

EXL[®]

ECCENTRIC ROTARY PLUG CONTROL VALVE

SHORT PATTERN



VALTEK[™]
SULAMERICANA



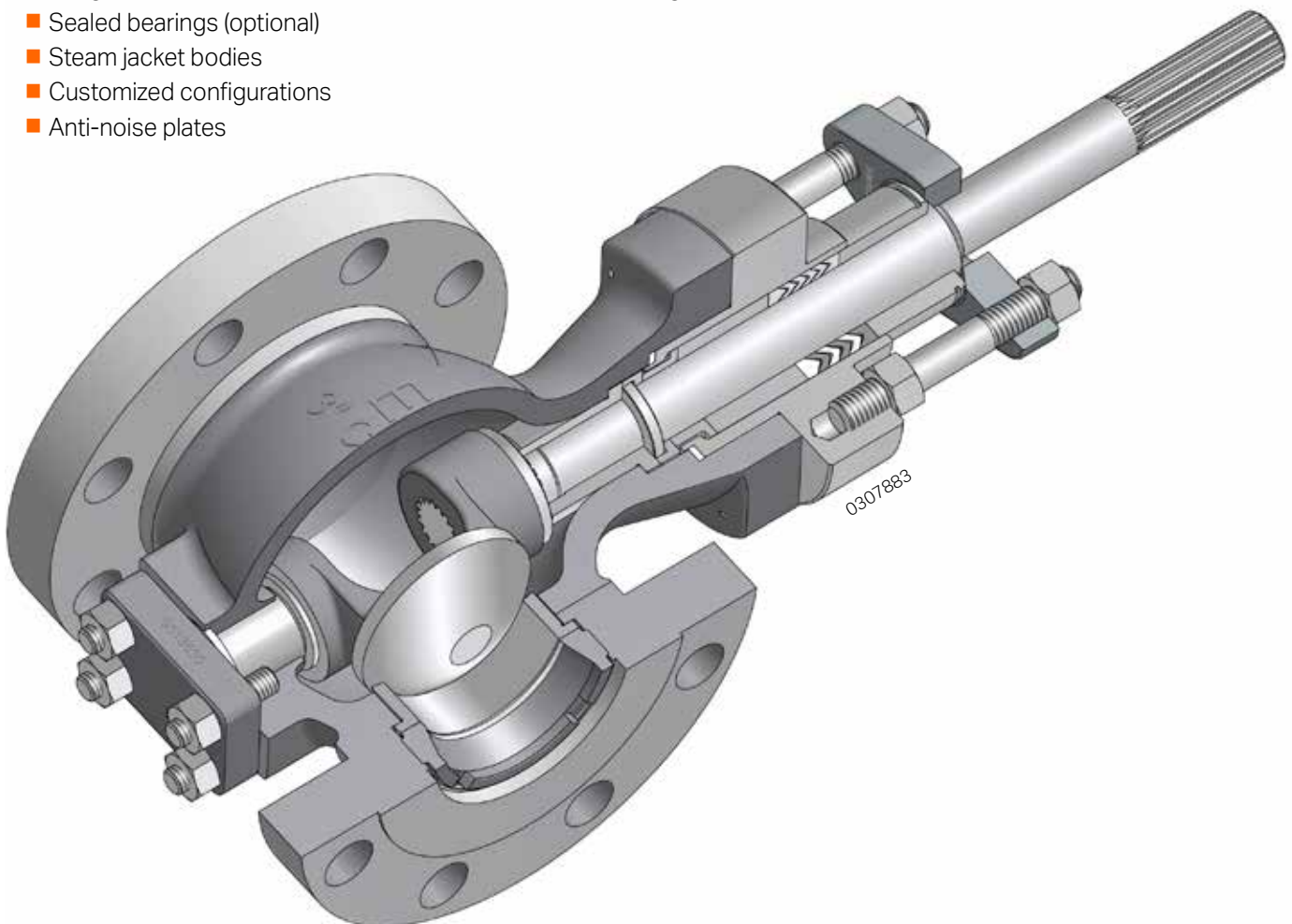
Eccentric Rotary Plug Short Body: ANSI/ISA - 75.08.02

The rotary plug control valves are being more used each day due to their great flow capacity, high rangeability, compact size and superior sealing capacity by the shaft assembly.

The rotary plug valve EXL model of ValtekSul has an advanced technological concept that combines the strength of a Globe type valve and the operational efficiency of a rotary valve.

Some of its main characteristics are:

- Easy assembly: Flanged and Wafer type bodies
- Double eccentricity plug: Low starting torque, excellent control
- Great flow capacity: non crossover shaft, 90° rotation
- High control rangeability: Superior to 160:1
- Flow direction: Bidirectional flow
- Ideal for the control of gases, liquids, steam and fluids with solids, viscous and slurry
- Tightness: Class IV (Metal-Metal) or VI (Soft Seat)
- Splined shaft coupling: More accuracy and safety
- Anti-blowout shaft system: Prevents accidents
- Fugitive emissions packing: ISO 15848 (similar to the bellows system)
- Long body with face-to-face dimensions compatible to the globe type valves (ANSI/ISA 75.08.01)
- Sealed bearings (optional)
- Steam jacket bodies
- Customized configurations
- Anti-noise plates



Body Subassembly, EXL Short Body

Eccentric Rotary Plug Valve - EXL

Application Fields

The versatility of the diverse configurations of the bi-eccentric plug EXL model control valve, for either throttling control operations or "on-off" services, can be extended to a wide field of applications, such as:

Oil and gas

- NACE construction
- LNG
- Oils, Naphtha, HCO
- Vent gases
- Fluids with suspended solids
- Process fluids

Industrial Gases

- Cryogenic gases
- Oxygen

Chemical & Petrochemical

- Acids
- Fluids containing solids
- Ammonia
- Pasty fluids

Mining

- Pasty fluids
- Muddy fluids
- Corrosive fluids

Pulp & Paper

- Process fluids
- Fluids with suspended fibers

Agribusiness

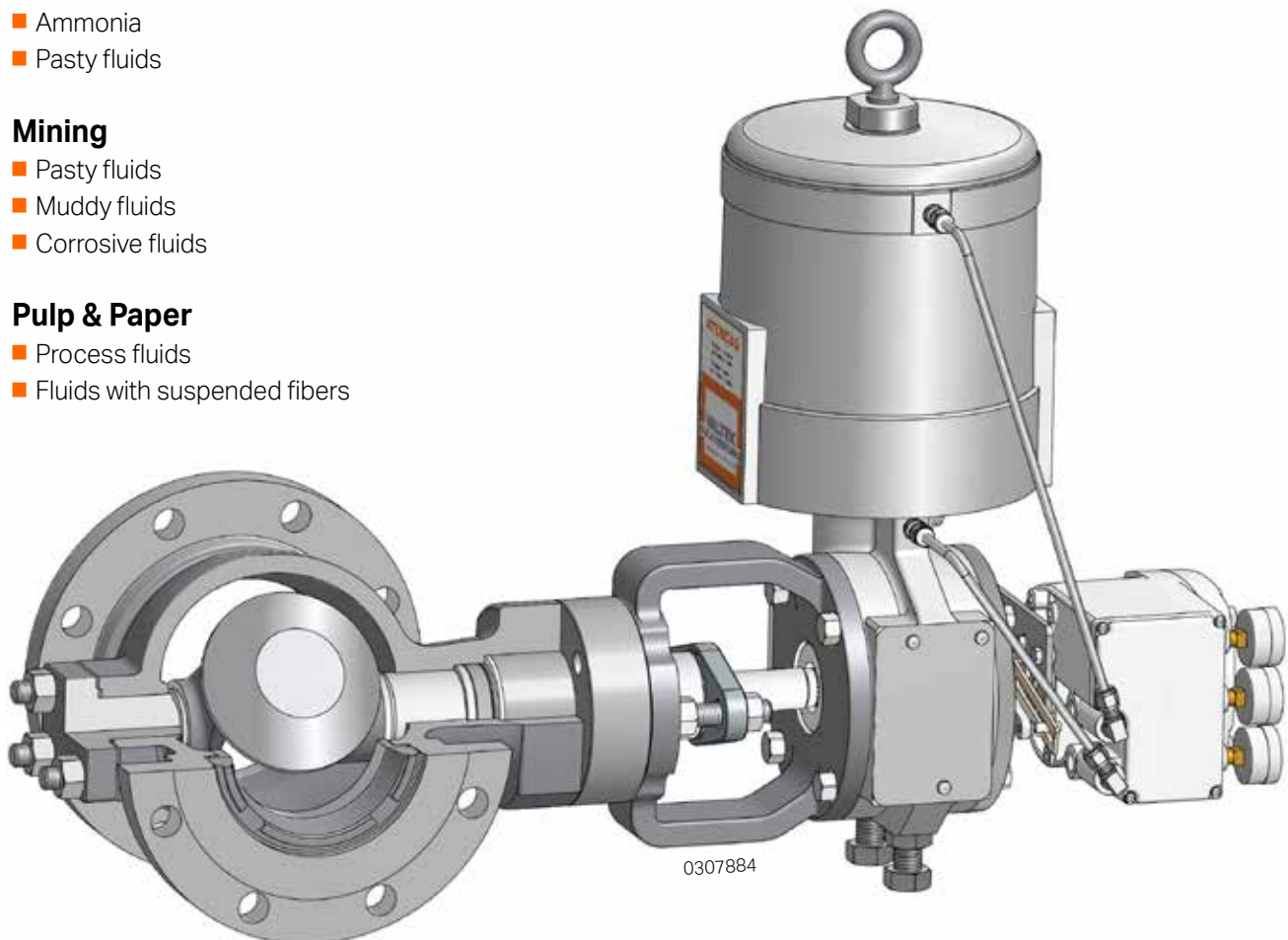
- Alcohol plants
- Sugar mills
- Pasty/erosive fluids
- Process fluids

Water treatment

- Water treatment
- Steam
- Desalination plants

Building automation

- Central heating processes
- Central cooling processes



EXL valve with RA Series Actuator

Eccentric Rotary Plug Valve - ExL

Characteristics and Additional Advantages

Its advanced design provides the EXL valve with a robust non crossover shaft set that prevents the fluid obstruction. When the valve is open, the fluid is not diverted to the seat ring and seat retainer area, thus providing higher performance, even after years of operation.

A complete and advanced technology of hardened trims expands its use to a wide range of applications, such as fluids in vaporization regime (flashing), erosive services, medium cavitations and steam operations in general.

Options	ASTM Specification	DIN Specification
Diameter	1, 1.5, 2, 3, 4, 6, 8, 10, and 12"	DN 25, 40, 50, 80, 100, 150, 200, 250 and 300
ANSI pressure class	150, 300 and 600	PN 10, 16, 25, 40 and 63
Ends	Flanged B 16.5 (RF - RTJ) Wafer Type	Flanged EN 1092-1 (B1; D; F B2 Regulation) Wafer Type
Face-to-face	Short body ISA 75.08.02 Long body ISA 75.08.01 (Globe type)	Short body EN 558: 2012-03 Series 36 Long body 2012-03 Series 1 (same as globe)
Body materials	ASTM A 216 Carbon Steel WCC	Carbon Steel 1.0619
	ASTM A 216 Carbon Steel WCC NACE	Carbon Steel 1.0619 NACE
	ASTM A 351-CF8M (316) Stainless Steel	1.4408 (316) Stainless Steel
	ASTM A 351-CF3M NACE (316 L) Stainless Steel	1.4409 NACE (316 L) Stainless Steel
	ASTM A 995 Gr. 6A-CD3MWCuN (Super-Duplex)	Duplex 1.4508
	ASTM A 494 Gr. M35-1 (Monel 400)	Monel 2.4360
	ASTM A 351 Gr. CN-7M (Alloy 20)	Alloy 2.4660
	ASTM A 494 CW-6M (Hastelloy C)	Hastelloy C 2.4883
Plug materials	ASTM A 351 CF3M (316L SST/Hardened chrome)	Stainless Steel 1.4409/Hardened chrome
	ASTM A 747-CB7Cu1 (17-4PH H 1025D)	Stainless Steel 1.4542
	ASTM A 5387 (Solid Alloy 6) Diam. 1" to 4"	Solid Alloy 6 , Diam. 1" to 4"
	ASTM A 351 CF3M/Alloy 6 (316L SST/Alloy 6)	Stainless Steel 1.4409 / Alloy 6
	ASTM A 995 Gr. 6A-CD3MNCuN (Super-Duplex)	Duplex 1.4508
	ASTM A 494 Gr. M35-1 (Monel 400)	Monel 2.4360
	ASTM A 351 Gr. CN-7M (Alloy 20)	Alloy 2.4660
	ASTM A 494 CW-6M (Hastelloy C)	Hastelloy C 2.4883
Packing	PTFE "V" rings; braided PTFE ; Graphite; PT Fugitive emissions ; PTG and PTG-XT (according to EPA* requirements)	
Operation temperature	-148°F to 750°F (-100°C to 400°C)	
Tightness Class	Metal-metal ANSI/FCI 70-2-2006 Class IV Soft Seat ANSI/FCI 70-2-2006 Class VI	
Trims	Full and reduction of 70% and 40% of 1" to 6" (DN 20-150) Full and reduction of 75% of 8" to 12" (DN 200 - 300)	
Noise level reduction plates	Capacity of reducing the noise levels in gases of up to 16 dBA	

*EPA: Environmental Protection Agency

Eccentric Rotary Plug Valve - EXL

Competitive advantages

Tightness

The plug double eccentricity permits that it moves away from the seat ring without contact. This assembly minimizes wear and tear and the need for regular maintenance, reducing costs. At the same time, tightness class VI is easily obtained with the use of a soft seat.

Anti-blowout shaft system

The internal shaft blowout protection system eliminates personal accidents and meets the standard ASME B16.34 safety regulation. It permits the actuator removal even when the valve is installed and pressurized. This mechanical system increases the reliability and safety of the EXL project, avoiding accidents and process shut-down.

High flow capacity

The exclusive EXL design permits a Cv up to 70% bigger than the other models of eccentric rotary plug control valves. The strength of the seat ring, stiff and extra-strong, makes the EXL performance superior in applications under high differential pressures.

Deep Packing Box

The EXL packing box is very deep and has excellent superficial finishing. The bonnet is made from forged bars and not from cast surface, what provides a longer service life for the entire packing set. The design of the EXL packing box permits the use of all packing models, including those that exceed the EPA* requirements.

Characteristics	
Eccentric Plug	<ul style="list-style-type: none"> ■ Constructed with standard hardened steel configuration. ■ Control characteristic: inherent linear ■ Double eccentricity: Do not cause seat friction: Zero breakaway torque ■ Bidirectional fluid direction ■ Flow direction that operates helping the valve to proceed to fail position ■ Robust with high dynamic coefficient
Non crossover shaft	<ul style="list-style-type: none"> ■ In the open position, do not obstruct fluid passage ■ It is not eroded by particles in the fluid ■ Much bigger flow capacity than other models of eccentric plug valves ■ Operate with fluids containing up to 3% of fibers, muddy or viscous fluids
Bonnet	<ul style="list-style-type: none"> ■ Easy maintenance, it has an internal shaft blowout protection system, according to the ASME B 16.34 regulation, section 6.5.1 ■ Permits the actuator disassembly with the valve installed and pressurized in the pipe
Rangeability	<ul style="list-style-type: none"> ■ Superior to 160:1
Various types of body	<ul style="list-style-type: none"> ■ Flanged ■ Wafer type without flange ■ Flanged with face-to-face dimension similar to globe valves
Several trim sizes	<ul style="list-style-type: none"> ■ Total area ■ Reduced area 75%, 70% and 40% ■ Facilitates changes in flow capacity with low costs
Various packing models	<ul style="list-style-type: none"> ■ Permits the assembly of various packing models and meets the fugitive emissions control requirements of EPA*, Ta-Luft and ISO
Noise reducing plates	<ul style="list-style-type: none"> ■ Permits the use of reduction plates of up to 16 dBA integrated to the body
Certification	<ul style="list-style-type: none"> ■ NACE

*EPA: Environmental Protection Agency

Eccentric Rotary Plug Valve - EXL Material Technology - Trim Options

Body: Carbon Steel - Standard Manufacturing

ASTM A 216 Gr. WCC; DIN 1.0619

Components	Materials	Temperature Range		Trim Code
		°F	°C	
Plug	ASTM A351 CF3M (316L SST) / Hardened chrome	-20 to 400 (1) (2)	-29 to 204 (1) (2)	CSA
Seat Ring	ASTM A182 316L (UNS S 31603)			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft and Post	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	MBT (2)			
Bearing	ASTM A351 CF3M (316L SST) / Hardened chrome	-20 to 400 (1) (2)	-29 to 204 (1) (2)	CSB
Seat Ring	ASTM A182 316L (UNS S 31603) / PTFE			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft and Post	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	MBT (2)			
Shaft and Post	ASTM A747-CB7Cu1 (17-4PH H1025D)	-20 to 750 (1)	-29 to 400 (1)	CSC
Plug	Stainless steel AISI 420 HT (UNS S 42600)			
Seat Ring	ASTM A182 F6A (UNS S 41000)			
Shaft and Post	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	Stainless steel 440C HT (UNS 44004)			
Plug	ASTM A747-CB7Cu1 (17-4PH H1025D)	-20 to 400 (3)	-29 to 204 (3)	CSD
Seat Ring	Stainless steel AISI 420 HT (UNS S 42600) / PTFE			
Seat Retainer	ASTM A182 F6A (UNS S 41000)			
Shaft and Post	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	Stainless steel 440C HT (UNS 44004)			

(1) Carbon steel limitations of body and bonnet

(2) MBT limitations (PTFE/carbon inserted in metallic bearing)

(3) PTFE limitations

Material Technology - Trim Options

Body: Carbon Steel - NACE Manufacturing MRO 175/ISO 15156 and MRO 103

ASTM A 216 Gr. WCC; DIN 1.0619

Components	Materials	Temperature Range		Trim Code
		°F	°C	
Plug	ASTM A351 CF3M (316L) c/ Alloy 6 (3)	-20 to 750 (1)	-29 to 400 (1)	CNA
Seat Ring	ASTM A182 - 316L SST (UNS 31603) c/Alloy 6			
Seat Retainer	ASTM A182 F6A (UNS S 41000)			
Shaft and Post	ASTM A564 Gr.660 (17-4PH H1150D)			
Bearing	ASTM A 182 F 51 (UNS S 31803)			

(1) Carbon steel limitations of body and bonnet

(3) Solid Alloy 6 (UNS R 30006) (sizes from 1 to 6 in.), Stainless steel 316 L sst with Alloy #6 coating (sizes from 8 to 12 in.)

Eccentric Rotary Plug Valve - ExL Material Technology - Trim Options

Body: Stainless Steel - Standard Manufacturing

ASTM A 351 - CF8M; DIN 1.4408

Components	Materials	Temperature Range		Trim Code
		°F	°C	
Plug	ASTM A351 CF3M (316L SST) / Hardened chrome	-148 to 400	-100 to 204 ⁽²⁾	CSA
Seat Ring	ASTM A182 F316L (UNS S 31603)			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	MBT ⁽²⁾			
Plug	ASTM A351 CF3M (316L SST) / Hardened chrome	-148 to 400	-100 to 204 ⁽²⁾	CSB
Seat Ring	ASTM A182 316L (UNS S 31603) / PTFE			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft and Post	ASTM A564 Gr.631 (17-4PH H1025)			
Bearing	MBT ⁽²⁾			

(2) MBT limitations (PTFE/carbon inserted in metallic bearing)

Body: Stainless Steel - Anti-Corrosion Manufacturing

ASTM A 351 - CF3M; DIN 1.4581

Components	Materials	Temperature Range		Trim Code
		°F	°C	
Plug	ASTM A747 CB7Cu 1 (17-4PH H 1150D)	-148 to 750	-100 to 400	SSA
Seat Ring	ASTM A182 316L (UNS S 316003)			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft and Post	ASTM A453 Gr.660 (UNS S 66286)			
Bearing	ASTM A182 F 51 (UNS S 31803)			

3) Solid Alloy 6 (UNS R 30006) (sizes from 1 to 6 in.), Stainless steel 316 L sst with Alloy #6 coating (sizes from 8 to 12 in.)

Body: Stainless Steel - NACE Manufacturing MRO 175/ISO 15156 and MRO 103

ASTM A 351 - CF3M; DIN 1.4581

Components	Materials	Temperature Range		Trim Code
		°F	°C	
Plug	ASTM A351 CF3M (316L) c/ Alloy 6 ⁽³⁾	-148 to 750	-100 to 400	CNA
Seat Ring	ASTM A182 (316L SST) c/ Alloy 6			
Seat Retainer	ASTM A351 CF3M (316L SST)			
Shaft and Post	ASTM A564 Gr.660 (17-4PH H 1150D)			
Bearing	ASTM A F 51 (UNS S 31803)			

3) Solid Alloy 6 (UNS R 30006) (sizes from 1 to 6 in.), CF3M (316 L sst), with Alloy #6 coating (sizes from 8 to 12 in.)

Eccentric Rotary Plug Valve - ExL Packing

Standard Packing

The ExL valve standard packing is formed by PTFE "V" rings. The PTFE "V" rings represent the packing system most used in years, with excellent tightening results. Due to its characteristics of very low friction coefficient, good mechanical resistance and excellent corrosion resistance, it is the most used material for packing systems. The PTFE "V" rings are employed for use in temperatures from -150 to 450°F (-100 to 232°C).

High Temperature Packing

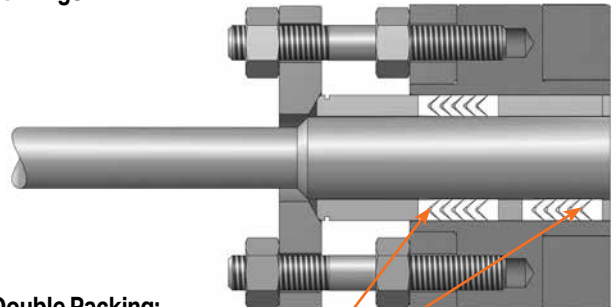
The ExL valve packing with molded rings is an alternative to be used when the operational temperature exceeds the limits of the PTFE "V" rings. The materials employed in the ExL valve molded packing are the braided PTFE, for temperatures of up to 500°F (260°C), and the graphite, for temperatures of up to 752°F (400°C). The packing with graphite molded rings is an excellent solution for high temperature applications. However, the need of high power required for sealing causes a considerable increase in friction in the rotation of the valve.

Fugitive Emissions Packing

The PT packing is formed by a set of "V" rings subjected to tightening by a set of spring washers, causing a "live-loaded effect".

This system reaches a level of tightness below 500 ppm. The PT packing combines the superior quality of virgin PTFE "V" rings and PTFE "V" rings with carbon filaments. The PTG packing is formed by an advanced packing set that is capable of keeping the tightness below 500 ppm (around 10 ppm). The PTG packing is formed by a combination of PTFE "V" rings with carbon filament and Kalrez® "V" rings, an advanced material that provides superior packing performance. For temperatures above 450°F (232°C), the PTG XT packing is employed, as it is formed by Zymax® rings instead of the PTFE rings with carbon.

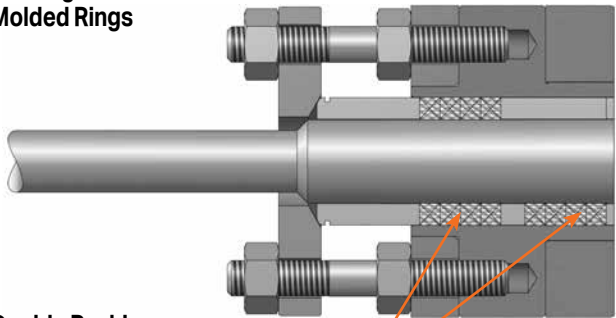
Standard Packing:
"V" rings



Double Packing:
"V" rings

Virgin PTFE

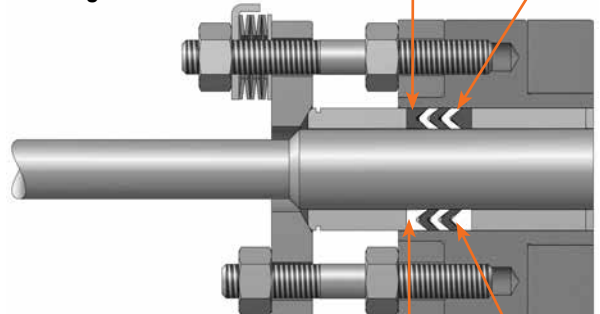
Packing:
Molded Rings



Double Packing:
Molded rings

Braided PTFE or Graphite

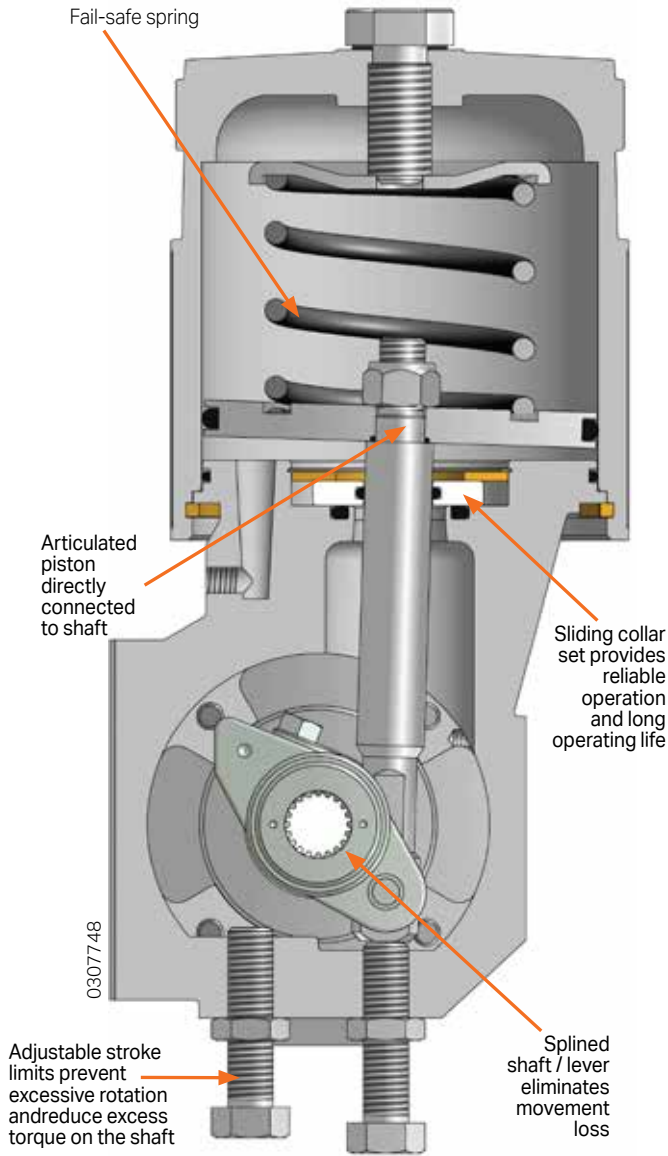
PT Packing
PTFE/Carbon Virgin PTFE



PTG Packing

PTFE/Carbon or Zymax® Kalrez®

Eccentric Rotary Plug Valve - ExL RA Series Actuator - Specifications



RA Series Rotary Actuator

High interchangeability – Reduces the need for spare parts

Compact and light design – Facilitates handling and occupies limited space

The piston-cylinder rotary actuator with RA series fail-safe spring combines superior torque and pneumatic stiffness with excellent control capacity.

These characteristics are integrated in a light, robust and compact set that is the ideal choice for the actuation of rotary valves.

The RA series double-acting piston-cylinder actuator was designed to operate with supply pressure of up to 150 psi (10.3 bar), reaching a high operational torque. The RA series actuator has a proven service life of a million cycles, making it the most reliable actuator on the market. The double-acting positioner sends air to both cylinder chambers, maintaining an exceptional stiffness. This pneumatic stiffness makes the RA series actuator incomparable and indispensable when precise valve control is required, even when operating with small openings.

All these features make the performance of the RA series actuators much superior than that of the diaphragm and spring actuators.

Specifications	
Type	<ul style="list-style-type: none"> ■ Double-acting piston-cylinder with fail-safe spring ■ Field reversible
Sizes	■ 25, 50, 100, 200
Action	<ul style="list-style-type: none"> ■ Air-to-open ■ Air-to-close ■ Fixed in last position
Air Pressure Supply	■ Maximum 150 psig (10.3 bar)
Operating Temperature	■ -40 to 350 °F (-40 to 175°C)
Auxiliary Handwheel	<ul style="list-style-type: none"> ■ Side-mounted declutchable ■ Gear operated manual ■ Lever
Positioners	<ul style="list-style-type: none"> ■ IDP 7600 Chronos Digital ■ HPP-2000 Analog

Eccentric Rotary Plug Valve - ExL

RP Series Rotary Actuator - Rack & Pinion Type

Specifications

The rack and pinion actuators are excellent options for “onoff” operations, due to its reduced dimensions, light weight and high operational torques. The RP series actuators of ValtekSul, double-acting with air supply fail-safe spring, robust building and long service life, are the right choice for “on-off” operations. They are manufactured in extruded aluminum alloy, with internal and external anti-corrosion protection

and internal superficial finishing that assures long operational life and low friction.

A double set of racks assembled symmetrically form a set of compact dimensions according to the ISO 5211/ DIN 3337 regulations and NAMUR assembly, permitting the easy installation of solenoids, position indicator switches, as well as other accessories.

Specifications

Type	<ul style="list-style-type: none"> ■ Double-acting rack and pinion type
Sizes	<ul style="list-style-type: none"> ■ 65, 75, 95, 110, 125, 140, 160, 190
Action	<ul style="list-style-type: none"> ■ Air-to-open ■ Air-to-close
Air Pressure Supply	<ul style="list-style-type: none"> ■ Maximum 116 psi (8 bar)
Operating Temperature	<ul style="list-style-type: none"> ■ Standard: -28 to 176°F (-20 to 80°C)
Manual Handwheel	<ul style="list-style-type: none"> ■ Declutchable

Specifications

Description	Materials
Body	<ul style="list-style-type: none"> ■ Struded and anodized aluminum, in the standard version ■ Struded and extra- anodized aluminum for aggressive environments, in the special version
Body cover	<ul style="list-style-type: none"> ■ Aluminum/Epoxy
Pinion	<ul style="list-style-type: none"> ■ Nitrited carbon steel, in the standard version ■ Stainless Steel, in the special version
Piston	<ul style="list-style-type: none"> ■ Anodized aluminum
Piston O-Ring	<ul style="list-style-type: none"> ■ Nitrile rubber ■ Viton
Stroke Bolts	<ul style="list-style-type: none"> ■ Stainless Steel
Assembly Bolts	<ul style="list-style-type: none"> ■ Stainless Steel
Piston Guides	<ul style="list-style-type: none"> ■ Nylon 66 and Molybdenum
Springs	<ul style="list-style-type: none"> ■ Treated carbon steel
Pinion bearing	<ul style="list-style-type: none"> ■ Peek
Accessory Assembly	<ul style="list-style-type: none"> ■ Permits accessory assembly in accordance to international standard: ISO 5211; DIN 3337 and VDI/VDE 3845
Option: High Operating Temperature	<ul style="list-style-type: none"> ■ -28 to 302°F (-20 to 150°C)

Eccentric Rotary Plug Valve - EXL Valve/Actuator Compatibility

Rotary Actuator RA Series

Actuator Size	Type of Spring	Valve Nominal Diameter (in.)								
		1	1.5	2	3	4	6	8	10	12
25	STD									
25	EXT.									
50	STD									
50	EXT.									
100	STD									
100	DUAL									
200	STD									
200	DUAL									

Rotary Actuator RP Series

Actuator Size	Valve Nominal Diameter (in.)								
	1	1.5	2	3	4	6	8	10	12
VR-065									
VR-075									
VR-085									
VR-110									
VR-125									
VR-140									
VR-160									
VR-190									

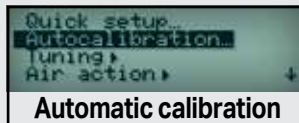
Eccentric Rotary Plug Valve - ExL Chronos Digital Positioner



Interface LCD



Language



Automatic calibration



Characteristic



Quick Setup

The Chronos IDP7600 positioner is a digital-pneumatic device with microprocessor technology, which employs the HART® (Highway Addressable Remote Transducer) communications protocol for remote communication. The two wire power supply, performed by the control loop itself, significantly contributes for costing reductions at the electrical installation.

The advanced technology provided by the two-stage relay and microprocessor guarantees that the Chronos IDP7600 presents high responsiveness and precise control. With a local PID algorithm with ultra-fast loop execution time and less deviation to set point, this positioner increases significantly the quality in the process control.

Reliability, intuitive use and quick setup and calibration make the Chronos IDP7600 a very functional and advanced HART® positioner. Besides the setup and calibration, which can be performed in the Chronos IDP7600 local interface, the HART® technology allows that the positioner is set and calibrated with the use of software tools based on the EDDL® and FDT/DTM® open technologies.

Characteristics

The main Chronos IDP7600 characteristics are:

- HART® communication protocol, version 7
- Temperature and pressure sensors
- Large and backlit graphical LCD display
- High bright warning LEDs
- Quick setup assistant menu
- Local interface with protected setup buttons
- DTM with diverse setup parameters, graphics and diagnosis
- Configurable characterization curve
- Autocalibration and autotune
- Automatic or manual gain adjustment of the local PID control.
- Execution of diverse signatures tests, such as ramp test (with friction analysis), step test, multi step test and the valve partial stroke test
- RFI and EMI immune
- Explosion proof housing Exd IIC T5/T6 (IECEx/ATEX/INMETRO), IP66.
- Advanced two-stage relay technology. Modular design, with the electronic part separated from the pneumatic part.

Eccentric Rotary Plug Valve - ExL

Material Technology Selection

Material ASTM		Temperature Operational Range				
		-50°F (-45°C)	-20°F (-29°C)	450°F (232°C)	600°F (315°C)	750°F (400°C)
Body	A 217 WCC		◀ -20°F (-29°C)		650°F (345°C) ▶	
	A 351 CF8M					
	A 351 CF3M					
	CD3MN - 4A				600°F (315°C) ▶	
	CD3MWCuN 6A				600°F (315°C) ▶	
	M 35-1				615°F (325°C) ▶	
Plug	A 351 CF3M/HC					
	A 747 - H 1150 D		◀ -20°F (-29°C)			
	A 351 CF3M/ Alloy #6 ⁽²⁾					
Shaft	17-4PH - H 1025					
	17-4PH - H 1150 D					
	A 564 Gr. 631					
Seat Ring	AISI 316 L					
	AISI 316 L/ Alloy #6					
	AISI 416/420 HT					
	AISI 316 L/PTFE			400°F (204°C) ▶		
Bearings	MBT ⁽¹⁾			400°F (204°C) ▶		
	AISI 440C HT		◀ -20°F (-29°C)			
	UNS S 31803					
	UNS S 30006					
	Ultimet					
Gaskets	PTFE			400°F (204°C) ▶		
	Grafito					
Packing	PTFE - Anéis "V"			400°F (204°C) ▶		
	PTFE Entrelaçado			400°F (204°C) ▶		
	Grafoil					
	PT		◀ -20°F (-29°C)	450°F (232°C) ▶		
	PTG		◀ -20°F (-29°C)	450°F (232°C) ▶		
	PTG-XT		◀ -20°F (-29°C)			

Notes: (1) MBT: PTFE/PTFEG inserted in metal bearing
(2) Diameters from 1 to 6 in. Solid Alloy #6 (UNS R 30006)
Diameters from 8 to 12 in. CF3M (316 L) with Alloy #6 coating.

Eccentric Rotary Plug Valve - ExL

Maximum Differential Pressures (bar)



Flow Direction
Downstream Shaft

Flow Direction: Downstream Shaft ⁽¹⁾

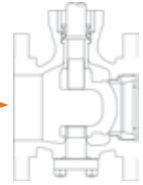
Component	Material	Temperature (°C)	Valve Nominal Diameter (inches)								
			1	1.5	2	3	4	6	8	10	12
Bearings	440C HT or Ultimet or Alloy 6	-100 to 149	98	98	98	98	88	87	52	52	52
		149 to 204	96	96	96	96	86	75	52	52	52
		204 to 260	95	95	95	95	85	74	52	52	52
		260 to 316	94	94	94	94	84	73	52	52	52
		316 to 400	89	89	89	89	80	69	52	52	52
	UNS S 31803	-100 to 149	87	87	87	87	78	60	52	52	52
		149 to 204	82	82	82	82	74	56	52	52	52
		204 to 260	78	78	78	78	70	54	52	52	52
		260 to 316	74	74	74	74	67	52	52	52	52
		316 to 400	65	65	65	65	58	52	52	52	52
	MBT A182 (316 SST) - PTFE or Sealed Bearing	-100 to 38	98	98	80	80	52	52	32	32	32
		38 to 93	82	82	64	64	41	41	25	25	25
93 to 149		65	65	51	51	32	32	25	25	25	
149 to 204		52	52	41	41	26	26	16	16	16	
Seat Ring	A182 (316 SST) or 410/416 SST or A182 (316L)/Alloy 6	-100 to 149	76	76	76	76	76	71	65	59	55
		149 to 204	70	70	70	70	70	66	60	55	50
		204 to 260	66	66	66	66	66	62	56	42	47
		260 to 316	62	62	62	62	62	59	54	40	45
	A182 (316L) / PTFE	316 to 400	59	59	59	59	59	55	51	38	42
		-100 to 38	52	52	52	52	52	52	52	52	52
		38 to 93	31	31	31	31	31	31	31	31	31
		93 to 149	17	17	17	17	17	17	17	17	17
Plug	A182 (316L SST) & Alloy 6	149 to 204	10	10	10	10	10	10	10	10	10
		204 to 260	66	66	66	66	66	66	66	66	66
		260 to 316	62	62	62	62	62	62	62	62	62
		316 to 400	59	59	59	59	59	59	59	59	59
		-100 to 149	76	76	76	76	76	76	76	76	76
	A182 (316L SST) & Alloy 6	149 to 204	70	70	70	70	70	70	70	70	70
		204 to 260	66	66	66	66	66	66	66	66	66
		260 to 316	62	62	62	62	62	62	62	62	62
		316 to 400	59	59	59	59	59	59	59	59	59
		-100 to 149	97	97	97	97	97	97	97	97	97
Shaft & Post	17-4PH (H 1025) or 17-4PH (H1150D)	149 to 204	94	94	94	94	94	94	94	94	94
		204 to 260	91	91	91	91	91	91	91	91	91
		260 to 316	88	88	88	88	88	88	88	88	88
		316 to 400	82	82	82	82	82	82	82	82	82
		-100 to 149	97	97	97	97	97	97	97	97	97
	A564 Gr.630	149 to 204	94	94	94	94	94	94	94	94	94
		204 to 260	91	91	91	91	91	91	91	91	91
		260 to 316	88	88	88	88	88	88	88	88	88
		316 to 400	82	82	82	82	82	82	82	82	82
		-100 to 149	97	97	97	97	97	97	97	97	97

Notes: (1) The values indicated above are related to the internal components. The pressure/temperature must not exceed the limits of the ANSI B16.34 regulation for the body subassembly.

Eccentric Rotary Plug Valve - ExL

Maximum Differential Pressures (bar)

Flow Direction
Upstream Shaft



Flow Direction: Upstream Shaft ⁽¹⁾

Component	Material	Temperature (°C)	Valve Nominal Diameter (inches)								
			1	1.5	2	3	4	6	8	10	12
Bearings	440C HT or Ultimet or Alloy 6	-100 to 149	98	98	98	98	88	87	52	52	52
		149 to 204	96	96	96	96	86	75	52	52	52
		204 to 260	95	95	95	95	85	74	52	52	52
		260 to 316	94	94	94	94	84	73	52	52	52
		316 to 400	89	89	89	89	80	69	52	52	52
	UNS S 31803	-100 to 149	87	87	87	87	78	60	52	52	52
		149 to 204	82	82	82	82	74	56	52	52	52
		204 to 260	78	78	78	78	70	54	52	52	52
		260 to 316	74	74	74	74	67	52	52	52	52
		316 to 400	65	65	65	65	58	52	52	52	52
	MBT A182 (316 SST) - PTFE or Sealed Bearing	-100 to 38	52	52	52	50	50	32	32	32	32
		38 to 93	52	46	52	30	30	18	18	18	18
93 to 149		45	37	31	20	20	12	12	12	12	
149 to 204		32	25	21	14	14	8	8	8	8	
Seat Ring	A182 (316 SST) or 410/416 SST or A182 (316L)/Alloy 6	-100 to 149	76	76	76	76	76	71	65	59	55
		149 to 204	70	70	70	70	70	66	60	55	50
		204 to 260	66	66	66	66	66	62	56	42	47
		260 to 316	62	62	62	62	62	59	54	40	45
	A182 (316L) / PTFE	316 to 400	59	59	59	59	59	55	51	38	42
		-100 to 38	52	52	52	52	52	52	52	52	52
		38 to 93	31	31	31	31	31	31	31	31	31
		93 to 149	17	17	17	17	17	17	17	17	17
Plug	A182 (316L SST) & Alloy 6	149 to 204	10	10	10	10	10	10	10	10	10
		204 to 260	66	66	66	66	66	66	66	66	66
		260 to 316	62	62	62	62	62	62	62	62	62
		316 to 400	59	59	59	59	59	59	59	59	59
		400 to 480	55	55	55	55	55	55	55	55	55
	A182 (316L SST) & Alloy 6	-100 to 149	76	76	76	76	40	32	18	18	14
		149 to 204	70	70	70	70	36	29	17	17	13
		204 to 260	66	66	66	66	34	28	16	16	12
		260 to 316	62	62	62	62	32	26	15	15	12
		316 to 400	59	59	59	59	31	25	14	14	11
Shaft & Post	17-4PH (H 1025) or 17-4PH (H1150D)	-100 to 149	97	97	97	97	87	76	45	30	19
		149 to 204	94	94	94	94	85	73	43	29	19
		204 to 260	91	91	91	91	82	71	42	28	18
		260 to 316	88	88	88	88	79	69	40	27	18
		316 to 400	82	82	82	82	74	64	38	25	16
	A638 Gr.660	-100 to 149	97	97	97	97	87	76	45	30	19
		149 to 204	94	94	94	94	85	73	43	29	19
		204 to 260	91	91	91	91	82	71	42	28	18
		260 to 316	88	88	88	88	79	69	40	27	18
		316 to 400	82	82	82	82	74	64	38	25	16

Notes: (1) The values indicated above are related to the internal components. The pressure/temperature must not exceed the limits of the ANSI B16.34 regulation for the body subassembly.

Eccentric Rotary Plug Valve - EXL

Specification and Selection

Maximum Acceptable Differential Pressures⁽¹⁾⁽²⁾ Actuator Versus Air Supply Pressure (bar/psi)

Valve Nominal Diameter (in.)	Trim Area	Valve Fail Position	Actuator Size RA Series																			
			25								50											
			Air Supply Pressure																			
			psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar				
60	4.1	80	5.5	100	6.9	150	10.3	60	4.1	80	5.5	100	6.9	150	10.3							
1	All	Open	725	50.0	725	50.0	725	50.0	725	50.0												
		Closed	725	50.0	725	50.0	725	50.0	725	50.0												
1.5	All	Open	725	50.0	725	50.0	725	50.0	725	50.0												
		Closed	725	50.0	725	50.0	725	50.0	725	50.0												
2	100%	Open	725	50.0	725	50.0	725	50.0	725	50.0												
		Closed	540	37.2	540	37.2	540	37.2	540	37.2												
	70 & 40%	Open	725	50.0	725	50.0	725	50.0	725	50.0												
		Closed	725	50.0	725	50.0	725	50.0	725	50.0												
3	100%	Open	356	24.6	548	37.8	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0						
		Closed	112	7.7	112	7.7	112	7.7	112	7.7	369	25.4	369	25.4	369	25.4						
	70%	Open	481	33.2	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0						
		Closed	159	11.0	159	11.0	159	11.0	159	11.0	499	34.4	499	34.4	499	34.4						
	40%	Open	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0						
		Closed	256	17.7	256	17.7	256	17.7	256	17.7	725	50.0	725	50.0	725	50.0						
	4	100%	Open	206	14.2	322	22.2	439	30.3	725	50.0	725	50.0	725	50.0	725	50.0					
			Closed	58	4.0	58	4.0	58	4.0	58	4.0	214	14.8	214	14.8	214	14.8					
70%		Open	298	20.6	461	31.8	624	43.0	725	50.0	725	50.0	725	50.0	725	50.0						
		Closed	91	6.3	91	6.3	91	6.3	91	6.3	309	21.3	309	21.3	309	21.3						
40%		Open	427	29.4	655	45.2	725	50.0	725	50.0	725	50.0	725	50.0	725	50.0						
		Closed	139	9.6	139	9.6	139	9.6	139	9.6	443	30.6	443	30.6	443	30.6						
6	100%	Open									298	20.6	445	30.7	592	40.8	706	48.7				
		Closed									65	4.5	65	4.5	65	4.5	65	4.5				
	70%	Open										396	27.3	588	40.6	725	50.0	725	50.0			
		Closed										90	6.2	90	6.2	90	6.2	90	6.2			
	40%	Open											613	42.3	725	50.0	725	50.0	725	50.0		
		Closed											147	10.1	147	10.1	147	10.1	147	10.1		
8	100%	Open											169	11.7	255	17.6	341	23.5	408	28.1		
		Closed											N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	75%	Open												228	15.7	342	23.6	456	31.4	544	37.5	
		Closed												N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10	100%	Open												61	4.2	97	6.7	133	9.2	160	11.0	
		Closed												N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	75%	Open													84	5.8	131	9.0	179	12.3	215	14.8
		Closed													N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) With downstream shaft and PTFE standard packing set. (2) The limits of the pressure class for body and flanges must be obeyed.

Eccentric Rotary Plug Valve - ExL

Specification and Selection

Maximum Acceptable Differential Pressures⁽¹⁾⁽²⁾ Actuator Versus Air Supply Pressure (bar/psi)

Valve Nominal Diameter (in.)	Trim Area	Valve Fail Position	Actuator Size																
			100								200								
			Air Supply Pressure RA Series																
			psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
			60	4.1	80	5.5	100	6.9	150	10.3	60	4.1	80	5.5	6.9	100	10.3	150	
6	100%	Open	706	48.7	706	48.7	706	48.7	706	48.7									
		Closed	403	27.8	403	27.8	403	27.8	403	27.8									
	70%	Open	725	50.0	725	50.0	725	50.0	725	50.0									
		Closed	533	36.8	533	36.8	533	36.8	533	36.8									
	40%	Open	725	50.0	725	50.0	725	50.0	725	50.0									
		Closed	725	50.0	725	50.0	725	50.0	725	50.0									
8	100%	Open	408	28.1	408	28.1	408	28.1	408	28.1									
		Closed	230	15.9	230	15.9	230	15.9	230	15.9									
	75%	Open	544	37.5	544	37.5	544	37.5	544	37.5									
		Closed	309	21.3	309	21.3	309	21.3	309	21.3									
10	100%	Open	160	11.0	160	11.0	160	11.0	160	11.0	160	11.0	160	11.0					
		Closed	87	6.0	87	6.0	87	6.0	87	6.0	87	6.0	87	6.0					
	75%	Open	215	14.8	215	14.8	215	14.8	215	14.8	215	14.8	215	14.8					
		Closed	118	8.1	118	8.1	118	8.1	118	8.1	118	8.1	118	8.1					
12	100%	Open	116	8.0	178	12.3	216	14.9	216	14.9	216	14.9	216	14.9					
		Closed	59	4.1	59	4.1	59	4.1	59	4.1	59	4.1	59	4.1					
	75%	Open	156	10.8	239	16.5	290	20.0	290	20.0	290	20.0	290	20.0					
		Closed	82	5.7	82	5.7	82	5.7	82	5.7	82	5.7	82	5.7					

For size 200 actuators the maximum air supply pressure is limited to 80 psi (5.5 bar)

(1) With downstream shaft and PTFE standard packing set.

(2) The limits of the pressure class for body and flanges must be obeyed.

Eccentric Rotary Plug Valve - EXL

Specification and Selection

Flow Direction		
Assembly	Direction	Application
Standard	Downstream Shaft Fluid towards the plug convex face	Clean Fluids No cavitation or flashing fluids
Reverse	Upstream Shaft Fluid towards the plug posterior face	Fluids with abrasive particles, flashing or cavitation

Packing - Temperature Limits		
Material Type	Temperature*	
	°F	°C
PTFE "V" Rings	-150 to 450	-100 to 232
Braided PTFE	-150 to 500	-100 to 260
Graphite	-20 to 752	-28 to 400
PT	-20 to 450	-28 to 232
PTG	-20 to 450	-28 to 232
PTG XT	-20 to 550	-28 to 288

Maximum Acceptable Differential Pressure - Seat Ring					
Seat Type	Fluido de Processo	Open Position		Closed Position	
		psi	bar	psi	bar
Metal Seat	Liquids, steam	363	25	725	50
	Gases	725	50	725	50
Soft Seat	Liquids, steam	145	10	725	50
	Gases	290	20	725	50

Note: The limits of the pressure class for body and flanges must be obeyed.

Application Recommendation				
Fluid	Plug	Seat Ring	Guides	Flow Direction
Clean Air and Gases	17-4PH	AISI 316	440C	Upstream Shaft
Liquid and Gaseous Hydrocarbons	17-4PH Alloy 6	AISI 316 Alloy 6	440C 440C	Downstream Shaft Downstream Shaft
Industrial Liquids	17-4PH	AISI 316	440C	Downstream Shaft
Clean Liquids, Cavitating or Flashing	17-4PH Alloy 6	AISI 420 Alloy 6	440C 440C	Upstream Shaft Upstream Shaft
Unclean Liquids, Slurry and Abrasive Unclean Liquids, Cavitating or Flashing	Alloy 6 Alloy 6	Alloy 6 Alloy 6	440C 440C	Upstream Shaft Upstream Shaft
Non-corrosive chemicals	17-4PH	AISI 316	440C	Downstream Shaft
Corrosive chemicals	17-4PH Alloy 6	AISI 316 Alloy 6	S 31803	Downstream Shaft Downstream Shaft
Water Steam - 150 psi	17-4PH	AISI 420	440C	Downstream Shaft
Water Steam - 300 psi	Alloy 6	Alloy 6	444C	Downstream Shaft

Eccentric Rotary Plug Valve - EXL

Flow Coefficients - C_V



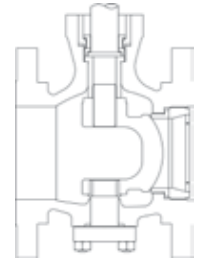
◀ Flow

Downstream Shaft

Flow Coefficients (C_V) - Downstream Shaft																							
Valve Nominal Diameter (in.)	Trim Area T/N	Opening Percentage																					
		100		90		80		70		60		50		40		30		20		10		5	
		Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft
1	100	20	12.0	20	11.9	18	11.3	17	10.2	14.3	8.7	11.7	7.2	9.1	5.6	6.7	4.1	3.9	2.4	1.7	1.0	0.9	0.5
	70	15	8.3	14.4	8.2	13.6	7.7	12.3	7.0	10.5	6.0	8.6	4.9	6.7	3.8	4.9	2.8	2.9	1.6	1.3	0.7	0.6	0.4
	40	8.4	6.0	8.3	5.9	7.8	5.5	7.0	5.0	6.0	4.3	4.9	3.5	3.8	2.7	2.8	2.0	1.7	1.2	0.7	0.5	0.4	0.3
1.5	100	47	39	46	38	43	36	39	33	33	28	27	23	21	18	16	13.1	9.2	7.7	4.0	3.3	2.1	1.7
	70	34	34	33	33	31	31	28	28	24	24	20	20	15	16	11.4	11.4	6.7	6.7	2.9	2.9	1.5	1.5
	40	19	19	19	19	17	17	16	16	13.5	13.6	11.1	11.2	8.6	8.6	6.3	6.4	3.7	3.7	1.6	1.6	0.8	0.8
2	100	78	70	76	69	72	65	65	58	56	50	46	41	36	32	26	24	15	13.8	6.7	6.0	3.5	3.1
	70	43	43	42	42	39	40	36	36	31	31	25	25	20	20	14.3	14.4	8.4	8.4	3.8	3.7	1.9	1.9
	40	24	24	24	24	22	22	20	20	17	17	14.2	14.1	11.0	11.0	8.1	8.1	4.8	4.7	2.0	2.0	1.1	1.1
3	100	213	213	209	209	197	197	178	178	153	153	125	125	97	97	72	72	42	42	18	18	9.4	9.4
	70	166	166	162	162	153	153	138	138	119	119	97	97	76	76	55	55	33	33	14.0	14.0	7.3	7.3
	40	94	94	92	92	87	87	79	79	67	67	55	55	43	43	32	32	19	19	8.1	8.1	4.2	4.2
4	100	308	308	302	302	284	284	257	257	221	221	180	180	141	141	104	104	61	61	26	26	13.6	13.6
	70	220	220	216	216	203	203	184	184	158	158	129	129	100	100	74	74	44	44	19	19	9.4	9.4
	40	148	148	146	146	137	137	124	124	106	106	88	88	68	68	49	49	29	29	12.7	12.7	6.6	6.6
6	100	735	735	721	721	678	678	613	613	526	526	431	431	336	336	247	247	145	145	63	63	32	32
	70	564	564	553	553	521	521	470	470	404	404	331	331	257	257	189	189	111	111	48	48	25	25
	40	326	326	320	320	301	301	272	272	234	234	191	191	149	149	109	109	64	64	28	28	14	14
8	100	1127	1127	1106	1106	1040	1040	940	940	807	807	661	661	514	514	379	379	222	222	96	96	49	49
	75	850	850	834	834	785	785	710	710	609	609	499	499	388	388	286	286	168	168	73	73	38	38
10	100	1787	1787	1753	1753	1650	1650	1491	1491	1279	1279	1048	1048	816	816	601	601	352	352	153	153	79	79
	75	1338	1338	1312	1312	1234	1234	1117	1117	958	958	785	785	610	610	450	450	263	263	114	114	59	59
12	100	2555	2555	2506	2506	2358	2358	2132	2132	1830	1830	1498	1498	1167	1167	858	858	503	503	219	219	113	113
	75	1918	1918	1881	1881	1771	1771	1601	1601	1373	1373	1125	1125	876	876	644	644	378	378	164	164	85	85

Eccentric Rotary Plug Valve - ExL

Flow Coefficients - C_v



Flow

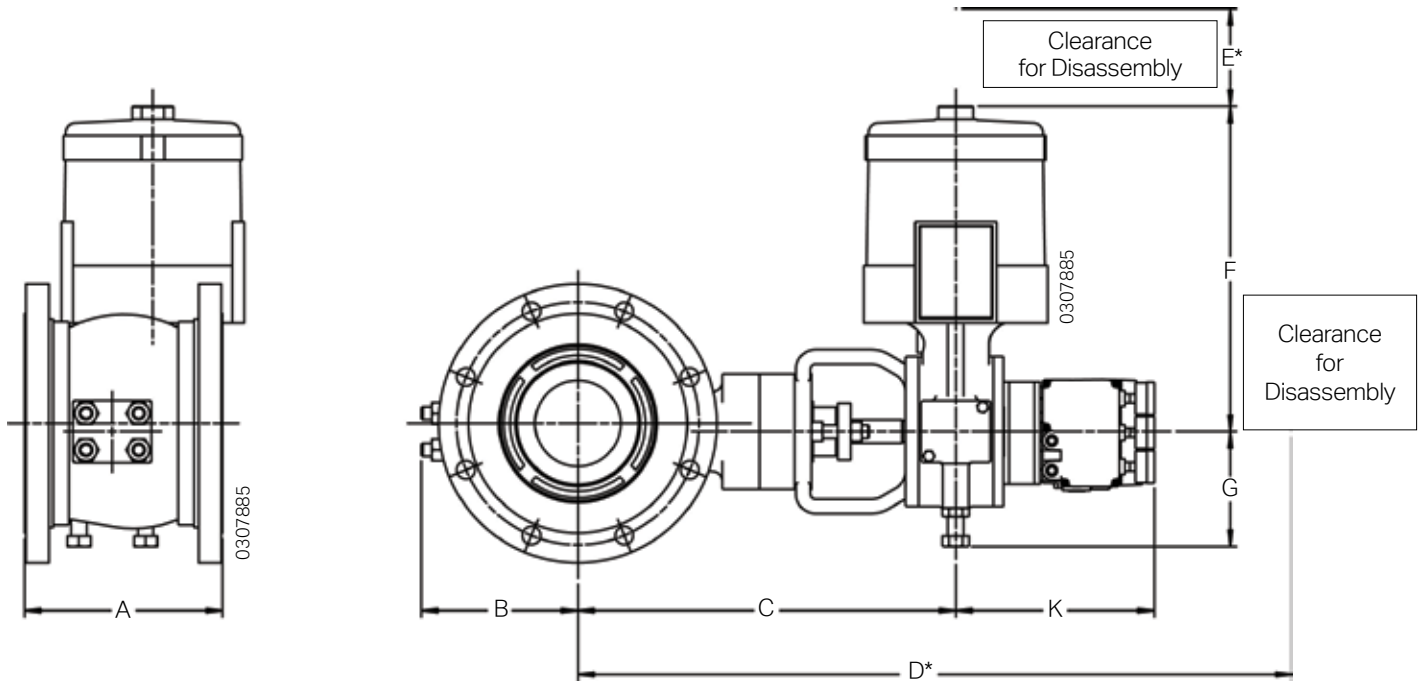
Upstream Shaft

Flow Coefficients (C_v) Upstream Shaft																							
Valve Nominal Diameter (in.)	Trim Area T/N	Opening Percentage																					
		100		90		80		70		60		50		40		30		20		10		5	
		Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft
1	100	18	10.3	17	9.9	16	9.5	14.9	8.6	12.8	7.4	10.5	6.0	8.1	4.7	6.0	3.5	3.5	2.0	1.5	0.9	0.8	0.5
	70	12.8	7.3	11.8	7.1	11.3	6.8	10.2	5.8	8.7	5.2	7.2	4.3	5.6	3.2	4.1	2.4	2.4	1.4	1.1	0.6	0.5	0.3
	40	7.1	6.2	7.0	6.0	6.6	5.6	6.0	5.0	5.1	4.3	4.2	3.5	3.3	2.7	2.4	2.0	1.4	1.2	0.6	0.5	0.3	0.3
1.5	100	46	38	46	38	43	36	39	33	33	28	27	23	21	18	16	13.1	9.2	7.7	4.0	3.3	2.1	1.7
	70	32	33	32	32	30	30	27	28	23	24	19	19	14.9	15	11.0	11.1	6.4	6.5	2.8	2.8	1.4	1.4
	40	19	19	18	19	17	18	16	16	13.3	13.6	11.0	11.1	8.5	8.7	6.3	6.4	3.7	3.8	1.6	1.6	0.9	0.9
2	100	80	71	78	70	73	66	66	59	57	51	47	42	36	32	27	24	16	13.9	6.8	6.1	3.5	3.1
	70	51	51	50	50	47	47	42	43	36	37	30	30	23	23	17	17	10.0	10.0	4.3	4.4	2.3	2.2
	40	32	32	31	31	29	30	27	27	23	23	19	19	14.5	14.6	10.7	10.8	6.3	6.3	2.7	2.7	1.4	1.4
3	100	240	240	235	235	222	222	200	200	172	172	141	141	110	110	81	81	47	47	21	21	10.6	10.6
	70	178	178	175	175	164	164	148	148	128	128	104	104	81	81	60	60	35	35	15	15	7.8	7.8
	40	103	103	101	101	95	95	86	86	74	74	60	60	47	47	35	35	20	20	8.8	8.8	4.7	4.7
4	100	404	404	396	396	373	373	337	337	290	290	237	237	184	184	135	135	80	80	35	35	18	18
	70	266	266	261	261	245	245	222	222	191	191	156	156	121	121	89	89	52	52	23	23	11.4	11.4
	40	169	169	165	165	156	156	141	141	121	121	99	99	77	77	57	57	33	33	14.3	14.3	7.4	7.4
6	100	950	950	932	932	877	877	793	793	680	680	557	557	434	434	319	319	187	187	81	81	42	42
	70	665	665	651	651	613	613	553	553	475	475	389	389	303	303	223	223	131	131	57	57	29	29
	40	380	380	373	373	350	350	317	317	272	272	223	223	173	173	128	128	75	75	33	33	17	17
8	100	1697	1697	1665	1665	1566	1566	1416	1416	1215	1215	995	995	775	775	570	570	334	334	145	145	75	75
	75	1274	1274	1250	1250	1176	1176	1063	1063	912	912	747	747	581	581	428	428	251	251	109	109	56	56
10	100	2502	2502	2454	2454	2309	2309	2088	2088	1792	1792	1467	1467	1142	1142	841	841	490	490	214	214	110	110
	75	1876	1876	1840	1840	1731	1731	1566	1566	1343	1343	1100	1100	856	856	630	630	370	370	160	160	83	83
12	100	3604	3604	3535	3535	3326	3326	3007	3007	2581	2581	2114	2114	1645	1645	1211	1211	710	710	308	308	159	159
	75	2702	2702	2651	2651	2494	2494	2255	2255	1935	1935	1585	1585	1234	1234	908	908	532	532	231	231	119	119

Eccentric Rotary Plug Valve - ExL

Dimensions - Valve with RA Series Actuator and Chronos Positioner

Short Pattern (ANSI/ISA - 75.08.02) - RF



Dimensions																		
Valve Nominal Diameter (in.)	ANSI Pressure Class	Actuator Size	A		B		C		D*		F		G		K		E*	
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1	150-600	25	4.0	102	2.7	69	10.6	269	20.2	513	11.3	287	4.6	117	10.4	265	6.0	152
1.5	150-600	25	4.5	114	2.8	71	11.6	295	21.2	539	11.3	287	4.6	117	10.4	265	6.0	152
2	150-600	25	4.9	124	2.9	74	11.7	296	21.3	541	11.3	287	4.6	117	10.4	265	6.0	152
3	150-600	25	6.5	165	4.0	102	13.8	350	23.4	595	11.3	287	4.6	117	10.4	265	6.0	152
	150-600	50	6.5	165	4.0	102	13.8	350	23.4	595	15.8	402	5.6	142	10.4	265	8.0	203
4	150-600	25	7.6	193	4.2	107	14.0	356	23.6	600	11.3	288	4.6	117	10.4	265	6.0	152
	150-600	50	7.6	193	4.2	107	14.0	356	23.6	600	15.8	402	5.6	142	10.4	265	8.0	203
6	150-600	50	9.0	229	6.7	171	17.9	455	27.7	704	15.8	402	5.6	142	10.4	265	8.0	203
	150-600	100	9.0	229	6.7	171	17.9	455	27.7	704	22.6	575	7.0	185	10.6	270	12.1	307
8	150-600	50	9.6	244	7.4	189	18.3	465	28.2	716	15.8	402	5.6	142	10.4	265	8.0	203
	150-600	100	9.6	244	7.4	189	18.3	465	28.2	716	22.6	575	7.0	185	10.6	270	12.1	307
10	150-600	100	11.7	297	9.4	239	18.8	478	28.7	728	22.6	575	7.3	185	10.6	270	12.1	307
	150-600	200	11.7	297	9.4	239	18.8	478	28.7	728	23.2	589	7.3	185	10.6	270	12.6	320
12	150-600	100	13.3	338	10.4	264	19.8	503	29.7	753	22.6	575	7.3	185	10.6	270	12.1	307
	150-600	200	13.3	338	10.4	264	19.8	503	29.7	753	23.2	589	7.3	182	10.6	270	12.6	320

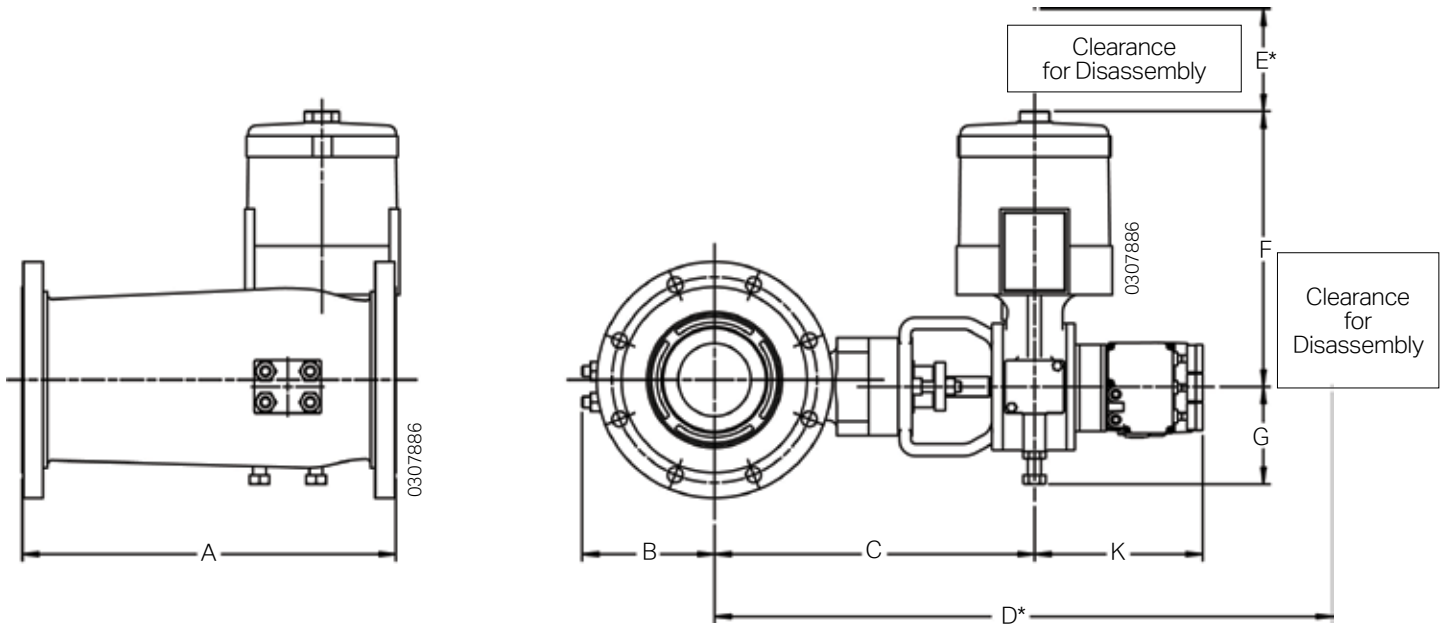
* Clearance needed for disassembly of standard actuator. K: with Chronos positioner.

** RTJ Connection: Consult ValtekSul Sales Engineering

Eccentric Rotary Plug Valve - ExL

Dimensions - Valve with RA Series Actuator and Chronos Positioner

Long Pattern (ANSI/ISA - 75.08.01) - RF



Dimensions																					
Valve Nominal Diameter (in.)	Actuator Size	A						B		C		D*		F		G		K		E*	
		150		300		600		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
		in.	mm	in.	mm	in.	mm														
1	25	7.25	184	7.5	191	8.0	203	2.7	69	10.6	269	20.2	513	11.3	287	4.6	117	10.4	265	6.0	152
1.5	25	8.75	222	9.25	235	9.9	251	2.8	71	11.6	295	21.2	519	11.3	287	4.6	117	10.4	265	6.0	152
2	25	10.0	254	10.5	267	11.3	286	2.9	74	11.7	296	21.3	541	11.3	286	4.6	117	10.4	265	6.0	152
	50	11.8	298	12.5	318	13.3	337	4.0	102	13.8	350	23.4	595	11.3	286	4.6	117	10.4	265	6.0	152
3	25	11.8	298	12.5	318	13.3	337	4.0	102	13.8	350	23.4	595	11.3	286	4.6	117	10.4	265	6.0	152
	50	11.8	298	12.5	318	13.3	337	4.0	102	13.8	350	23.4	594	15.8	402	5.6	142	10.4	265	8.0	203
4	25	13.9	353	14.5	368	15.5	394	4.2	107	14.0	356	23.6	600	11.3	288	4.6	117	10.4	265	6.0	152
	50	13.9	353	14.5	368	15.5	394	4.2	107	14.0	356	23.6	600	15.8	402	5.6	142	10.4	265	8.0	203
6	50	17.8	451	18.6	473	20.0	508	6.7	171	17.9	455	27.7	704	15.8	402	5.6	142	10.4	265	8.0	203
	100	17.8	451	18.6	473	20.0	508	6.7	171	17.9	455	27.7	704	22.6	575	7.3	185	10.6	270	12.1	307
8	50	21.4	543	22.4	568	24.0	610	7.4	189	18.3	465	28.2	716	15.8	402	5.6	142	10.4	265	8.0	203
	100	21.4	543	22.4	568	24.0	610	7.4	189	18.3	465	28.2	716	22.6	574	7.3	185	10.6	270	12.1	307
10	100	26.5	673	27.9	708	29.6	752	9.4	239	18.8	478	28.7	728	22.6	574	7.3	185	10.6	270	12.1	307
	200	26.5	673	27.9	708	29.6	752	9.4	239	18.8	478	28.7	728	23.2	589	7.3	185	10.6	270	12.6	320
12	100	29.0	737	30.5	775	32.2	819	10.4	264	19.8	503	29.7	753	22.6	574	7.3	185	10.6	270	12.1	307
	200	29.0	737	30.5	775	32.2	819	10.4	264	19.8	503	29.7	753	23.2	589	7.3	185	10.6	270	12.6	320

* Clearance needed for disassembly of standard actuator. K: with Chronos positioner.

** RTJ Connection: Consult ValtekSul Sales Engineering.

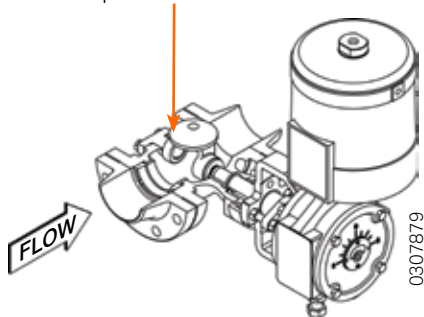
*** For more information, consult ValtekSul catalogue for long pattern EXL valves.

Eccentric Rotary Plug Valve - EXL Actuator Assembly Guidance

Standard Right-sided Assembly – Downstream Shaft

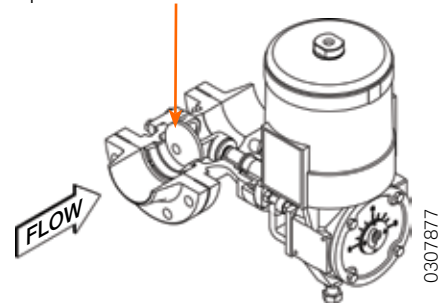
Assembly A

Air-to-close: Fail-open



Assembly B

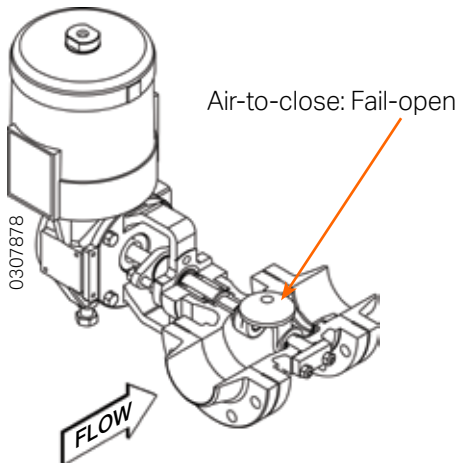
Air-to-open: Fail-close



Standard Left-sided Assembly – Upstream Shaft

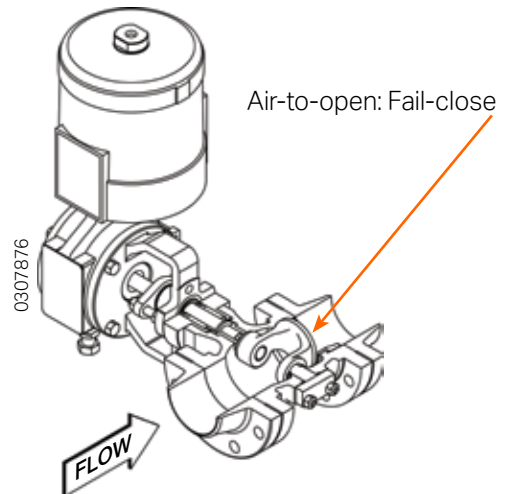
Assembly C

Air-to-close: Fail-open



Assembly D

Air-to-open: Fail-close



Quality Management System



ISO 9001-2015
Certificate nº 31001 QM 15
DQS GmbH
DQS Brazil
ISO 14001™ Certified

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