

Eliminator SP™ Actuator

IP69K STAINLESS STEEL, HEAVY DUTY, HIGH SPEED, HIGH FORCE

The Eliminator SP and SPL series Heavy Duty linear actuators offer all the performance advantages of our HD actuator, now with IP69K rating. Ideal for food and medical grade applications, this 316 stainless steel actuator is designed for high-pressure and high-temperature washdown conditions.



Ideal for a Variety of Applications Including:

- Food Processing
- Volumetric Filling / Pumping
- Medical Equipment
- Pressing / Punching
- Hydraulic Replacement
- And More

Key Features:

IP69K

- IP69K rated for high-pressure, high-temperature washdown
- Contoured 316 stainless steel construction with hard chrome plated piston rod
- Durable anti-rotation feature
- Rated thrust up to 25,000 lbf
- Velocity to 20 in/sec, stroke up to 48 inches
- Integrated load cell option provides continuous bi-directional measurement of applied loads (SPL model)
- 0.002 in/ft standard lead accuracy, with 0.0005 in/ft option
- Standard backlash is 0.003 in maximum; optional zero backlash is also available

SPECIFICATION CHART FOR THE ELIMINATOR SP ACTUATOR

Model Number	Thrust Load Rated	Linear Velocity Max. ¹	Travel Length Max. ²	Frame Size	Lead	Ball Screw Diameter	Ball Screw Max. ¹	Torque @ Ball Screw Max.	Dynamic Capacity Per Million Revs	Dynamic Capacity Per Million Inches	Motor Gearhead Frame Supported Max. ²
	lb _r	in/s	in	in	mm	mm	RPM	in-lb	lb _r	lb _r	in
SP201	1,000	8.0	12	2	4	16	3,048	28	1,529	825	2.75
SP302	2,000	20.0	36	3	10	25	3,048	139	6,490	4,760	4.25
SP304	4,000	20.0	36	3	10	25	3,048	278	6,490	4,760	4.25
SP404	4,000	18.0	42	4	10	32	2,743	278	14,580	10,690	5.75
SP406	6,000	18.0	42	4	10	32	2,743	418	14,580	10,690	5.75
SP508	8,000	14.0	48	5	12	50	1,778	668	31,250	24,340	8
SP516	16,000	14.0	48	5	12	50	1,778	1,337	31,250	24,340	8
SP618	18,000	9.8	48	6	12	63	1,245	1,504	35,750	27,840	8
SP625	25,000	14.4	48	6	20	80	1,097	3,481	52,150	48,160	8

Model Number	Inertia 1:1 Zero Stroke ³	Inertia 1:1 Per Inch of Stroke ³	Inertia 2:1 Zero Stroke ³	Inertia 2:1 Per Inch of Stroke ³	Inertia Inline Zero Stroke ³	Inertia Inline Per Inch of Stroke ³	Unit Weight "U" Motor Mount ⁴	Unit Weight "L" Motor Mount ⁴	Weight Per Inch of Stroke ⁴
	lb-in ²	lb-in ²	lb-in ²	lb-in ²	lb-in ²	lb-in ²	lb	lb	lb
SP201	0.51	0.0031	0.27	0.0008	0.04	0.0031	9	7	0.96
SP302	4.31	0.0212	1.64	0.0053	0.34	0.0212	43	70	2.13
SP304	4.87	0.0212	1.46	0.0053	0.38	0.0212	43	70	2.13
SP404	23.24	0.0457	4.11	0.0114	1.99	0.0457	76	70	2.73
SP406	23.24	0.0457	4.11	0.0114	1.99	0.0457	76	70	2.73
SP508	139.27	0.2688	22.66	0.0672	5.92	0.2688	179	145	4.99
SP516	139.36	0.2688	22.68	0.0672	6.00	0.2688	179	145	4.99
SP618	281.96	0.7361	43.91	0.1840	12.31	0.7361	216	181	6.21
SP625	295.02	1.8713	47.17	0.4678	25.37	1.8713	282	248	6.62

¹ Maximum velocity and maximum screw speed may not be achievable at maximum stroke.

² Larger Motor or Gearhead Frames and longer stroke lengths are available upon request.

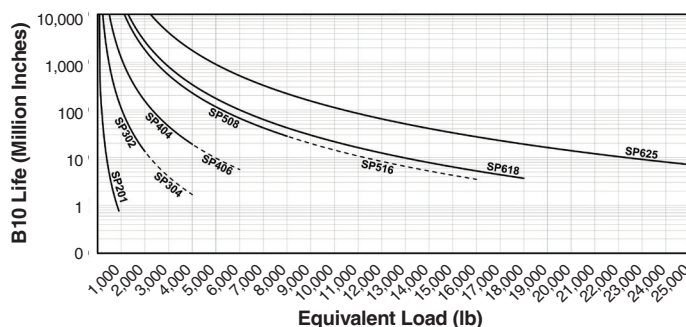
³ All inertia values are at the input shaft and are representative of typical pulleys, bushings, couplers, etc. Actual values may vary due to motor selection.

⁴ Weight values are for reference only and vary depending on configuration.

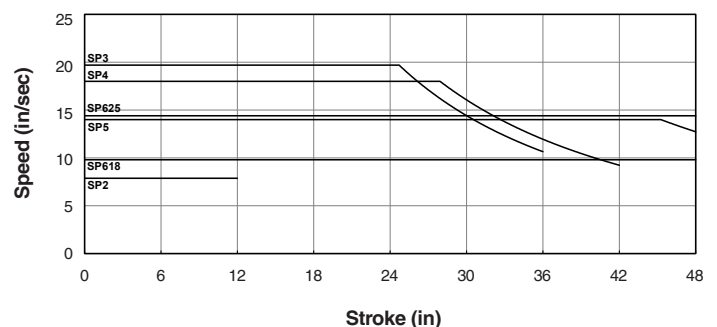
*IP69K rating for static only.

DATA CURVES FOR THE ELIMINATOR SP ACTUATOR

Dynamic Capacity: Life Vs. Load



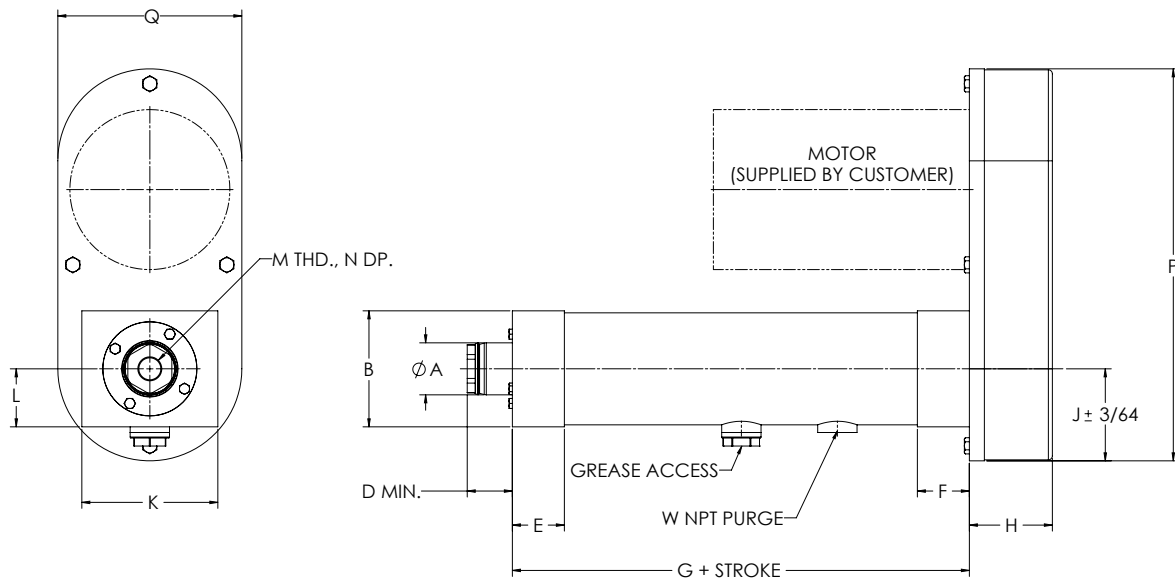
Speed Vs. Stroke



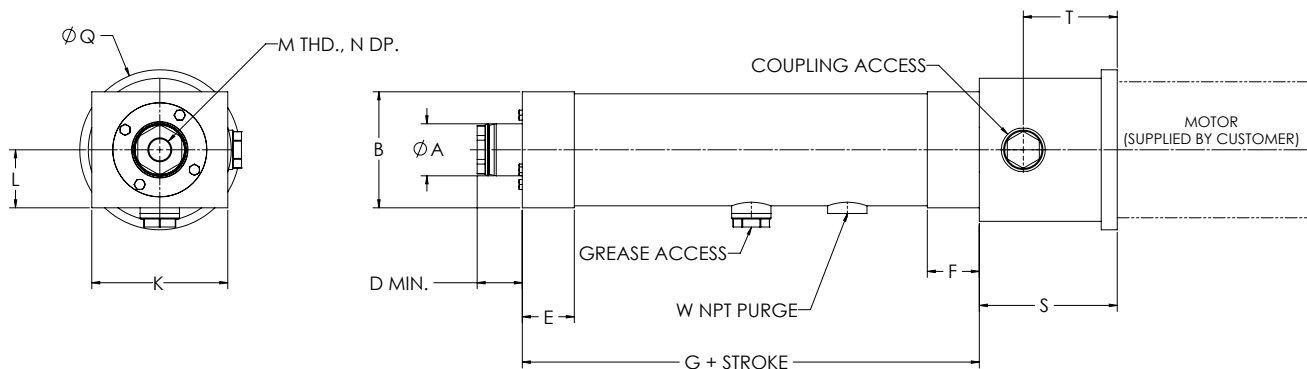
DIMENSIONED DRAWINGS FOR THE ELIMINATOR SP ACTUATOR

Dimensions are in inches and are subject to change without notice.

U-Parallel Offset Motor Configuration



L-Inline Motor Configuration



"S" length may vary depending on motor or gearbox.

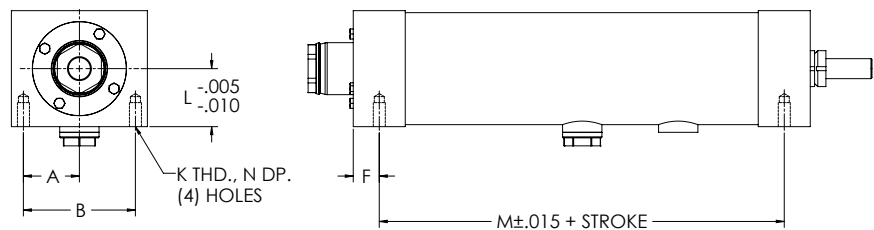
SP U-Parallel Offset and L-Inline Motor Configuration

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S	W
SP201	1.13	2.28	3.00	1.04	1.00	1.00	5.63	1.88	2.25	4.50	1.14	1/2-20	1.00	8.50	4.50	2.94	1/8
SP302	1.63	3.63	4.25	1.41	1.63	1.63	8.28	2.59	3.20	5.75	1.81	3/4-16	1.00	12.25	5.75	4.31	1/8
SP304	1.63	3.63	4.25	1.56	1.63	1.63	8.28	2.59	3.20	5.75	1.81	3/4-16	1.00	12.25	5.75	4.31	1/8
SP404	2.25	4.38	5.50	1.88	2.00	2.00	9.59	2.72	3.50	7.19	2.19	3/4-16	1.00	10.96	7.19	5.25	1/4
SP406	2.25	4.38	5.50	1.79	2.00	2.00	9.59	2.72	3.50	7.19	2.19	3/4-16	1.00	10.96	7.19	5.25	1/4
SP508	3.00	5.63	7.75	2.56	2.50	3.00	13.38	4.50	4.61	9.00	3.88	1 1/4-12	1.63	17.25	9.00	6.75	3/8
SP516	3.00	5.63	7.75	2.56	2.50	3.00	13.38	4.50	4.61	9.00	3.88	1 1/4-12	1.63	17.25	9.00	6.75	3/8
SP618	3.50	6.13	8.50	2.75	3.00	3.00	14.00	4.68	5.84	11.00	3.06	1 1/4-12	1.63	19.50	11.00	7.25	1/2
SP625	Contact Joyce/Dayton																

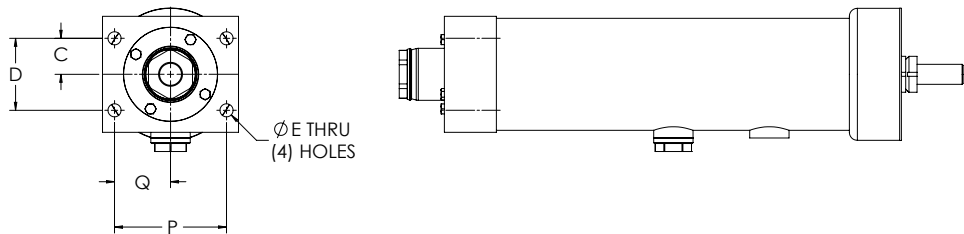
DIMENSIONED DRAWINGS FOR THE ELIMINATOR SP ACTUATOR

Dimensions are in inches and are subject to change without notice.

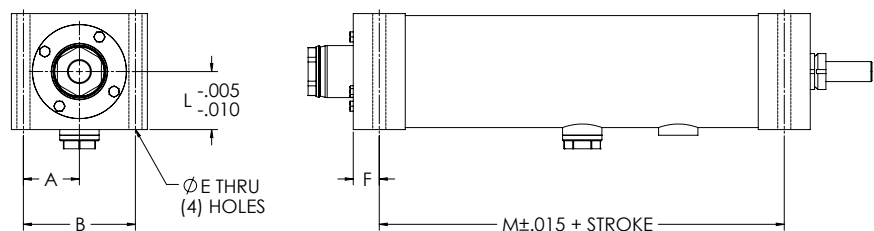
Bottom Mount Dimensions



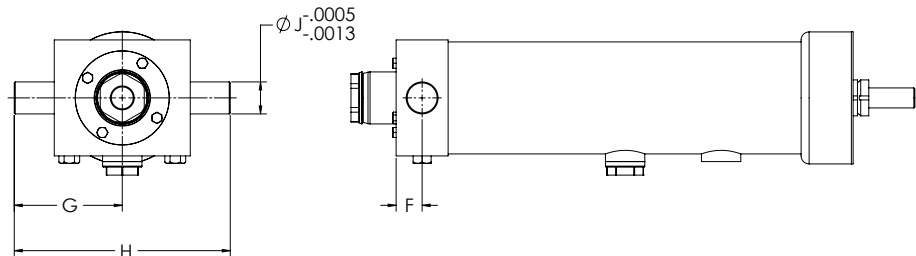
Front Flange Dimensions



Foot Mount Dimensions



Trunnion Mount Dimensions



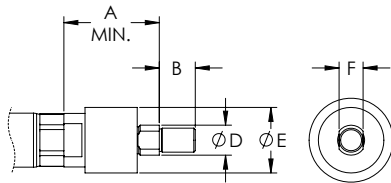
SP Mounting Dimensions (Bottom Mount, Front Flange, Foot Mount, Trunnion Mount)															
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
SP201	1.13	2.25	0.69	1.38	0.34	0.49	2.25	4.50	0.50	5/16-18	1.14	4.63	0.63	2.38	1.19
SP302	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.81	6.66	0.75	3.50	1.75
SP304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.81	6.66	0.75	3.50	1.75
SP404	2.19	4.38	1.44	2.88	0.69	1.00	4.50	9.00	1.25	5/8-11	2.19	7.59	1.00	4.38	2.19
SP406	2.19	4.38	1.44	2.88	0.69	1.00	4.50	9.00	1.25	5/8-11	2.19	7.59	1.00	4.38	2.19
SP508	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	3.88	10.63	1.25	6.25	3.13
SP516	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	3.88	10.63	1.25	6.25	3.13
SP618	3.31	6.63	2.00	4.00	1.06	Contact Joyce/Dayton				1-8	3.06	11.00	1.63	6.63	3.31
SP625	Contact Joyce/Dayton														

DIMENSIONED DRAWINGS FOR THE ELIMINATOR SP ACTUATOR

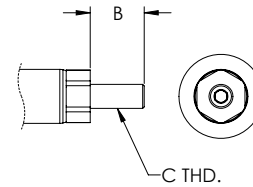
Dimensions are in inches and are subject to change without notice.

Rod End Options

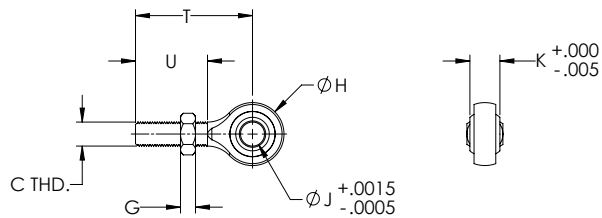
Self-Aligning Coupler



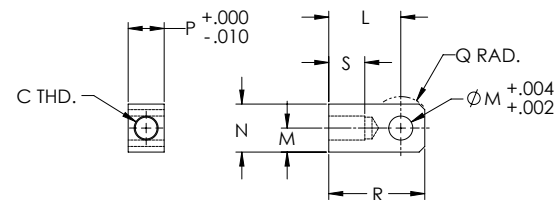
Male Thread



Spherical Rod Eye



Female Eye



SP Rod End Dimensions

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
SP201	2.00	0.75	1/2-20	0.63	1.37	0.50	0.31	1.31	0.50	0.63	1.50	0.50	1.00	0.75	0.63	2.00	0.75	2.44	1.50
SP302	2.38	1.13	3/4-16	0.97	1.75	0.88	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.88	2.81	1.13	2.88	1.75
SP304	2.38	1.13	3/4-16	0.97	1.75	0.88	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.88	2.81	1.13	2.88	1.75
SP404	2.38	1.13	3/4-16	0.97	1.75	0.88	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.88	2.81	1.13	2.88	1.75
SP406	2.38	1.13	3/4-16	0.97	1.75	0.88	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.88	2.81	1.13	2.88	1.75
SP508	2.94	1.63	1 1/4-12	1.38	2.50	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.56	4.81	2.00	4.13	2.13
SP516	2.94	1.63	1 1/4-12	1.38	2.50	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.56	4.81	2.00	4.13	2.13
SP618	2.94	1.63	1 1/4-12	1.38	2.50	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.56	4.81	2.00	4.13	2.13
SP625	Contact Joyce/Dayton																		

ORDERING GUIDE FOR THE ELIMINATOR SP ACTUATOR

Ordering Information

Base No. (Capacity)	Unit Mounting Option	Motor Position	Precision/Lead Accuracy***
SP201 (1,000 lbf)	MB: Bottom Mount	1, 2, 3, 4 0 = In-Line	A: .002 in/ft Zero Backlash
SP302 (2,000 lbf)	FF: Front Flange		B: .0005 in/ft Zero Backlash
SP304 (4,000 lbf)	MF: Foot Mount		X: Standard
SP404 (4,000 lbf)	TF: Front Trunnion		
SP406 (6,000 lbf)			
SP508 (8,000 lbf)			
SP516 (16,000 lbf)			
SP618 (18,000 lbf)			
SP625 (25,000 lbf)			

Std. Stroke Length*	Rod End Option ****	Gearbelt Reduction	N.C. Switch Qty ****
06: 6 in.	E: Female Eye	00: In-Line/Direct Coupled	0, 1, 2, 3, etc.
12: 12 in.	F: Female Thread	10: 1:1	
18: 18 in.	A: Self-Aligning Coupler**	20: 2:1	
24: 24 in.	M: Male Thread		
30: 30 in.	S: Spherical Rod Eye		
36: 36 in.			
42: 42 in.			
48: 48 in.			

Configuration	Switch Type	N.O. Switch Qty ****
L: In-Line	A: Hall Sourcing PNP	0, 1, 2, 3, etc.
U: Parallel Offset	B: Hall Sinking NPN	
	C: Reed	
	X: No Switches	

For custom stroke lengths, contact Joyce/Dayton.

* Standard Stroke Lengths

SP201 stroke lengths up to 12 in.

SP302 – SP304 stroke lengths up to 36 in.

SP404 – SP406 stroke lengths up to 42 in.

SP508 – SP740 stroke lengths up to 48 in.

** Self-Aligning Coupler

Not available for SP625

*** Precision/Lead Accuracy

SP201 – 0.0005 in/ft, Zero Backlash is standard

SP302, SP404 – Zero Backlash not available

**** IP69K Exceptions

Self-Aligning Coupler and Spherical Rod Ends not rated

Sealed Limit Switches, IP65 rated