



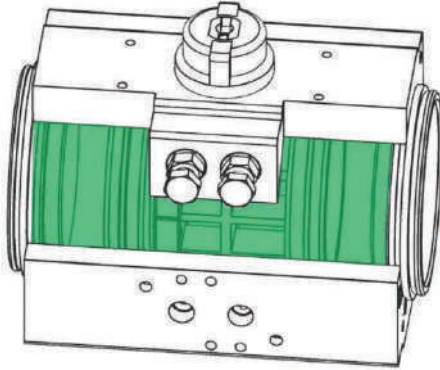
ACTUATORS & CONTROLS



Patent pending

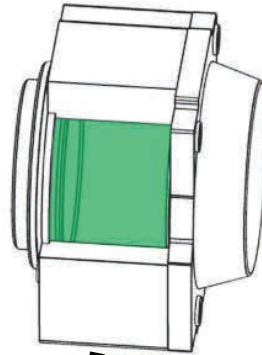
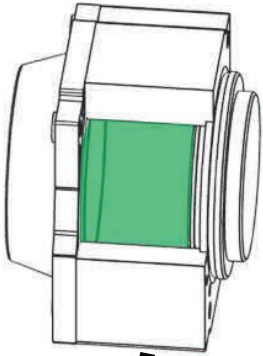


EZRack is a traditional rack & pinion actuator with an integrated air reservoir



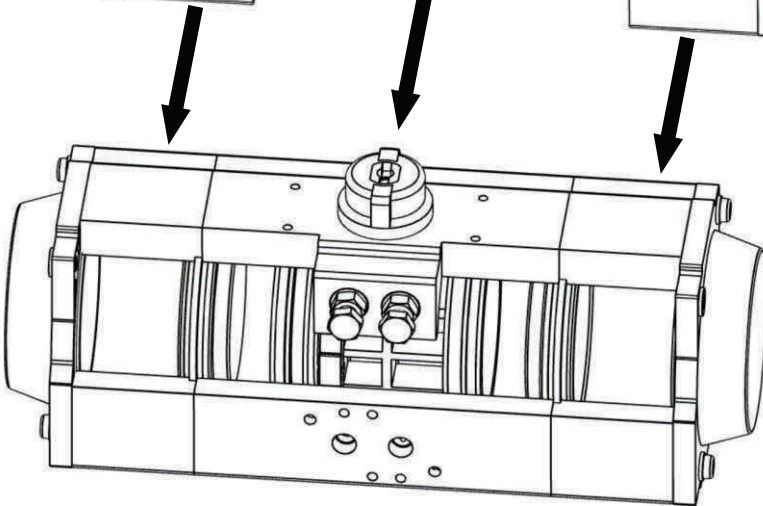
Double-acting rack and pinion

Traditional rack and pinion actuator.



With an integral air reservoir

Air reservoirs in fail-safe systems are commonly used to replace springs in large mission-critical emergency shut-down valves.



Unique features and benefits

- “0” cost and time to make the actuator double-acting, fail-close or fail-open
- “0” issues with springs
- “0” effect from environment
- 24x inventory reduction compared to traditional double-acting and spring-return actuators

Why spring-return actuators do not last in dirty environments

Dirty environments need actuators that never breathe in the environment they operate in (open-loop vs. closed-loop). Spring-returns are open-loop, whereas fail-safe air reservoirs are closed-loop. In dirty environment industries such as steel, chemical or pulp & paper, spring-return actuators vacuum in the environment, which quickly attacks and corrodes the springs, and the debris damages actuator seals.

EZRack Features and Benefits

Inventory & Working Capital Efficiency

Click QR codes on computer for link

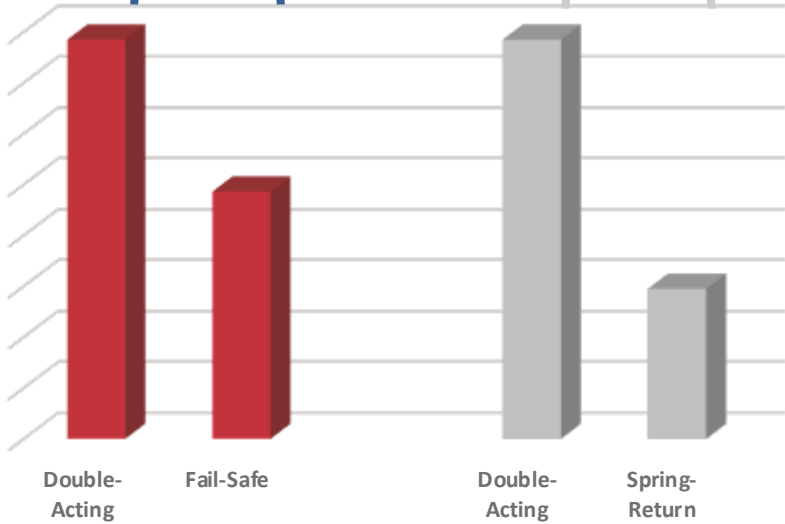
Video



- “0” cost and time to make the actuator double-acting, fail-close or fail-open
- 24x inventory reduction

TORQUE RANGE
(In-lbs. @ 80 psi)

80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-



Actuator Sizes		17 models	17 models
Function	Double-Acting	Same Actuator	3 SKUs per Actuator
	Fail-Close		
	Fail-Open		
Spring Set	30 PSI, 40 PSI, 50 PSI, 60 PSI, 70 PSI, 80 PSI, 90 PSI, 100 PSI	Same Actuator	8 SKUs per Actuator

Dirty or High-Purity Environments

Video



Years of usage in dirty and caustic environment



Exterior of actuator



Clean interior

Spring-return actuators

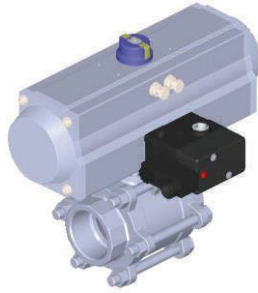
- Always breathe in and out environment; issues in dirty or high-purity environments are inevitable; short life-span



Any Electrical Rating
With Tru-Flo Solenoid Valve



Double-acting



Fail-close

Solenoid points
LEFT



Fail-open

Solenoid points
RIGHT

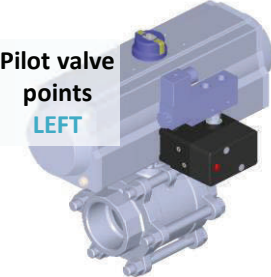


Universal Compatibility
With Any 3rd Party Solenoid



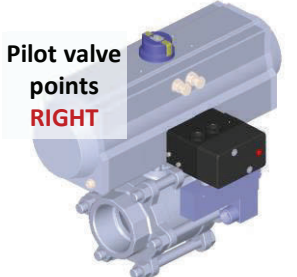
With 3rd party
5/2 DA solenoid

Pilot valve points
LEFT



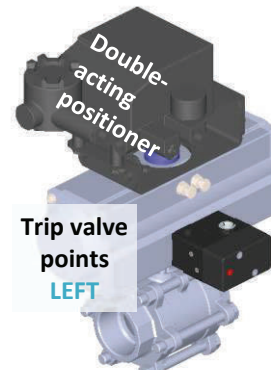
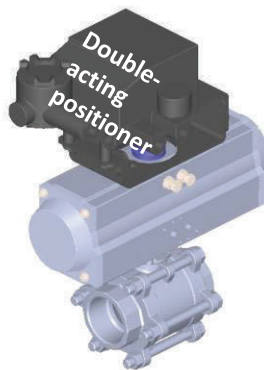
With 3rd party
3/2 DA solenoid

Pilot valve points
RIGHT

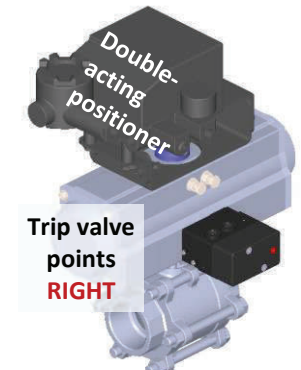


With 3rd party
3/2 DA solenoid

Universal Compatibility
With Any Positioner

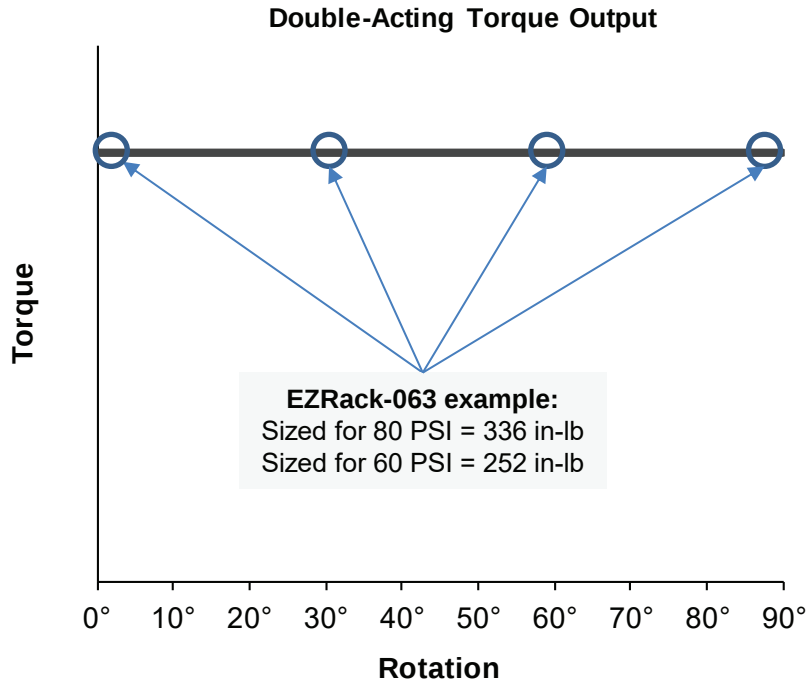


Trip valve points
LEFT

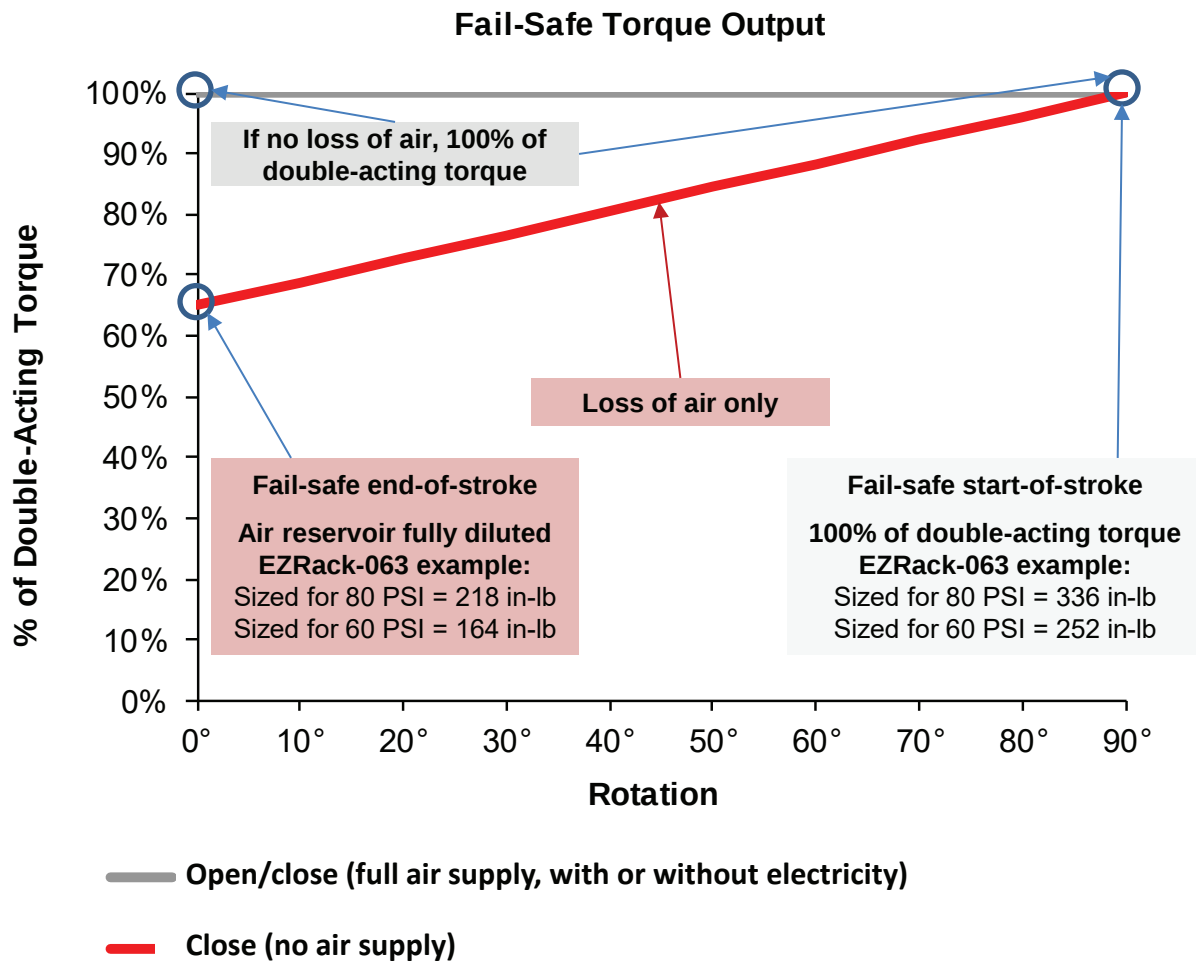


Trip valve points
RIGHT

Double-Acting Torque Curve



Fail-Safe Torque Curve



EZRack Torque Output & Weight

1557-25

Metric

Double-Acting (NM)								Weight
Model / BAR	2.0	3.0	4.0	5.0	5.5	6.0	7.0	Kg
ER-32	2.7	4.1	5.9	7.4	8.1	8.8	9.8	CF
ER-52	7.7	11.6	15.5	19.3	21.3	23.2	27.1	2.1
ER-63	13.8	20.6	27.5	34.4	37.9	41.3	48.2	3.1
ER-75	22.3	33.7	44.7	55.9	61.5	67.0	78.2	4.3
ER-83	28.2	42.3	56.4	70.5	77.6	84.6	98.7	4.9
ER-92	43.2	64.8	86.5	108.0	118.8	129.6	151.2	7.3
ER-105	63.1	94.7	127.2	157.8	173.6	189.4	220.9	8.9
ER-125	108.4	162.7	216.9	271.1	298.2	325.3	379.5	13.7
ER-140	163.2	244.8	326.4	408.0	448.8	489.6	571.2	20.0
ER-160	251.4	377.0	502.7	628.4	691.3	754.1	879.7	28.5
ER-190	405.1	607.7	810.2	1,012.8	1,114.1	1,215.3	1,417.9	43.3
ER-210	557.0	835.0	1,113.0	1,392.0	1,531.0	1,670.0	1,948.0	57.3
ER-240	873.0	1,309.0	1,745.0	2,182.0	2,400.0	2,618.0	3,054.0	CF
ER-270	1,227.0	1,841.0	2,454.0	3,068.0	3,374.5	3,681.0	4,295.0	CF
ER-300	1,506.0	2,259.0	3,013.0	3,766.0	4,142.5	4,519.0	5,272.0	CF
ER-350	2,255.0	3,382.0	4,510.0	5,638.0	6,201.5	6,765.0	7,893.0	CF
ER-400	3,213.0	4,819.0	6,427.0	8,033.0	8,836.5	9,640.0	11,246.0	CF

Fail-Safe (Minimum Torque At End-Of-Stroke) (NM)								Weight
Model / BAR	2.0	3.0	4.0	5.0	5.5	6.0	7.0	Kg
ER-32	1.8	2.7	3.8	4.8	5.3	5.7	6.4	CF
ER-52	5.0	7.5	10.1	12.5	13.8	15.1	17.6	2.1
ER-63	9.0	13.4	17.9	22.4	24.6	26.8	31.3	3.1
ER-75	14.5	21.9	29.1	36.3	39.9	43.6	50.8	4.3
ER-83	18.3	27.5	36.7	45.8	50.4	55.0	64.2	4.9
ER-92	28.1	42.1	56.2	70.2	77.2	84.2	98.3	7.3
ER-105	41.0	61.6	82.7	102.6	112.8	123.1	143.6	8.9
ER-125	70.5	105.8	141.0	176.2	193.8	211.4	246.7	13.7
ER-140	106.1	159.1	212.2	265.2	291.7	318.2	371.3	20.0
ER-160	163.4	245.1	326.8	408.5	449.3	490.2	571.8	28.5
ER-190	263.3	395.0	526.6	658.3	724.1	789.9	921.6	43.3
ER-210	362.1	542.8	723.5	904.8	995.2	1,085.5	1,266.2	57.3
ER-240	567.5	850.9	1,134.3	1,418.3	1,560.0	1,701.7	1,985.1	CF
ER-270	797.6	1,196.7	1,595.1	1,994.2	2,193.4	2,392.7	2,791.8	CF
ER-300	978.9	1,468.4	1,958.5	2,447.9	2,692.6	2,937.4	3,426.8	CF
ER-350	1,465.8	2,198.3	2,931.5	3,664.7	4,031.0	4,397.3	5,130.5	CF
ER-400	2,088.5	3,132.4	4,177.6	5,221.5	5,743.7	6,266.0	7,309.9	CF

Note: Published torques are actual output torque values and do not contain safety factor.

Imperial

Double-Acting (In-Lb)									Weight
Model / PSI	30	40	50	60	70	80	90	100	Lbs
ER-32	25	33	44	54	63	72	81	85	CF
ER-52	70	94	118	142	165	189	212	236	4.6
ER-63	126	168	210	252	294	336	378	420	6.8
ER-75	204	274	342	409	478	545	613	682	9.5
ER-83	258	344	430	516	602	688	774	860	10.8
ER-92	395	527	659	792	923	1,054	1,186	1,318	16.1
ER-105	578	771	967	1,164	1,348	1,541	1,734	1,926	19.6
ER-125	992	1,324	1,655	1,985	2,316	2,647	2,978	3,308	30.2
ER-140	1,494	1,992	2,490	2,988	3,486	3,984	4,482	4,980	44.1
ER-160	2,301	3,067	3,834	4,601	5,369	6,136	6,903	7,669	62.8
ER-190	3,708	4,945	6,180	7,416	8,653	9,888	11,124	12,361	95.5
ER-210	5,099	6,794	8,491	10,188	11,892	13,589	15,286	16,982	126.3
ER-240	7,991	10,651	13,312	15,973	18,641	21,303	23,964	26,624	CF
ER-270	11,231	14,979	18,721	22,463	26,211	29,953	33,694	37,442	CF
ER-300	13,785	18,380	22,980	27,580	32,174	36,770	41,365	45,960	CF
ER-350	20,641	27,518	34,400	41,282	48,167	55,046	61,924	68,809	CF
ER-400	29,410	39,210	49,019	58,830	68,628	78,434	88,240	98,039	CF

Fail-Safe (Minimum Torque At End-Of-Stroke) (In-Lb)									Weight
Model / PSI	30	40	50	60	70	80	90	100	Lbs
ER-32	16	22	28	35	41	47	52	56	CF
ER-52	46	61	77	92	107	123	138	154	4.6
ER-63	82	109	136	164	191	218	246	273	6.8
ER-75	133	178	222	266	310	355	399	443	9.5
ER-83	168	224	280	336	391	447	503	559	10.8
ER-92	257	343	429	515	600	685	771	857	16.1
ER-105	375	501	629	757	876	1,002	1,127	1,252	19.6
ER-125	645	860	1,075	1,291	1,505	1,720	1,935	2,150	30.2
ER-140	971	1,295	1,618	1,942	2,266	2,589	2,913	3,237	44.1
ER-160	1,496	1,994	2,492	2,991	3,490	3,988	4,487	4,985	62.8
ER-190	2,410	3,214	4,017	4,821	5,624	6,428	7,231	8,035	95.5
ER-210	3,314	4,416	5,519	6,622	7,730	8,833	9,936	11,038	126.3
ER-240	5,194	6,923	8,653	10,382	12,117	13,847	15,577	17,305	CF
ER-270	7,300	9,737	12,169	14,601	17,037	19,469	21,901	24,338	CF
ER-300	8,960	11,947	14,937	17,927	20,913	23,900	26,887	29,874	CF
ER-350	13,417	17,886	22,360	26,834	31,309	35,780	40,250	44,726	CF
ER-400	19,117	25,486	31,863	38,239	44,608	50,982	57,356	63,725	CF

Note: Published torques are actual output torque values
and do not contain safety factor.

Technical Specifications

Travel adjustment	Extended stopper: -5°/+5° on each side, total of 80° - 100°
Temperature range	Standard Temp: -20°C to 80°C (-4°F to 176°F)
Pressure rating	2 -7 bar (30 - 100 psi)
Operating medium (standard)	Must use inert gases

Mounting Specifications

Actuator to valve	Mounting standard per EN ISO5211 (DIN3337 optional) and traditional mounting
Accessories	NAMUR VDI/VDE 3845

Standard and Specifications Complied

ISO 5211:2001 (E)	Industrial valves – part-turn actuator attachments
MESC SPE 77/211	Valve stem and stem adaptor dimensions and bracket drilling patterns for actuated quarter-turn valves

With adapter plate making port 2 and port 4 1/4" NPT

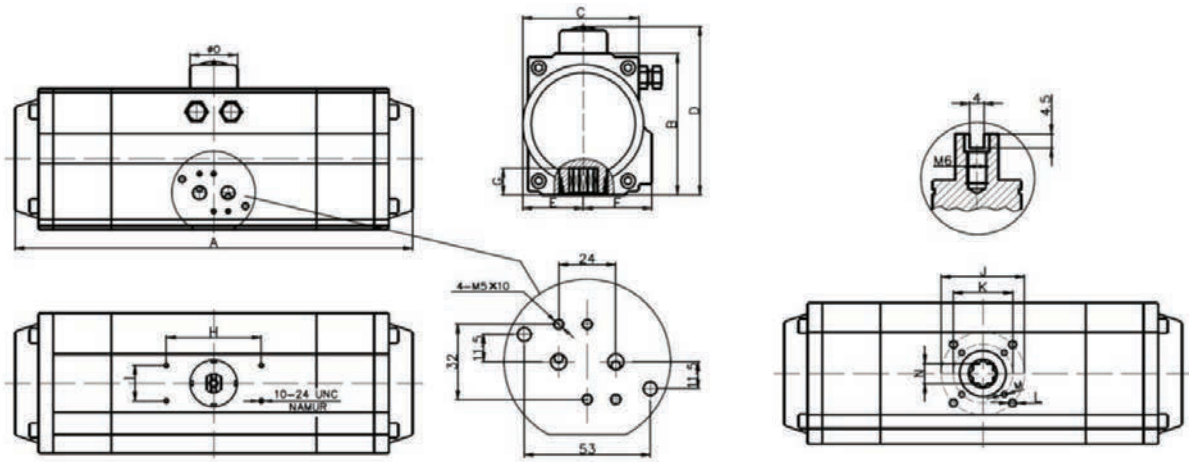
Namur VDI/VDE 3845	Interface between valves, actuators and auxiliary equipments
CEN/TC 69	Basic requirements for pneumatic part-turn actuators on industrial valves

EZRack Ordering Codes

Product Type	Model Number		Actuator Attributes				
			Thread	Corrosion Rating	Temp. Rating		
ERF	-	X	-	X	X	-	X
ERF	032, 052, 063, 075, 083, 092, 105, 125, 140, 160, 190, 210, 240, 270, 300, 350, 400		1: Imperial 2: Metric	1: Standard version	ST: Standard temp (-20°C to 80°C or -4°F to 176°F)		
					HT: High temp (-20°C to 160°C or -4°F to 320°F)		
					LT: Low temp (-40°C to 80°C or -40°F to 176°F)		

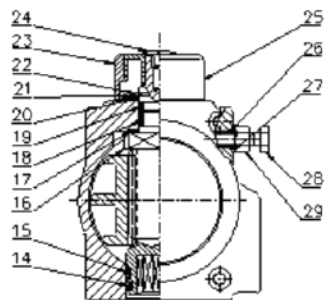
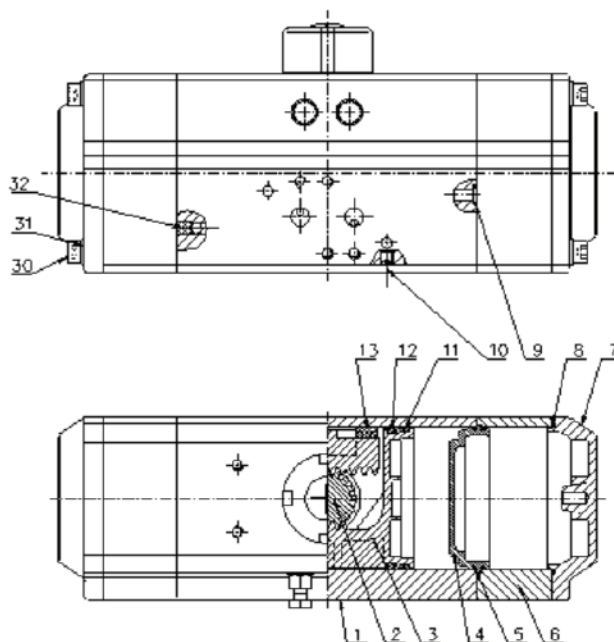
EZRack Dimensions

Note: Individual model specs downloadable online



Metric	Dimensions (mm)														
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ER-032	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-052	258	74	60	99	30	41	14	80	30	F05Φ50	F03Φ36	M6x11	M5x10	11	40
ER-063	290	88	69	113	36	45	18	80	30	F07Φ70	F05Φ50	M8x15	M6x12	14	40
ER-075	330	100	79	125	42	52	20	80	30	F07Φ70	F05Φ50	M8x13	M6x11	14	40
ER-083	332	109	88	134	46	53	20	80	30	F07Φ70	F05Φ50	M8x15	M6x12	17	40
ER-092	409	120	97.5	145	51	58	22	80	30	F07Φ70	F05Φ50	M8x13	M6x12	17	40
ER-105	450	133	105.5	158	57.5	64	24	80	30	F10Φ102	F07Φ70	M10x18	M8x14	22	40
ER-125	540	155	120.5	182	67.5	70	27.5	80	30	F10Φ102	F07Φ70	M10x18	M8x14	22	65
ER-140	654	172	137	198	76	77	32	80	30	F12Φ125	F10Φ102	M12x22	M10x18	27	65
ER-160	730	197	159.5	224	86.5	88	34	80	30	F12Φ125	F10Φ102	M12x22	M10x18	27	65
ER-190	830	230	186	269	103	103	40	130	30	F14Φ140	/	M16x23	/	36	78
ER-210	934	255	202	294	113	113	40	130	30	F14Φ140	/	M16x25	/	36	78
ER-240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Imperial	Dimensions (in)														
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ER-032	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-052	10.16	2.91	2.36	3.90	1.18	1.61	0.55	3.15	1.18	F05Φ1.97	F03Φ1.42	1/4-20 UNC	10-24UNC	0.43	1.57
ER-063	11.42	3.46	2.72	4.45	1.42	1.77	0.71	3.15	1.18	F07Φ2.76	F05Φ1.97	5/16-18 UNC	1/4-20 UNC	0.55	1.57
ER-075	12.99	3.94	3.11	4.92	1.65	2.05	0.79	3.15	1.18	F07Φ2.76	F05Φ1.97	5/16-18 UNC	1/4-20 UNC	0.55	1.57
ER-083	13.07	4.29	3.46	5.28	1.81	2.07	0.79	3.15	1.18	F07Φ2.76	F05Φ1.97	5/16-18 UNC	1/4-20 UNC	0.67	1.57
ER-092	16.10	4.72	3.84	5.71	2.01	2.26	0.87	3.15	1.18	F07Φ2.76	F05Φ1.97	5/16-18 UNC	1/4-20 UNC	0.67	1.57
ER-105	17.72	5.24	4.15	6.22	2.26	2.52	0.94	3.15	1.18	F10Φ4.02	F07Φ2.76	3/8-16 UNC	5/16-18 UNC	0.87	1.57
ER-125	21.26	6.10	4.74	7.17	2.66	2.76	1.08	3.15	1.18	F10Φ4.02	F07Φ2.76	3/8-16 UNC	5/16-18 UNC	0.87	2.56
ER-140	25.75	6.75	5.39	7.80	2.99	3.03	1.26	3.15	1.18	F12Φ4.92	F10Φ4.02	1/2-13 UNC	3/8-16 UNC	1.06	2.56
ER-160	28.74	7.76	6.28	8.82	3.41	3.44	1.34	3.15	1.18	F12Φ4.92	F10Φ4.02	1/2-13 UNC	3/8-16 UNC	1.06	2.56
ER-190	32.68	9.06	7.32	10.59	4.06	4.06	1.57	5.12	1.18	F14Φ5.51	/	5/8-11 UNC	/	1.42	3.07
ER-210	36.77	10.04	7.95	11.57	4.45	4.45	1.57	5.12	1.18	F14Φ5.51	/	5/8-11 UNC	/	1.42	3.07
ER-240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-350	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ER-400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



BOM

#	Description	Material	QTY	Protection
1	Body	Aluminum	1	Anodized
2	Pinion	Carbon steel	1	Nickel plated
3	Piston	Aluminum	2	Anodized
4	AR Plate	Aluminum	2	Anodized
5	O-ring	NBR	4	
6	AR Compartment	Aluminum	2	Anodized
7	Cap	Aluminum	2	Epoxy coated
8	O-ring	NBR	2	
9	O-ring	NBR	2	
10	Plug	Stainless steel	1	
11	Guide Ring	POM	2	
12	O-ring	NBR	2	
13	Support Ring	POM	2	
14	O-ring	NBR	1	
15	Bearing	POM	1	
16	Spacer	Carbon steel	1	Phosphatized / galvanized
17	Thrust Bearing	POM	1	
18	Bearing	POM	1	
19	O-ring	NBR	1	
20	Thrust Bearing	POM	1	
21	Thrust Washer	Stainless steel	1	
22	Circlip	Stainless steel	1	
23	Indicator Pointer	Plastic	4	
24	Indicator Nut	Plastic	1	
25	Indicator Pointer	Plastic	1	
26	O-ring	NBR	2	
27	Washer	Stainless steel	2	
28	Adjusting Screw	Stainless steel	2	
29	Adjusting Nut	Stainless steel	2	
30	Cylinder Screw	Stainless steel	8	
31	Washer	Stainless steel	8	
32	Rubber Plug	NBR	2	



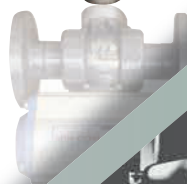
ACTUATORS & CONTROLS



Headquarters

4815 W 5TH ST.
LUMBERTON, NC 28358

Tel: 910-738-8904
SALES@FLOTITE.COM



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preferred vendor
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www.flotite.com ■ sales@flotite.com