

ESR: Spring Return Actuator

Spring Return • Rack & Pinion Pneumatic Actuator • Aluminum Housing

STANDARD SPECIFICATIONS

General	
Series	ESR
Figure	7901/7951
Standard Working Temperature	-22°F to +212°F
Design Parameters	
Mounting/Drive Connections	ISO 5211
Position Indicator	Yes
Coating	Anti-corrosive (EN 15714-3)
Air Supply/Top Flange	NAMUR VDI/VDE3845
Safety Integrity Rating	IEC 61508 SIL3
Environmental	Group II, Category 2 - Zones 1,2, 21 & 22 in accordance to Annex VII or Directive 94/9/CE (ATEX), ASTM D1654-D8
Materials of Construction	
Body	Hard Anodized Aluminum
Piston	Aluminum
Pinion	Nickle Plated Carbon Steel
End Caps	Epoxy Coated Aluminum



ORDERING INFORMATION

Actuator Only

Size	Item #	Description	ISO Mount	Material	Torque Output at 60 psi (in-lb)
20	ESR00200305NC	Spring Return	Bolt: F03-F05; Drive: 9x9mm, 8 Spring	Aluminum Alloy	See Manual
40	ESR004004NC	Spring Return	Bolt: F04; Drive: 14x14mm, 14 Spring	Aluminum Alloy	See Manual
40	ESR004005NC	Spring Return	Bolt: F05; Drive: 14x14mm, 14 Spring	Aluminum Alloy	See Manual
80	ESR00800507NC	Spring Return	Bolt: F05-F07; Drive: 17x17mm, 14 Spring	Aluminum Alloy	See Manual
130	ESR01300507NC	Spring Return	Bolt: F05-F07; Drive: 17x17mm, 14 Spring	Aluminum Alloy	See Manual
200	ESR02000710NC	Spring Return	Bolt: F07-F10; Drive: 17x17mm, 14 Spring	Aluminum Alloy	See Manual
300	ESR03000710NC	Spring Return	Bolt: F07-F10; Drive: 22x22mm, 14 Spring	Aluminum Alloy	See Manual
500	ESR050010NC	Spring Return	Bolt: F10; Drive: 22x22mm, 14 Spring	Aluminum Alloy	See Manual
850	ESR08501012NC	Spring Return	Bolt: F10-F12; Drive: 27x27mm, 14 Spring	Aluminum Alloy	See Manual
1200	ESR12001014NC	Spring Return	Bolt: F10-F14; Drive: 36x36mm, 14 Spring	Aluminum Alloy	See Manual
1750	ESR175014NC	Spring Return	Bolt: F14; Drive: 36x36mm, 14 Spring	Aluminum Alloy	See Manual
2100	ESR210016NC	Spring Return	Bolt: F16; Drive: 46x46mm, 14 Spring	Aluminum Alloy	See Manual
2500	ESR250016NC	Spring Return	Bolt: F16; Drive: 46x46mm, 14 Spring	Aluminum Alloy	See Manual
4000	ESR40001625NC	Spring Return	Bolt: F16-F25; Drive: 55x55mm, 14 Spring	Aluminum Alloy	See Manual

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 56,831 in-lb (6,421 Nm). 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.

Spring return Fig. 7901 - Metric | Fig. 7951 - Imperial

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.

General features

- Rack & Pinion design in 13 different sizes
- Working temperature -22° to 212°F (-30° to 100°C)
- 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

Bidirectional travel stops

Econ[®] pneumatic actuators are provided with bidirectional pinion travel stops. Side located stops allow a full ±5° 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: -22°F to +212°F (-30°C to +100°C)
- High temperature version - FKM O-Rings: +5°F to +302°F (-15°C to +150°C)

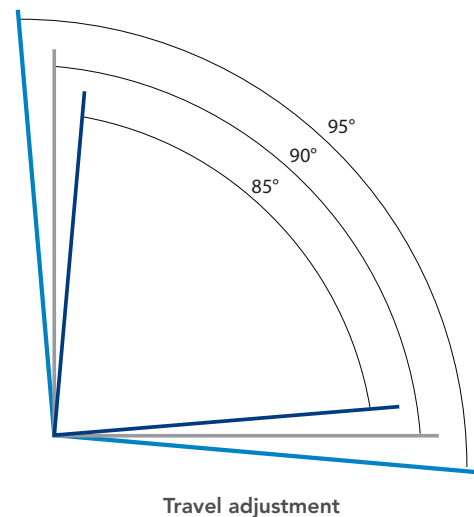
Maximum working pressure

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



Design Parameters

- 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 94/9/CE (ATEX), ASTM D1654-D8
- Anti-corrosive coatings according to EN 15714-3
- Air supply and top flange connection according to NAMUR VDI/VDE 3845
- Safety Integrity Rating IEC 61508 SIL 3
- Solenoid and accessories direct assembly according to NAMUR VDI/VDE 3845
- Mounting and drive connections to ISO 5211



Engineering data

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

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

* Stroke time conditions:

- 87 psi (6 bar) air pressure

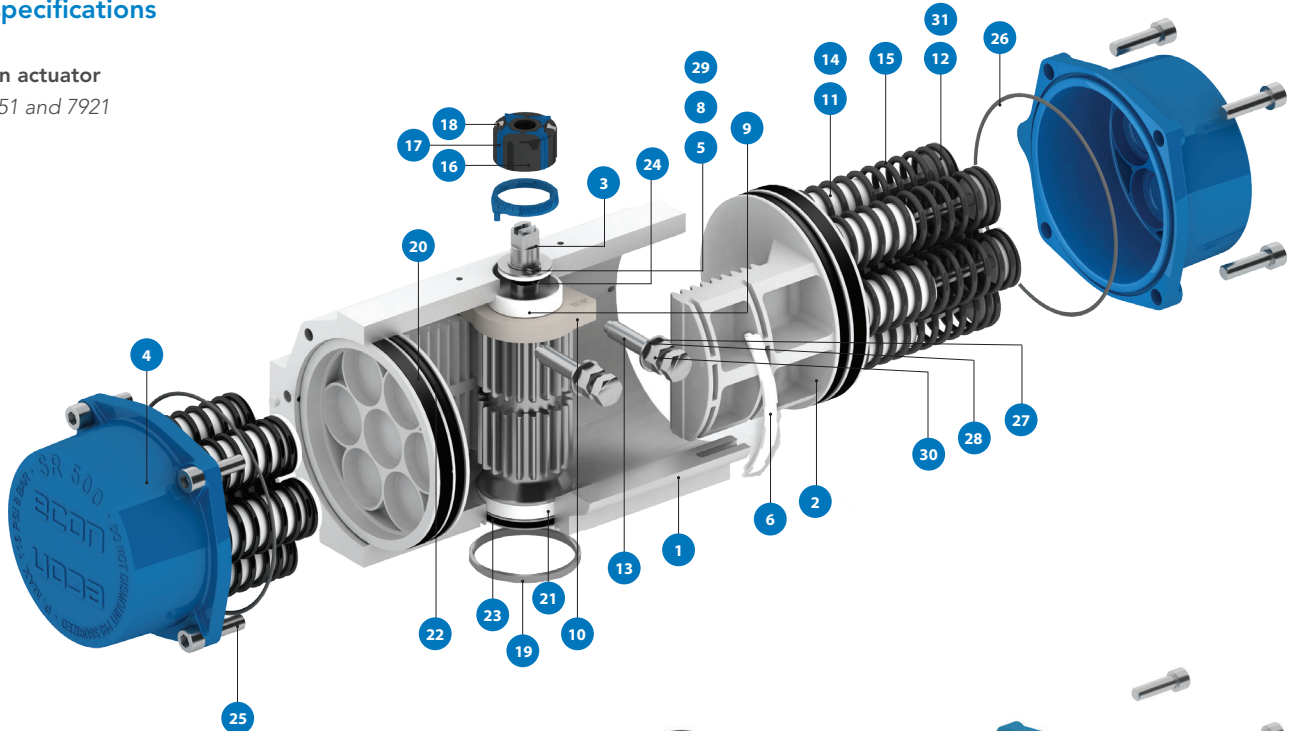
- 68 °F (20 °C)

- Air supply directly connected to the actuator

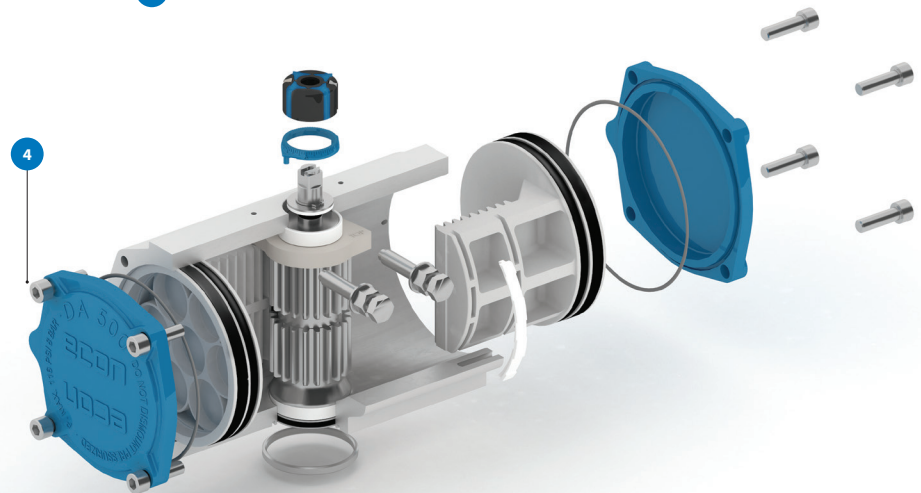
(no solenoid valve or other accessories between the air supply and actuator)

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

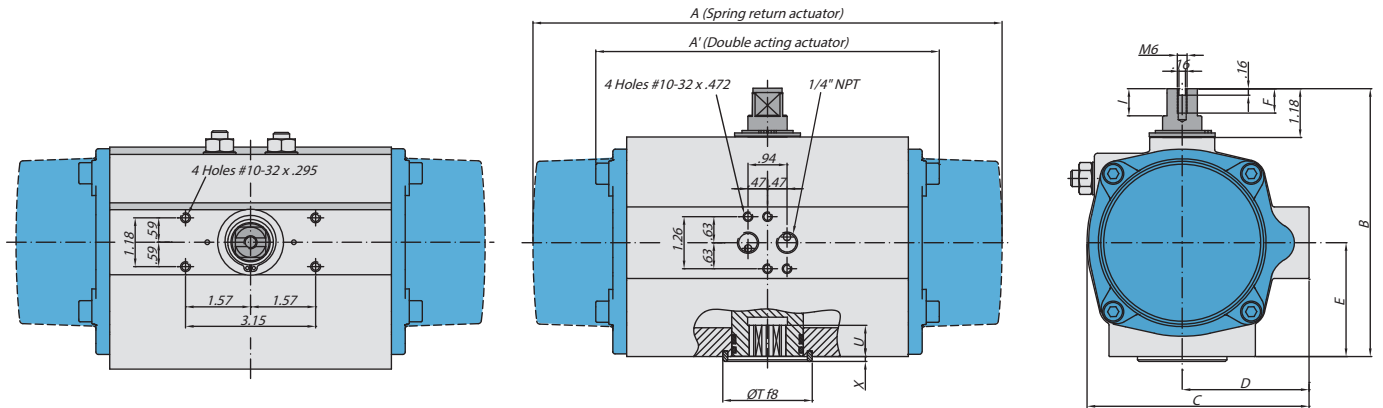
³ For sizes 500 -1200

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

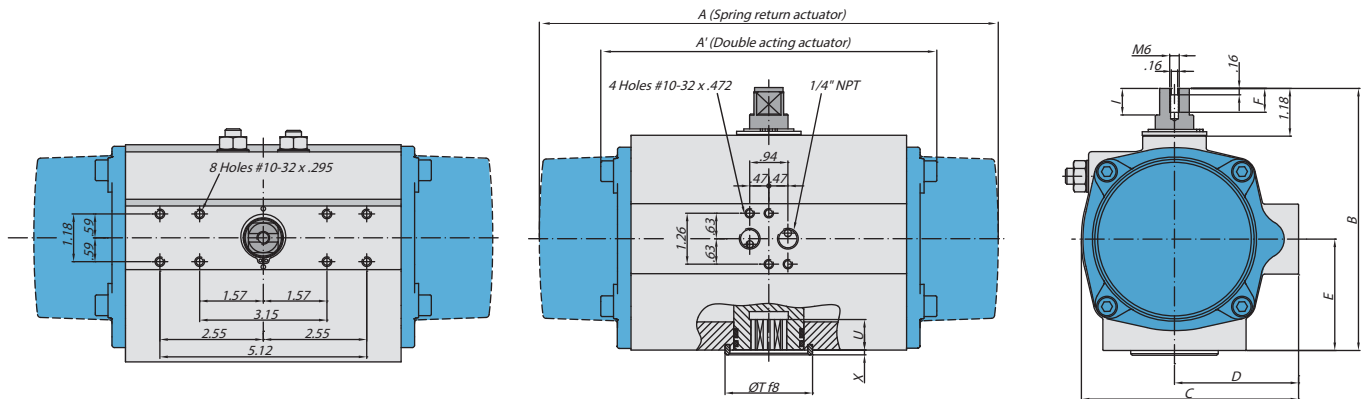
econ[®] Rack & Pinion pneumatic actuators

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

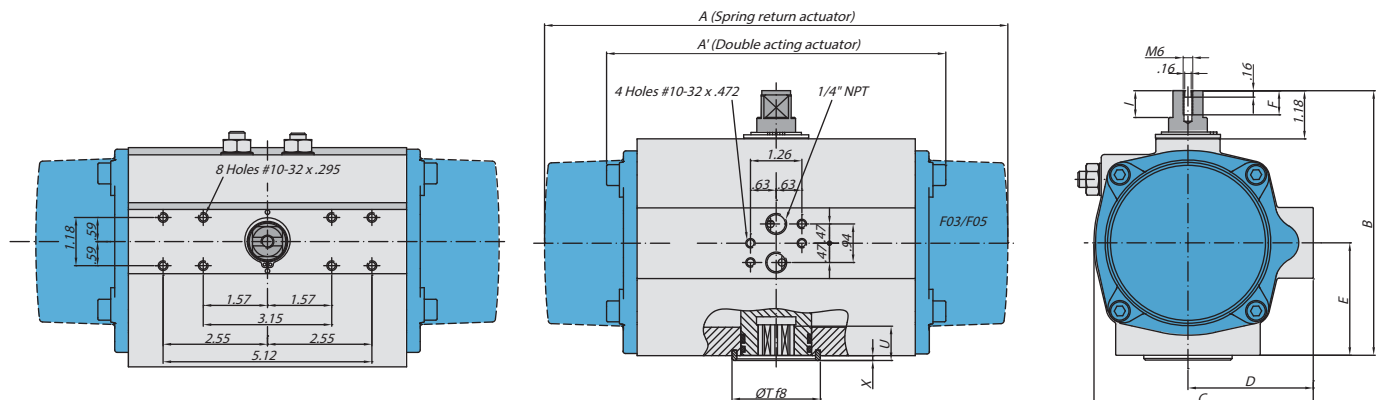
Sizes 10 | 20 | 40 | 80 | 130 | 200 | 300 | 500 | 850



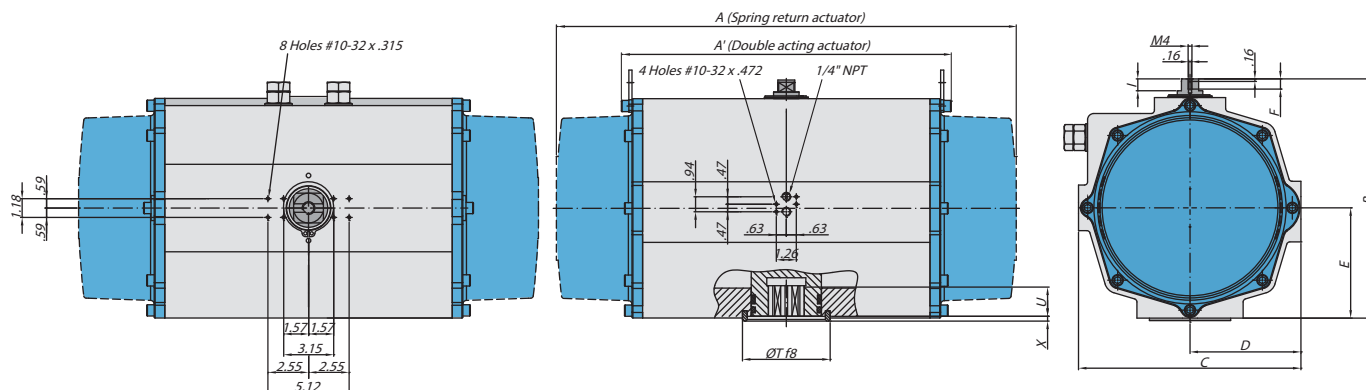
Sizes 1200 | 1750



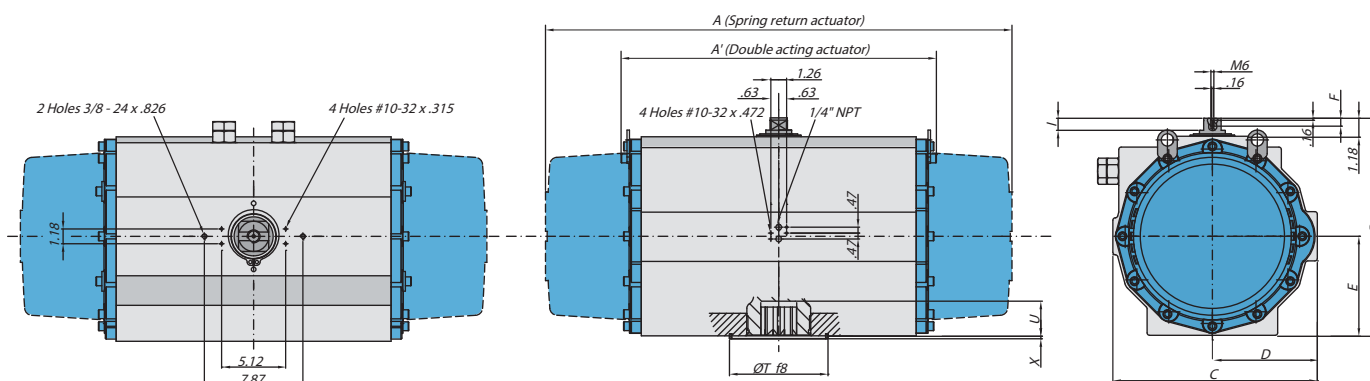
Sizes 2100



Sizes 2500



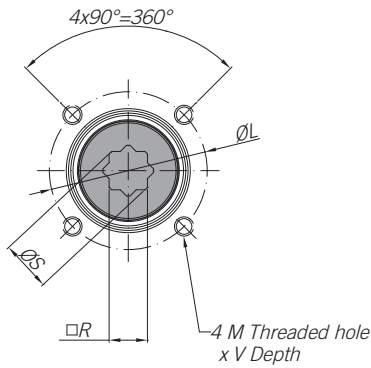
Sizes 4000



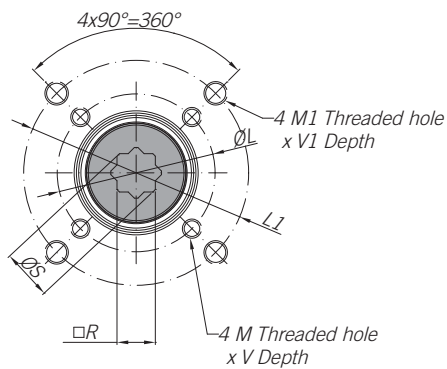
Size DA/SR	Spring return & double acting actuators - Dimensions in inches (in)											
	A (SR)	A' (DA)	B	C	D	E	F	I	ØT	X	U	ISO 5211
10	-	3.94	2.99	2.20	1.30	0.91	0.35	0.24	0	0.08	0.47	F03
20	6.42	5.70	3.78	2.99	1.89	1.34	0.35	0.49	0.98	0.08	0.39	F03/F05
20	6.42	5.70	3.78	2.99	1.89	1.34	0.35	0.49	1.18	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

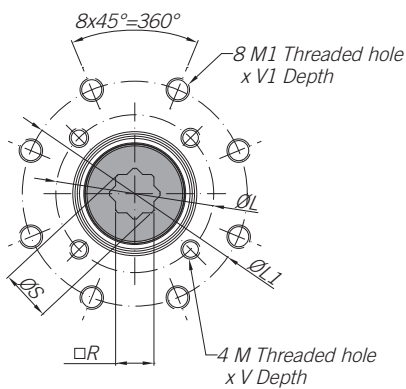
Sizes 10 | 20 | 40 | 500 | 1750 | 2100 | 2500



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



Sizes 4000



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

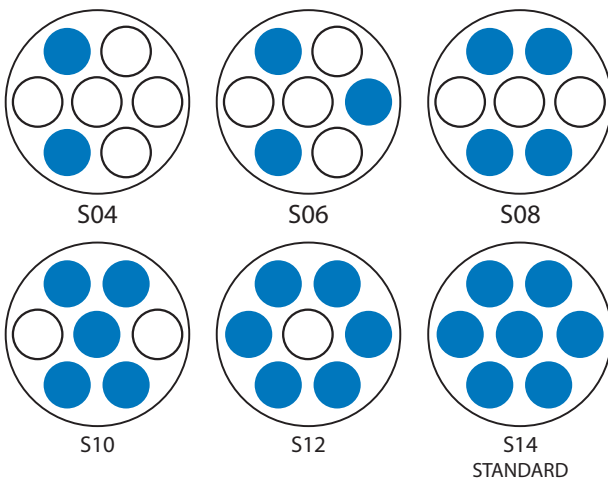
Metric versions - Fig.7901 and 7902

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

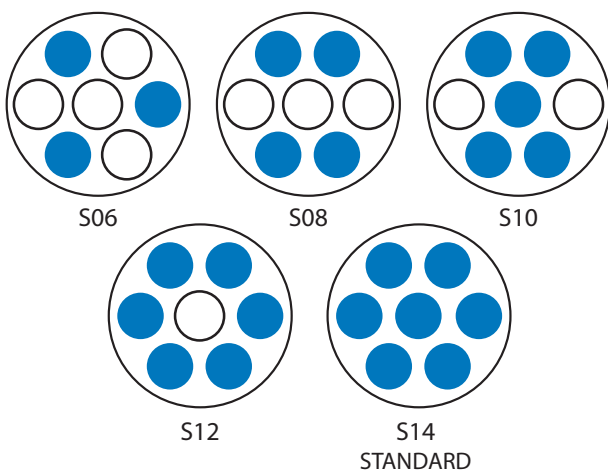
The SR-20 spring return actuator uses a minimum of two springs and maximum of four springs on each side according to the diagram below.



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 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
SR-80	S14 A					205	116	287	205	354	266	150	248	5.1
	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
SR-130	S14 A					400	276	556	432	682	558	266	416	8.0
	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
SR-200	S14 A					623	481	859	726	1,053	912	398	566	10.6
	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
SR-300	S14 A					881	625	1,232	975	1,522	1,266	646	947	16.1
	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
SR-500	S14 A					1,469	911	2,064	1,506	2,540	1,974	1,053	1,708	23.8
	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
SR-850	S14 A					2,199	1,509	3,078	2,388	3,779	3,089	1,567	2,372	33.9
	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
SR-1200	S14 A					3,809	2,738	5,266	4,204	6,434	5,372	2,399	3,647	48.9
	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

How to Order

Ball Valve Ordering Matrix

How to Order: Valve Only

Example: A 2", Two Piece ASME Class 150, Full Port Ball Valve with Flanged Ends, Carbon Steel Body, Stainless Steel Trim, TFM1600 Seats, Graphite Packing, NACE Compliant, Fire Safe, Locking Lever Operated is written: 10E10-AR-CSFG-NFC-0200

A	B	C	D	E	F	G	H	I	J	K
X	X	X	X	X	X	X	X	X	X	X

A	Construction Type
10E10	2-PC. ASME-150, Full Port, Flanged
30E10	2-PC. ASME-300, Full Port, Flanged
10E15	1-PC. ASME-150, Reduced Port, Flanged
30E15	1-PC. ASME-300, Reduced Port, Flanged**
2WE20	3-PC. 2000WOG, Full Port, NPT/SW (≤1")
5WE20	3-PC. 1500WOG, Full Port, NPT/SW (>1")
2WE30	2-PC. 2000WOG, Full Port, NPT (≤1")
5WE30	2-PC. 1500WOG, Full Port, NPT (>1")
1WE40	3-PC. 1000WOG, Full Port, NPT/SW
1WE52	2-PC. 1000WOG, Full Port, NPT*
1WE55	1-PC, 1000WOG, Double Red. Port, NPT*
10E60	3-Way ASME-150, Full Port, L/T Port, Flanged
1WE70	3-Way 1000WOG, Full Port, L/T Port, NPT

B	Port Configuration
A	As Defined (Standard Configuration)
T	T-Port
L	L-Port
3	30° V-Notch**
6	60° V-Notch**

C	End Connection
B	BW x BW**
X	BWE x BWE
R	RF Flange
O	FNPT x FNPT
W	SW x SW
U	FNPT x SW
J	RTJ Flange**

D	Body Material
C	Carbon Steel (A216-WCB)
A	Alloy 20**
S	Stainless Steel (A351-CF8M)

E	Trim
C	Carbon Steel
A	Alloy 20**
S	Stainless Steel

F	Seats
E	EK+PTFE**
F	TFM1600
G	TFM4215
H	TFM1600 + 15% Carbon**
P	PEEK***
R	RTFE**
T	PTFE
Z	METAL**
V	50%PTFE +50%SS**

G	Body Gasket
G	316 Spiral Wound + Grafoil
T	PTFE

H	NACE
N	NACE
O	NON-NACE

I	Fire Safe
F	Fire Safe
O	NON-Fire Safe

J	Operator
C	Locking Lever/T-Handle
G	Gear

K	Port Size	
	NPS	DN
0025	1/4"	8
0038	3/8"	10
0050	1/2"	15
0075	3/4"	20
0100	1"	25
0125	1-1/4"	32
0150	1-1/2"	40
0200	2"	50
0250	2-1/2"	65
0300	3"	80
0400	4"	100
0500	5"	125
0600	6"	150
0800	8"	200

Note:

* Manual operation only (A)

** Full factory lead time may be required for valves with these components

How to Order

Valve Assembly Ordering Matrix

How to Order: Valve Assembly

Example: A 2", Two Piece ASME Class 150, Full Port Ball Valve with Flanged Ends, Carbon Steel Body, Stainless Steel Trim, TFM1600 Seats, Graphite Packing, NACE Compliant, Fire Safe with **Spring Return Actuator, Fail Closed, 12 Springs, 24VDC NEMA 7 Solenoid, and NEMA 7 Mechanical Limit Switch** is written: 10E10-AR-CSFG-NFC-0200 + **S04C12-C-C-XXX**

ECON VALVE CODE +

L
X

 —

M
X

 —

N
X

 —

O	P	Q
X	X	X

L	Actuator: None
X	NO Actuator

OR

Actuator: Double Acting			
L	Size	L	Size
DA01	EDA 0010	DA50	EDA 0500
DA02	EDA 0020	DA85	EDA 0850
DA04	EDA 0040	DA12	EDA 1200
DA08	EDA 0080	DA17	EDA 1750
DA13	EDA 0130	DA21	EDA 2100
DA20	EDA 0200	DA25	EDA 2500
DA30	EDA 0300		

OR

Actuator: Spring Return			
L	Fail Closed	L	Fail Open
S02C <u>06</u>	ESR 0020 FC	S02A <u>06</u>	ESR 0020 FO
S04C <u>14</u>	ESR 0040 FC	S04A <u>14</u>	ESR 0040 FO
S08C <u>14</u>	ESR 0080 FC	S08A <u>14</u>	ESR 0080 FO
S13C <u>14</u>	ESR 0130 FC	S13A <u>14</u>	ESR 0130 FO
S20C <u>14</u>	ESR 0200 FC	S20A <u>14</u>	ESR 0200 FO
S30C <u>14</u>	ESR 0300 FC	S30A <u>14</u>	ESR 0300 FO
S50C <u>14</u>	ESR 0500 FC	S50A <u>14</u>	ESR 0500 FO
S85C <u>14</u>	ESR 0850 FC	S85A <u>14</u>	ESR 0850 FO
S12C <u>14</u>	ESR 1200 FC	S12A <u>14</u>	ESR 1200 FO
S17C <u>14</u>	ESR 1750 FC	S17A <u>14</u>	ESR 1750 FO
S21C <u>14</u>	ESR 2100 FC	S21A <u>14</u>	ESR 2100 FO
S25C <u>14</u>	ESR 2500 FC	S25A <u>14</u>	ESR 2500 FO
S40C <u>14</u>	ESR 4000 FC	S40A <u>14</u>	ESR 4000 FO

Change the spring quantity by replacing the last 2 characters (underlined) with a new code.

Change Spring Count			
04	4 Springs	10	10 Springs
06	6 Springs	12	12 Springs
08	8 Springs	14	14 Springs

OR

Actuator: Electric (On/Off)			
L	110 V	L	24V
E04A <u>S</u>	ELA 0040 110V	E04D <u>S</u>	ELA 0040 24V
E06A <u>S</u>	ELA 0060 110V	E08D <u>S</u>	ELA 0080 24V
E08A <u>S</u>	ELA 0080 110V		
E10A <u>S</u>	ELA 0100 110V		
E15A <u>S</u>	ELA 0150 110V		
E20A <u>S</u>	ELA 0200 110V		
E30A <u>S</u>	ELA 0300 110V		
E50A <u>S</u>	ELA 0500 110V		
E60A <u>S</u>	ELA 0600 110V		
E80A <u>S</u>	ELA 0800 110V		
E12A <u>S</u>	ELA 1200 110V		

If Electric Modulation is needed, change the last character (underlined) from S to M.

M	Solenoid Valve
X	NO Solenoid
A	Solenoid, NEMA 4 Watertight, 24VDC
L	Solenoid, NEMA 4 Watertight, 24VAC
B	Solenoid, NEMA 4 Watertight, 110VAC
C	Solenoid, NEMA 7 Explosion proof, 24VDC
M	Solenoid, NEMA 7 Explosion proof, 24VAC
D	Solenoid, NEMA 7 Explosion proof, 110VAC
T	Custom Solenoid Option

N	Limit Switch
X	NO Limit Switch
V	Limit Switch, NEMA 4 Mechanical
W	Limit Switch, NEMA 4 Proximity
Y	Limit Switch, NEMA 7 Explosion proof, Mechanical
Z	Limit Switch, NEMA 7 Explosion proof, Proximity
T	Custom Limit Switch Option

O	Positioner
X	NO Positioner
A	Smart Positioner, NEMA 4, Single Acting
B	Smart Positioner, NEMA 4, Double Acting
T	Custom Positioner Option
V	Pneumatic Positioner

P	Other
X	No other item
E	Stem extensions on valves

Q	Linkage Kit
X	NO Linkage Kit
L	Linkage Kit

Note:
Contact sales for additional valve assembly accessory options.

Proven quality since 1892

Econosto, part of the ERIKS group, has been offering a wide variety of engineered products since 1892. By focusing on technical superiority along with guaranteed quality, Econ branded products are now sold in most of the major markets throughout the world. Given the strength of the North American markets, the Econ brand of ball valves, actuators, and accessories are now being inventoried and sold in the United States and Canada. Primary amongst the targeted market segments are the following:

- Chemical and Petrochemical
- Food and Beverage
- Heating, Ventilation and Air Conditioning
- Marine
- Mining
- Oil and Gas
- Original Equipment Manufacturing
- Pulp and Paper
- Semiconductor
- Water and Wastewater

Econ Actuators

Product offerings include rack and pinion aluminum housed actuators with torque values up to 56,831 in-lb (6421 Nm). Econ products offer reliable and dependable automation for quarter turn valves.

Engineered and built to withstand most applications and environmental conditions, 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 around 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. Econosto has its own teams of Quality Inspectors stationed strategically close to or within their manufacturing sites in order to guarantee that their high quality standards are rigidly adhered to.

An increasing number of customers rely upon Econ products because there is a low cost to value ratio. This means that Econ products are not only cost competitive but also perform as well as or better than more expensive products.



Econ Products Featured:
Full Port, Flanged Floating Ball Valve with Spring Return Actuator and Quarter-Turn, Single Acting Smart Positioner.