

OSPE..BHD Belt-Driven Actuators

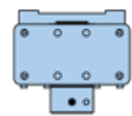
High-Speed, Long Travel, Heavy Duty Applications

- High dynamic for precision positioning
- High thrust capacity
- High payload capacity
- High speed operation
- Easy installation
- Ideal in multi axis applications

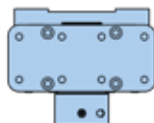


Features

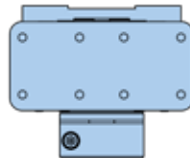
- Integrated ball bearing guide or roller guide
- Clamp drive shaft design for compact and backlash free gearhead and motor mounting
- Tandem carriage with second carriage for higher load capabilities
- Long available strokes
- Complete motor and drive packages
- Bi-parting carriages and special options on request
- Ambient temperature range -30°C to +80°C
- IP 54 Rating



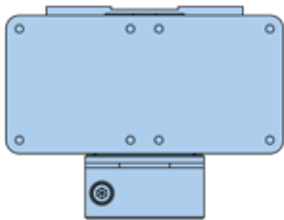
OSPE20BHD



OSPE25BHD



OSPE32BHD



OSPE50BHD

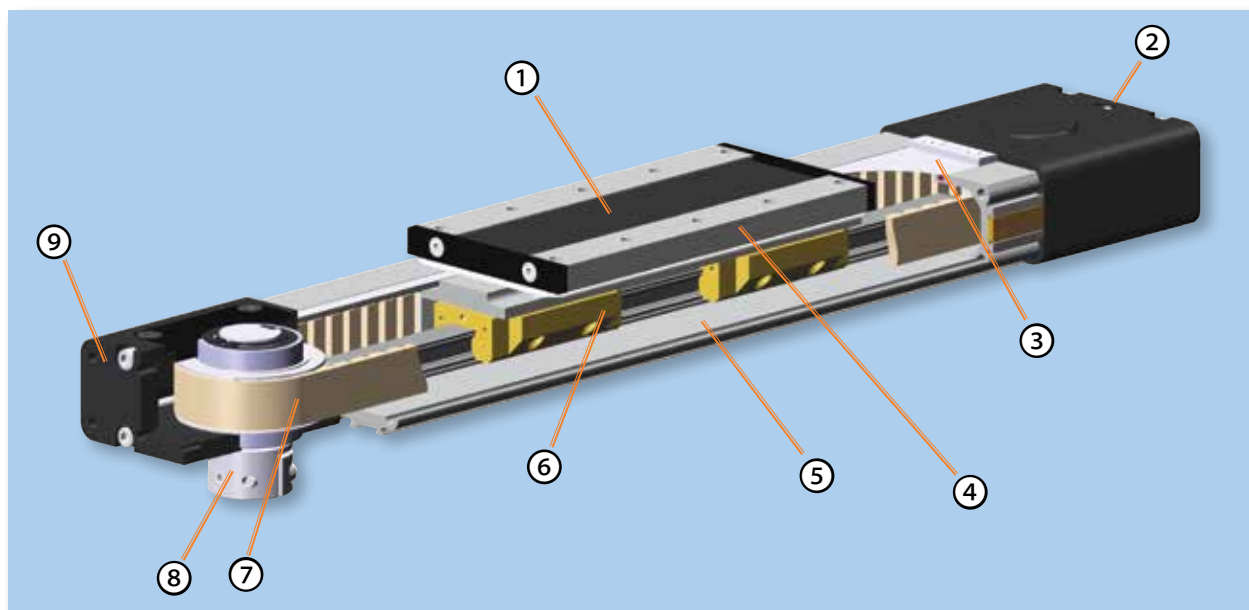
	OSPE20BHD	OSPE25BHD	OSPE32BHD	OSPE50BHD
Maximum Travel (mm)	5,760	5,700	5,600	5,500
Maximum Payload F_z (N)	1,600	3,000	10,000	15,000
Maximum Acceleration (m/sec²)	50	50	50	50

The OSPE..BHD is the highest capacity belt-driven actuator in the OSPE family. The integrated ball bearing guide or optional roller guide are proven in thousands of industrial machines requiring

robustness, dynamic precision and extraordinary performance with an aesthetically pleasing design.

The compact design allows integration of the OSPE..BHD in any

machine layout, providing very little space, without sacrificing payload or thrust capacity.



- ① **Carriage**
Low profile, high strength aluminum carriage with threaded holes for ease of mounting
- ② **Belt tensioning station**
Easy access for belt tension without removing the payload
- ③ **Corrosion resistant steel sealing band**
Magnetically fastened to the actuator body and provides sealing to IP54
- ④ **Lubrication access port**
Easy access maintenance allows for lubrication of both bearing trucks on a single carriage side
- ⑤ **Slotted profile**
With dovetail grooves for strength, actuator mounting, and mounting of sensor and other accessories
- ⑥ **Integrated ball bearing truck**
For high performance, high payload and moment load demands. (Optional roller wheels available.)
- ⑦ **Steel reinforced timing belt**
High thrust force transmission and long life
- ⑧ **Clamp shaft**
Optimal, zero-backlash coupling for gearhead and motor
- ⑨ **End housing mounting**
Threaded mounting holes allow for a multitude of mounting options

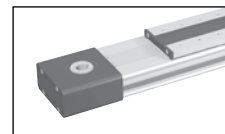
Integrated Bearing Design

Ball bearing - with a high-precision, hardened-steel rail and calibrated bearing trucks for high load capabilities
 Roller bearing - with an aluminum grounded and calibrated steel track and needle bearing wheels for high-speed operation up to 10 m/s.



Drive Shaft Options

Clamp shaft (for zero-backlash coupling), plain shaft (for dual axis linking), clamp and plain shaft (for master unit to connect link shaft on plain shaft), and hollow shaft (for compact gearhead mounting)



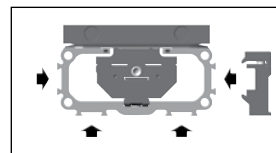
Carriage Options

Standard carriage, tandem carriage — for higher load capabilities, or bi-parting carriage — for opposing synchronized movements



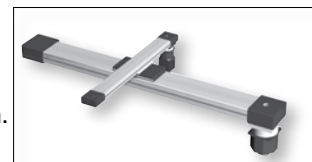
Actuator Mounting Options

End cap mounting — allows the actuator to be anchored by the end caps
 Profile mounts — support long travel actuators or for direct mounting



Multi-axis Systems

A wide range of adapter plates and intermediate drive shafts simplifies engineering and installation. Please consult factory for your individual system design.



Options and Accessories

Information on all OSPE..BHD Series options is detailed in Options & Accessories. Simply select all the options needed to solve your application requirements, then order with the actuator using convenient order codes (see Ordering Information). To order an option separately as an upgrade to an existing system or as a replacement part, use the individual option part numbers provided.

SPECIFICATIONS

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Parker Origa System Plus (OSPE) Series electric motor-driven actuator systems are field-proven worldwide. OSPE Actuator systems are completely modular to accommodate a broad range of application installation and performance requirements. Compact size, maximum configurability and the flexibility to select the right drive train technology for high speed and/ or precise positioning applications makes the OSPE easy to integrate into any machine layout simply and neatly.



Actuator Size			OSPE20BHD	OSPE25BHD		OSPE32BHD		OSPE50BHD	
Integrated Guide Rail ⁽¹⁾			B	B	R	B	R	B	R
Travel Distance per Revolution	S _{lin}	mm	125	180	180	240	240	350	350
Pulley Diameter		mm	39.79	57.30	57.30	76.39	76.39	111.41	111.41
Linear Speed (Max)	v _{max}	m/s	3	5	10	5	10	5	10
Acceleration (Max)	a _{max}	m/s ²	50	50	40	50	40	50	40
Repeatability (unidirectional)		µm	± 50	± 50	± 50	± 50	± 50	± 50	± 50
Order Stroke (Max) ⁽²⁾		mm	5,760	5,700	5,700	5,600	5,600	5,500	5,500
Thrust Force (Max)	F _{Amax}	N	550	1,070	1,070	1,870	1,870	3,120	3,120
		lbs	124	241	241	420	420	701	701
Torque on Drive Shaft (Max)	M _{Amax}	Nm	12	32	32	74	74	177	177
		in-lb	102	282	282	652	652	1,567	1,567
Torque ⁽³⁾ — RMS No Load	M ₀	Nm	0.9	1.4	1.4	2.5	2.5	4.2	4.2
		in-lb	8	12	12	22	22	37	37
Torque ⁽³⁾ — Peak No Load	M ₀	Nm	1.1	1.9	1.9	3.2	3.2	6.0	6.0
		in-lb	10	17	17	28	28	53	53
Load ⁽⁴⁾ (Max)	F _Y	N	1,600	2,000	986	5,000	1,348	12,000	3,704
		lbs	360	450	222	1,124	303	2,698	833
	F _Z	N	1,600	3,000	986	10,000	1,348	15,000	3,704
		lbs	360	674	222	2,248	303	3,372	833
Bending Moment Load ⁽⁴⁾ (Max)	M _X	Nm	21	50	11	120	19	180	87
		in-lb	186	443	97	1,062	168	1,593	770
	M _Y	Nm	150	500	64	1,000	115	1,800	365
		in-lb	1,328	4,425	566	8,851	1,018	15,931	3,231
	M _Z	Nm	150	500	64	1,400	115	2,500	365
		in-lb	1,328	4,425	566	12,391	1,018	22,127	3,231
Inertia									
@ Zero Stroke	J ₀	kgmm ²	280	1,229	984	3,945	3,498	25,678	19,690
Per Meter of Stroke	J _{OS}	kgmm ² /m	41	227	227	496	496	1,738	1,738
Per 1 kg Moved Mass	J _m	kgmm ² /kg	413	821	821	1,459	1,459	3,103	3,103
Weight									
@ Zero Stroke	m ₀	kg	2.0	2.8	2.8	6.2	5.8	18.2	17.9
Per Meter of Stroke	m _{OS}	kg/m	4.0	4.5	4.3	7.8	6.7	17.0	15.2
Carriage	m _C	kg	0.8	1.5	1.0	2.6	1.9	7.8	4.7
Ambient Temperature Range		°C	-30 to +80						
IP Rating)			IP 54						

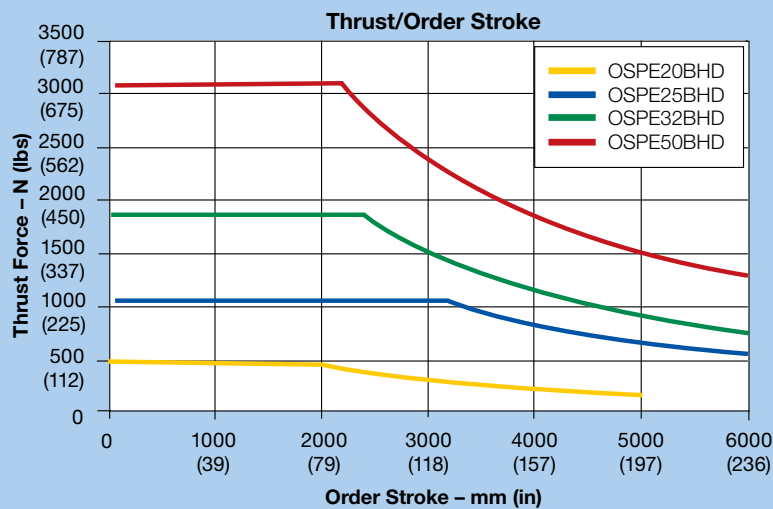
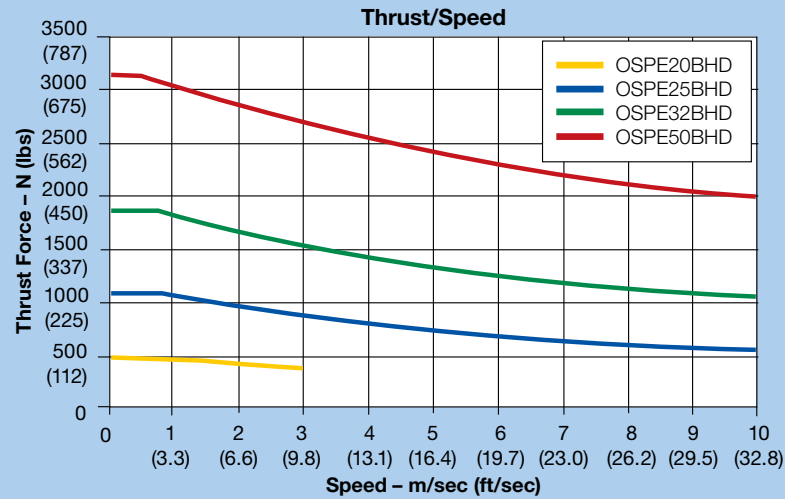
⁽¹⁾ B = Ball Bearing Guide Rail; R = Roller Guide

⁽²⁾ Longer, extended order strokes on request OSPE20BHD = 6000 mm; OSPE25BHD = 9400 mm; OSPE32BHD = 9200 mm

⁽³⁾ For tandem and bi-parting options double the values listed.

⁽⁴⁾ Load and bending moment based on 8000 km performance

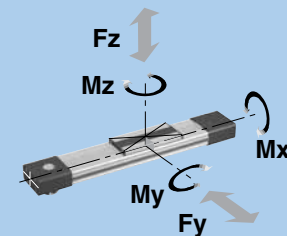
Available Thrust Force by Speed and Stroke



Calculating Load Factors - Combined Normal and Moment Load

The sum of combined loads (static and dynamic) must not exceed "1" at any time as shown in the formula below:

$$\frac{F_z}{F_z(\max)} + \frac{M_x}{M_x(\max)} + \frac{M_y}{M_y(\max)} + \frac{M_z}{M_z(\max)} \leq 1$$



$$M = F \times l \text{ (Nm)}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

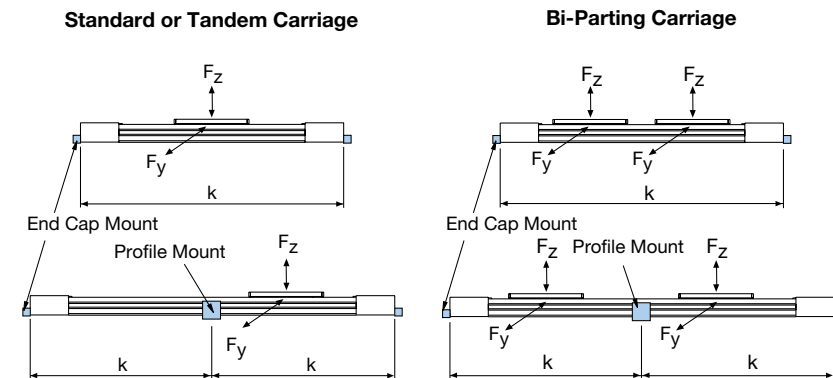
$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

Maximum Permissible Unsupported Length — Determining end cap and profile mounting placement

OSPE..BHD Series actuators need to be mounted onto a solid machine base or frame structure using appropriately positioned end cap and profile mounts. This ensures that the actuator will not undergo excessive deflection based on the application's load and length requirements.

The greater the load and/or the longer the unsupported length between mounts, the more the actuator is susceptible to deflection. Deflection is also dependent on the carriage orientation (F_z for top oriented carriage or F_y for a side mounted carriage).



To determine correct end cap and profile mount placement, please follow the steps shown in the example below.

Use the deflection graphs on the next page to insure that the load will not exceed the maximum allowed deflection.

Example:

A horizontal application uses an OSPE32BHD with a top oriented ball bearing carriage. The maximum load on the carriage is 30 kg and the order stroke is 2,400 mm (see previous section to calculate order stroke).

Therefore, the overall length of the actuator will be approximately 3,000 mm:

$$2,400 \text{ mm} + 2 \times \text{Dim "X"} (262 \text{ mm}) = 2,924 \text{ mm}$$

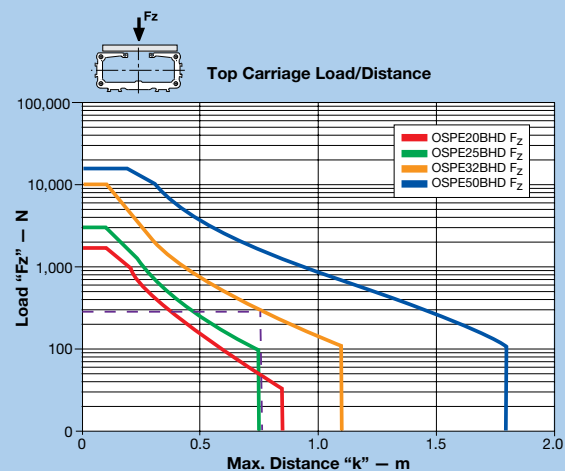
- 1) Use the F_z graph for a top loaded ball bearing carriage (shown at right)
- 2) Calculate the Load " F " in Newtons based on the 30 kg application load requirement:

$$30 \text{ kg} \times 9.81 \text{ kg/ms}^2 = 294.3 \text{ N}$$

- 3) Draw a line from 294.3 N on the Y-axis to the OSPE32BHD curve, then down to the X-axis.
- 4) The value of " k " is approximately 750 mm.
- 5) Since the overall length (3000 mm) is greater than this value " k ", the actuator will require additional fixture points— two end cap mounts and three sets of profile mounts — equally spaced to create a distance " k " of 750 mm in between.
- 6) Maximum deflection of the actuator with this mounting configuration will be less than 0.075 mm:

$$0.01\% \text{ of } 750 \text{ mm} = 0.075 \text{ mm}$$

Ball Bearing Carriage Load-Distance



To further reduce deflection:

If the application requires less deflection, then simply reduce the distance " k " appropriately. In this example, for instance, the application must not exceed 0.05 mm. Therefore, " k " must also be 500 mm.

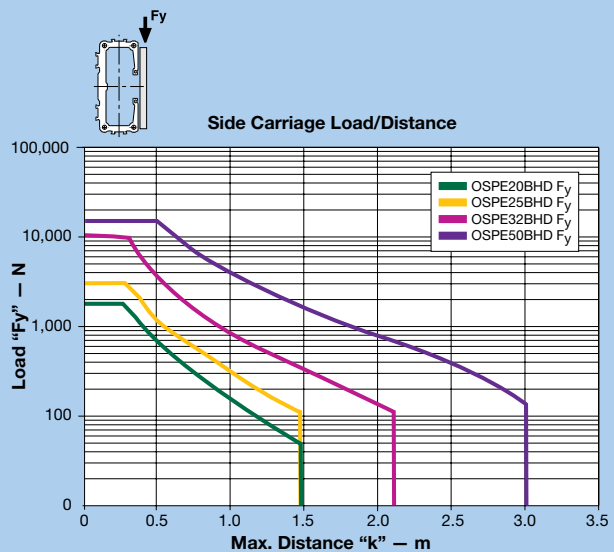
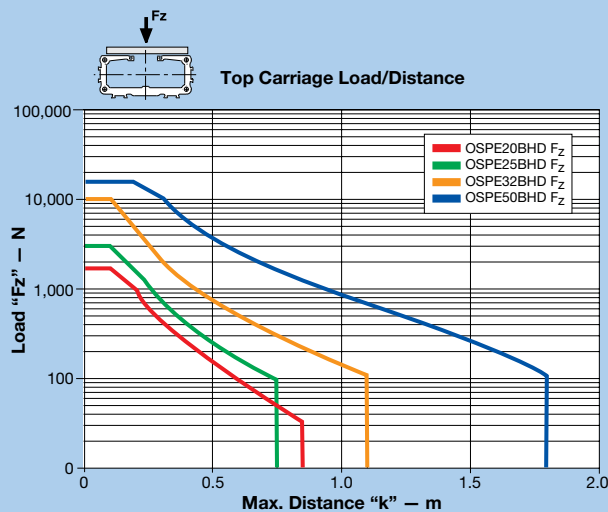
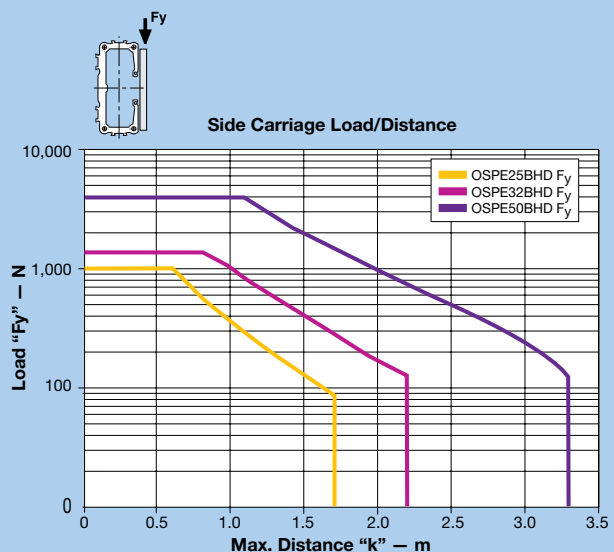
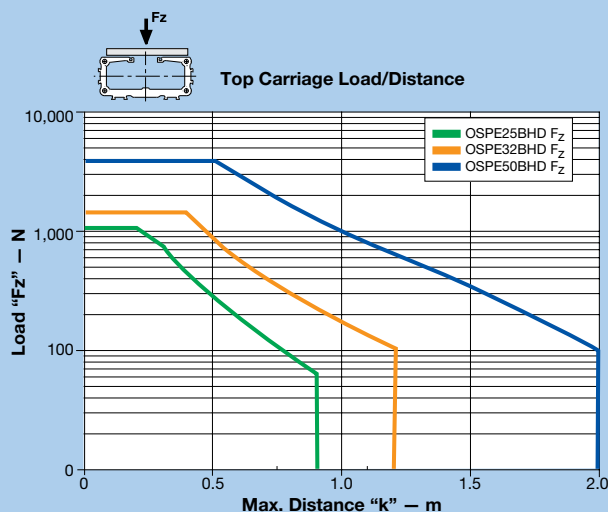
To achieve this reduced maximum deflection, the actuator will require seven fixture points — two end cap mounts and five pairs of profile mounts — equally spaced with a distance " k " of 500 mm in between.

Maximum Permissible Unsupported Length

Determining end cap and profile mounting placement

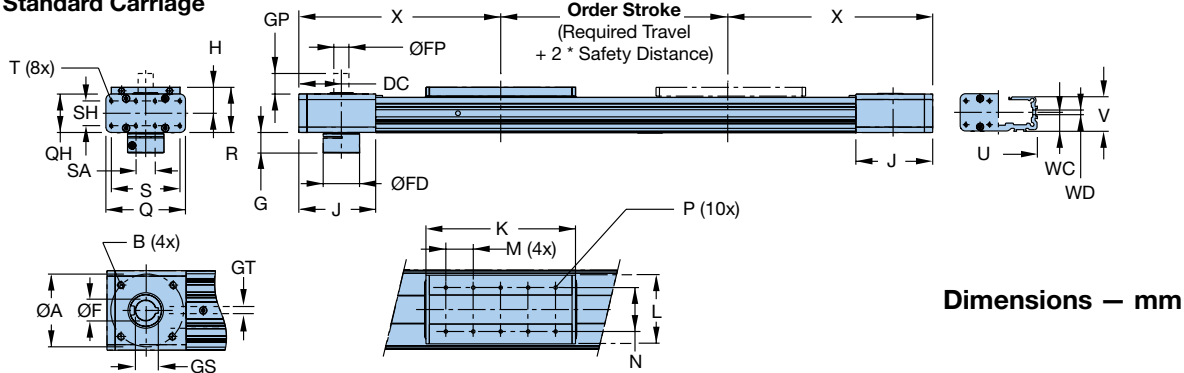
Use the appropriate deflection graph to ensure that the application load does not exceed the deflection curve. Supporting the actuator within the recommended maximum distance “k” will ensure that the installation will have a maximum deflection equal to 0.01% of distance “k.”

To further reduce deflection, simply reduce the distance between end cap and profile mounts as described in the example on the previous page.

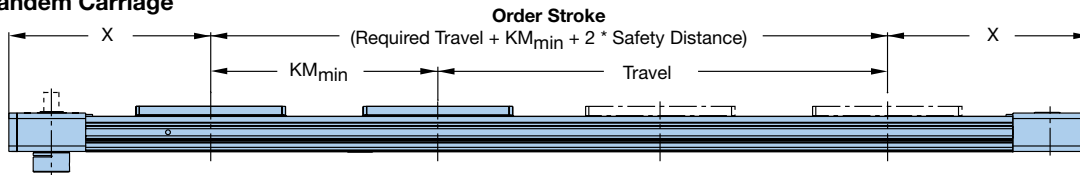
Ball Bearing Carriage Load-Distance**Roller Bearing Carriage Load-Distance**



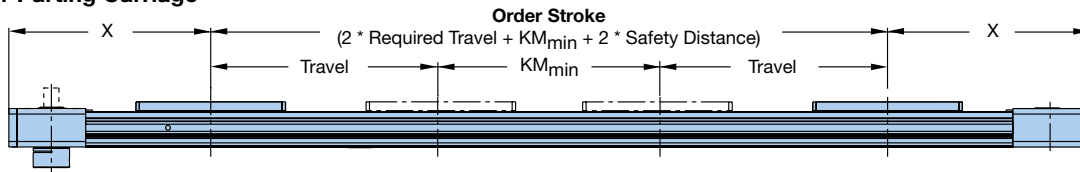
Standard Carriage



Tandem Carriage



Bi-Parting Carriage



Actuator Size	A	B	DC	F	FD	FP	G	GP	GS	GT
OSPE20BHD	65.7	M6x8	42.5	12 ^{H7}	27	12 ^{h7}	18.0	25	13.8	4
OSPE25BHD	82.0	M8x8	49.0	16 ^{H7}	34	16 ^{h7}	21.7	30	18.3	5
OSPE32BHD	106.0	M10x12	62.0	22 ^{H7}	53	22 ^{h7}	30.0	30	24.8	6
OSPE50BHD	144.0	M12x19	79.5	32 ^{H7}	75	32 ^{h7}	41.0	35	35.3	10

* For OSPE50BHD with roller guide: Dimension K = 263

Actuator Size	H	J	K	L	M	N	P	Q	QH
OSPE20BHD	27.6	76.5	155	67	30	51	M5x8	73	38
OSPE25BHD	31.0	88.0	178	85	40	64	M6x8	93	42
OSPE32BHD	38.0	112.0	218	100	40	64	M6x10	116	56
OSPE50BHD	49.0	147.0	288*	124	60	90	M6x10	175	87

Actuator Size	R	S	SA	SH	T	U	V	WC	WD	X
OSPE20BHD	49.0	60	18	27	M5x8.5	73	36.0	21.1	10.4	185
OSPE25BHD	52.5	79	25	27	M5x10	92	39.5	21.5	10.4	218
OSPE32BHD	66.5	100	28	36	M6x12	116	51.7	28.5	10.4	262
OSPE50BHD	92.5	158	18	70	M6x12	164	77.0	43.0	10.4	347

Order Stroke Dimensional Requirements

Actuator Size	KM _{min}	KM _{rec}
OSPE20BHD	180	220
OSPE25BHD	210	250
OSPE32BHD	250	300
OSPE50BHD	354	400

KM_{min} is the minimum distance between two carriages possible.

KM_{rec} is the recommended distance between two carriages for optimal performance.

Order Stroke Safety Distance:

The mechanical end position should not be used as a mechanical end stop, thus an additional **Safety Distance** at both ends of travel must be incorporated into the Order Stroke. The safety distance for servo-driven systems is equivalent to the travel distance per one revolution of the drive shaft. AC motor-driven systems with VFDs require a larger safety distance than servo systems. For further information and design assistance, please consult factory.

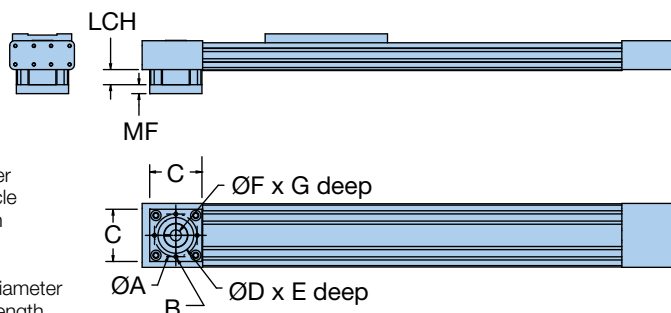
OPTIONS & ACCESSORIES

OSPE..BHD Belt-Driven Actuators Gearhead Mounting Kit Options

Gearhead Mounting Kits include a coupling housing and flange



A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
MF = Mounting flange



Belt Driven
Tables

OSPE..BHD with Gearhead Mounting Kit

Actuator Size	Order Code ⑥ ¹	Order Code ⑨ ²	Dimensions — mm								
			A	B	C	D	E	F	G	LCH	MF
OSPE20BHD	02, 03, 04 or 05	C0	44	M4	60	35	4.0	12	25	19	9.0
	0A, 0B	C1	62	M5	75	52	6.0	16	36	79	18.5
OSPE25BHD	02, 03, 04 or 05	C1	62	M5	76	52	6.0	16	36	22	13.0
OSPE32BHD	02, 03, 04 or 05	C2	80	M6	98	68	6.0	22	46	30	14.0
OSPE50BHD	02, 03, 04 or 05	C3	108	M8	130	90	6.5	32	70	41	18.0

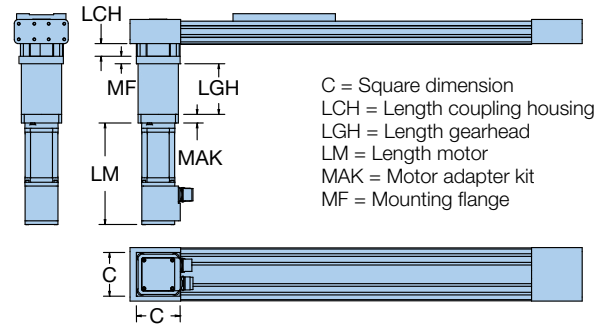
¹ When ordering with actuator, use order code ⑥ to specify drive shaft orientation and order code ⑨ to specify appropriately sized gearhead mounting kit. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

Mounted Gearhead and Motor Options



Mounted Gearhead and Motor options include a coupling housing, flange, gearhead with coupler, flange and motor



C = Square dimension
LCH = Length coupling housing
LGH = Length gearhead
LM = Length motor
MAK = Motor adapter kit
MF = Mounting flange

Mounted Gearhead and Mounted Motor

Actuator Size	Order Code		Mounted Motor	Dimensions — mm					
	⑥ ¹	⑨ ²		C	LCH	LGH	LM	MAK	MF
OSPE20BHD	Kx	K0	BE233FJ-KPSN	58	79	67.0	143	22.5	18.5
	Kx	K1	BE233FJ-KPSN w/ brake (CM233FJ-115027)	58	79	67.0	178	22.5	16.5
	Kx	K2	BE344LJ-KPSN	86	79	67.0	188	22.5	18.5
	Kx	K3	BE344LJ-KPSB	86	79	67.0	220	22.5	16.5
	Kx	KC	PM-FBL04AMK	62	79	67	108.2	22.5	18.5
	Kx	KD	MP-FBL04AMK2 (Brake)	62	79	67	148.2	22.5	18.5
OSPE25BHD	Kx	K0	BE233FJ-KPSN	58	22	67.0	143	22.5	13.0
	Kx	K1	BE233FJ-KPSN w/ brake (CM233FJ-115027)	58	22	67.0	178	22.5	13.0
	Kx	K2	BE344LJ-KPSN	86	22	67.0	188	22.5	13.0
	Kx	K3	BE344LJ-KPSB	86	22	67.0	220	22.5	13.0
	Kx		PM-FBL04AMK	62	22	67	108.2	22.5	13
	Kx		MP-FBL04AMK2 (Brake)	62	22	67	148.2	22.5	13
OSPE32BHD	Lx	K2	BE344LJ-KPSN	86	30	85.5	188	20.0	14.0
	Lx	K3	BE344LJ-KPSB	86	30	85.5	220	20.0	14.0
	Lx	M0	MPP0923D1E-KPSN	89	30	85.5	178	28.5	14.0
	Lx	M1	MPP0923D1E-KPSB	89	30	85.5	213	28.5	14.0
	Lx	M2	MPP1003D1E-KPSN	98	30	85.5	175	28.5	14.0
	Lx	M3	MPP1003D1E-KPSB	98	30	85.5	223	28.5	14.0
	Lx	M4	MPP1003R1E-KPSN	98	30	85.5	175	28.5	14.0
	Lx	M5	MPP1003R1E-KPSB	98	30	85.5	223	28.5	14.0
	Lx	KJ	PM-FCL10AMK	80	30	85	152.7	28.5	14
	Lx	KK	PM-FCL10AMK2 (Brake)	80	30	85	193	28.5	14
OSPE50BHD	Mx	K2	BE344LJ-KPSN	86	41	110.0	188	24.0	18.0
	Mx	K3	BE344LJ-KPSB	86	41	110.0	220	24.0	18.0
	Mx	M0	MPP0923D1E-KPSN	89	41	110.0	178	24.0	18.0
	Mx	M1	MPP0923D1E-KPSB	89	41	110.0	213	24.0	18.0
	Mx	M2	MPP1003D1E-KPSN	98	41	110.0	175	24.0	18.0
	Mx	M3	MPP1003D1E-KPSB	98	41	110.0	223	24.0	18.0
	Mx	M4	MPP1003R1E-KPSN	98	41	110.0	175	24.0	18.0
	Mx	M5	MPP1003R1E-KPSB	98	41	110.0	223	24.0	18.0
	Mx	M6	MPP1154B1E-KPSN	113	41	110.0	203	35.0	18.0
	Mx	M7	MPP1154B1E-KPSB	113	41	110.0	252	35.0	18.0
	Mx	M8	MPP1154P1E-KPSN	113	41	110.0	203	35.0	18.0
	Mx	M9	MPP1154P1E-KPSB	113	41	110.0	252	35.0	18.0
	Mx	KJ	PM-FCL10AMK	80	41	110	152.7	35	18
	Mx	KK	PM-FCL10AMK2 (Brake)	80	41	110	193	35	18

¹ When ordering with actuator, use order code ⑥ (see Ordering Information), to specify mounted gearhead size, ratio and orientation:

Gearhead size: **K** = PV60TA **L** = PV90TA **M** = PV115TA

Gearhead ratio and mounting orientation: (Replace "x" to specify)

With mounting position opposite carriage: **1** = ratio 3:1

2 = ratio 5:1

3 = ratio 10:1

With mounting position same side as carriage: **4** = ratio 3:1

5 = ratio 5:1

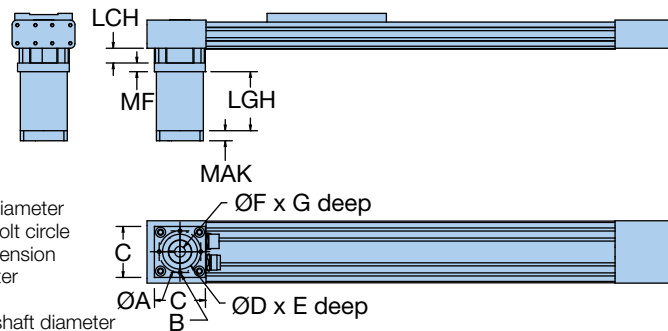
6 = ratio 10:1

² Use order code ⑨ (see Ordering Information) to specify choice of mounted motor.

■ Blue order codes indicate rapid shipment availability

Mounted Gearhead with Motor Mounting Kit Options

Mounted Gearhead with Motor Mounting Kits include a coupling housing, flange and gearhead with coupler and flange



A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
LGH = Length gearhead
MAK = Motor adapter
MF = Mounting flange

Belt Driven
Tables

Mounted Gearhead with Motor Mounting Kit

Actuator Size	Order Code		Dimensions — mm										
	⑥ ¹	⑨ ²	A	B	C	D	E	F	G	LCH	LGH	MAK	MF
OSPE20BHD	Jx	AA	46.66	M3	43	20.00	1.6	6.35	24.8	19	48.5	19.0	9.0
	Jx	AB	66.67	M4	55	38.10	1.6	6.35	20.5	19	48.5	15.7	9.0
	Jx	B5	46.00	M4	43	30.00	2.5	6.00	25.0	19	48.5	19.0	9.0
	Jx	AM	46.00	M4	43	30.00	2.5	8.00	25.0	19	48.5	19.0	9.0
	Jx	B6	63.00	M4	55	40.00	2.5	9.00	20.0	19	48.5	13.7	9.0
	Jx	AH	63.00	M5	55	40.00	2.5	9.00	20.0	19	48.5	19.0	9.0
	Kx	AB	66.67	M5	62	38.10	1.6	6.35	20.5	79	67.0	16.5	18.5
	Kx	AC	66.67	M5	62	38.00	1.6	9.53	20.8	79	67.0	16.5	18.5
	Kx	AF	98.43	M6	85	73.00	3.0	12.70	37.0	79	67.0	30.0	18.5
	Kx	AD	66.67	M5	62	38.10	1.6	9.525	31.8	79	67.0	22.5	18.5
	Kx	AE	98.43	M5	80	73.03	3.0	12.70	30.0	79	67.0	22.5	18.5
	Kx	B6	63.00	M4	62	40.00	2.5	9.00	20.0	79	67.0	16.5	18.5
	Kx	AH	63.00	M5	62	40.00	2.5	9.00	20.0	79	67.0	16.5	18.5
	Kx	B8	70.00	M5	62	50.00	3.0	12.00	30.0	79	67.0	22.5	18.5
	Kx	AN	70.00	M5	62	50.00	3.0	14.00	30.0	79	67.0	22.5	18.5
	Kx	AG	75.00	M5	62	60.00	2.5	11.00	23.0	79	67.0	16.5	18.5
	Kx	B9	75.00	M5	62	60.00	2.5	14.00	30.0	79	67.0	22.5	18.5
	Kx	BB	90.00	M6	80	70.00	3.0	14.00	30.0	79	67.0	22.5	18.5
	Kx	A3	100.00	M6	89	80.00	3.5	14.00	30.0	79	67.0	22.5	18.5

¹ When ordering with actuator, use order code ⑥ (see Ordering Information), to specify mounted gearhead size, ratio and orientation:

Gearhead size: **J** = PV040TA **K** = PV60TA

Gearhead ratio and mounting orientation: (Replace "x" to specify)

With mounting position opposite carriage: **1** = ratio 3:1 **2** = ratio 5:1 **3** = ratio 10:1

With mounting position same side as carriage: **4** = ratio 3:1 **5** = ratio 5:1 **6** = ratio 10:1

* 3:1 ratio not available on size OSPE20BHD (with "J" PV040TA gearhead)

² Use order code ⑨ (see Ordering Information), to specify appropriately sized motor mounting kit. See ordering information.

■ Blue order codes indicate rapid shipment availability

(continued on next page)

(continued from previous page)

Mounted Gearhead with Motor Mounting Kit

Actuator Size	Order Code		Dimensions — mm										
	⑥ ¹	⑨ ²	A	B	C	D	E	F	G	LCH	LGH	MAK	MF
OSPE25BHD	Kx	AB	66.67	M5	62	38.10	1.6	6.35	20.5	22	67.0	16.5	13
	Kx	AC	66.67	M5	62	38.00	1.6	9.53	20.8	22	67.0	16.5	13
	Kx	AF	98.43	M6	85	73.00	3.0	12.70	37.0	22	67.0	30.0	13
	Kx	AD	66.67	M5	62	38.10	1.6	9.525	31.8	22	67.0	22.5	13
	Kx	AE	98.43	M5	80	73.03	3.0	12.70	30.0	22	67.0	22.5	13
	Kx	B6	63.00	M4	62	40.00	2.5	9.00	20.0	22	67.0	16.5	13
	Kx	AH	63.00	M5	62	40.00	2.5	9.00	20.0	22	67.0	16.5	13
	Kx	B8	70.00	M5	62	50.00	3.0	12.00	30.0	22	67.0	22.5	13
	Kx	AN	70.00	M5	62	50.00	3.0	14.00	30.0	22	67.0	22.5	13
	Kx	AG	75.00	M5	62	60.00	2.5	11.00	23.0	22	67.0	16.5	13
	Kx	B9	75.00	M5	62	60.00	2.5	14.00	30.0	22	67.0	22.5	13
	Kx	BB	90.00	M6	80	70.00	3.0	14.00	30.0	22	67.0	22.5	13
OSPE32BHD	Kx	A3	100.00	M6	89	80.00	3.5	14.00	30.0	22	67.0	22.5	13
	Lx	AE	98.43	M5	90	73.03	3.0	12.70	30.0	30	85.5	20.0	14
	Lx	B6	63.00	M4	90	40.00	2.5	9.00	20.0	30	85.5	20.0	14
	Lx	AH	63.00	M5	90	40.00	2.5	9.00	20.0	30	85.5	20.0	14
	Lx	AN	70.00	M5	90	50.00	3.0	14.00	30.0	30	85.5	20.0	14
	Lx	AG	75.00	M5	90	60.00	2.5	11.00	23.0	30	85.5	20.0	14
	Lx	B9	75.00	M5	90	60.00	2.5	14.00	30.0	30	85.5	20.0	14
	Lx	B0	75.00	M6	90	60.00	3.0	14.00	30.0	30	85.5	20.0	14
	Lx	BB	90.00	M6	90	70.00	3.0	14.00	30.0	30	85.5	20.0	14
	Lx	B4	90.00	M6	90	70.00	3.0	16.00	40.0	30	85.5	28.5	14
	Lx	AP	90.00	M6	90	70.00	3.0	19.00	40.0	30	85.5	28.5	14
	Lx	B3	95.00	M6	90	50.00	2.5	14.00	30.0	30	85.5	20.0	14
	Lx	A3	100.00	M6	90	80.00	3.5	14.00	30.0	30	85.5	20.0	14
	Lx	AL	100.00	M6	90	80.00	3.0	16.00	40.0	30	85.5	28.5	14
	Lx	AJ	100.00	M6	90	80.00	3.0	19.00	40.0	30	85.5	30.0	14
	Lx	A4	115.00	M8	100	95.00	3.5	19.00	40.0	30	85.5	28.5	14
OSPE50BHD	Mx	AE	98.43	M5	115	73.03	3.0	12.70	30.0	41	110.0	24.0	18
	Mx	AG	75.00	M5	115	60.00	2.5	11.00	23.0	41	110.0	24.0	18
	Mx	B4	90.00	M6	115	70.00	3.0	16.00	40.0	41	110.0	35.0	18
	Mx	AP	90.00	M6	115	70.00	3.0	19.00	40.0	41	110.0	35.0	18
	Mx	A3	100.00	M6	115	80.00	3.5	14.00	30.0	41	110.0	24.0	18
	Mx	AL	100.00	M6	115	80.00	3.0	16.00	40.0	41	110.0	24.0	18
	Mx	AJ	100.00	M6	115	80.00	3.0	19.00	40.0	41	110.0	24.0	18
	Mx	A4	115.00	M8	115	95.00	3.5	19.00	40.0	41	110.0	24.0	18
	Mx	BD	130.00	M8	115	95.00	3.0	19.00	40.0	41	110.0	24.0	18
	Mx	AK	130.00	M8	115	110.00	3.5	24.00	50.0	41	110.0	35.0	18

¹ When ordering with actuator, use order code ⑥ (see Ordering Information), to specify mounted gearhead size, ratio and orientation:

Gearhead size: **L** = PV90TA **M** = PV115TA

Gearhead ratio and mounting orientation: (Replace "x" to specify)

With mounting position opposite carriage: **1** = ratio 3:1

2 = ratio 5:1

3 = ratio 10:1

With mounting position same side as carriage: **4** = ratio 3:1

5 = ratio 5:1

6 = ratio 10:1

² Use order code ⑨ to specify choice of appropriately sized mounted motor. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

End Cap Mounting Options

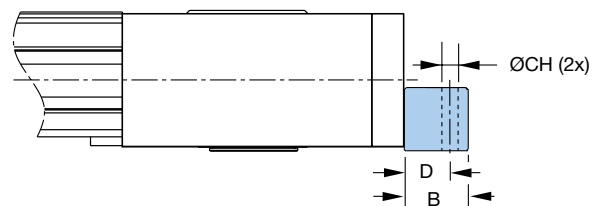
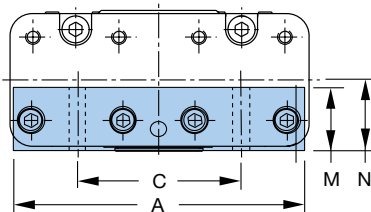
Order
Code

See "Maximum Permissible
Unsupported Length" for end cap
and profile mounting placement
requirements.

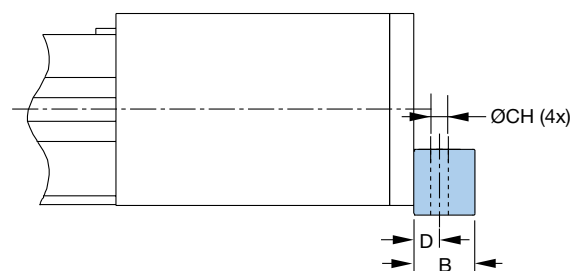
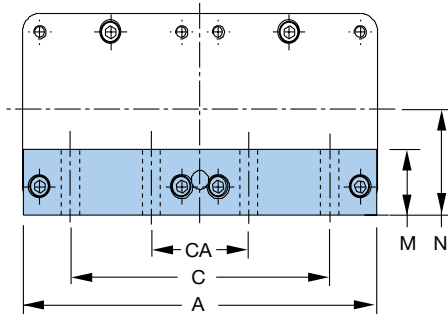
A
(1 pair)



Type CN End Cap for OSPE20BHD, OSPE25BHD and OSPE32BHD



Type CN End Cap for OSPE50BHD



Type CN Top Mounting Block

			Dimensions — mm							
Actuator Size	Part Number*	Weight* (kg)	A	B	C	CA	ØCH	D	M	N
OSPE20BHD	16213FIL	0.165	74	20	40	—	6.6	10.0	20	22
OSPE25BHD	12266FIL	0.311	91	25	52	—	6.6	16.0	25	22
OSPE32BHD	12267FIL	0.500	114	25	64	—	9.0	18.0	25	30
OSPE50BHD	12268FIL	0.847	174	30	128	48	9.0	12.5	30	48

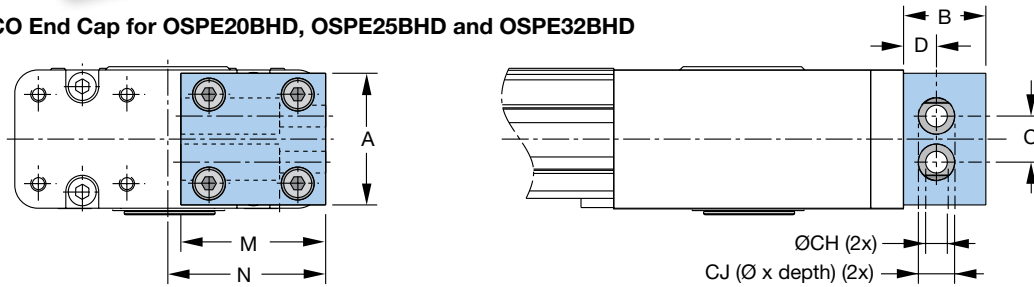
*When ordering with actuator, use order code 10. See Ordering Information. To order as replacement parts (per pair), use part numbers listed). Weights listed are for a single piece.

Order
Code

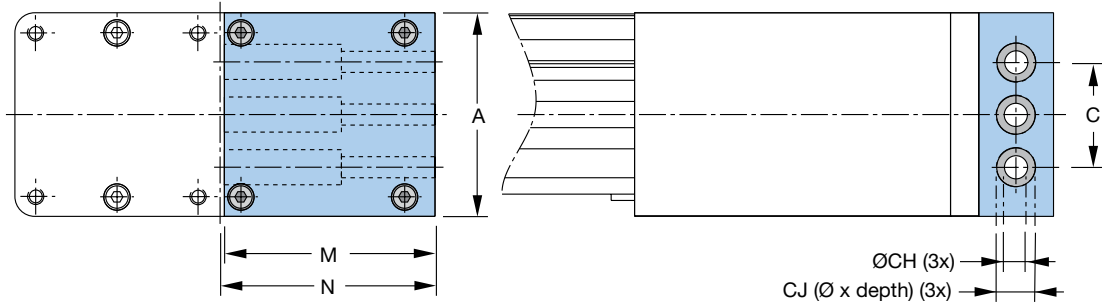
B
(1 pair)



Type CO End Cap for OSPE20BHD, OSPE25BHD and OSPE32BHD



Type CO End Cap for OSPE50BHD



Type CO Side Mounting Block

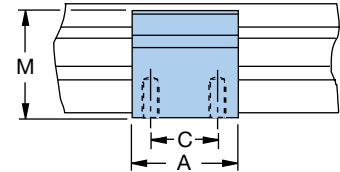
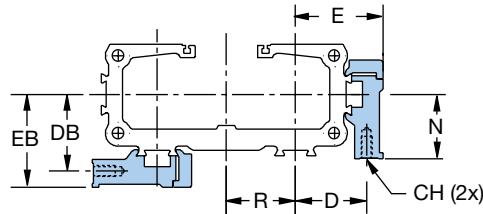
Actuator Size	Part Number*	Weight* (kg)	Dimensions — mm							
			A	B	C	ØCH	CJ	D	M	N
OSPE20BHD	16241FIL	0.166	40	22	18	6.6	11 x 39	15.0	42	45
OSPE25BHD	16245FIL	0.221	40	25	14	6.6	11 x 30	10.0	44	48
OSPE32BHD	16246FIL	0.450	56	28	19	9.0	15 x 42	12.0	60	62
OSPE50BHD	16247FIL	1.159	87	32	45	9.0	15 x 50	16.0	90	92

*When ordering with actuator, use order code 10. See ordering information, Ordering Information. To order as replacement parts (per pair), use part numbers listed). Weights listed are for a single piece.

Profile Mounting Options

Order
Code

2, 5, 8 or B
(1, 2, 3 or 4 pair)



See "Maximum Permissible Unsupported Length" for end cap and profile mounting placement requirements.

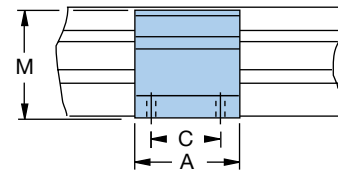
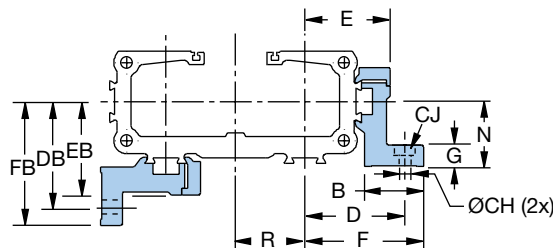
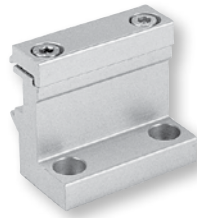
Type D1 (with internal threads)

Actuator Size	Part Number*	Weight* (kg)	Dimensions — mm									
			A	C	CH	D	DB	E	EB	M	N	R
OSPE20BHD	20008FIL	0.061	50	36	M5 x 10	20.5	28.1	28.0	35.6	38	22	23
OSPE25BHD	20008FIL	0.061	50	36	M5 x 10	27.0	28.5	34.5	36.0	38	22	26
OSPE32BHD	20157FIL	0.177	50	36	M5 x 10	33.0	35.5	40.5	43.0	46	30	32
OSPE50BHD	15534FIL	0.167	60	45	M6 x 11	40.0	45.0	52.0	57.0	71	48	44

*When ordering with actuator, use order code ①. See ordering information, Ordering Information. To order replacement parts (per individual unit), use part numbers listed. Part numbers and weights are for a single piece.

Order
Code

1, 4, 7 or A
(1, 2, 3 or 4 pair)



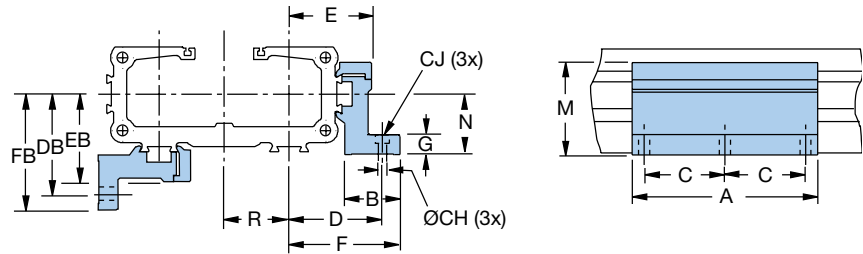
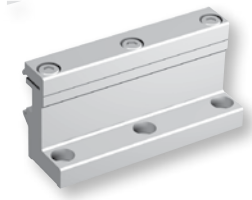
Type E1 (with 2 thru holes)

Actuator Size	Part Number*	Weight* (kg)	Dimensions — mm														
			A	B	C	ØCH	CJ	D	DB	E	EB	F	FB	G	M	N	R
OSPE20BHD	20009FIL	0.074	50	26	36	5.5	10 x 5.7	33.5	41.1	28.0	35.6	41.0	48.6	8	38	22	23
OSPE25BHD	20009FIL	0.074	50	26	36	5.5	10 x 5.7	40.0	41.5	34.5	36.0	47.5	49.0	8	38	22	26
OSPE32BHD	20158FIL	0.092	50	27	36	5.5	10 x 5.7	46.0	48.5	40.5	43.0	54.5	57.0	10	46	30	32
OSPE50BHD	15536FIL	0.189	60	34	45	7.0	—	59.0	64.0	52.0	57.0	67.0	72.0	10	71	48	44

*When ordering with actuator, use order code ①. See ordering information, Ordering Information. To order replacement parts (per individual unit), use part numbers listed. Part numbers and weights are for a single piece.

Order
Code

3, 6, 9 or C
(1, 2, 3 or 4 pair)



Type MAE (with 3 thru holes)

Actuator Size	Part Number*	Weight* (kg)	Dimensions — mm														
			A	B	C	ØCH	CJ	D	DB	E	EB	F	FB	G	M	N	R
OSPE20BHD	12278FIL	0.271	92	26	40	5.5	10 x 5.7	33.5	41.1	28.0	35.6	41.0	48.6	8	38	22	23
OSPE25BHD	12278FIL	0.271	92	26	40	5.5	10 x 5.7	40.0	41.5	34.5	36.0	47.5	49.0	8	38	22	26
OSPE32BHD	12279FIL	0.334	92	27	40	5.5	10 x 5.7	46.0	48.5	40.5	43.0	54.5	57.0	10	46	30	32
OSPE50BHD	12280FIL	0.668	112	34	45	7.0	—	59.0	64.0	52.0	57.0	67.0	72.0	10	71	48	44

*When ordering with actuator, use order code ⑪. See ordering information, Ordering Information. To order replacement parts (per individual unit), use part numbers listed. Part numbers and weights are for a single piece.

ORDERING INFORMATION

OSPE

Select an order code from each of the numbered fields to create a complete OSPE..BHD model order number. Include hyphens and non-selective characters as shown in example below.

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫			
Order Number Example:	OSPE	25	–	6	0	0	02	–	00000	–	P	00	0	0	0

① Series

OSPE Origa System Plus Electromechanical

② Actuator Bore Size

20 73 mm W x 49 mm H
25 93 mm W x 53 mm H
32 116 mm W x 67 mm H
50 175 mm W x 93 mm H

③ Drive Train

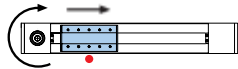
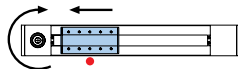
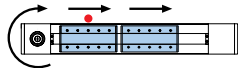
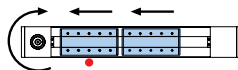
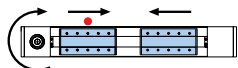
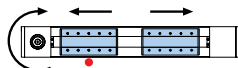
5 Belt actuator with integrated roller guide
 (Available upon request — consult factory)
6 Belt actuator with integrated ball bearing guide

④ Carriage

0 Standard
1 Tandem (two carriages for higher load capabilities)
2 Bi-Parting (two driven carriages with opposing movements)

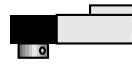
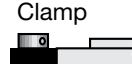
⑤ Operating Direction and Magnet Position*

(See blue inset box (next page) for parallel actuators operating direction)

- 0**  Standard (Carriage moves away from drive end)
- 1**  Standard (Carriage moves toward drive end)
- 0**  Tandem (Carriage moves away from drive end)
- 1**  Tandem (Carriage moves toward drive end)
- 2**  Bi-Parting (Carriages move toward mid-actuator)
- 3**  Bi-Parting (Carriages move away from mid-actuator)

* Sensors must be mounted in the side or bottom dovetail groove on the same side of the actuator with mounted magnet (•)

⑥ Drive Shaft and Gearhead/Motor Options Configuration and Orientation

- 02**  Clamp shaft¹ (opposite carriage side)
Clamp
- 04**  Clamp shaft¹ (same side as carriage)
Clamp
- 03**  Plain shaft² (opposite carriage side) with plain shaft to connect this master actuator in parallel with idler actuator using a link shaft
Clamp
- 05**  Plain shaft² (same side as carriage) with plain shaft to connect this master actuator in parallel with idler actuator using a link shaft
Clamp
- 06**  Hollow shaft with keyway (opposite carriage side)
Hollow
- 07**  Hollow shaft with keyway (same side as carriage)
Hollow
- 0A**  Plain shaft² (opposite carriage side) to connect this idler actuator in parallel with a master actuator using a link shaft
Plain
- 0B**  Plain shaft² (same side as carriage) to connect this idler actuator in parallel with a master actuator using a link shaft
Plain
- Jx** PV040TA
Kx PV060TA
Lx PV090TA
Mx PV115TA
 Mounted Gearhead Options³
 (replace “x” with appropriate ratio and orientation)

¹ See Options & Accessories for available Gearhead Mounting Kit Options.

² Only available with order code 00 “No gearhead mounting kit or motor option” (item ⑨)

³ Requires motor or motor mounting kit selection for item ⑨ below. See Options & Accessories for “Mounted Gearhead and Motor” or “Mounted Gearhead with Motor Mounting Kit” for details and dimensions

 Blue order codes indicate rapid shipment availability

⑦ Order Stroke* (see Dimensions)

00000 5-digit input (in mm)

* Maximum standard stroke:

OSPE20BHD = 05760 mm

OSPE25HD = 05700 mm

OSPE32BHD = 05600 mm

OSPE50BHD = 05500 mm

Longer strokes available upon request. Consult factory.

⑧ Hardware and Cover Strip

P Standard hardware with Parker gold cover strip

⑨ Gearhead/Motor Mounting Options

00 No gearhead or motor mounting option

Gearhead Mounting Kits (see Options & Accessories for available option dimensions and delivery)

Mounted Gearhead and Motor (see Options & Accessories for available option dimensions and delivery)

Mounted Gearhead with Motor Mounting Kit (see Options & Accessories for available option dimensions and delivery)

⑩ End Cap Mounting (see Options & Accessories)

0 No end cap mounting

A 1 pair CN (for top carriage mounting)

B 1 pair CO (for side carriage mounting)

⑪ Profile Mounting (see Options & Accessories)

0 No profile mounting

2 1 pair D1 (with 2 internal threads)

5 2 pair D1 (with 2 internal threads)

8 3 pair D1 (with 2 internal threads)

B 4 pair D1 (with 2 internal threads)

1 1 pair E1 (with 2 thru holes)

4 2 pair E1 (with 2 thru holes)

7 3 pair E1 (with 2 thru holes)

A 4 pair E1 (with 2 thru holes)

3 1 pair MAE (with 3 thru holes)

6 2 pair MAE (with 3 thru holes)

9 3 pair MAE (with 3 thru holes)

C 4 pair MAE (with 3 thru holes)

⑫ Magnetic Sensor Mounting*

0 No sensor mounting

A 1 pc. N.O., NPN, with M8 connector

B 2 pc. N.C., NPN, with M8 connector

C 1 pc. N.O., NPN, with M8 connector

2 pc. N.C., NPN, with M8 connector

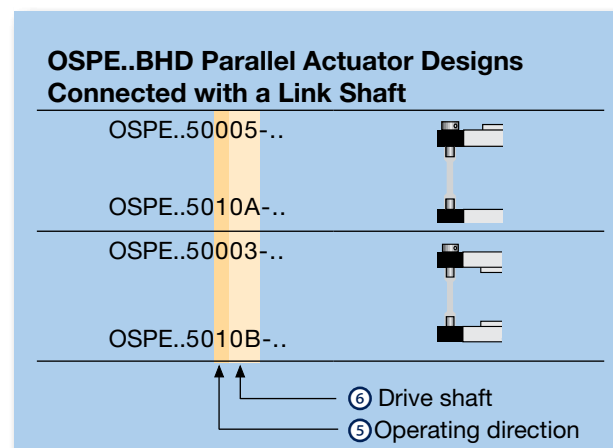
D 1 pc. N.O., PNP, with M8 connector

E 2 pc. N.C., PNP, with M8 connector

F 1 pc. N.O., PNP, with M8 connector

2 pc. N.C., PNP, with M8 connector

* Extension cable with M8 plug and 5m cable with flying leads, 003-2918-01, is included with all sensor options.



■ Blue order codes indicate rapid shipment availability

Free sizing and selection support
from Virtual Engineer at
parker.com/VirtualEngineer



OSPE..B Belt-Driven Actuators

Actuators for Point-to-Point Applications

FEATURES

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



Belt Driven
Tables

Features

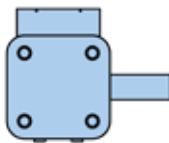
- Integrated drive and guidance system
- Tandem carriage with second carriage for increased load capabilities
- Long available strokes
- Complete motor, gearhead and control packages
- Diverse range of accessories and mountings
- Bi-parting carriages and special options available
- Ambient temperature range -30°C to +80°C
- IP 54 rated

PowerSlide

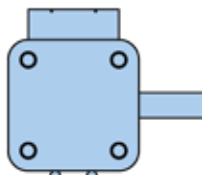
- Designed for harsh environments
- Speed up to 3 m/s
- Hardened steel guide rail
- Carriage with steel v-wheels
- Tough roller cover with wiper and grease access point

ProLine

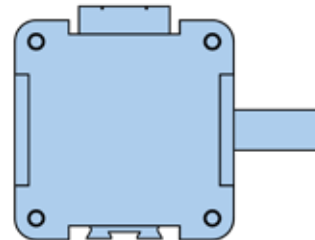
- Designed for high-speed, precise, smooth and quiet operation
- Aluminum rail with ground and calibrated steel trucks
- Carriage supported by needle bearing rolls
- Integrated wipers to keep bearing system clean
- Lifetime lubricated bearing system



OSPE25BHD



OSPE32BHD



OSPE50BHD

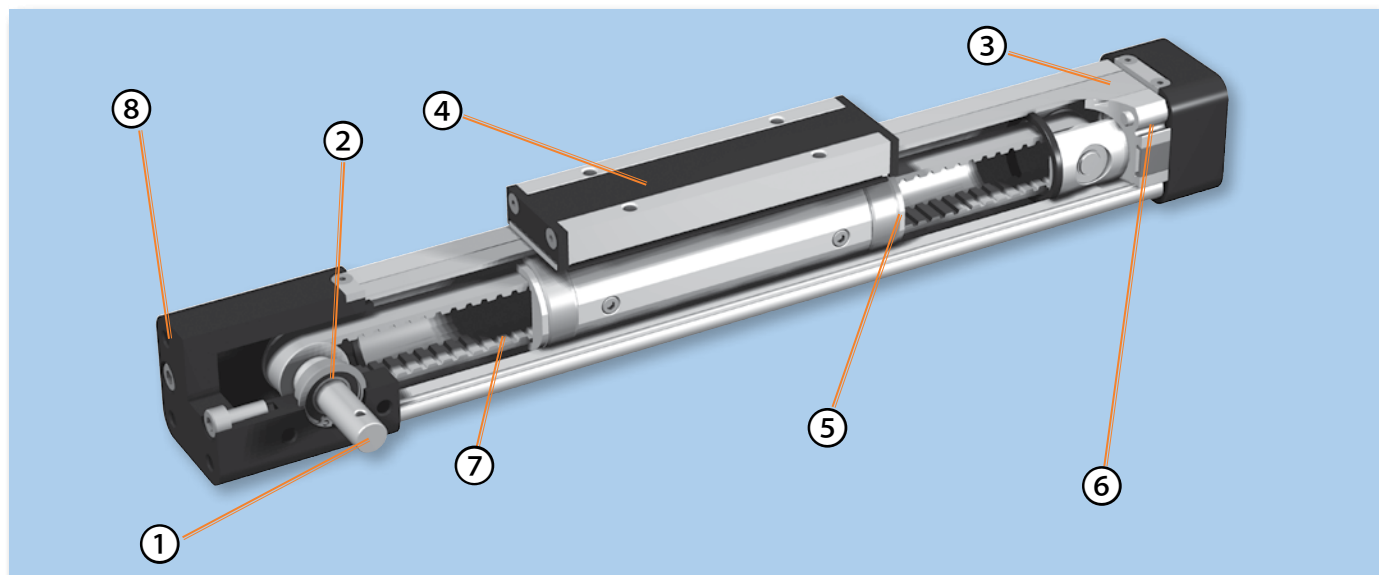
	OSPE25BHD	OSPE32BHD	OSPE50BHD
Maximum Travel (mm)	3,000	5,000	5,000
Maximum Payload F_z (N)	160	300	850
Maximum Acceleration (m/sec ²)	10	10	10

The field-proven OSPE..B design is the industry standard for the widest array of point-to-point linear traverse applications. Compact size and maximum configurability make the OSPE..B easy to

integrate into any machine layout simply and neatly.

To meet rigorous environmental and maximum performance criteria, the OSPE..B Series is optionally available with

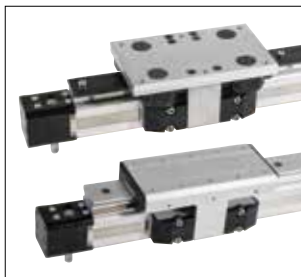
the PowerSlide and ProLine external bearing which can be installed in any position (top, side or bottom of the actuator) and retrofitted to existing actuators.



- ① **Drive shaft**
Designed to pair with a large assortment of motor and gearhead mounting options
- ② **Double row angular contact ball bearing**
Optimized for high thrust force transmission
- ③ **Corrosion resistant steel sealing band**
Magnetically fastened to the actuator body and provides sealing to IP54
- ④ **Carriage**
Low profile, high strength aluminum carriage with threaded holes for ease of mounting
- ⑤ **Low friction support rings**
Polymer glider bushing to provide an economical guidance system with optimum performance
- ⑥ **Slotted profile**
With dovetail grooves for strength, actuator mounting, and mounting of sensor and other accessories
- ⑦ **Steel reinforced toothed belt**
Moderate force transmission and long life
- ⑧ **End housing mounting**
Threaded mounting holes allow for a multitude of mounting options

Carriage Bearing Design Configurations

Standard carriage — with internal glider bearing
 PowerSlide — externally mounted steel roller guide for higher load capabilities specifically in harsh environments
 ProLine — externally mounted aluminum roller guide for higher load capabilities in high speed applications



Optional Carriage Orientation

(for standard carriage only)
 Tandem carriage (for higher load capabilities), bi-parting carriage (for opposing synchronized movements), clevis mounting (provides compensation between actuator and guide rails in machine designs), Inversion mounting (allows outer band to be on the bottom, while keeping payload on top, for better actuator protection in dirty environments)



Actuator Mounting Options

End cap mounting — allows the actuator to be anchored by the end caps
 Profile mounting — supports long travel actuators or for direct mounting

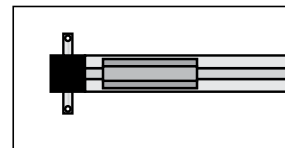


Multi-axis Systems

A wide range of adapter plates and intermediate drive shafts simplifies engineering and installation. Please consult factory for your individual system design.

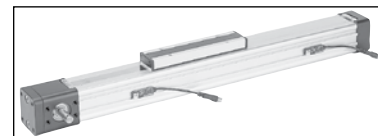
Drive Shaft Options

Plain drive shaft left, plain drive shaft right, or double plain drive shaft to connect master unit with idler unit



Options and Accessories

Information on all OSPE..B Series options are detailed in Options & Accessories. Simply select all the options needed to solve your application requirements, then order with the actuator using convenient order codes (see Ordering Information). To order an option separately as an upgrade to an existing system or as a replacement part, use the individual option part numbers provided.

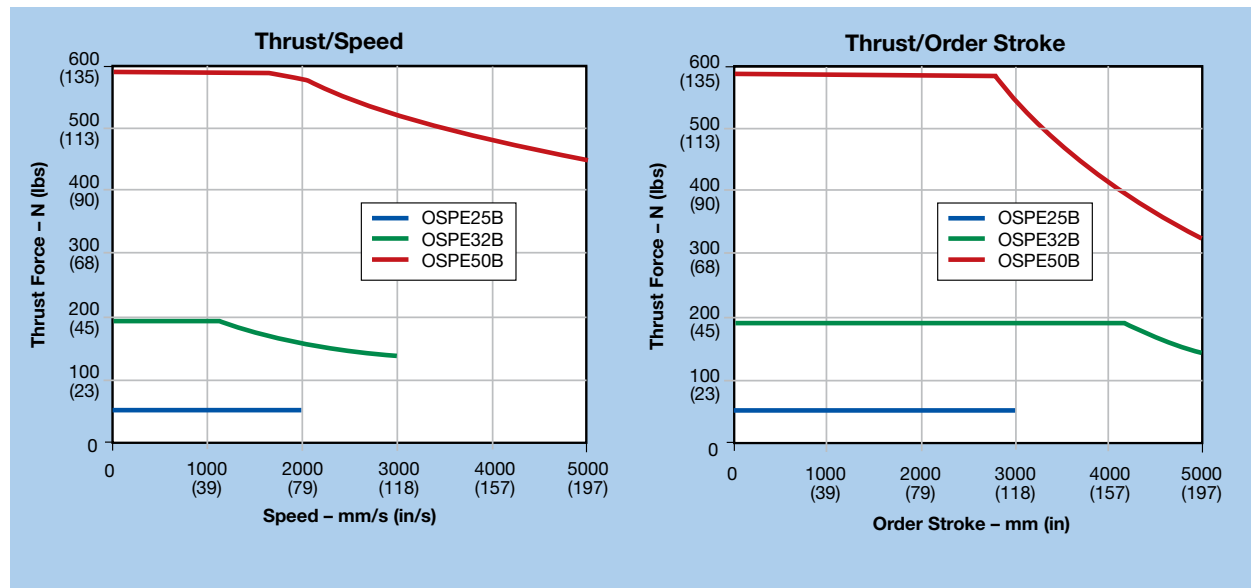


OSPE..B

Actuator Size			OSPE25B	OSPE32B	OSPE50B
Travel Distance per Rev	S _{lin}	mm	60	60	100
Pulley Diameter		mm	19.10	19.10	31.83
Linear Speed (Max)	v _{max}	m/s	2	3	5 ¹
Acceleration (Max)	a _{max}	m/s ²	10	10	10
Repeatability (unidirectional)		μm	± 50	± 50	± 50
Thrust Force (Max)	F _{Amax}	N	50	150	425
		lbs	11	34	96
Torque on Drive Shaft (Max)	M _{Amax}	Nm	0.9	1.9	7.4
		in-lb	8	17	65
Inertia					
@ Zero Stroke	J ₀	kgmm ²	25	43	312
Per Meter of Stroke	J _{OS}	kgmm ² /m	6.6	10.0	45.0
	J _m	kgmm ² /kg	91	91	253
Per 1 kg Moved Mass					
Ambient Temperature Range		°C	-30 to +80		
IP Rating)			IP 54		

¹ Maximum linear speed for OSPE50B with PowerSlide bearing is 3 m/s

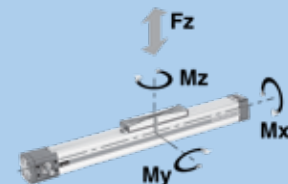
Available Thrust Force



Calculating Load Factors - Combined Normal and Moment Load

The sum of combined loads (static and dynamic) must not exceed "1" at any time as shown in the formula below:

$$\frac{F_z}{F_z(\max)} + \frac{M_x}{M_x(\max)} + \frac{M_y}{M_y(\max)} + \frac{M_z}{M_z(\max)} \leq 1$$



$$\begin{aligned}
 M &= F \times l \text{ (Nm)} \\
 M_x &= M_{x \text{ static}} + M_{x \text{ dynamic}} \\
 M_y &= M_{y \text{ static}} + M_{y \text{ dynamic}} \\
 M_z &= M_{z \text{ static}} + M_{z \text{ dynamic}}
 \end{aligned}$$

OSPE25B Performance

Carriage (Bearing System)			Standard Carriage	PowerSlide			ProLine
Part Number ¹			—	PS25/25	PS25/35	PS25/44	PL25
Max Order Stroke ²	OS _{max}	mm	3000	3000	3000	3000	3000
Normal Load ³ (Max)	F _Y / F _Z	N (lbs)	160 (36)	197 (44)	219 (49)	387 (87)	1549 (348)
Moment Load ³ (Max)	M _X	Nm (in-lb)	2 (18)	3 (27)	4 (35)	6 (53)	30 (266)
	M _Y	Nm (in-lb)	12 (106)	14 (124)	15 (133)	57 (504)	69 (611)
	M _Z	Nm (in-lb)	8 (71)	14 (124)	15 (133)	57 (504)	69 (611)
Torque — No Load ⁴	M ₀	Nm (in-lb)	0.4 (4)	0.6 (5)	0.6 (5)	0.6 (5)	0.6 (5)
@ 0 Stroke	m ₀	kg (lbs)	0.7 (1.54)	1.0 (2.20)	1.1 (2.42)	1.3 (2.86)	0.9 (1.98)
Weight Per Meter of Stroke	m _{OS}	kg (lbs)	1.6 (3.52)	3.0 (6.60)	3.4 (7.48)	4.2 (9.24)	3.3 (7.26)
Carriage ⁴	m _C	kg (lbs)	0.2 (0.44)	0.9 (1.98)	1.0 (2.20)	1.7 (3.74)	1.0 (2.20)

OSPE32B Performance

Carriage (Bearing System)			Standard Carriage	PowerSlide		ProLine
Part Number ¹			—	PS32/35	PS32/44	PL32
Max Order Stroke ²	OS _{max}	mm	5000	3500	3500	3750
Normal Load ³ (Max)	F _Y / F _Z	N (lbs)	300 (67)	303 (68)	747 (168)	2117 (476)
Moment Load ³ (Max)	M _X	Nm (in-lb)	8 (71)	4 (35)	16 (142)	52 (460)
	M _Y	Nm (in-lb)	25 (221)	15 (133)	57 (504)	132 (1168)
	M _Z	Nm (in-lb)	16 (142)	15 (133)	57 (504)	132 (1168)
Torque — No Load ⁴	M ₀	Nm (in-lb)	0.5 (4)	0.8 (7)	0.8 (7)	0.8 (7)
@ 0 Stroke	m ₀	kg (lbs)	1.5 (2.64)	1.9 (4.18)	2.1 (4.62)	2.0 (4.40)
Weight Per Meter of Stroke	m _{OS}	kg (lbs)	3.2 (7.04)	5.1 (11.22)	5.9 (12.98)	5.8 (12.76)
Carriage ⁴	m _C	kg (lbs)	0.4 (0.88)	1.2 (2.64)	1.9 (4.18)	1.6 (3.52)

OSPE50B Performance

Carriage (Bearing System)			Standard Carriage	PowerSlide		ProLine
Part Number ¹			—	PS50/60	PS50/76	PL50
Max Order Stroke ²	OS _{max}	mm	5000	3500	3500	3750
Normal Load ³ (Max)	F _Y / F _Z	N (lbs)	850 (191)	975 (219)	1699 (382)	5626 (1265)
Moment Load ³ (Max)	M _X	Nm (in-lb)	16 (142)	29 (257)	59 (522)	201 (1779)
	M _Y	Nm (in-lb)	80 (708)	81 (717)	149 (1319)	451 (3992)
	M _Z	Nm (in-lb)	32 (283)	81 (717)	149 (1319)	451 (3992)
Torque — No Load ⁴	M ₀	Nm (in-lb)	0.6 (5)	0.9 (8)	0.9 (8)	0.9 (8)
@ 0 Stroke	m ₀	kg (lbs)	4.2 (9.24)	5.5 (12.10)	6.3 (13.86)	5.4 (11.88)
Weight Per Meter of Stroke	m _{OS}	kg (lbs)	6.2 (13.64)	10.4 (22.88)	12.8 (28.16)	10.0 (22.00)
Carriage ⁴	m _C	kg (lbs)	1.0 (2.20)	3.3 (7.26)	5.9 (12.98)	3.5 (7.70)

¹ PowerSlide or ProLine guide bearings can be ordered individually with assigned part number in the table and specified, five digit order stroke value (mm), following the part number (-nnnnn) to designate the appropriate length guide rail. To order PowerSlide or Proline bearing with the actuator, use the appropriate order in item ⑩

² Longer strokes available upon request. Contact factory.

³ Load and moment based on 8000 km performance Refer to "Calculating Load Factors" for additional information.

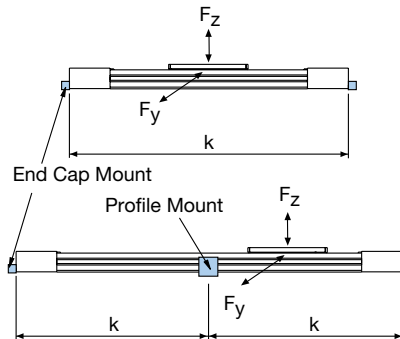
⁴ For tandem and bi-parting options, double the values listed.

Maximum Permissible Unsupported Length — Determining end cap and profile mounting placement

OSPE..B Series actuators need to be mounted onto a solid machine base or frame structure using appropriately positioned end cap and profile mounts. This ensures that the actuator will not undergo excessive deflection based on the application's load and length requirements.

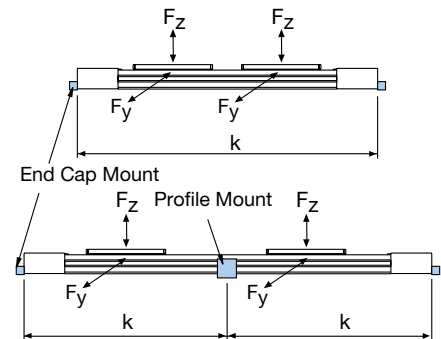
The greater the load and/or the longer the length between mounts, the more the actuator is susceptible to deflection. Deflection is also dependent on the carriage orientation (F_z for top oriented carriage or F_y for a side mounted carriage).

Standard Carriage, Tandem Carriage, PowerSlide or ProLine



To determine correct end cap and profile mount placement, please follow the steps shown in the example below.

Bi-Parting Carriage



Use the deflection graphs (next page), to ensure that the load will not exceed the maximum allowed deflection.

Example:

A horizontal application uses an OSPE32B with a top oriented carriage. The maximum load to the carriage is 10 kg and the order stroke is 3,700 mm (see Dimensions to calculate order stroke).

Therefore, the overall length of the actuator will be 4,000 mm:

$$3,700 \text{ mm} + 2 \times \text{Dim "X"} (150 \text{ mm}) = 4,000 \text{ mm}$$

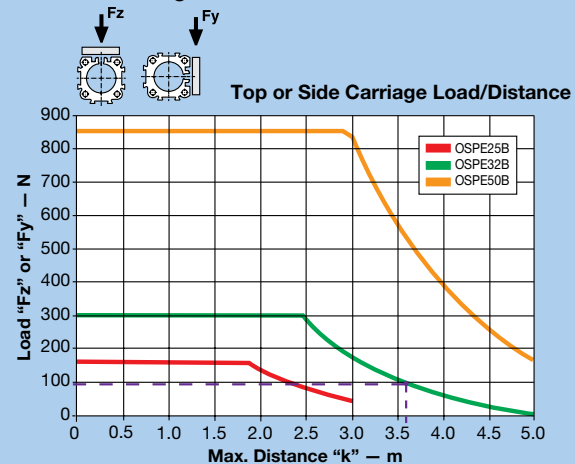
- 1) Use the appropriate F_z graph (next page) for a top loaded carriage. (Note: with the standard carriage, top loaded F_z and side loaded F_y values are the same).
- 2) Calculate the Load " F " in Newtons based on the 10 kg application load requirement:

$$10 \text{ kg} \times 9.81 \text{ kg/ms}^2 = 98.1 \text{ N}$$

- 3) Draw a line from 98 N on the Y-axis to the OSPE32B curve, then down to the X-axis.
- 4) The value of " k " is approximately 3,600 mm.
- 5) Since the overall length (4,000 mm) is greater than this value " k ", the actuator will require an additional third fixture point — two end cap mounts and one profile mount — equally spaced to create a distance " k " of 2000 mm in between.
- 6) Maximum deflection of the actuator with this mounting configuration will be less than 4 mm:

$$0.2\% \text{ of } 2,000 \text{ mm} = 4 \text{ mm}$$

Standard Carriage Load-Distance

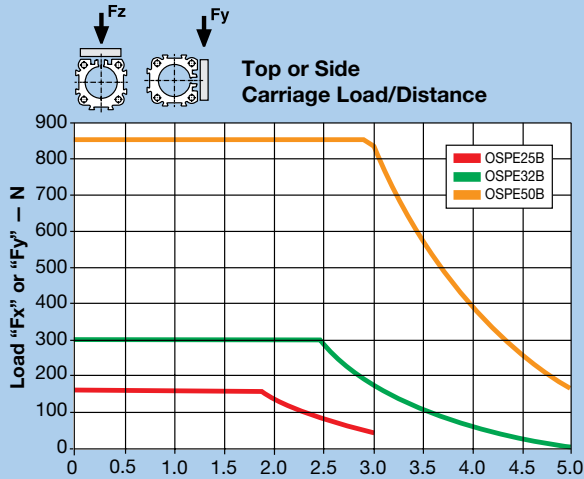


To further reduce deflection:

If the application requires less deflection, then simply reduce the distance " k " appropriately. In this example, for instance, the application must not exceed 2 mm (1/2 the maximum deflection calculated). Therefore, " k " must also be 1/2, or 1000 mm.

To achieve this reduced maximum deflection, the actuator will require five fixture points — two end cap mounts and three profile mounts — equally spaced with a distance " k " of 1000 mm in between.

Standard Carriage Load-Distance



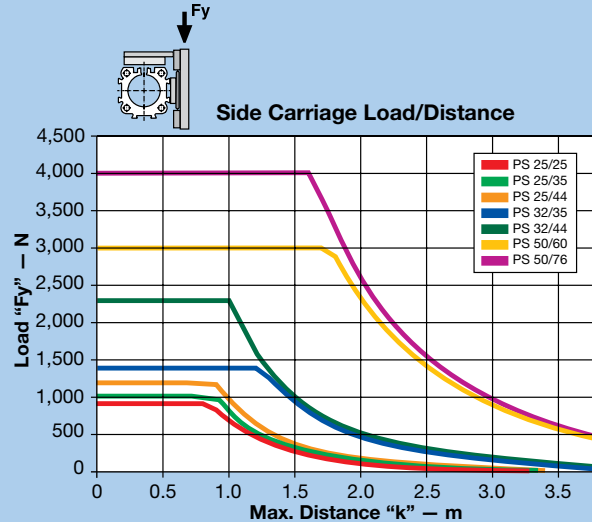
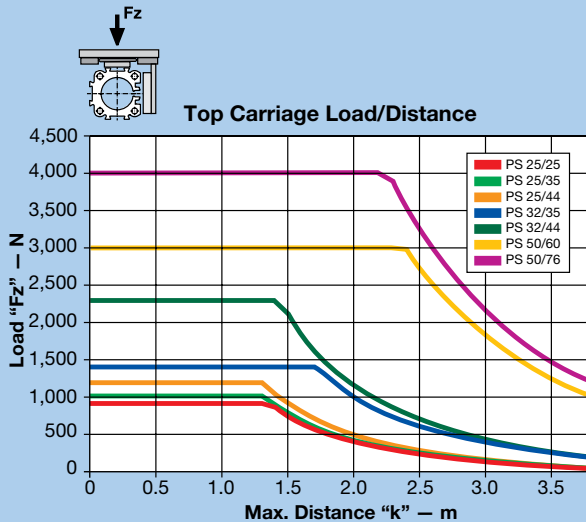
Maximum Permissible Unsupported Length

Determining end cap and profile mounting placement

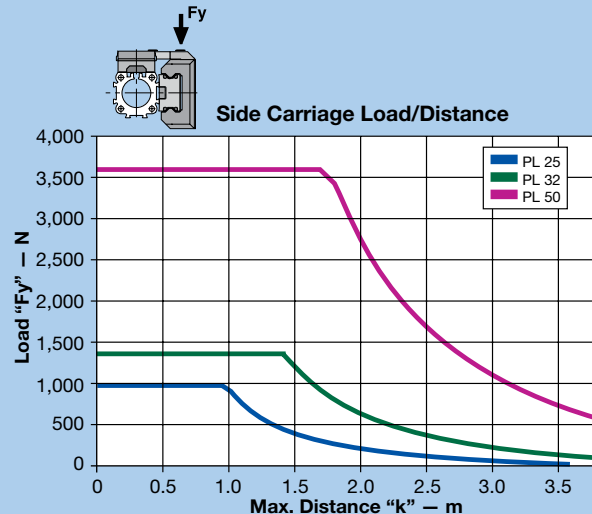
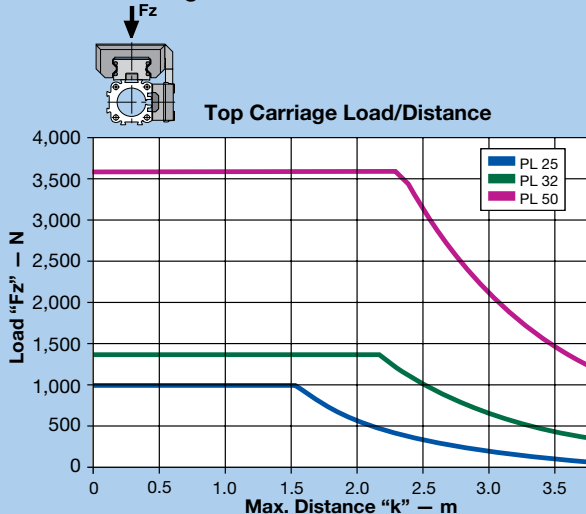
Use the appropriate deflection graph to ensure that the application load does not exceed the deflection curve. Supporting the actuator within the recommended maximum distance "k" will ensure that the installation will have a maximum deflection equal to 0.2% of distance "k."

To further reduce deflection, simply reduce the distance between end cap and profile mounts as described in the example on the previous page.

PowerSlide Carriage Load-Distance



ProLine Carriage Load-Distance

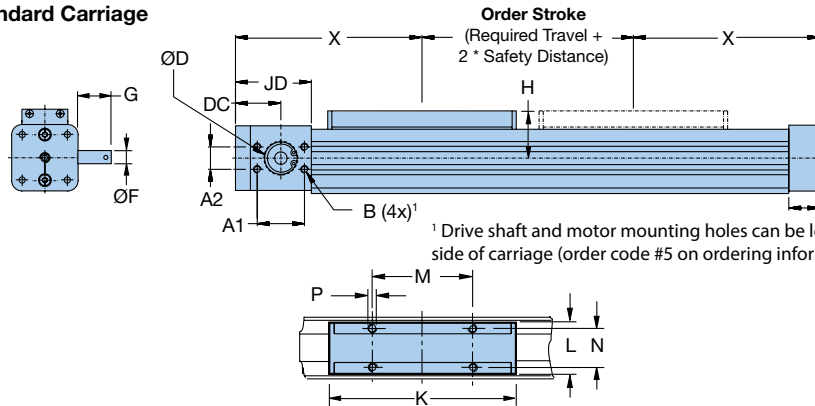




DIMENSIONS

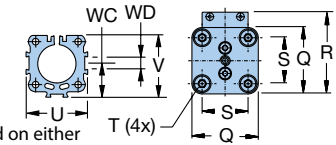
Base Unit Dimensions w/Standard Carriage

Standard Carriage

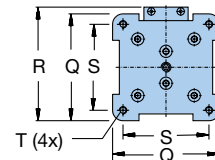


Dimensions — mm

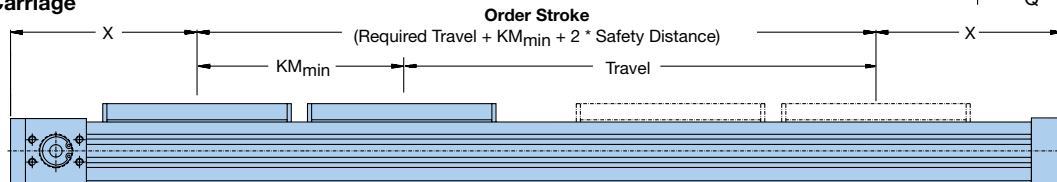
Size 25 & 32 End Cap



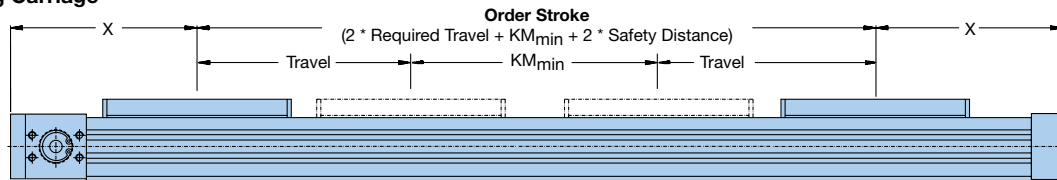
Size 50 End Cap



Tandem Carriage



Bi-Parting Carriage



* See Options & Accessories for clevis mount and inversion mount optional carriage dimensions.

Actuator Size	A	A1	A2	B	D	DC	F	G	H	J	JD	K
OSPE25B	33.5	30	15	M5 x 10	19 ^{H7}	37.0	10 _{j6}	24	31	22	57	117
OSPE32B	42.0	38	18	M6 x 12	26 ^{H7}	36.5	10 _{j6}	26	38	25	61	152
OSPE50B	59.4	50	32	M8 x 16	40 ^{H7}	48.5	16 _{h8}	34	49	25	85	200

	L	H	N	P	Q	R	S	T	U	V	WC	WD	X
OSPE25B	33	65	25	M5 x 8	41	52.5	27	M5 x 10	40	39.5	21.5	10.4	125
OSPE32B	36	90	27	M6 x 10	52	66.5	36	M6 x 12	52	51.7	28.5	10.4	150
OSPE50B	36	110	27	M6 x 10	87	92.5	70	M6 x 12	76	77	43.0	10.4	200

Order Stroke Dimensional Requirements

Actuator Size	KM_{min}	KM_{rec}
OSPE25B	130	190
OSPE32B	170	230
OSPE50B	220	320

KM_{min} is the minimum distance between two carriages possible; KM_{rec} is the recommended distance for optimal performance.

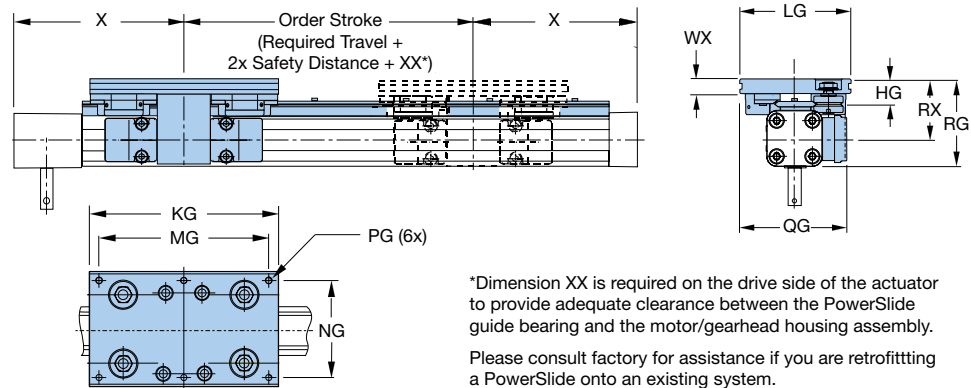
Order Stroke Safety Distance:

The mechanical end position should not be used as a mechanical end stop, thus an additional **Safety Distance** at both ends of travel must be incorporated into the Order Stroke. The safety distance for servo-driven systems is equivalent to the travel distance per revolution of the drive shaft. AC motor-driven systems with VFD require a larger safety distance than servo systems. For further information and design assistance, please consult factory.



PowerSlide Dimensions

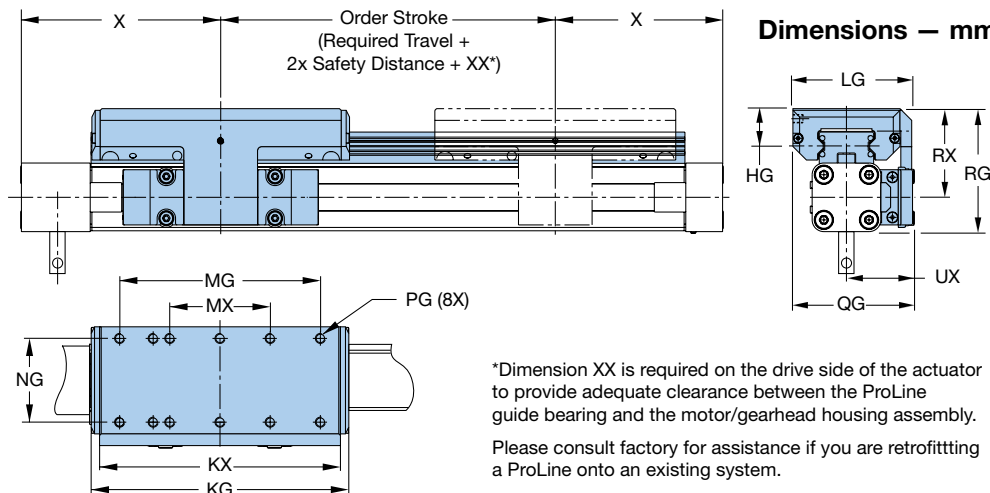
Dimensions — mm



Guide Rail Size	HG	KG	LG	MG	NG	PG	QG	RG	RX	WX	X	XX
PS25/25	20.0	145	80	125	64	M6 x 11	79.5	73.5	53.0	11.0	125	5
PS25/35	21.5	156	95	140	80	M6 x 12	89.5	73.0	52.5	12.5	125	10
PS25/44	26.0	190	116	164	96	M8 x 15	100.0	78.5	58.0	15.0	125	27
PS32/35	21.5	156	95	140	80	M6 x 12	95.5	84.5	58.5	12.5	150	—
PS32/44	26.0	190	116	164	96	M8 x 15	107.0	90.0	64.0	15.0	150	6
PS50/60	28.5	240	135	216	115	M8 x 17	130.5	123.5	81.0	17.0	200	5
PS50/76	39.0	280	185	250	160	M10 x 20	155.5	135.5	93.0	20.0	200	25

ProLine Dimensions

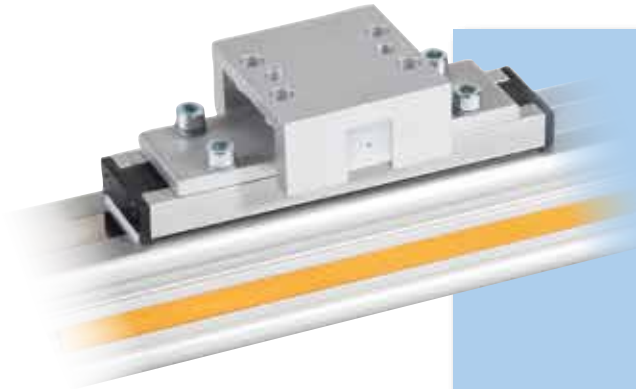
Dimensions — mm



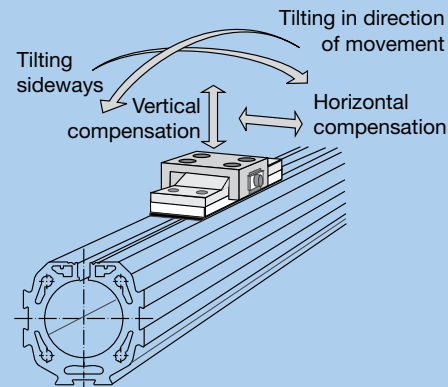
Guide Rail Size	HG	KG	KX	LG	MG	MX	NG	PG	QG	RG	RX	UX	X	XX
PL25	23	154	144	64	120	60	50	M6 x 12	72.5	74	53	40.5	125	10
PL32	25	197	187	84	160	80	64	M6 x 12	91.0	88	62	49.0	150	11
PL50	29	276	266	110	240	120	90	M6 x 16	117.0	118	75	62.0	200	24

Order
Code

R Clevis Mounting Option for Standard Carriage



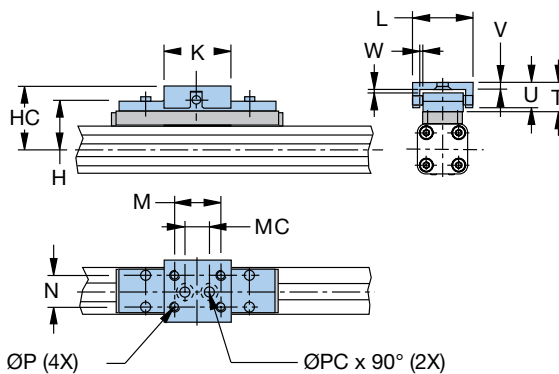
The aluminum clevis mount option bolts directly to the standard carriage to eliminate parallelism deviations and strain to the carriage when the actuator is mounted onto machine guide rails. Clevis mounting provides compensation for misalignment in Z and Y directions and can tilt around the X and Y axis.



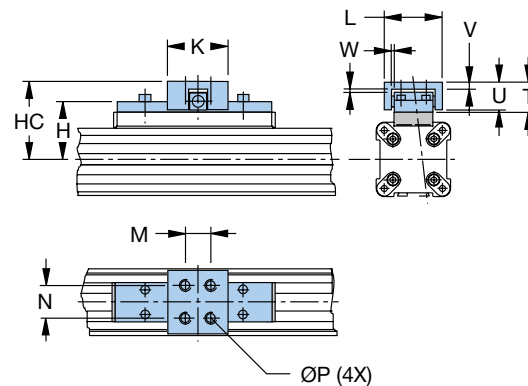
When external guides are involved in the application, slight parallelism deviations can lead to mechanical strain on the carriage and actuator. This can be avoided by the use of a clevis mount that provides freedom of movement compensation on several axes.

Belt Driven
Tables

OSPE25 and OSPE32



OSPE50



Dimensions — mm

Actuator Size	Part Number*	Weight* (kg)	H	HC	K	L	M	MC	N	P	PC	T	U	V	W
OSPE25B	20005FIL	0.091	39	52	40	38	30	16	16	M5	5.5	21	19	3.5	2
OSPE32B	20096FIL	0.091	50	68	60	62	46	40	25	M6	6.6	30	28	6.0	2
OSPE50B	20097FIL	0.308	61	79	60	62	46	—	25	M6	—	30	28	6.0	2

*Part number and weight are for individual unit.

Order
Code

M Inversion Mounting Option for Standard Carriage

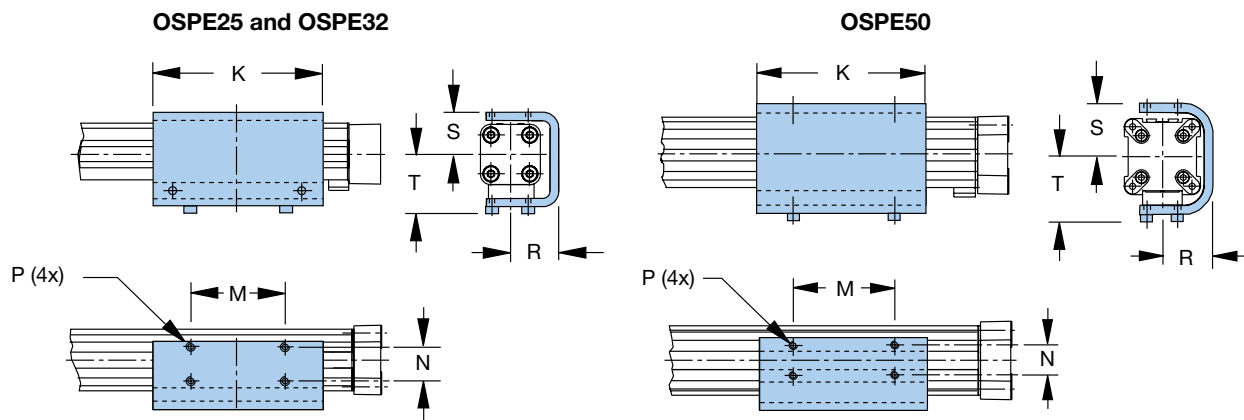


For dirty environments or space-restricted installations, inversion of the actuator is recommended.

The aluminum inversion bracket transfers the driving force to the opposite side of the actuator

allowing the load to be attached to the top side of the actuator while the carriage and sealing band remain protected on the bottom side. The size and position of the mounting holes are the same as on the standard carriage.

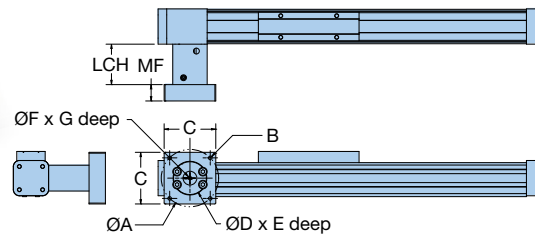
Note: Profile mounts and magnetic switches can only be used on the free side of the actuator.



			Dimensions — mm						
Actuator Size	Part Number*	Weight* (kg)	K	M	N	P	R	S	T
OSPE25B	20037FIL	0.302	117	65	25	M5 x 6	33.5	31	31
OSPE32B	20161FIL	0.449	150	90	27	M6 x 6	39.5	38	38
OSPE50B	20166FIL	0.947	200	110	27	M6 x 8	52.0	55	55

*Part number and weight are for individual unit.

Motor Mounting Kit Options



A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
MF = Motor flange

Motor Mounting Kits include a coupling housing, coupling and flange

Note: Screw thread to mount motor to flange plate is M3

Actuator Size	Order Code		Dimensions — mm								
	⑥*	⑦*	A	B	C	D	E	F	G	LCH	MF
OSPE25B	0	AA	46.66	M3	41	20.00	1.6	6.35	24.8	47	12
	0	AB	66.67	M4	55	38.10	1.6	6.35	20.5	47	9
	0	AC	66.67	M5	60	38.10	1.6	9.53	20.8	47	9
	0	AD	66.67	M5	60	38.10	1.6	9.525	31.8	47	19
	0	B5	46.00	M4	60	30.00	2.5	6.00	25.0	47	12
	0	AM	46.00	M4 ¹	41	30.00	2.5	8.00	25.0	47	12
	0	B6	63.00	M4	60	40.00	2.5	9.00	20.0	47	10
	0	AH	63.00	M5	60	40.00	2.5	9.00	20.0	47	12
	0	A2	63.00	M5	60	40.00	2.5	11.00	23.0	47	12
	0	B7	70.00	M5	60	50.00	3.0	8.00	25.0	47	17
	0	B8	70.00	M5	60	50.00	3.0	12.00	30.0	47	17
	0	AG	75.00	M5	70	60.00	2.5	11.00	23.0	47	10
OSPE32B	0	B1	90.00	M5	75	60.00	2.5	11.00	23.0	47	10
	0	AB	66.67	M5	60	38.10	1.6	6.35	20.5	49	10
	0	AC	66.67	M5	60	38.10	1.6	9.525	20.8	49	10
	0	AD	66.67	M5	60	38.10	1.6	9.525	31.8	49	18
	0	AE	98.43	M5	85	73.03	3.0	12.70	30.0	49	16
	0	AF	98.43	M6	85	73.03	3.0	12.70	37.0	49	26
	0	B6	63.00	M4	55	40.00	2.5	9.00	20.0	49	11
	0	AH	63.00	M5	60	40.00	2.5	9.00	20.0	49	11
	0	A2	63.00	M5	60	40.00	2.5	11.00	23.0	49	11
	0	BJ	66.67	M5	60	38.10	1.6	12.70	20.0	49	10
	0	B7	70.00	M5	60	50.00	3.0	8.00	25.0	49	16
	0	B8	70.00	M5	60	50.00	3.0	12.00	30.0	49	16
	0	AN	70.00	M5	60	50.00	3.0	14.00	30.0	49	16
	0	AG	75.00	M5	70	60.00	2.5	11.00	23.0	49	11
	0	B9	75.00	M5	70	60.00	2.5	14.00	30.0	49	16
	0	BA	75.00	M5	70	60.00	3.0	16.00	40.0	49	26
	0	B0	75.00	M6	70	60.00	3.0	14.00	30.0	49	16
	0	B1	90.00	M5	75	60.00	2.5	11.00	23.0	49	11
	0	B2	90.00	M5	75	60.00	2.5	14.00	30.0	49	16
	0	BB	90.00	M6	80	70.00	3.0	14.00	30.0	49	16
	0	B4	90.00	M6	80	70.00	3.0	16.00	40.0	49	26
	0	B3	95.00	M6	80	50.00	2.5	14.00	30.0	49	16

*When ordering with actuator, use order code ⑥ (gearhead designation) and order code ⑦ to specify motor mounting kit. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

(continued on next page)

(continued from previous page)

Actuator Size	Order Code	Order Code	Dimensions — mm								
	⑥*	⑦*	A	B	C	D	E	F	G	LCH	MF
OSPE50B	0	AF	98.43	M6	85	73.03	3.0	12.70	37.0	76	15
	0	AE	98.43	M5	88	73.03	3.0	12.70	30.0	67	14
	0	B9	75.00	M5	75	60.00	2.5	14.00	30.0	67	14
	0	BA	75.00	M5	70	60.00	3.0	16.00	40.0	76	15
	0	B0	75.00	M6	75	60.00	3.0	14.00	30.0	67	14
	0	B2	90.00	M5	80	60.00	2.5	14.00	30.0	67	14
	0	BB	90.00	M6	80	70.00	3.0	14.00	30.0	67	14
	0	B4	90.00	M6	80	70.00	3.0	16.00	40.0	76	15
	0	AP	90.00	M6	80	70.00	3.0	19.00	40.0	76	15
	0	B3	95.00	M6	85	50.00	2.5	14.00	30.0	67	14
	0	A1	99.00	M6	88	73.00	3.0	9.525	31.5	67	14
	0	A3	100.00	M6	90	80.00	3.5	14.00	30.0	67	14
	0	AL	100.00	M6	88	80.00	3.0	16.00	40.0	76	15
	0	AJ	100.00	M6	88	80.00	3.0	19.00	40.0	76	15
	0	A4	115.00	M8	100	95.00	3.5	19.00	40.0	76	15
	0	BD	130.00	M8	115	95.00	3.0	19.00	40.0	76	15
	0	BF	130.00	M8	115	110.00	3.5	19.00	40.0	76	15

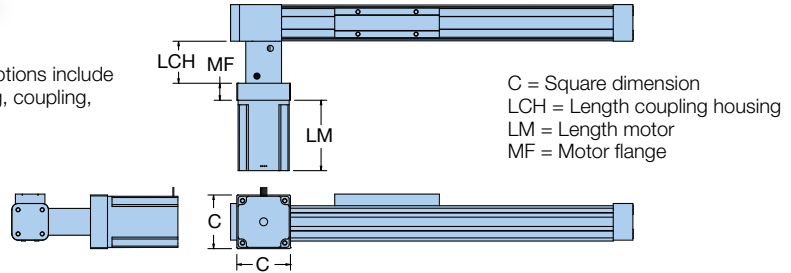
*When ordering with actuator, use order code ⑥ (gearhead designation) and order code ⑦ to specify motor mounting kit. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

Mounted Motor Options



Mounted Motor Options include a coupling housing, coupling, flange and motor



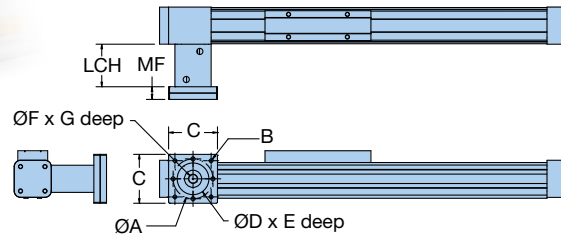
Belt Driven
Tables

Actuator Size	Order Code ⑥ *	Order Code ⑦ *	Motor description	Dimensions — mm			
				C	LCH	LM	MF
OSPE25B	0	L0	LV233-01-10	58	47	79	9
	0	L1	HV233-01-10	58	47	79	9
	0	K0	BE233FJ-KPSN	58	47	143	19
	0	K1	BE233FJ-KPSN with brake (CM233FJ-115027)	58	47	178	19
OSPE32B	0	L0	LV233-01-10	58	49	79	10
	0	L1	HV233-01-10	58	49	79	10
	0	L2	LV343-03-10	86	49	127	26
	0	L3	HV343-01-10	86	49	127	26
	0	K0	BE233FJ-KPSN	58	49	143	18
	0	K1	BE233FJ-KPSN with brake (CM233FJ-115027)	58	49	178	18
	0	K2	BE344LJ-KPSN	86	49	188	16
	0	K3	BE344LJ-KPSB	86	49	220	16
	0	KC	PM-FBL04AMK	62	49	108.2	16
	0	KD	PM-FBL04AMK2 (Brake)	62	49	148.2	16
OSPE50B	0	L2	LV343-03-10	86	76	127	15
	0	L3	HV343-01-10	86	76	127	15
	0	K2	BE344LJ-KPSN	86	67	188	14
	0	K3	BE344LJ-KPSB	86	67	220	14
	0	KJ	PM-FCL10AMK	80	76	152.7	15
	0	KK	PM-FCL10AMK2 (Brake)	80	76	193	15
	0	M0	MPP0923D1E-KPSN	89	76	178	15
	0	M1	MPP0923D1E-KPSB	89	76	212	15
	0	M2	MPP1003D1E-KPSN	98	76	175	15
	0	M3	MPP1003D1E-KPSB	98	76	224	15
	0	M4	MPP1003R1E-KPSN	98	76	175	15
	0	M5	MPP1003R1E-KPSB	98	76	224	15

*When ordering with actuator, use order code ⑥ (gearhead designation) and order code ⑦ to specify mounted motor. See Ordering Information.

Gearhead Mounting Kit Options

Gearhead Mounting Kits include a coupling housing, coupling and flange



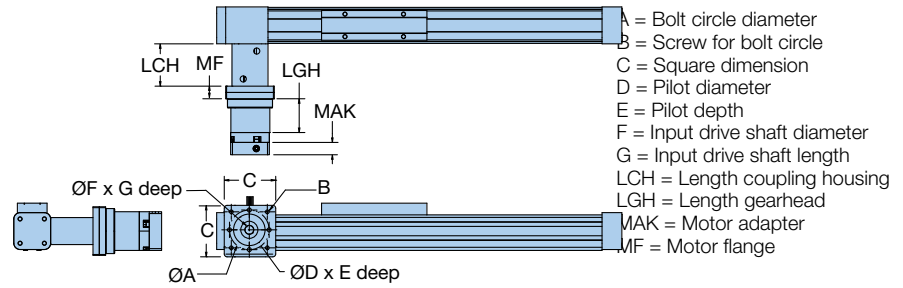
A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
MF = Motor flange

Actuator Size	Order Code ⑥*	Order Code ⑦*	Dimensions — mm								
			A	B	C	D	E	F	G	LCH	MF
OSPE25B	0	C0	44	S4	54	35	3	12	25	47	14.0
OSPE32B	0	C0	44	S4	60	35	3	12	25	49	14.5
	0	C1	62	S5	75	52	8	16	36	49	23.0
OSPE50B	0	C1	62	S5	75	52	8	16	36	76	18.5
	0	C2	80	S6	95	68	10	22	46	76	23.0

*When ordering with actuator, use order code ⑥ (gearhead designation) and order code ⑦ to specify gearhead mounting kit. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

Mounted Gearhead with Motor Mounting Kit Options



Mounted Gearhead with Motor Mounting Kit include a coupling housing, coupling, flange, and gearhead with coupler and flange

Belt Driven
Tables

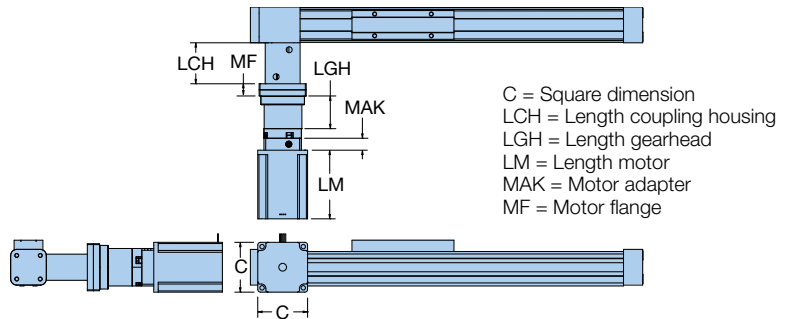
Actuator Size	Order Code ⑥ ¹	Order Code ⑦ ²	Dimensions — mm										
			A	B	C	D	E	F	G	LCH	LGH	MAK	MF
OSPE25B	A or B	AA	46.66	M3	43	20.00	1.6	6.35	24.8	47	48.5	19.0	14.0
	A or B	AB	66.67	M5	55	38.10	1.6	6.35	20.5	47	48.5	15.7	14.0
	A or B	B5	46.00	M4	43	30.00	2.5	6.00	25.0	47	48.5	19.0	14.0
	A or B	AM	46.00	M4	43	30.00	2.5	8.00	25.0	47	48.5	19.0	14.0
	A or B	B6	63.00	M4	55	40.00	2.5	9.00	20.0	47	48.5	13.7	14.0
	A or B	AH	63.00	M5	55	40.00	2.5	9.00	20.0	47	48.5	19.0	14.0
OSPE32B	C, D or E	AB	66.67	M5	62	38.10	1.6	6.35	20.5	49	67.0	16.5	23.0
	C, D or E	AC	66.67	M5	62	38.00	1.6	9.53	20.8	49	67.0	16.5	23.0
	C, D or E	AD	66.67	M5	62	38.10	1.6	9.525	31.8	49	67.0	22.5	23.0
	C, D or E	AE	98.43	M5	80	73.03	3.0	12.70	30.0	49	67.0	22.5	23.0
	C, D or E	AF	98.43	M6	85	73.03	3.0	12.70	37.0	49	67.0	30.0	23.0
	C, D or E	B6	63.00	M4	62	40.00	2.5	9.00	20.0	49	67.0	16.5	23.0
	C, D or E	AH	63.00	M5	62	40.00	2.5	9.00	20.0	49	67.0	16.5	23.0
	C, D or E	B8	70.00	M5	62	50.00	3.0	12.00	30.0	49	67.0	22.5	23.0
	C, D or E	AN	70.00	M5	62	50.00	11.0	14.00	30.0	49	67.0	22.5	23.0
	C, D or E	AG	75.00	M5	62	60.00	2.5	11.00	23.0	49	67.0	16.5	23.0
	C, D or E	B9	75.00	M5	62	60.00	2.5	14.00	30.0	49	67.0	22.5	23.0
	C, D or E	BB	90.00	M6	80	70.00	3.0	14.00	30.0	49	67.0	22.5	23.0
	C, D or E	A3	100.00	M6	89	80.00	3.5	14.00	30.0	49	67.0	22.5	23.0
	C, D or E	AB	66.67	M5	62	38.10	1.6	6.35	20.5	76	67.0	16.5	18.5
OSPE50B	C, D or E	AC	66.67	M5	62	38.00	1.6	9.53	20.8	76	67.0	16.5	18.5
	C, D or E	AD	66.67	M5	62	38.10	1.6	9.525	31.8	76	67.0	22.5	18.5
	C, D or E	AE	98.43	M5	80	73.03	3.0	12.70	30.0	76	67.0	22.5	18.5
	C, D or E	AF	98.43	M6	85	73.03	3.0	12.70	37.0	76	67.0	30.0	18.5
	C, D or E	B6	63.00	M4	62	40.00	2.5	9.00	20.0	76	67.0	16.5	18.5
	C, D or E	AH	63.00	M5	62	40.00	2.5	9.00	20.0	76	67.0	16.5	18.5
	C, D or E	B8	70.00	M5	62	50.00	3.0	12.00	30.0	76	67.0	22.5	18.5
	C, D or E	AN	70.00	M5	62	50.00	3.0	14.00	30.0	76	67.0	22.5	18.5
	C, D or E	AG	75.00	M5	62	60.00	2.5	11.00	23.0	76	67.0	16.5	18.5
	C, D or E	B9	75.00	M5	62	60.00	2.5	14.00	30.0	76	67.0	22.5	18.5
	C, D or E	BB	90.00	M6	80	70.00	3.0	14.00	30.0	76	67.0	22.5	18.5
	C, D or E	A3	100.00	M6	89	80.00	3.5	14.00	30.0	76	67.0	22.5	18.5

¹ When ordering with actuator, use order code ⑥ to specify mounted gearhead size and ratio: **A** PV40TA-005 (ratio 5:1); **B** PV40TA-010 (ratio 10:1); **C** PV60TA-003 (ratio 3:1); **D** PV60TA-005 (ratio 5:1); **E** PV60TA-010 (ratio 10:1). See Ordering Information.

² When ordering with actuator, use order code ⑦ to specify motor mounting kit. See Ordering Information.

■ Blue order codes indicate rapid shipment availability

Mounted Gearhead and Motor Options



Mounted Gearhead and Mounted Motor Options include a coupling housing, coupling, flange, gearhead with coupler, flange and motor

Actuator Size	Order Code		Motor description	Dimensions — mm					
	⑥ ¹	⑦ ²		C	LCH	LGH	LM	MAK	MF
OSPE25B	A or B	L0	LV233-01-10	58	47	48.5	79	15.7	14.0
	A or B	L1	HV233-01-10	58	47	48.5	79	15.7	14.0
	A or B	KA	PM-FAL01AM8N	40	47	48.5	95.2	19.0	14.0
	A or B	KB	PM-FAL01AM8N2 (Brake)	40	47	48.5	131.6	19.0	14.0
OSPE32B	C, D or E	L0	LV233-01-10	58	49	67.0	79	16.5	23.0
	C, D or E	L1	HV233-01-10	58	49	67.0	79	16.5	23.0
	C, D or E	L2	LV343-03-10	86	49	67.0	127	30.0	23.0
	C, D or E	L3	HV343-01-10	86	49	67.0	127	30.0	23.0
	C, D or E	K0	BE233FJ-KPSN	58	49	67.0	143	22.5	23.0
	C, D or E	K1	BE233FJ-KPSN w/ brake (CM233FJ-115027)	58	49	67.0	178	22.5	23.0
	C, D or E	K2	BE344LJ-KPSN	86	49	67.0	188	22.5	23.0
	C, D or E	K3	BE344LJ-KPSB	86	49	67.0	220	22.5	23.0
	C, D or E	KC	PM-FBL04AMK	62	49	67	108.2	22.5	23.0
	C, D or E	KD	PM-FBL04AMK2 (Brake)	62	49	67	148.2	22.5	23.0
OSPE50B	C, D or E	L0	LV233-01-10	58	76	67.0	79	16.5	18.5
	C, D or E	L1	HV233-01-10	58	76	67.0	79	16.5	18.5
	C, D or E	L2	LV343-03-10	86	76	67.0	127	30.0	18.5
	C, D or E	L3	HV343-01-10	86	76	67.0	127	30.0	18.5
	C, D or E	K0	BE233FJ-KPSN	58	76	67.0	143	22.5	18.5
	C, D or E	K1	BE233FJ-KPSN w/ brake (CM233FJ-115027)	58	76	67.0	178	22.5	18.5
	C, D or E	K2	BE344LJ-KPSN	86	76	67.0	188	22.5	18.5
	C, D or E	K3	BE344LJ-KPSB	86	76	67.0	220	22.5	18.5
	C, D or E	KC	PM-FBL04AMK	62	76	67	108.2	22.5	18.5
	C, D or E	KD	PM-FBL04AMK2 (Brake)	62	76	67	148.2	22.5	18.5

¹ When ordering with actuator, use order code ⑥ to specify mounted gearhead size and ratio: **A** PV40TA-005 (ratio 5:1); **B** PV40TA-010 (ratio 10:1); **C** PV60TA-003 (ratio 3:1); **D** PV60TA-005 (ratio 5:1); **E** PV60TA-010 (ratio 10:1). See Ordering Information.

² When ordering with actuator, use order code ⑦ to specify mounted motor on gearhead. See Ordering Information.

End Cap Mounting Options

See "Maximum Permissible Unsupported Length" for end cap mounting placement requirements.

End Cap Mounting Selection Overview

		Standard Carriage					PowerSlide					ProLine		
		25	32	50	25/25	25/35	25/44	32/35	32/44	50/60	50/76	25	32	50
	A1	•	•											
	A2											•	•	
	A3				•	•		•						
	B1	•	•		•	•	•	•	•			•	•	
	B4						•		•					
	C1			•						•	•			•
	C2													•
	C3									•				
	C4										•			

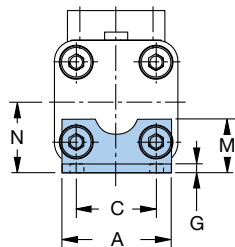
• Recommended for mounting position with carriage on top • Recommended for mounting position carriage side only (3 or 9 o'clock position)

Order
Code

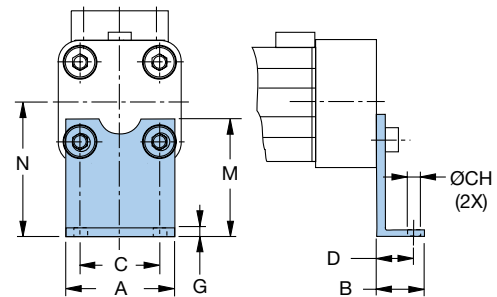
1, 2 or 3
(1 pair)



Type A1



Type A3



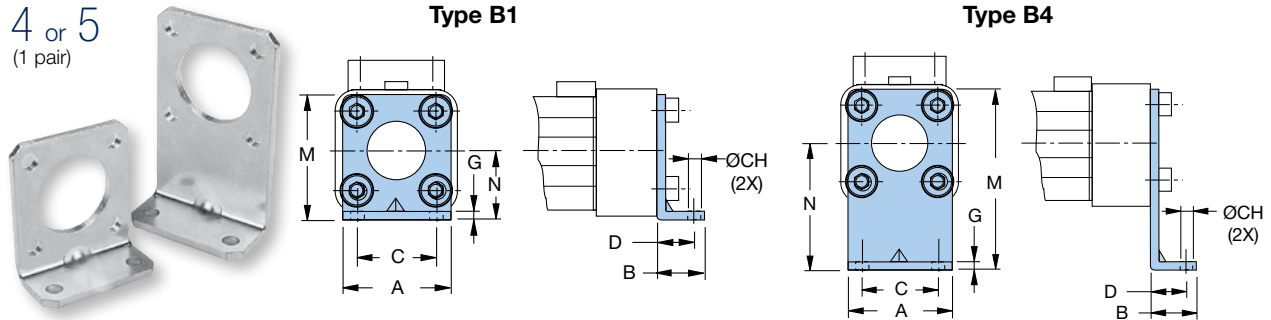
Type A1, A2 and A3 – Standard End Cap

Actuator Size	Type	Part Number*	Weight* (kg)	Dimensions – mm							
				A	B	C	CH	D	G	M	N
OSPE25B	A1	18156FIL	0.031							18	22
	A2	18157FIL	0.044	39	22	27	5.8	16	2.5	33	37
	A3	18158FIL	0.055							45	49
OSPE32B	A1	18161FIL	0.050							20	30
	A2	18162FIL	0.066	50	26	36	6.6	18	3.0	34	44
	A3	18163FIL	0.159							42	52

*Part number and weight are for individual piece.

Order
Code

4 or 5
(1 pair)



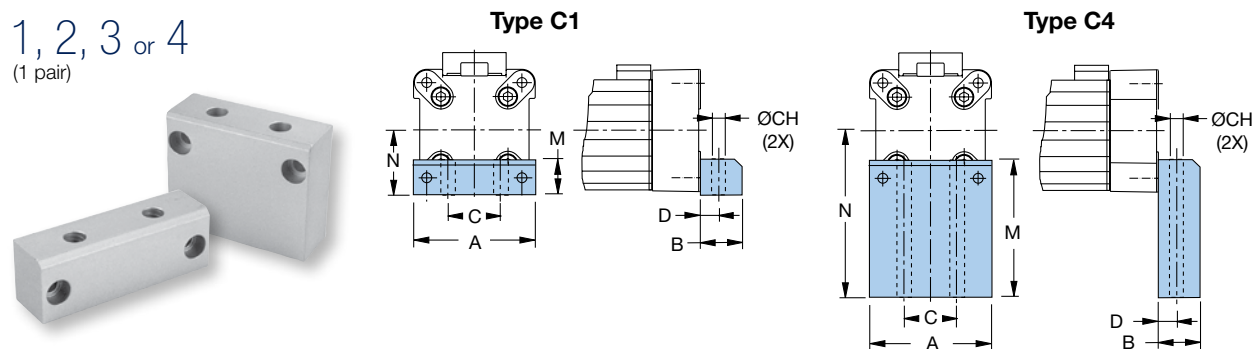
Type B1 and B4 – Reinforced End Cap

Actuator Size	Type	Part Number*	Weight* (kg)	Dimensions — mm							
				A	B	C	CH	D	G	M	N
OSPE25B	B1	18159FIL	0.010	39	22	27	5.8	16	2.5	42	22
	B4	18160FIL	0.110							80	60
OSPE32B	B1	18164FIL	0.078	50	26	36	6.6	18	3.0	55	30
	B4	18165FIL	0.380							85	60

*Part number and weight are for individual piece.

Order
Code

1, 2, 3 or 4
(1 pair)



Type C1, C2, C3 and C4 – Block End Cap

Actuator Size	Type	Part Number*	Weight* (kg)	Dimensions — mm						
				A	B	C	CH	D	M	N
OSPE50B	C1	18166FIL	0.146	86	24	40	9.0	12.5	30	48
	C2	18167FIL	0.210						39	57
	C3	18168FIL	0.300						54	72
	C4	18169FIL	0.412						77	95

*Part number and weight are for individual piece.

Profile Mounting Options

See "Maximum Permissible Unsupported Length" for end cap and profile mounting placement requirements.

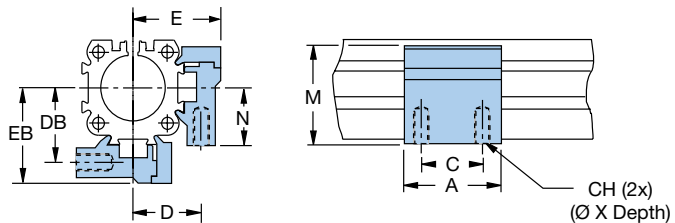
Profile Mounting Selection Overview

		Standard Carriage			PowerSlide							ProLine			
		25	32	50	25/25	25/35	25/44	32/35	32/44	50/60	50/76	25	32	50	
	2 Internal Threads														
	D1	•	•	•	•	•	•	•	•	•	•	•	•	•	
	2 Thru Holes														
	E1	•	•	•	•	•	•	•	•	•	•	•	•	•	
	E2												•	•	•
	E3					•	•			•			•		
	E4								•			•			
	3 Thru Holes														
	MAE	•	•	•	•	•	•	•	•	•	•	•	•	•	

- Recommended for mounting position with carriage on top
- Recommended for mounting position carriage side only (3 or 9 o'clock position)

Order
Code

2, 5 or 8
(1, 2 or 3 pair)



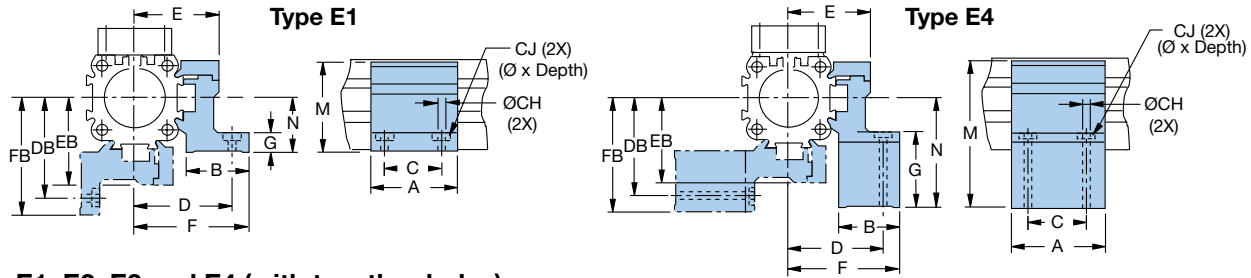
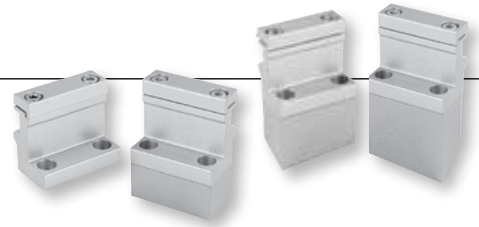
Type D1 (with two internal threads)

Actuator Size	Part Number*	Weight* (kg)	Dimensions — mm								
			A	C	CH	D	DB	E	EB	M	N
OSPE25B	20008FIL	0.061	50	36	M5 x 10	27	28.5	34.5	36	38	22
OSPE32B	20157FIL	0.072	50	36	M5 x 10	33	35.5	40.5	43	46	30
OSPE50B	20162FIL	0.167	60	45	M6 x 11	40	45.0	52.0	57	71	48

*Part number and weight are for individual piece.

Order
Code

E1 1, 4 or 7 (1, 2 or 3 pair) E3 L, P or S (1, 2 or 3 pair)
E2 K, N or R (1, 2 or 3 pair) E4 M, Q or T (1, 2 or 3 pair)



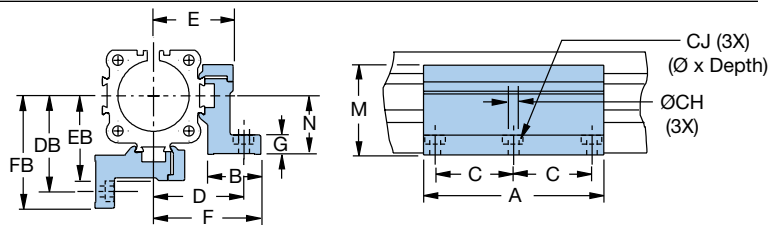
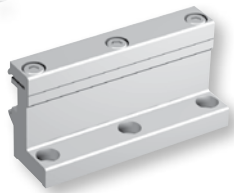
Type E1, E2, E3 and E4 (with two thru holes)

		Dimensions — mm														
Actuator Size	Part Number*	Weight* (kg)	A	B	C	CH	CJ	D	DB	E	EB	F	FB	G	M	N
OSPE25B	E1 20009FIL	0.074												8	38	22
	E2 20352FIL	0.125	50	26	36	5.5	10 x 5.7	40	41.5	34.5	36	47.5	49	23	53	37
	E3 20353FIL	0.120												35	65	49
	E4 20354FIL	0.020												46	76	60
OSPE32B	E1 20158FIL	0.092												10	46	30
	E2 20355FIL	0.141	50	27	36	5.5	10 x 5.7	46	48.5	40.5	43	54.5	57	24	60	44
	E3 20356FIL	0.140												32	68	52
	E4 20357FIL	0.197												40	76	60
OSPE50B	E1 20163FIL	0.189												10	71	48
	E2 20361FIL	0.235	60	34	45	7.0	—	59	64.0	52.0	57	67.0	72	19	80	57
	E3 20362FIL	0.338												31	95	72
	E4 20363FIL	0.442												57	118	95

*Part number and weight are for individual piece.

Order
Code

3, 6 or 9
(1, 2 or 3 pair)



Type MAE (with three thru holes)

		Dimensions — mm														
Actuator Size	Part Number*	Weight* (kg)	A	B	C	CH	CJ	D	DB	E	EB	F	FB	G	M	N
OSPE25B	12278FIL	0.271	92	26	40	5.5	10 x 5.7	40	41.5	34.5	36	47.5	49	8	38	22
OSPE32B	12279FIL	0.334	92	27	40	5.5	10 x 5.7	46	48.5	40.5	43	54.5	57	10	46	30
OSPE50B	12280FIL	0.668	112	34	45	7.0	—	59	64.0	52.0	57	67.0	72	10	71	48

*Part number and weight are for individual piece.

ORDERING INFORMATION

OSPE

ORDERING INFORMATION

Select an order code from each of the numbered fields to create a complete OSPE..B model order number. Include hyphens and non-selective characters as shown in example below.

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭

Order Number Example: OSPE 25 - 0 0 0 0 0 - 00000 - P 0 0 0 0 0

Belt Driven
Tables

① Series

OSPE Origa System Plus Electromechanical

② Actuator Bore Size

25 41 mm W x 53 mm H
32 52 mm W x 67 mm H
50 87 mm W x 93 mm H

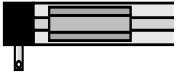
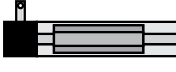
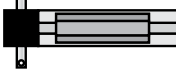
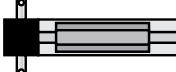
③ Drive Train

0 Belt actuator with internal glider bearing

④ Carriage

0 Standard
1 Tandem (two carriages for higher load capabilities)
2 Bi-Parting (two driven carriages for opposing movements)

⑤ Drive Shaft and Motor Input

0  Plain shaft, motor input left
1  Plain shaft, motor input right
2  Double plain shaft, motor input left
3  Double plain shaft, motor input right

⑥ Mounted Gearhead Options

0 No gearhead
A PV40TA-005 (gear ratio 5:1)*
B PV40TA-010 (gear ratio 10:1)*
C PV60TA-003 (gear ratio 3:1)*
D PV60TA-005 (gear ratio 5:1)*
E PV60TA-010 (gear ratio 10:1)*

* Requires selection from "Mounted Gearhead with Motor Mounting Kit" or "Mounted Gearhead and Motor" (see Options & Accessories) for item ⑦ below.

⑦ Gearhead/Motor Mounting Options

0 - No gearhead or motor mounting option
 Motor Mounting Kits (see Options & Accessories for available option dimensions and delivery)
 Mounted Motors (see Options & Accessories for available option dimensions and delivery)
 Gearhead Mounting Kits (see Options & Accessories for available option dimensions and delivery)
 Mounted Gearhead with Motor Mounting Kit (see Options & Accessories for available option dimensions and delivery)
 Mounted Gearhead and Motor (see Options & Accessories for available option dimensions and delivery)

⑧ Order Stroke*

00000 5-digit input (in mm)

* See Dimensions to calculate required order stroke.

Maximum catalog stroke:

OSPE25B = 03000 mm;

OSPE32B and OSPE50B = 05000 mm

Longer strokes available upon request. Consult factory.

⑨ Hardware and Dovetail Grove Covers

P Standard hardware with Parker gold cover strip

■ Blue order codes indicate rapid shipment availability

Free sizing and selection support
 from Virtual Engineer at
parker.com/VirtualEngineer



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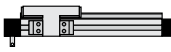
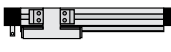
⑩ Carriage Options

- 0** No external guide rail
- 6** ProLine PL25, PL32, PL50*
- E** PowerSlide PS25/25*
- F** PowerSlide PS25/35 or PS32/35*
- G** PowerSlide PS25/44 or PS32/44*
- H** PowerSlide PS50/60*
- I** PowerSlide PS50/76*
- M** Inversion Mounting**
- R** Clevis Mounting **

* Requires standard carriage (select order code "0" from ④).
See Dimensions for additional information.

** Requires standard carriage (select order code "0" from ④).
See Options & Accessories for Inversion Mounting and Clevis Mounting.

⑪ External Guide Rail Orientation

- 0**  Guide Rail (right side)
- 1**  Guide Rail (left side)

⑫ End Cap Mounting (see Options & Accessories)

- 0** No end cap mounting
- 1** 1 pair A1* (standard end cap)
or C1** (block end cap)
- 2** 1 pair A2* (standard end cap)
or C2** (block end cap)
- 3** 1 pair A3* (standard end cap)
or C3** (block end cap)
- 4** 1 pair B1* (reinforced end cap)
or C4** (block end cap)
- 5** 1 pair B4* (reinforced end cap)

* For size 25 and 32

** For size 50

⑬ Profile Mounting (see Options & Accessories)

- 0** No profile mounting
- 2** 1 pair D1 (with 2 internal threads)
- 5** 2 pair D1 (with 2 internal threads)
- 8** 3 pair D1 (with 2 internal threads)
- 1** 1 pair E1 (with 2 thru holes)
- 4** 2 pair E1 (with 2 thru holes)
- 7** 3 pair E1 (with 2 thru holes)
- 3** 1 pair MAE (with 3 thru holes)
- 6** 2 pair MAE (with 3 thru holes)
- 9** 3 pair MAE (with 3 thru holes)
- K** 1 pair E2 (with 2 thru holes)
- N** 2 pair E2 (with 2 thru holes)
- R** 3 pair E2 (with 2 thru holes)
- L** 1 pair E3 (with 2 thru holes)
- P** 2 pair E3 (with 2 thru holes)
- S** 3 pair E3 (with 2 thru holes)
- M** 1 pair E4 (with 2 thru holes)
- Q** 2 pair E4 (with 2 thru holes)
- T** 3 pair E4 (with 2 thru holes)

⑭ Magnetic Sensor Mounting*

- 0** No sensor mounting
- A** 1 pc. N.O., NPN, with M8 connector
- B** 2 pc. N.C., NPN, with M8 connector
- C** 1 pc. N.O., NPN, with M8 connector
2 pc. N.C., NPN, with M8 connector
- D** 1 pc. N.O., PNP, with M8 connector
- E** 2 pc. N.C., PNP, with M8 connector
- F** 1 pc. N.O., PNP, with M8 connector
2 pc. N.C., PNP, with M8 connector

* Extension cable with M8 plug and 5 m cable with flying leads, 003-2918-01, is included with all sensor options.

 Blue order codes indicate rapid shipment availability

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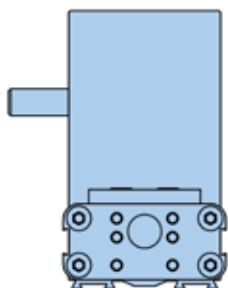
OSPE..BV Fixed Belt-Driven Actuators

Actuators with Fixed Belt for Vertical Applications

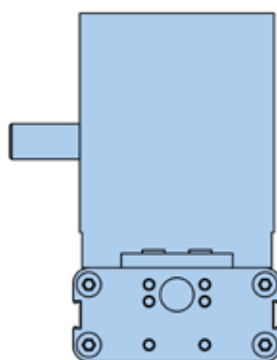
- Fixed actuator head for low moving mass
- Integrated ball bearing guide for high bending moments
- Magnetic switch set for contactless position sensing
- Easy to install
- Low maintenance

Features

- High acceleration and speeds
- Drive Shaft versions with clamp shaft or plain shaft
- Power transmission by belt
- Moving axis profile
- Complete motor and control packages
- IP 20 rating



OSPE20BHD



OSPE25BHD

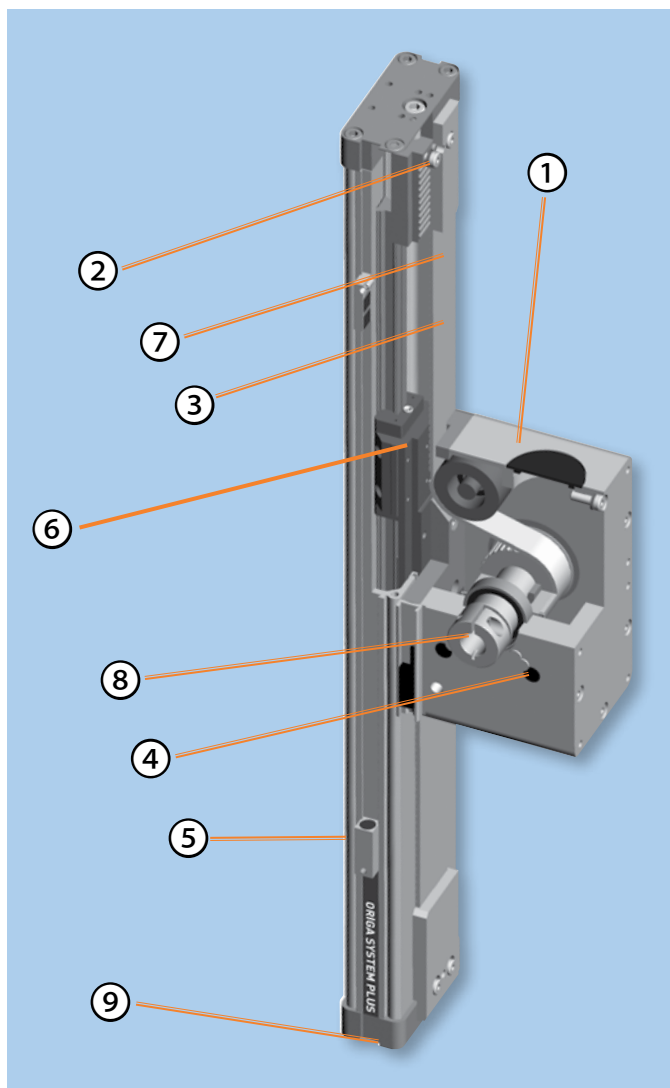
	OSPE20BV	OSPE25BV
Maximum Travel (mm)	1,000	1,500
Maximum Payload F_z (N)	1,600	3,000
Maximum Acceleration (m/sec ²)	20	20

The OSPE..BV vertical fixed belt-driven actuator with integrated ball bearing guide is designed specifically for lifting loads in vertical orientation. The light weight design allows to use smaller motors with this actuator keeping the robust and aesthetically pleasing design of the OSPE series.

The compact and modular design allows the integration of the OSPE..BV in any machine layout, providing very little space, without sacrificing payload or thrust capacity.



Belt Driven
Tables



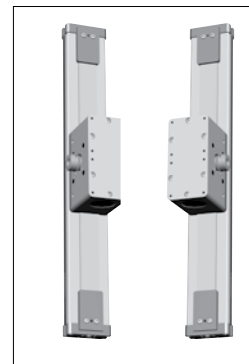
- ① **Carriage**
Low profile, high strength aluminum carriage with threaded holes for ease of mounting
- ② **Belt tensioning station**
Easy access for belt tension without removing the payload
- ③ **Corrosion resistant steel sealing band**
Magnetically fastened to the actuator body and provides sealing to IP54
- ④ **Lubrication access port**
Easy access maintenance allows for single point lubrication of bearing trucks at any point along travel
- ⑤ **Slotted profile**
With dovetail grooves for strength, actuator mounting, and mounting of sensor and other accessories
- ⑥ **Integrated ball bearing truck**
For high performance, high payload and moment load demands. (Optional roller wheels available.)
- ⑦ **Steel reinforced timing belt**
High thrust force transmission and long life
- ⑧ **Clamp shaft**
Optimal, zero-backlash coupling for gearhead and motor
- ⑨ **End housing mounting**
Threaded mounting holes allow for a multitude of mounting options

Drive Shaft Options

- Drive shaft with clamp shaft
- Drive shaft with both clamp and plain shaft
- Drive shaft with plain shaft
- Drive shaft with double plain shaft for parallel operation of two Z-axes with an intermediate drive shaft

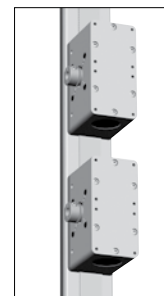
Actuator Head Orientation

All OSPE..BV actuator heads are standard with an integrated ball bearing guide and are available with either left or right side gearhead/motor mounting.



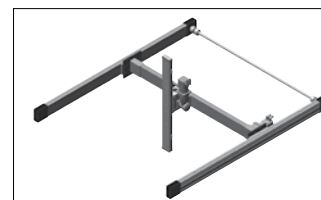
Drive Head Options

Standard or tandem with additional actuator head and two additional carriers for higher bending moments.



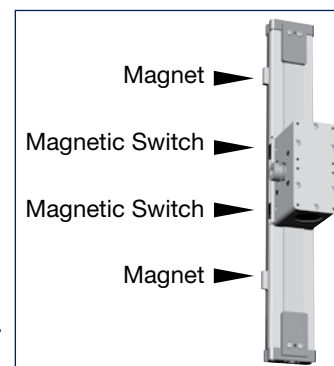
Multi-axis Systems

A wide range of adapter plates and intermediate drive shafts simplifies engineering and installation. Please consult factory for your individual system design.



Magnetic Switches Set

Magnetic switches with connector, mounting rail and magnets for contactless sensing of the end positions. Cable (suitable for cable chain) can be ordered separately in 5 m, 10 m or 15 m length.



Options and Accessories

Information on all OSPE..BV Series options is detailed in Options & Accessories. Simply select all the options needed to solve your application requirements, then order with the actuator using convenient order codes (see Ordering Information). To order an option separately as an upgrade to an existing system or as a replacement part, use the individual option part numbers provided.

SPECIFICATIONS

SPECIFICATIONS



OSPE..BV Performance Data

Actuator Size				OSPE20BV	OSPE25BV
Travel Distance per Revolution		S _{lin}	mm	108	160
Linear Speed (Max)		v _{max}	m/s	3	5
Acceleration (Max)		a _{max}	m/s ²	20	20
Repeatability			μm	± 50	± 50
Order Stroke (Max)			mm	1,000	1,500
Recommended Permissible Mass (Max)			kg	10	20
Thrust Force (Max)		F _{Amax}	N	650	1,430
			lbs	146	321
Torque on Drive Shaft (Max)		M _{Amax}	Nm	12	38
			in-lb	104	333
Torque* — No Load	RMS	M ₀	Nm	0.9	1.4
			in-lb	8	12
	Peak	M ₀	Nm	1.1	1.9
			in-lb	10	17
Load** (Max)		F _Y	N	1,600	2,000
			lbs	360	450
		F _Z	N	1,600	3,000
			lbs	360	674
Bending Moment Load* (Max)		M _X	Nm	20	50
			in-lb	177	443
		M _Y	Nm	100	200
			in-lb	885	1,770
		M _Z	Nm	100	200
			in-lb	885	1,770
Thrust Force (Max) F _A	N @ Specified Speed	<1 m/s		650	1,430
		<2 m/s		605	1,288
		<3 m/s		450	1,170
		<4 m/s		—	1,052
		<5 m/s		—	1,013
	N @ Specified Stroke	<1 m		650	1,430
		<2 m		605	1,367
Torque (Max) M _A	Nm @ Specified Speed	<1 m/s		12	38
		<2 m/s		11	34
		<3 m/s		8	31
		<4 m/s		—	28
		<5 m/s		—	27
	Nm @ Specified Stroke	<1 m		12	38
		<2 m		11	36
Inertia					
@ Zero Stroke		J ₀	kgmm ²	486	1,695
Per Meter of Stroke		J _{OS}	kgmm ² /m	1,144	2,668
Per 1 kg Moved Mass		J _m	kgmm ² /kg	296	649
Weight					
@ Zero Stroke		m ₀	kg	2.8	6.2
Per Meter of Stroke		m _{OS}	kg/m	4.5	7.8
Moved Mass of Carriage		m _C	kg	1.5	2.6
Ambient Temperature Range			°C	-30 to +80	
IP Rating				IP 20	

* For Tandem option double the values listed

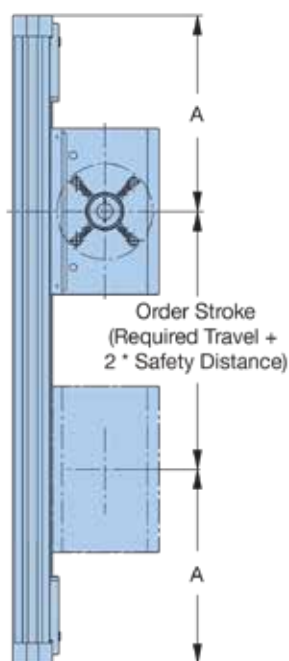
** Load and bending moment based on 8000 km performance

Belt Driven
Tables

DIMENSIONS

OSPE..BV Order Stroke Dimensions

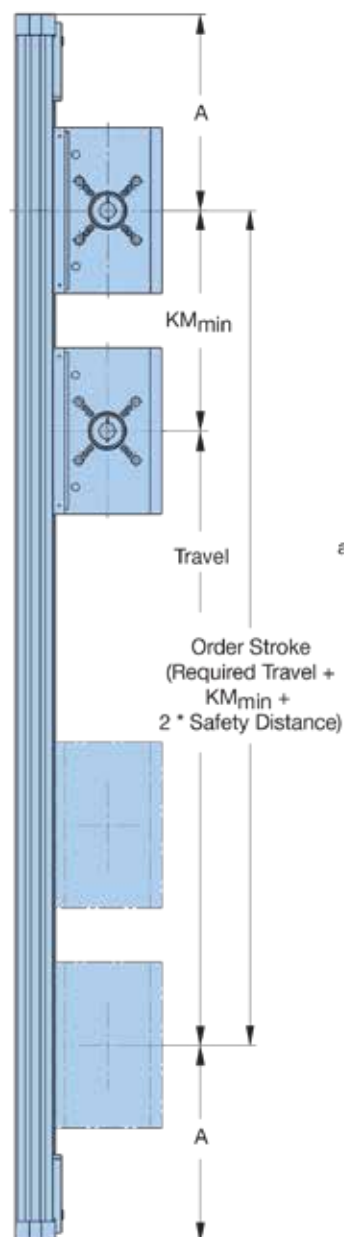
Standard Drive Head



Actuator Size	OSPE20BV	OSPE25BV
A	148	210
KM_{min}	155	225
KM_{rec}	225	275

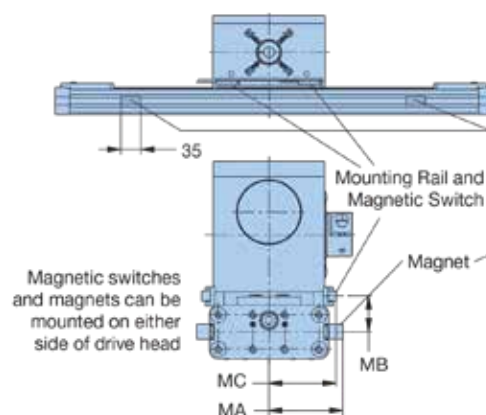
KM_{min} is the minimum distance between two drive heads possible.
KM_{rec} is the recommended distance between two drive heads for optimal performance.

Tandem Drive Head



Magnetic Switch Dimensions

The magnetic switch set provides contactless sensing of the end positions. The mounting rail and magnetic switches are mounted on the actuator drive head and the magnets are mounted in the dovetail slot on the profile.



Dimension (mm)

	OSPE20BV	OSPE25BV
MA	46.0	56.0
MB	23.7	26.0
MC	42.3	51.0

Order Stroke Safety Distance:

The mechanical end position should not be used as a mechanical end stop, thus an additional Safety Distance at both ends of travel must be incorporated into the Order Stroke.

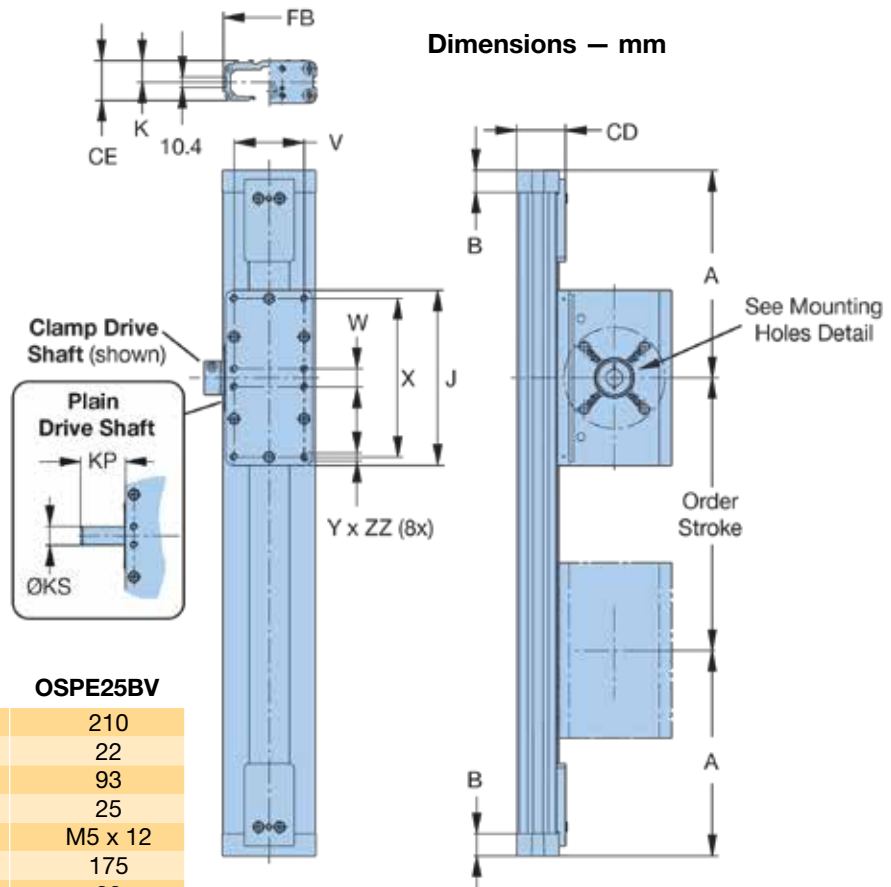
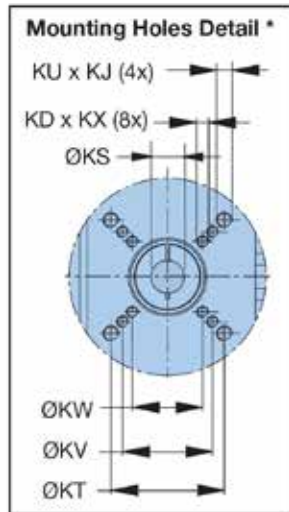
The safety distance for servo-driven systems is equivalent to the travel distance per one revolution of the drive shaft.

AC motor-driven systems with VFDs require a larger safety distance than servo systems. For further information and design assistance, please consult factory.

Base Unit Dimensions

Drive Shaft Versions:

- Clamp shaft • Plain Shaft • Clamp Shaft with Plain Shaft • Double Plain Shaft



Actuator Size	OSPE20BV	OSPE25BV
A	148	210
B	22	22
C	93	93
E	25	25
G x H	M5 x 12	M5 x 12
J	139	175
K	21	22
M	102	134
S	68	87
V	51	70
W	40	18
X	120	158
Y x ZZ	M6 x 10	M6 x 10
CD	40	49
CE	34	42
CF	123	155
EC	59	72
EF	21	27
FB	73	92
FH	36	40
KD x KX	—	M6 x 16
KF	61	76
KN	27	34
KO	16	22
KP	29	32
KS	12 ^{H7}	16 ^{H7}
KT	47	58
KU x KJ	M6 x 10	M8 x 16
KV	36	46
KW	—	36

* Mounting holes for motor flange or external planetary gearhead. Drive shaft and motor mounting holes can be located on either side of carriage (see Ordering Information for drive shaft options).

Free sizing and selection support
from Virtual Engineer at
parker.com/VirtualEngineer



ORDERING INFORMATION

OSPE..BV

ORDERING INFORMATION

Select an order code from each of the numbered fields to create a complete OSPE..BV model order number. Include hyphens and non-selective characters as shown in example below.

	①	②	③	④		⑤	⑥	⑦	⑧			⑨			
Order Number Example:	OSPE	20	-	7	0	0	02	-	00000	-	P	00	0	0	0

① Series

OSPE Origa System Plus Electromechanical

② Bore Size

20 73 mm W x 123.3 mm H

25 93 mm W x 154.5 mm H

③ Drive Train

7 Vertical Fixed Belt-Driven Actuator w/Integrated Ball Bearing Guide

④ Carriage

0 Standard

1 Tandem (two drive heads for higher actuator stiffness)

⑤ Drive Shaft Configuration and Orientation ⁽¹⁾

02  Clamp shaft* (left)

04  Clamp shaft* (right)

03  Clamp shaft* (left) with plain shaft for use with intermediate drive shaft for parallel actuator system

05  Clamp shaft* (right) with plain shaft for use with intermediate drive shaft for parallel actuator system

0A  Plain shaft idler unit** (left) for parallel actuator system

0B  Plain shaft idler unit** (right) for parallel actuator system

* Consult factory for all gearhead and motor mounting options

** Only available with order code 00 "No gearhead mounting kit or motor option" (item ⑧)

⑥ Order Stroke*

00000 5-digit input (in mm)*

* Maximum standard stroke: OSPE20BV = 1000 mm; OSPE25BV = 1500 mm. For example, to OSPE..V with maximum order stroke, specify 01500. Longer strokes available upon request. Consult factory.

⑦ Hardware and Cover Strip

P Standard hardware with Parker gold cover strip

⑧ Gearhead/Motor Mounting Options

00 No gearhead mounting kit or motor option

xx Consult factory for all gGearhead and motor mounting options

⑨ Magnetic Sensor Mounting

0 No sensor mounting

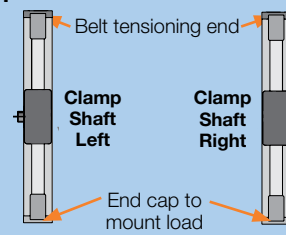
B 2 pc. N.C., NPN, with M8 connector

E 2 pc. N.C., PNP, with M8 connector

* Extension cable with M8 plug and 5 m cable flying lead cable for Sensor with M8 connector can be ordered separately; use part number 003-2918-01

⁽¹⁾ Drive Shaft Orientation

Drive shaft orientation is determined by viewing the actuator facing the drive head with the belt tensioning end facing up and the end cap for mounting the load facing down.



Note:

Special drive shafts are available – consult factory.