

# ORIGINAL LINE ELECTRIC<sup>®</sup> THRUSTERS

---

## **56 Product Features**

56 Features and Benefits

## **57 How it Works**

57 Definitions

57 Materials of Construction

58 Standard (-BS, -AS) Bearing

59 Precision (-AP) and Harsh Environment (-BH) Bearing

## **60 How it's Used**

60 Application Ideas

60 Target Applications

60 Drive Options

60 Advantages

## **61 How to Specify**

61 Specifications and Sizing (No Motor Option)

61 Sizing Your Actuator and Specifying the Right Motor

64 Stepper Motor and Motor/Drive Options

65 Reverse Parallel Motor Option

66 OLET-75 Options

69 OLET-150 Options

72 OLET-250 Options

75 Axial Load vs. Moment Load

76 Dimensions

## **82 How to Accessorize**

82 Adapter Plates

82 General Duty Housing Mounting Plate

83 Motors and Drives

83 Reverse Parallel Motor Mounts

83 Stainless Steel Tooling Plates

## **84 How to Order**

84 Incompatible Options

## **85 How to Repair**

## **86 How to Customize**



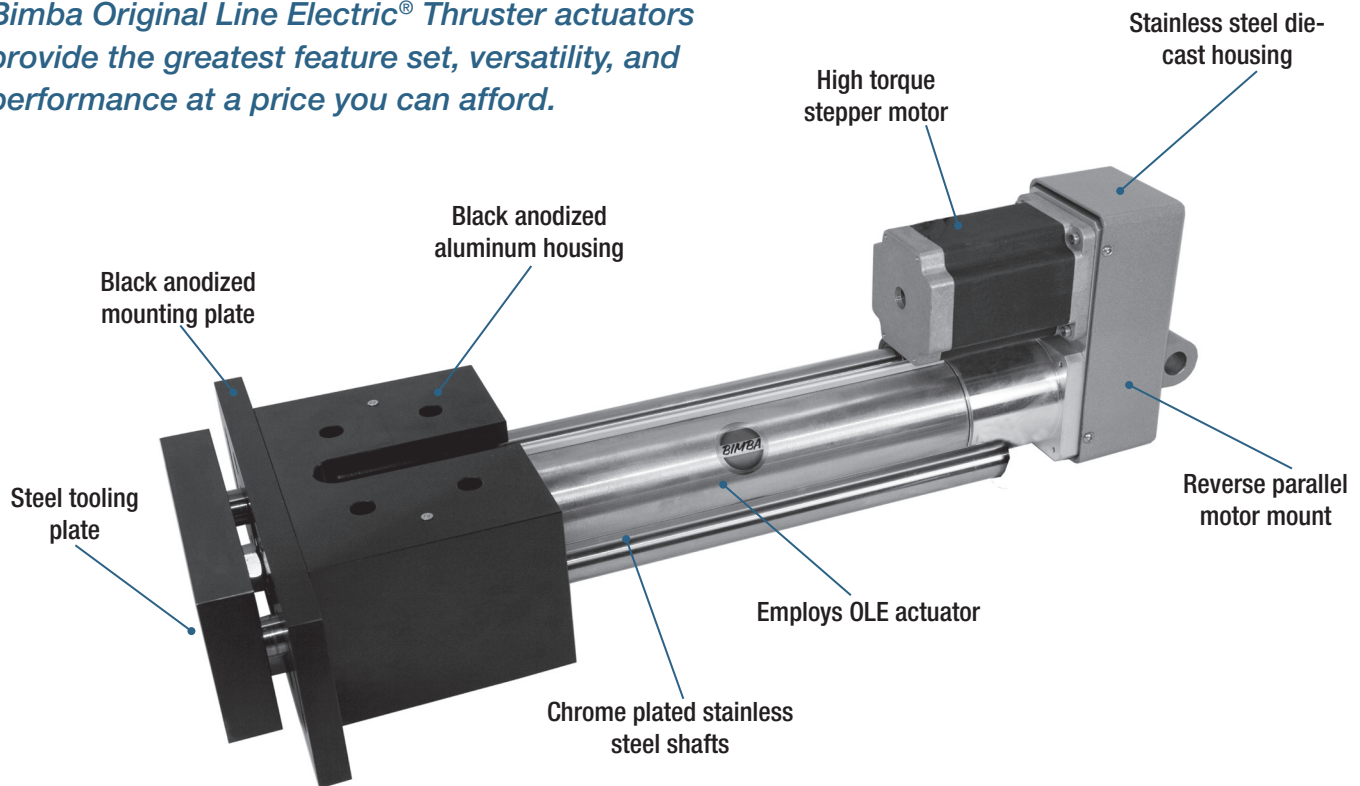


## ORIGINAL LINE ELECTRIC® THRUSTERS

The Original Line Electric® Thruster is a rugged, guided actuator with an OLE cylinder integral to the thruster block. With many types and options to choose from, the OLET offers many variations that allow selection of the most appropriate type to match your unique application needs. They're ideal for applications seeing significant side loading and require greater control and enhanced flexibility. With a large load capability, including a rated moment load up to 3000 in-lbs, and with types that utilize unique components that excel in standard, precision, and even harsh applications, there is sure to be an OLET to meet your most demanding application needs.

# PRODUCT FEATURES

*Bimba Original Line Electric® Thruster actuators provide the greatest feature set, versatility, and performance at a price you can afford.*



Original Line Electric® Thruster (OLET) actuators are alternatives to pneumatic thrusters where plant air quality or compressor availability is not available or lacking and where portability and precise control and positioning are needed.

The model above is OLET-1508-16S-MP-P2-AP; 150 series, 8 inch stroke, reverse parallel motor mount, 0.16 inch lead. The self-locking thread holds the rod in position, even with no power to the motor. Using a 23-frame stepper motor, it is capable of about 150 pounds of thrust at 1 inch per second, or 50 pounds of thrust at about 6 inches per second. Two other leads enable speeds up to 24 inches per second.

## FEATURES AND BENEFITS

- Modular design
- Multiple lead drive screws
- Self lubricating composite drive nut
- Custom motor couplers
- Reverse parallel motor mount available (shown above)
- Square rod
- Massive bronze rod bearing and low friction piston wear strip
- Dual angular load bearing
- RoHS compliant
- Order exactly what you need: actuator, motor, and drive, actuator and motor, or actuator only
- High speeds, high precision, and enables longer standard strokes
- High efficiency, high load capacity, high speed, and low noise
- High torque and moment load capacity, corrects axial misalignment of the screw and motor shaft
- Allows rear pivot or clevis mount and reduces overall length
- Prevents rotation and with the bronze rod bearing, provides high durability
- Provides side load capacity
- Absorbs axial loads to protect the motor
- Demonstrates compliance with hazardous substance regulations

Bimba's Original Line Electric® Thruster Actuators are designed, built, and tested to provide the longest life, greatest durability, highest speed, highest side load capability, and greatest thrust per dollar. They are ideal for applications where side loading is present and for those requiring greater control for enhanced flexibility. OLET actuators can adapt to applications that utilize our Original Line® pneumatic thruster cylinders, and are available without motors (sized for steppers or servos), with integral stepper motors, and also with matching step drives.

## DEFINITIONS

---

**Thrust:** Output force of the actuator

**Load:** Total of all forces opposing the actuator

**Repeatability:** Window within which the actuator can reposition itself

**Backlash:** Amount of travel for the actuator with the screw held fixed (measured at the rod end)

**Accuracy:** Amount of error possible in linear position on screw thread

**Lead:** The linear distance moved for one turn of the screw

**Static Load:** Force required to move the mass at a constant speed

**Dynamic Load:** Force required to accelerate the mass

**Friction Load:** Force opposing motion of the mass due to surface contact

**External Load:** All forces not accounted for above

**Weight:** The force of the mass due to Earth's gravity

**Stroke:** The distance the mass is moved

**Moment Load:** Load that tends to overturn or bend the axis of rotation in an angular direction

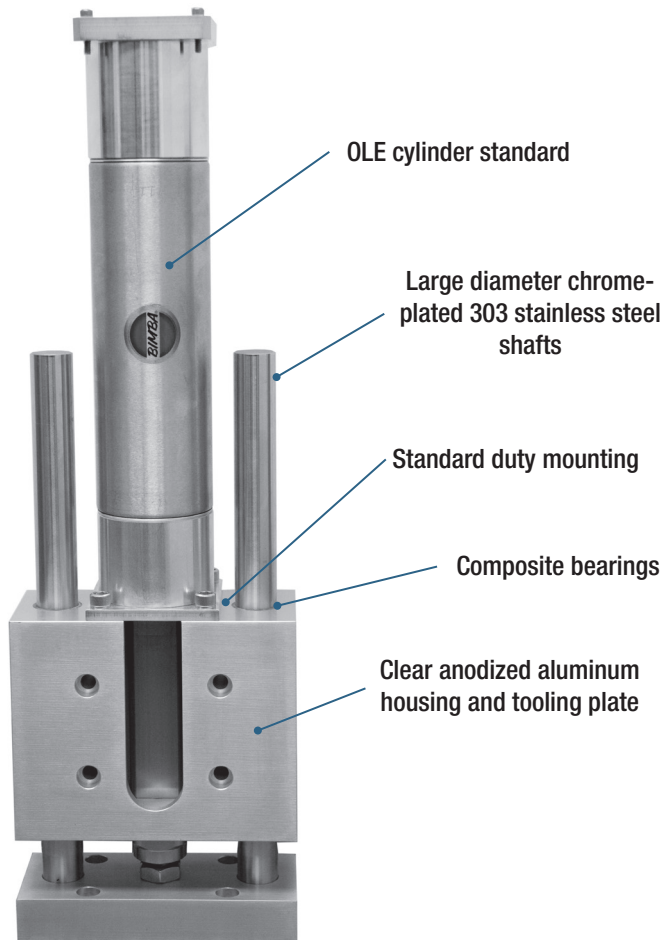
**Side Load:** A type of load in which a force is applied to the shaft perpendicular to the shaft's axis beyond a support point

## MATERIALS OF CONSTRUCTION

---

<b>Piston:</b>	6061-T6511 Aluminum
<b>Square Rod:</b>	304 Stainless Steel
<b>Motor Mount:</b>	2024-T350 Aluminum
<b>Angular Bearing:</b>	52100 Steel
<b>Rod End:</b>	303 Stainless Steel
<b>Drive Nut:</b>	Acetal (Kerkite)
<b>Coupler:</b>	17-4 PH Stainless Steel
<b>Fasteners:</b>	Alloy Steel and Stainless Steel
<b>Washdown Cap:</b>	6061-T6511 Aluminum
<b>O-Rings:</b>	Buna-Nitrile
<b>Wear Ring:</b>	Glass-filled Teflon
<b>Rod Bearing:</b>	SAE 660 Bronze
<b>Drive Screw:</b>	303 Stainless Steel
<b>Fasteners:</b>	18-8 Stainless Steel
<b>Retaining Rings:</b>	Stainless Steel, Phosphate Covered Spring Steel
<b>Pulleys:</b>	Anodized Aluminum
<b>Belt:</b>	Nylon Covered, Fiberglass Reinforced Neoprene
<b>Mounting Brackets:</b>	304 Stainless Steel
<b>R, Q, S Cap:</b>	CF8 Cast Stainless Steel
<b>Switch Track:</b>	6063-T6 Aluminum
<b>Thruster Housing:</b>	Anodized Aluminum
<b>Guide Shafts:</b>	Chrome Plated 303 Stainless Steel
<b>Tooling Plate 'S' Type:</b>	Anodized Aluminum
<b>Mounting Plate:</b>	Anodized Aluminum
<b>Tooling Plate 'P' and 'H' Type:</b>	Steel
<b>Optional Tooling Plate:</b>	Stainless Steel

## STANDARD (-BS, -AS) BEARING

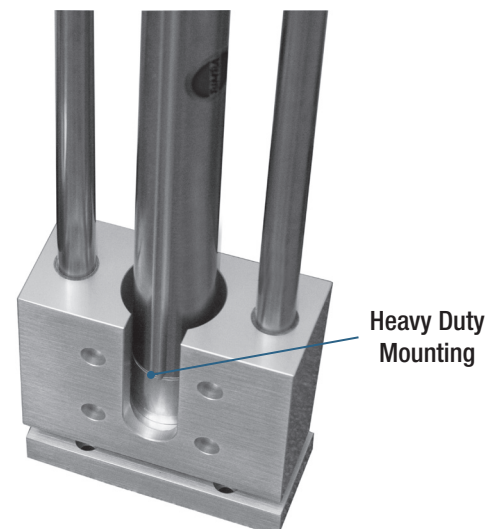


### Advantages

- Highest side load capability
- Heavy Duty version for extreme loads
- General Duty version for typical loading applications
- Space saving options
  - » General Duty width savings
  - » Heavy Duty length savings
- Composite bearing ideal for dirty environments
- Available in three bore sizes
- Long stroke lengths available as standard
- Compatible magnetic switches for position sensing and homing available
- Available with most Bimba Stepper or Servo motors and drives

### General Duty

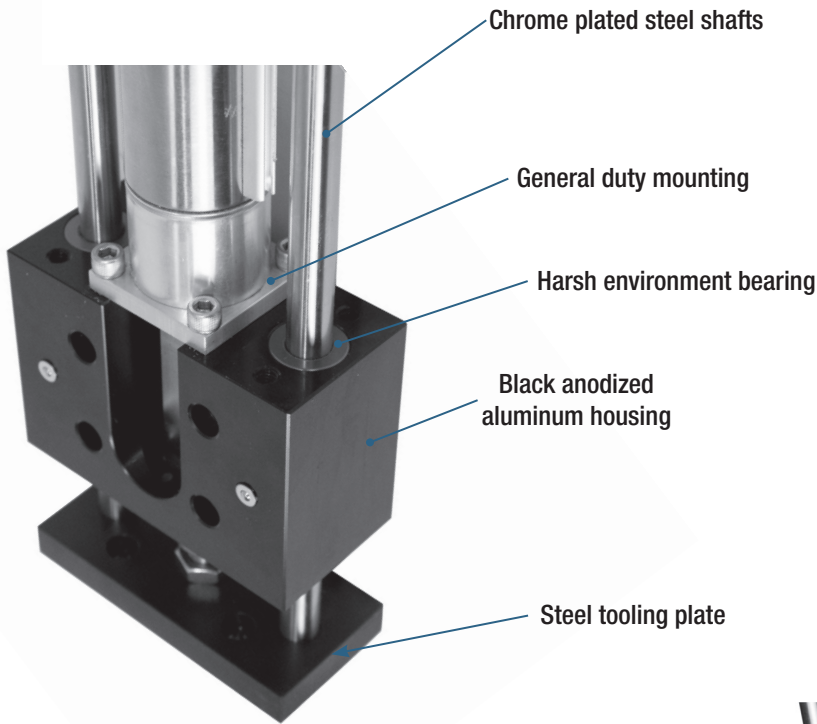
- Large diameter stainless steel shafts
- Mounting plate optional
- High-strength composite bearing made of fiber-imbedded plastic
- Composite bearing may perform better in certain environments (for example, dust or lint)
- Composite bearing/stainless steel shaft combination is ideal for corrosive environments
- High side load capabilities



### Heavy Duty

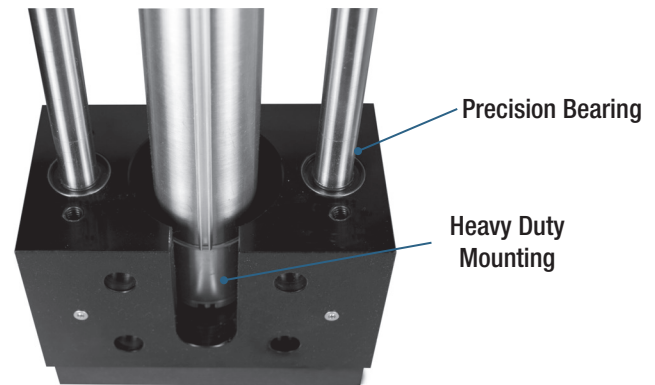
- OLE embedded in aluminum housing
- Highest side load capability
- Minimizes length by up to 4"

## PRECISION (-AP) AND HARSH ENVIRONMENT (-BH) BEARING



### Advantages

- High side load capability
- Heavy Duty version for extreme loads
- General Duty version for typical loading applications
- Space saving options
  - » General Duty width savings
  - » Heavy Duty length savings
- Precision recirculating ball bearings
- Harsh-environment bearing available
- Long stroke lengths available as standard
- Available with most Bimba Stepper or Servo motors and drives



### General Duty Harsh Bearing

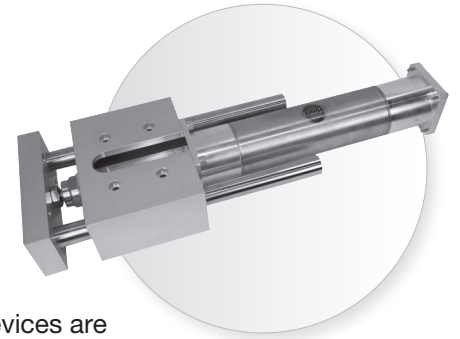
- Higher precision
- Less friction
- Smoother motion
- Faster motion

### Heavy Duty with Precision Bearing

- Ideal for dirty, dusty environments
- Ideal for use with IP65 motors
- Similar motion performance as Ball Bearing
- High side load capability

## APPLICATION IDEAS

- Gating
- Lifting
- Stacking
- Clamping
- Diverting
- Dispensing
- Stopping
- Rod applications with side load



## TARGET APPLICATIONS

The Original Line Electric® Thruster (OLET) is a hybrid device, made from an OLE foundation and the Bimba T/TE series pneumatic cylinders. These OLET devices are intended for use in applications that contain some degree of side-loading. Whereas the OLE is not recommended for any amount of side loading, the OLET is capable of withstanding particular values of both side loads and moment loads. As side and moment loading is distance dependent, longer strokes mean more loading introduced into the system. To withstand the rigors of the side loading, the Bimba OLET uses a robust aluminum housing and chrome-plated steel shafts to absorb and counteract the moment loading characteristics.

Due to the loading characteristics found in the OLET, Bimba customers find multiple uses for it, including stopping, guiding, and positioning applications where precision and high repeatability is needed, where the load may not be guided as sometimes found in linear motion applications.

## DRIVE OPTIONS

OLE actuators offer two drive interfaces to choose from: a single standard inline shaft input or a reverse parallel drive. With many Bimba stepper and servo motors available, configuring an electric actuator that best meets the needs of your application has never been easier. If you prefer, you can use your own motor. Bimba likely has a motor mount configuration that will fit; if not, we can design a custom motor mount that fits your unique motor.

## ADVANTAGES

FEATURE	ADVANTAGE	BENEFIT
Side loading	Load does not need to be guided	Used in non-guided applications
Thruster block	Robust	Absorbs high moment loading
Guide rods	Robust	Part of system that absorbs high moment load
Multiple bearing types	Select for proper environment	Long life in varying and harsh environments



## SPECIFICATIONS AND SIZING

### No Motor Option (N)

BASE PART NUMBER	LEAD <sup>2</sup> (in)	BACKLASH <sup>3</sup> (in)	SCREW ACCURACY (in/in)	SCREW REPEATABILITY (μ in)	MAXIMUM LOAD (lbs)	ACTUATOR INERTIA ADDER (oz-in <sup>2</sup> )	ACTUATOR INERTIA PER INCH (oz-in <sup>2</sup> ) <sup>4</sup>
OLET-75-xx-12xx-Nx1	.125	.003	0.0006	50	75	.003	.006
OLET-75-xx-50xx-Nx	.50	.005	0.0006	50	75	.003	.006
OLET-75-xx-75xxx-Nx	.75	.007	0.0006	50	75	.003	.006
OLET-150-xx-16xx-Nx1	.16	.005	0.0006	50	150	.218	.021
OLET-150-xx-25xx-Nx	.25	.006	0.0006	50	150	.218	.021
OLET-150-xx-50xx-Nx	.50	.008	0.0006	50	150	.218	.021
OLET-350-xx-20xx-Nx1	.20	.003	0.0006	50	350	1.588	.103
OLET-350-xx-50xx-NxT	.75	.005	0.0006	50	350	1.588	.103
OLET-350-xx-100xx-Nx	1.0	.007	0.0006	50	350	1.588	.103

Operating temperature range: -20° F to 160° F (-29° C to 71° C)

Standard IP rating: None

Maximum stroke: 18 inches

RoHS compliant

<sup>1</sup> Self-locking threads

<sup>2</sup> Inches per revolution of screw

<sup>3</sup> Amount of end play on screw. Low backlash designs are available. Contact Technical Support.

<sup>4</sup> Inertia is given per inch of stroke

**Caution!** When specifying actuator stroke, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.

## SIZING YOUR ACTUATOR AND SPECIFYING THE RIGHT MOTOR

The following procedure is for sizing an actuator and arriving at a single-point speed/torque specification for a motor not supplied by Bimba. Speed and thrust performance of Bimba's standard motor and actuator combinations may not be equivalent.

1. Determine the thrust, maximum speed, and stroke your application requires. Overstating speed and thrust will make your actuator more expensive than it needs to be. Understating the speed and thrust will compromise performance and durability.
2. Use the "Speed versus Thrust" graph. Actuators' curves that are ABOVE your speed/thrust data point are usable. Curves below the data point are not.

**You have just identified the series of actuator (75, 150, or 350) that is best suited for your application.**

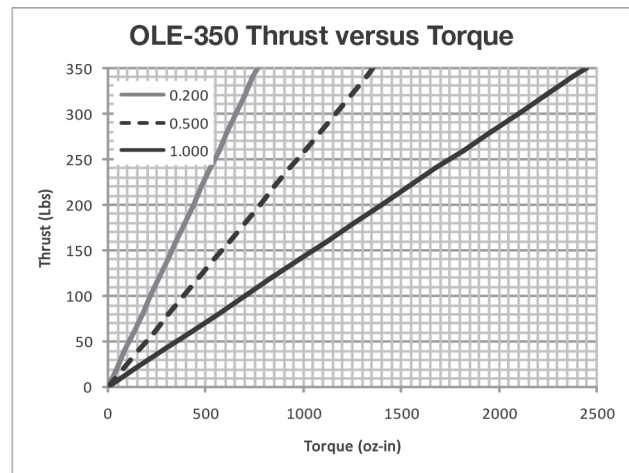
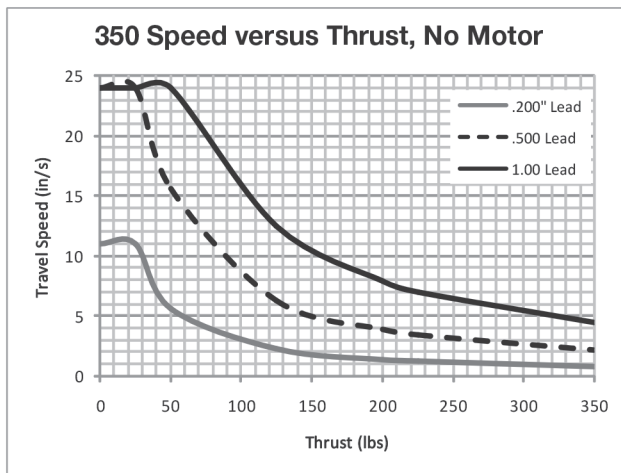
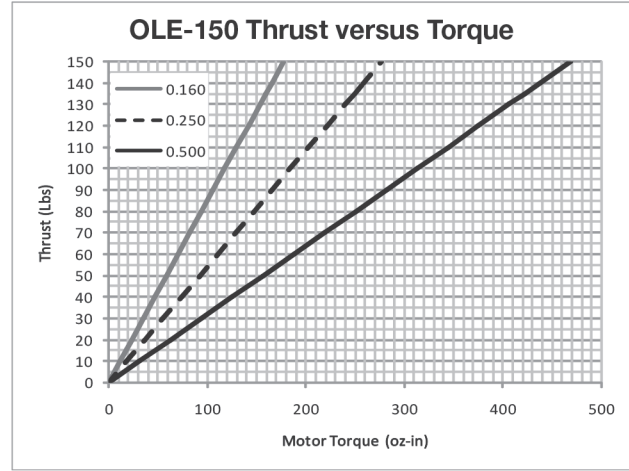
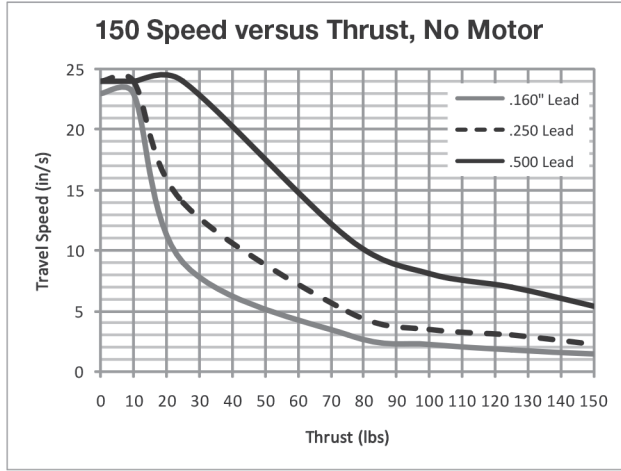
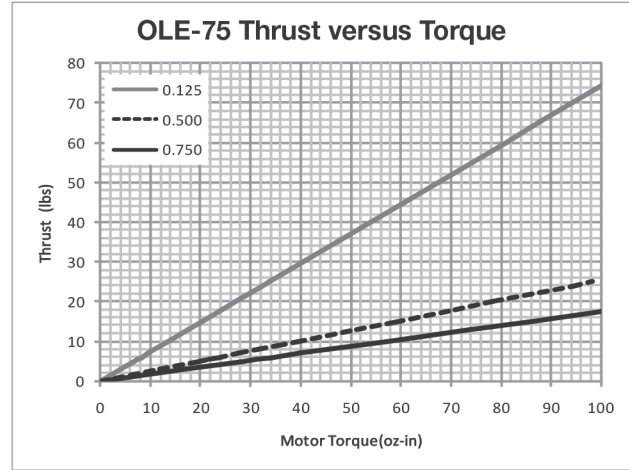
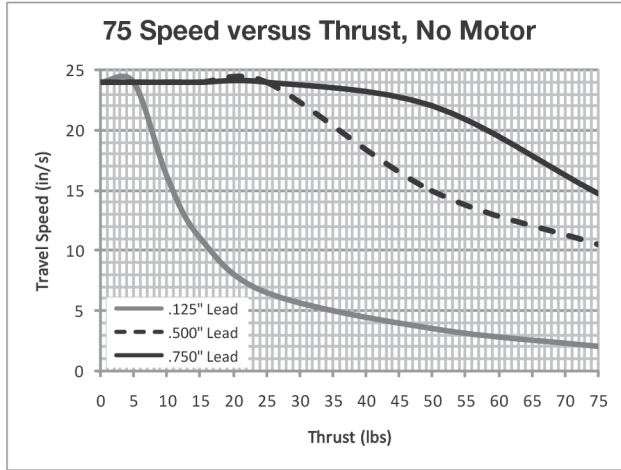
3. Use the "Thrust versus Torque" graphs for the actuator series identified above. Select the lead (inches per turn of the screw) that will provide the thrust you require with the minimum motor torque.
4. Use the "Speed versus RPM" graphs with the "critical speed graph" for the actuator series and lead you selected. Find the motor speed in RPM required to provide the actuator speed (inches per second) using the chosen lead (inches per rev). Similarly, use the critical speed graph to select the needed RPM for the actuator stroke length to determine the approximate bore size. The required speed must fall below the critical speed graph curve. You might need to evaluate several different OLE series or leads in order to identify an achievable speed/torque motor specification.

NOTE: Bimba sizing software available at [www.bimba.com](http://www.bimba.com).

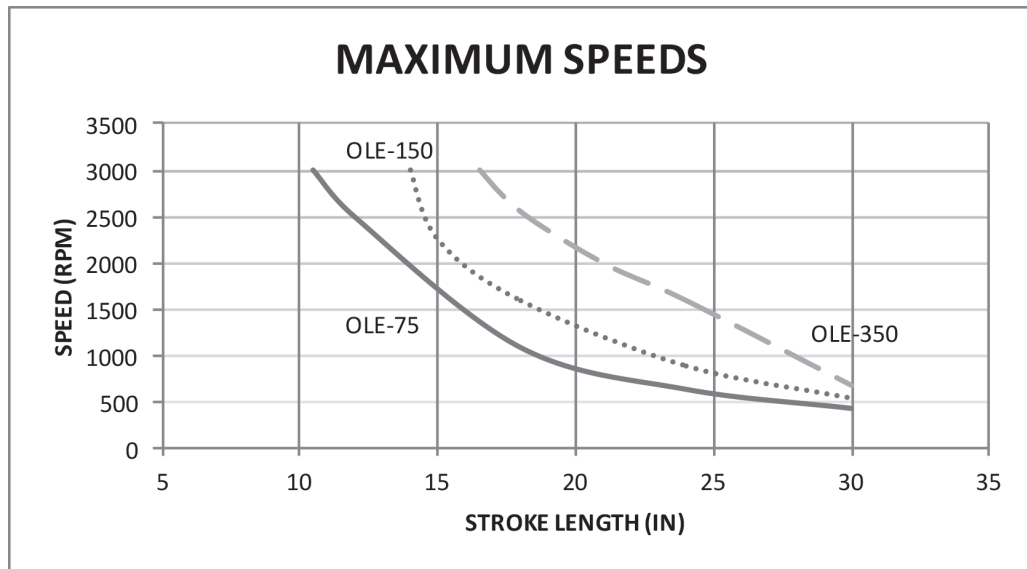
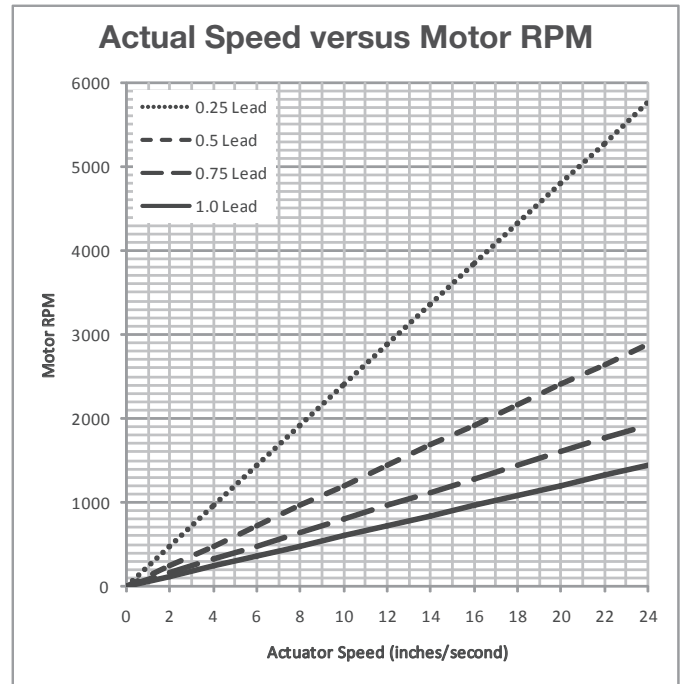
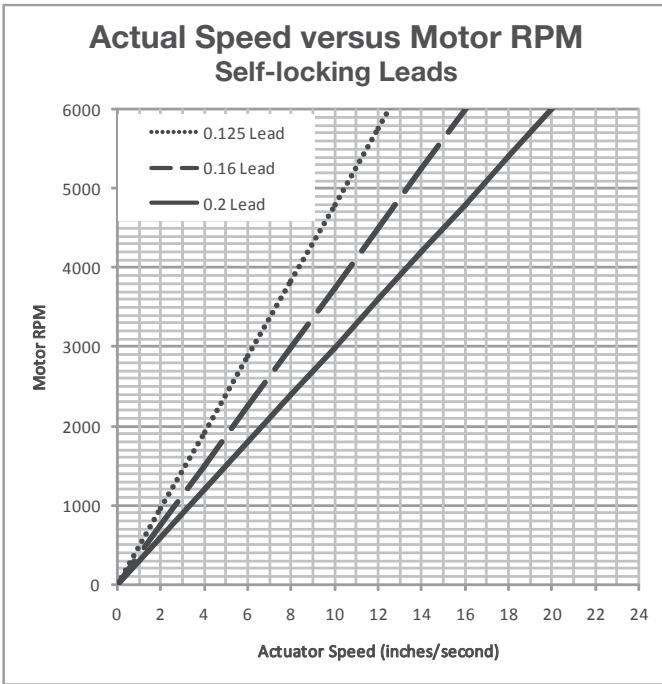
# HOW TO SPECIFY

## Speed versus Thrust

## Thrust versus Torque



NOTE: The curves above are based on a number of design factors, including the PV limit of the nut and the maximum torque compatibility of the coupler. Other factors combine to limit speed. Do not exceed thrust/speed values shown in above graphs as damage to actuator may result.



# HOW TO SPECIFY

## SPECIFICATIONS AND SIZING

### Stepper Motor and Motor/Drive Options (P, E, Y, Z)

BASE PART NUMBER	LEAD <sup>2</sup> (in)	BACKLASH <sup>3</sup> (in)	SCREW ACCURACY (in/in)	SCREW REPEATABILITY (μ in)	ACTUATOR INERTIA ADDER (oz-in <sup>2</sup> )	ACTUATOR INERTIA PER INCH (oz-in <sup>2</sup> ) <sup>4</sup>	MOTOR INERTIA ADDER (oz-in <sup>2</sup> ) <sup>5</sup>	MAXIMUM CURRENT DRAW <sup>6</sup>
OLET-75-xx-12xx-P2 <sup>1</sup>	.125	.003	0.0006	50	.003	.006	2.51	4.24
OLET-75-xx-50xx-P2	.50	.005	0.0006	50	.003	.006	2.51	4.24
OLET-75-xx-75xxx-P2	.75	.007	0.0006	50	.003	.006	2.51	4.24
OLET-150-xx-16xx-P2 <sup>1</sup>	.16	.005	0.0006	50	.218	.021	2.51	4.24
OLET-150-xx-25xx-P2	.25	.006	0.0006	50	.218	.021	2.51	4.24
OLET-150-xx-50xx-P2	.50	.008	0.0006	50	.218	.021	2.51	4.24
OLET-350-xx-20xx-P3 <sup>1</sup>	.20	.003	0.0006	50	1.588	.103	15.03	5.6
OLET-350-xx-50xx-P3	.50	.005	0.0006	50	1.588	.103	15.03	5.6
OLET-350-xx-100xx-P3	1.0	.007	0.0006	50	1.588	.103	15.03	5.6

Operating temperature range: 32° F to 122° F (0° C to 50° C) limited by the drive.  
 If the drive is remotely mounted and protected from heat, maximum operating temperature will be 160° F (71° C).  
 Maximum stroke: 18 inches  
 RoHS compliant

<sup>1</sup> Self-locking threads

<sup>2</sup> Inches per revolution of screw

<sup>3</sup> Amount of end play on screw

<sup>4</sup> Inertia is given per inch of stroke

<sup>5</sup> Inertia for motor by itself

<sup>6</sup> For drive sizing for actuators supplied without drives

**Caution! When specifying actuator stroke before ordering, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.**

## SPECIFICATIONS AND SIZING

### Reverse Parallel Motor Option (R, S, Q & P, E, Y, Z)

BASE PART NUMBER	LEAD <sup>2</sup> (in)	BACKLASH <sup>3</sup> (in)	SCREW ACCURACY (in/in)	SCREW REPEATABILITY (μ in)	ACTUATOR INERTIA ADDER (oz-in <sup>2</sup> ) <sup>4</sup>	ACTUATOR INERTIA PER INCH (oz-in <sup>2</sup> ) <sup>5</sup>	MOTOR INERTIA ADDER (oz-in <sup>2</sup> ) <sup>6</sup>	MAXIMUM CURRENT DRAW <sup>7</sup>
OLET-75-xx-12Rx-P2 <sup>1</sup>	.125	.003	0.0006	50	.096	.006	2.51	4.24
OLET-75-xx-50Rx-P2	.50	.005	0.0006	50	.096	.006	2.51	4.24
OLET-75-xx-75Rx-P2	.75	.007	0.0006	50	.096	.006	2.51	4.24
OLET-150-xx-16Rx-P2 <sup>1</sup>	.16	.005	0.0006	50	1.01	.021	2.51	4.24
OLET-150-xx-25Rx-P2	.25	.006	0.0006	50	1.01	.021	2.51	4.24
OLET-150-xx-50Rx-P2	.50	.008	0.0006	50	1.01	.021	2.51	4.24
OLET-350-xx-20Rx-P3 <sup>1</sup>	.20	.003	0.0006	50	9.51	.103	15.03	5.6
OLET-350-xx-50Rx-P3	.50	.005	0.0006	50	9.51	.103	15.03	5.6
OLET-350-xx-100Rx-P3	1.0	.007	0.0006	50	9.51	.103	15.03	5.6

Operating temperature range: 32° F to 122° F (0° C to 50° C).

If the drive is remotely mounted and protected from heat, maximum operating temperature will be 158° F (70° C).

Maximum stroke: 18 inches

RoHS compliant

<sup>1</sup> Self-locking threads

<sup>2</sup> Inches per revolution of screw

<sup>3</sup> Amount of end play on screw

<sup>4</sup> Inertia for reverse parallel option

<sup>5</sup> Inertia is given per inch of stroke

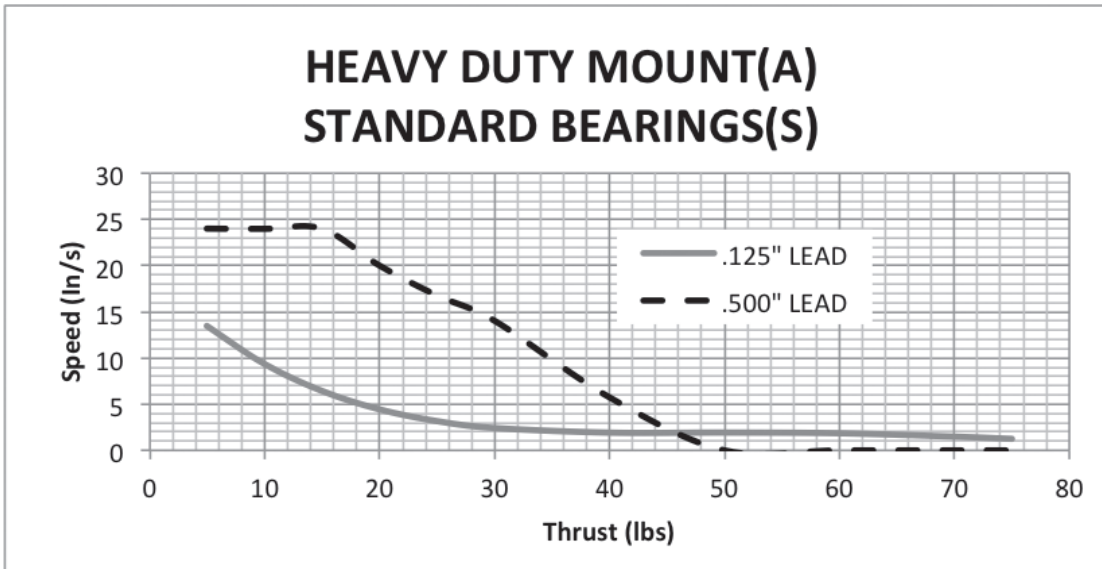
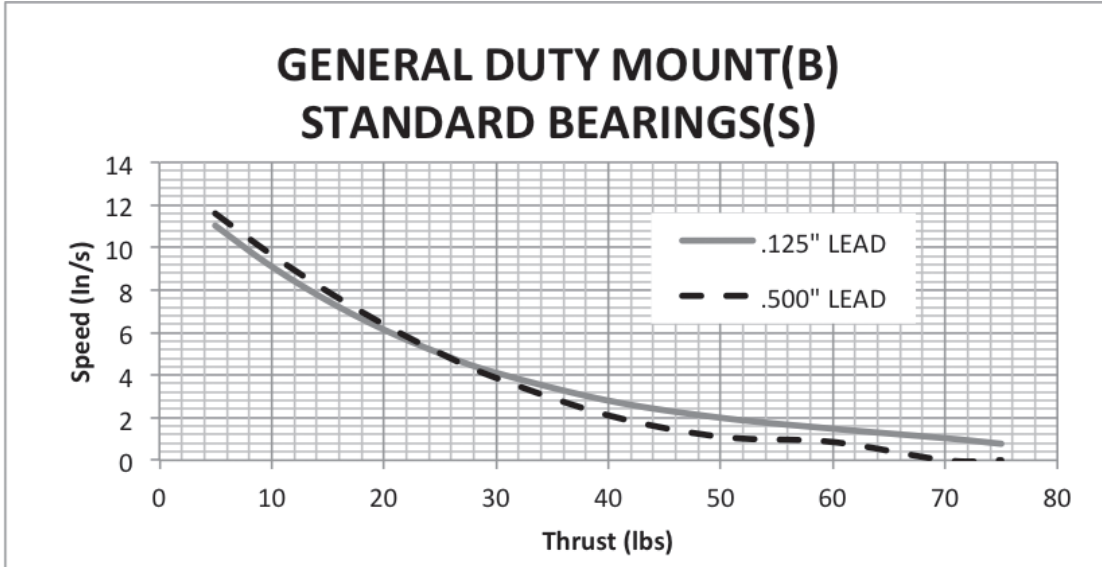
<sup>6</sup> Inertia for motor by itself

<sup>7</sup> For drive sizing for actuators supplied without drive

**Caution! When specifying actuator stroke before ordering, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.**

## SPECIFICATIONS AND SIZING

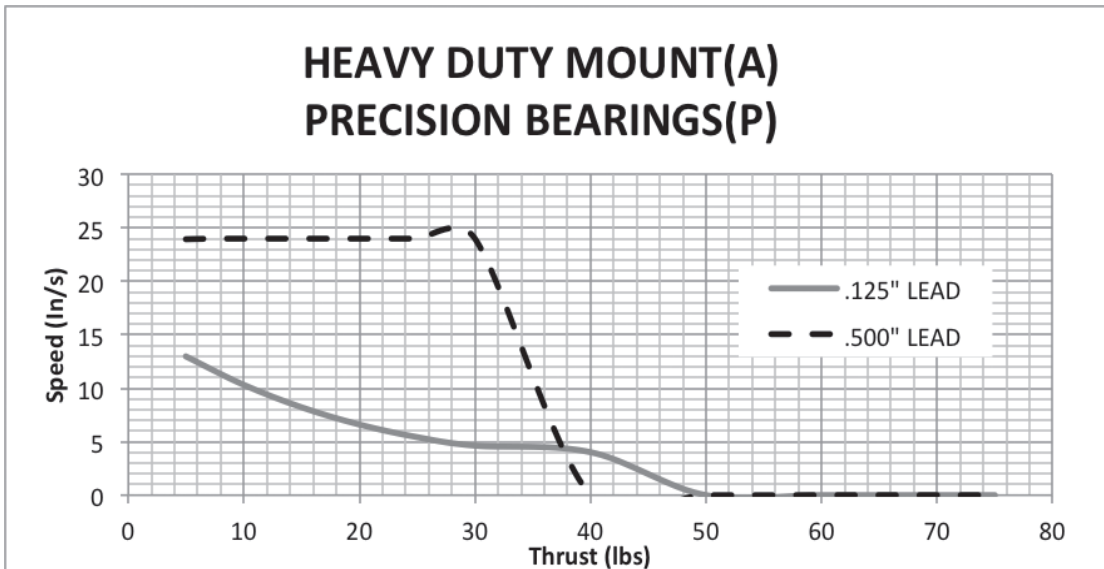
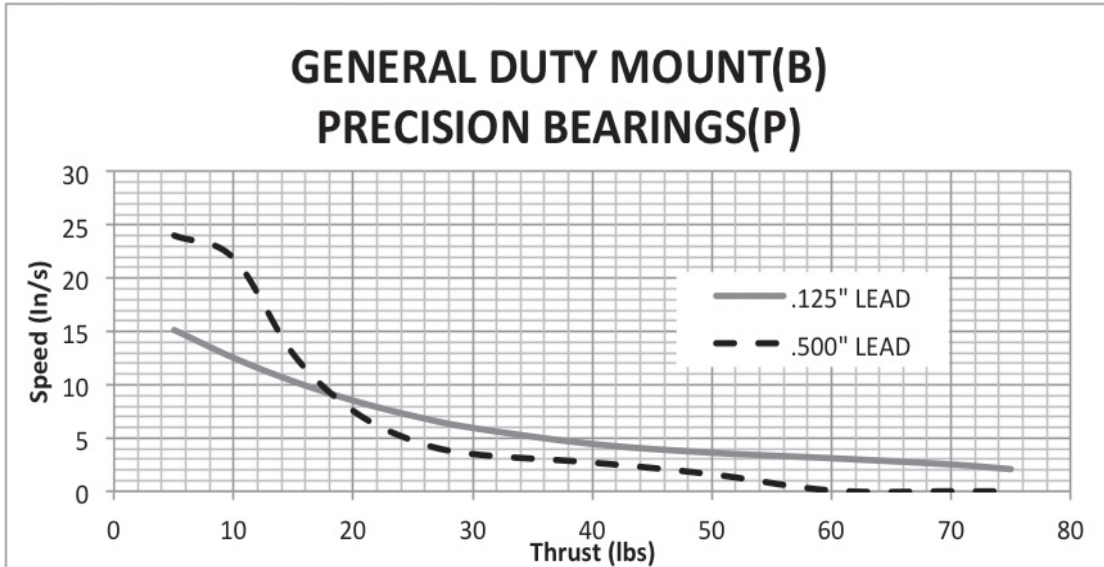
OLET-75 with P2, E2, Y2, Z2 Options  
(NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

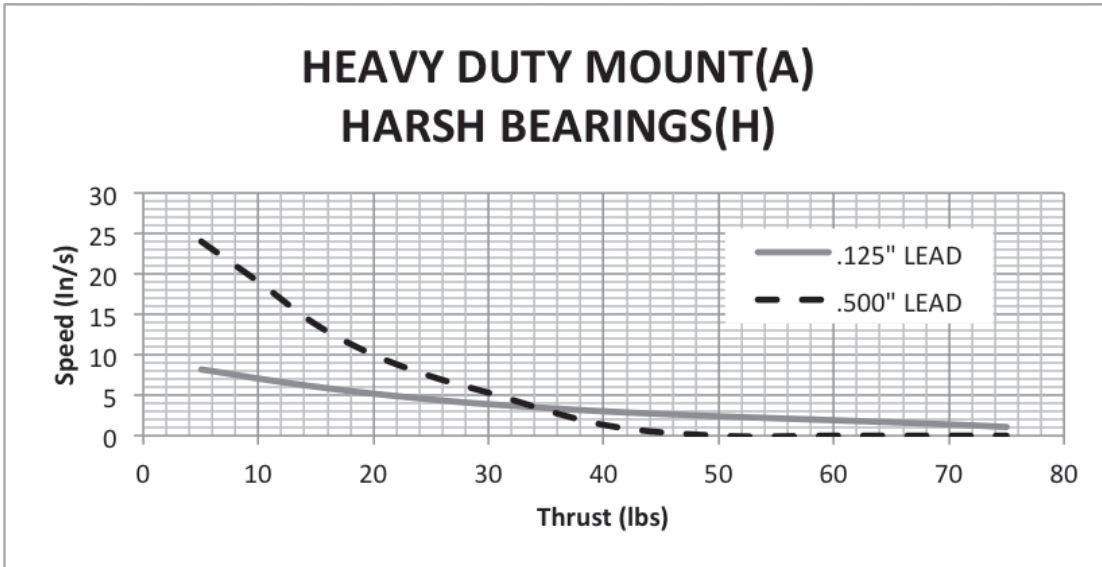
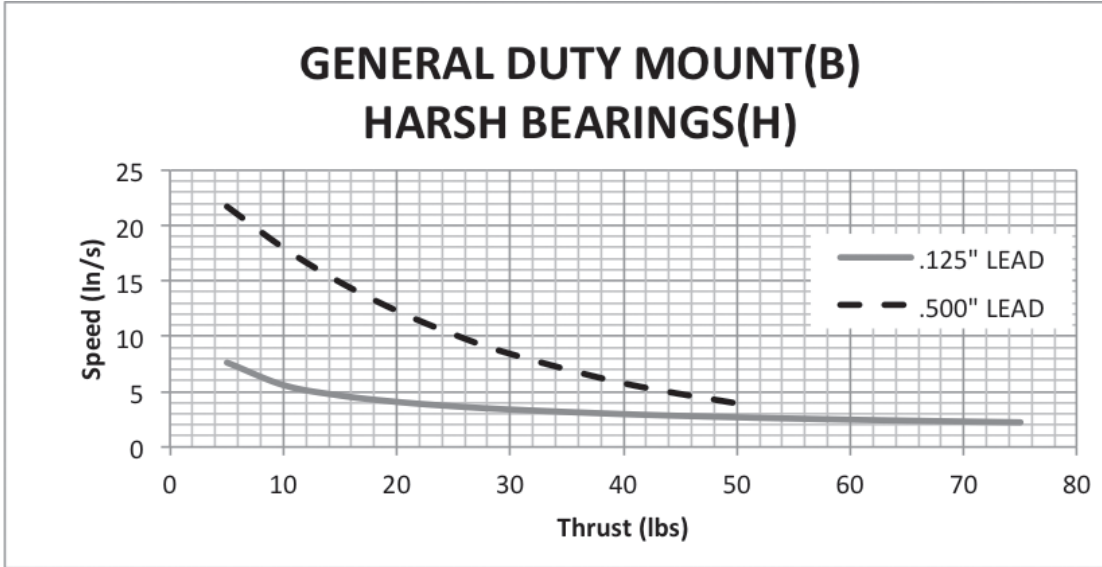
### OLET-75 with P2, E2, Y2, Z2 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

OLET-75 with P2, E2, Y2, Z2 Options  
(NEMA 23 Stepper Motor)

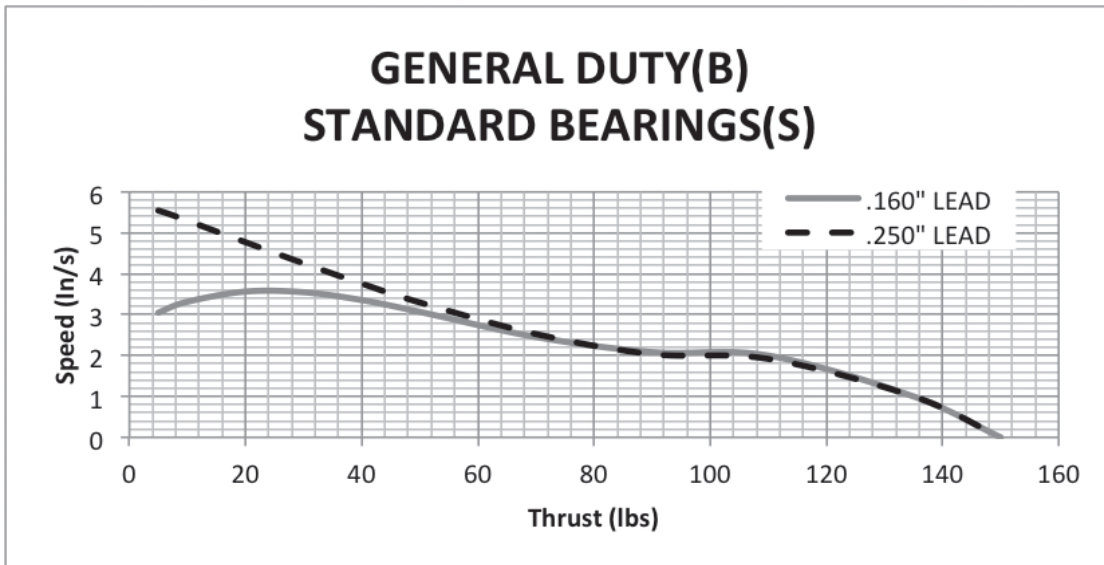
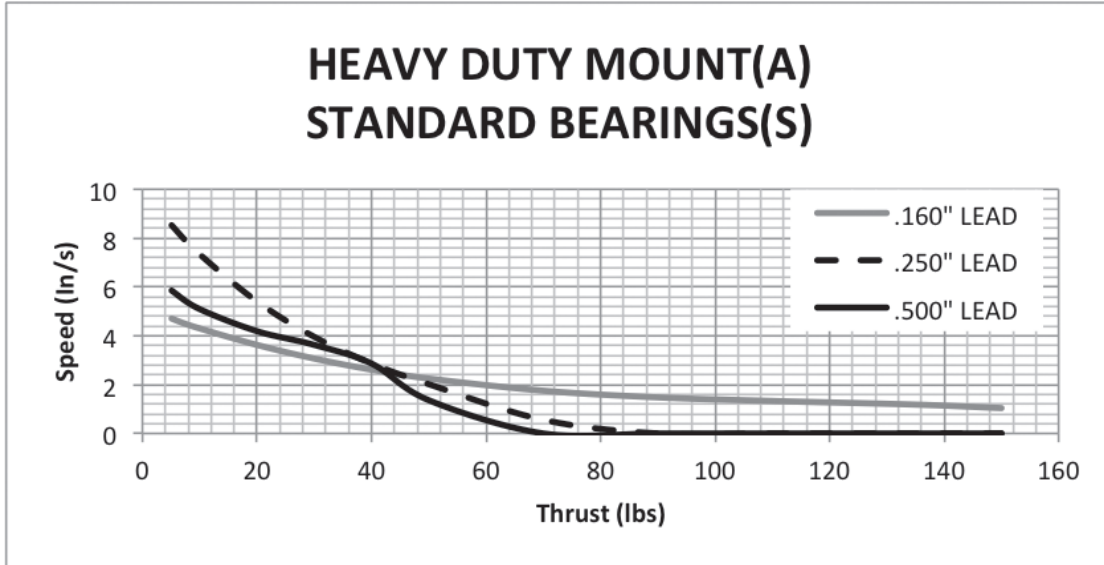


NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.



## SPECIFICATIONS AND SIZING

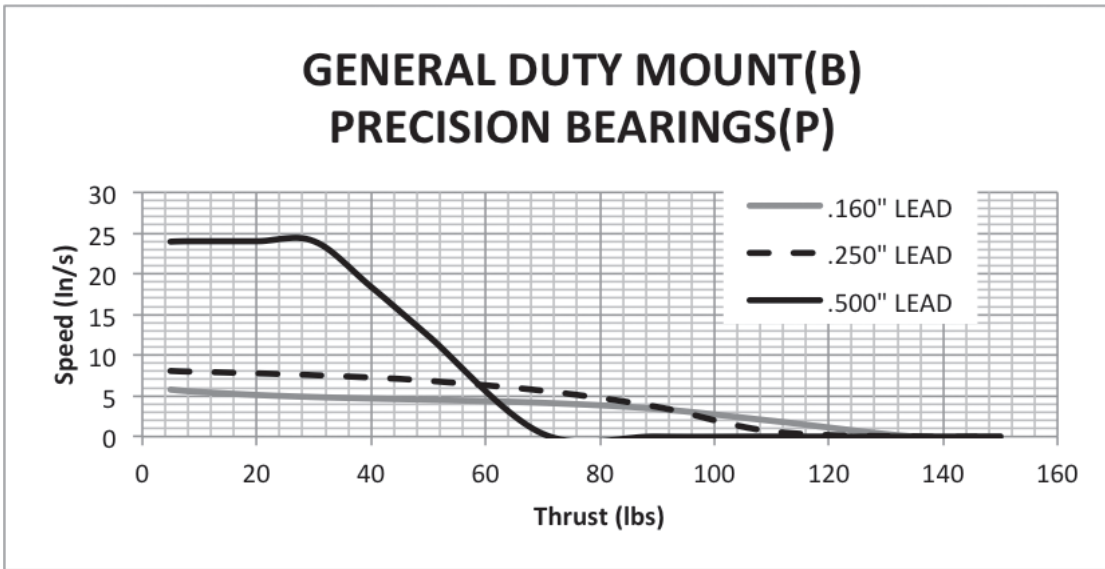
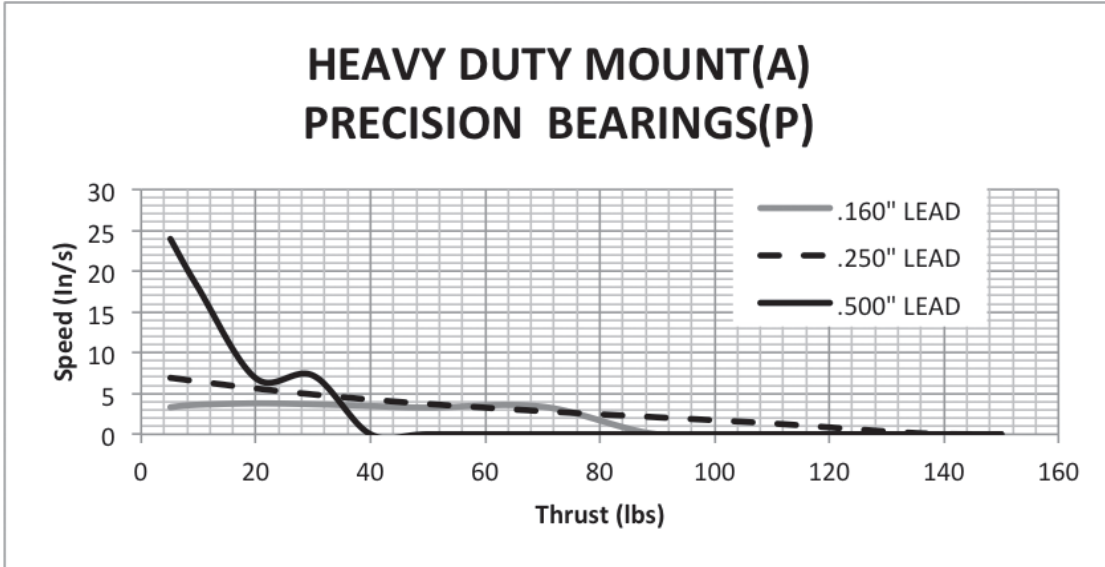
### OLET-150 with P2, E2, Y2, Z2 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

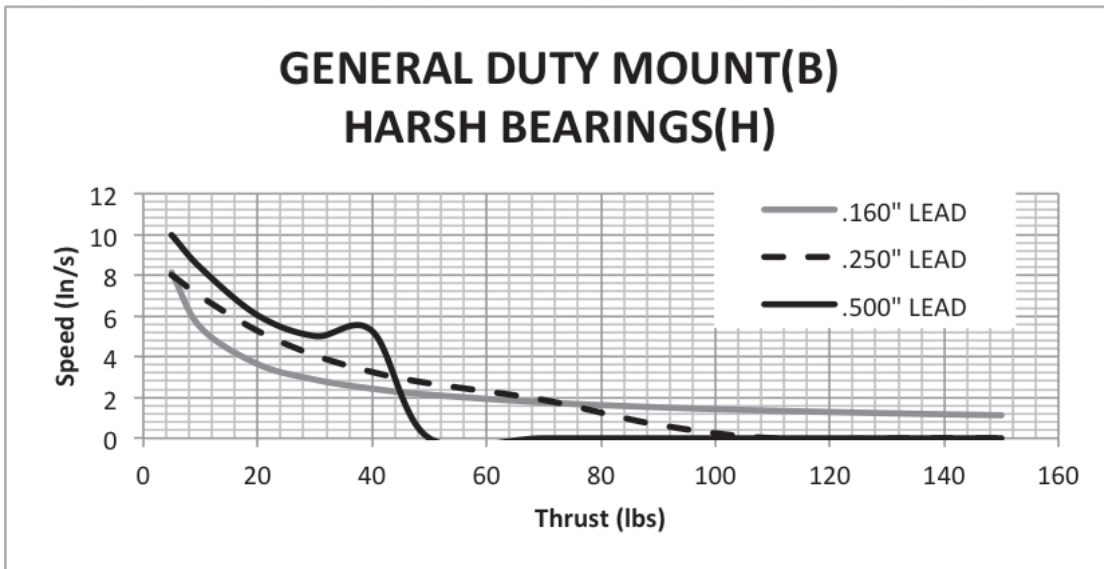
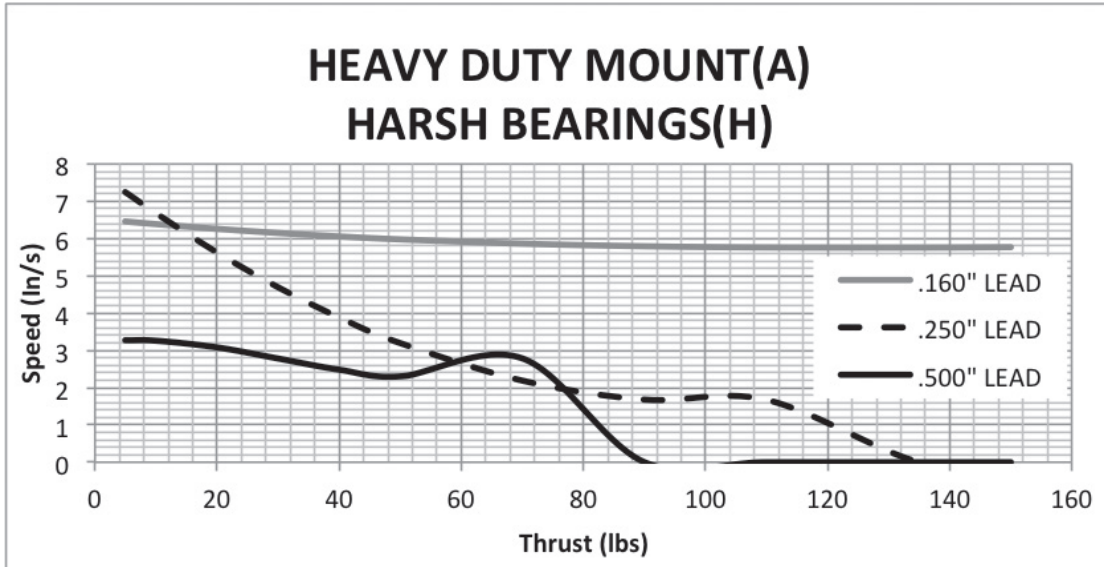
### OLET-150 with P2, E2, Y2, Z2 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

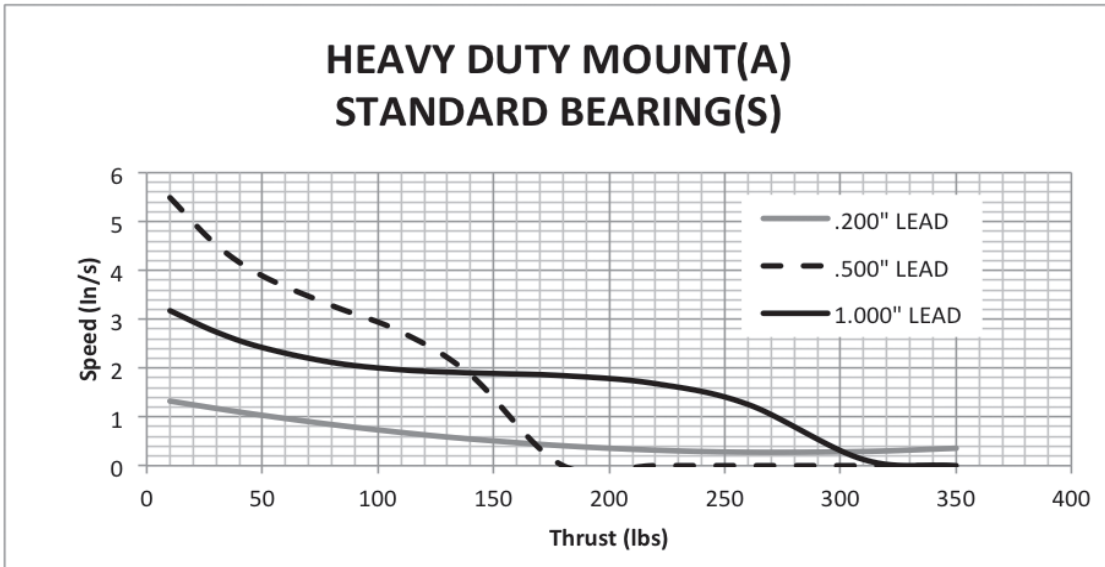
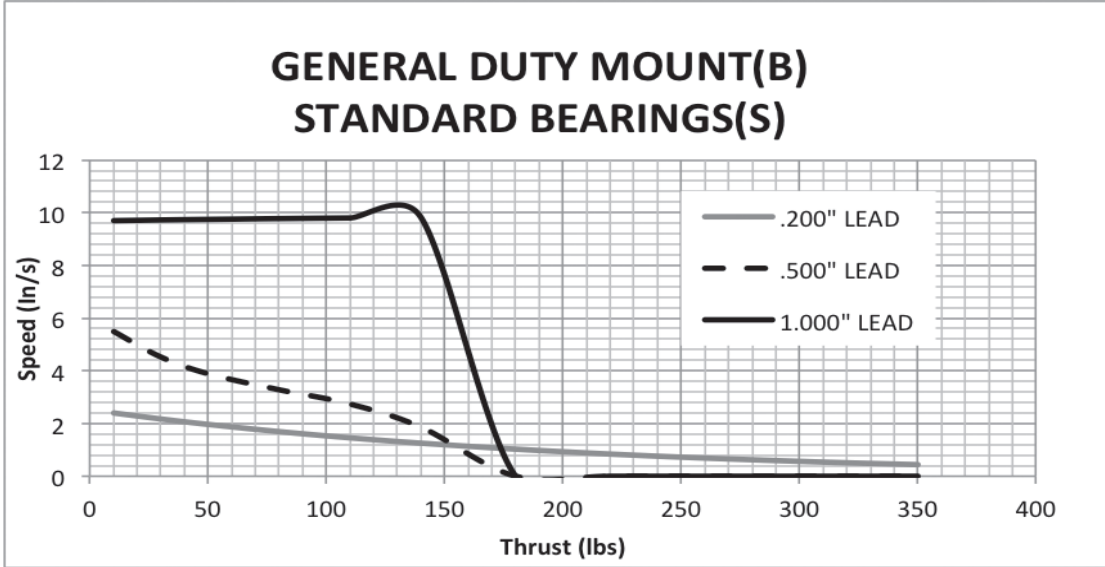
### OLET-150 with P2, E2, Y2, Z2 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

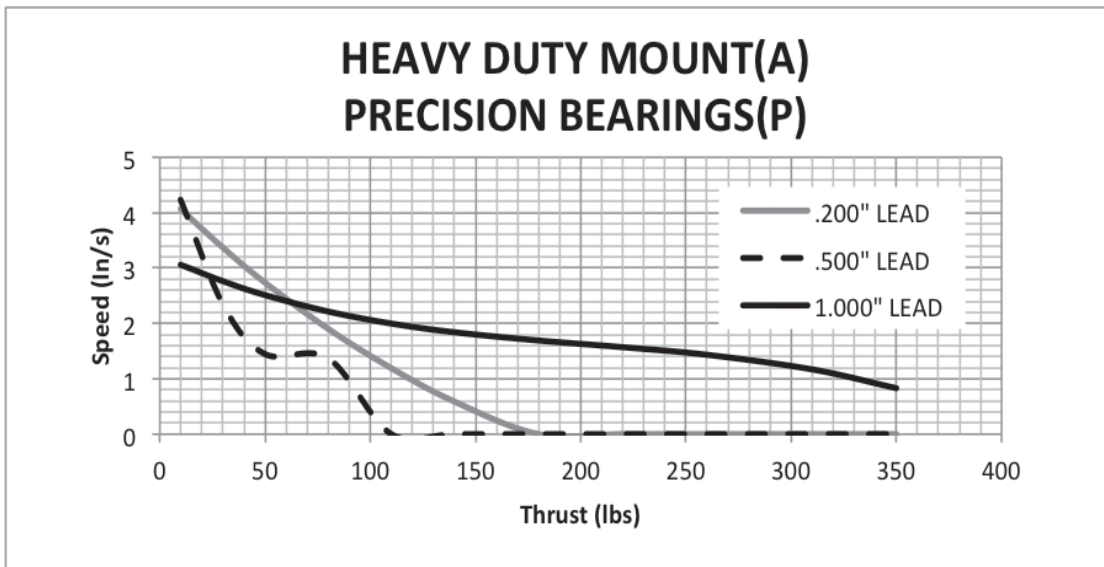
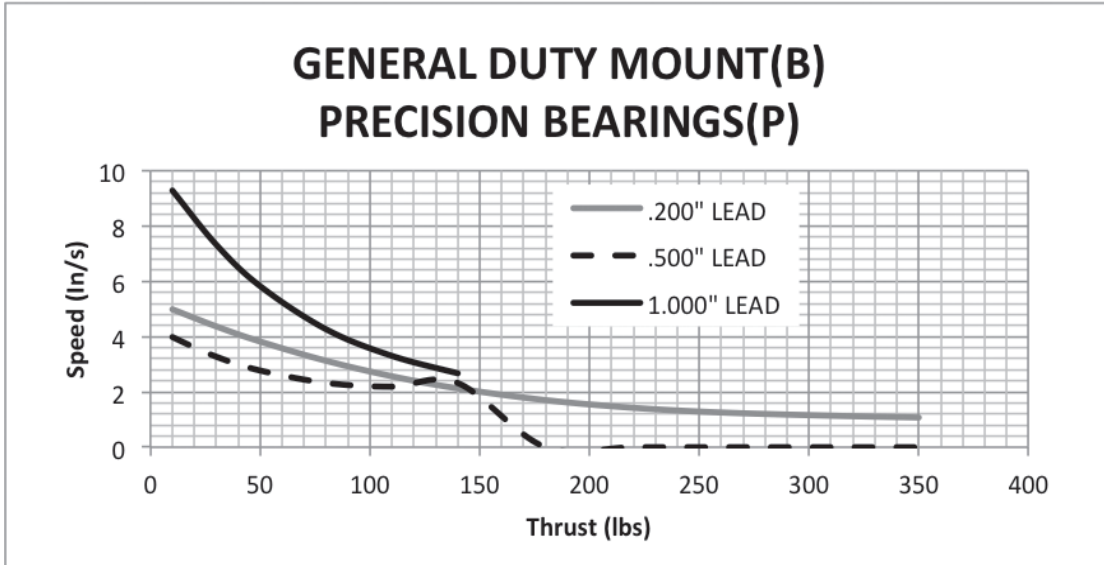
### OLET-350 with P3, E3, Y3, Z3 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

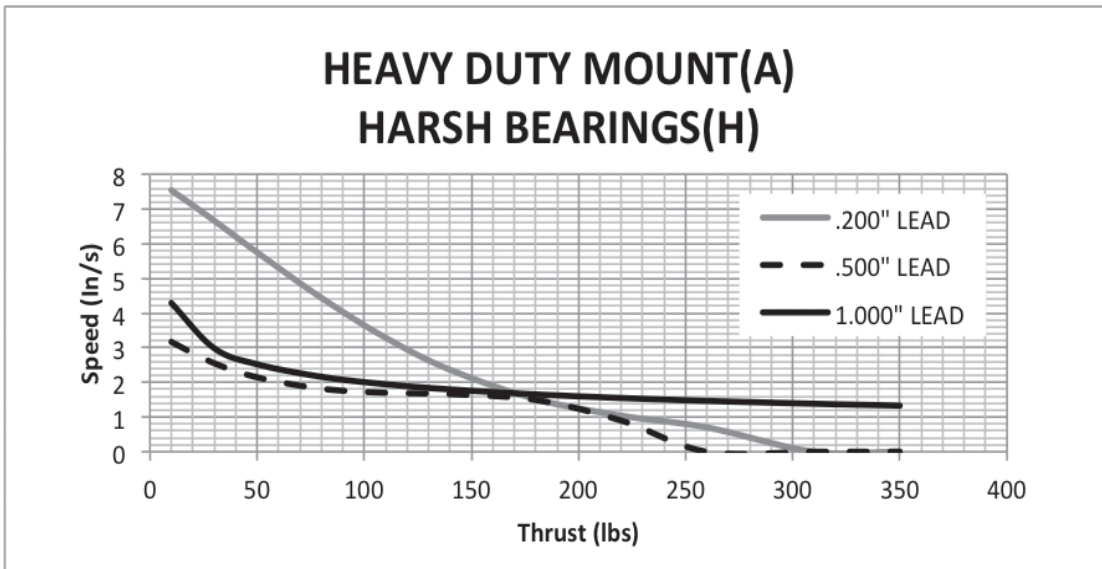
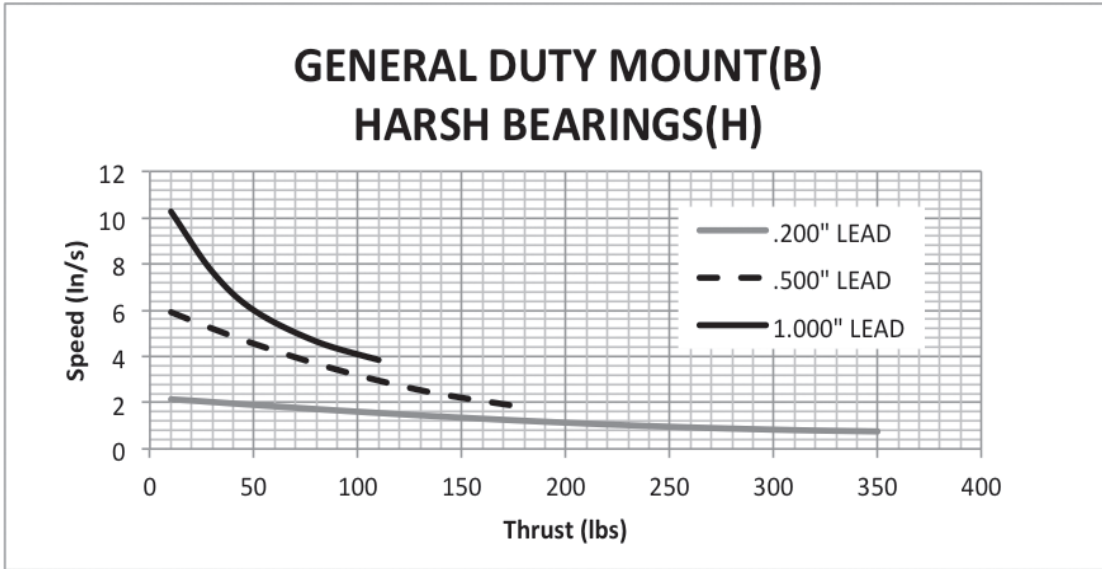
### OLET-350 with P3, E3, Y3, Z3 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## SPECIFICATIONS AND SIZING

### OLET-350 with P3, E3, Y3, Z3 Options (NEMA 23 Stepper Motor)



NOTE: For reverse parallel motor mount, use 90% of values found in the graphs above.

## AXIAL LOAD VS. MOMENT LOAD

An axial load component must be included in any sizing task to take into account the axial load introduced as a result of the expected moment load. To use this table, first find the effective moment in the first column. Next, scroll over to the applicable cell in the table that represents your OLET configuration. The value in that cell is the axial load that must be added or accounted for in your sizing application.

MOMENT (in-lbs)	OLE-75						OLE-150						OLE-350					
	HEAVY (-A)			GENERAL (-B)			HEAVY (-A)			GENERAL (-B)			HEAVY (-A)			GENERAL (-B)		
	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	35	0	20	60	47	50	19	0	0	35	0	20	0	65	168	19	0	0
4	38	1	25	59	40	51	22	0	11	38	1	25	0	94	171	22	0	11
6	39	2	28	58	33	52	24	0	24	39	2	28	0	111	172	24	0	24
8	40	2	30	57	28	53	26	7	34	40	2	30	0	123	173	26	7	34
10	41	3	32	56	25	54	29	13	41	41	3	32	0	133	174	29	13	41
25	45	7	38	50	18	58	43	35	71	45	7	38	0	171	178	43	35	71
50	48	15	43	48	24	61	62	53	94	48	15	43	49	200	181	62	53	94
75	49	22	46	54	33	62	75	63	107	49	22	46	90	217	182	75	63	107
100	51	28	48	65		65	83	70	117	51	28	48	120	229	183	83	70	117
125	52	34	50			73	89	76	124	52	34	50	142	239	184	89	76	124
150	52	39	51				95	80	130	52	39	51	161	246	185	95	80	130
175	53	44	52				103	84	135	53	44	52	177	253	186	103	84	135
200	53	48	53				113	87	140	53	48	53	190	259	186	113	87	140
225	54	52	54				129	90	144	54	52	54	202	263	187	129	90	144
250	54	55	55					93	147	54	55	55	213	268	187	152	93	147
275	55	58	56					95	150	55	58	56	223	272	187	184	95	150
300	55	60	56					98	153	55	60	56	232	276	188	227	98	153
325	55	62	57					100	156	55	62	57	240	279	188	283	100	156
350	56	63	57					101	158	56	63	57	248	282	188		101	158
375	56	64	58					103	161	56	64	58	255	285	189		103	161
400	56	64	58					105	163	56	64	58	261	288	189		105	163
425	57		59					106	165	57		59	267	290	189		106	165
450	57		59					108	167	57		59	273	293	189		108	167
500	57		60					110	170	57		60	284	297	190		110	170
550	58		61					113	173	58		61	294	301	190		113	173
600	58		61					115	176	58		61	302	305	191		115	176
650	58		62					117	179	58		62	311	308	191		117	179
700	59		62					119	181	59		62	318	311	191		119	181
750	59		63					121	183	59		63	325	314	191		121	183
800	59		63					122	186	59		63	332	317	192		122	186
850	59		64					124	188	59		64	338	319	192		124	188
900	60		64					125	189	60		64	344	322	192		125	189
950	60		64					126	191	60		64	349	324	192		126	191
1000	60		65					128	193	60		65		326	193		128	193
1200	61		66					132	199	61		66		334	193		132	199
1400	61		67					136	204	61		67		340	194		136	204
1600	62		68					139	208	62		68		346	195		139	208

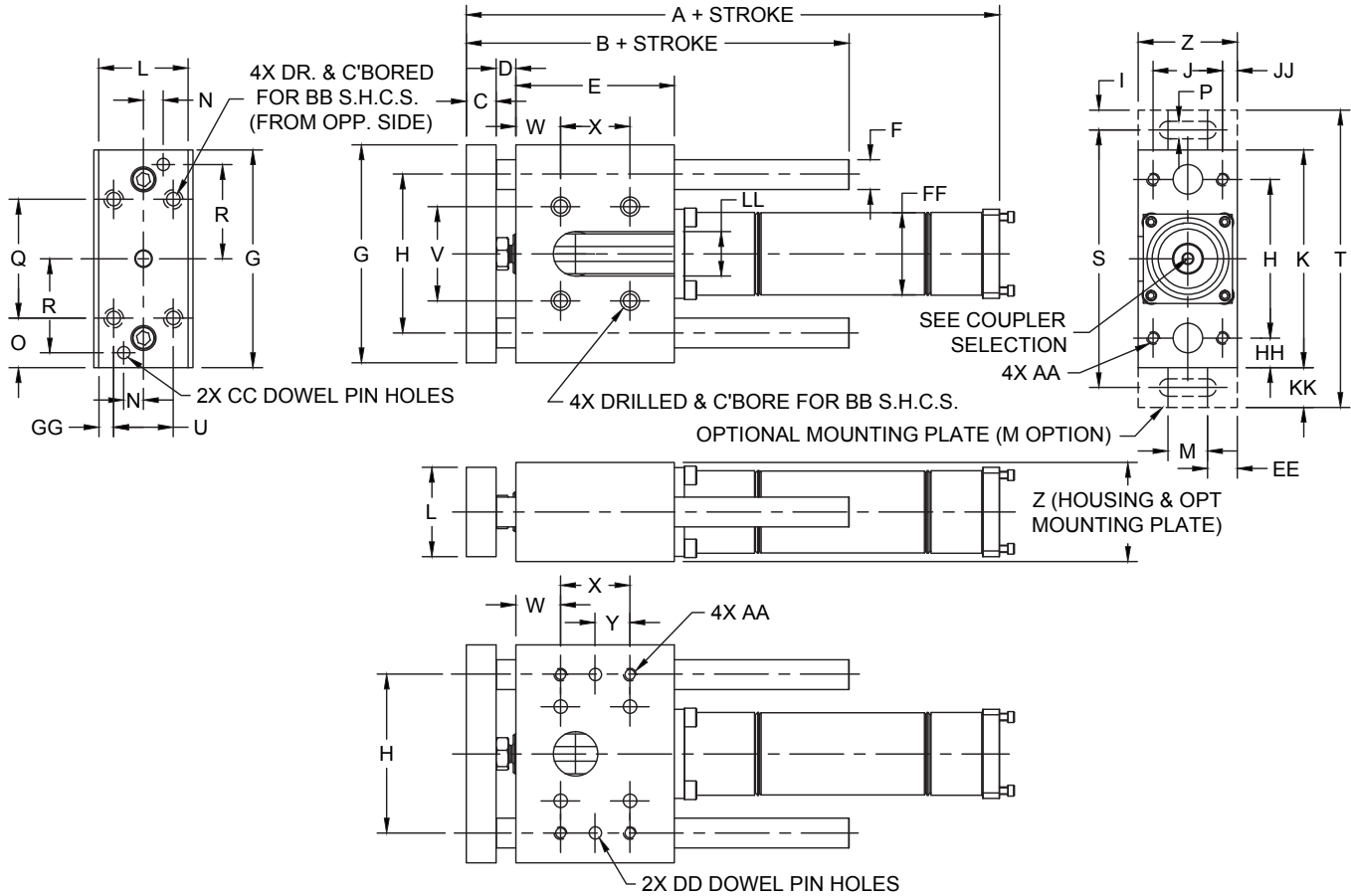
Example: You have a 10" stroke OLET-15010-50-P2-BP with a 10 lb load. This results in a 100 in-lb moment at full extension. Find the cell that intersects with the 100 in-lb moment load with the heading "OLE-150, General, P" and you will find a value of 28 in this cell. This 28 represents the value of load (28 lbs) that must be added to the sizing calculation.

# HOW TO SPECIFY

## DIMENSIONS

### No Motor (N)

#### General Duty OLET with 'S' Bearing



#### General Duty Housing with Composite Bearing ('BS')

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	9.17	5.00	0.62	0.38	3.00	0.625	4.25	3.12	0.50	1.375	4.25	5.00	1.00	0.375	1.125	0.38	2.00
150	12.50	6.38	0.75	0.50	4.00	0.750	5.50	4.00	0.50	1.750	5.50	6.38	1.31	0.500	1.250	0.44	3.00
350	17.24	9.75	1.25	0.75	6.00	1.125	7.50	4.25	1.00	2.500	7.50	9.75	1.81	0.750	1.875	0.69	3.75

MODEL	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
75	1.813	5.25	6.25	1.00	1.875	0.81	1.375	0.688	2.00	1/4-20	1/4	Ø.2520 / .2530
150	2.375	6.50	7.50	1.50	2.375	1.13	1.750	0.875	2.50	5/16-18	5/16	Ø.3145 / .3155
350	3.250	9.50	11.50	2.25	3.500	1.75	2.500	1.250	3.50	3/8-16	3/8	Ø.3770 / .3780

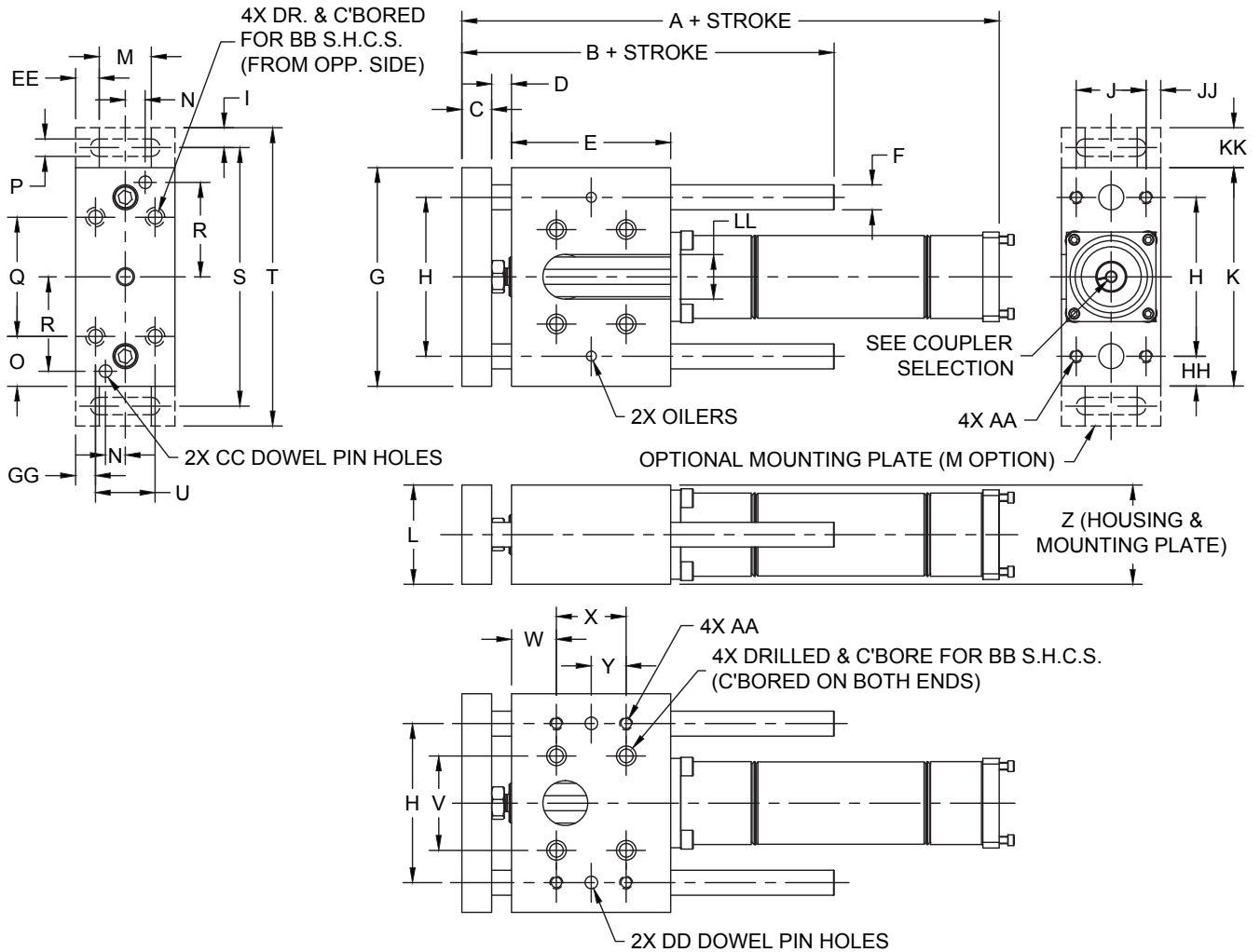
MODEL	DD	EE	FF	GG	HH	KK	LL	JJ
75	Ø.2520 / 2531 x .410 / .430 DP	0.50	1.56	0.375	0.56	1.00	1.12	.31
150	Ø.3145 / .3156 x .560 / .580 DP	0.59	2.07	0.375	0.75	1.00	1.12	.38
350	Ø.3770 / .3781 x 1.000 / 1.020 DP	0.84	3.10	0.500	1.06	2.00	1.50	.50



## DIMENSIONS

### No Motor (N)

#### General Duty OLET with 'P' or 'H' Bearing



#### General Duty Thruster with Precision Ball/Harsh Environment Bearing ('BP' or 'BH')

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	9.05	4.75	0.50	0.38	3.00	0.500	4.25	3.12	0.50	1.375	4.25	2.00	1.00	0.375	1.125	0.38	2.00
150	12.50	6.25	0.75	0.50	4.00	0.625	5.50	4.00	0.50	1.750	5.50	2.50	1.31	0.500	1.250	0.44	3.00
350	15.00	7.00	1.00	0.75	4.00	0.750	7.00	5.00	0.63	2.125	7.00	3.00	1.56	0.625	1.500	0.56	4.00

MODEL	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
75	1.813	5.25	6.25	1.00	1.875	0.81	1.375	0.688	2.00	1/4-20	1/4	Ø.2520 / .2530
150	2.375	6.50	7.50	1.50	2.375	1.12	1.750	0.875	2.50	5/16-18	5/16	Ø.3145 / .3155
350	3.000	8.25	9.50	2.00	3.250	0.94	2.125	1.063	4.00	3/8-16	3/8	Ø.3770 / .3780

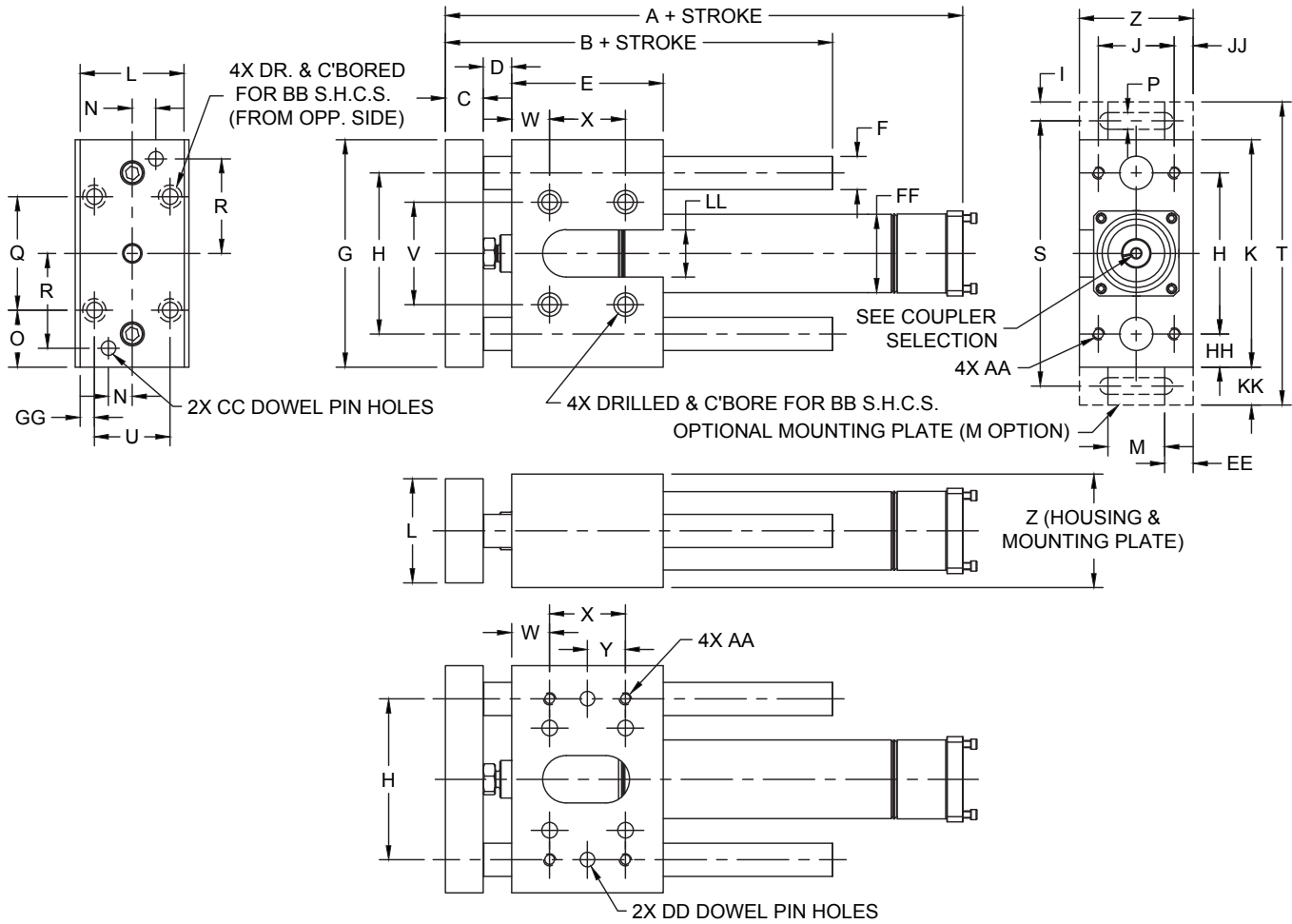
MODEL	DD	EE	FF	GG	HH	KK	LL	JJ
75	Ø.2520 / .2531 x .410 / .430 DP	0.31	1.12	0.500	0.56	1.00	1.12	.31
150	Ø.3145 / .3156 x .560 / .580 DP	0.38	1.56	0.500	0.75	1.00	1.12	.38
350	Ø.3770 / .3781 x .810 / .830 DP	0.94	2.08	0.500	1.00	1.25	1.25	.94

# HOW TO SPECIFY

## DIMENSIONS

### No Motor (N)

#### Heavy Duty OLET with 'S' Bearing



#### Heavy Duty Housing with Composite Bearing ('AS')

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	7.17	6.38	0.75	0.50	4.00	0.750	5.50	4.00	0.50	1.750	5.50	6.38	1.31	0.500	1.250	0.44	3.00
150	9.80	6.00	1.00	0.75	4.00	0.875	6.00	4.25	0.50	3.000	6.00	2.75	1.50	0.625	1.500	0.44	3.00
350	12.64	11.50	1.50	1.00	7.00	1.375	9.00	6.50	1.00	4.500	9.00	4.00	2.19	1.000	2.250	0.81	4.50

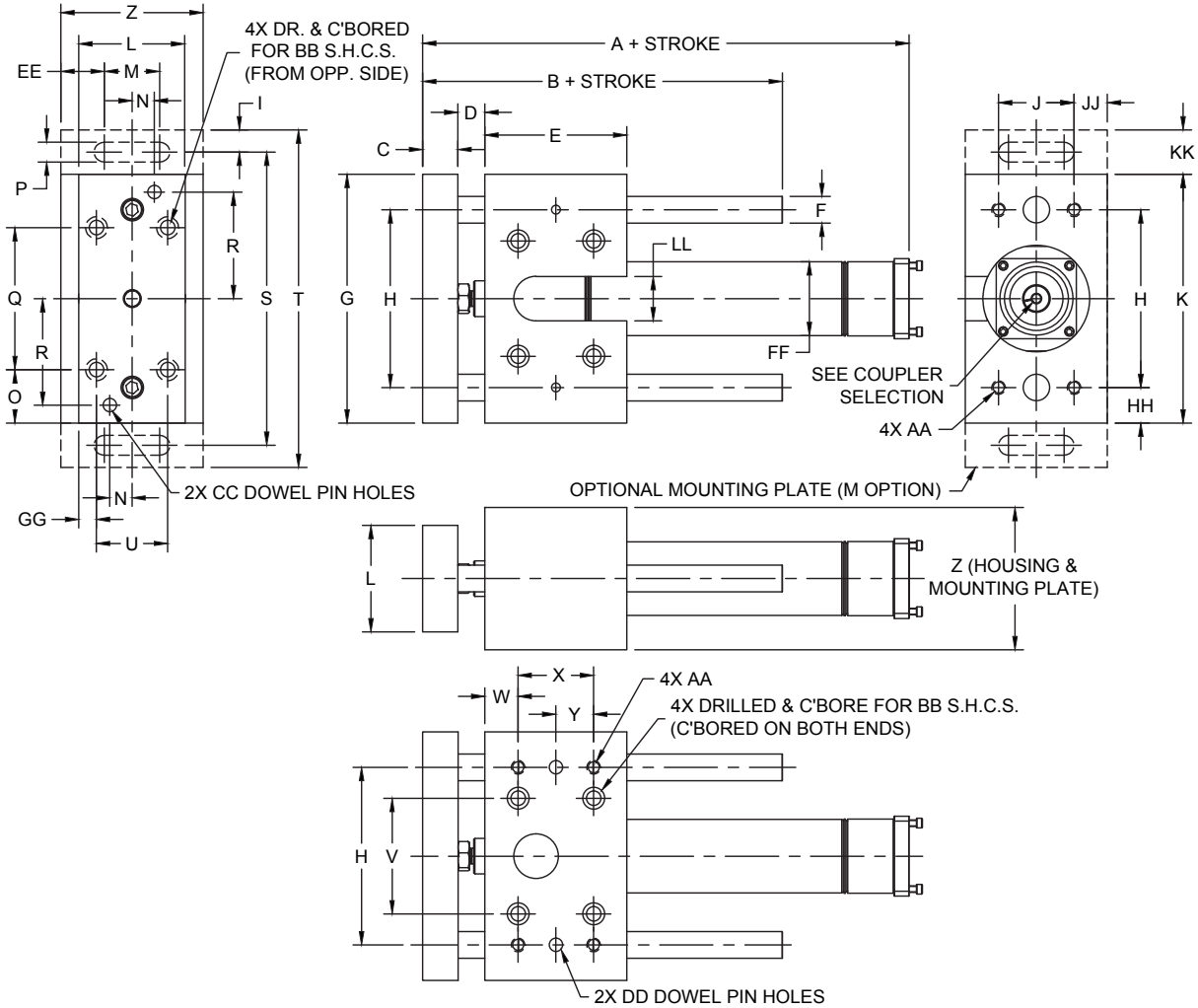
MODEL	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
75	2.375	6.50	7.50	1.50	2.375	1.13	1.750	0.875	2.50	5/16-18	5/16	Ø.3145 / .3155
150	2.500	7.00	8.00	2.00	2.700	1.00	2.000	1.000	3.00	5/16-18	5/16	Ø.3770 / .3780
350	4.000	11.00	13.00	2.75	4.200	2.00	3.000	1.500	4.50	1/2-13	1/2	Ø.5020 / .5030

MODEL	DD	EE	FF	GG	HH	KK	LL	JJ
75	Ø.3145 / .3156 x .560 / .580 DP	0.59	1.56	0.375	0.75	1.00	1.12	.38
150	Ø.3770 / .3780 x .810 / .830 DP	0.75	2.07	0.375	0.88	1.00	1.25	.50
350	Ø.5020 / .5030 x 1.250 / 1.270 DP	1.15	3.10	0.625	1.25	2.00	1.75	.75

## DIMENSIONS

### No Motor (N)

#### Heavy Duty OLET with 'P' or 'H' Bearing



#### Heavy Duty Thruster with Precision Ball/Harsh Environment Bearing ('AP' or 'AH')

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	7.17	6.25	0.75	0.50	4.00	0.625	5.50	4.00	0.50	1.750	5.50	2.50	1.31	0.500	1.250	0.44	3.00
150	9.80	7.00	1.00	0.75	4.00	0.750	7.00	5.00	0.63	2.125	7.00	3.00	1.56	0.625	1.500	0.56	4.00
350	12.07	9.50	1.25	0.75	6.00	1.000	8.25	6.25	1.00	2.625	8.50	4.00	2.00	1.000	1.750	0.63	4.75

MODEL	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
75	2.375	6.50	7.50	1.50	2.375	1.12	1.750	0.875	2.50	5/16-18	5/16	Ø.3145 / .3155
150	3.000	8.25	9.50	2.00	3.250	0.94	2.125	1.063	4.00	3/8-16	3/8	Ø.3770 / .3780
350	3.750	10.50	12.50	3.00	4.100	1.69	2.625	1.312	4.50	3/8-13	3/8	Ø.3770 / .3781

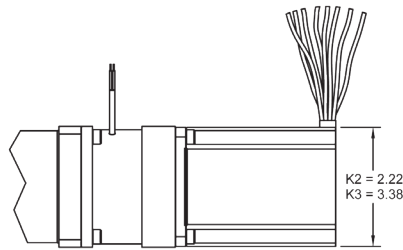
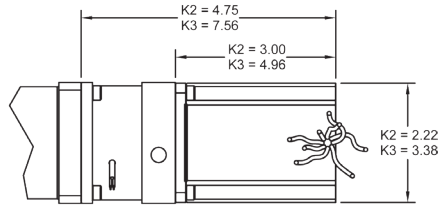
MODEL	DD	EE	FF	GG	HH	KK	LL	JJ
75	Ø.314 / .3156 x .560 / .580 DP	0.38	1.56	0.500	0.75	1.00	1.12	.38
150	Ø.3770 / .3781 x .810 / .830 DP	0.94	2.07	0.500	1.00	1.25	1.25	.94
350	Ø.3770 / .3781 x 1.000 / 1.020 DP	0.94	3.10	0.500	1.13	2.00	1.25	.94

## DIMENSIONS

### Brake (K Option)

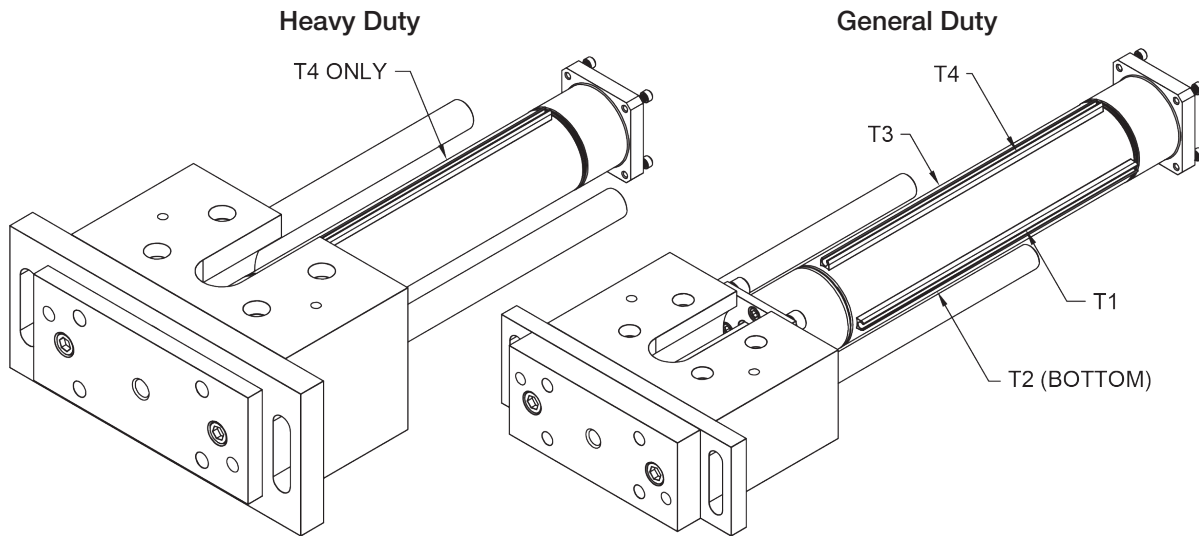
Add motor and brake dimensions below to no motor actuator dimensions.

#### 23 and 34 Frame Stepper and Brake (K2/K3)



### Switch Track (T1, T2, T3, T4 Options)

Numbers indicate the position of the switch track relative to the plug that provides access to the coupler.

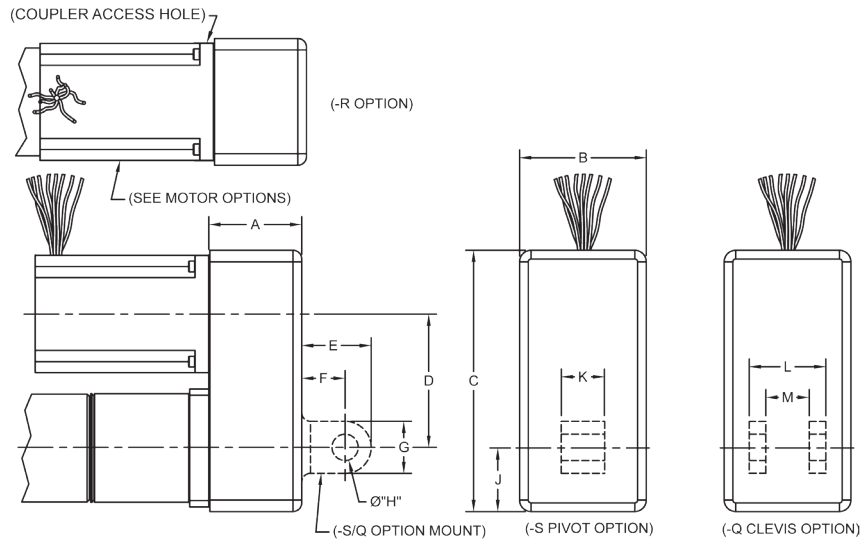


*For use with Bimba MR, MS, MSC, or MSK track mount switches.*

## DIMENSIONS

### Reverse Parallel Motor Mounting (R, S, and Q Options)

Add reverse parallel dimensions to no motor actuator dimensions.

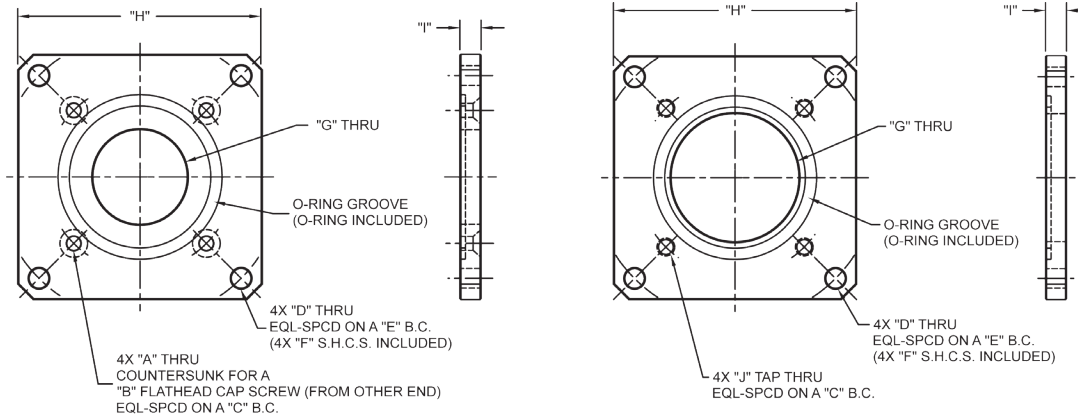


MOTOR	A	B	C	D	E	F	G	H	J	K	L	M
P2	1.65	2.59	5.14	2.56	1.25	0.75	1.00	0.50	1.31	0.75	1.75	0.76
P3	2.65	3.65	7.52	3.86	2.00	1.25	1.50	0.75	1.85	1.25	2.50	1.26

# HOW TO ACCESSORIZE

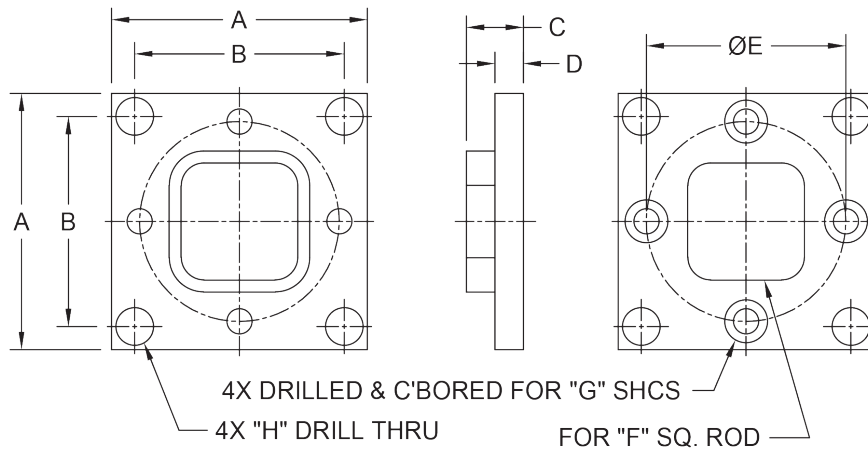
## ACCESSORIES

### Adapter Plates



PART NO.	A	B	C	D	E	F	G	H	I	J
D-109957	.13	#4	1.73	.18	2.63	#8	.87	2.25 SQ.	.20	N/A
D-109958	N/A	N/A	1.81	.18	2.63	#8	1.18	2.25 SQ.	.20	#8-32 UNC-2B
D-109959	N/A	N/A	2.76	.20	3.87	#10	1.97	3.39 SQ.	.30	#10-24 UNC-2B
D-109960	.17	#8	1.41	.18	2.63	#8	.99	2.25 SQ.	.20	N/A
D-109968	.18	#8	1.73	.18	2.63	#8	.87	2.25 SQ.	.20	N/A
D-111352	N/A	N/A	1.77	.18	2.63	#8	1.18	2.25 SQ.	.20	M3
D-111353	N/A	N/A	2.76	.20	3.87	#10	1.97	3.39 SQ.	.30	#8-32 UNC-2B

### General Duty Housing Mounting Plate



MOTOR	A	B	C	D	E	F	G	H
75	1.75	1.43	0.50	0.25	1.25	0.74	#8	0.27
100	2.25	1.84	0.50	0.25	1.75	1.00	#10	0.33
350	3.49	2.76	0.68	0.30	2.50	1.50	1/4	0.39

## MOTORS AND DRIVES

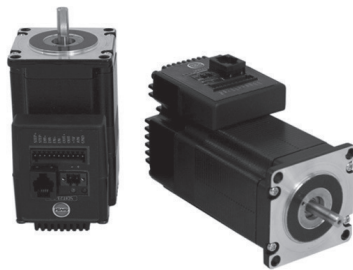
---

Bimba motors are available to use as the rotary drive mechanism of the OLET Series. With a complete array of stepper and servo motors available in stock, Bimba has a motor\*-drive solution that meets many demanding applications.

Configuring your motor and creating your first motion profile program is easier than ever with Bimba's intuitive and icon based IQ® suite of motion software. With our complete software suite available for free download from the Bimba website, there is no additional cost to your motion project. All Bimba stepper and servo programming software uses the same IQ® programming software, greatly reducing the learning curve. Existing programs can be easily shared or adapted among the two motor technologies.

**See the Motors and Drives section for Bimba's wide selection of available motors and motor drives.**

*\*Contact Bimba's Customer Service team for help in crossing your motor to a Bimba motor.*



INTELLIMOTOR®  
ITM-23Q-2-EIP-E-M12



AC STEPPER MOTOR  
MTR-AC23T-753-S

## REVERSE PARALLEL MOTOR MOUNTS

---

In cases where space saving is critical, or in which gaining mechanical advantage via a geared drive belt pulley leads to an improved design, Bimba offers reverse parallel motor mounts. They are offered for use with nearly any Bimba motor or customer-provided motor.

- Adapts to your motor dimensions
- Available in reduction ratios up to 2:1

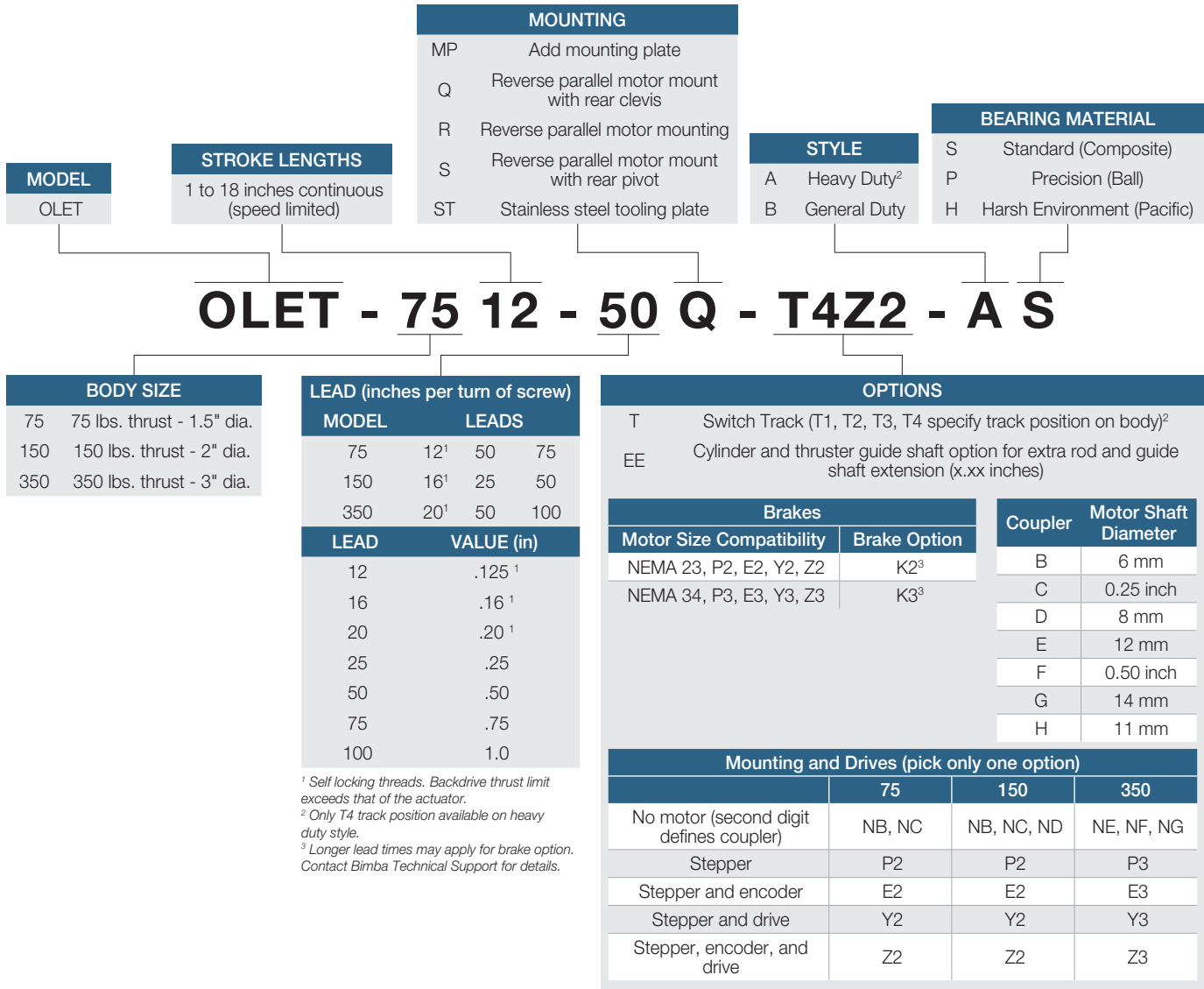
## STAINLESS STEEL TOOLING PLATES

---

Bimba offers stainless steel tooling plates for applications where water splash or high humidity is present in the environment. In addition, the stainless tooling plate is resistant to many, but not all, chemicals. Select the "ST" mounting option when a stainless tooling plate is needed.

# HOW TO ORDER

The model number of all Original Line Electric® Thruster Actuators consists of alphanumeric clusters designating product type, body size (number designates maximum thrust capacity in pounds), stroke length, lead, mounting style, motor type and configuration, thruster style and bearing material. The example below describes OLET-7512-50Q-T4Z2-AS, a 75 pound maximum thrust model with 1.5 inch diameter body, 12 inch stroke, 0.50 inch lead, reverse parallel mount, switch track, 23 frame stepper motor with encoder, and drive. Piston magnets are included.



## INCOMPATIBLE OPTIONS

The following options cannot be ordered together:

MODEL	R	S	Q	COUPLERS	MOTORS	MOTOR AND ENCODER	MOTOR AND DRIVE	MOTOR, ENCODER, AND DRIVE	K2	K3
75	N, S, Q	N, R, Q	N, R, S	D, E, F, G	P3	E3	Y3	Z3	N_	N_, P2, E2, Y2, Z2
150	N, S, Q	N, R, Q	N, R, S	A, E, F, G	P3	E3	Y3	Z3	N_	N_, P2, E2, Y2, Z2
350	N, S, Q	N, R, Q	N, R, S	A, B, C, D	P2	E2	Y2	Z2	N_, P3, E3, Y3, Z3	N_





# HOW TO REPAIR

Bimba OLET devices have only a few repairable parts. However, OLETs are not intended to be field-repairable. While they are designed for long-life, if a device is in need of repair and is able to be repaired, the unit must be returned to Bimba for the repair.

Should a repair be needed, please note the part number and serial number, and contact Bimba Customer Service at (800) 442-4622 (800.44.BIMBA) or e-mail [cs@bimba.com](mailto:cs@bimba.com).

# HOW TO CUSTOMIZE

Many popular standard features and options are available. If you need a special design feature or special adaptation, call on our custom solutions and specials design capabilities for the right product for your application. Bimba looks forward to serving your electric thruster actuator needs with the responsiveness and engineering expertise you have come to expect from Bimba.

## Mounting options:

- Rear pivot or clevis available with reverse parallel motor mount option
- Extra rod extension

## Motor options:

- Offset reverse parallel motor mounts (to conserve space)
- No motor
- Motor and encoder
- Motor and drive
- Motor, encoder, and drive

## Performance options:

- Brake option (with motor) – longer lead times may apply. Compatible brakes are specified.
- Self-locking threads (selected models)
- Switches – band or track mounting
- General or heavy duty
- Standard, precision or harsh environment versions

## Specials:

- Low backlash designs
- Special motors and controls
- Washdown motors