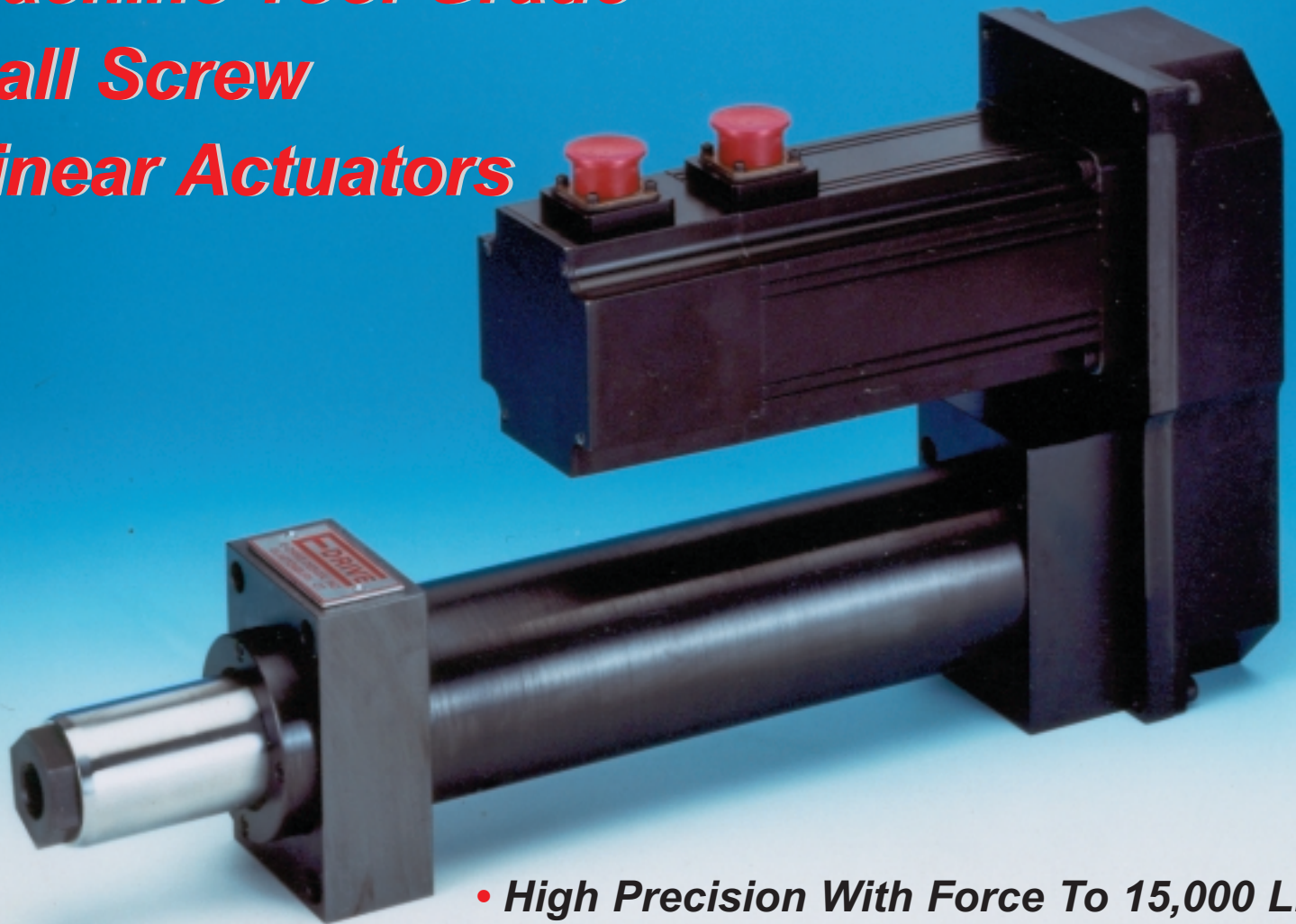


MT PRECISION™

***Machine Tool Grade
Ball Screw
Linear Actuators***



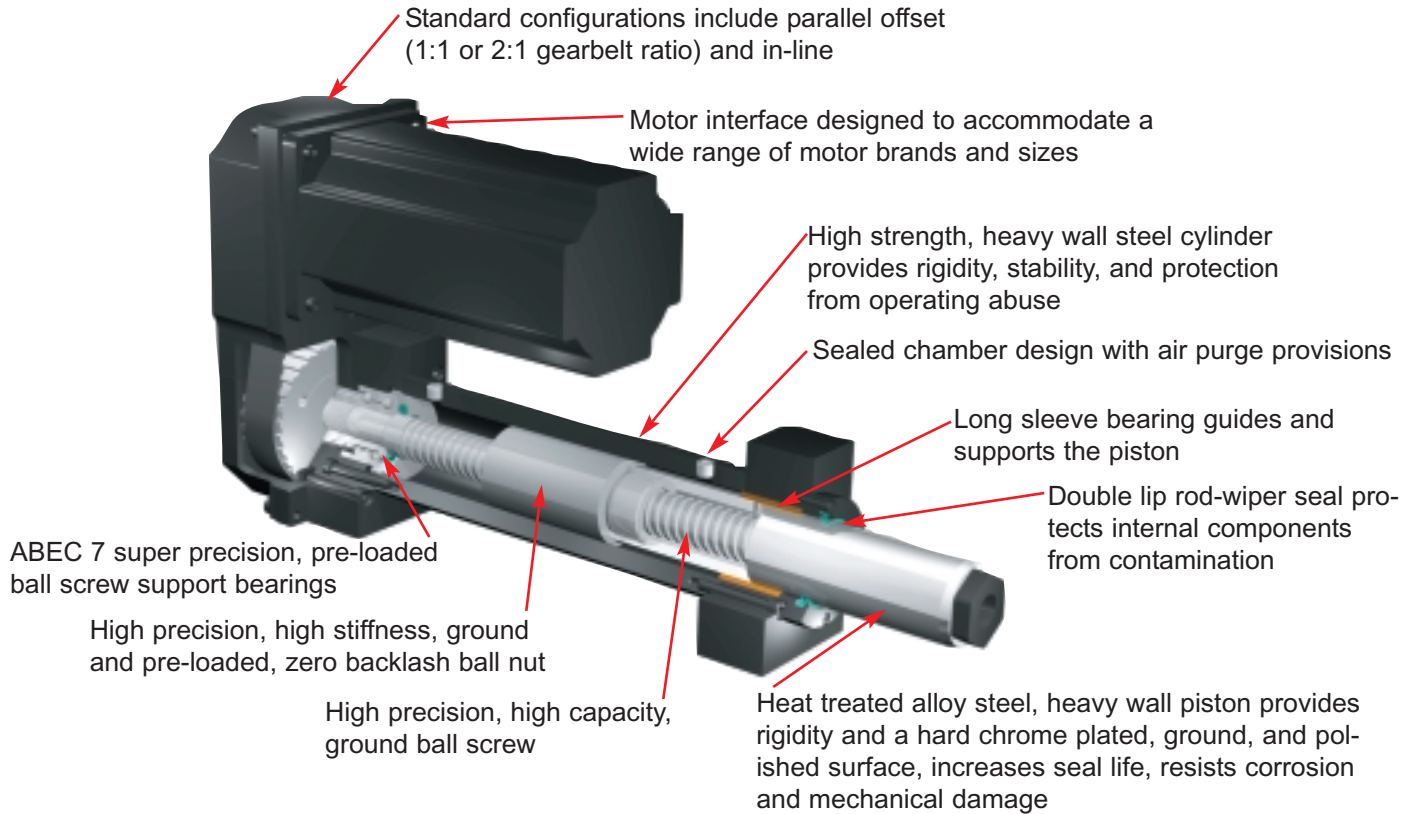
- ***High Precision With Force To 15,000 LB_f***
- ***Rugged Steel Construction***
- ***Designed For High System Stiffness***
- ***Flexible Design To Suit Any Motor***
- ***Protected From Contamination***



Precision Mechanical Products

Precision Experience In Motion™

MT PRECISION Machine Tool Actuator Features:



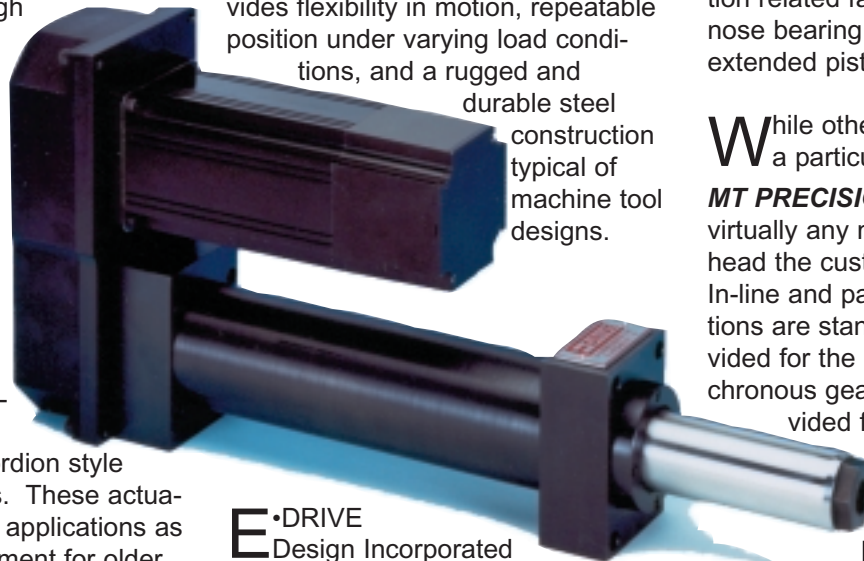
MT PRECISION Machine Tool Actuator Capabilities:

Model Number	Thrust Max. (lb _f)	Linear Velocity Max. (in/s)	Travel Length ⁽²⁾ Max. (in)	Frame Size (in)	Lead ⁽¹⁾ (in)	Ball Screw Max. (RPM)	Torque @ Ball Screw Max. (in-lb)	Dynamic Capacity ⁽³⁾ (lb _f)	Motor/ Gearhead Frame Supported Max. (in)	Unit Weight "U" Motor Mount (lb)	Unit Weight "L" Motor Mount (lb)	Rotational Inertia 1:1 (in-lb-sec ²)	Rotational Inertia 2:1 (in-lb-sec ²)	Rotational Inertia Inline (in-lb-sec ²)
MT304-06	4000	12	6	3	0.25	2880	175	2425	4.25	36	29	0.0230	0.0038	0.0012
MT304-12	4000	12	12	3	0.25	2880	175	2425	4.25	45	38	0.0234	0.0039	0.0015
MT304-18	4000	12	18	3	0.25	2880	175	2425	4.25	54	47	0.0237	0.0040	0.0019
MT304-24	4000	8	24	3	0.25	1920	175	2425	4.25	63	56	0.0241	0.0041	0.0023
MT304-30	4000	5	30	3	0.25	1200	175	2425	4.25	72	65	0.0245	0.0042	0.0026
MT506-06	6000	5.6	6	5	0.25	1350	265	4025	4.25	170	120	0.2203	0.0413	0.0195
MT506-12	6000	5.6	12	5	0.25	1350	265	4025	4.25	196	146	0.2241	0.0422	0.0233
MT506-18	6000	5.6	18	5	0.25	1350	265	4025	4.25	222	172	0.2279	0.0432	0.0271
MT506-24	6000	5.6	24	5	0.25	1350	265	4025	4.25	248	198	0.2317	0.0441	0.0309
MT506-30	6000	5.6	30	5	0.25	1350	265	4025	4.25	274	224	0.2355	0.0451	0.0347
MT506-36	6000	5.6	36	5	0.25	1350	265	4025	4.25	300	250	0.2393	0.0460	0.0385
MT506-42	6000	5.4	42	5	0.25	1300	265	4025	5.75	326	276	0.2431	0.0470	0.0423
MT512-06	12000	5.6	6	5	0.25	1350	530	6325	5.75	182	132	0.3642	0.0574	0.0214
MT512-12	12000	5.6	12	5	0.25	1350	530	6325	5.75	208	158	0.3680	0.0584	0.0252
MT512-18	12000	5.6	18	5	0.25	1350	530	6325	5.75	234	184	0.3718	0.0593	0.0290
MT512-24	12000	5.6	24	5	0.25	1350	530	6325	5.75	260	210	0.3756	0.0602	0.0328
MT512-30	12000	5.6	30	5	0.25	1350	530	6325	5.75	286	236	0.3794	0.0612	0.0366
MT512-36	12000	5.6	36	5	0.25	1350	530	6325	5.75	312	262	0.3832	0.0621	0.0404
MT512-42	12000	5.4	42	5	0.25	1300	530	6325	5.75	338	288	0.3870	0.0631	0.0442
MT515-06	15000	5.6	6	5	0.25	1350	665	9490	5.75	194	144	0.3661	0.0578	0.0233
MT515-12	15000	5.6	12	5	0.25	1350	665	9490	5.75	220	170	0.3699	0.0587	0.0271
MT515-18	15000	5.6	18	5	0.25	1350	665	9490	5.75	246	196	0.3737	0.0597	0.0309
MT515-24	15000	5.6	24	5	0.25	1350	665	9490	5.75	272	222	0.3775	0.0606	0.0347
MT515-30	15000	5.6	30	5	0.25	1350	665	9490	5.75	298	248	0.3813	0.0616	0.0385
MT515-36	15000	5.6	36	5	0.25	1350	665	9490	5.75	324	274	0.3851	0.0625	0.0423

(1) Standard lead accuracy is .0005 in/ft; Optional lead accuracy is .0002 in/ft. (2) Intermediate lengths are available.

(3) For 10⁶ inches of travel (B10)

The **MT PRECISION™** is a machine tool grade ball screw linear actuator developed to provide a precise, strong, and durable linear motion solution for high accuracy positioning applications. As an integral package, the **MT PRECISION™** actuator is less expensive and much easier to align than traditional ball screw component systems. As a sealed assembly, it is far less susceptible to contamination and much easier to maintain than accordion style or sheet metal covers. These actuators are ideal for new applications as well as direct replacement for older mechanical and hydraulic drive systems. When used as a drive for modernizing existing machines to the latest CNC technology, design time required is minimal, as is the actual



modification of the machine components. As engineers strive to refine and improve the production process, the **MT PRECISION™** actuator provides flexibility in motion, repeatable position under varying load conditions, and a rugged and durable steel construction typical of machine tool designs.

E•DRIVE Design Incorporated has, since 1980, shown consistent success in the toughest machine tool applications, e.g. High loads, varying loads, high speeds, high precision, and extreme durability. Precision

ground ball screw systems, tailored for maximum life, load, and stiffness, provide linear motion while fully enclosed, thus avoiding contamination related failures. A long bronze nose bearing provides support for the extended piston.

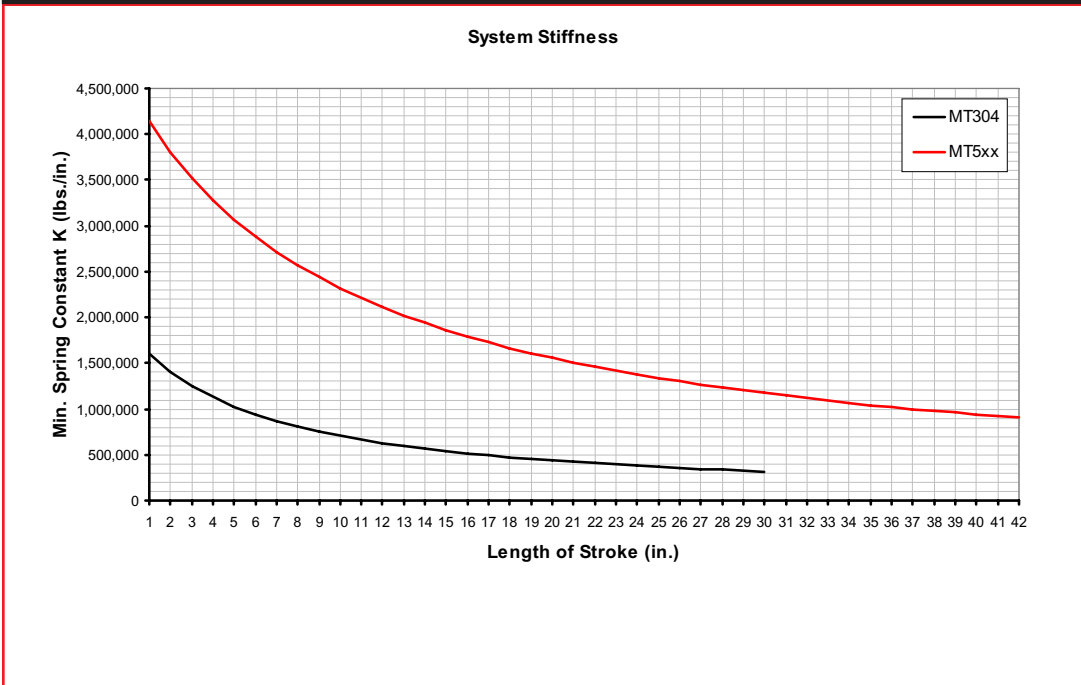
While other actuator designs force a particular motor decision, the **MT PRECISION™** is designed to suit virtually any motor, gearbox, or gear head the customer chooses to use. In-line and parallel offset configurations are standard. A coupling is provided for the in-line option and synchronous gear belt and pulleys provided for either 1:1 or 2:1 ratios when parallel offset.

Machine tool principles and guidelines ensure robust sizing of all components. Traditional front flange, bottom, foot, and trunnion mounting capabilities are available.

MT PRECISION™ Machine Tool Actuator Features:

- **High system stiffness results in repeatable positioning even under varying loads**
- **Flexibility means the motor choice is yours - accepts most motors without separate adapter plate**
- **Machine tool grade components provide accumulative accuracy essential to modern manufacturing**
- **High stiffness components provide superior response**
- **Sealed chamber design (IP54) avoids contamination**
- **Rugged Steel Construction supports large, high torque servo motors**
- **Continuous Duty Designs ensure reliability and longevity**
- **Variety of standard mounting options make it easy to mount and align**

Graph 1: System Stiffness



System stiffness is an essential measure of an axis drive's ability to position accurately and repeatably under varying load conditions. As the spring constant increases, the axial deflection, for a given load, decreases.

To determine the maximum axial deflection: Find the stroke length on the horizontal legend and draw a vertical line intersecting the stiffness curve for the model number being considered. From this intersection, a horizontal line projected to the left will intersect the vertical legend at the calculated minimum spring constant.

To calculate (D) maximum axial deflection under load:

$D = F / K$; where D = maximum axial deflection (inches), F = Load (lbs) and K = Spring Constant (lbs/inch)

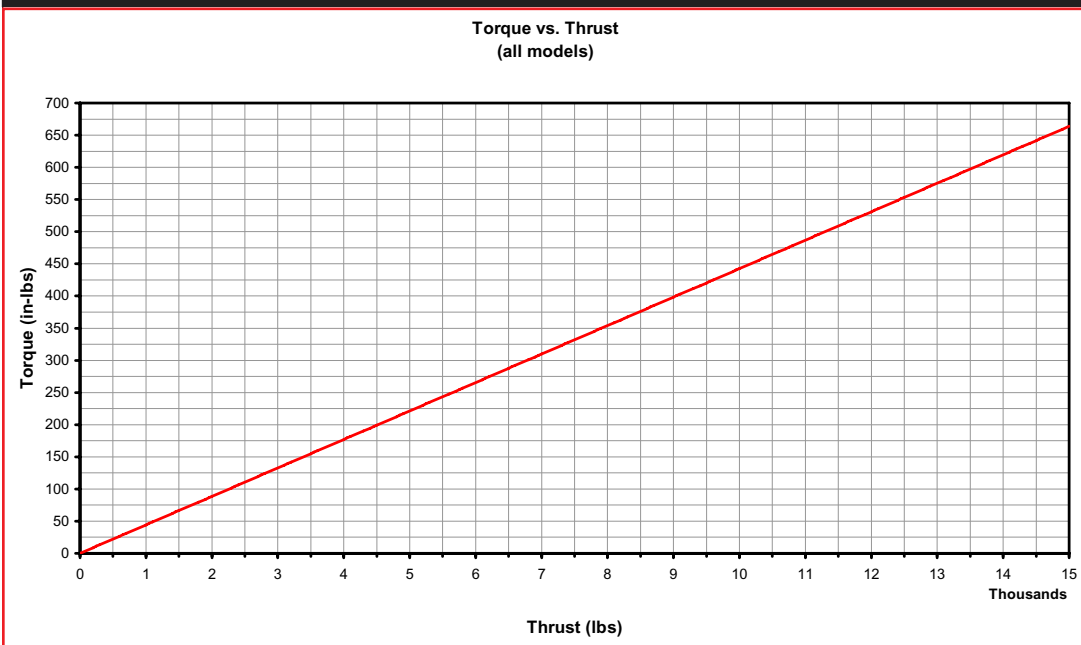
For example: What is the maximum axial deflection of a 12 inch stroke MT506 under 1,500 lb. load?

The minimum spring constant for this example is 2.1×10^6 lb/in

Maximum axial deflection $D = F / K = 1,500 \text{ lb} / 2.1 \times 10^6 \text{ lb/in} = 0.0007 \text{ inches}$

Note: maximum axial deflection occurs at full piston extension and stiffness increases as the piston is retracted.

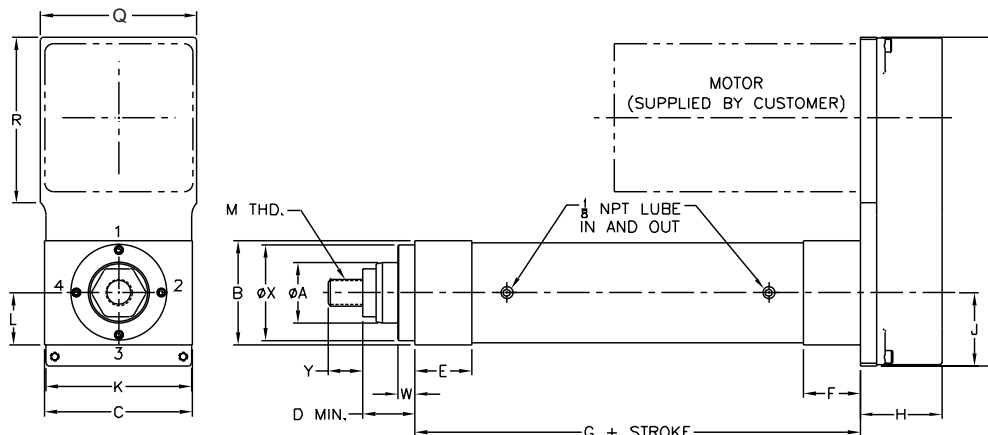
Graph 2: Torque Vs. Thrust at Ball Screw



The approximate motor torque required to produce a given force can be determined using the adjacent chart: find the peak force on the horizontal scale and draw a vertical line from this value through the data line. From the intersection point, draw a horizontal line to the vertical legend on the left. This torque input will produce the peak axial force defined above for an in-line or parallel offset 1:1 gear belt ratio. For a 2:1 gear ratio, the required torque is reduced by 50%.

MT PRECISION Mounting Dimensions:

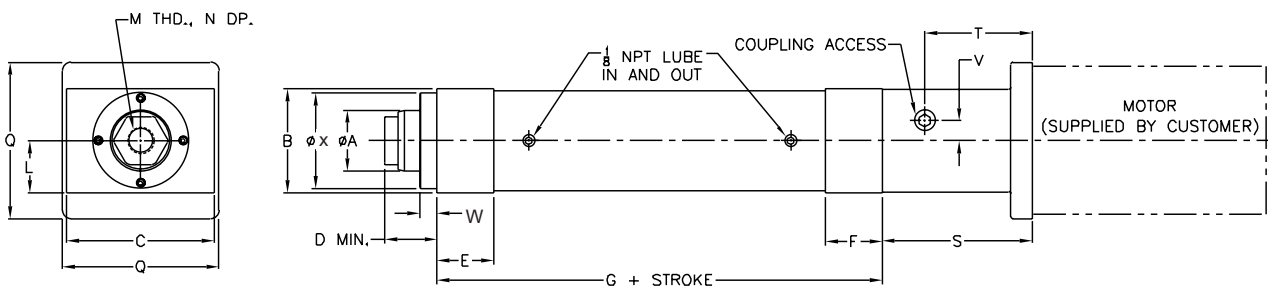
U-Parallel Offset Motor Configuration



NOTE: SHOWN WITH MALE PISTON THREAD OPTION

Note: DXF or DWG files are available on CD or through www.edrivedesign.com

L-Inline Motor Configuration



NOTE: SHOWN WITH FEMALE PISTON THREAD OPTION

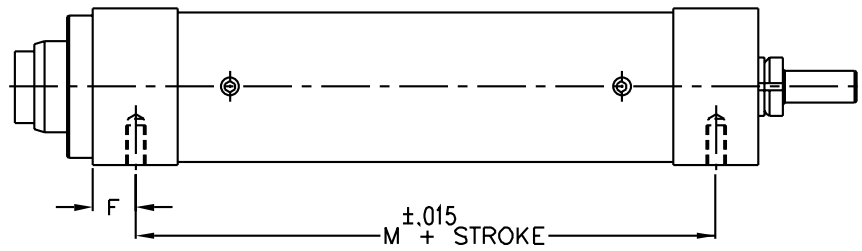
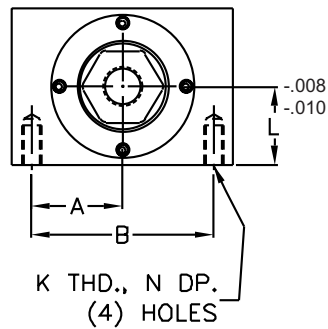
Note: DXF or DWG files are available on CD or through www.edrivedesign.com

MT PRECISION U-Parallel Offset and L-Inline Motor Configuration

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MT304	1.75	3	4.25	1.00	1.63	1.63	6.78	2.31	2.09	4.19	1.50	3/4-16	1.00
MT506	3.25	5	7.75	1.50	2.50	3.00	9.38	3.00	3.81	7.63	2.50	11/4-12	1.63
MT512	3.25	5	7.75	1.50	2.50	3.00	11.38	4.00	3.81	7.63	2.50	11/4-12	1.63
MT515	3.25	5	7.75	1.50	2.50	3.00	13.38	4.00	3.81	7.63	2.50	11/4-12	1.63

Model	P	Q	R	S	T	V	W	X	Y
MT304	9.44	4.50	4.75	4.31	3.09	0.58	0.50	2.7495/2.7485	1.13
MT506	17.19	8.38	9.19	6.75	4.63	1.00	0.63	4.4995/4.4985	2.00
MT512	17.19	8.38	9.19	6.75	4.63	1.00	0.63	4.4995/4.4985	2.00
MT515	17.19	8.38	9.19	6.75	4.63	1.00	0.63	4.4995/4.4985	2.00

MT PRECISION Bottom Mount Option

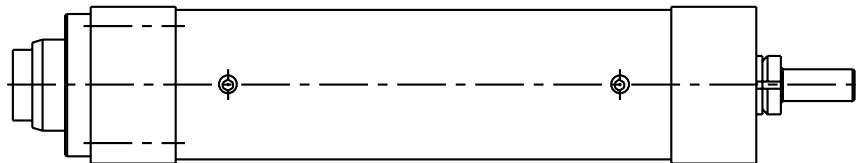
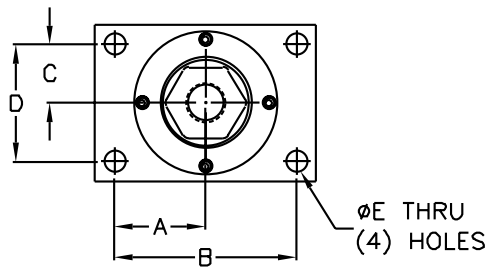


Note: DXF or DWG files are available on CD or through www.edrivedesign.com

MT PRECISION Bottom Mount Option

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MT304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	5.16	0.75
MT506	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	6.63	1.25
MT512	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	8.63	1.25
MT515	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

MT PRECISION Front Flange Mount Option

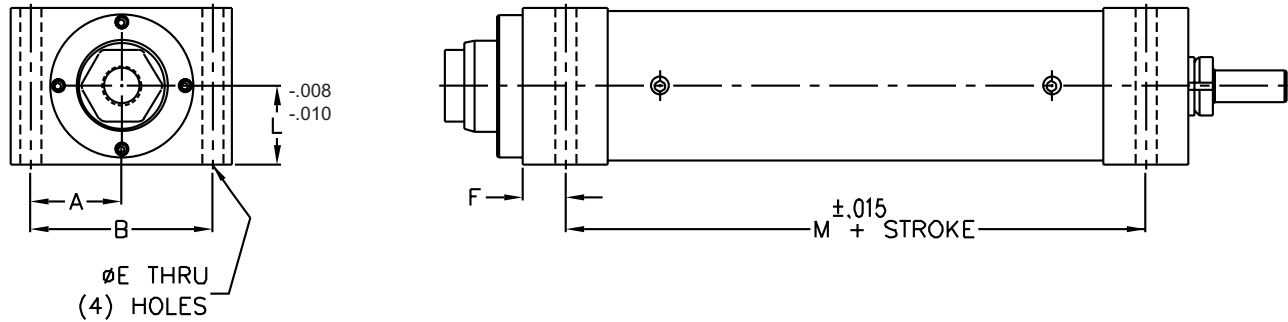


Note: DXF or DWG files are available on CD or through www.edrivedesign.com

MT PRECISION Front Flange Mount Option

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MT304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	5.16	0.75
MT506	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	6.63	1.25
MT512	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	8.63	1.25
MT515	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

MT PRECISION Foot Mount Option

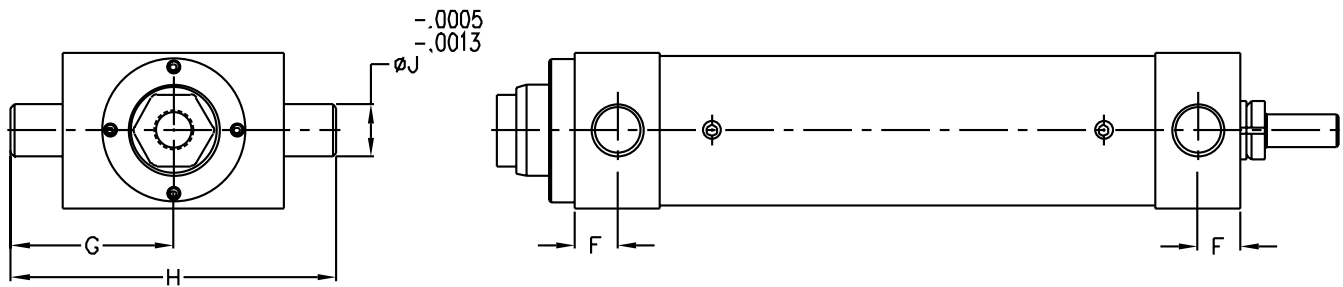


Note: DXF or DWG files are available on CD or through www.edrivedesign.com

MT PRECISION Foot Mount Option

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MT304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	5.16	0.75
MT506	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	6.63	1.25
MT512	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	8.63	1.25
MT515	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

MT PRECISION Trunnion Mount Option

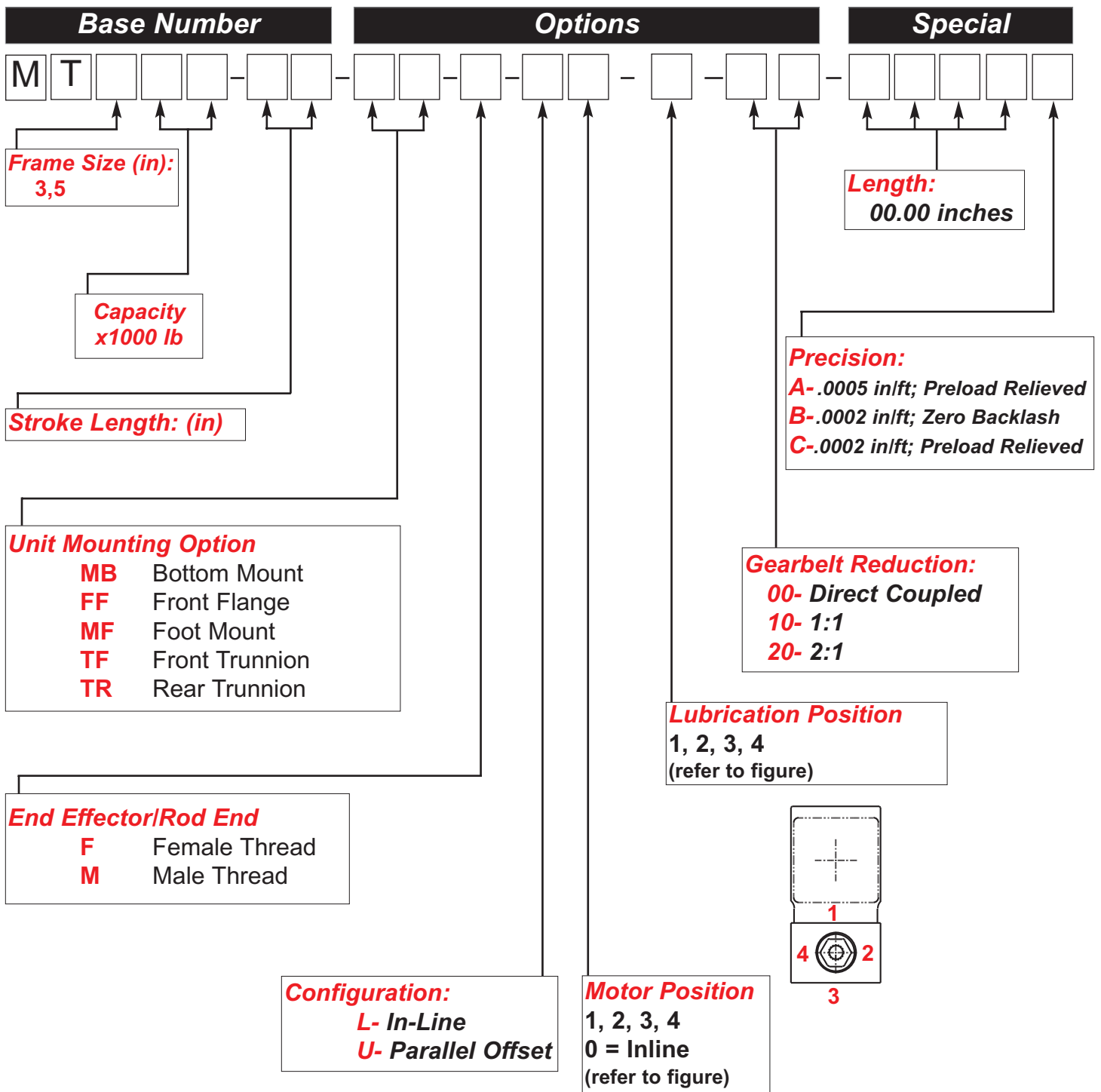


Note: DXF or DWG files are available on CD or through www.edrivedesign.com

MT PRECISION Trunnion Mount Option

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MT304	1.75	3.50	1.13	2.25	0.41	0.81	3.38	6.75	1.00	3/8-16	1.50	5.16	0.75
MT506	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	6.63	1.25
MT512	3.13	6.25	1.75	3.50	0.81	1.25	6.25	12.50	1.50	3/4-10	2.50	8.63	1.25
MT515	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

How To Order:



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