

econ[®]

Rack & Pinion Pneumatic Actuators | Spring return - Double acting



ERIKS
econosto

The Econ[®] Rack & Pinion pneumatic actuators are designed for use in quarter-turn applications and are ideal for the on/off or continuous operation of plug, butterfly and ball valves, as well as dampers and other 90° turn devices. Product offerings include rack and pinion aluminum housed actuators with torque values up to 6,421 Nm (56,831 in-lb). Engineered for reliability and built to last, Econ[®] actuators have a guaranteed service life of 500,000 cycles. The precision design and quality of our actuators provide long and safe performance for valve control. Econ[®] engineers and recognized distributors are happy to help you with your automation demands.

Up to date product features

The Econ[®] brand of products are designed according to today's standards and expectations that come from various agencies and customer groups. Throughout its extensive product offering, Econ[®] products have added features, which make them suitable for a wide spectrum of applications.

Proven quality

Quality is the driving force behind the Econ[®] brand of products. After assembly, each actuator is tested on a fully automatic test bench. An increasing number of customers rely upon Econ[®] products because there is a high value to cost ratio. This means that Econ[®] products are not only price competitive but also perform as well as or better than more expensive products.



Spring return Fig. 7901 - Metric | Fig. 7951 - Imperial Fig. 7921 - Imperial, low temperature



General features

- Rack & Pinion design in 14 different sizes
- Linear torque output in double acting actuators
- Double acting output torque up to 6,421 Nm (56,831 in-lb)
- Working temperature -30° to 100°C (-22° to 212°F)
- Angle of rotation is 90°±5° by means of external travel stops (between 85° and 95°)
- Lightweight and compact design
- Anti-friction sliding bearings provide long life without maintenance
- Captured springs = Safe maintenance
- Hard anodized aluminium body
- Epoxy coated end-caps
- Stainless steel external bolting
- Serialized body numbering for traceability
- End caps denote spring return or double acting set up
- Multifunction position indicator suitable for mechanical limit switches or proximity indicators
- Anti-blowout pinion design

Double acting Fig. 7902 - Metric | Fig. 7952 - Imperial Fig. 7922 - Imperial, low temperature



Design parameters

- In accordance with Pressure Equipment Directive (PED) 2014/68/EU, Econ[®] Rack & Pinion actuators are classified as follows:
 - > Size DA/SR 10 to 300 - Category SEP
 - > Size DA/SR 500 to 4000 - Category I
- Classified for use in potentially explosive atmospheres as Group II, Category 2, suitable for zones 1, 2, 21 and 22 in accordance with Annex VIII of Directive 2014/34/EU (ATEX)
- Anti-corrosive coatings according to EN-ISO 12944-2
- Air supply and top flange connection according to NAMUR VDI/VDE 3845
- Safety integrity rating IEC 61508 SIL 2 (SIL 3 in redundant configuration)
- Mounting and drive connections to ISO 5211 and DIN 3337

Options upon request

- Fast acting version
- Low temperature version down to -60°C (-76°F)
- High temperature version up to +150°C (302°F)
- Stroke limitation up to 100%
- Safety lockout device
- Passivation choices include:
 - > Epoxy coating
 - > Polyurethane coating
 - > PTFE coating
 - > Nickel plating
- Stainless steel pinion (Grade 304 and 316)
- Fireproof actuators (K-mass, blanket, other options)



Main features & characteristics

1. Body

The aluminium body is hard anodized inside and out to provide maximum resistance to abrasion and corrosion.

2. Pinion

The hardened electroless nickel plated carbon steel shaft is blowout proof and corrosion resistant, teeth are machined for accuracy.

3. Stroke adjustment

External stainless steel stroke adjustment bolts provide $90^{\circ} \pm 5^{\circ}$ stroke rotation limits.

4. Pistons

Pistons are specially coated for corrosion resistance. Backlash is avoided by specially machined teeth. The pistons have a 3-point guiding system to ensure low friction operation along with another integrally machined guide between the pinion and the pistons.

5. Position indicator

The top mounted position indicator is mechanically configurable for triggering mechanical or inductive limit switches without additional components.

6. Springs

Springs are positively contained and designed to release all compression before the end cap screws disengage from the body. This safety feature prevents the accidental release of the springs and eliminates the possibility of personal harm.

7. End caps

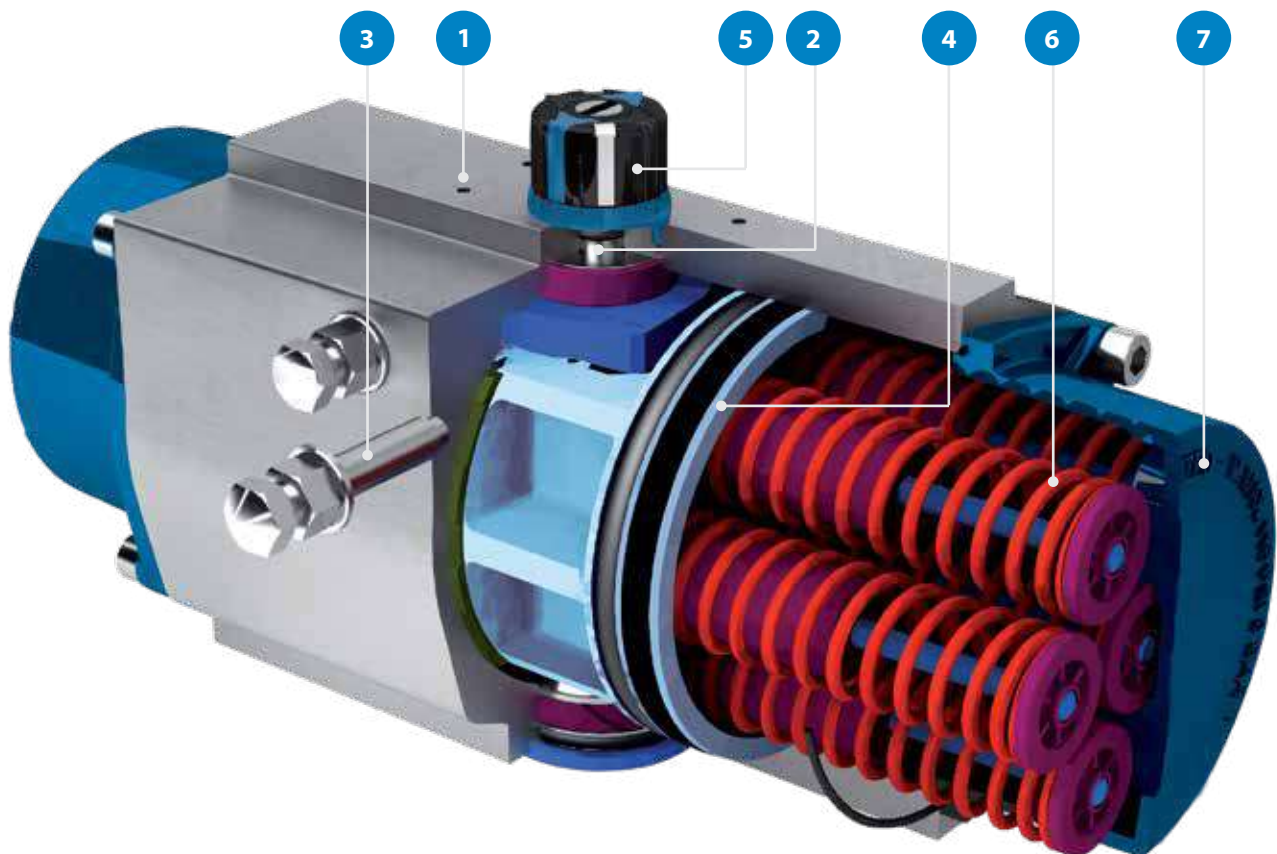
End caps are epoxy coated to protect them from environmental corrosion. Double acting and spring return end caps are visibly different in order to allow quick determination of actuator type without having to look at the identification label.

Testing

Every actuator is performance tested before being assigned a unique serial number for traceability.

Accessories

Mounting of limit switches, positioners, solenoid valves or indicators is accomplished via a NAMUR VDI/VDE 3845 mounting arrangement. Additionally, the height of the pinion shaft above the top of the actuator body is identical on all models, thereby simplifying the mounting arrangement for any NAMUR design accessory.



Bidirectional travel stops

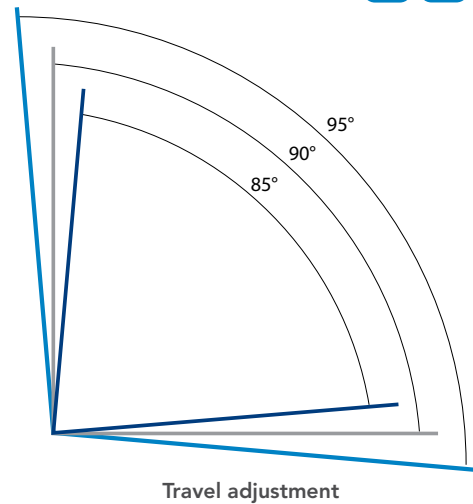
Econ[®] pneumatic actuators are provided with bidirectional pinion travel stops. Side located stops allow a full $\pm 5^\circ$ travel adjustment between 85° and 95° . These travel stops are designed to absorb the maximum rated torque of the actuator and maximum impact loads associated with recommended travel speeds. Adjustment of the counterclockwise and clockwise rotation limits is accomplished by unscrewing the locking nuts, turning the respective left and right studs to reduce or increase the travel angle and retightening the locking nuts.

Working temperature

- Standard construction: -30°C to $+100^\circ\text{C}$ (-22°F to $+212^\circ\text{F}$)
- High temperature version - FKM O-Rings: -15°C to $+150^\circ\text{C}$ ($+5^\circ\text{F}$ to $+302^\circ\text{F}$)
- Low temperature version - Silicone O-Rings (Fig. 7921 & 7922): -40°C to $+80^\circ\text{C}$ (-40°F to $+176^\circ\text{F}$)
- Extreme low temperature version - Silicone O-Rings & 316 Pinion: -60°C to $+80^\circ\text{C}$ (-76°F to $+176^\circ\text{F}$)

Maximum working pressure

8 bar (120 psig); Except double acting size 10 at 10 bar (145 psig).



Actuators passivation systems

Econ® actuators are made for outdoor use. Depending on the environment an additional passivation system is required. The following options are available:



Corrosion category C3 (standard Econ® passivation)

Hard anodized body and epoxy coated end caps

Body: Hard anodized, thickness 25 - 30µm

End-caps: Paint thickness 80 - 90µm

Pinion material: Carbon steel with ENP layer

Bolt and nuts: A2 (AISI 304)



Corrosion category C4

Fully coated actuators

Body: Hard anodized + polyurethane (PU) paint, thickness 35µm

End-caps: Epoxy paint, thickness 80 - 90µm

Pinion material: CS with ENP layer

Bolt and nuts: A2 (AISI 304)

Corrosion category C5-I

Fully polyurethane (PU) coated actuators

Body: Hard anodized + PU paint, thickness 35µm

End-caps: PU paint, thickness 80µm

Pinion material: AISI 304

Bolt and nuts: A2 (AISI 304)

Corrosion category C5-M

Fully polyurethane (PU) coated actuators

Body: Hard anodized + PU paint, thickness 35µm

End-caps: PU paint, thickness 80µm

Pinion material: AISI 316

Bolt and nuts: A4 (AISI 316)

Corrosion category acc. to EN-ISO 12944-2	Level of corrosion resistance	Applications
C2	Low	Atmospheres with low level of pollution. Rural areas.
C3	Medium	Urban and industrial atmospheres. Coastal areas with low salinity.
C4	High	Industrial and coastal areas with moderate salinity.
C5-I	Very high (Industrial)	Industrial areas with high humidity and aggressive atmospheres.
C5-M	Very high (Maritime)	Coastal and offshore areas with high salinity.
Im 1	Immersed in fresh water	River installations, hydro-electric power plants.
Im 2	Immersed in sea or brackish water	Harbour areas and offshore structures

For some environments an epoxy coating might not be the best solution. For these environments other options are available:



Fully PTFE coated actuators*

Layer thickness: 15 - 20µm

Pinion material: AISI 316

Bolt and nuts: A4 (AISI 316)

Fully nickel plated (ENP) actuators*

Layer thickness body: 25 - 30µm (hard anodized + ENP)

Layer thickness end caps: 80 - 90µm

Pinion material: Carbon steel with ENP layer

Bolt and nuts: AISI 316

Fully stainless steel AISI 316 actuator*

Can be immersed in fresh water

Pinion material: AISI 316

Bolt and nuts: AISI 316

*This actuator is not coated according to a paint system and therefore is not within the scope of EN-ISO 12944-2.

Engineering data

Metric units

Size DA/SR	Max pressure (bar)	Rotation	Screw stroke adjustment	Piston diameter (mm)	Air volume (l)		Stroke time (s) *			
					Opening	Closing	Double acting		Spring return	
							Opening	Closing	Opening	Closing
10	10	90°±2°	-	32,0	0,035	0,028	0,03	0,07	-	-
20	8	90°±5°	For 1° need 1/3 turn	45,0	0,13	0,09	0,04	0,09	0,12	0,18
40	8	90°±5°	For 1° need 1/3 turn	60,2	0,27	0,23	0,08	0,08	0,20	0,29
80	8	90°±5°	For 1° need 1/4 turn	80,0	0,64	0,47	0,11	0,10	0,27	0,40
130	8	90°±5°	For 1° need 1/4 turn	90,5	0,77	0,76	0,15	0,15	0,32	0,50
200	8	90°±5°	For 1° need 1/4 turn	104,6	1,19	1,09	0,15	0,22	0,50	0,60
300	8	90°±5°	For 1° need 1/3 turn	120,5	1,96	1,73	0,30	0,40	0,70	0,85
500	8	90°±5°	For 1° need 1/4 turn	140,2	2,95	2,74	0,40	0,50	0,90	1,10
850	8	90°±5°	For 1° need 1/3 turn	160,0	4,70	3,86	0,80	0,90	2,20	2,60
1200	8	90°±5°	For 1° need 1/3 turn	180,0	6,95	4,64	1,20	1,50	2,30	2,80
1750	8	90°±5°	For 1° need 1/3 turn	210,0	9,80	9,30	1,80	2,00	2,80	3,20
2100	8	90°±5°	For 1° need 1/3 turn	237,0	11,60	10,20	3,00	2,60	3,30	3,70
2500	8	90°±5°	For 1° need 1/3 turn	300,0	15,60	14,40	2,80	3,10	3,80	4,20
4000	8	90°±5°	For 1° need 1/3 turn	340,0	33,20	27,50	3,00	3,50	4,30	5,00

Imperial units

Size DA/SR	Max pressure (psi)	Rotation	Screw stroke adjustment	Piston diameter (in)	Air volume (in ³)		Stroke time (s) *			
					Opening	Closing	Double acting		Spring return	
							Opening	Closing	Opening	Closing
10	145	90°±2°	-	1.3	2.10	1.70	0.03	0.07	-	-
20	120	90°±5°	For 1° need 1/3 turn	1.8	7.90	5.50	0.04	0.09	0.12	0.18
40	120	90°±5°	For 1° need 1/3 turn	2.4	16.50	14.00	0.08	0.08	0.20	0.29
80	120	90°±5°	For 1° need 1/4 turn	3.2	39.10	28.70	0.11	0.10	0.27	0.40
130	120	90°±5°	For 1° need 1/4 turn	3.6	47.00	46.40	0.15	0.15	0.32	0.50
200	120	90°±5°	For 1° need 1/4 turn	4.1	72.62	68.35	0.15	0.22	0.50	0.60
300	120	90°±5°	For 1° need 1/3 turn	4.7	119.60	105.60	0.30	0.40	0.70	0.85
500	120	90°±5°	For 1° need 1/4 turn	5.5	180.00	167.20	0.40	0.50	0.90	1.10
850	120	90°±5°	For 1° need 1/3 turn	6.3	286.80	235.60	0.80	0.90	2.20	2.60
1200	120	90°±5°	For 1° need 1/3 turn	7.1	424.10	283.20	1.20	1.50	2.30	2.80
1750	120	90°±5°	For 1° need 1/3 turn	8.3	598.00	567.50	1.80	2.00	2.80	3.20
2100	120	90°±5°	For 1° need 1/3 turn	9.3	707.90	622.40	2.30	2.60	3.30	3.70
2500	120	90°±5°	For 1° need 1/3 turn	11.8	951.97	878.74	2.80	3.10	3.80	4.20
4000	120	90°±5°	For 1° need 1/3 turn	13.4	2,026.00	1,678.20	3.00	3.50	4.30	5.00

* Stroke time conditions:

- 6 bar (87 psi) air pressure

- 20°C (68 °F)

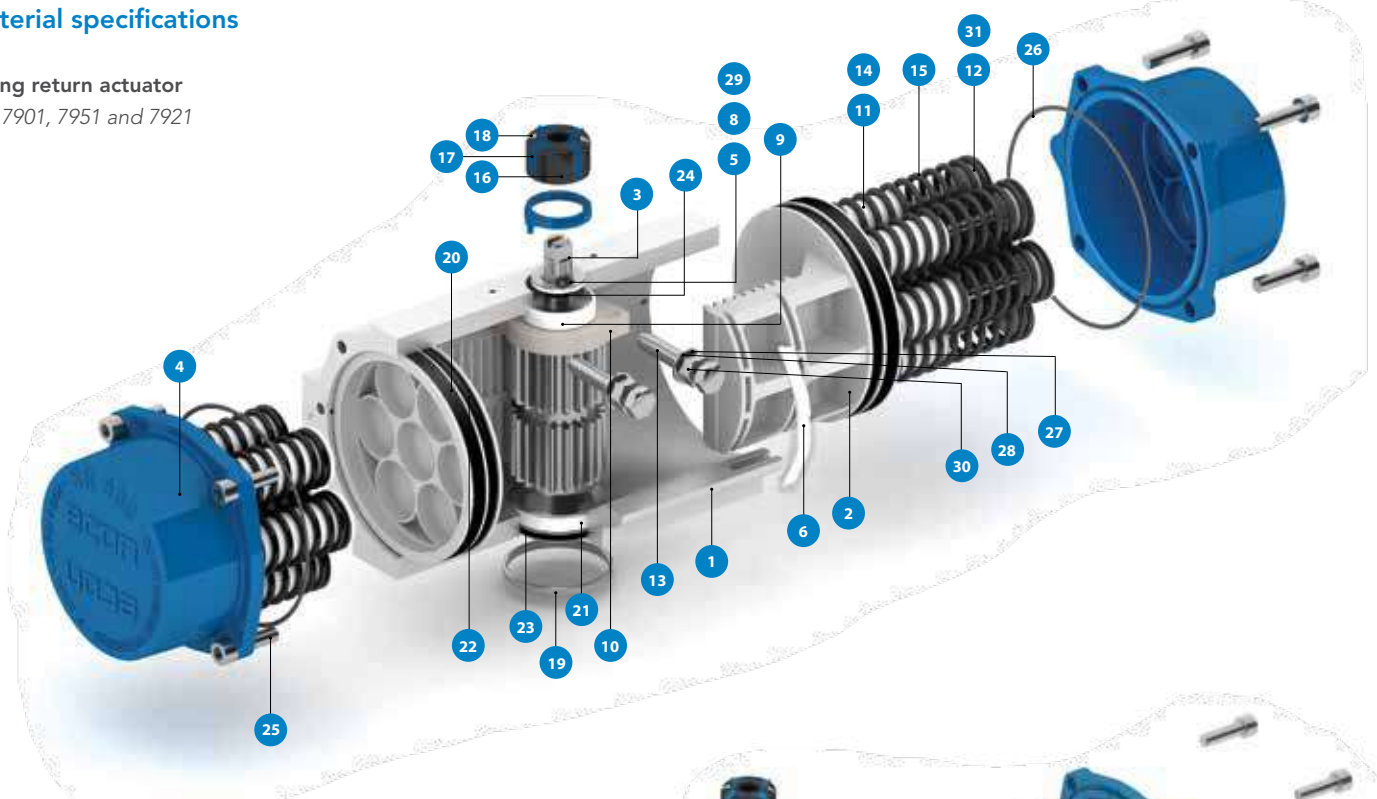
- Air supply directly connected to the actuator

(no solenoid valve or other accessories between the air supply and actuator)

Material specifications

Spring return actuator

Fig. 7901, 7951 and 7921



Double acting actuator

Fig. 7902, 7952 and 7922



Position indicator

From size 20 to 850

From size 1200 to 4000



Item	Description	Material	Item	Description	Material
1	Body	Hard anodized aluminum	17	Cams	Polypropylene
2	Piston	Aluminum	18	Inserts	Stainless steel
3	Pinion	Nickel plated carbon steel	19	Centering ring	Nickel plated carbon steel
4	End caps	Epoxy coated aluminum	20	Piston slide guide ¹	Polyamide PA 6.6 + 30% G.F.
5	Soft pinion washer ¹	Polyamide PA 6.6	21	Lower pinion bearing ¹	Polyamide PA 6.6
6	Piston slide ¹	Polyamide PA 6.6 + 30% G.F.	22	O-Ring (Piston) ¹	NBR / Silicone ⁴
7	Lifting lugs ²	Nickel plated carbon steel	23	O-Ring (Lower pinion) ¹	NBR / Silicone ⁴
8	Pinion washer ¹	Stainless steel	24	O-Ring (Upper pinion) ¹	NBR / Silicone ⁴
9	Upper pinion bearing ¹	Polyamide PA 6.6 / Bronze ³ / PEEK ⁴	25	End cap bolt	Stainless steel
10	Stop device	ASTM A 105	26	O-Ring (End cap) ¹	NBR / Silicone ⁴
11	Spring's long support	Polyamide PA 6.6	27	O-Ring (Stroke limiting bolts) ¹	NBR / Silicone ⁴
12	Spring's short support	Polyamide PA 6.6	28	End stop washer	Stainless steel
13	End stop bolt	Stainless steel	29	Slip washer ¹	Stainless steel
14	Spring bolt	Stainless steel	30	End stop nut	Stainless steel
15	Spring	DIN 2076 - D-5.6	31	Spring nut	Stainless steel
16	Position indicator	Polypropylene			

¹ Recommended spare parts

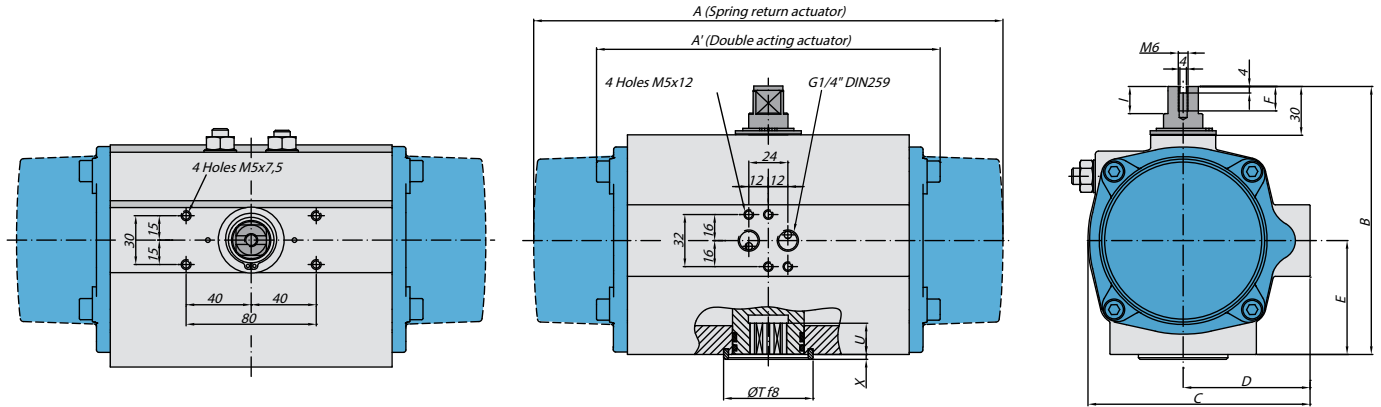
² Only for sizes DA/SR 2500 & 4000

³ For sizes 500 - 1200

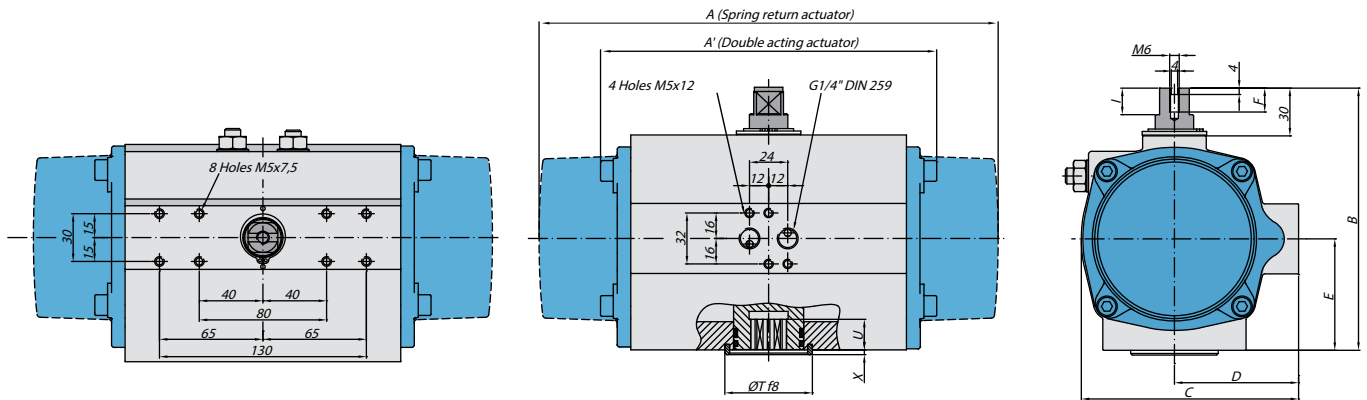
⁴ For low temperature versions Fig. 7921 and Fig. 7922

Dimensions Fig. 7901 and 7902 - Metric versions

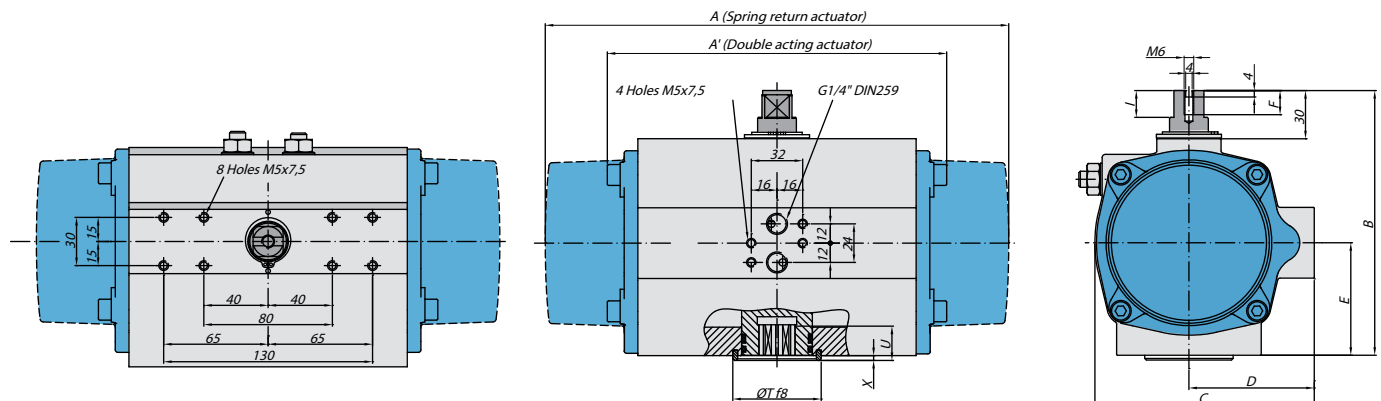
Sizes 10 | 20 | 40 | 80 | 130 | 200 | 300 | 500 | 850



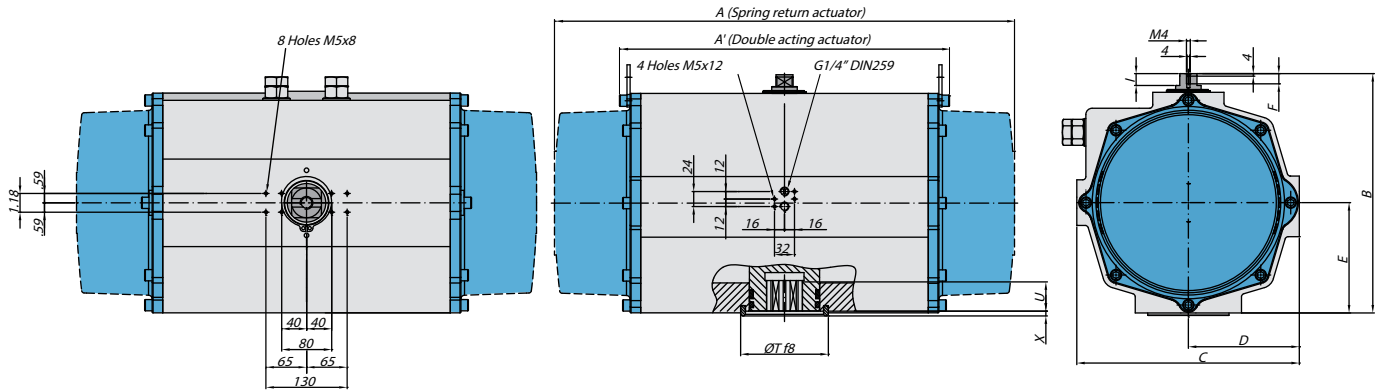
Sizes 1200 | 1750



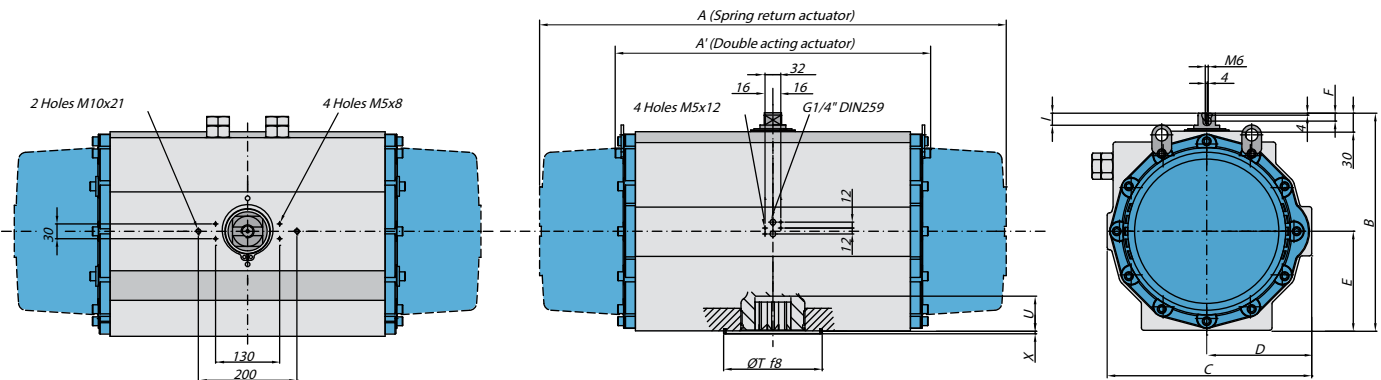
Sizes 2100



Sizes 2500



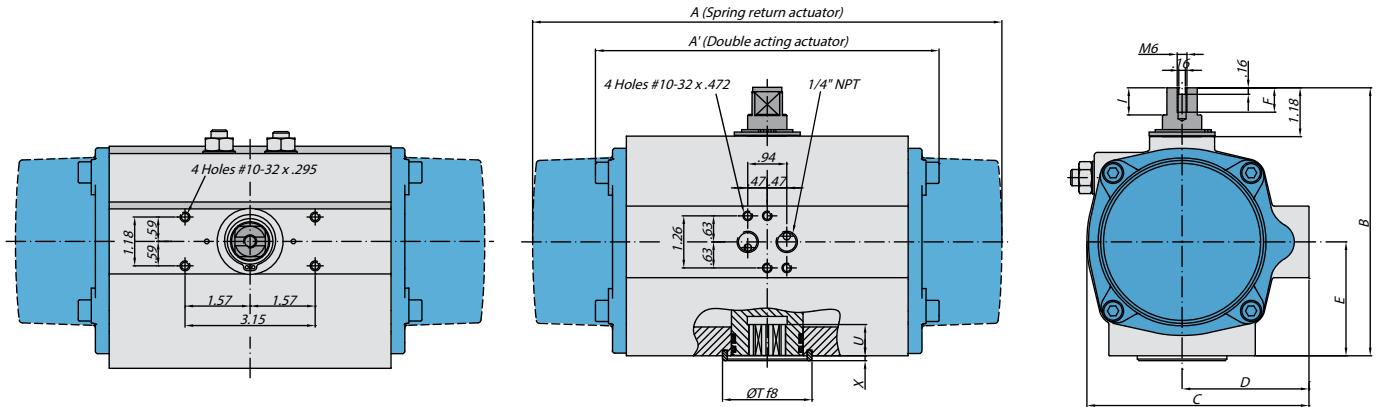
Sizes 4000



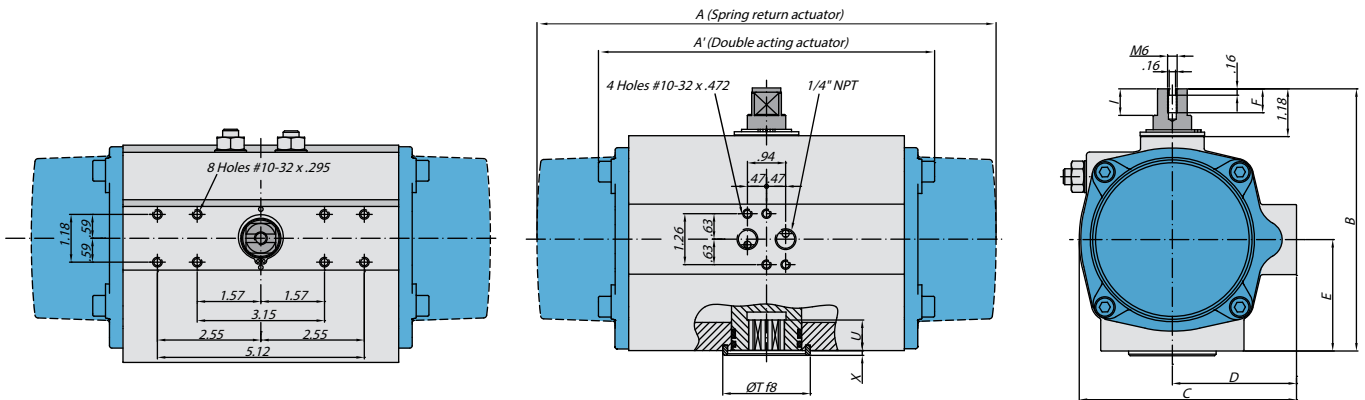
Size DA/SR	Spring return & double acting actuators - Dimensions in millimeters (mm)											
	A (SR)	A' (DA)	B	C	D	E	F	I	ØT	X	U	ISO 5211
10	-	100	76	56	33	23	9	6	0	3	10	F03
20	163	145	96	76	48	34	9	12,5	25	2	10	F03/F05
20	163	145	96	76	48	34	9	12,5	35	3	12	F05
20	163	145	96	76	48	34	9	12,5	30	3	12	F04
40	195	158	115	91	56	45	9	12,5	30	3	12	F04
40	195	158	115	91	56	45	9	12,5	35	3	12	F05
80	217	177	137	111	66	55	12	12,5	55	3	19	F05/F07
130	258	196	147	122	71	60	12	12,5	55	3	22	F05/F07
200	299	225	165	136	78	70	12	12,5	55	3	23	F07/F10
300	349	273	182	153	86	80	12	12,5	70	3	24	F07/F10
500	397	304	199	173	96	85	12	12,5	70	3	32	F10
850	473	372	221	192	106	98	12	12,5	85	3	39	F10/F12
1200	560	439	249	213	116	114	16	18,6	100	4	40	F10/F14
1750	601	461	280	243	131	130	16	18,6	100	4	50	F14
2100	702	510	313	277	148	147	16	18,6	130	4	50	F16
2500	738	518	383	356	177,5	176,5	16	18,6	130	4	58	F16
4000	940	630	434	415	213	201	16	18,6	200	4	60	F16/F25

Dimensions Fig. 7951, 7952, 7921 and 7922 - Imperial versions

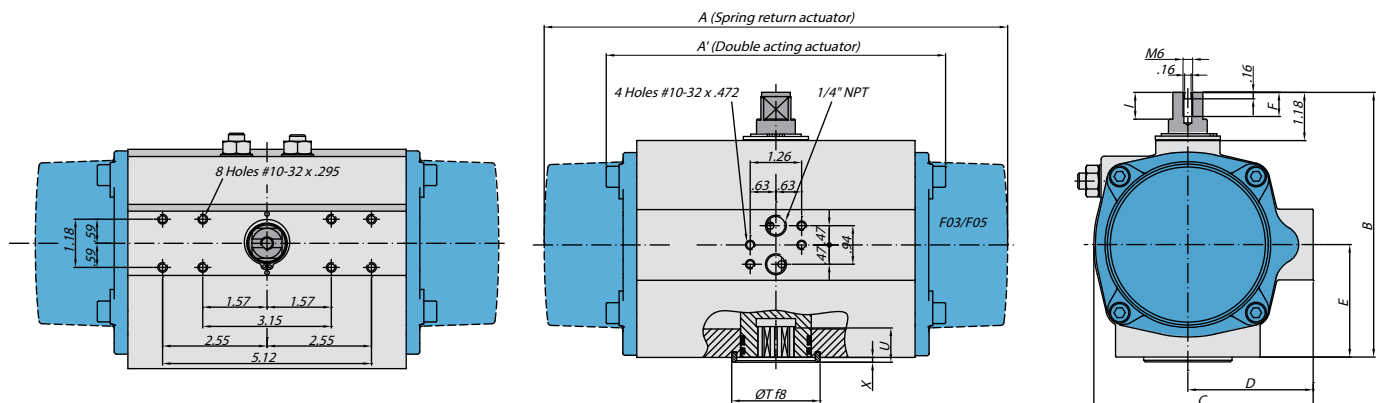
Sizes 10 | 20 | 40 | 80 | 130 | 200 | 300 | 500 | 850



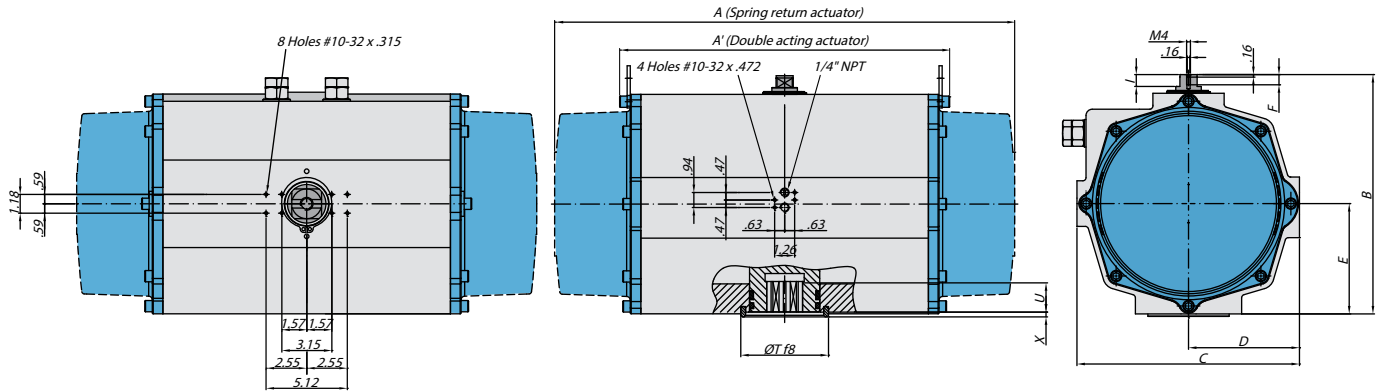
Sizes 1200 | 1750



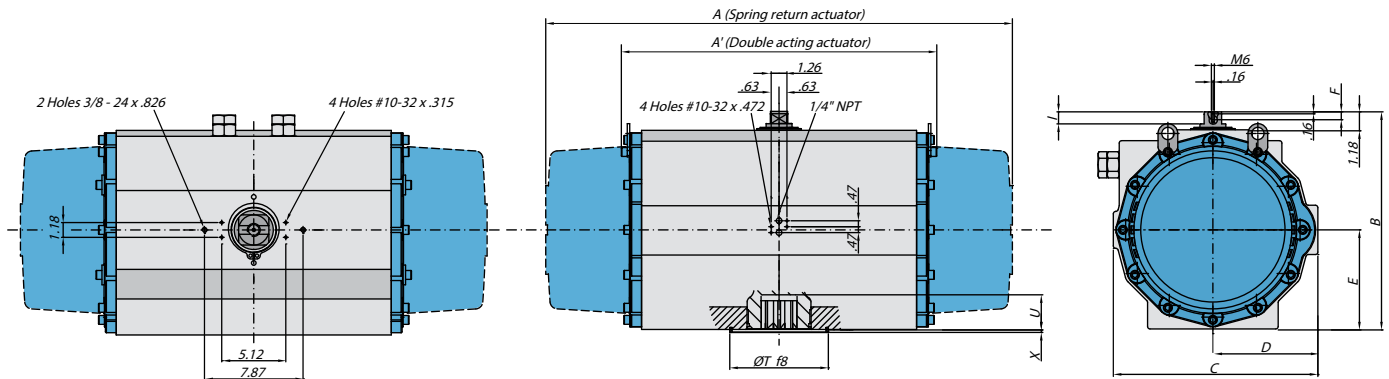
Sizes 2100



Sizes 2500



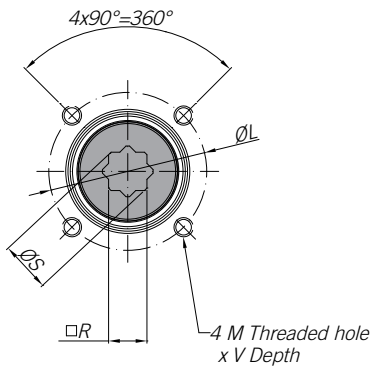
Sizes 4000



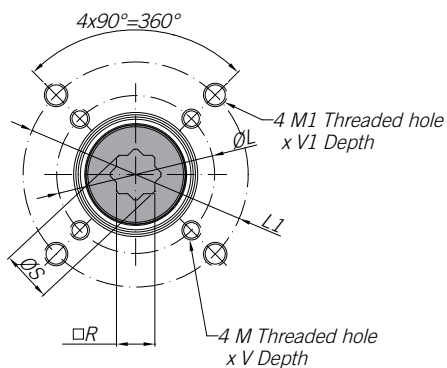
Size DA/SR	Spring return & double acting actuators - Dimensions in inches (in)											
	A (SR)	A' (DA)	B	C	D	E	F	I	ØT	X	U	ISO 5211
10	-	3.94	2.99	2.20	1.30	0.91	0.35	0.24	0	0.08	0.47	F03
20	6.42	5.70	3.78	2.99	1.89	1.34	0.35	0.49	0.98	0.08	0.39	F03/F05
20	6.42	5.70	3.78	2.99	1.89	1.34	0.35	0.49	1.18	0.12	0.47	F05
20	6.42	5.70	3.78	2.99	1.89	1.34	0.35	0.49	1.38	0.12	0.47	F04
40	7.68	6.22	4.53	3.58	2.21	1.77	0.35	0.49	1.18	0.12	0.47	F04
40	7.68	6.22	4.53	3.58	2.21	1.77	0.35	0.49	1.38	0.12	0.47	F05
80	8.54	6.97	5.39	4.37	2.60	2.17	0.47	0.49	2.17	0.12	0.75	F05/F07
130	10.16	7.72	5.79	4.80	2.80	2.36	0.47	0.49	2.17	0.12	0.87	F05/F07
200	11.77	8.86	6.50	5.33	3.07	2.76	0.47	0.49	2.17	0.12	0.91	F07/F10
300	13.72	10.75	7.17	6.00	3.39	3.15	0.47	0.49	2.76	0.12	0.94	F07/F10
500	15.63	11.97	7.83	6.81	3.78	3.35	0.47	0.49	2.76	0.12	1.26	F10
850	18.62	14.65	8.70	7.54	4.17	3.86	0.47	0.49	3.35	0.12	1.54	F10/F12
1200	22.05	17.28	9.80	8.37	4.57	4.49	0.63	0.73	3.94	0.16	1.89	F10/F14
1750	23.66	18.15	11.02	9.55	5.16	5.12	0.63	0.73	3.94	0.16	1.97	F14
2100	27.64	20.08	12.32	10.89	5.83	5.79	0.63	0.73	5.12	0.16	1.97	F16
2500	29.06	20.39	15.08	14.02	6.99	6.95	0.63	0.73	5.12	0.16	2.28	F16
4000	37.01	24.80	17.09	16.34	8.39	7.91	0.63	0.73	7.87	0.16	2.36	F16/F25

ISO 5211 details & dimensions

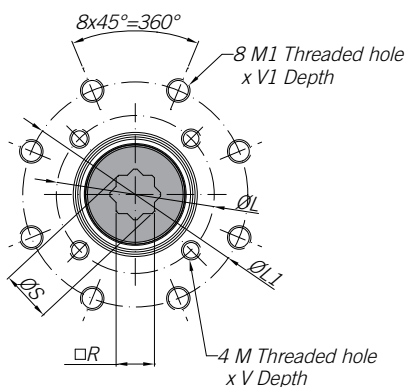
Sizes 10 | 20 | 40 | 500 | 1750 | 2100 | 2500



Sizes 20 | 80 | 130 | 200 | 300 | 850 | 1200



Sizes 4000



Metric versions - Fig.7901 and 7902

Size DA/SR	Actuators ISO 5211 details in millimeters							
	□R	ISO 1	ØL	M x V	ISO 2	ØL 1	M1 x V1	ØS
10	9	F03	36	M5x8	-	-	-	12,5
20	9	F03	36	M5x8	F05	50	M6x10	12,5
20	14	F05	50	M6x10	-	-	-	18,1
20	14	F04	42	M5x10	-	-	-	18,1
40	14	F04	42	M5x10	-	-	-	18,1
40	14	F05	50	M6x10	-	-	-	18,1
80	17	F05	50	M6x10	F07	70	M8x16	22,5
130	17	F05	50	M6x10	F07	70	M8x16	22,5
200	17	F07	70	M8x16	F10	102	M10x16	22,5
300	22	F07	70	M8x16	F10	102	M10x16	28,5
500	22	F10	102	M10x16	-	-	-	28,5
850	27	F10	102	M10x16	F12	125	M12x20	36,5
1200	36	F10	102	M10x16	F14	140	M16x26	48,5
1750	36	F14	140	M16x26	-	-	-	48,5
2100	46	F16	165	M20x30	-	-	-	60,2
2500	46	F16	165	M20x30	-	-	-	60,2
4000	55	F16	165	M20x30	F25	254	M16x30	72,5

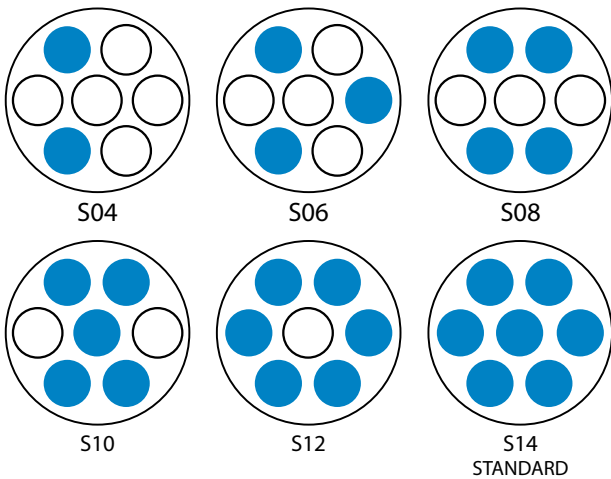
Imperial versions - Fig. 7951, 7952, 7921 and 7922

Size DA/SR	Actuators ISO 5211 details in inches							
	□R	ISO 1	ØL	M x V	ISO 2	ØL 1	M1 x V1	ØS
10	0.35	F03	1.42	10-32 UNF x 0.315	-	-	-	0.49
20	0.35	F03	1.42	10-32 UNF x 0.394	F05	1.97	1/4"-20 UNC x 0.394	0.49
20	0.55	F05	1.97	1/4"-20 UNC x 0.394	-	-	-	0.71
20	0.55	F04	1.65	10-32 UNF x 0.394	-	-	-	0.71
40	0.55	F04	1.65	10-32 UNF x 0.394	-	-	-	0.71
40	0.55	F05	1.97	1/4"-20 UNC x 0.394	-	-	-	0.71
80	0.67	F05	1.97	1/4"-20 UNC x 0.394	F07	2.76	5/16"-18 UNC x 0.669	0.89
130	0.67	F05	1.97	1/4"-20 UNC x 0.394	F07	2.76	5/16"-18 UNC x 0.669	0.89
200	0.67	F07	2.76	5/16"-18 UNC x 0.669	F10	4.02	3/8"-16 UNC x 0.669	0.89
300	0.87	F07	2.76	5/16"-18 UNC x 0.669	F10	4.02	3/8"-16 UNC x 0.669	1.12
500	0.87	F10	4.02	3/8"-16 UNC x 0.669	-	-	-	1.12
850	1.06	F10	4.02	3/8"-16 UNC x 0.669	F12	4.92	1/2"-13 UNC x 0.787	1.44
1200	1.42	F10	4.02	3/8"-16 UNC x 0.669	F14	5.51	5/8"-11 UNC x 1.024	1.91
1750	1.42	F14	5.51	5/8"-11 UNC x 1.024	-	-	-	1.91
2100	1.81	F16	6.5	3/4"-10 UNC x 1.181	-	-	-	2.37
2500	1.81	F16	6.5	3/4"-10 UNC x 1.181	-	-	-	2.37
4000	2.17	F16	6.5	3/4"-10 UNC x 1.181	F25	10	5/8"-11 UNC x 1.181	2.85

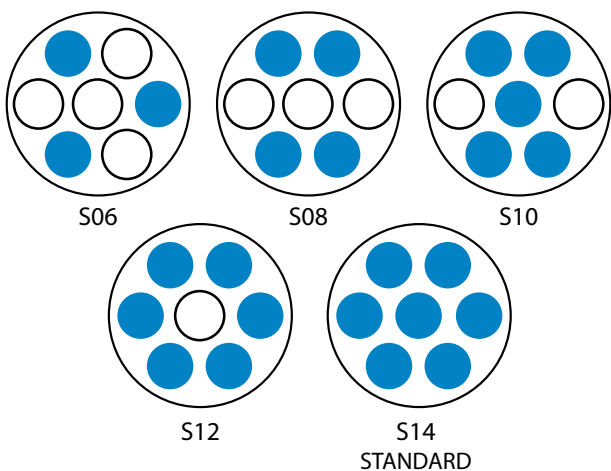
The SR-20 spring return actuator uses a minimum of two springs and maximum of four springs on each side according to the diagram below.



SR-40 and 80 spring return actuators use a minimum of two springs and maximum of seven springs on each side according to the diagram below.



SR-130 to 4000 spring return actuators use a minimum of three springs and maximum of seven springs on each side according to the diagram below.



Spring combinations for spring return actuators

Pre-stressed springs offer more torque and different options for their positioning. This system allows us to easily fit the necessary torque to close or open the valve, offering a total safety replacement and manipulation.

Spring return actuators use a maximum of seven springs on each side, always using the same type of spring regardless of the spring combination specified. The quantity of springs is identified as follows:

Ex: S14 - Where S stands for springs and 14 is the total number of springs assembled in the actuator.

For torque output based on spring combinations and actuator size, please see pages 14 through 17.

Size DA/SR	Spring combinations					
	S04	S06	S08	S10	S12	S14
SR-20	A	S	A	-	-	-
SR-40	A	A	A	A	A	S
SR-80	A	A	A	A	A	S
SR-130	-	A	A	A	A	S
SR-200	-	A	A	A	A	S
SR-300	-	A	A	A	A	S
SR-500	-	A	A	A	A	S
SR-850	-	A	A	A	A	S
SR-1200	-	A	A	A	A	S
SR-1750	-	A	A	A	A	S
SR-2100	-	A	A	A	A	S
SR-2500	-	A	A	A	A	S
SR-4000	-	A	A	A	A	S

S - Standard Combination

A - Available Combination

Torque output for spring return actuator - metric units

Size	Spring combination	Torque output for spring return in Nm												Spring stroke		Weight (kg)
		3 bar		4 bar		5 bar		6 bar		7 bar		8 bar		End	Start	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
SR-20	S04			9	7	13	10	16	13	19	17	22	20	4	7	1,51
	S06 A					11	7	14	10	17	13	20	17	7	11	1,54
	S08							12	7	15	10	18	14	9	15	1,56
SR-40	S04	16	14	23	20	30	27	37	34	43	41	50	47	5	8	2,17
	S06	14	10	21	17	28	24	34	30	41	37	48	44	7	12	2,20
	S08			19	14	26	20	32	27	39	34	46	41	10	16	2,23
	S10					24	17	30	24	37	30	44	37	12	20	2,26
	S12					21	13	28	20	35	27	42	34	15	24	2,29
	S14 A							26	17	33	24	40	30	17	28	2,32
SR-80	S04	31	27	44	40	57	53	70	66	82	78	95	91	9	13	3,28
	S06	27	21	40	34	53	47	66	60	79	73	92	86	13	20	3,36
	S08			37	29	49	41	62	54	75	67	88	80	17	27	3,43
	S10					46	36	59	49	71	61	84	74	22	33	3,51
	S12					42	30	55	43	68	56	81	69	26	40	3,58
	S14 A							51	37	64	50	77	63	30	47	3,65
SR-130	S06	43	36	62	56	82	75	102	95	121	115	141	134	19	27	4,40
	S08			57	48	76	68	96	87	116	107	135	127	26	36	4,50
	S10			51	40	71	60	91	80	110	99	130	119	32	45	4,60
	S12					65	52	85	72	105	92	124	111	39	54	4,70
	S14 A							80	64	99	84	119	103	45	64	4,80
SR-200	S06	61	49	90	78	119	107	149	136	178	166	207	195	31	46	6,50
	S08			81	65	111	94	140	123	169	152	198	182	42	61	6,70
	S10			72	52	102	81	131	110	160	139	189	169	52	77	6,90
	S12					93	68	122	97	151	126	180	156	63	92	7,00
	S14 A							113	84	142	113	172	143	73	107	7,30
SR-300	S06	102	75	151	123	199	172	247	220	296	269	344	317	51	93	9,65
	S08			136	100	185	148	233	197	281	245	330	294	68	111	9,92
	S10			122	76	170	125	219	173	267	222	315	270	85	138	10,20
	S12					156	101	204	150	253	198	301	247	102	166	10,50
	S14 A							190	126	238	175	287	223	119	193	10,80
SR-500	S06	152	119	224	191	296	263	369	335	441	407	513	480	76	115	13,33
	S08	131	86	203	158	275	231	347	303	419	375	492	447	101	153	13,84
	S10			181	126	254	198	326	270	398	342	470	414	126	192	14,35
	S12					232	165	304	238	376	310	449	382	152	230	14,85
	S14 A							283	205	355	277	427	349	177	268	15,36
SR-850	S06	260	209	380	328	500	448	619	568	739	687	858	807	116	177	19,70
	S08	227	159	347	278	467	398	586	518	706	637	826	757	155	236	20,30
	S10			314	228	434	348	553	467	673	587	793	707	193	295	20,90
	S12					401	298	521	417	640	537	760	657	232	353	21,60
	S14 A							488	367	607	487	727	607	271	412	22,20
SR-1200	S06	373	289	546	462	720	635	893	808	1.066	981	1.239	1.154	171	271	30,10
	S08	325	213	498	386	671	559	844	732	1.017	905	1.190	1.078	229	361	31,10
	S10	276	136	449	309	622	482	795	655	969	828	1.142	1.001	286	451	32,20
	S12			401	232	574	405	747	578	920	751	1.093	924	343	541	33,20
	S14 A					525	329	698	502	871	675	1.044	848	400	631	34,30

A=Standard spring combination

Torque output for spring return actuators - metric units, continued

Size	Spring combination	Torque output for spring return in Nm												Spring stroke		Weight (kg)
		3 bar		4 bar		5 bar		6 bar		7 bar		8 bar		End	Start	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
SR-1750	S06	477	349	712	584	948	820	1.183	1.055	1.419	1.291	1.654	1.526	270	421	39,30
	S08	400	229	636	465	871	700	1.107	936	1.342	1.171	1.578	1.407	360	562	41,00
	S10			559	345	795	581	1.030	816	1.266	1.052	1.501	1.287	451	702	42,70
	S12					718	461	954	697	1.189	933	1.425	1.168	541	843	44,40
	S14 A					642	342	877	578	1.113	813	1.348	1.049	631	983	46,00
SR-2100	S06	702	509	1.046	871	1.426	1.233	1.788	1.595	2.150	1.957	2.512	2.319	384	577	60,30
	S08	574	316	936	678	1.298	1.040	1.660	1.402	2.022	1.764	2.384	2.126	512	770	62,50
	S10			808	486	1.170	848	1.532	1.210	1.894	1.572	2.256	1.934	640	962	64,20
	S12					1.042	655	1.404	1.017	1.766	1.379	2.128	1.741	768	1.154	66,30
	S14 A					914	463	1.276	825	1.638	1.187	2.000	1.549	896	1.347	68,00
SR-2500	S06	1.299	1.045	1.876	1.622	2.453	2.199	3.029	2.775	3.606	3.352	4.183	3.929	508	806	85,90
	S08	1.155	816	1.732	1.393	2.309	1.970	2.886	2.547	3.462	3.124	4.039	3.700	677	1.075	89,40
	S10			1.588	1.165	2.165	1.742	2.742	2.318	3.319	2.895	3.895	3.472	846	1.344	92,90
	S12			1.444	936	2.021	1.513	2.598	2.090	3.175	2.667	3.752	3.243	1.015	1.613	96,40
	S14 A					1.877	1.285	2.454	1.861	3.031	2.438	3.608	3.015	1.184	1.882	99,90
SR-4000	S06	1.763	1.262	2.566	2.065	3.369	2.867							758	1.348	158,70
	S08	1.549	880	2.351	1.683	3.154	2.485	3.956	3.288	4.759	4.091	5.068	4.399	1.011	1.797	164,70
	S10			2.136	1.301	2.939	2.104	3.742	2.906	4.544	3.709	4.853	4.017	1.264	2.246	170,80
	S12					2.724	1.722	3.527	2.524	4.329	3.327	4.638	3.636	1.516	2.696	176,90
	S14 A							3.312	2.142	4.115	2.945	4.423	3.254	1.769	3.145	182,90

A=Standard spring combination

Torque output for double acting actuators - metric units

Size	Torque output for double acting in Nm						Weight (kg)
	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	
	0° to 90°	0° to 90°	0° to 90°	0° to 90°	0° to 90°	0° to 90°	
10	3	4,5	6	7	8,2	9,1	0,64
20	9,7	13	16,2	19,5	23	26	1,4
40	20,3	27,1	33,9	41	47	54	2,1
80	38,5	51,3	64,1	77	90	103	3
130	59,1	78,7	98,4	118	138	157	3,8
200	88	117	146	175	205	234	5,6
300	145	194	242	291	339	388	8,5
500	217	289	361	433	505	577	11,2
850	359	479	598	718	837	957	16,9
1200	519	692	865	1.038	1.211	1.384	25,8
1750	707	942	1.178	1.413	1.649	1.884	32,5
2100	1.086	1.448	1.810	2.172	2.534	2.896	49,7
2500	1.730	2.307	2.884	3.461	4.038	4.614	69,6
4000	2.408	3.210	4.013	4.816	5.618	6.421	129,4

Torque output for spring return actuators - imperial units

Size	Spring combination	Torque output for spring return in inch pounds (in-lb)										Spring stroke		Weight (lb)
		40 psi		60 psi		80 psi		100 psi		120 psi		End	Start	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
SR-20	S04			85	64	125	107	165	147	195	177	35	62	3.3
	S06 A					107	80	147	113	177	150	62	97	3.4
	S08					89	45	131	87	159	124	80	133	3.4
SR-40	S04	142	124	211	187	293	267	375	356	443	416	44	71	4.8
	S06	124	89	193	158	275	240	358	322	425	389	62	106	4.9
	S08			176	131	258	213	340	294	407	363	89	142	4.9
	S10					240	178	322	260	389	327	106	177	5.0
	S12					222	152	304	234	372	301	133	212	5.0
	S14 A					205	116	287	205	354	266	150	248	5.1
SR-80	S04	274	239	404	369	560	525	715	680	841	805	80	115	7.2
	S06	239	186	371	318	525	472	687	634	814	761	115	177	7.4
	S08			342	272	498	427	653	582	779	708	150	239	7.6
	S10					463	374	618	529	743	655	195	292	7.7
	S12					427	321	589	483	717	611	230	354	7.9
	S14 A					400	276	556	432	682	558	266	416	8.0
SR-130	S06	381	319	574	518	818	756	1,053	1,000	1,248	1,186	168	239	9.7
	S08			529	450	765	685	1,009	929	1,195	1,124	230	319	9.9
	S10			476	379	720	623	956	859	1,151	1,053	283	398	10.1
	S12					667	552	912	797	1,097	982	345	478	10.4
	S14 A					623	481	859	726	1,053	912	398	566	10.6
SR-200	S06	540	434	834	725	1,191	1,085	1,549	1,443	1,832	1,726	274	407	14.3
	S08			754	610	1,112	970	1,469	1,321	1,752	1,611	372	540	14.8
	S10			674	495	1,032	855	1,391	1,205	1,673	1,496	460	682	15.2
	S12					952	740	1,312	1,090	1,593	1,381	558	814	15.4
	S14 A					881	625	1,232	975	1,522	1,266	646	947	16.1
SR-300	S06	903	664	1,396	1,151	1,982	1,743	2,577	2,338	3,045	2,806	451	735	21.3
	S08			1,263	945	1,858	1,540	2,445	2,126	2,921	2,602	602	982	21.9
	S10			1,139	735	1,726	1,327	2,321	1,922	2,788	2,390	752	1,221	22.5
	S12					1,602	1,124	2,195	1,710	2,664	2,186	903	1,469	23.1
	S14 A					1,469	911	2,064	1,506	2,540	1,974	1,053	1,708	23.8
SR-500	S06	1,345	1,053	2,072	1,780	2,960	2,659	3,839	3,539	4,540	4,248	673	1,018	29.4
	S08	1,159	761	1,886	1,488	2,765	2,376	3,645	3,255	4,355	3,956	894	1,354	30.5
	S10			1,691	1,204	2,579	2,084	3,459	2,963	4,160	3,664	1,115	1,699	31.6
	S12					2,385	1,792	3,264	2,680	3,974	3,381	1,345	2,036	32.7
	S14 A					2,199	1,509	3,078	2,388	3,779	3,089	1,567	2,372	33.9
SR-850	S06	2,301	1,850	3,512	3,052	4,969	4,517	6,434	5,974	7,594	7,143	1,027	1,567	43.4
	S08	2,009	1,407	3,220	2,609	4,677	4,075	6,142	5,532	7,311	6,700	1,372	2,089	44.8
	S10			2,928	2,167	4,393	3,632	5,850	5,089	7,019	6,257	1,708	2,611	46.1
	S12					4,101	3,189	5,558	4,647	6,727	5,815	2,053	3,124	47.6
	S14 A					3,809	2,738	5,266	4,204	6,434	5,372	2,399	3,647	48.9
SR-1200	S06	3,301	2,558	5,048	4,305	7,165	6,421	9,281	8,530	10,966	10,214	1,513	2,399	66.4
	S08	2,876	1,885	4,621	3,630	6,739	5,740	8,849	7,856	10,532	9,541	2,027	3,195	68.6
	S10	2,443	1,204	4,190	2,948	6,306	5,067	8,422	7,176	10,108	8,860	2,531	3,992	71.0
	S12			3,762	2,269	5,872	4,385	7,989	6,495	9,674	8,178	3,036	4,788	73.2
	S14 A					5,447	3,704	7,557	5,820	9,240	7,505	3,540	5,585	75.6

A=Standard spring combination

Torque output for spring return actuators - imperial units, continued

Size	Spring combination	Torque output for spring return in inch pounds (in-lb)										Spring stroke		Weight (lb)
		40 psi		60 psi		80 psi		100 psi		120 psi		End	Start	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	
SR-1750	S06	4,222	3,089	6,594	5,461	9,476	8,335	12,350	11,217	14,639	13,506	2,390	3,726	86.6
	S08	3,540	2,027	5,922	4,406	8,795	7,282	11,671	10,155	13,966	12,453	3,186	4,974	90.4
	S10			5,240	3,346	8,114	6,228	10,996	9,102	13,285	11,391	3,992	6,213	94.1
	S12					7,441	5,166	10,315	8,049	12,612	10,338	4,788	7,461	97.9
	S14 A					6,759	4,113	9,642	6,987	11,931	9,284	5,585	8,700	101.4
SR-2100	S06	6,213	4,505	9,866	8,158	14,287	12,579	18,709	17,001	22,233	20,525	3,399	5,107	132.9
	S08	5,080	2,797	8,733	6,449	13,154	10,871	17,576	15,292	21,100	18,817	4,532	6,815	137.8
	S10			7,600	4,750	12,021	9,171	16,443	13,593	19,967	17,117	5,664	8,514	141.5
	S12					10,889	7,463	15,310	11,885	18,834	15,409	6,797	10,214	146.2
	S14 A					9,756	5,764	14,177	10,185	17,701	13,710	7,930	11,922	149.9
SR-2500	S06	11,497	9,249	17,318	15,070	24,362	22,114	31,406	29,158	37,023	34,775	4,496	7,134	189.4
	S08	10,223	7,222	16,043	13,045	23,088	20,087	30,131	27,138	35,748	32,748	5,992	9,515	197.1
	S10			14,771	11,025	21,813	18,069	28,864	25,113	34,474	30,730	7,488	11,895	204.8
	S12			13,497	9,001	20,547	16,051	27,590	23,093	33,208	28,703	8,984	14,276	212.5
	S14 A					19,273	14,024	26,315	21,068	31,933	26,685	10,479	16,657	220.2
SR-4000	S06	15,604	11,170	23,705	19,271	32,033	27,776					6,709	11,931	349.9
	S08	13,710	7,789	21,802	15,890	31,606	25,694	41,411	35,497	44,856	38,934	8,948	15,905	363.1
	S10			19,901	12,509	29,704	22,313	39,508	32,116	42,953	35,553	11,187	19,879	376.5
	S12					27,801	18,932	37,605	28,737	41,050	32,181	13,418	23,862	390.0
	S14 A					25,906	15,551	35,709	25,356	39,147	28,800	15,657	27,836	403.2

A=Standard spring combination

Torque output for double acting actuators - imperial units

Size	Torque output for double acting in inch pounds (in-lb)						Weight (lb)
	40 psi	60 psi	80 psi	100 psi	120 psi	145 psi	
	0° to 90°	0° to 90°	0° to 90°	0° to 90°	0° to 90°	0° to 90°	
10	27	41	58	71	81	97	1.4
20	86	119	158	200	230	-	3.1
40	180	248	331	411	478	-	4.6
80	341	470	626	784	912	-	6.6
130	523	721	962	1,204	1,390	-	8.4
200	779	1,070	1,430	1,788	2,071	-	12.3
300	1,283	1,777	2,372	2,958	3,434	-	18.7
500	1,921	2,647	3,526	4,406	5,107	-	24.7
850	3,177	4,386	5,845	7,304	8,470	-	37.3
1200	4,594	6,340	8,456	10,566	12,249	-	56.9
1750	6,257	8,630	11,503	14,386	16,675	-	71.6
2100	9,612	13,264	17,686	22,107	25,632	-	109.5
2500	15,312	21,135	28,177	35,228	40,837	-	153.4
4000	21,313	29,407	39,210	49,014	56,831	-	285.3

Actuator accessories Rack & Pinion actuators

Switch boxes

Econ[®] Fig. 79650, 79651, 79652 and 79653

- Position feedback device for open, closed or intermediate positions. Also available with a potentiometer and position transmitter for a 4-20mA or 0-10V feedback signal
- The switch boxes can be equipped with mechanical switches or Pepperl and Fuchs proximity sensors
- Econ[®] switch boxes can also be mounted on actuators for 3-way L- or T-port valves
- Aluminium or stainless steel IP67 enclosure
- Fig. 79653 for explosion proof applications (ATEX-classified for zone 1 and 21)



Inductive dual sensors

Econ[®] Fig. 79654, 79655, 79656, 79657 and 79658

- Compact construction with sturdy plastic IP67 enclosure
- Cable connection types: Plug-in terminal strip, M12 male connector or 2 meter PVC cable
- 2-wire DC sensor with minimum off-state (leakage) current; max. 0,2mA. Compatible with all modern PLC's and DCS-systems (only for fig. 79654, 79657 and 79658)
- Fig. 79658 for explosion proof applications (ATEX-classified for zone 2 and 22)



Solenoid valves

Fig. 33580

- Namur pilot solenoid valves for direct mounting
- Voltages: 24 AC, 115 AC, 230 AC and 24 DC
- For double acting and single acting actuators (3/2 and 5/2 function)
- Aluminium IP65 enclosure
- DIN 43650 connector



Smart positioners

Fig. 3303 and 3304

- For modulating applications
- Automatic calibration
- Input signal 4-20mA
- Additional modules available for 4-20mA feedback signal or HART protocol communication
- Pressure gauges can be mounted on this positioner as an option



Control panels and cabinets

- Customized solutions based on the functional needs
- Different designs depending on weather effects and environmental influences



Scotch Yoke actuators

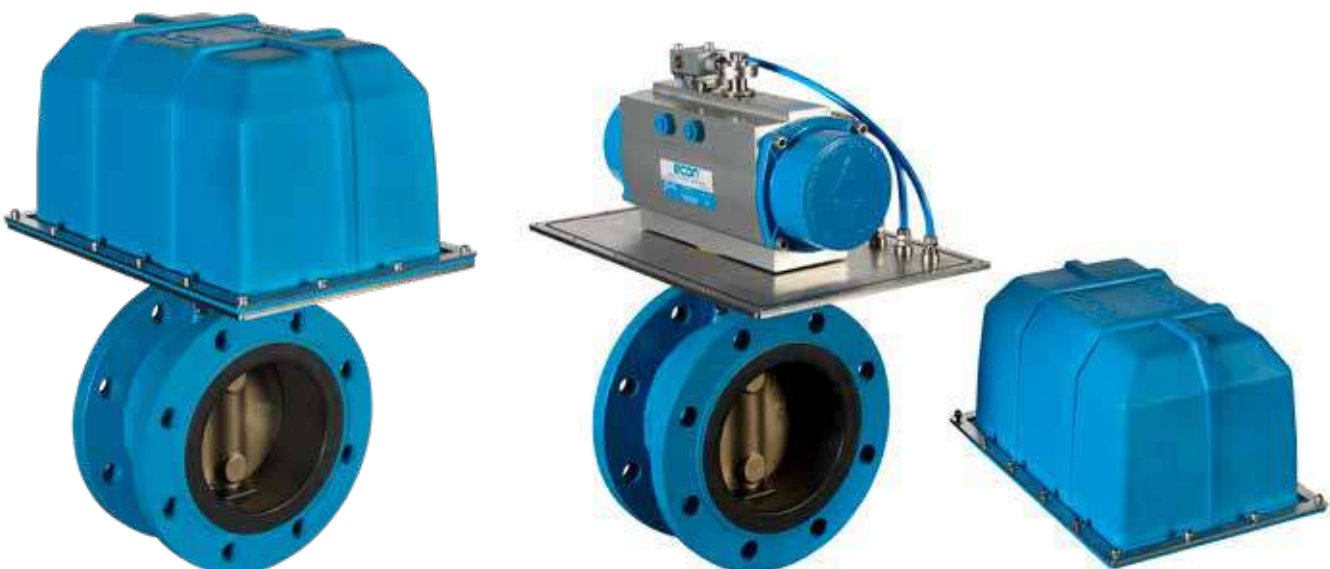
Fig. 7991 and 7992

- Torques up to 250.000Nm
- Double and spring return versions
- Pneumatic and hydraulic operated
- ATEX-classified for zone 1,2, 21 and 22
- Safety Integrity Rating IEC 61508 SIL 2 (SIL 3 in redundant configuration)



Actuator protector (DOME)

- Protects the actuator against highly corrosive environments
- Special version available for submerged applications up to 20 meters



Valve Automation Centre

The ERIKS Flow Control Valve Automation Centre in the Netherlands has a state of the art workshop in which well trained technicians mount pneumatic, hydraulic and electric actuators on valves. Valves and actuators can be modified according to customer specifications and be equipped with options such as valve positioners, limit switches, pilot valves and more. Five pressure test benches allow testing of valves up to DN1200/48". The applicable standards are API 598 and EN 12266 and any other customer specified protocols can additionally be performed.

Engineering

- Working out customer-specific requirements.
- Product engineering and design.
- Product development support.
- Providing 2D and 3D assembly drawings.
- Supplying 3D CAD models.

Workshops

- Modern workshops of more than 5000 m².
- Facilitating of large and complex projects.
- Automating and modifying of valves.
- Mounting, adjusting and modifying according to customer-specific requirements.

Logistics

- More than 2 million products from stock.
- Automated delivery of products.
- International presence in 24 countries.

Testing

- Large test facilities.
- Pressure testing of valves up to DN1200/48".
- Maximum test pressure 1200 bar.

Largest stockist of valves and actuators in Europe.



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