GXL SERIES

VSI CONTROLS
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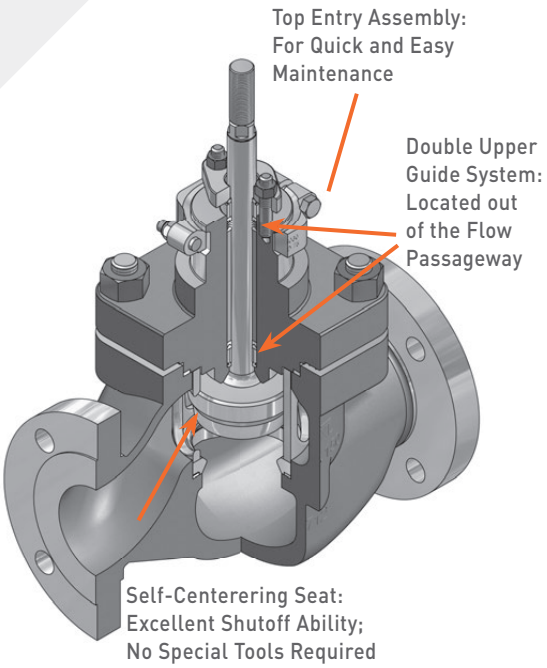
GXL SERIES

Introduction

The GXL Control Valve System offers a completely integrated system - globe style control valve, double-acting piston actuator with spring failure and digital-pneumatic positioner with HART protocol.
It is available in nominal sizes from ½ to 4" (DN 15 to 100) for operating temperatures up to 250°C (480°F) and pressure classes 150-300 (ANSI B16.34), PN 10 to PN 40 (EN 1092-1).

Reliability

The GXL globe control valve for general purpose services exhibits a compact envelope, simple design and is a perfect fit for new installations or replacing existing control valves, where easy installation, configuration and start-up are welcomed.
The GXL product incorporates the same basic valve design as the renowned GLS Series and, by offering only the most requested material and trim options, the consequent competitive and quickly configurable/deliverable product results.
The GXL unbalanced valve trim consists of the one-piece plug+stem, seat ring and retainer, and provides easy maintenance requiring no special tools. The robust stem diameter, top and bottom stem guiding combined with the stiff and powerful double-acting spring-fail piston actuator and digital Chronos positioner offer throttling control & accuracy comparable to control valve systems at triple the price.
Highly efficient upper and lower standard V-ring and low emission packing systems round out the offering, making the GXL control valve system one of most capable and reliable general service control valves in the industry.



Rangeability 30:1 (Typical)

ANSI Class V Shutoff – Metal Seat
ANSI Class VI Shutoff – Soft Seat

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LA-XL Series Linear Actuator

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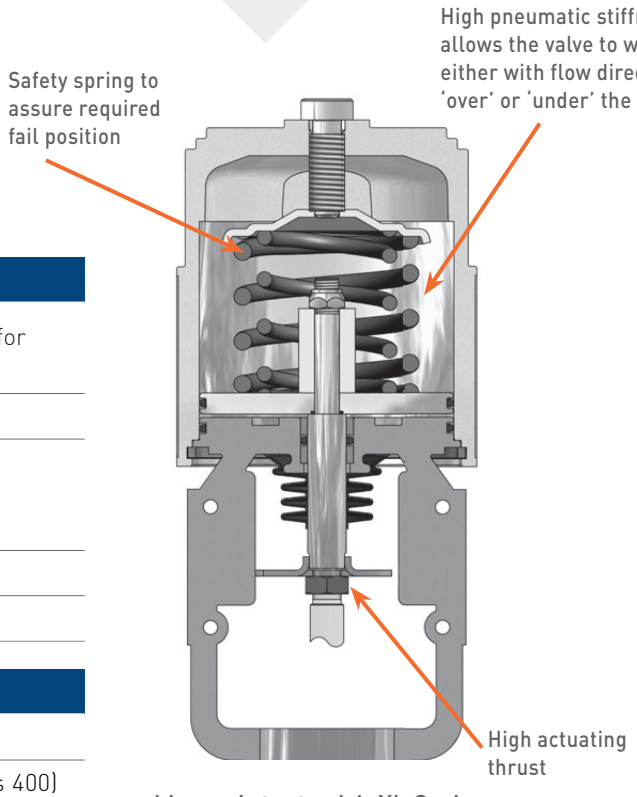
The LA-XL Series is a complete line of pneumatic linear double-acting spring piston actuators known for their high thrust, stiffness and positioning/control sensitivity. Designed to operate with supply pressures from 2 bar (30 PSI) up to 10.3 bar (150 PSI), they are equipped with internal spring(s) to insure the required valve position is achieved in the event of air supply or control signal failure. The design is field-reversible, offering one actuator for air-to open, air-to-close, or fail-in-place applications.

Features/Benefits

- High response frequency, dynamic positioning sensitivity and stability provides precise control
- High actuator thrust/stiffness, improves throttling performance and reduces actuator size
- The compact, lightweight unit is easily maintained
- The absence of diaphragms and other high stress parts (subject to repeated cycling, failure and rupture) results in a highly reliable product
- High part interchangeability – Reduces the need for spare parts
- Field reversible
- Lightweight and compact design – Helps handling and occupies limited space



Linear Actuator LA-XL Series

ACTUATOR SPECIFICATIONS	
Type	Double acting cylinder with spring for failsafe action
Sizes	15, 25 e 50
Action	Air-to-Open Air-to-Close Fail-in-place
Air Supply Pressure	Up to 10.3 bar (150 PSI)
Operating Temperature	From -40° to 175°C (-40° to 350°F)

CONSTRUCTION MATERIALS	
Yoke	Carbon Steel
Actuator Stem	Martensitic Stainless Steel (Series 400)
Piston and Cylinder	Anodized Aluminum
O-Rings*	NBR or Viton
Actuator Spring	Steel (corrosion proof)
Cylinder Retaining Ring	Zinc Plated steel or Stainless Steel
Spring Button	Carbon Steel
Yoke Clamp	316 Stainless Steel
Adjusting Screw	Zinc Plated steel

Temperature below -40 °C requires Fluorsilicone o-rings.

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Chronos Digital Positioner

The Chronos IDP7600 is an advanced digital pneumatic control valve positioner with micro-processor technology that employs HART® protocol to remotely communicate. The two-wire loop-powered device, contributes significantly to a reduction of wiring costs.

The advanced technology of the two-stage relay and microprocessor allows the positioner to achieve high response levels and accurate control. The Chronos IDP7600 incorporates an internal PID loop with ultrafast loop execution time; which, lowers process variability and improves loop performance and increases productivity.

Its functionality, reliability, intuitive menus and quick setup/calibration capability make the Chronos IDP7600 the most practical and advanced HART® positioner on the market today.

Features / Benefits / Advantages

- Easy two-wire connectivity from the control system speeds installation
- "Quick Set Up" and "Autotune" features allow fast device and system connectivity and valve configuration/ tuning, reducing start-up time
- Using the local interface/buttons for configuration maintains the device classification, eliminates configurators/computers
- A configurable 4-20mA output functions as a position transmitter, eliminating other standalone devices
- Two configurable digital outputs may function i.e. as valve limit switches (full open/full close), eliminating need for standalone devices
- One configurable digital input may function to switch valve control from remote to local.
- Bright, backlit graphic LCD allow reading even in dimly lit areas, saving time and reducing errors
- Green/Yelow/Red LED's quickly indicate device status
- A wide selection of device hazardous classification options match location classifications
- Auto or manual gain adjustment allows the user to speed up/slow down control valve to match the loop
- A two-stage relay allows fast response to large signal changes and precise response to small ones
- Single-acting or double-acting mode allows actuator selection flexibility without additional manifolds
- Multilingual capability (English, French, German, Italian, Portuguese, Spanish)
- Upgradeable firmware allows the latest improvements to be uploaded and used
- "Tight Shutoff" Option temporarily improves shutoff in leaking valves
- Modular design isolates pneumatic from electric componentry, and also allows easy subassy modules replacement

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HART COMMUNICATION PROTOCOL

Local Interface

The Chronos IDP7600 positioner interface consists of a large LCD display and four buttons. The display has an illuminated background to allows easy viewing of messages even in dimly lit areas of the plant. Virtually all menu items can be accessed through the four buttons, with the main cover of the positioner intact, and without the need for a portable calibrator or personal computer.

A trio of bright LED indicators (in green, yellow and red colors) complements the information on the display and allows functional alerts to be seen even at a distance. Detailed information can be seen locally at a glance and is presented in plain language, requiring no decoding.

Diagnostic

Chronos IDP7600 positioner offers the latest in advanced diagnostics and predictive maintenance tools. Three diagnostic levels are available, based on NAMUR NE107, to perform Off Line, On Line or Performance-based condition-based maintenance of control valves installed base in the plant.

LCD Interface

Language

Autocalibration

Characterization

Quick Setup

TECHNICAL SPECIFICATIONS AND CONSTRUCTION MATERIALS

Communication Protocol	HART®, version 7
Power Supply	Two-wire, loop powered, 4-20 mA, protected against reverse polarity
Signal Range	4-20 mA (3.8 mA min.)
Compliance Voltage	10.4 Vcc @ 20 mA (typical)
Effective Resistance	520 Ω @ 20 mA (typical)
Characterization	Linear, equal percent or customized, with characterizable curve from 21 points freely configurable via configurator
Mounting Types	Linear actuators Rotary actuators
Strokes	Linear: 10 to 300 mm (0.4 to 12 inches) Rotary: 0 to 90°
Pneumatic Supply	Instrument air according to ANSI/ISA 7.0.01[1] / Nitrogen
Supply Pressure	2.1 to 8.3 barg (30 to 120 psig)
Operating Temperature	-20 to 85°C (-4 to 185°F) -40 to 85°C (-40 to 185°F) (optional)

Operating Humidity	0 to 95% U.R., noncondensing
Housing / Enclosure	Anodized aluminum, low-copper, polyester painting (standard) 300 series stainless steel (optional)
Internal Parts	Aluminum and 300 series stainless steel
Soft Goods	Buna-N, Silicone
Hazardous Area Certifications	Explosion proof, flameproof, non-incendive, and intrinsic safety per IEC/NEC
Enclosing Rating	IP66-NEMA 4X
Electrical Connections	1/2"-14 NPT (standard) M20 x 1.5 (optional)
Pneumatic Connections	1/4" - 18 NPT 1/8" - 27 NPT (pressure gauges)
Weights	Aluminum version: 9.6 lbs. (4.4 kg) Stainless steel version: 20.6 lbs (9.4 kg)
Dimensions	8.4 x 5.7 x 6.5 in. (22 x 15 x 17 cm)

(1) Dew point should be at least 10°C (18°F) below the ambient temperature, the amount of oil should not exceed one part per million (1 ppm) and particle size should be less than 5 microns (less than 1 micron is recommended).

GXL SERIES

Design / Materials

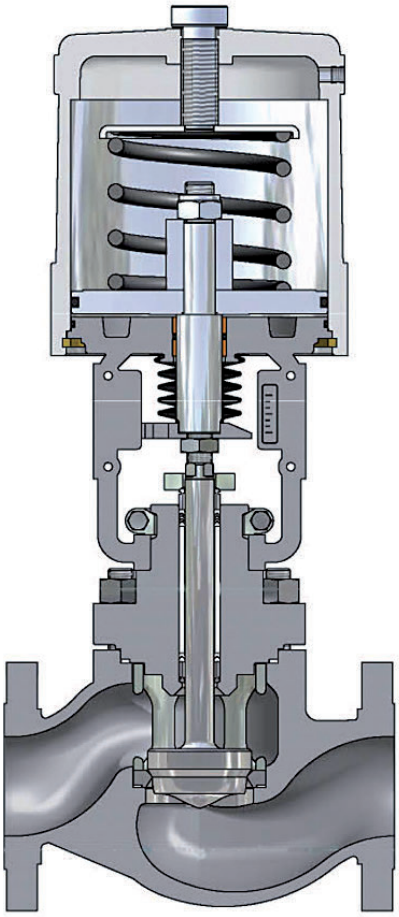
The GXL Series was designed with bonnet and seat gaskets totally enclosed. The valve bonnet has a shoulder projection that actuates as a mechanical stop which limits the gasket compression.

Maintaining tight body, retainer and seat machining tolerances assures proper gasket compression, and keeps the seat from touching the body; which, compensates for any thermal expansion.

Standard valve trim is austenitic SS (AISI 316). For applications with higher pressure drops, 316 SS with an Alloy #6 overlay, or martensitic SS (AISI 410 or 420) are used.

Valve stem is integral with plug, and incorporates an oversized diameter, to accommodate high actuating thrusts while maintaining excellent alignment.

The GXL control valve system can be used in temperatures ranging from -46 to +250°C.



BODY SPECIFICATIONS	
Style	Globe - Single Seat
Nominal sizes	0.5; 0.75; 1; 1.5; 2; 3; 4 (pol.) DN 15; 20; 25; 40; 50; 80; 100
Ratings	ANSI Classe 150 & 300 DIN PN 16 & 40
End connections	Integral Flange (Raised Face) Socketweld NPT
Face-to-Face dimension	ANSI/ISA-75.08.01 (Integral Flange) ANSI/ISA-75.08.03 (SW and NPT)
Bonnet	Standard Only
Shutoff	ANSI Class V with Metal Seat ANSI Class VI with Soft Seat
Flow characteristics	Linear Equal percentage Quick open

*Sizes from 0.5 to 2 inches.

TEMPERATURE LIMITS FOR PLUG GUIDE/INSERTS		
GUIDE/INSERT MATERIALS	MAX. TEMPERATURE	
	°C	°F
Stainless Steel/ PTFEG	150	300
Stainless Steel/ Graphite	250	480
Bronze	250	480

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STANDARD MATERIALS OF CONSTRUCTION WITH CARBON STEEL BODY			
ITEM	MATERIAL CLASSIFICATION	SPECIFICATION	
		ASTM CODE	UNS CODE
Body	Carbon Steel (Casting)	A 216 WCC	J 02503
Bonnet	Carbon Steel (Casting)	A 216 WCC	J 02503
Plug	316 (Bar)	A 479 Gr 316	S 31600
	420 (Bar) or 410	A 276 Gr 420	S 42000
	316 / Alloy #6	A479 Gr 316 / AMS 5387	S 31600 / R 30006
Metal Seat	316 (Bar)	A 479 Gr 316	S 31600
	420 (Bar) or 410	A 276 Gr 420	S 42000
	316 / Alloy #6	A 479 Gr 316 / AMS 5387	S 31600 / R 30006
Soft Seat	316 (Bar) / PTFE	A 479 Gr 316	S 31600
Seat Retainer	316 (Casting)	A 351 Gr CF8M	J 92900
Gland Flange	316 (Casting)	A 351 Gr CF8M	J 92900
Packing Follower	316 (Bar)	A 479 Gr 316	S 31600
Packing spacer	316 (Bar)	A 479 Gr 316	S 31600
Body-bonnet and seat-body gaskets	AISI 316 + graphite		

STANDARD MATERIALS OF CONSTRUCTION WITH STAINLESS STEEL BODY			
ITEM	MATERIAL CLASSIFICATION	SPECIFICATION	
		ASTM CODE (AMS No.)	UNS CODE
Body	316 (Casting)	A 351 CF8M	J 92900
Bonnet	316 (Casting)	A 351 CF8M	J 92900
Plug	316 (Bar)	A 479 Gr 316	S 31600
	17-4PH (Bar)	A 276 Gr 630	S 17400
	316 / Alloy #6	A 479 Gr 316 / AMS 5387	S 31600 / R 30006
Metal Seat	316 (Bar)	A 479 Gr 316	S 31600
	17-4PH (Bar)	A 564 Gr 630	S 17400
	316 / Alloy #6	A 479 Gr 316 / AMS 5387	S 31600 / R 30006
Soft Seat	316 (Bar) / PTFE	A 479 Gr 316	S 31600
Seat Retainer	316 (Casting)	A 351 Gr CF8M	J 92900
Gland Flange	316 (Casting)	A 351 Gr CF8M	J 92900
Packing Follower	316 (Bar)	A 479 Gr 316	S 31600
Packing spacer	316 (Bar)	A 479 Gr 316	S 31600
Body-bonnet and seat-body gaskets	AISI 316 + graphite		

GXL SERIES

PRESSURE AND TEMPERATURE LIMITS FOR VALVE BODIES – ANSI B 16.34

MATERIAL	CLASS	PRESSURE		TEMPERATURE	
		BAR	PSI	°C	°F
Carbon Steel ASTM A 216 Gr. WCC	ANSI 150	20.0	290	-29 a 38	-20 a 100
		17.9	260	93	200
		15.9	230	149	300
		13.8	200	204	400
		12.8	185	232	450
	ANSI 300	51.7	750	-29 a 38	-20 a 100
		51.7	750	93	200
		50.3	730	149	300
		48.6	705	204	400
		47.2	685	232	450
Stainless Steel ASTM A 351 Gr. CF8M	ANSI 150	19.0	275	-29 a 38	-20 a 100
		16.2	235	93	200
		14.8	215	149	300
		13.4	195	204	400
		12.8	185	232	450
	ANSI 300	49.7	720	-29 a 38	-20 a 100
		42.8	620	93	200
		39.4	560	149	300
		35.5	515	204	400
		34.1	495	232	450

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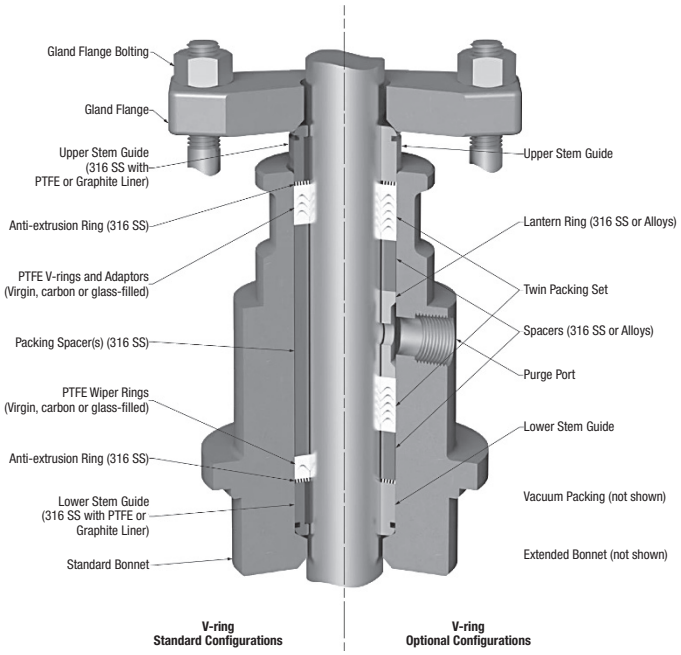
Stem Packing

The GXL control valve system is equipped as standard with an upper and lower packing set, which guarantees excellent sealing levels due to the redundant barriers.
The packing box has a long depth, which provides sufficient distance between the lower packing set and the main upper packing set that is greater than the plug stroke. Thus, the lower packing set acts as a wiper to minimize the amount of fluid on the stem and the upper packing set is kept out of the contact with the operating fluid and provides the main sealing.



Standard Packing

The standard packing set of the GXL control valve system is composed of Qty 4 upper and Qty 2 lower V-rings with a 316 SS anti-extrusion ring on the top and bottom of the packing box. The packing is compressed by tightening the gland bolts/flange and is held in place by the upper and lower stem guides. The packing rings are made of glass-filled PTFE which assures strength and stability at operating pressures and temperatures up to 210°C (410°F).
The PTFE "V" rings have a low friction coefficient, good mechanical strength, and excellent corrosion resistance.

Optional Packing

Special packing sets are available upon request: graphite based, PTFE, as well as low emission packing.
Contact VSI Controls sales and engineering department for more details.

Pressure Drops

MAXIMUM ALLOWABLE PRESSURE DROP – ACTUATOR [1] [2] [3]

VALVE SIZE		ACTUATOR SIZE					
		15		25		50	
INCHES	DN	BAR	PSI	BAR	PSI	BAR	PSI
0.5	15	46.2	670				
0.75	20	41.0	595				
1	25	32.4	470				
1.5	40	8.2	120	51.0	740		
2	50	8.2[4]	120[4]	40.6	590		
3	80					51.0	740
4	100					51.0	740

(1) Maximum allowable pressure drop based on full area trim, PTFE packing, air-to-open, flow over and air supply pressure of 4.1 bar (60 PSI).
(2) For throttling applications, the actuator stiffness shall be considered.
(3) Do not exceed the body rating.
(4) With 1.38" trim.

GXL SERIES

Fluid dynamic coefficients

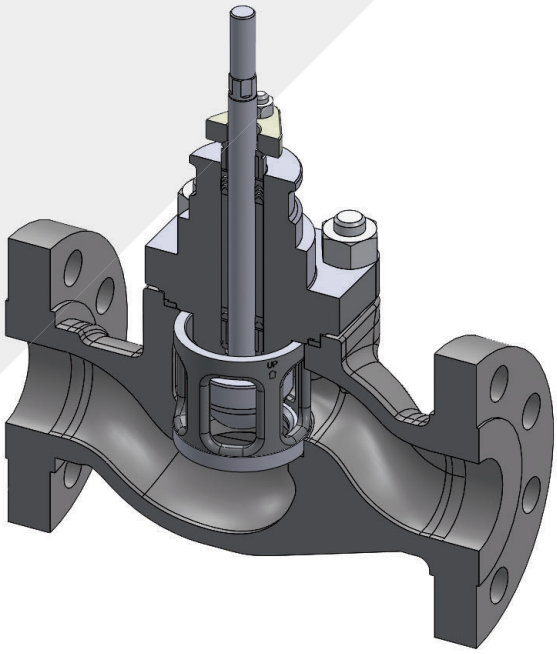
The fluid dynamics and flow coefficients of the GXL series have been fully calculated using a CFD (Computational Fluid Dynamics) approach, supported by a flow test validation.

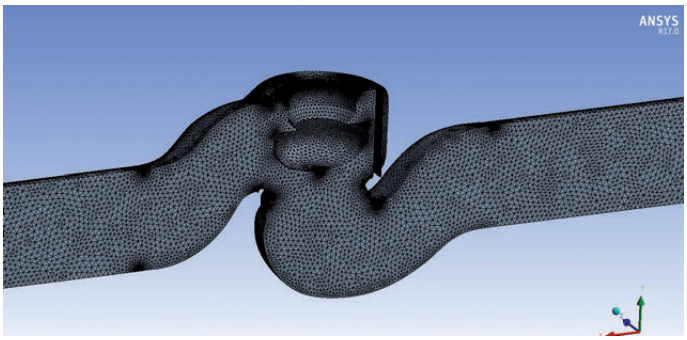
In terms of flow, the tabulated characteristic curves perfectly match the real characteristics, in the various trim and flow sense configurations.

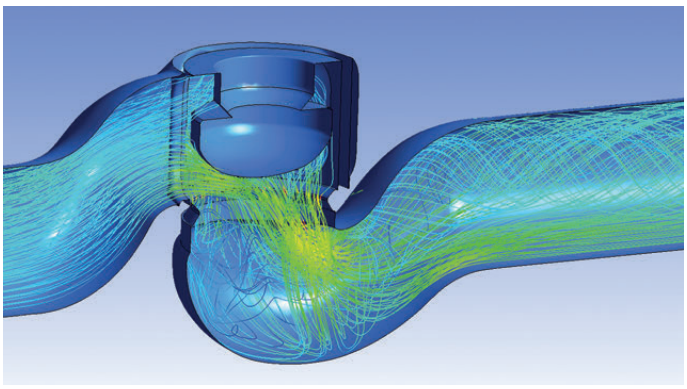
Computational Fluid Dynamics analysis also allows us to accurately calculate the cavitation and noise generation coefficients, which aids in correctly sizing & selecting the valve even in the presence of high fluid pressure drops (liquids or gases).

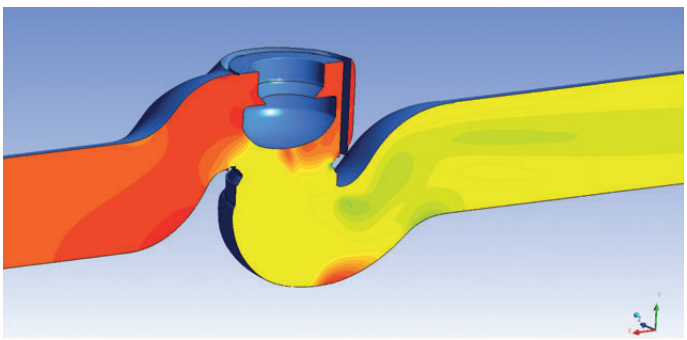
Other benefits of using CFD results in control valve sizing & selection include:

- Correctly sizing the valve and port size according to the process conditions; and, calculating the minimum and maximum Cv values
- Accurately calculating the valve opening in the various operating scenarios
- Correctly predicting the onset of noise or cavitation issues, and avoiding special trims until they are really needed.









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Flow coefficients

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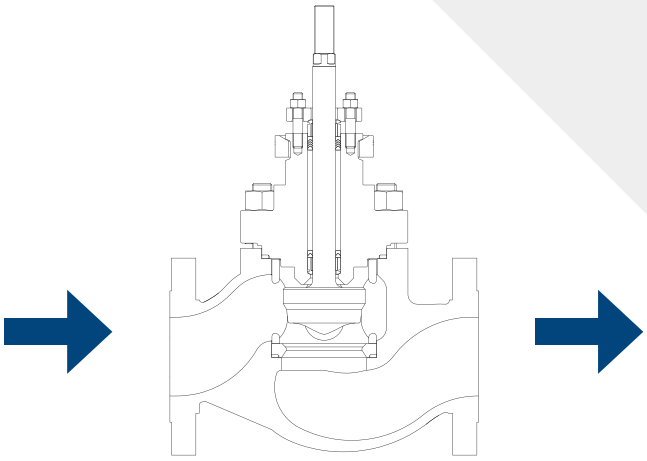
FLOW DIRECTION -
OVER THE PLUG



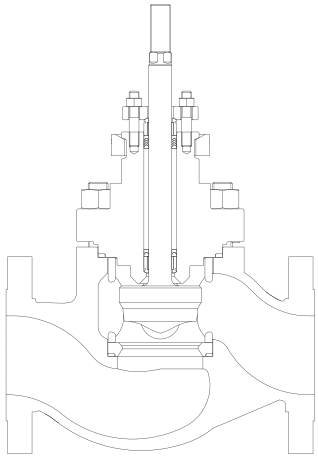
FLOW COEFFICIENTS (Cv) - LINEAR - FTC

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		Cv (at Percent OPEN)										
		Inch	mm	5	10	20	30	40	50	60	70	80	90	100
	0.83 (21)	0,75	19,05	1,2	3,7	5,8	8,5	10,0	11,7	14,2	15,9	16,9	17,6	18,3
	0.71 (18)	0,75	19,05	0,8	2,4	4,3	6,0	6,8	7,9	9,5	11,3	12,8	13,7	14,1
	0.63 (16)	0,75	19,05	0,9	2,7	4,0	5,5	6,1	6,9	8,3	8,9	9,2	9,7	9,9
½[1]	0.51 (13)	0,75	19,05	0,5	1,6	3,0	3,6	4,3	4,8	5,6	6,4	7,0	7,7	8,0
	0.38 (10)	0,75	19,05	0,3	1,0	1,8	2,4	2,6	3,1	3,5	3,9	4,5	4,8	4,9
	0.30 (8)	0,75	19,05	0,2	0,6	0,9	1,2	1,4	1,6	1,8	2,0	2,2	2,5	2,5
¾[2]	0.25-58 (6.5-58)	0,75	19,05	0,1	0,4	0,7	0,9	1,1	1,3	1,4	1,7	1,9	2,0	2,0
	0.25-56 (6.5-56)	0,75	19,05	0,1	0,4	0,6	0,7	0,8	0,9	1,0	1,2	1,3	1,5	1,5
	0.25-46 (6.5-46)	0,50	12,70	0,03	0,10	0,15	0,21	0,25	0,28	0,33	0,40	0,45	0,51	0,52
1	0.25-42 (6.5-42)	0,50	12,70	0,02	0,07	0,11	0,14	0,16	0,18	0,20	0,23	0,26	0,28	0,32
	0.25-34 (6.5-34)	0,50	12,70	0,02	0,06	0,07	0,08	0,09	0,09	0,10	0,12	0,13	0,15	0,16
	0.25-26 (6.5-26)	0,50	12,70	0,001	0,002	0,006	0,011	0,016	0,021	0,026	0,033	0,040	0,047	0,056
	0.25-12 (6.5-12)	0,50	12,70	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,015
	1.38 (35)	0,75	19,05	2,4	7,6	13,1	17,6	19,8	21,6	25,2	27,3	30,5	32,6	33,6
	1.07 (27)	0,75	19,05	1,8	5,6	9,6	13,0	14,8	16,3	18,5	20,7	22,1	24,2	24,4
	0.83 (21)	0,75	19,05	1,3	4,2	6,4	8,7	10,0	11,2	12,9	14,6	15,8	16,5	16,9
1.5	0.71 (18)	0,75	19,05	0,8	2,6	3,8	5,3	5,9	6,7	8,1	9,6	11,2	12,2	12,7
	0.63 (16)	0,75	19,05	0,8	2,4	3,5	4,9	5,4	6,0	7,4	8,6	10,1	11,0	11,4
	0.51 (13)	0,75	19,05	0,6	1,9	3,1	3,9	4,3	4,8	5,3	5,9	6,8	7,8	7,9
	0.38 (10)	0,75	19,05	0,4	1,2	1,9	2,4	2,6	2,9	3,2	3,7	4,2	4,7	4,8
	0.30 (8)	0,75	19,05	0,2	0,6	1,0	1,3	1,5	1,6	1,8	2,0	2,2	2,4	2,5
	1.80 (46)	0,75	19,05	3,9	12,4	21,4	29,4	33,6	37,8	43,1	48,3	51,5	54,6	56,7
	1.38 (35)	0,75	19,05	2,7	8,4	13,8	18,8	21,5	24,8	27,3	31,5	33,6	35,7	37,8
2	1.07 (27)	0,75	19,05	1,8	5,6	9,6	13,2	15,2	17,2	19,7	22,1	24,2	25,2	26,3
	0.83 (21)	0,75	19,05	1,3	4,2	6,4	8,7	10,0	11,2	13,0	14,7	16,1	16,9	17,5
	0.71 (18)	0,75	19,05	0,8	2,6	3,8	5,3	5,9	6,7	8,0	9,3	11,0	12,0	12,5
	2.83 (72)	1,50	38,10	12	38	66	85	92	97	111	120	126	129	132
3	2.20 (56)	1,50	38,10	9	27	37	49	56	62	69	77	81	86	88
	1.80 (46)	1,50	38,10	5	14	24	32	36	41	48	55	60	64	67
	3.70 (94)	1,50	38,10	11	34	51	98	128	150	169	182	194	203	213
4	2.83 (72)	1,50	38,10	11	34	56	74	89	100	116	129	141	149	153
	2.20 (56)	1,50	38,10	9	27	43	56	64	70	80	91	102	111	121

(1) For size 0.5 in., the largest trim size available is 0,51" (T.N.13).
(2) For size 0.75 in., the largest trim size available is 0,71" (T.N.18).

GXL SERIES

FLOW DIRECTION -
UNDER THE PLUG



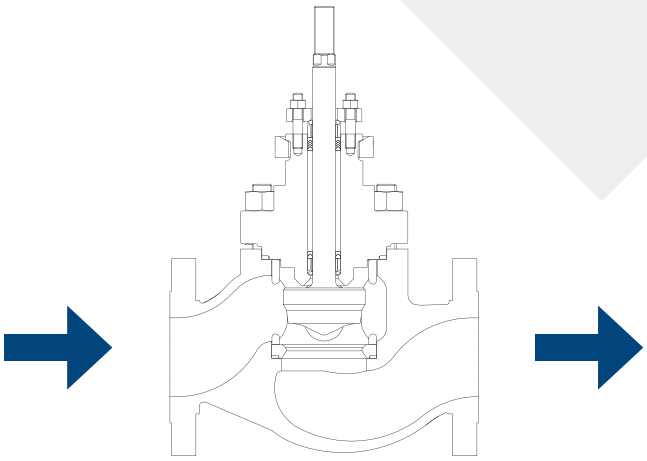
FLOW COEFFICIENTS (Cv) - LINEAR - FTO

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		Cv (at Percent OPEN)										
		Inch	mm	5	10	20	30	40	50	60	70	80	90	100
	0.83 (21)	0,75	19,05	1,3	4,1	6,0	8,3	9,4	10,3	12,2	13,7	15,0	15,5	15,7
	0.71 (18)	0,75	19,05	0,5	1,7	3,6	5,3	5,9	7,0	8,2	9,4	10,7	11,4	11,7
	0.63 (16)	0,75	19,05	0,8	2,5	3,8	5,2	5,9	6,8	7,7	8,8	9,2	9,6	9,8
	0.51 (13)	0,75	19,05	0,4	1,4	2,8	3,5	4,1	4,5	5,3	5,9	6,5	6,9	7,1
½[1]	0.38 (10)	0,75	19,05	0,2	0,8	1,6	2,0	2,3	2,7	3,0	3,5	3,8	4,3	4,4
	0.30 (8)	0,75	19,05	0,1	0,4	0,7	1,0	1,2	1,3	1,5	1,8	2,1	2,2	2,3
¾[2]	0.25-58 (6.5-58)	0,75	19,05	0,1	0,3	0,6	0,8	1,0	1,1	1,3	1,5	1,7	1,9	1,9
	0.25-56 (6.5-56)	0,75	19,05	0,1	0,3	0,4	0,6	0,6	0,7	0,8	0,9	1,0	1,1	1,2
1	0.25-46 (6.5-46)	0,50	12,70	0,02	0,07	0,14	0,20	0,25	0,28	0,33	0,39	0,45	0,48	0,50
	0.25-42 (6.5-42)	0,50	12,70	0,03	0,08	0,11	0,14	0,16	0,18	0,20	0,23	0,26	0,28	0,32
	0.25-34 (6.5-34)	0,50	12,70	0,02	0,05	0,07	0,08	0,09	0,09	0,10	0,12	0,13	0,14	0,15
	0.25-26 (6.5-26)	0,50	12,70	0,001	0,002	0,006	0,008	0,016	0,019	0,025	0,032	0,039	0,046	0,055
	0.25-12 (6.5-12)	0,50	12,70	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,015
	1.38 (35)	0,75	19,05	3,6	11,2	17,4	21,7	23,6	25,9	28,4	30,5	31,5	32,6	34,7
	1.07 (27)	0,75	19,05	2,0	6,4	11,7	15,1	16,6	17,9	20,2	21,7	23,1	24,2	24,4
	0.83 (21)	0,75	19,05	1,1	3,5	5,6	8,3	10,6	11,8	13,0	14,2	14,7	15,2	15,5
1.5	0.71 (18)	0,75	19,05	0,8	2,6	4,2	6,3	7,9	8,9	9,8	10,6	11,0	11,4	11,7
	0.63 (16)	0,75	19,05	0,6	2,0	3,4	4,3	4,8	5,4	6,3	7,2	8,2	9,2	10,5
	0.51 (13)	0,75	19,05	0,4	1,4	2,3	2,9	3,4	3,8	4,4	5,0	5,7	6,4	7,2
	0.38 (10)	0,75	19,05	0,3	0,9	1,4	1,7	2,0	2,3	2,6	3,0	3,5	3,9	4,5
	0.30 (8)	0,75	19,05	0,1	0,4	0,7	0,9	1,0	1,2	1,4	1,6	1,8	2,0	2,3
	1.80 (46)	0,75	19,05	4,1	12,8	23,2	30,8	34,8	38,9	44,1	49,4	50,4	50,9	51,5
	1.38 (35)	0,75	19,05	2,4	7,6	15,0	19,6	22,0	24,8	28,4	31,5	33,6	36,8	37,8
2	1.07 (27)	0,75	19,05	1,8	5,8	9,8	14,0	15,7	17,4	20,1	22,1	23,3	24,2	25,2
	0.83 (21)	0,75	19,05	1,1	3,4	5,6	8,4	10,6	11,8	13,5	15,0	15,5	16,0	16,3
	0.71 (18)	0,75	19,05	0,6	2,0	3,7	4,8	5,3	6,0	7,0	8,1	9,1	10,3	11,7
	2.83 (72)	1,50	38,10	12	38	64	84	95	104	113	120	125	128	130
3	2.20 (56)	1,50	38,10	9	29	40	50	55	59	66	74	81	86	91
	1.80 (46)	1,50	38,10	5	15	27	35	38	40	43	49	54	59	61
	3.70 (94)	1,50	38,10	22	68	104	132	143	152	167	182	195	207	215
4	2.83 (72)	1,50	38,10	11	34	59	80	83	92	103	119	132	144	150
	2.20 (56)	1,50	38,10	9	27	42	55	61	67	76	84	91	99	105

(1) For size 0.5 in., the largest trim size available is 0,51" (T.N.13).
(2) For size 0.75 in., the largest trim size available is 0,71" (T.N.18).

VSI CONTROLS
A PETROLVALVES COMPANY

FLOW DIRECTION -
OVER THE PLUG



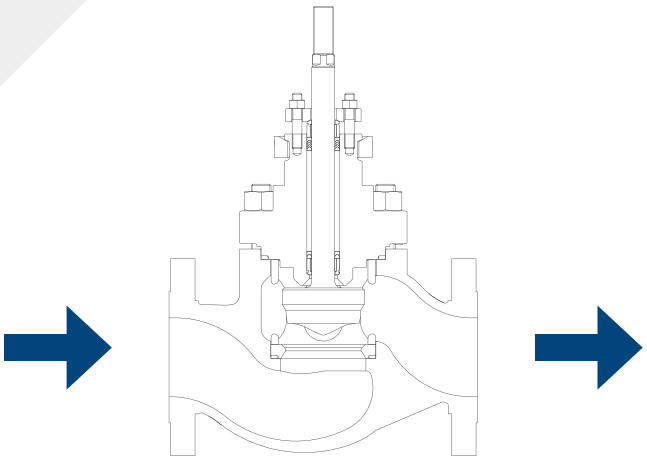
FLOW COEFFICIENTS (Cv) - EQUAL PERCENTAGE - FTC

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		Cv (at Percent OPEN)										
		Inch	mm	5	10	20	30	40	50	60	70	80	90	100
	0.83 (21)	0,75	19,05	0,6	2,0	2,5	3,0	3,6	4,2	5,5	7,9	10,5	13,2	15,4
	0.71 (18)	0,75	19,05	0,4	1,2	1,5	2,0	2,5	3,1	3,9	5,5	7,6	9,9	12,0
½[1]	0.63 (16)	0,75	19,05	0,2	0,6	0,9	1,2	1,7	2,3	3,0	4,4	6,1	7,9	9,6
	0.51 (13)	0,75	19,05	0,2	0,5	0,6	0,9	1,2	1,7	2,1	3,1	4,5	5,8	7,0
¾[2]	0.38 (10)	0,75	19,05	0,1	0,2	0,3	0,4	0,6	0,9	1,3	1,7	2,6	3,4	4,3
	0.30 (8)	0,75	19,05	0,0	0,1	0,2	0,2	0,3	0,5	0,7	1,0	1,3	1,9	2,4
	0.25-16 (6.5-16)	0,75	19,05	0,0	0,1	0,1	0,2	0,3	0,4	0,6	0,8	1,1	1,6	2,0
1	0.25-14 (6.5-14)	0,75	19,05	0,01	0,04	0,07	0,10	0,14	0,22	0,32	0,51	0,76	1,05	1,2
	0.25-12 (6.5-12)	0,75	19,05	0,01	0,02	0,03	0,05	0,07	0,11	0,17	0,27	0,42	0,57	0,7
	0.25-10 (6.5-10)	0,75	19,05	0,00	0,01	0,03	0,04	0,05	0,07	0,09	0,14	0,20	0,26	0,3
	1.38 (35)	0,75	19,05	1,3	4,0	5,0	6,5	8,1	10,1	13,9	19,4	26,2	32,1	37,8
	27 (1.07)	0,75	19,05	0,7	2,2	2,7	3,6	4,4	5,5	7,7	10,9	14,3	17,6	20,9
	1.07 (21)	0,75	19,05	0,2	0,6	0,9	1,3	1,8	2,4	3,6	5,3	7,5	9,9	12,4
	0.71 (18)	0,75	19,05	0,2	0,5	0,8	1,1	1,5	2,0	3,0	4,4	6,2	8,3	10,4
1.5	0.63 (16)	0,75	19,05	0,1	0,5	0,7	0,9	1,3	1,8	2,6	3,7	5,2	6,9	8,7
	0.51 (13)	0,75	19,05	0,1	0,3	0,5	0,7	1,0	1,3	1,9	2,7	3,7	5,0	6,3
	0.38 (10)	0,75	19,05	0,1	0,2	0,3	0,4	0,6	0,8	1,2	1,5	2,0	2,8	3,8
	0.30 (8)	0,75	19,05	0,0	0,1	0,2	0,2	0,3	0,5	0,7	0,8	1,1	1,6	2,1
	1.80 (46)	0,75	19,05	1,7	5,4	6,7	8,8	11,3	13,7	18,2	25,6	33,7	42,2	50,4
	1.38 (35)	0,75	19,05	1,1	3,5	4,4	5,8	7,4	9,0	12,6	17,9	24,0	30,4	36,8
2	1.07 (27)	0,75	19,05	0,7	2,1	2,7	3,5	4,3	5,6	7,8	11,0	14,7	18,3	22,1
	0.83 (21)	0,75	19,05	0,4	1,2	1,5	2,0	2,6	3,3	4,6	6,6	9,0	11,5	13,8
	0.71 (18)	0,75	19,05	0,2	0,7	0,9	1,3	1,7	2,2	3,0	4,4	6,1	8,1	9,9
	2.83 (72)	1,50	38,10	4	13	17	23	29	41	58	74	87	104	123
3	2.20 (56)	1,50	38,10	3	8	11	13	17	26	38	51	63	75	88
	1.80 (46)	1,50	38,10	2	6	7	10	13	15	21	29	42	53	65
	3.70 (94)	1,50	38,10	8	27	33	40	47	64	92	120	146	169	194
4	2.83 (72)	1,50	38,10	5	16	20	25	32	44	63	85	108	127	149
	2.20 (56)	1,50	38,10	2	5	7	10	13	18	26	39	54	67	81

(1) For size 0.5 in., the largest trim size available is 0,51" (T.N.13).
(2) For size 0.75 in., the largest trim size available is 0,71" (T.N.18).

GXL SERIES

FLOW DIRECTION -
UNDER THE PLUG



FLOW COEFFICIENTS (Cv) - EQUAL PERCENTAGE - FTO

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		Cv (at Percent OPEN)										
		Inch	mm	5	10	20	30	40	50	60	70	80	90	100
	0.83 (21)	0,75	19,05	0,3	1,0	1,2	1,6	2,1	2,8	4,0	5,8	8,1	11,2	13,3
	0.71 (18)	0,75	19,05	0,2	0,8	1,0	1,3	1,7	2,3	3,3	4,8	6,6	9,1	10,9
1/2[1]	0.63 (16)	0,75	19,05	0,2	0,5	0,7	1,0	1,4	1,9	2,8	4,1	5,8	7,8	9,0
	0.51 (13)	0,75	19,05	0,1	0,4	0,5	0,7	1,0	1,4	1,9	2,9	4,3	5,6	6,6
3/4[2]	0.38 (10)	0,75	19,05	0,1	0,2	0,3	0,4	0,5	0,7	1,1	1,6	2,3	3,1	3,8
	0.30 (8)	0,75	19,05	0,0	0,1	0,2	0,2	0,3	0,4	0,6	0,9	1,2	1,8	2,2
	0.25-16 (6.5-16)	0,75	19,05	0,0	0,1	0,1	0,2	0,2	0,3	0,5	0,8	1,1	1,6	1,9
1	0.25-14 (6.5-14)	0,75	19,05	0,01	0,03	0,05	0,07	0,11	0,17	0,27	0,43	0,65	1,00	1,2
	0.25-12 (6.5-12)	0,75	19,05	0,00	0,01	0,03	0,05	0,07	0,11	0,17	0,29	0,47	0,55	0,7
	0.25-10 (6.5-10)	0,75	19,05	0,00	0,01	0,01	0,02	0,03	0,05	0,08	0,13	0,22	0,26	0,3
	1.38 (35)	0,75	19,05	0,9	2,7	3,4	4,5	5,9	8,1	11,5	16,2	23,2	28,4	33,6
	27 (1.07)	0,75	19,05	0,6	1,9	2,3	3,0	4,1	5,5	7,5	11,1	16,1	21,2	24,2
	1.07 (21)	0,75	19,05	0,2	0,6	0,9	1,2	1,8	2,6	4,0	5,5	8,2	12,0	15,3
	0.71 (18)	0,75	19,05	0,1	0,4	0,6	0,9	1,3	1,9	2,9	4,1	6,0	8,8	11,2
1.5	0.63 (16)	0,75	19,05	0,2	0,5	0,6	1,0	1,2	1,8	2,8	4,2	5,4	7,3	9,5
	0.51 (13)	0,75	19,05	0,1	0,4	0,5	0,7	0,9	1,3	2,0	3,1	3,9	5,3	6,9
	0.38 (10)	0,75	19,05	0,1	0,2	0,2	0,3	0,5	0,7	0,9	1,4	2,0	3,0	3,8
	0.30 (8)	0,75	19,05	0,0	0,1	0,1	0,2	0,3	0,4	0,5	0,8	1,1	1,7	2,1
	1.80 (46)	0,75	19,05	1,5	4,6	5,6	7,3	9,5	12,6	17,7	27,8	37,6	44,3	51,5
	1.38 (35)	0,75	19,05	0,9	2,8	3,5	4,7	6,2	8,3	11,7	16,9	24,3	30,8	35,7
2	1.07 (27)	0,75	19,05	0,6	1,9	2,3	3,1	4,1	5,6	7,7	11,6	16,9	21,5	25,2
	0.83 (21)	0,75	19,05	0,3	1,0	1,3	1,7	2,3	3,2	4,6	6,6	9,8	13,3	15,4
	0.71 (18)	0,75	19,05	0,2	0,7	0,9	1,2	1,7	2,3	3,3	4,8	7,0	9,6	11,1
	2.83 (72)	1,50	38,10	3	10	14	19	26	37	63	79	90	107	127
3	2.20 (56)	1,50	38,10	2	7	9	13	17	26	39	55	66	78	92
	1.80 (46)	1,50	38,10	2	5	6	8	11	15	21	31	44	53	61
	3.70 (94)	1,50	38,10	7	22	27	36	45	62	100	134	155	181	211
4	2.83 (72)	1,50	38,10	5	15	18	25	33	45	64	91	107	126	149
	2.20 (56)	1,50	38,10	2	5	6	9	13	18	25	39	52	63	77

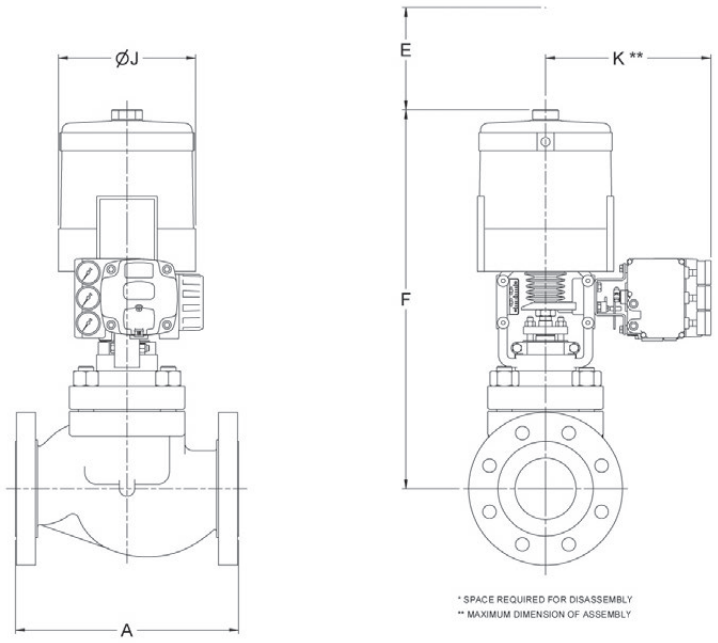
(1) For size 0.5 in., the largest trim size available is 0,51" (T.N.13).
(2) For size 0.75 in., the largest trim size available is 0,71" (T.N.18).

VSI CONTROLS
A PETROLVALVES COMPANY

Weights & Dimensions

Valve+Actuator+Chronos Positioner

GXL SERIES



GXL - DIMENSIONS

Valve Size (in)	A				F						E *						K **					
	ANSI/ISA 75.08.01				Actuator size						Actuator size						Actuator size					
	CL 150		CL 300		15		25		50		15		25		50		15		25		50	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
0.50	184,2	7,25	190,5	7,50	410	16,1					97	3,8					260	10,2				
0.75	184,2	7,25	193,5	7,62	410	16,1					97	3,8					260	10,2				
1.0	184,2	7,25	196,9	7,75	410	16,1					97	3,8					260	10,2				
1.5	222,3	8,75	235,0	9,25	420	16,5	445	17,5			152	6,0	152	6,0			260	10,2	280	11,0		
2.0	254,0	10,00	266,7	10,50	420	16,5	445	17,5			152	6,0	152	6,0			260	10,2	280	11,0		
3.0	298,5	11,75	317,5	12,50					597	23,5					203	8,0					282	11,1
4.0	352,6	13,88	368,3	14,50					628	24,7					203	8,0					282	11,1

Valve Size (in)	Diameter J						Weight (CL 150)			Weight (CL 300)		
	Actuator size						Actuator size			Actuator size		
	15		25		50		15	25	50	15	25	50
	mm	in	mm	in	mm	in	kg	kg	kg	kg	kg	kg
0.50	136	5,4					18,8			19,0		
0.75	136	5,4					18,8			19,9		
1.0	136	5,4					19,4			20,6		
1.5	136	5,4	163	6,4			26,0	28,0		28,5	30,6	
2.0	136	5,4	163	6,4			28,0	30,0		29,6	31,6	
3.0					227	8,9			66,5			70,2
4.0					227	8,9			87,5			95,5

VSI Controls™ S.r.l.
with a sole shareholder
subject to direction and coordination activity of
PETROLVALVES S.p.A.

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