

Linear Drive with Ball Screw Drive and Piston Rod Series OSP-E..SBR



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ELECTRIC LINEAR DRIVE FOR PRECISE AND HIGH SPEED POSITIONING OF HIGH MASSES

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

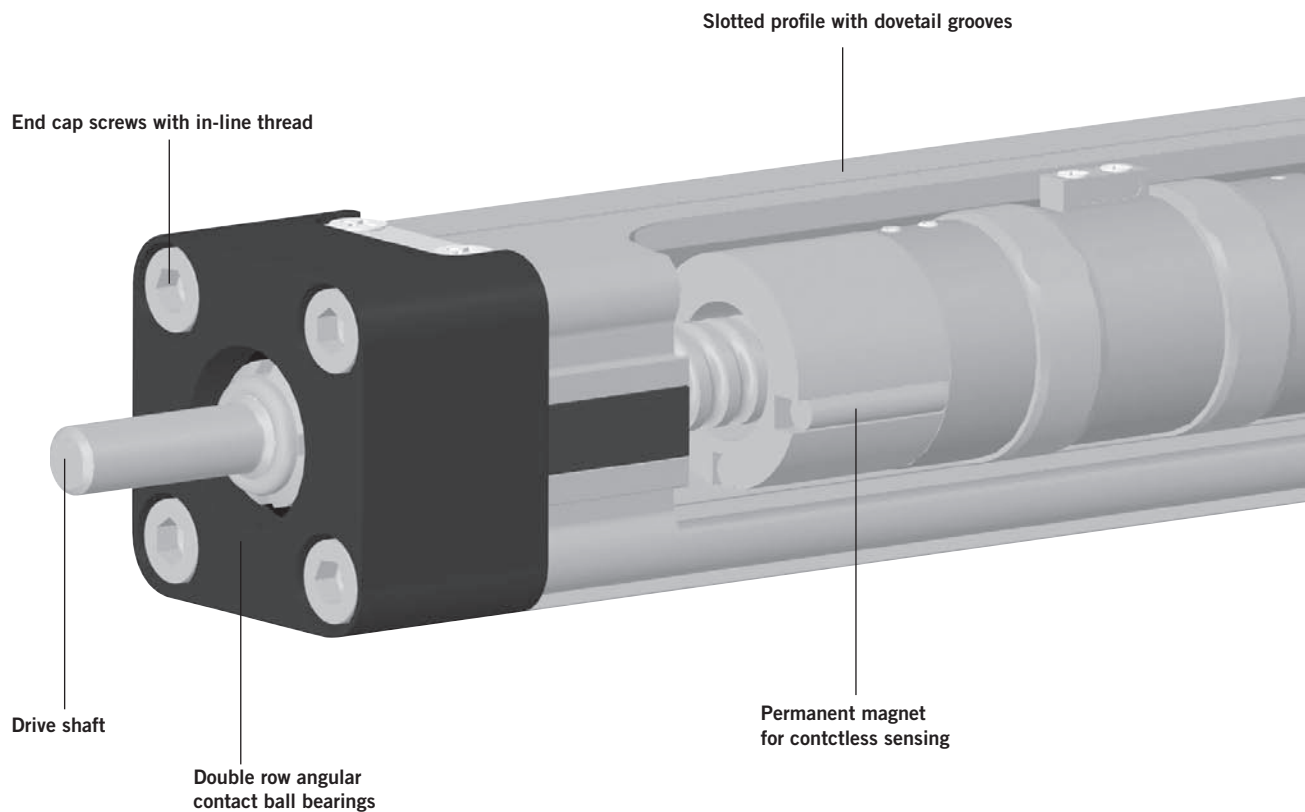
Linear Drive with Ball Screw Drive, Internal Plain Bearing Guide and Piston Rod

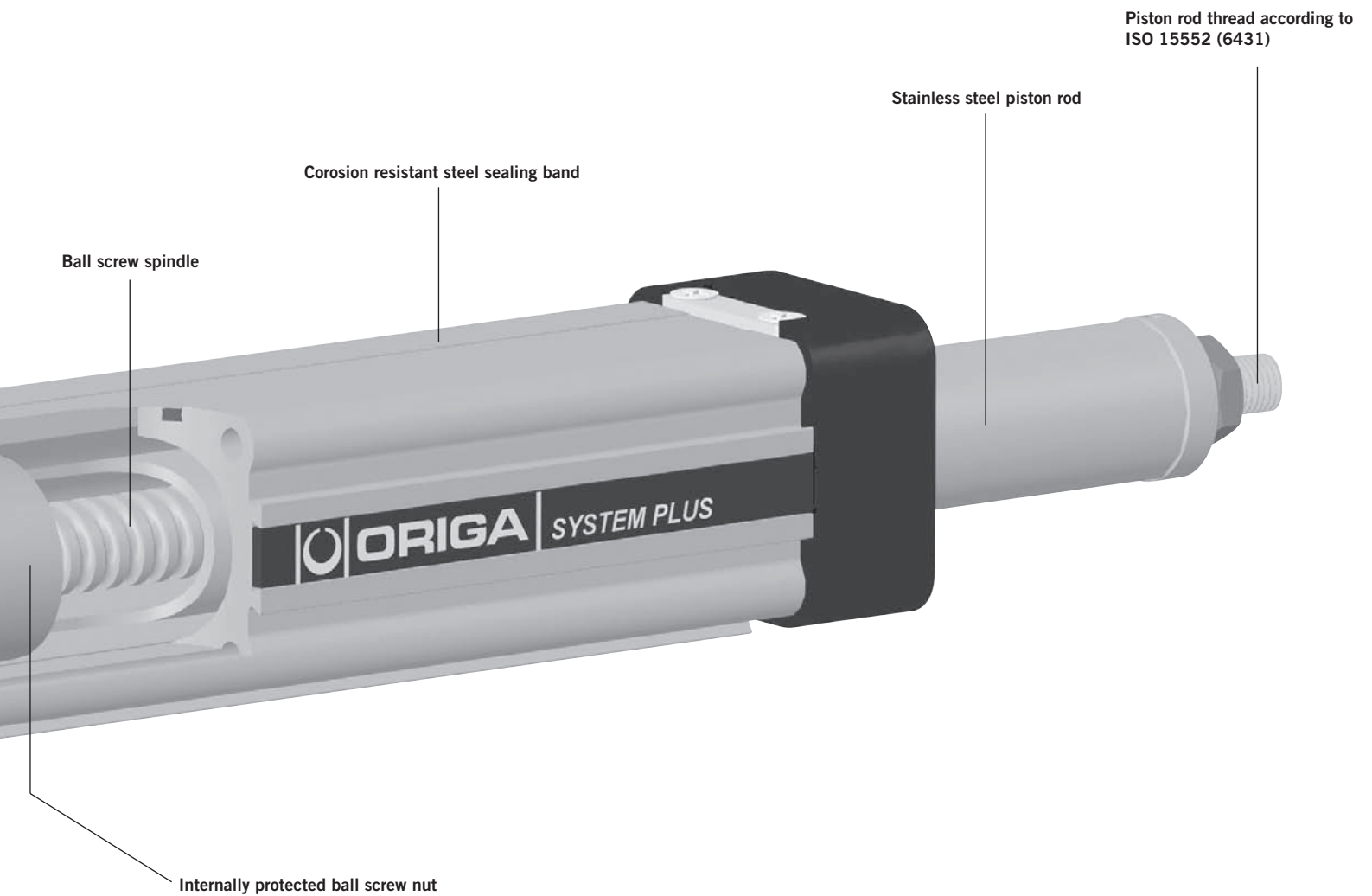
Advantages

- High output force
- Excellent running characteristics
- Accurate path and position control
- High levels of repeatability

Features

- Extending drive rod
- Ball screw spindle
- Non-rotating drive rod
- Continuous duty operation
- Large range of accessories





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 BALL SCREW DRIVE, INTERNAL PLAIN BEARING GUIDE AND PISTON ROD

STANDARD VERSIONS OSP-E..SBR

Data Sheet 1.35.021E-1,-2,-3,-4

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



BALL SCREW PITCH

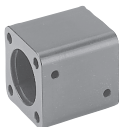
The ball screws spindles are available in various pitches:

- OSP-E25SBR: 5 mm
- OSP-E32SBR: 5, 10 mm
- OSP-E50SBR: 5, 10, 25 mm

ACCESSORIES

MOTOR MOUNTINGS

Data Sheet 1.44.006E-5



END CAP MOUNTING

Data Sheet 1.44.010E-5

For end-mounting the actuator on the extending rod side

MID SECTION SUPPORT

Data Sheet 1.44.010E-9

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



FLANGE MOUNTING C

Data Sheet 1.44.010E-6

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



TRUNNION MOUNTING EN

Data Sheet 1.44.010E-13

Trunning mounting EN in combination with pivot mounting EL.

– steplessly adjustable in axial direction.



PISTON ROD EYE

Data Sheet 1.44.018E-2



PISTON ROD CLEVIS

Data Sheet 1.44.018E-2



PISTON ROD COMPENSATING COUPLING

Data Sheet 1.44.018E-3

For compensating of radial and angular misalignments



MAGNETIC SWITCHES SERIES RS AND ES

Data Sheet 1.44.030E

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



A1P702E00GAG50X

The right to introduce technical modifications is reserved

Linear Drive with Ball Screw Drive and Piston Rod

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



Characteristics			
Characteristics	Symbol	Unit	Description
General Features			
Series			OSP-E..SBR
Name			Linear drive with ball screw drive and piston rod
Mounting			see drawings
Temperature range	ϑ_{\min} ϑ_{\max}	°C °C	-20 +80
Weight (Mass)		kg	see table
Installation			In any position
Material	Slotted profile		Al anodized
	Ball screw		Steel
	Ball nut		Steel
	Piston rod		Stainless steel
	Guide bearings		Low friction plastic
	Sealing band		Hardened, corrosion resistant steel
	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 stroke
OSP-E25SBR	0.7	3.0	0.2	0.9	1.2	11.3
OSP-E32SBR	1.7	5.6	0.6	1.8	5.9	32.0
OSP-E50SBR	4.5	10.8	1.1	2.6	50.0	225.0

Standard Version:

- Standard carrier with internal plain bearing guide
- Pitches of Ball Screw Spindle:
Type OSP-E25SBR : 5 mm
Type OSP-E32SBR : 5, 10 mm
Type OSP-E50SBR : 5, 10, 25 mm

Option:

- Key way version

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.

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 3000 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.

The right to introduce technical modifications is reserved



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

Data Shett No. 1.35.021E-1

Sizing Performance Overview Maximum Loadings

Sizing of Linear Drive

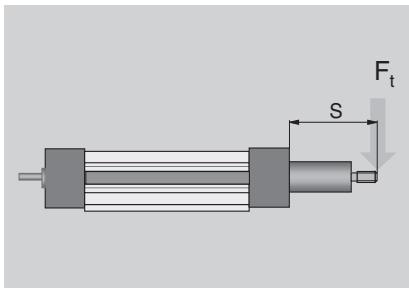
The following steps are recommended for selection :

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.

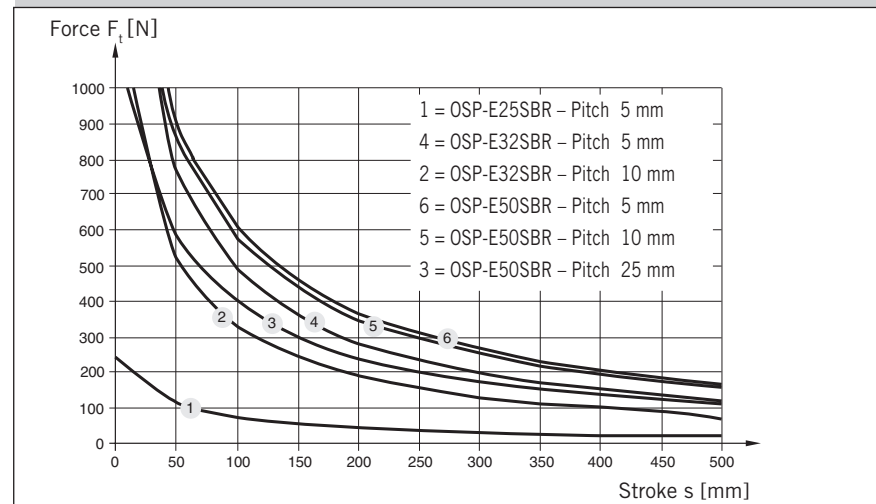
Performance overview							
Characteristics	Unit	Description					
Series		OSP-E25SBR		OSP-E32SBR		OSP-E50SBR	
Pitch	[mm]	5	5	10	5	10	25
Max. speed	[m/s]	0.25	0.25	0.5	0.25	0.5	1.25
Linear motion per revolution drive shaft	[mm]	5	5	10	5	10	25
Max. rpm drive shaft	[min ⁻¹]	3000		3000		3000	
Max. effective action force F_A	[N]	260		900		1200	
Corresponding torque drive shaft	[Nm]	0.45		1.1 1.8		1.3 2.8 6.0	
No-load torque	[Nm]	0.2		0.3		0.3 0.4 0.5	
Max. allowable torque on drive shaft	[Nm]	0.6		1.5 2.8		4.2 7.5 20	
Max. allowable acceleration	[m/s ²]	5		5		5	
Typical repeatability	[mm/m]	±0.05		±0.05		±0.05	
Max. Standard stroke length	[mm]	500		500		500	

Transverse Force / Stroke

The permissible transverse force is reduced with increasing stroke length, according to the adjacent graphs.



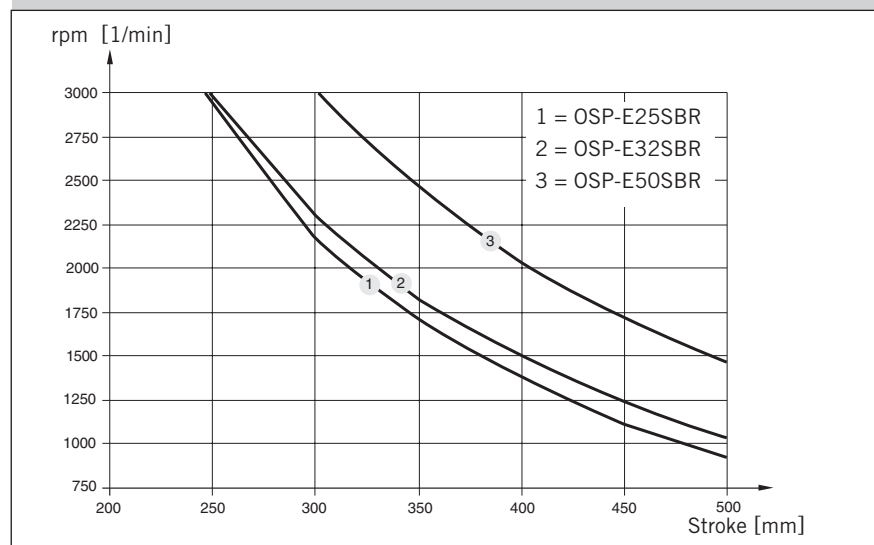
Transverse Force / Stroke



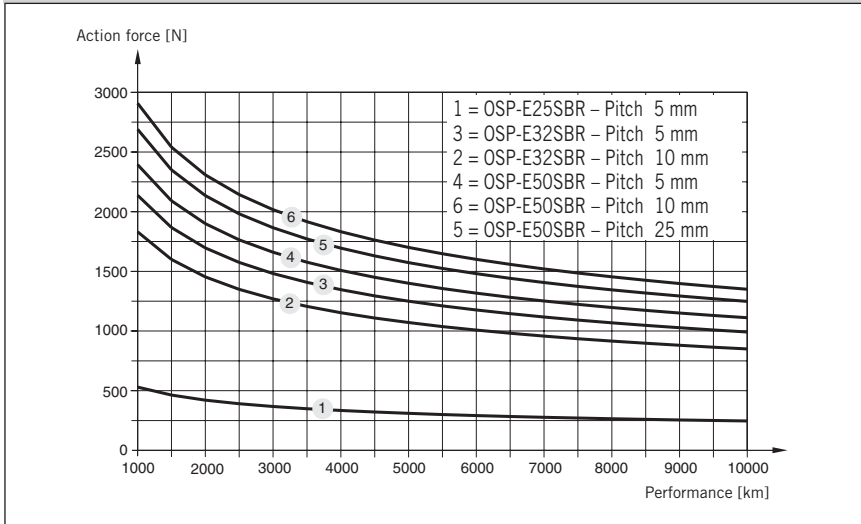
Maximum rpm / Stroke

At longer strokes the speed has to be reduced according to the adjacent graphs.

Maximum rpm / Stroke



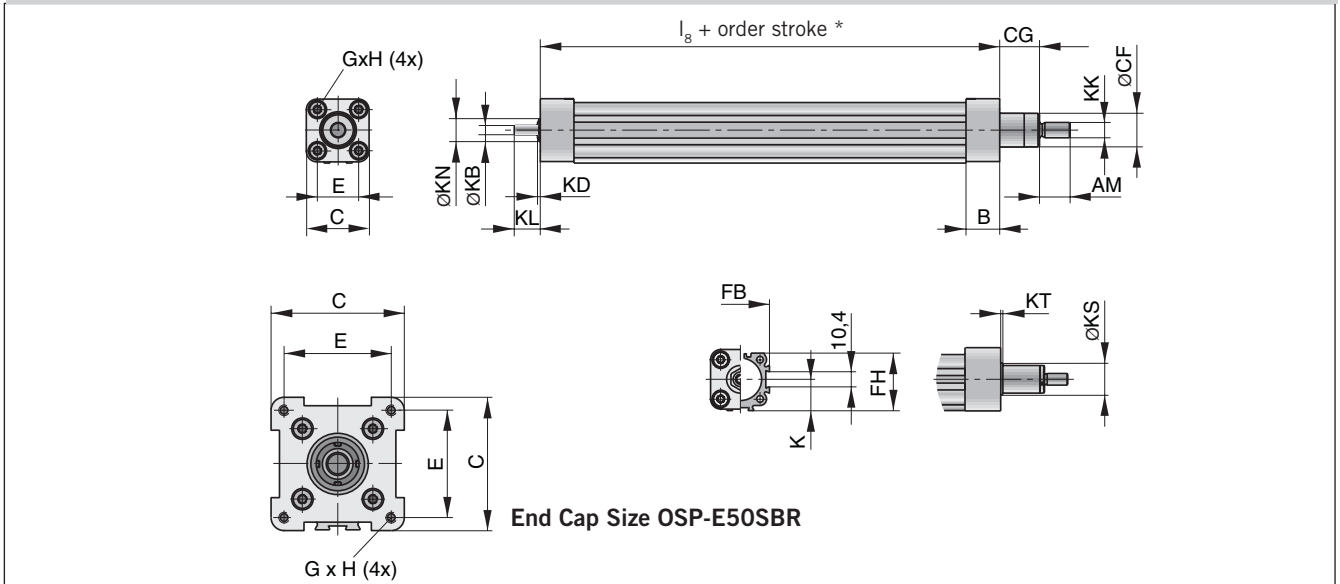
Performance as a function of the action force



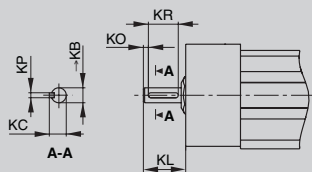
Performance / Action force

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.

Linear Drive with Ball Screw Drive and Piston Rod – Basic Unit Series OSP-E..SBR



Plain shaft with keyway (Option)



Dimension Table [mm]

Series	ØKB _{h7}	KC	KL		KO	KP ^{P9}	KR
			Opt.3	Opt.4			
OSP-E25SBR	6	6.8	17	24	2	2	12
OSP-E32SBR	10	11.2	31	41	5	3	16
OSP-E50SBR	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.

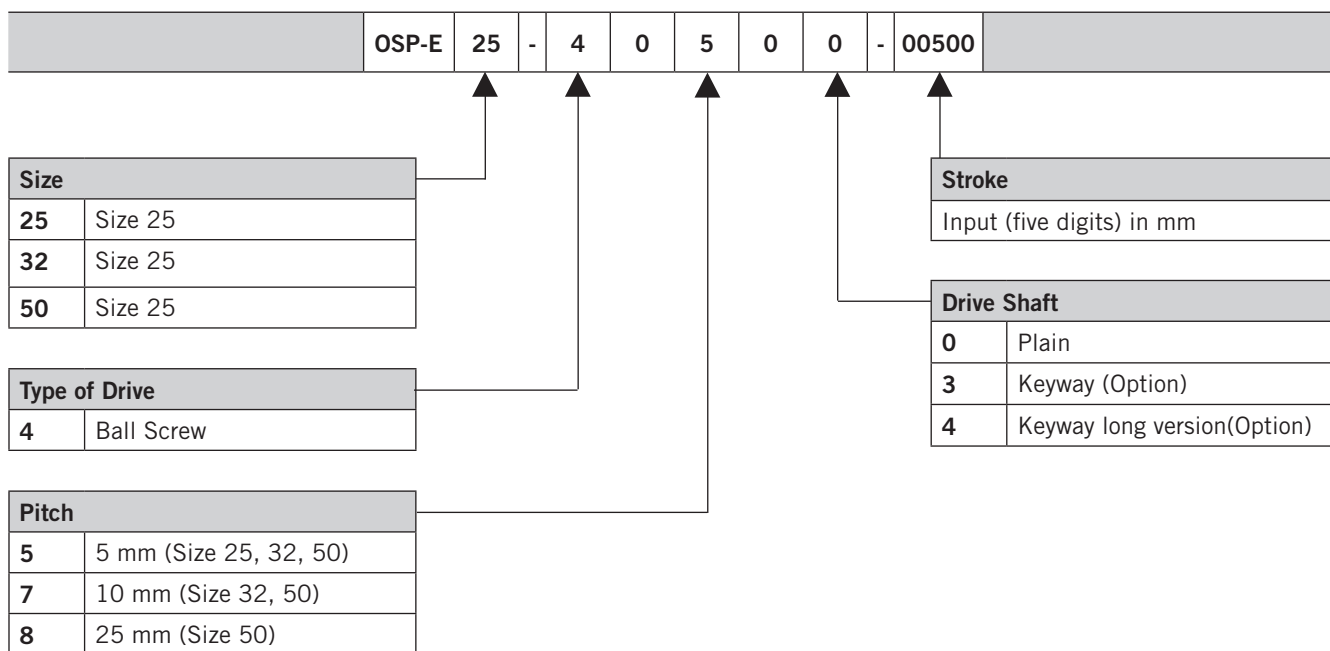
Order stroke = required travel + 2 x safety distance.

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 _g	AM	ØCF	CG	FB	FH	ØKB	KD	KK	KL	ØKN	ØKS	KT
OSP-E25SBR	22	41	27	M5 x 10	21.5	110	20	22	26	40	39.5	6 _{h7}	2	M10x1.25	17	13	-	-
OSP-E32SBR	25.5	52	36	M6 x 12	28.5	175.5	20	28	26	52	51.7	10 _{h7}	2	M10x1.25	31	20	33	2
OSP-E50SBR	33	87	70	M6 x 12	43	206	32	38	37	76	77	15 _{h7}	3	M16x1.5	43	28	44	3

Order Instructions



Accessories - please order separately

Description	For more Information see Data Sheet No.
Motor Mountings	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	1.44.030E
Drive systems and components for electric linear drives OSP-E	A4P019E