

# 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. <sup>1</sup> | Travel Length Max. <sup>2</sup> | Frame Size | Lead | Ball Screw Diameter | Ball Screw Max. <sup>1</sup> | Torque @ Ball Screw Max. | Dynamic Capacity Per Million Revs | Dynamic Capacity Per Million Inches | Motor Gearhead Frame Supported Max. <sup>2</sup> |
|--------------|-------------------|-----------------------------------|---------------------------------|------------|------|---------------------|------------------------------|--------------------------|-----------------------------------|-------------------------------------|--------------------------------------------------|
|              | 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 <sup>3</sup> | Inertia 1:1 Per Inch of Stroke <sup>3</sup> | Inertia 2:1 Zero Stroke <sup>3</sup> | Inertia 2:1 Per Inch of Stroke <sup>3</sup> | Inertia Inline Zero Stroke <sup>3</sup> | Inertia Inline Per Inch of Stroke <sup>3</sup> | Unit Weight "U" Motor Mount <sup>4</sup> | Unit Weight "L" Motor Mount <sup>4</sup> | Weight Per Inch of Stroke <sup>4</sup> |
|--------------|--------------------------------------|---------------------------------------------|--------------------------------------|---------------------------------------------|-----------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------|
|              | lb-in <sup>2</sup>                   | lb-in <sup>2</sup>                          | lb-in <sup>2</sup>                   | lb-in <sup>2</sup>                          | lb-in <sup>2</sup>                      | lb-in <sup>2</sup>                             | 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                                   |

<sup>1</sup> Maximum velocity and maximum screw speed may not be achievable at maximum stroke.

<sup>2</sup> Larger Motor or Gearhead Frames and longer stroke lengths are available upon request.

<sup>3</sup> 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.

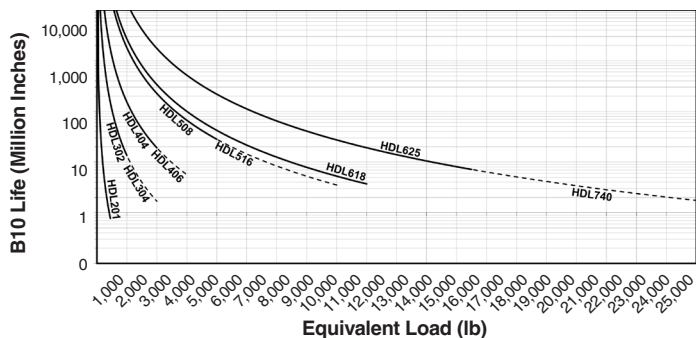
<sup>4</sup> Weight values are for reference only and vary depending on configuration.

"U" Parallel offset configuration

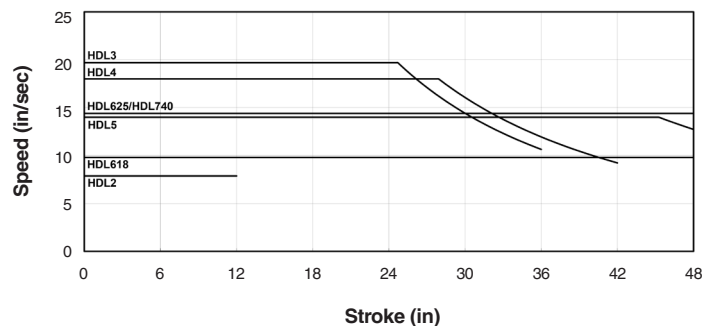
"L" Inline configuration

## DATA CURVES FOR THE ELIMINATOR HDL ACTUATOR

### Dynamic Capacity: Life Vs. Load



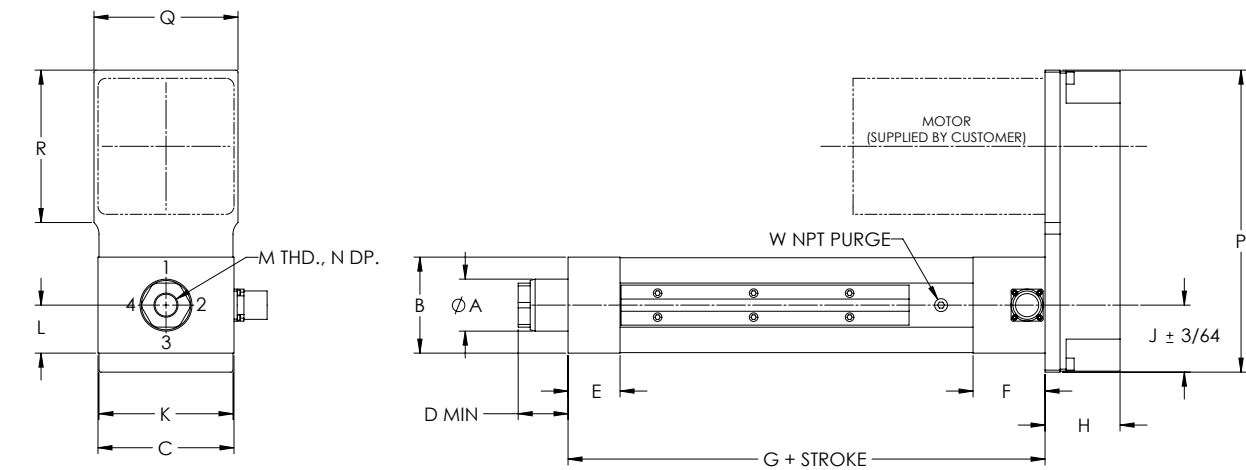
### Speed Vs. Stroke



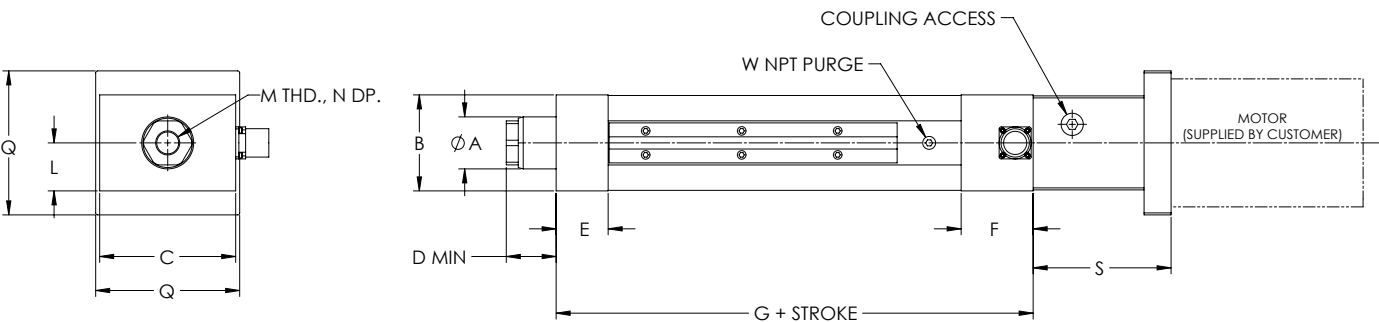
# DIMENSIONED DRAWINGS FOR THE ELIMINATOR HDL ACTUATOR

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

## U-Parallel Offset Motor Configuration



## L-Inline Motor Configuration



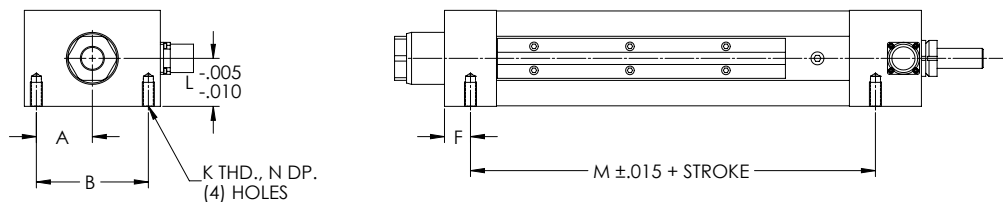
"S" length may vary depending on motor or gearbox.

| 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 |

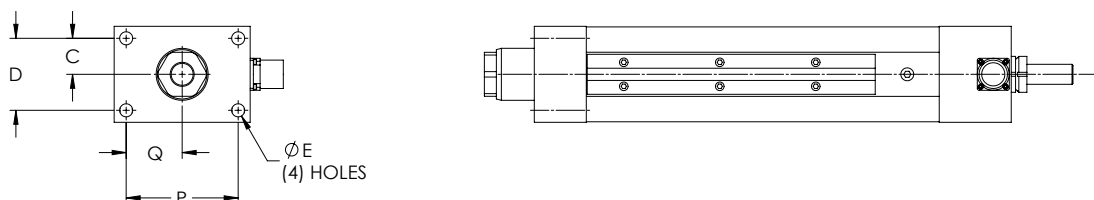
# DIMENSIONED DRAWINGS FOR THE ELIMINATOR HDL ACTUATOR

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

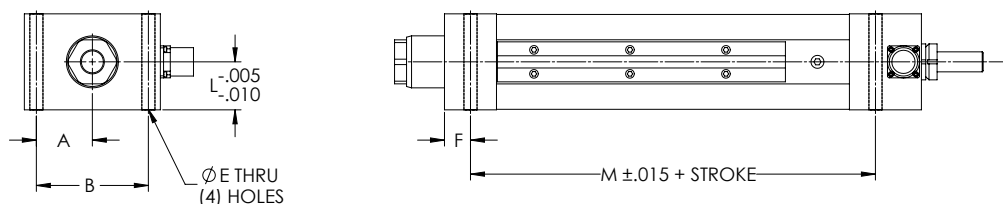
## Bottom Mount Dimensions



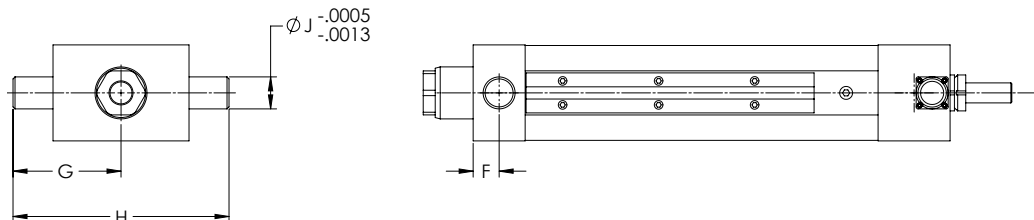
## Front Flange Dimensions



## Foot Mount Dimensions



## Trunnion Mount Dimensions



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

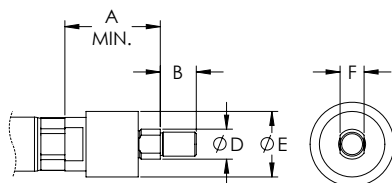
| Model  | A    | B    | C    | D    | E    | F    | G    | H     | J    | K       | L    | M     | N    | P    | Q    |
|--------|------|------|------|------|------|------|------|-------|------|---------|------|-------|------|------|------|
| HDL201 | 1.13 | 2.25 | 0.69 | 1.38 | 0.34 | 0.49 | 2.24 | 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 | 1.50 | 7.13 | 14.25 | 2.00 | 1-8     | 3.00 | 11.00 | 1.63 | 6.63 | 3.31 |
| HDL625 | 3.31 | 6.63 | 2.00 | 4.00 | 1.06 | 1.50 | 7.13 | 14.25 | 2.00 | 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

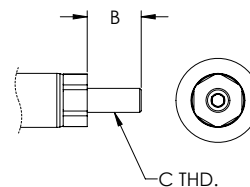
Dimensions are in inches and are subject to change without notice.

## Rod End Options

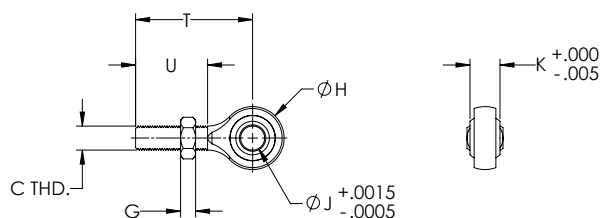
### Self-Aligning Coupler



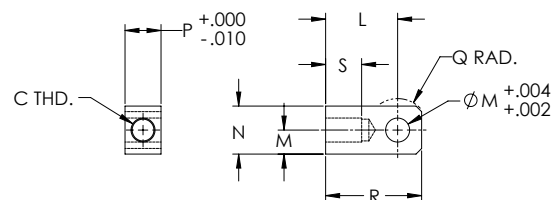
### Male Thread



### 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 |

# ORDERING GUIDE FOR THE ELIMINATOR HDL ACTUATOR

## Ordering Information

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

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

| Configuration             | Switch Type                           | N.O. Switch Qty  |
|---------------------------|---------------------------------------|------------------|
| <b>L:</b> In-Line         | <b>A:</b> Hall Sourcing PNP           | 0, 1, 2, 3, etc. |
| <b>U:</b> Parallel Offset | <b>B:</b> Hall Sinking NPN            |                  |
|                           | <b>C:</b> Reed                        |                  |
|                           | <b>D:</b> Switch Tracks / No Switches |                  |
|                           | <b>X:</b> Solid Cover / No Switches   |                  |

For custom stroke lengths, contact EDrive.

\* 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 – HDL625 are available with stroke lengths up to 48 in.  
\*\* HDL201 – Std. Precision/Lead Accuracy is 0.0005 in/ft, 0.003 in. Backlash