

Eliminator HDL™ Actuator

ELIMINATOR HD + INTEGRATED LOAD CELL

The Eliminator HDL combines all the precision features of the HD series with the additional benefit of an integrated load cell, providing continuous and accurate measurement of applied loads and force. This heavy-duty, rugged linear actuator provides a clean, simple, and economical solution for your high-speed precision thrust applications.



Ideal for a Variety of Applications Including:

- Process Monitoring
- Prototyping
- Force Control
- Hydraulic Replacement
- And More

Key Features:

- “Measure while you press” integrated load cell design
- Conforms to latest standard ASTM E4 for testing machines
- Rated forces up to 40,000 lbf
- High velocity up to 20 in/sec, stroke up to 48 inches
- Accurate to within 0.5% of rated force
- 0.002 in/ft standard lead accuracy, 0.0005 in/ft optional lead accuracy
- Standard backlash is 0.003 in maximum

SPECIFICATION CHART FOR THE ELIMINATOR HDL 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
	lbr	in/s	in	in	mm	mm	RPM	in-lb	lbr	lbr	in
HDL201	1,000	8.0	12	2.00	4	16	3,048	28	1,529	825	2.75
HDL302	2,000	20.0	36	3.00	10	25	3,048	139	6,490	4,760	4.25
HDL304	4,000	20.0	36	3.00	10	25	3,048	278	6,490	4,760	4.25
HDL404	4,000	18.0	42	4.00	10	32	2,743	278	14,580	10,690	5.75
HDL406	6,000	18.0	42	4.00	10	32	2,743	418	14,580	10,690	5.75
HDL508	8,000	14.0	48	5.00	12	50	1,778	668	31,250	24,340	8.00
HDL516	16,000	14.0	48	5.00	12	50	1,778	1,337	31,250	24,340	8.00
HDL618	18,000	9.8	48	6.00	12	63	1,245	1,504	35,750	27,840	8.00
HDL625	25,000	14.4	48	6.00	20	80	1,097	3,481	52,150	48,160	8.00
HDL740	40,000	14.4	48	7.00	20	80	1,097	5,575	52,150	48,160	10.85

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
HDL201	0.51	0.0031	0.27	0.0008	0.04	0.0031	8	6	1
HDL302	4.31	0.0212	1.64	0.0053	0.34	0.0212	29	22	1
HDL304	4.87	0.0212	1.46	0.0053	0.38	0.0212	29	22	1
HDL404	23.24	0.0457	4.11	0.0114	1.99	0.0457	63	49	2
HDL406	23.24	0.0457	4.11	0.0114	1.99	0.0457	63	49	2
HDL508	139.27	0.2688	22.66	0.0672	5.92	0.2688	155	105	3
HDL516	139.36	0.2688	22.68	0.0672	6.00	0.2688	155	105	3
HDL618	281.96	0.7361	43.91	0.1840	12.31	0.7361	207	152	6
HDL625	295.02	1.8713	47.17	0.4678	25.37	1.8713	214	158	6
HDL740	401.85	1.8707	64.87	0.4677	96.29	1.8707	373	318	7.41

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.

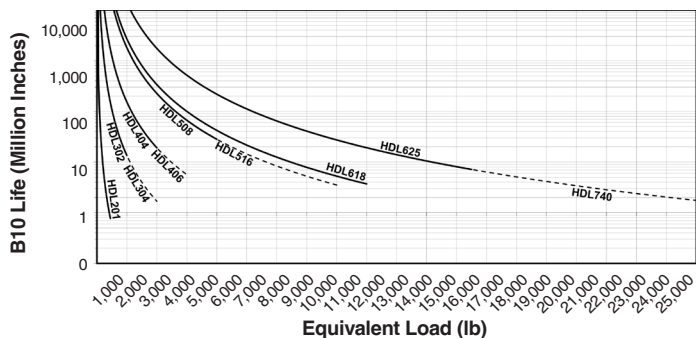
⁴ Weight values are for reference only and vary depending on configuration.

"U" Parallel offset configuration

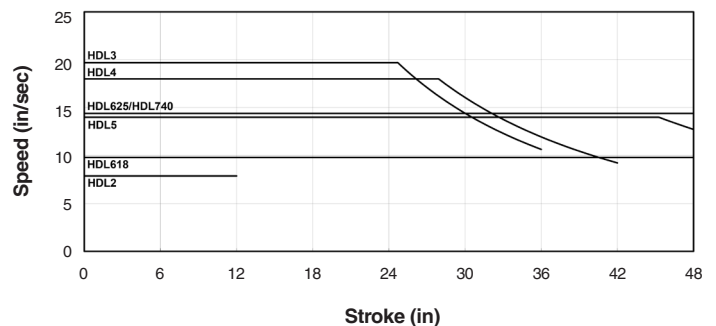
"L" Inline configuration

DATA CURVES FOR THE ELIMINATOR HDL ACTUATOR

Dynamic Capacity: Life Vs. Load



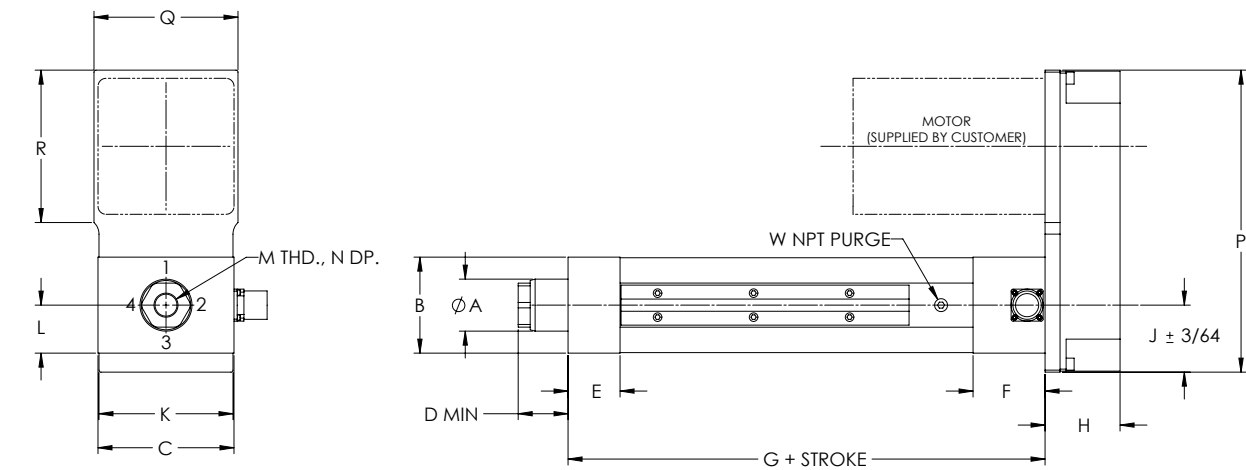
Speed Vs. Stroke



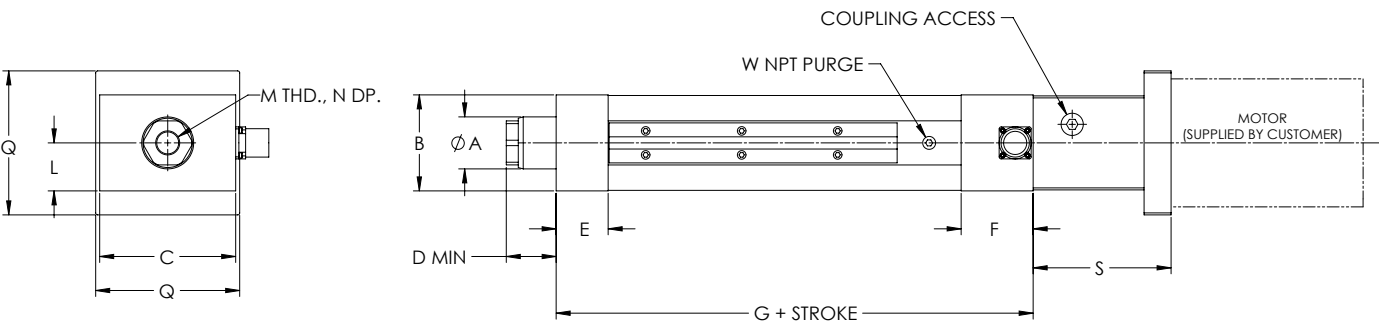
DIMENSIONED DRAWINGS FOR THE ELIMINATOR HDL ACTUATOR

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

U-Parallel Offset Motor Configuration



L-Inline Motor Configuration



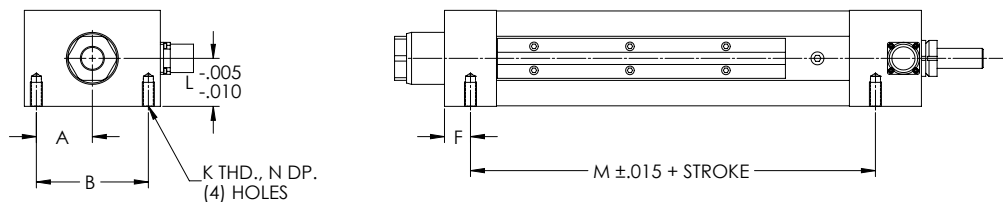
"S" length may vary depending on motor or gearbox.

HDL U-Parallel Offset and L-Inline Motor Configuration																		
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	W
HDL201	1.13	2.00	3.00	1.04	1.00	1.75	6.34	1.63	1.48	2.97	1.00	1/2-20	1.00	6.30	2.97	N/A	2.66	1/8
HDL302	1.63	3.00	4.25	1.41	1.63	2.25	8.91	2.34	2.09	4.19	1.50	3/4-16	1.00	9.44	4.50	4.75	4.31	1/8
HDL304	1.63	3.00	4.25	1.56	1.63	2.25	8.91	2.34	2.09	4.19	1.50	3/4-16	1.00	9.44	4.50	4.75	4.31	1/8
HDL404	2.25	4.00	5.50	1.88	2.00	2.63	10.22	2.63	2.69	5.38	2.00	3/4-16	1.00	13.00	6.00	6.94	5.00	1/4
HDL406	2.25	4.00	5.50	1.79	2.00	2.63	10.22	2.63	2.69	5.38	2.00	3/4-16	1.00	13.00	6.00	6.94	5.00	1/4
HDL508	3.00	5.00	7.75	2.56	2.50	3.00	13.38	4.03	3.81	7.63	2.50	1 1/4-12	1.63	17.19	8.38	9.19	6.75	3/8
HDL516	3.00	5.00	7.75	2.56	2.50	3.00	14.38	4.03	3.81	7.63	2.50	1 1/4-12	1.63	17.19	8.38	9.19	6.75	3/8
HDL618	3.50	6.00	8.50	2.75	3.00	4.00	15.00	4.13	4.13	8.38	3.00	1 1/4-12	1.63	17.88	9.00	9.19	7.25	1/2
HDL625	4.00	6.00	8.50	2.75	3.00	4.00	17.75	4.13	4.13	8.38	3.00	1 1/4-12	1.63	17.88	9.00	9.19	7.25	1/2
HDL740	4.25	7.00	10.00	3.77	3.50	5.56	20.02	5.44	4.94	9.88	3.50	2-12	3.00	19.88	10.94	10.05	10.17	1/2

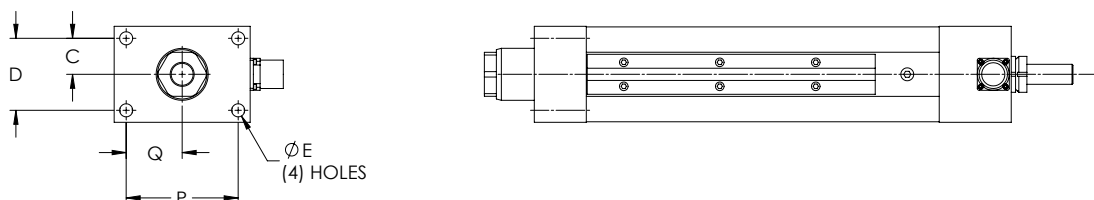
DIMENSIONED DRAWINGS FOR THE ELIMINATOR HDL ACTUATOR

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

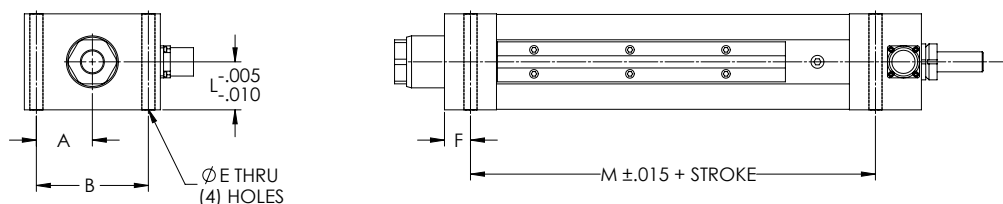
Bottom Mount Dimensions



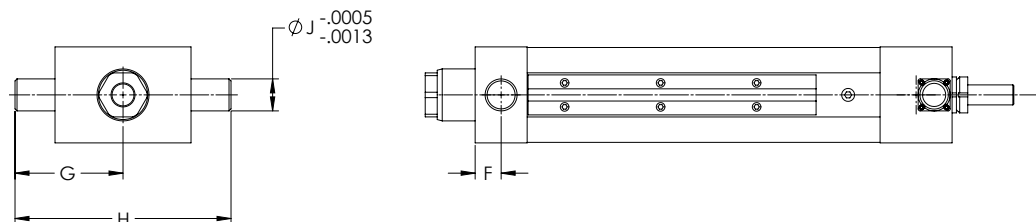
Front Flange Dimensions



Foot Mount Dimensions



Trunnion Mount Dimensions



HDL Mounting Dimensions (Bottom Mount, Front Flange, Foot Mount, Trunnion Mount)

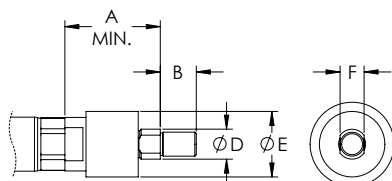
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
HDL201	1.13	2.25	0.69	1.38	0.34	0.49	2.24	4.48	0.50	5/16-18	0.99	4.63	0.63	2.38	1.19
HDL302	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	6.66	0.75	3.50	1.75
HDL304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	6.66	0.75	3.50	1.75
HDL404	2.19	4.38	1.44	2.88	0.69	1.00	4.50	9.00	1.25	5/8-11	2.00	7.59	1.00	4.38	2.19
HDL406	2.19	4.38	1.44	2.88	0.69	1.00	4.50	9.00	1.25	5/8-11	2.00	7.59	1.00	4.38	2.19
HDL508	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	10.63	1.25	6.25	3.13
HDL516	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	10.63	1.25	6.25	3.13
HDL618	3.31	6.63	2.00	4.00	1.06	Contact Joyce/Dayton				1-8	3.00	11.00	1.63	6.63	3.31
HDL625	3.31	6.63	2.00	4.00	1.06	Contact Joyce/Dayton				1-8	3.00	13.75	1.63	6.63	3.31
HDL740	4.00	8.00	2.50	5.00	1.06	1.75	7.88	15.75	2.00	1-8	3.50	14.96	2.00	8.00	4.00

DIMENSIONED DRAWINGS FOR THE ELIMINATOR HDL ACTUATOR

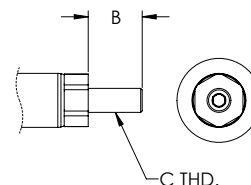
Dimensions are in inches and are subject to change without notice.

Rod End Options

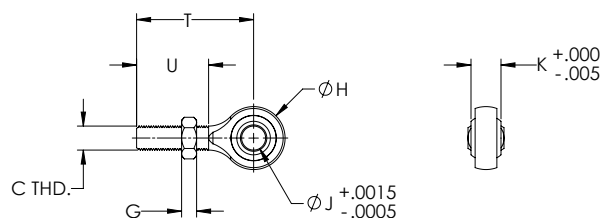
Self-Aligning Coupler



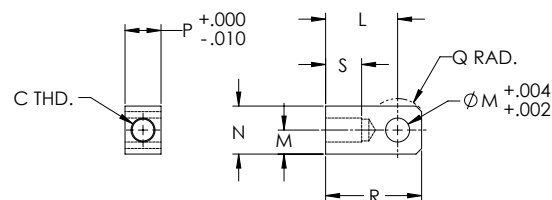
Male Thread



Spherical Rod Eye



Female Eye



HDL Rod End Dimensions

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
HDL201	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	0.50	2.00	0.75	2.44	1.50
HDL302	2.31	1.13	3/4-16	0.97	2.00	0.75	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.75	2.81	1.13	2.88	1.75
HDL304	2.31	1.13	3/4-16	0.97	2.00	0.75	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.75	2.81	1.13	2.88	1.75
HDL404	2.31	1.13	3/4-16	0.97	2.00	0.75	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.75	2.81	1.13	2.88	1.75
HDL406	2.31	1.13	3/4-16	0.97	2.00	0.75	0.42	1.75	0.75	0.88	2.06	0.75	1.50	1.25	0.75	2.81	1.13	2.88	1.75
HDL508	2.94	1.63	1 1/4-12	1.45	3.13	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.38	4.81	2.00	4.13	2.13
HDL516	2.94	1.63	1 1/4-12	1.45	3.13	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.38	4.81	2.00	4.13	2.13
HDL618	2.94	1.63	1 1/4-12	1.45	3.13	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.38	4.81	2.00	4.13	2.13
HDL625	2.94	1.63	1 1/4-12	1.45	3.13	1.25	0.72	2.75	1.00	1.38	3.44	1.38	2.75	2.00	1.38	4.81	2.00	4.13	2.13
HDL625	5.63	3.00	2-12	2.25	5.00	2.00	1.09	5.00	2.00	1.75	5.00	4.00	2.00	2.50	2.50	7.00	3.00	8.00	4.50

ORDERING GUIDE FOR THE ELIMINATOR HDL ACTUATOR

Ordering Information

Base No. (Capacity)	Unit Mounting Option	Motor Position	Precision/Lead Accuracy**
HDL201 (1,000 lbf)	MB: Bottom Mount	1, 2, 3, 4	C: .0005 in/ft
HDL302 (2,000 lbf)	FF: Front Flange	0 = In-Line	.003 in. Backlash
HDL304 (4,000 lbf)	MF: Foot Mount		X: Standard
HDL404 (4,000 lbf)	TF: Front Trunnion		
HDL406 (6,000 lbf)			
HDL508 (8,000 lbf)			
HDL516 (16,000 lbf)			
HDL618 (18,000 lbf)			
HDL625 (25,000 lbf)			
HDL740 (40,000 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	
	D: Switch Tracks / No Switches	
	X: Solid Cover / No Switches	

For custom stroke lengths, contact Joyce/Dayton.

* HDL201 is available with stroke lengths up to 12 in.
HDL302 – HDL304 are available with stroke lengths up to 36 in.
HDL404 – HDL406 are available with stroke lengths up to 42 in.
HDL508 – HDL740 are available with stroke lengths up to 48 in.
** HDL201 – Std. Precision/Lead Accuracy is 0.0005 in/ft, 0.003 in. Backlash