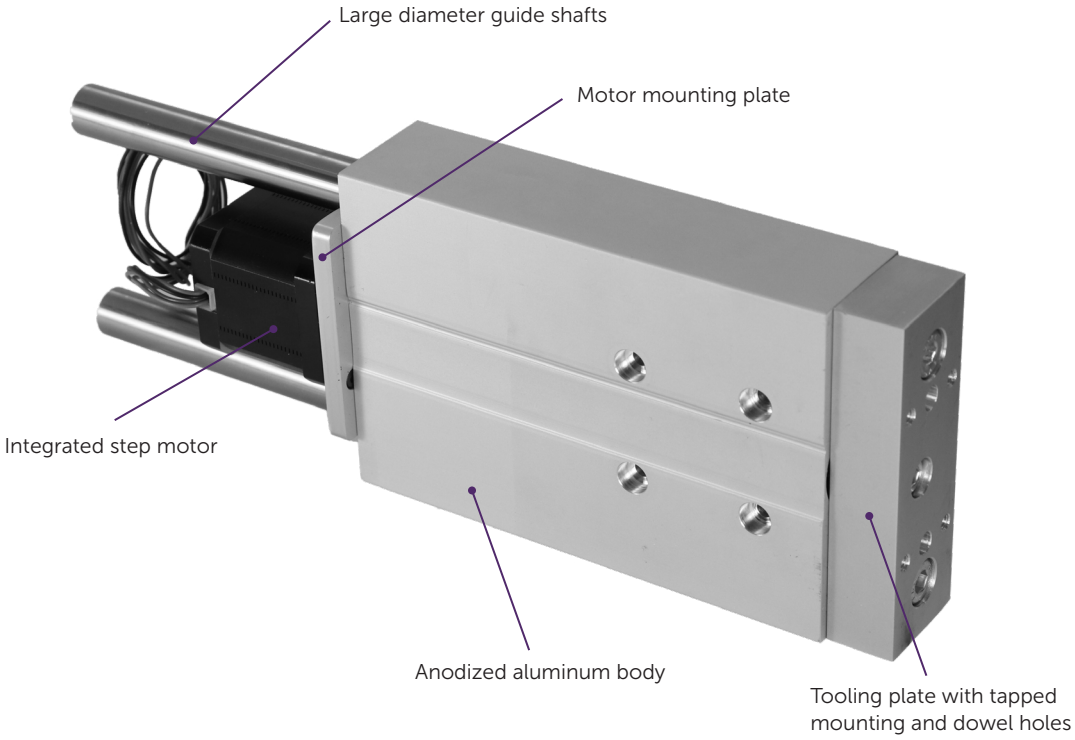
Extruded Electric Thruster (EET) Actuators



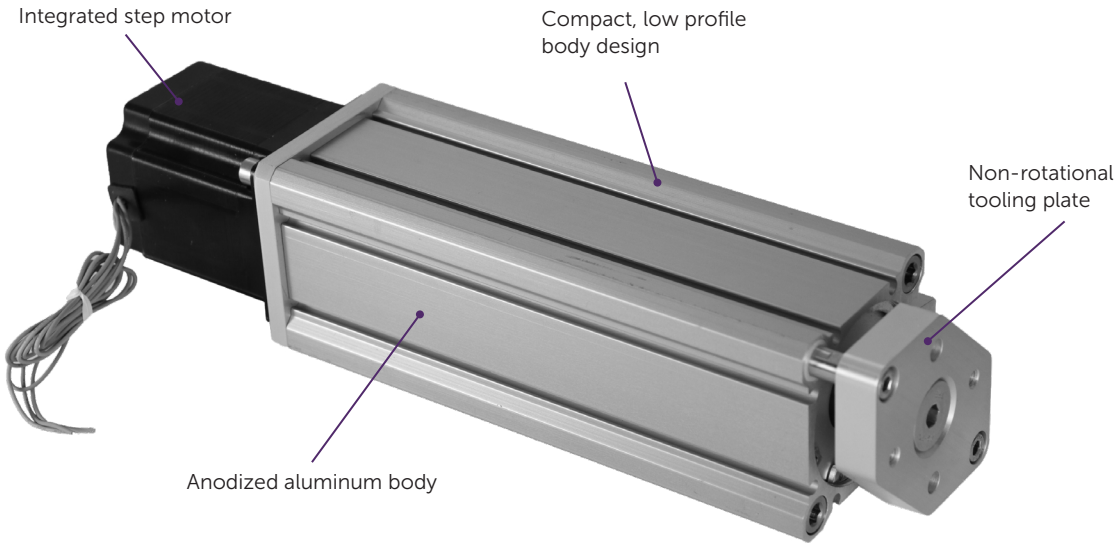
IMI Bimba's EET Series extruded electric thrusters are alternatives to pneumatic thrusters where plant air quality or compressor availability is lacking or unavailable. They are ideal where portability and precise control and positioning are needed.

The model above is EET-25100-L0601-N17 that consists of extended shafts, 25mm bore, 1-100mm stroke length, L06 drive screw, 1mm lead screw with a N17 NEMA motor.

Features and Benefits

- Extra long rod bearings for high radial load capacity
- Large tooling plate for optimal mounting versatility
- Composite and ball bearing options for application flexibility
- Maximum stroke of 255mm which is the longest in the product family
- Excellent for high side load applications
- Allows the freedom in choosing the motion control system

IMI Bimba Extruded Flat Electric Thruster (EFET) and Extruded Flat Electric (EFE) Actuators



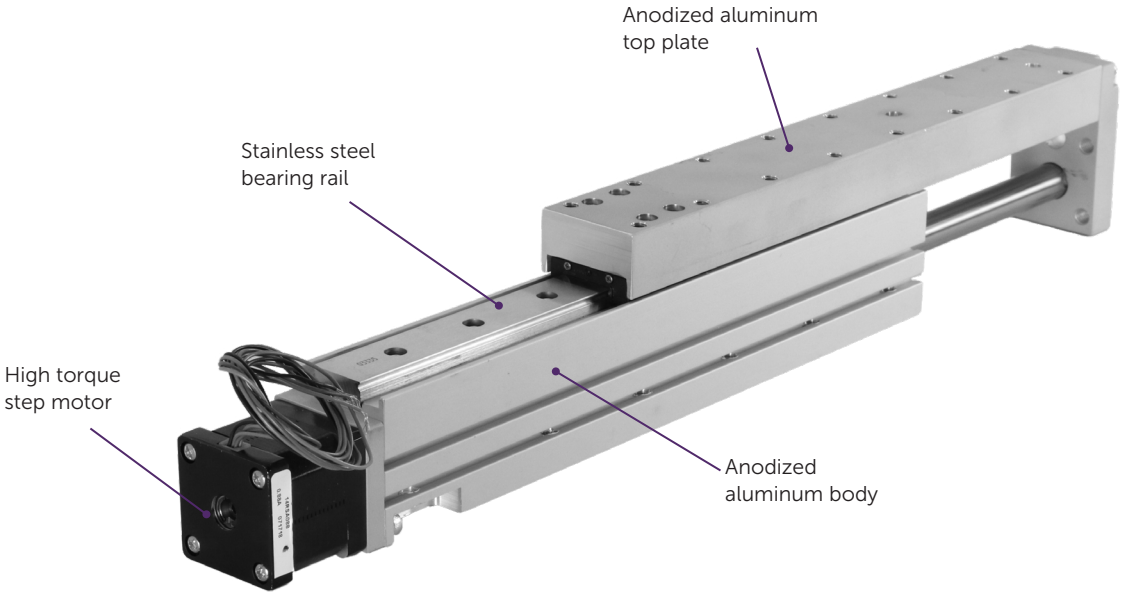
IMI Bimba's EFET Series extruded flat electric thrusters and EFE Series extruded flat electric actuators are alternatives to pneumatic options where plant air quality or compressor availability is lacking or unavailable. They are ideal where portability, precise control, and positioning are needed.

The model above is EFET-32100-L0806-N17 that consists of an extruded flat electric thruster, 32mm bore, 100mm stroke, 6mm screw type, 6mm lead, and NEMA 17 motor.

Features and Benefits

- Low profile design for maximum space savings
- Rod-style option available (no tooling plate) for maximum design flexibility
- Six profile sizes with at least two screw leads each for maximum design flexibility
- Ideal for high thrust force applications
- Largest motor in the series with up to 200lbs thrust
- Allow the freedom to choose the motion control system

IMI Bimba Narrow Profile Electric Table (NPET) Actuators



IMI Bimba's NPET Series narrow profile electric table actuators are electric alternatives to pneumatic tables. These actuators provide precise load guiding with a recirculating ball rail above the bore. Two bearing styles (single or double bearing block) are offered to accommodate both lower cost and higher precision, higher cost applications. With standard strokes up to 120mm, the NPET offers longer travel length than any competitive actuator of its type.

The model above is NPET-32170-L0806-N17 which consists of a narrow profile electric table, 32mm bore, 170mm stroke, 8mm drive screw, 6mm lead, and NEMA 17 motor.

Features and Benefits

- Standard metric threads for ports, mounting, and rods
- Bore sizes: 12mm, 20mm, 32mm
- Double carrier bearing block optional
- Anodized aluminum body
- Stainless steel, hard Chrome-plated piston rod
- Maximum operating pressure: 10 bar (140 PSI)
- Recirculating ball linear rail for high moment load capabilities
- Leading stroke range
- High thrust capabilities for a wider range of applications
- Allows for freedom in choosing the motion control system

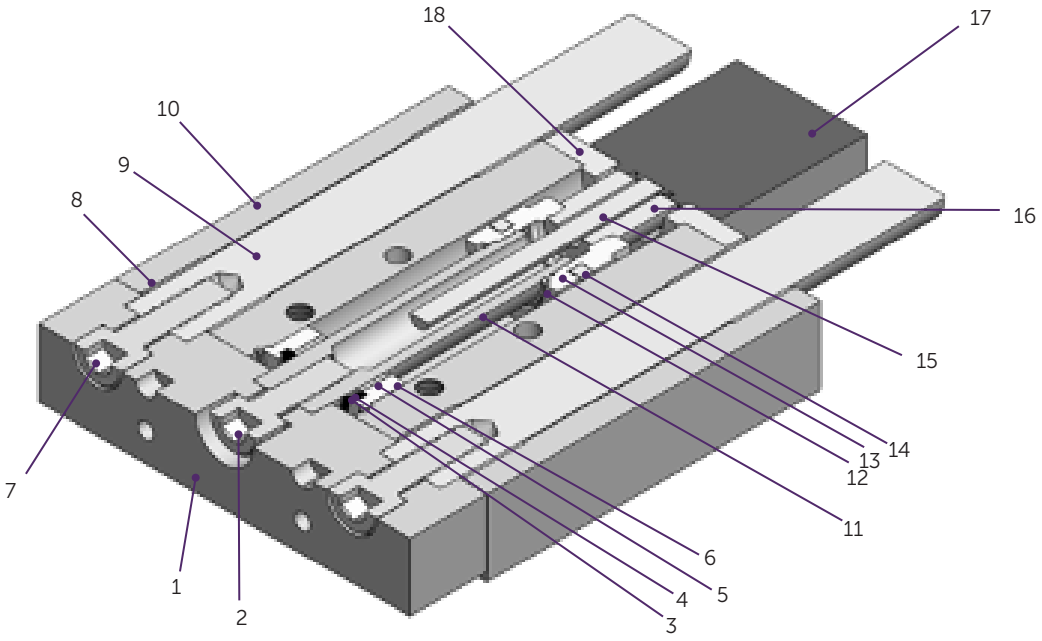
IMI Bimba's Compact Guided Electric Actuators are designed, built, and tested to provide long life, high speeds, and a compact design to fit into tight spaces.

Many popular standard features and options are available for the Compact Guided Electric Actuators. If you need a special design feature or special adaptation, work with our custom solutions and specials design teams to develop the right product for your application. IMI Bimba looks forward to serving your electric actuator needs with the responsiveness and engineering expertise you have come to expect from IMI Bimba.

Definitions

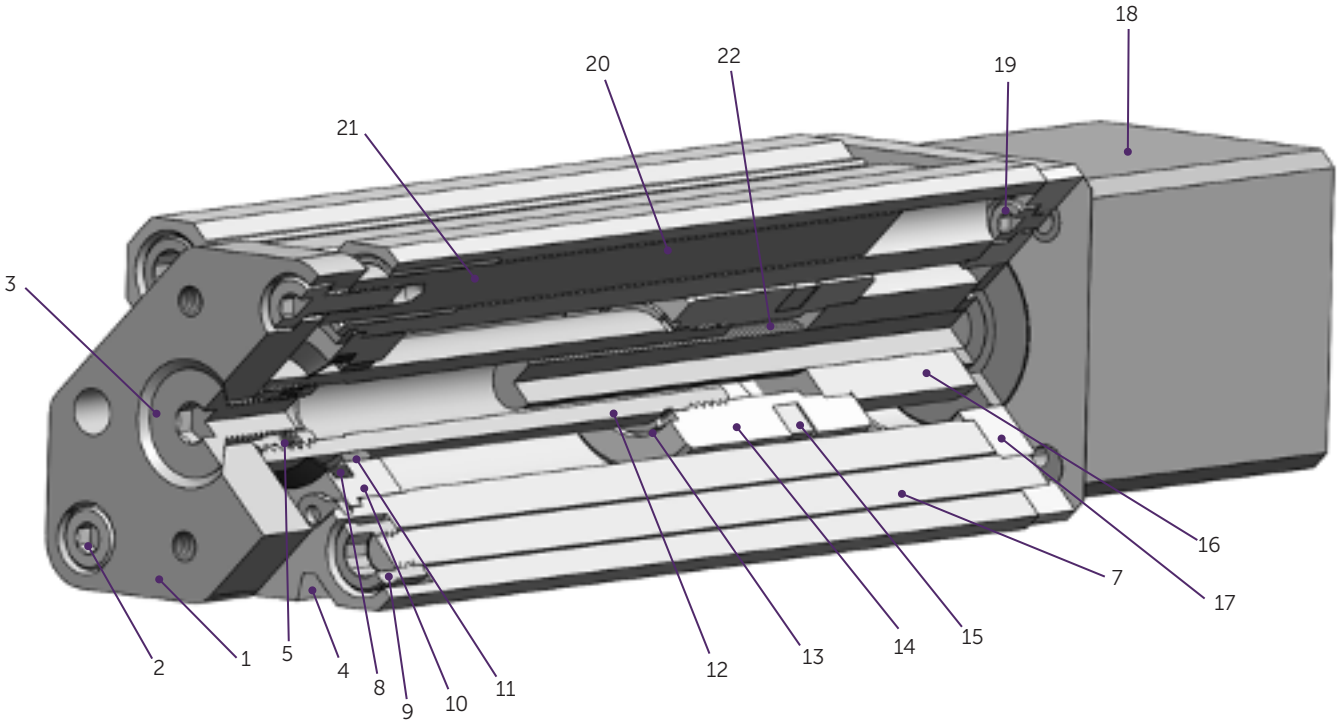
Thrust: Output force of the actuator
Load: Total of all forces opposing the actuator
Repeatability: Window within which the actuator can reposition itself
Backlash: Amount of travel for the actuator with the screw held fixed (measured at the rod end)
Accuracy: Amount of error possible in linear position 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 - EET/EETS Series



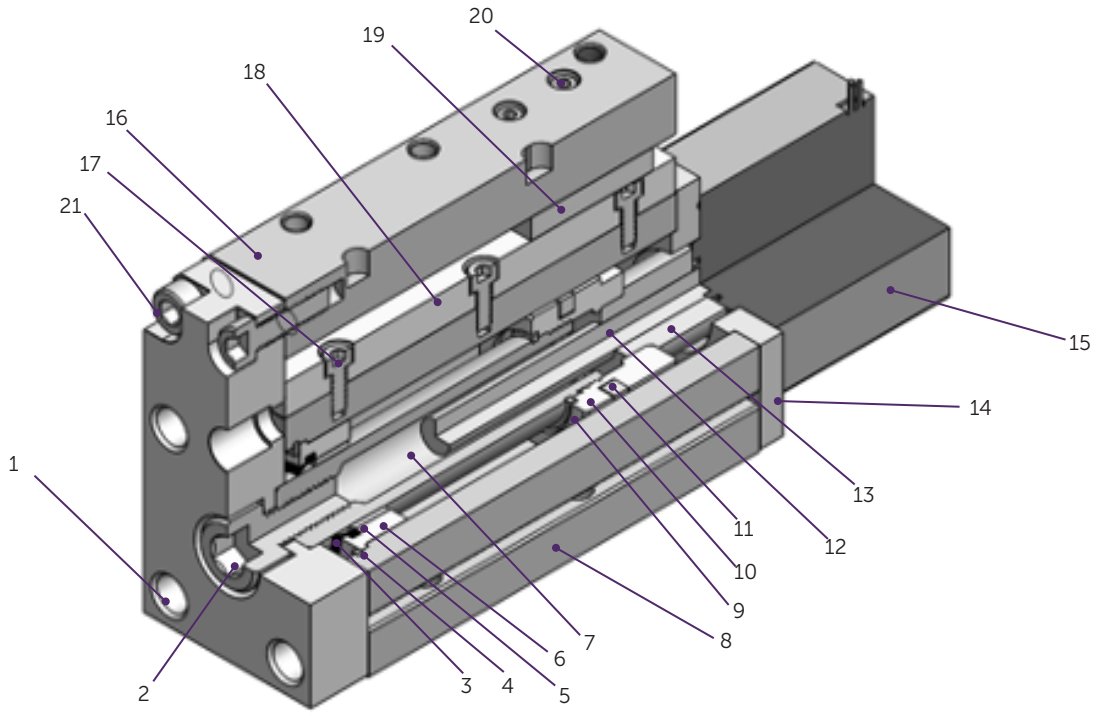
Part #	Description	Material
1	Tooling Plate	Aluminum, anodized
2	Center Screw	Zinc-plated carbon steel
3	Wiper Seal	Nitrile
4	Retaining Ring	Zinc-plated carbon steel
5	Rod Guide Bearing	Plastic
6	Rod Guide	Aluminum, anodized
7	Guide Shaft Screw (2)	Zinc-plated carbon steel
8	Guide Shaft Bearing (2/4)	Plastic
9	Guide Shaft (2)	Stainless steel (carbon steel on -x option)
10	Body	Aluminum, anodized
11	Rod	Carbon steel, stainless steel (20 and 25mm)
12	Square Wire Ring	Carbon spring steel
13	Piston	Aluminum
14	Magnet (Optional)	Neodymium iron boron
15	Drive Screw	Stainless steel
16	Drive Nut	Plastic
17	Motor	N/A
18	Motor Mount Plate	Aluminum, anodized
NS	Motor Screw (2)	Zinc-plated carbon steel
NS	Body Mount Screw (2)	Zinc-plated carbon steel
NS	Thread Adaptor	Stainless steel

Materials of Construction - EFET/ EFE Series



Part #	Description	Material
1	Tooling Plate	Aluminum, anodized
2	Guide Rod Screw	Stainless steel
3	Center Screw	Stainless steel
4	Body	Aluminum, anodized
5	Thread Adaptor (16, 20, and 25 only)	Stainless steel
6	Tie Rod Nut (2)	Carbon steel
7	Tie Rod (2)	Carbon steel
8	Retaining Ring	Zinc-plated carbon steel or stainless steel (optional)
9	Rod Wiper	Nitrile
10	Rod Guide	Aluminum, anodized
11	Rod Guide Bushing	Plastic
12	Rod	Carbon steel, stainless steel (20 and 25mm)
13	Square Wire Ring	Carbon spring steel
14	Piston	Aluminum
15	Magnet (Optional)	Neodymium iron boron
16	Drive Nut	Plastic
17	Motor Mount Plate	Aluminum, anodized
18	Motor	N/A
19	Motor Screw (2)	Zinc-plated carbon steel or stainless steel (optional)
20	Guide Rod	Chrome-plated stainless steel
21	Guide Rod Bushing	Delrin
22	Drive Screw	Stainless steel

Materials of Construction - NPET Series



Part #	Description	Material
1	End Block	Aluminum, anodized
2	Center Screw	Zinc-plated carbon steel
3	Wiper Seal	Nitrile
4	Retaining Ring	Zinc-plated carbon steel
5	Rod Guide Bearing	Plastic
6	Rod Guide	Aluminum, anodized
7	Rod	Carbon steel (32mm), stainless steel (20mm)
8	Body	Aluminum, anodized
9	Square Wire Ring	Carbon spring steel
10	Piston	Aluminum
11	Magnet (optional)	Neodymium iron boron
12	Drive Screw	Stainless steel
13	Drive Nut	Plastic
14	Motor Mount Plate	Aluminum, anodized
15	Motor	N/A
16	Top Plate	Aluminum, anodized
17	Rail Screw (stroke dependent)	Zinc-plated carbon steel
18	Bearing Rail	Stainless steel
19	Bearing Block	Stainless steel
20	Bearing Block Screw (4)	Zinc-plated carbon steel
21	End Block Screw (4)	Zinc-plated carbon steel
NS	Motor Screw (2)	Zinc-plated carbon steel
NS	Body Mount Screw (2)	Zinc-plated carbon steel
NS	Thread Adaptor (20mm only)	Stainless steel

Application Ideas

- Multi-axis pick and place
- Stops, gates, and diverters
- Material handling
- Clamping, jigs, and fixturing
- End-of-arm tooling
- Automated sorting
- Positioning systems
- Volumetric filling
- Pick and place
- Lifting, stacking, and inserting
- Fixturing
- Dispensing

Target Applications

The Compact Guided Electric Actuator Series is designed to provide an alternative to traditional pneumatic cylinders in a similar package, but using electric. Our compact series consists of an Extruded Electric Thruster (EET) for high side load applications, a Narrow Profile Electric Table (NPET) for applications where space is at a premium, and an Extruded Flat Electric Thruster (EFET) when a compact actuator is the best solution. The Electric Flat Extruded Thruster (EFET) is also offered without a tooling plate for pushing/pulling guided loads.

The Compact Guided Electric Actuator Series is designed to fit into tight spaces. Every actuator features an integral bearing system and tooling plate with dowel pins and tapped mounting holes, making mounting end effectors simple. With configurable stroke lengths, optional switch magnets, and 2-axis transition plates, these actuators make your motion project easy, affordable, and fast.

All actuators in the product family utilize integrated hybrid step motors for equipment designers who require high performance and exceptional endurance in a very small package. The high-performance hybrid motors directly drive a rotor drive nut on a precision acme lead screw. This design reduces tolerances and noise while increasing efficiency and durability over configurations commonly used in other linear actuators.

Drive Options

Compact Guided Electric Actuators come equipped with integrated hybrid step motors featuring integral lead screws.

Advantages

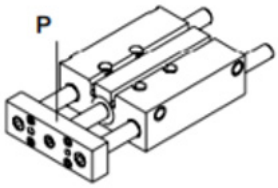
Feature	Advantage	Benefit
Small, compact design	Fits into tight spaces	Used when space is limited
Pre-engineered transition plates	Quick and easy 2-axis configurations	Eliminates design engineering time
Integrated guide system	Withstands high moment side load	Minimizes need for external bearings
Easily repairable	Saves time and money	Reduces downtime

EET/EETS Series Tooling Plate End Play (in)

Bore	25mm	50mm	75mm	100mm	125mm	150mm	175mm	200mm	225mm	250mm	275mm
EET											
16mm	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
20mm	0.003	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005
25mm	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
32mm	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.006
EETS with Standard Bearings											
16mm	0.019	0.031	0.042	0.054	0.066	0.078	0.089	0.101	0.113	0.124	0.136
20mm	0.019	0.030	0.042	0.053	0.064	0.075	0.087	0.098	0.109	0.120	0.132
25mm	0.017	0.026	0.035	0.044	0.053	0.062	0.071	0.080	0.089	0.098	0.107
32mm	0.016	0.024	0.032	0.039	0.047	0.055	0.063	0.070	0.078	0.086	0.094
EETS with Ball Bearings											
32mm	N/A	0.009	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.033	0.037

*EET with Ball Bearings, endplay not to exceed 0.003 in

EET/EETS Maximum Side Load with Standard Bearings (in-lbs)



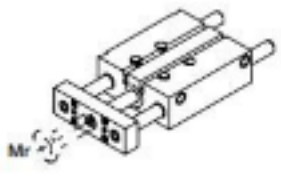
Bore	EET	EETS									
		25mm	50mm	75mm	100mm	125mm	150mm	175mm	200mm	225mm	250mm	275mm
16mm	19	3.5	2.2	1.6	1.3	1.0	0.9	0.8	0.7	0.6	0.6	0.5
20mm	26	5.6	3.7	2.8	2.2	1.8	1.6	1.4	1.2	1.1	1.0	0.9
25mm	43	11.1	7.5	5.7	4.6	3.8	3.3	2.9	2.6	2.3	2.1	1.9
32mm	68	21.5	15.0	11.6	9.4	7.9	6.8	6.0	5.4	4.9	4.4	4.1

*For Max Side Load on X-Option models use 2x load rating in table above

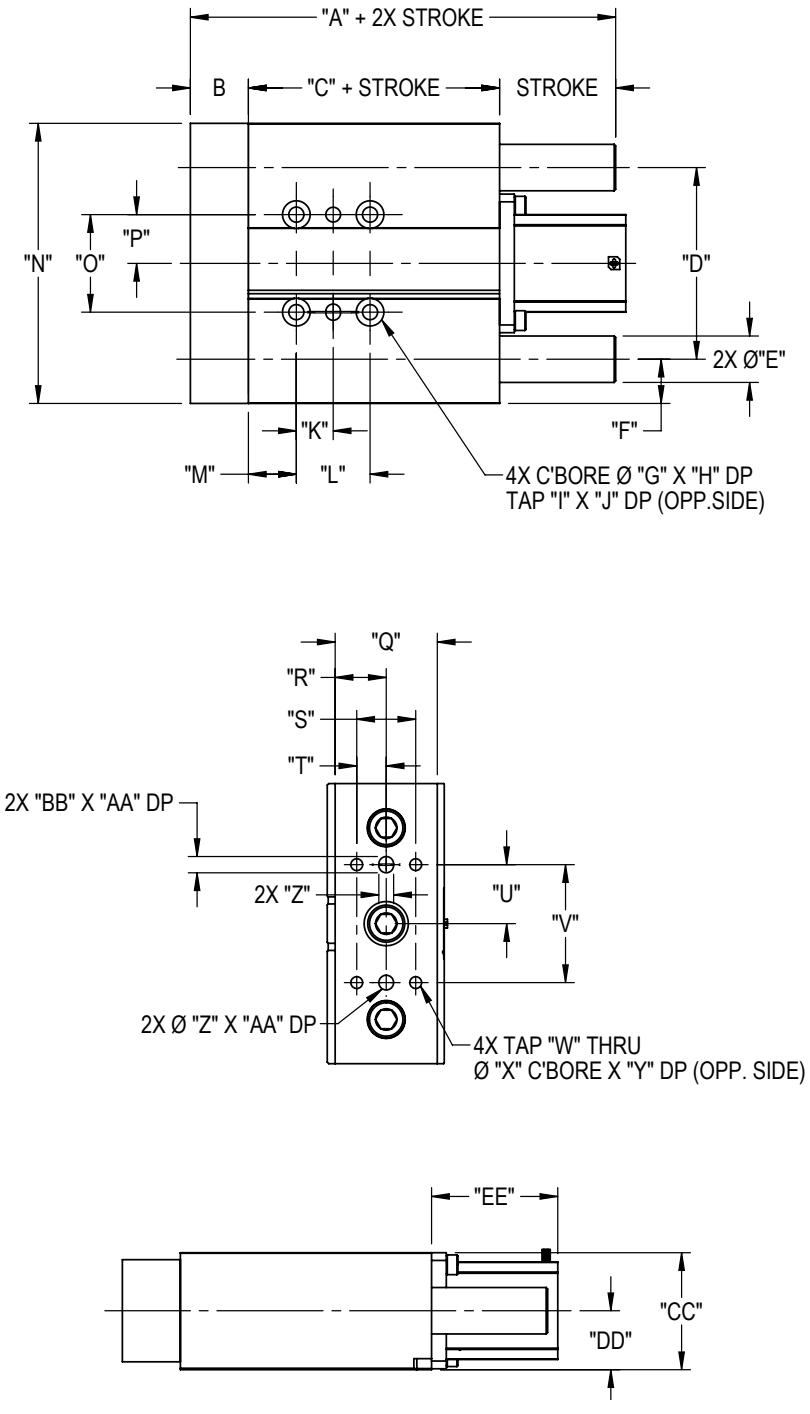
EET/EETS Maximum Moments (in-lbs)

Standard Bearings		
Bore	**EET**	**EETS**
16mm	64	32
20mm	115	57
25mm	214	107
32mm	414	207

*For Max Moment Load on X-Option models use 2x load rating in table above



EET/EETS Series Dimensions



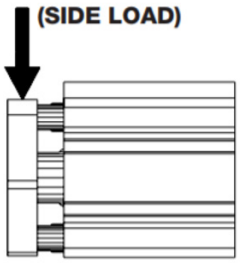
	Bore			
	16mm	**20mm**	**25mm**	**32mm***
A	2.37	3.00	3.21	3.27
B	0.55	0.62	0.79	0.98
C	1.82	2.38	2.42	2.29
D	2.00	2.50	2.75	3.25
E	0.39 (10mm)	0.47 (12mm)	0.63 (16mm)	0.79 (20mm)
F	0.43	0.50	0.62	0.75
G	0.28	0.38	0.38	0.47
H	0.16	0.21	0.21	0.26
I	#10-32	¼-20	¼-20	5/16-18
J	0.50	0.63	0.63	0.77
K	0.53	0.63	0.75	0.84
L	1.06	1.25	1.50	1.69
M	0.65	0.79	0.79	0.85
N	2.85	3.50	3.99	4.75
O	1.00	1.39	1.39	1.65
P	0.50	0.69	0.69	0.82
Q	0.86	1.10	1.30	1.73
R	0.43	0.55	0.65	0.87
S	0.63	0.75	0.88	1.00
T	0.31	0.38	0.44	0.50
U	0.63	0.75	0.88	1.00
V	1.25	1.50	1.75	2.00
W	#8-32	#10-32	#10-32	¼-20
X	0.25	0.28	0.28	0.38
Y	0.20	0.20	0.30	0.44
Z	0.1878 / 0.1890	0.1878 / 0.1890	0.2503 / 0.2515	0.2503 / 0.2515
AA	0.20	0.20	0.24	0.24
BB	0.24	0.24	0.28	0.28
CC	1.11	1.36	1.49	1.98
DD	0.45	0.57	0.73	0.98
EE	2.06	1.99	2.14	2.14

* Counterbore on both sides

EET/EETS Series Technical Data Comparison

Series	Bore	Motor Size (NEMA)	Screw dia. (mm)	Lead (mm)	Max. Stroke (mm)	Max. Speed in/sec (mm/sec)	Max. Thrust lbs. (N)	Thrust at Max. Speed lbs. (N)
EET/EETS	16	11	5	1	100	0.35 (8.90)	41.80 (185)	39.80 (177)
				5		1.80 (45.70)	4.70 (20)	4.40 (19)
	20	14	6	1	255	0.32 (8.10)	71.70 (318)	66.10 (294)
				5		1.60 (40.60)	7.90 (35)	7.30 (32)
				10		3.20 (81.30)	3.60 (16)	3.10 (13.70)
	25	17		1		0.29 (7.40)	247.60 (1101)	211.50 (940)
				5		1.47 (37.30)	27.20 (121)	23.30 (103.60)
				10		2.90 (73.70)	12.60 (56)	10.70 (47.50)
	32			1		0.29 (7.40)	247.60 (1101)	211.50 (940)
			8	4		1.25 (31.80)	33.50 (149)	28.60 (127.20)
				6		1.80 (45.70)	20.30 (90)	17.40 (77.40)
				13		3.75 (95.30)	9.30 (41)	7.90 (35.14)

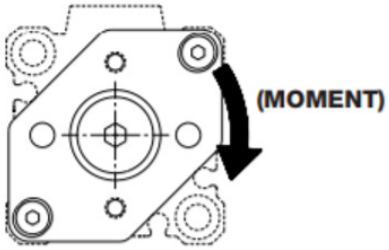
EFET/EFE Maximum Side Load



Bore		Stroke Length											
		5mm		10mm		15mm		20mm		25mm		30mm	
mm	in	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	kg	lbs
16mm	(5/8")	2.60	5.72	2.16	4.76	1.85	4.08	1.62	3.57	1.44	3.17	1.30	2.86
20mm	(3/4")	5.09	11.23	4.36	9.62	3.82	8.42	3.39	7.48	3.06	6.74	2.78	6.13
25mm	(1")	5.22	11.50	4.48	9.88	3.93	8.66	3.50	7.71	3.15	6.94	2.86	6.32
32mm	(1-1/4")	5.54	12.22	4.80	10.59	4.24	9.35	3.80	8.37	3.44	7.58	3.14	6.91
40mm	(1-1/2")	6.53	14.40	5.69	12.55	5.04	11.12	4.53	9.98	4.11	9.06	3.76	8.28
50mm	(2")	N/A	N/A	8.94	19.71	8.03	17.71	7.30	16.09	6.68	14.74	6.17	13.60

Bore		Stroke Length											
		35mm		40mm		45mm		50mm		75mm		100mm	
mm	in	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	Kg.	lbs.	kg	lbs
16mm	(5/8")	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20mm	(3/4")	2.55	5.62	2.35	5.19	2.19	4.82	2.04	4.50	N/A	N/A	N/A	N/A
25mm	(1")	2.63	5.80	2.43	5.35	2.26	4.98	2.11	4.64	N/A	N/A	N/A	N/A
32mm	(1-1/4")	2.89	6.36	2.68	5.90	2.49	5.48	2.33	5.13	1.76	3.89	1.42	3.13
40mm	(1-1/2")	3.47	7.64	3.22	7.09	3.00	6.60	2.80	6.18	2.13	4.70	1.72	3.79
50mm	(2")	5.73	12.62	5.34	11.78	5.01	11.03	4.71	10.39	3.64	8.02	2.96	6.53

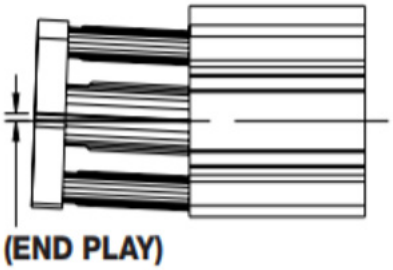
EFET/EFE Maximum Moments



Bore		Stroke Length											
		5mm		10mm		15mm		20mm		25mm		30mm	
mm	in	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.
16mm	(5/8")	0.16	1.39	0.13	1.16	0.11	1.00	0.10	0.87	0.09	0.78	0.08	0.70
20mm	(3/4")	0.42	3.72	0.36	3.20	0.32	2.81	0.28	2.50	0.25	2.25	0.23	2.05
25mm	(1")	0.45	4.02	0.39	3.46	0.34	3.04	0.31	2.71	0.28	2.45	0.25	2.23
32mm	(1-1/4")	0.50	4.45	0.44	3.88	0.39	3.44	0.35	3.09	0.32	2.81	0.29	2.57
40mm	(1-1/2")	0.59	5.24	0.52	4.57	0.46	4.05	0.41	3.64	0.37	3.31	0.34	3.03
50mm	(2")	N/A	N/A	1.13	10.04	1.02	9.06	0.93	8.26	0.86	7.59	0.79	7.02

Bore		Stroke Length											
		35mm		40mm		45mm		50mm		75mm		100mm	
mm	in	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.	N-m	in-lb.
16mm	(5/8")	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20mm	(3/4")	0.21	1.88	0.20	1.74	0.18	1.62	0.17	1.51	N/A	N/A	N/A	N/A
25mm	(1")	0.23	2.05	0.21	1.89	0.20	1.76	0.19	1.64	N/A	N/A	N/A	N/A
32mm	(1-1/4")	0.27	2.37	0.25	2.20	0.23	2.05	0.22	1.92	0.16	1.46	0.13	1.18
40mm	(1-1/2")	0.32	2.79	0.29	2.59	0.27	2.41	0.26	2.26	0.19	1.72	0.16	1.39
50mm	(2")	0.74	6.53	0.69	6.11	0.65	5.73	0.61	5.40	0.47	4.19	0.39	3.42

EFET/EFE Tooling Plate End Play

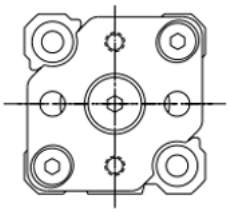


Bore		Stroke Length											
		5mm		10mm		15mm		20mm		25mm		30mm	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
16mm	(5/8")	0.18	0.01	0.23	0.01	0.27	0.01	0.32	0.01	0.36	0.01	0.41	0.02
20mm	(3/4")	0.15	0.01	0.18	0.01	0.20	0.01	0.23	0.01	0.26	0.01	0.29	0.01
25mm	(1")	0.16	0.01	0.19	0.01	0.22	0.01	0.24	0.01	0.27	0.01	0.30	0.01
32mm	(1-1/4")	0.17	0.01	0.20	0.01	0.23	0.01	0.26	0.01	0.28	0.01	0.31	0.01
40mm	(1-1/2")	0.17	0.01	0.20	0.01	0.23	0.01	0.26	0.01	0.28	0.01	0.31	0.01
50mm	(2")	N/A	N/A	0.26	0.01	0.30	0.01	0.33	0.01	0.36	0.01	0.40	0.02

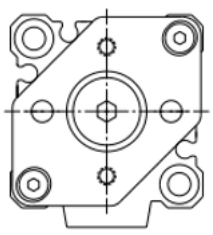
Bore		Stroke Length											
		35mm		40mm		45mm		50mm		75mm		100mm	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
16mm	(5/8")	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20mm	(3/4")	0.32	0.01	0.35	0.01	0.38	0.02	0.40	0.02	N/A	N/A	N/A	N/A
25mm	(1")	0.33	0.01	0.36	0.01	0.39	0.02	0.42	0.02	N/A	N/A	N/A	N/A
32mm	(1-1/4")	0.34	0.01	0.37	0.02	0.40	0.02	0.43	0.02	0.57	0.02	0.71	0.03
40mm	(1-1/2")	0.34	0.01	0.37	0.02	0.40	0.02	0.43	0.02	0.57	0.02	0.71	0.03
50mm	(2")	0.43	0.02	0.46	0.02	0.50	0.02	0.53	0.02	0.70	0.03	0.86	0.03

EFET Tooling Plate Styles

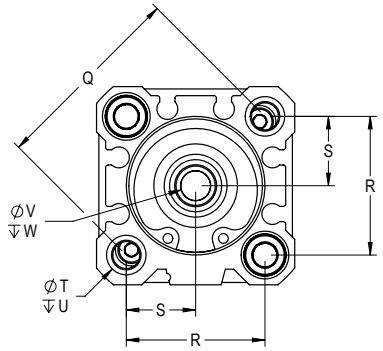
16mm Bore



20mm to 50mm Bore



EFE Front Mounting Dimensions

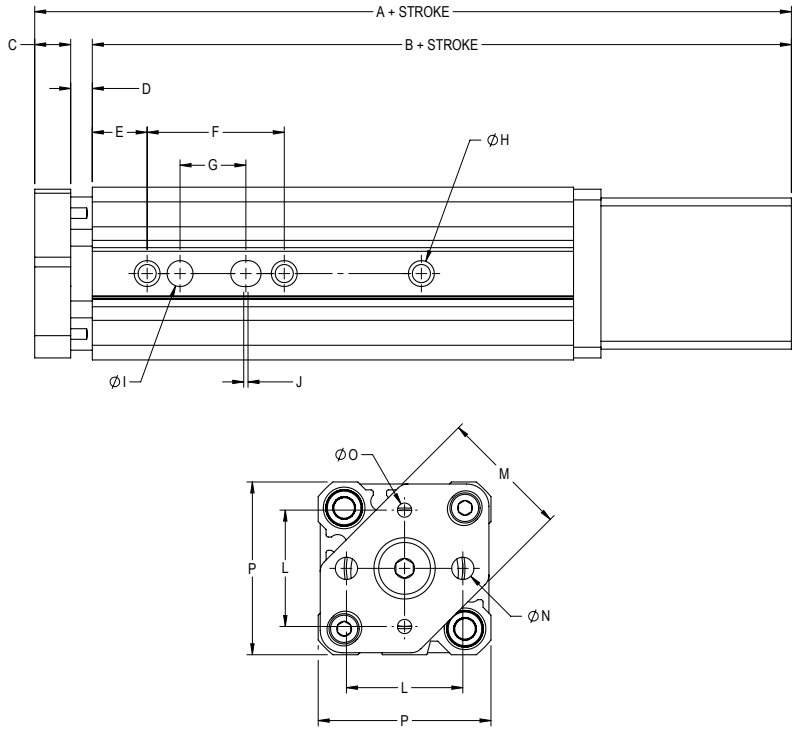


Bore	Q	R	S	T	U	V	W
16mm	1.113	0.787	0.394	M5x0.8	0.420	M8x1.25	0.315
20mm	1.420	1.004	0.502	M7x1.0	0.670	M10x1.5	0.450
25mm	1.558	1.102	0.551	M7x1.0	0.670	M10x1.5	0.450
32mm	1.892	1.338	0.669	M8x1.25	0.670	M10x1.5	0.750
40mm	2.227	1.575	0.788	M8x1.25	0.670	M10x1.5	0.750
50mm	2.785	1.969	0.985	M10x1.5	0.865	M10x1.5	0.750

EFET/EFE Series Technical Data Comparison

Series	Bore	Motor Size (NEMA)	Screw dia. (mm)	Lead (mm)	Max. Stroke (mm)	Max. Speed in/sec (mm/sec)	Max. Thrust lbs. (N)	Thrust at Max. Speed lbs. (N)
EFE/EFET	16	11	5	1	83	0.35 (8.90)	41.80 (185)	39.80 (177)
				5		1.80 (45.70)	4.70 (20)	4.40 (19)
	20	14	6	1	94	0.32 (8.10)	71.70 (318)	66.10 (294)
				5		1.60 (40.60)	7.90 (35)	7.30 (32)
				10		3.20 (81.30)	3.60 (16)	3.10 (13.7)
	25			1	104	0.32 (8.10)	71.70 (318)	66.10 (294)
				5		1.60 (40.60)	7.90 (35)	7.30 (32)
				10		3.20 (81.30)	3.60 (16)	3.10 (13.70)
	32	17	6	1	113	0.29 (7.40)	247.60 (1101)	211.50 (940)
			8	4		1.25 (31.80)	33.50 (149)	28.60 (127.20)
				6		1.80 (45.70)	20.30 (90)	17.40 (77.40)
				13		3.75 (95.30)	9.30 (41)	7.90 (35.14)
	40	23	10	2	132	0.59 (15.00)	260 (1156)	132 (587.10)
				10		2.90 (73.60)	31 (137)	15.70 (69.80)
				25		7.40 (188)	12 (53)	5.90 (26.20)
	50			2	131	0.59 (15)	260 (1156)	132 (587.10)
				10		2.90 (73.60)	31 (137)	15.70 (69.80)
				25		7.40 (188)	12.00 (53.00)	5.90 (26.20)

EFET/EFE Series Dimensions



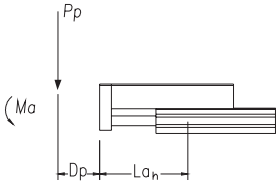
Bore	16mm	20mm	25mm	32mm	40mm	50mm
A	4.26	4.82	4.93	5.03	5.67	5.91
B	3.88	4.37	4.41	4.43	5.06	5.12
C	0.24	0.27	0.33	0.33	0.33	0.48
D	0.14	0.18	0.20	0.28	0.28	0.32
E	0.50	0.50	0.50	0.50	0.50	0.50
F	1.25	1.25	1.25	1.25	1.25	1.25
G	0.60	0.60	0.60	0.60	0.60	0.60
H	M5x0.8 ↓.145	M5x0.8 ↓.190	M5x0.8 ↓.190	M5x0.8 ↓.300	M5x0.8 ↓.300	M5x0.8 ↓.394
I	0.24	0.24	0.24	0.24	0.24	0.24
J	0.04	0.04	0.04	0.04	0.04	0.04
K	1.14	1.42	1.58	1.77	2.05	2.52
L	0.79	1.06	1.06	1.19	1.19	1.69
M	0.99	1.04	1.18	1.35	1.50	1.90
N	0.16	0.20	0.20	0.20	0.20	0.25
O	M3x0.5	M4x0.7	M4x0.7	M4x0.7	M4x0.7	M5x0.8
P	1.14	1.42	1.58	1.94	2.23	2.79

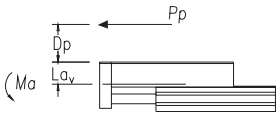
NPET Maximum Moments

Maximum Allowable Moment (Nm)		
Moment	Bore	
	20mm Std	32mm Std
Ma	22.0	36.0
Mb	22..0	36.0
Mc	59.0	107.0

*For Max Side Load on X-Option models use 2x load rating in table above

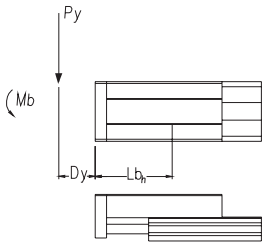
Moment Lever Arm Constants (mm)		
Moment	Bore	
	20mm Std	32mm Std
Lah	45+stroke	60+stroke
Lbh	45+stroke	60+stroke
Lav	21.20	20.00
Lbv	17.50	23.00
Lch	17.50	23.00
Lcv	21.20	22.00

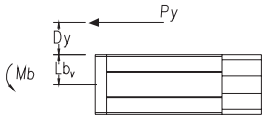




$$Pp = \frac{Ma \times 1000}{Dp + La} \text{ (Newtons)}$$

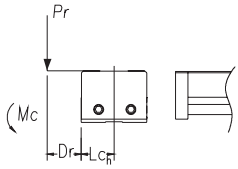
Dp = Distance from load point to body (mm)
La = Moment arm (mm) see chart

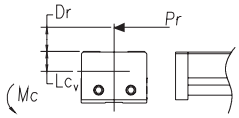




$$Py = \frac{Mb \times 1000}{Dy + Lb} \text{ (Newtons)}$$

Dy = Distance from load point to body (mm)
Lb = Moment arm (mm) see chart





$$Pr = \frac{Mc \times 1000}{Dr + Lc} \text{ (Newtons)}$$

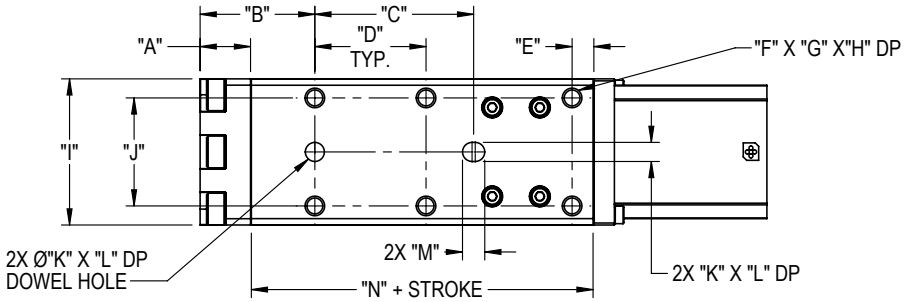
Dr = Distance from load point to body (mm)
Lc = Moment arm (mm) see chart

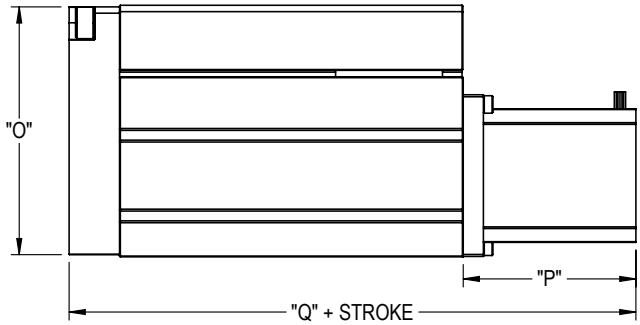
NPET Series Technical Data Comparison

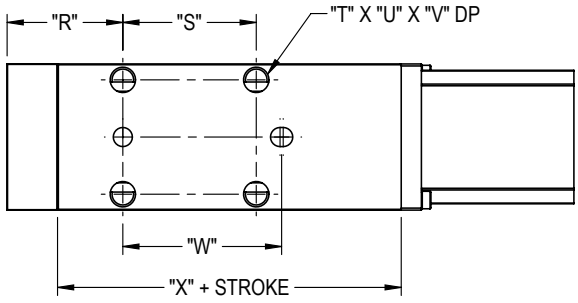
Series	Bore	Motor Size (NEMA)	Screw dia. (mm)	Lead (mm)	Max. Stroke (mm)	Max. Speed in/sec (mm/sec)	Max. Thrust lbs. (N)	Thrust at Max. Speed lbs. (N)
NPET	20	14	6	1	200	0.32 (8.10)	71.70 (318)	66.10 (294)
				5		1.60 (40.60)	7.90 (35)	7.30 (32)
				10		3.20 (81.30)	3.60 (16)	3.10 (13.70)
	32	17		1	170	0.29 (7.40)	247.60 (1101)	211.50 (940)
			8	4		1.25 (31.80)	33.50 (149)	28.60 (127.20)
				6		1.80 (45.70)	20.50 (91)	17.40 (77.40)
				13		3.75 (95.30)	9.50 (42)	7.90 (35.14)

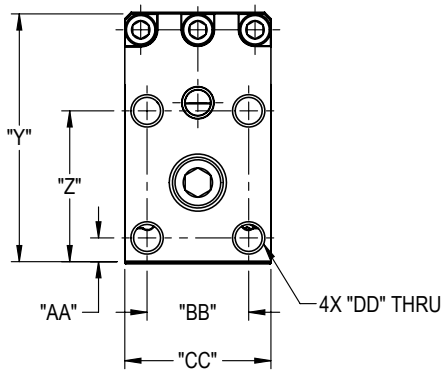
NPET Series Dimensions

	Bore	
	20mm	**32mm**
A	0.47	0.63
B	1.09	1.42
C	See page 28	See page 29
D	1.26	1.38
E	0.31	0.27
F	See page 28	See page 29
G	M5x0.8	M6x1.0
H	0.39	0.35
I	1.38	1.81
J	1.02	1.34
K	0.1980 / 0.1969	0.2374/ 0.2362
L	0.20	0.24
M	0.24	0.28
N	2.38	2.29
O	2.48	3.12
P	1.99	2.14
Q	4.84	5.06
R	0.99	1.43
S	1.58	1.65
T	See page 28	See page 29
U	M6x1.0	M8x1.25
V	0.35	0.45
W	See page 28	See page 29
X	2.38	2.29
Y	2.40	3.07
Z	1.28	1.87
AA	0.25	0.29
BB	1.02	1.26
CC	1.38	1.81
DD	M6x1.0	M10x1.5



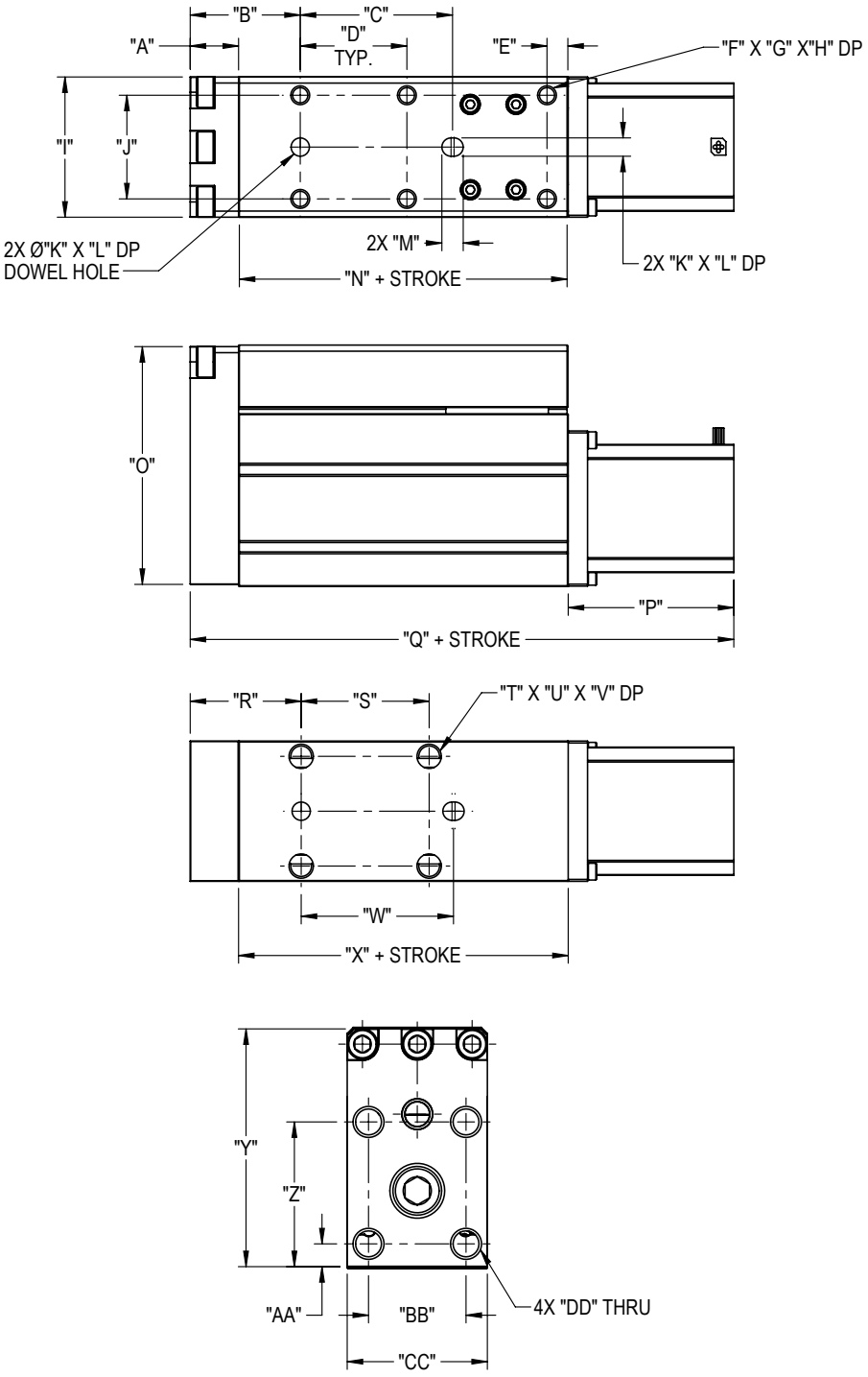






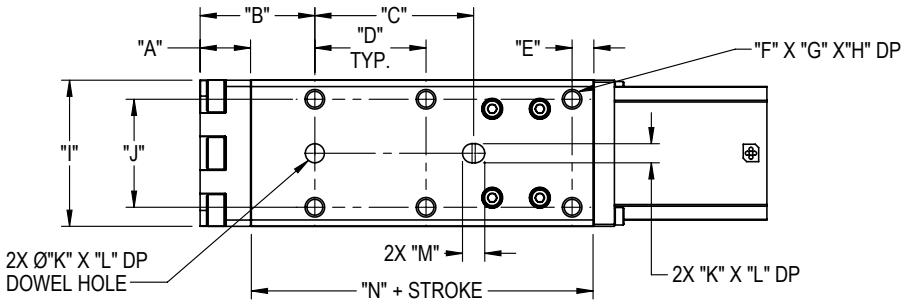
NPET Series Dimensions

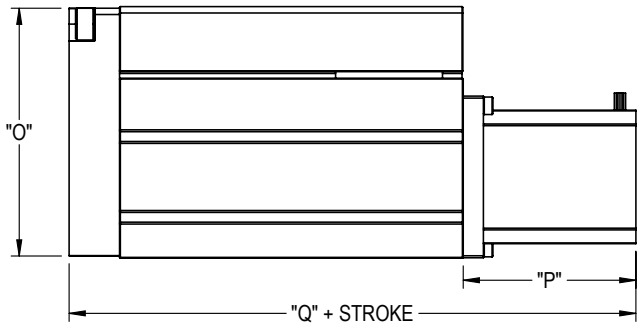
NPET-20 Dimensions				
Stroke	**C**	**F**	**T**	**W**
5	1.575	4	2	1
10	1.575	4	2	1
15	1.575	4	4	1.575
20	1.969	4	4	1.575
25	1.969	4	4	1.575
30	1.969	4	4	1.969
35	1.969	4	4	1.969
40	1.969	6	4	1.969
45	1.969	6	6	1.969
50	2.362	6	6	1.969
55	2.362	6	6	1.969
60	2.362	6	6	2.362
65	2.362	6	6	2.362
70	2.362	8	6	2.362
75	2.756	8	6	2.362
80	2.756	8	6	2.362
85	2.756	8	8	2.756
90	2.756	8	8	2.756
95	2.756	8	8	2.756
100	2.756	10	8	2.756
105	2.756	10	8	2.756
110	2.756	10	8	2.756
115	2.756	10	8	2.756
120	2.756	10	8	2.756
125	2.756	12	10	2.756
130	2.756	12	10	2.756
135	2.756	12	10	2.756
140	2.756	12	10	2.756
145	2.756	12	10	2.756
150	3.15	12	10	2.756
155	3.15	14	10	2.756
160	3.15	14	10	3.15
165	3.15	14	12	3.15
170	3.15	14	12	3.15
175	3.15	14	12	3.15
180	3.15	14	12	3.15
185	3.15	16	12	3.15
190	3.15	16	12	3.15
195	3.15	16	12	3.15
200	3.15	16	12	3.15

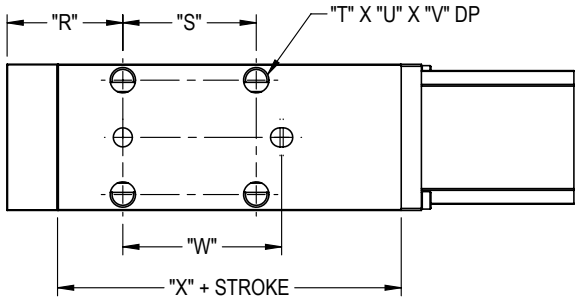


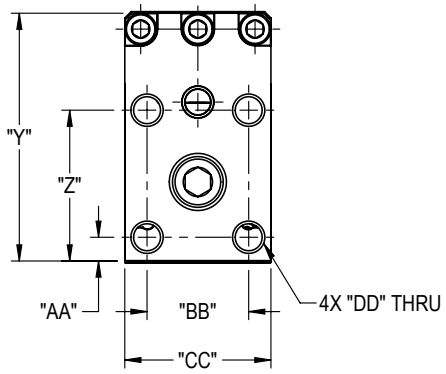
NPET Series Dimensions

NPET-32 Dimensions				
Stroke	**C**	**F**	**T**	**W**
5	1.968	4	2	1
10	1.968	4	2	1
15	1.968	4	4	1
20	1.968	4	4	1
25	1.968	4	4	1.968
30	1.968	4	4	1.968
35	1.968	6	4	1.968
40	2.362	6	4	1.968
45	2.362	6	4	1.968
50	2.362	6	4	1.968
55	2.362	6	4	1.968
60	2.362	6	6	1.968
65	2.362	8	6	2.362
70	2.362	8	6	2.362
75	2.362	8	6	2.362
80	2.362	8	6	2.362
85	2.362	8	6	2.362
90	2.362	8	6	2.362
95	2.362	10	6	2.362
100	2.992	10	8	2.362
105	2.992	10	8	2.362
110	2.992	10	8	2.362
115	2.992	10	8	2.362
120	2.992	12	8	2.992
125	2.992	12	8	2.992
130	2.992	12	8	2.992
135	2.992	12	8	2.992
140	2.992	12	10	2.992
145	2.992	12	10	2.992
150	3.15	12	10	2.992
155	3.15	14	10	2.992
160	3.15	14	10	2.992
165	3.15	14	10	2.992
170	3.15	14	10	2.992



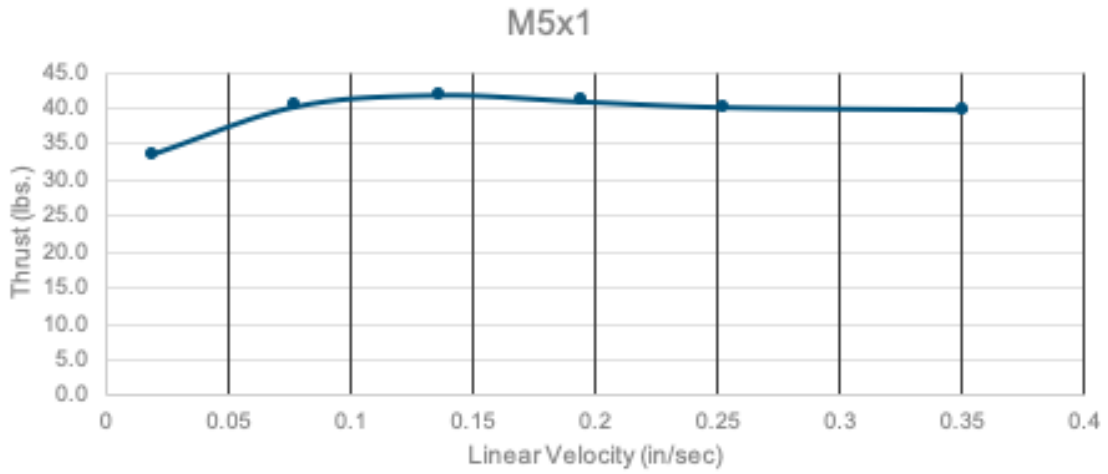


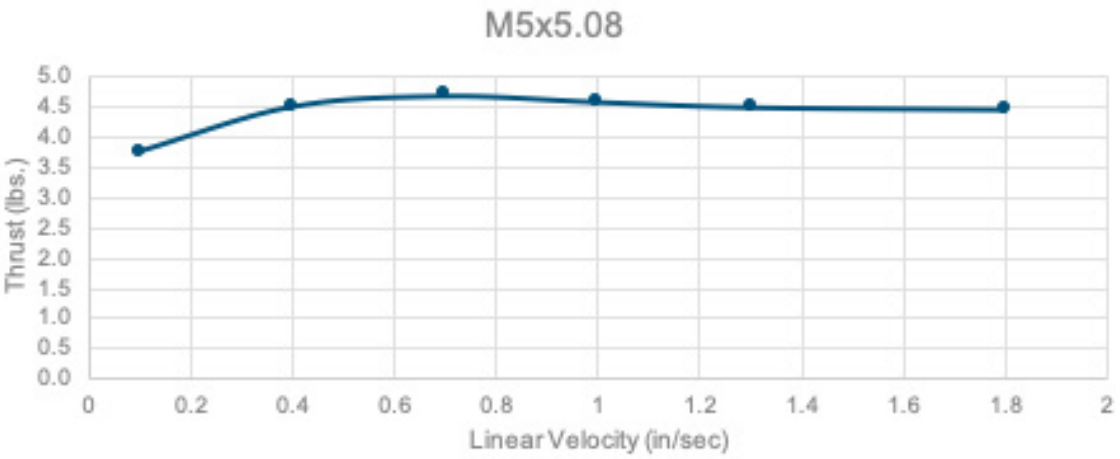




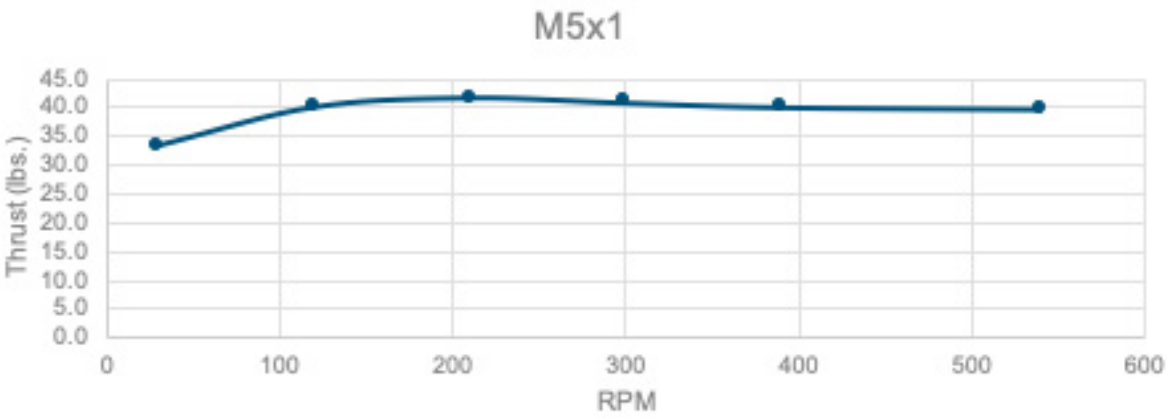
NEMA 11

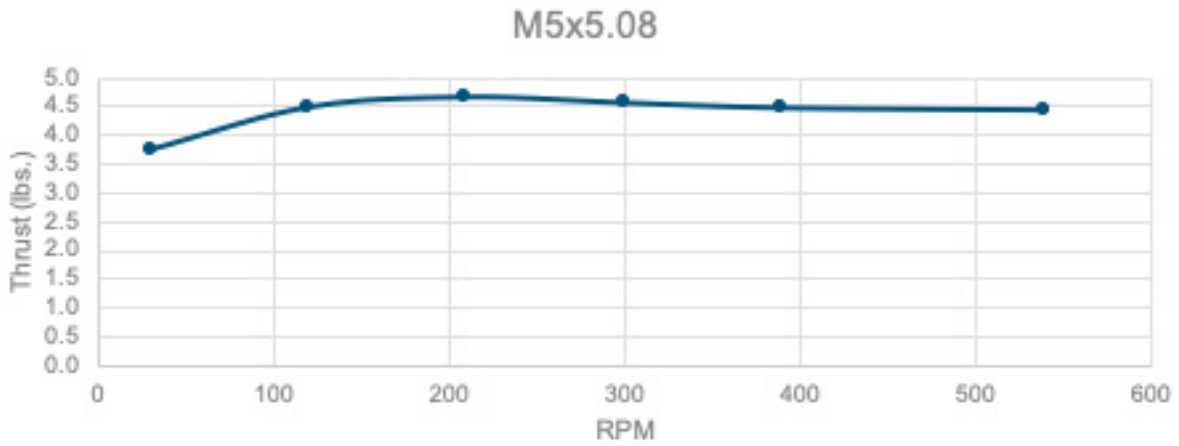
The charts below show the force output versus linear speed for NEMA 11 Motor and Screw combinations. Recommended maximum thrust force is 30 lbs (89 N) and recommended maximum lead screw length is 4 inches.





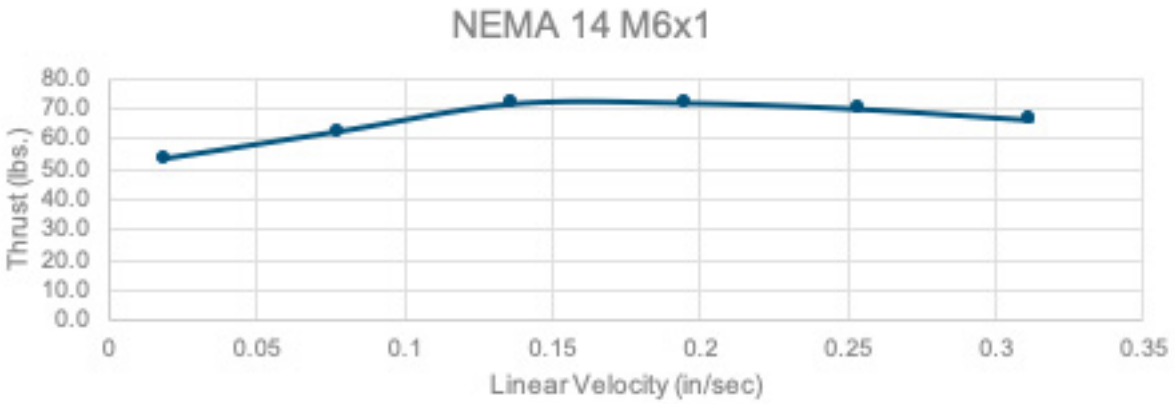
NEMA 11

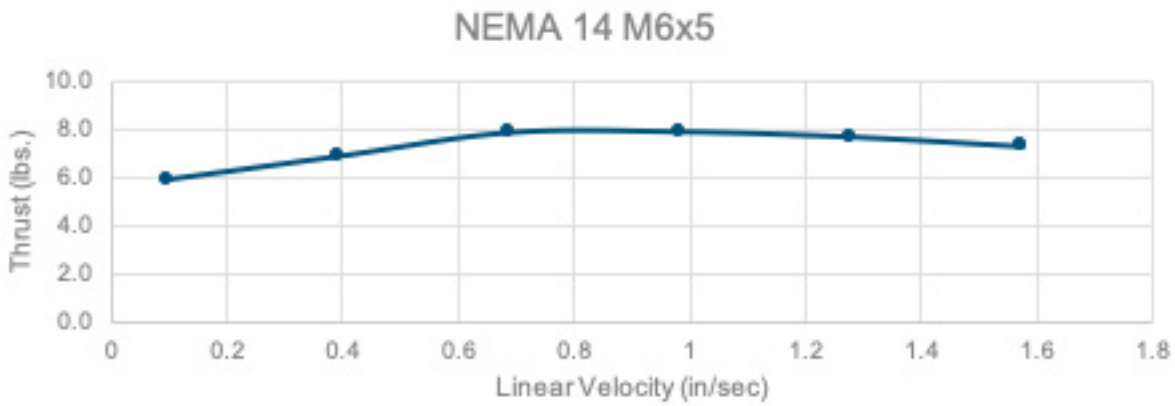


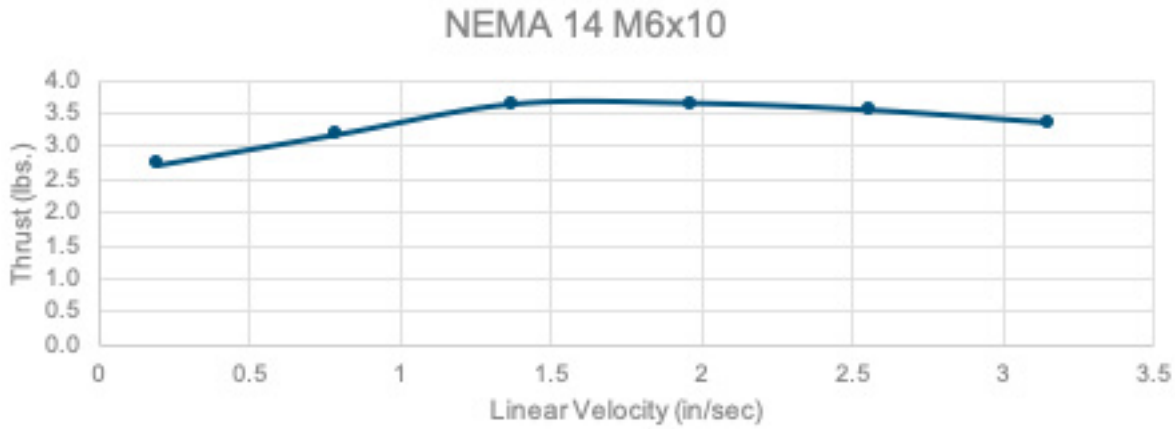


NEMA 14

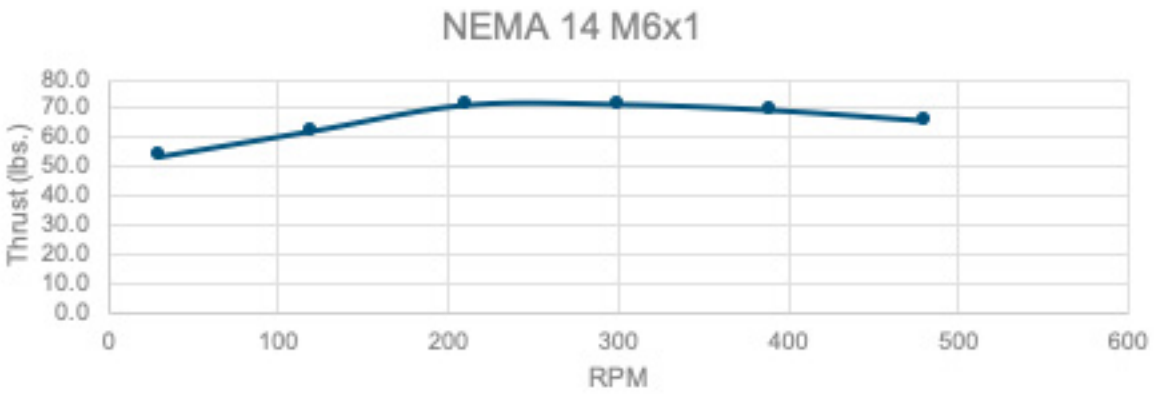
The charts below show the force output versus linear speed for NEMA 14 Motor and Screw combinations. Recommended maximum thrust force is 50 lbs (222 N) and recommended maximum lead screw length is 8 inches.

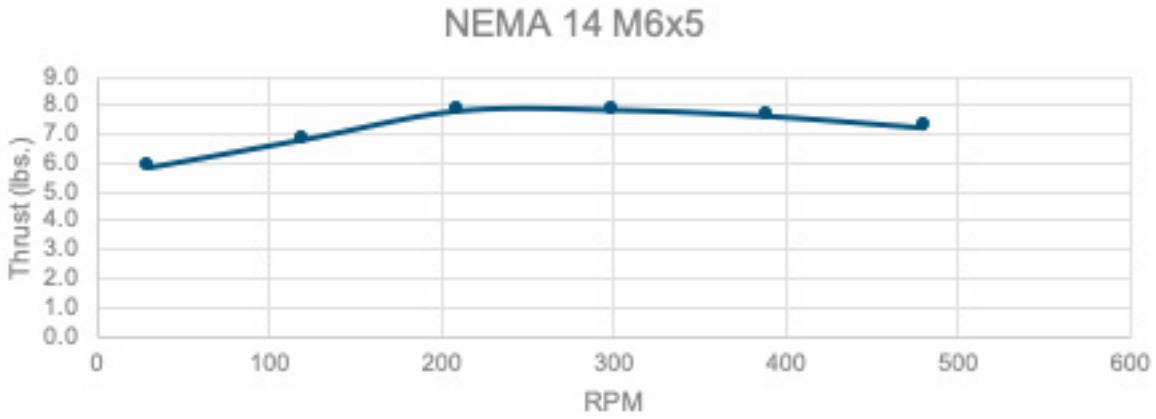


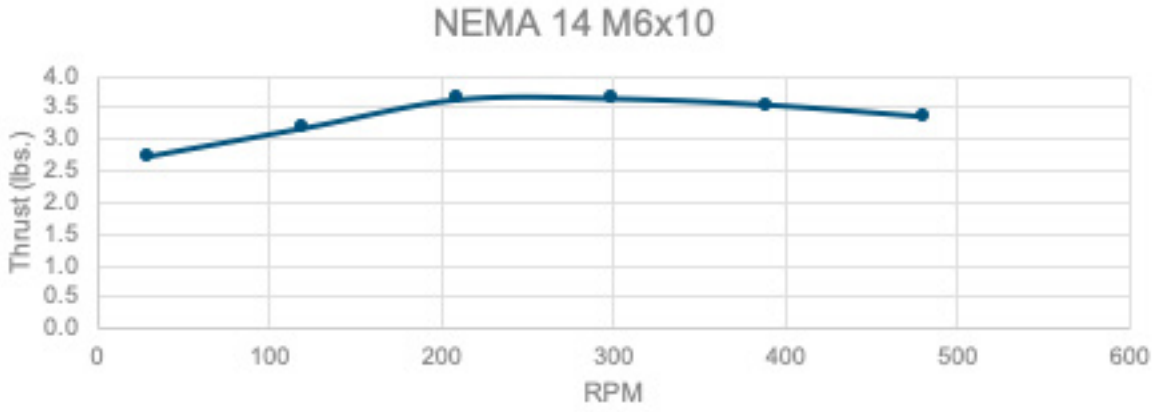




NEMA 14

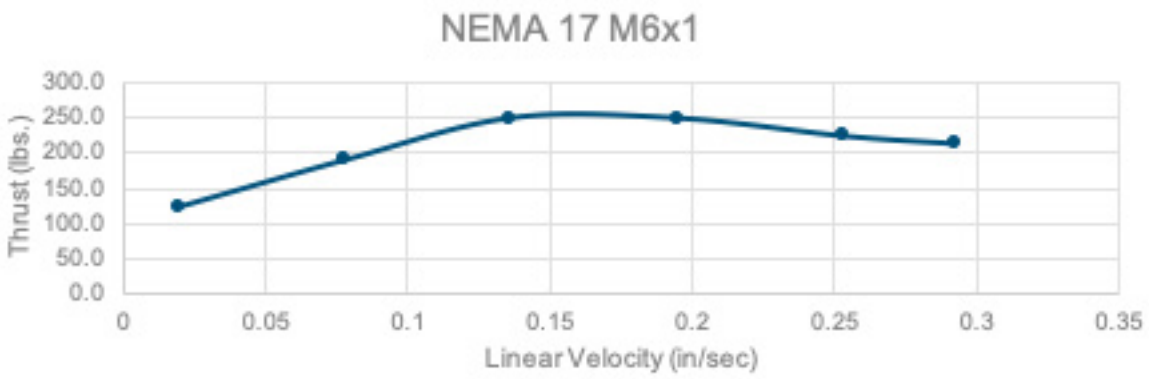


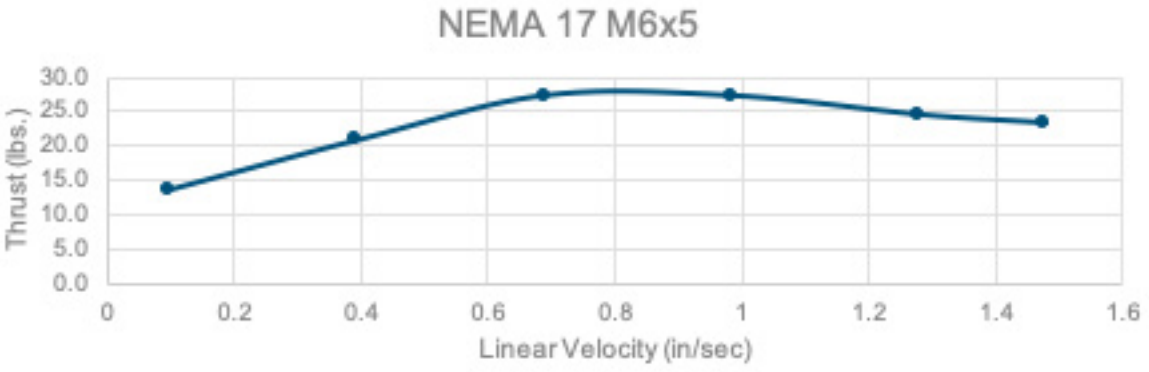


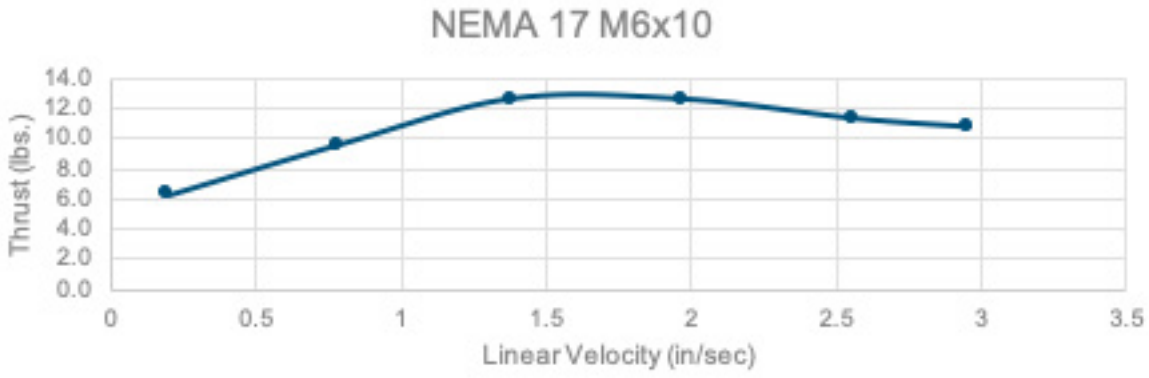


NEMA 17

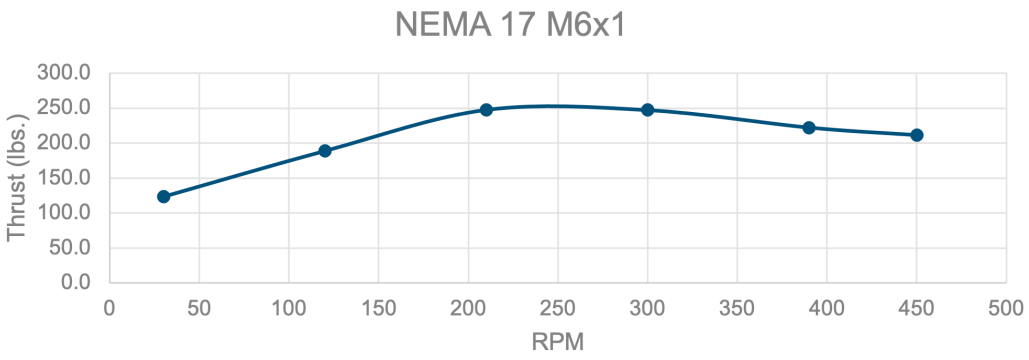
The charts below show the force output versus linear speed for NEMA 17 Motor and Screw combinations. Recommended maximum thrust force is 75 lbs (334 N) and recommended maximum lead screw length is 8 inches.

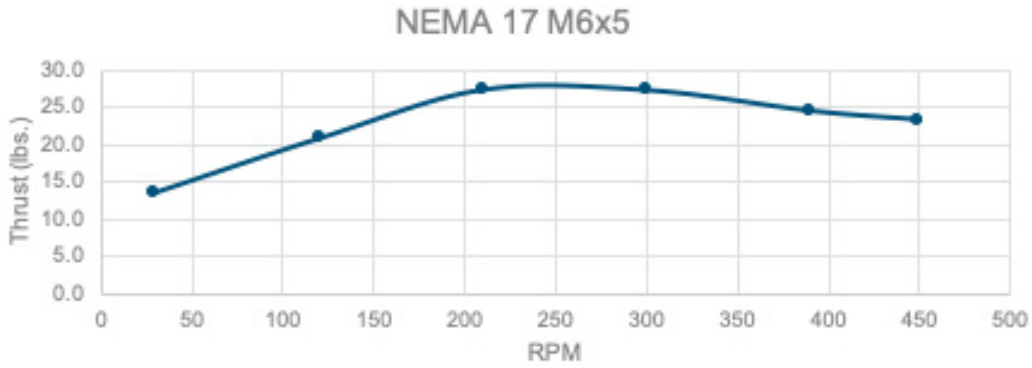


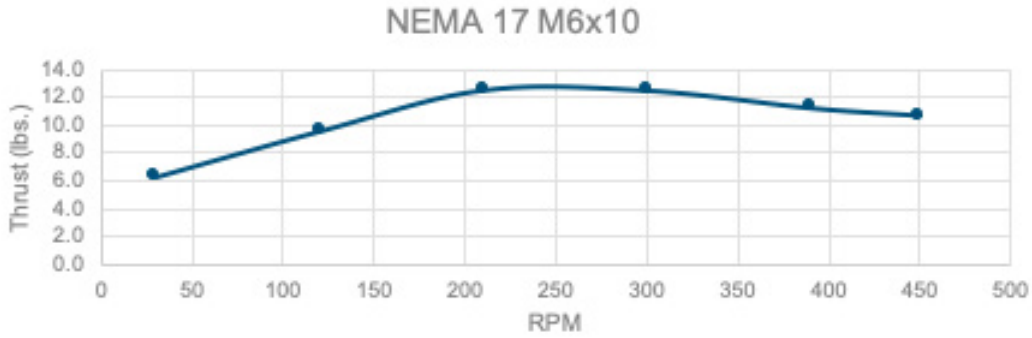


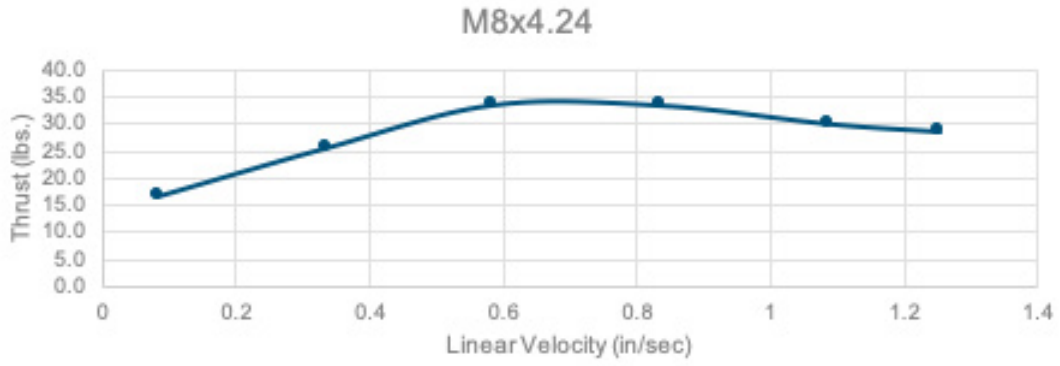


NEMA 17

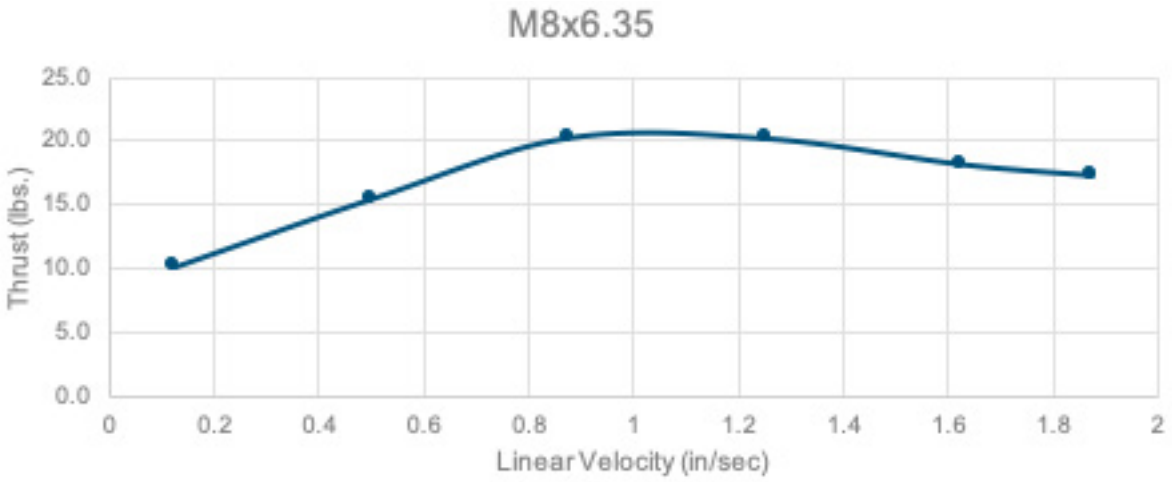


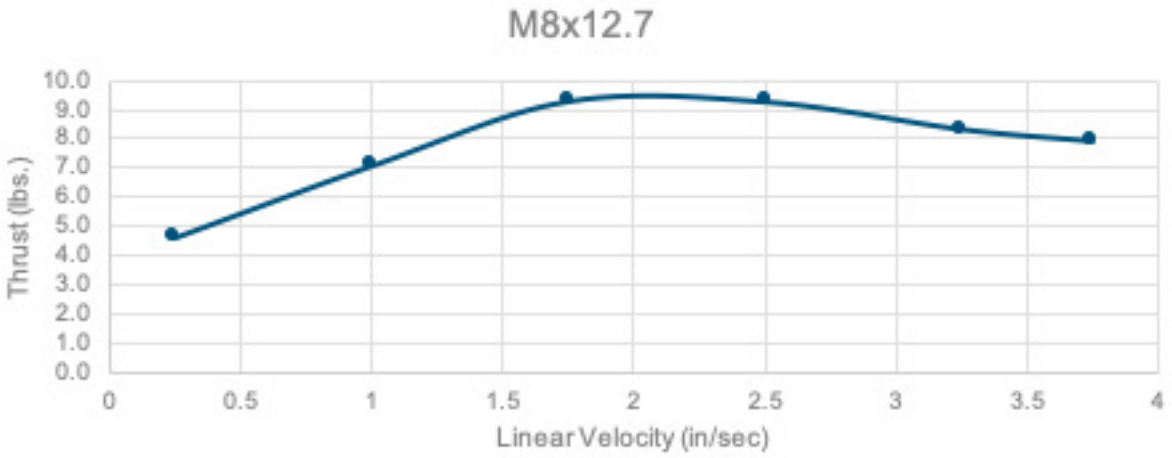


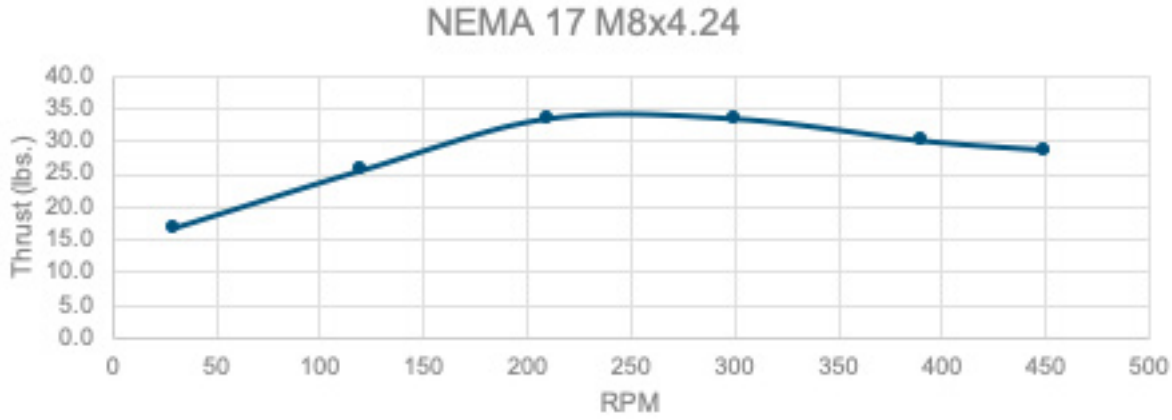




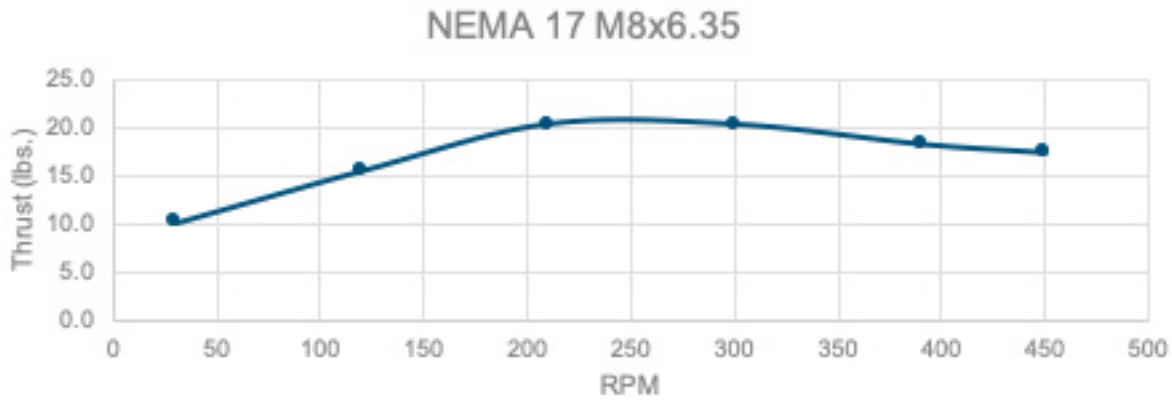
NEMA 17

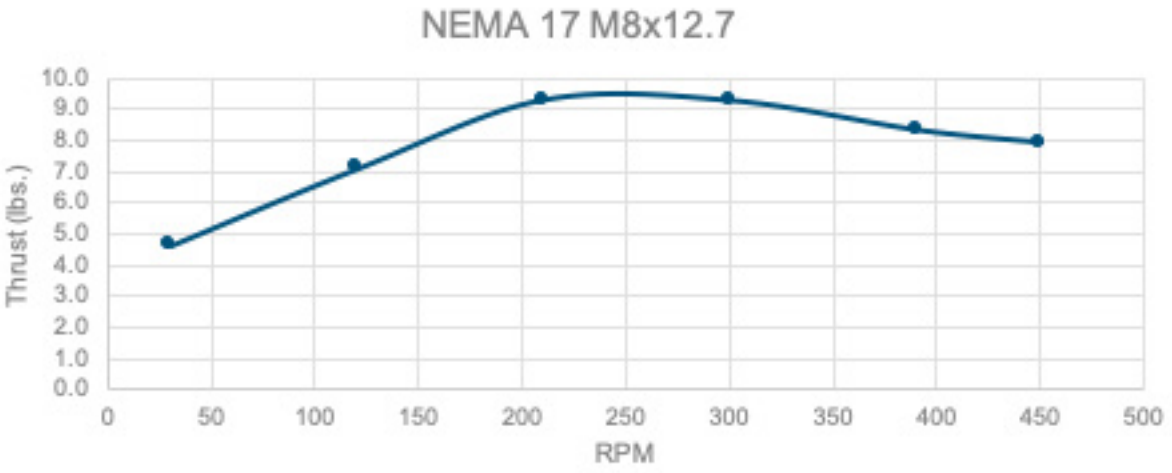






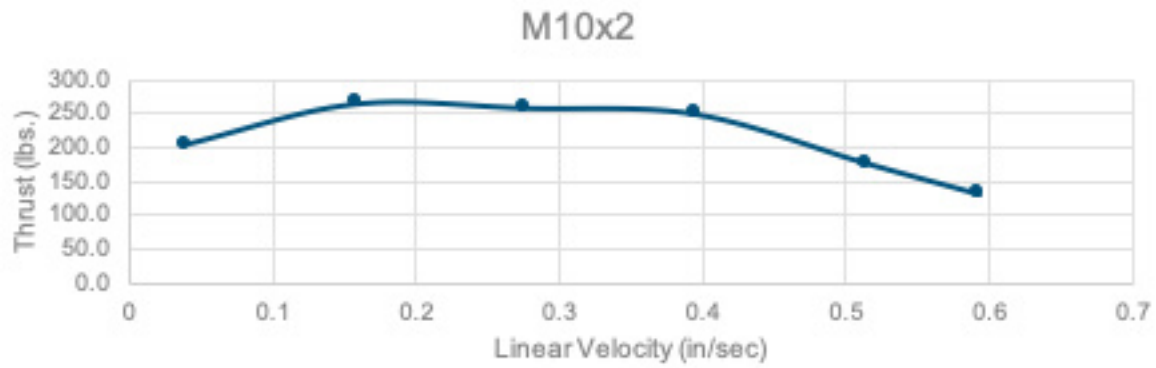
NEMA 17

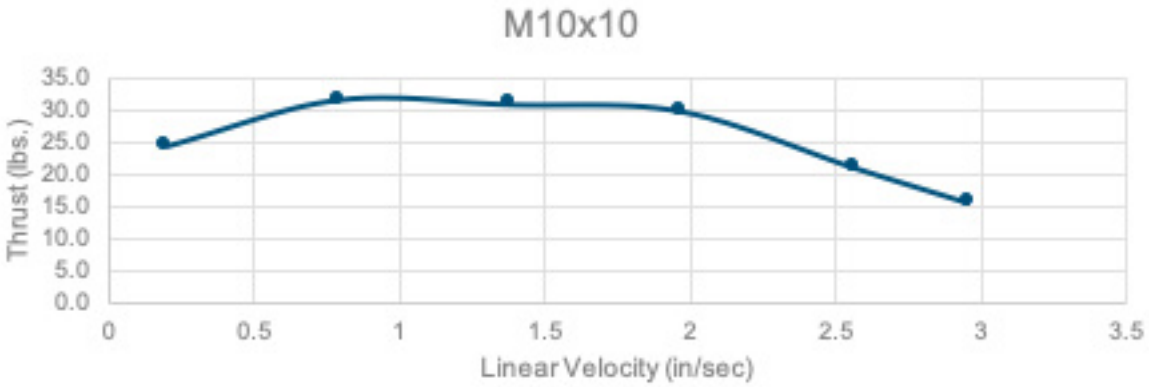


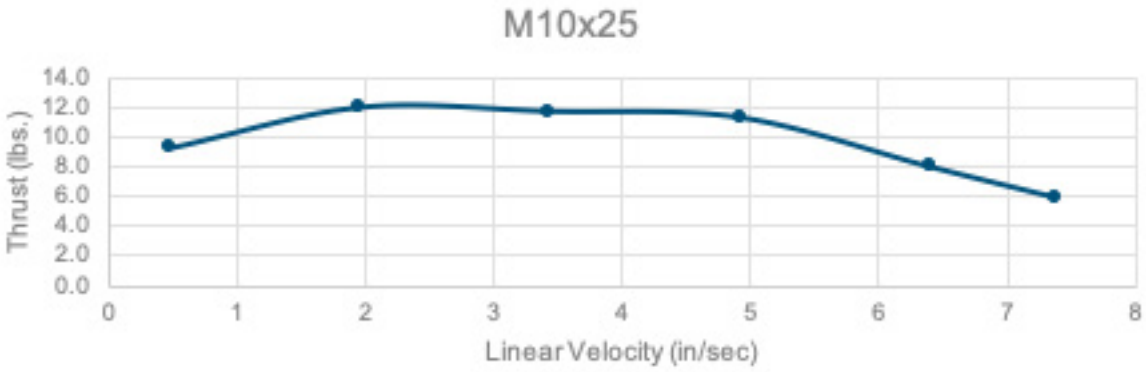


NEMA 23

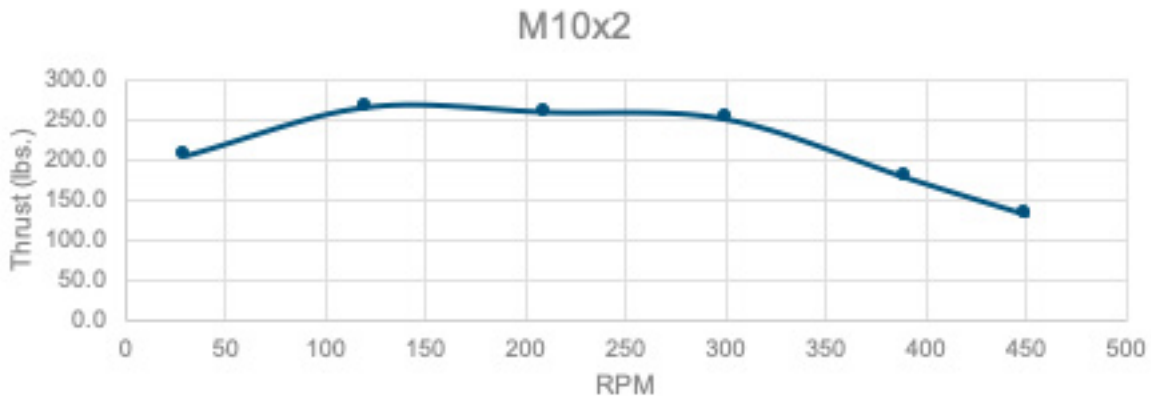
The charts below show the force output versus linear speed for NEMA 23 Motor and Screw combinations. Recommended maximum thrust force is 200 lbs (889 N) and recommended maximum lead screw length is 16 inches.

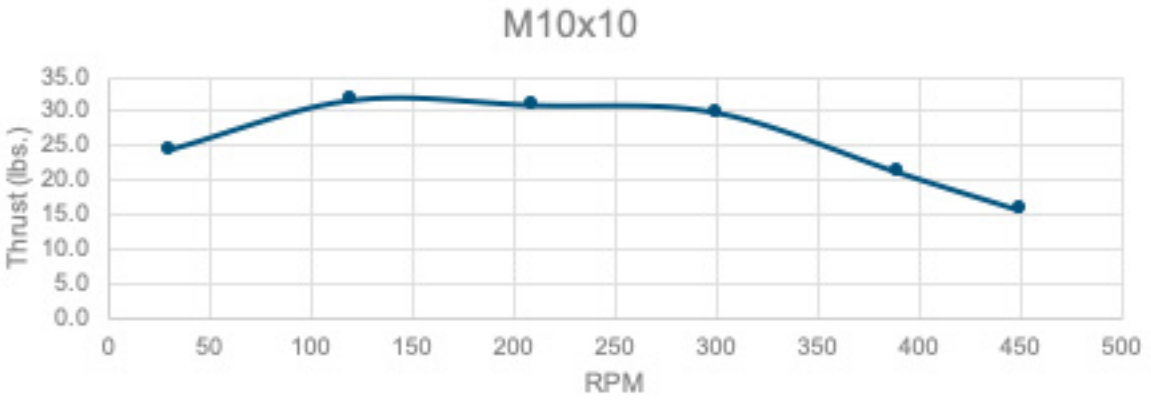


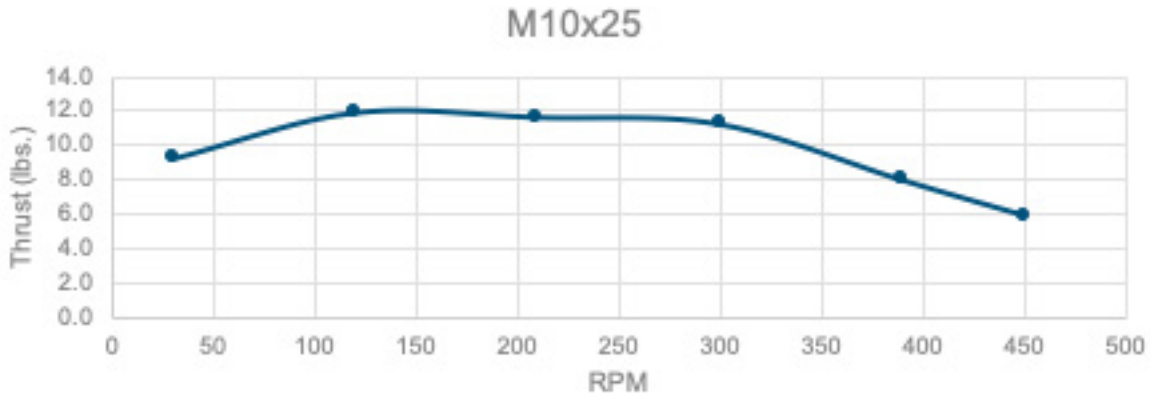




NEMA 23





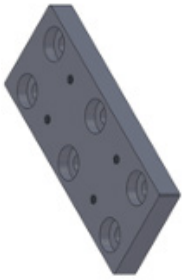


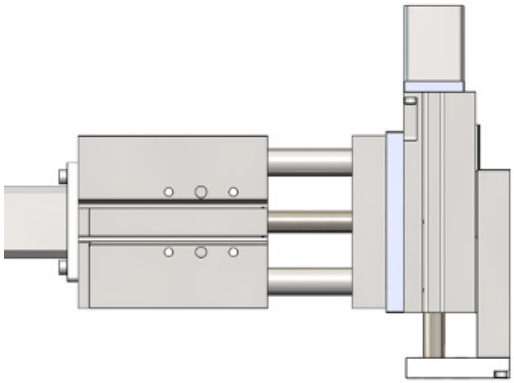
Transition Plates

Transition plates have been developed to utilize the superior side load capabilities of our EET product series. Using these transition plates, users can now seamlessly combine any of our EFE/EFET or NPET actuators with an EET to create a 2-axis system. These systems are ideal for pick and place applications, creating a 2 or 3 axis machine along with a variety of other tasks. Below are a list of possible combinations.

To properly size your system, choose an EET actuator capable of handling side load higher than you need for thrust force from the second axis.

Series to Series	Transition Plate Part #
EET-16 to any EFE or EFET	D-207665
EET-20 to any EFE or EFET	D-207666
EET-25 to any EFE or EFET	D-207667
EET-32 to any EFE or EFET	D-207668
EET-20 to NPET-20	D-207669
EET-25 to NPET-20	D-207670
EET-25 to NPET-32	D-207671
EET-32 to NPET-32	D-207672





Kit	EET Screw	EET Screw Qty.	2nd Screw	2nd Screw Qty.	Transition Plate	Description (Series to Series)
D-207737	D-66483-ZP-14	4	D-66487-ZP-6	3	D-207665	EET-16 to EFE/T-16
D-207738			D-66487-ZP-8			EET-16 to EFE/T-20/25
D-207739			D-66487-ZP-10			EET-16 to EFE/T-32/40
D-207740			D-66487-ZP-12			EET-16 to EFE/T-50
D-207741	D-66486-ZP-18		D-66487-ZP-6		D-207666	EET-20 to EFE/T-16
D-207742			D-66487-ZP-8			EET-20 to EFE/T-20/25
D-207743			D-66487-ZP-10			EET-20 to EFE/T-32/40
D-207744			D-66487-ZP-12			EET-20 to EFE/T-50
D-207745			D-66487-ZP-6	4	D-207667	EET-25 to EFE/T-16
D-207746			D-66487-ZP-8			EET-25 to EFE/T-20/25
D-207747			D-66487-ZP-10			EET-25 to EFE/T-32/40
D-207748			D-66487-ZP-12			EET-25 to EFE/T-50
D-207749	D-66487-ZP-20		D-66487-ZP-6		D-207668	EET-32 to EFE/T-16
D-207750			D-66487-ZP-8			EET-32 to EFE/T-20/25
D-207751			D-66487-ZP-10			EET-32 to EFE/T-32/40
D-207752			D-66487-ZP-12			EET-32 to EFE/T-50
D-207753	D-66486-ZP-20		D-66488-ZP-14	6	D-207669	EET-20 to NPET-20
D-207754					D-207670	EET-25 to NPET-20
D-207755	D-66486-ZP-25		D-66489-ZP-18		D-207671	EET-25 to NPET-32
D-207756	D-66487-ZP-25				D-207672	EET-32 to NPET-32

EET Ordering Information

The model numbers of EET Series extruded electric thrusters consist of an alphanumeric cluster designating product type, bore, stroke length, drive screw type, lead, motor, and other optional components that together make up the complete part number to use in ordering. Use the ordering information below to build a valid part number.

An example of a basic EET unit with a 25mm bore, 100mm stroke, 6mm drive screw, 1mm lead, NEMA 17 motor, and no additional options is shown below.

Product Type	
EET	Extruded Electric Thruster - Extended Shafts
EETS	Extruded Electric Thruster - Flush Shafts

Drive Screw Type	
L05	Lead Screw, 5mm
L06	Lead Screw, 6mm
L08	Lead Screw, 8mm

Options	
M	Magnet
X	Ball Bearings (with case hardened shaft)*
Blank	No Options

*Minimum stroke length 42mm

EET - 25 100 - L06 01 - N17 - _

Bore	
16	16mm
20	20mm
25	25mm
32	32mm

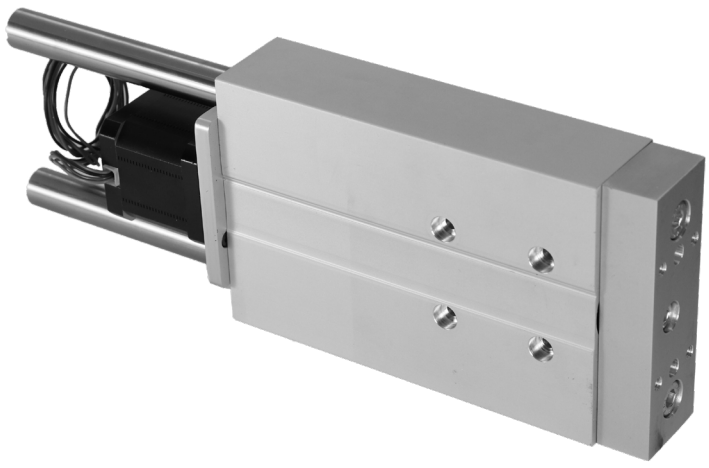
Stroke (mm)	
100	100mm
255	255mm

Lead	
01	1mm
04	4mm
05	5mm
06	6mm
10	10mm
13	13mm

Motor	
N11	NEMA 11
N14	NEMA 14
N17	NEMA 17

Option Compatibility

Bore (mm)	Stroke (mm)	Drive Screw Type (mm)	Lead (mm)	Motor Code	Options
16	1-100	L05	01	N11	-
			05		
20	1-255	L06	01	N14	
			05		
			10		
25	1-255	L06	01	N17	
			05		
			10		
32	1-255	L06	01	N17	X-Ball Bearings (with case hardened shaft)
		L08	04		
			06		
			13		



EFET/EFE Ordering Information

The model numbers of EFET/EFE Series extruded flat electric actuators consist of an alphanumeric cluster designating product type, bore, stroke length, drive screw type, lead, motor, and other optional components that together make up the complete part number to use in ordering. Use the ordering information below to build a valid part number.

An example of a basic EFET unit with a 32mm bore, 100mm stroke, 6mm drive screw, 6mm lead, NEMA 17 motor, and additional options is shown below.

Product Type	
EFE	Extruded Flat Electric
EFET	Extruded Flat Electric Thruster

Drive Screw Type	
L05	Lead Screw, 5mm
L06	Lead Screw, 6mm
L08	Lead Screw, 8mm
L10	Lead Screw, 10mm

Options	
C	Stainless Steel Fasteners
P	Blank Plate for Custom Mount
E***	Extra Extension
M	Magnet
Blank	No Options

EFET - 32 100 - L06 06 - N17 - _

Bore	
16	16mm
20	20mm
25	25mm
32	32mm
40	40mm
50	50mm

Stroke	
5-83	83mm
5-94	94mm
5-104	104mm
5-113	113mm
5-132	132mm
10-131	131mm

Lead	
01	1mm
02	2mm
04	4mm
05	5mm
06	6mm
10	10mm
13	13mm
25	25mm

Motor	
N11	NEMA 11
N14	NEMA 14
N17	NEMA 17
N23	NEMA 23

Option Compatibility

Bore (mm)	Stroke (mm)	Drive Screw Type (mm)	Lead (mm)	Motor Code
16	5-83	L05	01	N11
			05	
20	5-94	L06	01	N14
			05	
			10	
25	5-104	L06	01	N14
			05	
			10	
32	5-113	L06	01	N17
		L08	04	
			06	
			13	
40	5-132	L10	02	N23
			10	
			25	
50	10-131	L10	02	N23
			10	
			25	

NPET Ordering Information

The model numbers of NPET Series narrow profile electric tables consist of an alphanumeric cluster designating product type, bore, stroke length, drive screw type, lead, motor, and other optional components that together make up the complete part number to use in ordering. Use the ordering information below to build a valid part number.

An example of a basic NPET unit with a 32mm bore, 170mm stroke, 8mm drive screw, 6mm lead, NEMA 17 motor,and additional options is shown below.

Product Type	
NPET	Narrow Profile Electric Table

Drive Screw Type	
L06	Lead Screw, 6mm
L08	Lead Screw, 8mm

Options	
M	Magnet
Blank	No Options

NPET - 32 170 - L08 06 - N17 - _

Bore	
20	20mm
32	32mm

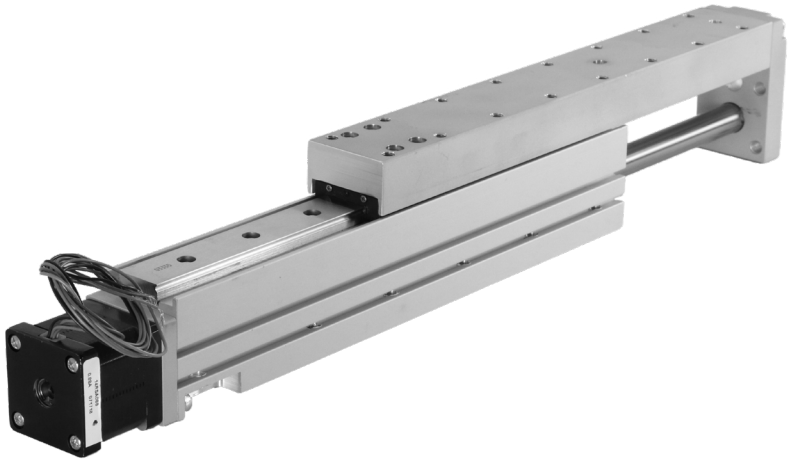
Stroke	
5-200	200mm
5-170	170mm

Lead	
01	1mm
04	4mm
05	5mm
06	6mm
10	10mm
13	13mm

Motor	
N14	NEMA 14
N17	NEMA 17

Option Compatibility

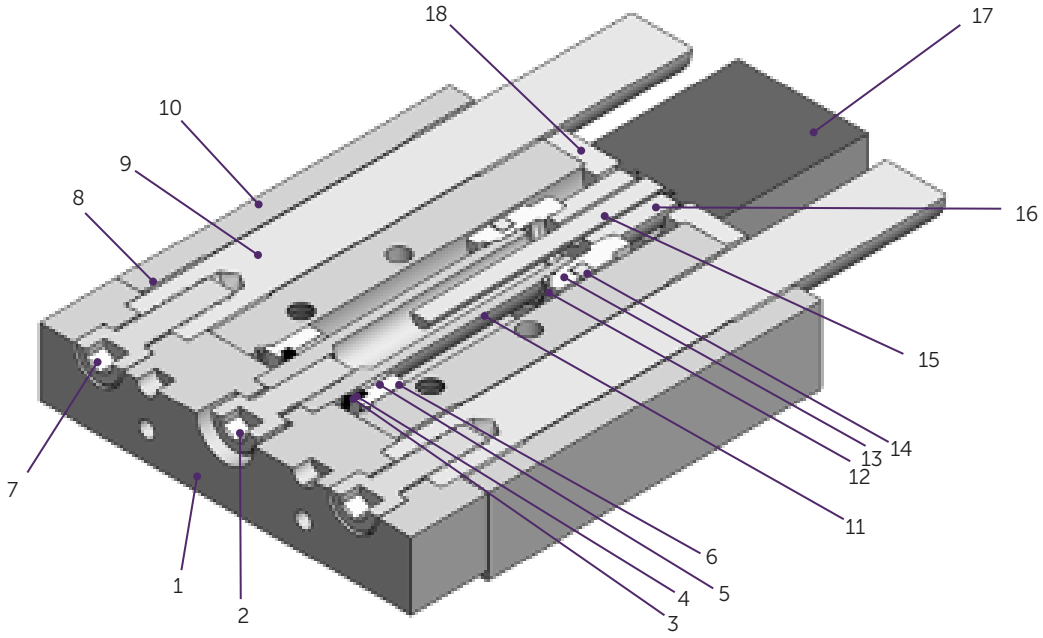
Bore (mm)	Stroke (mm)	Drive Screw Type (mm)	Lead (mm)	Motor Code
20	5-200	L06	01	N14
			05	
			10	
32	5-170	L06	01	N17
		L08	04	
			06	
			13	



IMI Bimba Compact Guided Series of electric actuators are fully repairable. Please consult the exploded view with a list of parts.

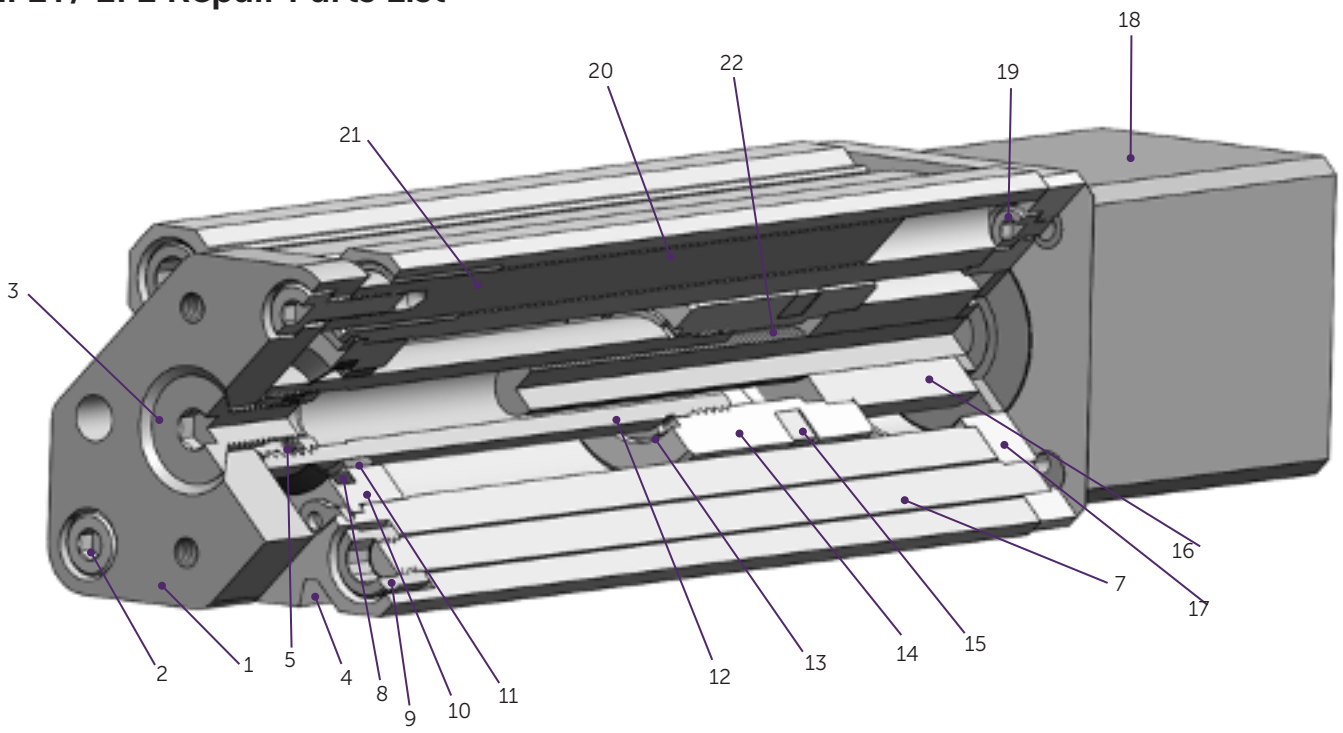
Should a repair be needed, please note the part number and serial number, and contact IMI Bimba Customer Service at (800) 442-4622 (800.44.IMI Bimba) or e-mail cs@IMI Bimba.com.

EET/EETS Repair Parts List



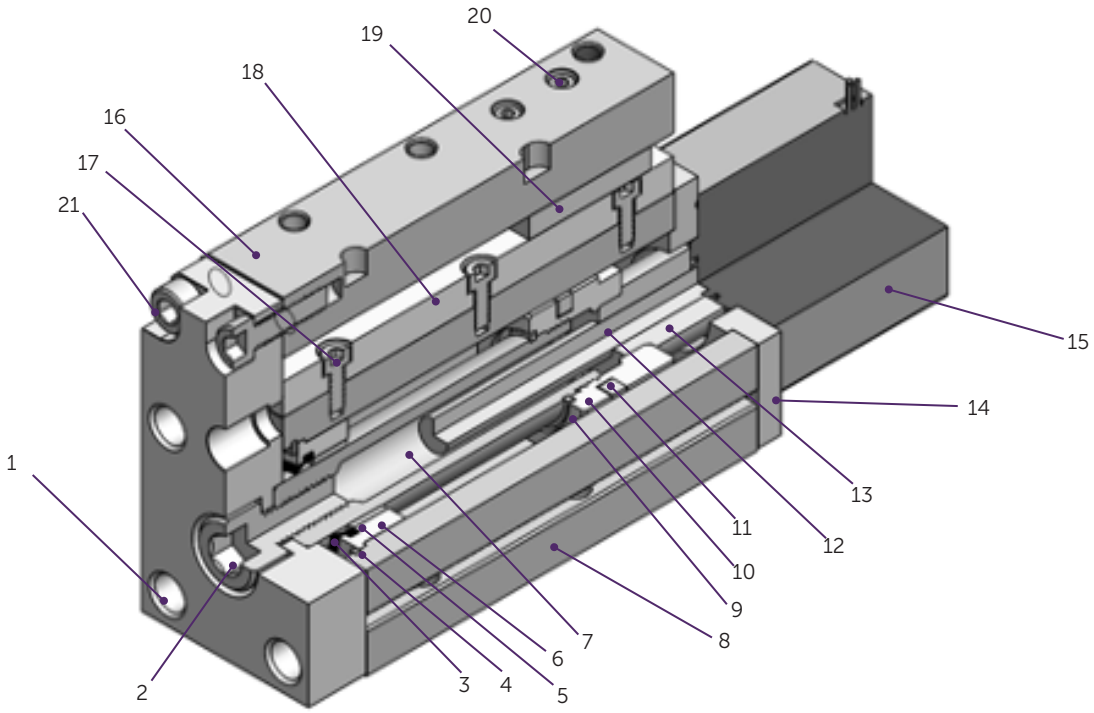
Part #	Description	Material
1	Tooling Plate	Aluminum, anodized
2	Center Screw	Zinc-plated carbon steel
3	Wiper Seal	Nitrile
4	Retaining Ring	Zinc-plated carbon steel
5	Rod Guide Bearing	Plastic
6	Rod Guide	Aluminum, anodized
7	Guide Shaft Screw (2)	Zinc-plated carbon steel
8	Guide Shaft Bearing (2/4)	Plastic
9	Guide Shaft (2)	Stainless steel (carbon steel on -x option)
10	Body	Aluminum, anodized
11	Rod	Carbon steel, stainless steel (20 and 25mm)
12	Square Wire Ring	Carbon spring steel
13	Piston	Aluminum
14	Magnet (Optional)	Neodymium iron boron
15	Drive Screw	Stainless steel
16	Drive Nut	Plastic
17	Motor	N/A
18	Motor Mount Plate	Aluminum, anodized
NS	Motor Screw (2)	Zinc-plated carbon steel
NS	Body Mount Screw (2)	Zinc-plated carbon steel
NS	Thread Adaptor	Stainless steel

EFET/ EFE Repair Parts List



Part #	Description	Material
1	Tooling Plate	Aluminum, anodized
2	Guide Rod Screw	Stainless steel
3	Center Screw	Stainless steel
4	Body	Aluminum, anodized
5	Thread Adaptor (16, 20, and 25 only)	Stainless steel
6	Tie Rod Nut (2)	Carbon steel
7	Tie Rod (2)	Carbon steel
8	Retaining Ring	Zinc-plated carbon steel or stainless steel (optional)
9	Rod Wiper	Nitrile
10	Rod Guide	Aluminum, anodized
11	Rod Guide Bushing	Plastic
12	Rod	Carbon steel, stainless steel (20 and 25mm)
13	Square Wire Ring	Carbon spring steel
14	Piston	Aluminum
15	Magnet (Optional)	Neodymium iron boron
16	Drive Nut	Plastic
17	Motor Mount Plate	Aluminum, anodized
18	Motor	N/A
19	Motor Screw (2)	Zinc-plated carbon steel or stainless steel (optional)
20	Guide Rod	Chrome-plated stainless steel
21	Guide Rod Bushing	Delrin
22	Drive Screw	Stainless steel

NPET Repair Parts List



Part #	Description	Material
1	End Block	Aluminum, anodized
2	Center Screw	Zinc-plated carbon steel
3	Wiper Seal	Nitrile
4	Retaining Ring	Zinc-plated carbon steel
5	Rod Guide Bearing	Plastic
6	Rod Guide	Aluminum, anodized
7	Rod	Carbon steel (32mm), stainless steel (20mm)
8	Body	Aluminum, anodized
9	Square Wire Ring	Carbon spring steel
10	Piston	Aluminum
11	Magnet (optional)	Neodymium iron boron
12	Drive Screw	Stainless steel
13	Drive Nut	Plastic
14	Motor Mount Plate	Aluminum, anodized
15	Motor	N/A
16	Top Plate	Aluminum, anodized
17	Rail Screw (stroke dependent)	Zinc-plated carbon steel
18	Bearing Rail	Stainless steel
19	Bearing Block	Stainless steel
20	Bearing Block Screw (4)	Zinc-plated carbon steel
21	End Block Screw (4)	Zinc-plated carbon steel
NS	Motor Screw (2)	Zinc-plated carbon steel
NS	Body Mount Screw (2)	Zinc-plated carbon steel
NS	Thread Adaptor (20mm only)	Stainless steel

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. IMI Bimba looks forward to serving your electric thruster actuator needs with the responsiveness and engineering expertise you have come to expect from IMI 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

For further customization, contact the factory.