

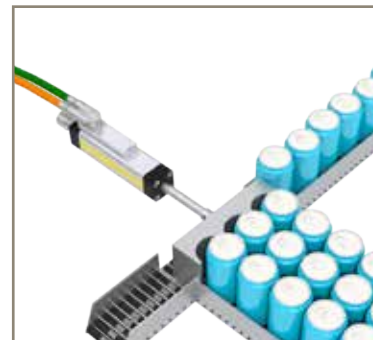


aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



## ETT - Electric Tubular Motor

Linear Handling and Pick & Place Applications



ENGINEERING YOUR SUCCESS.



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- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
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**Electric Tubular Motor - ETT**

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# Parker Hannifin

## The global leader in motion and control technologies

### 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.

### Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

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Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

### Electromechanical Worldwide Manufacturing Locations

#### Europe

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Dijon, France  
Offenburg, Germany  
Filderstadt, Germany  
Milan, Italy

#### Asia

Wuxi, China  
Jangan, Korea  
Chennai, India

#### North America

Rohnert Park, California  
Irwin, Pennsylvania  
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### Local Manufacturing and Support in Europe

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Offenburg, Germany



Milan, Italy



Littlehampton, UK



Filderstadt, Germany



Dijon, France

# Electric Tubular Motor - ETT

## Overview

### Description

ETT is a direct thrust linear motor actuator, ideally suited to 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, which thanks to their high performance, are able to deliver impressive thrust values up to 2083 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 for 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
- Four lengths and four 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

### Target markets

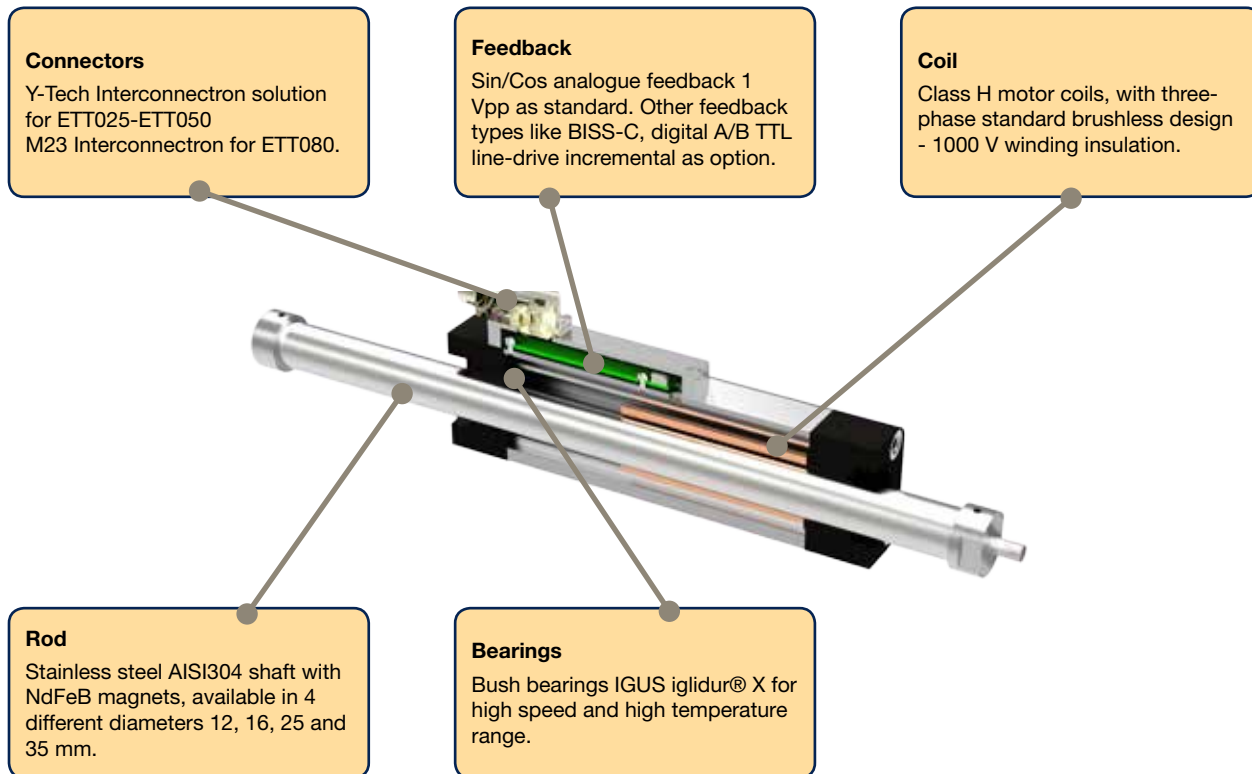
- Food, Pharmaceutical & Beverage
- Packaging Machines
- Material Handling
- Factory Automation



### Technical Characteristics - Overview

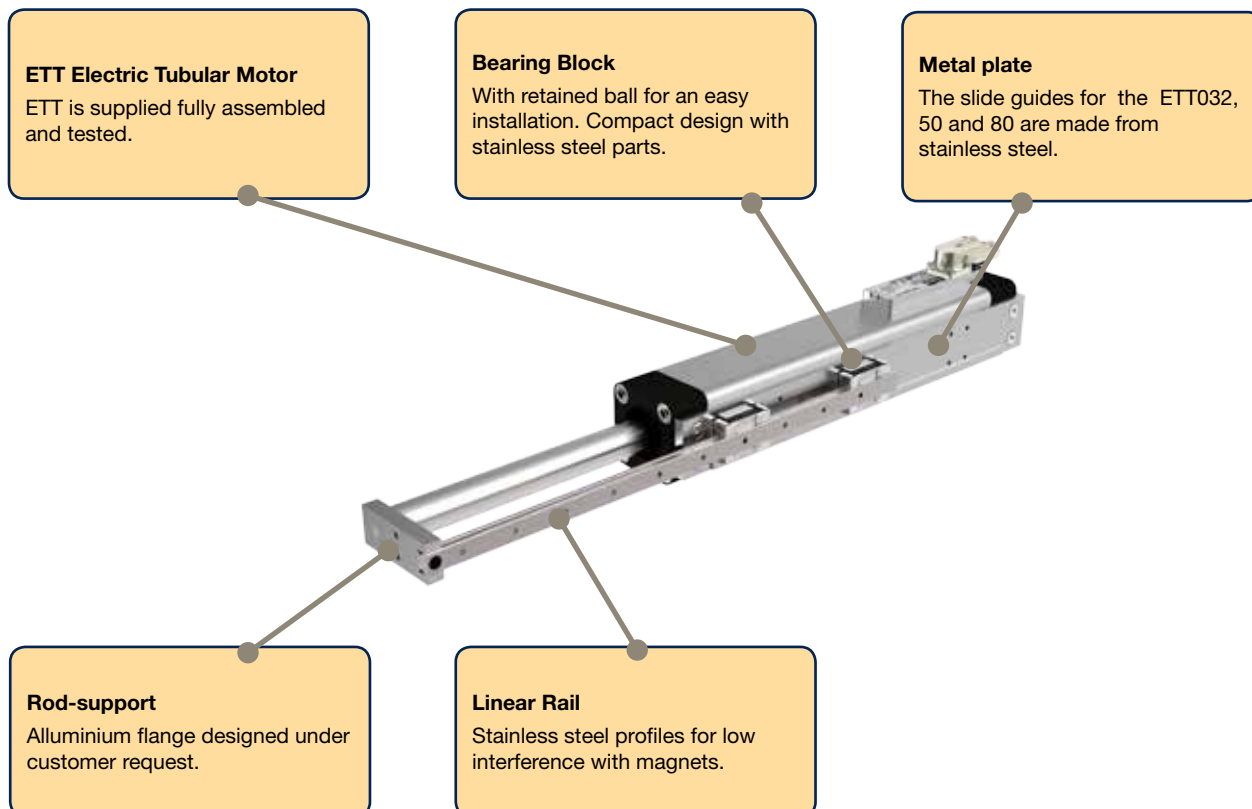
<b>Motor type</b>	Linear tubular servo motor
<b>Rod</b>	AISI304 (stainless steel)
<b>Rated force</b>	8...295 N
<b>Peak force</b>	56...2083 N
<b>Speed range</b>	up to 8 m/s
<b>Acceleration range</b>	up to 350 m/s <sup>2</sup>
<b>Mounting</b>	Screw fixed
<b>Shaft end</b>	Front male thread, Rear cap end Other options available
<b>Cooling</b>	Natural ventilation
<b>Protection level (IEC60034-5)</b>	IP67
<b>Feedback sensor</b>	Analog Hall 1Vpp (SinCos 90°) Other feedback on request
<b>Thermal protection</b>	KTY PTC or PT1000 as option
<b>Marking</b>	CE
<b>Voltage supply</b>	230 VAC (all sizes) 400 VAC (only ETT80)
<b>Temperature class</b>	Class F
<b>Connections</b>	Connectors Flying leads as option
<b>Bi-directional accuracy</b>	0.5 mm

### Product Design ETT Tubular Motor



### Product Design ETT Tubular Motor with Slide Guide System

For more information please check page 20



# Technical Characteristics

## Technical Data

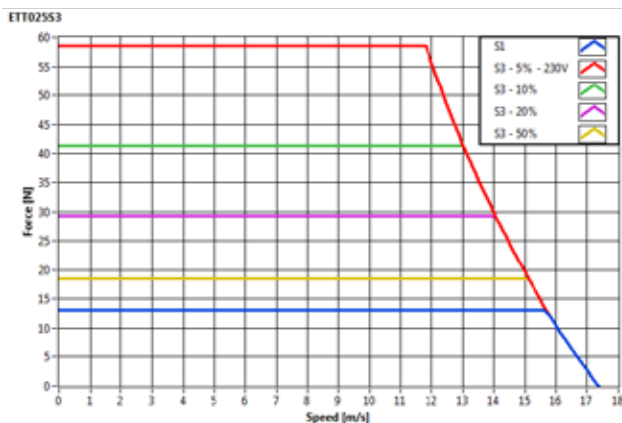
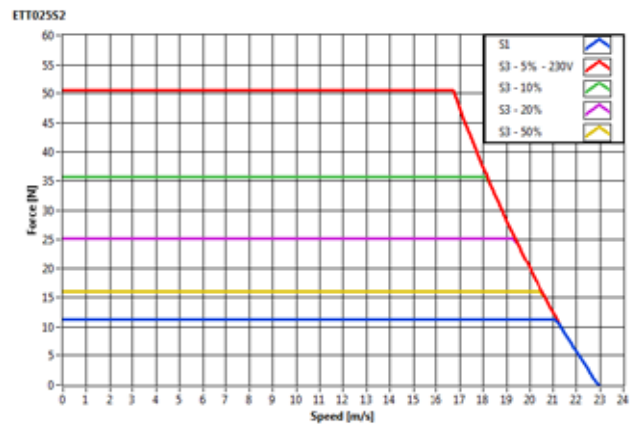
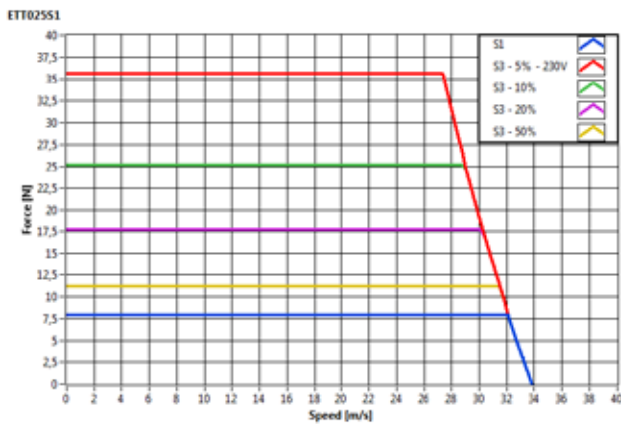
### ETT025

ETT025	Unit	ETT025S1*	ETT025S2	ETT025S3*
Peak force <sup>1) 2) 4)</sup>	[N]	56	80	93
Peak current	[A]	4.8	4.6	4.0
<i>Without heatsink plate</i>				
Continous stall force duty cycle S1 <sup>1)</sup>	[N]	8	11	13
Continous stall current duty cycle S1 <sup>1)</sup>	[A]	0.7	0.7	0.6
Force @ duty cycle S3 5% <sup>1)</sup>	[N]	36	50	59
Current @ duty cycle S3 5% <sup>1)</sup>	[A]	3.0	2.9	2.6
Force constant	[N/A]	11.80	17.37	22.95
Back EMF (ph-ph,rms)	[V <sub>rms</sub> /(m/s)]	6.81	10.03	13.25
Phase resistance	[ohm]	17.17	25.06	33.89
Phase inductance	[mH]	5.42	7.89	10.46
Power supply (drive side)	VAC		230	
Max DC bus voltage	VDC		325	
Pole pitch			60	
Maximum stroke <sup>5)</sup>	[mm]		360	
Peak acceleration <sup>3)</sup>	[m/s <sup>2</sup> ]	155	220	254
Position repeatability	[mm]		0.05	
Accuracy	[mm]		0.5	

<sup>1)</sup> Data valid at an ambient temperature of 25 °C; <sup>2)</sup> Based on triangular move over maximum stroke with normal payload

<sup>3)</sup> Based on a 100 mm stroke, without payload; <sup>4)</sup> Considering a duty cycle of S3 2%; <sup>5)</sup> Other value under request

Manufacturing tolerance ±10%; \*Duty cycle S1 and S3 compliant to CEI EN60034-1 with max time 5 minutes



Curves based on rod movement.

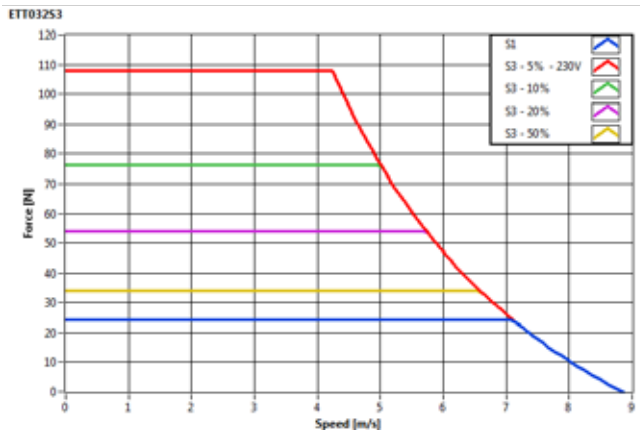
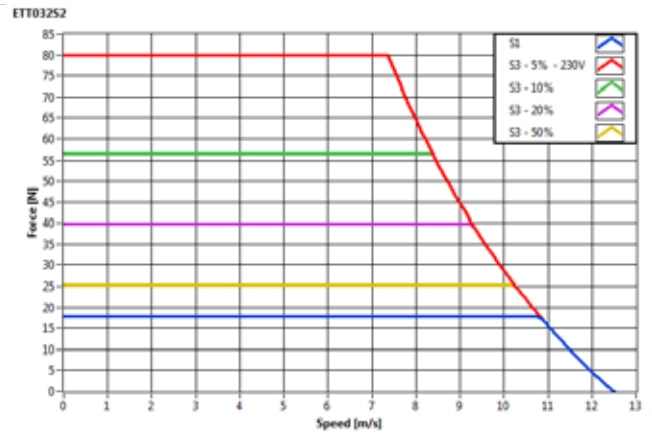
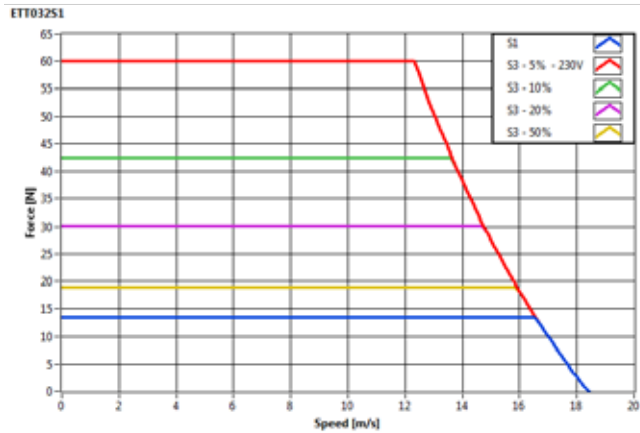
Curves based on a theoretical system without load and without stroke limits. Max. duty cycle 5 minutes.

These ratings are valid for Parker Hannifin drives. Other drives might not achieve the same ratings.

**ETT032**

ETT032	Unit	ETT032S1*	ETT032S2	ETT032S3*
<b>Peak force</b> <sup>1) 2) 4)</sup>	[N]	95	126	169
<b>Peak current</b>	[A]	4.4	4.0	3.8
<i>Without heatsink plate</i>				
<b>Continous stall force duty cycle S1</b> <sup>1)</sup>	[N]	13	18	24
<b>Continous stall current duty cycle S1</b> <sup>1)</sup>	[A]	0.6	0.6	0.5
<b>Force @ duty cycle S3 5%</b> <sup>1)</sup>	[N]	60	80	107
<b>Current @ duty cycle S3 5%</b> <sup>1)</sup>	[A]	2.8	2.5	2.4
<b>Force constant</b>	[N/A]	21.67	31.89	45.05
<b>Back EMF (ph-ph,rms)</b>	[V <sub>rms</sub> /(m/s)]	12.51	18.41	26.01
<b>Phase resistance</b>	[ohm]	31.46	43.84	58.50
<b>Phase inductance</b>	[mH]	14.57	21.75	28.94
<b>Power supply (drive side)</b>	VAC		230	
<b>Max DC bus voltage</b>	VDC		325	
<b>Pole pitch</b>			60	
<b>Maximum stroke</b> <sup>5)</sup>	[mm]	660	630	600
<b>Peak acceleration</b> <sup>3)</sup>	[m/s <sup>2</sup> ]	224	258	307
<b>Position repeatability</b>	[mm]		0.05	
<b>Accuracy</b>	[mm]		0.5	

<sup>1)</sup> Data valid at an ambient temperature of 25 °C; <sup>2)</sup> Based on triangular move over maximum stroke with normal payload  
<sup>3)</sup> Based on a 100 mm stroke, without payload; <sup>4)</sup> Considering a duty cycle of S3 2%; <sup>5)</sup> Other value under request  
 Manufacturing tolerance ±10%; \*Duty cycle S1 and S3 compliant to CEI EN60034-1 with max time 5 minutes.



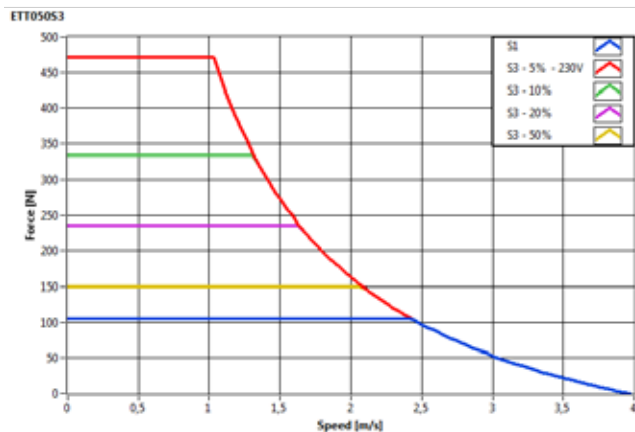
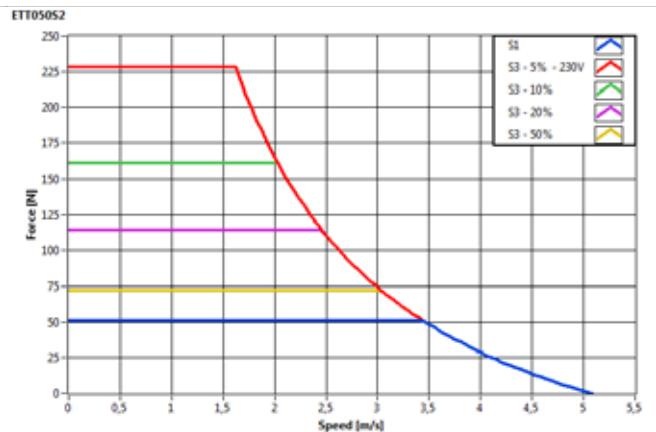
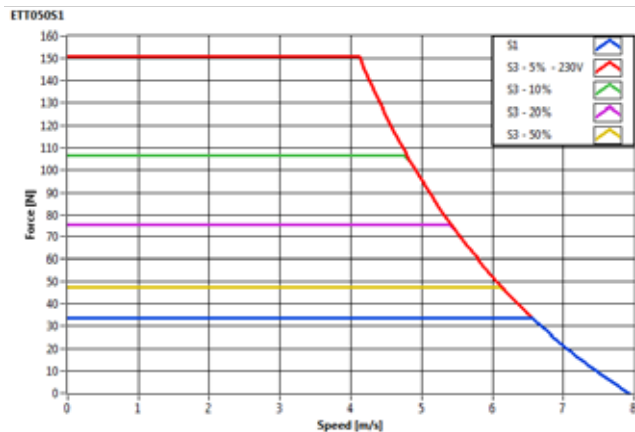
Curves based on rod movement.  
 Curves based on a theoretical system without load and without stroke limits. Max. duty cycle 5 min.  
 These ratings are valid for Parker Hannifin drives. Other drives might not achieve the same ratings.



ETT050

ETT050	Unit	ETT050S1*	ETT050S2	ETT050S3*
Peak force <sup>1) 2) 4)</sup>	[N]	238	361	746
Peak current	[A]	4.7	4.6	7.4
<i>Without heatsink plate</i>				
Continous stall force duty cycle S1 <sup>1)</sup>	[N]	34	51	106
Continous stall current duty cycle S1 <sup>1)</sup>	[A]	0.7	0.7	1.1
Force @ duty cycle S3 5% <sup>1)</sup>	[N]	151	228	472
Current @ duty cycle S3 5% <sup>1)</sup>	[A]	3.0	2.9	4.7
Force constant	[N/A]	50.30	78.55	100.53
Back EMF (ph-ph,rms)	[V <sub>rms</sub> /(m/s)]	41.07	64.13	82.08
Phase resistance	[ohm]	42.41	62.70	58.04
Phase inductance	[mH]	23.55	34.70	22.70
Power supply (drive side)	VAC		230	
Max DC bus voltage	VDC		325	
Pole pitch			60	
Maximum stroke <sup>5)</sup>	[mm]	720	690	540
Peak acceleration <sup>3)</sup>	[m/s <sup>2</sup> ]	199	264	337
Position repeatability	[mm]		0.05	
Accuracy	[mm]		0.5	

<sup>1)</sup> Data valid at an ambient temperature of 25 °C; <sup>2)</sup> Based on triangular move over maximum stroke with normal payload  
<sup>3)</sup> Based on a 100 mm stroke, without payload; <sup>4)</sup> Considering a duty cycle of S3 2%; <sup>5)</sup> Other value under request  
 Manufacturing tolerance ±10%; \*Duty cycle S1 and S3 compliant to CEI EN60034-1 with max time 5 minutes.

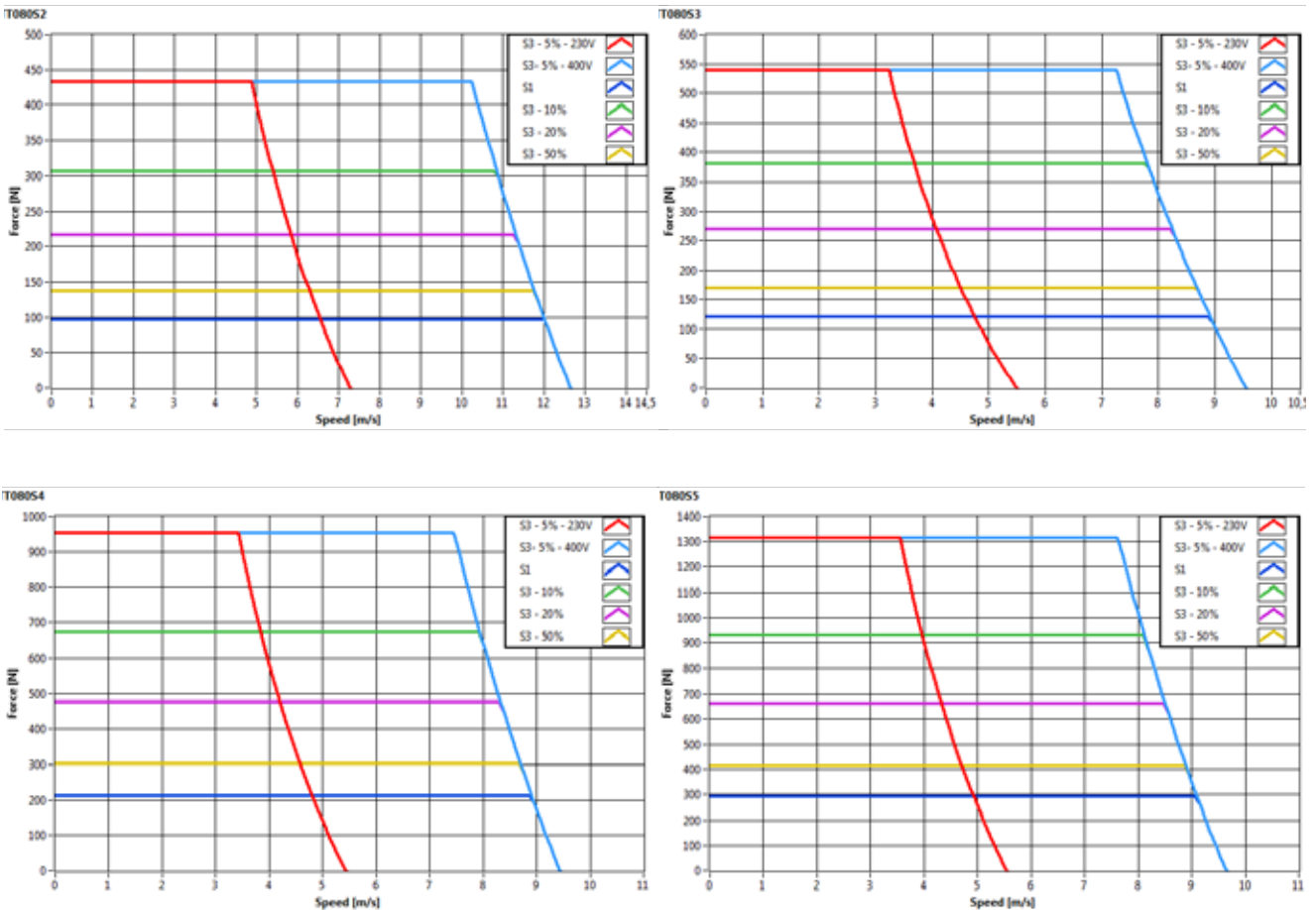


Curves based on rod movement.  
 Curves based on a theoretical system without load and without stroke limits. Max. duty cycle 5 min.  
 These ratings are valid for Parker Hannifin drives. Other drives might not achieve the same ratings.

**ETT080**

ETT080 Power supply 230-400 VAC	Unit	ETT080S2	ETT080S3*	ETT080S4	ETT080S5
Peak force <sup>1) 2) 4)</sup>	[N]	686	852	1506	2083
Peak current	[A]	12.5	11.7	20.5	29.0
<i>Without heatsink plate</i>					
Continous stall force duty cycle S1 <sup>1)</sup>	[N]	97	120	213	295
Continous stall current duty cycle S1 <sup>1)</sup>	[A]	1.8	1.7	2.9	4.1
Force @ duty cycle S3 5% <sup>1)</sup>	[N]	434	539	952	1318
Current @ duty cycle S3 5% <sup>1)</sup>	[A]	7.9	7.4	13.0	18.3
Force constant	[N/A]	54.80	72.57	73.44	71.88
Back EMF (ph-ph,rms)	[V <sub>rms</sub> /(m/s)]	31.64	59.26	42.4	41.5
Phase resistance	[ohm]	11.14	14.81	7.65	5.25
Phase inductance	[mH]	12.80	17.06	7.50	5.51
Power supply (drive side)	VAC	230/400			
Max DC bus voltage	VDC	325/566			
Pole pitch		60			
Maximum stroke <sup>5)</sup>	[mm]	736	706	586	460
Peak acceleration <sup>3)</sup>	[m/s <sup>2</sup> ]	238	264	330	352
Position repeatability	[mm]	0.05			
Accuracy	[mm]	0.5			

<sup>1)</sup> Data valid at an ambient temperature of 25 °C; <sup>2)</sup> Based on triangular move over maximum stroke with normal payload  
<sup>3)</sup> Based on a 100 mm stroke, without payload; <sup>4)</sup> Considering a duty cycle of S3 2%; <sup>5)</sup> Other value under request  
 Manufacturing tolerance ±10%; \*Duty cycle S3 compliant to CEI EN60034-1 with max time 5 minutes.



Curves based on road movement.  
 Curves based on a theoretical system without load and without stroke limits. Max. duty cycle 5 min.  
 These ratings are valid for Parker Hannifin drives. Other drives might not achieve the same ratings.

## Standards and Conformance

### Low Voltage Directive

- 2006/95/EC

### EMC Directive

- 2004/108/EC

### Generic standard - Emission standard for industrial environments

- CEI EN 61000-6-4:2007

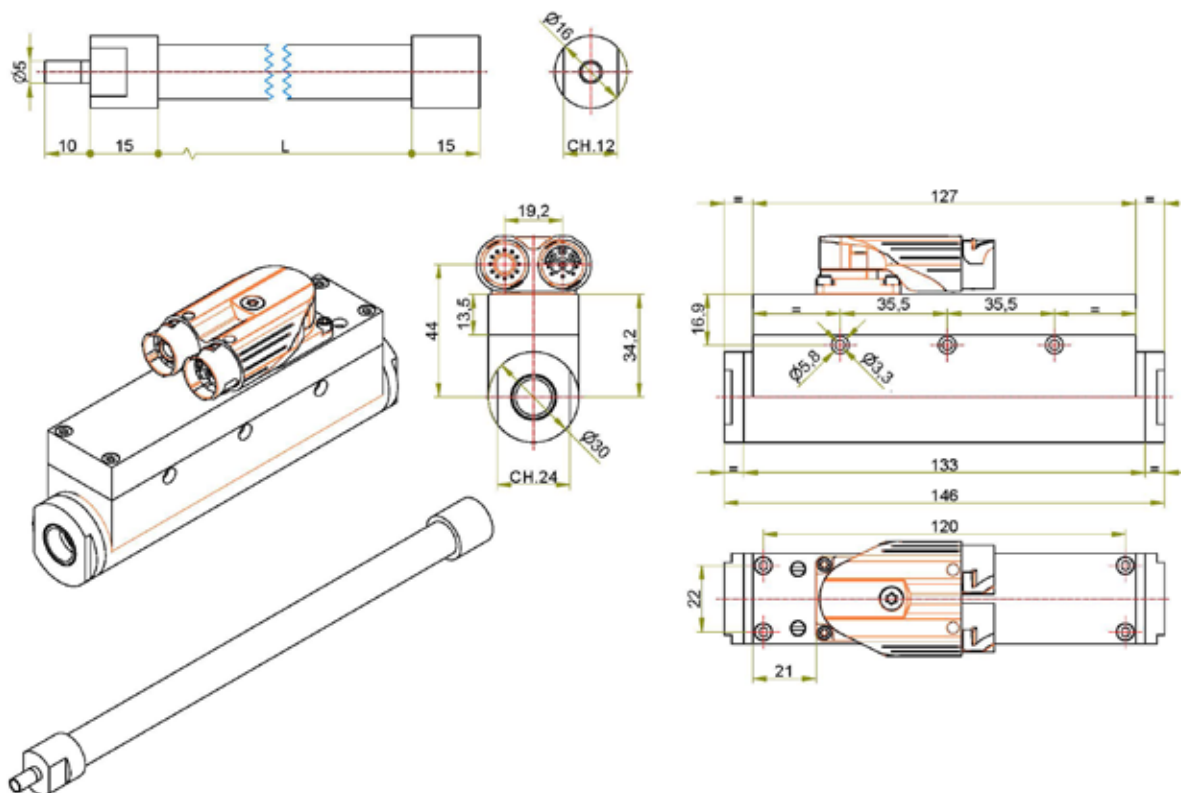
### Generic standard - Immunity for industrial environments

- CEI EN 61000-6-2:2006

Marked 

## Dimensions

### ETT025



## ETT - Length of Rod / Table of Stroke

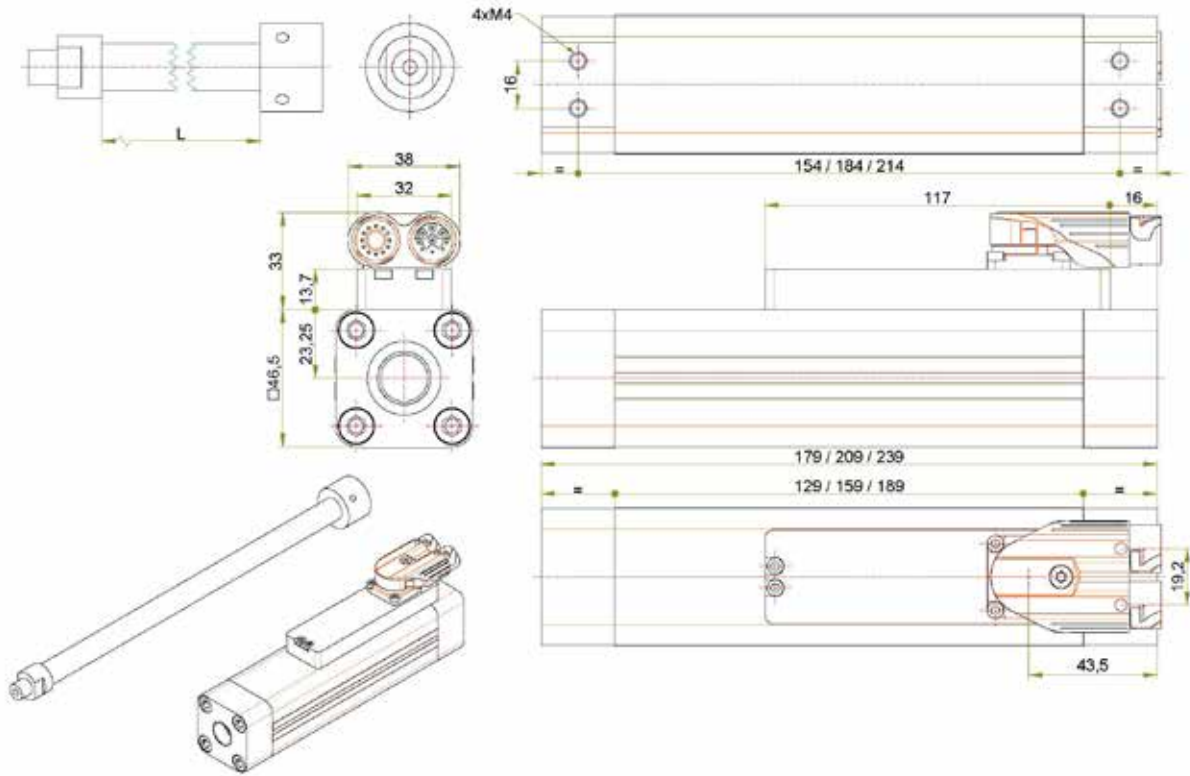
### ETT025

Part Number Codification	Rod "F"		Rod "N"		Rod "M"		Rod "G"		Stroke		
	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	S1 [mm]	S2 [mm]	S3 [mm]
<b>0205</b>	204	0.216	216	0.216	206	0.216	212	0.217	20	20	20
<b>0215</b>	214	0.23	226	0.23	216	0.23	222	0.231	30	30	30
<b>0245</b>	244	0.271	256	0.271	246	0.271	252	0.272	60	60	60
<b>0275</b>	274	0.311	286	0.311	276	0.311	282	0.312	90	90	90
<b>0305</b>	304	0.352	316	0.352	306	0.352	312	0.353	120	120	120
<b>0335</b>	334	0.393	346	0.393	336	0.393	342	0.394	150	150	150
<b>0365</b>	364	0.434	376	0.434	366	0.434	372	0.435	180	180	180
<b>0395</b>	394	0.475	406	0.475	396	0.475	402	0.476	210	210	210
<b>0425</b>	424	0.515	436	0.515	426	0.515	432	0.516	240	240	240
<b>0455</b>	454	0.556	466	0.556	456	0.556	462	0.557	270	270	270
<b>0485</b>	484	0.597	496	0.597	486	0.597	492	0.598	300	300	300
<b>0515</b>	514	0.638	526	0.638	516	0.638	522	0.639	330	330	330
<b>0545</b>	544	0.679	556	0.679	546	0.679	552	0.68	360	360	360
								Coil weight [kg]	0.5	0.5	0.6

Max rod length allowed 750 mm.

Dimensions

ETT032



ETT - Length of Rod / Table of Stroke

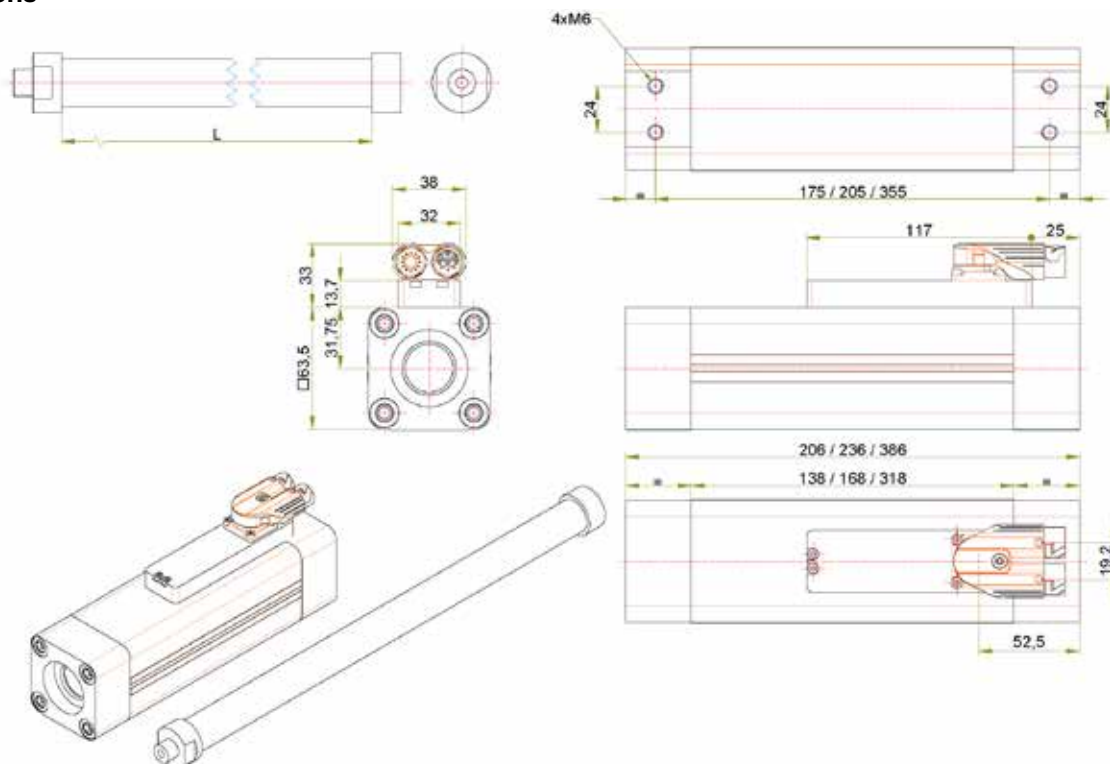
ETT032

Part Number Codification	Rod "F"		Rod "N"		Rod "M"		Rod "G"		Stroke			
	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	S1 [mm]	S2 [mm]	S3 [mm]	
0221	227	0.185	239	0.184	228	0.184	237	0.186	30			
0251	257	0.227	269	0.226	258	0.226	267	0.228	60	30		
0281	287	0.268	299	0.267	288	0.267	297	0.269	90	60	30	
0311	317	0.31	329	0.309	318	0.309	327	0.311	120	90	60	
0341	347	0.352	359	0.351	348	0.351	357	0.353	150	120	90	
0371	377	0.394	389	0.393	378	0.393	387	0.395	180	150	120	
0401	407	0.436	419	0.435	408	0.435	417	0.437	210	180	150	
0431	437	0.478	449	0.477	438	0.477	447	0.479	240	210	180	
0461	467	0.519	479	0.518	468	0.518	477	0.52	270	240	210	
0491	497	0.561	509	0.56	498	0.56	507	0.562	300	270	240	
0521	527	0.603	539	0.602	528	0.602	537	0.604	330	300	270	
0551	557	0.645	569	0.644	558	0.644	567	0.646	360	330	300	
0581	587	0.687	599	0.686	588	0.686	597	0.688	390	360	330	
0611	617	0.729	629	0.728	618	0.728	627	0.73	420	390	360	
0641	647	0.771	659	0.77	648	0.77	657	0.772	450	420	390	
0671	677	0.812	689	0.811	678	0.811	687	0.813	480	450	420	
0701	707	0.854	719	0.853	708	0.853	717	0.855	510	480	450	
0731	737	0.896	749	0.895	738	0.895	747	0.897	540	510	480	
0761	767	0.938	779	0.937	768	0.937	777	0.939	570	540	510	
0791	797	0.98	809	0.979	798	0.979	807	0.981	600	570	540	
0821	827	1.022	839	1.021	828	1.021	837	1.023	630	600	570	
0851	857	1.063	869	1.062	858	1.062	867	1.064	660	630	600	
									Coil weight [kg]	0.89	1.01	1.16

Max rod length allowed 1250 mm.

**Dimensions**

**ETT050**



**ETT - Length of Rod / Table of Stroke**

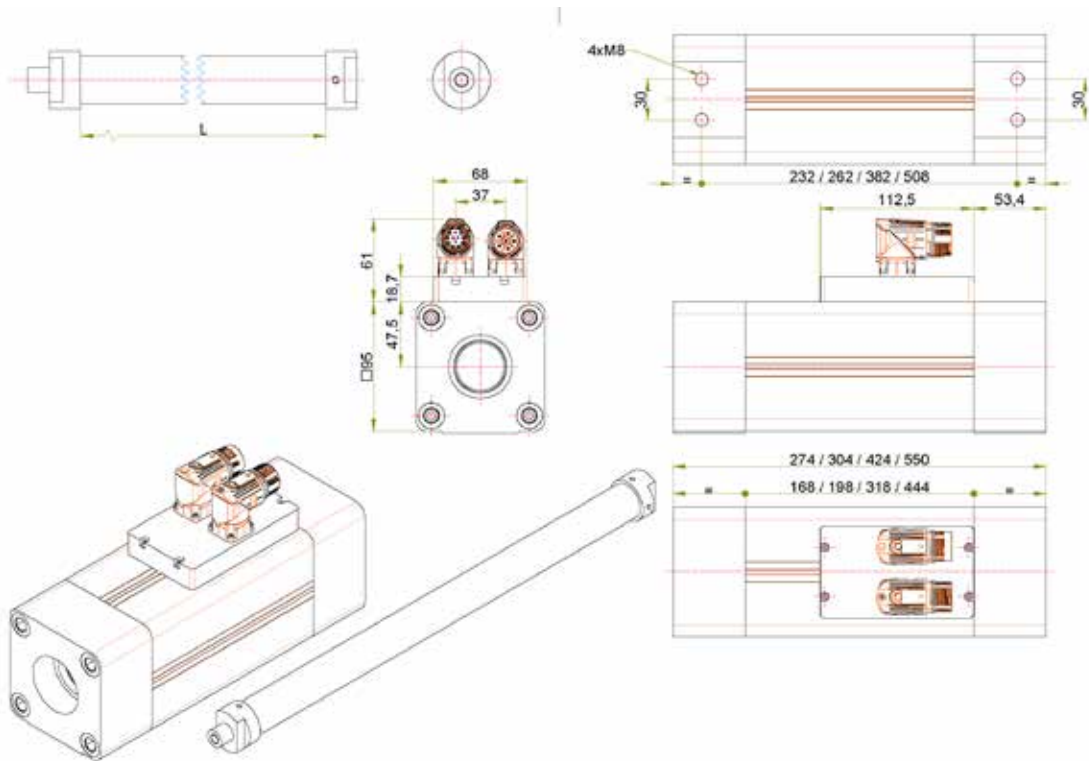
**ETT050**

Part Number Codification	Rod "F"		Rod "N"		Rod "M"		Rod "G"		Stroke			
	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	S1 [mm]	S2 [mm]	S3 [mm]	
0254	254	0.759	274	0.758	259	0.758	264	0.76	30			
0284	284	0.866	304	0.865	289	0.865	294	0.867	60	30		
0314	314	0.973	334	0.972	319	0.972	324	0.974	90	60		
0344	344	1.08	364	1.079	349	1.079	354	1.081	120	90		
0374	374	1.187	394	1.186	379	1.186	384	1.188	150	120		
0404	404	1.294	424	1.293	409	1.293	414	1.295	180	150		
0434	434	1.401	454	1.4	439	1.4	444	1.402	210	180	30	
0464	464	1.508	484	1.507	469	1.507	474	1.509	240	210	60	
0494	494	1.614	514	1.613	499	1.613	504	1.615	270	240	90	
0524	524	1.721	544	1.72	529	1.72	534	1.722	300	270	120	
0554	554	1.828	574	1.827	559	1.827	564	1.829	330	300	150	
0584	584	1.935	604	1.934	589	1.934	594	1.936	360	330	180	
0614	614	2.042	634	2.041	619	2.041	624	2.043	390	360	210	
0644	644	2.149	664	2.148	649	2.148	654	2.15	420	390	240	
0674	674	2.256	694	2.255	679	2.255	684	2.257	450	420	270	
0704	704	2.363	724	2.362	709	2.362	714	2.364	480	450	300	
0734	734	2.47	754	2.469	739	2.469	744	2.471	510	480	330	
0764	764	2.576	784	2.575	769	2.575	774	2.577	540	510	360	
0794	794	2.683	814	2.682	799	2.682	804	2.684	570	540	390	
0824	824	2.79	844	2.789	829	2.789	834	2.791	600	570	420	
0854	854	2.897	874	2.896	859	2.896	864	2.898	630	600	450	
0884	884	3.004	904	3.003	889	3.003	894	3.005	660	630	480	
0914	914	3.111	934	3.11	919	3.11	924	3.112	690	660	510	
0944	944	3.218	964	3.217	949	3.217	954	3.219	720	690	540	
									Coil weight [kg]	1.54	1.765	3.005

Max rod length allowed 1500 mm.

Dimensions

ETT080



ETT - Length of Rod / Table of Stroke

ETT080

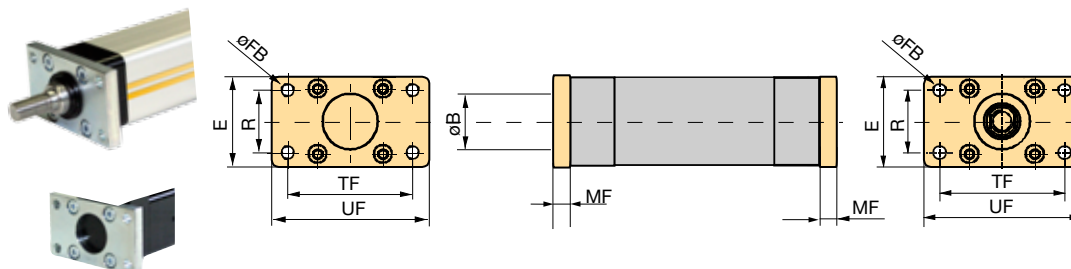
Part Number Codification	Rod "F"		Rod "N"		Rod "M"		Rod "G"		Stroke				
	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]	S2 [mm]	S3 [mm]	S4 [mm]	S5 [mm]	
0338	338	1.99	362	1.99	350	2.00	354	2.00	46				
0368	368	2.20	392	2.20	380	2.22	384	2.22	76	46			
0398	398	2.42	422	2.42	410	2.43	414	2.43	106	76			
0428	428	2.63	452	2.63	440	2.64	444	2.64	136	106			
0458	458	2.84	482	2.84	470	2.85	474	2.85	166	136			
0488	488	3.05	512	3.05	500	3.07	504	3.07	196	166	46		
0518	518	3.27	542	3.27	530	3.28	534	3.28	226	196	76		
0548	548	3.48	572	3.48	560	3.49	564	3.49	256	226	106		
0578	578	3.69	602	3.69	590	3.71	594	3.71	286	256	136		
0608	608	3.90	632	3.90	620	3.92	624	3.92	316	286	166	40	
0638	638	4.12	662	4.12	650	4.13	654	4.13	346	316	196	70	
0668	668	4.33	692	4.33	680	4.34	684	4.34	376	346	226	100	
0698	698	4.54	722	4.54	710	4.56	714	4.56	406	376	256	130	
0728	728	4.75	752	4.75	740	4.77	744	4.77	436	406	286	160	
0758	758	4.97	782	4.97	770	4.98	774	4.98	466	436	316	190	
0788	788	5.18	812	5.18	800	5.19	804	5.19	496	466	346	220	
0818	818	5.39	842	5.39	830	5.41	834	5.41	526	496	376	250	
0848	848	5.60	872	5.60	860	5.62	864	5.62	556	526	406	280	
0878	878	5.82	902	5.82	890	5.83	894	5.83	586	556	436	310	
0908	908	6.03	932	6.03	920	6.04	924	6.04	616	586	466	340	
0938	938	6.24	962	6.24	950	6.26	954	6.26	646	616	496	370	
0968	968	6.45	992	6.45	980	6.47	984	6.47	676	646	526	400	
0998	998	6.67	1022	6.67	1010	6.68	1014	6.68	706	676	556	430	
1028	1028	6.88	1052	6.88	1040	6.89	1044	6.89	736	706	586	460	
									Coil weight [kg]	4.4	5	7	9.55

Max rod length allowed 1750 mm

## Accessories and Options

### Mounting Methods

#### Front and Rear Plate



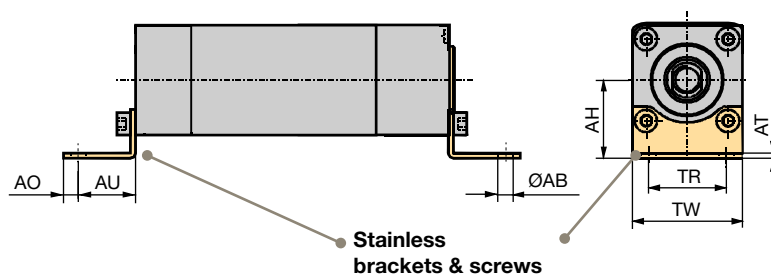
#### Front and rear plate dimensions

	Order no. (1 piece)	UF	E	TF	ØFB	R	MF	ØB
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
<b>ETT032</b>	0112.918	80	48	64	7	32	10	30
<b>ETT050</b>	0122.918	110	65	90	9	45	12	40
<b>ETT080</b>	0132.918	150	95	126	12	63	16	60

Spare parts delivery includes screws for mounting.

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

#### Mounting Brackets



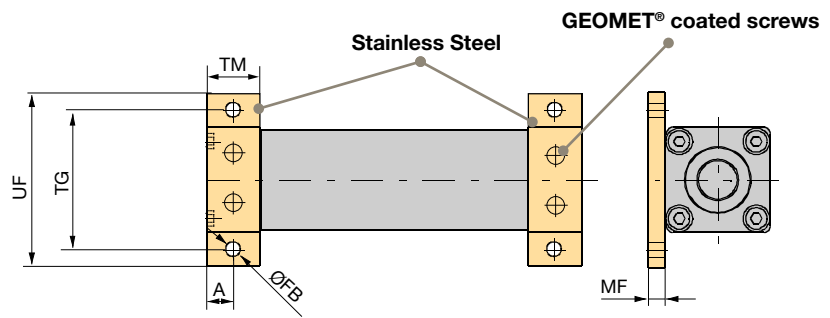
	Order no. Front & Terminal bracket	AH	AT	TR	ØAB (H14)	AO	AU	TW
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
<b>ETT032</b>	0112.916	32	4	32	7	8	24	46.5
<b>ETT050</b>	0122.916	44	4	45	9	12	32	63.5
<b>ETT080</b>	0132.916	47	6	72	13.5	15	41	95

Spare parts delivery includes screws for mounting.

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



## Mounting Flanges



	Order no. (2 piece)	TG	UG	ØFB	TM	MF	A
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
<b>ETT032</b>	0112.917E	62	78	6.6	25	8	12.5
<b>ETT050</b>	0122.917E	84	104	9	30	10	15
<b>ETT080</b>	0132.917E	120	144	13.5	40	12	20

Spare parts delivery includes screws for mounting.

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

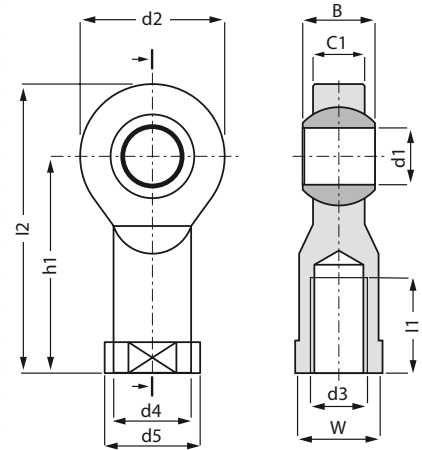
## Cylinder Rod Version

### Plastic Swivel Rod Eye



manufactured by igus®

KBRM	-05	-06	-08	-10
	ETT025	ETT032	ETT050	ETT080
d1 E10	5	6	8	10
d2	18	20	24	30
d3	M5	M6	M8	M10
d4	9.0	10.0	13.0	15
d5	12.0	13.0	16.0	19
C1	6.0	7.0	9.0	10.5
B	8	9	12	14
h1	27	30	36	43
l1	10	12	16	20
l2	36	40	48	58
W	SW09	SW11	SW14	SW17
Pitch	30°	29°	25°	25°



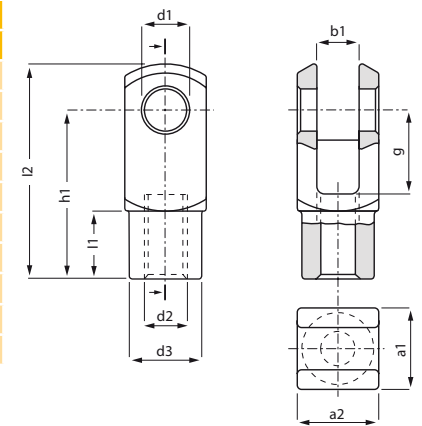
### Plastic Rod Clevis



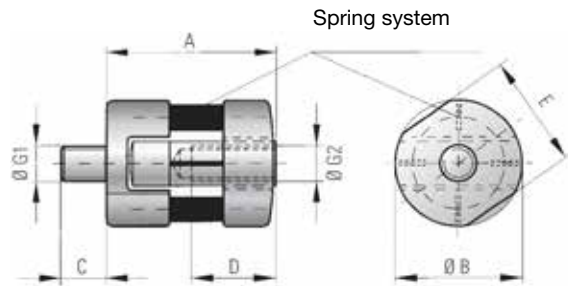
manufactured by igus®

GERM	-05	-06	-08	-10
	ETT025	ETT032	ETT050	ETT080
d1 H9	5	6	8	10
g h11	12	12	16	20
a1 +0.3 / -0.16	12	12	16	20
a2 +0.3 / -0.16	12	12	16	20
b1 B13	6	6	8	10
d2 6H *	M5	M6	M8	M10
d3 +0.3 / -0.3	10.0	10.0	14.0	18.0
l2 +0.5 / -0.5	31.0	31.0	42.0	52.0
h1 +0.3 / -0.3	24.0	24.0	32.0	40.0
l1 +0.2 / -0.2	9.0	9.0	12.0	15.0

\* Thread tolerance



## Alignment Coupler



manufactured by R+W®

LK	70	150	300	500
	ETT025	ETT032	ETT050	ETT080
Pressure force [N]	70	150	300	500
A	24	33	41.5	52
B	18	22	30	42
G1/2	M5	M6	M8	M10
G1/2* [Nm]	4	7	18	30
C	6.5	8	10	13
D	10	12	16	20
E	16	20	27	38
Mass [g]	11	23	57	135
Lateral restoring force <sub>(max)</sub> [N]	10	18	48	96
Lateral mov. <sub>(max)</sub> [mm]	0.5	0.5	0.5	0.7
Angular mov. <sub>(max)</sub>	1.5°	1.5°	1.5°	1.5°

\* Max. tightening torque thread

All alignment coupler sizes are sized on continuous force of ETT. For other force options, please contact Parker

## Sealing Rings

ETT motors can be equipped with sealing rings for protecting the coil from contaminants, spray water or excessive grease loss; thus increasing the motor service life.



Sealing rings of special design	
Material	Thermoplastic polyurethane elastomer
Colour	Green
Temperature range	From - 30 °C to + 100 °C
Hardness	47 ± Shore D
Ageing resistance	
Light	Very good
Ozone	Good
Media resistance	
Mineral oils, greases	Yes*
Highly blended/synthetic lubricants	No*
Aggressive	No*

Adding sealing rings will change some ETT requirements:

- rod must be lubricated with grease type RHEOSIL 500F
- speed is limited up to 3 m/s max
- temperature range changes to -30 °C... + 100 °C
- stroke of the rod decreases
- rotating movements are not allowed
- rod needs to be kept clean

\*Please contact your nearest sales office

## ETT with Slide Guide System

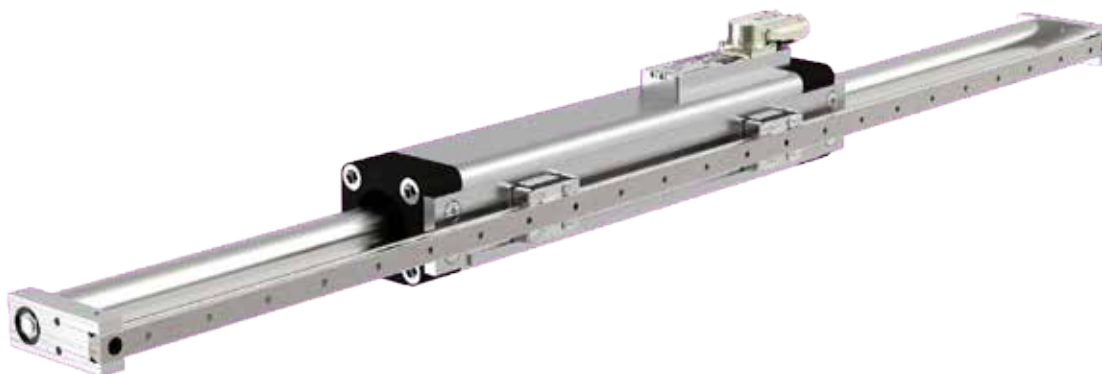
As the system is based on polymer plain bearings, the motor shaft can only sustain limited radial loads; the slide guide system of the ETT motor makes it the ideal solution for applications requiring an anti-rotational device and where lateral force occurs.

Two different configuration layouts are available:

### ETT with Slide Guide System

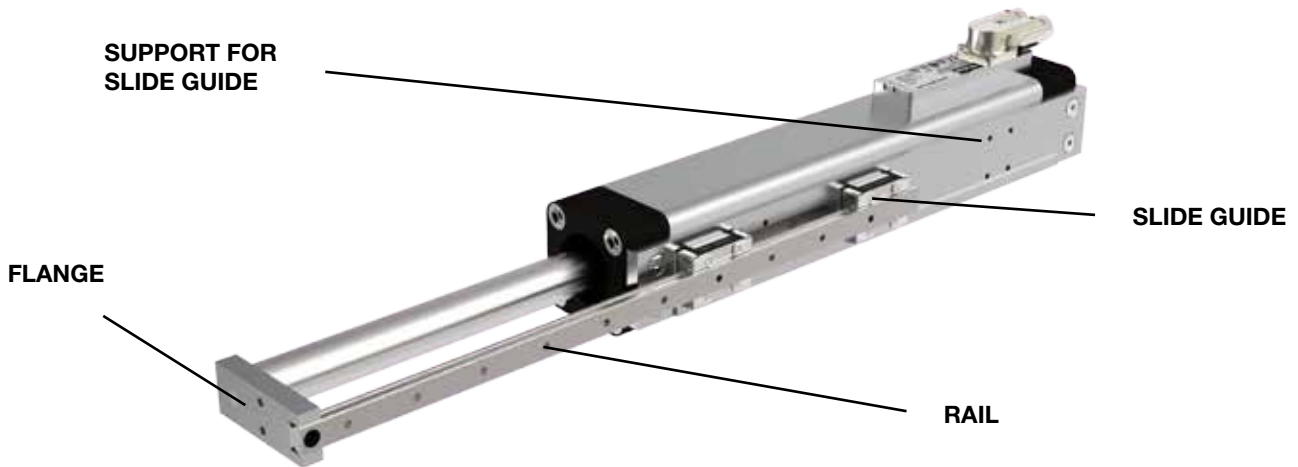


### Coil movement for long stroke and heavy load



Both solutions use an external system of block bearing, rail and rod-end designed for a specific application. An external linear feedback can be added on the mechanical system to improve the precision and repeatability of the system. With coil movement it's recommended to remove the bush bearing, it's mandatory for long strokes.

### Structure of the Slide Guide System



RAIL	
Series	<b>ETT-LR</b> Rail option
Rail type	<b>1</b> Type NB
	<b>025</b> n.a.
	<b>032</b> Designed for motor size 032 - 9 mm size
ETT motor size	<b>050</b> Designed for motor size 050 - 15 mm size
	<b>080</b> Designed for motor size 080 - 20 mm size
Length	<b>xxx</b> *See table of rod length

SLIDE GUIDE	
Series	<b>ETT-LC</b> Slide guide option
Rail type	<b>1</b> Type NB
	<b>025</b> n.a.
	<b>032</b> Designed for motor size 032 - 9 mm size
ETT motor size	<b>050</b> Designed for motor size 050 - 15 mm size
	<b>080</b> Designed for motor size 080 - 20 mm size

FLANGE	
Series	<b>ETT-LF</b> Flange option
Side of flange	<b>F</b> Front flange
	<b>R</b> Rear flange
	<b>025</b> n.a.
	<b>032</b> Designed for motor size 032 - 9 mm size
ETT motor size	<b>050</b> Designed for motor size 050 - 15 mm size
	<b>080</b> Designed for motor size 080 - 20 mm size

SUPPORT FOR SLIDE GUIDE	
Series	<b>ETT-LA</b> Metal support for slide guide option
	<b>025</b> n.a.
	<b>032</b> Designed for motor size 032 - 9 mm size
ETT motor size	<b>050</b> Designed for motor size 050 - 15 mm size
	<b>080</b> t.b.d.
	<b>S1</b> Winding: Serial, Stack Length 1 - not available for size 080
	<b>S2</b> Winding: Serial, Stack Length 2
	<b>S3</b> Winding: Serial, Stack Length 3
	<b>S4</b> Winding: Serial, Stack Length 4 - only size 080
	<b>S5</b> Winding: Serial, Stack Length 5 - only size 080
Length	

The solution can be ordered as a complete system mounted and tested. The slide guide system structure results in a reduction of ETT performance due to additional moving mass and friction. ETT with slide guide system is an ideal solution for easy integration into pick and place gantries and general purpose material handling machines.

## Feedback

### Internal position sensor-analogue sin/cos

The position sensor outputs analogue, differential sine and cosine signals for providing position feedback. Shown below in the follow table the main features of sin/cos feedback.

	ETT025	ETT032	ETT050	ETT080
Pole pitch [mm]	60	60	60	60
Output current [mA]	50	50	50	50
Supply voltage [VDC]	5 ± 0.25			
Supply current [mA]	40 ± 10%			
Repeatability up to [µm]	± 50			

### Internal position sensor-incremental TTL

The incremental position sensor outputs have TTL line drives signals, A and B, /A and /B without track of zero. The resolution is programmable and the default value is 2048 increments.

	ETT025	ETT032	ETT050	ETT080
Pole pitch [mm]	60	60	60	60
Output signals	A, B, /A, /B			
Supply voltage [VDC]	5 ± 0.25			
Supply current [mA]	100 ± 10%			
Repeatability up to [µm]	± 50			
Resolution with 2048 increments [µm]	29.3			
System accuracy [mm]	± 0.5			
Error of linearity	< 1%			
Max resolution	24 bit			

### Internal position sensor-BISS-C

The internal feedback allows to have a BISS-C interface option. The electronic board contains an integrated sensor, interpolation electronics and motor parameters as electronic data sheet (EDS).

	ETT025	ETT032	ETT050	ETT080
Pole pitch [mm]	60	60	60	60
Output signals	BISS-C RS485 serial			
Supply voltage [VDC]	5 ± 0.25			
Supply current [mA]	100 ± 10%			
Repeatability up to [µm]	± 50			
Resolution with 2048 increments [µm]	29.3			
System accuracy [mm]	± 0.5			
Error of linearity	< 1%			
Max resolution	8192 increments			

### External Linear Encoders

To achieve highest accuracy, the most popular feedback device for linear motor positioning systems is the linear encoder. There are two variants of linear encoders available; magnetic and optical.

<b>MSK500010KE1</b>	<p>Incremental, digital interface, resolution 1 µm</p> <ul style="list-style-type: none"> <li>• Magnetic encoder</li> <li>• Max. resolution up to 1 µm</li> <li>• Repeat accuracy ±0.01 mm</li> <li>• Status LED display</li> <li>• Works with magnetic band MB500</li> <li>• Reading distance up to 2 m</li> </ul>
<b>LIC 2117</b>	<p>Absolute, EnDat interface, resolution 0.1 µm</p> <ul style="list-style-type: none"> <li>• Optical encoder</li> <li>• Max. resolution up to 0.1 µm</li> <li>• Repeat accuracy ±15 µm</li> <li>• EnDat2.2</li> <li>• Reading distance up to 3 m</li> </ul>

## Cables and connectors

All cable kits are optimally configured for our servo products line. The characteristics of the cables include: low adhesion, halogen free and flame-retardant according to the requirements DIN VDE 0472. Resistant to oil, grease, coolant and lubricants.

### Motor connection power cable

Type	ETT-CAP
<b>Cable design</b>	
Conductor material	Stranded copper
Core structure	(3 + T) x 1.5 mm <sup>2</sup>
Core insulation	TEO-Flexene®
Outer sheath	Polyurethane
Colour sheath	Orange RAL2003
<b>Technical data</b>	
Rated voltage	Power: 600/1000 V
Dielectric strength	Power: 4000 V
Insulation resistance	Power: > 2500 MOhm x km
Minimum bending radius	7.5 x diam. unsupported chain 10 x diam. long travel
Max. speed	240 m/min.
Max. acceleration	20 m/sec <sup>2</sup>
Cycles	10000000
Operating temperature	-30 + 80 °C
Outer diameter	8.5 mm

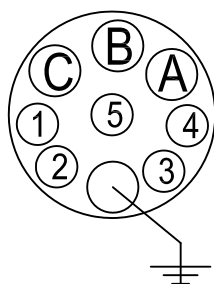


### Motor connection signal cable

Type	ETT-CAS
<b>Cable design</b>	
Conductor material	Stranded copper
Core structure	[3x(2x0.14 SK)+2x(0.50 SK)] SK
Core insulation	TPE-E
Outer sheath	Polyurethane
Colour sheath	Green RAL6018
<b>Technical data</b>	
Rated voltage	30 V
Dielectric strength	1500 V
Insulation resistance	> 10 MOhm x km
Minimum bending radius	90 mm
Max. speed	240 m/min.
Max. acceleration	20 m/sec <sup>2</sup>
Cycles	≥ 5000000
Operating temperature	-30 + 80 °C
Outer diameter	8.4 mm



## Layout and Connectors ETT025 - ETT050

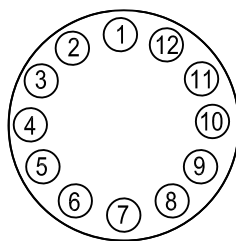


### Power connector

Pin	Description
A	U
B	W
C	V
PE	PE
1	n.c.
2	n.c.
3	n.c.
4	n.c.
5	n.c.

#### Type

CONMOTYF Female connector



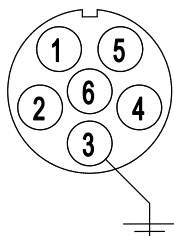
### Feedback connector

Pin	Description
1	COS -
2	COS +
3	n.c.
4	KTY84 -
5	KTY84 +
6	n.c.
7	SIN -
8	SIN +
9	n.c.
10	+5 V
11	n.c.
12	GND - shield

#### Type

CONRESYF Female connector

## Layout and Connectors ETT080

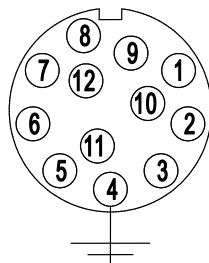


### Power connector

Pin	Description
1	U
2	V
3	GND - shield
4	n.c.
5	n.c.
6	W

#### Type

CONMOT82F Female connector



### Feedback connector

Pin	Description
1	SIN -
2	SIN +
3	n.c.
4	GND - shield
5	n.c.
6	n.c.
7	EXCT -
8	KTY -
9	KTY +
10	EXCT +
11	COS +
12	COS -

#### Type

CONRES82F Female connector

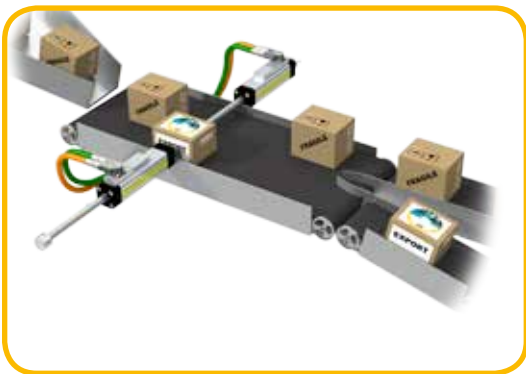


## Application Examples



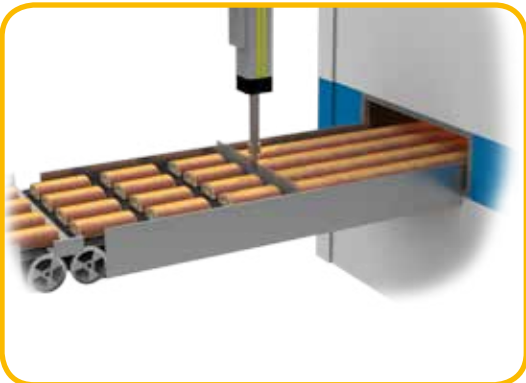
### Stacking

The ETT manages the stacking of CD's after the printing section. Thanks to the complete and ready to use direct drive solution, no more time is spent in assembling and aligning different elements (gearbox, belts and pulley, motor, etc).



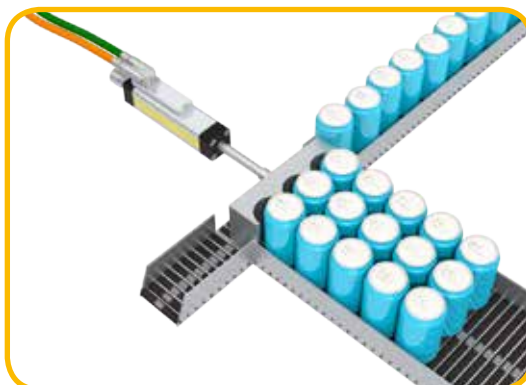
### Sorting

A supervision system manages the boxes and moves them onto different conveyors following their layout. Both ETT tubular motors are synchronised and can quickly adapt to the box's dimensions. The quick positioning is the main advantage for system performance.



### Cutting

Here the ETT function is to cut the material all to the same length. The ETT high force level and synchronization with the conveyor are key benefits in this application. The level of control offered by the ETT means that it is easy to change the format of the material.



### Re-positioning

ETT is used to accurately reposition products on conveyors. The flexible dynamic positioning offered by the electric tubular motor guarantees the perfect alignment for different product formats whilst fewer components improves energy efficiency.

## Step by Step Selection Process

The following sizing steps help to choose the most suitable electric tubular motor.

1. Select an ETT using estimated application data.
2. Calculate the actually required application data following the dimensioning steps described below.
3. If your application's requirements exceed a maximum value, please choose a larger electro cylinder and recheck the maximum values. Perhaps, a smaller tubular motor can also meet the requirements.

Step	Application data	Selection
1	Accuracy, ambient conditions	Check the basic conditions for the use of the ETT in your application.
2	Required space	Check the space available in your application and choose the motor mounting option: rod movement or coil movement
3	Select stroke	Selection of the desired stroke: Determine required stroke from usable stroke and safety travels select the desired stroke from the list of standard strokes or, if the desired stroke is not listed: Define the length of the usable stroke in steps of one mm. Caution! Please respect the minimum and the maximum possible stroke
4	Maximum force required	Determination of the maximum required axial force (traction and thrust force). With evaluation of duty cycle
5	Select position mounting	Check if the ETT orientation is vertical or horizontal
6	Maximum speed	Selection of the maximum speed required for the application
7	Application cycle	Please check the application cycle
8	Permissible thrust force taking the buckling risk into consideration	Check the maximum thrust force depending on the stroke and the mounting variant. Maybe your application can also be realized with a different mounting variant allowing to attain the maximum thrust force
10	Permissible side load	Determine the lateral forces of your application and compare them to the permissible lateral forces (depending on the stroke)
11	Mounting type	Selection of ETT mounting accessories
12	Rod connection	Selection of the rod mounting type

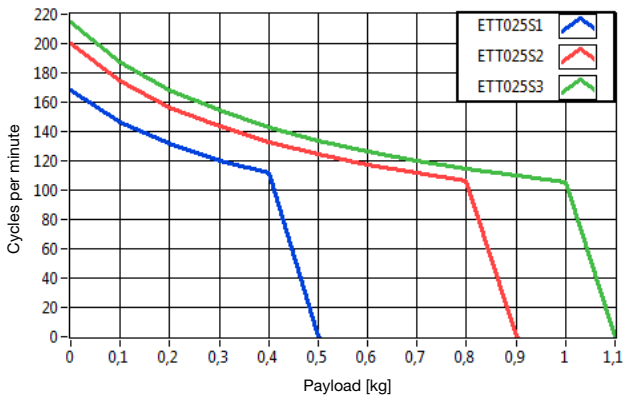
**Automated sizing can be done with the help of "ETTsizing" software tool to simplify the process:**  
[www.ettsizing.eu](http://www.ettsizing.eu)

## ETT Range Sizing

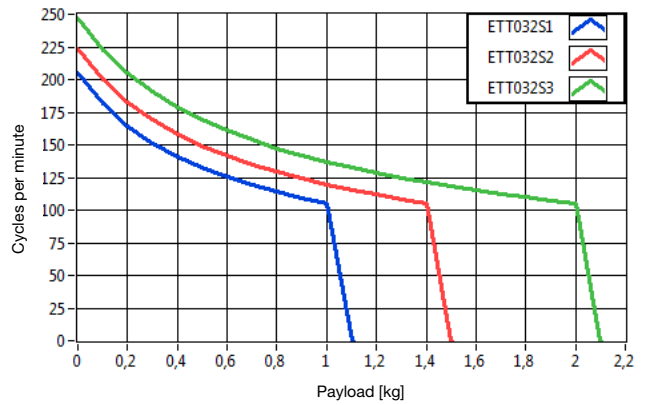
In order to simplify the representation, we assumed boundary conditions which must be adhered to without exception in your application, otherwise the product combinations suggested here might not work. In this case, the application must be dimensioned conventionally.

The following graphs show the combination of the maximum cycles per minute and maximum payload for each size of motor with the assumption of: Stroke 90 mm, Triangular profile, Cycle S3 – 5%, Without thrust force.

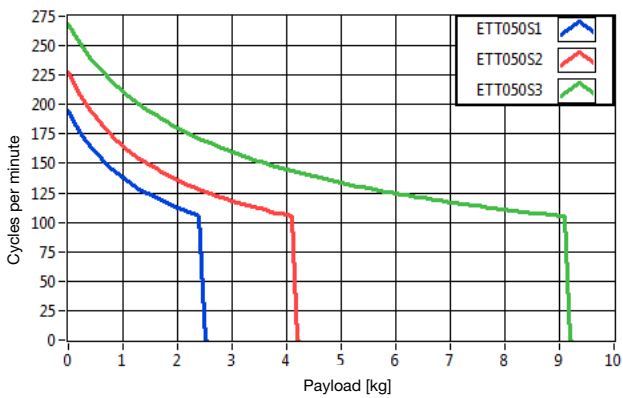
ETT025



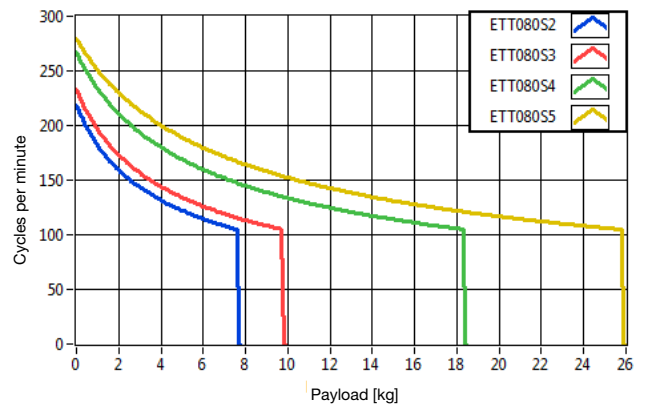
ETT032



ETT050



ETT080



**Common Motion Profile Formulas**

**Triangular Profile 1/2, 1/2**

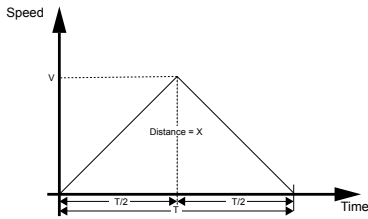
Accelerate to speed and decelerate back to original speed or zero, rest and repeat the process as needed.

This is very simple and is common in applications such as Pick & Place.

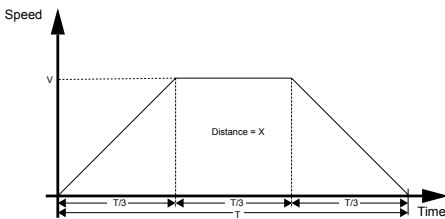
**Trapezoidal Profile**

Accelerate to constant speed, travel at a constant speed and then decelerate back to original speed or zero. This is common in applications such as scanning inspection. There are two types, the 1/3 Trapezoidal Profile and the Variable Trapezoidal Profile.

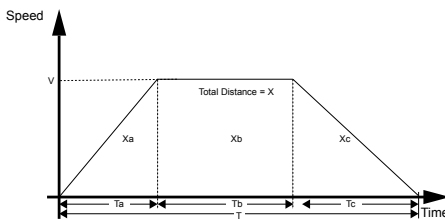
Item	Symbol	Unit
Stroke	X	mm
Velocity	V	m/s
Acceleration time	T <sub>a</sub>	s
Continuous time	T <sub>b</sub>	s
Deceleration time	T <sub>c</sub>	s
Settling time	T <sub>s</sub>	s
Waiting time	T <sub>w</sub>	s



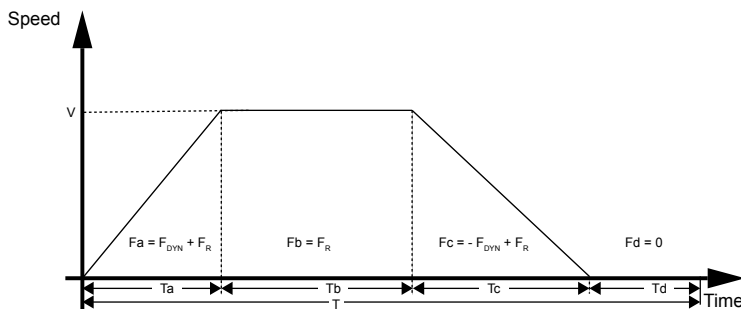
Solve for	Have	X (m) T (sec)	V (m/sec) T (sec)	A (m/sec <sup>2</sup> ) T (sec)	A (m/sec <sup>2</sup> ) V (m/sec)
Distance X(m)			$X = (1/2) * V * T$	$X = (1/4) * A * T^2$	$X = (V^2/A)$
Velocity V (m/sec)		$V = 2 * (X/T)$		$V = (A * T)/2$	$V = \sqrt{(A * X)}$
Acceleration A (m/sec <sup>2</sup> )		$A = 4 * (X/T^2)$	$A = 2 * (V/T)$		$A = V^2/X$



Solve for	Have	X (m) T (sec)	V (m/sec) T (sec)	A (m/sec <sup>2</sup> ) T (sec)	A (m/sec <sup>2</sup> ) V (m/sec)
Distance X(m)			$X = (2/3) * V * T$	$X = (1/4.5) * A * T^2$	$X = 2 * (V^2/A)$
Velocity V (m/sec)		$V = 1.5 * (X/T)$		$V = (A * T)/3$	$V = \sqrt{(A * X)/2}$
Acceleration A (m/sec <sup>2</sup> )		$A = 4.5 * (X/T^2)$	$A = 3 * (V/T)$		$A = 2 * (V^2/X)$



Solve for	Have	X (m) T (sec)	V (m/sec) T (sec)	A (m/sec <sup>2</sup> ) T (sec)	A (m/sec <sup>2</sup> ) V (m/sec)
Distance X(m)			$X = V * T/2$	$X = (A * T^2)/2$	$X = V^2/(2 * A)$
Velocity V (m/sec)		$V = (2 * X)/T$		$V = A * T$	$V = \sqrt{(2 * A * X)}$
Acceleration A (m/sec <sup>2</sup> )		$A = (2 * X)/T^2$	$A = V/T$		$A = V^2/(2 * X)$



Peak force  $F_{peak} = \max (F_a, F_b, F_c, F_d)$

$$RMS \text{ Force } F_{RMS} = \sqrt{\frac{F_a^2 * T_a + F_b^2 * T_b + F_c^2 * T_c + F_d^2 * T_d}{T_a + T_b + T_c + T_d}}$$

**Force Formula**

Dynamic force  $F_{DYN} = m * a$

Friction force  $F_R = \mu * F_N$

Normal force  $F_N = \cos \alpha * F_G$

Gravity force  $F_G = m * g$

Item	Symbol	Unit
Gravity	g	9.81 m/s <sup>2</sup>
Friction coefficient	$\mu$	
Moving mass	m	kg
Angle of the inclined surface	$\alpha$	°
Acceleration time	T <sub>a</sub>	s
Constant speed time	T <sub>b</sub>	s
Deceleration time	T <sub>c</sub>	s
Waiting time	T <sub>d</sub>	s

## Servo Drives Products



### Compact Servo Drive SLVD-N

SLVD-N is the family of compact digital servo drives for brushless motors. In addition to positioning applications with trapezoidal profile, electrical shaft, electronic cam, spindle orientation, simulator of stepper motor and torque control, it holds a PLC inside able to talk to the most common industrial programming systems, giving a great freedom of use of the inputs and outputs. It also allows the development of additional configurations to the basis features of the drive, such as gains adjustment of the loop in relation to speed or space, torque monitoring used for tools etc.

Model	Continuous current [A]	Peak current [A]	Size
SLVD1N	1.25	2.5	1
SLVD2N	2.5	5	
SLVD5N	5	10	
SLVD7N	7	14	
SLVD10N	10	20	2

### Intelligent Servo Drive Compax 3

Compax3 is Parker Hannifin's global servo drive. The drive series includes single and multi axis drives as well as hydraulic controllers. It features a power range from 1 to 109 kVA.

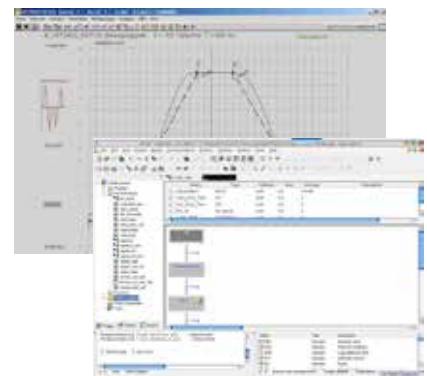
The servo drives are developed and manufactured in Germany. As a global servo drive controller, Compax3 is available all over the world. Service and support sites are located in the vicinity of all major industry locations - worldwide. The "Parker Authorized Distribution Partners" play an important role in this context - well-trained and experienced application and support specialists will provide professional support in any situation.



Device	Current [A]		Supply Voltage	Power [kVA]
	I <sub>cont.</sub>	I <sub>peak</sub> (<5 s)		
S025V2	2.5	5.5	1 * 230/240 VAC	1,0
S063V2	6.3	12.6		2,5
S100V2	10	20	3 * 230/240 VAC	4,0
S150V2	15	30		6,0
S015V4	1.5	4.5	3 * 400/480 VAC	1.25
S038V4	3.8	9.0		3.1
S075V4	7.5	15		6.2

### Software and Tools

MotionWiz and C3 Servo Manager configuration software are available to configure the SLVD-N and Compax3 system with just a few clicks. The software features an easy and "friendly" interface to speed up installation, optimisation and diagnostics procedures. To simplify configuration, the software shows a typical Windows® environment on the monitor with dialogue windows and toolbars.



## 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  
**080** ISO 6432 - Bore 80 mm

#### 3 Winding

**S1** Serial, Stack Length 1  
**S2** Serial, Stack Length 2  
**S3** Serial, Stack Length 3  
**S4** Serial, Stack Length 4  
**S5** Serial, Stack Length 5

#### 4 Connection and Feedback Type

**CS** Intercontec Connector  
 (Springtec EEDA101NN00000002000) - Feedback  
 Analogue SinCos 1 Vpp -  
**CI** Intercontec Connector  
 (Springtec EEDA101NN00000002000) - Feedback  
 Incremental TTL  
**CB** Intercontec Connector  
 (Springtec EEDA101NN00000002000) - Feedback  
 BISS-C  
**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 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)  
**F** Female Thread / Cap End  
 (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)  
**N** Male Thread / Male Thread  
 (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)  
**G** Female Thread / Female Thread  
 (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)  
**X** Special  
 (Customized version - Please contact Parker)

#### 6 Fixed Field

**N** Fixed field

#### 7 Stroke

..... Stroke length is in mm, four digits.  
 ..... Example 30cm=0300. See table pages  
 ..... 12,13,14,15 - column "Stroke".

#### 8 Protection Class

**C** IP67

#### 9 Customized Options

Blank for standard motors

## ETT Electric Tubular Motor (Rod only)

	1	2	3	4	5
Order example	<b>ETT-R</b>	<b>032</b>	<b>M</b>	<b>....</b>	

<b>1</b>	<b>Type</b>	<b>ETT-R</b> Electric Tubular Motor - Rod only
<b>2</b>	<b>Size</b>	<p><b>025</b> ISO 6432 - size 25</p> <p><b>032</b> ISO 6432 - size 32</p> <p><b>050</b> ISO 6432 - size 50</p> <p><b>080</b> ISO 6432 - size 80</p>
<b>3</b>	<b>Rod End Mounting - Front / Rear</b>	<p><b>M</b> Male Thread / Cap End (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)</p> <p><b>F</b> Female Thread / Cap End (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)</p> <p><b>N</b> Male Thread / Male Thread (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)</p> <p><b>G</b> Female Thread / Female Thread (M5 ETT025, M6 ETT032, M8 ETT050, M10 ETT080)</p> <p><b>X</b> Special (Customized version - Please contact Parker)</p>
<b>4</b>	<b>Length</b>	<p>..... Rod length is in mm, four digits.</p> <p>..... See tables pages 12,13,14,15 - column</p> <p>..... "Part Number Codification"</p>
<b>5</b>	<b>Customized Options</b>	Blank for standard motors

## Order Code

### ETT Electric Tubular Motor (Coil only)

	1	2	3	4	5	6	7
Order example	<b>ETT-C</b>	<b>032</b>	<b>S1</b>	<b>CS</b>	<b>N</b>	<b>C</b>	

#### 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

**080** ISO 6432 - Bore 80mm

#### 3 Winding

**S1** Serial, Stack Length 1

**S2** Serial, Stack Length 2

**S3** Serial, Stack Length 3

**S4** Serial, Stack Length 4

**S5** Serial, Stack Length 5

#### 4 Connection and Feedback Type

**CS** Intercontec Connector  
(Springtec EEDA101NN00000002000) -  
Feedback Analogue SinCos 1 Vpp -

**CI** Intercontec Connector  
(Springtec EEDA101NN00000002000) -  
Feedback Incremental TTL

**CB** Intercontec Connector  
(Springtec EEDA101NN00000002000) -  
Feedback BISS-C

**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 Motor and Signal Cable

	1	2	3	4	5	6	7
Order example	<b>ETT-CAP</b>	<b>X</b>	<b>003</b>	<b>PM</b>	<b>-</b>	<b>Y1</b>	<b>SL - 00</b>

<b>1</b>	<b>Cable Type</b>	
	<b>ETT-CAP</b>	Power cable for ETT
	<b>ETT-CAS</b>	Signal cable for ETT
<b>2</b>	<b>Fixed Field</b>	
	<b>X</b>	Fixed field
<b>3</b>	<b>Cable Length</b>	
	<b>001</b>	1 m
	<b>003</b>	3 m
	<b>005</b>	5 m
	<b>007</b>	7 m
	<b>010</b>	10 m
	<b>015</b>	15 m
	<b>020</b>	20 m
<b>4</b>	<b>Application Type</b>	
	<b>PM</b>	High flex cable
<b>5</b>	<b>Connector</b>	
	<b>Y1</b>	Intercontec Y-TECH Connector
	<b>I1</b>	Intercontec M23 Connector
	<b>X</b>	Special Execution
<b>6</b>	<b>Drive Type</b>	
	<b>SL</b>	SLVD-N Drive
	<b>C3</b>	Compax3
	<b>63</b>	638 Drive
	<b>IP</b>	IPA Drive
<b>7</b>	<b>Option</b>	
	<b>00</b>	No special option
		Special customer drawing





# 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  
CO<sub>2</sub> 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



## 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

# Parker Worldwide

## Europe, Middle East, Africa

### AE – United Arab Emirates,

Dubai

Tel: +971 4 8127100

parker.me@parker.com

### AT – Austria, Wiener Neustadt

Tel: +43 (0)2622 23501-0

parker.austria@parker.com

### AT – Eastern Europe, Wiener Neustadt

Tel: +43 (0)2622 23501 900

parker.easteurope@parker.com

### AZ – Azerbaijan, Baku

Tel: +994 50 2233 458

parker.azerbaijan@parker.com

### BE/LU – Belgium, Nivelles

Tel: +32 (0)67 280 900

parker.belgium@parker.com

### BG – Bulgaria, Sofia

Tel: +359 2 980 1344

parker.bulgaria@parker.com

### BY – Belarus, Minsk

Tel: +48 (0)22 573 24 00

parker.poland@parker.com

### CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00

parker.switzerland@parker.com

### CZ – Czech Republic, Klecany

Tel: +420 284 083 111

parker.czechrepublic@parker.com

### DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0

parker.germany@parker.com

### DK – Denmark, Ballerup

Tel: +45 43 56 04 00

parker.denmark@parker.com

### ES – Spain, Madrid

Tel: +34 902 330 001

parker.spain@parker.com

### FI – Finland, Vantaa

Tel: +358 (0)20 753 2500

parker.finland@parker.com

### FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25

parker.france@parker.com

### GR – Greece, Athens

Tel: +30 210 933 6450

parker.greece@parker.com

### HU – Hungary, Budaörs

Tel: +36 23 885 470

parker.hungary@parker.com

### IE – Ireland, Dublin

Tel: +353 (0)1 466 6370

parker.ireland@parker.com

### IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21

parker.italy@parker.com

### KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000

parker.easteurope@parker.com

### NL – The Netherlands, Oldenzaal

Tel: +31 (0)541 585 000

parker.nl@parker.com

### NO – Norway, Asker

Tel: +47 66 75 34 00

parker.norway@parker.com

### PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00

parker.poland@parker.com

### PT – Portugal, Leca da Palmeira

Tel: +351 22 999 7360

parker.portugal@parker.com

### RO – Romania, Bucharest

Tel: +40 21 252 1382

parker.romania@parker.com

### RU – Russia, Moscow

Tel: +7 495 645-2156

parker.russia@parker.com

### SE – Sweden, Spånga

Tel: +46 (0)8 59 79 50 00

parker.sweden@parker.com

### SK – Slovakia, Banská Bystrica

Tel: +421 484 162 252

parker.slovakia@parker.com

### SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650

parker.slovenia@parker.com

### TR – Turkey, Istanbul

Tel: +90 216 4997081

parker.turkey@parker.com

### UA – Ukraine, Kiev

Tel: +48 (0)22 573 24 00

parker.poland@parker.com

### UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878

parker.uk@parker.com

### ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700

parker.southafrica@parker.com

## North America

### CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

### US – USA, Cleveland

Tel: +1 216 896 3000

## Asia Pacific

### AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

### CN – China, Shanghai

Tel: +86 21 2899 5000

### HK – Hong Kong

Tel: +852 2428 8008

### IN – India, Mumbai

Tel: +91 22 6513 7081-85

### JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

### KR – South Korea, Seoul

Tel: +82 2 559 0400

### MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

### NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

### SG – Singapore

Tel: +65 6887 6300

### TH – Thailand, Bangkok

Tel: +662 186 7000

### TW – Taiwan, Taipei

Tel: +886 2 2298 8987

## South America

### AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

### BR – Brazil, Sao Jose dos Campos

Tel: +55 800 727 5374

### CL – Chile, Santiago

Tel: +56 2 623 1216

### MX – Mexico, Toluca

Tel: +52 72 2275 4200

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### EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

### US Product Information Centre

Toll-free number: 1-800-27 27 537

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