

# DURA-THRUST

## Economy Linear Thrusters

### ET-SERIES ECONOMY LINEAR THRUSTER

**DURA-THRUST ET Series** of Linear Thrusting Devices provide a practical, low-cost, economy approach to automatic working positioning/holding. The ET series is designed for applications where all the features of our LT series are not required, while still offering the quality construction and durability you've come to expect.

#### FEATURES

**DURA-THRUST ET Series** are externally powered by standard non-repairable air cylinders. The slide bearings are oil impregnated bronze bushings. Rods are pinned to the end blocks to assure positive location. Adjustable shaft mounted locking collars with nylon bumper pads allow easy setup and provide low noise level minimizing the clatter inherent in fast acting slide devices. Furthermore the entire ET series is sensor ready.

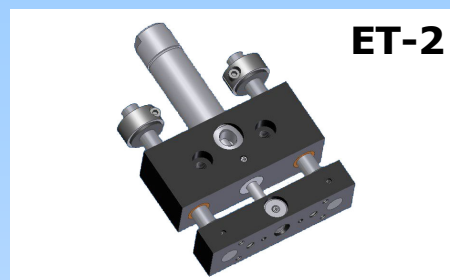
#### MOUNTING STYLES

**DURA-THRUST ET Series** units can be mounted and located in any plane with provided mounting holes and dowel pin holes. The main body contains both tapped holes and counterbored clearance holes for cap screws. The end plate contains the same features for easy adaptations to addition work moving/holding devices or customer tooling.

**The ET series of economy thrusters are perfect for simple applications such as part ejection, part stops, lifting tables, and clamps.**



**ET-1**



**ET-2**



**ET-3**



**ET-4**

### TECHNICAL SPECIFICATION

#### Pneumatic Specifications

Pressure Range

Cylinder Type

Dynamic Seals

Required Valves

#### ENGLISH

40-100 psi

#### METRIC

3-7 bar

Double Acting

Buna-N

4-way, 2 position

#### Temperature Range

Buna-N Seals (standard)

Viton Seals (-V option)

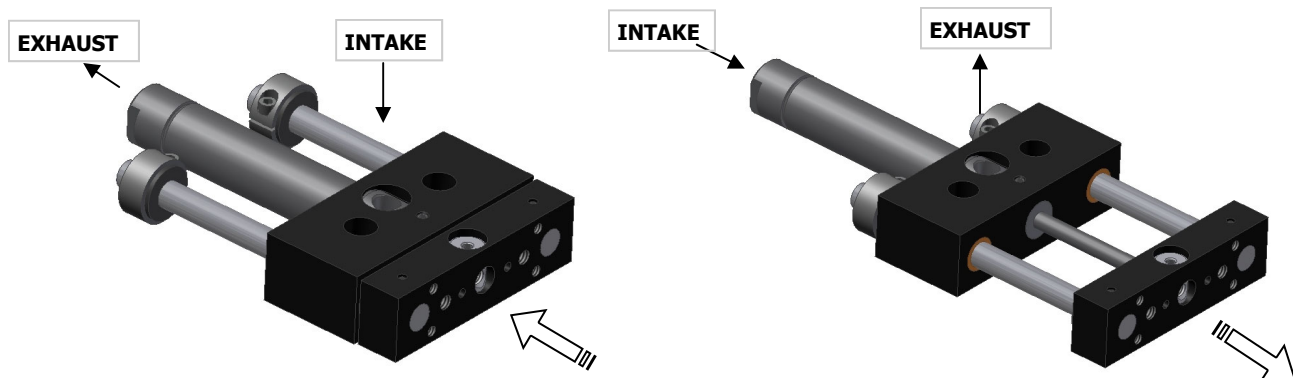
-30 to 180 F

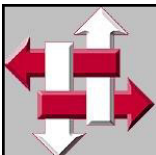
-20 to 300 F

-35 to 80 C

-30 to 150 C

### OPERATING PRINCIPLES





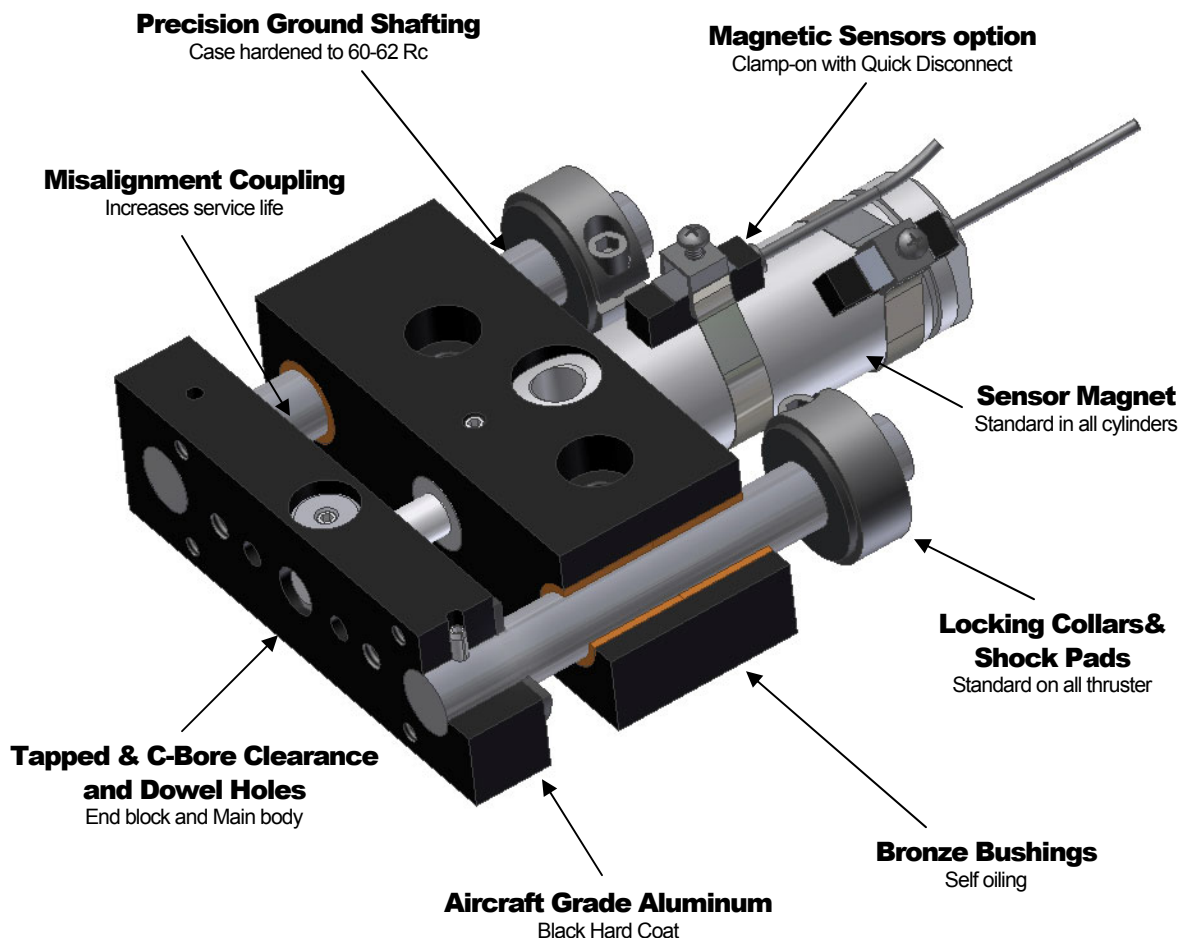
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**ET-SERIES**

ECONOMY  
LINEAR THRUSTER

**PRODUCT FEATURES**

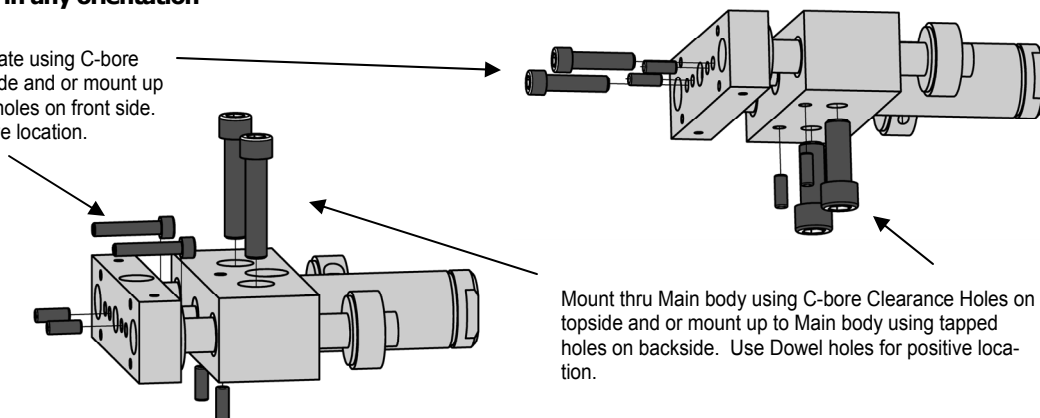


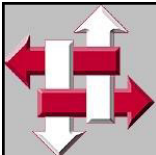
**DESIGNED - MANUFACTURED - ASSEMBLED IN THE USA** 

**MOUNTING INFORMATION**

**Mounts and operates in any orientation**

Mount Payload thru End Plate using C-bore Clearance Holes on backside and or mount up to End Plate using tapped holes on front side. Use Dowel holes for positive location.



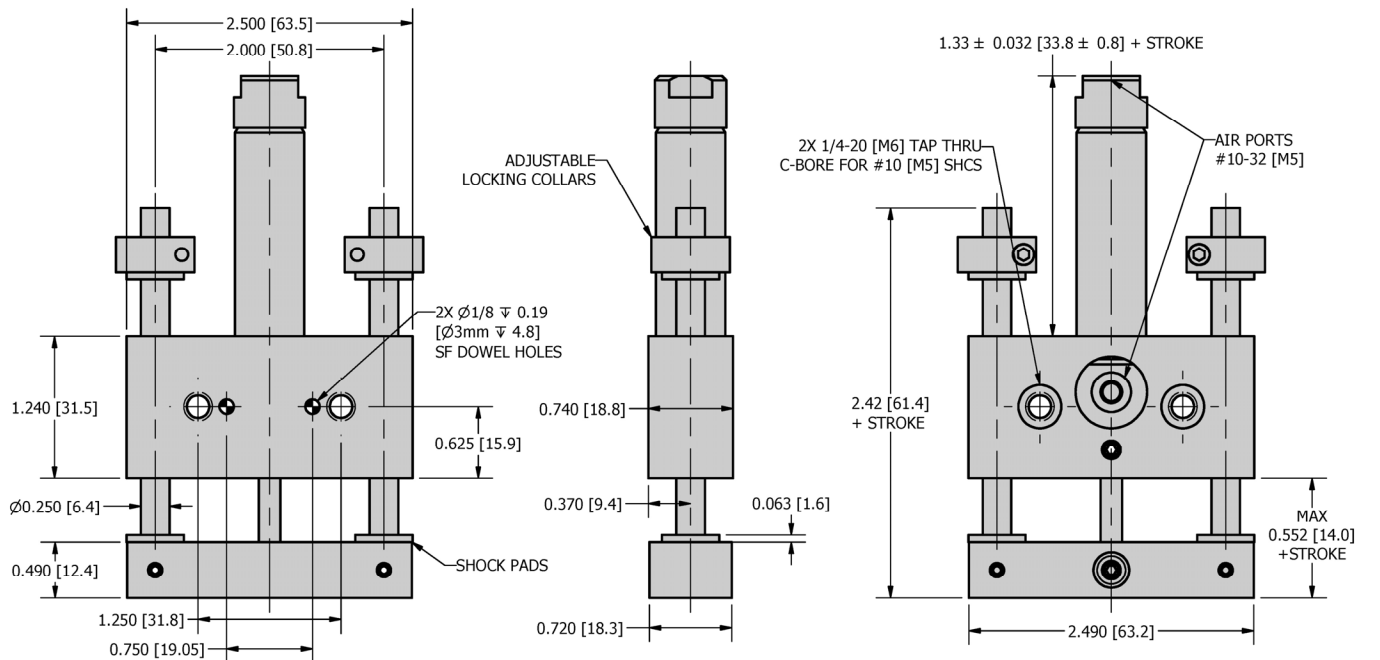


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**ET-1**  
ECONOMY  
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**DIMENSIONAL DRAWING**



**SPECIFICATIONS**

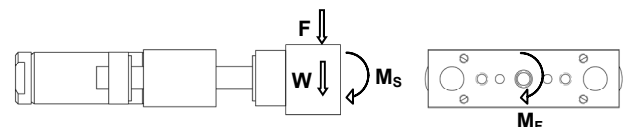
	<b>ET-1</b>	<b>M ET-1</b>
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80 psi / 5.5 bar	19.2 lbf	85.4 N
Unit Force Factor - Extend	0.24 lbf/psi	15.5 N/bar
Unit Force Factor - Retract	0.22 lbf/psi	14.2 N/bar
Base Weight	0.47 lb	0.21 kg
Additional Weight per Stroke	0.05 lb/in	0.85 g/mm
Cylinder Bore Diameter	0.562"	14.27 mm
Shaft Diameter	0.250"	6.35 mm

**LOADING**

	<b>ET-1</b>	<b>M ET-1</b>
Max Force + Weight <b>F+W</b>	4 lbf	17 N
Max Side Moment <b>M<sub>S</sub></b>	4 lbf-in	0.45 N-m
Max Front Moment <b>M<sub>F</sub></b>	4 lbf-in	0.45 N-m
Max Deflection @ Max M <sub>F</sub> & Max Stroke	0.006"	0.15 mm



Flow controls recommended for nearly all applications



**HOW TO ORDER : BASIC UNIT**

**METRIC BASIC MODEL STROKE SEALS**

**M** **ET-1** - **V**

**METRIC M**

**STROKE** Inch: 1", 2", 3", 4"  
mm: 25.4, 50.8, 76.2, 101.6

**SEALS V** - Viton (standard Buna - N)

**SAMPLE ORDER: ET-1-2-V**

Ex) ET-1 Thruster with 2 inch stroke and Viton seals

**CUSTOMS DESIGNS ALWAYS AVAILABLE  
PLEASE CONTACT US FOR INFORMATION**

**ACCESSORIES (order separately)**

**MAGNETIC SENSORS KITS \* (Cylinder clamp mounted)**

**CSK-N** - Magnetic Sensor NPN w/ quick disconnect Kit

**CSK-P** - Magnetic Sensor PNP w/ quick disconnect Kit

**CSK-R** - Magnetic Sensor REED w/ quick disconnect Kit

\* sensors kits include (2) sensors and (2) cylinder clamps and (2) 5 meter cables.

**MAGNETIC SENSORS \* (Cylinder clamp mounted)**

**CS-N** - Magnetic Sensor NPN w/ quick disconnect

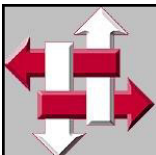
**CS-P** - Magnetic Sensor PNP w/ quick disconnect

**CS-R** - Magnetic Sensor REED w/ quick disconnect

\* includes (1) sensors and (1) cylinder clamp

**SENSOR CABLE**

**SENCAB-5** - Quick Disconnect PUR Cable 5M Length

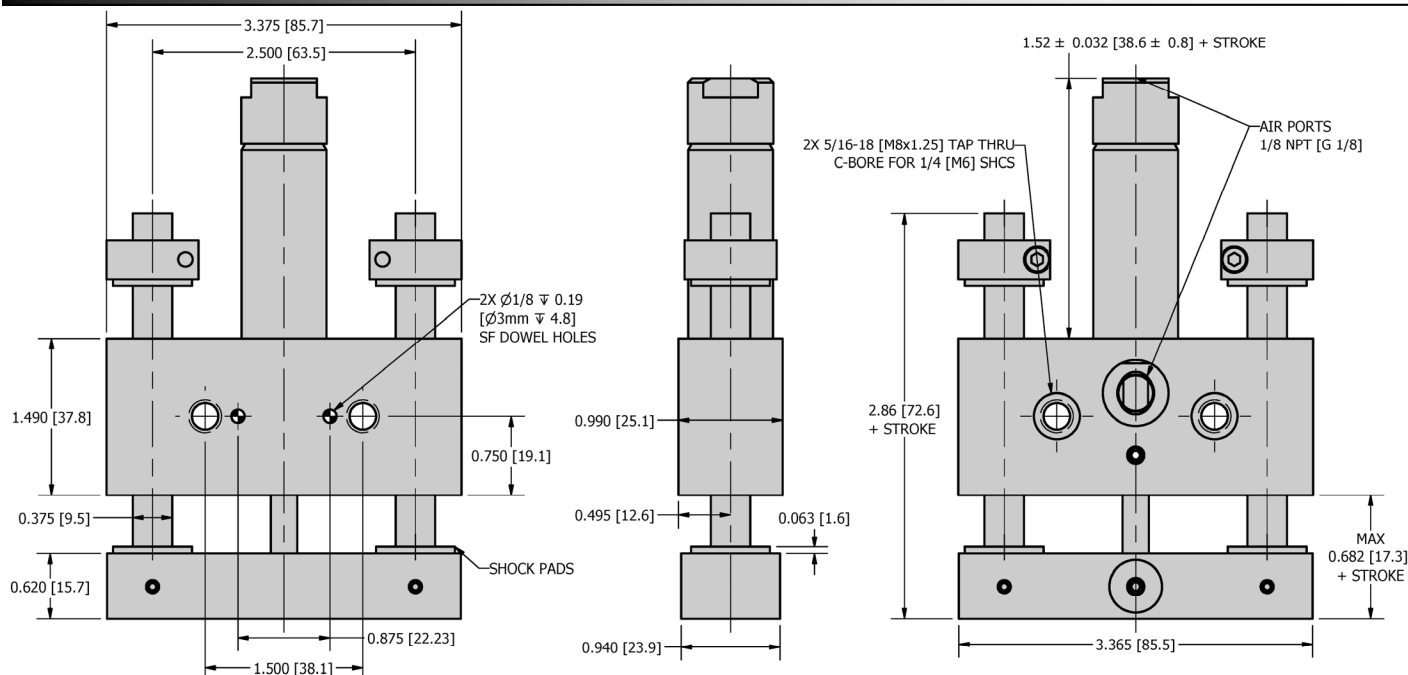


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**ET-2**  
ECONOMY  
LINEAR THRUSTER

**DIMENSIONAL DRAWING**



**SPECIFICATIONS**

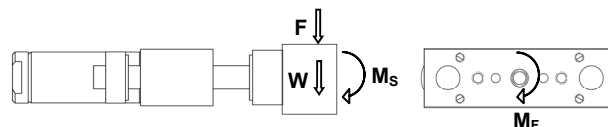
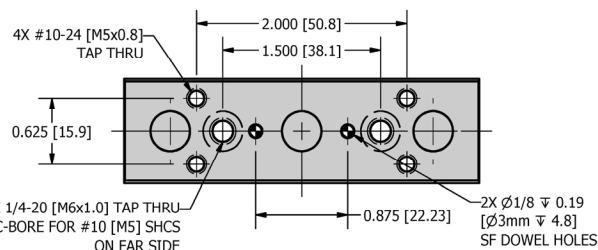
	<b>ET-2</b>	<b>M ET-2</b>
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80 psi / 5.5 bar	35.2 lbf	156.8 N
Unit Force Factor - Extend	0.44 lbf/psi	28.4 N/bar
Unit Force Factor - Retract	0.39 lbf/psi	25.2 N/bar
Base Weight	1.05 lb	0.48 kg
Additional Weight per Stroke	0.09 lb/in	1.63 g/mm
Cylinder Bore Diameter	0.750"	19.05 mm
Shaft Diameter	0.375"	9.52 mm

**LOADING**

	<b>ET-2</b>	<b>M ET-2</b>
Max Force + Weight <b>F+W</b>	6 lbf	26 N
Max Side Moment <b>M<sub>S</sub></b>	6 lbf-in	0.68 N-m
Max Front Moment <b>M<sub>F</sub></b>	6 lbf-in	0.68 N-m
Max Deflection @ Max M <sub>F</sub> / Max Stroke	0.005"	0.13 mm



Flow controls recommended for nearly all applications



**HOW TO ORDER : BASIC UNIT**

**METRIC BASIC MODEL STROKE SEALS**

**M** **ET-2** - **V**

**METRIC M**

**STROKE** Inch: 1", 2", 3", 4", 5", 6", 7", 8"  
mm: 25.4, 50.8, 76.2, 101.6, 127, 152.4, 177.8, 203.2

**SEALS V** - Viton (standard Buna - N)

**SAMPLE ORDER: ET-2-1-V**

Ex) ET-2 Thruster with 1 inch stroke and Viton seals

**CUSTOMS DESIGNS ALWAYS AVAILABLE**  
**PLEASE CONTACT US FOR INFORMATION**

**ACCESSORIES (order separately)**

**MAGNETIC SENSORS KITS \* (Cylinder clamp mounted)**

**CSK-N** - Magnetic Sensor NPN w/ quick disconnect Kit

**CSK-P** - Magnetic Sensor PNP w/ quick disconnect Kit

**CSK-R** - Magnetic Sensor REED w/ quick disconnect Kit

\* sensors kits include (2) sensors and (2) cylinder clamps and (2) 5 meter cables.

**MAGNETIC SENSORS \* (Cylinder clamp mounted)**

**CS-N** - Magnetic Sensor NPN w/ quick disconnect

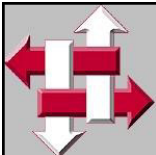
**CS-P** - Magnetic Sensor PNP w/ quick disconnect

**CS-R** - Magnetic Sensor REED w/ quick disconnect

\* includes (1) sensors and (1) cylinder clamp

**SENSOR CABLE**

**SENCAB-5** - Quick Disconnect PUR Cable 5M Length

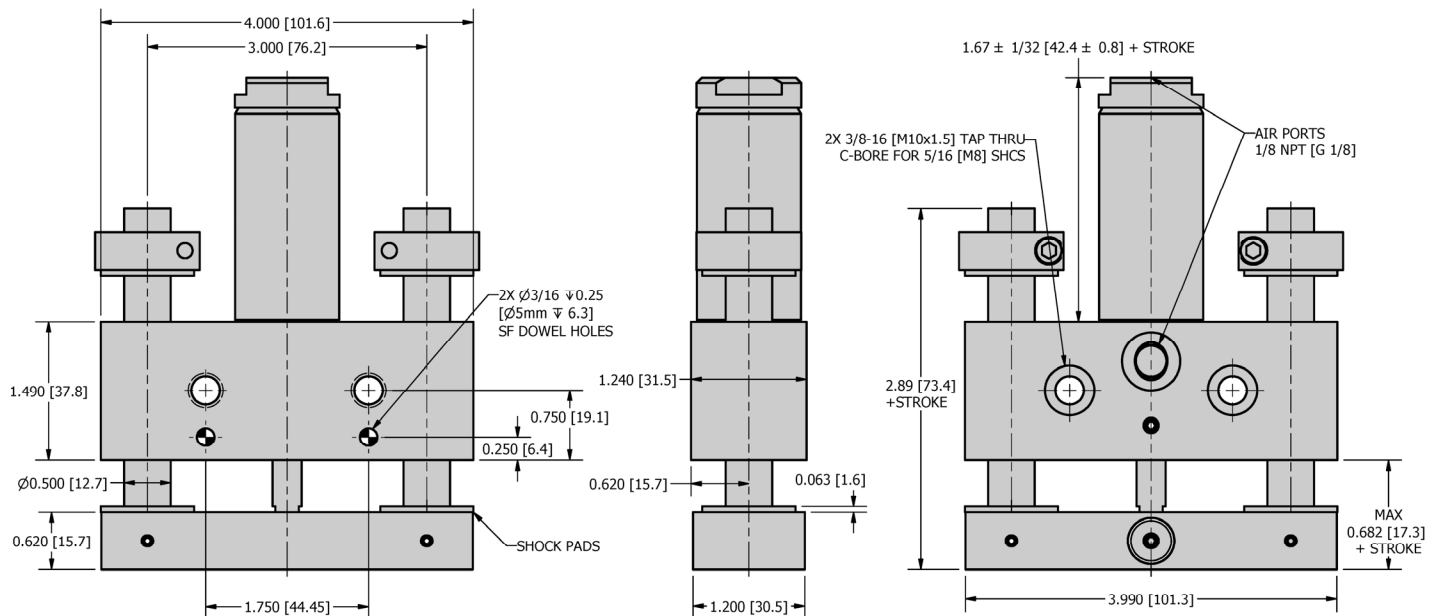


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**ET-3**  
ECONOMY  
LINEAR THRUSTER

**DIMENSIONAL DRAWING**



**SPECIFICATIONS**

	<b>ET-3</b>	<b>M ET-3</b>
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80 psi / 5.5 bar	70.4 lbf	311.9 N
Unit Force Factor - Extend	0.88 lbf/psi	56.7 N/bar
Unit Force Factor - Retract	0.81 lbf/psi	52.3 N/bar
Base Weight	1.68 lb	0.76 kg
Additional Weight per Stroke	0.16 lb/in	2.9 g/mm
Cylinder Bore Diameter	1.062"	27 mm
Shaft Diameter	0.500"	12.7 mm

**LOADING**

	<b>ET-3</b>	<b>M ET-3</b>
Max Force + Weight <b>F+W</b>	8 lbf	35 N
Max Side Moment <b>M<sub>s</sub></b>	8 lbf-in	0.9 N-m
Max Front Moment <b>M<sub>F</sub></b>	8 lbf-in	0.9 N-m
Max Deflection @ Max M <sub>F</sub> / Max Stroke	0.005"	0.13 mm



Flow controls recommended for nearly all applications

**HOW TO ORDER : BASIC UNIT**

**ACCESSORIES (order separately)**

**METRIC BASIC MODEL STROKE SEALS**

**M** **ET-3** - **V**

**METRIC M**

**STROKE** Inchs: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10"  
mm: 25.4, 50.8, 76.2, 101.6, 127, 152.4, 177.8, 203.2, 228.6, 254

**SEALS V - Viton (standard Buna - N)**

**SAMPLE ORDER: ET-3-2-V**

Ex) ET-3 Thruster with 2 inch stroke and Viton seals

**CUSTOMS DESIGNS ALWAYS AVAILABLE  
PLEASE CONTACT US FOR INFORMATION**

**MAGNETIC SENSORS KITS \* (Cylinder clamp mounted)**

**CSK-N** - Magnetic Sensor NPN w/ quick disconnect Kit

**CSK-P** - Magnetic Sensor PNP w/ quick disconnect Kit

**CSK-R** - Magnetic Sensor REED w/ quick disconnect Kit

\* sensors kits include (2) sensors and (2) cylinder clamps and (2) 5 meter cables.

**MAGNETIC SENSORS \* (Cylinder clamp mounted)**

**CS-N** - Magnetic Sensor NPN w/ quick disconnect

**CS-P** - Magnetic Sensor PNP w/ quick disconnect

**CS-R** - Magnetic Sensor REED w/ quick disconnect

\* includes (1) sensors and (1) cylinder clamp

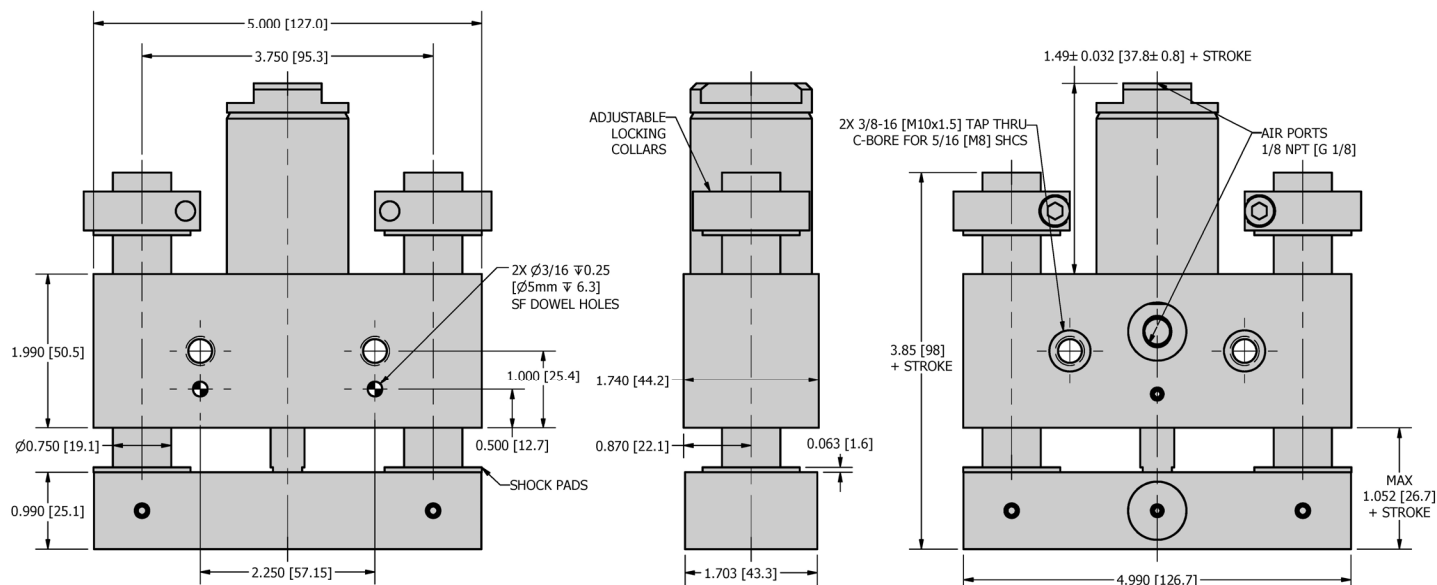
**SENSOR CABLE**

**SENCAB-5** - Quick Disconnect PUR Cable 5M Length





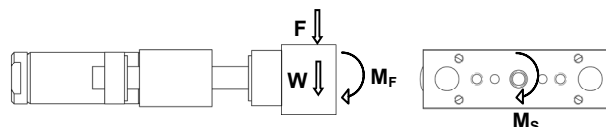
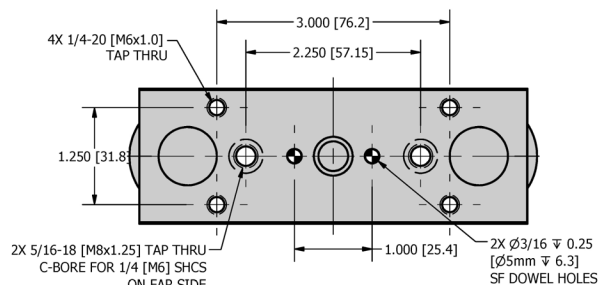
**ET-4**  
ECONOMY  
LINEAR THRUSTER



Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80 psi / 5.5 bar	140.8 lbf	624.3 N
Unit Force Factor - Extend	1.76 lbf/psi	113.5 N/bar
Unit Force Factor - Retract	1.61 lbf/psi	103.9 N/bar
Base Weight	4.07 lb	1.85 kg
Additional Weight per Stroke	0.33 lb/in	5.92 g/mm
Cylinder Bore Diameter	1.500"	38.1 mm
Shaft Diameter	0.750"	19.05 mm

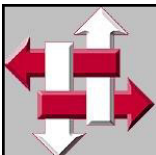
<b>LOADING</b>	<b>ET-4</b>	<b>M ET-4</b>
Max Force + Weight <b>F+W</b>	15 lbf	66 N
Max Side Moment <b>M<sub>S</sub></b>	15 lbf-in	1.69 N-m
Max Front Moment <b>M<sub>F</sub></b>	15 lbf-in	1.69 N-m
Max Deflection @ Max M <sub>F</sub> / Max Stroke	0.005"	0.13 mm

Flow controls recommended for nearly all applications



METRIC	BASIC MODEL	STROKE	SEALS
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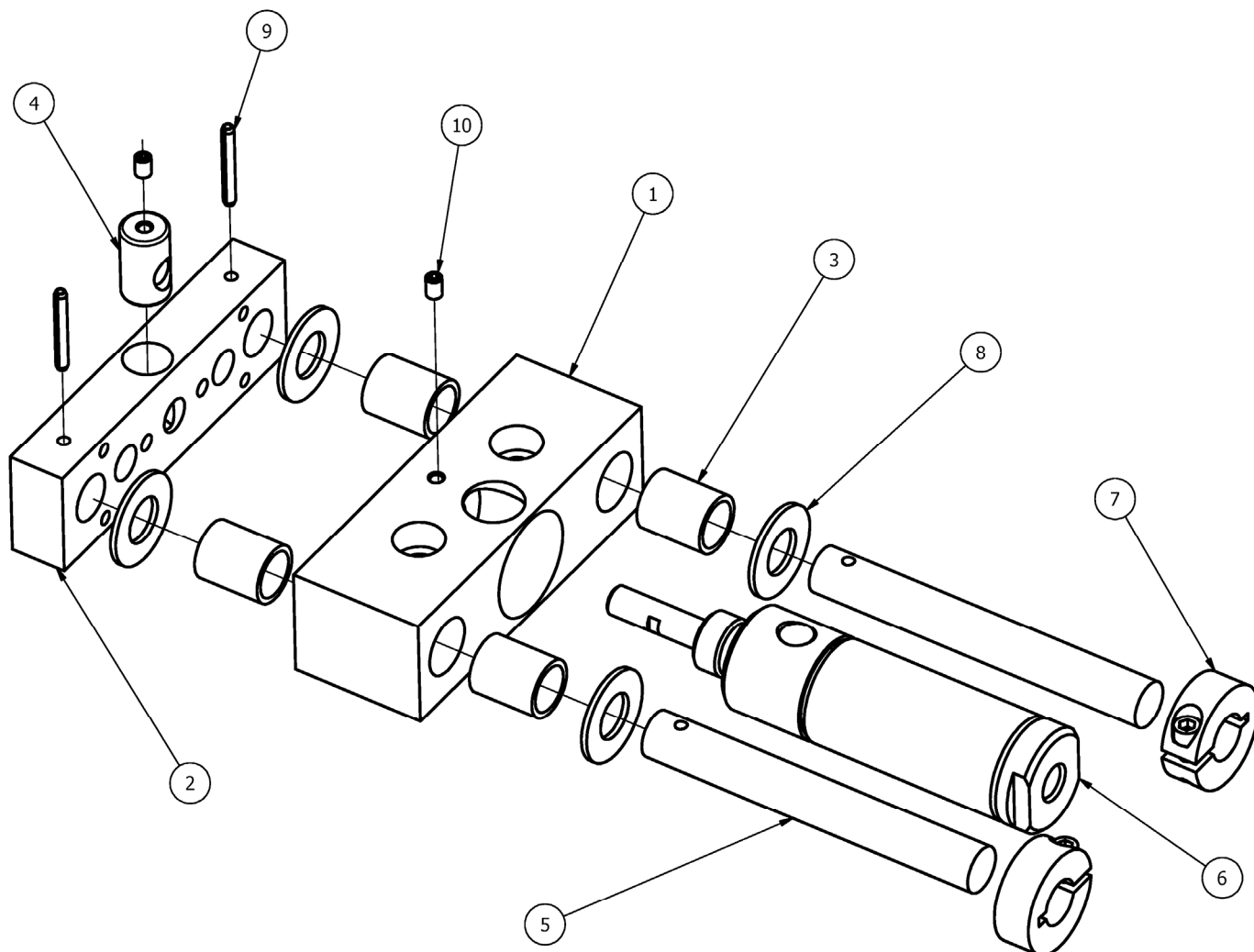
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**ET-SERIES**

ECONOMY  
LINEAR THRUSTER

**EXPLODED VIEW**



**PARTS LIST**

**HOW TO ORDER PARTS**

ITEM	REQ'D	NAME	ET-1	ET-2	ET-3	ET-4
1	1	Main Body	ET-101	ET-201	ET-301	ET-401
2	1	End Block	ET-102	ET-202	ET-302	ET-402
3	4	Bushing *	ET-103	ET-203	ET-303	ET-403
4	1	Connector	ET-104	ET-204	ET-304	ET-404
5	2	Rod	ET-105-S <sup>1</sup>	ET-205-S <sup>1</sup>	ET-305-S <sup>1</sup>	ET-405-S <sup>1</sup>
6	1	Air Cylinder	ET-106-S <sup>1</sup> -V <sup>2</sup>	ET-206-S <sup>1</sup> -V <sup>2</sup>	ET-306-S <sup>1</sup> -V <sup>2</sup>	ET-406-S <sup>1</sup> -V <sup>2</sup>
7	2	Locking Collar *	XLC-0250	XLC-0375	XLC-0500	XLC-0750
8	4	Shock Pad *	XSP-0250	XSP-0375	XSP-0500	XSP-0750
9	2	Roll Pin *	FRP-1/8x5/8	FRP-1/8x7/8	FRP-1/8x1	FRP-1/8x1-1/4
10	2	Set Screw *	FSS-8-32x1/8 [FSS-M4x3] <sup>†</sup>	FSS-8-32x1/8 [FSS-M4x3] <sup>†</sup>	FSS-8-32x1/4 [FSS-M4x6] <sup>†</sup>	FSS-8-32x3/8 [FSS-M4x8] <sup>†</sup>

**METRIC**

**PART NUMBER**

M

-

**OPTIONS**

**SAMPLE ORDER: ET-105-2**

Ex) ET-1 Rod with 2 inch stroke

**OPTIONS** (see product pages for information)

<sup>1</sup> - S = Stroke

<sup>2</sup> - V = Viton Seals if required

**NOTES**

<sup>†</sup> - Metric Fasteners

\* - Metric code not required