

OSPE..B Belt-Driven Actuators

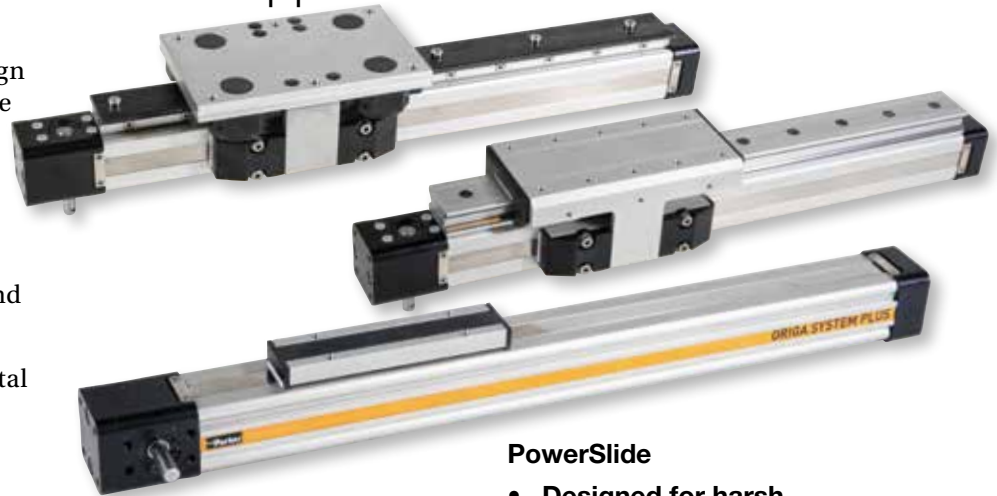
Actuators for Point-to-Point Applications

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.

Advantages:

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



Features:

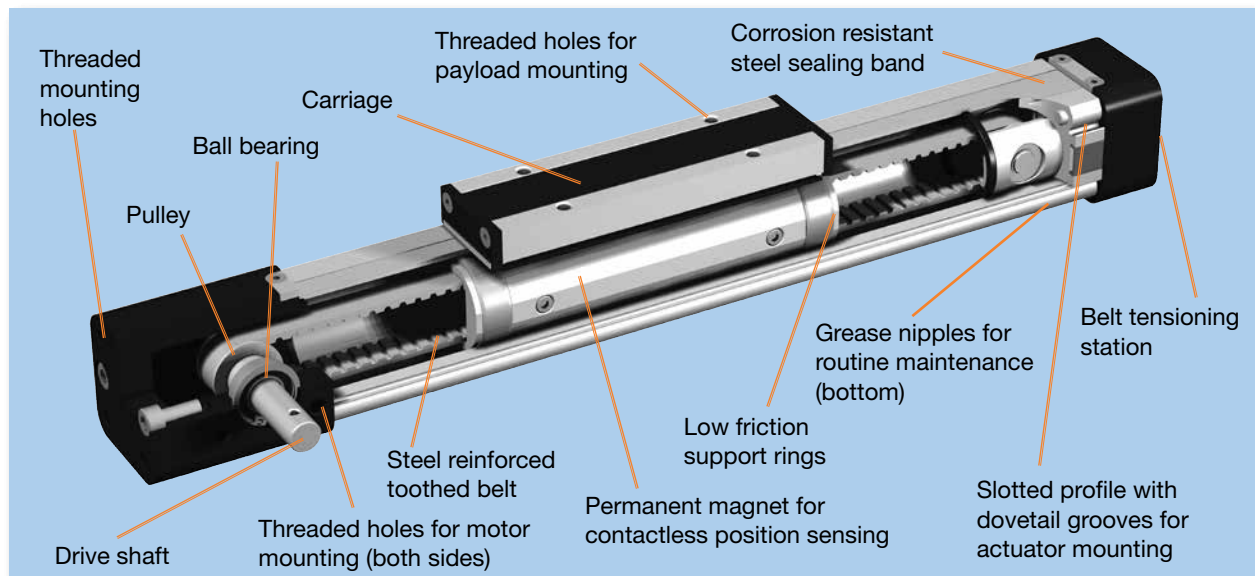
- Integrated drive and guidance system
- Tandem carriage with second carriage for increased load capabilities
- Long available strokes
- Complete motor, gearhead and control packages
- Diverse range of accessories and mountings
- Bi-parting carriages and special options available
- Ambient temperature 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



Choose from a Wide Range of Standard Options for Maximum Design Flexibility in a Pre-assembled Solution

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)



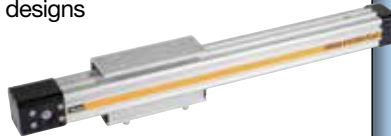
Tandem carriage — for higher load capabilities



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

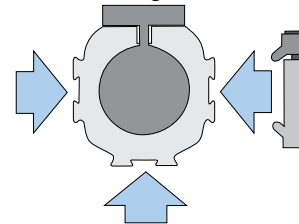
Actuator Mounting Options



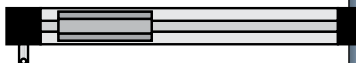
End cap mounting — allows the actuator to be anchored by the end caps



Profile mounting — supports long travel actuators or for direct mounting



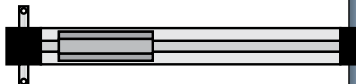
Drive Shaft Options



Plain drive shaft left



Plain drive shaft right



Double plain drive shaft — to connect master unit with idler unit

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

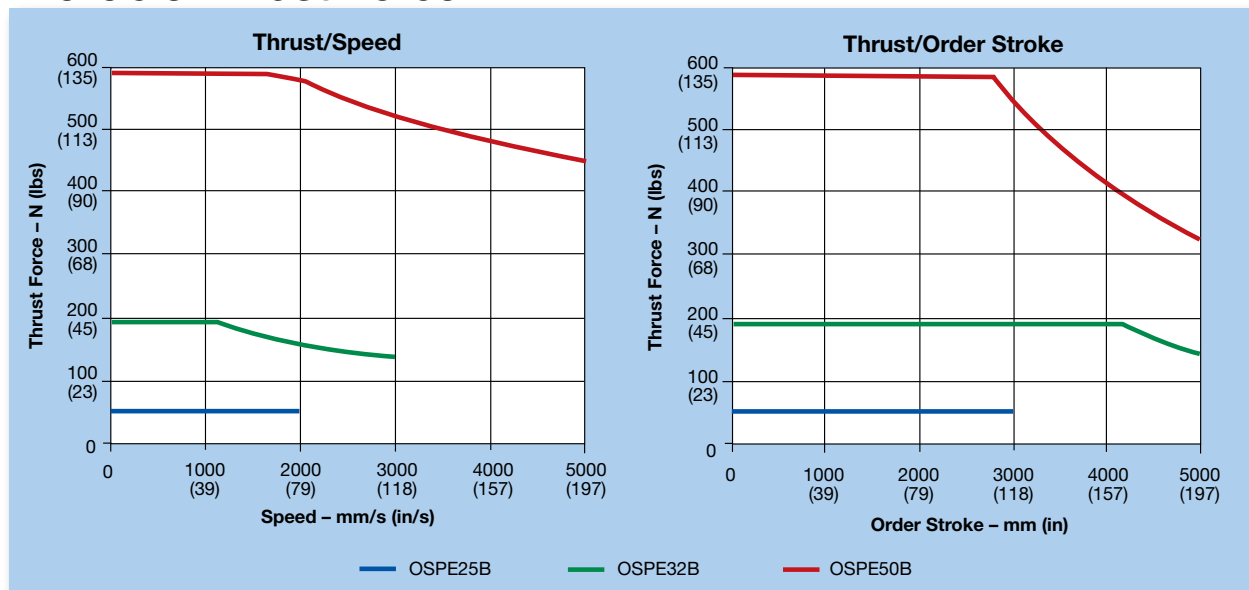
OSPE..B Belt-Driven Actuators

General Specifications

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
		kgmm ² /m	6.6	10.0	45.0
Per Meter of Stroke					
Per 1 kg Moved Mass	J_m	kgmm ² /kg	91	91	253
Ambient Temperature Range		°C	-30 to +80		
IP Rating)			IP 54		

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

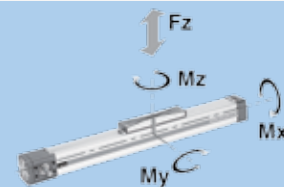
Available Thrust Force



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:

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



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

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

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

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

OSPE25B Performance

Carriage (Bearing System)			Standard	PowerSlide			ProLine
			Carriage	PS25/25	PS25/35	PS25/44	PL25
Part Number ¹			—	20304	20305	20306	20874
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	PowerSlide		ProLine
			Carriage	PS32/35	PS32/44	PL32
Part Number ¹			—	20307	20308	20875
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	PowerSlide		ProLine
			Carriage	PS50/60	PS50/76	PL50
Part Number ¹			—	20309	20310	20876
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 (-nnnn) to designate the appropriate length guide rail. To order PowerSlide or Proline bearing with the actuator, use the appropriate order in item ④ on page 49.

² Longer strokes available upon request. Contact factory.

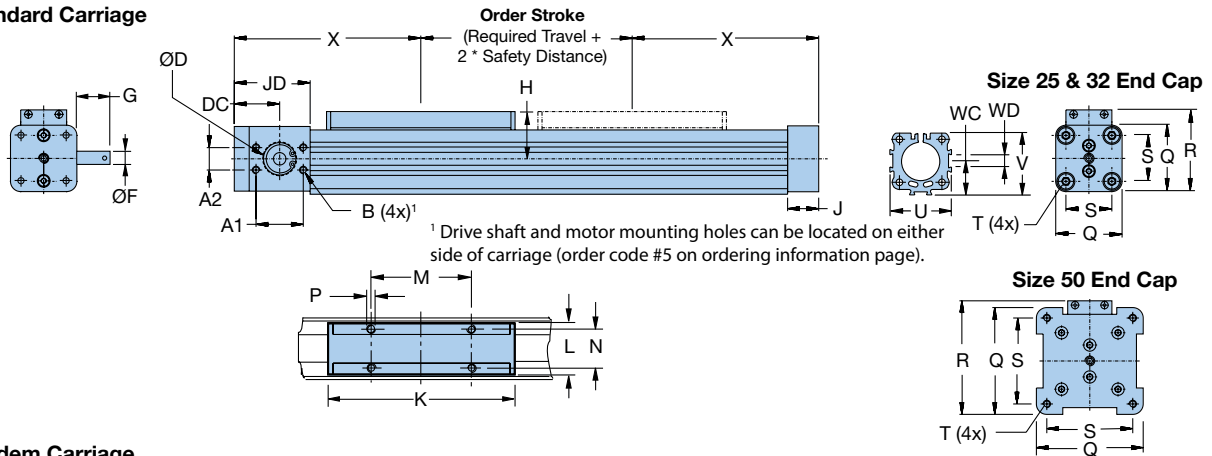
³ Load and moment based on 8000 km performance Refer to "Calculating Load Factors" on facing page for additional information.

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

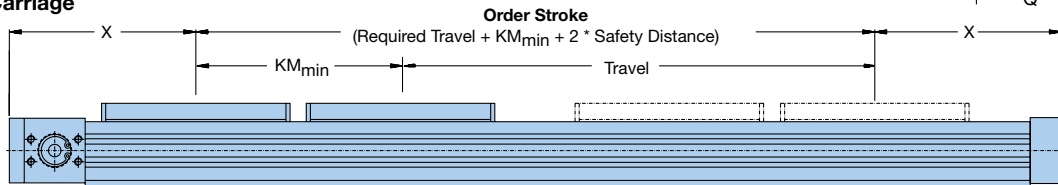
OSPE..B Belt-Driven Actuators

Base Unit Dimensions w/Standard Carriage — mm

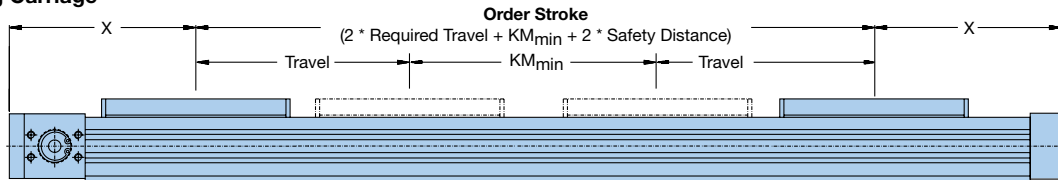
Standard Carriage



Tandem Carriage



Bi-Parting Carriage



* See page 34 for clevis mount or page 35 for 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

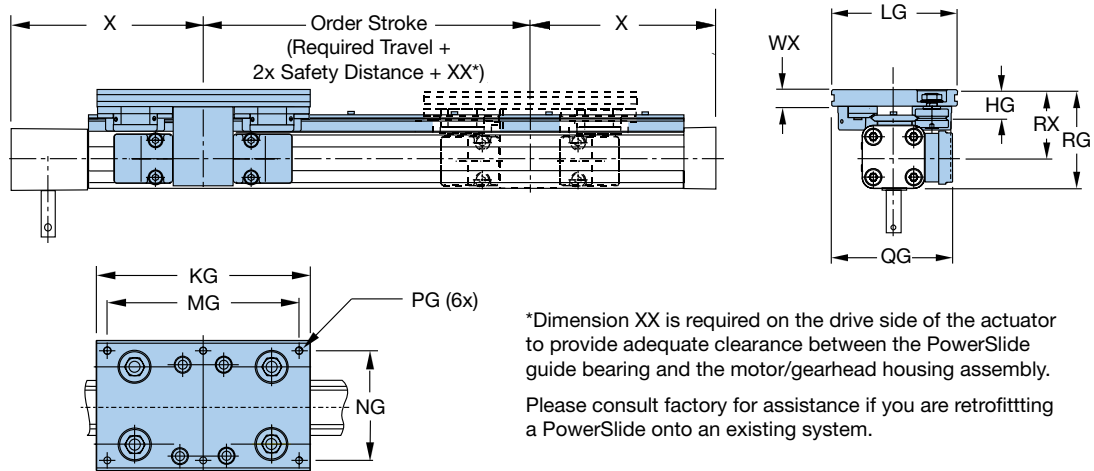
Actuator Size	KM_{min}	KM_{rec}
OSPE25B	130	190
OSPE32B	170	230
OSPE50B	220	320

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

Order Stroke Safety Distance:

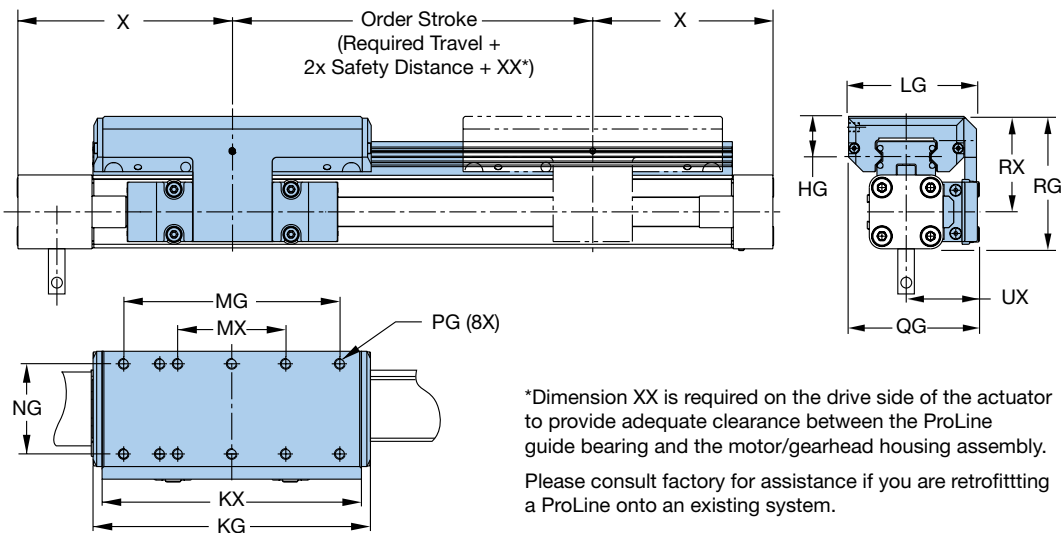
The mechanical end position should not be used as a mechanical end stop, thus an additional **Safety Distance** at both ends of travel must be incorporated into the Order Stroke. The safety distance for servo-driven systems is equivalent to the travel distance per revolution of the drive shaft. AC motor-driven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

PowerSlide Dimensions — 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 — mm

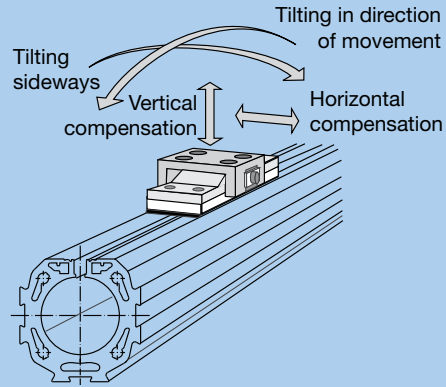
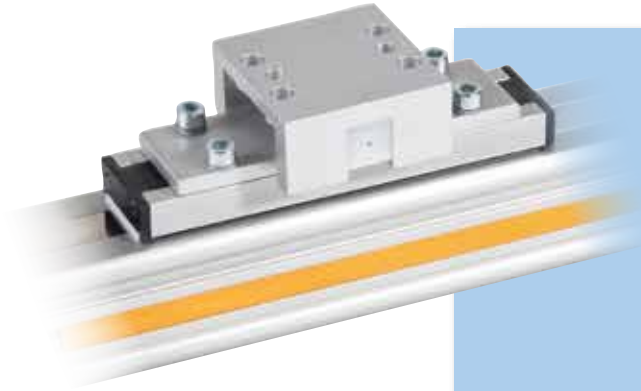


Guide Rail Size	HG	KG	KX	LG	MG	MX	NG	PG	QG	RG	RX	UX	X	XX
PL25	23	154	144	64	120	60	50	M6 x 12	72.5	74	53	40.5	125	10
PL32	25	197	187	84	160	80	64	M6 x 12	91.0	88	62	49.0	150	11
PL50	29	276	266	110	240	120	90	M6 x 16	117.0	118	75	62.0	200	24

OSPE..B Belt-Driven Actuators

Order Code

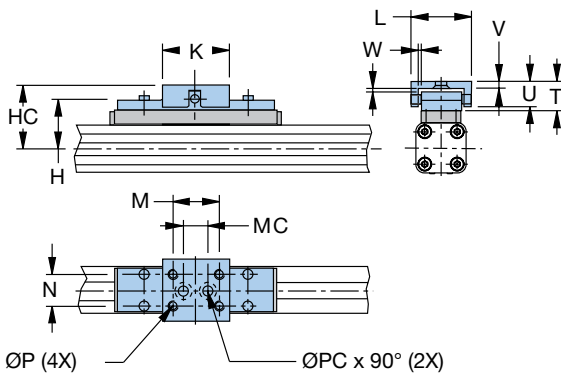
R Clevis Mounting Option for Standard Carriage



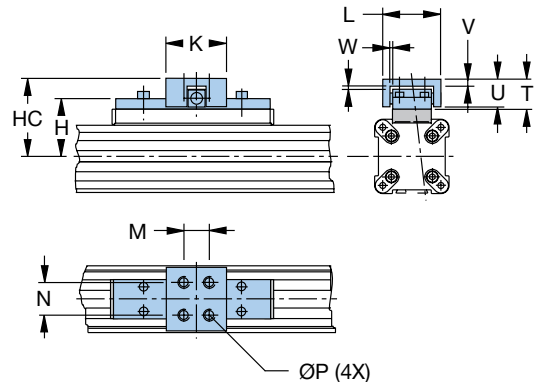
The aluminum clevis mount option bolts directly to the standard carriage to eliminate parallelism deviations and strain to the carriage when the actuator is mounted onto machine guide rails. Clevis mounting provides compensation for misalignment in Z and Y directions and can tilt around the X and Y axis.

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.

OSPE25 and OSPE32



OSPE50



Actuator Size	Part Number*	Weight* (kg)	Dimensions – mm												
			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.

M Inversion Mounting Option for Standard Carriage

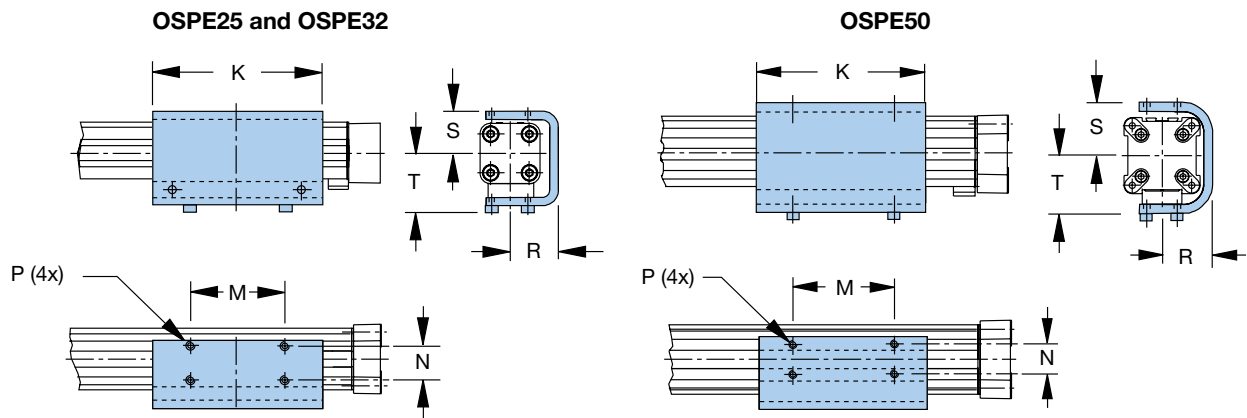


For dirty environments or space-restricted installations, inversion of the actuator is recommended.

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.



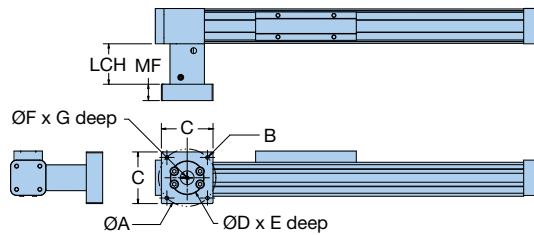
Actuator Size	Part Number*	Weight* (kg)	Dimensions – mm						
			K	M	N	P	R	S	T
OSPE25B	20037FIL	0.302	117	65	25	M5 x 6	33.5	31	31
OSPE32B	20161FIL	0.449	150	90	27	M6 x 6	39.5	38	38
OSPE50B	20166FIL	0.947	200	110	27	M6 x 8	52.0	55	55

*Part number and weight are for individual unit.

OSPE..B Belt-Driven Actuators

Motor Mounting Kit Options

Motor 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

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

Actuator Size	Order Code ⑥ *	Order Code ⑦ *	Dimensions — mm								
			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	M5	60	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	AF	98.43	M6	85	73.03	3.0	12.70	37.0	49	26
	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	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, page 48.

(continued on next page)

(continued from previous page)

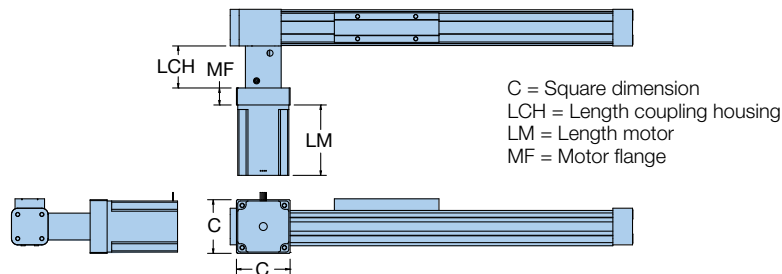
Actuator Size	Order Code ⑥ *	Order Code ⑦ *	Dimensions — mm								
			A	B	C	D	E	F	G	LCH	MF
OSPE50B	0	AF	98.43	M6	85	73.03	3.0	12.70	37.0	76	15
	0	AE	98.43	M5	88	73.03	3.0	12.70	30.0	67	14
	0	AL	100.00	M6	88	80.00	3.0	16.00	40.0	76	15
	0	A4	115.00	M8	100	95.00	3.5	19.00	40.0	76	15
	0	B9	75.00	M5	75	60.00	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	AJ	100.00	M6	88	80.00	3.0	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, page 48.

OSPE..B Belt-Driven Actuators

Mounted Motor Options

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

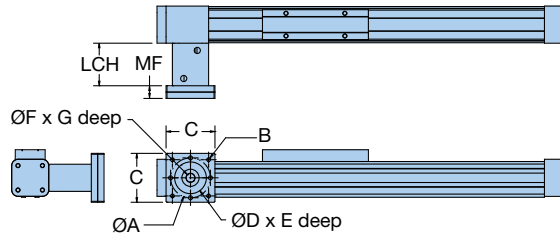


Actuator Size	Order Code ⑥*	Order Code ⑦*	Motor description	Dimensions — mm			
				C	LCH	LM	MF
OSPE25B	0	L0	LV233-01-10	58	47	79	9
	0	L1	HV233-01-10	58	47	79	9
	0	K0	BE233FJ-KPSN	58	47	143	19
	0	K1	BE233FJ-KPSN with brake (CM233FJ-115027)	58	47	178	19
OSPE32B	0	L0	LV233-01-10	58	49	79	10
	0	L1	HV233-01-10	58	49	79	10
	0	L2	LV343-01-10	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
OSPE50B	0	L2	LV343-01-10	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	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, page 48.

Gearhead Mounting Kit Options

Gearhead Mounting Kits include a coupling housing, coupling and flange



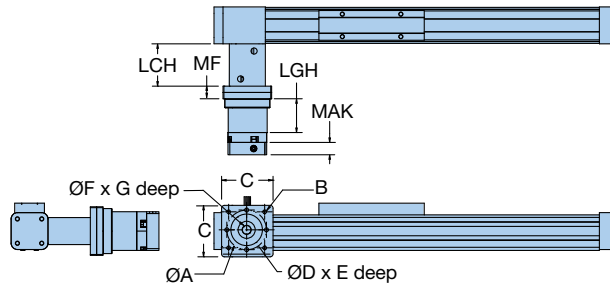
- A = Bolt circle diameter
- B = Screw for bolt circle
- C = Square dimension
- D = Pilot diameter
- E = Pilot depth
- F = Input drive shaft diameter
- G = Input drive shaft length
- LCH = Length coupling housing
- MF = Motor flange

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
	0	C0	44	S4	60	35	3	12	25	49	14.5
OSPE32B	0	C1	62	S5	75	52	8	16	36	49	23.0
	0	C1	62	S5	75	52	8	16	36	76	18.5
OSPE50B	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, page 48.

OSPE..B Belt-Driven Actuators

Mounted Gearhead with 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
 LGH = Length gearhead
 MAK = Motor adapter
 MF = Motor flange

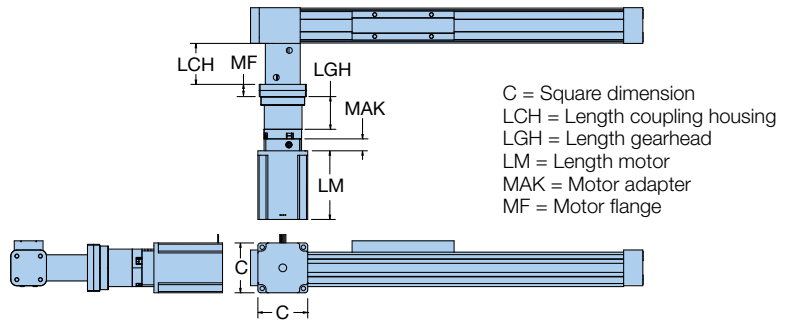
Mounted Gearhead with Motor Mounting Kit include a coupling housing, coupling, flange, and gearhead with coupler and flange

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	AF	98.43	M6	85	73.03	3.0	12.70	37.0	49	67.0	30.0	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	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	3.0	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
	OSPE50B	C, D or E	AB	66.67	M5	62	38.10	1.6	6.35	20.5	76	67.0	16.5
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		AF	98.43	M6	85	73.03	3.0	12.70	37.0	76	67.0	30.0	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		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, page 48.

² When ordering with actuator, use order code ⑦ to specify motor mounting kit. See ordering information, page 48.

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 ⑥ ¹	Order Code ⑦ ²	Motor description	Dimensions – mm					
				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
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	LV343-01-10	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 with 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
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	LV343-01-10	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 with 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

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, page 48.




² When ordering with actuator, use order code ⑦ to specify mounted motor on gearhead. See ordering information, page 48.

OSPE..B Belt-Driven Actuators

End Cap Mounting Options

See "Maximum Permissible Unsupported Length" (page 46), for end cap mounting placement requirements.

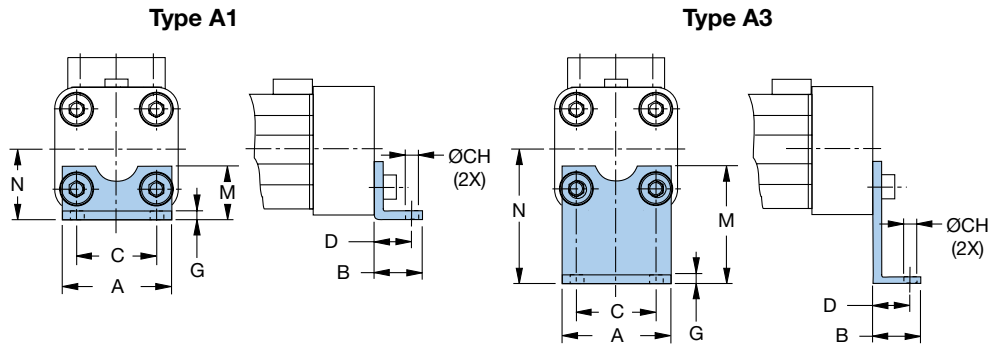
End Cap Mounting Selection Overview

Type	Standard Carriage			PowerSlide								ProLine		
	25	32	50	25/25	25/35	25/44	32/35	32/44	50/60	50/76	25	32	50	
Standard 	A1	•	•											
	A2											•	•	
	A3				•	•		•						
Reinforced 	B1	•	•	•	•	•	•	•			•	•		
	B4								•	•				
Block 	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)



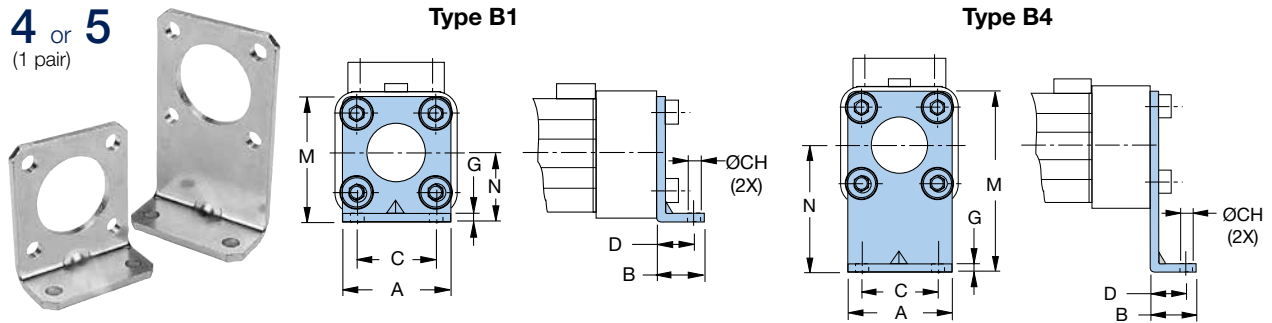
Type A1, A2 and A3 – Standard End Cap

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)



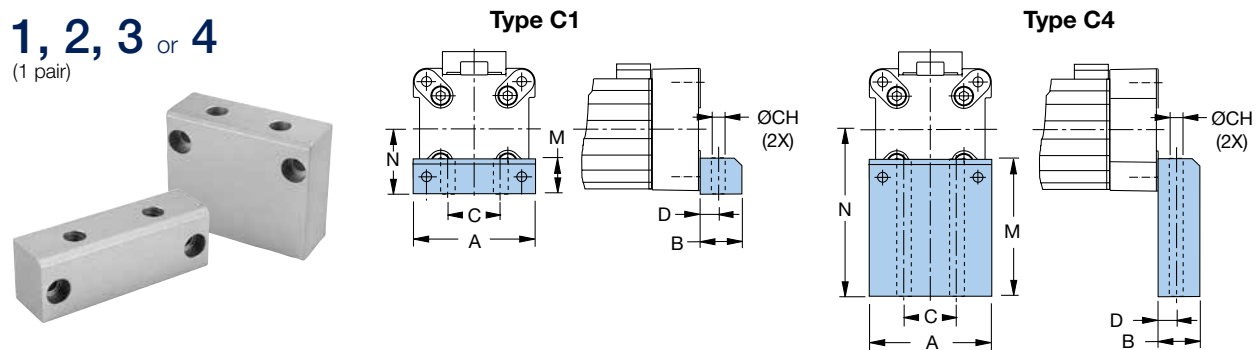
Type B1 and B4 – Reinforced End Cap

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							30	48
	C2	18160FIL	0.210							39	57
	C3	18164FIL	0.300	86	24	40	9.0	12.5		54	72
	C4	18165FIL	0.412							77	95




*Part number and weight are for individual piece.

OSPE..B Belt-Driven Actuators

Profile Mounting Options

See "Maximum Permissible Unsupported Length" (page 46), for end cap and profile mounting placement requirements.

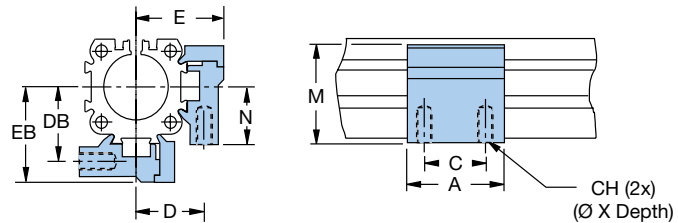
Profile Mounting Selection Overview

Type	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)



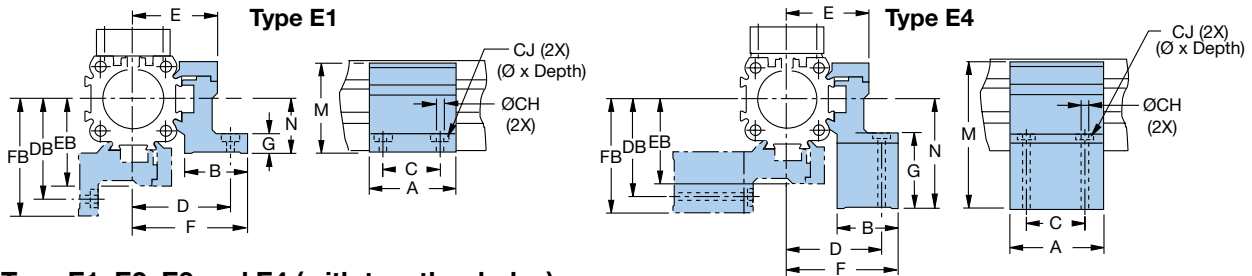
Type D1 (with two internal threads)

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)



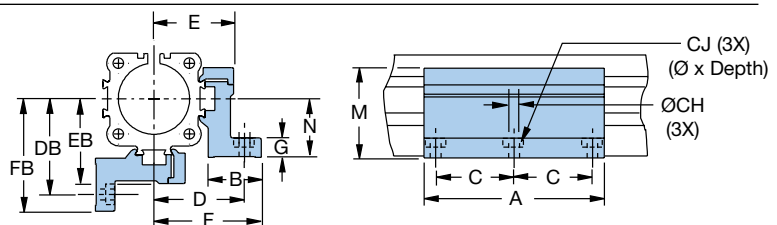
Type E1, E2, E3 and E4 (with two thru holes)

Actuator Size	Part Number*	Weight* (kg)	Dimensions – mm														
			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)

Actuator Size	Part Number*	Weight* (kg)	Dimensions – mm													
			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.

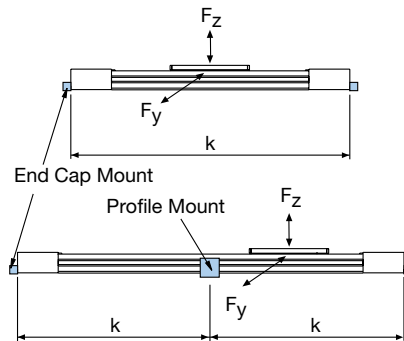
OSPE..B Belt-Driven Actuators

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.

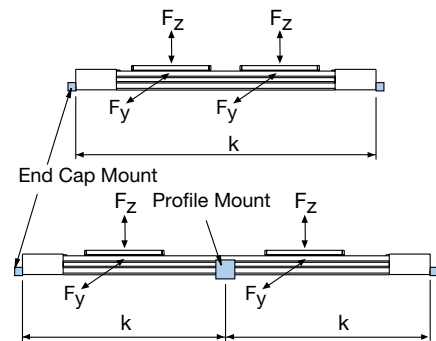
The greater the load and/or the longer the unsupported length between mounts, the more the actuator is susceptible to deflection. Deflection is also dependent on the carriage orientation (F_z for top oriented carriage or F_y for a side mounted carriage).

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 (page 47), 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 page 32 to calculate order stroke).

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

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

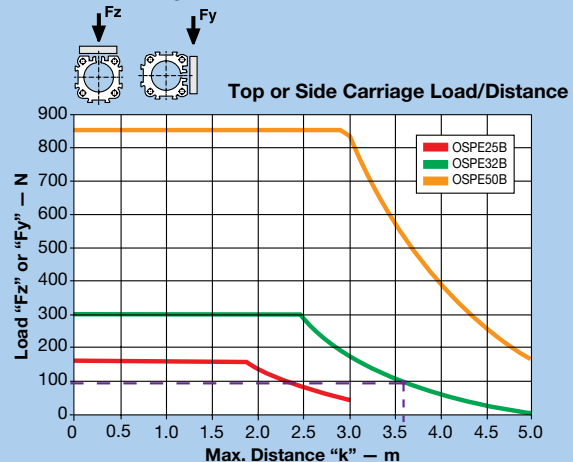
- 1) Use the appropriate F_z graph (page 47) for a top loaded carriage. (Note: with the standard carriage, top loaded F_z and side loaded F_y values are the same).
- 2) Calculate the Load "F" in Newtons based on the 10 kg application load requirement:

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

- 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

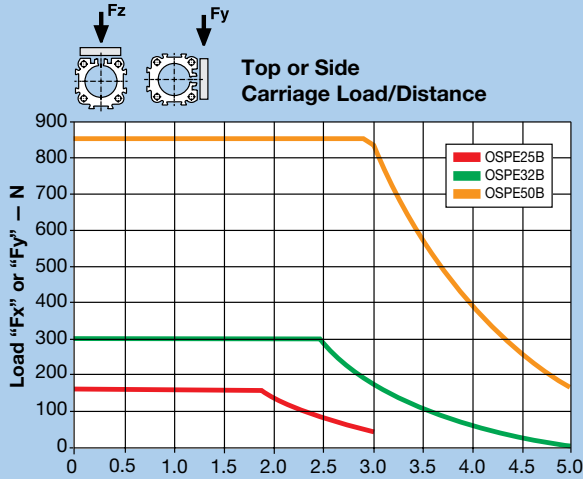


To further reduce deflection:

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



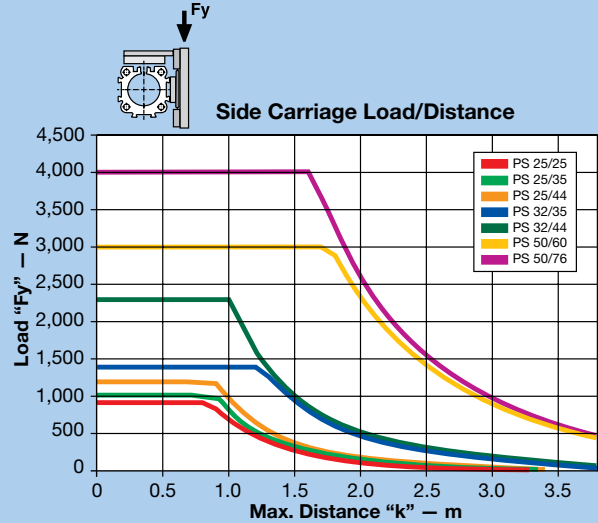
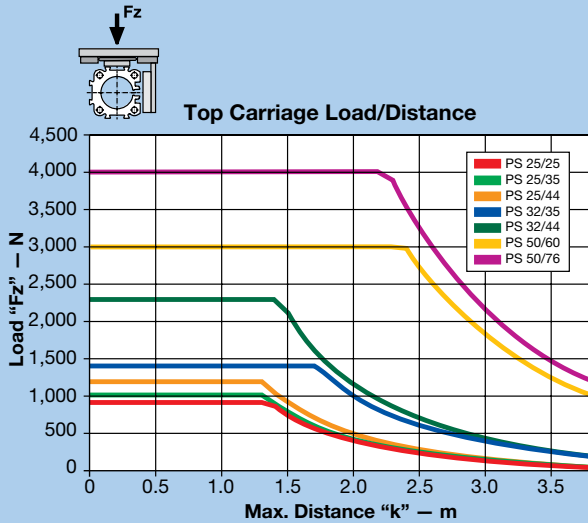
Maximum Permissible Unsupported Length

Determining end cap and profile mounting placement

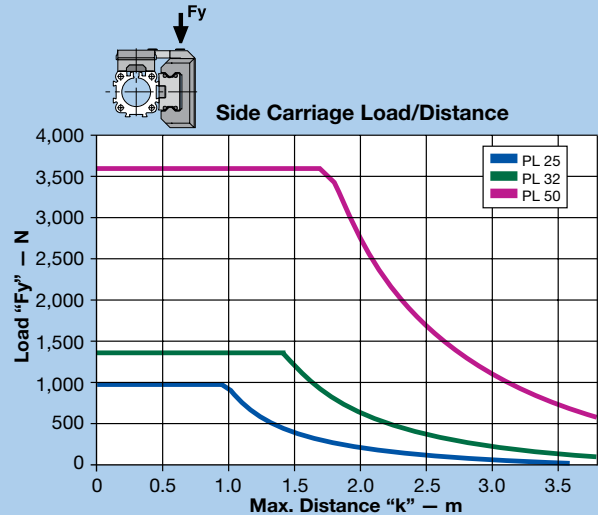
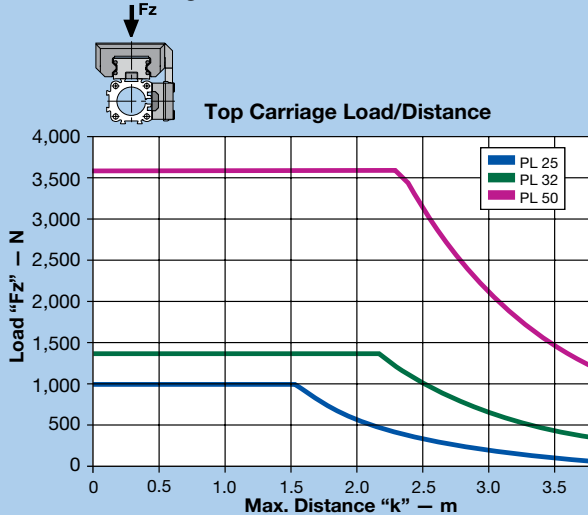
Use the appropriate deflection graph to ensure that the application load does not exceed the deflection curve. Supporting the actuator within the recommended maximum distance "k" will ensure that the installation will have a maximum deflection equal to 0.2% of distance "k."

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



OSPE..B Belt-Driven Actuators

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

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

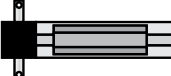
1 Tandem (two carriages for higher load capabilities)

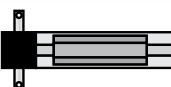
2 Bi-Parting (two driven carriages for opposing movements)

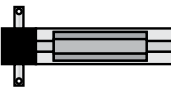
⑤ Drive Shaft and Motor Input

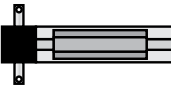
0  Plain shaft, motor input left

1  Plain shaft, motor input right

2  Double plain shaft, motor input left

3  Double plain shaft, motor input right

0  Guide Rail (left) with order code "3" from item 5 (double shaft – motor input right side)

1  Guide Rail (right) with order code "3" from item 5 (double shaft – motor input right side)

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" (see page 40), or "Mounted Gearhead and Motor" (see page 41) for item ⑦ below.

⑦ Gearhead/Motor Mounting Options:

0 - No gearhead or motor mounting option

Motor Mounting Kits (see page 36 for available options and dimensions)

Mounted Motors (see page 38 for available options and dimensions)

Gearhead Mounting Kits (see page 39 for available options and dimensions)

Mounted Gearhead with Motor Mounting Kit (see page 40 for available options and dimensions)

Mounted Gearhead and Motor (see page 41 for available options and dimensions)

⑧ Order Stroke*

00000 5-digit input (in mm)

* See page 32 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 Groove Covers

P Standard hardware with Parker gold cover strip

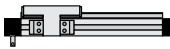
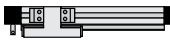
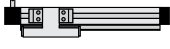
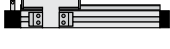

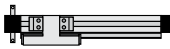
⑩ Carriage Options

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 page 31 for dimensions and additional information.

** Requires standard carriage (select order code "0" from ④). See page 35 for Inversion Mounting and page 34 for Clevis Mounting.

⑪ External Guide Rail Orientation

0		Guide Rail (right) with order code "0" from item ⑤ (plain shaft left)
1		Guide Rail (left) with order code "0" from item ⑤ (plain shaft left)
0		Guide Rail (left) with order code "1" from item ⑤ (plain shaft right)
1		Guide Rail (right) with order code "1" from item ⑤ (plain shaft right)
0		Guide Rail (right) with order code "2" from item ⑤ (double shaft – motor input left side)
1		Guide Rail (left) with order code "2" from item ⑤ (double shaft – motor input left side)

⑫ End Cap Mounting (see page 42)

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 page 44)

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