

ORIGA SYSTEM PLUS

# Modular Electric Linear Drive Systems



**HOERBIGER**

**ORIGA**

# OSP

— ORIGA

— SYSTEM

— PLUS

— ELECTRIC ACTUATOR

2D & 3D  
CAD Drawings  
can be downloaded  
from website  
[www.hoerbigeroriga.com](http://www.hoerbigeroriga.com)

## Attention!

Contact Hoerbiger-Origa for sizing software  
and/or technical assistance

630-871-8300

Application Sheet on Page 147

All dimensions are in European-Standard.

Please convert all in US-Standard.

## Conversion Table

<b>Multiply</b>	<b>By</b>	<b>To Obtain</b>
Millimeters	.03937	Inches
Newtons	.2248	Lbs.(F)
Newton-Meters	8.8512	In-Lbs
Kilograms	2.205	Lbs.
<hr/>		
Inches	25.4	Millimeters
Lbs.(F)	4.448	Newtons
In-Lbs	.113	Newtons-Meters
Lbs.	.45359	Kilograms



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Internet <http://www.hoerbigeroriga.com>



# Contents Electric Linear Drive Systems



	Page		Page
Introduction – OSP Concept	2-3	<b>Linear Guides</b>	
Modular Components Overview	4-7	Overview	115-116
Applications for OSP-E Drives	8-9	Plain Bearing Guide SLIDELINE	117-118
		Roller Guide POWERSLIDE	119-122
		Ball Bushing Guide GUIDELINE	123-127
		Aluminium-Roller Guide PROLINE	127-129
<b>Belt-Driven</b>		<b>Proximity Sensors</b>	130-132
– With Integrated Roller Guide	11-23		
– Recirculating Ball Bearing Guide Series OSP-E..BHD 25, 32, 50		<b>Gearboxes and Motor Mounts</b>	134-143
<b>Multi-Axis Connection System</b>		<b>Ordering Instructions</b>	144-145
Overview	26-28	<b>Application Sheet</b>	147
Adapter Plates	29-37		
Intermediate Drive Shaft	38		
– Accessories – OSP-E..BHD	40-45		
– With Integral Guidance	47-56		
Series OSP-E..B 25, 32, 50			
– For Synchronized Bi-Parting Movements	58-66		
Series OSP-E..BP 25, 32, 50			
– Accessories – Linear Drive OSP-E	68-78		
<b>Ball-Screw-Driven</b>			
– Series OSP-E..S 25, 32, 50	79-89		
– Accessories – OSP-E Ballscrew	92-102		
– Series OSP-E..SBR 25, 32, 50	103-110		

# ORIGA SYSTEM PLUS

- ONE CONCEPT
- THREE DRIVE OPTIONS

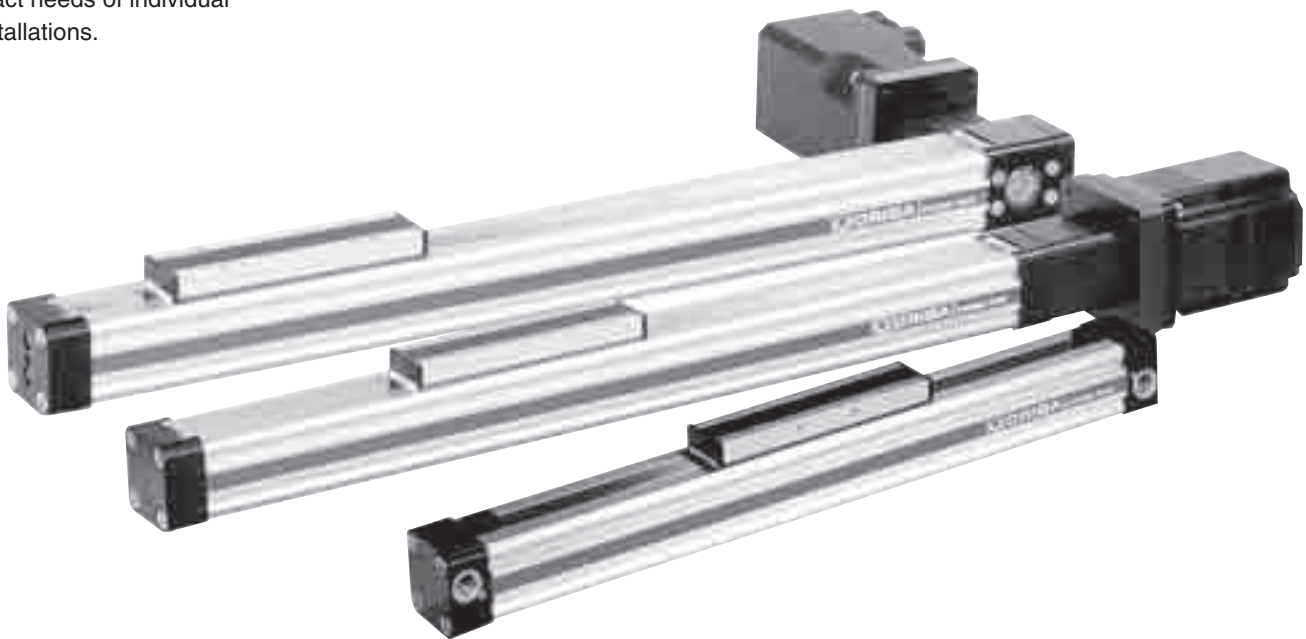
Based on the ORIGA rodless cylinder, proven in world wide markets, HOERBIGER-ORIGA now offers the complete solution for linear drive systems. Designed for absolute reliability, high performance, ease of use and optimised engineering the ORIGA SYSTEM PLUS satisfies even the most demanding applications.

## ORIGA SYSTEM PLUS

is a totally modular concept which offers the choice of pneumatic or electric actuation, with guidance and control modules to suit the exact needs of individual installations.

The actuators at the core of the system all have a common aluminium extruded profile, with double dovetail mounting rails on three

sides, these are the principle building blocks of the system to which all modular options are directly attached.












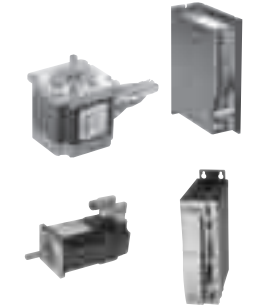



## SYSTEM MODULARITY

- **Electric Screw Drive**
  - For high force capability and accurate path and position control.
- **Electric Belt Drive**
  - For high speed applications, accurate path and position control and longer strokes.

# ORIGA SYSTEM PLUS

– ONE CONCEPT  
– THREE DRIVE OPTIONS

<p><b>Basic Linear Drive</b> – Standard Version</p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt, Belt Bi-parting, Belt with integrated Roller Guide</li> <li>● Series OSP-E Screw (Ball Screw)</li> <li>● Series OSP-E SBR</li> </ul>		<p><b>Linear Guides</b> – SLIDELINE</p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Screw</li> </ul>	
<p><b>Clevis Mounting</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>		<p><b>Linear Guides</b> – POWERSLIDE</p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>	
<p><b>End Cap Mounting</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>		<p><b>Linear Guides</b> – GUIDELINE</p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>	
<p><b>Mid-Section Support</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>		<p><b>Linear Guides</b> – PROLINE</p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>	
<p><b>Inversion Mounting</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>		<p><b>Proximity Sensors</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P (pneumatic)*</li> <li>● Series OSP-E Belt</li> <li>● Series OSP-E Screw</li> </ul>	
<p><b>Multi-Axis Connection System</b></p> <ul style="list-style-type: none"> <li>● Adapter Plates</li> <li>● Intermediate Drive Shafts</li> </ul>		<p><b>Electric Motors and Control Packages*</b></p> <ul style="list-style-type: none"> <li>● Stepper Motor and Controller</li> <li>● Servo Motor and Controller</li> <li>● Gear Heads</li> </ul> <p><b>Consult Factory for Motor Selection</b></p>	
		<p><b>Gearboxes</b></p> <ul style="list-style-type: none"> <li>● Planetary</li> <li>● Belt Gear – OSP-E SBR</li> </ul>	

Linear Drives	OSP-E25 -BHD <sup>1)</sup>	OSP-E32 -BHD <sup>1)</sup>	OSP-E50 -BHD <sup>1)</sup>	OSP-E25 -B <sup>2)</sup>	OSP-E32 -B <sup>2)</sup>	OSP-E50 -B <sup>2)</sup>	OSP-E25 -BP <sup>3)</sup>	OSP-E32 -BP <sup>3)</sup>	OSP-E50 -BP <sup>3)</sup>
Effective action force [N]	550-1070	1030-1870	1940-3120	50	100 - 150	300 - 425	50	100 - 150	300 - 425
Velocity v [m/s]	10,0/5	10,0/5	10,0/5	2,0	3,0	5,0	2,0	3,0	5,0
Magnetic piston (three sides)	□	□	□	□	□	□	□	□	□
Free choice of stroke length [mm] **	1 - 7000	1 - 7000	1 - 7000	1 - 3000	1 - 5000	1 - 5000	1 - 1500 x 2	1 - 2500 x 2	1 - 2500 x 2
Temperature range [°C] *	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80
Stainless steel parts	X	X	X	X	X	X	X	X	X
Tandem piston	○	○	○	○	○	○	○	○	○
<b>Self-Guidance</b>									
L [N]	986/3000	1348/1000	3704/15000	160	300	850	160	300	850
M [Nm]	64/500	115/1000	365/1800	12	25	80	12	25	80
Ms [Nm]	11/50	19/120	87/180	2	8	16	2	8	16
Mv [Nm]	64/500	115/1400	365/2500	8	16	32	8	16	32
<b>Slideline</b>									
L [N]	-	-	-	X	X	X	X	X	X
M [Nm]	-	-	-	X	X	X	X	X	X
Ms [Nm]	-	-	-	X	X	X	X	X	X
Mv [Nm]	-	-	-	X	X	X	X	X	X
<b>Proline</b>									
L [N]	-	-	-	986	1348	3582	986	1348	3582
M [Nm]	-	-	-	44	84	287	44	84	287
Ms [Nm]	-	-	-	19	33	128	19	33	128
Mv [Nm]	-	-	-	44	84	287	44	84	287
<b>Powerslide</b>									
L [N]	-	-	-	910 - 1190	1400 - 2300	3000 - 4000	910 - 1190	1400 - 2300	3000 - 4000
M [Nm]	-	-	-	63 - 175	70 - 175	250 - 350	63 - 175	70 - 175	250 - 350
Ms [Nm]	-	-	-	14 - 20	20 - 50	90 - 140	14 - 20	20 - 50	90 - 140
Mv [Nm]	-	-	-	63 - 175	70 - 175	250 - 350	63 - 175	70 - 175	250 - 350
<b>Guideline</b>									
L [N]	○	○	○	1650 - 2500	1650 - 2500	4400 - 8000	1650 - 2500	1650 - 2500	4400 - 8000
M [Nm]	○	○	○	115	145	500	115	145	500
Ms [Nm]	○	○	○	75	90	375	75	90	375
Mv [Nm]	○	○	○	90	115	355	90	115	355
Guideline with shock absorber for cushioning	○	○	○	○	○	○	○	○	○
<b>Aktiv brake</b>									
Braking force at 6 bar (brake surface dry) [N]	X	X	X	○	○	○	○	○	○
<b>Slideline SL / Proline PL with brakes</b>									
<b>Aktiv brake</b>									
Braking force (no pressure, brake surface dry) [N]	X	X	X	○	○	○	○	○	○
<b>Passiv brake Multibrake</b>									
Braking force (no pressure, brake surface dry) [N]	X	X	X	○	○	○	○	○	○
<b>Accessories</b>									
<b>Magnetic switches</b>									
RS (closer, opener)	○	○	○	○	○	○	○	○	○
Elektronik switches ES (PNP, NPN)	○	○	○	○	○	○	○	○	○
<b>Displacement measuring systems</b>									
SFI - incremental	○	○	○	○	○	○	○	○	○
SFA - absolute	○	○	○	○	○	○	○	○	○
<b>Motor package (stepper/servo)</b>	○	○	○	○	○	○	○	○	○
<b>Gearbox (integrated planetary gearbox)</b>	○	○	○	-	-	-	-	-	-
<b>Mountings</b>									
Clevis Mounting	X	X	X	○	○	○	○	○	○
End Cap Mounting / Mid-section Support	○	○	○	○	○	○	○	○	○
Inversion Mounting	X	X	X	○	○	○	○	○	○
Adapter Profile / T-Nut Profile	○	○	○	○	○	○	○	○	○
<b>Multi-Axis Connection System</b>									
Adapter Plates	○	○	○	○	○	○	○	○	○
Intermediate Drive Shafts	○	○	○	○	○	○	○	○	○
<b>Special Drives</b>									
Clean Room Cylinders	X	X	X	X	X	X	X	X	X

□ = Standard version

○ = Option

X = Currently not available

\* = other temperature ranges on request

\*\* = **exc. safety clearance from mechanical end position**  
other stroke lengths on request

<sup>1)</sup> = Electric Linear Drive (Belt, with integrated Roller Guide / or Recirculating Ball Bearing Guide

— Option: Bi-parting

<sup>2)</sup> = Electric Linear Drive (Belt)

<sup>3)</sup> = Electric Linear Drive (Belt Bi-parting)

<sup>4)</sup> = Electric Linear Drive (Ball screw)

<sup>5)</sup> = Electric Linear Drive (Trapezoidal Screw)

<sup>6)</sup> = Electric Linear Drive (Trapezoidal Screw with extending Rod)

<sup>7)</sup> = Electric Linear Drive (Ball screw with extending Rod)

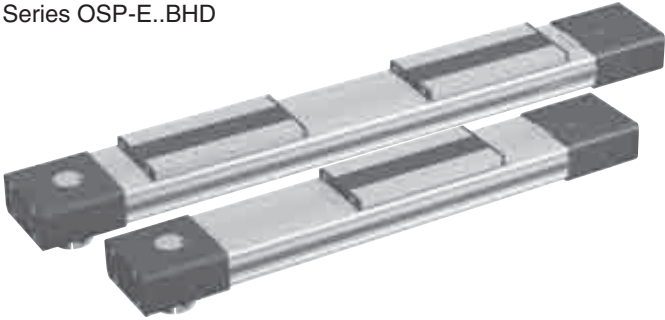
# Electric Linear Drive Systems, Modular Components - Overview

	OSP-E25 -S <sup>4)</sup>	OSP-E32 -S <sup>4)</sup>	OSP-E50 -S <sup>4)</sup>	OSP-E25 -SBR <sup>7)</sup>	OSP-E32 -SBR <sup>7)</sup>	OSP-E50 -SBR <sup>7)</sup>
	250	600	1500	260	550 – 1090	750 – 1680
	0,25	0,5	1,25	0,25	0,25 – 0,5	0,25 – 1,25
	□	□	□	□	□	□
	1 - 1100	1 - 2000	1 - 3200	1 – 500	1 – 500	1 – 500
	- 20 – + 80	- 20 – + 80	- 20 – + 80	-20 – +80	-20 – +80	-20 – +80
	X	X	X	X	X	X
	○	○	○	-	-	-
	500	1200	3000	-	-	-
	12	25	80			
	2	8	16	-	-	-
	8	16	32	-	-	-
	675	925	2000	-	-	-
	34	60	180			
	14	29	77	-	-	-
	34	60	180	-	-	-
	986	1348	3582	-	-	-
	44	84	287	-	-	-
	19	33	128	-	-	-
	44	84	287	-	-	-
	910 - 1190	1400 - 2300	3000 - 4000	-	-	-
	63 - 175	70 - 175	250 - 350	-	-	-
	14 - 20	20 - 50	90 - 140	-	-	-
	63 - 175	70 - 175	250 - 350	-	-	-
	1650 - 2500	1650 - 2500	4400 - 8000	-	-	-
	115	145	500			
	75	90	375	-	-	-
	90	115	355			
	○	○	○	-	-	-
	○	○	○	-	-	-
	○	○	○	-	-	-
	○	○	○	-	-	-
	○	○	○	○	○	○
	○	○	○	○	○	○
	○	○	○	-	-	-
	○	○	○	-	-	-
	○	○	○	○	○	○
	-	-	-	-	-	-
	○	○	○	-	-	-
	○	○	○	○	○	○
	○	○	○	-	-	-
	○	○	○	○	○	○
	○	○	○	○	○	○
	○	○	○	○	○	○
	X	X	X	X	X	X



# A COMPLETE SYSTEM – SIX DRIVE OPTIONS FOR ALL REQUIREMENTS

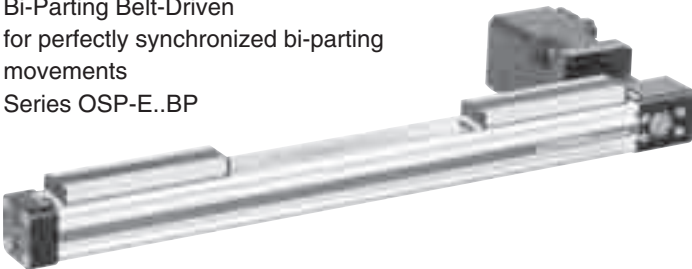
Belt-Driven with Integrated Roller Guide or integrated Recirculating Ball Bearing Guide  
Series OSP-E..BHD



Belt-Driven with Integral Guidance  
Series OSP-E..B



Bi-Parting Belt-Driven  
for perfectly synchronized bi-parting  
movements  
Series OSP-E..BP



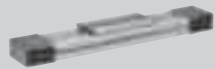



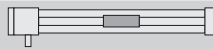

Ball Screw-Driven  
Series OSP-E..S




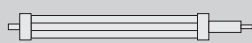


Screw-Driven with extending rod  
Series OSP-E..SR (with Trapezoidal Screw)  
Series OSP-E..SBR (with Ball Screw)



# STANDARD VERSIONS, OPTIONS AND ACCESSORIES

Description	<b>Belt-Driven – Basic Versions</b>		
	Belt-Driven with Integrated Roller Guide	Belt-Driven	Bi-Parting Belt-Driven
			
Standard Versions			
Options	<ul style="list-style-type: none"> <li>– Bi-Parting</li> <li>– Integrated Planetary Gearbox</li> <li>– Actuating Direction</li> </ul>	<ul style="list-style-type: none"> <li>– Drive Shaft Options</li> </ul>	<ul style="list-style-type: none"> <li>– Drive Shaft Options</li> </ul>
<b>Mountings</b>			
Clevis Mounting	–	O	O
End Cap Mounting	O	O	O
Mid-Section Support	O	O	O
Inversion Mounting	–	O	O
<b>Accessories</b>			
Proximity Sensors	O	O	O
Motor Mountings	O	O	O
<b>Linear Guides</b>	O	O	O
<b>Multi-Axis Connection System</b>	O	O	O

Description	<b>Screw-Driven – Basic Versions</b>	
	Ball Screw-Driven	Screw-Driven with extending Rod – with Ball Screw
		
Standard Versions		
Options	<ul style="list-style-type: none"> <li>– Pitch options</li> </ul>	<ul style="list-style-type: none"> <li>– Flange Mounting</li> <li>– Trunnion Mounting</li> <li>– Piston Rod Mountings</li> </ul>
<b>Mountings</b>		
Clevis Mounting	O	–
End Cap Mounting	O	O
Mid-Section Support	O	O
Inversion Mounting	O	–
<b>Accessories</b>		
Magnetic Switches	O	O
Motor Mountings	O	O
<b>Linear Guides</b>	O	–
<b>Multi-Axis Connection System</b>	O	O

# APPLICATION EXAMPLES FOR ELECTRIC LINEAR DRIVE SYSTEMS

## Auto Handling

- high speed pick and place movements



## Material Handling Systems

- vertical and horizontal transfer movements



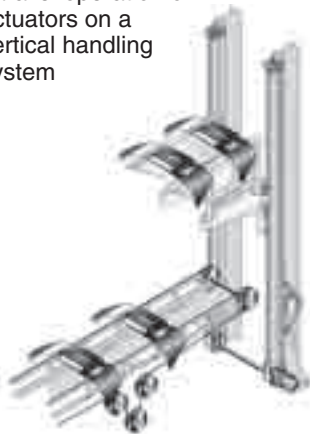
## Punching Machines

- accurate feeding and positioning



## Mechanical Handling

- parallel operation of actuators on a vertical handling system



## Slitting Machines

- high speed traverse applications for the slicing of papers and textiles



## Profile Cutting Machines

- intricate profile movements of water jets and lasers



## Spray Coating

- synchronized high speed bi-parting movements



## Automated Filling Machines

- accurate 3-axis positioning



## Automatic Doors and Guards

- simple bi-parting operation



## Ergonomic Workstations

- adjustment of working levels



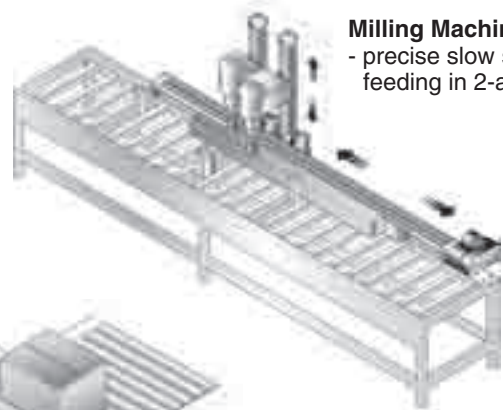
**Robotic Installations**

- traverse of robots between work stations



**Milling Machines**

- precise slow speed feeding in 2-axis



**Conveyor Systems**

- simple cross-transfer actuators



**Spraying Equipment**

- precision reciprocating action



**Measuring Systems**

- optical curvature gauging using synchronised bi-parting actuation



**Ventilation Systems**

- adjustment of air dampers



**Mobile Lifting Systems**

- lifting devices for industrial safety



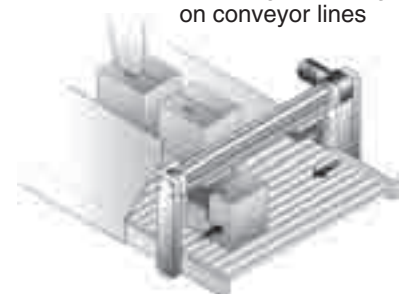
**Medical Equipment**

- adjustment of orthopaedic beds



**Conveyor Systems**

- centering of packages on conveyor lines

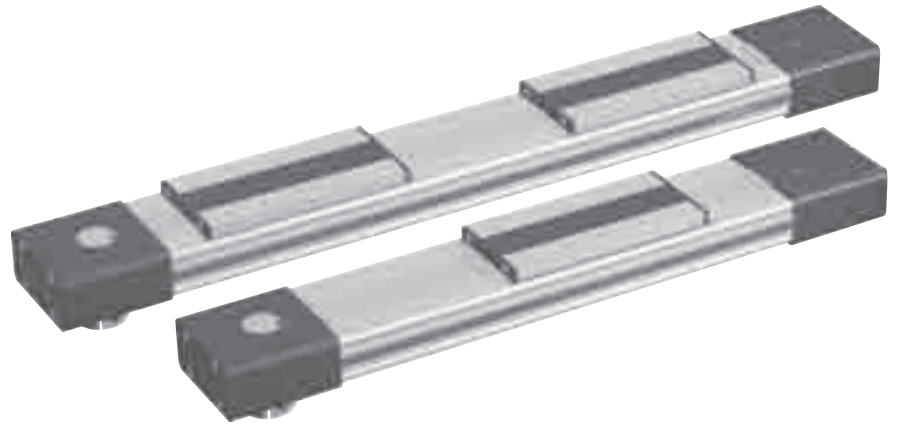




# Linear Actuator with Toothed Belt and Integrated Guide

– with Roller Guide  
– with Recirculating Ball Bearing Guide

## Series OSP-E..BHD



### Contents

Description	Page
Overview	11-14
<b>Version with Roller Guide</b>	
Technical Data	15-17
Dimensions	18, 23
<b>Version with Recirculating Ball Bearing Guide</b>	
Technical Data	19-21
Dimensions	22, 23

# ELECTRIC LINEAR ACTUATOR FOR HEAVY DUTY APPLICATIONS

The latest generation of high capacity linear drives, the OSP-E..BHD series combines robustness, precision and high performance. The aesthetic design is easily integrated into machine constructions by virtue of extremely adaptable mountings.

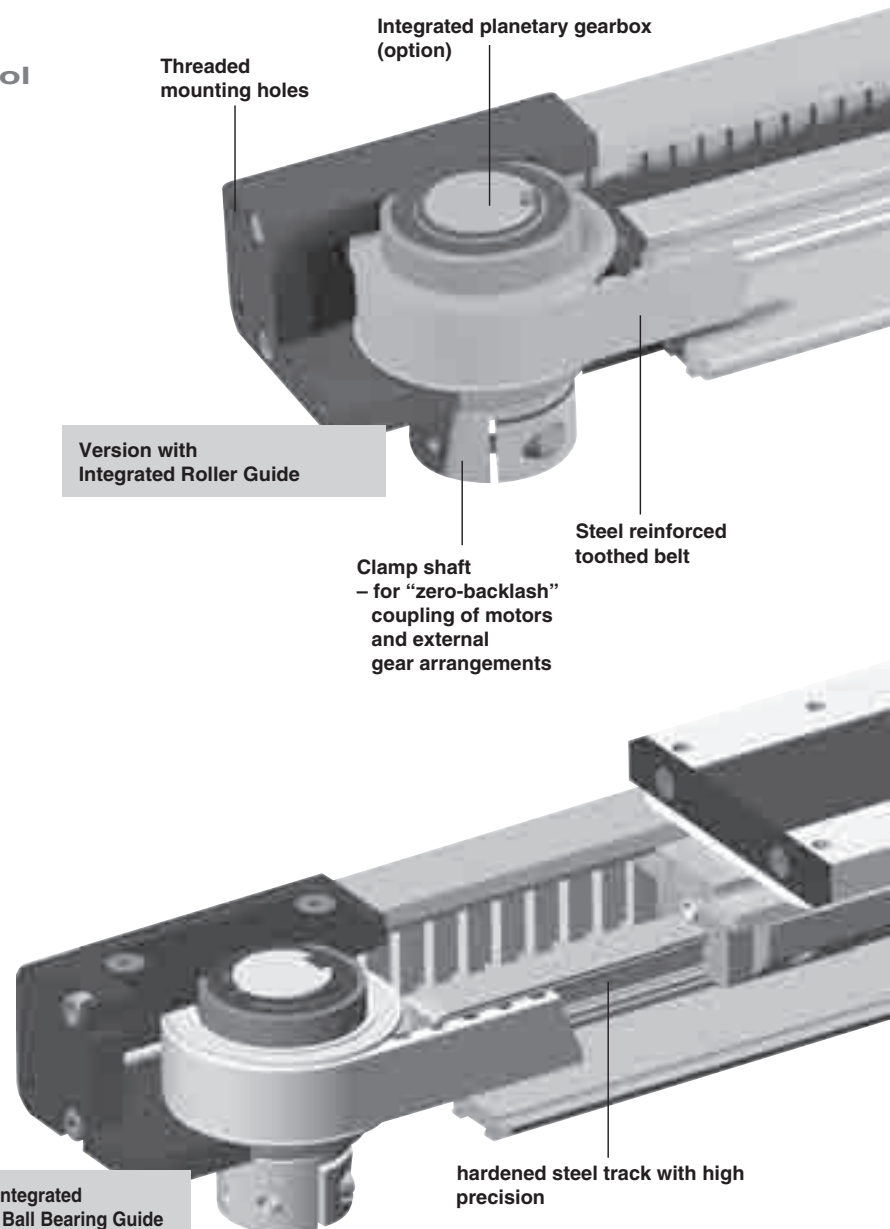
## Linear Actuator with Toothed Belt and Integrated Roller Guide or Integrated Recirculating Ball Bearing Guide for high force output

### Advantages:

- Accurate path and position control
- High force output
- High speed operation
- High load capacity
- Easy installation
- Low maintenance
- Ideal for multi-axis applications

### Features:

- Integrated roller guide or integrated recirculating ball bearing guide
- Complete motor and control packages
- Optional integrated planetary gearbox
- Diverse range of multi-axis connection parts
- Diverse range of accessories and mountings
- Special options available

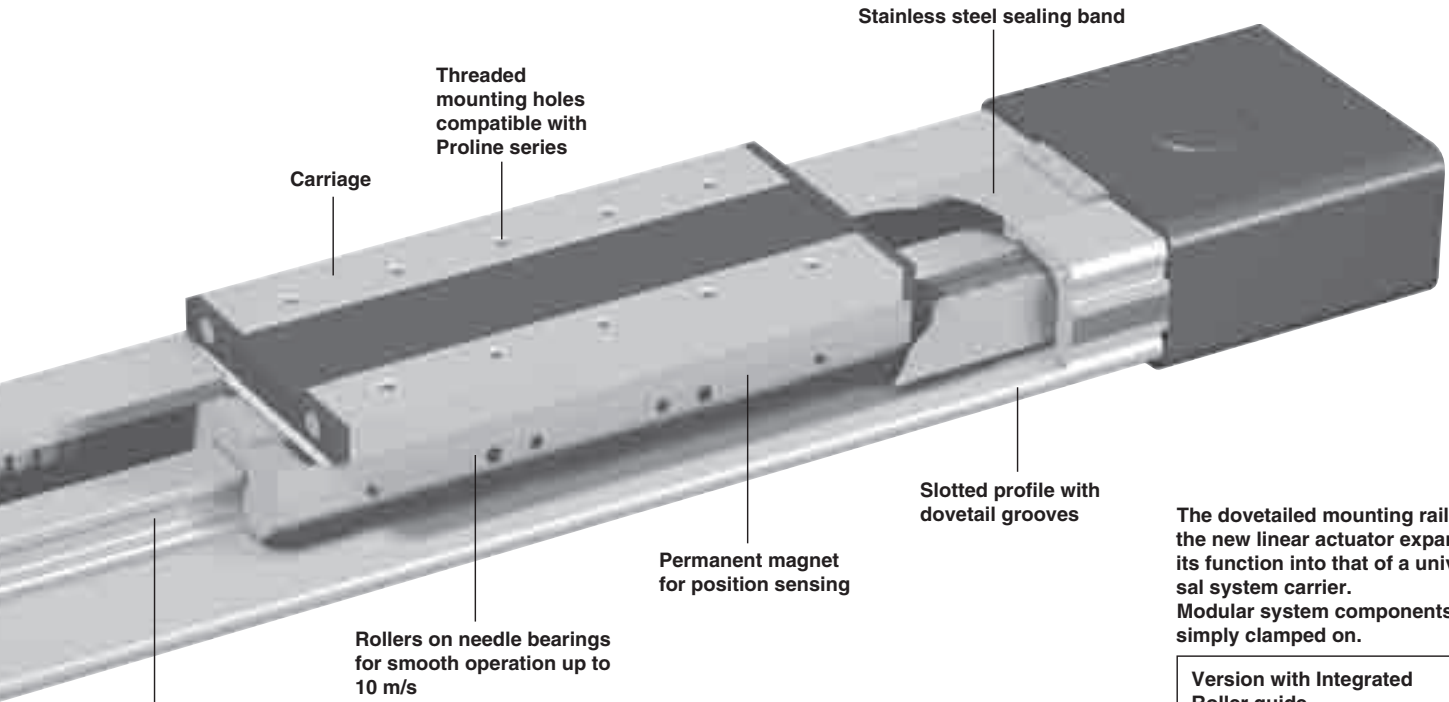
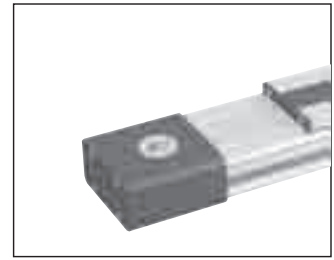


**Optional Integrated PLANETARY GEARBOX**

- Highly compact and rigid solution fully integrated in the drive end housing
- Purpose designed for the BHD series
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges



**OPTION**  
Hollow shaft with keyway



Carriage

Threaded mounting holes compatible with Proline series

Stainless steel sealing band

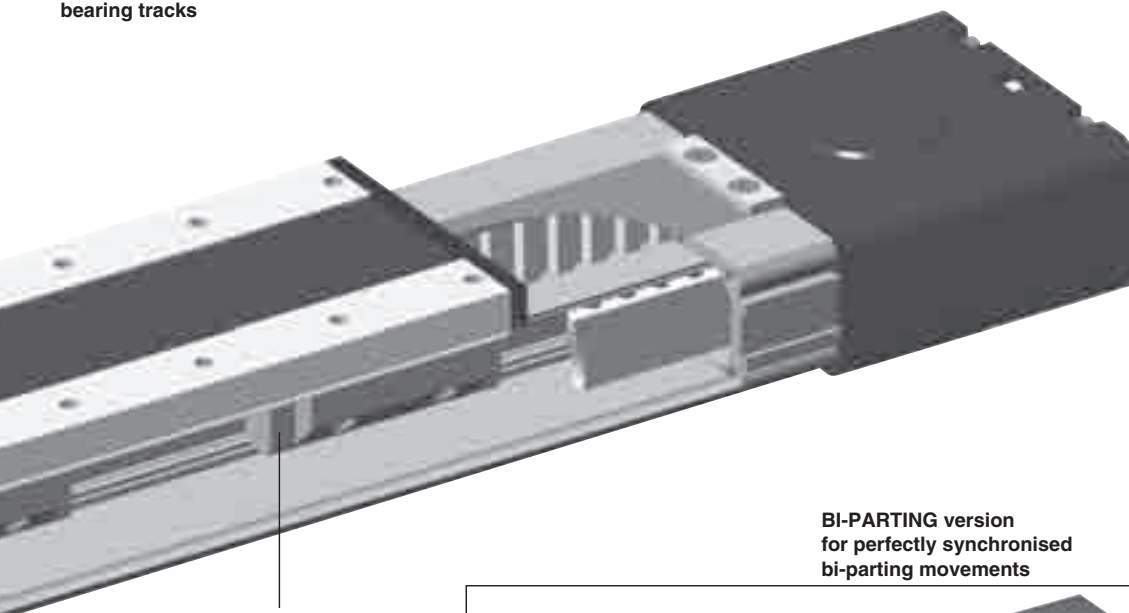
Slotted profile with dovetail grooves

Permanent magnet for position sensing

Rollers on needle bearings for smooth operation up to 10 m/s

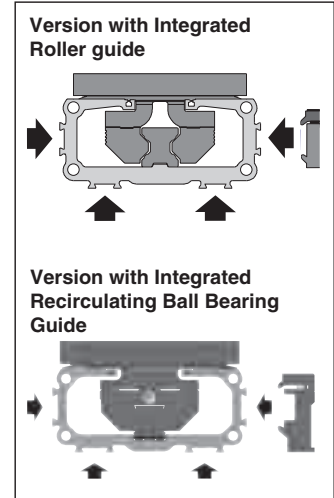
Guide rail with precision ground and calibrated bearing tracks

The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.



Steel runner block with integrated scraper system and grease nipples

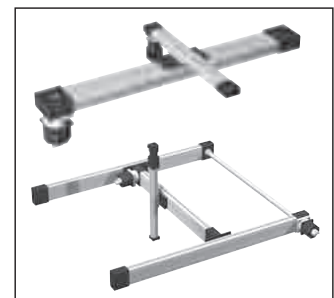
**BI-PARTING** version for perfectly synchronised bi-parting movements



Version with Integrated Roller guide

Version with Integrated Recirculating Ball Bearing Guide

**MULTI-AXIS**  
A wide range of adapter plates and intermediate drive shafts simplify engineering and installation





# OPTIONS AND ACCESSORIES

## SERIES OSP-E, BELT DRIVES WITH INTEGRATED GUIDE

### STANDARD VERSIONS

#### OSP-E..BHD

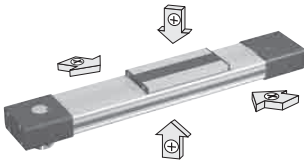
##### Version with Roller Guide

Page 15

##### Version with Recirculating Ball Bearing Guide

Page 19

Standard carrier with integrated roller guide. Dovetail profile for mounting of accessories and the actuator itself.



### BASIC ACTUATOR OPTIONS

#### BI-PARTING VERSION

Page 18

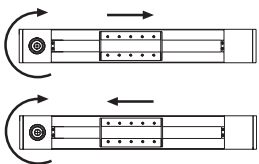
For perfectly synchronised bi-parting movements.



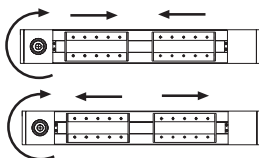
#### DRIVE SHAFT OPTIONS ACTUATING DIRECTION

Page 144

Important in parallel operations, e.g. with intermediate drive shaft



(Standard)



(Standard – Bi-Parting Version)

### INTEGRATED PLANETARY GEARBOX

Page 23

For required torque and speed reduction



### CLAMP SHAFT WITH CONNECTION SHAFT

For connection to connecting shaft (Page 38)



### HOLLOW SHAFT WITH KEYWAY

For close coupling of motors and external gears



### ACCESSORIES

#### END CAP MOUNTING

Page 40

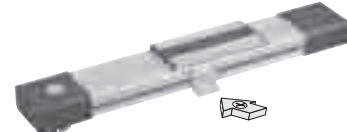
For mounting the drives on the end cap



### MID-SECTION SUPPORT

Page 41

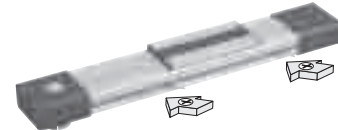
For supporting long actuators or mounting the actuator on dovetail grooves.



### MAGNETIC SWITCHES SERIES RS AND ES

Page 130

For electrical sensing of end of stroke and intermediate carrier positions. Schlittens.



### MOTOR MOUNTINGS

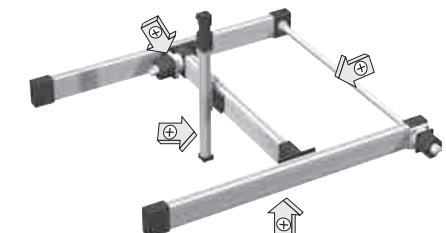
Page 44

For linear drive with clamp shaft



Page 25

For connection of linear drives in multi-axis systems. Carrier to carrier or carrier to profile and connecting shaft for parallel drive arrangements are available.



The right to introduce technical modifications is reserved

# Linear Actuator with Toothed Belt and Integrated Roller Guide

## Series OSP-E..BHD Size 25, 32, 50



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Belt-Driven Linear Actuator with integrated roller guide
Series			OSP-E..BHD/OSP-E..BHD-BP
Mounting			See drawings
Ambient Temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°C °C	-30 +80
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Toothed belt		Steel-corded polyurethane
	Belt wheels		Aluminium
	Rails		Aluminium
	Tracks		High alloy spring steel
	Roller cassettes		Roller bearing steel in aluminium casing
	Sealing band		Hardened stainless steel
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) kg and Inertia					
Series	Weight (mass)   kg			Inertia [x 10 <sup>-6</sup> /kgm <sup>2</sup> ]	
	At stroke 0 m	Add per metre stroke	Moving mass	At stroke 0 m	Add per metre
OSP-E25BHD	3.8	4.3	1.0	984	197
OSP-E32BHD	7.7	6.7	1.9	3498	438
OSP-E50BHD	22.6	15.2	4.7	19690	1489
OSP-E25BHD-BP	5.7	4.3	2.0	1805	197
OSP-E32BHD-BP	11.3	6.7	3.8	6358	438
OSP-E50BHD-BP	31.7	15.2	9.4	34274	1489

### Installation Instructions

Use the threaded holes in the end cap for mounting the linear actuator. Check if mid-section supports are needed using the maximum allowable unsupported length graph on page 17. At least one end cap must be secured to prevent axial sliding when mid-section support is used.

### Maintenance

All moving parts are lifetime lubricated. We recommend a check of the linear actuator after an operation time of 12 months of operation or 3000 km, depending on the type of application. Please see separate instructions.

### Commissioning

The products in this data sheet should not be operated until the machine/ application in which they are used has passed necessary inspection.

### Standard Versions:

- Standard carrier with integrated roller guide
- Dovetail profile for mounting of accessories and the actuator itself
- Clamp shaft

### Special Versions:

- Bi-parting version for synchronised movements (OSP-E..BHD-BP).
- Integrated planetary gearbox.
- Drive shaft / Actuating direction
- Clamp shaft with connection shaft (for use in Mutli-Axis systems with connecting shaft)
- Hollow shaft with keyway

The right to introduce technical modifications is reserved



# Sizing Performance Overview

## Maximum Loadings

### Sizing of Linear Actuator

The following steps are recommended:

1. Calculate the static and the dynamic moments [Nm] created by the load  $L$  [N], the distance  $r$  [m] and the acceleration  $a$  [m/s<sup>2</sup>] in all directions ( $M$ ,  $M_s$  and  $M_v$ ) according to the diagram below.
2. Make a preliminary choice and get the calculation factors from the table.
3. Check maximum allowable torque on the drive shaft (pay attention to the note under the table).  
If the value is lower than required, overview the moving profile or select if possible a bigger unit.
4. Before sizing and specifying the motor, the rms torque must be calculated using the cycle time of the application.
5. Check that maximum allowable unsupported length is not exceeded (see page 17).

Performance Overview					
Characteristics	Unit	Description			
Series		OSP-E25BHD	OSP-E32BHD	OSP-E50BHD	
Max. speed	[m/s]	10	10	10	
Linear motion per revolution, drive shaft	[mm]	180	240	350	
Max. rpm. drive shaft	[min <sup>-1</sup> ]	3000	2500	1700	
Max. effective action force	< 1 m/s:	[N]	1070	1870	3120
	1-3 m/s:	[N]	890	1560	2660
$F_A$ at speed	> 3-10 m/s:	[N]	550	1030	1940
No-load torque	[Nm]	1.2	2.2	3.2	
Max. acceleration/deceleration	[m/s <sup>2</sup> ]	40	40	40	
Repeatability	[mm/m]	±0.05	±0.05	±0.05	
Max. standard stroke length	[mm]	7000	7000	7000	

Maximum Allowable Torque on Drive Shaft Speed and Stroke											
OSP-E25BHD				OSP-E32BHD				OSP-E50BHD			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	31	1	31	1	71	1	71	1	174	1	174
2	28	2	31	2	65	2	71	2	159	2	174
3	25	3	31	3	59	3	60	3	153	3	138
4	23	4	25	4	56	4	47	4	143	4	108
5	22	5	21	5	52	5	38	5	135	5	89
6	21	6	17	6	50	6	32	6	132	6	76
7	19	7	15	7	47	7	28	7	126	7	66
8	18			8	46			8	120		
9	17			9	44			9	116		
10	16			10	39			10	108		

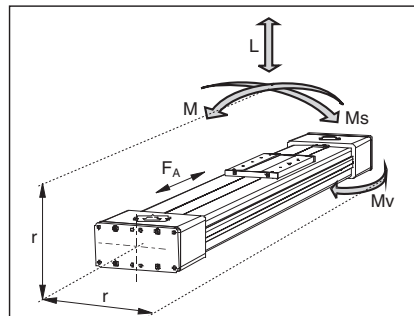
### Important:

The maximum permissible moment on the drive shaft is the lowest value of the speed- or stroke-dependent moment value.

**Example above:** OSP-E25BHD-stroke 5 m, required speed 3 m/s from table T2; speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm.

Max. torque for this application is 21 Nm.

When sizing Bi-parting units the stroke is the ordering stroke, see page 8.



$$M = F \cdot r$$

Bending moments are calculated from the centre of the linear actuator and  $F$  indicates actual force

$$M = M_{stat} + M_{dyn}$$

$$M_s = M_{s,stat} + M_{s,dyn}$$

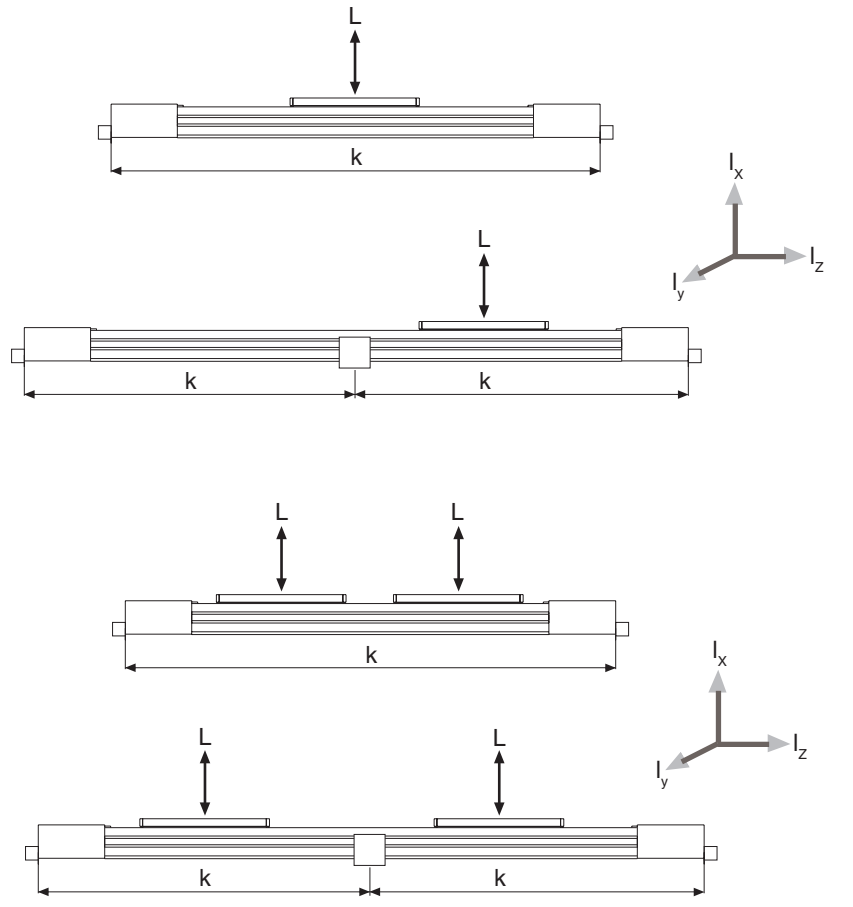
$$M_v = M_{v,stat} + M_{v,dyn}$$

Maximum Allowable Loadings				
Series	Max. applied load $L$ [N]	Max. moments [Nm]		
		$M$	$M_s$	$M_v$
OSP-E25BHD	986	64	11	84
OSP-E32BHD	1348	115	19	115
OSP-E50BHD	3704	365	87	365

$$\frac{L}{L(\max)} + \frac{M}{M(\max)} + \frac{M_s}{M_s(\max)} + \frac{M_v}{M_v(\max)} \leq 1$$

The total of the loads must not exceed 1 under any circumstances.

# Maximum Allowable Unsupported Length Stroke Length



## Stroke Length

The stroke lengths of the linear actuators are available in multiples of 10 mm up to 7000 mm

Other stroke lengths are available on request.

**The end of stroke must not be used as a mechanical stop.**

**Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.**

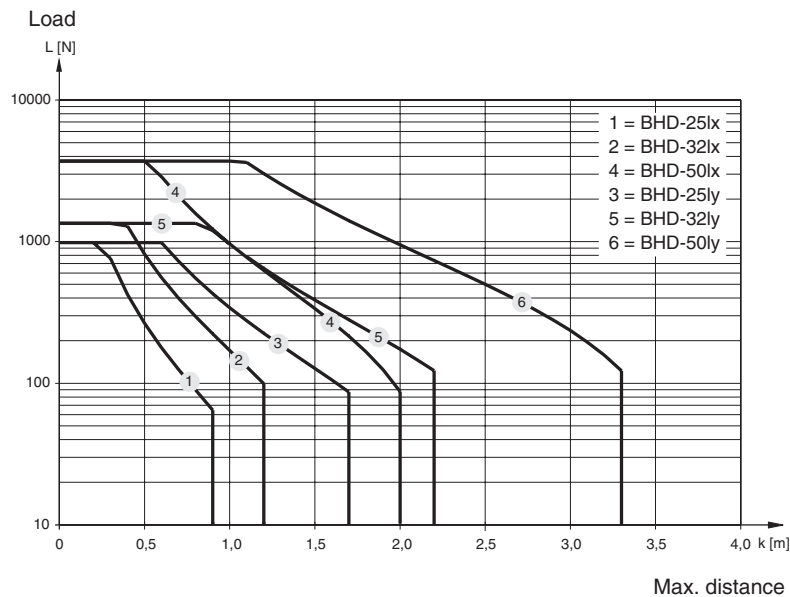
The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.

For advice, please contact your local HOERBIGER-ORIGA technical support department.

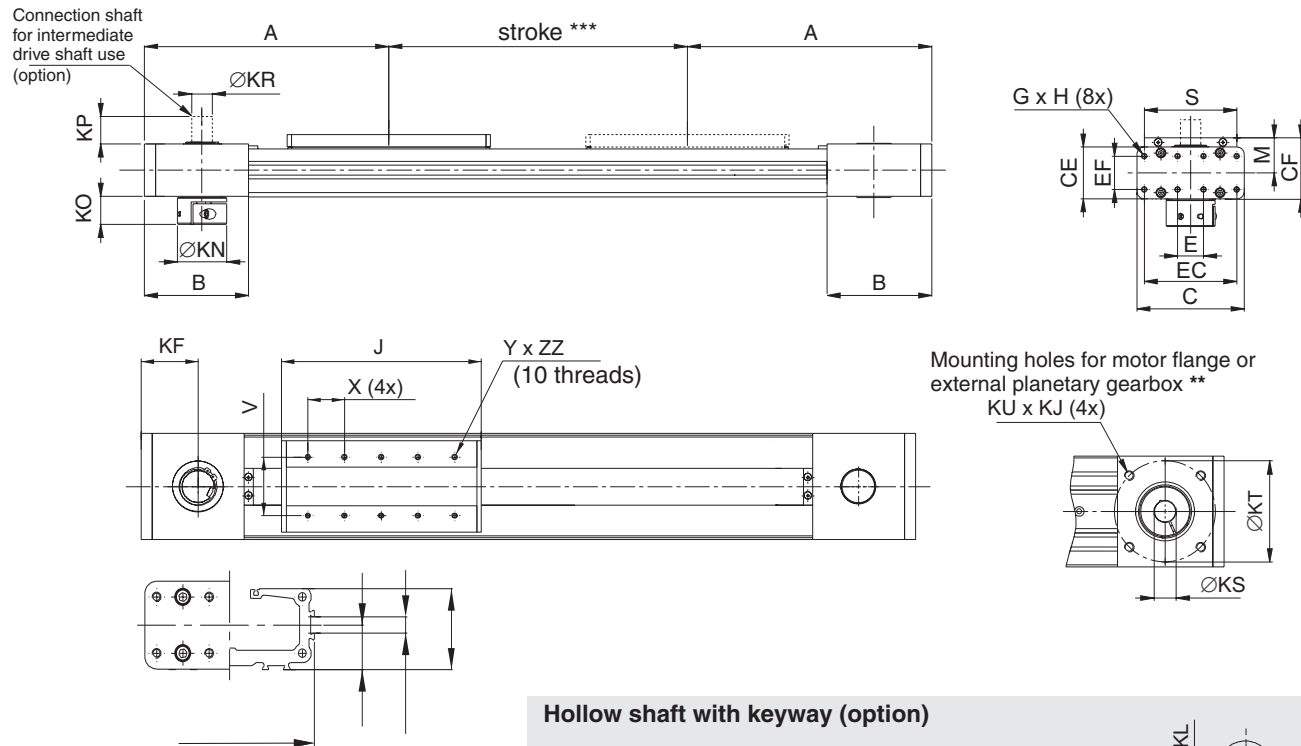
\* For Bi-parting version the max. load (L) is the total load of both carriers  
 $L = L_{\text{carrier 1}} + L_{\text{carrier 2}}$

k = Max. allowable distance between mountings/mid-section support for a given load L

When loadings are below or up to the curve in the graph below the deflection will be max. 0.01 % of distance k



**Belt Driven Linear Actuator with Roller Guide – Basic Unit**  
**Series OSP-E25BHD, -E32BHD, -E50BHD**



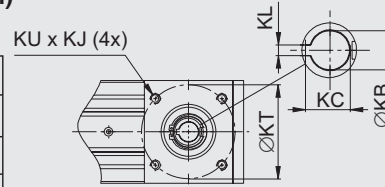
**\*\* Note:**  
 The mounting holes for the coupling housing/motor flange/gearbox are located on the opposite side to the carrier as standard. As an option they can be located on the same side as the carrier. (For additional drive shaft/actuating direction options see the Order Instructions on page 144).

**Hollow shaft with keyway (option)**

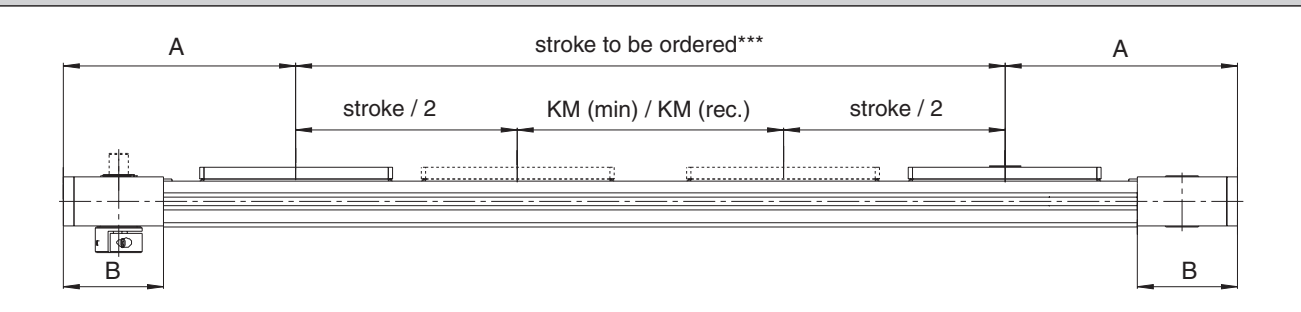
**Dimension Table (mm)**

Serie	KB*	KC	KJ	KL	KT	KU
OSP-E25BHD	16 <sup>H7</sup>	18.3	8	5	82	M8
OSP-E32BHD	22 <sup>H7</sup>	24.8	12	6	106	M10
OSP-E50BHD	32 <sup>H7</sup>	35.3	19	10	144	M12

\*Other dimensions for KB on request



**Options – Bi-Parting Version**  
**Series OSP-E25BHD-BP, -E32BHD-BP, -E50BHD-BP**



**\*\*\* 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 100 mm.  
 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 HOERBIGER-ORIGA representative.

**Dimension Table (mm)**

Series	A	B	C	E	G	H	J	K	M	S	V	X	Y	CE	CF	EC	EF	FB	FH	KF	KJ	KM <sub>min</sub>	KM <sub>rec.</sub>	KN	KO	KP	KR	KS*	KT	KU	ZZ
OSP-E25BHD	218	88	93	25	M5	10	178	21.5	31	85	64	40	M6	42	52.5	79	27	92	39.5	49	8	210	250	34	21.7	30	16 <sup>H7</sup>	16 <sup>H7</sup>	82	M8	8
OSP-E32BHD	262	112	116	28	M6	12	218	28.5	38	100	64	40	M6	56	66.5	100	36	116	51.7	62	12	250	300	53	30	30	22 <sup>H7</sup>	22 <sup>H7</sup>	106	M10	10
OSP-E50BHD	347	147	175	18	M6	12	263	43	49	124	90	60	M6	87	92.5	158	70	164	77	79.5	19	295	350	75	41	35	32 <sup>H7</sup>	32 <sup>H7</sup>	144	M12	10

\*Other dimensions for KS on request

# Linear Actuator with Toothed Belt and Integrated Recirculating Ball Bearing Guide

## Series OSP-E..BHD Size 25, 32, 50



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Belt-Driven Linear Actuator with integrated Recirculating Ball Bearing Guide
Series			OSP-E..BHD / OSP-E..BHD-BP
Mounting			See drawings
Ambient Temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°C °C	-30 +80
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Toothed belt		Steel-corded polyurethane
	Belt wheels		Aluminium
	Rail		Steel
	Track		hardened steel track with high precision, accuracy class H
	Runner block		Steel runner block with integrated scraper system, grease nipples, pre-loaded 0.02xC, accuracy H (N for Ø25)
	Sealing band		Hardened stainless steel
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) kg and Inertia						
Series	Weight (mass) [kg]			Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ]		
	At stroke 0 m	Add per metre stroke	Moving mass	At stroke 0 m	Add per metre stroke	Add per kg Mass
OSP-E25BHD	4.3	3.7	1.5	1229	227	821
OSP-E32BHD	8.8	7.8	2.6	3945	496	1459
OSP-E50BHD	26	17	7.8	25678	1738	3103
OSP-E25BHD-BP	6.7	3.7	2.8	2353	227	821
OSP-E32BHD-BP	13.5	7.8	5.2	7733	496	1459
OSP-E50BHD-BP	40	17	15	49180	1738	3103

### Installation Instructions

Use the threaded holes in the end cap for mounting the linear actuator. Check if mid-section supports are needed using the maximum allowable unsupported length graph on page 21. At least one end cap must be secured to prevent axial sliding when mid-section support is used.

### Maintenance

We recommend a check of the linear actuator after an operation time of 12 months of operation or 3000 km, depending on the type of application. Please see separate instructions.

### Commissioning

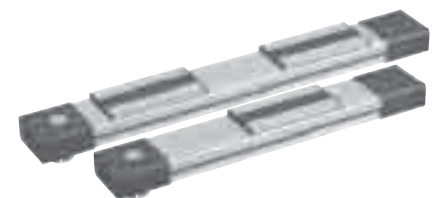
The products in this data sheet should not be operated until the machine/application in which they are used has passed necessary inspection.

### Standard Versions:

- Standard carrier with integrated recirculating ball bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Clamp shaft

### Special Versions:

- Bi-parting version for synchronised movements (OSP-E..BHD -BP).
- Integrated planetary gearbox.
- Drive shaft / Actuating direction
- Clamp shaft with connection shaft (for use in Multi-Axis systems with connecting shaft)
- Hollow shaft with keyway



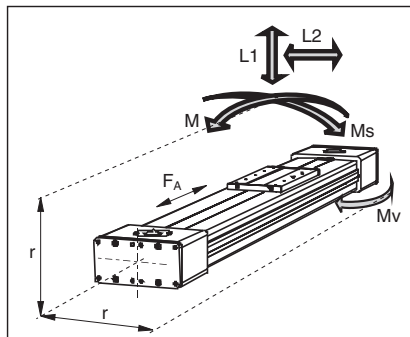
# Sizing Performance Overview

## Maximum Loadings

### Sizing of Linear Actuator

The following steps are recommended:

1. Calculate the static and the dynamic moments [Nm] created by the load  $L$  [N], the distance  $r$  [m] and the acceleration  $a$  [m/s<sup>2</sup>] in all directions ( $M$ ,  $M_s$  and  $M_v$ ) according to the diagram below.
2. Make a preliminary choice and get the calculation factors from the table.
3. Check maximum allowable torque on the drive shaft (pay attention to the note under the table). If the value is lower than required, overview the moving profile or select if possible a bigger unit.
4. Before sizing and specifying the motor, the rms torque must be calculated using the cycle time of the application.
5. Check that maximum allowable unsupported length is not exceeded (see page 21).



$$M = F \cdot r$$

Bending moments are calculated from the centre of the linear actuator and  $F$  indicates actual force

$$M = M_{stat} + M_{dyn}$$

$$M_s = M_{s,stat} + M_{s,dyn}$$

$$M_v = M_{v,stat} + M_{v,dyn}$$

### Performance Overview

Characteristics	Unit	Description			
Series		OSP-E25BHD	OSP-E32BHD	OSP-E50BHD	
Max. speed	[m/s]	5 <sup>1)</sup>	5 <sup>1)</sup>	5 <sup>1)</sup>	
Linear motion per revolution, drive shaft	[mm]	180	240	350	
Max. rpm. drive shaft	[min <sup>-1</sup> ]	1700	1250	860	
Max. effective action force $F_A$ at speed	< 1 m/s:	[N]	1070	1870	3120
	1-3 m/s:	[N]	890	1560	2660
	> 3 m/s:	[N]	550	1030	1940
No-load torque	[Nm]	1.2	2.2	3.2	
Max. acceleration/deceleration	[m/s <sup>2</sup> ]	50	50	50	
Repeatability	[mm/m]	±0.05	±0.05	±0.05	
Max. standard stroke length	[mm]	5700 <sup>2)</sup>	5600 <sup>2)</sup>	5500 <sup>2)</sup>	

<sup>1)</sup> up to 10 m/s on request

<sup>2)</sup> longer strokes on request

### Maximum Allowable Torque on Drive Shaft Speed and Stroke

T2

OSP-E25BHD				OSP-E32BHD				OSP-E50BHD			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	31	1	31	1	71	1	71	1	174	1	174
2	28	2	31	2	65	2	71	2	159	2	174
3	25	3	31	3	59	3	60	3	153	3	138
4	23	4	25	4	56	4	47	4	143	4	108
5	22	5	21	5	52	5	38	5	135	5	89

#### Important:

The maximum permissible moment on the drive shaft is the lowest value of the speed- or stroke-dependent moment value.

**Example above:** OSP-E25BHD-stroke 5 m, required speed 3 m/s from table T2; speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm.

Max. torque for this application is 21 Nm.

When sizing Bi-parting units the stroke is the ordering stroke, see page 22.

### Maximum Allowable Loadings

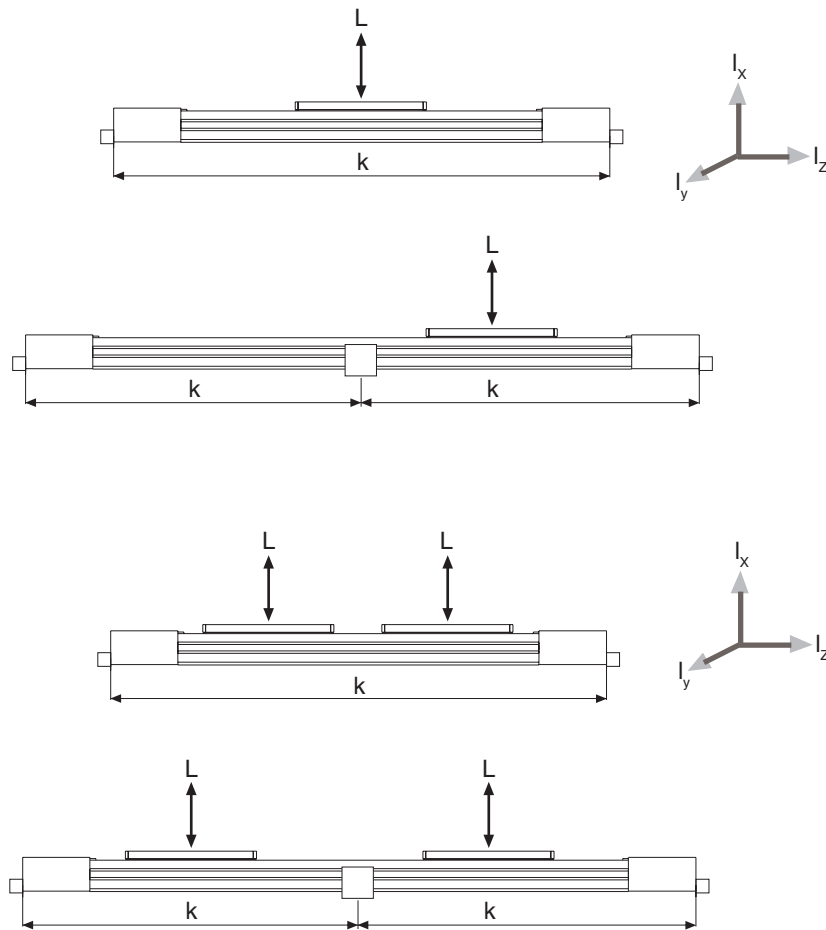
Series	Max. applied load		Max. moments [Nm]		
	L1[N]	L2[N]	M	$M_s$	$M_v$
OSP-E25BHD	3000	2000	500	50	500
OSP-E32BHD	10000	5000	1000	120	1400
OSP-E50BHD	15000	12000	1800	180	2500

If multiple forces and moments act upon the actuator simultaneously, the following equation applies.

$$\frac{L1}{L1(max)} + \frac{L2}{L2(max)} + \frac{M}{M(max)} + \frac{M_s}{M_s(max)} + \frac{M_v}{M_v(max)} \leq 1$$

The total of the loads must not exceed 1 under any circumstances.

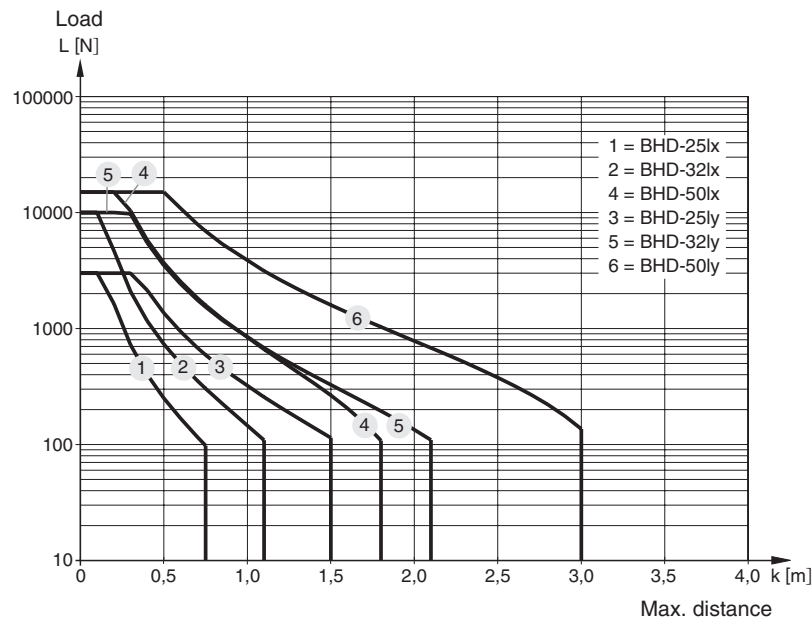
## Maximum Allowable Unsupported Length – Placing of Mid-Section Support



\* For Bi-parting version the max. load (L) is the total load of both carriers  
 $L = L_{\text{carrier 1}} + L_{\text{carrier 2}}$

k = Max. allowable distance between mountings/mid-section support for a given load L

When loadings are below or up to the curve in the graph below the deflection will be max. 0.01 % of distance k



## Maximum Allowable Unsupported Length Stroke Length

### Stroke Length

The stroke lengths of the linear actuators are available in multiples of 10 mm up to 5700 mm

Other stroke lengths are available on request.

**The end of stroke must not be used as a mechanical stop.**

**Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.**

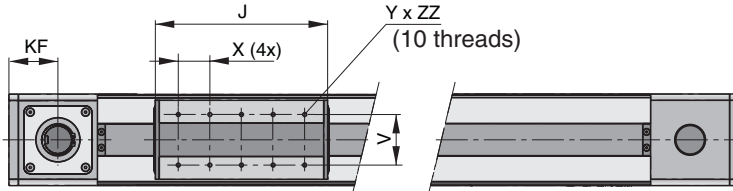
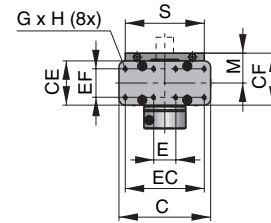
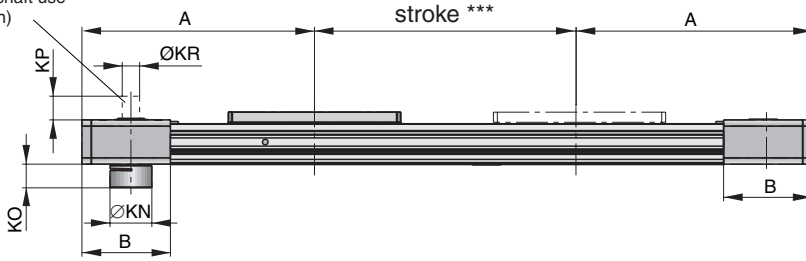
The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.

For advice, please contact your local HOERBIGER-ORIGA technical support department.

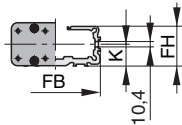
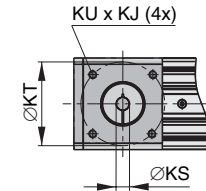


**Belt Driven Linear Actuator with Recirculating Ball Bearing Guide – Basic Unit**  
**Series OSP-E25BHD, -E32BHD, -E50BHD**

Connection shaft  
for intermediate  
drive shaft use  
(option)



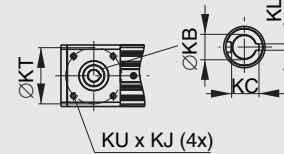
Mounting holes for motor flange or  
external planetary gearbox \*\*



**Hollow shaft with keyway (option)**

Dimension Table (mm)

Series	KB*	KC	KJ	KL	KT	KU
OSP-E25BHD	16 <sup>H7</sup>	18.3	8	5	82	M8
OSP-E32BHD	22 <sup>H7</sup>	24.8	12	6	106	M10
OSP-E50BHD	32 <sup>H7</sup>	35.3	19	10	144	M12

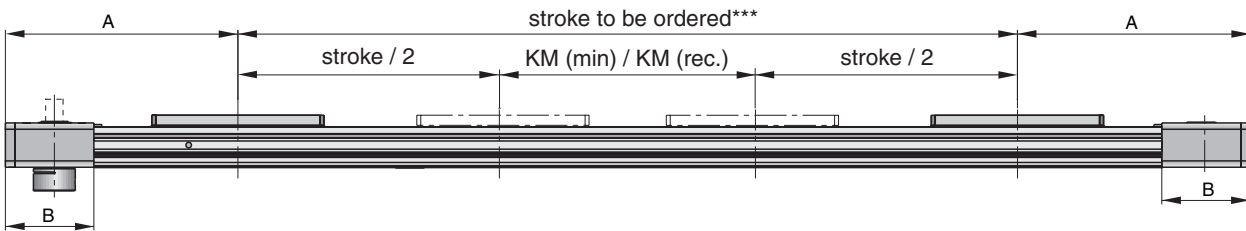


**\*\* Note:**

The mounting holes for the coupling housing/motor flange/gearbox are located on the opposite side to the carrier as standard. As an option they can be located on the same side as the carrier. (For additional drive shaft/actuating direction options see the Order Instructions on page 144).

\*Other dimensions for KB on request

**Options – Bi-Parting Version**  
**Series OSP-E25BHD-BP, -E32BHD-BP, -E50BHD-BP**



**\*\*\* 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 100 mm. 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 HOERBIGER-ORIGA representative.

Dimension Table (mm)

Series	A	B	C	E	G	H	J	K	M	S	V	X	Y	CE	CF	EC	EF	FB	FH	KF	KJ	KM <sub>min</sub>	KM <sub>rec.</sub>	KN	KO	KP	KR	KS*	KT	KU	ZZ
OSP-E25BHD	218	88	93	25	M5	10	178	21.5	31	85	64	40	M6	42	52.5	79	27	92	39.5	49	8	210	250	34	21.7	30	16 <sub>n7</sub>	16 <sup>H7</sup>	82	M8	8
OSP-E32BHD	262	112	116	28	M6	12	218	28.5	38	100	64	40	M6	56	66.5	100	36	116	51.7	62	12	250	300	53	30	30	22 <sub>n7</sub>	22 <sup>H7</sup>	106	M10	10
OSP-E50BHD	347	147	175	18	M6	12	288	43	49	124	90	60	M6	87	92.5	158	70	164	77	79.5	19	354	400	75	41	35	32 <sub>n7</sub>	32 <sup>H7</sup>	144	M12	10

\*Other dimensions for KS on request

## Series OSP-E..BHD – with optional Integrated Planetary Gearbox



# Integrated Planetary Gearbox

### Features

- Highly compact and rigid solution fully integrated in the drive end housing
- Purpose designed for the BHD series
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges

### Performance Overview

Characteristics	Unit	Description		
		OSP-E25BHD	OSP-E32BHD	OSP-E50BHD
Ratio (1-stage)	i	3/5/10	3/5/10	3/5/10
Max axial load	$F_{amax}$ [N]	1550	1900	4000
Torsional rigidity (i=5)	$C_{t,21}$ [Nm/arcmin]	3.3	9	24
Torsional rigidity (i=3/10)	$C_{t,21}$ [Nm/arcmin]	2.8	7.5	20.5
Torsional backlash	$J_t$ [arcmin]	<12	<12	<12
Linear movement per rotation of drive shaft	[mm]	220	280	360
Nominal input speed	$n_{nom}$ [min <sup>-1</sup> ]	3700	3400	2600
Max input speed	$n_{1max}$ [min <sup>-1</sup> ]	6000	6000	6000
No-load running torque at Nominal input speed	$T_{012}$ [Nm]	<0.14	<0.51	<1.5
Lifetime	[h]	20 000	20 000	20 000
Efficiency (1-stage)	$\eta$ [%]	>97	>97	>97
Noise level ( $n_1=3000$ min <sup>-1</sup> )	$L_{PA}$ [db]	<70	<72	<74

Please contact your local HOERBIGER-ORIGA technical support for available motor flanges.

For motors and controllers, see separate catalogue.

Material:  
Aluminium (AL-H) / Steel (St-H)

### Standard Version:

- Gearbox on opposite side to carrier

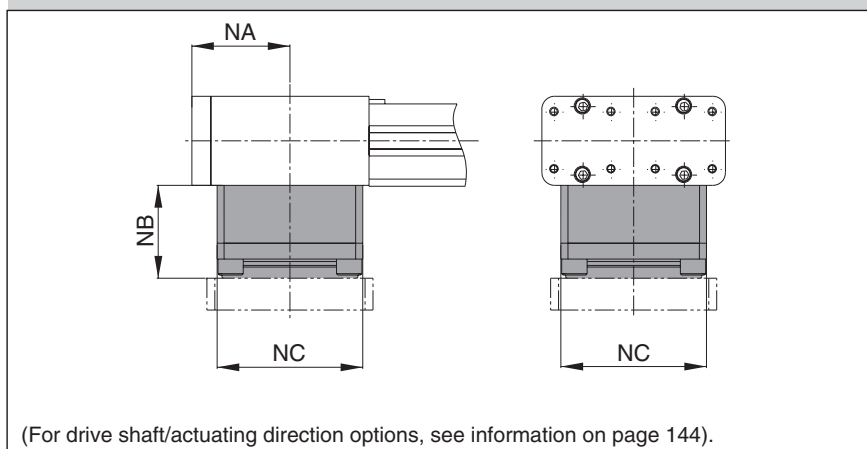
### Special Version:

- Gearbox on same side as carrier

### Note:

When ordering, specify type of motor and model for correct motor flange.

### Dimensions



### Dimension Table (mm) and additional Weight (kg)

Series	NA	NB	NC	Weight (mass) [kg]
OSP-E25BHD	49	43	76	2.6
OSP-E32BHD	62	47	92	4.9
OSP-E50BHD	79.5	49.5	121	9.6



# Multi-Axis Connection System for Linear Drive Systems Series OSP-E



## Contents

Description	Page
Overview	26-28
Adapter plates – Dimensions/Order Instructions	29-37
Intermediate Drive Shafts – Dimensions/Order Instructions	38

# MULTI-AXIS CONNECTION SYSTEM – SIMPLIFIES ENGINEERING AND INSTALLATION

A completely new system for easy connection of OSP-E linear drives  
in multi-axis systems.

## MULTI-AXIS CONNECTIONS

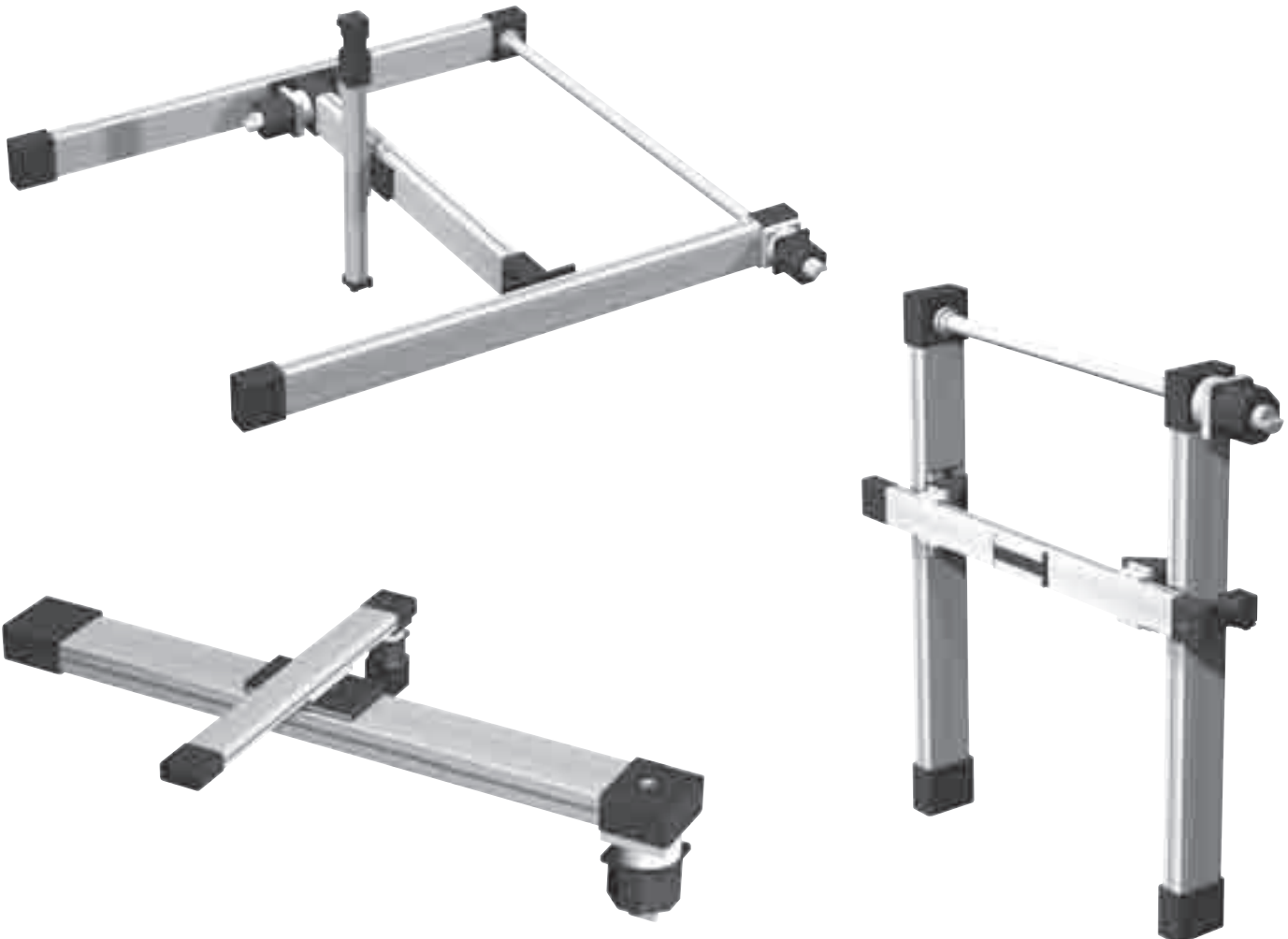
With a highly adaptable  
system for connection of  
linear drives in multi-axis  
arrangements,  
HOERBIGER-ORIGA offers  
design engineers complete  
flexibility.

A wide range of adapter  
plates, profile mountings and  
intermediate drive shafts  
simplify engineering and  
installation.

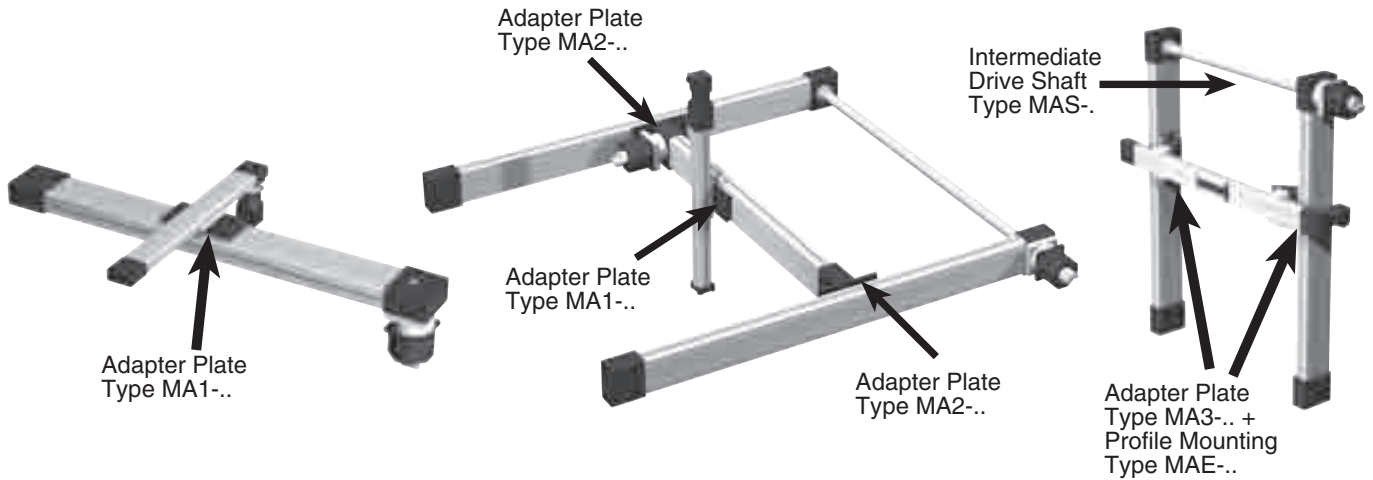
The connection system  
enables actuators to be

mounted in carrier to  
carrier; carrier to profile;  
carrier to end cap mounting;  
and carrier to end cap  
configurations.


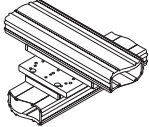
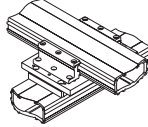
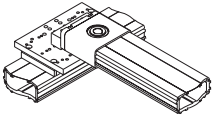

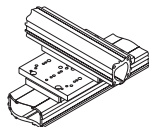
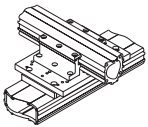
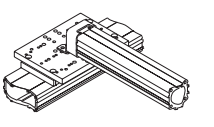

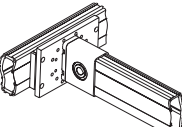
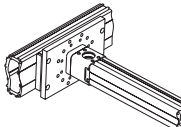

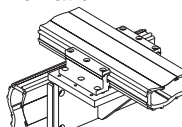
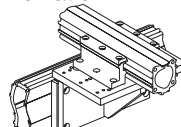
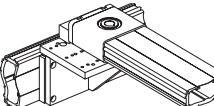
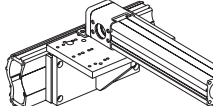
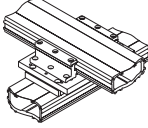
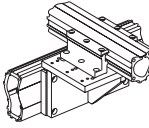
Developed for the heavy-  
duty belt drive series  
OSP-E..BHD, the system  
provides cross-connection  
with the same series and  
also other linear drive series  
in the ORIGA SYSTEM  
PLUS range.



# MULTI-AXIS CONNECTION SYSTEM



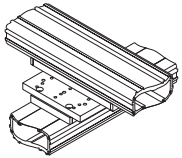
\* For available standard combinations, see page 28

<p><b>Adapter Plate Type MA1-..*</b></p> <p>For connecting carrier to carrier, carrier to profile mounting or carrier to end cap mounting.</p> 	<p>Combination C*</p> 	<p>Combination P*</p> 	<p>Combination EM*</p> 
<p><b>Adapter Plate Type MA2-..*</b></p> <p>For connecting carrier to end cap.</p> 	<p>Combination C*</p> 	<p>Combination P*</p> 	<p>Combination EM*</p> 
<p><b>Adapter Plate Type MA3-..*</b></p> <p>For connecting 90° carrier to profile mounting or carrier to end cap mounting.</p> 	<p>Combination E*</p> 	<p>Combination E*</p> 	
<p><b>Intermediate Drive Shaft Type MAS-.</b></p> 	<p>Combination P*</p> 	<p>Combination P*</p> 	
	<p>Combination EM*</p> 	<p>Combination EM*</p> 	
			

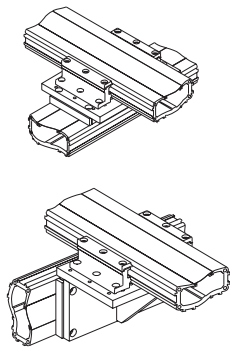
# AVAILABLE MOUNTING COMBINATIONS

## Available Mounting Combinations

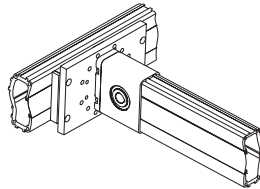
Combination C\*



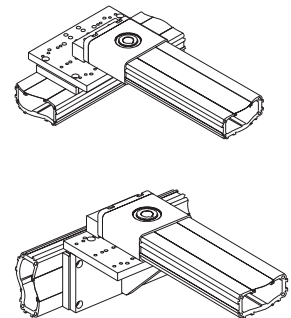
Combination P



Combination E\*



Combination EM\*



Illustrations just show OSP-E..BHD examples

Series	Type	OSP-E..BHD/BHD-BP												OSP-E..B/S/BP/P*/SBR												
		-25				-32				-50				-25				-32				-50				
		C <sup>1</sup>	P <sup>2</sup>	E <sup>3</sup>	EM <sup>4</sup>	C <sup>5</sup>	P <sup>6</sup>	E <sup>7</sup>	EM <sup>8</sup>	C <sup>9</sup>	P <sup>10</sup>	E <sup>11</sup>	EM <sup>12</sup>	C <sup>13</sup>	P <sup>14</sup>	E <sup>15</sup>	EM <sup>16</sup>	C <sup>17</sup>	P <sup>18</sup>	E <sup>19</sup>	EM <sup>20</sup>	C <sup>21</sup>	P <sup>22</sup>	E <sup>23</sup>	EM <sup>24</sup>	
OSP-E25BHD	MA1-25	•	•		•	•	•		•					•	•		•	•	•	•		•	•	•		•
OSP-E32BHD	MA1-32	•	•		•	•	•		•	•	•		•				•	•	•	•		•	•	•		•
OSP-E50BHD	MA1-50	•	•		•	•	•		•	•	•		•				•	•	•	•		•	•	•		•
OSP-E25BHD	MA2-25			•				•								•				•						•
OSP-E32BHD	MA2-32			•				•					•							•						•
OSP-E50BHD	MA2-50			•				•					•							•						•
OSP-EBHD25	MA3-25		•		•		•		•					•		•			•		•		•		•	•
OSP-EBHD32	MA3-32		•		•		•		•				•						•		•		•		•	•
OSP-EBHD50	MA3-50		•		•		•		•				•						•		•		•		•	•

Abbreviations:

**C** = MAn to Carrier,

**P** = MAn to Profile mounting,

**E** = MAn to End cap,

**EM** = MAn to End cap mounting (n=1,2,3)

\* = The mounting plates can also be used to mount the OSP-P pneumatic rodless actuator to the BHD

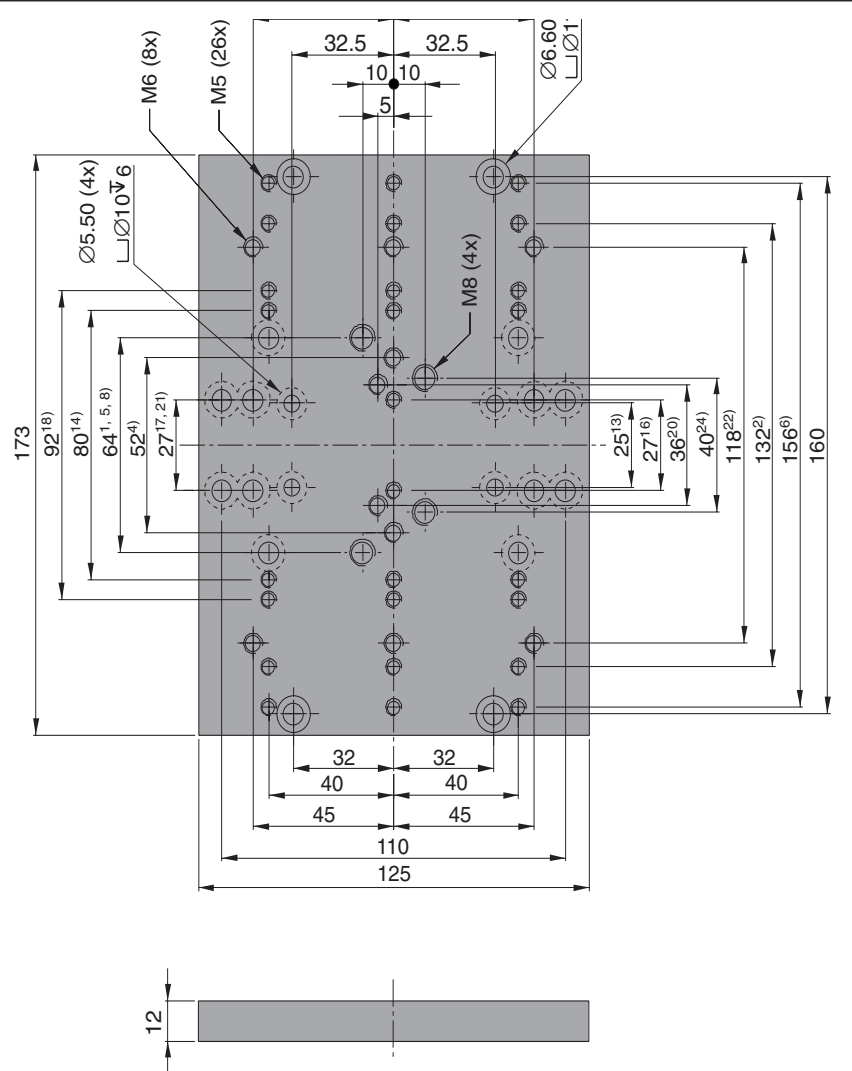
Values in superscript refer to corresponding adapter plate dimensions on pages 29-37.

e.g. Dimensions corresponding to combination option "C" for adapter plate MA1-50 connected to an OSP-E32BHD carrier are shown with Superscript number <sup>5</sup> on the MA1-50 adapter plate on page 31.

Other combinations on request.

The right to introduce technical modifications is reserved

**Dimensions (mm) Adapter Plate Type MA1-25**



Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
 e.g. Dimensions with Superscript number <sup>5</sup>, corresponds to the option "C" for OSP-E32BHD actuator.

# Adapter Plate for OSP-E25



Type: MA1-25

The right to introduce technical modifications is reserved

**Order Instructions and Weight**

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA1-25	0.7	12269



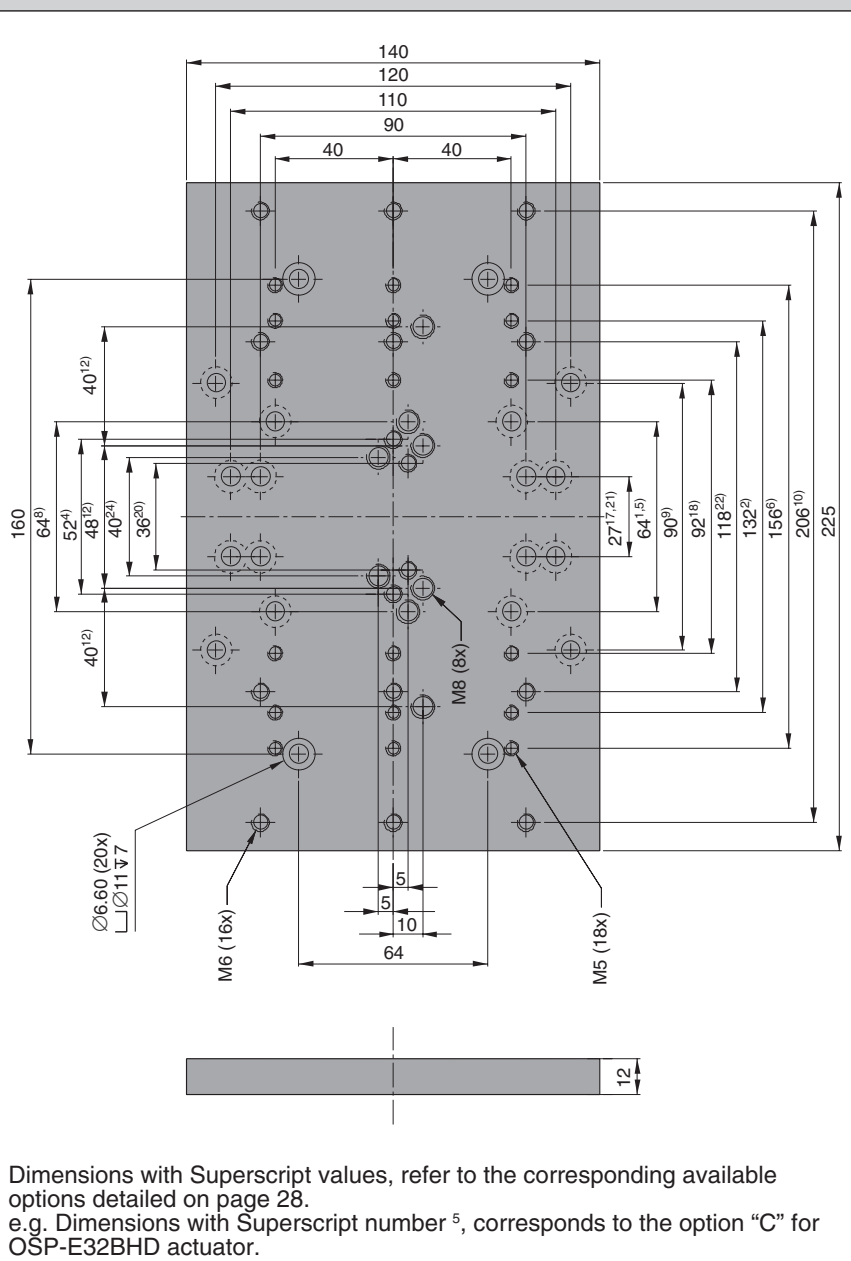


# Adapter Plate for OSP-E32



Type: MA1-32

Dimensions (mm) Adapter Plate Type MA1-32

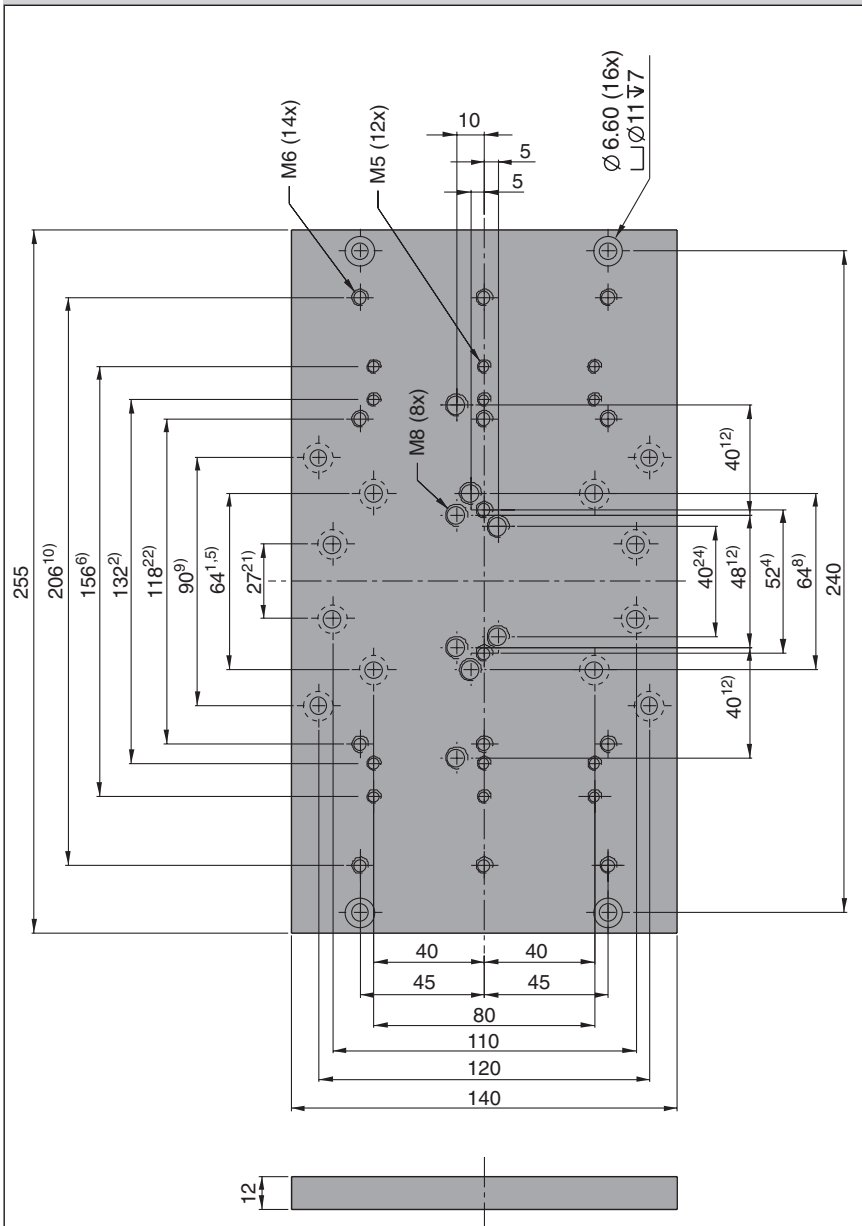


### Order Instructions and Weight

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA1-32	1.0	12272



Dimensions (mm) Adapter Plate Type MA1-50



Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
 e.g. Dimensions with Superscript number <sup>5</sup>, corresponds to the option "C" for OSP-E32BHD actuator.

# Adapter Plate for OSP-E50



Type: MA1-50

**Order Instructions and Weight**

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA1-50	1.1	12275

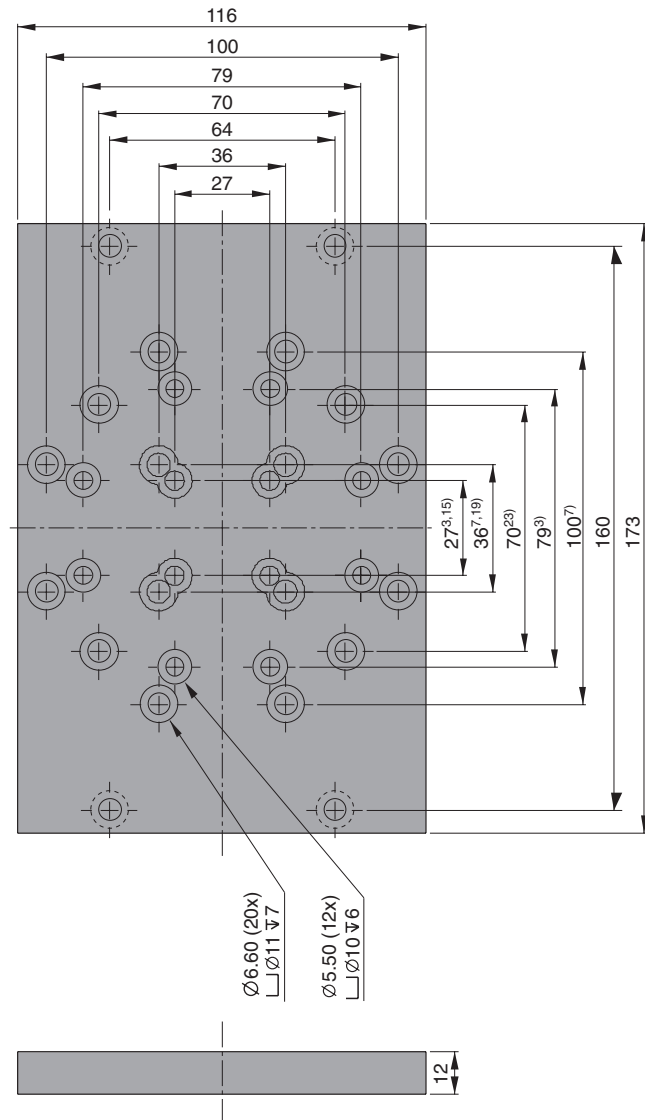


# Adapter Plate for OSP-E25



Type: MA2-25

## Dimensions (mm) Adapter Plate Type MA2-25



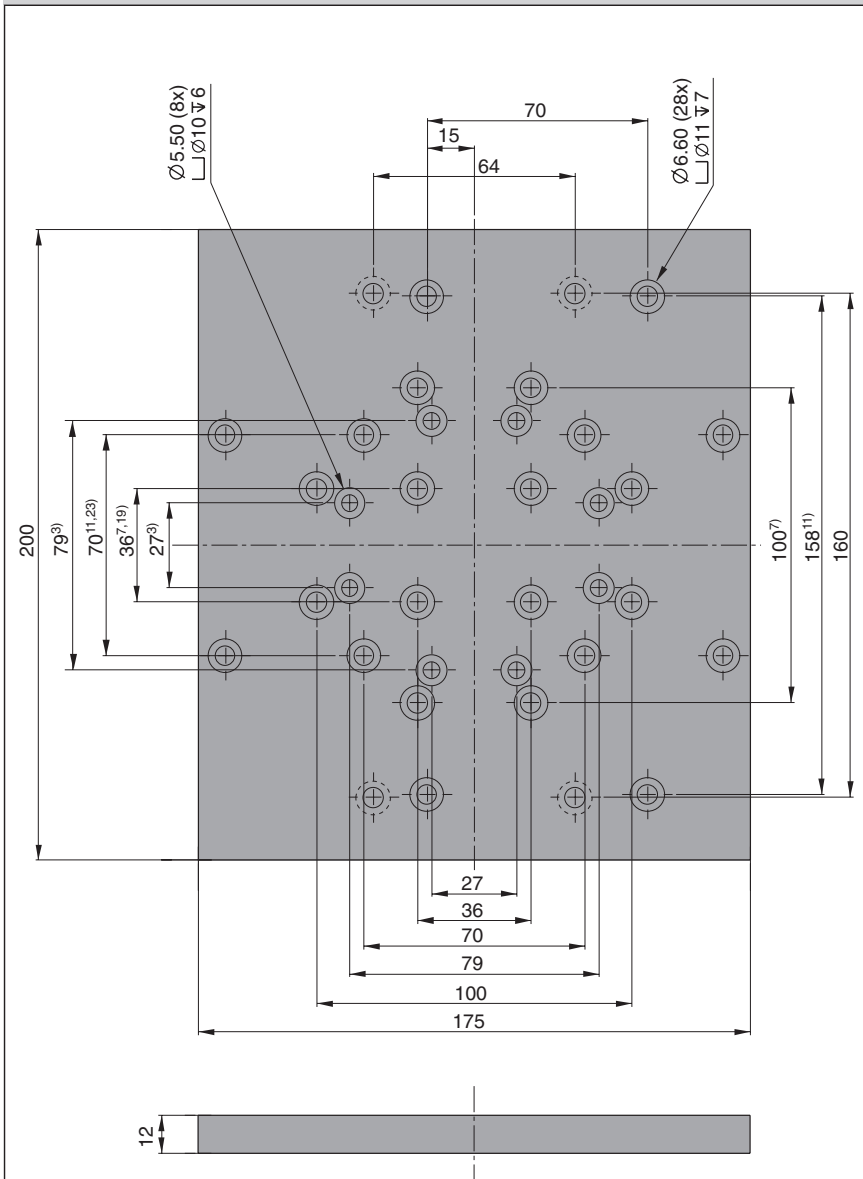
Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
e.g. Dimensions with Superscript number <sup>3</sup>, corresponds to the option "E" for OSP-E25BHD actuator.

### Order Instructions and Weight

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA2-25	0.6	12270



Dimensions (mm) Adapter Plate Type MA2-32



Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
 e.g. Dimensions with Superscript number <sup>3</sup>, corresponds to the option "E" for OSP-E25BHD actuator.

# Adapter Plate for OSP-E32



Type: MA2-32

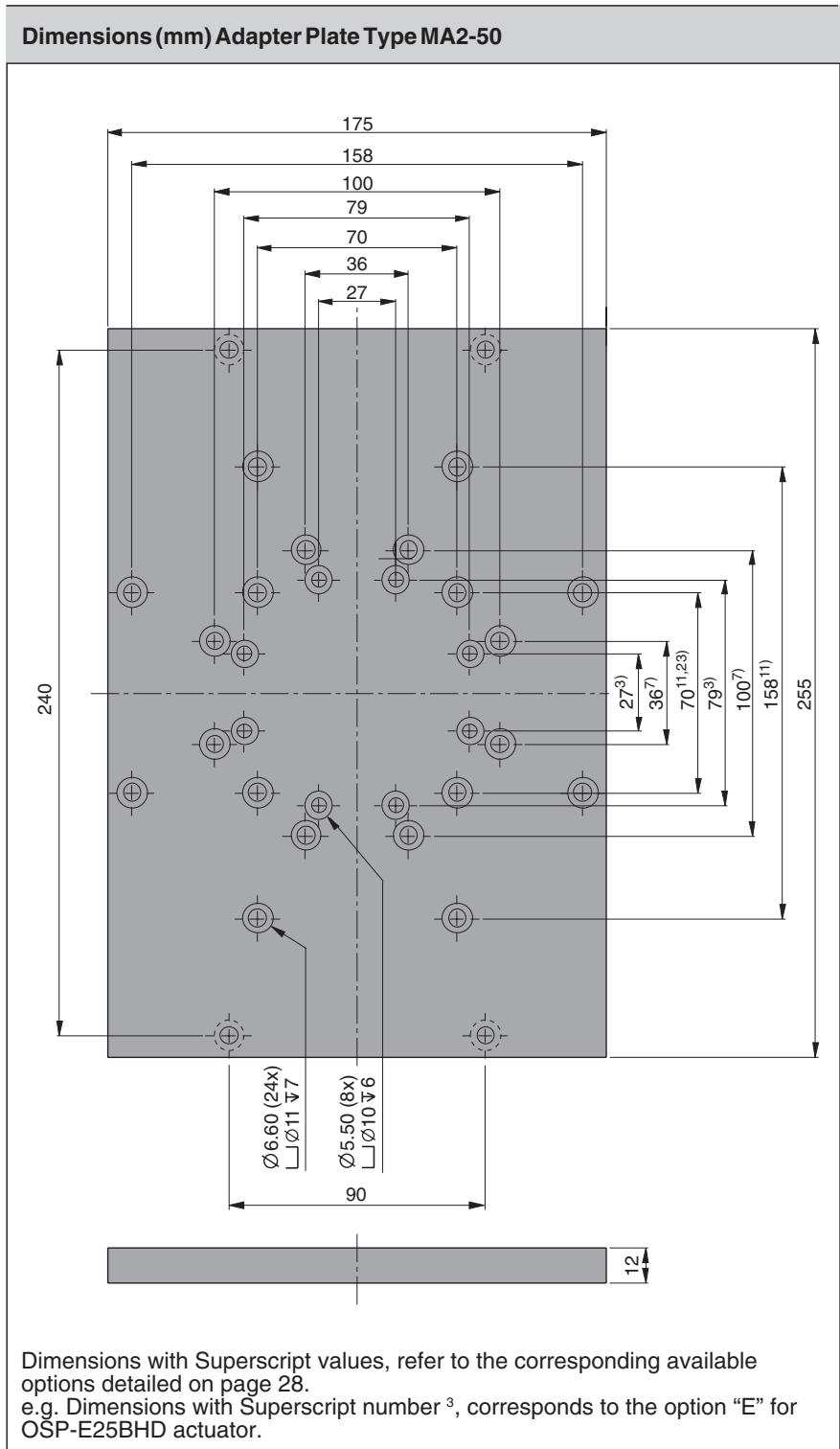
Order Instructions and Weight		
Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA2-32	1.1	12273



# Adapter Plate for OSP-E50



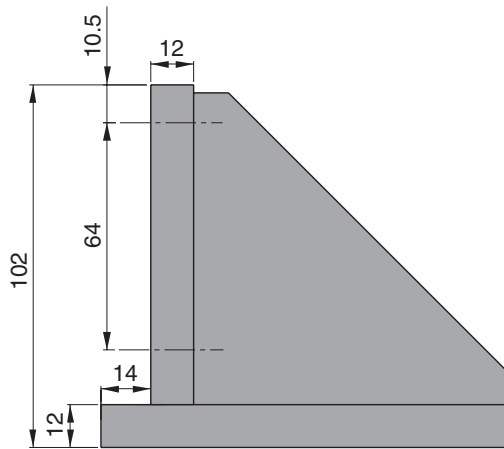
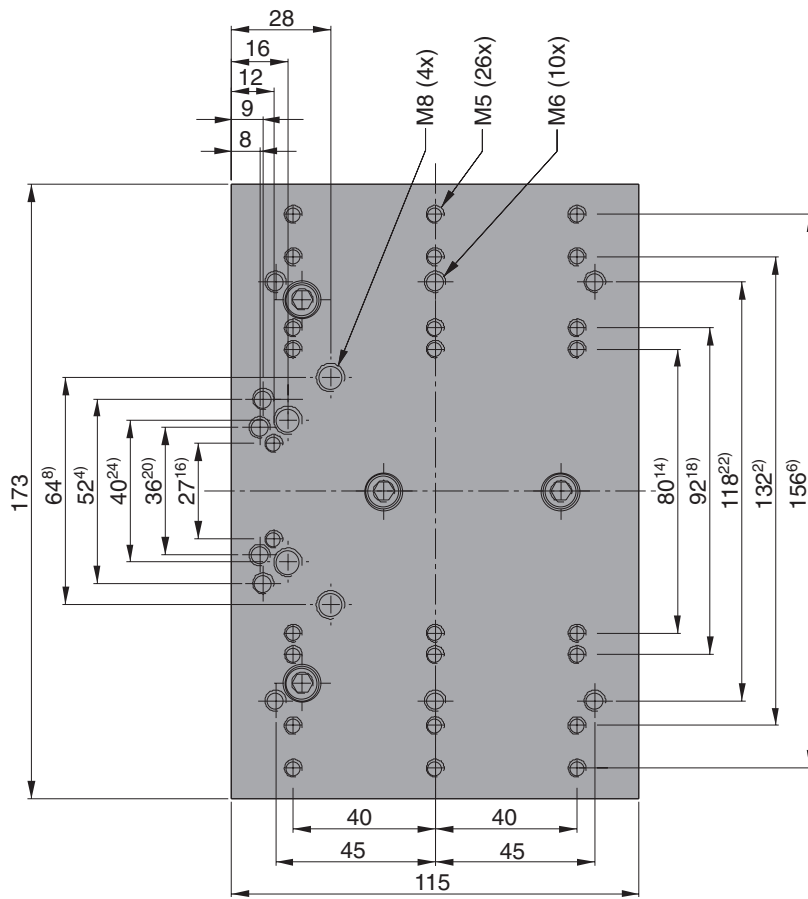
Type: MA2-50



Order Instructions and Weight		
Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA2-50	1.4	12276



Dimensions (mm) Adapter Plate Type MA3-25



Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
e.g. Dimensions with Superscript number 4, corresponds to the option "EM" for OSP-E25BHD actuator.

# Adapter Plate for OSP-E25



Type: MA3-25



**Order Instructions and Weight**

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA3-25	1.3	12271



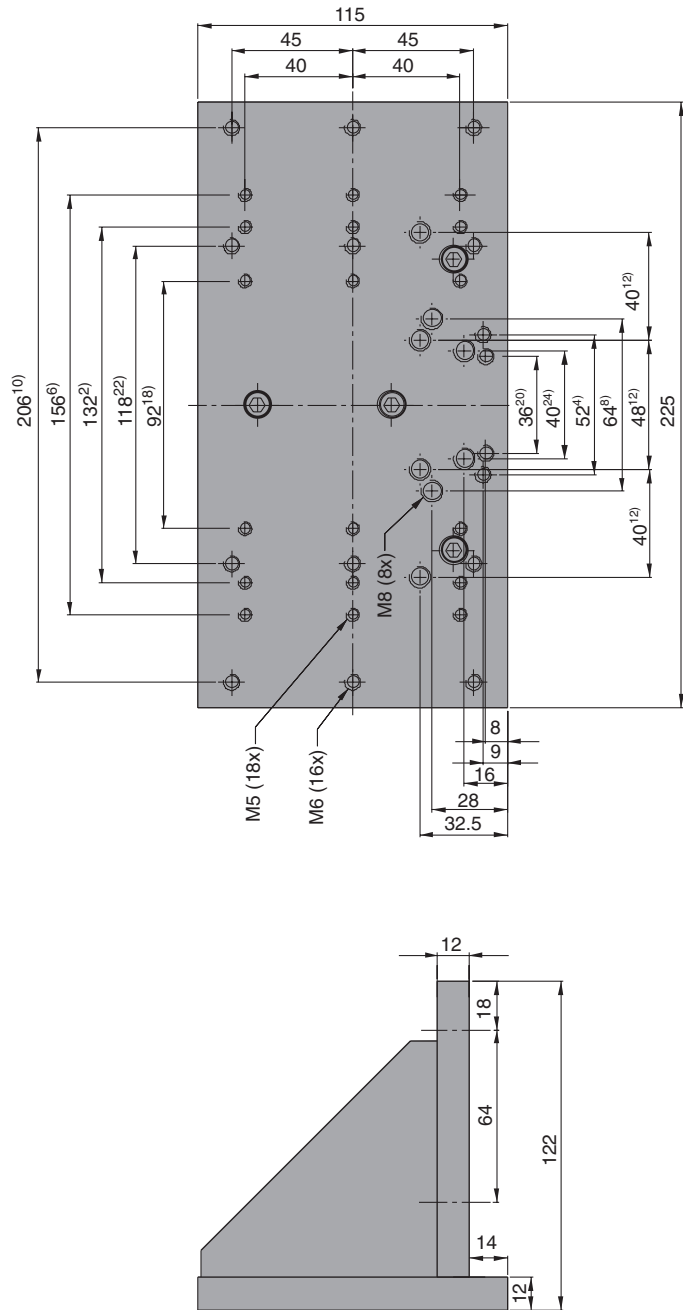
# Adapter Plate for OSP-E32



Type: MA3-32



## Dimensions (mm) Adapter Plate Type MA3-32

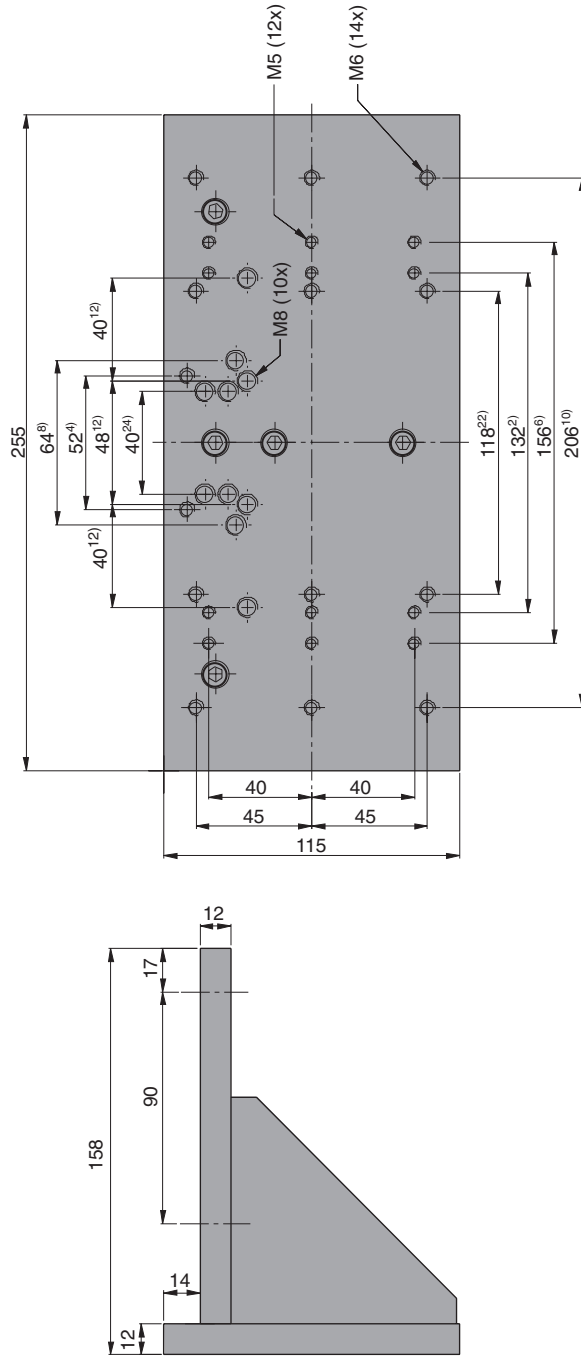


Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
e.g. Dimensions with Superscript number <sup>4</sup>, corresponds to the option "EM" for OSP-E25BHD actuator.

### Order Instructions and Weight

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA3-32	1.8	12274

Dimensions (mm) Adapter Plate Type MA3-50



Dimensions with Superscript values, refer to the corresponding available options detailed on page 28.  
e.g. Dimensions with Superscript number 4, corresponds to the option "EM" for OSP-E25BHD actuator.

# Adapter Plate for OSP-E50



Type: MA3-50



**Order Instructions and Weight**

Description	Weight(mass) [kg]	Order No.
Adapter Plate Type MA3-50	2.3	12277





# Multi-Axis Accessories

## Complete Intermediate Drive Shaft

Size 25, 32, 50



For Linear Drive  
• Series OSP-E..BHD

**Note:**  
For Series OSP-E..BHD with integrated gearbox, please contact your local HOERBIGER-ORIGA technical support.

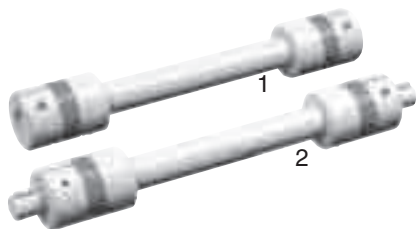
For other series on request.

### Features

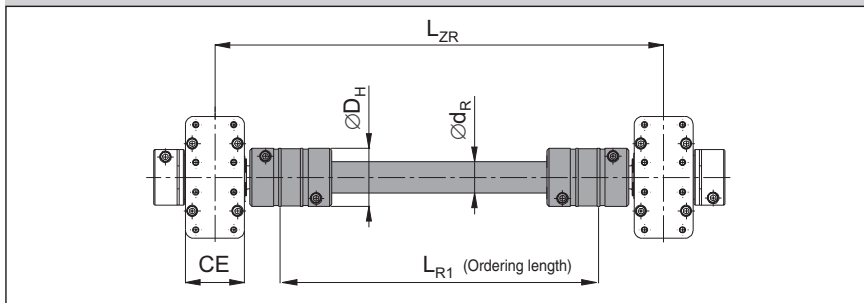
Backlash-free shaft connection under pre-stress  
Design up to speed 1500 rpm  
Double cardan connection for larger displacements  
Easy to mount

### Material:

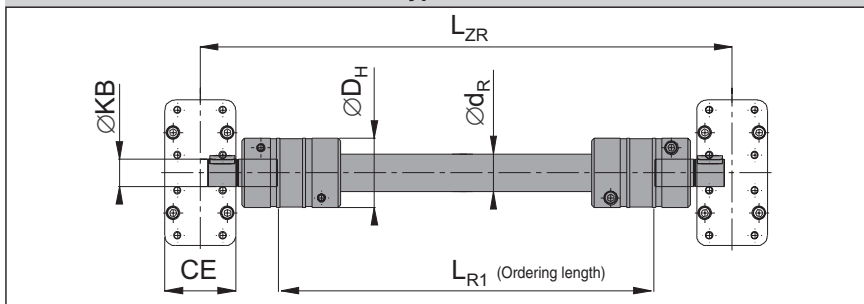
Aluminium (AL-H) / Steel (St-H)  
Polyurethane/Hytrel



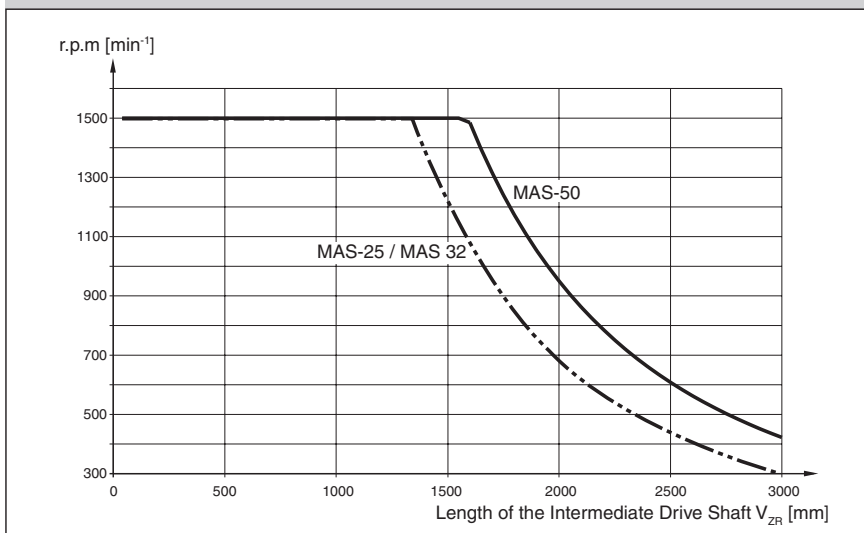
For Clamp Shaft with Connection Shaft  
Series OSP-E25BHD to E50BHD, Type MAS-



For Hollow Shaft with Keyway  
Series OSP-E25BHD to E50BHD, Type MAS-



### Critical Speed v. for Coupling Length



1 = For Clamp Shaft with Connection Shaft  
2 = For Hollow Shaft with Keyway

### Characteristics / Dimension Table (mm)

Series	Type	Max Torque [Nm]**	CE	D <sub>H</sub>	KB***	L <sub>ZR</sub>	L <sub>R1</sub>	d <sub>R</sub>	Order No. *	
									For Clamp shaft	For Hollow shaft
OSP-E25BHD	MAS-25	39	42	55	16 <sub>h7</sub>	<3000	L <sub>ZR</sub> - 112	25 x 2.5	12305-....	12281 - ....
OSP-E32BHD	MAS-32	42	56	55	22 <sub>h7</sub>	<3000	L <sub>ZR</sub> - 126	25 x 2.5	12306-....	12282 - ....
OSP-E50BHD	MAS-50	102	87	65	32 <sub>h7</sub>	<3000	L <sub>ZR</sub> - 167	35 x 4.0	12307-....	12283 - ....

\* Complete with L<sub>R1</sub> length in mm.  
Example: 12305 - 1200  
(L<sub>R1</sub> length = 1200 mm)

\*\* For higher torque requirement, please contact your local

HOERBIGER-ORIGA technical support.

\*\*\* Other dimensions for KB on request.  
See OSP-E..BHD basic unit, page 18.



# Accessories for BHD Linear Drive Systems Series OSP-E..BHD



## Contents

Description	Page
End Cap Mountings	40
Mid-Section Support	41
Adaptor Profile	42
T-Nut Profile	43
Motor Mountings Coupling Housing	44
Profile Mountings	45

# Linear Drive Accessories

## End Cap Mountings

Size 25, 32, 50



For Linear Drive with integrated Roller Guide

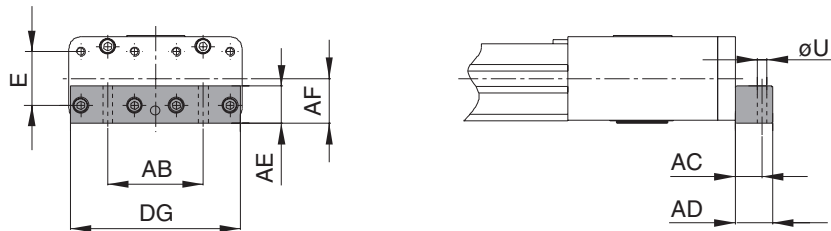
• Series OSP-E..BHD

On the end-face of each end cap there are eight threaded holes for mounting the actuator.

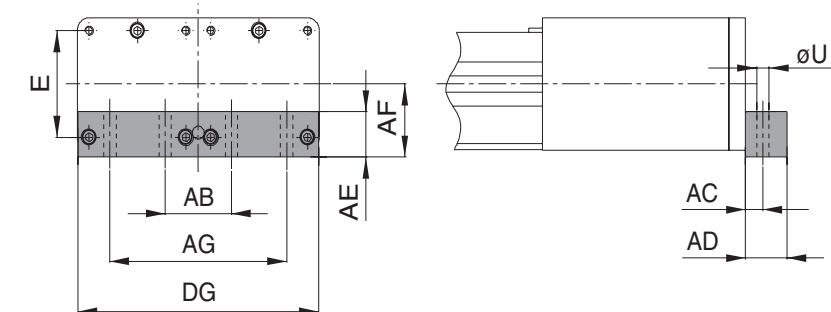
Material:  
Anodized aluminium.

The mountings are supplied in pairs.

### Series OSP-E25BHD to E32BHD: Type C25, C32



### Series OSP-E50BHD: Type C50



### Dimension Table (mm)

Series	Type	E	ØU	AB	AC	AD	AE	AF	AG	DG	Order No. *
OSP-E25BHD	C25	27	6.6	52	16	25	25	22	–	91	12266
OSP-E32BHD	C32	36	9	64	18	25	25	30	–	114	12267
OSP-E50BHD	C50	70	9	48	12.5	30	30	48	128	174	12268

(\* = Pair)



# Linear Drive Accessories

## Mid-Section Support

Size 25, 32, 50



For Linear Drive with integrated Roller Guide

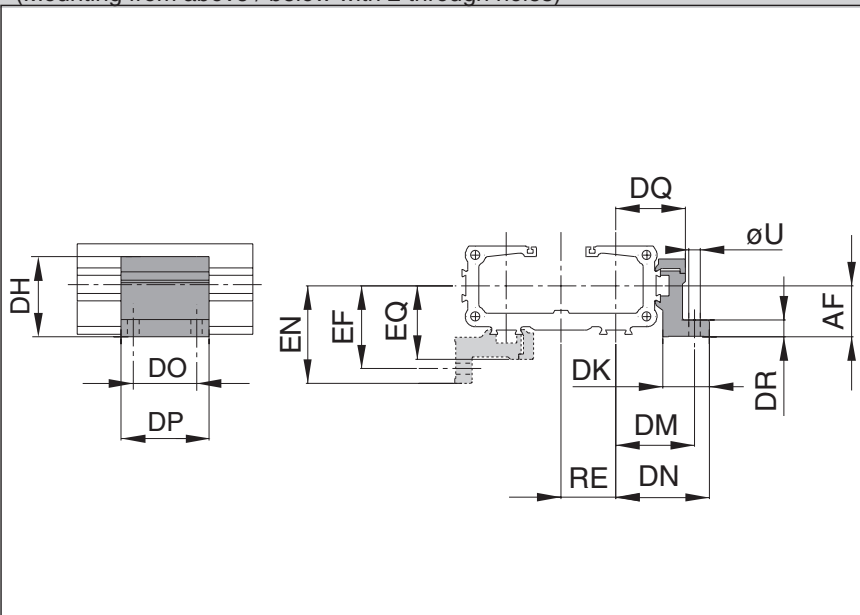
- Series OSP-E ..BHD

Note on Types E1 and D1:  
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the center of the actuator is different.

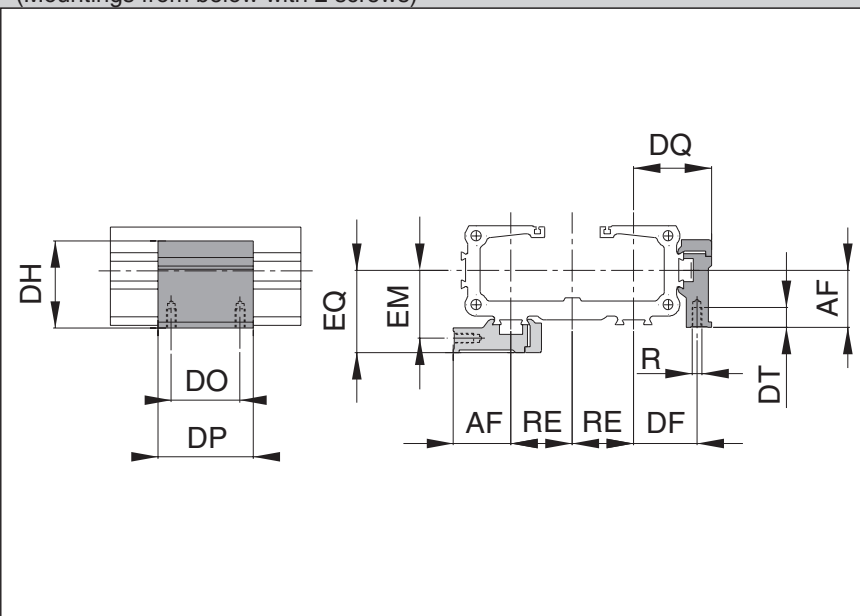
Stainless steel version on request



Series OSP-E25BHD to E50BHD: Type E1  
(Mounting from above / below with 2 through holes)



Series OSP-E25BHD to E50BHD: Type D1  
(Mountings from below with 2 screws)



Dimension Table (mm)

Series	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	RE	Order No.	
																			TypeE1	TypeD1
OSP-E25	M5	5.5	22	27	38	26	40	47.5	36	50	34.5	8	10	41.5	28.5	49	36	26	20009	20008
OSP-E32	M5	5.5	30	33	46	27	46	54.5	36	50	40.5	10	10	48.5	35.5	57	43	32	20158	20157
OSP-E50	M6	7	48	40	71	34	59	67	45	60	52	10	11	64	45	72	57	44	20163	20162

# Linear Drive Accessories

## Adaptor Profile

Size 25, 32, 50



### For Linear Drive

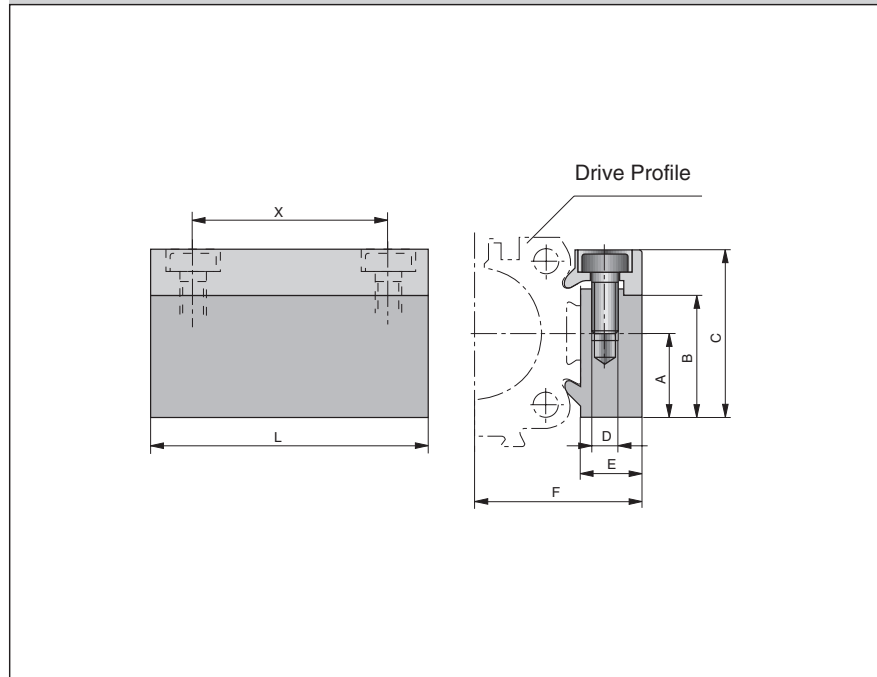
- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

### Adaptor Profile OSP

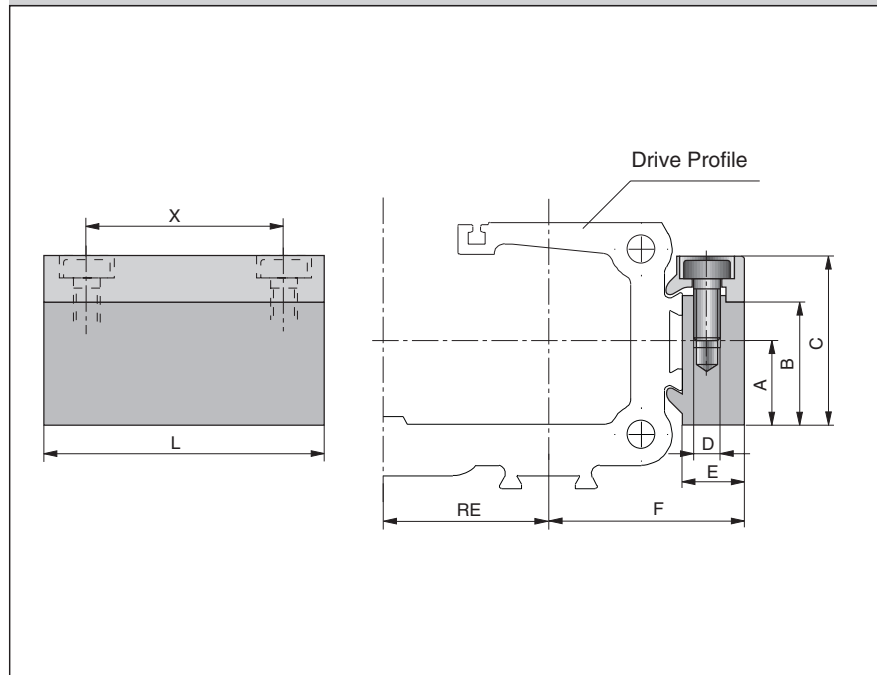
- A universal attachment for mounting of additional items
- Solid material



### Dimensions Series OSP-E



### Dimensions Series OSP-E..BHD

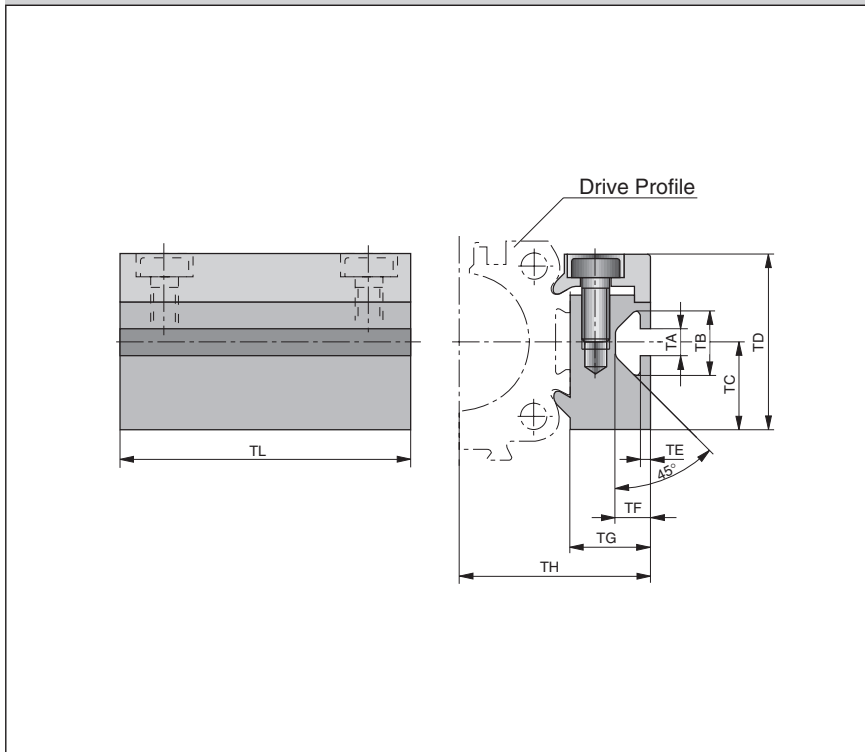


### Dimension Table (mm)

Series	A	B	C	D	E	F	L	X	RE	Order No.	
										Standard	Stainless
OSP-E25	16	23	32	M5	10.5	30.5	50	36	26	20006	20186
OSP-E32	16	23	32	M5	10.5	36.5	50	36	32	20006	20186
OSP-E50	20	33	43	M6	14	52	80	65	44	20025	20267

The right to introduce technical modifications is reserved

Dimensions Series OSP-E



# Linear Drive Accessories

## T-Nut Profile

Size 25, 32, 50

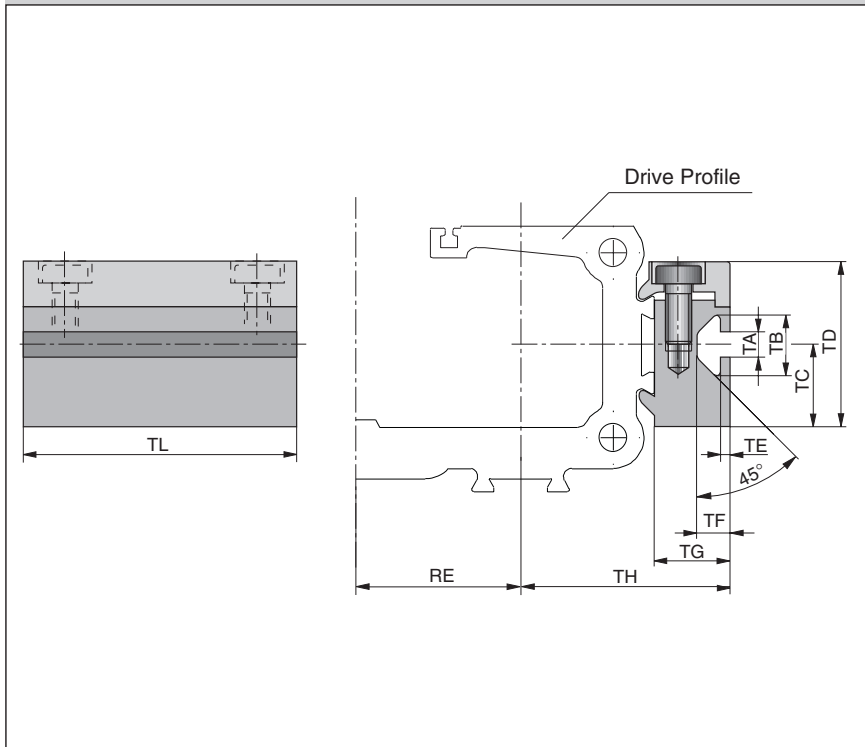


- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw
  - Series OSP-E..BHD

### T-Nut Profile OSP

- A universal attachment for mounting with standard T-Nuts

Dimensions Series OSP-E..BHD



The right to introduce technical modifications is reserved

Dimension Table (mm)

Series	RE	TA	TB	TC	TD	TE	TF	TG	TH	TL	Order No.	
											Standard	Stainless
OSP-E25	26	5	11.5	16	32	1.8	6.4	14.5	34.5	50	20007	20187
OSP-E32	32	5	11.5	16	32	1.8	6.4	14.5	40.5	50	20007	20187
OSP-E50	44	8.2	20	20	43	4.5	12.3	20	58	80	20026	20268



# Linear Drive Accessories

## Motor Mountings

## Coupling Housing

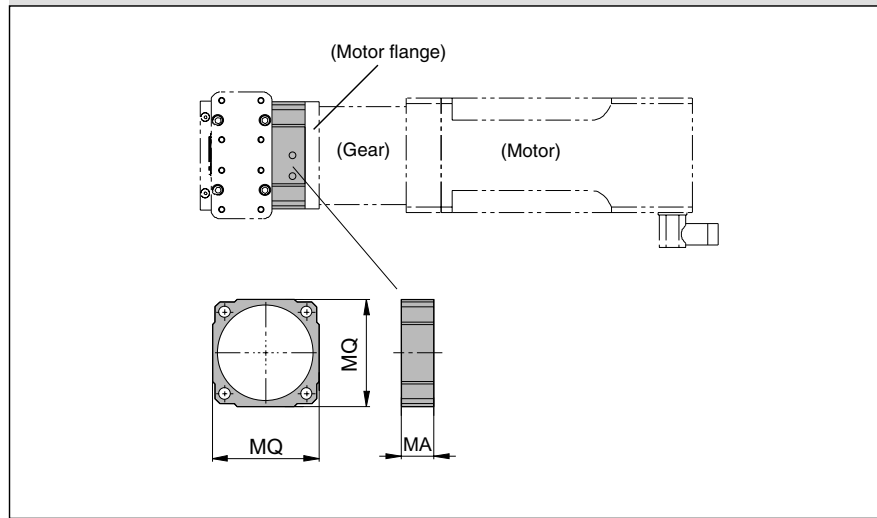
Size 25, 32, 50



• For Series OSP-E..BHD

The coupling housing is the mounting base for the gear or for the motor.

### Coupling Housing (for motor)



### Dimension Table (mm)

Series	MA	MQ	Order No.
OSP-E25BHD	22	76	12300
OSP-E32BHD	30	98	12301
OSP-E50BHD	41	128	12302

## Motor Flange

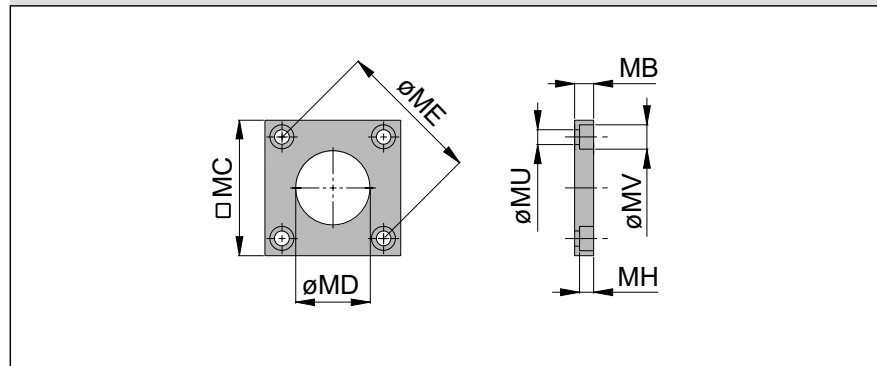
(Semi-finished)

Size 25, 32, 50

• For Series OSP-E..BHD

The semi-finished motor flange match the coupling housing above and has to be machined to fit actual gear or motor type.

### Motor Flange (Semi-finished)



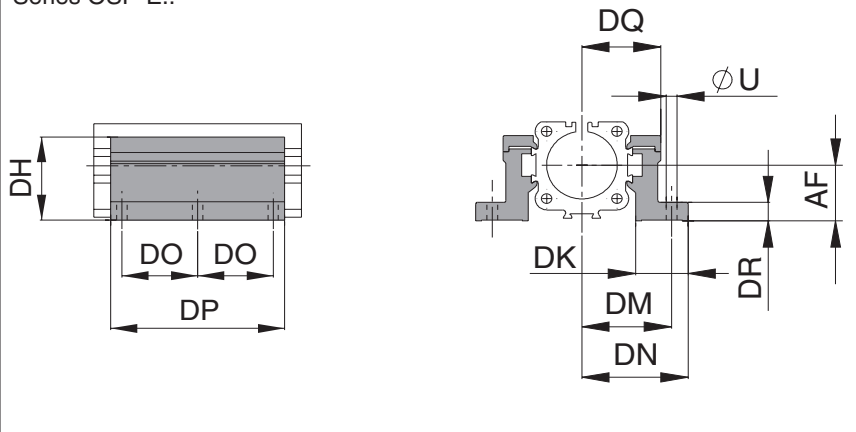
### Dimension Table (mm)

Series	MB	MC	MD	ME	MH	MU	MV	Order No.
OSP-E25BHD	14	90	36	82	8.5	9	15	12308
OSP-E32BHD	14	100	55	106	10.5	11	18	12309
OSP-E50BHD	18	125	77	144	12.5	13.5	20	12310

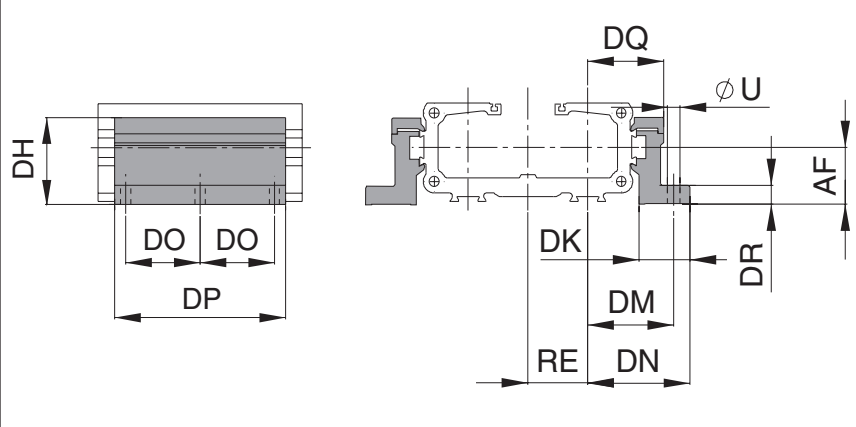


Series OSP-E25 to E50, Type MAE-..

Series OSP-E..



Series OSP-E..BHD



# Linear Drive Accessories

## Profile Mountings

Size 25, 32, 50



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

Material:

Anodized aluminum

Stainless steel version on demand.

The mountings are supplied in pairs.

Weight (mass) [kg]	
Type	Weight (mass) [kg] (pair)
MAE-25	0.3
MAE-32	0.4
MAE-50	0.8

Dimension Table (mm)

Series	Type	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	RE	Order No.
OSP-E25	MAE-25	M5	5.5	22	27	38	26	40	47.5	40	92	34.5	8	10	41.5	28.5	49	36	26	12278
OSP-E32	MAE-32	M5	5.5	30	33	46	27	46	54.5	40	92	40.5	10	10	48.5	35.5	57	43	32	12279
OSP-E50	MAE-50	M6	7	48	40	71	34	59	67	45	112	52	10	11	64	45	72	57	44	12280

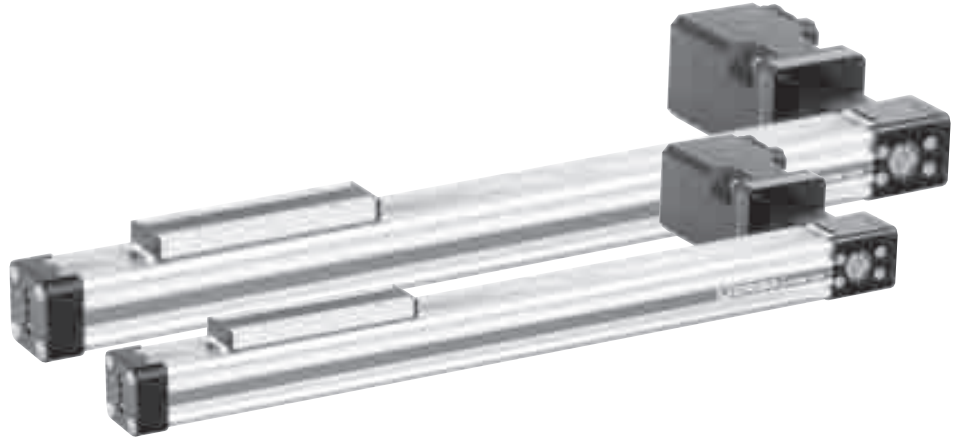
The right to introduce technical modifications is reserved







# Linear Actuator with Toothed Belt Series OSP-E..B



## Contents

Description	Page
Overview	47-50
Technical Data	51-55
Dimensions	56

# ELECTRIC LINEAR ACTUATOR FOR POINT-TO-POINT APPLICATIONS

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

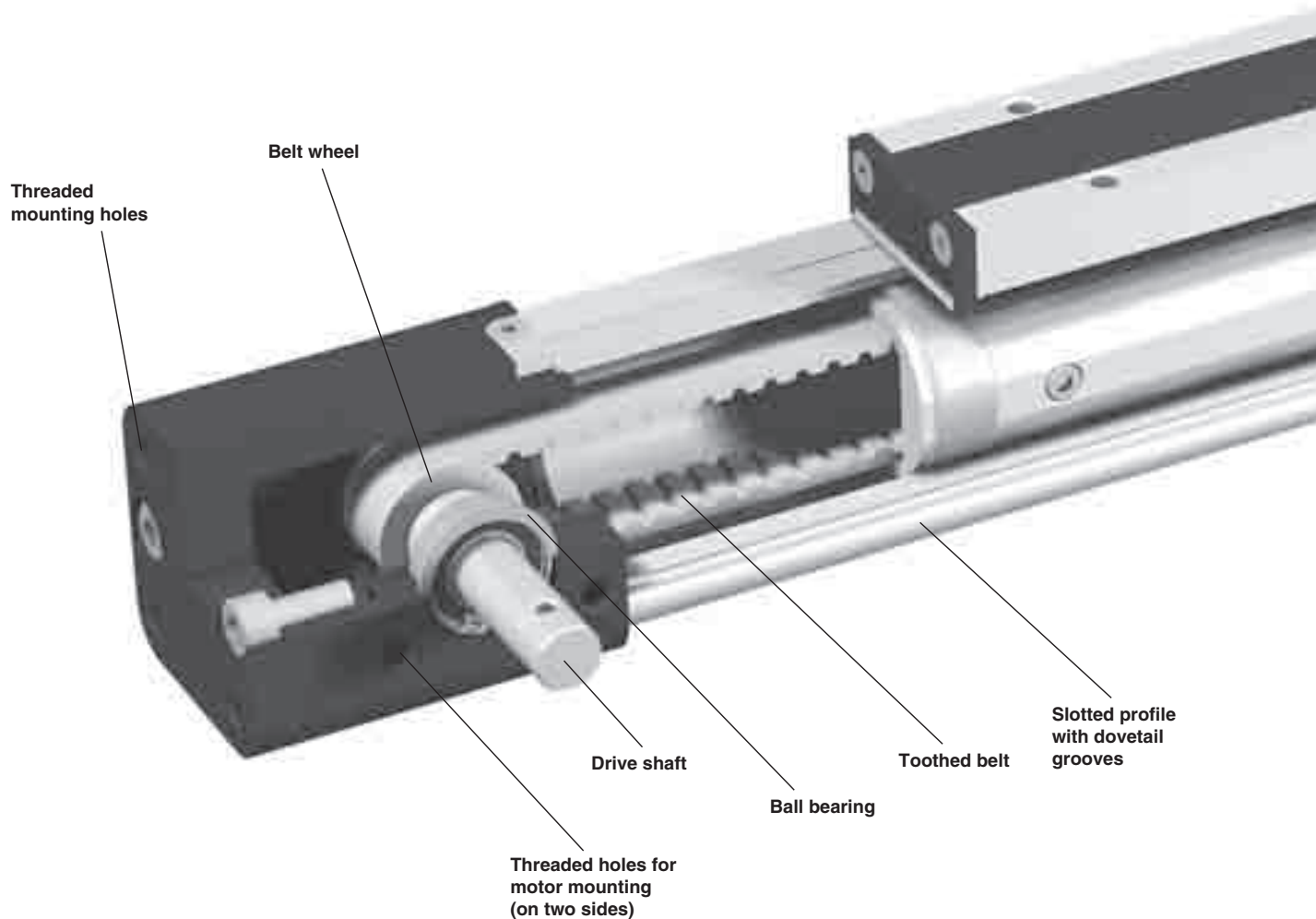
## Linear Actuator with Toothed Belt

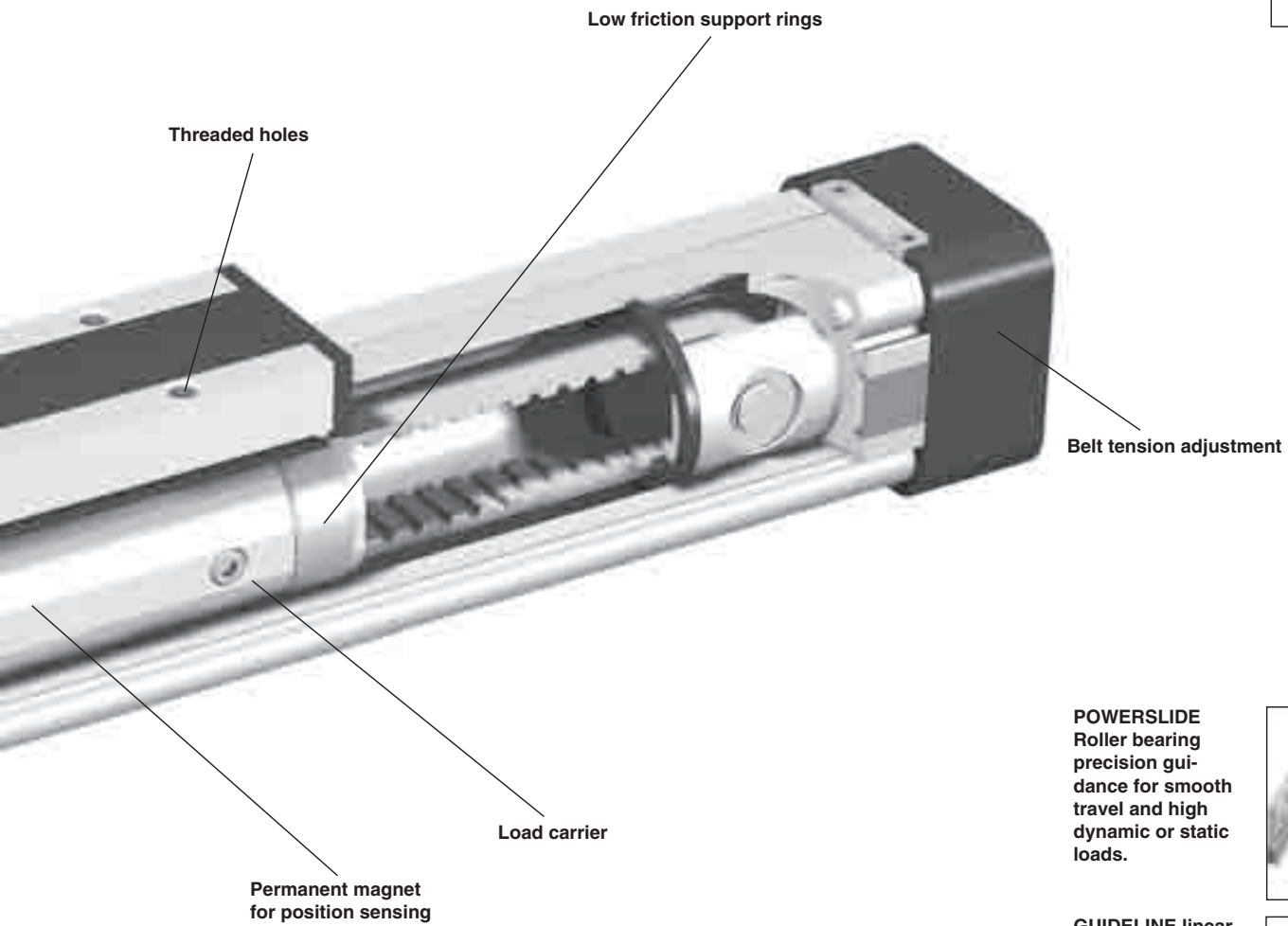
### Advantages:

- Precise path and position control
- High speed operation
- Easy installation
- Low maintenance
- Ideal for precise point-to-point and reciprocating applications

### Features:

- Integrated drive and guidance system
- Long available strokes
- Complete motor and control packages
- Diverse range of accessories and mountings
- Bi-parting and special options available





**PROLINE**  
The compact aluminium roller guide for high loads and velocities.



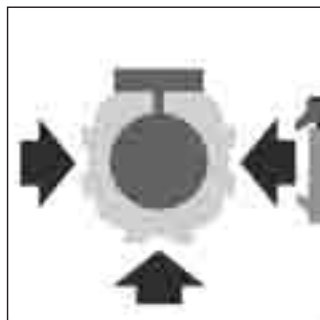
**POWERSLIDE**  
Roller bearing precision guidance for smooth travel and high dynamic or static loads.



**GUIDELINE** linear guides for heavy duty applications.



The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.

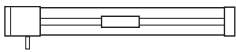
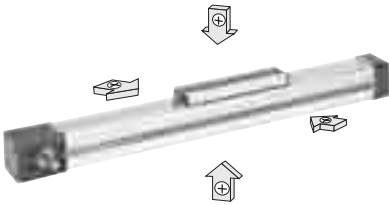


# OPTIONS AND ACCESSORIES

## SERIES OSP-E, BELT DRIVEN

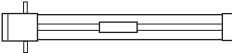
### STANDARD VERSIONS OSP-E..B

Standard carrier with integral guidance.  
Dovetail profile for mounting of accessories and the actuator itself.



### BASIC ACTUATOR OPTIONS

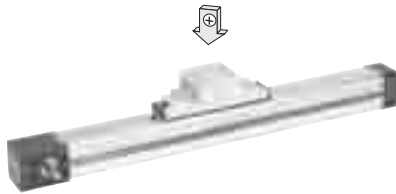
#### DRIVE SHAFT OPTIONS



### MOUNTINGS FOR OSP-E25 TO E50

#### CLEVIS MOUNTING

Page 68-69  
Carrier mounting for driving loads supported by external linear guides.



#### END CAP MOUNTING

Page 70  
For end-mounting of the actuator



#### MID-SECTION SUPPORT

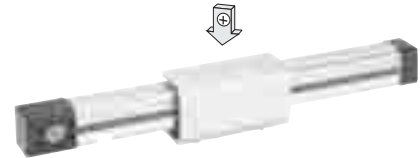
Page 71  
For supporting long actuators or mounting the actuator on the dovetail grooves.



#### INVERSION MOUNTING

Page 75

The inversion mounting, mounted on the carrier, transfers the driving force to the opposite side, e.g. for dirty environments.



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Linear Actuator with Toothed Belt
Series			OSP-E..B
Mounting			See drawings
Ambient Temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°C °C	-30 +80
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Toothed belt		Steel-corded polyurethane
	Belt wheels		Aluminium
	Sealing band		Hardened stainless steel
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) kg and Inertia					
Series	At stroke 0 m	Weight (mass) kg]		Inertia [x 10 <sup>-6</sup> /kgm <sup>2</sup> ]	
		Add per metre stroke	Moving mass	At stroke 0 m	Add per metre
OSP-E25	0.9	1.6	0.25	25.3	6.6
OSP-E32	1.8	3.2	0.43	43.3	10
OSP-E50	5.3	6.3	1.08	312.2	45

### Installation Instructions

Use the threaded holes in the end cap for mounting the linear actuator. See if mid-section supports are needed using the maximum allowable un-supported length graph on page 53.

At least one end cap must be secured to prevent axial sliding when mid-section support is used.

When the linear actuator is moving an externally guided load, the clevis mounting should be used (see page 68).

The linear actuators can be fitted with the standard carrier mounting facing in any direction.

To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.

The inversion mounting can be fitted to transfer the driving force to the opposite side (see page 75).

### Maintenance

All moving parts are long-term lubricated for a normal operational environment. We recommend a check and lubrication of the linear actuator, and if necessary a change of the toothed belt and wear parts, after an operation time of 4 000 hours of operation or 3 000 km, depending on the type of application.

### Start Up

The products in this datasheet should not be operated until the machine/ application in which they are used has passed necessary inspection.

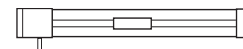
# Linear Actuator with Toothed Belt

## Series OSP-E..B Size 25, 32, 50



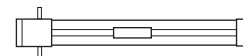
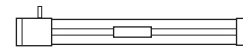
### Standard Versions:

- Standard carrier with integral guidance.
- Dovetail profile for mounting of accessories and the actuator itself.



### Special Versions:

- Position of Drive Shafts



# Sizing Performance Overview

## Maximum Loadings

### Sizing of Linear Actuator

The following steps are recommended for selection :

1. Required acceleration is shown in graphs on page 54.
2. Required torque is shown on page 55.
3. Check that maximum values in the adjacent charts are not exceeded.
4. Check max. allowable torque on drive shaft by using table T2. (Pay attention to note under table) If value is lower than required, overview the moving profile or select if possible a bigger unit.
5. Before sizing and specifying the motor, the average torque must be calculated using the cycle time of the application.
6. Check that the maximum allowable unsupported length is not exceeded (see on page 53).

### Performance Overview

Characteristics	Unit	Description			
Size		OSP-E25B	OSP-E32B	OSP-E50B	
Max. speed	[m/s]	2	3	5	
Linear motion per revolution, drive shaft	[mm]	60	60	100	
Max. rpm. drive shaft	[min <sup>-1</sup> ]	2 000	3 000	3 000	
Max. effective action force	< 1 m/s:	[N]	50	150	425
	1- 2 m/s:	[N]	50	120	375
F <sub>A</sub> at speed	> 2 m/s:	[N]	–	100	300
No-load torque	[Nm]	0.4	0.5	0.6	
Max. acceleration/deceleration	[m/s <sup>2</sup> ]	10	10	10	
Repeatability	[mm/m]	±0.05	±0.05	±0.05	
Max. standard stroke length	[mm]	3000	5000	5000	

### Maximum Allowable Torque on Drive Shaft Speed and Stroke

T2

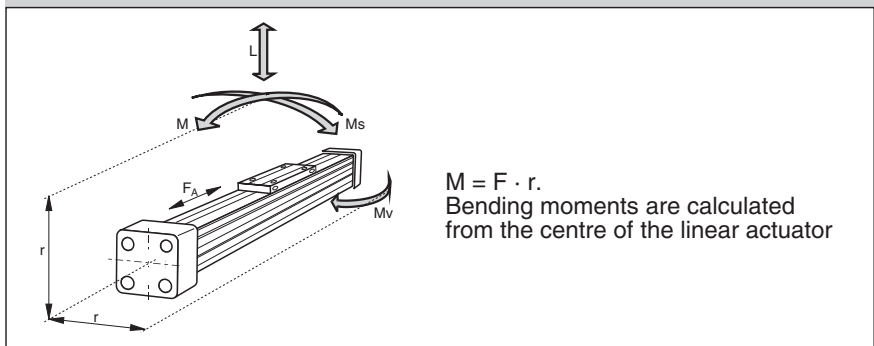
OSP-E25B				OSP-E32B				OSP-E50B			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	0.9	1	0.9	1	2.3	1	2.3	1	10.0	1	10.0
2	0.9	2	0.9	2	2.0	2	2.3	2	9.5	2	10.0
	3	0.9	3		1.8		3		3		9.0
							4		8.0		7.0
					5		7.5		5		6.0

#### Important:

The maximum permissible moment on the drive shaft is the lowest value of the speed- or stroke-dependent moment value.

**Example above:** OSP-E32B-stroke 2 m, required speed 3 m/s;  
From table T2: speed 3 m/s gives 1.8 Nm and stroke 2 m gives 2.3 Nm.  
Max. torque for this application is 1.8 Nm.

### Maximum Allowable Static Loadings

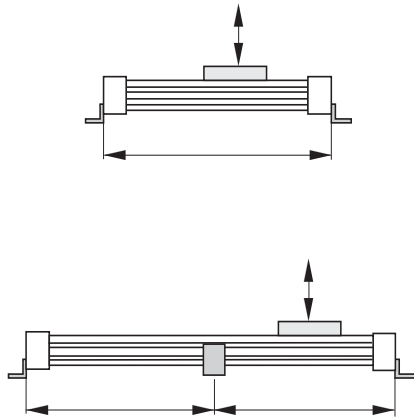


Size	Max. applied load L [N]	Max. moments [Nm]		
		M	M <sub>s</sub>	M <sub>v</sub>
OSP-E25B	160	12	2	8
OSP-E32B	300	25	8	16
OSP-E50B	850	80	16	32

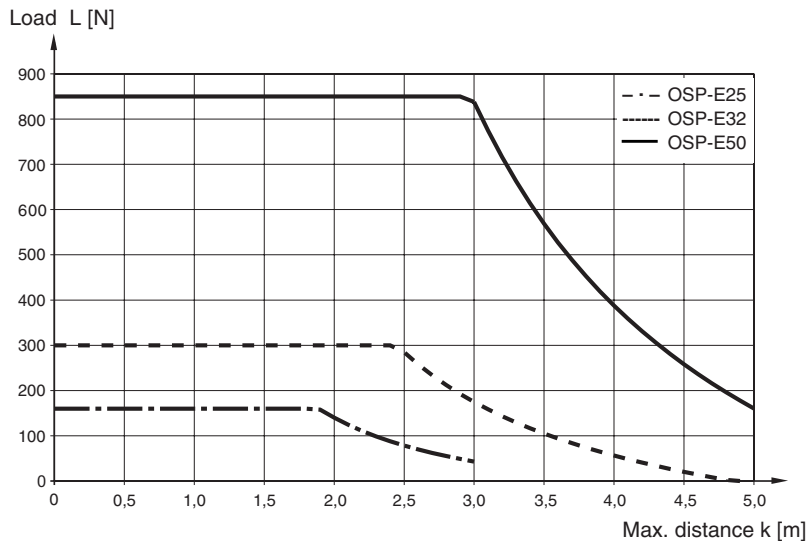
### Combined Loadings

If several forces and moments are applied to the linear actuator simultaneously, then the following equation must be fulfilled in addition to the maximum loadings stated beside.

$$\frac{L}{L(\max)} + \frac{M}{M(\max)} + \frac{M_s}{M_s(\max)} + \frac{M_v}{M_v(\max)} \leq 1$$



$k$  = Maximum allowable distance between mountings/mid-section support for a given load ( $L$ )



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance  $k$ .)

# Maximum Allowable Unsupported Length Stroke Length

## Stroke Lengths

The stroke lengths of the linear actuators are available in multiples of 5 mm up to 5 m.  
(OSP-E25: max. 3 m)

Other stroke lengths are available on request.

**The end of stroke must not be used as a mechanical stop.**

**Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft.**

**The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.**

**For advise, please contact your local HOERBIGER-ORIGA technical support department.**

**When mechanical stops are required, external shock absorbers should be used (see separate catalogue).**

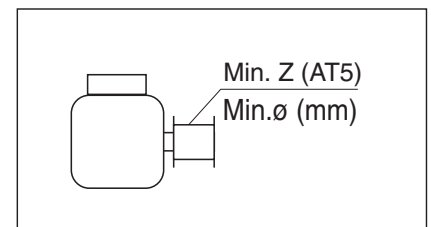
**Align the centre line of the shock absorber as closely as possible with the object's centre of gravity.**

## Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupler or belt wheel, a steadying block should be used.

## Belt wheels

Minimum allowable number of teeth  $Z$  (AT5) at maximum applied torque.



Size	Min. $Z$	Min. $\varnothing$
OSP-E25B	24	38
OSP-E32B	24	38
OSP-E50B	36	57



# Required Acceleration

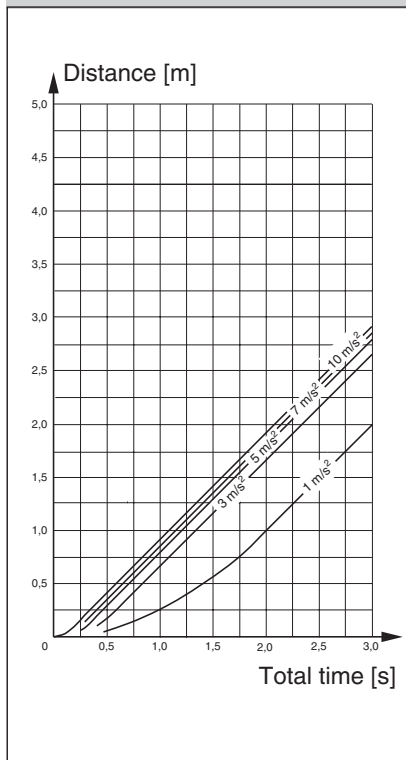
## Distance-Time Graph

Using the required travel distance and total time, the adjacent graphs show the required acceleration based on maximum speed.

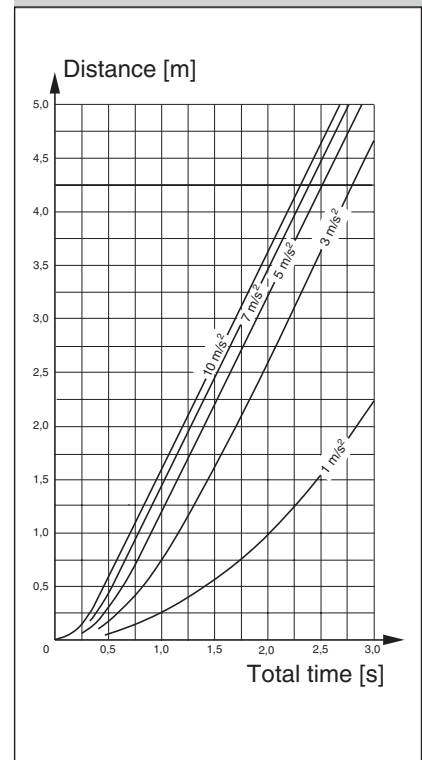
The graphs assume that acceleration and deceleration are equal.

Please note that specifying non-essential high acceleration or short cycle time will result in an oversized motor.

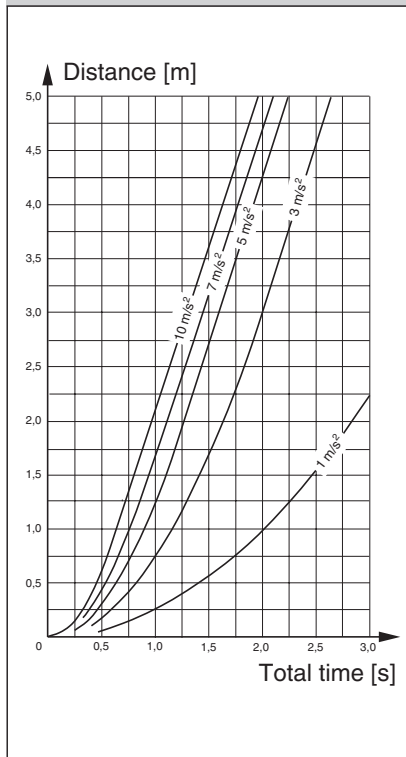
Max. speed 1 m/s



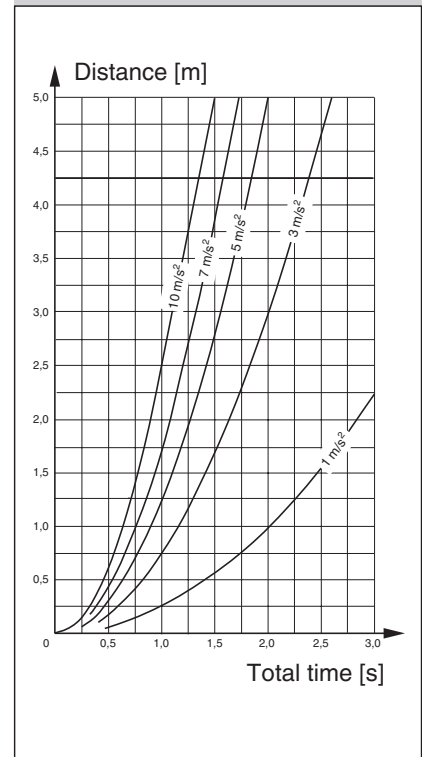
Max. speed 2 m/s



Max. speed 3 m/s

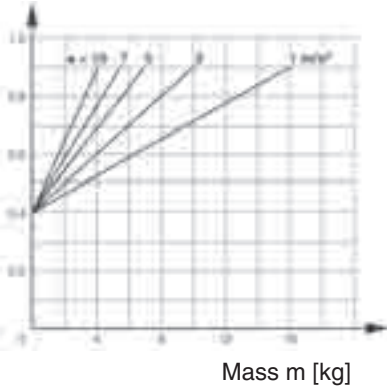


Max. speed 5 m/s



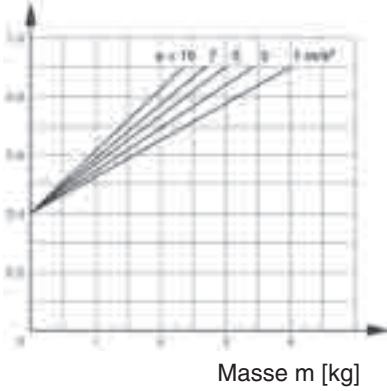
**Size OSP-E25,  
Horizontal Application**

Torque M [Nm]



**Size OSP-E25,  
Vertical Application**

Torque M [Nm]



# Required Torque

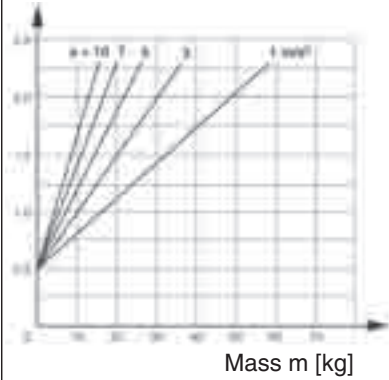
Using the known mass, the direction of the application and the required acceleration from the distance-time graphs, the linear actuator can be sized and the required torque is shown in the adjacent graphs. Mass in graphs = Load + moving mass of the linear actuator (according to the weight chart on page 51).

**Please note:**

When using an additional guide, please add the mass of the carriage to the total moving mass.

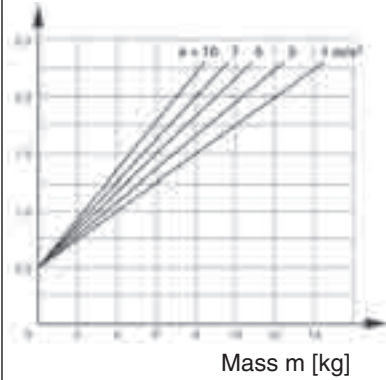
**Size OSP-E32,  
Horizontal Application**

Torque M [Nm]



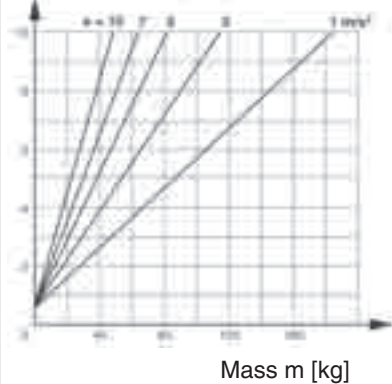
**Size OSP-E32,  
Vertical Application**

Torque M [Nm]



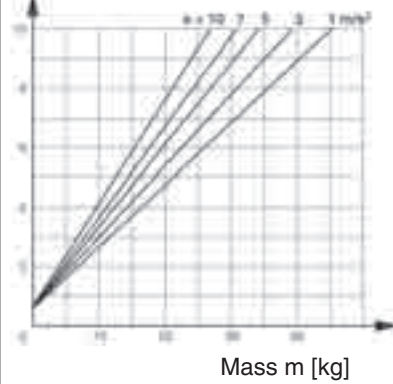
**Size OSP-E50,  
Horizontal Application**

Torque M [Nm]

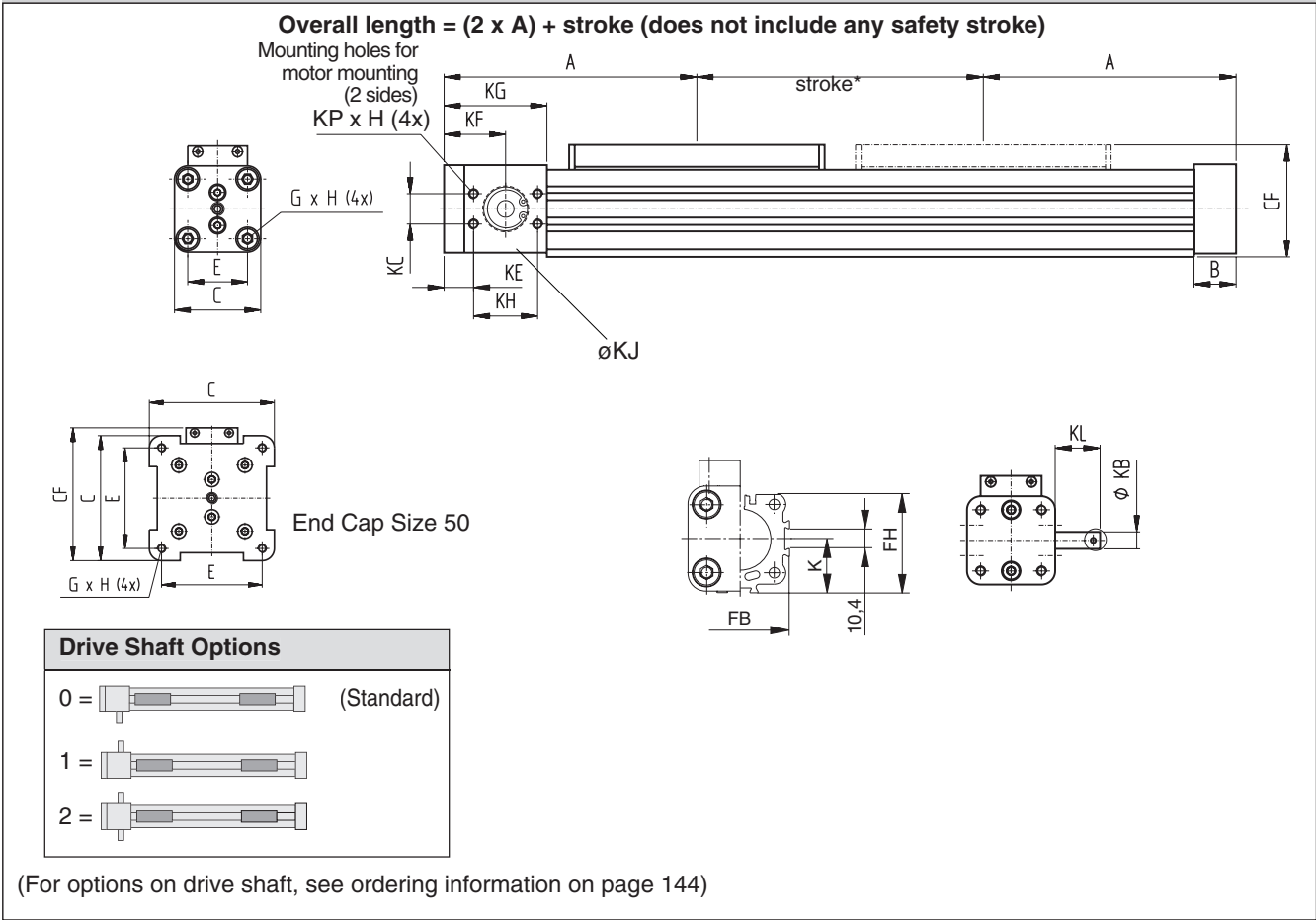


**Size OSP-E50,  
Vertical Application**

Torque M [Nm]

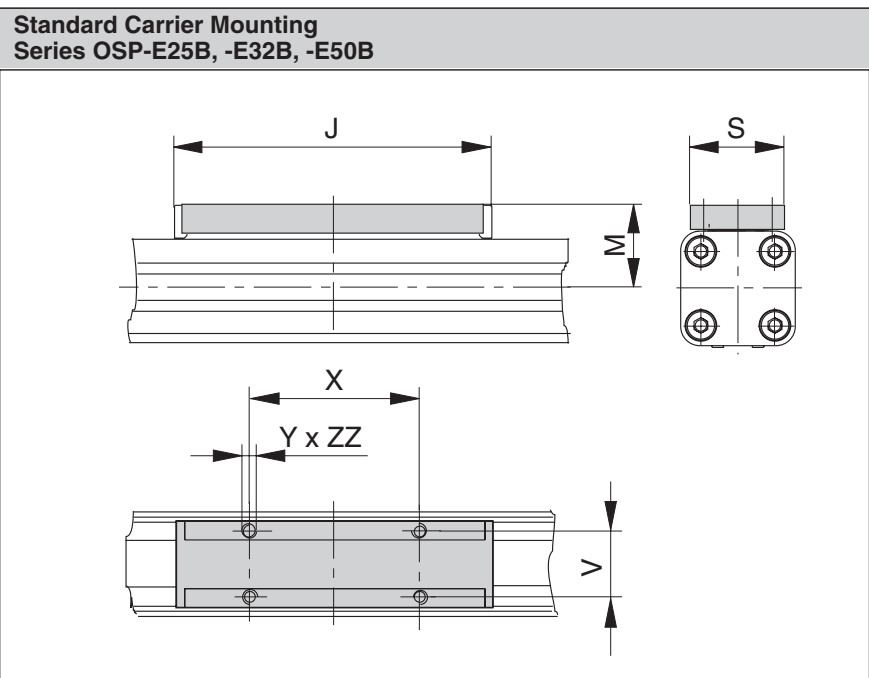


**Belt Driven Linear Actuator - Basic Unit**  
**Series OSP-E25B, -E32B, -E50B**



\* The end of stroke must not be used as a mechanical stop. Add to both ends, a minimum extra length, corresponding to the linear motion per one revolution of the drive shaft. The use of AC motor with frequency converter drives normally requires a larger 'extra length' than that required for servo systems. For advise, please contact your local HOERBIGER-ORIGA technical support department.

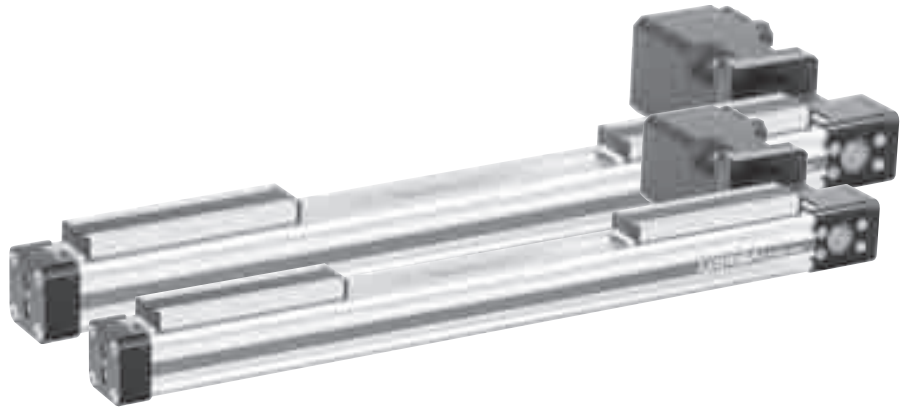
When mechanical stops are required CONSULT FACTORY.



**Dimension Table (mm)**

Series	A	B	C	E	G	H	J	K	M	S	V	X	Y	CF	FB	FH	KB	KC	KE	KF	KG	KH	KJ	KL	KP	ZZ
OSP-E25B	125	22	41	27	M5	10	117	21.5	31	33	25	65	M5	52.5	40	39.5	10 <sub>6</sub>	15	22	37	57	30	19 <sup>H7</sup>	24	M5	8
OSP-E32B	150	25	52	36	M6	12	152	28.5	38	36	27	90	M6	66.5	52	51.7	10 <sub>6</sub>	18	17.5	36.5	61	38	26 <sup>H7</sup>	26	M6	10
OSP-E50B	200	25	87	70	M6	12	200	43	49	36	27	110	M6	92.5	76	77	16 <sub>h8</sub>	32	23.5	48.5	85	50	40 <sup>H7</sup>	34	M8	10

# Linear Actuator with Toothed Belt and Bi-Parting Carriers Series OSP-E..BP



## Contents

Description	Page
Overview	58-60
Technical Data	61-65
Dimensions	66

# ELECTRIC LINEAR ACTUATOR FOR SYNCHRONIZED BI-PARTING APPLICATIONS

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

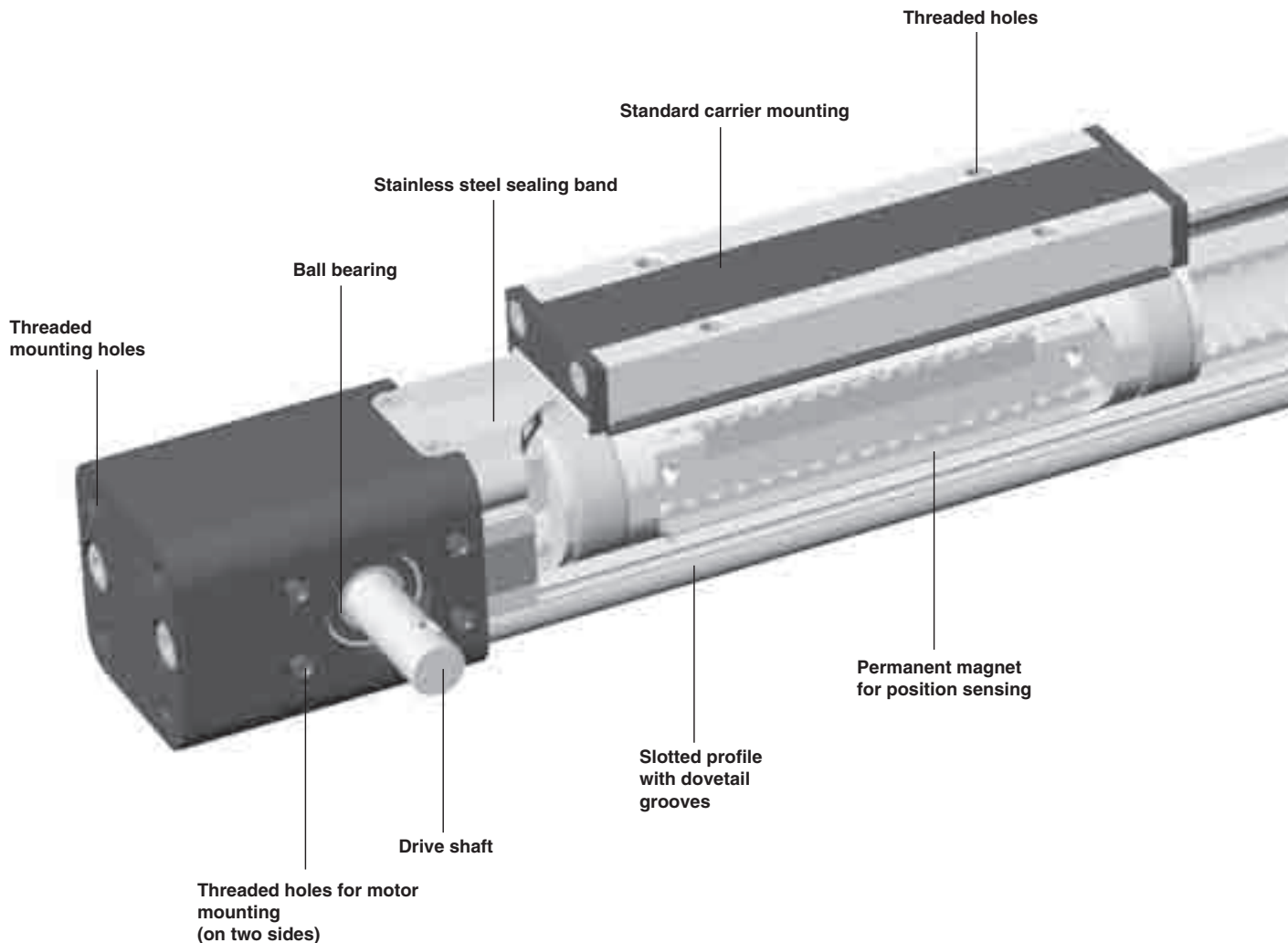
## Linear Actuator with Toothed Belt and Bi-Parting Carriers

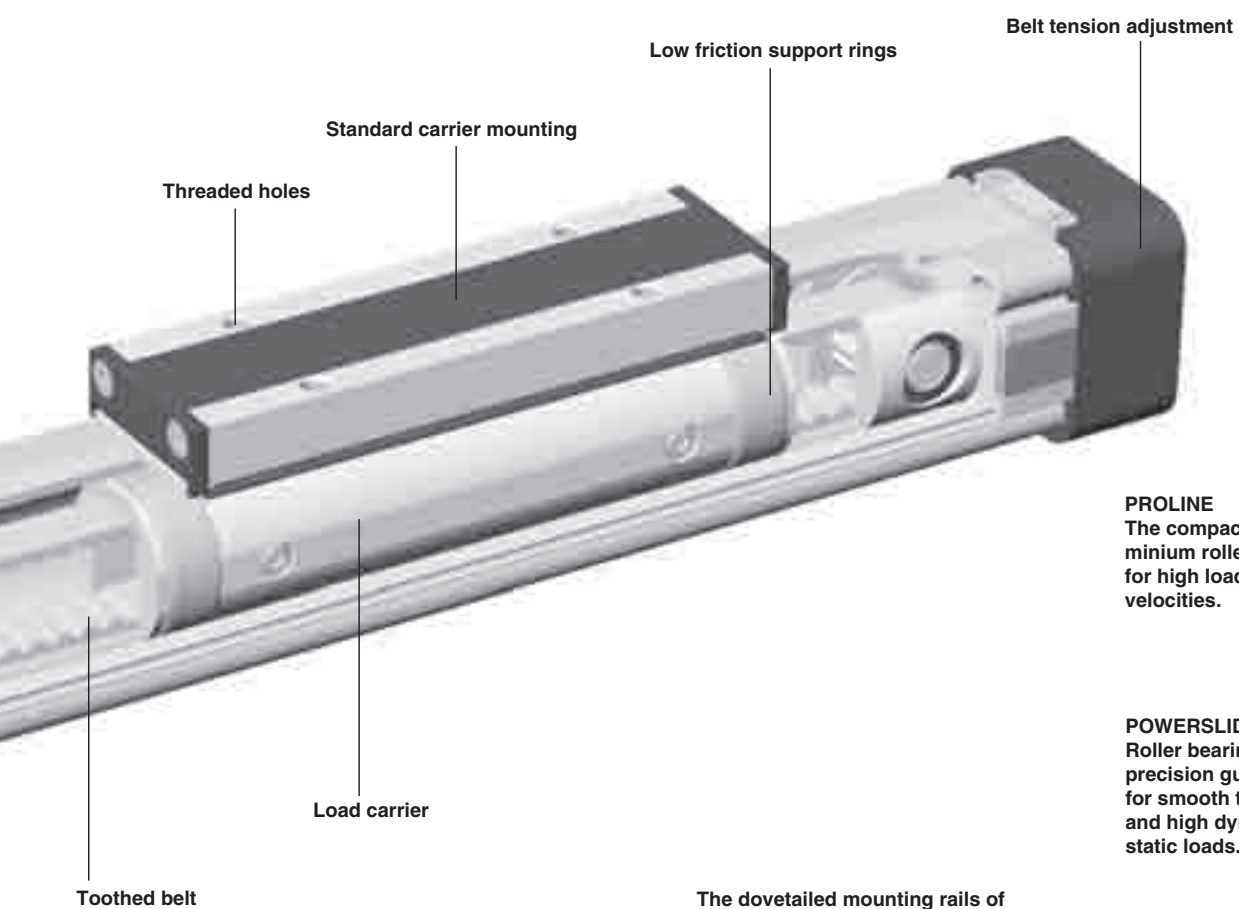
### Advantages:

- Precise synchronized bi-parting movements
- Precise path and position control
- High speed operation
- Easy installation
- Low maintenance
- Ideal for centering and door operating applications

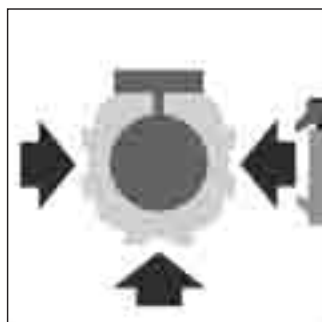
### Features:

- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available





The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.



**PROLINE**  
The compact aluminium roller guide for high loads and velocities.



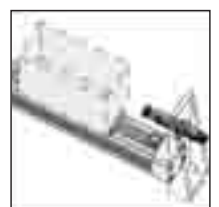
**POWERSLIDE**  
Roller bearing precision guidance for smooth travel and high dynamic or static loads.



**GUIDELINE** linear guides for heavy duty applications.



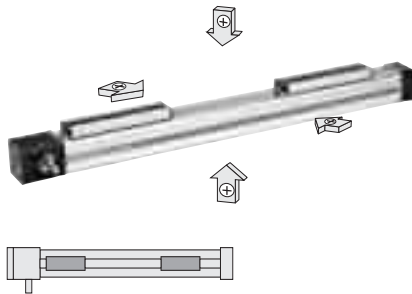
**Shock Absorbers** for smooth absorption of kinetic energy.



## SERIES OSP-E, BI-PARTING BELT DRIVEN

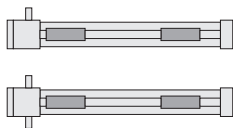
### STANDARD VERSIONS OSP-E..BP

Standard carrier with integral guidance.  
Dovetail profile for mounting of accessories and the actuator itself.



### BASIC ACTUATOR OPTIONS

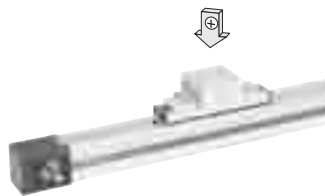
#### DRIVE SHAFT OPTIONS



### MOUNTINGS FOR OSP-E25 TO E50

#### CLEVIS MOUNTING

Page 68-69  
Carrier mounting for driving loads supported by external linear guides.



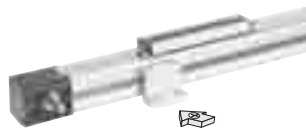
#### END CAP MOUNTING

Pages 70  
For end-mounting of the actuator



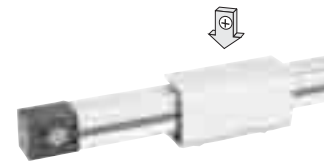
#### MID-SECTION SUPPORT

Page 71  
For supporting long actuators or mounting the actuator on the dovetail grooves.



#### INVERSION MOUNTING

Page 75  
The inversion mounting, mounted on the carrier, transfers the driving force to the opposite side, e.g. for dirty environments..



# Linear Actuator with Toothed Belt and Bi-Parting Carriers

## Series OSP-E..BP Size 25, 32, 50



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Bi-Parting Belt-Driven for synchronized bi-parting movements
Series			OSP-E..BP
Mounting			See drawings
Ambient Temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°C °C	-30 +80
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Toothed belt		Steel-corded polyurethane
	Belt wheels		Aluminium
	Sealing band		Hardened stainless steel
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) kg and Inertia					
Series	At stroke 0 m	Weight (mass) [kg]		Inertia [ $\times 10^{-6}/\text{kgm}^2$ ]	
		Add per metre stroke	Moving mass	At stroke 0 m	Add per metre
OSP-E25BP	1.15	1.6	0.5	48	6.6
OSP-E32BP	2.23	3.2	0.86	83	10
OSP-E50BP	6.38	6.3	2.16	585	45

### Installation Instructions

Use the threaded holes in the end cap for mounting the linear actuator. See if mid-section supports are needed using the maximum allowable un-supported length graph on page 63.

At least one end cap must be secured to prevent axial sliding when mid-section support is used.

When the linear actuator is moving an externally guided load, the clevis mounting should be used (see page 68).

The linear actuators can be fitted with the standard carrier mounting facing in any direction.

To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.

The inversion mounting can be fitted to transfer the driving force to the opposite side (see page 75).

### Maintenance

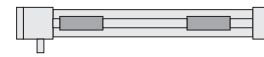
All moving parts are long-term lubricated for a normal operational environment. We recommend a check and lubrication of the linear actuator, and if necessary a change of the toothed belt and wear parts, after an operation time of 4 000 hours of operation or 3 000 km, depending on the type of application.

### Start Up

The products in this datasheet should not be operated until the machine/application in which they are used has passed necessary inspection.

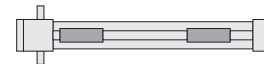
### Standard Versions:

- Standard carrier with integral guidance.
- Dovetail profile for mounting of accessories and the actuator itself.



### Special Versions:

- Position of Drive Shafts





# Sizing Performance Overview

## Maximum Loadings

### Sizing of Linear Actuator

The following steps are recommended for selection:

1. Required acceleration is shown in graphs on page 64.
2. Required torque is shown on page 65.
3. Check that maximum values in the adjacent charts are not exceeded.
4. Check max. allowable torque on drive shaft by using table T2.  
(Pay attention to note under table)  
If value is lower than required, overview the moving profile or select if possible a bigger unit.
5. Before sizing and specifying the motor, the average torque must be calculated using the cycle time of the application.
6. Check that the maximum allowable unsupported length is not exceeded (see on page 63).

Performance Overview					
Characteristics	Unit	Description			
Size		OSP-E25BP	OSP-E32BP	OSP-E50BP	
Max. speed	[m/s]	2	3	5	
Linear motion per revolution, drive shaft	[mm]	60	60	100	
Max. rpm, drive shaft	[min <sup>-1</sup> ]	2 000	3 000	3 000	
Max. effective action force	< 1 m/s:	[N]	50	150	425
	1- 2 m/s:	[N]	50	120	375
F <sub>A</sub> at speed	> 2 m/s:	[N]	–	100	300
No-load torque	[Nm]	0.4	0.5	0.6	
Max. acceleration/deceleration	[m/s <sup>2</sup> ]	10	10	10	
Repeatability	[mm/m]	±0.05	±0.05	±0.05	
Max. standard stroke length	[mm]	2 x 1500	2 x 2500	2 x 2500	

### Maximum Allowable Torque on Drive Shaft Speed and Stroke\*

T2

OSP-E25BP				OSP-E32BP				OSP-E50BP			
Speed	Torque	Stroke*	Torque	Speed	Torque	Stroke*	Torque	Speed	Torque	Stroke*	Torque
[m/s]	[Nm]	[m]	[Nm]	[m/s]	[Nm]	[m]	[Nm]	[m/s]	[Nm]	[m]	[Nm]
1	0.9	1	0.9	1	2.3	1	2.3	1	10.0	1	10.0
2	0.9	2	0.9	2	2.0	2	2.3	2	9.5	2	10.0
		3	0.9			3	1.8			3	9.0
						4	2.3			4	7.0
						5	1.8			5	6.0

#### Important:

The maximum permissible moment on the drive shaft is the lowest value of the speed- or stroke-dependent moment value.

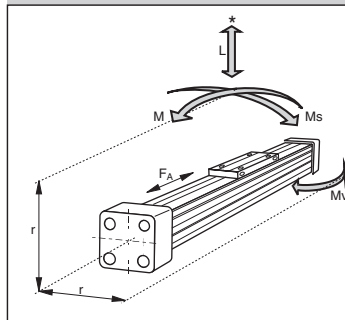
Example above: OSP-E32B-stroke 2 m, required speed 3 m/s;

From table T2: speed 3 m/s gives 1.8 Nm and stroke 2 m gives 2.3 Nm.

Max. torque for this application is 1.8 Nm.

\* The stroke is the ordering stroke, see page 66.

### Maximum Allowable Static Loadings



$M = F \cdot r$ .  
Bending moments are calculated from the centre of the linear actuator

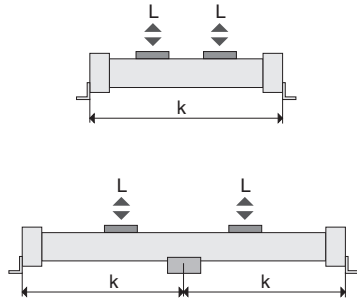
Size	*Max. applied load L [N]	Max. moments [Nm]		
		M*	M <sub>s</sub>	M <sub>v</sub>
OSP-E25BP	160	12	2	8
OSP-E32BP	300	25	8	16
OSP-E50BP	850	80	16	32

\*The max. load and the max. moments is the total values of both carriers.

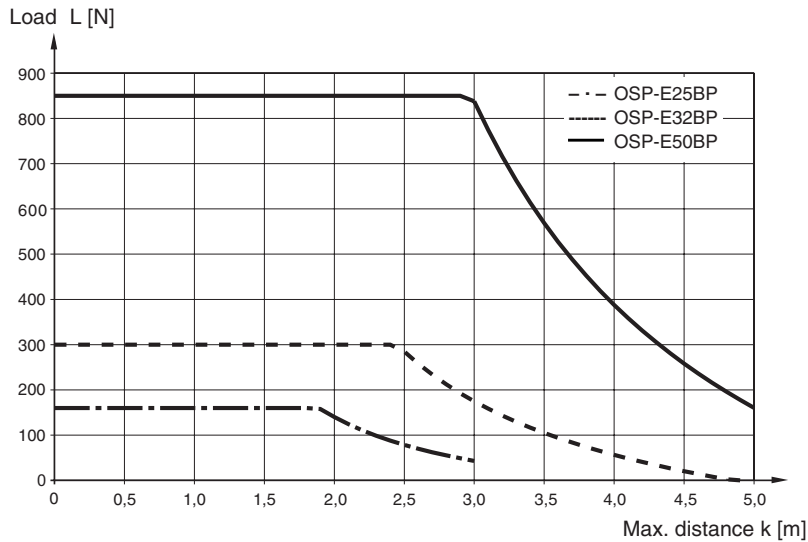
### Combined Loadings

If several forces and moments are applied to the linear actuator simultaneously, then the following equation must be fulfilled in addition to the maximum loadings stated beside.

$$\frac{L}{L(\max)} + \frac{M}{M(\max)} + \frac{M_s}{M_s(\max)} + \frac{M_v}{M_v(\max)} \leq 1$$



$k$  = maximum allowable distance between end cap mounting and mid-section support for a given loading  $L$ .  
The maximum force  $L$  must be distributed equally on the two carriers.



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance  $k$ .)

# Maximum Allowable Unsupported Length Stroke Length

## Stroke Lengths

The stroke lengths of linear actuators are available in multiples of 5 mm up max. 2 x 2500 mm (OSP-E25BP: max. 10 x 1500 mm).

Other stroke lengths are available on request.

**The end of stroke must not be used as a mechanical stop.**

**Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft.**

**The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.**

**For advise, please contact your local HOERBIGER-ORIGA technical support department.**

**When mechanical stops are required, external shock absorbers should be used (see separate catalogue).**

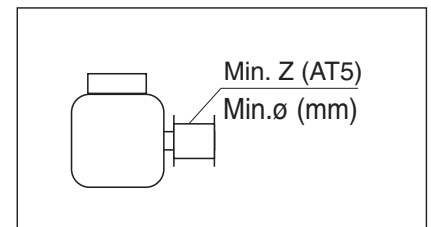
**Align the centre line of the shock absorber as closely as possible with the object's centre of gravity.**

## Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupler or belt wheel, a steadying block should be used.

## Belt wheels

Minimum allowable number of teeth  $Z$  (AT5) at maximum applied torque.



Size	Min. Z	Min. ø
OSP-E25BP	24	38
OSP-E32BP	24	38
OSP-E50BP	36	57

# Required Acceleration

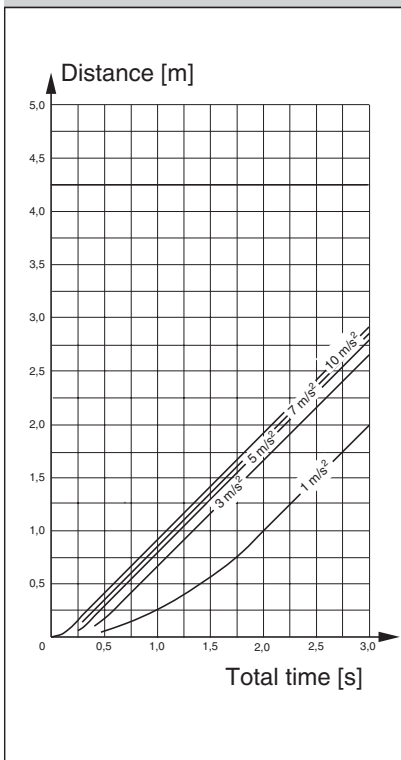
## Distance-Time Graph

Using the required travel distance and total time, the adjacent graphs show the required acceleration based on maximum speed.

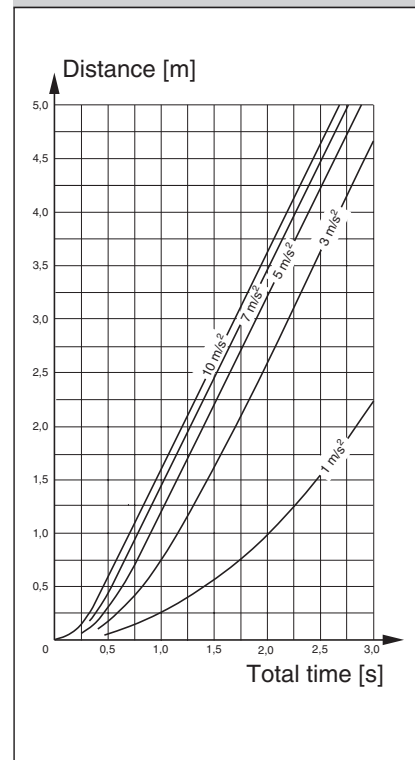
The graphs assume that acceleration and deceleration are equal.

Please note that specifying non-essential high acceleration or short cycle time will result in an oversized motor.

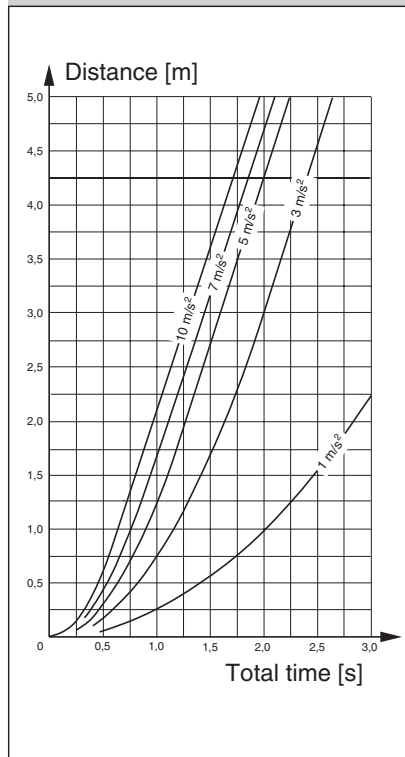
Max. speed 1 m/s



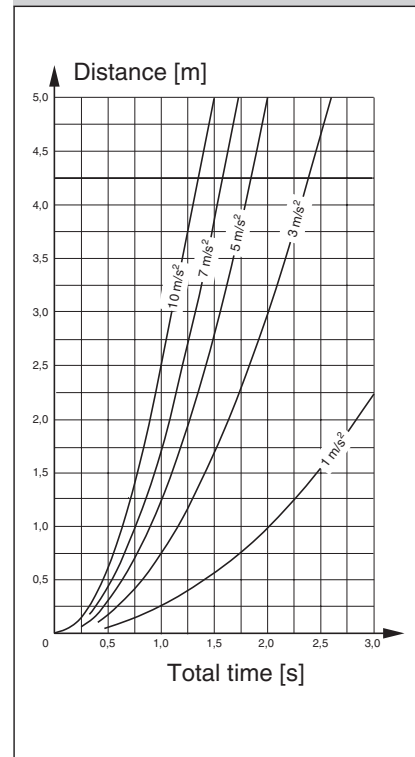
Max. speed 2 m/s



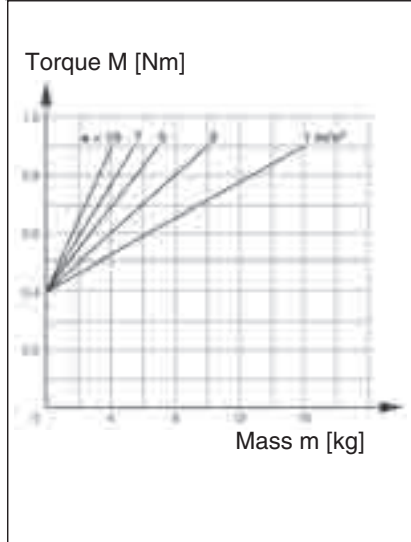
Max. speed 3 m/s



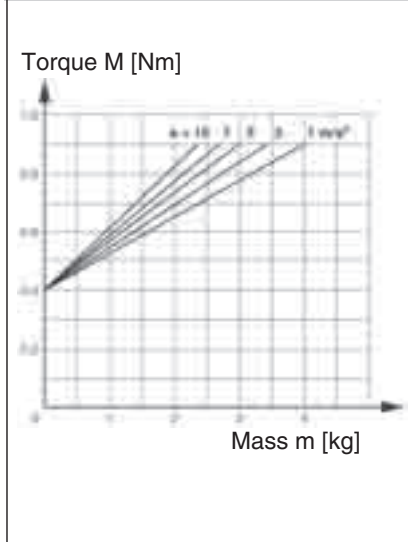
Max. speed 5 m/s



**Size OSP-E25,  
Horizontal Application**



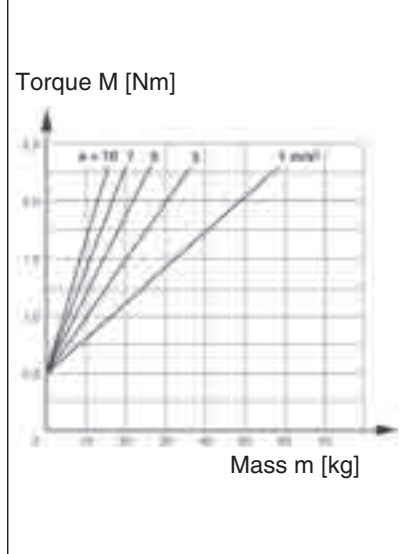
**Size OSP-E25,  
Vertical Application**



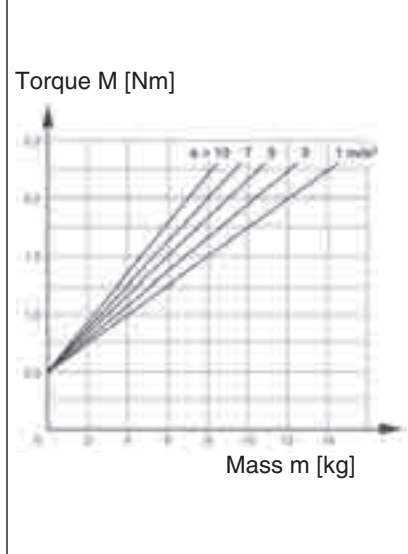
# Required Torque

Using the known mass, the direction of the application and the required acceleration from the distance-time graphs, the linear actuator can be sized and the required torque is shown in the adjacent graphs. Mass in graphs = Load + moving mass of the linear actuator (according to the weight chart on page 61).

**Size OSP-E32,  
Horizontal Application**

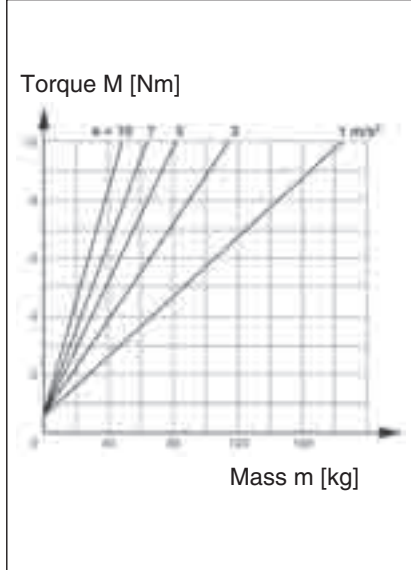


**Size OSP-E32,  
Vertical Application**

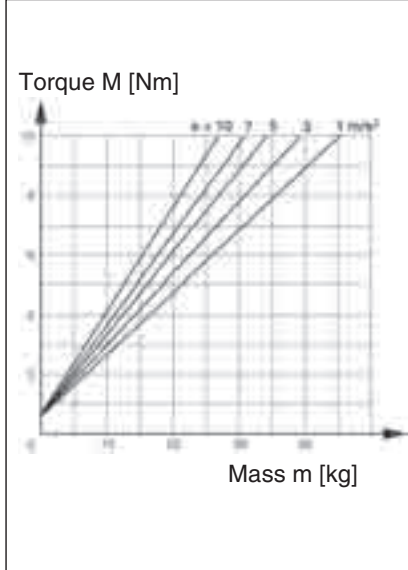


**Please note:** When using an additional guide, please add the mass of the carriage to the total moving mass.

**Size OSP-E50,  
Horizontal Application**

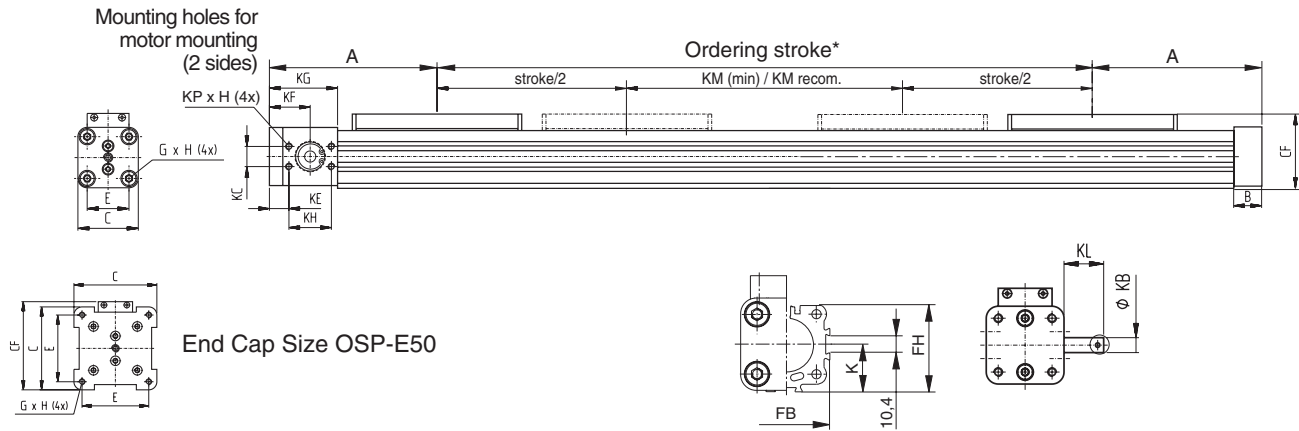


**Size OSP-E50,  
Vertical Application**



**Belt Driven Linear Actuator - Basic Unit**  
**Series OSP-E25BP, -E32BP, -E50BP**

**Overall length = (2 x A) + stroke (does not include any safety stroke)**



End Cap Size OSP-E50

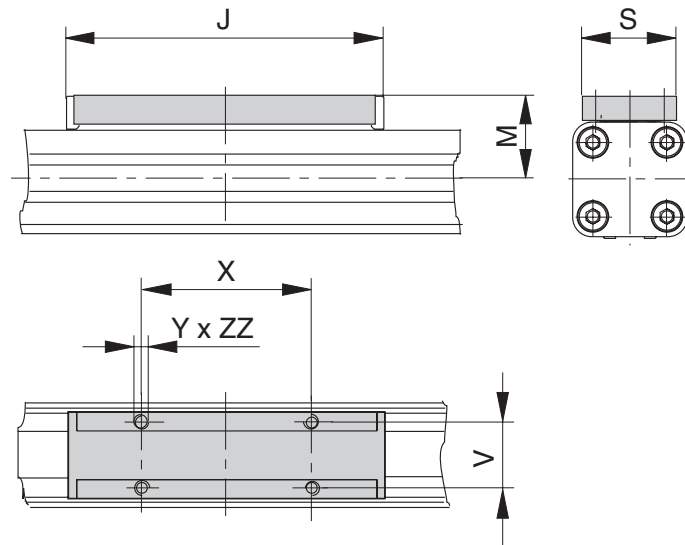
**Drive Shaft Options**

- 0 = (Standard)
- 1 =
- 2 =

(For options on drive shaft, see ordering information on page 144)

\* The end of stroke must not be used as a mechanical stop. Add to both ends, a minimum extra length, corresponding to the linear motion per one revolution of the drive shaft. The use of AC motor with frequency converter drives normally requires a larger 'extra length' than that required for servo systems. For advise, please contact your local HOERBIGER-ORIGA technical support department.

**Standard Carrier Mounting**  
**Series OSP-E25, -E32, -E50**



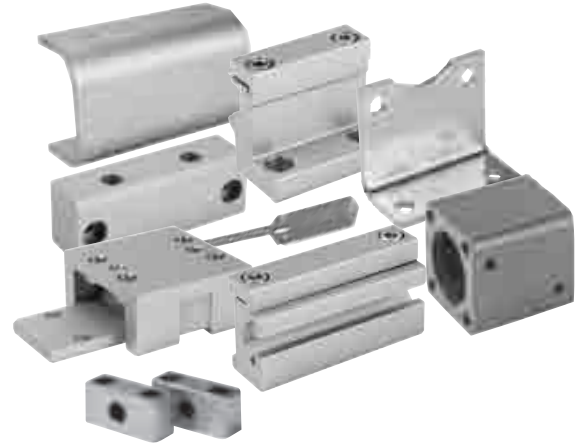
**Dimension KM (mm)**

Size	KM <sub>min</sub>	KM <sub>rec.</sub>
25	130	190
32	170	230
50	220	320

**Dimension Table (mm)**

Series	A	B	C	E	G	H	J	K	M	S	V	X	Y	CF	FB	FH	KB	KC	KE	KF	KG	KH	KJ	KL	KM <sub>min</sub>	KP	ZZ
OSP-E25BP	125	22	41	27	M5	10	117	21.5	31	33	25	65	M5	52.5	40	39.5	10 <sub>js</sub>	15	22	37	57	30	19 <sup>H7</sup>	24	130	M5	8
OSP-E32BP	150	25	52	36	M6	12	152	28.5	38	36	27	90	M6	66.5	52	51.7	10 <sub>js</sub>	18	17.5	36.5	61	38	26 <sup>H7</sup>	26	170	M6	10
OSP-E50BP	200	25	87	70	M6	12	200	43	49	36	27	110	M6	92.5	76	77	16 <sub>h8</sub>	32	23.5	48.5	85	50	40 <sup>H7</sup>	34	220	M8	10

# Accessories for Linear Belt Drive Systems Series OSP-E



## Contents

Description	Page
Clevis Mounting	68-69
End Cap Mountings	70
Mid-Section Support	71
End Cap Mountings (for Linear Drives with guides)	72-73
Mid-Section Support (for Linear Drives with guides)	74
Inversion Mounting	75
Adaptor Profile	76
T-Nut Profile	77
Profile Mountings	78

# Linear Drive Accessories

## Clevis Mounting

Size 25, 32, 50



For Linear Drives

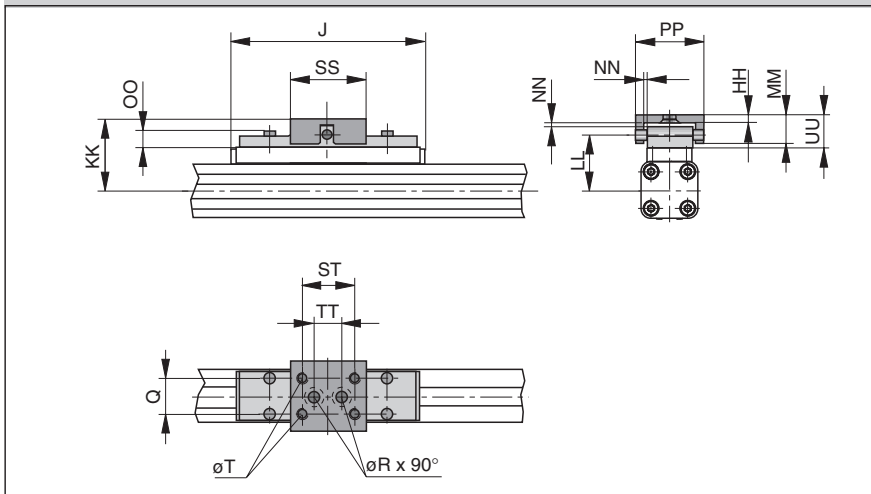
- Series OSP-E Belt
- Series OSP-E Screw

When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction, the mounting has very little play. Freedom of movement is provided as follows:

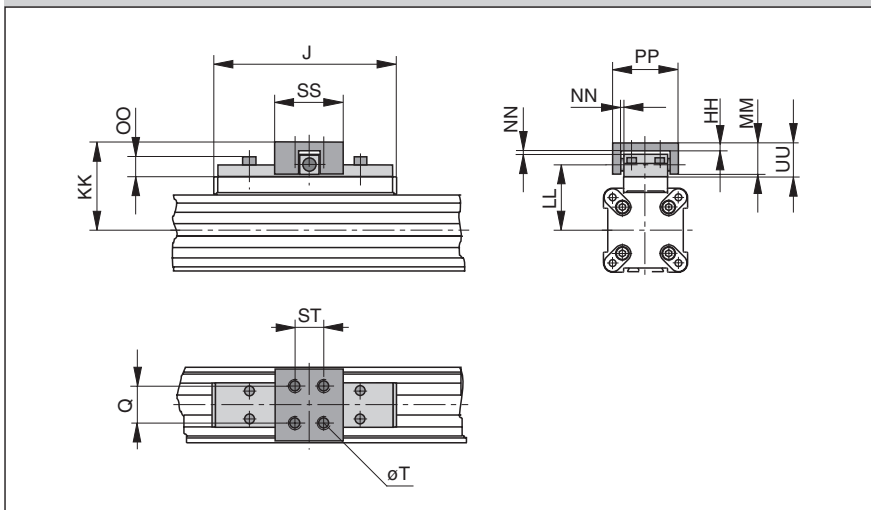
- Tilting in direction of movement
- Vertical compensation
- Tilting sideways
- Horizontal compensation

A stainless steel version is also available.

### Series OSP-E25 to E32



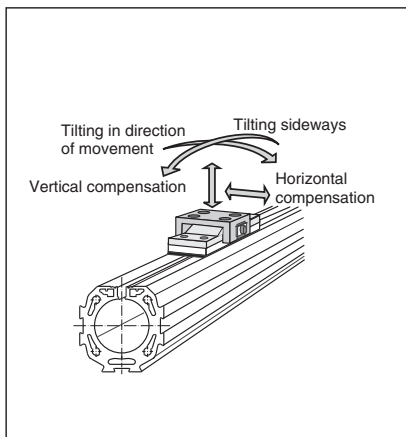
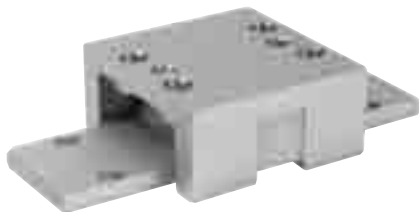
### Series OSP-E50



Dimension Table (mm)

Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Order No.	
																Standard	Stainless
OSP-E25	117	16	M5	5.5	3.5	52	39	19	2	9	38	40	30	16	21	20005	20092
OSP-E32	152	25	M6	6.6	6	68	50	28	2	13	62	60	46	40	30	20096	20094
OSP-E50	200	25	M6	—	6	79	61	28	2	13	62	60	46	—	30	20097	20095

\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

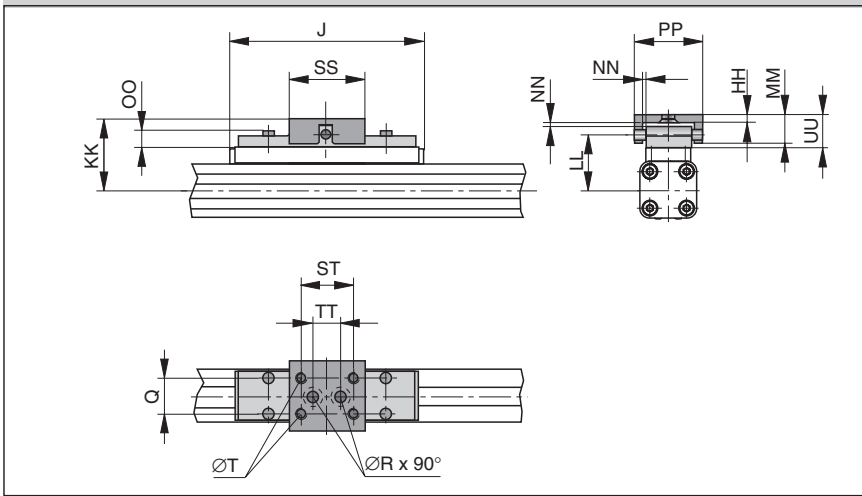


**Please note:**  
When using additional inversion mountings, take into account the dimensions on page 75.

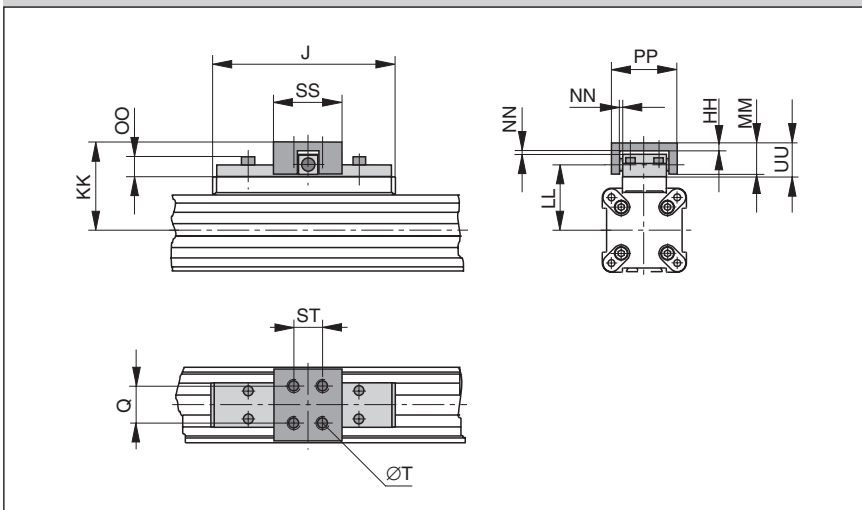
The right to introduce technical modifications is reserved



**Series OSP-E25 to E32**



**Series OSP-E50**



# Linear Drive Accessories

## Clevis Mounting, play-free

Size 25, 32, 50



- For Linear Drives**
- Series OSP-E Belt
  - Series OSP-E Screw

When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction the clevis mounting has a play-free fit.

Freedom of movement is provided as follows:

- Tilting in direction of movement
- Vertical compensation
- Tilting sideways
- Horizontal compensation

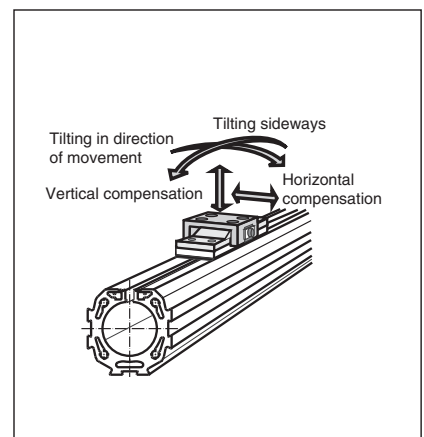
A stainless steel version is also available.

**Dimension Table (mm)**

Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Order No.	
																Standard	Stainless
OSP-E25	117	16	M5	5.5	3.5	52	39	19	2	9	49	40	30	16	21	20496	20498
OSP-E32	152	25	M6	6.6	6	68	50	28	2	13	69	60	46	40	30	20497	20499
OSP-E50	200	25	M6	—	6	79	61	28	2	13	69	60	46	—	30	20812	20818

\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

**Please note:**  
When using additional inversion mountings, take into account the dimensions on page 75.





# Linear Drive Accessories

## End Cap Mountings

Size 25, 32, 50



### For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw \*

On the end-face of each end cap there are four threaded holes for mounting the actuator.

The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

### Material:

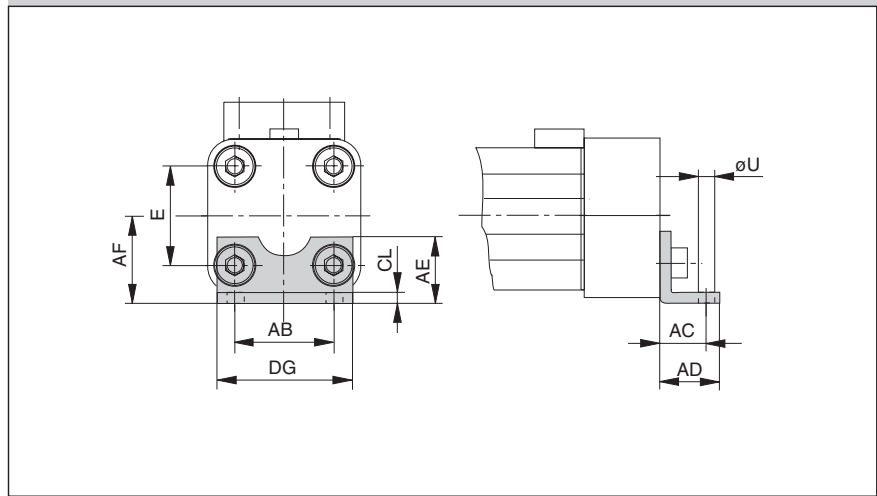
Series OSP-25 to 32:

Galvanised steel.

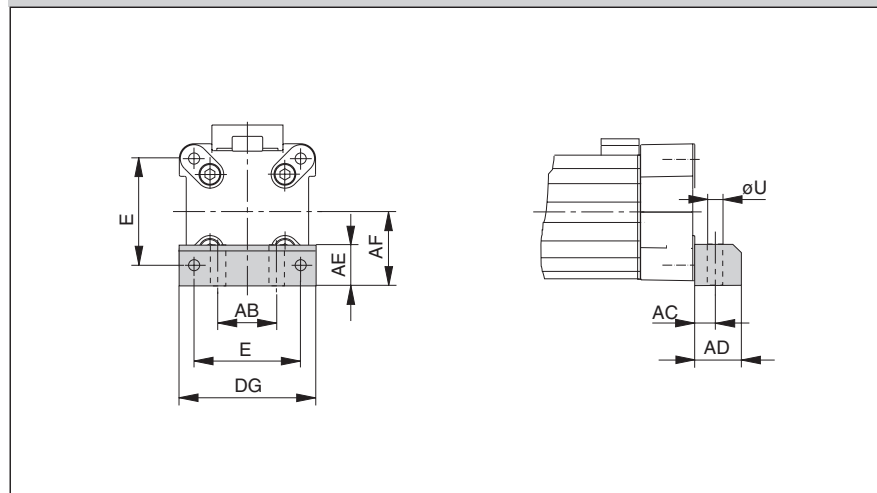
Series OSP-50:

Anodized aluminium.

### Series OSP-E25 to E32: Type A1



### Series OSP-E50: Type C1



### Dimension Table (mm)

Series	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No.	
										Type A1	Type C1
OSP-E25	27	5.8	27	16	22	18	22	2.5	39	2010-1	–
OSP-E32	36	6.6	36	18	26	20	30	3	50	3010-1	–
OSP-E50	70	9	40	12.5	24	30	48	–	86	–	5010-1

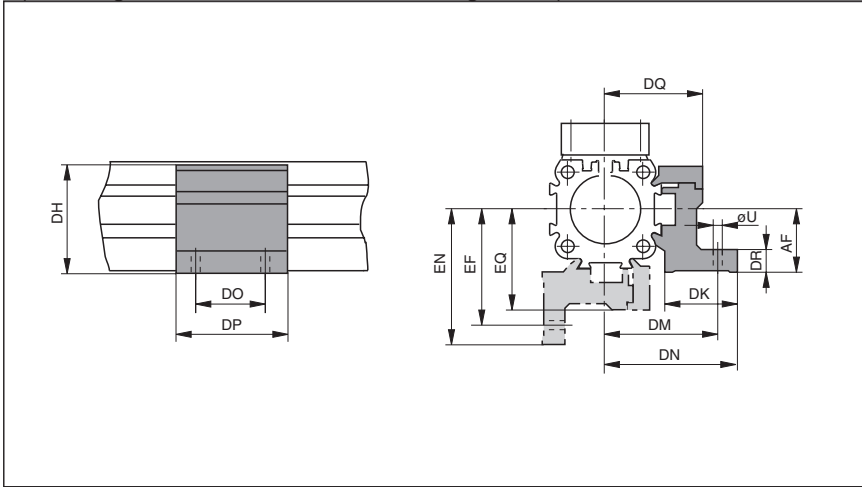
### \* Important:

With the OSP-E Screw series, the end cap mounting can only be used at the opposite end of the drive shaft.

We recommend the application of two mid section supports (page 74) at the drive shaft end of the actuator.



**Series OSP-E25, E32, E50, Type E1**  
(Mounting from above / below with 2 through holes)



# Linear Drive Accessories

## Mid-Section Support

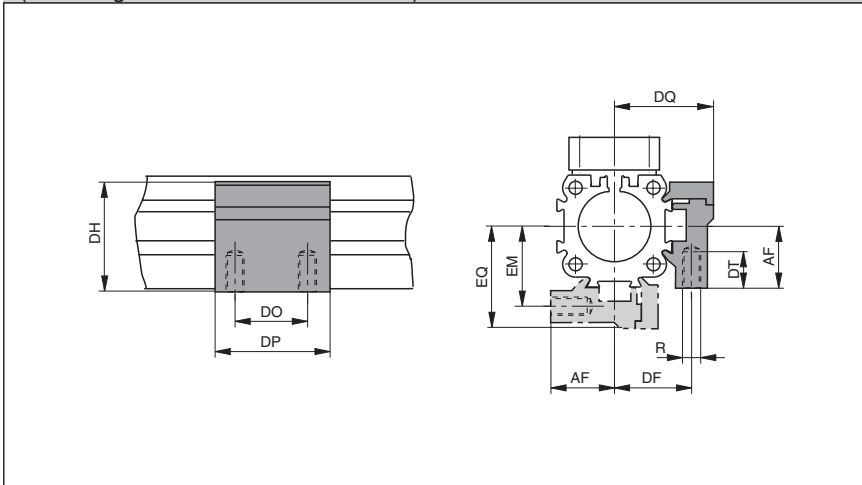
Size 25, 32, 50



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw

**Series OSP-E25, E32, E50, Type D1**  
(Mountings from below with 2 screws)



Note on Types E1 and D1:  
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

Stainless steel version on request

Dimension Table (mm)

Series	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	Order No.	
																		Type E1	Type D1
OSP-E25	M5	5.5	22	27	38	26	40	47.5	36	50	34.5	8	10	41.5	28.5	49	36	20009	20008
OSP-E32	M5	5.5	30	33	46	27	46	54.5	36	50	40.5	10	10	48.5	35.5	57	43	20158	20157
OSP-E50	M6	7	48	40	71	34	59	67	45	60	52	10	11	64	45	72	57	20163	20162

The right to introduce technical modifications is reserved







# Linear Drive Accessories

## Mountings for Linear Drives fitted with OSP-guides



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw \*

Overview											
Mounting Type	Type	Type – OSP Guides									
		SLIDELINE PROLINE MULTIBRAKE			POWERSLIDE						
		25	32	50	25/ 25	25/ 35	25/ 44	32/ 35	32/ 44	50/ 60	50/ 76
End cap mounting 	Type A1										
	Type A2	O	O								
	Type A3				O	O		O			
End cap mounting, reinforced 	Type B1	X	X		X	X	X	X	X		
	Type B3										
	Type B4						O		O		
End cap mounting X 	Type C1			X						X	
	Type C2			O							
	Type C3									O	
	Type C4										O
Mid section support, small Mid section support, wide 	Type D1	X	X	X	X	X	X	X	X	X	X
	Type E1	X	X	X	X	X	X	X	X	X	X
	Type E2	O	O	O							
	Type E3				O	O		O		O	
	Type E4						O		O		O

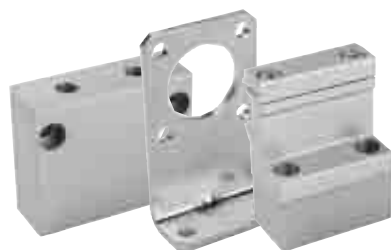
X = carriage mounted in top (12 o'clock position)

O = carriage mounted in lateral (3 or 9 o'clock position)

 = available components

**\* Important:**

With the OSP-E Screw series, end cap mountings type A, B and C can only be used at the opposite end of the drive shaft. Please use mid-supports (page 74).



## End cap mountings \*

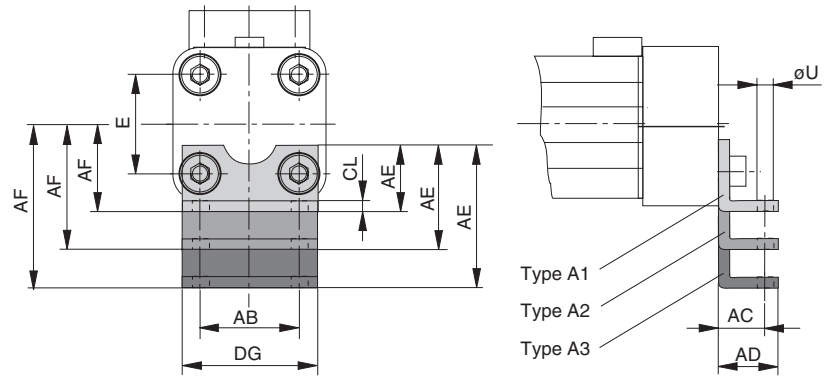
Four internal screw threads are located in the end faces of all OSP actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

Material: Series OSP-25, 32: zinc plated steel  
Series OSP-50: anodized aluminium

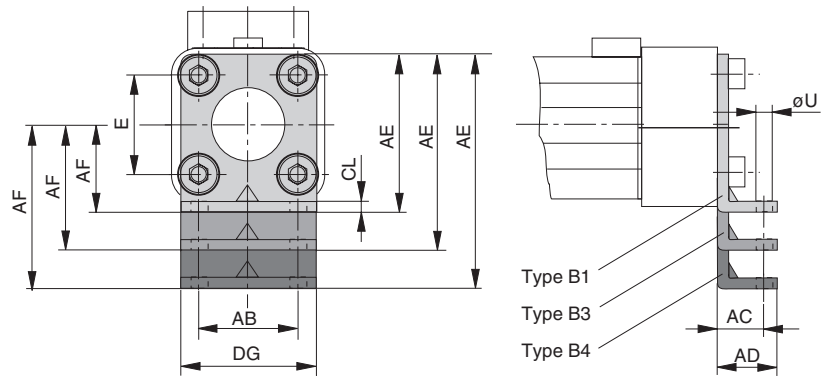
Supplied in pairs.



### Series OSP – E25, E32: Type A



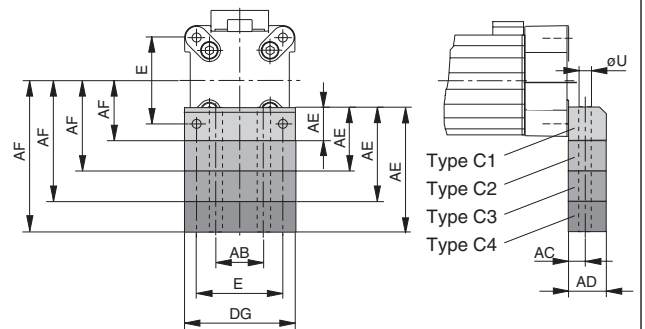
### Series OSP – E25, E32: Type B



**Dimension Table (mm)**  
– Dimensions AE and AF (Dependant on the mounting type)

Mount type	Dimensions AE for size			AF for size		
	25	32	50	25	32	50
A1	18	20	–	22	30	–
A2	33	34	–	37	44	–
A3	45	42	–	49	52	–
B1	42	55	–	22	30	–
B3	–	–	–	–	–	–
B4	80	85	–	60	60	–
C1	–	–	30	–	–	48
C2	–	–	39	–	–	57
C3	–	–	54	–	–	72
C4	–	–	77	–	–	95

### Series OSP – E50: Type C

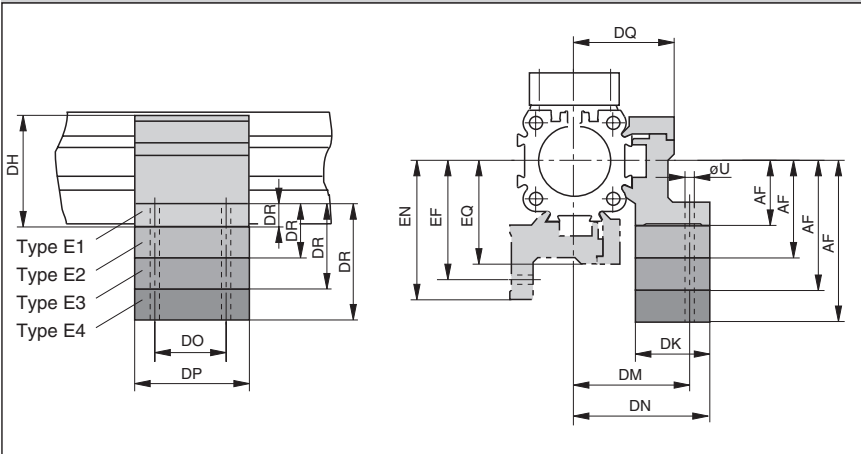


**Dimension Table (mm)**

Series	E	øU	AB	AC	AD	CL	D
OSP-E25	27	5.8	27	16	22	2.5	39
OSP-E32	36	6.6	36	18	26	3	50
OSP-E50	70	9	40	12.5	24	–	86

\* see mounting instructions on page 72

**Series OSP-E25, E32, E50: Type E.**  
**(Mounting from above / below using a cap screw)**



**Mid section supports**

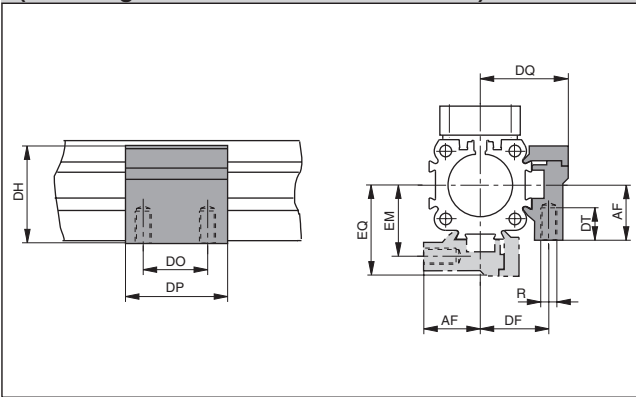
Information regarding type E1 and D1:

Mounting of the mid section supports is also possible on the lower side of the drive. In this case, please note the new centre line dimensions.

Stainless steel version on request.



**Series OSP-E25, E32, E50: Type D1**  
**(Mounting from below with thread screw)**



**Dimension Table (mm)**  
 – Dimensions DR und AF (Dependant on the mounting type)

Mount type	Dimensions DR for size			AF for size		
	25	32	50	25	32	50
<b>D1</b>	–	–	–	22	30	48
<b>E1</b>	8	10	10	22	30	48
<b>E2</b>	23	24	19	37	44	57
<b>E3</b>	35	32	31	49	52	72
<b>E4</b>	46	40	57	60	60	95

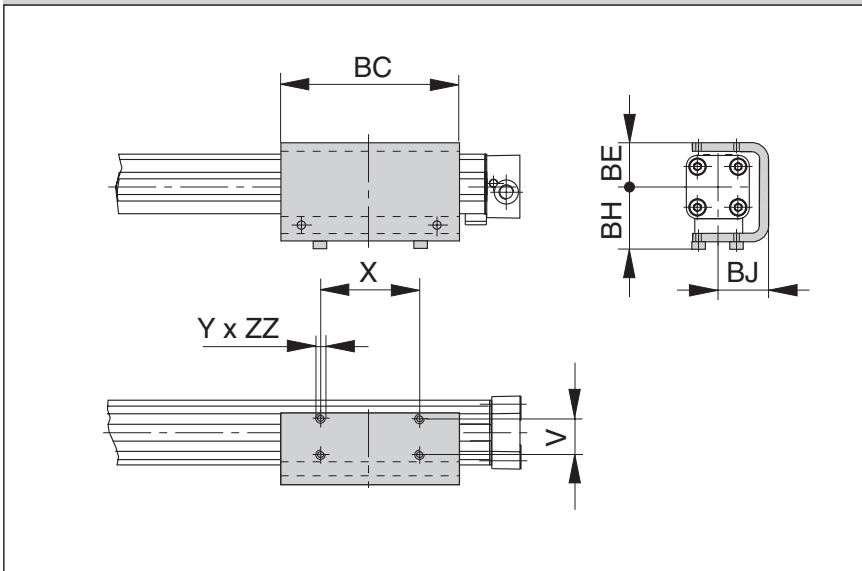
**Dimension Table (mm)**

Series	R	U	DF	DH	DK	DM	DN	DO	DP	DQ	DT	EF	EM	EN	EQ
<b>OSP-E25</b>	M5	5.5	27	38	26	40	47.5	36	50	34.5	10	41.5	28.5	49	36
<b>OSP-E32</b>	M5	5.5	33	46	27	46	54.5	36	50	40.5	10	48.5	35.5	57	43
<b>OSP-E50</b>	M6	7	40	71	34	59	67	45	60	52	11	64	45	72	57

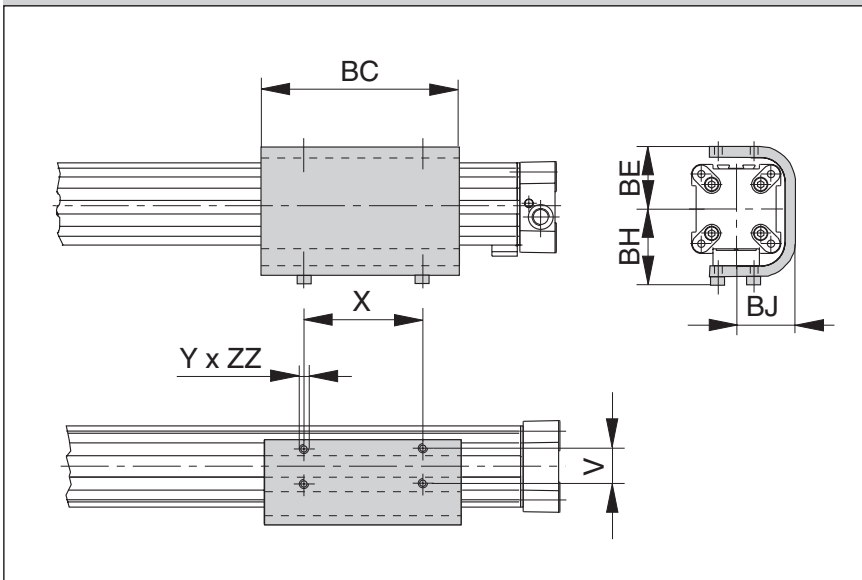
**Order instruction for mountings Type A – Type B – Type C – Type D – Type E**

Mounting type (versions)	Order No. size		
	25	32	50
<b>A</b>	2010-1	3010-1	–
<b>A2</b>	2040-1	3040-1	–
<b>A3</b>	2060-1	3060	–
<b>B1</b>	20311-1	20313-1	–
<b>B3</b>	–	–	–
<b>B4</b>	20312-1	20314-1	–
<b>C1</b>	–	–	5010-1
<b>C2</b>	–	–	20349-1
<b>C3</b>	–	–	20350-1
<b>C4</b>	–	–	20351-1
<b>D1</b>	20008	20157	20162
<b>E1</b>	20009	20158	20163
<b>E2</b>	20352	20355	20361
<b>E3</b>	20353	20356	20362
<b>E4</b>	20354	20357	20363

Series OSP-E25, E32



Series OSP-E50



Dimension Table (mm)

Series	V	X	Y	BC	BE	BH	BJ	ZZ	Order No.
OSP-E25	25	65	M5	117	31	43	33.5	6	20037
OSP-E32	27	90	M6	150	38	51	39.5	6	20161
OSP-E50	27	110	M6	180	55	64	52	8	20166

The right to introduce technical modifications is reserved

# Linear Drive Accessories

## Inversion Mounting

Size 25, 32, 50



- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw

In dirty environments, or where there are special space problems, inversion of the cylinder is recommended. The inversion bracket transfers the driving force to the opposite side of the cylinder. The size and position of the mounting holes are the same as on the standard cylinder.

Stainless steel version on demand.

**Please note:**

Other components of the OSP system such as **mid-section supports**, **proximity switches** can still be mounted on the free side of the cylinder.

**Important Note:**

May be used in combination with **Clevis Mounting**, ref. page 68.



# Linear Drive Accessories

## Adaptor Profile

Size 25, 32, 50



### For Linear Drive

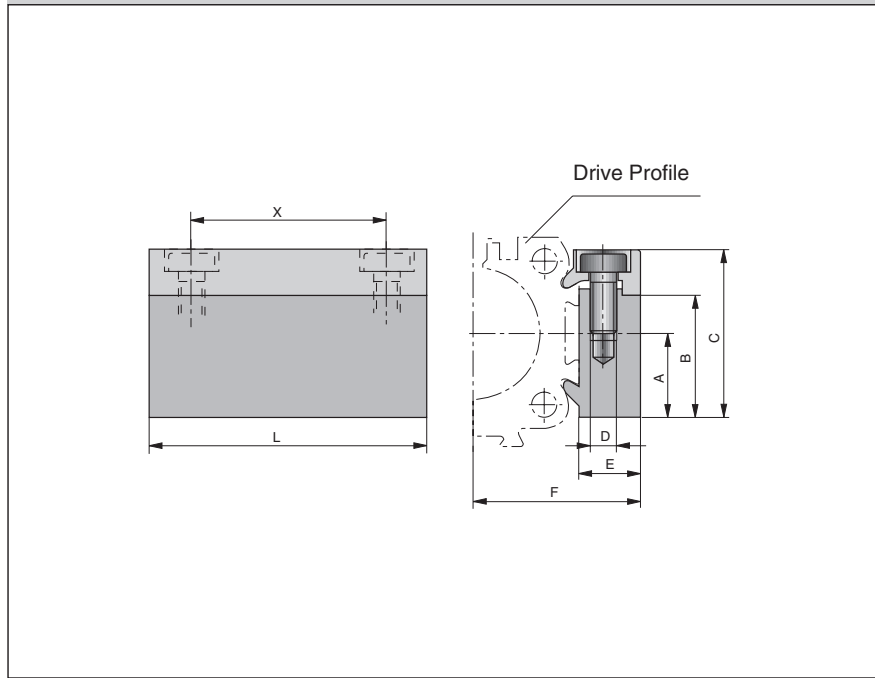
- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

### Adaptor Profile OSP

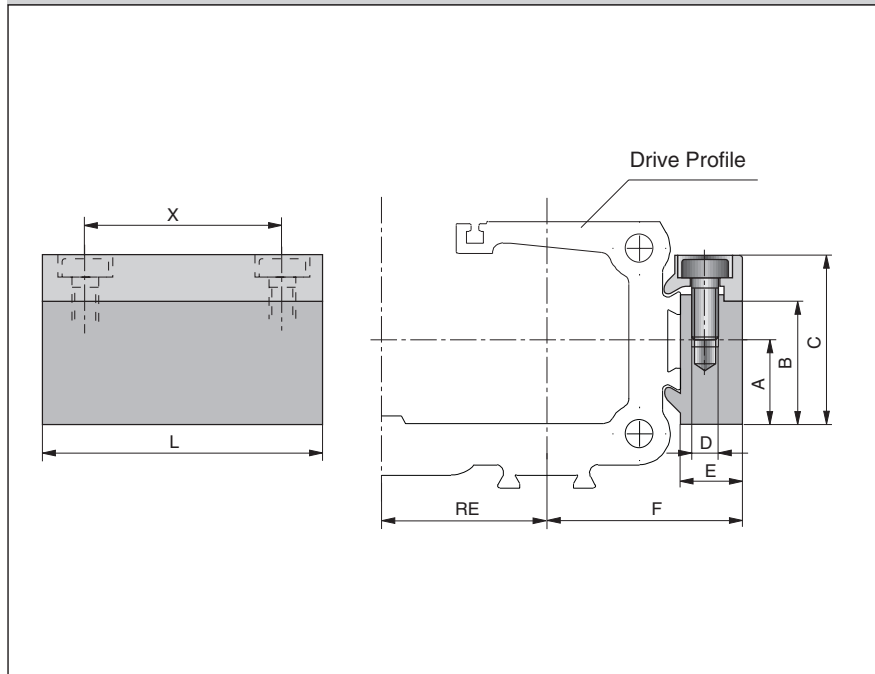
- A universal attachment for mounting of additional items
- Solid material



### Dimensions Series OSP-E



### Dimensions Series OSP-E..BHD

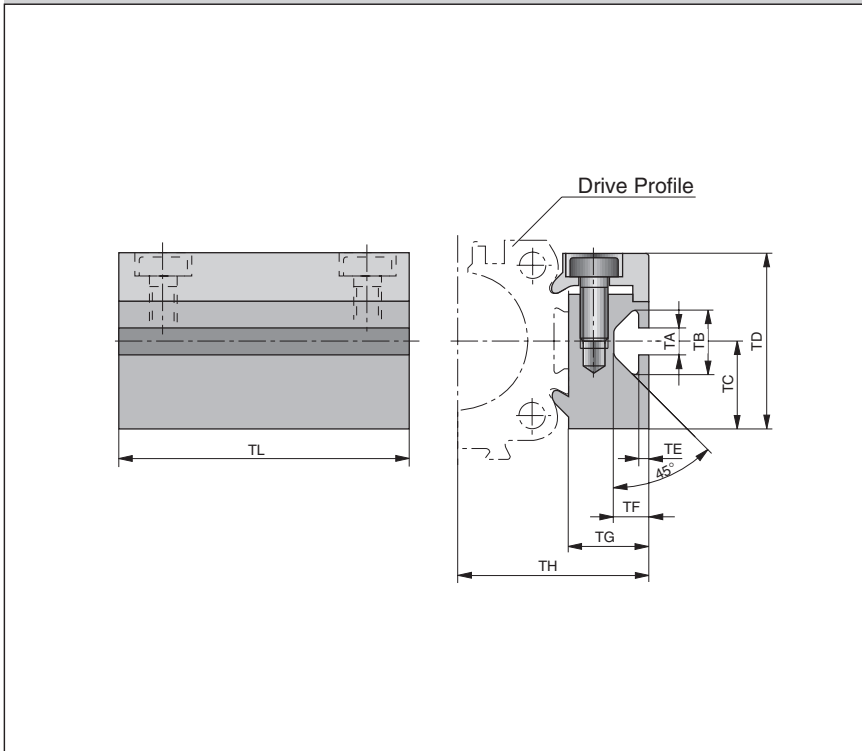


### Dimension Table (mm)

Series	A	B	C	D	E	F	L	X	RE	Order No.	
										Standard	Stainless
OSP-E25	16	23	32	M5	10.5	30.5	50	36	26	20006	20186
OSP-E32	16	23	32	M5	10.5	36.5	50	36	32	20006	20186
OSP-E50	20	33	43	M6	14	52	80	65	44	20025	20267

The right to introduce technical modifications is reserved

Dimensions Series OSP-E



# Linear Drive Accessories

## T-Nut Profile

Size 25, 32, 50

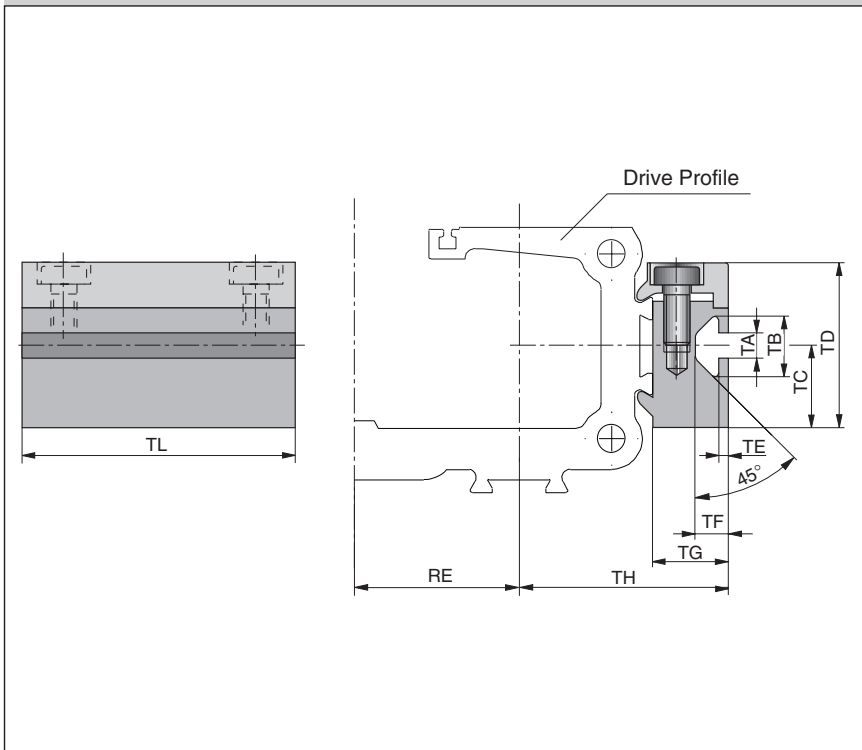


- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw
  - Series OSP-E..BHD

### T-Nut Profile OSP

- A universal attachment for mounting with standard T-Nuts

Dimensions Series OSP-E..BHD



The right to introduce technical modifications is reserved

Dimension Table (mm)

Series	RE	TA	TB	TC	TD	TE	TF	TG	TH	TL	Order No. Standard	Order No. Stainless
OSP-E25	26	5	11.5	16	32	1.8	6.4	14.5	34.5	50	20007	20187
OSP-E32	32	5	11.5	16	32	1.8	6.4	14.5	40.5	50	20007	20187
OSP-E50	44	8.2	20	20	43	4.5	12.3	20	58	80	20026	20268





# Linear Drive Accessories

## Profile Mountings

Size 25, 32, 50



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

Material:  
Anodized aluminum

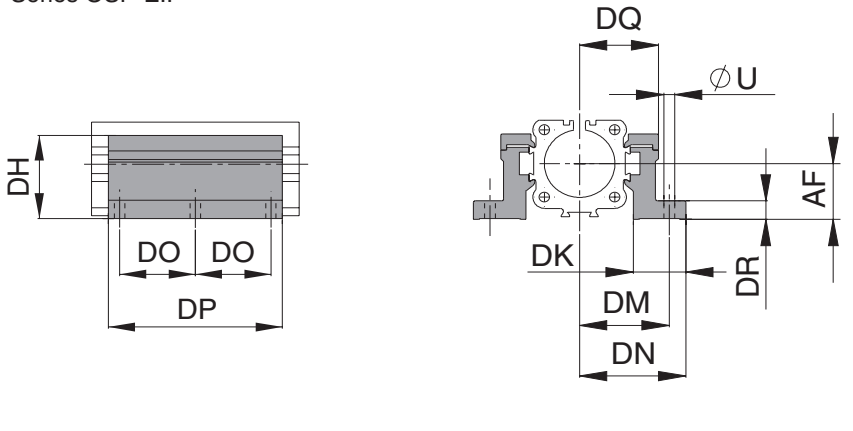
Stainless steel version on demand.

The mountings are supplied in pairs.

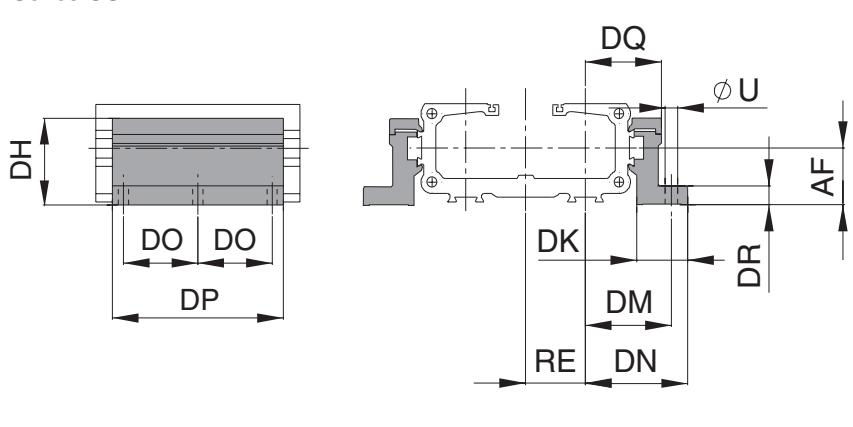
Weight (mass) [kg]	
Type	Weight (mass) [kg] (pair)
MAE-25	0.3
MAE-32	0.4
MAE-50	0.8

### Series OSP-E25 to E50, Type MAE-..

#### Series OSP-E..



#### Series OSP-E..BHD



### Dimension Table (mm)

Series	Type	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	RE	Order No.
OSP-E25	MAE-25	M5	5.5	22	27	38	26	40	47.5	40	92	34.5	8	10	41.5	28.5	49	36	26	12278
OSP-E32	MAE-32	M5	5.5	30	33	46	27	46	54.5	40	92	40.5	10	10	48.5	35.5	57	43	32	12279
OSP-E50	MAE-50	M6	7	48	40	71	34	59	67	45	112	52	10	11	64	45	72	57	44	12280



# Linear Actuator with Ball Screw Series OSP-E..S



## Contents

Description	Page
Overview	79-82
Technical Data	83-88
Dimensions	89

# ELECTRIC LINEAR ACTUATOR FOR HIGH ACCURACY APPLICATIONS

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

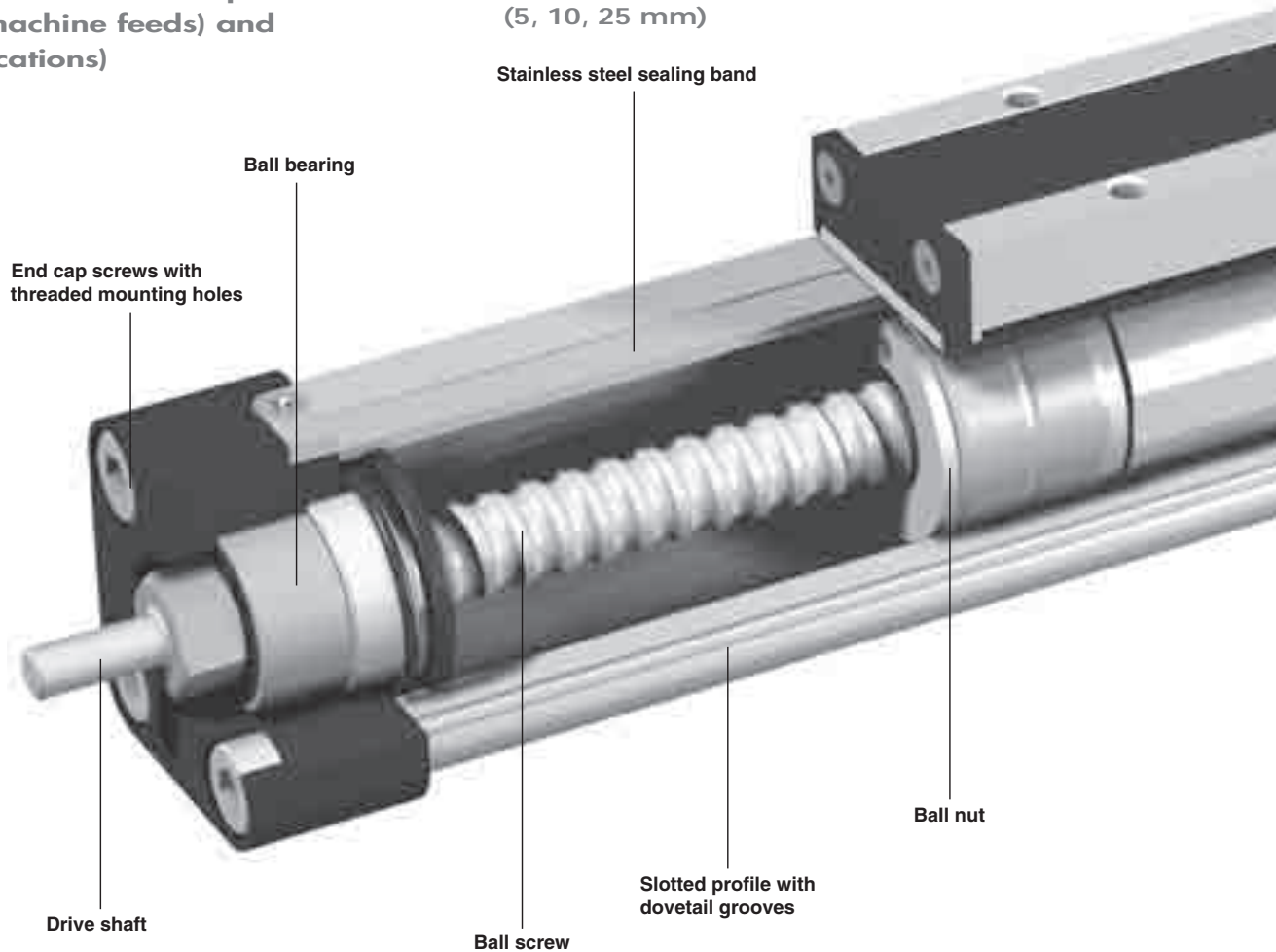
## Linear Actuator with Ball Screw

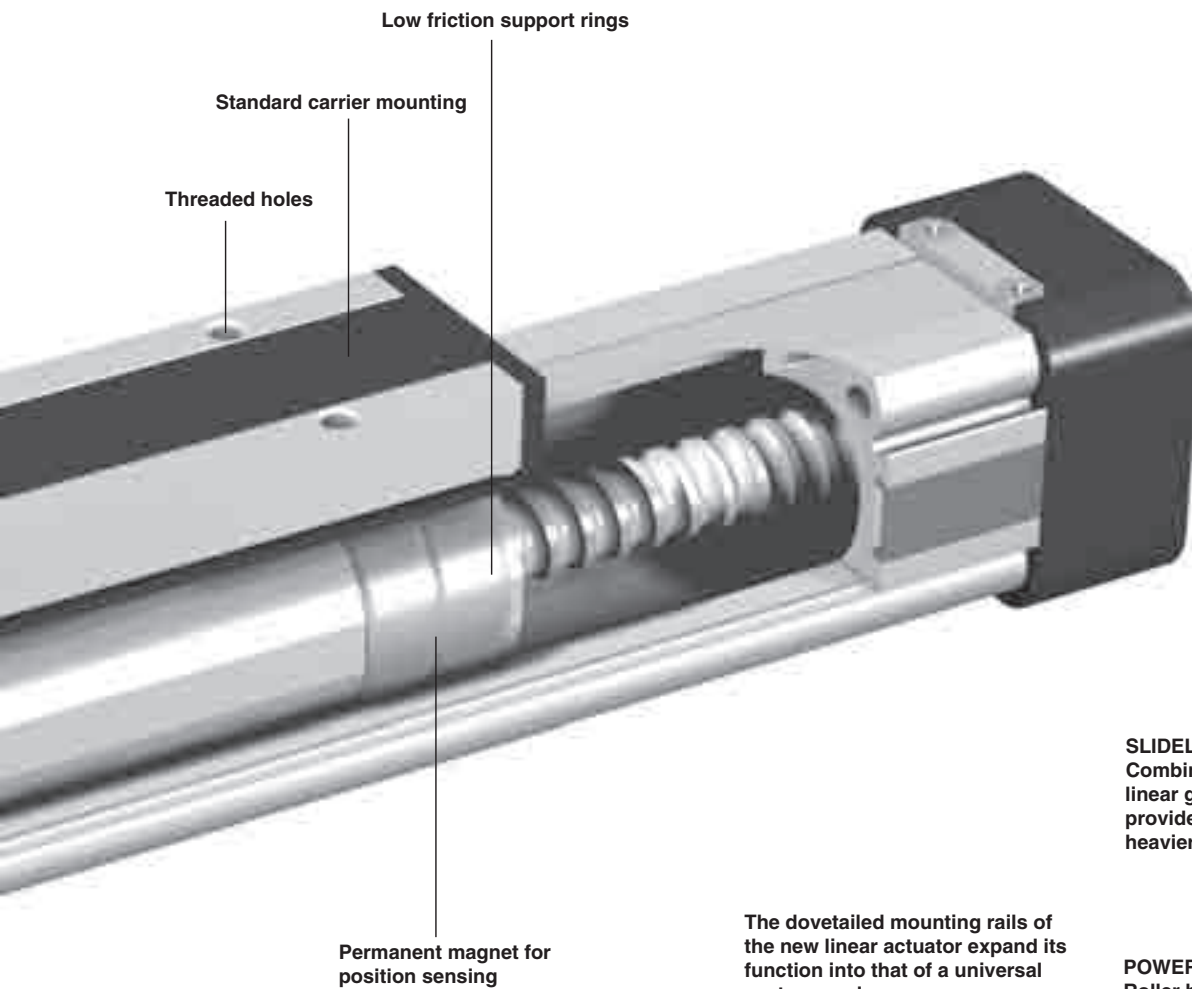
### Advantages:

- Accurate path and position control
- High force output
- Easy installation
- Low maintenance
- Excellent slow speed characteristics
- Ideal for precise traverse operations (e.g. machine feeds) and lifting applications)

### Features:

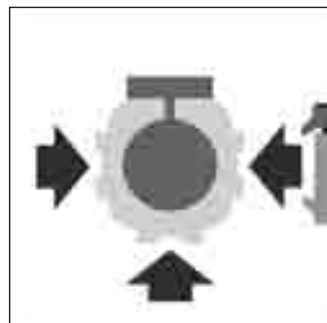
- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Optimal screw pitches (5, 10, 25 mm)





Permanent magnet for position sensing

The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.



**PROLINE**  
The compact aluminium roller guide for high loads and velocities.



**SLIDELINE**  
Combination with linear guides provides for heavier loads.



**POWERSLIDE**  
Roller bearing precision guidance for smooth travel and high dynamic or static loads.



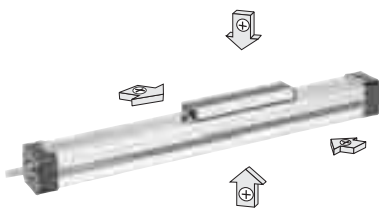
**GUIDELINE**  
linear guides for heavy duty applications



## SERIES OSP-E, SCREW-DRIVEN

### STANDARD VERSIONS OSP-E..S

Standard carrier with integral guidance. Dovetail profile for mounting of accessories and the actuator itself.

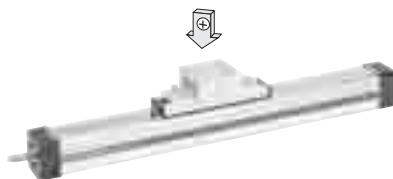


### MOUNTINGS FOR OSP-E25 TO E50

#### CLEVIS MOUNTING

Page 92

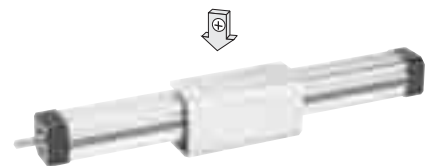
Carrier mounting for driving loads supported by external linear guides.



#### INVERSION MOUNTING

Page 99

The inversion mounting, mounted on the carrier, transfers the driving force to the opposite side, e.g. for dirty environments.



### BASIC ACTUATOR OPTIONS

#### BALL SCREW PITCH

The ball screws are available in various pitches. OSP-E25 in 5 mm, OSP-E32 in 5 or 10 mm and OSP-E50 in 5, 10, 25, 50 mm pitch.

#### END CAP MOUNTING

Page 94

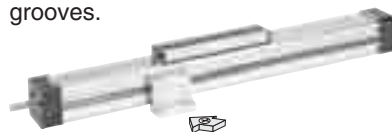
For end-mounting of the actuator



#### MID-SECTION SUPPORT

Page 95

For supporting long actuators or mounting the actuator on the dovetail grooves.



# Linear Actuator with Ball Screw Series OSP-E..S Size 25, 32, 50



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Linear Actuator with Ball Screw
Series			OSP-E..S
Mounting			See drawings
Operating temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°C °C	-20 +80
Weight (mass)		kg	See table
Installation			In any position
Material	Slotted profile		Extruded anodized aluminium
	Ball screw		Hardened steel
	Ball nut		Hardened steel
	Sealing band		Hardened stainless steel
	Guide bearings		Low friction plastic
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (mass) kg and Inertia					
Series	At stroke 0 m	Weight (mass)[kg]		Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ]	
		Add per metre stroke	Moving mass	At stroke 0 m	Add per metre
OSP-E25S	0.8	2.3	0.2	2.2	11.3
OSP-E32S	2.0	4.4	0.4	8.4	32
OSP-E50S	5.2	9.4	1.2	84	225

## Standard Version:

- Standard carrier with own internal guidance
- Dovetail grooves for mounting accessories and the drive itself
- Travel per rotation of threaded spindle:  
Type OSP-E25 : 5 mm  
Type OSP-E32 : 5, 10 mm  
Type OSP-E50 : 5, 10, 25 mm

## 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.

See if mid-section supports are needed using the maximum allowable unsupported length graph on page 85. At least one end cap must be secured to prevent axial sliding when mid-section support is used (see page 94). When the linear actuator is moving an externally guided load, the clevis mounting should be used.

The linear actuators can be fitted with the standard carrier mounting facing in any direction.

To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.

The inversion mounting can be fitted to transfer the driving force to the opposite side (see page 99).

## Maintenance

All moving parts are long-term lubricated for a normal operational environment. We recommend a check and lubrication of the linear actuator, and if necessary a change of worn parts, after every 12 months or 3000 km travel of distance, depending on the type of application. Please see separate instructions.

## Commissioning

The products in this datasheet should not be operated until the machine/application in which they are used has passed necessary inspection.



**HOERBIGER**  
**ORIGA**

# Sizing Performance Overview Maximum Loadings

## Sizing of Linear Actuator

The following steps are recommended for selection:

1. Recommended maximum acceleration is shown in graphs on page 86.
2. Required torque is shown in graphs on page 87.
3. Check that maximum values in the adjacent charts are not exceeded.
4. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time of the application.
5. Check that the maximum allowable unsupported length is not exceeded (see on page 85).

Performance Overview							
Characteristics	Unit	Description					
Series		OSP-E25S		OSP-E32S		OSP-E50S	
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 <sup>-1</sup> ]	3 000	3 000		3 000		
Max. effective action force $F_A$	[N]	250	600		1 500		
Corresponding torque on drive shaft	[Nm]	0.35	0.75	1.3	1.7	3.1	7.3
No-load torque	[Nm]	0,2	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
Typical repeatability	[mm/m]	±0.05		±0.05		±0.05	
Max. Standard stroke length	[mm]	1100	2000		3200		

### Maximum Allowable Loadings

$M = F \cdot r$ .  
Bending moments are calculated from the centre of the linear actuator and F indicates actual force.

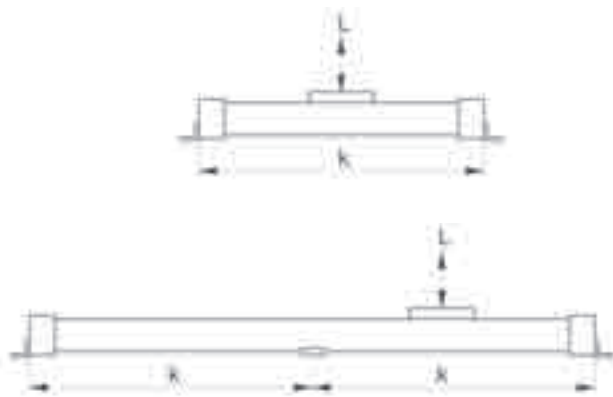
Size	Max. applied load [N] L	Max. moments [Nm]		
		M	$M_s$	$M_v$
OSP-E25	500	12	2	8
OSP-E32	1 200	25	8	16
OSP-E50	3 000	80	16	32

### Combined Loadings.

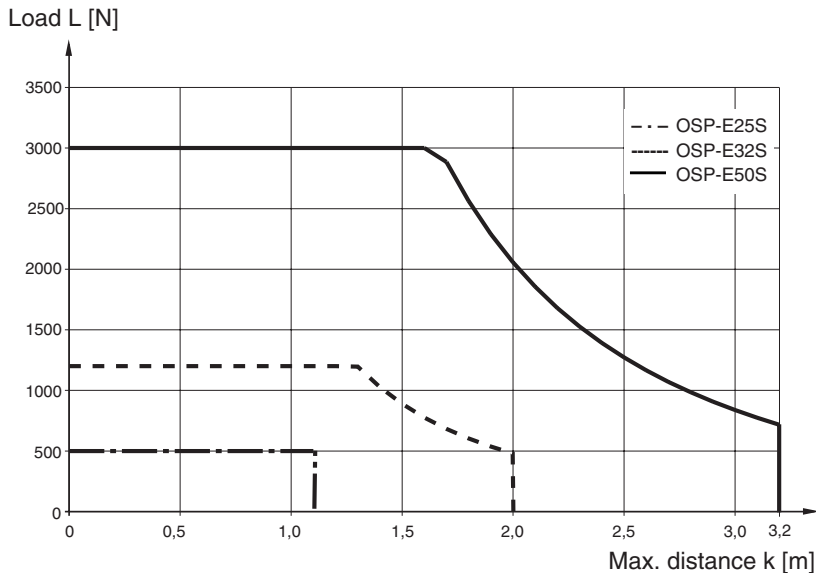
If several forces and moments are applied to the linear actuator simultaneously, then the following

equation must be fulfilled in addition to the above stated maximum loadings.

$$\frac{L}{L(\max)} + \frac{M}{M(\max)} + \frac{M_s}{M_s(\max)} + \frac{M_v}{M_v(\max)} \leq 1$$



k = Maximum allowable distance between mountings/mid-section support for a given load (L)



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)

# Maximum Allowable Unsupported Length

## Stroke Length

### Stroke Lengths

The stroke lengths of the linear actuators are available in multiples of 1 mm up to above maximum stroke lengths.

**OSP-E25:** max. 1100 mm

**OSP-E32:** max. 2000 mm

**OSP-E50:** max. 3200 mm

Other stroke lengths are available on request.

**The end of stroke must not be used as a mechanical stop.**

**Allow an additional safety clearance of minimum 25 mm at both ends.**

**The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems. For advise, please contact your local HOERBIGER-ORIGA technical support department.**

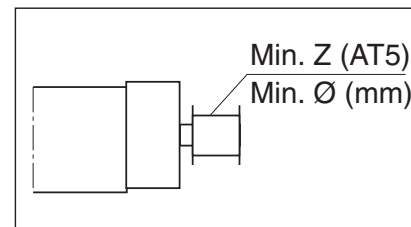
**When mechanical stops are required, external shock absorbers should be used. Align the centreline of the shock absorber as closely as possible with the object's centre of gravity.**

### Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupling or belt wheel, a steadying block should be used.

### Belt wheels

Minimum allowable number of teeth (AT5) and diameter of belt wheel at maximum applied torque.

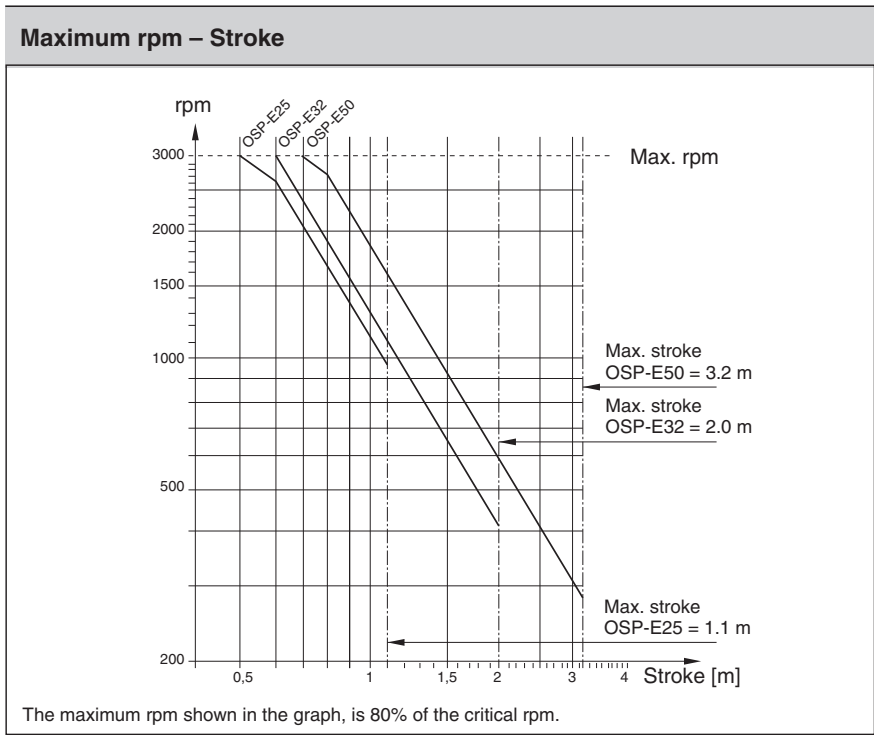


Size	Min. Z	Min. Ø
OSP-E25S	24	38
OSP-E32S	24	38
OSP-E50S	36	57



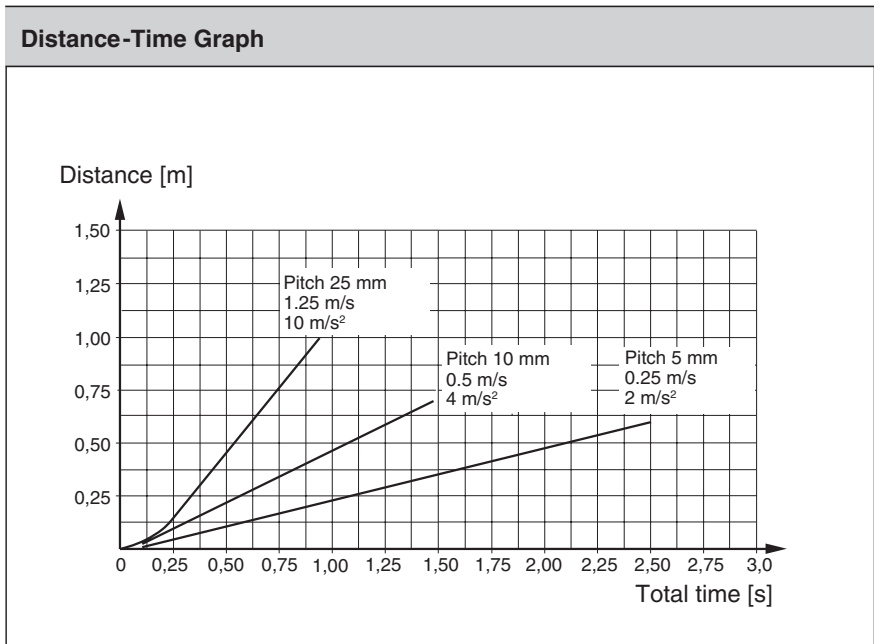
# Maximum rpm – Stroke

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

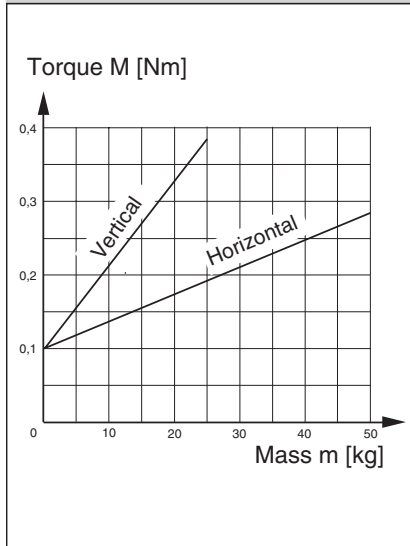


# Distance-Time Graph

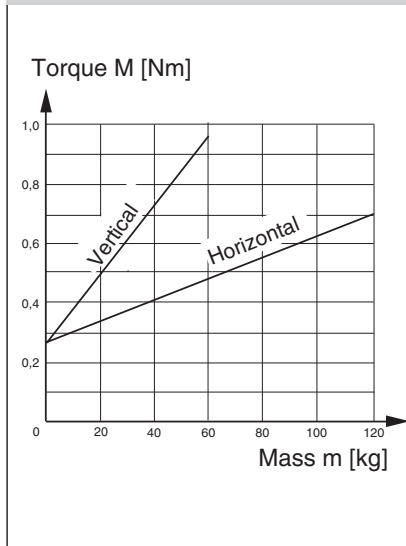
The adjacent graphs show travel distance and total time at maximum speed and recommended maximum acceleration. The graph assumes that acceleration and deceleration are equal.



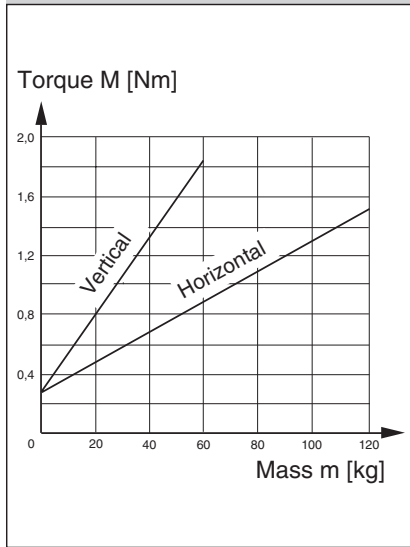
**Size OSP-E25, Pitch 5 mm  
Acceleration 2 m/s<sup>2</sup>**



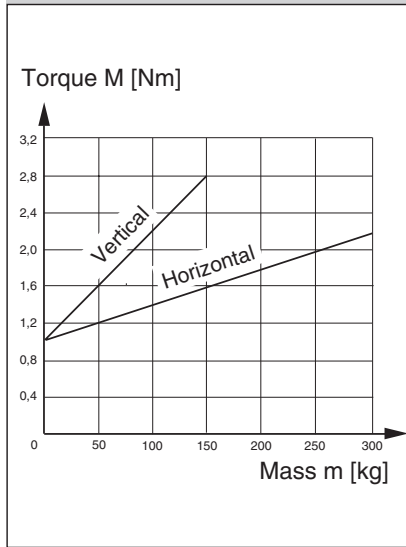
**Size OSP-E32, Pitch 5 mm  
Acceleration 2 m/s<sup>2</sup>**



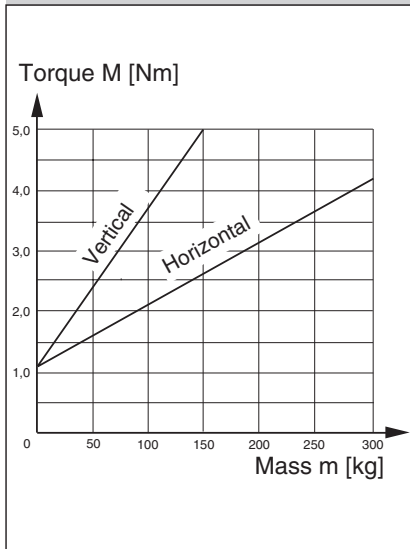
**Size OSP-E32, Pitch 10 mm  
Acceleration 4 m/s<sup>2</sup>**



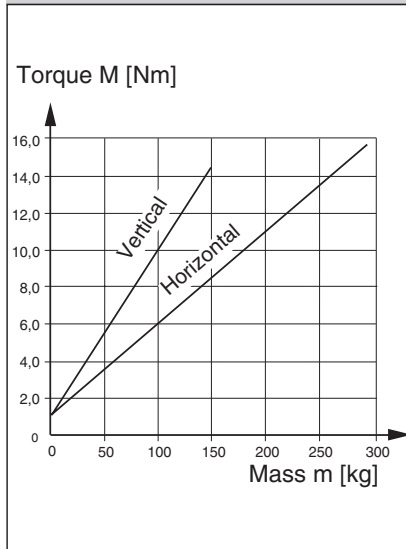
**Size OSP-E50, Pitch 5 mm  
Acceleration 2 m/s<sup>2</sup>**



**Size OSP-E50, Pitch 10 mm  
Acceleration 4 m/s<sup>2</sup>**



**Size OSP-E50, Pitch 25 mm  
Acceleration 10 m/s<sup>2</sup>**



## Required Torque

Using the known mass, the direction of the application and the recommended acceleration, the linear actuator can be sized and the required torque is shown in the adjacent graphs.

Mass in graphs = Load + moving mass of the linear actuator according to the weight chart (see on page 83).

**Please note:**  
When using an additional guide, please add the mass of carriage to the total moving mass.

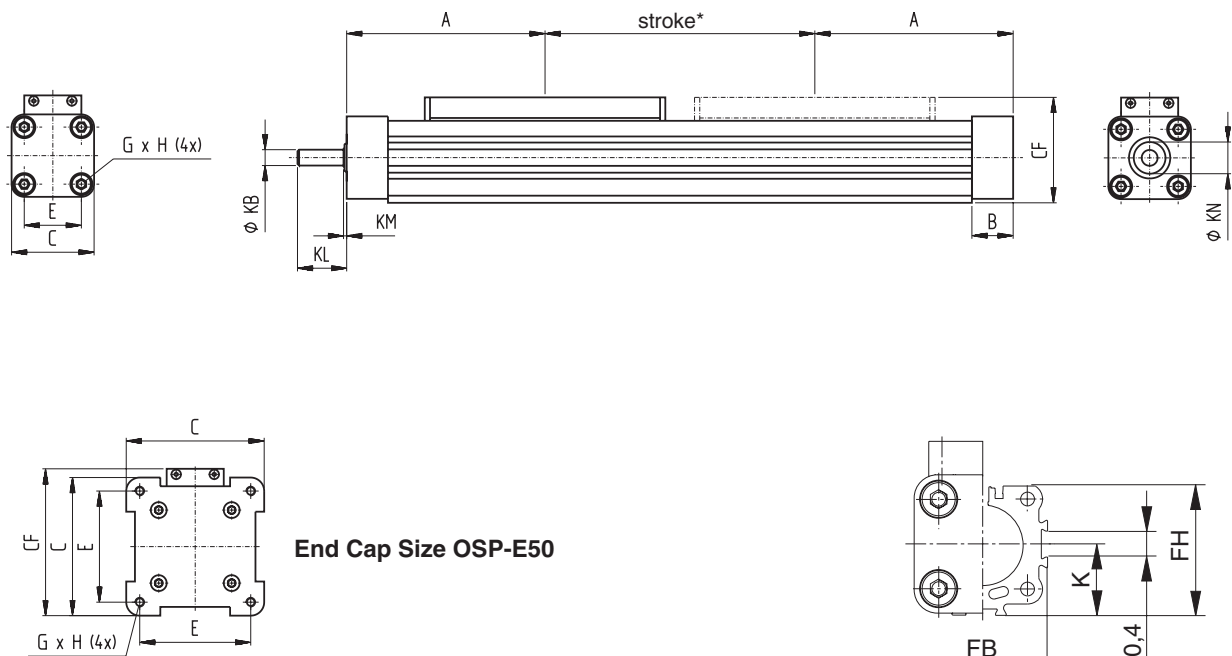
# Maximum RPM per Stroke for Critical Speed

Stroke	OSPE	Speed [mm/s]	OSPE	Speed [mm/s]		OSPE	Speed [mm/s]		
	25	pitch	32	pitch	pitch	50	pitch	pitch	pitch
	rpm	5	rpm	5	10	rpm	5	10	25
200	3000	250	3000	250	500	3000	250	500	1250
300	3000	250	3000	250	500	3000	250	500	1250
400	3000	250	3000	250	500	3000	250	500	1250
500	3000	250	3000	250	500	3000	250	500	1250
600	2667	222	2996	250	499	3000	250	500	1250
700	2089	174	2378	198	396	3000	250	500	1250
800	1680	140	1933	161	322	2745	229	458	1144
900	1381	115	1603	134	267	2311	193	385	963
1000	1155	96	1350	113	225	1972	164	329	822
1100	980	82	1153	96	192	1703	142	284	709
1200			996	83	166	1485	124	247	619
1300			869	72	145	1306	109	218	544
1400			765	64	127	1158	97	193	483
1500			678	57	113	1034	86	172	431
1600			606	50	101	929	77	155	387
1700			544	45	91	839	70	140	349
1800			491	41	82	761	63	127	317
1900			446	37	74	694	58	116	289
2000			407	34	68	635	53	106	265
2100						583	49	97	243
2200						538	45	90	224
2300						498	41	83	207
2400						462	38	77	192
2500						429	36	72	179
2600						400	33	67	167
2700						374	31	62	156
2800						351	29	58	146
2900						329	27	55	137
3000						309	26	52	129
3100						292	24	49	121
3200						275	23	46	115

stroke [mm]  
rpm [rev/min]  
Speed [mm/s]

**Screw-Driven Linear Actuator – Basic Unit**  
**Series OSP-E25S, -E32S, -E50S**

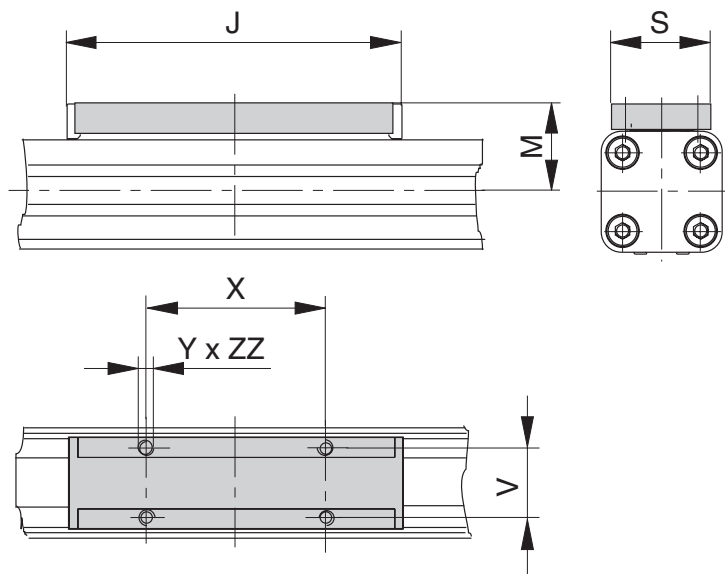
Overall length = (2 x A) + stroke (does not include any safety stroke)



End Cap Size OSP-E50

\* The end of stroke must not be used as a mechanical stop. Add to both ends, a minimum extra length of 25 mm to the stroke. The use of AC motor with frequency converter drives normally requires a larger 'extra length' than that required for servo systems. For advise, please contact your local HOERBIGER-ORIGA technical support department.

**Standard Carrier Mounting**  
**Series OSP-E25S, -E32S, -E50S**

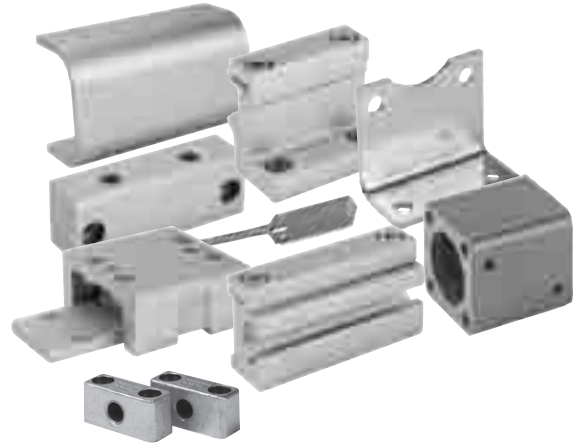


Dimension Table (mm)

Series	A	B	C	E	G	H	J	K	M	S	V	X	Y	CF	FB	FH	KB	KL	KM	KN	ZZ
OSP-E25S	100	22	41	27	M5	10	117	21.5	31	33	25	65	M5	52.5	40	39.5	6 <sub>h7</sub>	17	2	13	8
OSP-E32S	125	25.5	52	36	M6	12	152	28.5	38	36	27	90	M6	66.5	52	51.7	10 <sub>h7</sub>	31	2	20	10
OSP-E50S	175	33	87	70	M6	12	200	43	49	36	27	110	M6	92.5	76	77	15 <sub>h7</sub>	43	3	28	10



# Accessories for Linear Drive Systems (Mountings, Sensors) Series OSP-E Ballscrew



## Contents

Description	Page
Clevis Mounting	92-93
End Cap Mountings	94
Mid-Section Support	95
End Cap Mountings (for Linear Drives with guides)	96-97
Mid-Section Support (for Linear Drives with guides)	98
Inversion Mounting	99
Adaptor Profile	100
T-Nut Profile	101
Profile Mountings	102

# Linear Drive Accessories

## Clevis Mounting

Size 25, 32, 50



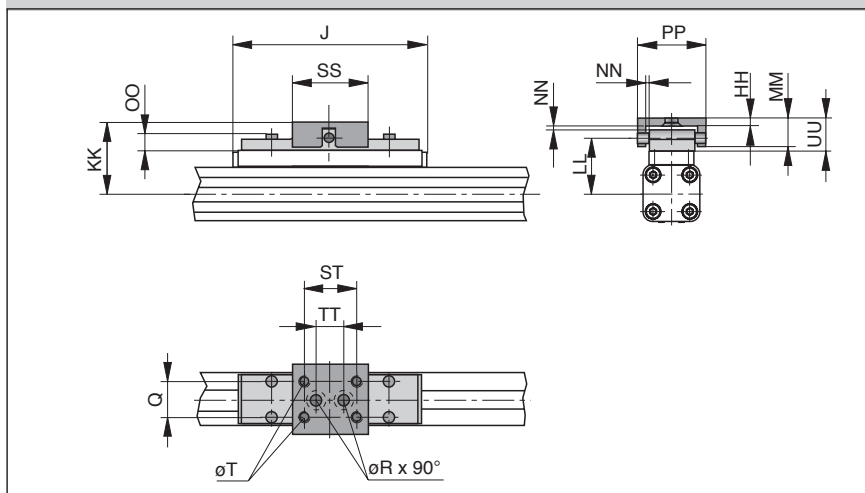
- For Linear Drives
- Series OSP-E Belt
  - Series OSP-E Screw

When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction, the mounting has very little play. Freedom of movement is provided as follows:

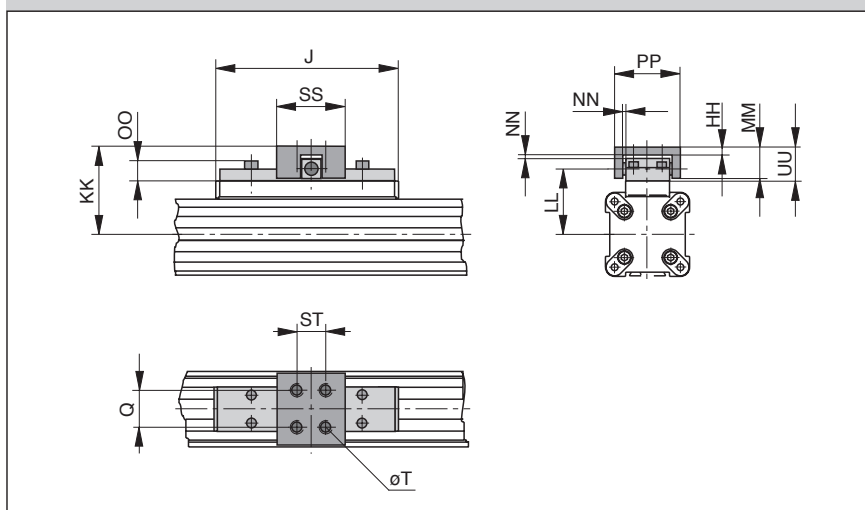
- Tilting in direction of movement
- Vertical compensation
- Tilting sideways
- Horizontal compensation

A stainless steel version is also available.

### Series OSP-E25 to E32



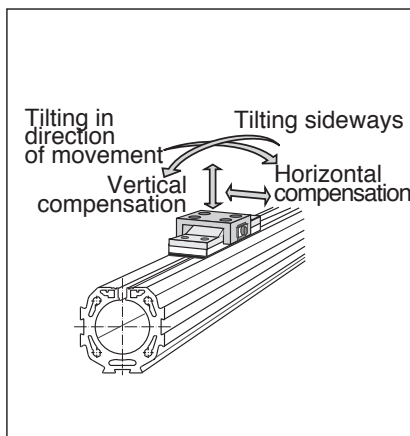
### Series OSP-E50



Dimension Table (mm)

Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Order No.	
																Standard	Stainless
OSP-E25	117	16	M5	5.5	3.5	52	39	19	2	9	38	40	30	16	21	20005	20092
OSP-E32	152	25	M6	6.6	6	68	50	28	2	13	62	60	46	40	30	20096	20094
OSP-E50	200	25	M6	—	6	79	61	28	2	13	62	60	46	—	30	20097	20095

\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

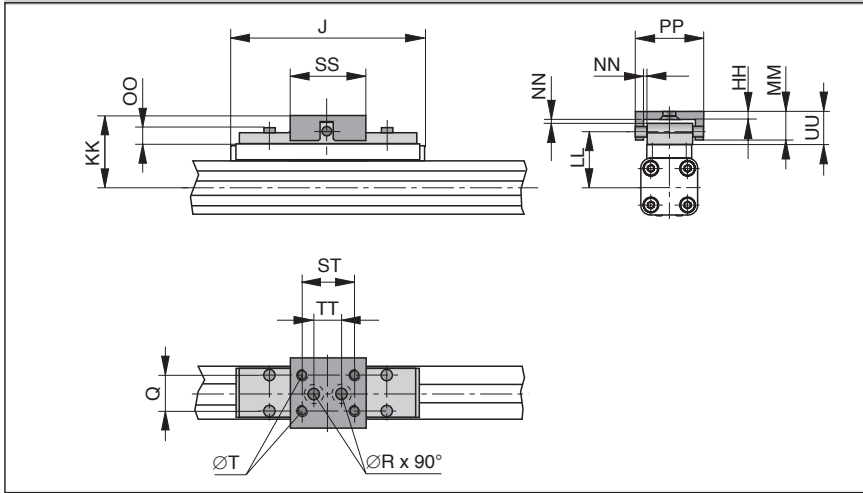


**Please note:**  
When using additional inversion mountings, take into account the dimensions on page 99.

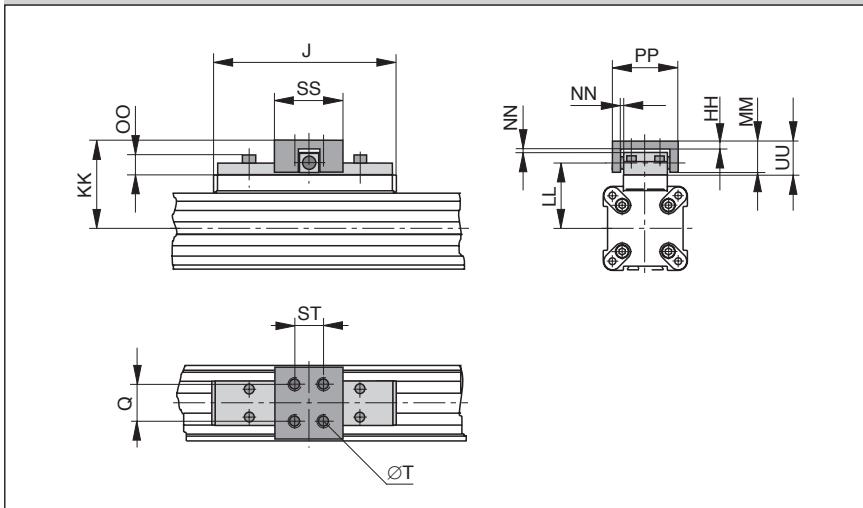
The right to introduce technical modifications is reserved



Series OSP-E25 to E32



Series OSP-E50



# Linear Drive Accessories

## Clevis Mounting, play-free

Size 25, 32, 50



- For Linear Drives
- Series OSP-E Belt
  - Series OSP-E Screw

When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction the clevis mounting has a play-free fit.

Freedom of movement is provided as follows:

- Tilting in direction of movement
- Vertical compensation
- Tilting sideways
- Horizontal compensation

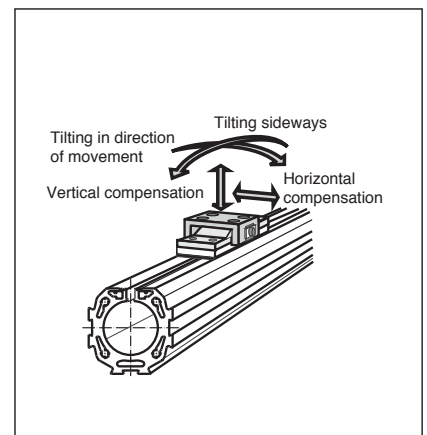
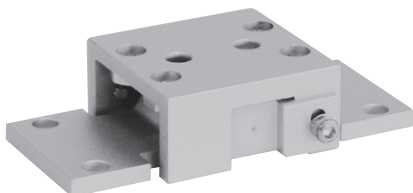
A stainless steel version is also available.

Dimension Table (mm)

Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Order No.	
																Standard	Stainless
OSP-E25	117	16	M5	5.5	3.5	52	39	19	2	9	49	40	30	16	21	20496	20498
OSP-E32	152	25	M6	6.6	6	68	50	28	2	13	69	60	46	40	30	20497	20499
OSP-E50	200	25	M6	—	6	79	61	28	2	13	69	60	46	—	30	20812	20818

\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

**Please note:**  
When using additional inversion mountings, take into account the dimensions on page 99.





# Linear Drive Accessories

## End Cap Mountings

Size 25, 32, 50



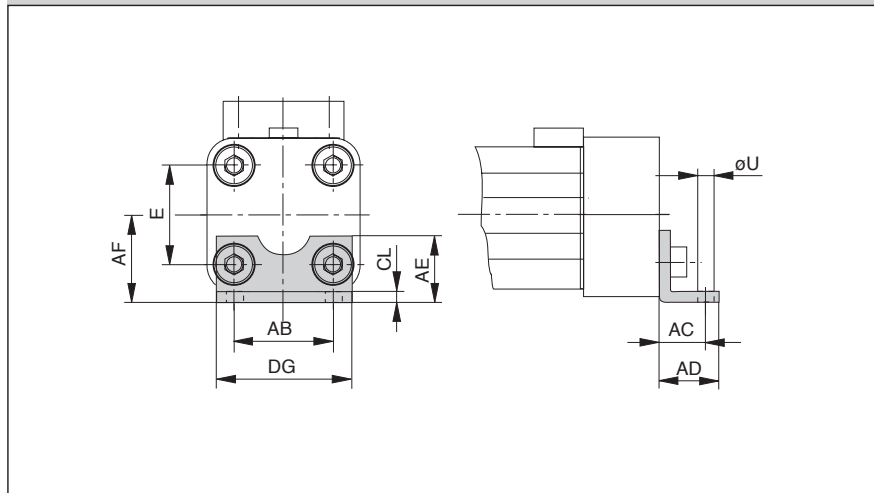
- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw \*

On the end-face of each end cap there are four threaded holes for mounting the actuator.

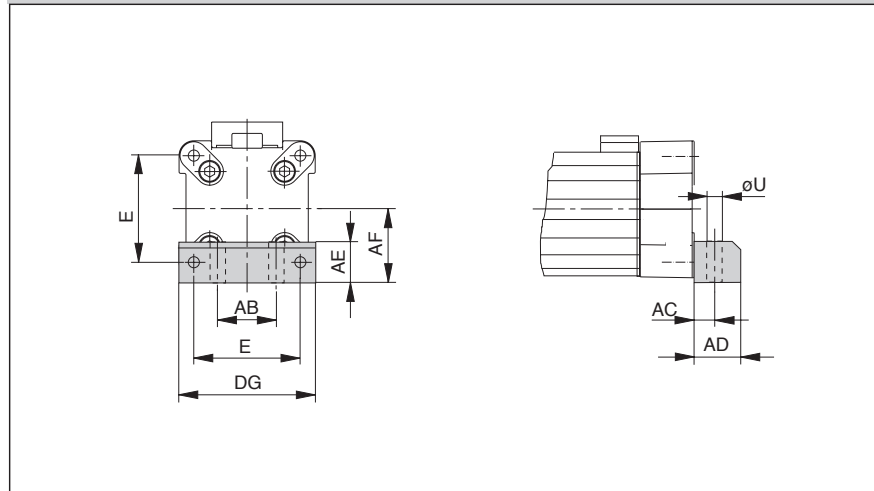
The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

Material:  
 Series OSP-25 to 32:  
 Galvanised steel.  
 Series OSP-50:  
 Anodized aluminium.

### Series OSP-E25 to E32: Type A1



### Series OSP-E50: Type C1



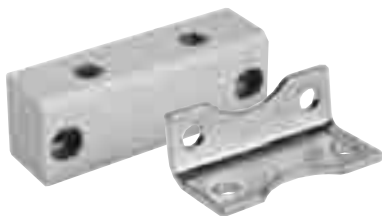
### Dimension Table (mm)

Series	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No.	
										Type A1	Type C1
OSP-E25	27	5.8	27	16	22	18	22	2.5	39	2010-1	–
OSP-E32	36	6.6	36	18	26	20	30	3	50	3010-1	–
OSP-E50	70	9	40	12.5	24	30	48	–	86	–	5010-1

**\* Important:**

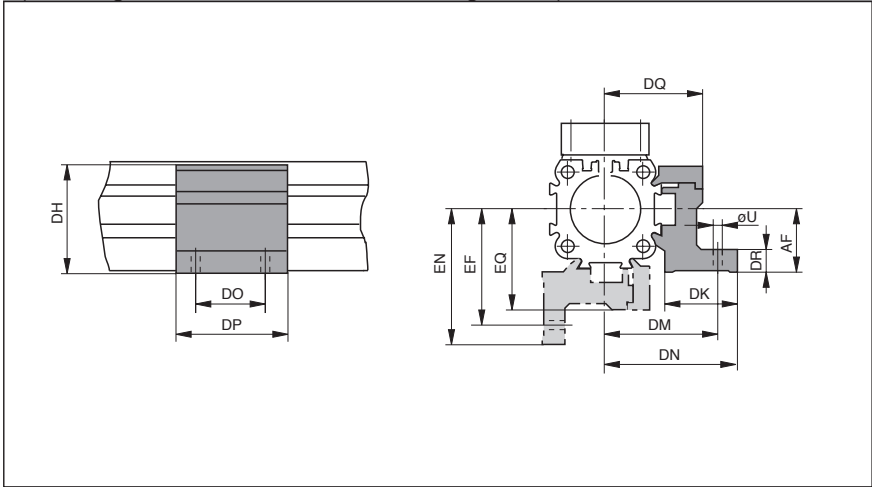
With the OSP-E Screw series, the end cap mounting can only be used at the opposite end of the drive shaft.

We recommend the application of two mid section supports (page 95) at the drive shaft end of the actuator.

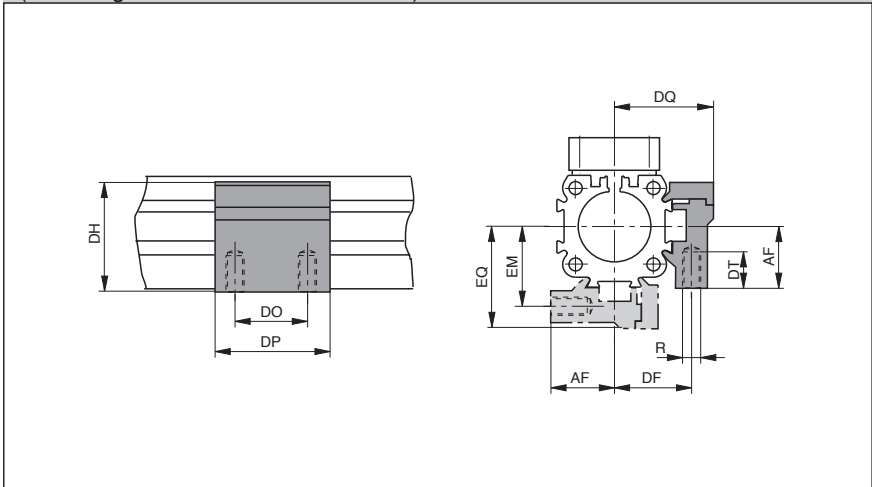


The right to introduce technical modifications is reserved

**Series OSP-E25, E32, E50, Type E1**  
(Mounting from above / below with 2 through holes)



**Series OSP-E25, E32, E50, Type D1**  
(Mountings from below with 2 screws)



# Linear Drive Accessories

## Mid-Section Support

Size 25, 32, 50



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw

Note on Types E1 and D1:  
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

Stainless steel version on request

Dimension Table (mm)

Series	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	Order No.	
																		Type E1	Type D1
OSP-E25	M5	5.5	22	27	38	26	40	47.5	36	50	34.5	8	10	41.5	28.5	49	36	20009	20008
OSP-E32	M5	5.5	30	33	46	27	46	54.5	36	50	40.5	10	10	48.5	35.5	57	43	20158	20157
OSP-E50	M6	7	48	40	71	34	59	67	45	60	52	10	11	64	45	72	57	20163	20162

The right to introduce technical modifications is reserved



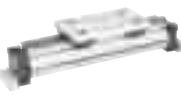



# Linear Drive Accessories

## Mountings for Linear Drives fitted with OSP-guides



- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw \*

Overview											
Mounting Type	Type	Type – OSP Guides									
		SLIDELINE PROLINE MULTIBRAKE			POWERSLIDE						
		25	32	50	25/ 25	25/ 35	25/ 44	32/ 35	32/ 44	50/ 60	50/ 76
End cap mounting 	Type A1										
	Type A2	O	O								
	Type A3				O	O		O			
End cap mounting, reinforced 	Type B1	X	X		X	X	X	X	X		
	Type B3										
	Type B4						O		O		
End cap mounting X 	Type C1			X						X	
	Type C2			O							
	Type C3									O	
	Type C4										O
Mid section support, small Mid section support, wide 	Type D1	X	X	X	X	X	X	X	X	X	X
	Type E1	X	X	X	X	X	X	X	X	X	X
	Type E2	O	O	O							
	Type E3				O	O		O		O	
	Type E4						O		O		O

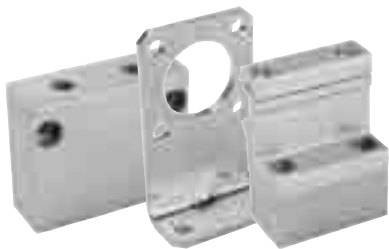
X = carriage mounted in top (12 o'clock position)

O = carriage mounted in lateral (3 or 9 o'clock position)

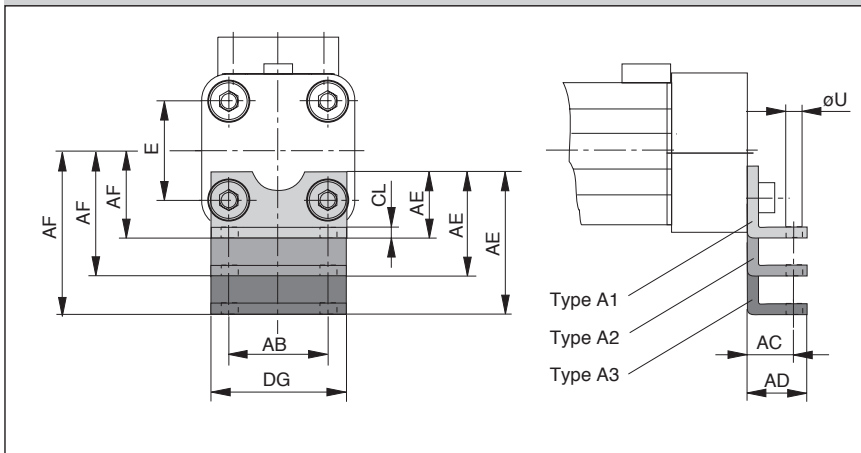
 = available components

**\* Important:**

With the OSP-E Screw series, end cap mountings type A, B and C can only be used at the opposite end of the drive shaft. Please use mid-supports (page 98).



**Series OSP – E25, E32: Type A**



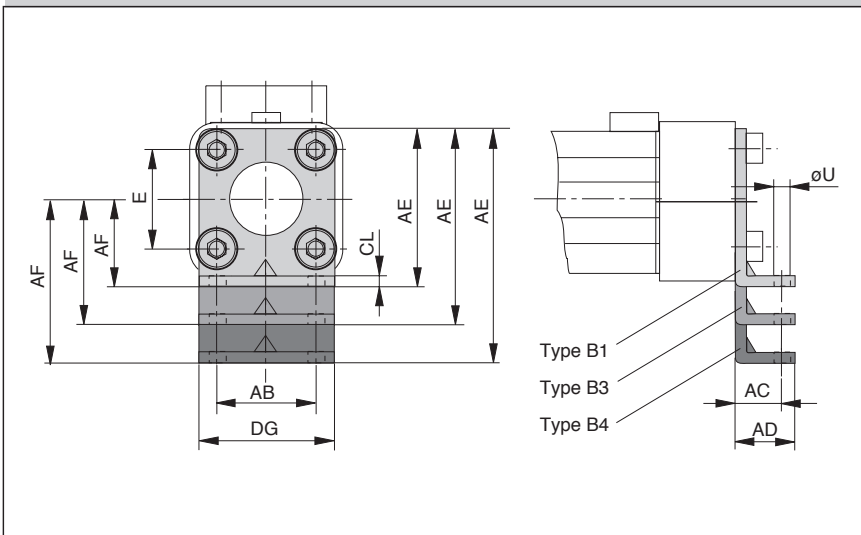
**End cap mountings \***

Four internal screw threads are located in the end faces of all OSP actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

Material: Series OSP-25, 32: zinc plated steel  
Series OSP-50: anodized aluminium

Supplied in pairs.

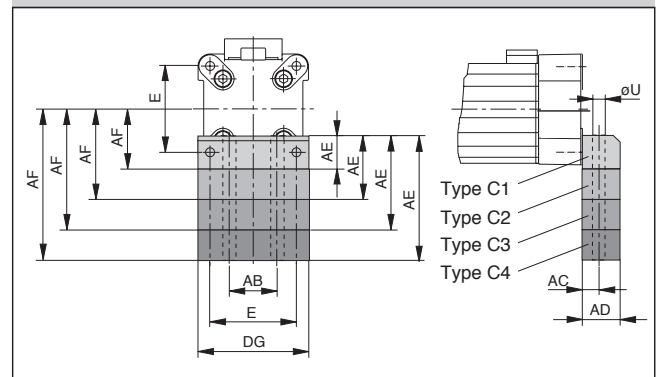
**Series OSP – E25, E32: Type B**



**Dimension Table (mm)**  
– Dimensions AE and AF (Dependant on the mounting type)

Mount type	Dimensions AE for size			AF for size		
	25	32	50	25	32	50
A1	18	20	–	22	30	–
A2	33	34	–	37	44	–
A3	45	42	–	49	52	–
B1	42	55	–	22	30	–
B3	–	–	–	–	–	–
B4	80	85	–	60	60	–
C1	–	–	30	–	–	48
C2	–	–	39	–	–	57
C3	–	–	54	–	–	72
C4	–	–	77	–	–	95

**Series OSP – E50: Type C**



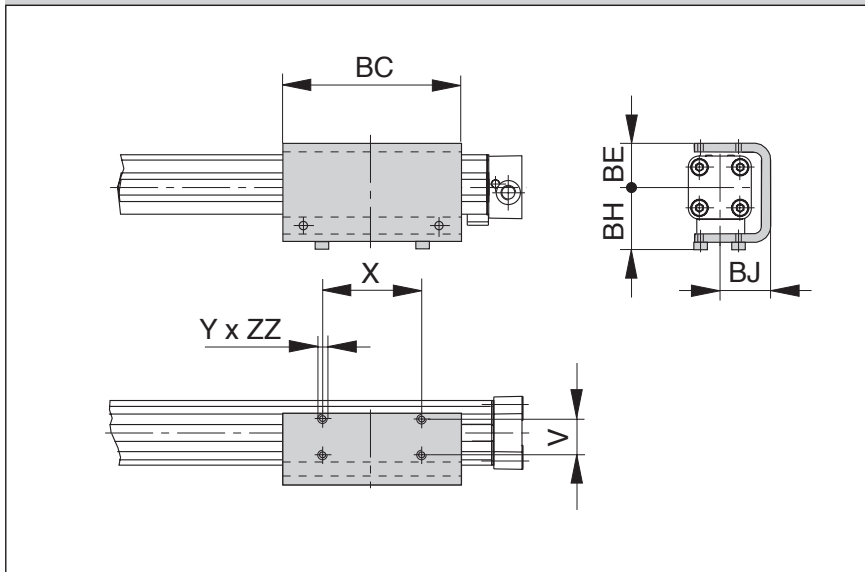
**Dimension Table (mm)**

Series	E	øU	AB	AC	AD	CL	D
OSP-E25	27	5.8	27	16	22	2.5	39
OSP-E32	36	6.6	36	18	26	3	50
OSP-E50	70	9	40	12.5	24	-	86

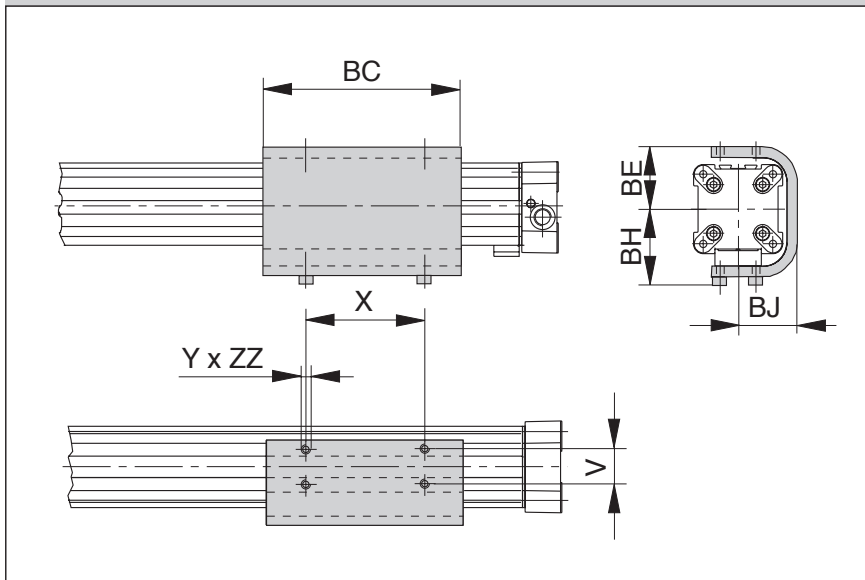
\* see mounting instructions on page 96



Series OSP-E25, E32



Series OSP-E50



Dimension Table (mm)

Series	V	X	Y	BC	BE	BH	BJ	ZZ	Order No.
OSP-E25	25	65	M5	117	31	43	33.5	6	20037
OSP-E32	27	90	M6	150	38	51	39.5	6	20161
OSP-E50	27	110	M6	180	55	64	52	8	20166

The right to introduce technical modifications is reserved

# Linear Drive Accessories

## Inversion Mounting

Size 25, 32, 50



- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw

In dirty environments, or where there are special space problems, inversion of the cylinder is recommended. The inversion bracket transfers the driving force to the opposite side of the cylinder. The size and position of the mounting holes are the same as on the standard cylinder.

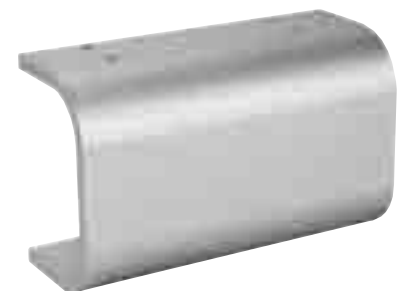
Stainless steel version on demand.

**Please note:**

Other components of the OSP system such as **mid-section supports**, **proximity switches** can still be mounted on the free side of the cylinder.

**Important Note:**

**May be used in combination with Clevis Mounting, ref. page 92.**



# Linear Drive Accessories Adaptor Profile

Size 25, 32, 50



For Linear Drive

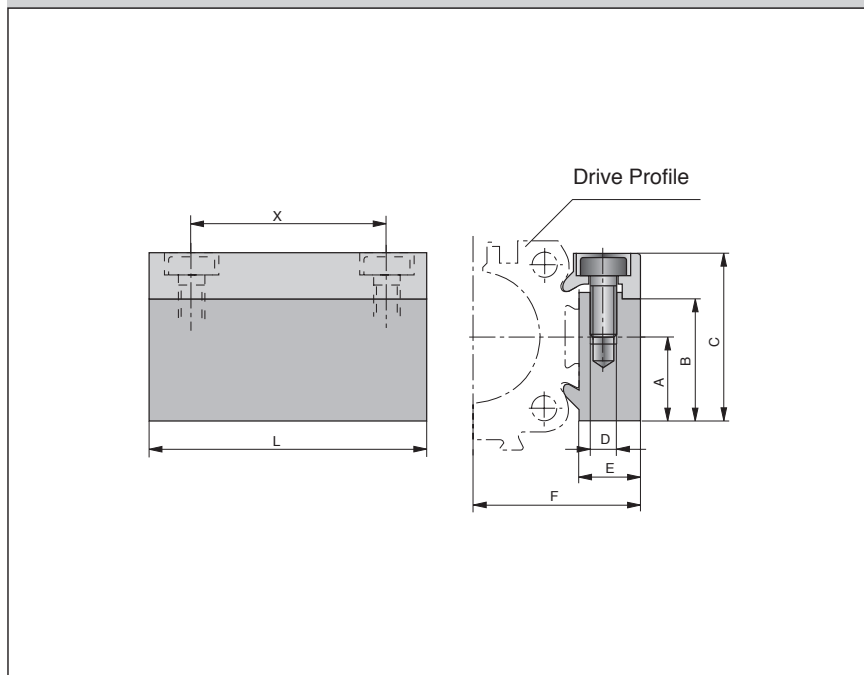
- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

Adaptor Profile OSP

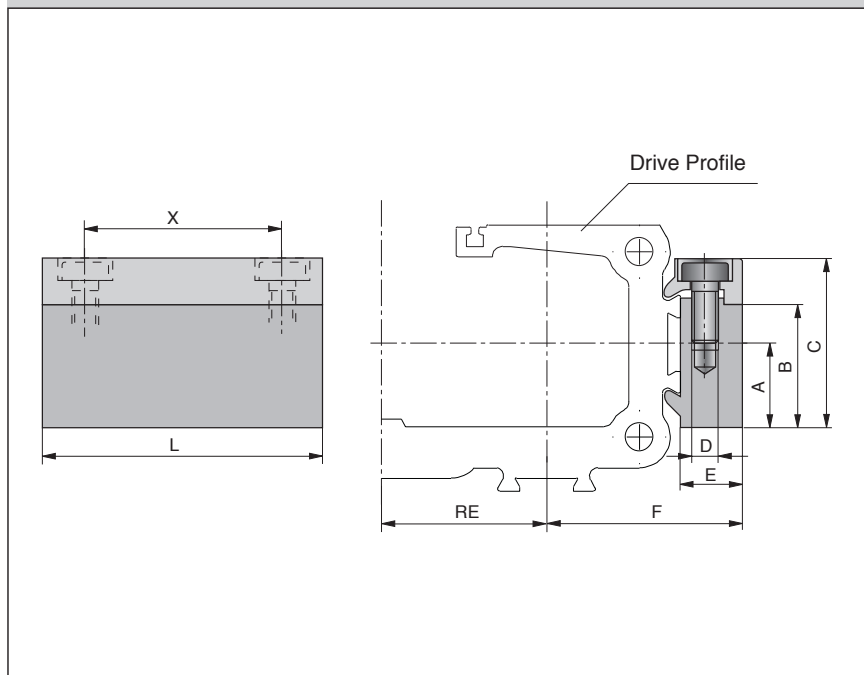
- A universal attachment for mounting of additional items
- Solid material



## Dimensions Series OSP-E



## Dimensions Series OSP-E..BHD

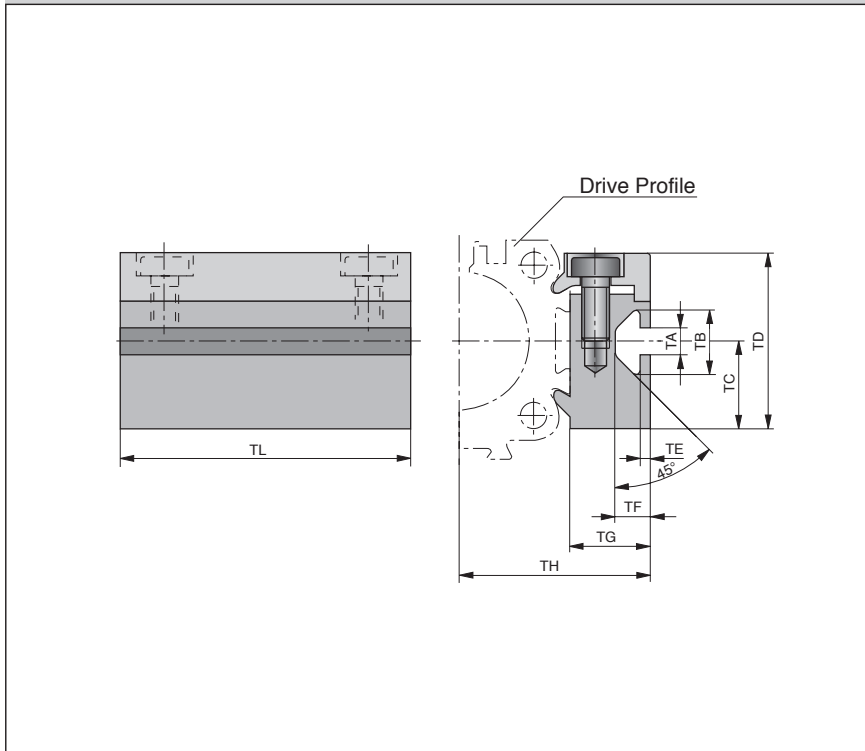


Dimension Table (mm)

Series	A	B	C	D	E	F	L	X	RE	Order No.	
										Standard	Stainless
OSP-E25	16	23	32	M5	10.5	30.5	50	36	26	20006	20186
OSP-E32	16	23	32	M5	10.5	36.5	50	36	32	20006	20186
OSP-E50	20	33	43	M6	14	52	80	65	44	20025	20267

The right to introduce technical modifications is reserved

Dimensions Series OSP-E



# Linear Drive Accessories

## T-Nut Profile

Size 25, 32, 50

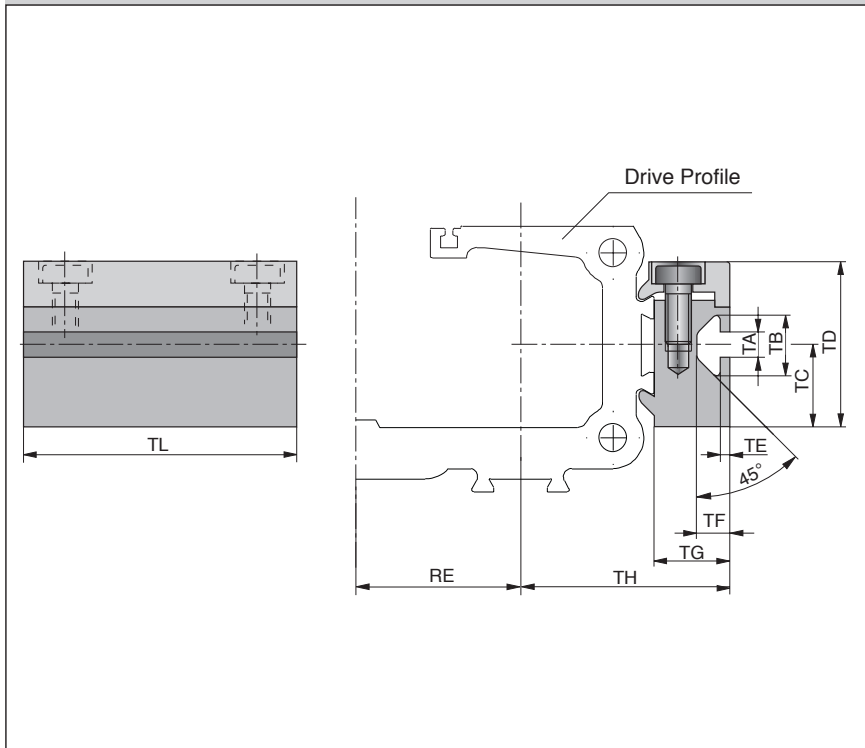


- For Linear Drive
- Series OSP-E Belt
  - Series OSP-E Screw
  - Series OSP-E..BHD

### T-Nut Profile OSP

- A universal attachment for mounting with standard T-Nuts

Dimensions Series OSP-E..BHD



The right to introduce technical modifications is reserved

Dimension Table (mm)

Series	RE	TA	TB	TC	TD	TE	TF	TG	TH	TL	Order No.	
											Standard	Stainless
OSP-E25	26	5	11.5	16	32	1.8	6.4	14.5	34.5	50	20007	20187
OSP-E32	32	5	11.5	16	32	1.8	6.4	14.5	40.5	50	20007	20187
OSP-E50	44	8.2	20	20	43	4.5	12.3	20	58	80	20026	20268





# Linear Drive Accessories

## Profile Mountings

Size 25, 32, 50



For Linear Drive

- Series OSP-E Belt
- Series OSP-E Screw
- Series OSP-E..BHD

Material:

Anodized aluminum

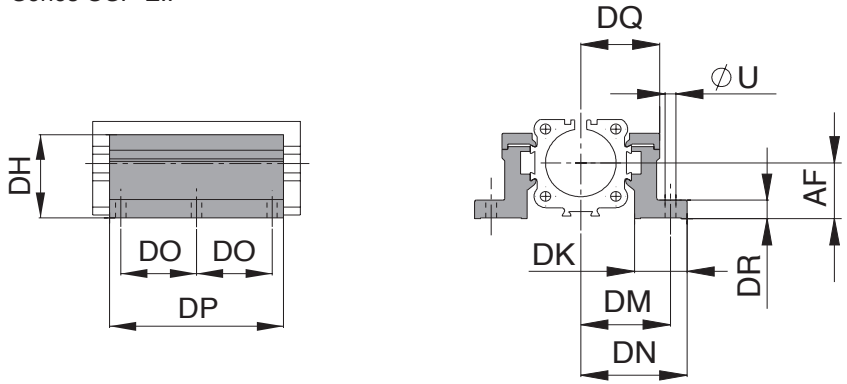
Stainless steel version on demand.

The mountings are supplied in pairs.

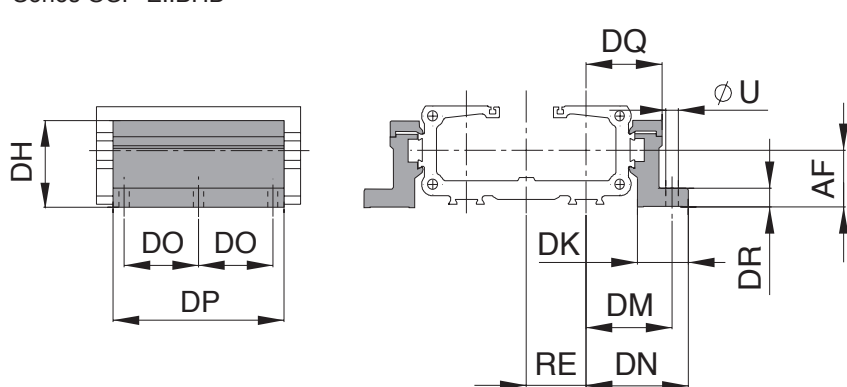
Weight (mass) [kg]	
Type	Weight (mass) [kg] (pair)
MAE-25	0.3
MAE-32	0.4
MAE-50	0.8

### Series OSP-E25 to E50, Type MAE-..

#### Series OSP-E..



#### Series OSP-E..BHD



Dimension Table (mm)																				
Series	Type	R	U	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ	RE	Order No.
OSP-E25	MAE-25	M5	5.5	22	27	38	26	40	47.5	40	92	34.5	8	10	41.5	28.5	49	36	26	12278
OSP-E32	MAE-32	M5	5.5	30	33	46	27	46	54.5	40	92	40.5	10	10	48.5	35.5	57	43	32	12279
OSP-E50	MAE-50	M6	7	48	40	71	34	59	67	45	112	52	10	11	64	45	72	57	44	12280



The right to introduce technical modifications is reserved

# Linear Actuator with Ball Screw and Extending Rod Series OSP-E..SBR



## Contents

Description	Page
Overview	103-106
Technical Data	107-109
Dimensions	110

# ELECTRIC LINEAR ACTUATOR 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 Actuator with Ball Screw and Extending Rod

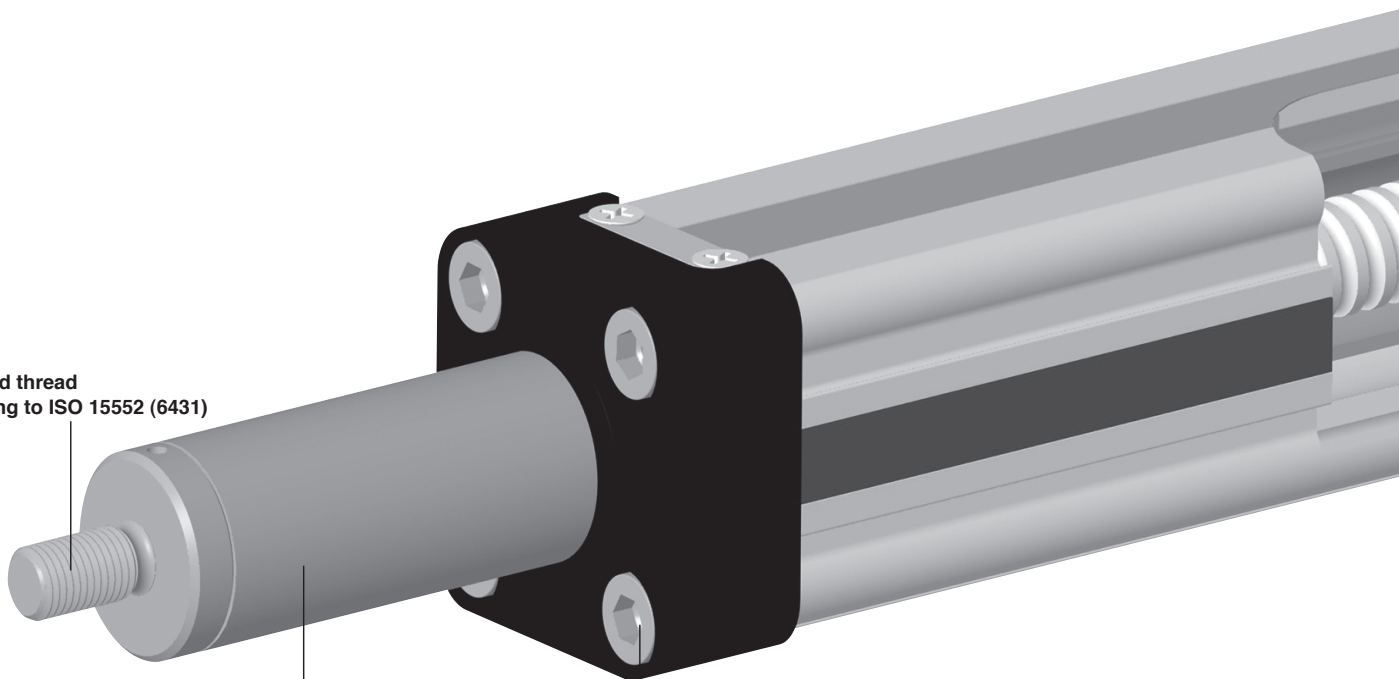
### Advantages

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

### Features

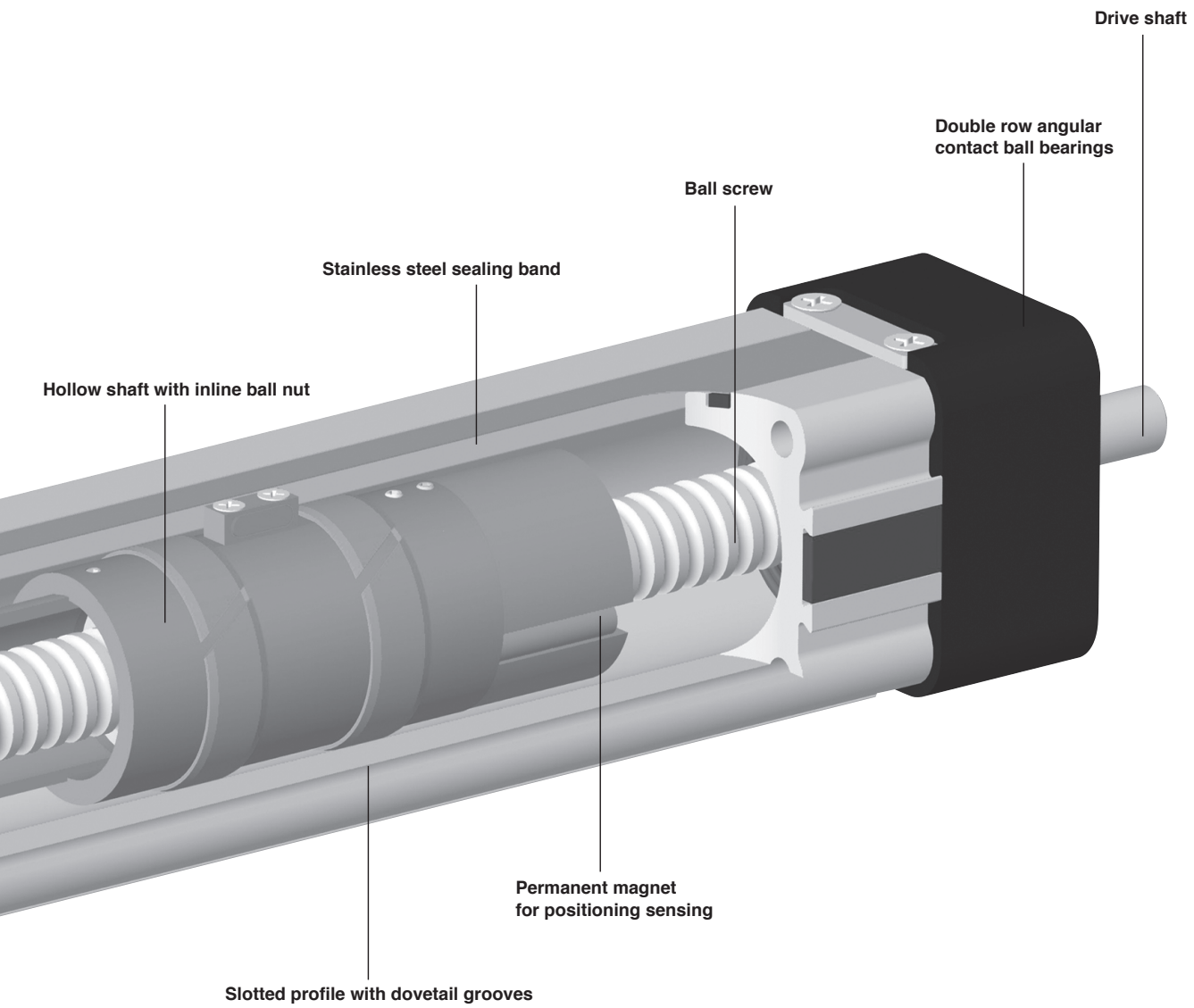
- Extending drive rod
- Ball spindle
- Non-rotating drive rod
- Continuous duty operation
- Large range of accessories

Drive rod thread  
according to ISO 15552 (6431)



Stainless steel drive rod

End cap screws with in-line thread

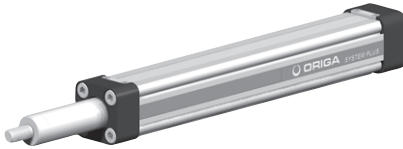


## SERIES OSP-E, BALL SCREW DRIVEN WITH EXTENDING ROD

### STANDARD VERSIONS OSP-E..SBR

Pages 107-109

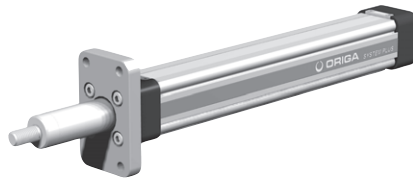
Standard carrier with integral guidance. Dovetail profile for mounting of accessories and the actuator itself.



### FLANGE MOUNTING C

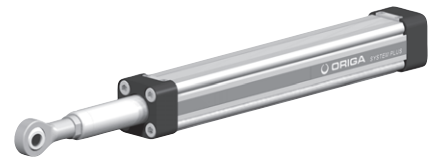
Page 111

For end-mounting the actuator on the extending rod side



### DRIVE ROD EYE

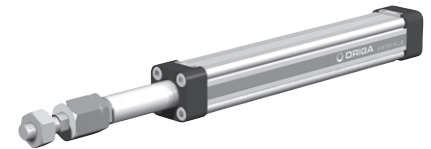
Page 113



### DRIVE ROD COMPENSATING COUPLING

Page 113

For compensating of radial and angular misalignments



### MOUNTINGS FOR OSP-E25SBR TO E50SBR

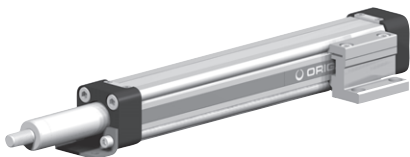
#### END CAP MOUNTING

Page 110

For end-mounting the actuator on the extending rod side

Page 95

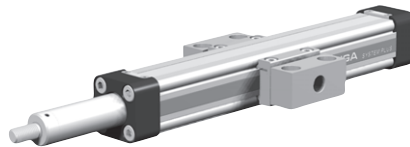
For mounting the actuator on the dovetail grooves and on the motor end



### TRUNNION MOUNTING – EN

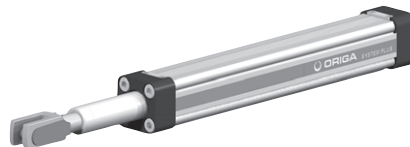
Page 112

For pivoted support  
Trunnion mounting with pivot  
– steplessly adjustable in axial direction.



### DRIVE ROD CLEVIS

Page 113

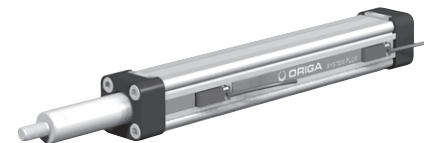


### ACCESSORIES

#### MAGNETIC SWITCHES SERIES RS AND ES

Page 130

For electrical sensing of end and intermediate carrier positions.



The right to introduce technical modifications is reserved

# Linear Actuator with Ball Screw and Extending Rod

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



Characteristics			
Characteristics	Symbol	Unit	Description
<b>General Features</b>			
Type			Linear drive with ball screw and piston rod
Series			OSP-E..SBR
Mounting			see drawings
Operating temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°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
	Sealing band		Hardened stainless steel
	Guide bearings		Low friction plastic
	Screws, nuts		Zinc plated steel
	Mountings		Zinc plated steel and aluminium
Encapsulation class		IP	54

Weight (Mass) kg and Inertia						
Series	Weight (Mass) [kg]		Moving Mass [kg]		Inertia [x 10 <sup>-6</sup> kgm <sup>2</sup> ]	
	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:

- Dovetail grooves for mounting accessories and the drive itself
- Travel per rotation of threaded spindle:  
Type OSP-E25SBR : 5 mm  
Type OSP-E32SBR: 5, 10 mm  
Type OSP-E50SBR: 5, 10, 25 mm

### 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. We recommend a check and lubrication of the linear actuator, and if necessary a change of worn parts, after every 12th month or 3000 km travel of distance, depending on the type of application. Please see separate instructions.

### Commissioning

The products in this datasheet should not be operated until the machine/application in which they are used has passed necessary inspection.

The right to introduce technical modifications is reserved



# Sizing Performance Overview

## Maximum Loadings

### Sizing of Linear Actuator

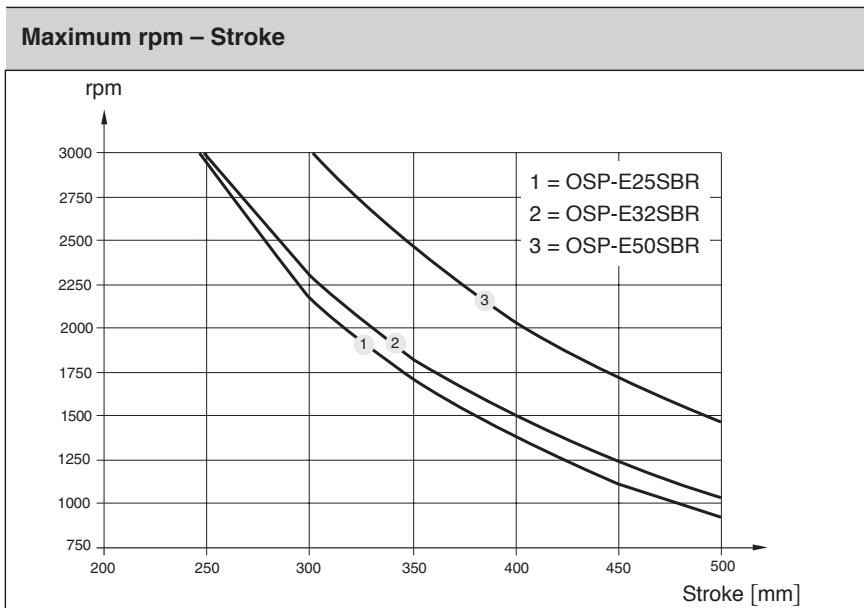
The following steps are recommended for selection :

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 <sup>-1</sup> ]	3000	3000		3000		
Max. effective action force $F_A$ Corresponding torque drive shaft	[N]	260	550	1090	750	990	1680
	[Nm]	0.3	0.65	2.6	0.9	2.4	10
No-load torque	[Nm]	0.2	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 <sup>2</sup> ]	5	5		5		
Typical repeatability	[mm/m]	±0.05	±0.05		±0.05		
Max. Standard stroke length	[mm]	500	500		500		

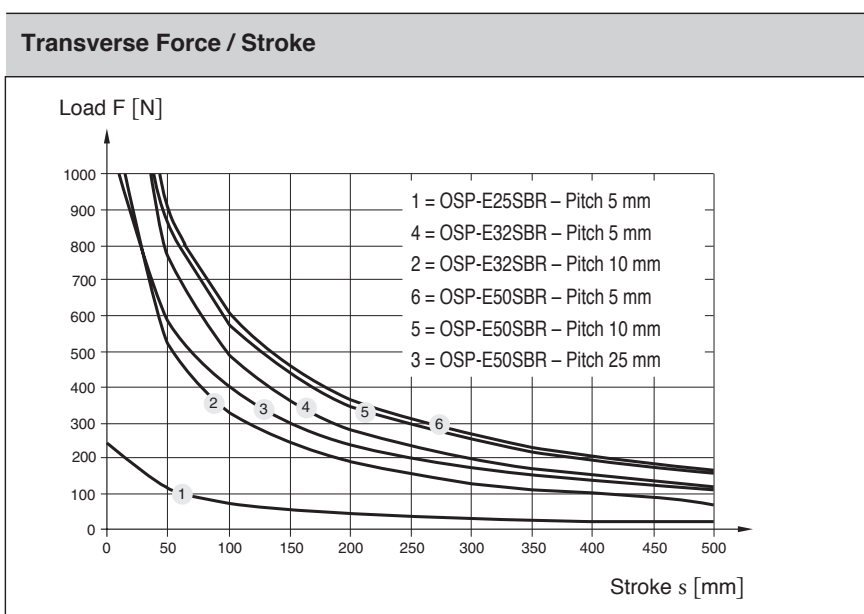
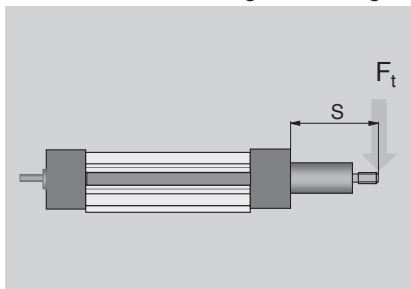
## Maximum rpm – Stroke

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

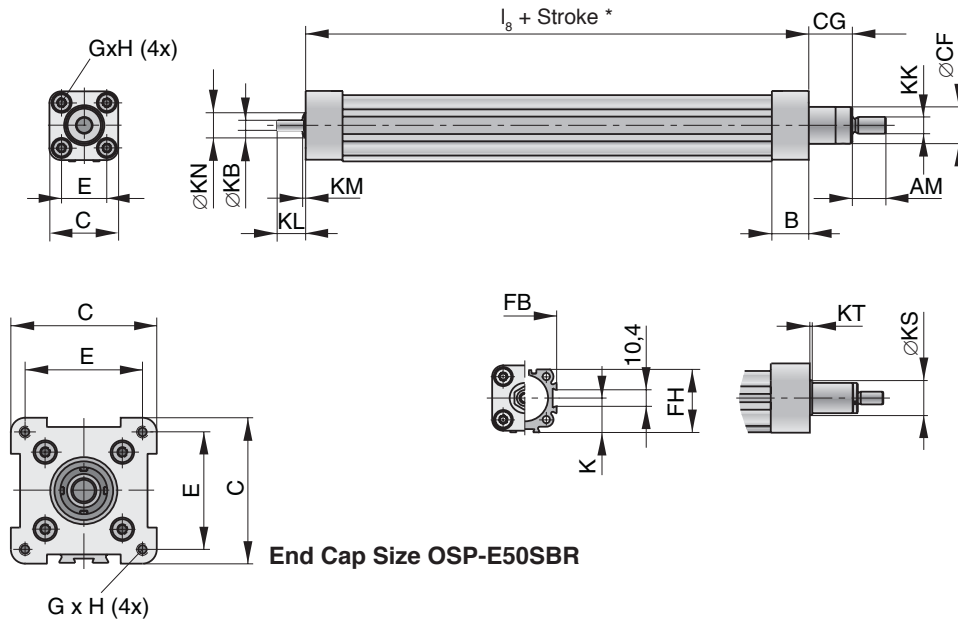


## Transverse Force/stroke

The permissible transverse force is reduced with increasing stroke length.

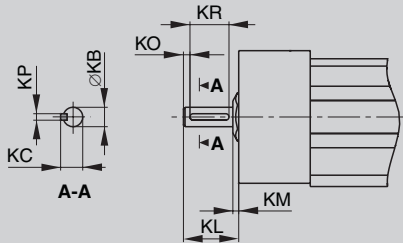


**Linear Actuator with Ball Screw and Extending Rod – Basic Unit**  
**Series OSP-E25SBR, OSP-E32SBR, OSP-E50SBR**



**End Cap Size OSP-E50SBR**

**Hollow shaft with keyway (Option)**



**Dimension Table (mm)**

Series	ØKB <sub>h7</sub>	KC	KL		KM	KO	KP <sup>P9</sup>	KR
			Opt.3	Opt.4				
OSP-E25SBR	6	6,8	17	24	2	2	2	12
OSP-E32SBR	10	11.2	31	41	2	5	3	16
OSP-E50SBR	15	17	43	58	3	6	5	28

Option 3: Keyway  
 Option 4: Keyway, long version

\* The end of stroke must not be used as a mechanical stop. Allow an additional safety clearance of minimum 25 mm at both ends. The use of an AC motor with frequency converter normally

requires a larger safety clearance than that required for servo systems. For advise, please contact your local HOERBIGER-ORIGA technical support department.

**Stroke Length:**  
 The stroke lengths of the linear actuators are as standard available in multiples of 1 mm up to 500 mm. Other stroke lengths on request.

**Dimension Table (mm)**

Series	B	C	E	G	H	K	$I_s$	AM	ØCF	CG	FB	FH	ØKB	KK	KL	KM	ØKN	ØKS	KT
OSP-E25SBR	22	41	27	M5	10	21.5	110	20	22	26	40	39.5	6 <sub>h7</sub>	M10x1.25	17	2	13	-	-
OSP-E32SBR	25.5	52	36	M6	12	28.5	175.5	20	28	26	52	51.7	10 <sub>h7</sub>	M10x1.25	31	2	20	33	2
OSP-E50SBR	33	87	70	M6	12	43	206	32	38	37	76	77	15 <sub>h7</sub>	M16x1.5	43	3	28	44	3



# Linear Drive Accessories

## End Cap Mountings

Size 25, 32, 50



For Linear Drive with Trapezoidal Screw and extending rod

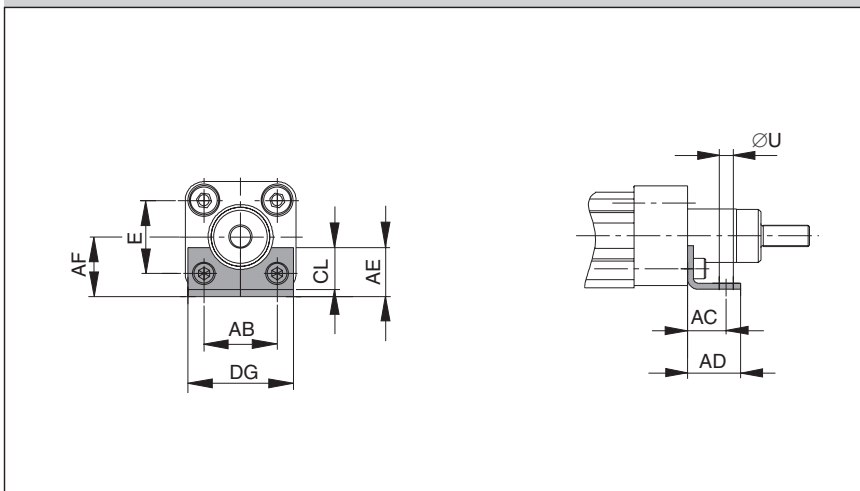
- Series OSP-E..SR
- Series OSP-E..SBR

On the end-face of each end cap there are four threaded holes for mounting the actuator. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

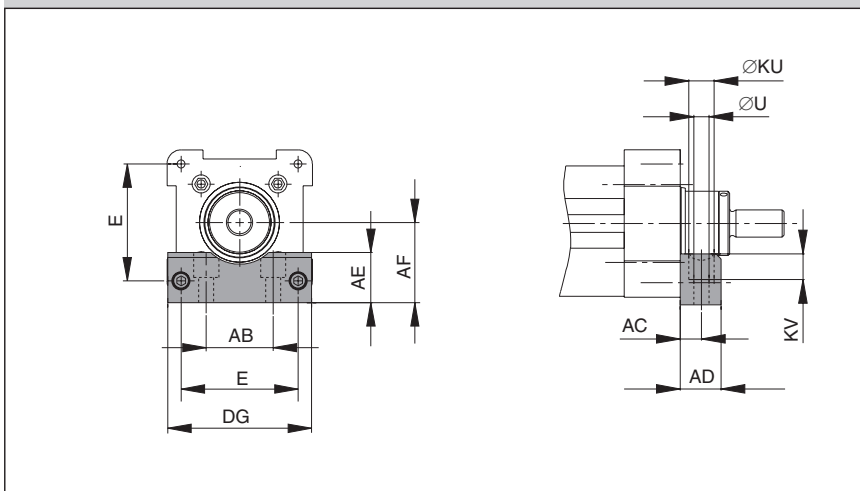
Material:  
 Series OSP-25 to 32: Galvanised steel.  
 Series OSP-50: Anodized aluminium.

The mountings are supplied singly

### Series OSP-E25SR (SBR) to E32SR (SBR): Type A1SR



### Series OSP-E50SR, (SBR): Type C1SR



### Dimension Table (mm)

Series	E	øU	AB	AC	AD	AE	AF	CL	DG	øKU	KV	Order No. *	
												Type A1SR	Type C1SR
OSP-E25SR (SBR)	27	5.8	27	16	22	18	22	2.5	39	-	-	12263	-
OSP-E32SR (SBR)	36	6.6	36	18	26	20	30	3	50	-	-	12264	-
OSP-E50SR (SBR)	70	9	40	12.5	24	30	48	-	86	15	15	-	12265

(\* = single mounting)

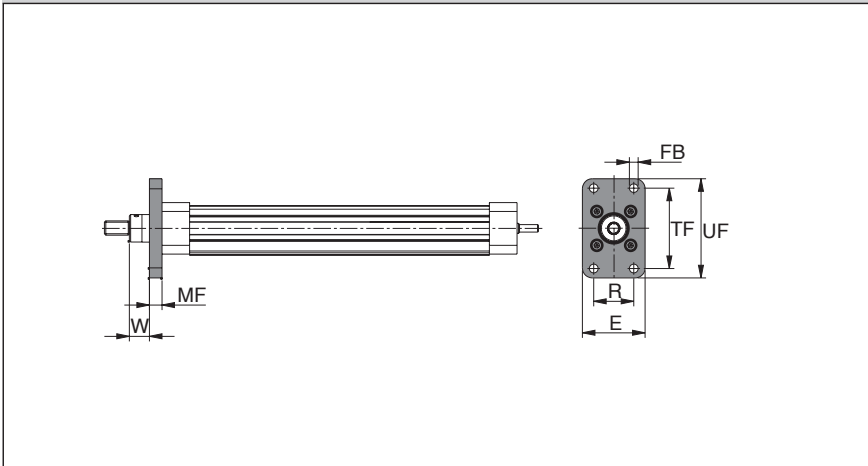
#### \* Important:

With the OSP-E Screw series, the end cap mounting can only be used at the end opposite to the drive shaft.

We recommend the application of two mid section supports (page 95) at the drive shaft end of the actuator.



Series OSP-E25SR (SBR) to E50SR (SBR): Type C-E..



Dimension Table (mm) for Flange Mounting C-E..

Series	Type	∅ FB	E	MF	R	TF	UF	W	Order No.
OSP-E25SR (SBR)	C-E25	7	50	10	32	64	79	16	12232
OSP-E32SR (SBR)	C-E32	9	56	10	36	72	90	16	12233
OSP-E50SR (SBR)	C-E50	12	100	16	63	126	153	21	12234

# Linear Drive Accessories

## Flange Mounting C

Size 25, 32, 50

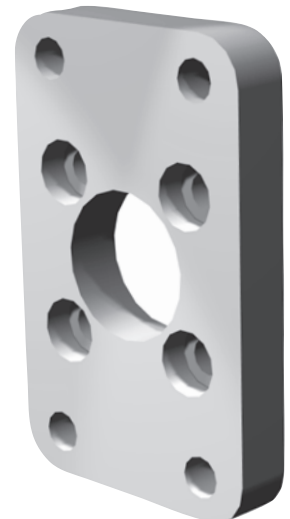


For Linear Drive  
with Trapezoidal Screw  
and extending rod

- Series OSP-E..SR
- Series OSP-E..SBR

The flange mounting C-E can only be mounted at the piston rod end of the linear drive.

Material:  
Aluminium



# Linear Drive Accessories

## Trunnion Mounting EN

Size 25, 32, 50

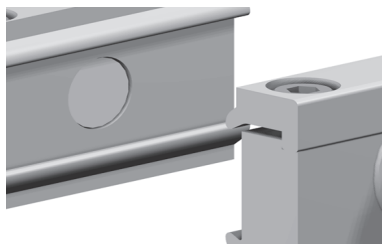


For Linear Drive with Trapezoidal Screw and extending rod

- Series OSP-E..SR
- Series OSP-E..SBR

The trunnion mounting is fitted to the dovetail rails of the actuator profile

The mountings are supplied in pairs.



## Pivot EL for Trunnion Mounting EN

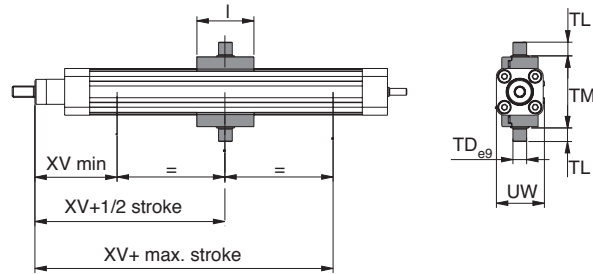
Size 25, 32, 50

For Linear Drive with Trapezoidal Screw and extending rod

- Series OSP-E..SR
- Series OSP-E..SBR



### Series OSP-E25SR (SBR) to E50SR (SBR): Type EN..

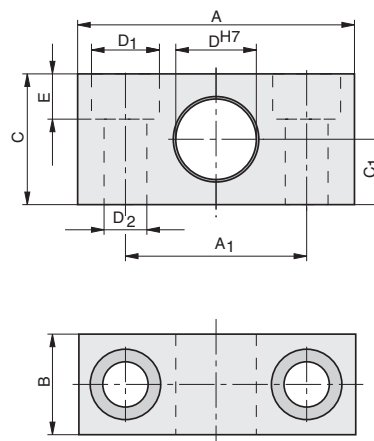


Material: Aluminium

### Dimension Table (mm) for Trunnion Mounting EN

Series	Type	l	ø TD e9	TL	TM	UW	XV min	XV+ 1/2stroke	XV+ max. stroke	Order No.
OSP-E25SR (SBR)	EN-E25	50	12	12	63	42	73	83	62	12235
OSP-E32SR (SBR)	EN-E32	50	16	16	75	52	76.5	90	69.5	12236
OSP-E50SR (SBR)	EN-E50	80	20	20	108	87	110	110	84	12237

### Series OSP-E25SR (SBR) to E50SR (SBR): Type EL

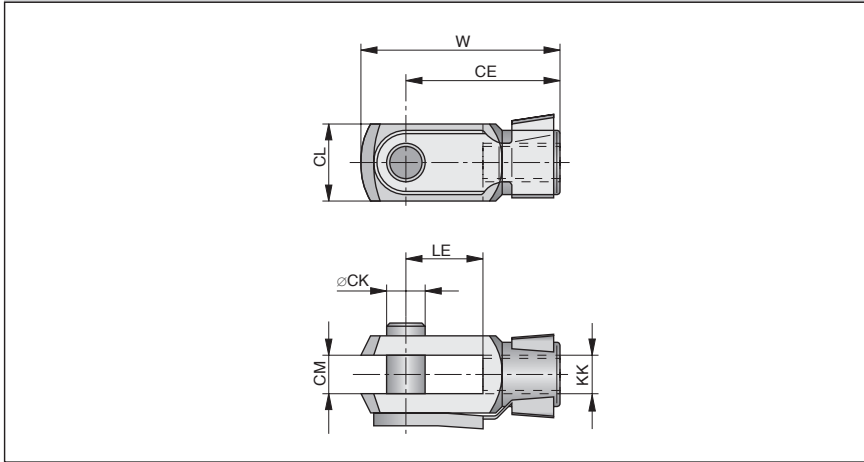


Material: Aluminium

### Dimension Table (mm) for Pivot EL

Series	Type	A	A <sub>1</sub>	B	C	C <sub>1</sub>	øD <sup>H7</sup>	øD <sub>1</sub>	øD <sub>2</sub>	E	Weight (Mass) (kg)	Order No.
OSP-E25SR (SBR)	EL-032	55	36	20	26	13	12	13.5	8.4	9	0.06	PD 23381
OSP-E32SR (SBR)	EL-040/050	55	36	20	26	13	16	13.5	8.4	9	0.06	PD 23382
OSP-E50SR (SBR)	EL-063/080	65	42	25	30	15	20	16.5	10.5	11	0.10	PD 23383

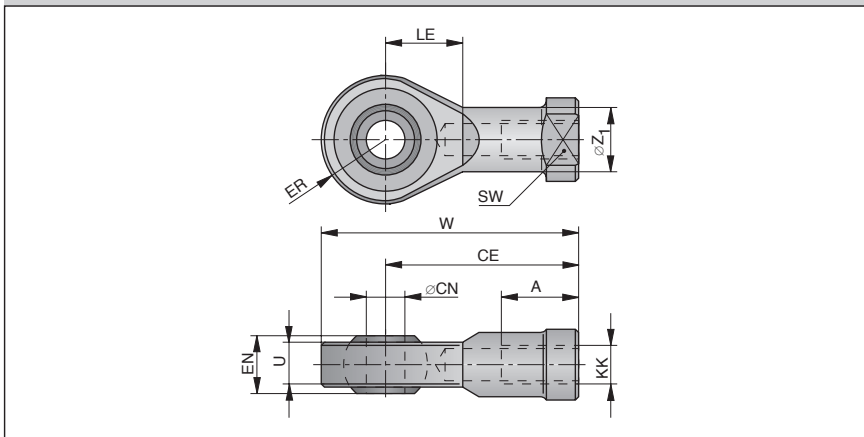
**Piston Rod Clevis according to ISO 8140 (CETOP RP102P)**  
**Type: GK-..**



**Order Instructions, Dimension Table (mm), Weight**

Series	Type	øCK	CE	CL	CM	KK	LE	W	Mass (kg)	Order No.
OSP-E25SR (SBR)	GK-M10x1.25	10	40	20	10	M10x1.25	20	52	0.08	KY6135
OSP-E32SR (SBR)	GK-M10x1.25	10	40	20	10	M10x1.25	20	52	0.08	KY6135
OSP-E50SR (SBR)	GK-M16x1.5	16	64	32	16	M16x1.5	32	83	0.30	KY6139

**Piston Rod Eye according to ISO 8139 (CETOP RP103 P)**  
**Type: GA-..**



**Order Instructions, Dimension Table (mm), Weight**

Series	Type	A	CE	øCN	EN	ER	KK	LE	SW	U	W	øZ	Mass (kg)	Order No.
OSP-E25SR (SBR)	GA-M10x1.25	20	43	10	14	14	M10x1.25	15	17	10.5	57	15	0.072	KY 6147
OSP-E32SR (SBR)	GA-M10x1.25	20	43	10	14	14	M10x1.25	15	17	10.5	57	15	0.072	KY 6147
OSP-E50SR (SBR)	GA-M16x1.5	28	64	16	21	21	M16x1.5	22	22	15	85	22	0.21	KY 6150

# Linear Drive Accessories

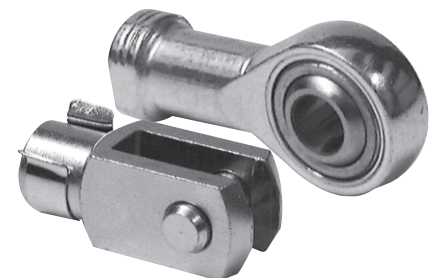
## Piston Rod Elements

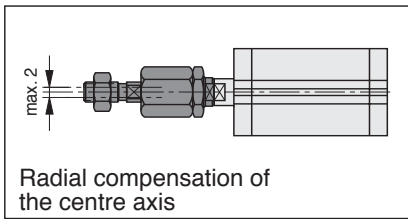
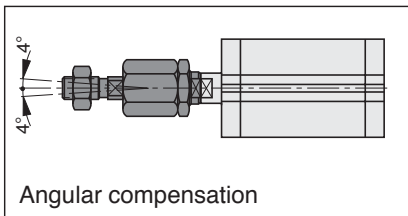
Size 25, 32, 50



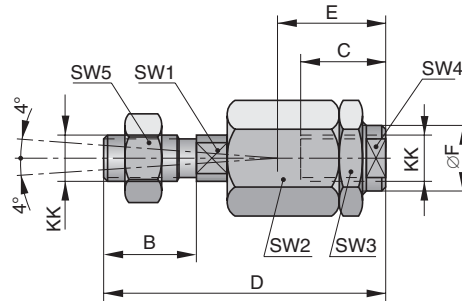
- Piston Rod Clevis according to ISO 8140
- Piston Rod Eye according to ISO 8139
- Piston Rod Compensating Coupling

- Series OSP-E..SR
- Series OSP-E..SBR



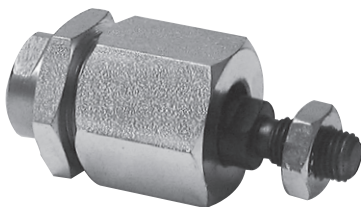


**Piston Rod Compensating Coupling  
Type: AK-..**

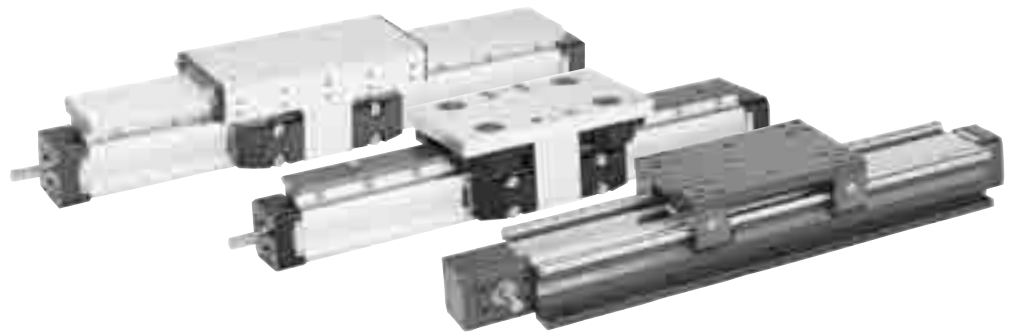


**Order Instructions, Dimension Table (mm), Weight**

Series	Type	B	C	D	E	ØF	KK	SW1	SW2	SW3	SW4	SW5	Mass (kg)	Order No.
OSP-E25SR(SBR)	AK-M10x1.25	20	23	70	31	21.5	M10x1.25	12	30	30	19	17	0.218	KY 1129
OSP-E32SR(SBR)	AK-M10x1.25	20	23	70	31	21.5	M10x1.25	12	30	30	19	17	0.218	KY 1129
OSP-E50SR(SBR)	AK-M16x1.5	40	32	112	45	33.5	M16x1.5	19	41	41	30	30	0.637	KY 1133



# Linear Guides Series OSP-E



## Contents

Description	Page
Overview	115-116
Plain Bearing SLIDELINE	117-118
Roller Guide POWERSLIDE	119-122
Ball Bushing Guide GUIDELINE	123-126
Aluminium Roller Guide PROLINE	127-129

# OSP

— ORIGA  
— SYSTEM  
— PLUS

## Adaptive modular system

The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

### Versions:

#### Electric linear drive

##### Series:

- OSP-E..B
- OSP-E..BP
- OSP-E..S

##### Sizes:

25 - 32 - 50

##### Advantages:

- Takes high loads and forces
- High precision
- Smooth operation
- Can be retrofitted
- Can be installed in any position

## Linear Guides

### Electric linear drive

- Series OSP-E..B (Belt Driven)
- Series OSP-E..S (Screw Driven)



### SLIDELINE

The cost-effective plain bearing guide for medium loads.  
Not available for OSP-E – Belt Drive series  
See pages 117-118



### POWERSLIDE

The roller guide for heavy loads.  
See pages 119-122



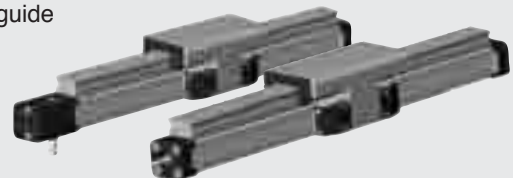
### GUIDELINE

The ball bushing guide for the heaviest loads and greatest accuracy.  
See pages 123-126



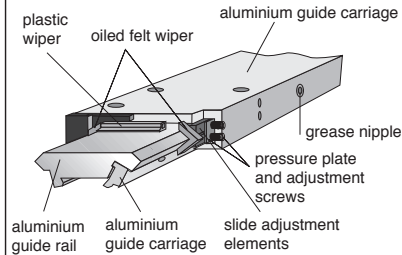
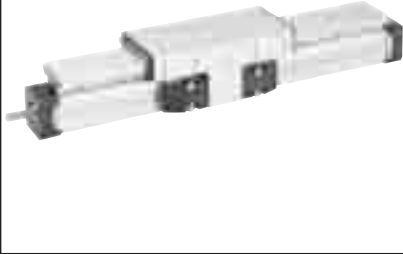
### PROLINE

The compact aluminium roller guide for high loads and velocities.  
See pages 127-129



## Versions

**Standard version**  
– for electric linear drive:  
**Series OSP-E Screw**



# Plain Bearing Guide SLIDELINE

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series SL 25 to 50**  
**for Linear Drive**  
• **Series OSP-E Screw ONLY**

## Technical Data

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds  $v < 0.2$  m/s.

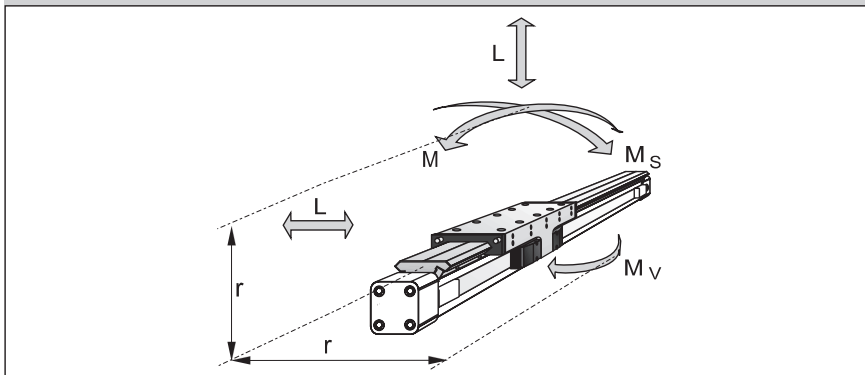
## \* Please note:

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

## Features:

- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements – optional with integral brake
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways.
- Corrosion resistant version available on request.

## Loads, forces and moments



Series	Max. Moments [Nm]			Max. Load [N]	Mass of drive with guide [kg]		Mass* of guide carriage [kg]	Order-No. SLIDELINE <sup>1)</sup> for OSP-E Screw without brake
	M	Ms	Mv		L	with 0 mm Stroke OSP-E Screw		
<b>SL 25</b>	34	14	34	675	1.70	0.42	0.61	<b>20342</b>
<b>SL 32</b>	60	29	60	925	3.44	0.73	0.95	<b>20196</b>
<b>SL 50</b>	180	77	180	2000	7.89	1.35	2.06	<b>20195</b>

<sup>1)</sup> Corrosion resistant fixtures available on request

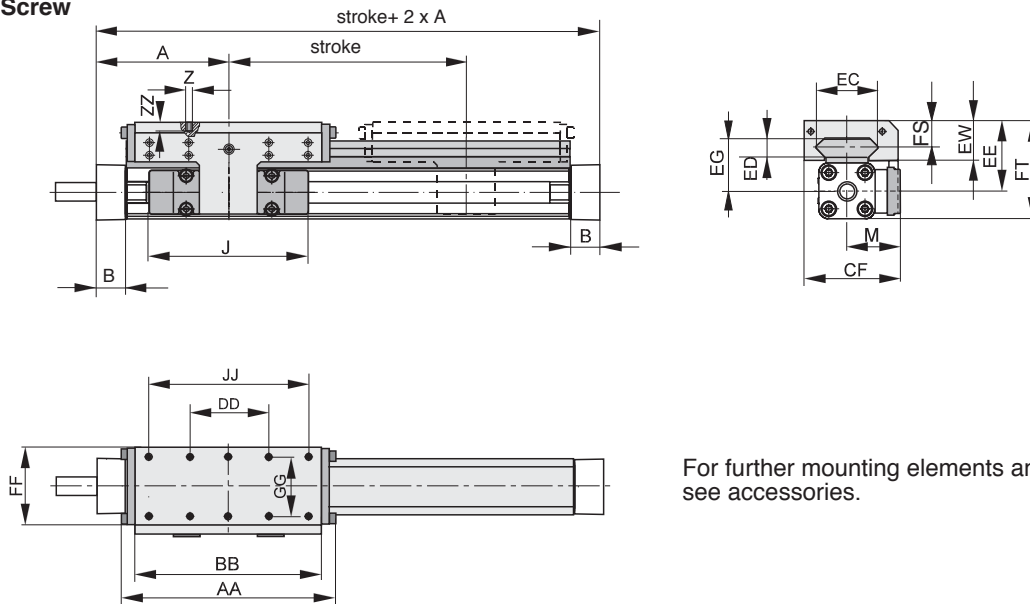
The right to introduce technical modifications is reserved

**HOERBIGER**  
**ORIGA**



## Dimensions

### Series OSP-E Screw



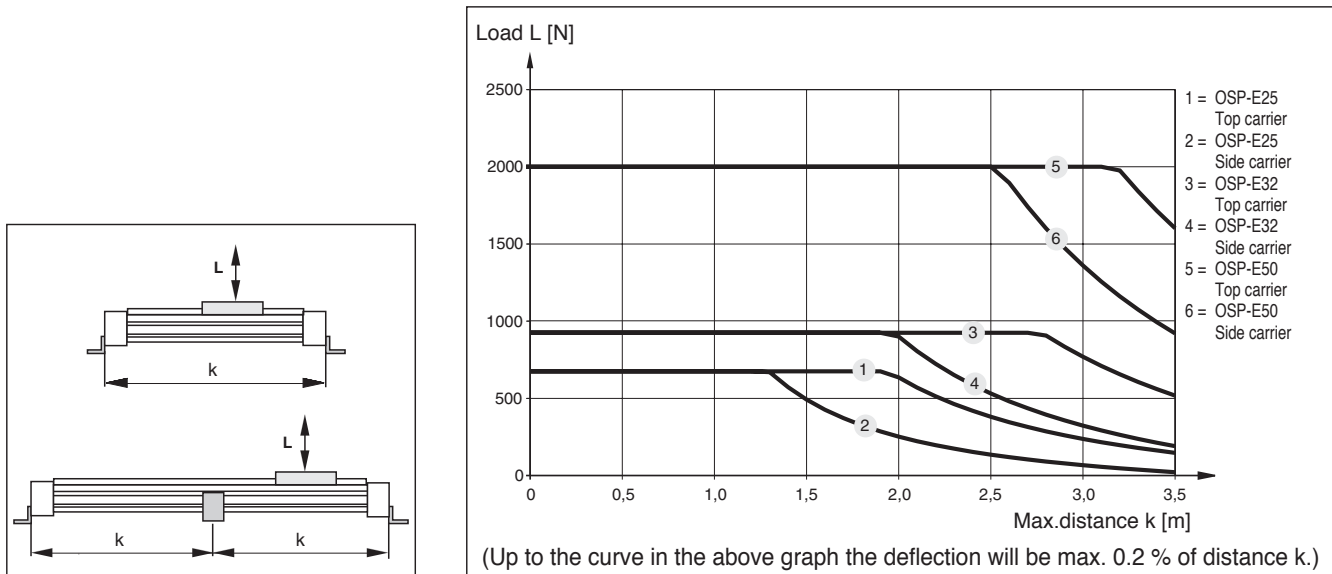
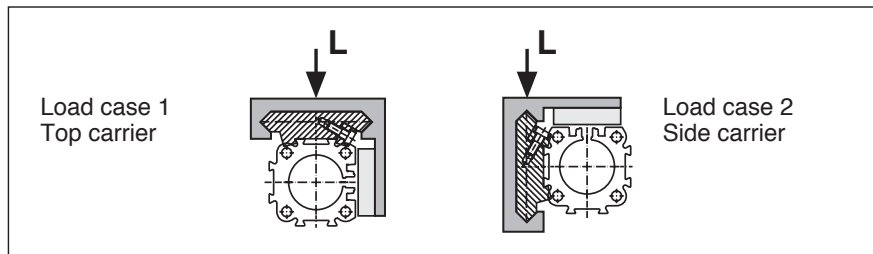
For further mounting elements and options see accessories.

### Dimension Table (mm)

Series	A OSP-E Screw	B OSP-E Screw	J	M	Z	AA	BB	DD	CF	EC	ED	EE	EG	EW	FF	FT	FS	GG	JJ	ZZ
SL25	100	22	117	40.5	M6	162	142	60	72.5	47	12	53	39	30	64	73.5	20	50	120	12
SL32	125	25.5	152	49	M6	205	185	80	91	67	14	62	48	33	84	88	21	64	160	12
SL50	175	33	200	62	M6	284	264	120	117	94	14	75	56	39	110	118.5	26	90	240	16

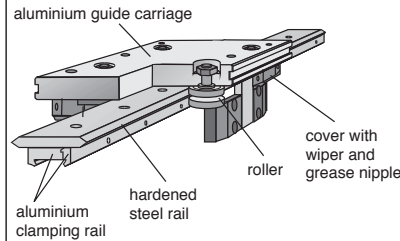
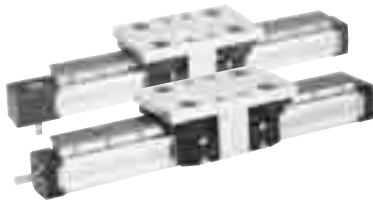
## Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.



## Versions

– for electric linear drive:  
**Series OSP-E Belt**  
**Series OSP-E Screw**



# Roller Guide Powerslide

**OSP**  
 — ORIGA  
 — SYSTEM  
 — PLUS

**Series PS 25 to 50**  
**for Linear Drive**  
 • Series OSP-E Belt\*  
 • Series OSP-E Screw

## Technical Data

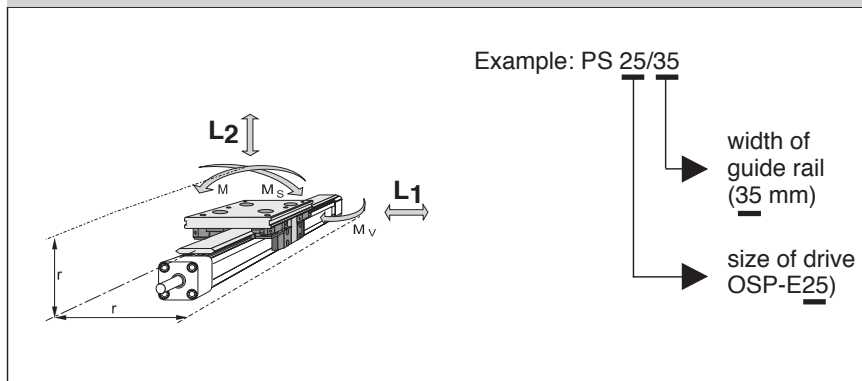
The Table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

For further information and technical data see data sheets for linear drives

## Features:

- Anodised aluminium guide carriage with vee rollers having 2 rows of ball bearings
- Hardened steel guide rail
- Several guide sizes can be used on the same drive
- Corrosion resistance version available on request (only for Series OSP-P)
- Max. speed  $v = 3$  m/s,
- Tough roller cover with wiper and grease nipple
- Any length of stroke up to 3500 mm, (longer strokes on request)

## Loads, forces and moments



\* Series PS for OSP-E Bi-parting version on request

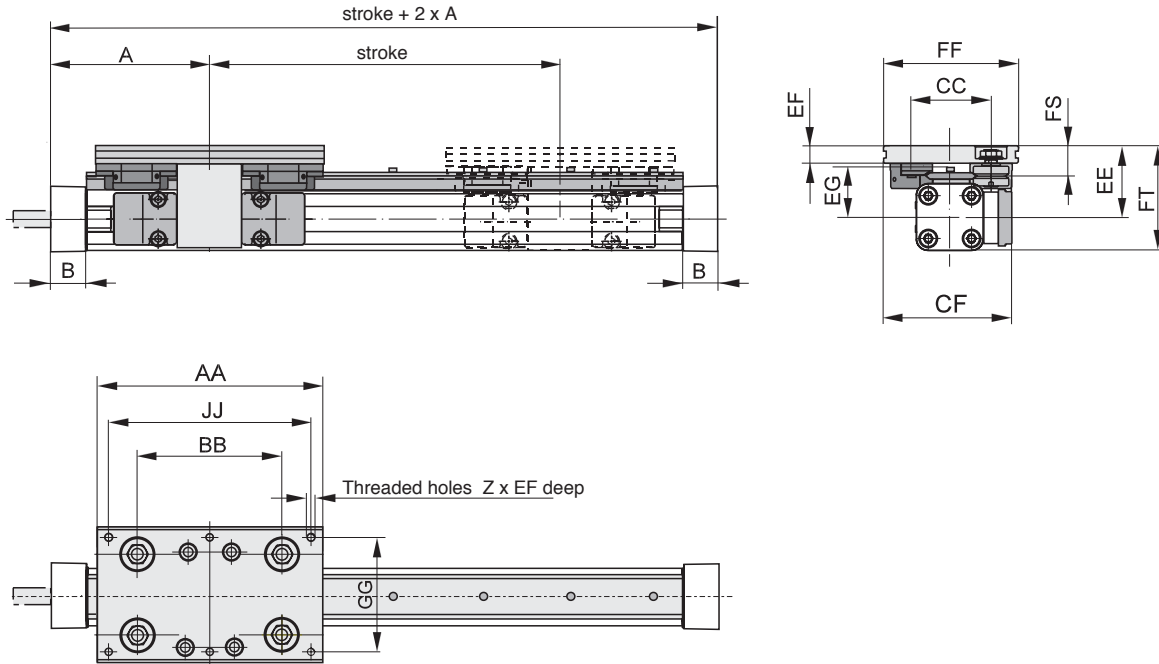
Series	Max. Moments [Nm]			Max. Load [N]	Mass of drive with guide [kg]				Mass* of guide carriage	Order No. Powerslide for [kg]	
	M	Ms	Mv		L <sub>1</sub> , L <sub>2</sub>	with 0 mm stroke	increase per 100 mm stroke	OSP-E Belt		OSP-E Screw	OSP-E* Belt
<b>PS 25/25</b>	63	14	63	910	1.7	1.6	0.4	0.4	0.7	<b>20304</b>	<b>20015</b>
<b>PS 25/35</b>	70	17	70	1010	1.9	1.8	0.4	0.4	0.8	<b>20305</b>	<b>20016</b>
<b>PS 25/44</b>	175	50	175	1190	2.8	2.7	0.5	0.5	1.5	<b>20306</b>	<b>20017</b>
<b>PS 32/35</b>	70	20	70	1400	2.8	2.9	0.6	0.6	0.8	<b>20307</b>	<b>20286</b>
<b>PS 32/44</b>	175	50	175	2300	3.7	3.8	0.7	0.7	1.5	<b>20308</b>	<b>20287</b>
<b>PS 50/60</b>	250	90	250	3000	9.3	8.7	1.5	1.8	2.3	<b>20309</b>	<b>20288</b>
<b>PS 50/76</b>	350	140	350	4000	13.2	12.6	1.8	2.1	4.9	<b>20310</b>	<b>20289</b>

The right to introduce technical modifications is reserved

## Dimensions

### Series OSP-E Screw

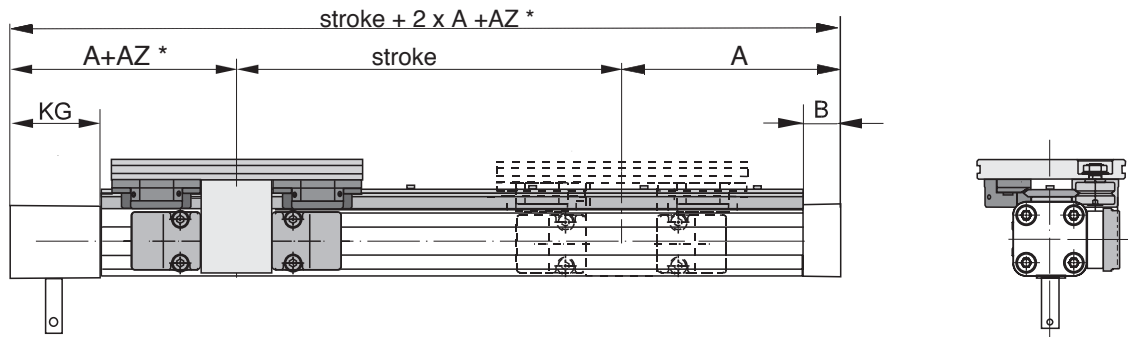
Overall length = stroke + 2 x A (does not include any safety stroke)



## Dimensions

### Series OSP-E Belt

Overall length = stroke + (2 x A) + AZ\* (does not include any safety stroke)



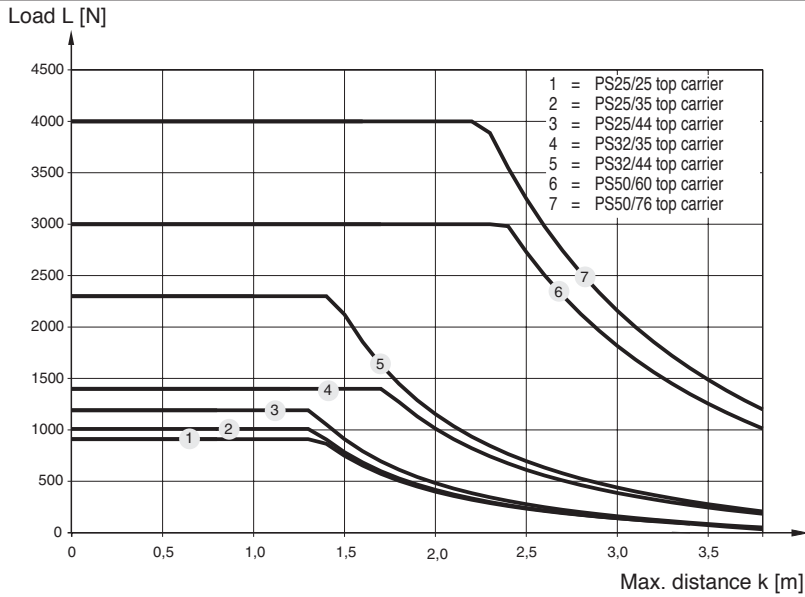
**\* Please note:**

The dimension "AZ" must be added to "A". Stroke length to order is stroke + dimension "AZ" + extra length  
Please also note the effect of dimension "AZ" when retrofitting a guide. Dimension "AZ" should be deducted from the originally supplied stroke (see pages 56 and 89)

## Dimension Table (mm)

Series	A OSP-E Belt	OSP-E Screw	B OSP-E Belt	OSP-E Screw	Z	AA	AZ	BB	CC	CF	EE	EF	EG	FF	FS	FT	GG	JJ	KG
PS 25/25	125	100	22	22	6xM6	145	5	90	47	79.5	53	11	39	80	20	73.5	64	125	57
PS 25/35	125	100	22	22	6xM6	156	10	100	57	89.5	52.5	12.5	37.5	95	21.5	73	80	140	57
PS 25/44	125	100	22	22	6xM8	190	27	118	73	100	58	15	39	116	26	78.5	96	164	57
PS 32/35	150	125	25	25,5	6xM6	156	-	100	57	95.5	58.5	12.5	43.5	95	21.5	84.5	80	140	61
PS 32/44	150	125	25	25,5	6xM8	190	6	118	73	107	64	15	45	116	26	90	96	164	61
PS 50/60	200	175	25	33	6xM8	240	5	167	89	130.5	81	17	61	135	28.5	123.5	115	216	85
PS 50/76	200	175	25	33	6xM10	280	25	178	119	155.5	93	20	64	185	39	135.5	160	250	85

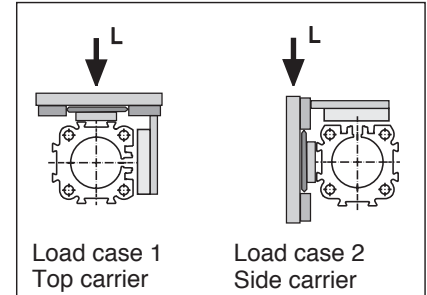
### Load Case 1 – Top Carrier



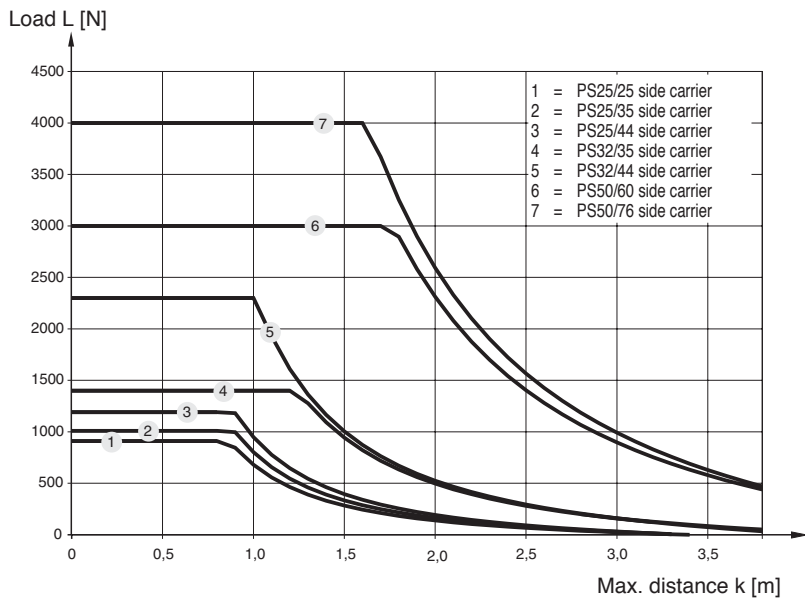
(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)

## Mid-Section Support

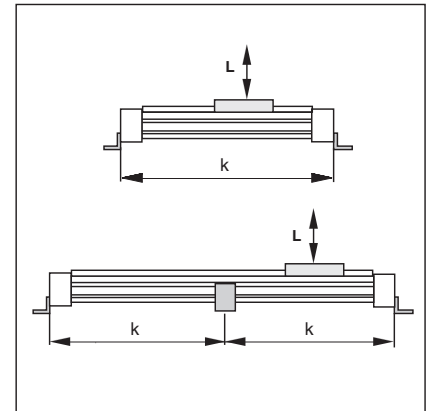
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.



### Load Case 2 – Side Carrier



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)



Other Mountings and Options see page 96.

# Service life

Calculation of service life is achieved in two stages:

- Determination of load factor  $L_F$  from the loads to be carried
- Calculation of service life in km

## 1. Calculation of load factor $L_F$

$$L_F = \frac{M}{M_{\max}} + \frac{M_S}{M_{S \max}} + \frac{M_V}{M_{V \max}} + \frac{L_1}{L_{1 \max}} + \frac{L_2}{L_{2 \max}}$$

with combined loads,  $L_F$  should not exceed the value 1.

# Lubrication

For maximum system life, lubrication of the rollers must be maintained at all times.

Only high quality lithium-based greases should be used.

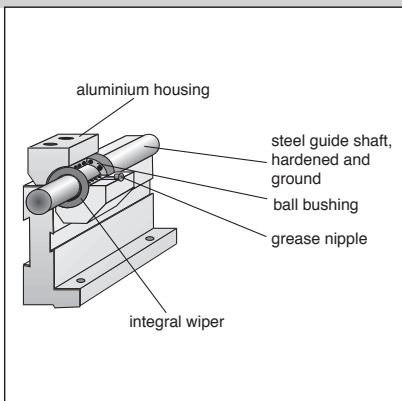
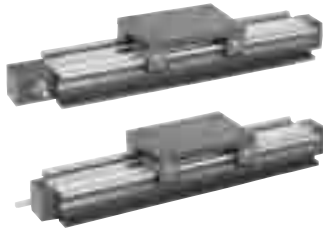
Lubrication intervals are dependent on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

## 2. Calculation of service life

• For PS 25/25, PS 25/35 and PS 32/35	Service life [km] = $\frac{106}{(L_F + 0.02)^3}$
• For PS 25/44, PS 32/44 and PS 50/60:	Service life [km] = $\frac{314}{(L_F + 0.015)^3}$
• For PS 50/76:	Service life [km] = $\frac{680}{(L_F + 0.015)^3}$

## Versions

– Versions for linear drive  
Series OSP-E Belt  
Series OSP-E Screw



# Ball bushing guide GUIDELINE

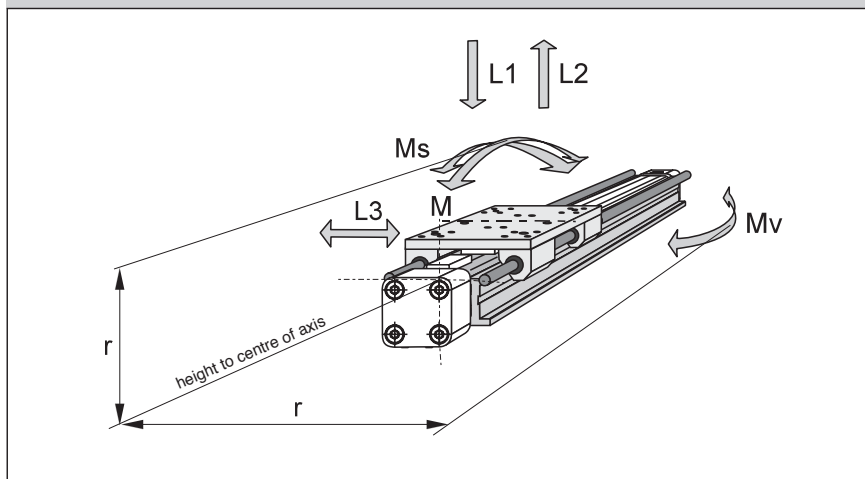
**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series GDL 25 to 50  
for Linear Drive**  
• Series OSP-E Belt \*  
• Series OSP-E Screw

## Technical Data

The Table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

## Loads, forces and moments



## Features

- Anodised aluminium guide rail with four ball bushings
- Hardened and ground steel guide shafts
- Max. speed  $v = 3$  m/s
- Any length of stroke up to 6000 mm (longer strokes on request)

\* Series GDL for OSP-E Bi-parting version on request

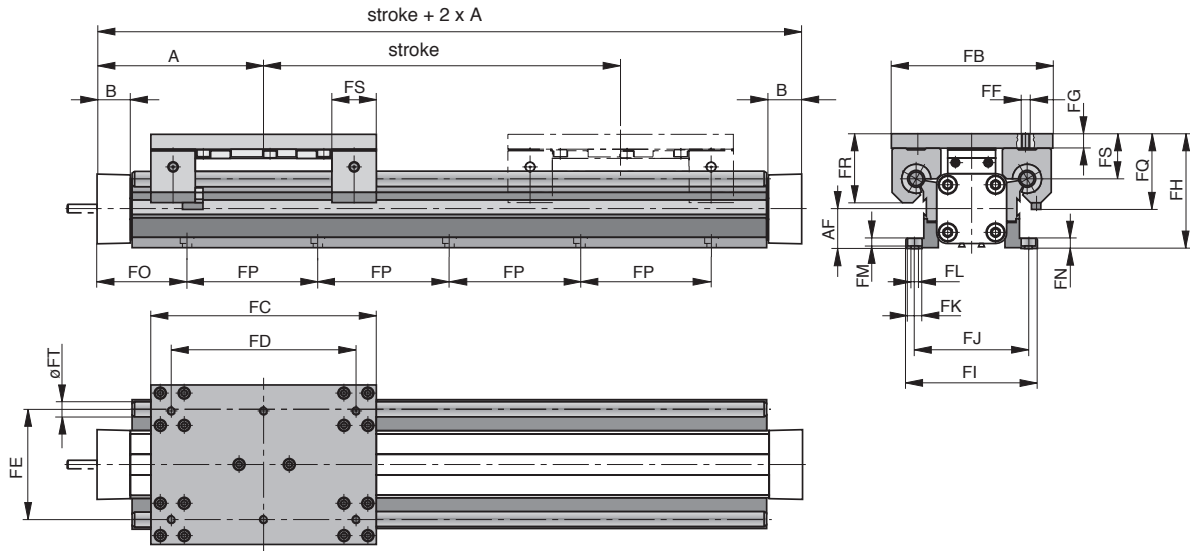
Series	Max. Moments [Nm]			Max. Load [N]			Mass of drive with guide carriage [kg]				Mass of guide carriage [kg]	Order No. GUIDELINE for	
	M	Ms	Mv	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	increase per 0 mm stroke	increase per 100 mm stroke	OSP-E Belt	OSP-E Screw		OSP-E Belt	OSP-E Screw
<b>GDL 25</b>	115	75	90	2500	2100	1650	2.8	2.6	0.6	0.7	1.1	<b>20315</b>	<b>20175</b>
<b>GDL 32</b>	145	90	115	2500	2100	1650	4.1	4.1	0.8	0.9	1.2	<b>20182</b>	<b>20180</b>
<b>GDL 50</b>	500	375	355	8000	6250	4400	10.4	9.8	1.6	2.0	2.2	<b>20316</b>	<b>20183</b>

The right to introduce technical modifications is reserved

**Dimensions**

**Series OSP-E Screw**

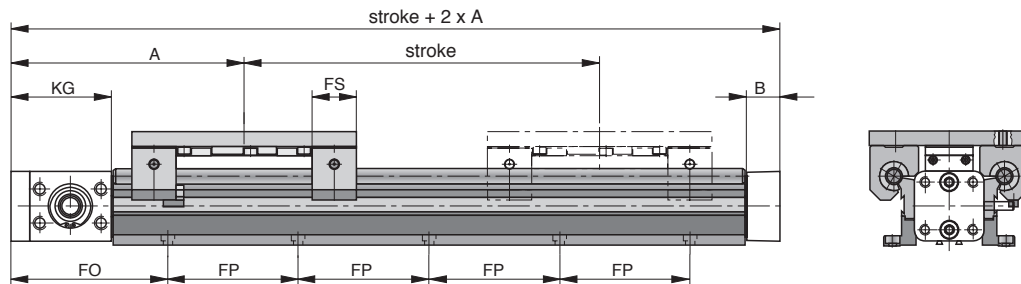
**Overall length = stroke + 2 x A (does not include any safety stroke)**



**Dimensions**

**Series OSP-E Belt**

**Overall length = stroke + 2 x A (does not include any safety stroke)**



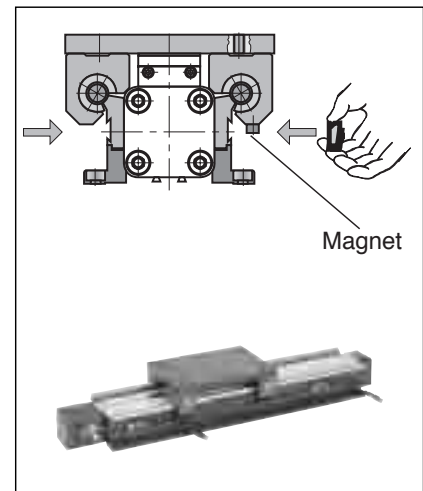
**Note:**

The guideline linear guide must be mounted on a flat surface along its entire length. For the OSP-E linear drive, the motor dimensions must be checked relative to the flat surface.

**Arrangement of proximity sensors:**

Proximity sensors can be fitted anywhere on either side. The magnet can be screwed on to one of the four ball bushing housings from underneath.

**Proximity sensors**  
– see pages 130-132



**Dimension Table (mm)**

Series	A		B		AF	FB	FC	FD	FE	FF	FG	FH	FI	FJ	øFK	øFL	FM	FN	FP	FQ	FR	FS	øFT	FU	KG
	OSP-E Belt	OSP-E Screw	OSP-E Belt	OSP-E Screw																					
GDL 25	125	100	22	22	22	120	145	110	70	M6	11	78	86	73	10.5	6.0	5.7	8	100	56.5	51.5	33.5	12	32	57
GDL 32	150	125	25	25.5	30	120	170	140	80	M6	11	86	98	85	10.5	6.0	5.7	8	100	56.5	51.5	33.5	12	32	61
GDL 50	200	175	25	33	48	180	200	160	120	M8	14	118	134	118	12	7.5	6.8	10	100	73	61	38	16	36	85

X	FO					
	OSP-E Screw			OSP-E Belt		
	E25	E32	E50	E25	E32	E50
00	50.0	75.0	75.0	92.0	117.5	129.5
01	50.5	75.5	75.5	92.5	118.0	130.0
02	51.0	76.0	76.0	93.0	118.5	130.5
03	51.5	76.5	76.5	93.5	119.0	131.0
04	52.0	77.0	77.0	94.0	119.5	131.5
05	52.5	77.5	77.5	94.5	120.0	132.0
06	53.0	78.0	78.0	95.0	120.5	132.5
07	53.5	78.5	78.5	95.5	71.0	133.0
08	54.0	79.0	79.0	96.0	71.5	133.5
09	54.5	79.5	79.5	96.5	72.0	134.0
10	55.0	80.0	80.0	97.0	72.5	134.5
11	55.5	80.5	80.5	97.5	73.0	135.0
12	56.0	81.0	81.0	98.0	73.5	135.5
13	56.5	81.5	81.5	98.5	74.0	136.0
14	57.0	82.0	82.0	99.0	74.5	136.5
15	57.5	82.5	82.5	99.5	75.0	137.0
16	58.0	83.0	83.0	100.0	75.5	137.5
17	58.5	83.5	83.5	100.5	76.0	138.0
18	59.0	84.0	84.0	101.0	76.5	138.5
19	59.5	84.5	84.5	101.5	77.0	139.0
20	60.0	85.0	85.0	102.0	77.5	139.5
21	60.5	85.5	85.5	102.5	78.0	140.0
22	61.0	86.0	86.0	103.0	78.5	140.5
23	61.5	86.5	86.5	103.5	79.0	141.0
24	62.0	87.0	87.0	104.0	79.5	141.5
25	62.5	87.5	87.5	104.5	80.0	142.0
26	63.0	88.0	88.0	105.0	80.5	142.5
27	63.5	88.5	88.5	105.5	81.0	143.0
28	64.0	89.0	89.0	106.0	81.5	143.5
29	64.5	89.5	89.5	106.5	82.0	144.0
30	65.0	90.0	90.0	107.0	82.5	144.5
31	65.5	90.5	90.5	107.5	83.0	95.0
32	66.0	91.0	91.0	108.0	83.5	95.5
33	66.5	91.5	91.5	108.5	84.0	96.0
34	67.0	92.0	92.0	109.0	84.5	96.5
35	67.5	92.5	92.5	109.5	85.0	97.0
36	68.0	93.0	93.0	110.0	85.5	97.5
37	68.5	93.5	93.5	110.5	86.0	98.0
38	69.0	94.0	94.0	111.0	86.5	98.5
39	69.5	94.5	94.5	111.5	87.0	99.0
40	70.0	95.0	95.0	112.0	87.5	99.5
41	70.5	95.5	95.5	112.5	88.0	100.0
42	71.0	96.0	96.0	113.0	88.5	100.5
43	71.5	96.5	96.5	113.5	89.0	101.0
44	72.0	97.0	97.0	114.0	89.5	101.5
45	72.5	97.5	97.5	114.5	90.0	102.0
46	73.0	98.0	98.0	115.0	90.5	102.5
47	73.5	98.5	98.5	115.5	91.0	103.0
48	74.0	99.0	99.0	116.0	91.5	103.5
49	74.5	99.5	99.5	116.5	92.0	104.0

X	FO					
	OSP-E Screw			OSP-E Belt		
	E25	E32	E50	E25	E32	E50
50	75.0	50.0	50.0	67.0	92.5	104.5
51	75.5	50.5	50.5	67.5	93.0	105.0
52	76.0	51.0	51.0	68.0	93.5	105.5
53	76.5	51.5	51.5	68.5	94.0	106.0
54	77.0	52.0	52.0	69.0	94.5	106.5
55	77.5	52.5	52.5	69.5	95.0	107.0
56	78.0	53.0	53.0	70.0	95.5	107.5
57	78.5	53.5	53.5	70.5	96.0	108.0
58	79.0	54.0	54.0	71.0	96.5	108.5
59	79.5	54.5	54.5	71.5	97.0	109.0
60	80.0	55.0	55.0	72.0	97.5	109.5
61	80.5	55.5	55.5	72.5	98.0	110.0
62	81.0	56.0	56.0	73.0	98.5	110.5
63	81.5	56.5	56.5	73.5	99.0	111.0
64	82.0	57.0	57.0	74.0	99.5	111.5
65	82.5	57.5	57.5	74.5	100.0	112.0
66	83.0	58.0	58.0	75.0	100.5	112.5
67	83.5	58.5	58.5	75.5	101.0	113.0
68	84.0	59.0	59.0	76.0	101.5	113.5
69	84.5	59.5	59.5	76.5	102.0	114.0
70	85.0	60.0	60.0	77.0	102.5	114.5
71	85.5	60.5	60.5	77.5	103.0	115.0
72	86.0	61.0	61.0	78.0	103.5	115.5
73	86.5	61.5	61.5	78.5	104.0	116.0
74	87.0	62.0	62.0	79.0	104.5	116.5
75	87.5	62.5	62.5	79.5	105.0	117.0
76	88.0	63.0	63.0	80.0	105.5	117.5
77	88.5	63.5	63.5	80.5	106.0	118.0
78	89.0	64.0	64.0	81.0	106.5	118.5
79	89.5	64.5	64.5	81.5	107.0	119.0
80	90.0	65.0	65.0	82.0	107.5	119.5
81	90.5	65.5	65.5	82.5	108.0	120.0
82	91.0	66.0	66.0	83.0	108.5	120.5
83	91.5	66.5	66.5	83.5	109.0	121.0
84	92.0	67.0	67.0	84.0	109.5	121.5
85	92.5	67.5	67.5	84.5	110.0	122.0
86	93.0	68.0	68.0	85.0	110.5	122.5
87	93.5	68.5	68.5	85.5	111.0	123.0
88	94.0	69.0	69.0	86.0	111.5	123.5
89	94.5	69.5	69.5	86.5	112.0	124.0
90	95.0	70.0	70.0	87.0	112.5	124.5
91	95.5	70.5	70.5	87.5	113.0	125.0
92	96.0	71.0	71.0	88.0	113.5	125.5
93	96.5	71.5	71.5	88.5	114.0	126.0
94	97.0	72.0	72.0	89.0	114.5	126.5
95	97.5	72.5	72.5	89.5	115.0	127.0
96	98.0	73.0	73.0	90.0	115.5	127.5
97	98.5	73.5	73.5	90.5	116.0	128.0
98	99.0	74.0	74.0	91.0	116.5	128.5
99	99.5	74.5	74.5	91.5	117.0	129.0

**Note:**

The dimension FO is derived from the last two digits of the stroke:

**Example:**

 Stroke 15 **25** mm


For a cylinder OSP-E25 the adjacent table indicates that for x=25mm:

**FO = 62,5 mm**



## System Life

The calculation for expected service life is achieved in three steps:

- Determination of the load factor  $L_F$ , inserting actual values into the adjacent equation
- Determination of guidance constant  $K_F$
- Calculation of the service life in km

## Lubrication

For maximum system life, lubrication of the ball bushings must be maintained at all times.

Only high quality Lithium based greases should be used.

Lubrication intervals are dependant on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

### 1. Calculation of load factor $L_F$

$$L_F = \frac{M}{M_{\max}} + \frac{M_S}{M_{S \max}} + \frac{M_V}{M_{V \max}} + \frac{L_1}{L_{1 \max}} + \frac{L_2}{L_{2 \max}} + \frac{L_3}{L_{3 \max}}$$

with combined loads,  $L_F$  should not exceed the value 1.

### 2. Guidance constant $K_F$

Installation	guidance constant $K_F$	
	GDL 25, GDL 32	GDL 40, GDL 50
Horizontal	200	210
Sideways	250	320
Vertical	90	120

### 3. Service life calculation

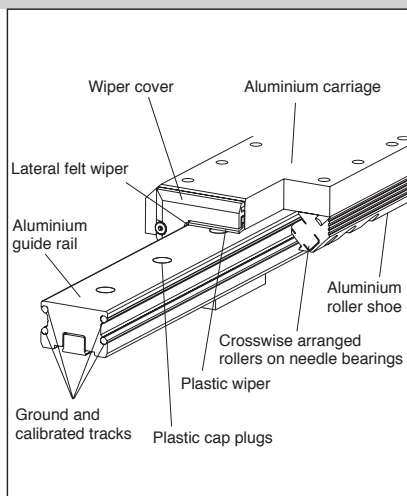
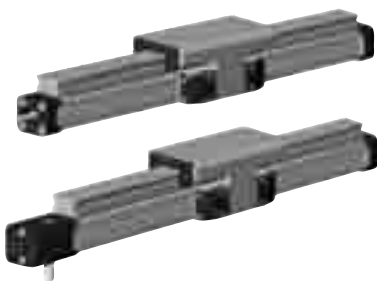
Approximate service life is calculated using the following equation:

$$\text{Service life [km]} = \frac{K_F}{L_F^3}$$

## Versions

### Standard versions

– for electric Linear Drive:  
Series OSP-E Belt  
Series OSP-E Screw



# Aluminium Roller Guide PROLINE

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series PL 25 to 50  
for Linear Drive**

- Series OSP-E Belt \*
- Series OSP-E Screw

## Technical Data

The table shows the maximum permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M}{M_{\max}} + \frac{M_s}{M_{s \max}} + \frac{M_v}{M_{v \max}} + \frac{L_1}{L_{1 \max}} + \frac{L_2}{L_{2 \max}} \leq 1$$

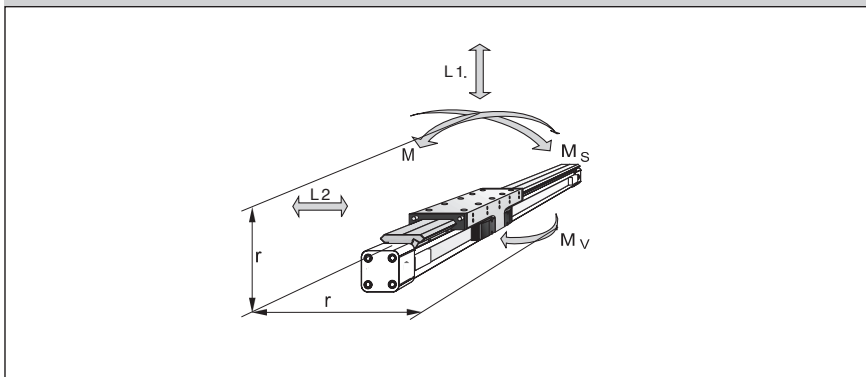
The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

**With a load factor of  $\leq 1$ , the service life is 5000 km.  
The sum of the loads should not exceed  $>1$**

## Features:

- High precision
- High velocities (10 m/s)
- Smooth operation - low noise
- Integrated wiper system
- Long life lubrication
- Compact dimensions - compatible to Slideline plain bearing guide
- Stainless steel version available on request
- Any length of stroke up to 3750 mm  
The maximum stroke lengths of drives OSP-E..B and OSP-E..S must be observed.

## Loads, Forces and Moments



## OSP-E Belt:

for position of guides see page 128.

For further information and technical data see data sheets for linear drives OSP-E Belt (page 51) and OSP-E Ball Screw (page 83)

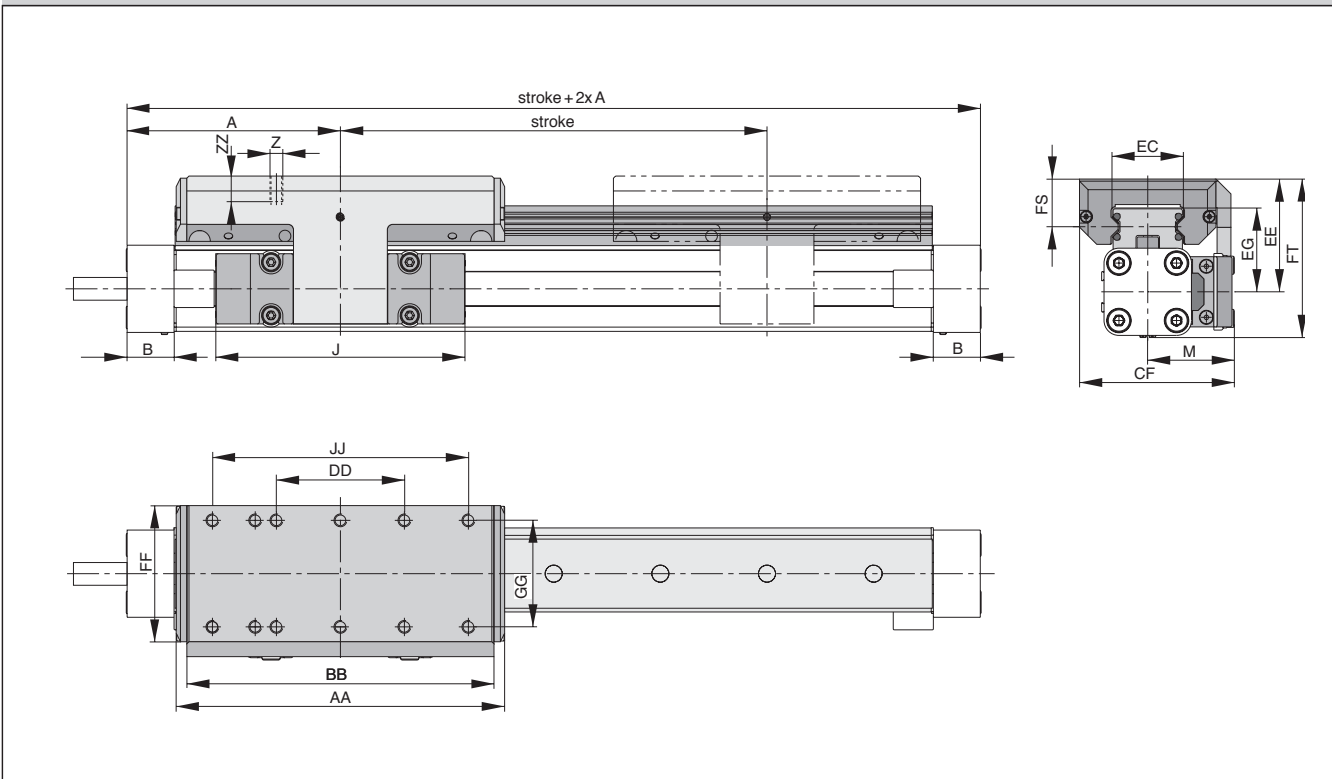
\* Series PL for OSP-E Bi-parting version on request

Series	Max. Moments [Nm]			Max. Load [N]	Mass of drive with guide [kg]				Mass guide-carriage [kg]	Order No. PROLINE <sup>1)</sup> for	
	M	Ms	Mv		L1, L2	OSP-E Belt	OSP-E Screw	increase per 0 mm stroke		increase per 100 mm stroke	OSP-E Belt*
PL 25	44	19	44	986	1.9	1.8	0.33	0.40	0.75	20874	20856
PL 32	84	33	84	1348	3.6	3.7	0.58	0.70	1.18	20875	20857
PL 50	287	128	287	3582	8.9	8.8	1.00	1.32	2.50	20876	20859

<sup>1)</sup> Stainless steel version on request

The right to introduce technical modifications is reserved

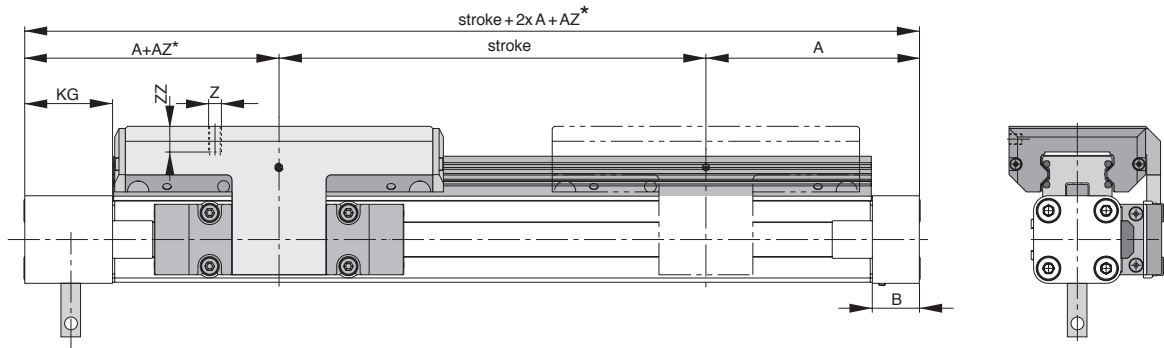
## Dimensions Series OSP-E-Screw PL25, PL32, PL50



**Dimension Table (mm) OSP-E-Screw PL25, PL32, PL50**

Series	A	B	J	M	Z	AA	BB	DD	CF	EC	EE	EG	FF	FS	FT	GG	JJ	ZZ
<b>PL25</b>	100	22	117	40.5	M6	154	144	60	72.5	32.5	53	39	64	23	73.5	50	120	12
<b>PL32</b>	125	25.5	152	49	M6	197	187	80	91	42	62	48	84	25	88	64	160	12
<b>PL50</b>	175	33	200	62	M6	276	266	120	117	63	75	57	110	29	118.5	90	240	16

## Dimensions Series OSP-E-Belt PL25, PL32, PL50



**\* Please note:**

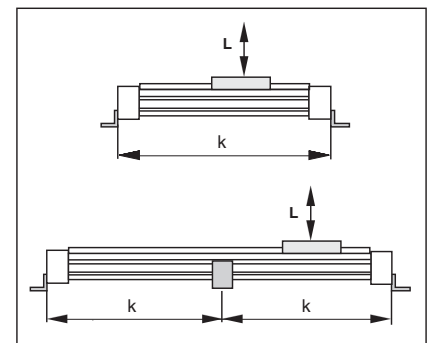
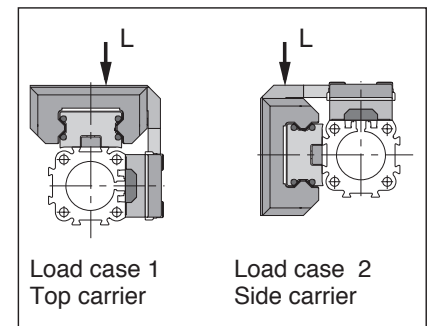
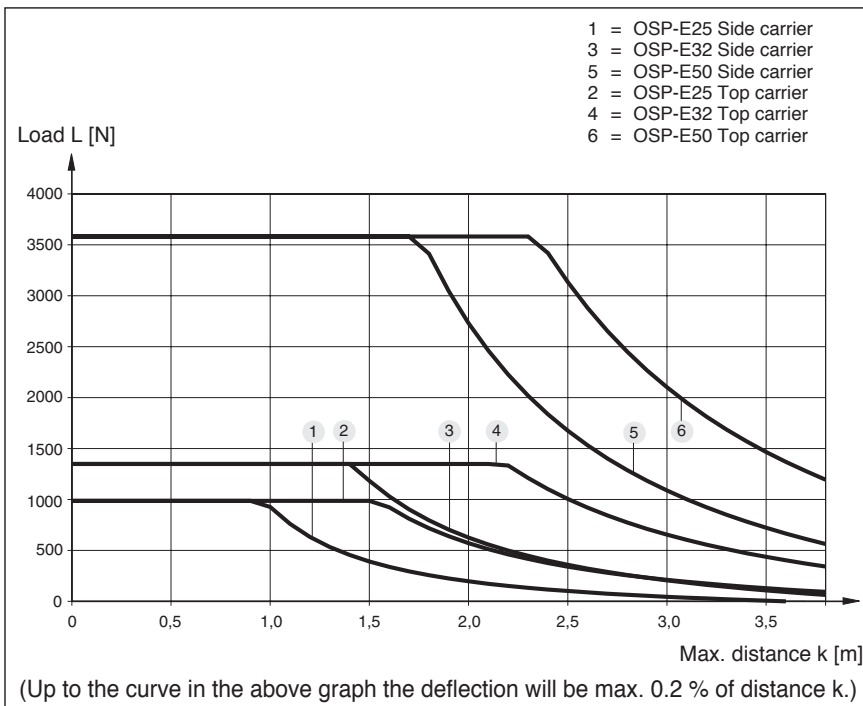
The dimension "AZ" must be added to "A". Stroke length to order is stroke + dimension "AZ" + safety clearance (See data sheet 1.20.002E-6, 1.25.002E-6)  
Please also note the effect of dimension "AZ" when retrofitting a guide – contact your local HOERBIGER-ORIGA technical support department.

### Dimension Table (mm) Series OSP-E-Belt PL25, PL32, PL50

Serie	A	B	J	M	Z	AA	AZ	BB	DD	CF	EC	EE	EG	FF	FS	FT	GG	JJ	KG	ZZ
PL25	125	22	117	40.5	M6	154	10	144	60	72.5	32.5	53	39	64	23	73.5	50	120	57	12
PL32	150	25	152	49	M6	197	11	187	80	91	42	62	48	84	25	88	64	160	61	12
PL50	200	25	200	62	M6	276	24	266	120	117	63	75	57	110	29	118.5	90	240	85	16

## Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.



# Linear Drive Accessories

## Magnetic Switches

Type RS-  
Type ES-



For electrical sensing of the carrier position, e.g. at the end positions, magnetic switches may be fitted.

Position sensing is contactless and is based on magnets fitted as standard to the carrier. A yellow LED indicates operating status.

The universal magnetic switches are suitable for all HOERBIGER-ORIGA OSP-Actuators and aluminum profile rod type cylinders.

**Piston speed and switching distance affect signal duration and should be considered in conjunction with the minimum reaction time of ancillary control equipment.**

$$\text{Min. reaction time} = \frac{\text{Switching distance}}{\text{Piston speed}}$$



Characteristics				
Characteristics	Symbol	Unit	Description	
<b>Electrical Characteristics</b>		<b>Type RS</b>		<b>Type ES</b>
Operating voltage	$U_B$	V	10-240 AC/DC (NO) 10-150 AC/DC (NC) 10-70 AC/DC (NO/NC)**	10-30 DC
Connection			Two wire	Three wire
Switching function			Normally open (NO) closing Normally closed (NC) opening	PNP closing NPN
Max. permanent switching current	$I_{Dmax}$	mA	200	200
Max. switching capacity		VA (W)	10 VA	—
Residual voltage at $I_{Lmax}$		V	< 3	< 3
Max. current consumption		mA	—	< 20
Status indicator			LED, yellow	
Typical switching time		ms	on: <2	on: <2
Switch-off delay		ms	—	ca. 25
Pole reversal			LED does not work	—
Pole reversal protection			—	Built in
Short circuit protection			—	Built in
Switchable capacity		$\mu F$	0.1 at 100 $\Omega$ , 24 VDC	
Switching distance		mm	ca. 15	ca. 15
Hysteresis for OSP		mm	ca. 8	ca. 3
<b>Mechanical Characteristics</b>				
Housing			Macrolon, grey	
Insulation class			F to VDE 0580	
Connection *)	Type RS-K		Cable, 5 m long	
	Type RS-S		3-pole Connector M8, Cable length ca. 100mm**	3-pole Connector M8, Cable length ca. 100mm
Cable cross section (highly flexible)		mm <sup>2</sup>	2 x 0.14	3 x 0.14
Cable (highly flexible)*)			PVC	PUR, black
Wire colours			brown AC/DC+ blue or white signal output	Pin 1 = +, brown Pin 3 = 0V, blue Pin 4 = Signal black or white
Minimum permissible bending radius		mm	$\geq 20$	
of cable	fixed	mm	$\geq 70$	
	moving	mm	$\geq 70$	
Switching point accuracy		mm	$\pm 0.2$	
Temperature range *) <sup>1)</sup>	$\vartheta_{min}$ $\vartheta_{max}$	$^{\circ}C$ $^{\circ}C$	-25 other temperature ranges +80 on request	
Service life, switching cycles			3 x 10 <sup>6</sup> up to 6 x 10 <sup>6</sup>	Theoretically unlimited
Electrical protection		IP	67 according to DIN EN 60529	
Shock resistance		m/s <sup>2</sup>	100 (contact switches)	500
Weight (mass)		kg	0.12	

\*) other versions on request

\*\*) RS with connector (RS-S)

<sup>1)</sup> for the magnetic switch temperature range, please take into account the surface temperature and the self-heating properties of the linear drive.

The right to introduce technical modifications is reserved

## Type RS

In the type RS contact is made by a mechanical **reed switch** encapsulated in glass.  
 Direct connection with 2-pole cable, 5m long, open ended (**Type RS-K**).  
 With 3-pole connector M8, cable length ca. 100 mm (**Type RS-S**).

## Type ES

In the type ES contact is made by an **electronic switch** – without bounce or wear and protected from pole reversal. The output is short circuit proof and insensitive to shocks and vibrations. Connection is by 3-pole connector for easy disconnection.

Fitted with connection cable 100 mm long with connector.

**A 5 m cable with connector and open end can be ordered separately, or use the Order No. for the complete Type ES-S or RS-S with 5 m cable.**

## Magnetic Switches RS and ES

### Electrical Service Life Protective Measures

Type RS magnetic switches are sensitive to excessive currents and inductions. With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

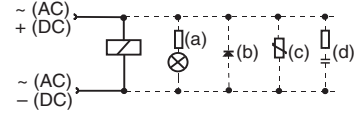
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

In the switching of inductive loads such as relays, solenoid valves and lifting magnets, voltage peaks

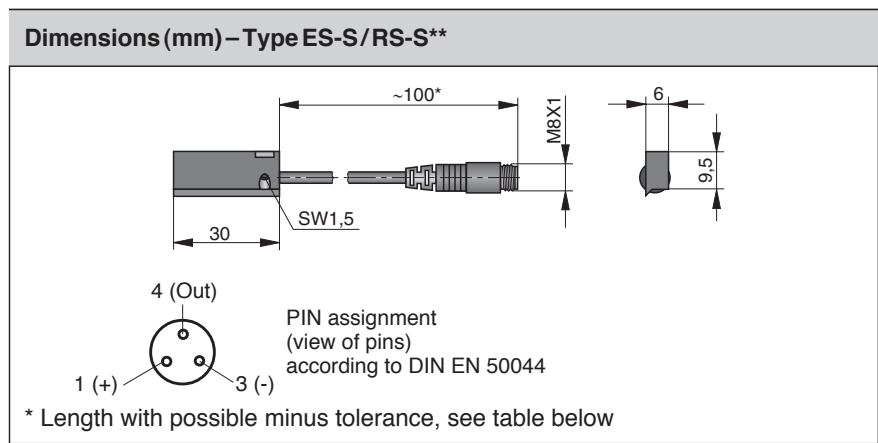
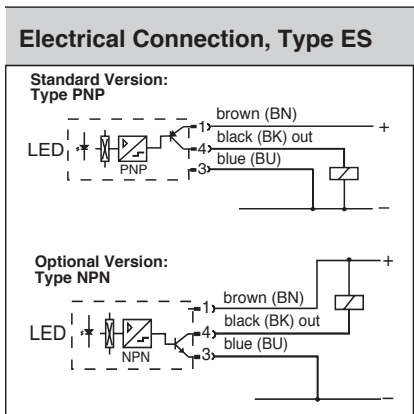
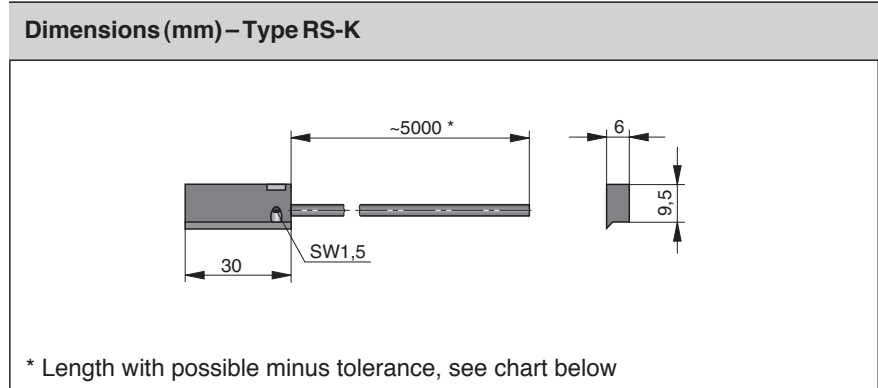
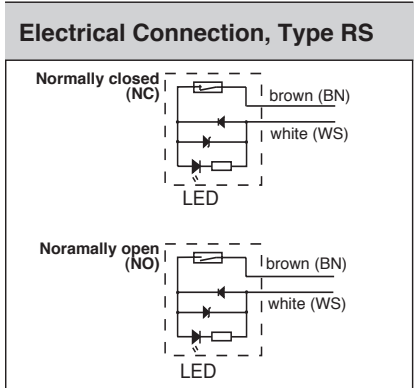
(transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

### Connection Examples

- Load with protective circuits
- (a) Protective resistor for light bulb
  - (b) Freewheel diode on inductivity
  - (c) Varistor on inductivity
  - (d) RC element on inductivity



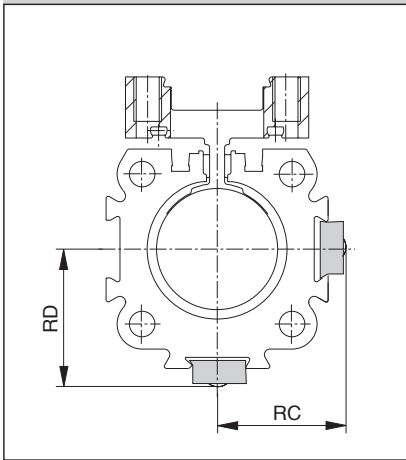
For the type ES, external protective circuits are not normally needed.



### Length of connection cable with length tolerance

Sensor Order-No.	Nominal cable length	Length tolerance
KL3045	5000 mm	-50 mm
KL3047	100 mm	-20 mm
KL3048	5000 mm	-50 mm
KL3054	100 mm	-20 mm
KL3060	145 mm	±5 mm
KL3087	100 mm	-20 mm

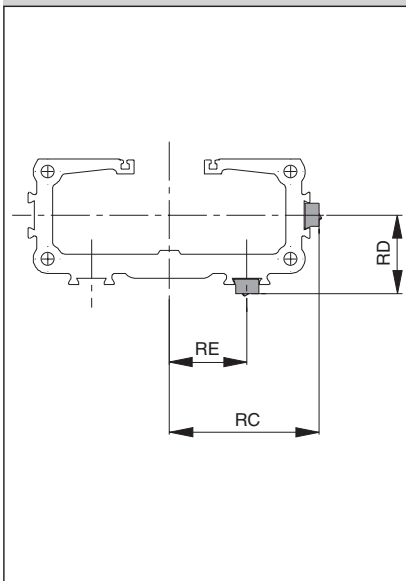
### Dimensions – Series OSP-E



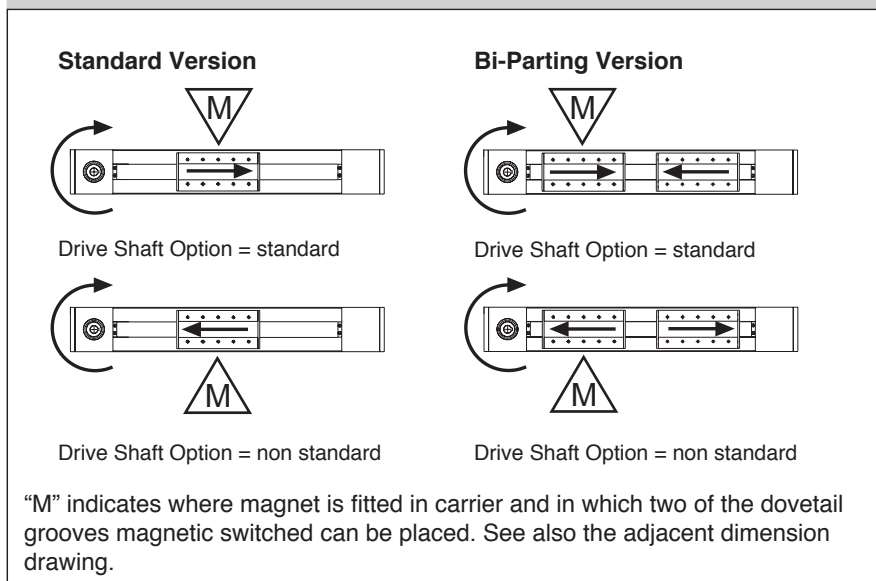
### Dimension Table (mm) and Order Instructions

Series	Dimension			RS closer Normally open	Order No. RS opener Normally closed	ES	
	RC	RD	RE			PNP	NPN
OSP-E25	25	27	–	Type: RS-K KL3045 Type: RS-S KL3047	Type: RS-K KL 3048 Type: RS-S KL 3087	Type: ES-S KL 3054	Type: ES-S KL 3060
OSP-E32	31	34	–				
OSP-E50	43	48	–				
OSP-E25BHD	51	27	26				
OSP-E32BHD	63	34	32				
OSP-E50BHD	87	48	34				
Cable 5 m with connector and with open end for magnetic switch Typ ES-S/RS-S					4041		

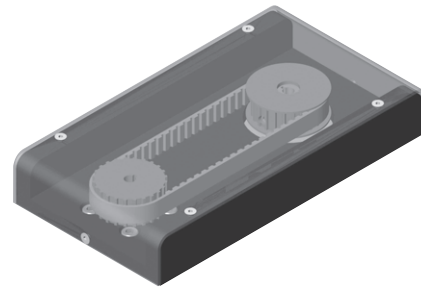
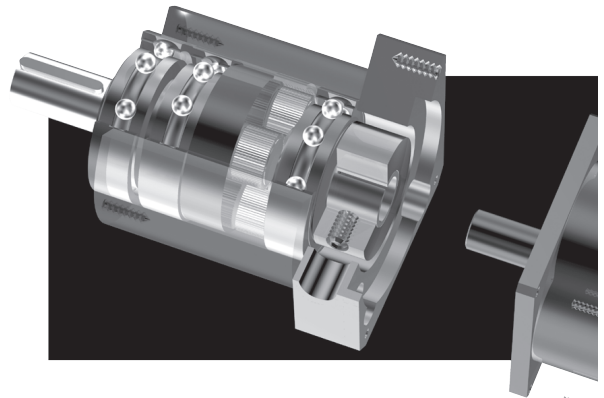
### Dimensions – Series OSP-E..BHD



### Positioning of Sensors/Permanent Magnets – OSP-E..BHD



# Gearboxes & Motor Mounts



## Contents

Description	Page
Gearbox for BHD Series	134-136
Gearbox for OSP-E Belt	137-140
Motor Mounts	141-142
Belt Gear for OSP-E..S, SBR	143



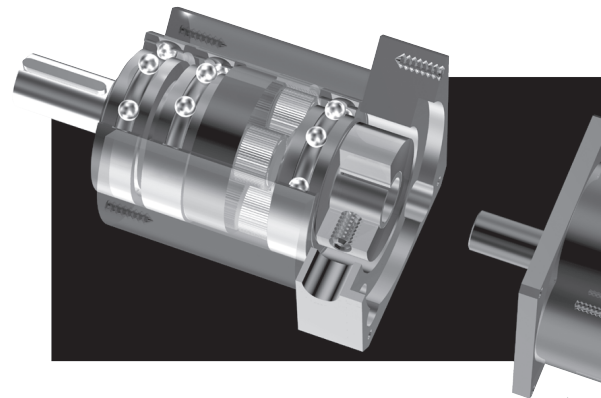
# PLANETARY GEARBOX FOR THE OSP-E BHD HEAVY DUTY ACTUATOR

A gearbox-mounting flange allows the LP series gearbox to be mounted directly to the actuator, eliminating the need for a coupling.

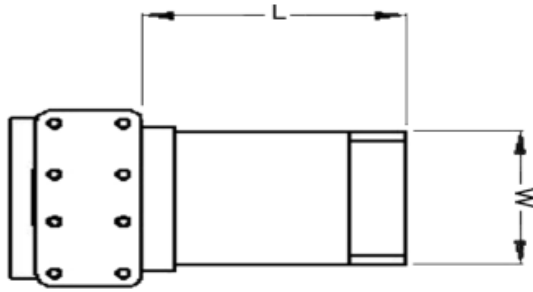
Motor mounting flange and reducing bush are custom made to suit the motor.

**Please specify the motor manufacturer and model when ordering.**

**Note maximum shaft diameter below!**



OSP-E BHD Heavy Duty Belt Gearbox				LP070 (BHD25)	Series LP090 (BHD32)	LP120 (BHD50)
Nominal Output Torque	T2n	Nm (lb-in)	5:1, 25:1, 50:1	32 (283)	80 (708)	200 (1770)
			3:1, 10:1, 15:1, 30:1, 100:1	15 (133)	35 (310)	90 (797)
Maximum Acceleration Torque	T2B	Nm (lb-in)	5:1, 25:1, 50:1	32 (283)	80 (708)	200 (1770)
			3:1, 10:1, 15:1, 30:1, 100:1	29 (257)	72 (637)	180 (1593)
Nominal Speed	n1max	RPM		3700	3400	2600
Maximum Speed	n1n	RPM		6000	6000	4800
Standard Output Backlash	j	arcmin	1-stage: 3, 5, 10	< 12		
			2-stage: 15, 25, 30, 50, 100	< 15		
Weight	m	kg (lb)	1-stage	1.9 (4.2)	4.1 (9)	9 (19.8)
			2-stage	2.2 (4.9)	5.1 (11.2)	11.2 (24.7)
Mass Moment of Inertia	J1	kgcm <sup>2</sup> (lb-in <sup>2</sup> )	1-stage	0.28 (0.096)	1.77 (0.604)	5.42 (1.85)
			2-stage	0.28 (0.096)	1.78 (0.608)	5.49 (1.874)
Maximum Motor Shaft Diameter		mm (ins)		16 0.6299	24 0.9448	32 1.2598
Ratios Available			1-stage: 3, 5, 10 2-stage: 15, 25, 30, 50, 100			
Efficiency at Load			1-stage: >97% 2-stage: >95%			
Average Lifetime			20,000 hours			
Lubrication			Flow Grease			
Protection Rating			IP 64			



Type	Available Ratio	L*	W*	Weight Kg
<b>LP 070</b>				
Single Stage	3, 5, 10	96/103	70	3.3
Double Stage	15, 25, 30, 50, 100	116/123	70	3.6
<b>LP 090</b>				
Single Stage	3, 5, 10	115/125	90	5.5
Double Stage	15, 25, 30, 50, 100	141.5/151.5	90	6.5
<b>LP 120</b>				
Single Stage	3, 5, 10	148/158	120	10.4
Double Stage	15, 25, 30, 50, 100	180.5/190.5	120	12.6

L\* Overall length will vary depending on the motor

W\* Standard dimension may vary depending on the motor

Above dimensions are for reference only. Consult factory for further information on all Gear Heads.

## Order Number for OSP-E BHD Gearbox

**ALWAYS STATE EXACT MOTORTYPE WHEN ORDERING GEAR!**

Description		Reduction	Order Number
Planetary Gear  LP70 for BHD25	LP 070 1-stage	i=3:1	80001240
	LP 070 1-stage	i=5:1	80001252
	LP 070 1-stage	i=10:1	80001253
	LP 070 2-stage	i=15:1	80001242
	LP 070 2-stage	i=25:1	80001254
	LP 070 2-stage	i=30:1	80001243
	LP 070 2-stage	i=50:1	80001255
	LP 070 2-stage	i=100:1	80001256
LP90 for BHD32	LP 090 1-stage	i=3:1	80001244
	LP 090 1-stage	i=5:1	80001216
	LP 090 1-stage	i=10:1	80001257
	LP 090 2-stage	i=15:1	80001245
	LP 090 2-stage	i=25:1	80001258
	LP 090 2-stage	i=30:1	80001246
	LP 090 2-stage	i=50:1	80001259
	LP 090 2-stage	i=100:1	80001260
LP120 for BHD50	LP 120 1-stage	i=3:1	80001247
	LP 120 1-stage	i=5:1	80001250
	LP 120 1-stage	i=10:1	80001261
	LP 120 2-stage	i=15:1	80001248
	LP 120 2-stage	i=25:1	80001262
	LP 120 2-stage	i=30:1	80001249
	LP 120 2-stage	i=50:1	80001263
	LP 120 2-stage	i=100:1	80001264

## Gearbox Mounting Flanges - See New Ordering Instructions Position 4 for Shaft Type

		Shaft Type	
Gearbox flange to mount the LP series to BHD	LP70 for BHD25	K,L,M,N	12311
	LP90 for BHD32	K,L,M,N	12312
	LP120 for BHD50	K,L,M,N	12313

# PLANETARY GEARBOX FOR THE OSP-E BELT ACTUATOR

A gearbox mounts directly to the actuator, eliminating the need for a coupling.

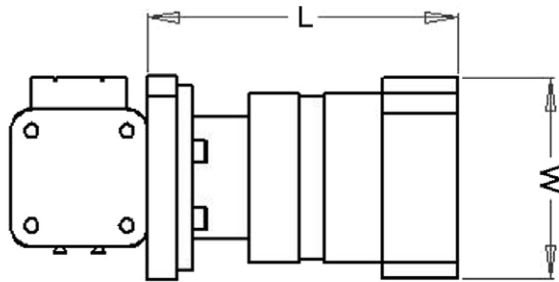
A simple adaptor flange and bushing allows NEMA 23 and 34 frame motors to be fitted.

The gearbox input shaft connects directly to the motor shaft and is secured using a split-clamping ring.



OSP-E Belt Gearbox			Series EG	
Nominal Output Torque	T2n	Nm (lb-in)	3:1, 10:1	14 (124)
			5:1, 7:1	26 (230)
Maximum Acceleration Torque	T2B	Nm (lb-in)	3:1, 10:1	25 (221)
			5:1, 7:1	40 (354)
Nominal Speed	n1max	RPM		3500
Maximum Speed	n1n	RPM		6000
Standard Output Backlash	j	arcmin	3:1 - 10:1	< 10
Weight	m	kg (lb)	1-stage	1.0 (2.2)
Mass Moment of Inertia	J1	kgcm <sup>2</sup> (lb-in <sup>2</sup> )	i = 3	0.176 (0.06)
			i = 5	0.15 (0.051)
			i = 7,10	0.138 (0.047)
Ratios Available			1-stage: 3, 4, 5, 7, 10	
Efficiency at Load			1-stage: 90%	
Average Lifetime			> 20,000 hours	
Lubrication			Mineral Grease EP0	
Protection Rating			IP 64	
Operating Temperature			-20°C to 90°C	

## Planetary Gearbox Dimensions



Actuator and Type	Available Ratio	L Max	W Max	Weight Kg
<b>25 Belt/Ballscrew</b>				
Nema 23	3, 5, 7, 10	108.3	70	1.3
Nema 34	3, 5, 7, 10	115.8	85	1.46
SGMPH 01	3, 5, 7, 10	110.8	70	1.3
SGMPH 02/04	3, 5, 7, 10	115.8	85	1.46
<b>32 Belt/Ballscrew</b>				
Nema 23	3, 5, 7, 10	109.8	70	1.3
Nema 34	3, 5, 7, 10	117.3	85	1.46
SGMPH 01	3, 5, 7, 10	112.3	70	1.3
SGMPH 02/04	3, 5, 7, 10	117.3	85	1.46
<b>50 Belt/Ballscrew</b>				
Nema 23	3, 5, 7, 10	111.8	70	1.3
Nema 34	3, 5, 7, 10	119.3	85	1.46
SGMPH 01	3, 5, 7, 10	114.3	70	1.3
SGMPH 02/04	3, 5, 7, 10	119.3	85	1.46

Gam Gear Heads have hollow shafts and do not require gearbox mounts

Gam Gear Heads are not to be used with BHD model actuators

Above dimensions are for reference only. Consult factory for further information on all Gear Heads.

## Order Number for OSP-E Belt and Ballscrew Gearbox

Order Numbers	Description
<b>25 Belt Actuator</b>	
EG00003-B2523A	Gearbox 3:1 Ratio 25 Belt .250 motor shaft
EG00005-B2523A	Gearbox 5:1 Ratio 25 Belt .250 motor shaft
EG00007-B2523A	Gearbox 7:1 Ratio 25 Belt .250 motor shaft
EG00010-B2523A	Gearbox 10:1 Ratio 25 Belt .250 motor shaft
EG00003-B2523	Gearbox 3:1 Ratio 25 Belt .375 motor shaft
EG00005-B2523	Gearbox 5:1 Ratio 25 Belt .375 motor shaft
EG00007-B2523	Gearbox 7:1 Ratio 25 Belt .375 motor shaft
EG00010-B2523	Gearbox 10:1 Ratio 25 Belt .375 motor shaft
EG00003-B2534	Gearbox 3:1 Ratio 25 Belt .375 motor shaft
EG00005-B2534	Gearbox 5:1 Ratio 25 Belt .375 motor shaft
EG00007-B2534	Gearbox 7:1 Ratio 25 Belt .375 motor shaft
EG00010-B2534	Gearbox 10:1 Ratio 25 Belt .375 motor shaft
<b>32 Belt Actuator</b>	
EG00003-B3223A	Gearbox 3:1 Ratio 32 Belt .250 motor shaft
EG00005-B3223A	Gearbox 5:1 Ratio 32 Belt .250 motor shaft
EG00007-B3223A	Gearbox 7:1 Ratio 32 Belt .250 motor shaft
EG00010-B3223A	Gearbox 10:1 Ratio 32 Belt .250 motor shaft
EG00003-B3223	Gearbox 3:1 Ratio 32 Belt .375 motor shaft
EG00005-B3223	Gearbox 5:1 Ratio 32 Belt .375 motor shaft
EG00007-B3223	Gearbox 7:1 Ratio 32 Belt .375 motor shaft
EG00010-B3223	Gearbox 10:1 Ratio 32 Belt .375 motor shaft
EG00003-B3234	Gearbox 3:1 Ratio 32 Belt .375 motor shaft
EG00005-B3234	Gearbox 5:1 Ratio 32 Belt .375 motor shaft
EG00007-B3234	Gearbox 7:1 Ratio 32 Belt .375 motor shaft
EG00010-B3234	Gearbox 10:1 Ratio 32 Belt .375 motor shaft
<b>50 Belt Actuator</b>	
EG00003-B5023	Gearbox 3:1 Ratio 50 Belt .375 motor shaft
EG00005-B5023	Gearbox 5:1 Ratio 50 Belt .375 motor shaft
EG00007-B5023	Gearbox 7:1 Ratio 50 Belt .375 motor shaft
EG00010-B5023	Gearbox 10:1 Ratio 50 Belt .375 motor shaft
EG00003-B5034	Gearbox 3:1 Ratio 50 Belt .375 motor shaft
EG00005-B5034	Gearbox 5:1 Ratio 50 Belt .375 motor shaft
EG00007-B5034	Gearbox 7:1 Ratio 50 Belt .375 motor shaft
EG00010-B5034	Gearbox 10:1 Ratio 50 Belt .375 motor shaft

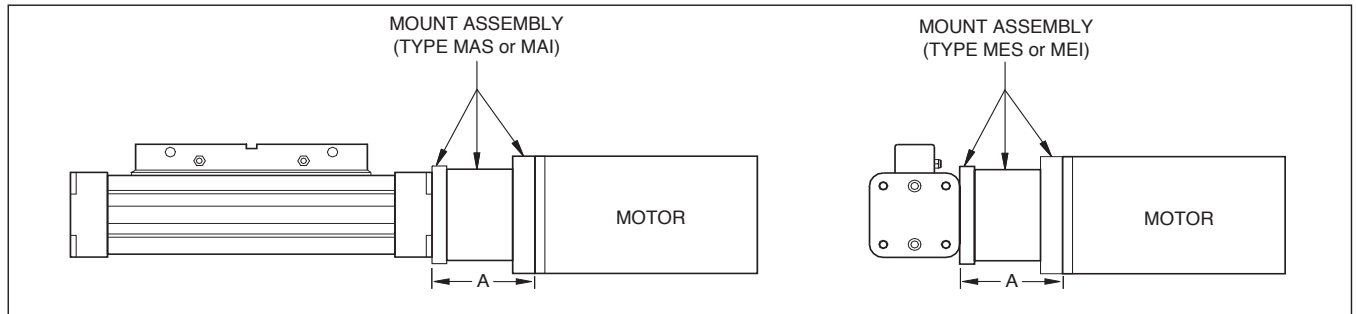
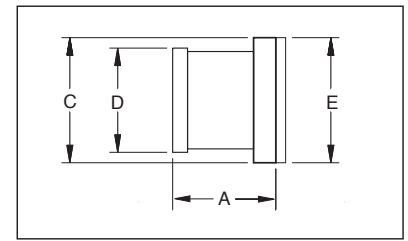
## Order Number for Yaskawa Metric Frame Motors Gearbox

Order Numbers	Description
<b>25 Belt Actuator</b>	
EG00003-B2501	Gearbox 3:1 Ratio 25 Belt SGMPH01 Motor
EG00005-B2501	Gearbox 5:1 Ratio 25 Belt SGMPH01 Motor
EG00007-B2501	Gearbox 7:1 Ratio 25 Belt SGMPH01 Motor
EG00010-B2501	Gearbox 10:1 Ratio 25 Belt SGMPH01 Motor
EG00003-B2504	Gearbox 3:1 Ratio 25 Belt SGMPH02/04 Motor
EG00005-B2504	Gearbox 5:1 Ratio 25 Belt SGMPH02/04 Motor
EG00007-B2504	Gearbox 7:1 Ratio 25 Belt SGMPH02/04 Motor
EG00010-B2504	Gearbox 10:1 Ratio 25 Belt SGMPH02/04 Motor
<b>32 Belt Actuator</b>	
EG00003-B3201	Gearbox 3:1 Ratio 32 Belt SGMPH01 Motor
EG00005-B3201	Gearbox 5:1 Ratio 32 Belt SGMPH01 Motor
EG00007-B3201	Gearbox 7:1 Ratio 32 Belt SGMPH01 Motor
EG00010-B3201	Gearbox 10:1 Ratio 32 Belt SGMPH01 Motor
EG00003-B3204	Gearbox 3:1 Ratio 32 Belt SGMPH02/04 Motor
EG00005-B3204	Gearbox 5:1 Ratio 32 Belt SGMPH02/04 Motor
EG00007-B3204	Gearbox 7:1 Ratio 32 Belt SGMPH02/04 Motor
EG00010-B3204	Gearbox 10:1 Ratio 32 Belt SGMPH02/04 Motor
<b>50 Belt Actuator</b>	
EG00003-B5001	Gearbox 3:1 Ratio 50 Belt SGMPH01 Motor
EG00005-B5001	Gearbox 5:1 Ratio 50 Belt SGMPH01 Motor
EG00007-B5001	Gearbox 7:1 Ratio 50 Belt SGMPH01 Motor
EG00010-B5001	Gearbox 10:1 Ratio 50 Belt SGMPH01 Motor
EG00003-B5004	Gearbox 3:1 Ratio 50 Belt SGMPH02/04 Motor
EG00005-B5004	Gearbox 5:1 Ratio 50 Belt SGMPH02/04 Motor
EG00007-B5004	Gearbox 7:1 Ratio 50 Belt SGMPH02/04 Motor
EG00010-B5004	Gearbox 10:1 Ratio 50 Belt SGMPH02/04 Motor

# MOTOR MOUNTS FOR OSP-E BELT & BALLSCREW

The coupling housing is the mounting base for the motor and includes a self aligning coupling.

Motor flanges and couplings suitable for the available range of servo and stepper motors will be found together with technical data and dimensions on motors and drives, see separate data sheet.

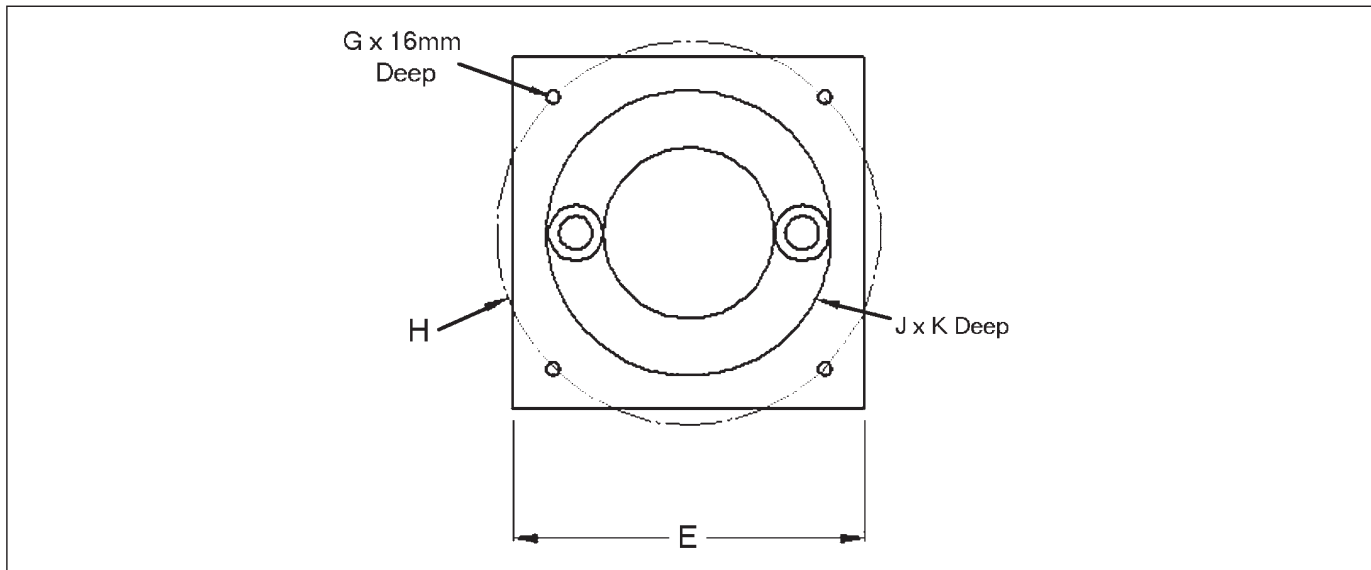


Motor Mount	Size	Type	Motor Type	A	C	D	E
MES-2504	25	Belt	Metric 04	95.7	70	70	70
MES-3204	32	Belt	Metric 04	86.7	70	70	70
MES-5004	50	Belt	Metric 04	86.7	70	90	70
MES-5008	50	Belt	Metric 08	114.7	90	90	90
MEI-2523	25	Belt	Nema 23	76.7	70	70	70
MEI-3234	32	Belt	Nema 34	88.7	90	70	90
MEI-5034	50	Belt	Nema 34	83	90	90	90
MGM-3234	32	Belt	Nema 34	88.7	90	70	90
MGM-5034	50	Belt	Nema 34	88.7	90	90	90
MAS-2501	25	Screw	Metric 01	51.4	42	42	42
MAS-3204	32	Screw	Metric 04	86.7	70	70	70
MAS-5004P	50	Screw	Metric 04P**	88.7	90	90	90
MAS-5008	50	Screw	Metric 08	88.7	90	90	90
MAI-2517	25	Screw	Nema 17	51.4	42	42	42
MAI-3223	32	Screw	Nema 23	76.7	70	70	70
MAI-5034	50	Screw	Nema 34	88.7	90	90	90
MAS-5008P	50	Screw	Metric 08P**	88.7	120	90	120
MEI-5042	50	Belt	Nema 42	88.7	120	90	120
MAI-3101	32	Screw	Nema 34	86.7	90	70	90
MAI-3234	32	Screw	Nema 34	86.7	90	70	90
MEI-3223	32	Belt	Nema 23	76.7	70	70	70
MAI-2523	25	Screw	Nema 23	51.4	70	42	70
MGM-3223	32	Belt	Nema 23	76.7	70	70	70
MGM-5034S	50	Screw	Nema 34	88.7	90	90	90
MGM-3223S	32	Screw	Nema 23	86.7	70	70	70
MES-3208	32	Belt	Metric 08	88.7	90	90	90

Dimensions are for reference purposes only  
 Nema mounts match IMS stepper motors or equivalent  
 Metric mounts match Yaskawa SGM Servo motors or equivalent  
 \*Drilled & counterbored for 4-40 socket head cap screw from opposite side  
 MGM = Gearbox mount



# MOTOR MOUNTING PLATE DIMENSIONS



Motor Mount	Size	Type	Motor Type	G	H	J	K
MES-2504	25	Belt	Metric 04	10-32 UNF	70	50	3.5
MES-3204	32	Belt	Metric 04	10-32 UNF	70	50	3.5
MES-5004	50	Belt	Metric 04	10-32 UNF	70	50	3.5
MES-5008	50	Belt	Metric 08	10-32 UNF	90	70	3.5
MEI-2523	25	Belt	Nema 23	10-32 UNF	66.68	38.1	2
MEI-3234	32	Belt	Nema 34	10-32 UNF	98.42	73.08	2
MEI-5034	50	Belt	Nema 34	10-32 UNF	98.42	73.08	2
MGM-3234	32	Belt	Nema 34	10-32 UNF	98.42	73.08	2
MGM-5034	50	Belt	Nema 34	10-32 UNF	98.42	73.08	2
MAS-2501	25	Screw	Metric 01	M4	46	30	3
MAS-3204	32	Screw	Metric 04	10-32 UNF	70	50	3.5
MAS-5004P	50	Screw	Metric 04P**	10-32 UNF	90	70	3.5
MAS-5008	50	Screw	Metric 08	10-32 UNF	90	70	3.5
MAI-2517	25	Screw	Nema 17	*	43.8	22	2.5
MAI-3223	32	Screw	Nema 23	10-32 UNF	66.68	38.1	2
MAI-5034	50	Screw	Nema 34	10-32 UNF	98.42	73.08	2
MAS-5008P	50	Screw	Metric 08P**	M8 X125	145	110	4
MEI-5042	50	Belt	Nema 42	.25-20 UNC	127	55.58	2
MAI-3101	32	Screw	Nema 34	10-32 UNF	98.42	73.08	2
MAI-3234	32	Screw	Nema 34	10-32 UNF	98.42	73.08	2
MEI-3223	32	Belt	Nema 23	10-32 UNF	66.68	38.1	2
MAI-2523	25	Screw	Nema 23	10-32 UNF	66.68	38.1	2
MGM-3223	32	Belt	Nema 23	10-32 UNF	66.68	38.1	2
MGM-5034S	50	Screw	Nema 34	10-32 UNF	98.42	73.08	2
MGM-3223S	32	Screw	Nema 23	10-32 UNF	66.68	38.1	2
MES-3208	32	Belt	Metric 08	10-32 UNF	90	70	3.5

Dimensions are for reference purposes only  
 Nema mounts match IMS stepper motors or equivalent  
 Metric mounts match Yaskawa SGM Servo motors or equivalent  
 \*Drilled & counterbored for 4-40 socket head cap screw from opposite side  
 MGM = Gearbox mount

# Linear Drive Accessories

## Belt Gear

Size 25, 32, 50



• For Series OSP-E..S, ST, SR, SBR

Belt Gear with freely selectable dimensions for Motor Mounting – see dimension table with min.- and max. dimensions.

**Note:**

This gearbox is, as standard, designed for OSP-E-shaft with keyway.

**Option:**

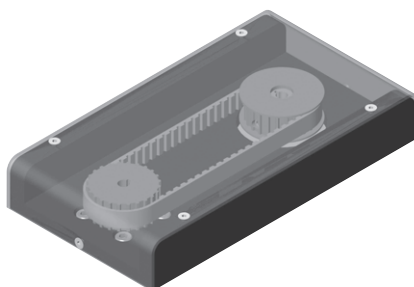
With plain shaft (with clamping sleeve on the drive side).

Please note the corresponding OSP-E-shaft.

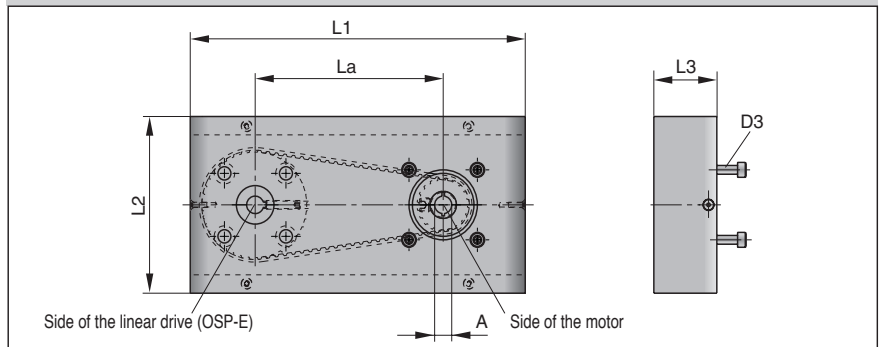
OSP-E Shaft for Belt Drive Unit (standard)		
Size	Option	Description
25	4	with keyway long version
32	3	with keyway
50	3	with keyway

Max. allowed Moments M [Nm] for Belt Gear		
Size	Transmission ratio	
	1:1	2:1
25	5	5
32	10	10
50	20	20

Beware of the max. allowed moments of the corresponding linear drive.



### Dimensions

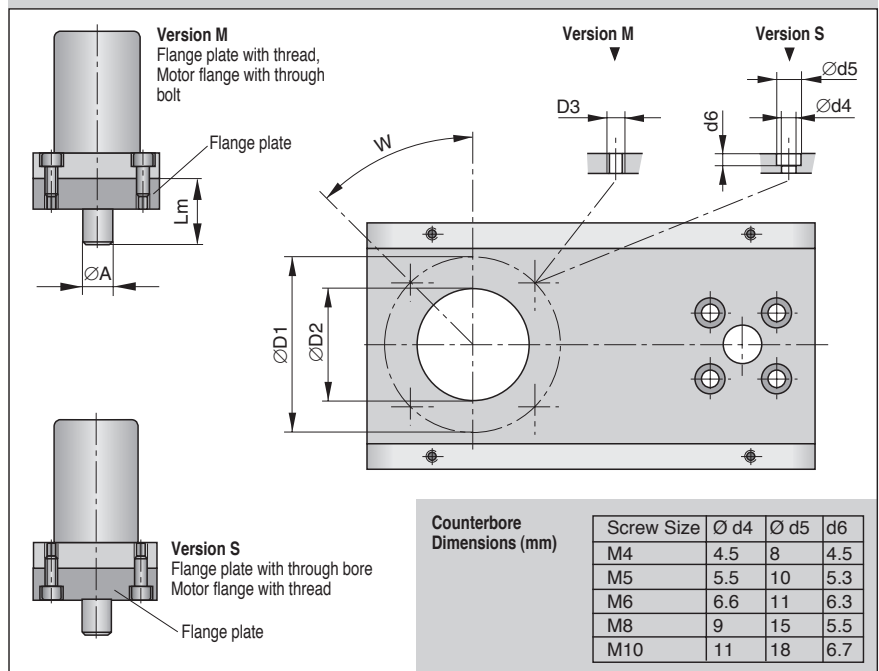


### Dimension Table (mm)

Series	L1	L2	L3	La		D3	Ø A*	Order-No.
				1:1	2:1			
OSP-E25	186	101	30	110	109.3	M4 – M10	6, 7, 8, 9, 10, 11	15576
OSP-E32	196	101	37	110	111.4		8, 9, 10, 11, 12, 14	15576
OSP-E50	234	101	50	135	133.7		12, 14, 16, 19	15576

\* other diameters on request

### Variable Dimensions for Motor Mounting

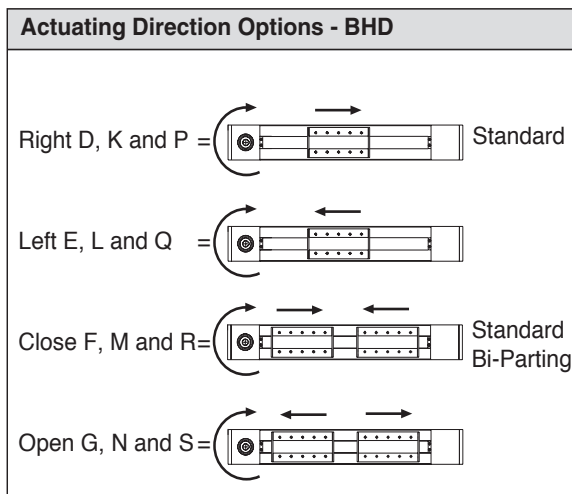
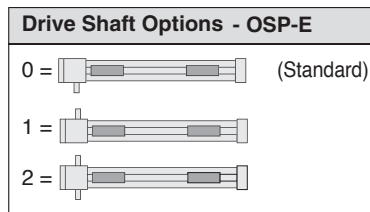


### Dimension Table for motor mounting dimensions (mm)

Dimension	Size	25S		32S		50S	
		W=45°	W=90°	W=45°	W=90°	W=45°	W=90°
Ø D1	min.	40		40		40	
	max. "M"	100	85	110	85	115	85
	max. "S"	106 – Ød5	80 – Ød5	106 – Ød5	80 – Ød5	106 – Ød5	80 – Ød5
Ø D2	min.	25		25		25	
	max.	80		80		80	
Ø D3	max.	M10		M10		M10	
Ø A		6, 7, 8, 9, 10, 11		8, 9, 10, 11, 12, 14		12, 14, 16, 19	
Lm	min.	16		20		30	
	max.	23		30		40	

# Ordering Instructions / Part Numbering System for OSP Series Electric Actuators

1	2	3	4	5	6
series	bore	lead	shaft	mount	double mount
E Electric	2 25	0 belt	0 right (belt)	0 if double (all and BHD)	0 if single (all and BHD)
	3 32	1	1 left (belt)	1 std mnt (nr20) (all and BHD)	1 std mnt (nr20) (all and BHD)
H Heavy Duty Roller Guide (BHD)	5 50	2 5mm BS	2 double (belt)	2 floating mount (nr25) (all)	2 floating mount (nr25) (all)
		3	3	3 invert mount (nr30) (all)	3 invert mount (nr30) (all)
		4 10mm BS	4 BHD Integrated Gearbox 3:1**	4 invert float mount (nr35) (all)	4 invert float mount (nr35) (all)
		5	5 BHD Integrated Gearbox 5:1**	5 slideline (screw only)	5 slideline (screw only)
		6 25mm BS	6 BHD Integrated Gearbox 10:1**	6 Powerslide ps25 (25)	6 ps25 (one mount, two carriages)(25)
		7	7	7 Powerslide ps35 (25,32)	7 ps35 (one mount, two carriages)(25,32)
R Heavy Duty Ball Guide (BHDII)		8	8	8 Powerslide ps44 (25,32)	8 ps44 (one mount, two carriages)(25,32)
		9	9	9 Powerslide ps60 (50)	9 ps60 (one mount, two carriages)(50)
		A	A STD (screw)	A Powerslide ps76 (50)	A ps76 (one mount, two carriages)(50)
		B BP (belt Bi-parting)	B 2 end (screw)	B	B
		C	C	C	C
		D	D Clamp Shaft-Right (BHD)	D	D
S Extending Rod Ballscrew (OSP-SBR)		E	E Clamp Shaft-Left (BHD)	E	E
		F	F Clamp Shaft-Close (BHD)	F	F
		G	G Clamp Shaft-Open (BHD)	G	G
		H	H	H	H
		J	J	J	J
		K	K Hollow Shaft-Right (BHD)	K	K
		L	L Hollow Shaft-Left (BHD)	L	L
		M	M Hollow Shaft-Close (BHD)	M Guideline (all)	M Guideline (all)
		N	N Hollow Shaft-Open (BHD)	N	N
		P	P Clamp Shaft-Right-IS (BHD)*	P	P
		Q	Q Clamp Shaft-Left-IS (BHD)*	Q Proline/GDL (all)	Q Proline/GDL (all)
		R	R Clamp Shaft-Close-IS (BHD)*	R	R
		S	S Clamp Shaft-Open-IS (BHD)*	S	S
		T	T Obsolete (BHD)	T	T
		U	U Obsolete (BHD)	U	U
		V	V Obsolete (BHD)	V	V
		W	W Obsolete (BHD)	W	W
		X	X	X	X
		Y	Y	Y	Y
		Z special	Z special	Z special	Z special



\*For use with intermediate shaft  
 \*\*Consult factory before ordering

7*	8	9*	10	11	12	13	14	15	16	17	18
motor mount	screws & coating	support	center support qty	switch	switch qty	stroke (mm)					
0 none and BHD	0 std	0 none and BHD	0 none	0 none	0	-	0	0	0	0	0
1 mes-2504 (belt)(25)	1 stainless hardware	1		1 no reed KL3045 (all)		-					
2 mes-3204 (belt)(32)	2 xylan coated aluminum	2		2 nc reed KL3048 (all)		-					
3 mes-5004 (belt)(50)	3 stainless/xylan	3		3 pnp KL3054+4041(all)		-					
4 mes-5008 (belt)(50)	4 Purge Ports	4		4 npn KL3060+4041 (all)		-					
5 mei-2523 (belt)(25)	5 Purge / Stainless	5		5 nc pnp-BMF-PNP-ASSY+4041		-					
6 mei-3234 (belt)(32)	6 Purge / Stainless / Xylan	6		6 nc npn solid state		-					
7 mei-5034 (belt)(50)	7	7		7		-					
8 mgm-3234 (belt)(32)	8	8		8		-					
9 mgm-5034 (belt)(50)	9	9		9		-					
A mas-2501 (screw)(25)	A	A		A		-					
B mas-3204(screw)(32)	B	B D1 (all)		B		-					
C mas-5004P(screw)(50)	C	C E1 (all)		C		-					
D mas-5008(screw)(50)	D	D E2 (all)		D		-					
E mai-2517 (screw)(25)	E	E E3 (all)		E		-					
F mai-3223 (screw)(32)	F	F E4 (all)		F		-					
G mai-5034 (screw)(50)	G	G A1+D1 (25,32)		G		-					
H mas-5008p (screw)(50)	H	H B1+D1 (25,32)		H		-					
J mei-5042 (belt)(50)	J	J C1+D1 (50)		J		-					
K mai-3101 (screw)(32)	K	K A1+E1 (25,32)		K		-					
L mai-3234 (screw)(32)	L	L B1+E1 (25,32)		L		-					
M mei-3223 (belt)(32)	M	M C1+E1 (50)		M		-					
N mai-2523 (screw)(25)	N	N A2+E2 (25,32)		N		-					
P mgm-3223 (belt)(32)	P	P C2+E2 (50)		P		-					
Q mgm-5034S (screw)(50)	Q	Q A3+E3 (25,32)		Q		-					
R mgm-3223S (screw)(32)	R	R		R		-					
S mes-3208 (belt)(32)	S	S C3+E3 (50)		S		-					
T Belt Gear 1:1 (Screw Only)	T	T B4+E4 (25,32)		T		-					
U Belt Gear 2:1 (Screw Only)	U	U C4+E4 (50)		U		-					
V	V	V		V		-					
W	W	W		W		-					
X	X	X		X		-					
Y Optional BHD (see below)	Y	Y		Y		-					
Z special	Z special	Z special		Z special		-					

7\* (BHD) Non-standard KB and KL dimensions must be specified on a separate line item (use "Z" in part number).

7\* (BHD) Order motor mount and/or gearbox as a separate line item (contact customer service).

7\* Contact customer service if non-standard motor mounting holes are required.

9\* (BHD) Order supports as a separate line item.

9\* Only one end support is supplied in the OSP-E part number. If more than one is required, please order additional end supports as a separate line item.





# Electric Actuator Application Sheet

Distributor: \_\_\_\_\_

End-User: \_\_\_\_\_

Salesperson: \_\_\_\_\_

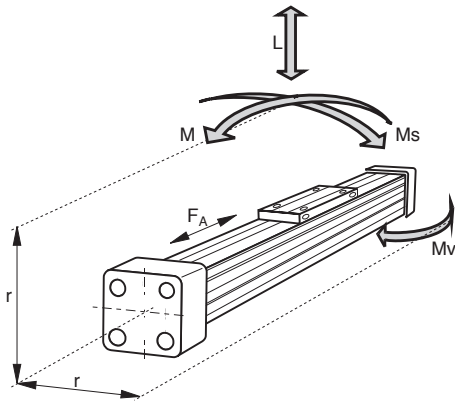
Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Stroke: \_\_\_\_\_ Time to make move: \_\_\_\_\_ Load: \_\_\_\_\_ Incline: \_\_\_\_\_

Check if load is externally supported

Actuator type: \_\_\_\_\_



M = \_\_\_\_\_

MS = \_\_\_\_\_

MV = \_\_\_\_\_

Description: \_\_\_\_\_

See Attached for info /a additional info

Special Features Required:

Switches Type \_\_\_\_\_ Qty. \_\_\_\_\_

Controller Needed

Servo Motor Needed

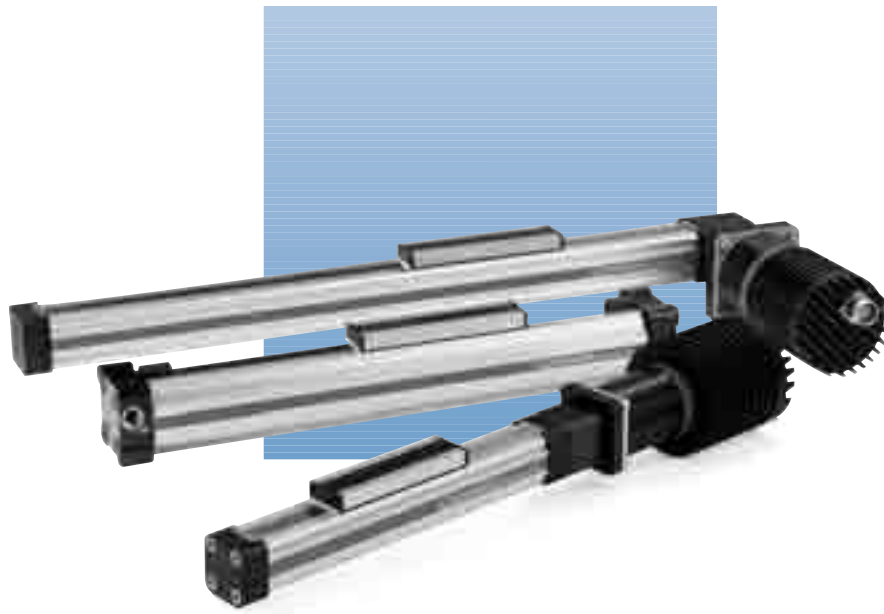
Stepper Motor Needed

Customer Supplied Motor

**Please complete and fax to: 630/871-1515, Attention: Technical Support**



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