

Linear Drive with Trapezoidal Screw Drive and Piston Rod Series OSP-E..STR



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ELECTRIC LINEAR DRIVE FOR INTERMITTENT APPLICATIONS

A completely new generation of linear drives which can be integrated into any machine layout neatly and simply.

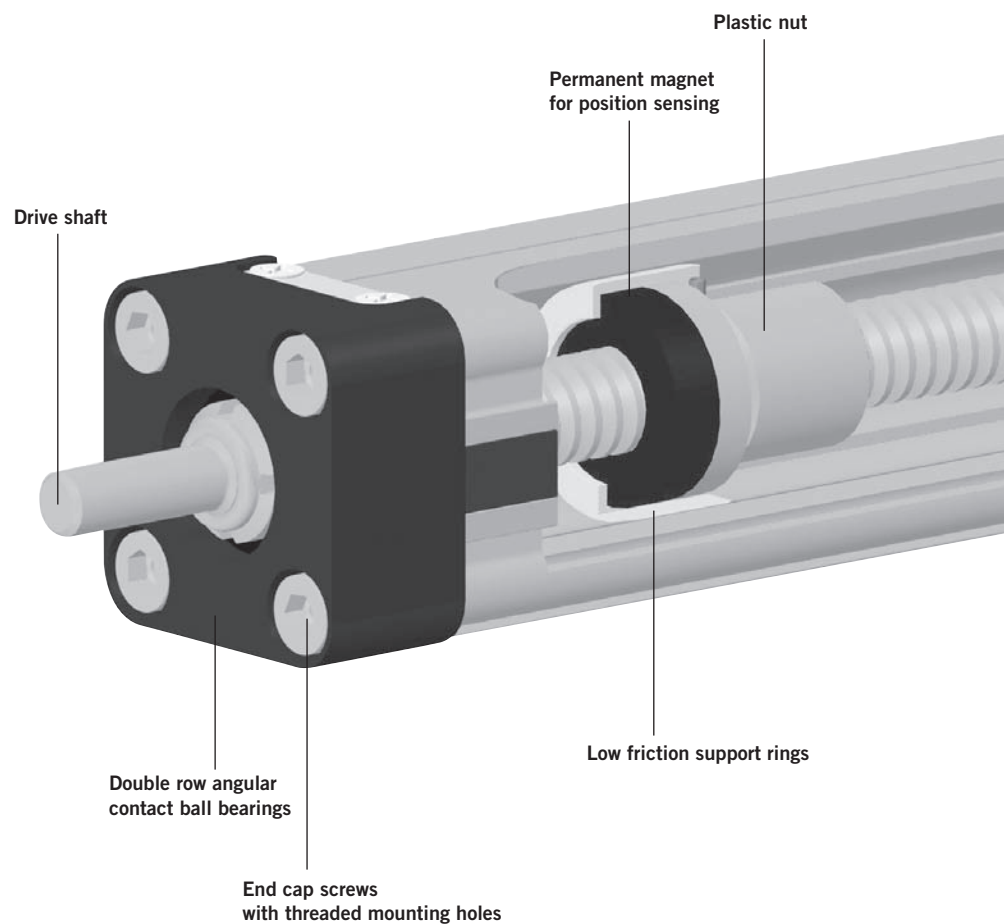
Linear Drive with Trapezoidal Screw Drive, Internal Plain Bearing Guide and Piston Rod

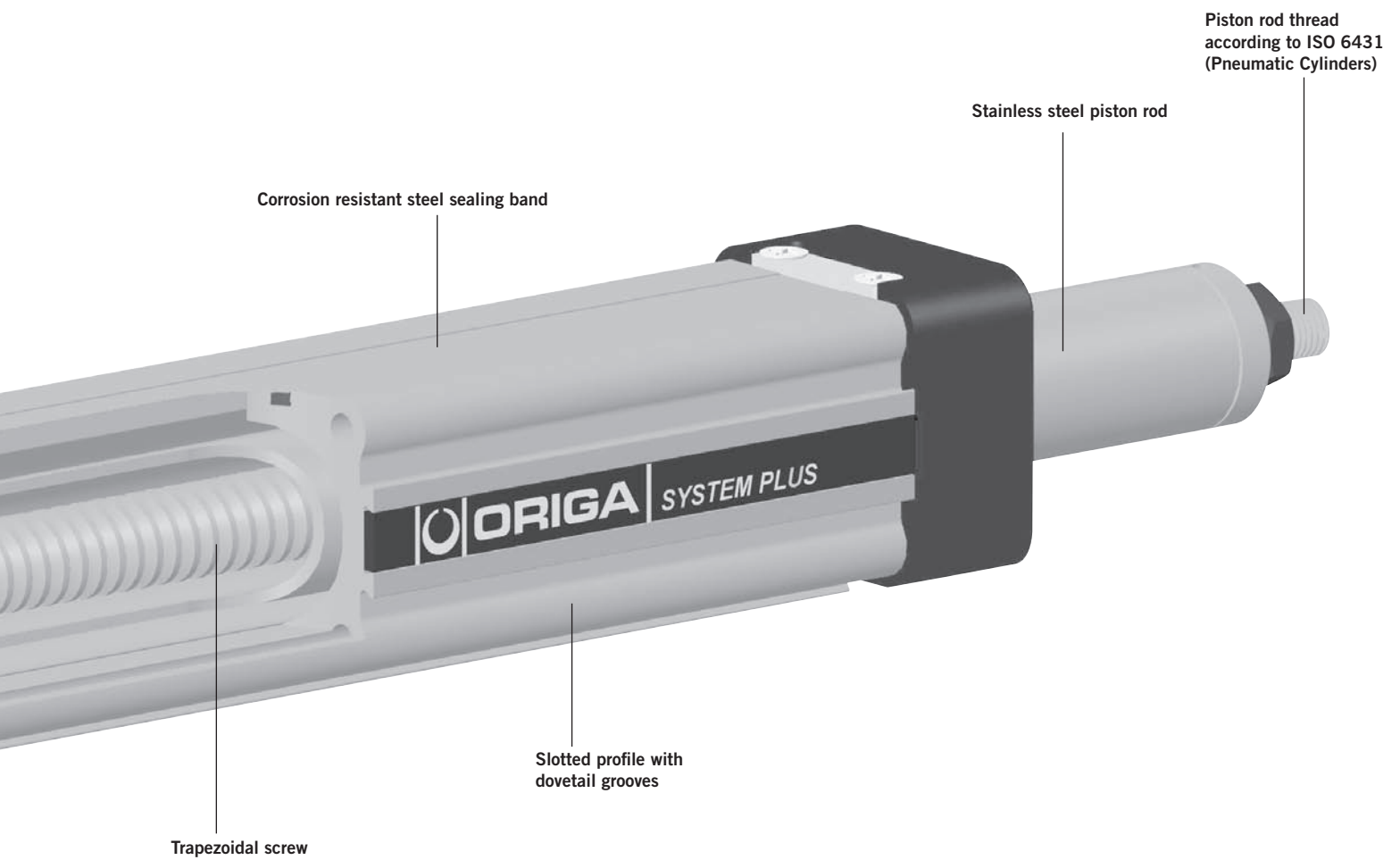
Advantages

- Accurate path and position control
- High force output
- Self-locking
- Excellent slow speed characteristics
- Easy installation
- Low maintenance
- Ideal for level regulation, lifting and other applications with intermittent operations

Features

- Piston rod-end dimensions conforming to ISO pneumatic standards
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available





Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com



OPTIONS AND ACCESSORIES

SERIES OSP-E, LINEAR DRIVE WITH TRAPEZOIDAL SCREW DRIVE, INTERNAL PLAIN BEARING GUIDE AND PISTON ROD

STANDARD VERSIONS OSP-E..STR

Data Sheet 1.35.011E-1,-2,-3,-4

Standard carrier with internal guidance and integrated magnet for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



FLANGE MOUNTING C

Data Sheet 1.44.010E-5

For end-mounting the actuator on the extending rod side



PISTON ROD CLEVIS

Data Sheet 1.44.018E-2



TRUNNION MOUNTING EN

Data Sheet 1.44.010E-13

Trunnion mounting EN in combination with pivot mounting EL. – steplessly adjustable in axial direction.



PISTON ROD COMPENSATING COUPLING

Data Sheet 1.44.018E-3

For compensating of radial and angular misalignment.



ACCESSORIES

MOTOR-MOUNTINGS

Data Sheet 1.44.006E-5



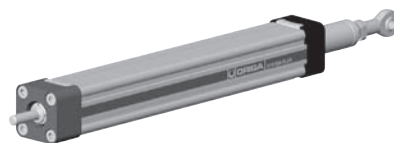
END CAP MOUNTING

Data Sheet 1.44.010E-4

For end-mounting the actuator on the extending rod side.

PISTON ROD EYE

Data Sheet 1.44.018E-2



MAGNETIC SWITCHES SERIES RS AND ES

Data Sheet 1.44.030E

For contactless position sensing of end stop and intermediate carrier positions.



MID SECTION SUPPORT

Data Sheet 1.44.010E-8

For mounting the actuator on the dovetail grooves and on the motor end.



A3P154EOGGAGOX

The right to introduce technical modifications is reserved

Linear Drive with Trapezoidal Screw Drive and Piston Rod

Series OSP-E..STR
Size 25, 32, 50



Characteristics			
Characteristics	Symbol	Unit	Description
General Features			
Series			OSP-E..STR
Name			Linear Drive with Trapezoidal Screw Drive and Piston Rod
Mounting			See drawings
Temperature Range	ϑ_{\min} ϑ_{\max}	°C °C	-20 +70
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Trapezoidal screw		Cold rolled steel
	Drive nut		Thermoplastic polyester
	Piston rod		Stainless steel
	Sealing band		Hardened, corrosion resistant steel
	Guide bearings		Low friction plastic
	Screws, nuts		zinc plated steel
	Mountings		zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) and Inertia						
Series	Weight (mass)[kg]		Moving mass [kg]		Inertia [x 10 ⁻⁶ kgm ²]	
	At stroke 0 m	Add per metre stroke	At stroke 0 m	Add per metre stroke	At stroke 0 m	Add per metre
OSP-E25STR	0.4	2.9	0.1	0.7	1.1	10.3
OSP-E32STR	0.9	5.4	0.2	1.2	3.9	29.6
OSP-E50STR	2.4	10.6	0.8	1.6	24.6	150

Installation Instructions

Use the threaded holes in the free end cap and a mid-section support close to the motor end for mounting the linear actuator.

The linear actuator can be fitted in any position. To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the linear drive, and if necessary a change of wear parts, after an operation time of 12 months or 300 km travel of distance.

Please refer to the operating instructions supplied with the drive.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the linear drive machine into service, the user must ensure the adherence to the EC Machine Directive 91/368/EEC.

Contactless position sensing

Please use the magnetic switch mentioned below:

KL3096 (Type RS-K, normally closed, Reed-contact, with cable)

KL3098 (Type ES-S, Magnetic electronic, PNP-switch with DIN-plug)

For more informations see data sheet 1.44.030E



For **magnetic switches** see 1.44.030E
For **mountings and accessories** see 1.44.006E, 1.44.010E, 1.44.018E

Sizing Performance Overview Maximum Loadings

Sizing of Linear Drive

The following steps are recommended for selection :

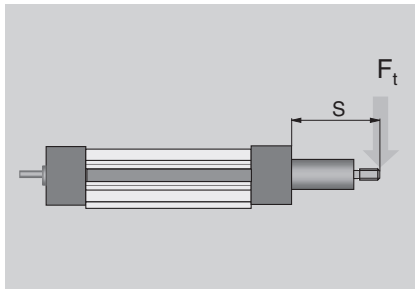
1. Check that the maximum values in the adjacent chart and transverse force/stroke graph below are not exceeded.
2. Check the lifetime/travel distance in graph below.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time in application

Performance Overview				
Characteristics	Unit	Description		
Size		OSP-E25STR	OSP-E32STR	OSP-E50STR
Pitch	[mm]	3	4	5
Max. speed	[m/s]	0.075	0.1	0.125
Linear motion per revolution, drive shaft	[mm]	3	4	5
Max. rpm, drive shaft	[min ⁻¹]	1500 ²⁾	1500	1500
Max. effective action force F_A	[N]	800	1600	3300
Corresponding torque on drive shaft	[Nm]	1.35	3.4	9.25
No-load torque	[Nm]	0.3	0.4	0.5
Max. allowable torque on drive shaft	[Nm]	1.7	4.4	12
Self-locking force F_L ¹⁾	[N]	800	1600	3300
Typical repeatability	[mm/m]	±0,5	±0,5	±0,5
Max. Standard stroke length	[mm]	500	500	500

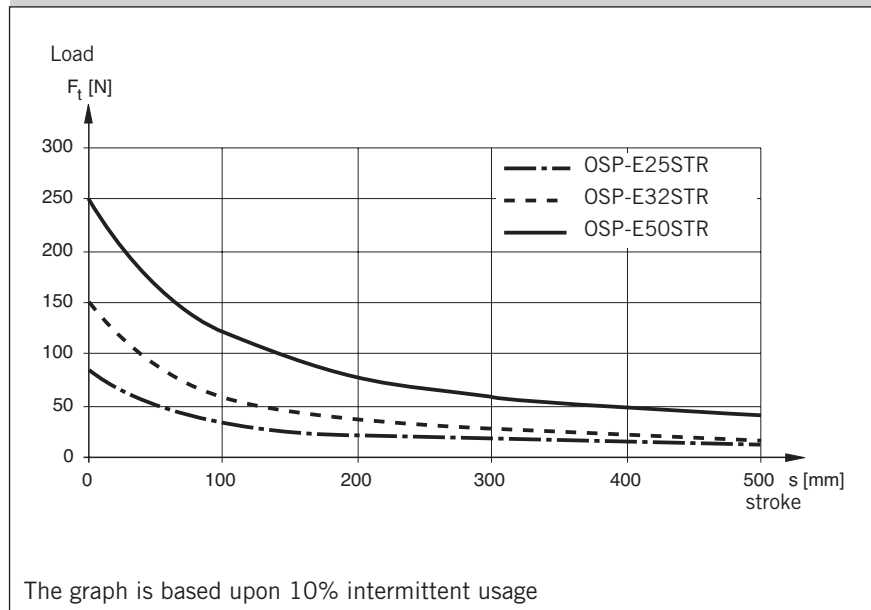
¹⁾ Related to screw types Tr 12x3, Tr 16x4, Tr 24x5
see data sheet 1.35.011-1 – for inertia

²⁾ from 0,4 m stroke max. 1200 min⁻¹ permissible

Transverse Force / stroke



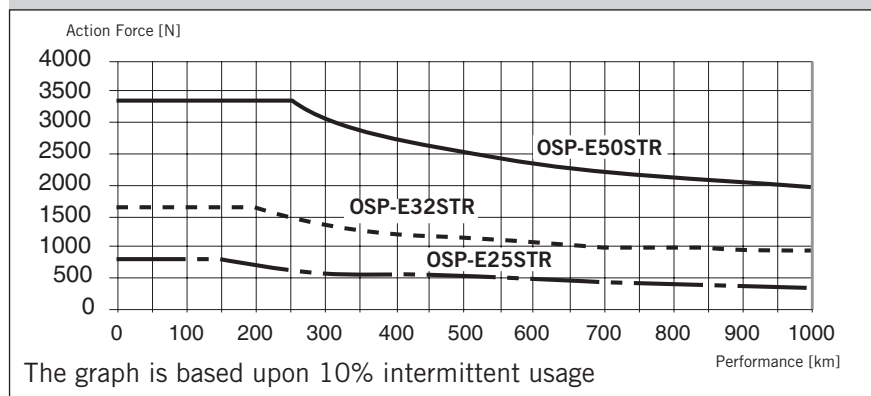
Transverse Force / Stroke



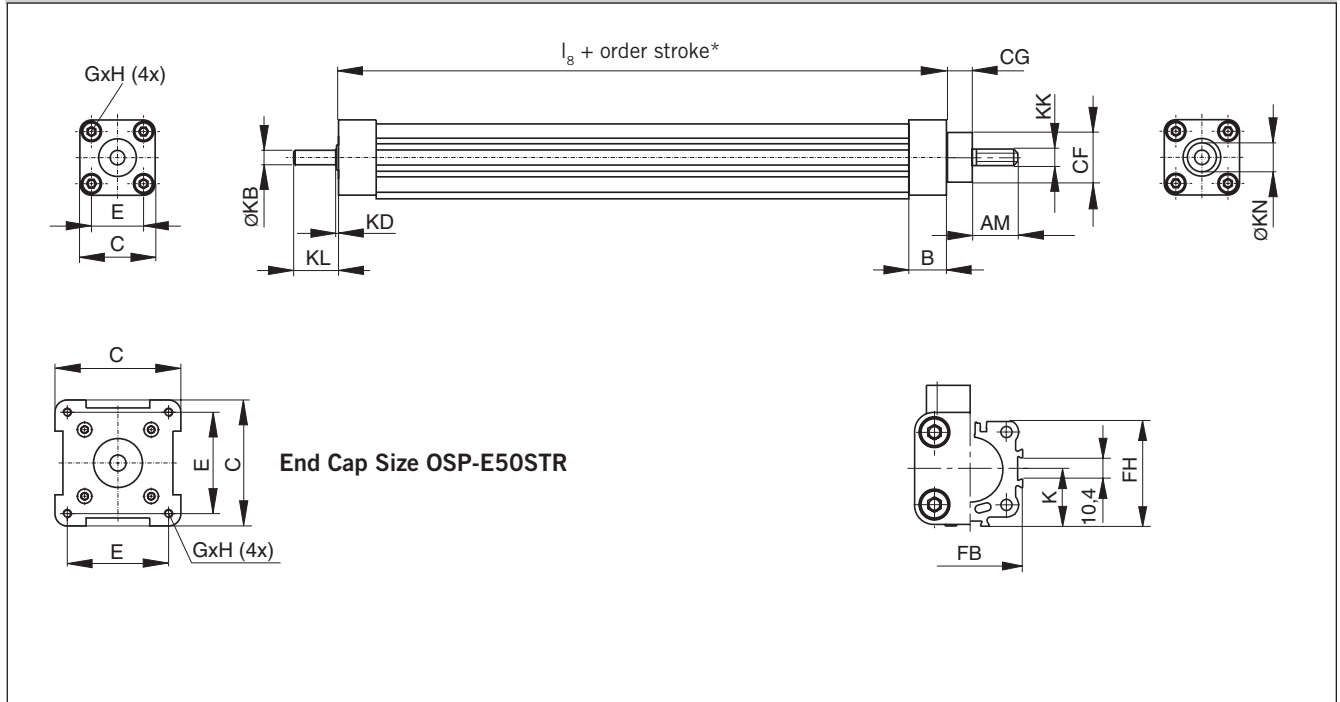
Performance / Action Force

The Linear Drives are designed for a 10% intermittent usage.
The performance to be expected depends on the maximum required actions force of the application.
An increase of the action force will lead to a reduced performance.

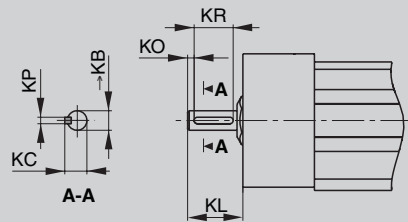
Performance as a function of the action force



Linear Drive with Trapezoidal Screw Drive and Piston Rod – Basic Unit
Series OSP-E..STR



Plain shaft with keyway (Option)



Dimension Table [mm]

Series	∅KB _{h7}	KC	KL Opt.3	Opt.4	KO	KP ^{P9}	KR
OSP-E25STR	6	6.8	17	24	2	2	12
OSP-E32STR	10	11.2	31	41	5	3	16
OSP-E50STR	15	17	43	58	6	5	28

Option 3: Keyway
Option 4: Keyway long version

*** NOTE:**

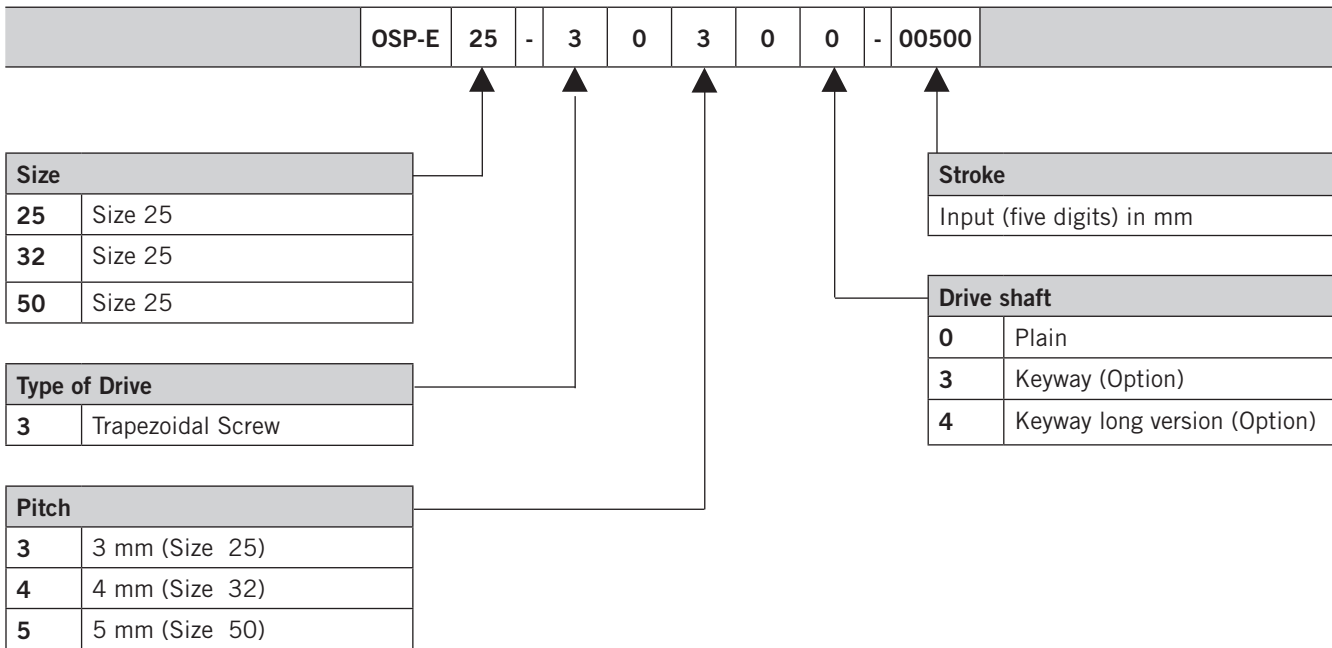
The mechanical end position must not be used as a mechanical end stop. Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 25 mm.

Order stroke = required travel + 2 x safety distance.

The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems. For further information, please contact your local Parker Origa representative.

Dimension Table [mm]																
Series	B	C	E	G x H	K	l ₈	AM	CF	CG	FB	FH	KB	KD	KK	KL	KN
OSP-E25STR	22	41	27	M5 x10	21.5	83	20	22	26	40	39.5	6 _{h7}	2	M10x1.25	17	13
OSP-E32STR	25.5	52	36	M6 x12	28.5	94	20	28	26	52	51.7	10 _{h7}	2	M10x1.25	31	20
OSP-E50STR	33	87	70	M6 x12	43	120	32	38	37	76	77	15 _{h7}	3	M16x1,5	43	28

Order Instructions



Accessories - please order separately

Description	For more informations see Data Sheet No.
Coupling Housing	1.44.006E-5
End Cap Mountings	1.44.010E-5
Mid-Section Support	1.44.010E-9
Flange Mounting C	1.44.010E-6
Trunnion Mounting	1.44.010E-13
Adaptor Profile	1.44.010E-10
T-Nut Profile	1.44.010E-11
Piston Rod Clevis according to ISO 8140	1.44.018E-2
Piston Rod Eye according to ISO 8139	1.44.018E-2
Piston Rod Compensating Coupling	1.44.018E-3
Magnetic Switches/Proximity Sensors	1.44.030E
Drive systems and components for electric linear drives OSP-E	A4P019E