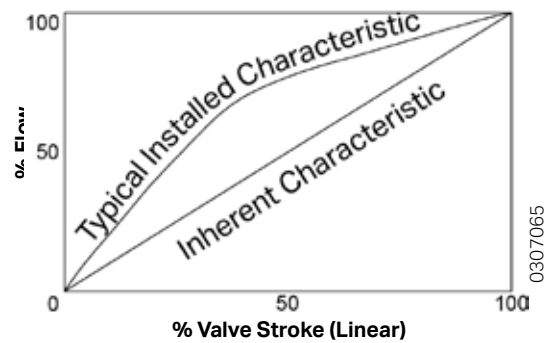
Equal Percentage is the characteristic most commonly used in process control. The change in flow per unit of valve stroke is directly proportional to the flow occurring just before the change is made.

When installed, a valve with Equal Percentage characteristic will produce in most control loops a characteristic that approaches Linear when the overall system pressure drop is big in relation to that of the valve.



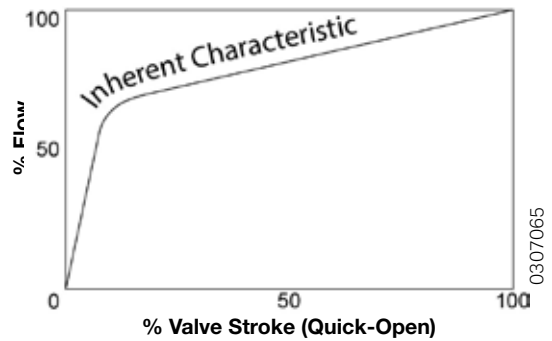
Linear

The Linear characteristic produces equal changes in flow per unit of valve stroke, despite of the plug position. Linear plugs are used on those systems where the valve pressure drop is a major portion of the total system pressure drop.



Quick-open

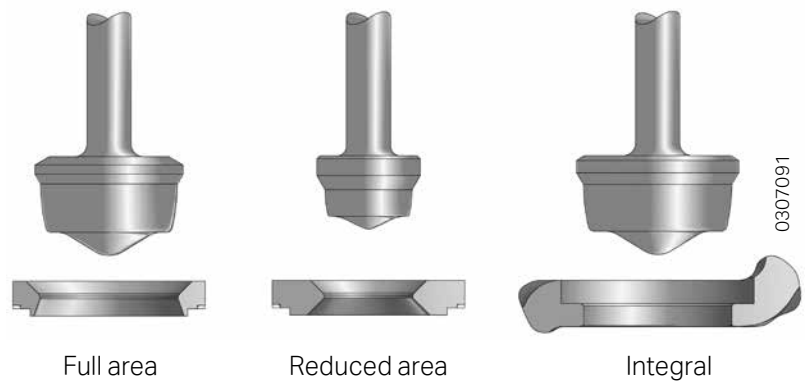
Quick-open plugs are used for on-off service and are designed to produce maximum flow increase, as earlier as the small opening percentage.



Trims size

Two trim options are normally available: the standard, with full passage area, and another with reduced passage, available in a variety of sizes, and requested when C_v values are relatively lower for a specific body size that will be used. Besides these options, an Integral trim can be supplied, which uses a special seat machined to the valve body and an oversized plug to provide higher C_v than the one provided by the full-area trim.

As the GLs trims are completely interchangeable for a determined body diameter and pressure class, trim size and nominal C_v alteration is a simple operation.



Trims Size

GLs - Body Subassembly

General Specification Chart

GLs Series - Specification & Manufacturing Materials

Body	Diameter	0.5 to 36 inches		
	ANSI Class	150, 300 and 600		
	Styles	Globe, Angle, 3-way or steam-jacketed versions		
	Manufacturing Materials	Carbon steel, Stainless steel, Chrome-Moly, Duplex, Super-Duplex, Alloy #20, Bronze, Monel, Hastelloy B, Hastelloy C, Nickel, Titanium and other castable materials under request.		
	Connections	Separable Flanges (0.5 to 4 inches) Integral Flanges (all sizes) Screwed (NPT) (0.5 to 2 inches) Socketweld, SW (0.5 to 4 inches) Buttweld, BW (all sizes) Grayloc (all sizes)		
	Separable Flanges	Carbon steel, 316 Stainless steel and other materials under request		
	Gaskets	Flat	PTFE, PTFEG*, KEL-F	
Spiral		AISI-316 or 304 with graphite filling or others materials Asbestos free (AFG)		
O-Rings		Inconel X-750 with silver coating		
Bonnet	Types	Plain; Standard extended; Cryogenic		
	Materials	Same body options		
	Bonnet flanges	Carbon steel or Stainless steel 316 separable flanges		
	Guides	Types	Double upper guide on the valve stem, out of flow stream	
		Materials	AISI-316 with PTFEG* lining or graphite, Bronze, Alloy #6 or other materials under request	
	Packing set	Types	Standard, "V" type or square rings, Double packing. Vacuum packing.	
Materials		PTFE , PTFEG* "V" rings, Braided PTFE , AFP** with inconel wire, graphite and other materials under request.		
Trim	Types	Unbalanced Balanced: With metal sealing rings. Balanced: With elastomers or polymers rings.		
	Flow Characteristics	Equal Percent, Linear or Quick Open		
	Materials	AISI-316 (standard), AISI-304, AISI-347, AISI-416, AISI-420, AISI-440C, 17-4PH, Duplex, Super-Duplex, Alloy #20, Monel, Hastelloy B, Hastelloy C, Nickel, Titanium and others.		
	Superficial Hardenin	Materials	Alloy #6, Colmonoy #5 and other materials under request	
		Types	Seat surface hardening, Full seat surface and plug head hardening , Valve Stem hardening in the lower area guide	
Soft seats	Materials	PTFE, PTFEG*, FEP, KEL-F, Polyurethane, PEEK		
Actuator	Types	Pneumatic	Double acting piston/cylinder, with spring for failure position. Field reversible and available in sizes 25, 50, 100, 200, 300, 400, 500 and 600. Options: manual handwheel, stroke limits and others (See actuators catalogue).	
		Others	Manually. Electro-mechanical or Electro-Hydraulic under request.	
Positioner	Types	Pneumatics: Analogical or Digital Electro-pneumatics with various communication protocols available.		

* Reinforced PTFEG: PTFE with fiber glass. **AFP: Asbestos free packing.

GLs - Body Subassembly Standard Manufacturing Materials Technology

Carbon Steel: ASTM A 216 Gr. WCC, DIN 1.0619

Component	Materials	Temperature Range	
		°F	°C
Body	ASTM A 216 Gr. WCC	-20 to 800	-29 to 427
Bonnet	Plain: ASTM A 105 / ASTM A 675-70	-20 to 750	-29 to 400
	Extended:: ASTM A 105 / ASTM A 675-70	-20 to 800	-29 to 427
Bonnet Flange	ASTM A 316 Gr. WCC or ASTM A 105	-20 to 800	-29 to 427
Seat Ring ⁽¹⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 410 (UNS S 41000)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6)	-20 to 800	-29 to 427
	Stainless Steel AISI 316 w/PTFE (Soft Seat)	-20 to 450	-29 to 232
Plug ⁽²⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 410 (UNS S 41000)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6) inside guide ⁽⁴⁾	-20 to 800	-29 to 427
Seat Retainer	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Plug Guides	Stainless Steel AISI 316 (UNS S 31603) with PTFEG lining	-20 to 350	-29 to 177
	Stainless Steel AISI 316 (UNS S 31603) with Grafoil ⁽³⁾	-20 to 800	-29 to 427
	Solid Bronze	-20 to 500	-29 to 260
	Solid Stellite #6 ⁽⁴⁾	-20 to 800	-29 to 427
Body Gaskets and Bonnet Gaskets	Flat: PTFE	-20 to 350	-29 to 177
	Flat: with AFG	-20 to 600	-29 to 315
	Spiral Stainless Steel AISI 316 with AFG	-20 to 750	-29 to 400
	Spiral Stainless Steel AISI 316 with Graphite	-20 to 800	-29 to 427
Packing Set	PTFE Vee ring with plain bonnet	-20 to 450	-29 to 232
	PTFE Vee ring with extended bonnet	-20 to 600	-29 to 315
	Braided PTFE with plain bonnet	-20 to 500	-29 to 260
	Braided PTFE with extended bonnet	-20 to 600	-29 to 315
	Graphite / AFP ⁽³⁾ with plain bonnet	-20 to 750	-29 to 400
	Graphite / AFP ⁽³⁾ with extended bonnet	-20 to 800	-29 to 427
	PT and PTG with plain bonnet	-20 to 450	-29 to 232
	PT and PTG with extended bonnet	-20 to 600	-29 to 315
	PTG-XT with plain bonnet	-20 to 550	-29 to 282
	PTG-XT with extended bonnet	-20 to 700	-29 to 371
Packing Spacer	Stainless Steel AISI 316 (UNS S 31600)	-20 to 800	-29 to 427
Gland Flange	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Gland Flange Bolting	ASTM A 193 Grade B8 class 1/ ASTM A 194 grade 8	-20 to 800	-29 to 427
Bonnet Flange Bolting	ASTM A 193 Grade B7/ ASTM A 194 grade 2H	-20 to 800	-29 to 427

Notes: ⁽¹⁾ Alloy 6 seat ring (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽²⁾ Alloy 6 plug (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽³⁾ Do not use graphite above 750°F (400°C) in oxidizing service such as air or oxygen.

⁽⁴⁾ When using Alloy 6 (Stellite #6) guides, the plug stem should be hardened with Stellite #6 at the area in contact with the guide.

GLs - Body Subassembly Standard Manufacturing Materials Technology

Carbon Steel Alloy: Cromo-Moly ASTM A 217 Gr. C5 / ASTM A 217 Gr. WC9

Component	Materials	Temperature Range	
		°F	°C
Body	ASTM A 217 Gr. C5	-20 to 800	-29 to 427
	ASTM A 217 Gr. WC9 Class 3		
Bonnet	Stainless Steel AISI 316 (UNS S 31600)	-20 to 800	-29 to 427
Bonnet Flange	ASTM A 105	-20 to 800	-29 to 427
Seat Ring ⁽¹⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 410 (UNS S 41000)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6)	-20 to 800	-29 to 427
	Stainless Steel AISI 316 w/PTFE (Soft Seat)	-20 to 450	-29 to 232
Plug ⁽²⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 410 (UNS S 41000)	-20 to 650	-29 to 343
	AISI 316 w/Alloy 6 (Stellite #6)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6) inside guide ⁽⁴⁾	-20 to 800	-29 to 427
Seat Retainer	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Plug Guides	Stainless Steel AISI 316 (UNS S 31600) with PTFEG lining	-20 to 350	-29 to 177
	Stainless Steel AISI 316 (UNS S 31600) with Grafoil ⁽³⁾	-20 to 800	-29 to 427
	Solid Bronze	-20 to 500	-29 to 260
	Solid Stellite #6 ⁽⁴⁾	-20 to 800	-29 to 427
Body Gaskets and Bonnet Gaskets	Spiral Stainless Steel AISI 316 with AFG	-20 to 750	-29 to 400
	Spiral Stainless Steel AISI 316 with Graphite ⁽³⁾	-20 to 800	-29 to 427
Packing Set	PTFE Vee ring with plain bonnet	-20 to 450	-29 to 232
	PTFE Vee ring with extended bonnet	-20 to 600	-29 to 315
	Braided PTFE with plain bonnet	-20 to 500	-29 to 260
	Braided PTFE with extended bonnet	-20 to 600	-29 to 315
	Graphite / AFP ⁽³⁾ with plain bonnet	-20 to 750	-29 to 400
	Graphite / AFP ⁽³⁾ with extended bonnet	-20 to 800	-29 to 427
	PT and PTG with plain bonnet	-20 to 450	-29 to 232
	PT and PTG with extended bonnet	-20 to 600	-29 to 315
	PTG-XT with plain bonnet	-20 to 550	-29 to 282
PTG-XT with extended bonnet	-20 to 700	-29 to 371	
Packing Spacer	Stainless Steel AISI 316 (UNS 31600)	-20 to 800	-29 to 427
Gland Flange	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Gland Flange Bolting	ASTM A 193 Grade B8 Class 1	-20 to 800	-29 to 427
	ASTM A 194 Grade 8		
Bonnet Flange Bolting	ASTM A 193 Grade B7 ASTM a 194 Grade 2H	-20 to 800	-29 to 427

Notes: ⁽¹⁾ Alloy 6 seat ring (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽²⁾ Alloy 6 plug (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽³⁾ Do not use graphite above 750°F (400°C) in oxidizing service such as air or oxygen.

⁽⁴⁾ When using Alloy 6 (Stellite #6) guides, the plug stem should be hardened with Stellite #6 at the area in contact with the guide.

GLs - Body Subassembly Standard Manufacturing Materials Technology

Stainless Steel ASTM A 351-CF8M (316 SST)

Component	Materials	Temperature Range	
		°F	°C
Body	ASTM A 351-CF8M	-20 to 800	-29 to 427
Bonnet	Stainless Steel AISI 316 (UNS S 31600)	-20 to 800	-29 to 427
Bonnet Flange	Carbon Steel ASTM A 105	-20 to 800	-29 to 427
	Stainless Steel AISI 316 - ASTM A 351-CF8M	-20 to 800	-29 to 427
Seat Ring ⁽¹⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 316 w/PTFE (Soft Seat)	-20 to 450	-29 to 232
	Stainless Steel AISI 316 w/Alloy #6 (Stellite #6)	-20 to 800	-29 to 427
Plug ⁽²⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 316 w/Alloy #6 (Stellite #6)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy #6 (Stellite #6) inside guide ⁽⁴⁾	-20 to 800	-29 to 427
Seat Retainer	Stainless Steel ASTM A 351 - CF8M (AISI 316)	-20 to 800	-29 to 427
Plug Guides	Stainless Steel AISI 316 (UNS S 31600) with PTFEG lining	-20 to 350	-29 to 177
	Stainless Steel AISI 316 (UNS S 31600) with Graphite ⁽³⁾	-20 to 800	-29 to 427
	Solid Stellite #6 ⁽⁴⁾	-20 to 800	-29 to 427
Body Gaskets and Bonnet Gaskets	Plain: PTFE	-20 to 350	-29 to 177
	Plain: with AFG	-20 to 600	-29 to 315
	Spiral Stainless Steel AISI 316 with AFG	-20 to 750	-29 to 400
	Spiral Stainless Steel AISI 316 with Graphite ⁽³⁾	-20 to 800	-29 to 427
Packing Set	PTFE Vee ring with plain bonnet	-20 to 450	-29 to 232
	PTFE Vee ring with extended bonnet	-20 to 600	-29 to 315
	Braided PTFE with plain bonnet	-20 to 500	-29 to 260
	Braided PTFE with extended bonnet	-20 to 600	-29 to 315
	Graphite / AFP ⁽³⁾ with plain bonnet	-20 to 750	-29 to 400
	Graphite / AFP ⁽³⁾ with extended bonnet	-20 to 800	-29 to 427
	PT and PTG with plain bonnet	-20 to 450	-29 to 232
	PT and PTG with extended bonnet	-20 to 600	-29 to 315
	PTG-XT with plain bonnet	-20 to 550	-29 to 282
	PTG XT with extended bonnet	-20 to 700	-29 to 371
Packing Spacer	Stainless Steel AISI 316 (UNS S 31600)	-20 to 800	-29 to 427
Gland Flanges	Stainless Steel ASTM A 351 - CF8M (316 SST)	-20 to 800	-29 to 427
Gland Flange Bolting	ASTM A 193 Grade B8 Class 1 ASTM A 194 Grade 8	-20 to 800	-29 to 427
Bonnet Flange Bolting	ASTM A 193 Grade B7 ASTM A 194 Grade 2H	-20 to 800	-29 to 427

Notes: ⁽¹⁾ Alloy 6 seat ring (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽²⁾ Alloy 6 plug (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽³⁾ Do not use graphite above 750°F (400°C) in oxidizing service such as air or oxygen.

⁽⁴⁾ When using Alloy 6 (Stellite #6) guides, the plug stem should be hardened with Stellite #6 at the area in contact with the guide.

GLs - Body Subassembly

NACE Manufacturing

Materials Technology

Carbon Steel ASTM A 216 Gr. WCC-NACE

Component	Materials	Temperature Range	
		°F	°C
Body	ASTM A 216 Gr. WCC-NACE	-20 to 800	-29 to 427
Bonnet	Plain: ASTM A 105 or ASTM A 675-70	-20 to 750	-29 to 400
	Extended: ASTM A 105 / A 675-70	-20 to 800	-29 to 427
Bonnet Flange	ASTM A 516-70	-20 to 800	-29 to 427
Seat Ring ⁽¹⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6)	-20 to 800	-29 to 427
Plug ⁽²⁾	Stainless Steel AISI 316 (UNS S 31600)	-20 to 600	-29 to 315
	Stainless Steel AISI 316 w/Alloy #6 (Stellite #6)	-20 to 650	-29 to 343
	Stainless Steel AISI 316 w/Alloy 6 (Stellite #6) inside guide ⁽⁴⁾	-20 to 800	-29 to 427
Seat Retainer	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Plug Guides	Stainless Steel AISI 316 (UNS S 31600) with PTFEG lining	-20 to 350	-29 to 177
	Stainless Steel AISI 316 (UNS S 31600) with Graphite ⁽³⁾	-20 to 800	-29 to 427
	Solid Stellite #6 ⁽⁴⁾	-20 to 800	-29 to 427
Body Gaskets and Bonnet Gaskets	Plain:: PTFE	-20 to 350	-29 to 177
	Plain: with AFG	-20 to 600	-29 to 315
	Spiral Stainless Steel AISI 316 (UNS S 31600) with AFG	-20 to 750	-29 to 400
	Spiral Stainless Steel AISI 316 (UNS S 31600) with Graphite ⁽³⁾	-20 to 800	-29 to 427
Packing Set	PTFE Vee ring with plain bonnet	-20 to 450	-29 to 232
	PTFE Vee ring with extended bonnet	-20 to 600	-29 to 315
	Braided PTFE with plain bonnet	-20 to 500	-29 to 260
	Braided PTFE with extended bonnet	-20 to 600	-29 to 315
	Graphite / AFP ⁽³⁾ with plain bonnet	-20 to 750	-29 to 400
	Graphite / AFP ⁽³⁾ with extended bonnet	-20 to 800	-29 to 427
	PT and PTG with plain bonnet	-20 to 450	-29 to 232
	PT and PTG with extended bonnet	-20 to 600	-29 to 315
	PTG XT with plain bonnet	-20 to 550	-29 to 282
	PTG XT with extended bonnet	-20 to 700	-29 to 371
Packing Spacer	Stainless Steel AISI 316 (UNS S 31600)	-20 to 800	-29 to 427
Gland Flanges	Stainless Steel AISI 316 - ASTM A 351 - CF8M	-20 to 800	-29 to 427
Gland Flange Bolting	ASTM A 193 Grade B8 Class 1	-20 to 800	-29 to 427
	ASTM A 193 Grade B7M Zinc Plated		
Bonnet Flange Bolting	ASTM A 193 Grade B7 ASTM A 193 Grade B7M ASTM A 194 Grade 2H ASTM A 194 Grade 2HM	-20 to 800	-29 to 427

Notes: ⁽¹⁾ Alloy 6 seat ring (Stellite #6) solid manufactured until T/N: 41 (1.63)

⁽²⁾ Alloy 6 plug (Stellite #6) solid manufactured until T/N: 41 (1.63)

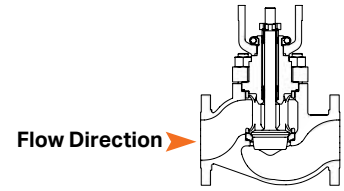
⁽³⁾ Do not use graphite above 750°F (400°C) in oxidizing service such as air or oxygen.

⁽⁴⁾ When using Alloy #6 (Stellite #6) guides, the plug stem should be hardened with Stellite #6 at the area in contact with the guide.

GLs - Body Subassembly

Flow Coefficient - C_v

Class 150-300-600 - Unbalanced Trims



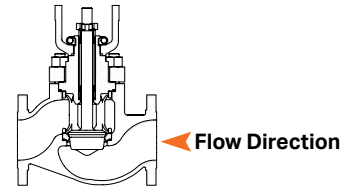
Flow Coefficient (C_v) - Equal Percentage *

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
0.50	13 (0.50)	0.75	19.05	0.83	5.0	4.6	3.7	2.6	1.9	1.4	0.90	0.55	0.33	0.25
	10 (0.38)	0.75	19.05	0.82	3.7	3.3	2.5	1.6	1.2	0.85	0.49	0.31	0.189	0.127
	8 (0.31)	0.75	19.05	0.81	2.8	2.5	1.7	1.2	0.94	0.58	0.33	0.22	0.149	0.095
	6.5-03 (0.25-03)	0.75	19.05	0.81	1.9	1.6	1.1	0.81	0.56	0.37	0.23	0.142	0.090	0.060
	6.5-06 (0.25-06)	0.75	19.05	0.82	1.2	1.0	0.70	0.52	0.36	0.24	0.147	0.092	0.058	0.038
3.2-00 (0.12-00)	0.50	12.70	0.81	0.46	0.45	0.38	0.27	0.168	0.103	0.072	0.043	0.026	0.015	
0.75	18 (0.71)	0.75	19.05	0.85	9.5	9.0	7.6	5.6	3.9	3.2	2.3	1.6	1.0	0.63
	16 (0.63)	0.75	19.05	0.83	9.0	8.3	6.6	4.6	3.0	2.3	1.6	0.94	0.59	0.32
	13 (0.50)	0.75	19.05	0.82	6.5	5.9	4.7	3.0	2.0	1.5	0.98	0.63	0.37	0.24
	10 (0.38)	0.75	19.05	0.82	4.2	3.7	2.9	1.7	1.4	0.87	0.46	0.29	0.165	0.106
	8 (0.31)	0.75	19.05	0.82	2.9	2.6	1.6	1.2	0.88	0.59	0.31	0.20	0.151	0.093
	6.5-03 (0.25-03)	0.75	19.05	0.81	2.0	1.8	1.2	0.91	0.57	0.35	0.21	0.140	0.087	0.059
	6.5-06 (0.25-06)	0.75	19.05	0.81	1.3	1.3	0.96	0.63	0.37	0.23	0.131	0.087	0.051	0.024
3.2-00 (0.12-00)	0.50	12.70	0.82	0.47	0.47	0.37	0.24	0.151	0.088	0.056	0.036	0.018	0.006	
1.0	20 (0.81)	0.75	19.05	0.87	15.6	14.2	11.3	8.1	4.9	3.3	2.8	2.1	1.6	1.1
	18 (0.71)	0.75	19.05	0.85	13.5	11.8	8.9	6.1	3.9	3.1	2.3	1.6	1.1	0.70
	16 (0.63)	0.75	19.05	0.83	10.3	8.7	6.5	4.2	2.7	2.3	1.5	0.98	0.61	0.35
	13 (0.50)	0.75	19.05	0.82	6.6	5.8	4.5	2.9	2.0	1.5	1.1	0.73	0.47	0.26
	10 (0.38)	0.75	19.05	0.82	4.1	3.4	2.3	1.5	1.3	0.85	0.51	0.33	0.22	0.140
	8 (0.31)	0.75	19.05	0.81	2.9	2.4	1.6	1.2	0.93	0.61	0.35	0.20	0.138	0.089
	6.5-03 (0.25-03)	0.75	19.05	0.81	1.9	1.5	1.1	0.82	0.55	0.31	0.21	0.132	0.082	0.055
	6.5-06 (0.25-06)	0.75	19.05	0.81	1.3	1.2	0.94	0.63	0.37	0.23	0.129	0.085	0.051	0.024
3.2-00 (0.12-00)	0.50	12.70	0.81	0.47	0.46	0.29	0.22	0.158	0.113	0.085	0.063	0.043	0.026	
1.5	32 (1.25)	1.00	25.40	0.86	28	25	21	15.6	10.3	6.7	5.0	3.6	2.3	1.6
	25 (1.00)	0.75	19.05	0.85	19.2	17.3	14.5	10.9	7.2	4.5	3.3	2.4	1.6	1.1
	20 (0.81)	0.75	19.05	0.82	12.8	11.3	8.9	6.3	4.0	2.6	1.8	1.0	0.69	0.33
	16 (0.63)	0.75	19.05	0.83	7.8	6.7	5.2	3.7	2.5	1.7	1.2	0.64	0.40	0.22
	10 (0.38)	0.75	19.05	0.79	3.6	2.8	1.9	1.4	1.2	0.87	0.58	0.30	0.182	0.109
2.0	41 (1.63)	1.50	38.10	0.89	46	41	34	25	16.3	11.4	9.1	5.9	3.8	2.6
	32 (1.25)	1.00	25.40	0.87	31	27	22	16.0	10.3	6.6	5.2	3.6	2.3	1.6
	25 (1.00)	0.75	19.05	0.83	21	18.5	15.3	11.2	7.5	4.7	3.3	2.5	1.6	1.1
	20 (0.81)	0.75	19.05	0.82	13.7	12.2	9.8	7.0	4.4	2.8	2.2	1.4	0.94	0.64
	16 (0.63)	0.75	19.05	0.79	9.0	8.0	6.2	4.2	2.6	2.0	1.4	0.89	0.53	0.31
	10 (0.38)	0.75	19.05	0.79	3.6	3.3	2.6	1.7	1.2	0.93	0.56	0.35	0.22	0.152
3.0	67 (2.63)	2.00	50.80	0.87	105	96	86	77	61	38	22	16.4	10.3	5.9
	50 (2.00)	1.50	38.10	0.83	79	74	67	56	41	24	13.5	8.9	6.4	3.7
	41 (1.63)	1.50	38.10	0.81	51	45	35	24	15.5	10.3	8.2	5.6	3.5	2.5
	32 (1.25)	1.00	25.40	0.78	32	28	23	15.8	10.5	6.8	5.1	3.5	2.3	1.5
4.0	90 (3.50)	2.50	63.50	0.91	196	184	169	157	115	57	36	24	15.4	10.7
	67 (2.63)	2.00	50.80	0.90	132	122	110	99	66	42	27	17.2	10.3	6.7
	55 (2.25)	2.00	50.80	0.89	97	89	80	66	41	26	16.3	10.3	6.2	4.2
	41 (1.63)	1.50	38.10	0.90	57	53	43	28	17.6	11.5	7.5	4.9	3.2	2.2
6.0	125 (5.00)	3.00	76.20	0.90	401	375	340	298	250	148	62	35	18.3	13.7
	90 (3.50)	2.50	63.50	0.89	225	203	177	153	115	65	41	26	16.5	10.8
	75 (3.00)	2.00	50.80	0.91	169	152	133	114	73	37	25	16.9	10.9	7.8
	67 (2.63)	2.00	50.80	0.90	129	118	105	92	67	37	23	14.8	8.8	5.5
8.0	160 (6.25)	4.00	101.6	0.91	693	645	591	498	335	185	115	76	46	28
	125 (5.00)	3.00	76.20	0.89	458	413	360	299	212	134	65	36	19.0	14.0
	90 (3.50)	2.50	63.50	0.90	244	219	195	160	114	65	41	26	15.9	11.0
	67 (2.63)	2.00	50.80	0.90	141	130	115	99	67	36	23	14.8	8.6	5.9
10	203 (8.00)	4.00	101.6	0.90	1015	923	819	724	604	425	191	112	70	41
	160 (6.25)	4.00	101.6	0.89	69	623	543	469	343	189	118	78	47	29
	125 (5.00)	3.00	76.20	0.91	479	431	376	296	211	133	65	36	18.9	13.9
12	240 (9.50)	4.00	101.60	0.90	1407	1287	1138	958	764	533	268	269	99	58
	187 (7.38)	4.00	101.60	0.89	937	860	758	638	481	268	142	97	65	44
	160 (6.25)	4.00	101.60	0.91	752	685	614	509	335	184	115	76	46	28

GLs - Body Subassembly

Flow Coefficient - C_v

Class 150-300-600 - Unbalanced Trims



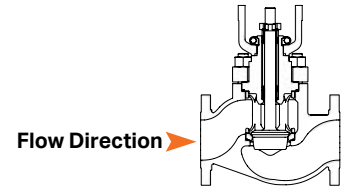
Flow Coefficient (C_v) - Equal Percentage*

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
0.50	13 (0.50)	0.75	19.05	0.91	4.9	4.7	3.9	2.3	1.6	1.1	0.72	0.45	0.30	0.20
	10 (0.38)	0.75	19.05	0.87	3.5	3.1	2.3	1.5	1.0	0.69	0.41	0.27	0.180	0.131
	8 (0.31)	0.75	19.05	0.89	2.5	2.2	1.6	1.1	0.70	0.46	0.28	0.21	0.148	0.106
	6.5-03 (0.25-03)	0.75	19.05	0.88	1.7	1.5	1.0	0.66	0.43	0.27	0.176	0.108	0.074	0.048
	6.5-06 (0.25-06)	0.75	19.05	0.88	1.2	1.2	0.81	0.50	0.33	0.20	0.134	0.092	0.068	0.059
3.2-00 (0.12-00)	0.50	12.70	0.89	0.44	0.43	0.41	0.25	0.160	0.100	0.067	0.044	0.029	0.017	
0.75	18 (0.71)	0.75	19.05	0.85	9.5	8.9	7.5	5.5	3.2	2.2	1.4	0.94	0.67	0.43
	16 (0.63)	0.75	19.05	0.90	8.5	8.4	6.3	4.3	2.8	1.8	1.2	0.75	0.45	0.27
	13 (0.50)	0.75	19.05	0.91	6.1	5.8	4.7	2.9	1.9	1.2	0.77	0.47	0.30	0.183
	10 (0.38)	0.75	19.05	0.88	3.7	3.4	2.7	1.7	1.1	0.70	0.42	0.27	0.160	0.096
	8 (0.31)	0.75	19.05	0.89	2.7	2.4	1.6	1.1	0.70	0.45	0.26	0.181	0.126	0.081
	6.5-03 (0.25-03)	0.75	19.05	0.89	1.9	1.8	1.3	0.83	0.47	0.31	0.193	0.124	0.079	0.051
	6.5-06 (0.25-06)	0.75	19.05	0.88	1.2	1.2	0.76	0.50	0.32	0.184	0.112	0.064	0.035	0.013
3.2-00 (0.12-00)	0.50	12.70	0.88	0.46	0.46	0.45	0.27	0.159	0.092	0.057	0.034	0.015	0.004	
1.0	20 (0.81)	0.75	19.05	0.89	13.5	12.3	9.3	6.6	4.1	2.8	1.9	1.3	0.95	0.66
	18 (0.71)	0.75	19.05	0.90	12.3	11.4	8.0	5.6	3.5	2.3	1.5	1.0	0.69	0.46
	16 (0.63)	0.75	19.05	0.91	9.8	9.1	6.1	3.9	2.5	1.7	1.1	0.70	0.45	0.29
	13 (0.50)	0.75	19.05	0.89	6.6	5.9	4.5	2.7	1.8	1.2	0.78	0.47	0.29	0.195
	10 (0.38)	0.75	19.05	0.92	3.9	3.4	2.3	1.5	0.98	0.65	0.43	0.29	0.193	0.129
	8 (0.31)	0.75	19.05	0.89	2.8	2.4	1.6	1.1	0.72	0.48	0.26	0.179	0.125	0.080
	6.5-03 (0.25-03)	0.75	19.05	0.91	1.8	1.6	1.1	0.70	0.46	0.29	0.186	0.137	0.082	0.058
	6.5-06 (0.25-06)	0.75	19.05	0.92	1.2	1.0	0.73	0.46	0.31	0.177	0.116	0.083	0.048	0.032
3.2-00 (0.12-00)	0.50	12.70	0.91	0.51	0.50	0.33	0.194	0.126	0.085	0.061	0.040	0.025	0.014	
1.5	32 (1.25)	1.00	25.40	0.89	31	29	25	16.3	11.0	7.0	4.5	3.0	1.9	1.3
	25 (1.00)	0.75	19.05	0.92	22	22	16.7	10.9	6.6	4.5	3.0	1.9	1.3	0.91
	20 (0.81)	0.75	19.05	0.91	15.8	13.7	9.4	6.1	4.5	2.6	1.6	0.93	0.59	0.33
	16 (0.63)	0.75	19.05	0.88	10.0	8.2	6.3	5.3	3.2	1.9	1.1	0.77	0.43	0.27
	10 (0.38)	0.75	19.05	0.90	3.7	3.2	1.9	1.3	0.88	0.60	0.36	0.23	0.142	0.088
2.0	41 (1.63)	1.50	38.10	0.91	47	45	41	30	16.4	10.6	7.0	4.6	3.1	2.2
	32 (1.25)	1.00	25.40	0.89	30	29	24	15.6	10.1	6.4	4.3	2.8	1.9	1.3
	25 (1.00)	0.75	19.05	0.92	23	22	17.7	11.4	6.7	4.6	3.0	1.9	1.3	0.88
	20 (0.81)	0.75	19.05	0.91	17.5	17.1	12.5	7.9	5.1	3.3	2.1	1.3	0.93	0.61
	16 (0.63)	0.75	19.05	0.90	10.1	9.1	6.7	4.5	2.7	1.8	1.2	0.74	0.44	0.28
	10 (0.38)	0.75	19.05	0.90	3.1	2.9	2.6	1.9	1.2	0.81	0.50	0.33	0.21	0.147
3.0	67 (2.63)	2.00	50.80	0.89	109	102	93	89	72	36	21	12.9	7.9	4.5
	50 (2.00)	1.50	38.10	0.90	83	78	72	64	44	25	13.8	8.8	5.3	3.3
	41 (1.63)	1.50	38.10	0.92	48	46	41	27	17.0	11.2	7.2	4.7	3.1	2.2
	32 (1.25)	1.00	25.40	0.88	32	31	25	16.3	10.6	7.0	4.5	2.9	1.9	1.3
4.0	90 (3.50)	2.50	63.50	0.91	196	184	169	157	115	57	36	24	15.4	10.7
	67 (2.63)	2.00	50.80	0.90	132	122	110	99	66	42	27	17.2	10.3	6.7
	55 (2.25)	2.00	50.80	0.89	97	89	80	66	41	26	16.3	10.3	6.2	4.2
	41 (1.63)	1.50	38.10	0.90	57	53	43	28	17.6	11.5	7.5	4.9	3.2	2.2
6.0	125 (5.00)	3.00	76.20	0.90	401	375	340	298	250	148	62	35	18.3	13.7
	90 (3.50)	2.50	63.50	0.89	225	203	177	153	115	65	41	26	16.5	10.8
	75 (3.00)	2.00	50.80	0.91	169	152	133	114	73	37	25	16.9	10.9	7.8
	67 (2.63)	2.00	50.80	0.90	129	118	105	92	67	37	23	14.8	8.8	5.5
8.0	160 (6.25)	4.00	101.6	0.91	693	645	591	498	335	185	115	76	46	28
	125 (5.00)	3.00	76.20	0.89	458	413	360	299	212	134	65	36	19.0	14.0
	90 (3.50)	2.50	63.50	0.90	244	219	195	160	114	65	41	26	15.9	11.0
	67 (2.63)	2.00	50.80	0.90	141	130	115	99	67	36	23	14.8	8.6	5.9
10	203 (8.00)	4.00	101.6	0.90	1015	923	819	724	604	425	191	112	70	41
	160 (6.25)	4.00	101.6	0.89	69	623	543	469	343	189	118	78	47	29
	125 (5.00)	3.00	76.20	0.91	479	431	376	296	211	133	65	36	18.9	13.9
12	240 (9.50)	4.00	101.60	0.90	1407	1287	1138	958	764	533	268	269	99	58
	187 (7.38)	4.00	101.60	0.89	937	860	758	638	481	268	142	97	65	44
	160 (6.25)	4.00	101.60	0.91	752	685	614	509	335	184	115	76	46	28

* Flow direction: Flow Under

GLs - Body Subassembly Flow Coefficient - C_v

Class 150-300-600 - Unbalanced Trims



Flow Coefficient (C_v) - Linear*

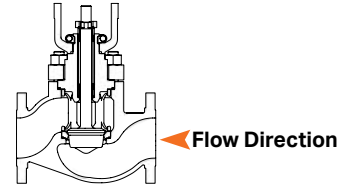
Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		mm	in.		100	90	80	70	60	50	40	30	20	10
0.50 & 0.75 & 1.00	13 (0.50)	19.05	0.75	0.87	5.5	5.3	5.1	4.7	4.3	3.8	3.2	2.5	1.7	0.83
	10 (0.38)	19.05	0.75	0.83	4.0	4.0	3.8	3.4	3.1	2.8	2.2	1.7	1.2	0.62
	8 (0.31)	19.05	0.75	0.81	2.8	2.8	2.7	2.4	2.3	2.0	1.6	1.2	0.84	0.45
	6.5-15 (0.25-15)	19.05	0.75	0.82	2.0	1.9	1.9	1.7	1.5	1.2	0.99	0.78	0.42	0.21
	6.5-18 (0.25-18)	19.05	0.75	0.82	1.2	0.93	0.81	0.72	0.65	0.54	0.46	0.36	0.22	0.140
	3.2-00 (0.12-00)	12.70	0.50	0.83	0.46	0.44	0.39	0.33	0.29	0.25	0.191	0.144	0.080	0.028
	3.2-03 (0.12-03)	12.70	0.50	0.81	0.21	0.195	0.175	0.156	0.136	0.117	0.096	0.072	0.049	0.025
	3.2-06 (0.12-06)	12.70	0.50	0.78	0.150	0.130	0.120	0.110	0.098	0.085	0.072	0.059	0.046	0.032
	3.2-09 (0.12-09)	12.70	0.50	0.80	0.053	0.045	0.038	0.031	0.025	0.019	0.013	0.008	0.004	0.001
3.2-12 (0.12-12)	12.70	0.50	0.79	0.014	0.012	0.010	0.008	0.006	0.005	0.003	0.002	0.001	0.000	
0.75	18 (0.71)	19.05	0.75	0.85	10.1	9.9	9.6	9.2	8.8	8.1	7.2	5.4	3.6	1.5
	16 (0.63)	19.05	0.75	0.88	9.0	8.8	8.4	8.1	7.5	6.2	4.9	3.8	2.4	1.3
	13 (0.50)	19.05	0.75	0.88	6.8	6.5	6.0	5.5	4.8	4.0	3.3	2.4	1.7	0.73
	10 (0.38)	19.05	0.75	0.83	4.2	4.1	3.9	3.5	3.1	2.7	2.1	1.6	1.0	0.48
	8 (0.31)	19.05	0.75	0.82	3.0	2.9	2.7	2.4	2.2	1.8	1.4	1.1	0.72	0.37
1.0	20 (0.81)	19.05	0.75	0.87	17.8	17.1	16.4	15.4	13.8	11.0	8.5	6.3	3.7	1.9
	18 (0.71)	19.05	0.75	0.85	15.8	15.3	14.4	12.8	10.6	8.5	6.7	5.0	3.2	1.4
	16 (0.63)	19.05	0.75	0.83	12.1	11.6	10.7	9.1	7.8	6.2	4.9	3.8	2.4	1.3
	13 (0.50)	19.05	0.75	0.84	6.9	6.6	6.0	5.2	4.4	3.7	3.0	2.4	1.6	0.84
	10 (0.38)	19.05	0.75	0.83	4.4	4.3	3.8	3.3	2.9	2.5	2.1	1.6	1.1	0.55
	8 (0.31)	19.05	0.75	0.81	2.9	2.9	2.6	2.3	2.1	1.8	1.4	1.1	0.74	0.33
	6.5-15 (0.25-15)	19.05	0.75	0.82	1.9	1.9	1.7	1.6	1.4	1.1	0.95	0.79	0.47	0.24
	6.5-18 (0.25-18)	19.05	0.75	0.83	1.2	0.96	0.82	0.77	0.70	0.59	0.54	0.41	0.27	0.16
	3.2-00 (0.12-00)	12.70	0.50	0.83	0.49	0.48	0.41	0.36	0.30	0.26	0.22	0.156	0.102	0.055
1.5	32 (1.25)	25.40	1.00	0.83	32	31	29	26	24	19.8	16.4	12.5	8.2	3.8
	25 (1.00)	19.05	0.75	0.82	21	21	19.8	18.2	16.3	13.9	11.3	8.6	5.6	2.6
	20 (0.81)	19.05	0.75	0.80	14.8	14.4	13.8	12.8	11.3	9.5	7.6	5.7	3.7	1.9
	18 (0.71)	19.05	0.75	0.81	14.6	14.1	13.3	12.0	10.4	8.4	6.7	5.0	3.2	1.4
	16 (0.63)	19.05	0.75	0.79	12.1	11.5	10.6	9.0	7.7	6.2	4.9	3.8	2.4	1.3
	10 (0.38)	19.05	0.75	0.80	4.3	4.2	3.7	3.2	2.8	2.5	2.1	1.6	1.1	0.55
2.0	41 (1.63)	38.10	1.50	0.87	56	54	51	48	43	36	29	22	14.0	6.5
	32 (1.25)	25.40	1.00	0.83	35	33	31	29	25	22	17.3	12.9	8.3	4.1
	25 (1.00)	19.05	0.75	0.82	23	22	21	19.2	17.1	14.5	11.5	8.6	5.5	2.6
	20 (0.81)	19.05	0.75	0.84	15.5	15.0	14.2	13.0	11.5	9.7	7.8	5.7	3.7	1.9
	18 (0.71)	19.05	0.75	0.81	15.0	14.4	13.5	12.1	10.5	8.5	6.7	5.0	3.2	1.4
	16 (0.63)	19.05	0.75	0.79	12.1	11.6	10.7	9.1	7.8	6.3	4.9	3.8	2.4	1.3
	10 (0.38)	19.05	0.75	0.80	4.5	4.4	3.9	3.4	3.0	2.7	2.1	1.7	1.1	0.57
3.0	67 (2.63)	50.80	2.00	0.86	117	114	111	106	98	84	71	56	38	17.6
	50 (2.00)	38.10	1.50	0.84	80	78	74	70	63	55	45	33	22	12.8
	41 (1.63)	38.10	1.50	0.81	56	54	50	46	40	33	27	21	13.5	6.4
	32 (1.25)	25.40	1.00	0.82	36	34	31	28	25	22	17.1	12.8	8.2	4.0
4.0	90 (3.50)	63.50	2.50	0.87	194	184	176	165	153	132	102	67	30	16.0
	67 (2.63)	50.80	2.00	0.84	136	132	125	114	102	86	68	50	33	15.8
	55 (2.25)	50.80	2.00	0.81	116	107	98	88	77	65	54	41	28	13.9
	41 (1.63)	38.10	1.50	0.82	58	55	52	48	41	34	28	20	13.6	6.8
6.0	125 (5.00)	76.20	3.00	0.85	454	438	414	384	347	303	255	199	126	61
	90 (3.50)	63.50	2.50	0.83	249	237	222	204	183	160	134	104	71	36
	75 (3.00)	50.80	2.00	0.81	197	184	169	153	135	116	94	72	49	25
	67 (2.63)	50.80	2.00	0.82	160	148	133	120	102	86	68	49	33	15.8
8.0	160 (6.25)	101.6	4.00	0.86	715	689	650	602	543	475	398	312	217	112
	125 (5.00)	76.20	3.00	0.83	576	534	489	440	388	331	271	209	143	73
	90 (3.50)	63.50	2.50	0.81	295	271	246	219	191	161	131	101	66	30
	67 (2.63)	50.80	2.00	0.82	170	155	141	124	108	88	68	49	32	15.7
10	203 (8.00)	101.6	4.00	0.85	1057	1015	964	901	825	733	622	490	340	174
	160 (6.25)	101.6	4.00	0.82	736	708	672	621	560	490	402	304	201	99
	125 (5.00)	76.20	3.00	0.81	588	543	494	442	387	328	253	191	126	61
12	240 (9.50)	101.6	4.00	0.86	1465	1425	1365	1276	1156	1017	847	658	492	258
	187 (7.38)	101.6	4.00	0.81	945	917	876	824	749	653	543	356	212	139
	160 (6.25)	101.6	4.00	0.83	831	776	715	648	572	490	405	306	202	99

* Flow direction: Flow Over

GLs - Body Subassembly

Flow Coefficient- C_v

Class 150-300-600 - Unbalanced Trims



Flow Coefficient (C_v) - Linear*

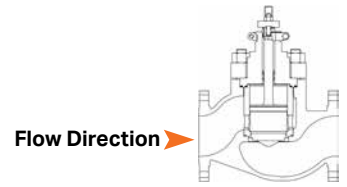
Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
0.50 & 0.75 & 1.00	13 (0.50)	0.75	19.05	0.88	5.0	4.9	4.6	4.3	3.9	3.5	2.8	2.2	1.4	0.67
	10 (0.38)	0.75	19.05	0.90	3.5	3.4	3.2	3.0	2.6	2.2	1.7	1.3	0.85	0.33
	8 (0.31)	0.75	19.05	0.89	2.6	2.4	2.2	2.1	1.7	1.5	1.2	0.90	0.56	0.28
	6.5-15 (0.25-15)	0.75	19.05	0.88	1.7	1.7	1.6	1.4	1.3	1.0	0.82	0.61	0.38	0.20
	6.5-18 (0.25-18)	0.75	19.05	0.85	1.2	1.1	1.0	0.94	0.84	0.72	0.58	0.45	0.29	0.169
	3.2-00 (0.12-00)	0.50	12.70	0.85	0.42	0.42	0.40	0.34	0.29	0.25	0.192	0.131	0.087	0.038
	3.2-03 (0.12-03)	0.50	12.70	0.86	0.22	0.195	0.176	0.156	0.137	0.117	0.093	0.070	0.048	0.030
	3.2-06 (0.12-06)	0.50	12.70	0.87	0.140	0.130	0.120	0.110	0.095	0.083	0.071	0.058	0.045	0.025
	3.2-09 (0.12-09)	0.50	12.70	0.87	0.062	0.044	0.037	0.030	0.024	0.018	0.013	0.006	0.004	0.001
3.2-12 (0.12-12)	0.50	12.70	0.85	0.014	0.012	0.010	0.008	0.006	0.005	0.003	0.002	0.001	0.000	
0.75	18 (0.71)	0.75	19.05	0.91	9.2	9.2	9.2	8.9	8.3	7.1	6.0	4.4	3.1	1.4
	16 (0.63)	0.75	19.05	0.89	8.9	8.7	8.4	8.0	7.1	6.1	4.7	3.6	2.3	1.2
	13 (0.50)	0.75	19.05	0.85	6.3	6.1	5.7	5.2	4.6	3.8	3.1	2.3	1.6	0.63
	10 (0.38)	0.75	19.05	0.90	3.8	3.7	3.3	3.1	2.7	2.3	1.8	1.3	0.91	0.35
	8 (0.31)	0.75	19.05	0.89	2.7	2.6	2.4	2.2	1.8	1.5	1.2	0.90	0.55	0.23
	6.5-15 (0.25-15)	0.75	19.05	0.89	1.9	1.9	1.7	1.5	1.3	1.1	0.88	0.61	0.39	0.167
	6.5-18 (0.25-18)	0.75	19.05	0.88	1.2	1.1	1.0	0.94	0.84	0.72	0.58	0.45	0.29	0.160
	3.2-00 (0.12-00)	0.50	12.70	0.85	0.46	0.44	0.41	0.35	0.30	0.25	0.198	0.138	0.080	0.034
1.0	20 (0.81)	0.75	19.05	0.91	15.1	15.1	14.6	13.3	11.9	9.8	8.0	6.1	3.8	2.1
	18 (0.71)	0.75	19.05	0.93	13.1	12.8	12.0	10.6	9.2	7.7	5.9	4.4	2.6	0.99
	16 (0.63)	0.75	19.05	0.93	10.3	9.9	9.3	8.2	7.1	6.1	4.7	3.6	2.3	1.2
	13 (0.50)	0.75	19.05	0.90	6.8	6.5	6.0	5.3	4.7	3.8	3.0	2.2	1.44	0.64
	10 (0.38)	0.75	19.05	0.91	4.0	3.8	3.5	3.1	2.6	2.1	1.7	1.2	0.85	0.37
	8 (0.31)	0.75	19.05	0.90	2.9	2.8	2.5	2.2	1.9	1.6	1.3	0.98	0.62	0.27
	6.5-15 (0.25-15)	0.75	19.05	0.90	1.7	1.7	1.7	1.5	1.3	0.94	0.76	0.53	0.37	0.156
	6.5-18 (0.25-18)	0.75	19.05	0.88	1.2	1.1	1.0	0.94	0.84	0.72	0.58	0.45	0.29	0.169
	3.2-00 (0.12-00)	0.50	12.70	0.92	0.49	0.47	0.42	0.36	0.30	0.26	0.198	0.143	0.099	0.055
1.5	32 (1.25)	1.00	25.40	0.89	33	30	29	28	26	23	19.4	15.2	10.8	5.5
	25 (1.00)	0.75	19.05	0.91	21	21	20	19.2	17.8	15.4	12.8	10.0	6.8	2.9
	20 (0.81)	0.75	19.05	0.92	13.6	13.3	12.9	12.4	11.4	10.0	8.0	5.5	3.2	1.6
	18 (0.71)	0.75	19.05	0.91	12.9	12.6	11.8	10.4	9.0	7.6	5.8	4.4	2.6	0.99
	16 (0.63)	0.75	19.05	0.88	11.1	9.8	8.7	7.7	6.7	5.6	4.4	3.4	2.3	1.1
	10 (0.38)	0.75	19.05	0.90	4.0	3.5	3.2	2.8	2.4	2.0	1.6	1.2	0.81	0.40
	3.2-00 (0.12-00)	0.50	12.70	0.90	4.2	3.6	3.2	2.8	2.4	2.0	1.6	1.2	0.83	0.42
2.0	41 (1.63)	1.50	38.10	0.91	51	50	50	49	44	37	30	23	15.2	6.8
	32 (1.25)	1.00	25.40	0.88	35	34	31	29	26	22	17.6	13.5	9.0	3.7
	25 (1.00)	0.75	19.05	0.92	22	21	20	19.3	17.4	14.7	11.9	9.2	5.6	2.7
	20 (0.81)	0.75	19.05	0.80	15.4	15.0	14.7	14.2	12.8	10.8	8.7	5.9	3.4	1.7
	18 (0.71)	0.75	19.05	0.90	13.1	12.8	12.0	10.6	9.2	7.7	5.9	4.4	2.6	1.1
	16 (0.63)	0.75	19.05	0.90	11.1	9.8	8.7	7.7	6.7	5.6	4.4	3.4	2.3	1.0
3.0	67 (2.63)	2.00	50.80	0.91	115	113	110	106	100	89	74	55	37	17.7
	50 (2.00)	1.50	38.10	0.90	83	78	74	67	60	53	43	34	24	13.9
	41 (1.63)	1.50	38.10	0.89	51	49	45	42	37	33	29	22	15.0	6.4
	32 (1.25)	1.00	25.40	0.90	36	34	33	30	26	22	17.5	13.4	9.0	3.6
	20 (0.81)	0.75	19.05	0.80	15.4	15.0	14.7	14.2	12.8	10.8	8.7	5.9	3.4	1.7
4.0	90 (3.50)	2.50	63.50	0.90	196	187	177	165	151	134	113	89	62	32
	67 (2.63)	2.00	50.80	0.92	133	127	117	105	91	79	65	53	35	15.9
	55 (2.25)	2.00	50.80	0.89	101	95	88	82	73	63	52	40	27	13.9
	41 (1.63)	1.50	38.10	0.88	53	50	46	42	37	32	29	22	15.1	7.2
6.0	125 (5.00)	3.00	76.20	0.90	434	419	396	368	333	292	246	193	134	70
	90 (3.50)	2.50	63.50	0.89	235	220	203	182	158	133	110	88	71	40
	75 (3.00)	2.00	50.80	0.91	183	174	161	144	126	109	88	68	49	25
	67 (2.63)	2.00	50.80	0.90	148	138	128	114	99	83	67	53	37	21
8.0	160 (6.25)	4.00	101.6	0.90	682	658	621	576	521	457	384	301	210	109
	125 (5.00)	3.00	76.20	0.91	481	456	426	392	352	306	255	197	135	68
	90 (3.50)	2.50	63.50	0.90	271	252	231	208	184	157	128	98	67	34
	67 (2.63)	2.00	50.80	0.89	165	155	143	127	110	91	74	55	38	22
10	203 (8.00)	4.00	101.6	0.90	1057	1015	964	901	825	733	622	490	340	174
	160 (6.25)	4.00	101.6	0.89	700	662	608	546	476	402	324	243	165	109
	125 (5.00)	3.00	76.20	0.89	555	516	474	427	377	322	256	189	136	69
12	240 (9.50)	4.00	101.6	0.90	1397	1367	1307	1217	1108	978	818	638	479	251
	187 (7.38)	4.00	101.6	0.89	985	930	860	773	670	562	452	340	233	149
	160 (6.25)	4.00	101.6	0.91	854	797	730	644	549	441	341	251	165	107

* Flow direction: Flow Under

GLs - Body Subassembly

Flow Coefficient - C_v

Class 150-300-600 - Balanced Trims



Flow Coefficient (C_v) - Equal Percentage*

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
2.0	41 (1.63)	1.00	25.40	0.92	34	32	30	23	16	11	7.6	5.2	3.6	2.4
	32 (1.25)	1.00	25.40	0.90	29	27	20	14	9.7	6.7	4.6	3.1	2.1	1.5
3.0	67 (2.63)	1.50	38.10	0.91	101	100	93	80	66	56	29	17	11	6.9
	50 (2.00)	1.50	38.10	0.94	92	82	69	56	45	26	16	10	6.4	4.0
	41 (1.63)	1.50	38.10	0.93	59	50	35	24	17	12	7.8	5.3	3.6	2.4
	32 (1.25)	1.00	25.40	0.91	34	30	21	15	10	6.9	4.7	3.2	2.1	1.5
4.0	90 (3.50)	2.00	50.8	0.95	165	160	146	127	111	81	41	29	18	12
	67 (2.63)	2.00	50.8	0.95	148	129	110	96	63	38	25	16	11	6.8
	55 (2.25)	2.00	50.8	0.94	115	99	84	67	39	28	19	12	7.7	5.0
	32 (1.25)	1.00	25.40	0.93	40	32	23	15	10	6.9	4.7	3.2	2.1	1.5
6.0	125 (5.00)	2.50	63.5	0.97	336	330	307	269	216	168	98	56	37	24
	102 (4.00)	2.50	63.5	0.94	307	277	237	189	149	91	55	36	24	15
	75 (3.00)	2.00	50.8	0.89	229	193	156	122	97	54	33	21	14	8.9
8.0	160 (6.25)	3.00	76.2	0.93	533	518	480	419	334	254	159	80	56	37
	125 (5.00)	3.00	76.2	0.91	478	429	364	288	226	138	84	55	37	24
	90 (3.50)	2.00	80.8	0.90	314	264	213	166	136	91	44	29	19	12
10	200 (7.90)	3.00	76.2	0.89	832	813	773	704	603	483	371	282	109	58
	160 (6.25)	3.00	76.2	0.88	728	660	570	466	361	297	163	81	56	38
	125 (5.00)	3.00	76.2	0.88	572	486	394	312	254	142	85	55	37	24
12	240 (9.50)	4.00	101.6	0.94	1188	1158	1079	960	792	604	469	213	128	84
	187 (7.38)	4.00	101.6	0.89	1030	921	773	619	469	317	175	117	77	52
	152 (6.00)	3.00	76.2	0.86	812	706	586	462	355	282	141	81	51	35
14	280 (11.00)	4.00	101.6	0.94	1337	1317	1268	1188	1060	872	660	503	204	113
	200 (7.90)	4.00	101.6	0.87	1139	1040	901	738	559	432	215	138	91	61
	160 (6.25)	4.00	101.6	0.87	882	753	606	464	338	192	128	85	56	37

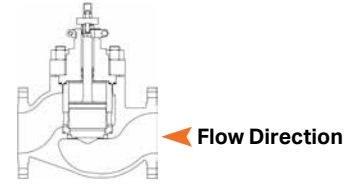
⁽¹⁾ Flow direction: Flow Over

⁽²⁾ For information on larger sizes C_v 's, consult www.literature.valtek.sul.com - Bulletin number 5 of the catalogue Valve Sizing and Selection or Large Globe Valves catalogue, of ValtekSul.

GLs - Body Subassembly

Flow Coefficient - C_v

Class 150-300-600 - Balanced Trims



Flow Coefficient (C_v) - Equal Percentage*

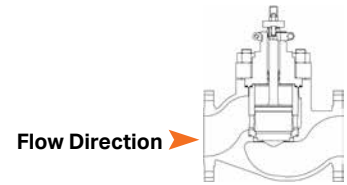
Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
2.0	41 (1.63)	1.00	25.40	0.88	34	31	29	23	15	11	7.4	5.1	3.5	2.4
	32 (1.25)	1.00	25.40	0.86	28	26	20	13	9.4	6.5	4.4	3.0	2.1	1.4
3.0	67 (2.63)	1.50	38.10	0.85	97	97	90	78	64	55	29	17	11	6.7
	50 (2.00)	1.50	38.10	0.88	89	79	66	54	44	25	15	9.8	6.2	3.9
	41 (1.63)	1.50	38.10	0.85	56	48	33	24	16	11	7.6	5.2	3.5	2.4
	32 (1.25)	1.00	25.40	0.86	34	30	22	14	9.8	6.7	4.5	3.1	2.1	1.4
4.0	90 (3.50)	2.00	50.8	0.89	158	153	140	121	107	78	40	28	18	12
	67 (2.63)	2.00	50.8	0.91	143	125	106	93	61	37	24	16	10	6.6
	55 (2.25)	2.00	50.8	0.86	111	96	85	64	37	27	18	12	7.5	4.9
	32 (1.25)	1.00	25.40	0.87	38	31	22	14	9.8	6.7	4.5	3.1	2.1	1.4
6.0	125 (5.00)	2.50	63.5	0.95	321	315	293	257	207	161	95	55	36	24
	102 (4.00)	2.50	63.5	0.89	294	266	228	182	143	88	53	35	23	15
	75 (3.00)	2.00	50.8	0.88	221	187	151	118	94	52	32	21	13	8.7
8.0	160 (6.25)	3.00	76.2	0.86	509	495	459	401	321	244	153	78	55	36
	125 (5.00)	3.00	76.2	0.86	458	412	350	277	218	134	81	53	36	24
	90 (3.50)	2.00	80.8	0.87	303	255	206	160	132	88	42	28	18	12
10	200 (7.90)	3.00	76.2	0.87	802	782	741	674	578	464	358	273	106	57
	160 (6.25)	3.00	76.2	0.85	700	635	548	449	348	288	159	79	56	37
	125 (5.00)	3.00	76.2	0.86	552	470	381	302	246	138	82	55	36	24
12	240 (9.50)	4.00	101.6	0.89	1130	1100	1031	922	763	582	453	206	124	82
	187 (7.38)	4.00	101.6	0.86	980	881	742	596	452	306	169	114	75	50
	152 (6.00)	3.00	76.2	0.85	782	680	565	446	342	273	137	78	51	34
14	280 (11.00)	4.00	101.6	0.88	1280	1260	1210	1131	1012	843	638	488	199	110
	200 (7.90)	4.00	101.6	0.85	1100	1000	872	712	539	418	208	134	89	59
	160 (6.25)	4.00	101.6	0.85	850	729	584	478	326	196	124	82	55	36

⁽¹⁾ Flow direction: Flow Under

⁽²⁾ For information on larger sizes C_v 's, consult www.literature.valtekSul.com - Bulletin number 5 of the catalogue Valve Sizing and Selection or Large Globe Valves catalogue, of ValtekSul.

GLs - Body Subassembly Flow Coefficient - C_v

Class 150-300-600 - Balanced Trims



Flow Coefficient (C_v) - Linear*

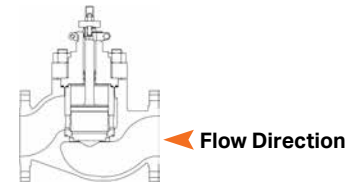
Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
2.0	41 (1.63)	1.00	25.40	0.93	37	37	36	34	32	29	25	21	15	7.9
	32 (1.25)	1.00	25.40	0.89	32	31	28	26	23	20	17	13	9.2	4.8
3.0	67 (2.63)	1.50	38.10	0.88	102	101	98	93	87	78	67	54	39	21
	50 (2.00)	1.50	38.10	0.89	87	81	75	68	61	52	44	34	24	12
	41 (1.63)	1.50	38.10	0.88	67	61	55	49	43	37	31	24	16	8.2
	32 (1.25)	1.00	25.40	0.88	40	37	33	30	26	22	18	14	9.5	4.9
4.0	90 (3.50)	2.00	50.8	0.92	165	164	160	153	144	131	115	93	67	36
	67 (2.63)	2.00	50.8	0.93	147	138	128	117	104	90	75	59	41	21
	55 (2.25)	2.00	50.8	0.95	112	104	96	88	78	68	56	44	30	16
	32 (1.25)	1.00	25.40	0.92	41	37	34	31	27	23	19	14	9.6	4.9
6.0	125 (5.00)	2.50	63.5	0.94	336	334	326	312	293	268	234	190	138	74
	102 (4.00)	2.50	63.5	0.93	304	288	273	252	228	200	169	133	92	49
	75 (3.00)	2.00	50.8	0.89	223	206	187	168	148	126	103	79	53	28
8.0	160 (6.25)	3.00	76.2	0.93	533	528	515	493	463	421	368	298	216	115
	125 (5.00)	3.00	76.2	0.93	481	457	430	397	359	315	265	209	145	75
	90 (3.50)	2.00	80.8	0.92	317	291	264	237	206	175	143	109	74	38
10	200 (7.90)	3.00	76.2	0.94	832	822	802	763	709	635	540	423	352	188
	160 (6.25)	3.00	76.2	0.89	742	712	670	620	560	493	415	325	227	118
	125 (5.00)	3.00	76.2	0.90	594	552	507	456	304	346	284	219	149	76
12	240 (9.50)	4.00	101.6	0.93	1190	1180	1150	1091	1021	932	803	647	496	268
	187 (7.38)	4.00	101.6	0.90	1050	1000	941	862	783	688	578	455	316	163
	152 (6.00)	3.00	76.2	0.90	842	783	726	655	580	497	408	315	215	110
14	280 (11.00)	4.00	101.6	0.94	1340	1330	1300	1251	1181	1082	953	764	641	351
	200 (7.90)	4.00	101.6	0.90	1170	1120	1050	982	892	783	673	532	374	193
	160 (6.25)	4.00	101.6	0.90	912	853	783	712	629	542	446	344	235	119

⁽¹⁾ Flow direction: Flow Over

⁽²⁾ For information on larger sizes C_v 's, consult www.literature.valtek.sul.com - Bulletin number 5 of the catalogue Valve Sizing and Selection or Large Globe Valves catalogue, of ValtekSul.

GLs - Body Subassembly Flow Coefficient - C_v

Class 150-300-600 - Balanced Trims



Flow Coefficient (C_v) - Linear*

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
2.0	41 (1.63)	1.00	25.40	0.87	35	35	34	33	31	28	24	20	14	7.7
	32 (1.25)	1.00	25.40	0.85	31	29	27	25	23	20	16	13	9.0	4.7
3.0	67 (2.63)	1.50	38.10	0.87	97	97	94	89	83	75	64	53	38	20
	50 (2.00)	1.50	38.10	0.87	83	78	72	66	58	50	42	33	23	12
	41 (1.63)	1.50	38.10	0.87	64	59	53	48	42	35	30	23	16	8.0
	32 (1.25)	1.00	25.40	0.85	38	35	32	29	26	22	18	14	9.3	4.8
4.0	90 (3.50)	2.00	50.8	0.88	158	157	153	147	138	126	111	90	65	35
	67 (2.63)	2.00	50.8	0.90	141	132	123	112	100	87	73	57	40	21
	55 (2.25)	2.00	50.8	0.92	108	101	93	85	75	65	54	43	30	15
	32 (1.25)	1.00	25.40	0.89	39	36	33	30	26	22	18	14	9.4	4.8
6.0	125 (5.00)	2.50	63.5	0.89	321	319	312	299	281	257	225	184	134	72
	102 (4.00)	2.50	63.5	0.88	292	278	261	243	220	193	163	129	90	47
	75 (3.00)	2.00	50.8	0.85	215	198	181	162	143	122	100	77	53	27
8.0	160 (6.25)	3.00	76.2	0.89	509	505	492	472	444	405	355	288	209	112
	125 (5.00)	3.00	76.2	0.89	461	439	414	382	346	304	256	202	141	74
	90 (3.50)	2.00	80.8	0.88	306	281	252	229	200	170	139	106	72	37
10	200 (7.90)	3.00	76.2	0.86	802	782	762	731	680	611	521	409	342	184
	160 (6.25)	3.00	76.2	0.86	719	684	645	597	540	476	401	317	221	115
	125 (5.00)	3.00	76.2	0.83	573	532	489	441	391	334	276	213	145	75
12	240 (9.50)	4.00	101.6	0.88	1140	1120	1090	1051	981	892	773	627	482	260
	187 (7.38)	4.00	101.6	0.88	1010	960	901	832	753	665	560	441	308	159
	152 (6.00)	3.00	76.2	0.87	812	753	700	633	561	481	396	306	210	107
14	280 (11.00)	4.00	101.6	0.88	1280	1270	1240	1201	1131	1042	913	744	623	342
	200 (7.90)	4.00	101.6	0.87	1120	1070	1011	942	862	763	652	516	364	188
	160 (6.25)	4.00	101.6	0.88	882	823	703	688	609	525	433	334	229	116

⁽¹⁾ Flow direction: Flow Under

⁽²⁾ For information on larger sizes C_v 's, consult www.literature.valtek.sul.com - Bulletin number 5 of the catalogue Valve Sizing and Selection or Large Globe Valves catalogue, of ValtekSul.

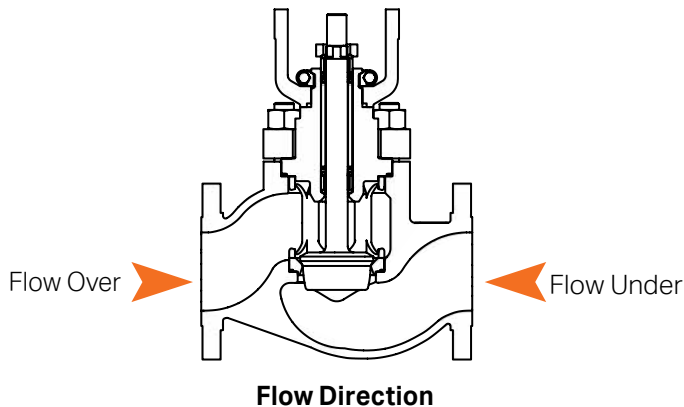
GLs - Body Subassembly Flow Coefficient - C_v

Class 150-300-600 - Unbalanced Trims - Flow direction: Flow Over Flow Coefficient (C_v) - Quick-open*

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
0.50	13 (0.50)	0.75	19.05	0.87	4.8	4.6	4.4	4.1	3.8	3.5	3.1	2.4	1.4	0.74
0.75	18 (0.71)	0.75	19.05	0.85	7.6	7.5	7.5	7.4	7.3	7.3	6.4	4.9	3.0	1.7
1.0	20 (0.81)	0.75	19.05	0.87	11.1	11.1	11.1	11.1	10.1	10.1	8.7	6.3	3.7	1.9
1.5	32 (1.25)	1.00	25.40	0.85	30	29	29	29	28	25	20	14.1	9.0	4.9
2.0	41 (1.63)	1.50	38.10	0.87	50	49	49	48	47	46	39	28	15.1	8.3
3.0	67 (2.63)	2.00	50.80	0.86	128	127	126	126	124	109	90	64	39	22
4.0	90 (3.50)	2.50	63.50	0.87	223	223	220	216	211	185	153	110	68	38
6.0	125 (5.00)	3.00	76.20	0.85	465	465	464	462	419	361	295	221	143	76
8.0	160 (6.25)	4.00	101.6	0.86	728	718	708	695	683	594	480	361	223	117
10	203 (8.00)	4.00	101.6	0.85	1175	1155	1125	1095	976	836	747	542	365	190
12	240 (9.50)	4.00	101.6	0.86	1667	1617	1567	1437	1278	1108	938	737	494	246

Class 150-300-600 - Unbalanced Trims - Flow direction: Flow Under Flow Coefficient (C_v) - Quick-open*

Valve Nominal Diameter (in.)	Nominal Trims Size (T.N.)	Stroke		F_L	Opening Percentage									
		in.	mm		100	90	80	70	60	50	40	30	20	10
0.50	13 (0.50)	0.75	19.05	0.88	4.5	4.4	4.2	4.0	3.7	3.4	3.0	2.3	1.4	0.73
0.75	18 (0.71)	0.75	19.05	0.91	7.2	7.2	7.1	7.1	7.1	7.0	6.2	4.7	2.9	1.7
1.0	20 (0.81)	0.75	19.05	0.91	11.1	11.1	10.1	10.1	10.1	10.0	8.4	6.1	3.5	1.9
1.5	32 (1.25)	1.00	25.40	0.89	28	28	28	27	27	24	19	13.8	8.5	4.7
2.0	41 (1.63)	1.50	38.10	0.91	47	46	45	45	44	44	37	28	14.8	7.9
3.0	67 (2.63)	2.00	50.80	0.91	122	122	121	120	119	105	86	62	38	21
4.0	90 (3.50)	2.50	63.50	0.90	213	213	210	207	203	178	147	107	66	37
6.0	125 (5.00)	3.00	76.20	0.90	445	445	444	443	402	347	285	214	139	74
8.0	160 (6.25)	4.00	101.6	0.90	696	686	677	666	656	572	463	350	216	115
10	203 (8.00)	4.00	101.6	0.90	1125	1105	1075	1045	936	806	725	525	355	186
12	240 (9.50)	4.00	101.6	0.90	1586	1546	1496	1377	1227	1067	898	712	481	239

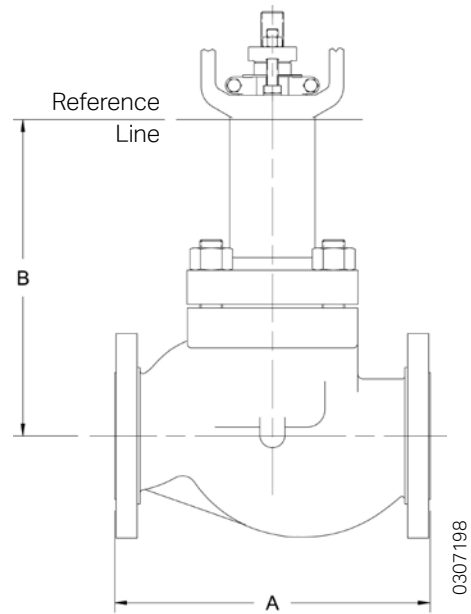
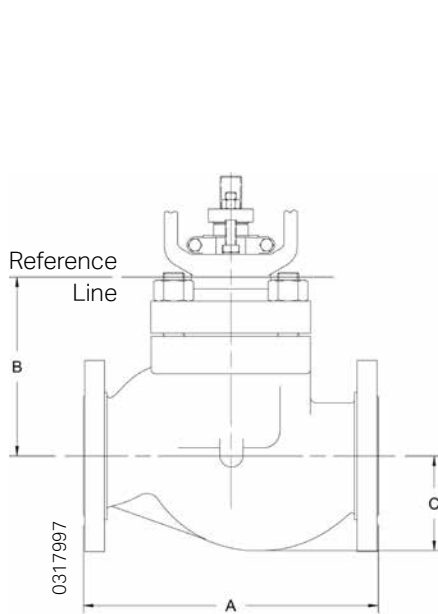


Valves Sizing

Sizing and selection of GLs valves follow strict criteria established by Valtek Sulamericana, based on internationally recognized standards and procedures.

Contact ValtekSul to receive technical support on issues related to sizing and uses of control valves

GLs - Body Subassembly Dimensions



Dimensions - Globe Valves - Classes 150, 300 & 600

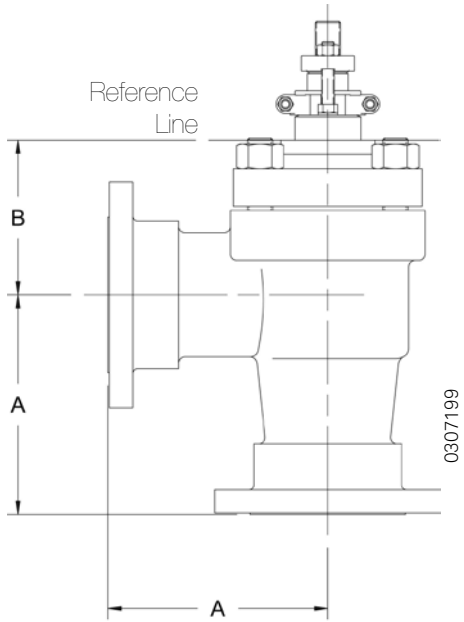
Valve Nominal Diameter (in.)	A								B				C		Clearance for Disassembly, Above the Actuator	
	Separable Flanges ⁽¹⁾		Integral Flanges ⁽²⁾						Standard Bonnet		Extended Bonnet					
	Class 150-600		Class 150		Class 300		Class 600									
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0.50	8.5	216	7.3	184	7.5	190	8.0	203	3.8	97	8.3	212	1.5	38	2.5	64
0.75	8.5	216	7.3	184	7.6	194	8.1	206	3.8	97	8.3	212	1.5	38	2.5	64
1.0	8.5	216	7.3	184	7.8	197	8.3	210	3.8	97	8.3	212	1.8	44	2.5	64
1.5	9.5	241	8.8	222	9.3	235	9.9	251	5.2	132	9.7	246	2.3	59	4.0	102
2.0	11.5	292	10.0	254	10.5	267	11.3	286	5.4	138	9.9	252	2.3	59	4.5	114
3.0	14.0	356	11.8	298	12.5	318	13.3	337	6.8	172	12.3	312	3.4	86	5.8	147
4.0	17.0	432	13.9	353	14.5	368	15.5	394	8.4	214	13.9	354	5.2	133	7.5	190
6.0			17.8	451					10.1	256	15.6	395	5.5	139	10.0	254
6.0					18.6	473	20.0	508	12.3	311	17.8	451	5.8	146	10.0	254
8.0			21.4	543					12.5	318	18.0	457	7.1	180	10.9	277
8.0					22.4	568	24.0	610	14.4	365	19.9	505	7.5	191	11.4	290
10			26.5	673					14.1	359	19.6	498	8.4	214	11.9	302
10					27.9	708	29.6	752	14.1	359	20.6	524	8.9	227	12.1	308
12			29.0	737					14.1	359	19.6	498	9.6	243	12.6	320
12					30.5	775	32.3	819	16.3	413	22.8	578			12.6	320

⁽¹⁾ In accordance to ANSI/ISA-75.08.07 regulation, latest edition. The diameters of 1/2 and 3/4 inches are not listed in this regulation.

⁽²⁾ In accordance to ANSI/ISA-75.08.01 regulation, latest edition.

GLs - Body Subassembly

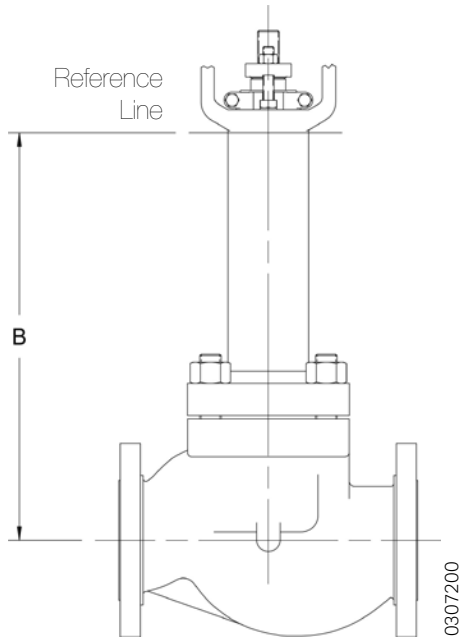
Estimated Shipping Weight and Dimensions



Dimensions - Angle-style Valves - Classes 150, 300 & 600

Valve Nominal Diameter (in.)	ANSI Pressure Class	A ⁽¹⁾		B				Clearance for Disassembly, Above the Actuator	
				Standard Bonnet		Extended Bonnet			
		in.	mm	in.	mm	in.	mm	in.	mm
0.5 to 1.0	150-600	4.3	108	3.1	78	7.6	192	2.5	64
1.5	150-600	4.8	121	3.6	92	8.1	206	4.0	102
2.0	150-600	5.8	146	3.9	100	8.4	214	4.5	114
3.0	150-600	7.0	178	4.9	124	10.4	264	5.8	147
4.0	150-600	8.8	222	6.2	156	11.7	295	7.5	190
6.0	150	8.9	226	7.1	180	12.6	320	10.0	254
6.0	300-600	11.0	279	9.5	241	15.0	381	10.0	254
8.0	150	13.0	330	9.0	229	14.5	368	13.8	349
8.0	300-600	13.0	330	10.8	275	16.3	414	13.8	349

⁽¹⁾ Dimension "A" in accordance to Valtek Sulamericana's standards.

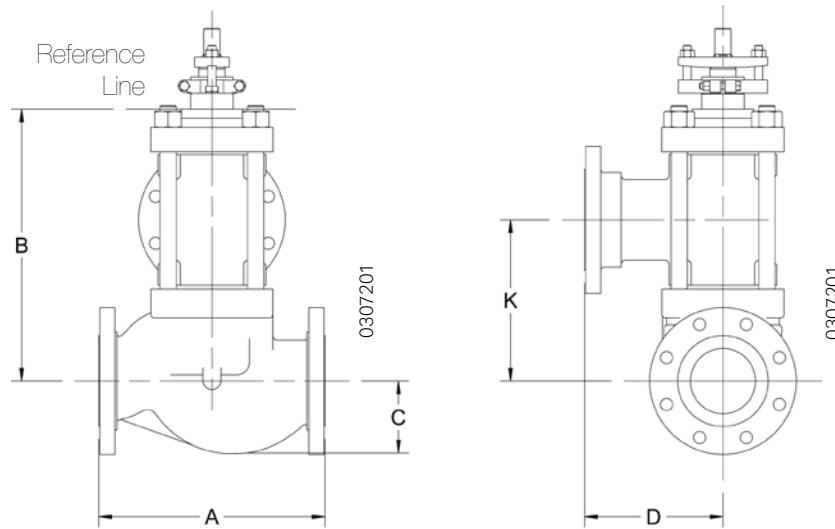


Dimensions - Bonnets for Cryogenics

Valve Nominal Diameter (in.)	ANSI Pressure Class	B					
		Standard Bonnet Dimension for Cryogenics					
		in.	mm	in.	mm	in.	mm
0.5 to 1.0	150-600	15.0	381	24.0	610	27.0	686
1.5	150-600	15.0	381	24.0	610	27.0	686
2.0	150-600	15.3	387	24.3	616	27.3	692
3.0	150-600	18.0	457	24.0	610	27.0	686
4.0	150-600	18.0	457	24.0	610	27.0	686
6.0	150	18.0	457	24.0	610	27.0	686

GLs - Body Subassembly

Estimated Shipping Weight and Dimensions



Dimensions - Three-way Valves

Valve Nominal Diameter (in.)	A								B				C		D		K		Clearance for Disassembly, Above the Actuator	
	Sep. Flang. ⁽¹⁾		Integral Flanges ⁽²⁾						Standard Bonnet		Extended Bonnet									
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0.50	8.5	216	7.3	184	7.5	190	8.0	203	6.7	170	11.2	284	1.5	38	4.3	108	3.4	87	3.4	87
0.75	8.5	216	7.3	184	7.6	194	8.1	206	6.7	170	11.2	284	1.5	38	4.3	108	3.4	87	3.4	87
1.0	8.5	216	7.3	184	7.8	197	8.3	210	6.7	170	11.2	284	1.8	44	4.3	108	3.4	87	3.4	87
1.5	9.5	241	8.8	222	9.3	235	9.9	251	9.1	230	13.4	341	2.3	59	4.8	121	5.4	137	5.0	127
2.0	11.5	292	10.0	254	10.5	267	11.3	286	9.3	236	13.7	347	2.3	59	5.8	146	5.6	143	5.5	140
3.0	14.0	356	11.8	298	12.5	318	13.3	337	13.0	329	18.5	470	3.4	86	7.0	178	7.6	194	7.1	181
4.0	17.0	432	13.9	353	14.5	368	15.5	394	16.7	423	22.1	562	5.2	133	8.5	216	9.9	251	9.4	240
6.0			17.8	451					21.6	548	26.6	675	5.5	139	8.9	226	14.0	356	11.6	294
6.0					18.6	473	20.0	508	25.8	654	31.3	794	5.8	146	10.0	254	16.0	406	11.6	294
8.0			21.4	543					23.9	608	29.4	748	7.1	180	10.7	272	15.0	381	12.2	310
8.0					22.4	568	24.0	610	30.2	767	35.7	907	7.5	191	12.0	305	18.3	464	12.2	310

⁽¹⁾ In accordance to ANSI/ISA-75.08.07 regulation, latest edition. The diameters of 1/2 and 3/4 inches are not listed in this regulation.

⁽²⁾ In accordance to ANSI/ISA-75.08.01 regulation, latest edition.

Estimated Shipping Weight*

Valve Nominal Diameter (in.)	Class 150		Class 300		Class 600		Additional for Extended Bonnet	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
0.5 & 0.75	40	18	40	18	40	18	5	2
1.0	50	23	50	23	50	23	5	2
1.5	65	30	65	30	65	30	5	2
2.0	75	34	75	34	75	34	5	2
3.0	160	73	170	77	180	82	15	7
4.0	240	109	250	114	265	120	20	9
6.0	360	163	570	259	600	272	40	18
8.0	590	268	790	359	830	377	65	30
10	1050	477	1405	638	1600	726	90	41
12	1278	581	1772	805	2058	935	100	46

* Globe valves, equipped with standard size actuators and Chronos digital positioners.

Additional Weight for Oversized Actuators

Original Standard Size	Required Oversize Dimension	Additional Weight	
		lbs.	kg
25	50	30	14
50	100	90	41
100	200	125	57

Quality Management System



ISO 9001-2015

Certificate nº 31001 QM 15

DQS GmbH

DQS Brazil

ISO 14001™ Certified

ValtekSul Brasil

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For additional information, please consult your Valtek Sulamericana representative. Specific assembly, operation and maintenance instructions for GLS Control Valves can be found at the Maintenance Catalogue nº 01.

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