GXL®

+

CHRONOS

GLOBE CONTROL VALVE

VALTEK™
SULAMERICANA

A GXL-Chronos oferece um completo conjunto integrado, de válvula de controle tipo globo e posicionador digital, protocolo HART, explosion proof e intrinsecamente seguro. Proporcionando um único conjunto válvula-posicionador com elevadas caraterísticas técnicas.
Fabricada nos diâmetros ½" a 4" padrão (DN 15 a 100) temperatura máxima de operação de 232ºC (450ºF) e classes de pressão 150-300 (ANSI B16.34) ou PN 10 a PN 40 (EN 1092-1).
O conjunto GXL-Chronos, operado por atuador a cilindro e pistão, forma a melhor alternativa de mercado quando se necessita de uma válvula do tipo globo, simples, compacta, econômica, de pequenas dimensões e longa vida operacional.

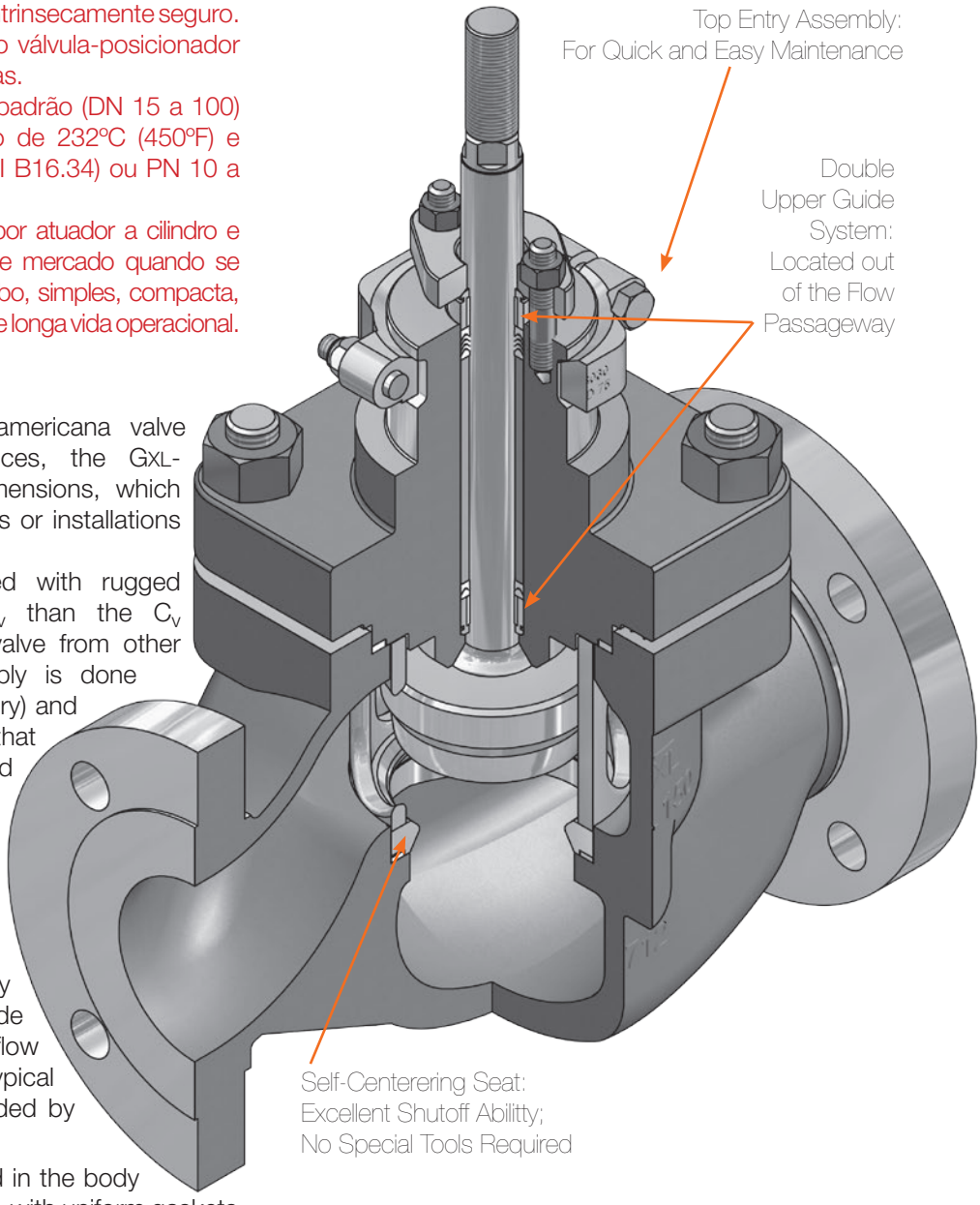
Reliability

Using many of the Valtek Sulamericana valve characteristics for severe services, the GXL-Chronos valve has compact dimensions, which helps its application in equipments or installations with limited space.
The GXL-Chronos trim, designed with rugged dimensions, provides higher C_V than the C_V commonly found in globe-type valve from other manufacturers. The trim assembly is done from the body upper side (top entry) and the seat is centered by the plug, that assures an excellent seating and high levels of tightness, without the need of seat lapping. Even in corrosive processes, the seat removal is always a simple task and does not require any special tools. The plug is machined as a single piece and it is guided by an advanced double upper guide system, which remains out of the flow passageway thus eliminating the typical problems of valves with plug guided by the seat retainer.

The bonnet and the seat are fitted in the body and use a enclosed gasket system, with uniform gaskets which eliminates leakage and does not require special attention with tightening torque. The extra deep packing box, allows the utilization of several packing options, including those required to meet the EPA* requirements. The GXL-Chronos valve has a wide variety of trim to serve various flow ranges. These characteristics, combined with the use of: spring cylinder actuators with proven lifetime longer than a million of cycles provide an accurate and refined process control, result in a modern valve with advanced design and long lifetime. With low cost and high operating performance, the GXL-Chronos valve provides an accurate flow control in the most advanced industrial processes.

*EPA = U. S. Environmental Protection Agency

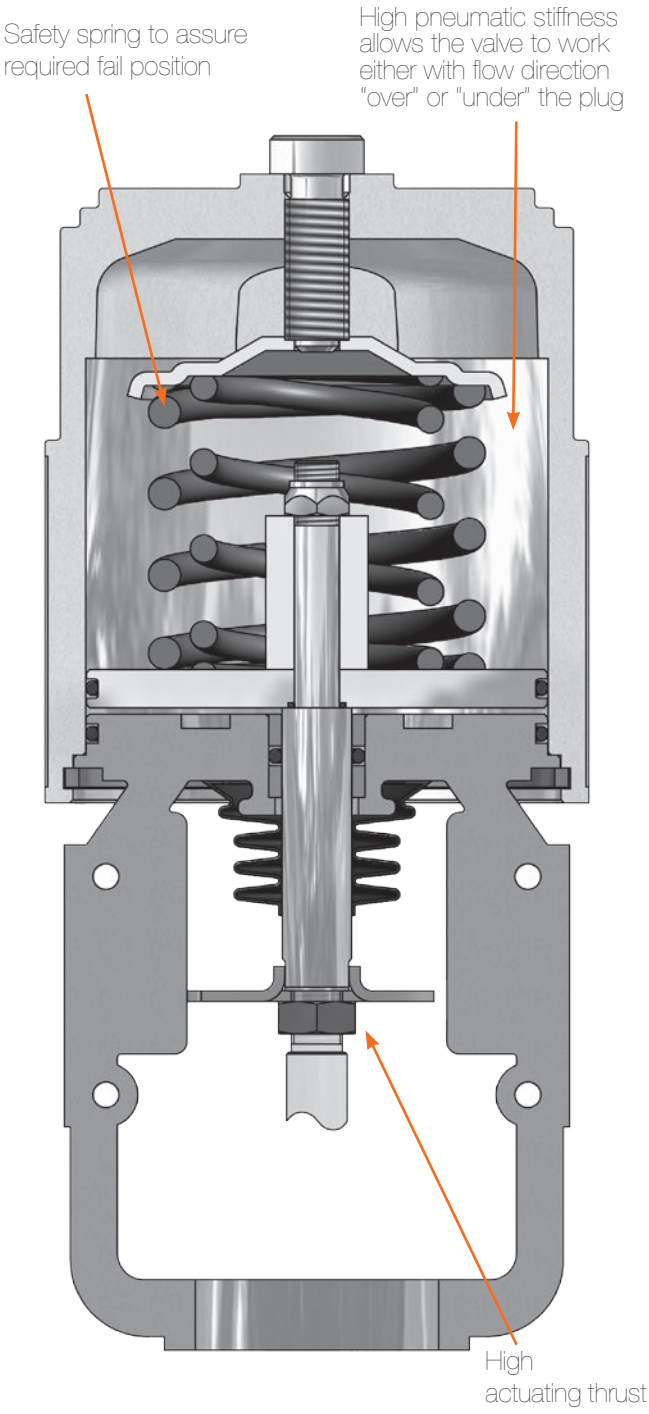
BODY SUB-ASSEMBLY (FIGURE 1)



Rangeability 30:1 (Typical)
ANSI Class IV Shutoff – Metal Seat *
ANSI Class VI Shutoff – Soft Seat *

* Standard for valves with unbalanced trim.

LINEAR ACTUADOR, SERIE LA-XL (FIGURE 2)



High part interchangeability – Reduces the need for spare parts

Lightweight and compact design – Helps handling and occupies limited space

Actuadors

The LA-XL Series is a complet line of linear spring-cylinder actuators recognized by their high performance, actuating thrust and high control sensitivity. Designed to operate with air suppy pressure up to 150 psi (10.3 bar), they are provided with internal springs to actuate in case of air supply failure and are field-reversible, either to air-to open or air-to-close configuration, without the need of additional parts.

Benefits

- High response frequency.
- Dynamic positioning sensitivity due to the air present on both piston sides.
- High actuating thrust resulting from the use of air supply pressure up to 150 psi (10.3 bar).
- Compact, lightweight, easy maintenance and long-lasting.
- It does not have diaphragms subject to stress failure and rupture.

ACTUATOR SPECIFICATIONS (TABLE I)

Type	Double acting cylinder with positive spring for failsafe action Filed reversible
Sizes	15, 25 e 50
Action	Air-to-Open Air-to-Close Fail-in-place
Air Supply Pressure	Up to 150 psi maximum (10.3 bar maximum)
Operating Temperature	-40˚ a 350˚F (-40˚ a 175˚C)

MATERIALS OF CONSTRUCTION (TABLE II)

Yoke	Ductile Iron
Actuator Stem	UNS S 41600 Stainless Steel
Piston and Cylinder	Anodized Aluminum
O-Rings*	Buna N (Standard)
Actuator Spring	Steel (corrosion proof)
Cylinder Retaining Ring	Zinc Plated steel
Spring Button	Carbon Steel
Yoke Clamp	316 Stainless Steel
Adjusting Screw	Zinc Plated steel

* Room temperature higher than 180 ºF (82 ºC) requires Viton o-rings.
Temperature below -40 ºF (-40 ºC) requires Fluorsilicone o-rings.

Features

- Backlit LCD display with large dimensions
- High brightness warning LEDs
- Quick setup wizard
- RFI & EMI immune
- Explosion proof housing Exd IIC T5/T6 (IECEx/ ATEX/INMETRO), IP66
- Local interface with protected setup buttons
- Autocalibration and autotune
- Automatic or manual gain adjustment
- Two-stage relay with advanced technology
- Modular design with electronic and pneumatic parts separated
- Can be mounted on single or double acting actuators

Benefits / Advantages

- Multilingual texts, messages in plain language
- Accurate control
- Allows reading in dimly lit places
- High response level
- Easy to assemble in a wide range of linear and rotary actuators
- Configuration and calibration processes are extremely fast
- Firmware upgradeable
- Cost-effective
- In most cases, PC and handhelds are not required to configure (setup).
- When necessary, the maintenance tasks are simple
- Cut-off function
- Assembly in double acting actuators does not require additional manifolds

The Chronos IDP7600 positioners are digital-to-pneumatic instruments with microprocessed technology that use the HART® protocol to allow remote communication. The two-wire power supply, made by the control loop, contributes significantly to the reduction of wiring costs.
The advanced technology of the two-stage relay and microprocessor allows the positioner provides high response level and accurate control. The Chronos IDP7600 provides a local PID loop with ultrafast loop execution time: lower process variability means higher quality of final product and increased productivity.
The reability, intuitive use and quick setup/calibration make the Chronos IDP7600 the more practical and advanced HART® positioner of the market.

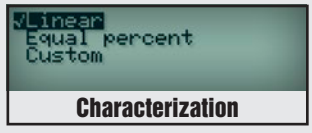
Local Interface

The interface of Chronos IDP7600 positioner consists of LCD display with large size, which has illuminated background to allows easy viewing of massages even in dimly lit areas of the plant.
A trio of bright LED in green, yellow and red complements the information on the display and allows the functioning alerts are seen even at a distance.
The information can seen locally at a glance and are presented in plain language, which does require decoding.
Virtually all menu items can de accessed through the four buttons of of the interface, with the main cover of the positioner closed, and without the need for a portable calibrator or personal computer.

LCD Interface

Language

Autocalibration



Characterization

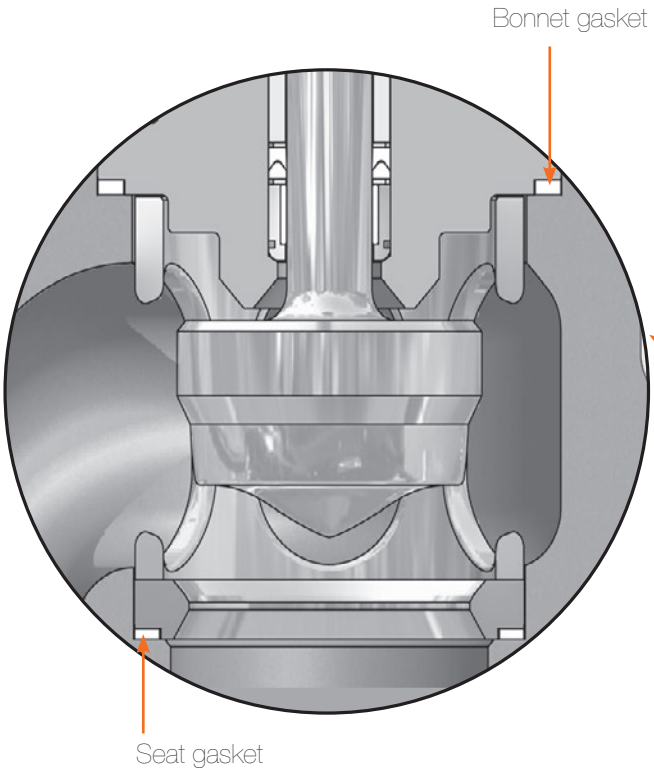
Quick Setup

Communication Protocol	HART®
Power Supply	Two-wire, loop powered, 4-20 mA, protected against reverse polarity
Input Signal	4-20 mA (3.8 mA min.)
Compliance Voltage	10.4 Vcc @ 20 mA (typical)
Hazardous Area Certifications	Explosion proof, flameproof and non-incendive - IECEx / ATEX / IN-METRO
Versão HART	7
Alarmes	Alarmes detalhados para blocos, processo e atualização de eventos
Ação de Falha Segura	Alarme de desvio configurável pelo usuário para saída “Zero” ou “Máxima Pressão”
Characterization	Linear, equal percent or customized, with characterizable curve from 21 points
Banda Morta	< 0.2% F.S.(1)
Repetibilidade	< 0.05% F.S.
Linearidade	< 0.5% F.S. (atuadores rotativos), < 0.8% F.S. (atuadores lineares)
Consumo de Ar Constante	< 0.5 Nm3/h @ 4.1 Barg (0.3 SCFM @ 60 psig)
Supply Pressure	30 to 120 psig (2.1 to 8.3 bar) - air according to ANSI/ISA 7.0.01[2]

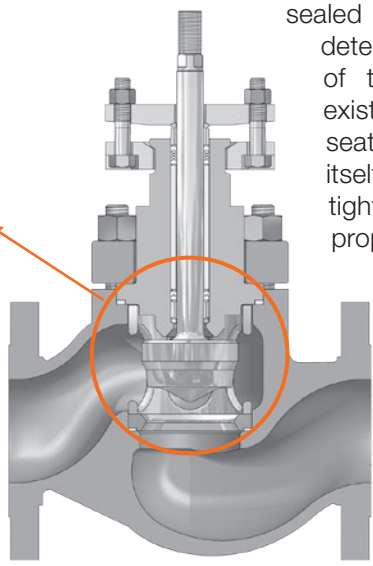
Vazão de Ar	Versão Standard: 22.5 Nm3/h @ 4.1 Barg (14 SCFM @ 60 psig) Versão de Alta Vazão: 35.4 Nm3/h @ 4.1 Barg (22 SCFM @ 60 psig)
Strokes	Rotary: 0 to 90° Linear: 0.4 to 12 inches (10.2 to 304 mm)
Efeitos da Temperatura	± 0.08% F.S./°C (± 0.04% F.S./°F)
Máxima Vibração	4g (5 a 15 Hz.) / 2g (15 a 2000 Hz.)
Máximo Choque	10g
Housing / Enclosure	Anodized aluminum, low-copper, polyester painting (standard) Aluminum and 300 series stainless steel
Soft Goods	Buna-N, Silicone
Weights	9.6 lbs. (4.4 kg) Aluminum version 20.6 lbs. (9.4 kg) Stainless steel version
Enclosing Rating	IP66
Electrical Connections	1/2”-14 NPT (standard) M20 x 1.5 (optional)
Pneumatic Connections	1/4”-18 NPT (gauges 1/8”-27NPT)
Operating Temperature	-4 to 185°F (-20 to 85°C)
Operating Humidity	0 - 100% noncondensing

(1) Dew point should be at least 18°F (10°C) 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).

SEAT AND BONNET GASKETS (FIGURE 3)



The GXL-Chronos control valve for general purpose services was designed with bonnet and seat gaskets totally enclosed. The GXL-Chronos valve bonnet has a shoulder projection that actuates as a mechanical stop which limits the gasket compression. Thus, the bonnet gasket remains completely sealed and its compression is determined by the depth of the shoulder projection existing in the bonnet. Body, seat retainer and the seat itself are machined within tight tolerances to assure proper gasket compression.



Differently from the bonnet, the seat does not touch directly the body (metal to metal), maintaining the proper clearance to compensate the mechanical tolerances and thermal expansion.

BODY SPECIFICATIONS (TABLE III)

Style	Globe - Single Seat
Nominal sizes	0.5; 0.75; 1; 1.5; 2; 3; 4 (pol.) DN 20; 25; 40; 50; 80; 100
Ratings	ANSI Classe 150-300 DIN PN 16-40
End connections	Integral Flanges Socketweld* NPT*
Flange surface finish	Standard: 125-250 Ra Optional: 250-500 Ra
Face-to-Face dimension	ANSI/ISA-75.08.01
Bonnet	Standard
Shutoff	ANSI Class IV with Metal Seat ANSI Classe VI with Soft Seat
Flow characteristics	Linear Equal percentage Quick open

*Sizes de 0.5 to 2 inches.

TEMPERATURE LIMITS FOR SEAT AND BONNET GASKET (TABLE IV)

GASKET TYPE	MATERIAL	TEMPERATURE LIMITS	
		°F	°C
Flat	PTFE	350	176
Spiral	316 SS/Graphite	650	345

TEMPERATURE LIMITS FOR PLUG GUIDE/INSERTS (TABLE V)

GUIDE/INSERT MATERIALS	MAX. TEMPERATURE		TEMPERATURE LIMITS
	°F	°C	
Stainless Steel/ PTFEG	300	150	100 psi @ 300°F*
Stainless Steel/ Graphite	450	345	Body Rating
Bronze	450	260	Body Rating

STANDARD MATERIALS OF CONSTRUCTION CARBON STEEL SUB-ASSEMBLY (TABLE VI)				
ITEM	MATERIAL CLASSIFICATION	SPECIFICATION		
		ASTM CODE (AMS No.)	UNS CODE	HARDNESS R_C
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	8
	420 (Bar)	A 276 Gr 420	S 42000	38-45
	316 / Alloy #6*	A479 Gr 316 / AMS 5387	S 31600 / R 30006	40-42
Metal Seat	316 (Bar)	A 479 Gr 316	S 31600	8
	420 (Bar)	A 276 Gr 420	S 42000	38-45
	316 / Alloy #6*	A 479 Gr 316 / AMS 5387	S 31600 / R 30006	40-42
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	

STANDARD MATERIALS OF CONSTRUCTION STAINLESS STEEL SUB-ASSEMBLY (TABLE VII)				
ITEM	MATERIAL CLASSIFICATION	SPECIFICATION		
		ASTM CODE (AMS No.)	UNS CODE	HARDNESS R_C
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	8
	17-4PH (Bar)	A 276 Gr 630	S 17400	35
	316 / Alloy #6*	A479 Gr 316 / AMS 5387	S 31600 / R 30006	40-42
Metal Seat	316 (Bar)	A 479 Gr 316	S 31600	8
	420 (Bar)	A 564 Gr 630	S 17400	35
	17-4PH (Bar)	A 479 Gr 316 / AMS 5387	S 31600 / R 30006	40-42
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	

* Valves with nominal sizes 0.5 to 2 inches: seat ring and plug head in solid Alloy #6.
Valves with nominal sizes 3 and 4 inches: solid alloy #6 on seat ring and alloy #6 overlay on plug head.

PRESSURE AND TEMPERATURE LIMITS FOR VALVE BODIES – ANSI B 16.34 (TABLE VIII)					
MATERIAL	CLASS	PRESSURE		TEMPERATURE	
		PSI	BAR	°F	°C
Carbon Steel ASTM A 216 Gr. WCB	ANSI 150	19.7	19.7	-20 a 100	-29 a 38
		17.9	17.9	200	93
		15.9	15.9	300	149
		13.8	13.8	400	204
		11.7	11.7	450	232
	ANSI 300	51.0	51.0	-20 a 100	-29 a 38
		46.5	46.5	200	93
		45.2	45.2	300	149
		43.8	43.8	400	204
		41.4	41.4	450	232
Stainless Steel ASTM A 351 Gr. CF8M	ANSI 150	19.0	19.0	-20 a 100	-29 a 38
		16.2	16.2	200	93
		14.8	14.8	300	149
		13.4	13.4	400	204
		11.7	11.7	450	232
	ANSI 300	49.7	49.7	-20 a 100	-29 a 38
		42.8	42.8	200	93
		39.4	39.4	300	149
		35.5	35.5	400	204
		33.1	33.1	450	232

MAXIMUM ALLOWABLE PRESSURE DROP – ACTUATOR(1)(2) (TABLE IX)							
VALVE SIZE		ACTUATOR SIZE					
		15		25		50	
POL.	DN	PSI	BAR	PSI	BAR	PSI	BAR
0.5	15	670	46.2				
0.75	20	595	41.0				
1	25	470	32.4				
1.5	40	120	8.2	740	51.0		
2	50	120*	8.2*	590	40.6		
3	80			110**	7.5**	740	51.0
4	100					740	51.0

(1) Maximum allowable pressure drop based on full area trim, PTFE packing, air-to-open, flow over and air supply pressure of 60 PSI (4.1 bar).
(2) For thottling aplications, the actuator stiffness shall be considered.
(3) Do not exceed the body rating.
* With 1.38” trim. **With 1.80” trim

The GXL-Chronos packing box has a large depth and an excellent finish of internal surfaces which provides a longer operating life for the whole packing set. Due to its design characteristics, the GXL-Chronos packing box allows the use of a large variety of packing systems, for a better compliance with the most stringent standards concerning fugitive emission control in modern industrial processes.

STANDARD PACKING (FIGURE 9)

The standard packing of GXL-Chronos valves is comprised by PTFE VRings. The PTFE V-Rings have been the most largely used packing material for many years, with excellent tightness results. Its low friction characteristics, good mechanical strength and excellent corrosion resistance makes it the most commonly used material for stem and shaf sealing. The PTFE V-Rings are used in the GXL-Chronos valve with operating temperatures from -20° to 450 °F (-28° to 232 °C).

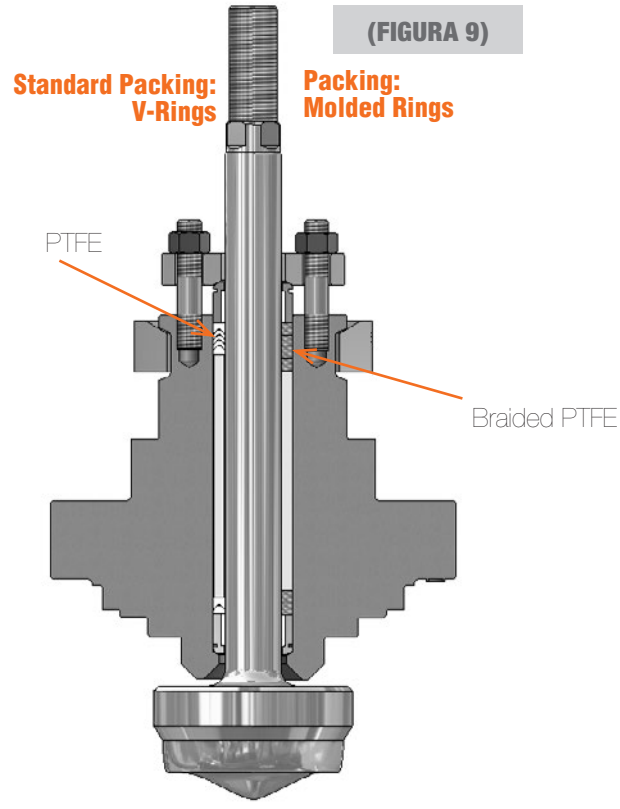
HIGH TEMPERATURE PACKING (FIGURE 9)

The GXL-Chronos valve packing with molded rings is an option for using when the operating temperature exceeds the limits of PTFE V-rings. The materials used for GXL-Chronos molded packings are braided PTFE for operating temperatures up to 500°F (260°C) and graphite for temperatures up to 650°F (345°C). The graphite molded rings packing is an excellent solution for high temperature applications. However, the high force requirements for its sealing causes a considerably friction increase

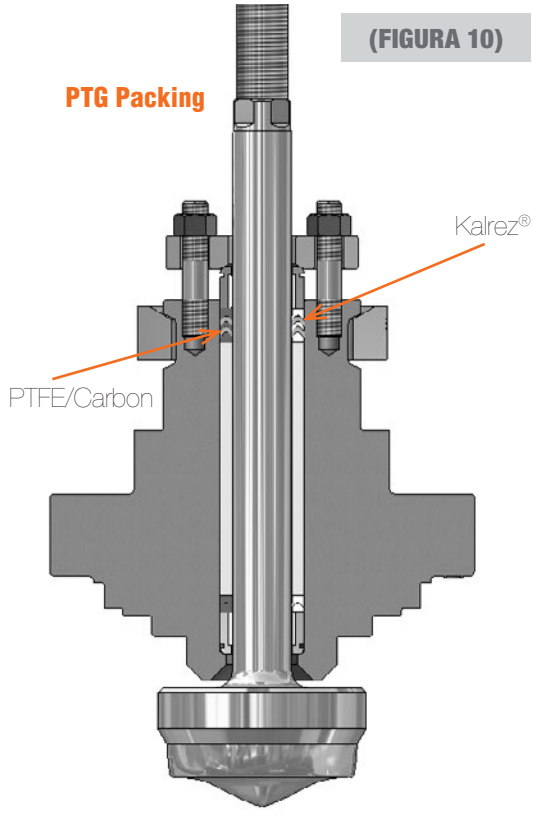
PACKING TEMPERAT URE LIMITS (TABLE X)

BONNET TYPE	PACKING MATERIAL	TEMPERATURE	
		°F	°C
Standard	PTFE “V” Rings	-20 a 450	-28 a 232
	Braided PTFE	-20 a 450	-28 a 232
	PTG	-20 a 450	-28 a 232

(FIGURA 9)

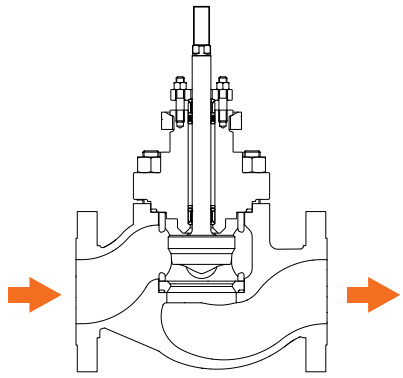


(FIGURA 10)



FLOW COEFFICIENTS

FLOW DIRECTION - OVER THE PLUG



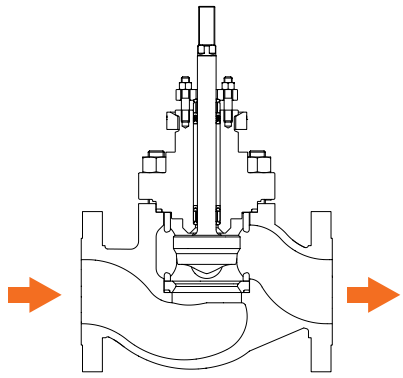
FLOW COEFFICIENTS (C_V) - EQUAL PERCENTAGE (TABELA XI)

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		C_V AT PERCENT OPEN									
		Inch	mm	100	90	80	70	60	50	40	30	20	10
½(1)	21 (0.83)	19.05	0.75	14.7	13.4	10.6	7.6	4.6	3.1	2.7	1.99	1.52	1.00
	18 (0.71)	19.05	0.75	11.4	10.0	7.6	5.2	3.3	2.6	1.96	1.40	0.95	0.60
	16 (0.63)	19.05	0.75	9.1	8.4	6.6	4.6	3.0	2.3	1.58	0.95	0.59	0.32
	13 (0.51)	19.05	0.75	6.7	6.1	4.8	3.2	2.0	1.60	1.02	0.65	0.39	0.25
¾(2)	10 (0.38)	19.05	0.75	4.1	3.6	2.8	1.70	1.34	0.85	0.45	0.28	0.160	0.103
	8 (0.30)	19.05	0.75	2.3	2.0	1.26	0.94	0.68	0.45	0.24	0.155	0.116	0.071
1	6.5-16 (0.25-16)	19.05	0.75	1.89	1.75	1.16	0.87	0.55	0.33	0.198	0.133	0.083	0.057
	6.5-14 (0.25-14)	19.05	0.75	1.19	1.17	0.89	0.59	0.35	0.22	0.122	0.081	0.048	0.022
	6.5-12 (0.25-12)	19.05	0.75	0.65	0.65	0.51	0.33	0.21	0.122	0.078	0.050	0.025	0.008
	6.5-10 (0.25-10)	19.05	0.75	0.31	0.28	0.22	0.155	0.101	0.077	0.053	0.032	0.020	0.007
1.5	35 (1.38)	19.05	0.75	36	33	28	20	13.3	8.7	6.5	4.6	3.0	2.0
	27 (1.07)	19.05	0.75	19.9	18.0	15.1	11.3	7.4	4.7	3.4	2.5	1.63	1.10
	21 (0.83)	19.05	0.75	11.8	10.5	8.2	5.8	3.7	2.4	1.62	0.97	0.63	0.30
	18 (0.71)	19.05	0.75	9.9	8.7	6.8	4.8	3.1	2.0	1.35	0.81	0.53	0.25
	16 (0.63)	19.05	0.75	8.3	7.2	5.6	3.9	2.7	1.79	1.22	0.68	0.42	0.23
	13 (0.51)	19.05	0.75	6.0	5.2	4.0	2.9	1.95	1.30	0.88	0.49	0.31	0.169
	10 (0.38)	19.05	0.75	3.6	2.8	1.89	1.39	1.21	0.85	0.57	0.30	0.178	0.107
	8 (0.30)	19.05	0.75	1.99	1.55	1.06	0.78	0.68	0.48	0.32	0.166	0.100	0.060
2	46 (1.80)	19.05	0.75	48	43	35	26	16.9	11.8	9.4	6.2	4.0	2.7
	35 (1.38)	19.05	0.75	35	31	25	18.0	11.6	7.5	5.9	4.1	2.6	1.76
	27 (1.07)	19.05	0.75	21	18.6	15.4	11.3	7.5	4.7	3.3	2.5	1.59	1.07
	21 (0.83)	19.05	0.75	13.1	11.8	9.4	6.7	4.2	2.7	2.1	1.40	0.90	0.62
	18 (0.71)	19.05	0.75	9.4	8.4	6.5	4.5	2.8	2.1	1.50	0.93	0.55	0.33
3	72 (2.83)	38.10	1.50	117	106	95	85	67	43	25	18.1	11.4	6.5
	56 (2.20)	38.10	1.50	84	78	71	59	43	26	14.3	9.4	6.8	4.0
	46 (1.80)	38.10	1.50	62	54	43	28	18.7	12.4	9.9	6.7	4.3	3.0
4	94 (3.70)	38.10	1.50	185	174	159	134	99	59	36	27	20	13.3
	72 (2.83)	38.10	1.50	142	132	119	95	67	42	26	17.5	12.2	7.9
	56 (2.20)	38.10	1.50	101	93	80	61	39	23	14.5	11.3	7.2	4.5

(1) Para o diâmetro de 0.5 polegada, o maior interno disponível é o T.N.13 (0,51").
(2) Para o diâmetro de 0.75 polegada, o maior interno disponível é o T.N.16 (0,63").

FLOW COEFFICIENTS

FLOW DIRECTION - UNDER THE PLUG



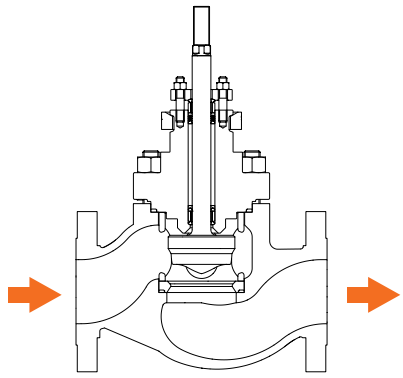
COEFICIENTE DE VAZÃO (C_V) - EQUAL PERCENTAGE (TABELA XI)

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		C_V AT PERCENT OPEN									
		Inch	mm	100	90	80	70	60	50	40	30	20	10
	21 (0.83)	19.05	0.75	12.700	11.76	8.33	5.83	3.64	2.39	1.60	1.07	0.72	0.48
	18 (0.71)	19.05	0.75	10.400	9.63	6.82	4.77	2.98	1.96	1.31	0.88	0.59	0.39
½(1)	16 (0.63)	19.05	0.75	8.60	8.5	6.4	4.4	2.8	1.80	1.24	0.76	0.46	0.27
	13 (0.51)	19.05	0.75	6.30	6.0	4.9	3.0	1.94	1.25	0.80	0.49	0.32	0.190
¾(2)	10 (0.38)	19.05	0.75	3.65	3.4	2.6	1.68	1.08	0.68	0.41	0.26	0.157	0.094
	8 (0.30)	19.05	0.75	2.1	1.82	1.24	0.83	0.52	0.34	0.197	0.137	0.095	0.061
	6.5-16 (0.25-16)	19.05	0.75	1.80	1.72	1.21	0.80	0.45	0.29	0.185	0.118	0.076	0.049
1	6.5-14 (0.25-14)	19.05	0.75	1.16	1.15	0.75	0.49	0.31	0.181	0.110	0.063	0.034	0.013
	6.5-12 (0.25-12)	19.05	0.75	0.64	0.64	0.63	0.38	0.22	0.128	0.079	0.047	0.021	0.006
	6.5-10 (0.25-10)	19.05	0.75	0.30	0.30	0.29	0.176	0.104	0.060	0.037	0.022	0.010	0.003
	35 (1.38)	19.05	0.75	32.00	30	26	17.0	11.4	7.3	4.7	3.1	1.99	1.35
	27 (1.07)	19.05	0.75	23.00	23	17.668	11.3	6.9	4.7	3.1	1.98	1.37	0.941
	21 (0.83)	19.05	0.75	14.60	12.7	8.6	5.6	4.1	2.4	1.46	0.85	0.54	0.30
1.5	18 (0.71)	19.05	0.75	10.70	9.3	6.3	4.1	3.0	1.75	1.07	0.63	0.40	0.22
	16 (0.63)	19.05	0.75	9.05	7.4	5.6	4.7	2.9	1.72	0.98	0.70	0.39	0.24
	13 (0.51)	19.05	0.75	6.56	5.4	4.1	3.4	2.1	1.25	0.71	0.51	0.28	0.175
	10 (0.38)	19.05	0.75	3.65	3.2	1.92	1.29	0.87	0.59	0.36	0.23	0.140	0.087
	8 (0.30)	19.05	0.75	2.05	1.77	1.08	0.73	0.49	0.33	0.199	0.127	0.079	0.049
	46 (1.80)	19.05	0.75	49	47	43	31	17.0	10.9	7.3	4.8	3.2	2.29
	35 (1.38)	19.05	0.75	34	33	27	17.6	11.3	7.3	4.9	3.2	2.1	1.41
2	27 (1.07)	19.05	0.75	24	23	18.7	12.1	7.1	4.9	3.1	1.99	1.35	0.93
	21 (0.83)	19.05	0.75	14.7	14.4	10.6	6.6	4.3	2.8	1.78	1.14	0.78	0.51
	18 (0.71)	19.05	0.75	10.6	10.4	7.6	4.8	3.1	1.99	1.29	0.82	0.56	0.37
	72 (2.83)	38.10	1.50	121	113	103	99	80	40	24	14.3	8.7	5.0
3	56 (2.20)	38.10	1.50	88	83	76	68	46	27	14.6	9.3	5.6	3.5
	46 (1.80)	38.10	1.50	58	56	50	33	21	13.5	8.8	5.7	3.8	2.6
	94 (3.70)	38.10	1.50	201	189	173	161	118	59	37	25	15.8	10.9
4	72 (2.83)	38.10	1.50	142	131	119	107	72	45	29	18.6	11.1	7.3
	56 (2.20)	38.10	1.50	95	87	79	65	40	25	15.995	10.1	6.1	4.1

(1) Para o diâmetro de 0.5 polegada, o maior interno disponível é o T.N.13 (0,51").
(2) Para o diâmetro de 0.75 polegada, o maior interno disponível é o T.N.16 (0,63").

FLOW COEFFICIENTS

FLOW DIRECTION - OVER THE PLUG



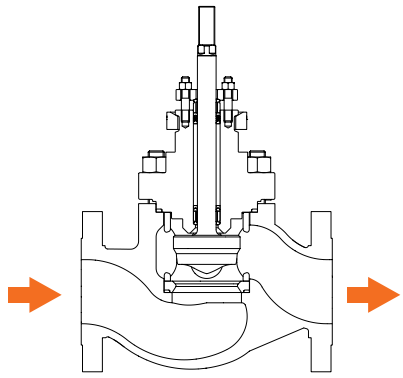
FLOW COEFFICIENTS (C_V) - LINEAR (TABLE XII)

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		C_V AT PERCENT OPEN									
		Inch	mm	100	90	80	70	60	50	40	30	20	10
	21 (0.83)	0.75	19.05	17.4	16.8	16.1	15.1	13.5	10.8	8.3	6.1	3.6	1.87
	18 (0.71)	0.75	19.05	13.4	13.0	12.2	10.8	9.0	7.3	5.7	4.3	2.7	1.22
	16 (0.63)	0.75	19.05	9.4	9.2	8.8	8.5	7.9	6.4	5.1	3.9	2.5	1.34
½(1)	13 (0.51)	0.75	19.05	7.6	7.3	6.7	6.1	5.3	4.4	3.6	2.6	1.85	0.82
	10 (0.38)	0.75	19.05	4.6	4.5	4.3	3.7	3.3	2.9	2.2	1.74	1.13	0.52
	8 (0,30)	0.75	19.05	2.4	2.3	2.1	1.89	1.73	1.46	1.13	0.87	0.57	0.29
¾(2)	6.5-58 (0.25-58)	0.75	19.05	1.87	1.84	1.79	1.60	1.38	1.17	0.92	0.66	0.42	0.176
	6.5-56 (0.25-56)	0.75	19.05	1.45	1.36	1.22	1.11	0.95	0.82	0.68	0.50	0.35	0.189
	6.5-46 (0.25-46)	0.75	19.05	0.49	0.47	0.43	0.38	0.31	0.26	0.21	0.149	0.092	0.050
1	6.5-42 (0.25-42)	0.75	19.05	0.30	0.27	0.25	0.22	0.191	0.164	0.134	0.101	0.068	0.035
	6.5-34 (0.25-34)	0.75	19.05	0.150	0.140	0.120	0.110	0.098	0.085	0.072	0.059	0.046	0.032
	6.5-26 (0.25-26)	0.75	19.05	0.053	0.045	0.038	0.031	0.025	0.019	0.013	0.008	0.004	0.001
	6.5-12 (0.25-12)	0.75	19.05	0.014	0.012	0.010	0.008	0.006	0.005	0.003	0.002	0.001	0.000
	35 (1.38)	0.75	19.05	32	31	29	26	24	20	16.5	12.6	8.2	3.8
	27 (1.07)	0.75	19.05	23	23	21	19.7	17.6	15.1	12.3	9.3	6.0	2.8
	21 (0.83)	0.75	19.05	16.1	15.7	15.0	13.9	12.3	10.4	8.3	6.2	4.0	2.1
1.5	18 (0.71)	0.75	19.05	12.1	11.6	10.7	9.1	7.7	6.2	4.9	3.8	2.4	1.31
	16 (0.63)	0.75	19.05	10.9	10.5	9.6	8.2	7.0	5.6	4.5	3.5	2.2	1.18
	13 (0.51)	0.75	19.05	7.5	7.4	6.5	5.6	5.0	4.4	3.6	2.8	1.92	0.96
	10 (0.38)	0.75	19.05	4.6	4.5	4.0	3.5	3.0	2.7	2.2	1.70	1.17	0.59
	8 (0.30)	0.75	19.05	2.4	2.3	2.1	1.90	1.75	1.48	1.22	0.93	0.61	0.28
	46 (1.80)	0.75	19.05	54	52	49	46	41	35	28	21	13.4	6.2
	35 (1.38)	0.75	19.05	36	34	32	30	26	23	17.9	13.4	8.6	4.2
2	27 (1.07)	0.75	19.05	25	24	23	21	18.8	15.9	12.7	9.4	6.0	2.8
	21 (0.83)	0.75	19.05	16.7	16.1	15.3	14.0	12.4	10.4	8.3	6.2	4.0	2.1
	18 (0.71)	0.75	19.05	11.9	11.4	10.5	8.9	7.6	6.2	4.9	3.8	2.4	1.29
	72 (2.83)	1.50	38.10	126	123	120	114	106	90	77	61	41	19.0
3	56 (2.20)	1.50	38.10	84	82	77	73	66	57	47	35	23	13.5
	46 (1.80)	1.50	38.10	64	61	57	52	46	38	30	23	15.3	7.2
	94 (3.70)	1.50	38.10	203	193	185	173	161	139	107	70	32	16.8
4	72 (2.83)	1.50	38.10	146	142	134	123	110	93	74	53	35	17.0
	56 (2.20)	1.50	38.10	115	106	97	87	76	65	53	40	27	13.7

(1) Para o diâmetro de 0.5 polegada, o maior interno disponível é o T.N.13 (0,51").
(2) Para o diâmetro de 0.75 polegada, o maior interno disponível é o T.N.16 (0,63").

FLOW COEFFICIENTS

FLOW DIRECTION - UNDER THE PLUG

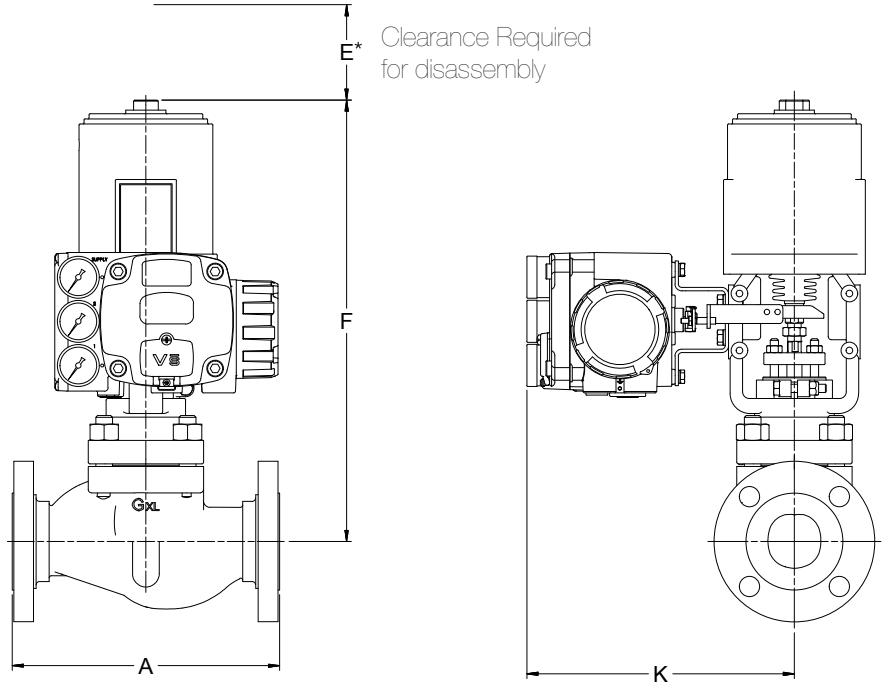


FLOW COEFFICIENTS (C_V) - LINEAR (TABLE XII)

VALVE SIZE (inches)	TRIM SIZE (TN)	STROKE		C_V AT PERCENT OPEN									
		Inch	mm	100	90	80	70	60	50	40	30	20	10
	21 (0.83)	0.75	19.05	14.80	14.800	14.307	13.024	11.643	9.571	7.795	5.920	3.749	2.072
	18 (0.71)	0.75	19.05	11.10	10.844	10.161	8.965	7.770	6.489	4.952	3.757	2.220	0.837
	16 (0.63)	0.75	19.05	9.3	9.1	8.8	8.4	7.3	6.3	4.9	3.7	2.4	1.24
½(1)	13 (0.51)	0.75	19.05	6.8	6.6	6.2	5.6	5.0	4.2	3.4	2.5	1.74	0.68
	10 (0.38)	0.75	19.05	4.2	4.1	3.6	3.3	2.9	2.5	1.94	1.44	0.98	0.38
	8 (0,30)	0.75	19.05	2.2	2.1	1.96	1.73	1.45	1.23	0.97	0.72	0.44	0.181
¾(2)	6.5-58 (0.25-58)	0.75	19.05	1.80	1.78	1.64	1.46	1.25	1.04	0.82	0.57	0.36	0.157
	6.5-56 (0.25-56)	0.75	19.05	1.10	1.07	0.95	0.88	0.79	0.67	0.54	0.42	0.27	0.157
	6.5-46 (0.25-46)	0.75	19.05	0.48	0.46	0.43	0.37	0.31	0.26	0.21	0.146	0.085	0.035
1	6.5-42 (0.25-42)	0.75	19.05	0.30	0.27	0.25	0.22	0.191	0.164	0.130	0.098	0.067	0.042
	6.5-34 (0.25-34)	0.75	19.05	0.140	0.130	0.120	0.110	0.095	0.083	0.071	0.058	0.045	0.025
	6.5-26 (0.25-26)	0.75	19.05	0.052	0.044	0.037	0.030	0.024	0.018	0.013	0.006	0.004	0.001
	6.5-12 (0.25-12)	0.75	19.05	0.014	0.012	0.010	0.008	0.006	0.005	0.003	0.002	0.001	0.000
	35 (1.38)	0.75	19.05	33	31	30	29	27	24	19.7	15.5	10.9	5.6
	27 (1.07)	0.75	19.05	23	23	22	20.7	19.2	16.6	13.8	10.8	7.3	3.2
	21 (0.83)	0.75	19.05	14.8	14.5	14.0	13.5	12.4	10.9	8.8	5.9	3.5	1.73
1.5	18 (0.71)	0.75	19.05	11.1	10.9	10.5	10.1	9.3	8.2	6.6	4.5	2.6	1.30
	16 (0.63)	0.75	19.05	10.0	8.8	7.8	6.9	6.0	5.0	4.0	3.1	2.1	1.00
	13 (0.51)	0.75	19.05	6.9	6.1	5.4	4.8	4.2	3.5	2.8	2.1	1.45	0.69
	10 (0.38)	0.75	19.05	4.3	3.7	3.3	2.9	2.5	2.1	1.66	1.24	0.85	0.43
	8 (0.30)	0.75	19.05	2.2	1.93	1.72	1.50	1.29	1.07	0.86	0.64	0.44	0.22
	46 (1.80)	0.75	19.05	49	48	48	47	42	36	29	22	14.5	6.4
	35 (1.38)	0.75	19.05	36	35	32	30	27	23	18.3	14.0	9.4	3.8
2	27 (1.07)	0.75	19.05	24	23	24	21	19.1	16.1	13.1	10.0	6.1	2.9
	21 (0.83)	0.75	19.05	15.5	15.2	14.8	14.3	12.9	10.9	8.8	6.0	3.5	1.69
	18 (0.71)	0.75	19.05	11.1	9.8	8.7	7.7	6.7	5.6	4.4	3.4	2.3	1.01
	72 (2.83)	1.50	38.10	124	122	119	114	108	96	79	60	40	19.1
3	56 (2.20)	1.50	38.10	87	82	77	70	63	55	46	36	25	14.6
	46 (1.80)	1.50	38.10	58	56	51	47	41	37	32	25	17.0	7.3
	94 (3.70)	1.50	38.10	205	197	186	173	159	141	119	94	65	34
4	72 (2.83)	1.50	38.10	143	137	126	113	98	85	69	57	37	17.1
	56 (2.20)	1.50	38.10	100	94	87	80	72	62	51	39	26	13.7

(1) Para o diâmetro de 0.5 polegada, o maior interno disponível é o T.N.13 (0,51").
(2) Para o diâmetro de 0.75 polegada, o maior interno disponível é o T.N.16 (0,63").

DIMENSIONS



DIMENSIONS (TABLE XIII)

Valve Size (inches)	A				F						K						E*	
	ANSI Class				Actuator size						Actuator size						Clearance Required for disassembly	
	150		300		15		25		50		15		25		50			
	inch	mm	inch	mm	inch	mm	inch	mm	pul	mm	inch	mm	inch	mm	inch	mm	inch	mm
0.5	7.3	184	7.5	191	16.1	410					9.8	250					3.8	97
0.75	7.3	184	7.6	194	16.1	410					9.8	250					3.8	97
1	7.3	184	7.8	197	16.1	410					9.8	250					3.8	97
1.5	8.8	222	9.3	235	16.5	420					9.8	250					6.0	152
2	10.0	254	16.5	267	16.5	420	17.5	445			9.8	250	11.0	280			6.0	152
3	11.8	298		318					23.5	597					11.1	282	8.0	203
4	13.9	353		368					24.7	628					11.1	282	8.0	203

*Free space required to disassembly the standard actuator.

The information and specification contained in this bulletin are considered accurate. However, they are provided only for information purposes and should not be considered as certified. Valtek Sulamericana products are continuously improved and upgraded and the specification, dimensions and information contained herein are subject to change without notice. For further information or to confirm these presented here, contact your Valtek Sulamericana representative. The specific instructions for installation, operation and maintenance of the GXL-Chronos control valve are provided in Maintenance Bulletin #2. For Chronos positioner see the Maintenance Bulletin #42.

Latin América
Central Office e Factory
Rua Goias, 345 - Diadema - SP - Brazil
+55 11 4072-8600
www.valteksulamericana.com.br

Middle East
Main office and manufacturing
Al Qusais Industrial Area 4
Dubai - United Arab Emirates
+971 4 207 3933 www.vsmena.ae

Representatives in more than 45 countries

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