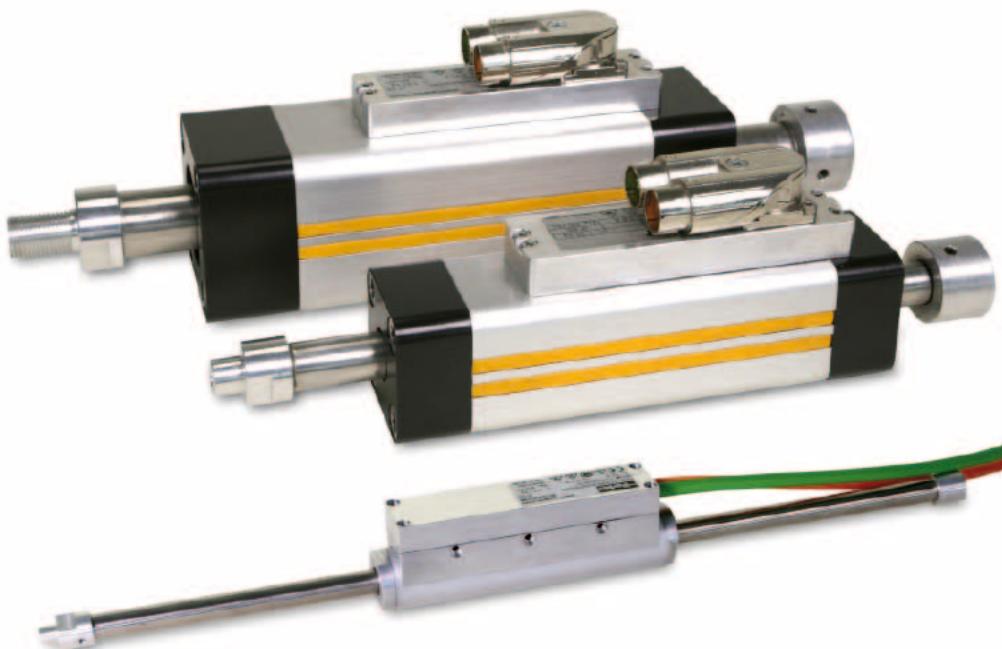


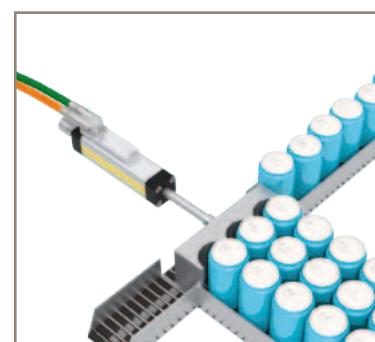


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



ETT - Electric Tubular Motor

Linear Handling and Pick & Place Applications



ENGINEERING YOUR SUCCESS.



WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Electric Tubular Motor - ETT

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Parker Hannifin

The global leader in motion and control technologies

A world class player on a local stage

Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

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Offenburg, Germany
Filderstadt, Germany
Milan, Italy

Asia

Wuxi, China
Chennai, India

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Irwin, Pennsylvania
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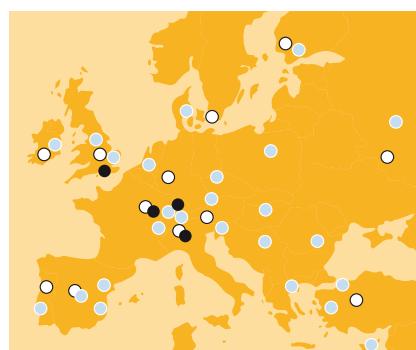
For contact information, please refer to the Sales Offices on the back cover of this document or visit www.parker.com



Milan, Italy



Littlehampton, UK



● Electromechanical Manufacturing
○ Parker Sales Offices
● Distributors



Dijon, France

Electric Tubular Motor - ETT

Overview

Description

ETT is a direct thrust linear motor actuator, ideally suited for all kinds of linear handling and pick & place applications. It is a cost-effective and energy-efficient alternative to pneumatic cylinders in applications that demand greater flexibility and control.

The ETT's linear motion is directly generated without the need for mechanical transmission elements like ball screws, toothed belts and gearboxes. The tubular motor has two main components; the rod (shaft) and the stator with integrated feedback (body). The shaft is made of a stainless steel tube with built in neodymium magnets, that thanks to their high performance, are able to deliver impressive thrust values up to 512 N. The main body comprises the stator winding, the feedback electronics and high performance bearings. A major benefit of the ETT design is that long and/or heavy duty cycles are possible without the need of additional cooling. The IP67 protection class allows the ETT tubular motor to be used in harsh environmental conditions.

Features

- Ultra dynamic linear motion and position control capabilities
- Ideally suited for pneumatic substitution where greater position control capabilities are required
- Three lengths and three sizes meeting the requirements of the pneumatic ISO flange standard (DIN ISO 15552:2005-12) for simplified mechanical integration
- Swivelling electrical connectors and extensive accessory options allow flexible mounting
- Reduced mechanical complexity delivers high energy efficiency and reduces maintenance
- AISI304 stainless steel shaft allows it's use in "clean" environments
- High thermal efficiency improves reliability and increases mechanical life
- Wide choice of rod end mounting options, including swivel rod eye, increases flexibility

Application

- Food, Pharmaceutical & Beverage
- Packaging Machines
- Material Handling
- Factory Automation



Technical Characteristics - Overview

| | |
|--------------------------------------|---|
| Motor type | Linear tubular servo motor |
| Rod | AISI304 (stainless steel) |
| Rated force | 6 ... 128 N |
| Peak force | 24 ... 512 N |
| Speed range | up to 4 m/s |
| Acceleration range | 200 m/s ² |
| Mounting | Screw fixed |
| Shaft end | With screw fix external thread (standard) Other (option) |
| Cooling | Natural ventilation |
| Protection level (IEC60034-5) | IP67 |
| Feedback sensor | 1 Vpp Sine/Cosine encoder |
| Thermal protection | KTY |
| Marking | CE |
| Voltage supply | 230 VAC other voltage on request |
| Temperature class | Class F |
| Connections | Connectors for ETT032/050 Flying cables for ETT025 |
| Accuracy | ±0.05 mm |

Technical Characteristics

Technical Data

ETT025

| ETT025 | Unit | ETT025S1 | ETT025S2 | ETT025S3 |
|--|---------------------|----------|-----------------|----------|
| Power supply 230 VAC | | | | |
| Effective stroke | [mm] | | 30 ... 360 | |
| Rated force | [N] | 6 | 9 | 12 |
| Peak force for 10 s ¹⁾ | [N] | 24 | 36 | 48 |
| Maximum speed ²⁾ | [m/s] | | 4 | |
| Peak acceleration ³⁾ | [m/s ²] | | 200 | |
| Actuator length | [mm] | | 162 | |
| Slider length w/o stop | [mm] | | 215 ... 545 | |
| Slider weight | [kg] | | 0.224 ... 0.618 | |
| Slider diameter | [mm] | | 12 | |
| Pole pitch | [mm] | | 60 | |
| Force constant | [N/A] | 8.57 | 12.86 | 17.14 |
| Back EMF | [V/(m/s)] | | n.a | |
| Phase resistance | [ohm] | 16.5 | 24.5 | 32.5 |
| Phase inductance | [mH] | 7.3 | 11 | 14.6 |
| Position repeatability | [mm] | | ± 0.05 | |

¹⁾ Data valid at an ambient temperature of 40 °C

²⁾ Based on triangular move over maximum stroke with nominal payload

³⁾ Based on a 50 mm stroke, without payload

ETT032

| ETT032 | Unit | ETT032S1 | ETT032S2 | ETT032S3 |
|--|---------------------|------------|----------------|------------|
| Power supply 230 VAC | | | | |
| Effective stroke | [mm] | 30 ... 660 | 30 ... 630 | 30 ... 600 |
| Rated force | [N] | 13 | 19 | 25 |
| Peak force for 10 s ¹⁾ | [N] | 52 | 76 | 100 |
| Maximum speed ²⁾ | [m/s] | | 4 | |
| Peak acceleration ³⁾ | [m/s ²] | | 200 | |
| Actuator length | [mm] | 179 | 209 | 239 |
| Slider length w/o stop | [mm] | | 221 ... 851 | |
| Slider weight | [kg] | | 0.389 ... 1.63 | |
| Slider diameter | [mm] | | 16 | |
| Pole pitch | [mm] | | 60 | |
| Force constant | [N/A] | 19.12 | 30.65 | 40.32 |
| Back EMF | [V/(m/s)] | 7 | 10.6 | 14.4 |
| Phase resistance | [ohm] | 29 | 43 | 56 |
| Phase inductance | [mH] | 16 | 24 | 32 |
| Position repeatability | [mm] | | ± 0.05 | |

¹⁾ Data valid at an ambient temperature of 40 °C

²⁾ Based on triangular move over maximum stroke with nominal payload

³⁾ Based on a 50 mm stroke, without payload

ETT050

| ETT050 | Unit | ETT050S1 | ETT050S2 | ETT050S3 |
|--|---------------------|------------|---------------|------------|
| Power supply 230 VAC | | | | |
| Effective stroke | [mm] | 30 ... 720 | 30 ... 690 | 30 ... 540 |
| Rated force | [N] | 32 | 48 | 128 |
| Peak force for 10 s ¹⁾ | [N] | 128 | 192 | 512 |
| Maximum speed ²⁾ | [m/s] | | 4 | |
| Peak acceleration ³⁾ | [m/s ²] | | 200 | |
| Actuator length | [mm] | 206 | 236 | 386 |
| Slider length w/o stop | [mm] | | 254 ... 944 | |
| Slider weight | [kg] | | 0.56 ... 2.12 | |
| Slider diameter | [mm] | | 25 | |
| Pole pitch | [mm] | | 60 | |
| Force constant | [N/A] | 51.61 | 77.42 | 206.45 |
| Back EMF | [V/(m/s)] | 12.6 | 18.9 | 25.2 |
| Phase resistance | [ohm] | 44 | 66 | 44 |
| Phase inductance | [mH] | 28 | 42 | 38 |
| Position repeatability | [mm] | | ± 0.05 | |

¹⁾ Data valid at an ambient temperature of 40 °C

²⁾ Based on triangular move over maximum stroke with nominal payload

³⁾ Based on a 50 mm stroke, without payload

Standards and Conformance

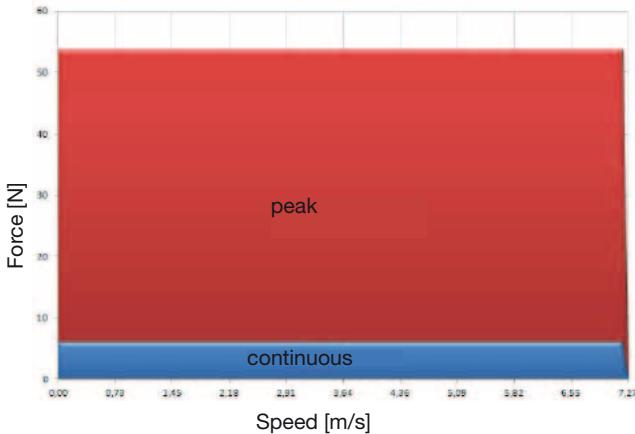
| | |
|---|---|
| Low Voltage Directive | <ul style="list-style-type: none"> • 2006/95/EC |
| EMC Directive | <ul style="list-style-type: none"> • 2004/108/EC |
| Generic standard - Emission standard for industrial environments | <ul style="list-style-type: none"> • CEI EN 61000-6-4:2007 |
| Generic standard - Immunity for industrial environments | <ul style="list-style-type: none"> • CEI EN 61000-6-2:2006 |

Marked 

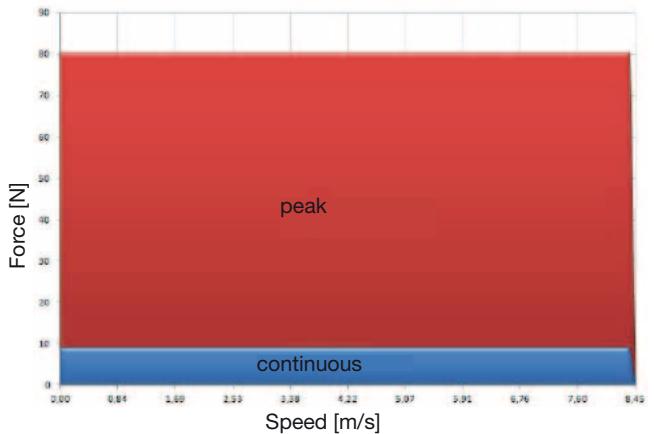
ETT - Electric Tubular Motor
Speed Force Curves

Speed Force Curves 1)

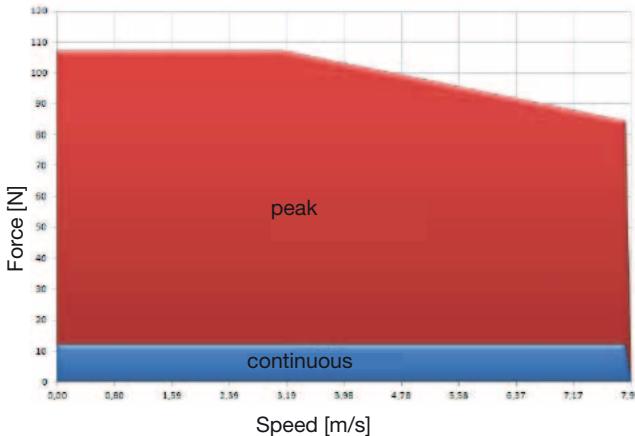
ETT025-S1 force / velocity curves



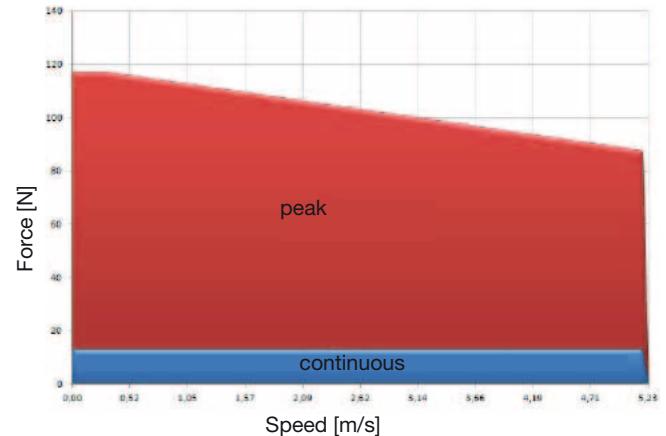
ETT025-S2 force / velocity curves



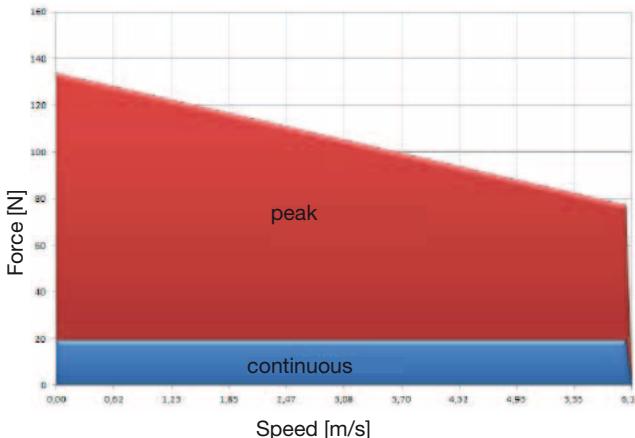
ETT025-S3 force / velocity curves



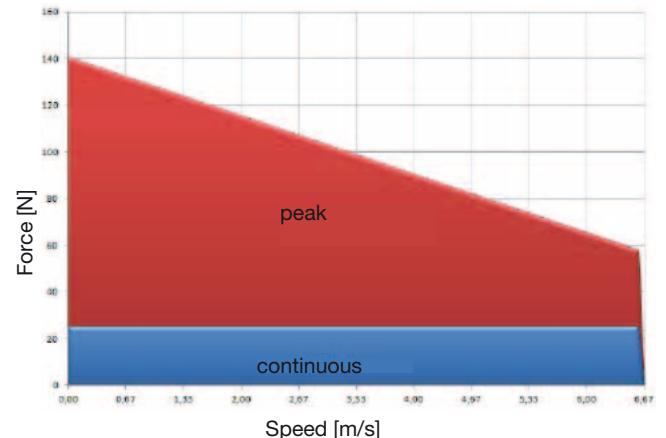
ETT032-S1 force / velocity curves



ETT032-S2 force / velocity curves



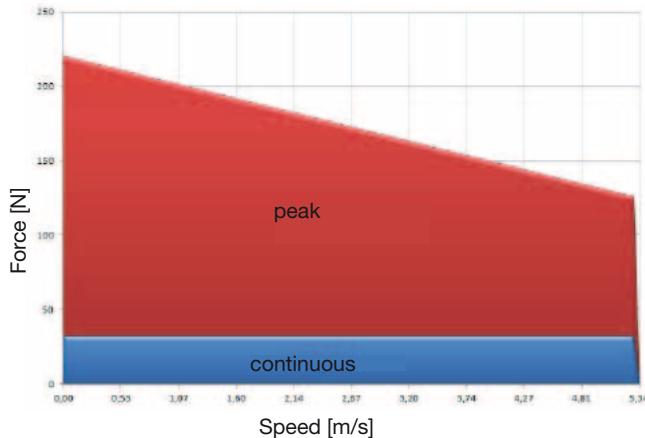
ETT032-S3 force / velocity curves



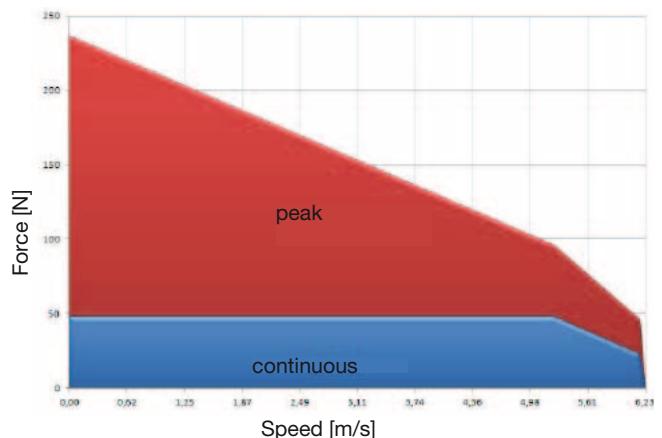
¹⁾ Based on triangular move over maximum stroke without payload

Speed Force Curves 1)

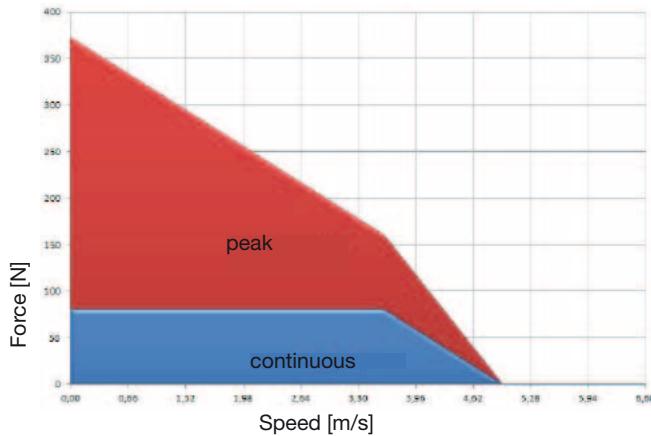
ETT050-S1 force / velocity curves



ETT050-S2 force / velocity curves



ETT050-S3 force / velocity curves



1) Based on triangular move over maximum stroke without payload

Associated Drives

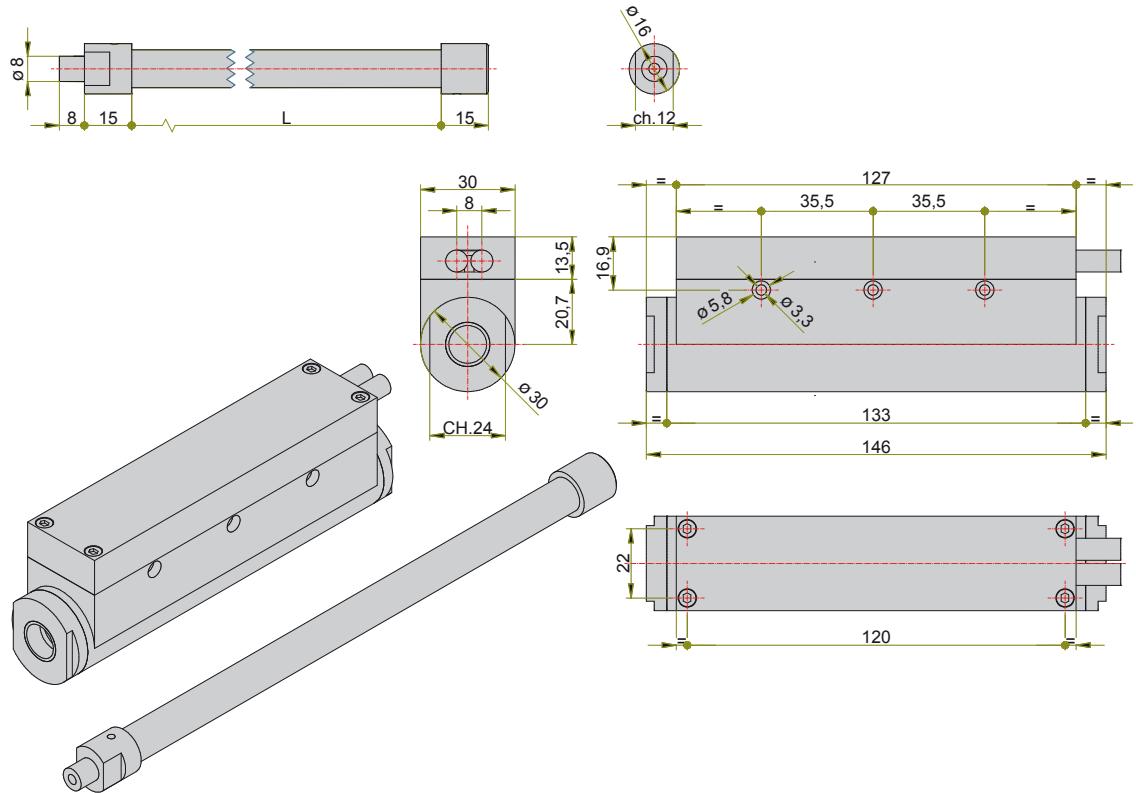
Parker can also offer suitable servo drives with a variety of different technology functions and communication options for use with the ETT series.

| ETT Type | Continuous current [A] | SLVD-N | Compx3 |
|----------|------------------------|--------|--------|
| ETT025S1 | 0.7 | | |
| ETT025S2 | 0.7 | | |
| ETT025S3 | 0.7 | | |
| ETT032S1 | 0.68 | | |
| ETT032S2 | 0.62 | | |
| ETT032S3 | 0.62 | | |
| ETT050S1 | 0.62 | | |
| ETT050S2 | 0.62 | | |
| ETT050S3 | 0.62 | | |

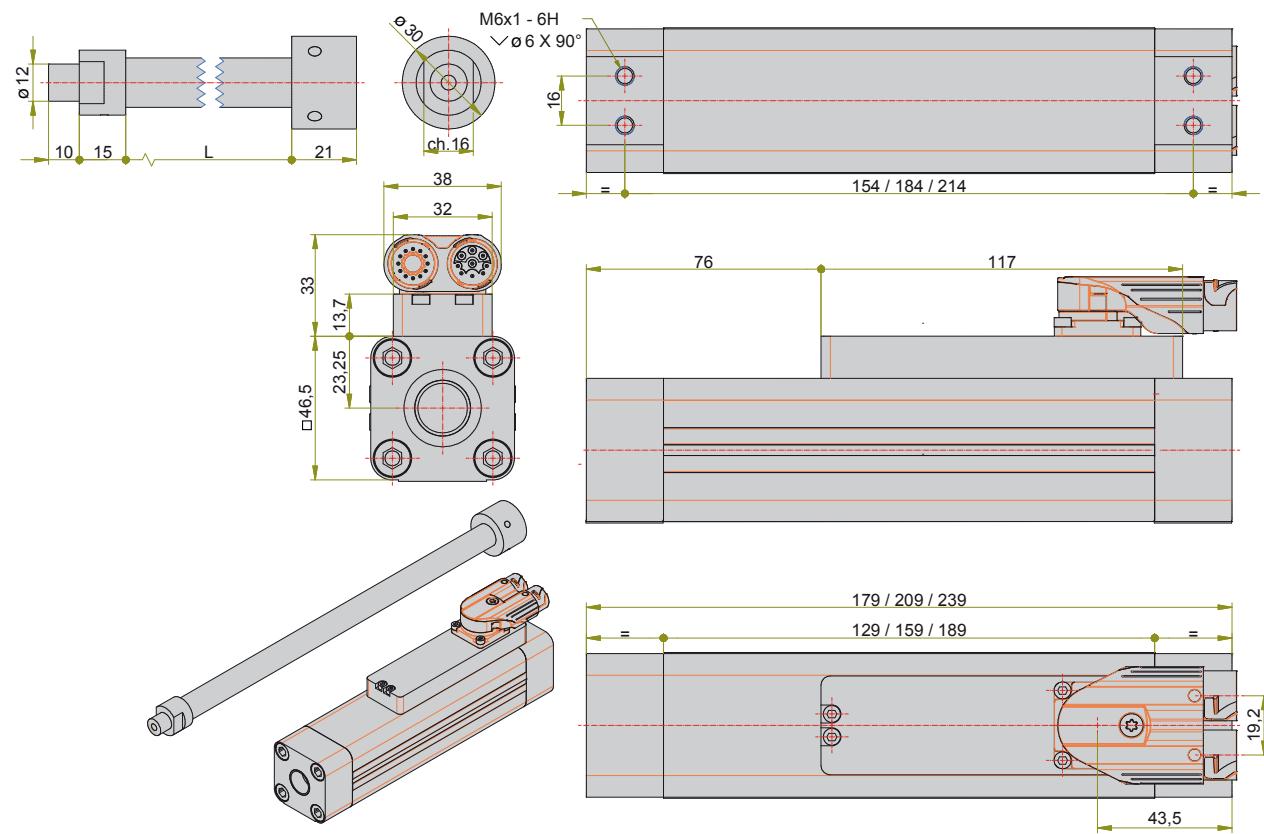
Electric Tubular Motor - ETT
Dimensions

Dimensions

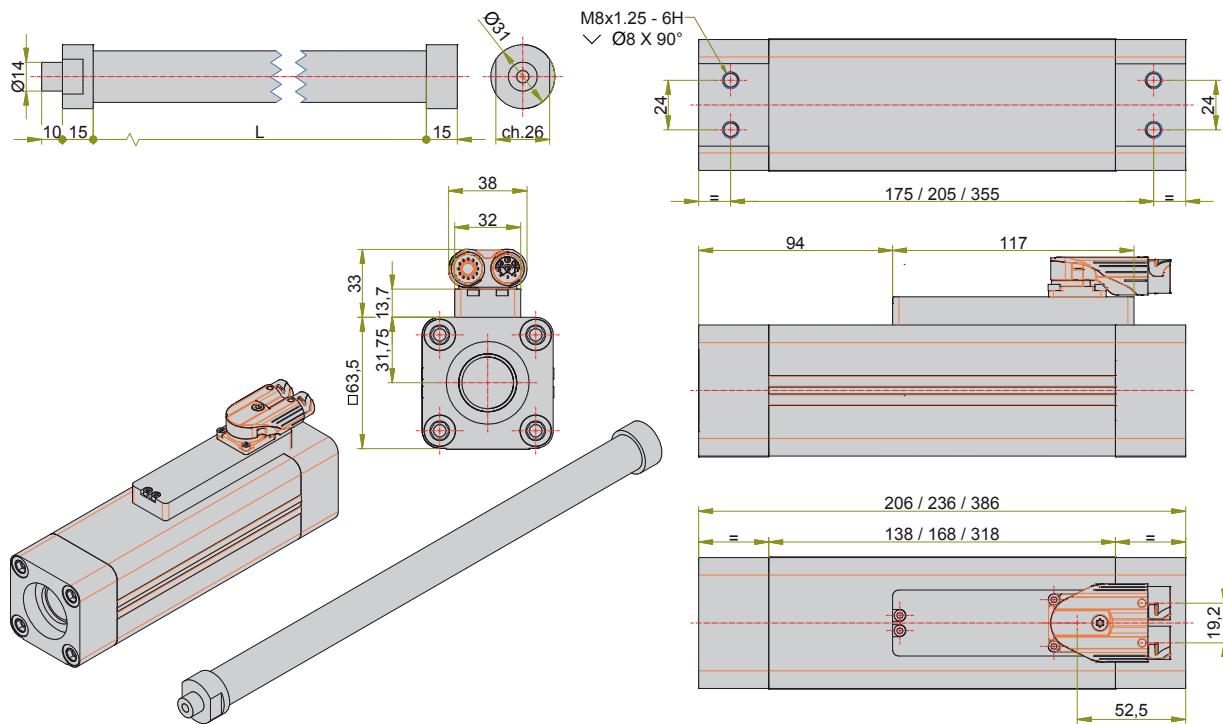
ETT025



ETT032

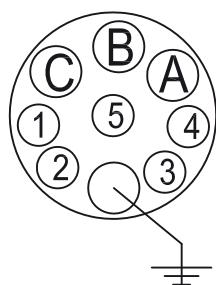


ETT050

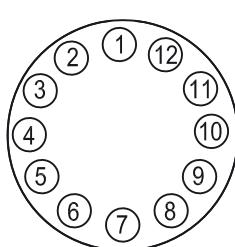


Layout and Connectors ETT032 & ETT050

Power connector



Feedback connector



| Pin | Description |
|-----|-------------|
| A | U |
| B | W |
| C | V |
| PE | PE |
| 1 | nc |
| 2 | nc |
| 3 | nc |
| 4 | nc |
| 5 | nc |

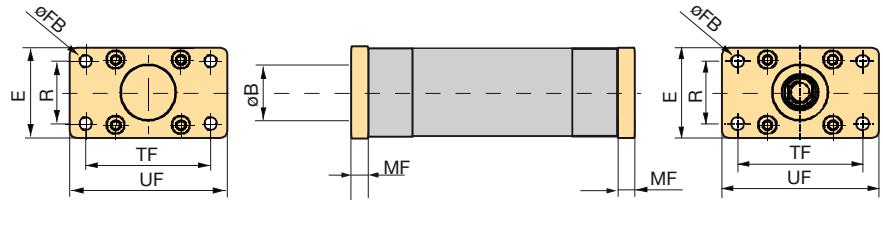
| Pin | Description |
|-----|-------------|
| 1 | cos - |
| 2 | cos + |
| 3 | nc |
| 4 | KTY84 - |
| 5 | KTY84 + |
| 6 | nc |
| 7 | sin - |
| 8 | sin + |
| 9 | nc |
| 10 | +5 V |
| 11 | nc |
| 12 | GND |

ETT025 available with flying leads only

Accessories and Options

Mounting Methods

Front and Rear Plate



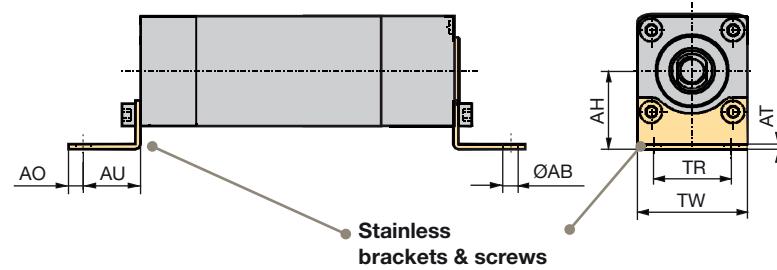
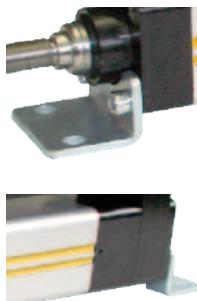
Front and rear plate dimensions

| | Order no. (1 piece) | UF | E | TF | ØFB | R | MF | ØB |
|---------------|------------------------|------|------|------|------|------|------|------|
| | | [mm] |
| ETT032 | 0112.918 | 80 | 48 | 64 | 7 | 32 | 10 | 30 |
| ETT050 | 0122.918 | 110 | 65 | 90 | 9 | 45 | 12 | 40 |

Spare parts delivery is including screws for mounting.

Please note that front and rear plate as spare parts must be ordered separately.

Mounting Brackets

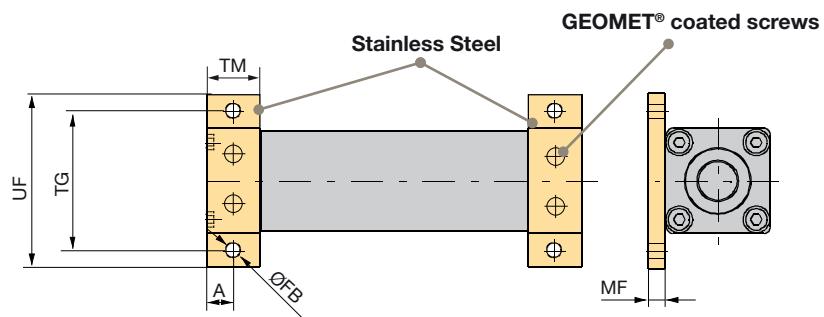
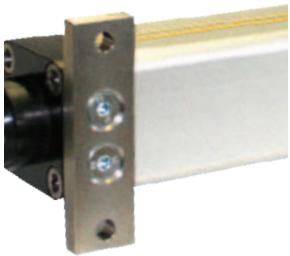


| | Order no. Front & Terminal bracket | AH | AT | TR | ØAB (H14) | AO | AU | TW |
|---------------|---------------------------------------|------|------|------|--------------|------|------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| ETT032 | 0112.916 | 32 | 4 | 32 | 7 | 8 | 24 | 46.5 |
| ETT050 | 0122.916 | 44 | 4 | 45 | 9 | 12 | 32 | 63.5 |

Spare parts delivery is including screws for mounting.

* For protection classes, we recommend GEOMET® coated screws (thin layer corrosion protection).

Mounting Flanges



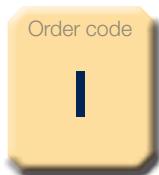
| | Order no. (1 piece) | TG | UF | ØFB | TM | MF | A |
|---------------|------------------------|------|------|------|------|------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| ETT032 | 0112.917 | 62 | 78 | 6.6 | 25 | 8 | 12.5 |
| ETT050 | 0122.917 | 84 | 104 | 9 | 30 | 10 | 15 |

Spare parts delivery is including screws for mounting.

* For protection classes, we recommend GEOMET® coated screws (thin layer corrosion protection).

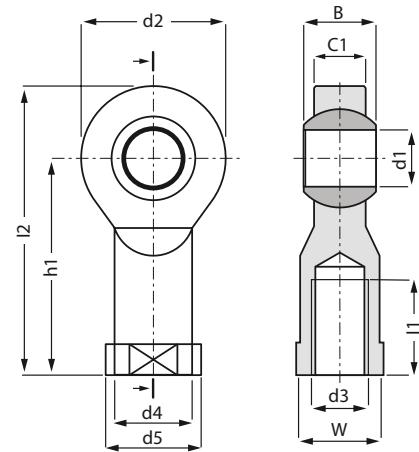
Cylinder Rod Version

Plastic Swivel Rod Eye



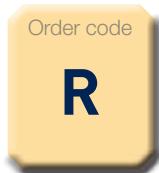
manufactured by igus®

| KBRM | -05 | -06 | -08 |
|----------------------|--------|--------|--------|
| | ETT025 | ETT032 | ETT050 |
| d1 E10 | 5 | 6 | 8 |
| d2 | 18 | 20 | 24 |
| d3 | M5 | M6 | M8 |
| d4 | 9.0 | 10.0 | 13.0 |
| d5 | 12.0 | 13.0 | 16.0 |
| C1 | 6.0 | 7.0 | 9.0 |
| B without MH* | 8 | 9 | 12 |
| B with MH* | 8.1 | 9.2 | 12.2 |
| h1 | 27 | 30 | 36 |
| I1 | 10 | 12 | 16 |
| I2 | 36 | 40 | 48 |
| W | SW09 | SW11 | SW14 |
| Pitch | 30° | 29° | 25° |



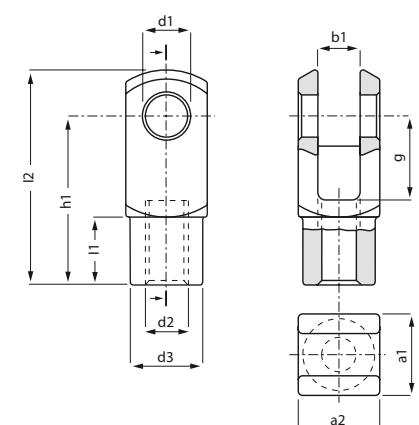
* MH: metal insert

Plastic Rod Clevis



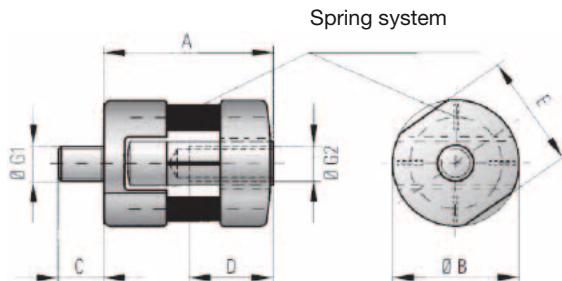
manufactured by igus®

| GERM | -05 | -06 | -08 |
|------------------------|--------|--------|--------|
| | ETT025 | ETT032 | ETT050 |
| d1 H9 | 5 | 6 | 8 |
| g h11 | 12 | 12 | 16 |
| a1 +0.3 / -0.16 | 12 | 12 | 16 |
| a2 +0.3 / -0.16 | 12 | 12 | 16 |
| b1 B13 | 6 | 6 | 8 |
| d2 6H * | M5 | M6 | M8 |
| d3 +0.3 / -0.3 | 10.0 | 10.0 | 14.0 |
| I2 +0.5 / -0.5 | 31.0 | 31.0 | 42.0 |
| h1 +0.3 / -0.3 | 24.0 | 24.0 | 32.0 |
| I1 +0.2 / -0.2 | 9.0 | 9.0 | 12.0 |



* Thread tolerance

Alignment Coupler



manufactured by R+W®

| LK | -70 | -150 | -300 |
|--|--------|--------|--------|
| | ETT025 | ETT032 | ETT050 |
| Pressure force [N] | 70 | 150 | 300 |
| A | 24 | 33 | 41.5 |
| B | 18 | 22 | 30 |
| G1/2 | M5 | M6 | M8 |
| G1/2* [Nm] | 4 | 7 | 18 |
| C | 6.5 | 8 | 10 |
| D | 10 | 12 | 16 |
| E | 16 | 20 | 27 |
| Mass | 11 | 23 | 57 |
| Lateral restoring force (max) [N] | 10 | 18 | 48 |
| lateral (max) [mm] | 0.5 | 0.5 | 0.5 |
| angular (max) | 1.5° | 1.5° | 1.5° |

* Max. tightening torque thread

Feedback

Internal position sensor

The standard position sensor is an analogue Sine/Cosine 1 Vpp signal. The table shows the different position feedback:

| | |
|--------------|-------------------|
| Sine /Cosine | Standard feedback |
|--------------|-------------------|

External position sensor

For highest precision demands an external position sensor is available:

| | |
|---------------------------------|---|
| TTK50 – HXQ0K02 | Hiperface external feedback, cable length 2 m <ul style="list-style-type: none"> Measure step: 0.244 µm at interpolation of the sine/cosine signals with e.g. 12 bit Length of period: 1 mm Measured length: 940 mm max. System accuracy (ambient temperature): ±10 µm (+20 °C) Repeat accuracy: <5 µm Hysteresis error: <10 µm |
| MSK500010KE1/20LDI000505 | Incremental linear feedback <ul style="list-style-type: none"> Resolution up to 0.001 mm Free programmable parameters (e.g. resolution) via optical interface Status LEDs Real-time data processing Scale MB500 (linear) / MR500 (radial) Fix and periodical reference signals |

Order Code

ETT Electric Tubular Motor (Complete Unit)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------|-----|-----|----|----|---|---|------|---|---|
| Order example | ETT | 032 | S1 | CS | M | N | | C | |

1 Type

ETT Electric Tubular Motor

2 Size

- 025** ISO 6432 - Bore 25 mm
- 032** ISO 6432 - Bore 32 mm
- 050** ISO 6432 - Bore 50 mm

3 Winding

- S1** Serial, Stack Length 1
- S2** Serial, Stack Length 2
- S3** Serial, Stack Length 3

4 Connection and Feedback Type

- CS** Intercontec Connector
(Springtec EEDA101NN000000002000) -
Feedback Analogue SinCos 1 Vpp -
Not for ETT025
- 1S** Flying leads, Length 1 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025
- 2S** Flying leads, Length 2.5 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025
- 5S** Flying leads, Length 5 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025

5 Rod End Mounting - Front / Rear

- M** Male Thread / Cap End
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- F** Female Thread / Cap End
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- N** Male Thread / Male Thread
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- G** Female Thread / Female Thread
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- W** Linear Coupling / Cap End
R+W: LK70 for ETT025, LK150 for ETT032,
LK300 for ETT050
- I** Swivel Rod Eye
igus KBRM-05 for ETT025
- R** Clevis
igus GERM05 for ETT025
- X** Special
(Customized version - Please contact Parker)

6 Fixed Field

- N** Fixed field

7 Stroke*

- 30** 30 mm
-
-
- 720** 720 mm

8 Protection Class

- C** IP67

9 Customized Options

Blank for standard motors

* Please see values in table "ETT - Length of Rod / Table of Stroke" (page 18)

ETT - Motor and Signal Cable

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
|---------------|---------|---|-----|----|---|----|----|---|----|
| Order example | ETT-CAP | X | 003 | PM | - | Y1 | SL | - | 00 |

1 Cable Type

ETT-CAP Power cable for ETT

ETT-CAS Signal cable for ETT - COS

2 Fixed Field

X Fixed field

3 Cable Length

- 001** 1 m
- 003** 3 m
- 005** 5 m
- 007** 7 m
- 010** 10 m
- 015** 15 m
- 020** 20 m

4 Application Type

PM High flex cable

5 Connector

- Y1** Intercontec Connector
- X** Special Execution

6 Drive Type

- SL** SLVD-N Drive
- C3** Compax3

7 Option

- 00** No special option
- Special customer drawing

ETT Electric Tubular Motor (Rod only)

| | 1 | 2 | 3 | 4 | 5 |
|---------------|-------|-----|---|------|---|
| Order example | ETT-R | 032 | M | | |

1 Type

ETT-R Electric Tubular Motor - Rod only

2 Size

- 025** ISO 6432 - Bore 25 mm
- 032** ISO 6432 - Bore 32 mm
- 050** ISO 6432 - Bore 50 mm

3 Rod End Mounting - Front / Rear

- M** Male Thread / Cap End
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- F** Female Thread / Cap End
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- N** Male Thread / Male Thread
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- G** Female Thread / Female Thread
(M5 for ETT025, M6 for ETT032, M8 for ETT050)
- W** Linear Coupling / Cap End
R+W: LK70 for ETT025, LK150 for ETT032,
LK300 for ETT050
- I** Swivel Rod Eye
igus KBRM-05 for ETT025
- R** Clevis
igus GERM05 for ETT025
- X** Special
(Customized version - Please contact Parker)

4 Length*

- 215** 215 mm
- ...
- ...
- 944** 944 mm

5 Customized Options

Blank for standard motors

* Please see values in table "ETT - Length of Rod / Table of Stroke" (page 18)

ETT Electric Tubular Motor (Coil only)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------------|-------|-----|----|----|---|---|---|
| Order example | ETT-C | 032 | S1 | CS | N | C | |

1 Type

ETT-C Electric Tubular Motor - Coil only

2 Size

- 025** ISO 6432 - Bore 25 mm
- 032** ISO 6432 - Bore 32 mm
- 050** ISO 6432 - Bore 50 mm

3 Winding

- S1** Serial, Stack Length 1
- S2** Serial, Stack Length 2
- S3** Serial, Stack Length 3

4 Connection and Feedback Type

- CS** Intercontec Connector
(Springtec EEDA101NN00000002000) -
Feedback Analogue SinCos 1 Vpp -
Not for ETT025
- 1S** Flying leads, Length 1 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025
- 2S** Flying leads, Length 2.5 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025
- 5S** Flying leads, Length 5 m, rear output -
Feedback Analogue SinCos 1 Vpp - Only ETT025

5 Fixed Field

- N** Fixed Field

6 Protection Class

- C** IP67

7 Customized Options

Blank for standard motors

ETT - Length of Rod / Table of Stroke

ETT025

| Length of Rod [mm] | Stroke | | |
|-----------------------|--------------|------------|------------|
| | Stack Length | | |
| | S1 [mm] | S2 [mm] | S3 [mm] |
| 215 | 30 | | |
| 245 | 60 | | |
| 275 | 90 | | |
| 305 | 120 | | |
| 335 | 150 | | |
| 365 | 180 | | |
| 395 | 210 | | |
| 425 | 240 | | |
| 455 | 270 | | |
| 485 | 300 | | |
| 515* | 330 | | |
| 545* | 360 | | |

ETT032

| Length of Rod [mm] | Stroke | | |
|-----------------------|--------------|------------|------------|
| | Stack Length | | |
| | S1 [mm] | S2 [mm] | S3 [mm] |
| 221 | 30 | 0 | 0 |
| 251 | 60 | 30 | 0 |
| 281 | 90 | 60 | 30 |
| 311 | 120 | 90 | 60 |
| 341 | 150 | 120 | 90 |
| 371 | 180 | 150 | 120 |
| 401 | 210 | 180 | 150 |
| 431 | 240 | 210 | 180 |
| 461 | 270 | 240 | 210 |
| 491 | 300 | 270 | 240 |
| 521 | 330 | 300 | 270 |
| 551 | 360 | 330 | 300 |
| 581 | 390 | 360 | 330 |
| 611 | 420 | 390 | 360 |
| 641 | 450 | 420 | 390 |
| 671 | 480 | 450 | 420 |
| 701 | 510 | 480 | 450 |
| 731* | 540 | 510 | 480 |
| 761* | 570 | 540 | 510 |
| 791* | 600 | 570 | 540 |
| 821* | 630 | 600 | 570 |
| 851* | 660 | 630 | 600 |

ETT050

| Length of Rod [mm] | Stroke | | |
|-----------------------|--------------|------------|------------|
| | Stack Length | | |
| | S1 [mm] | S2 [mm] | S3 [mm] |
| 254 | 30 | 0 | 0 |
| 284 | 60 | 30 | 0 |
| 314 | 90 | 60 | 0 |
| 344 | 120 | 90 | 0 |
| 374 | 150 | 120 | 0 |
| 404 | 180 | 150 | 0 |
| 434 | 210 | 180 | 30 |
| 464 | 240 | 210 | 60 |
| 494 | 270 | 240 | 90 |
| 524 | 300 | 270 | 120 |
| 554 | 330 | 300 | 150 |
| 584 | 360 | 330 | 180 |
| 614 | 390 | 360 | 210 |
| 644 | 420 | 390 | 240 |
| 674 | 450 | 420 | 270 |
| 704 | 480 | 450 | 300 |
| 734 | 510 | 480 | 330 |
| 764 | 540 | 510 | 360 |
| 794 | 570 | 540 | 390 |
| 824 | 600 | 570 | 420 |
| 854 | 630 | 600 | 450 |
| 884* | 660 | 630 | 480 |
| 914* | 690 | 660 | 510 |
| 944* | 720 | 690 | 540 |

* Needs specific mechanical mounting. Special length available on request

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



Aerospace

Key Markets

- Aftermarket services
- Commercial transports
- Engines
- General & business aviation
- Helicopters
- Launch vehicles
- Military aircraft
- Missiles
- Power generation
- Regional transports
- Unmanned aerial vehicles

Key Products

- Control systems & actuation products
- Engine systems & components
- Fluid conveyance systems & components
- Fluid metering, delivery & atomization devices
- Fuel systems & components
- Fuel tank inerting systems
- Hydraulic systems & components
- Thermal management
- Wheels & brakes

Climate Control

Key Markets

- Agriculture
- Air conditioning
- Construction Machinery
- Food & beverage
- Industrial machinery
- Life sciences
- Oil & gas
- Precision cooling
- Process
- Refrigeration
- Transportation

Key Products

- Accumulators
- Advanced actuators
- CO₂ controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Heat exchangers
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Smart pumps
- Solenoid valves
- Thermostatic expansion valves

Electromechanical

Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydraulic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions

Filtration

Key Markets

- Aerospace
- Food & beverage
- Industrial plant & equipment
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation & renewable energy
- Process
- Transportation
- Water Purification

Key Products

- Analytical gas generators
- Compressed air filters & dryers
- Engine air, coolant, fuel & oil filtration systems
- Fluid condition monitoring systems
- Hydraulic & lubrication filters
- Hydrogen, nitrogen & zero air generators
- Instrumentation filters
- Membrane & fiber filters
- Microfiltration
- Sterile air filtration
- Water desalination & purification filters & systems



Fluid & Gas Handling

Key Markets

- Aerial lift
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Life sciences
- Marine
- Mining
- Mobile
- Oil & gas
- Renewable energy
- Transportation

Key Products

- Check valves
- Connectors for low pressure fluid conveyance
- Deep sea umbilicals
- Diagnostic equipment
- Hose couplings
- Industrial hose
- Mooring systems & power cables
- PTFE hose & tubing
- Quick couplings
- Rubber & thermoplastic hose
- Tube fittings & adapters
- Tubing & plastic fittings

Hydraulics

Key Markets

- Aerial lift
- Agriculture
- Alternative energy
- Construction machinery
- Forestry
- Industrial machinery
- Machine tools
- Marine
- Material handling
- Mining
- Oil & gas
- Power generation
- Refuse vehicles
- Renewable energy
- Truck hydraulics
- Turf equipment

Key Products

- Accumulators
- Cartridge valves
- Electrohydraulic actuators
- Human machine interfaces
- Hybrid drives
- Hydraulic cylinders
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Hydrostatic steering
- Integrated hydraulic circuits
- Power take-offs
- Power units
- Rotary actuators
- Sensors

Pneumatics

Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors

Process Control

Key Markets

- Alternative fuels
- Biopharmaceuticals
- Chemical & refining
- Food & beverage
- Marine & shipbuilding
- Medical & dental
- Microelectronics
- Nuclear Power
- Offshore oil exploration
- Oil & gas
- Pharmaceuticals
- Power generation
- Pulp & paper
- Steel
- Water/wastewater

Key Products

- Analytical Instruments
- Analytical sample conditioning products & systems
- Chemical injection fittings & valves
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves, regulators & digital flow controllers
- Industrial mass flow meters/controllers
- Permanent no-weld tube fittings
- Precision industrial regulators & flow controllers
- Process control double block & bleeds
- Process control fittings, valves, regulators & manifold valves
- Regulators
- Valves

Sealing & Shielding

Key Markets

- Aerospace
- Chemical processing
- Consumer
- Fluid power
- General industrial
- Information technology
- Life sciences
- Microelectronics
- Military
- Oil & gas
- Power generation
- Renewable energy
- Telecommunications
- Transportation

Key Products

- Dynamic seals
- Elastomeric o-rings
- Electro-medical instrument design & assembly
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- High temperature metal seals
- Homogeneous & inserted elastomeric shapes
- Medical device fabrication & assembly
- Metal & plastic retained composite seals
- Shielded optical windows
- Silicone tubing & extrusions
- Thermal management
- Vibration dampening

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