Recirculating Ball Bearing Guide STARLINE

B

OSP
ORIGA SYSTEM PLUS

Series STL 16 to 50
for Linear Drive Series OSP-P

Features:

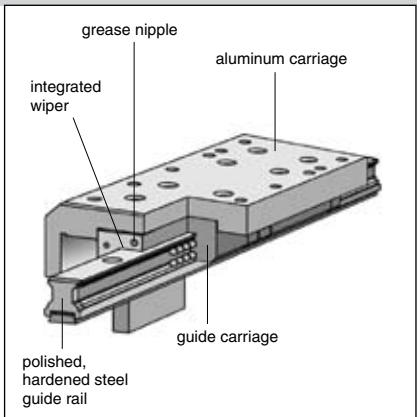
- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminum guide carriage – dimensions compatible with OSP guides SLIDELINE and PROLINE
- Installation height (STL16 - 32) compatible with OSP guides SLIDELINE and PROLINE

- Maximum speed
  STL16: v = 3 m/s
  STL25 to 50: v = 5 m/s

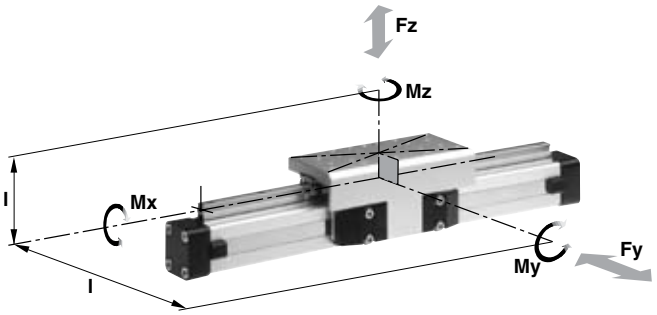
**** Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

Versions

for pneumatic linear drive:
Series OSP-P



Loads, Forces and Moments



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

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{1max}} + \frac{Fz}{Fz_{max}} \leq 1$$

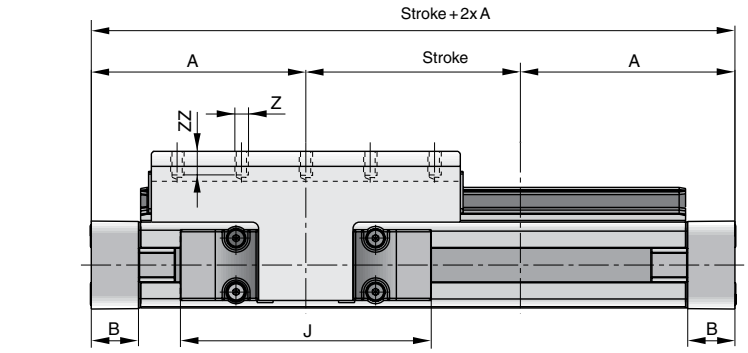
The sum of the loads should not exceed >1

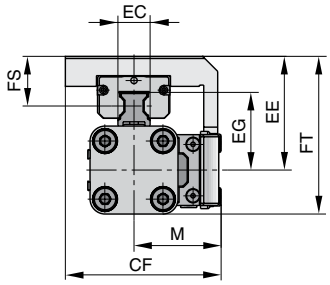
The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

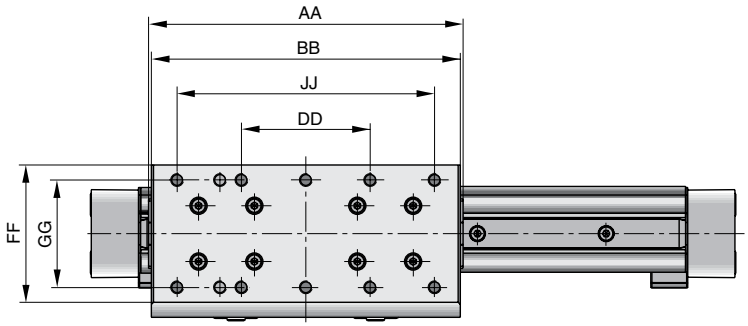
Series	For linear drive	Max. moments (Nm)			Max. loads (N)		Mass of linear drive with guide (kg)		Mass ** guide carriage (kg)
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke	
STL16	OSP-P16	15	30	30	1000	1000	0.598	0.210	0.268
STL25	OSP-P25	50	110	110	3100	3100	1.733	0.369	0.835
STL32	OSP-P32	62	160	160	3100	3100	2.934	0.526	1.181
STL40	OSP-P40	150	400	400	4000	7500	4.452	0.701	1.901
STL50	OSP-P50	210	580	580	4000	7500	7.361	0.936	2.880

B

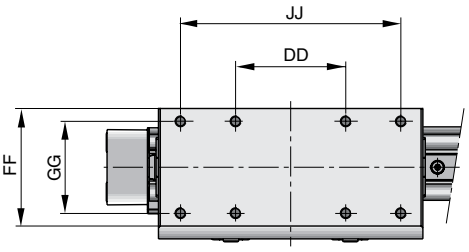
Dimensions Series OSP-P STL16 to STL 50







Type STL25 to PL50



Type STL16

Dimension Table (mm) Series OSP-P STL16 to STL50

Series	A	B	J	M	Z	AA	BB	CF	DD	EC	EE	EG	FF	FS	FT	GG	JJ	ZZ
STL16	65	14	69	31	M4	93	90	55	30	15	40	24.6	48	18	55	36	70	8
STL25	100	22	117	40.5	M6	146.6	144	72.5	60	15	53	36.2	64	23.2	73.5	50	120	12
STL32	125	25.5	152	49	M6	186.6	184	91	80	15	62	42.2	84	26.2	88	64	160	12
STL40	150	28	152	55	M6	231	226	102	100	20	72	51.6	94	28.5	106.5	78	200	12
STL50	175	33	200	62	M6	270.9	266	117	120	23	85	62.3	110	32.5	128.5	90	240	16

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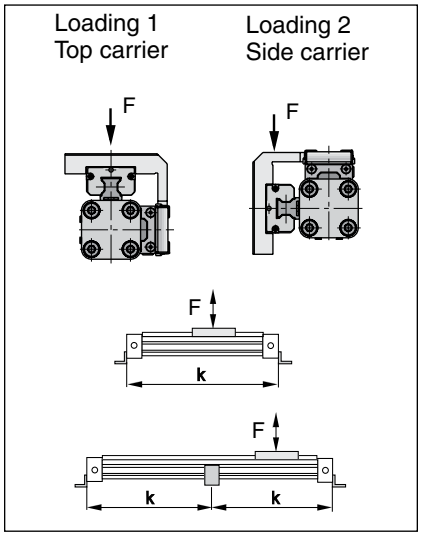
Mid-Section Support

(For versions, see pages B76-B77)

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

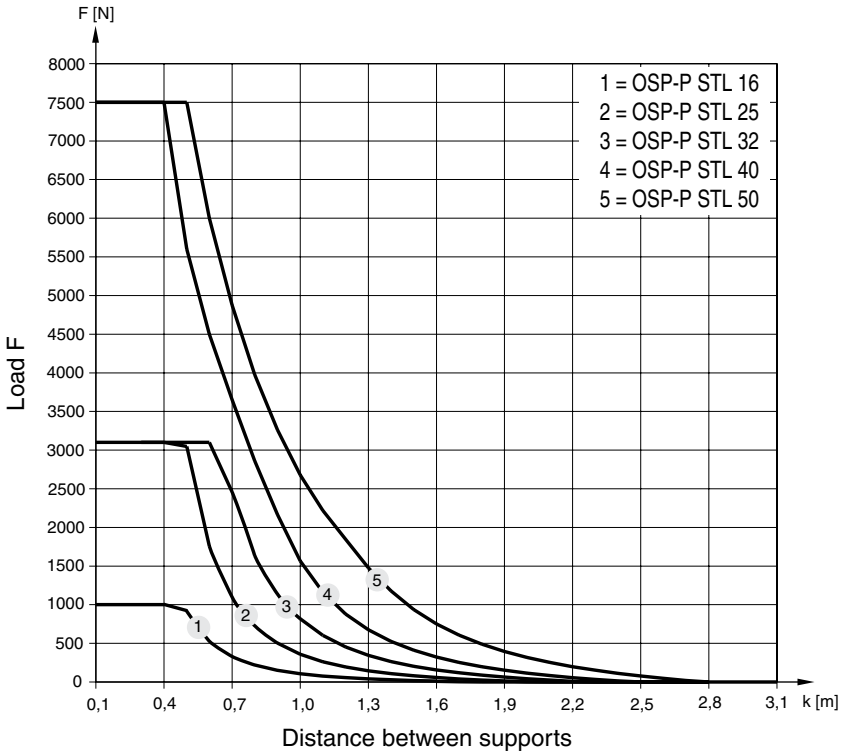
B



Note:
For speeds v > 0.5 m/s the distance between supports should not exceed 1 m.

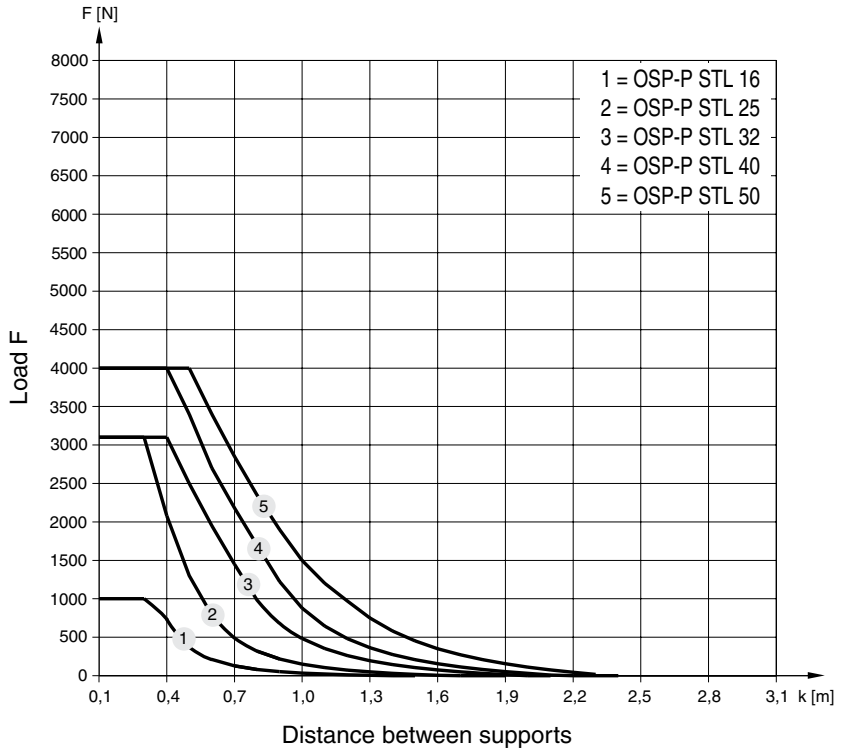
Permissible Unsupported Length STL16 to STL50

Loading 1 – Top carrier



Permissible Unsupported Length STL16 to STL50

Loading 2 – Side carrier



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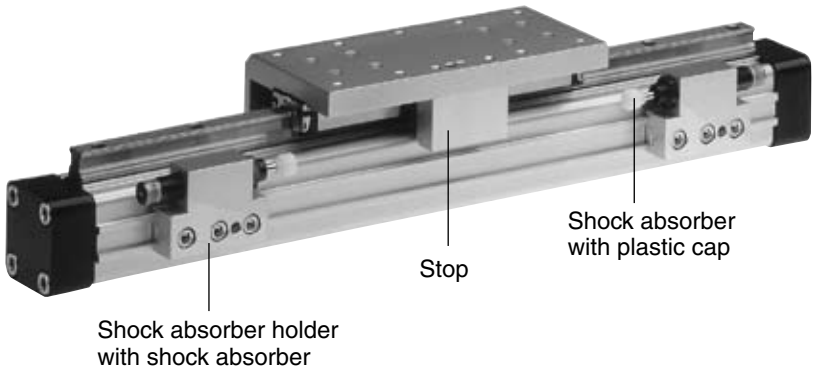
Variable Stop Type VS16 to VS50

Arrangement with two variable stops



Variable Stop

The variable stop Type VS provides simple stroke limitation.

It can be retrofitted and positioned anywhere along the stroke length.

For every cylinder diameter two types of shock absorber are available

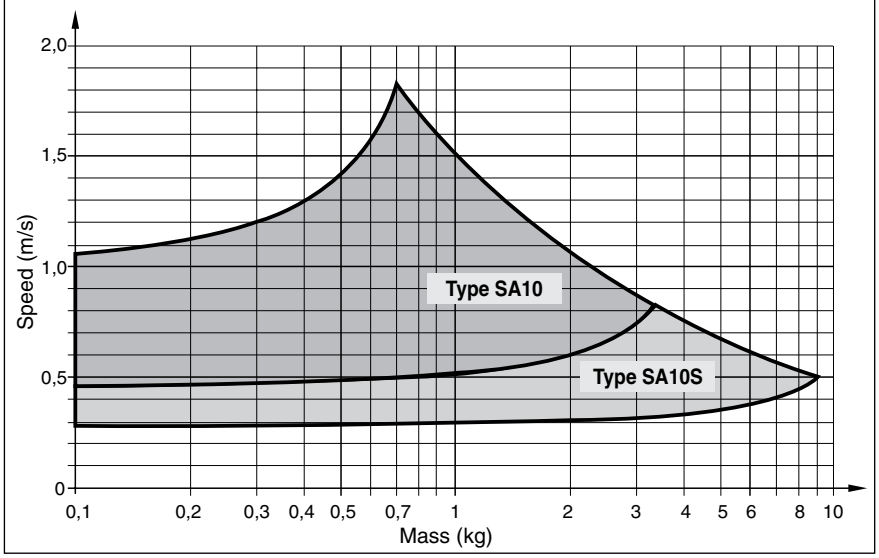
– see “Shock Absorber Selection” below.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

B

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL16



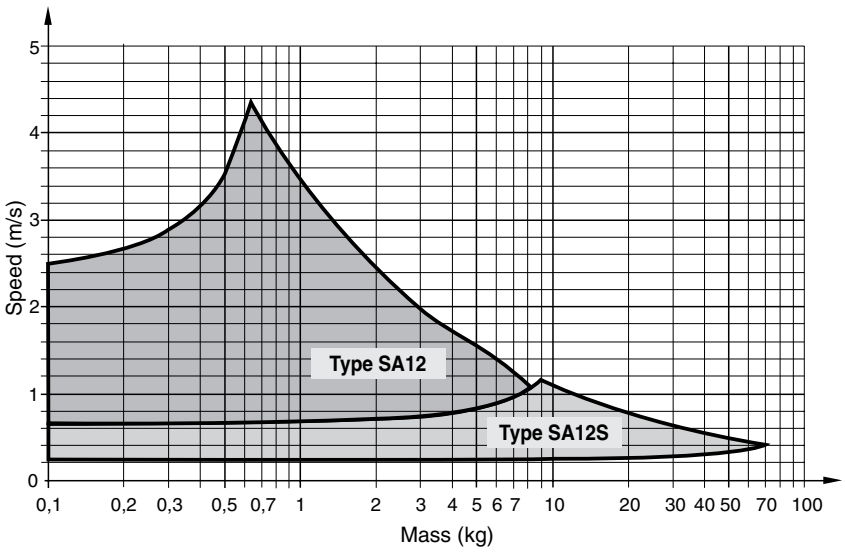
Shock Absorber Selection

The shock absorber is selected in dependence on the mass and speed.

The mass of the carrier itself must be taken into account.

The values relate to an effective driving force of 78 N (6 bar)

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL25



The values relate to an effective driving force of 250 N (6 bar)

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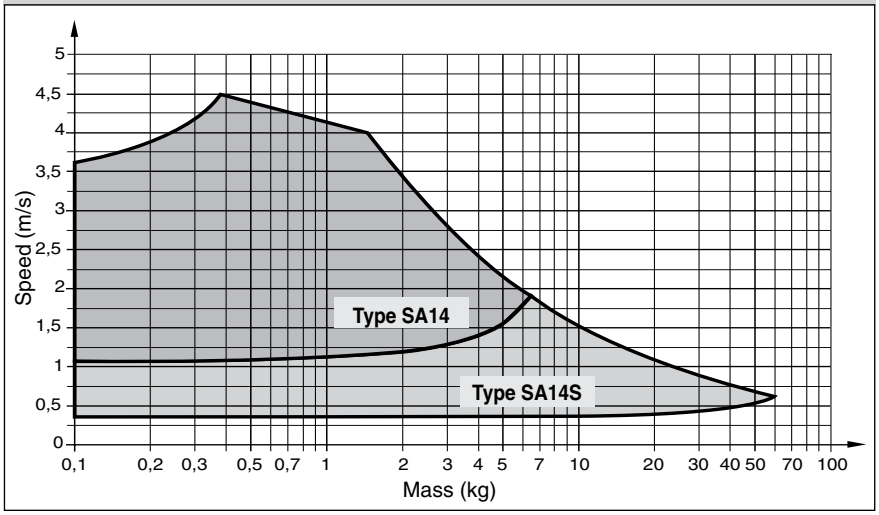
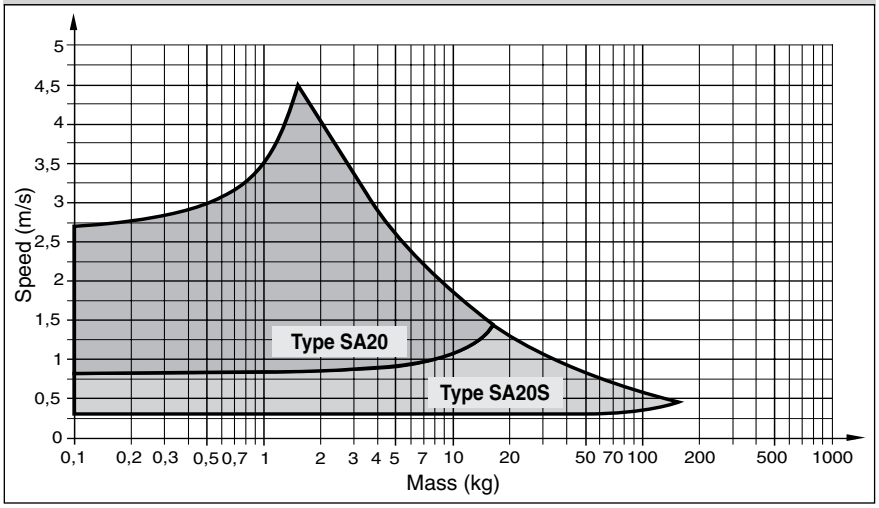
Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL32



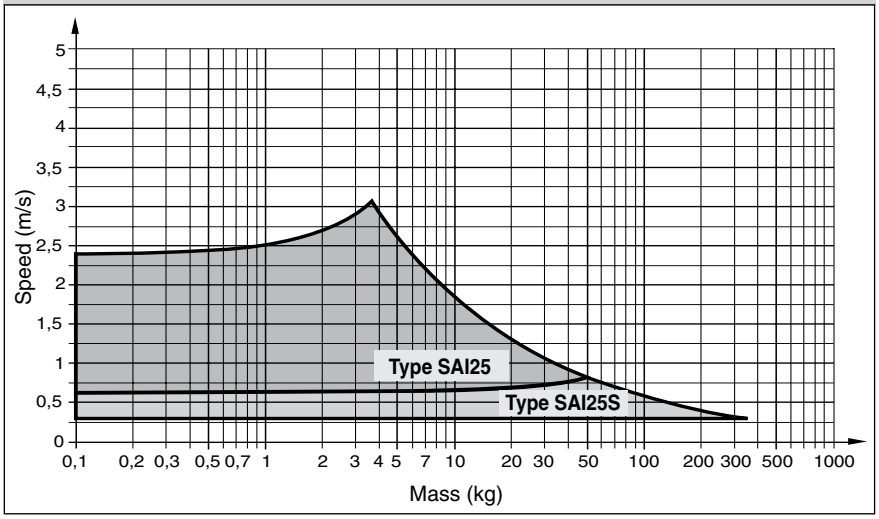
The values relate to an effective driving force of 420 N (6 bar)

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL40



The values relate to an effective driving force of 640 N (6 bar)

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL50



The values relate to an effective driving force of 1000 N (6 bar)

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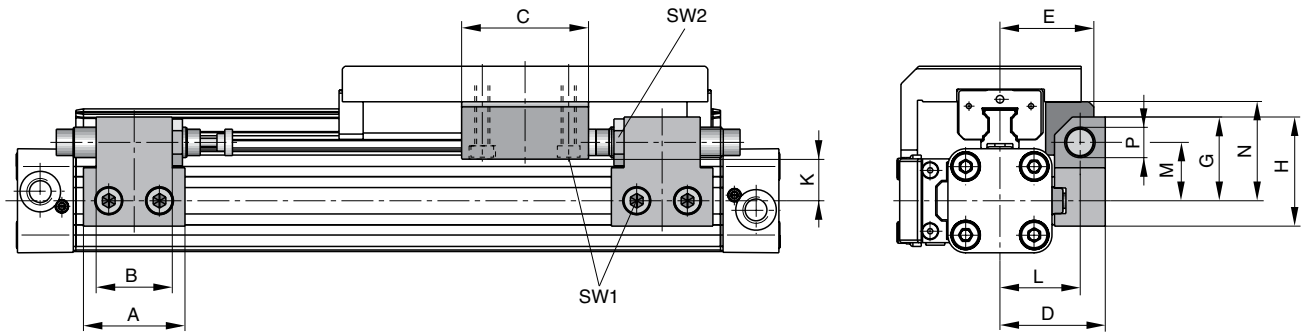
B

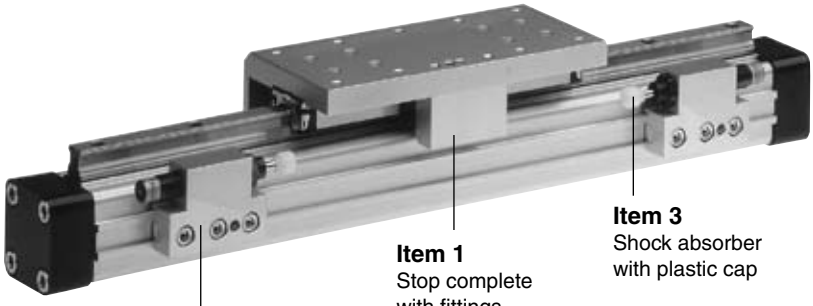
Dimensions – Variable Stop Type VS16 to VS50



Dimension Table (mm) – Variable Stop Type VS16 to VS50

Series	Type	A	B	C	D	E	G	H	K	L	M	N	P	SW1	SW2
OSP-STL16	**VS16**	30	14	25	33	30	28	38	16.2	25.5	20.5	30	M10x1	4	12.5
OSP-STL25	**VS25**	40	30	50	41.5	37	33	43	18	31.5	23	39	M12x1	5	16
OSP-STL32	**VS32**	60	40	50	45.5	42	35	45	19	35.5	25	48	M14x1.5	5	17
OSP-STL40	**VS40**	84	52	60	64	59	48	63	25.6	50	34	58.6	M20x1.5	5	24
OSP-STL50	**VS50**	84	-	60	75	69	55	70	26.9	57	38	66.9	M25x1.5	5	30

Order Information – Variable Stop Type VS16 to VS50



Item 1
Stop complete
with fittings

Item 2
Shock absorber holder
complete with fittings
– without shock absorber

Item 3
Shock absorber
with plastic cap

Order Instructions – Variable Stop Type VS16 to VS50

Item	Description	Size VS16		VS25		VS32		VS40		VS50	
		Type	Order No.	Type	Order No.	Type	Order No.	Type	Order No.	Type	Order No.
1	Stop, complete	–	**21196**	–	**21197**	–	**21198**	–	**21199**	–	**21200**
2	Shock absorber holder, complete	–	**21201**	–	**21202**	–	**21203**	–	**21204**	–	**21205**
3 *	Shock absorber, standard	**SA10**	**7718**	**SA12**	**7706**	**SA14**	**7708**	**SA20**	**7710**	**SAI25**	**7712**
	Shock absorber, version S	**SA10S**	**7721**	**SA12S**	**7707**	**SA14S**	**7709**	**SA20S**	**7711**	**SAI25S**	**7835**
	* Shock absorber with plastic cap										

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Linear Drive Accessories

Ø 16 to 32 mm
End Cap Mounting
Type: B

B

for Linear Drives with Recirculating Ball Bearing Guide

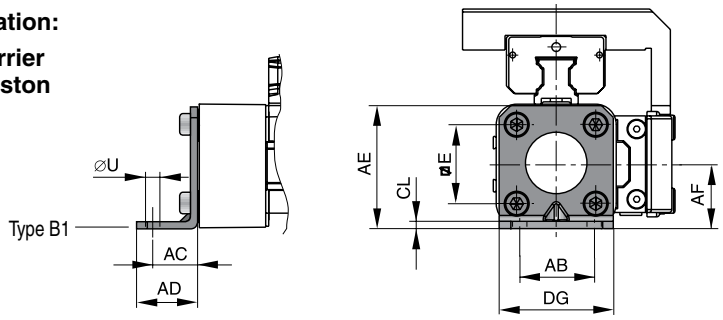
- **Series OSP-P STL**
- **Series OSP-P KF**

Material:
Galvanized steel
Anodized aluminum

The mountings are supplied in pairs.

Series OSP-P STL40, STL50: Type C1
Series OSP-P KF40, KF50: Type C1

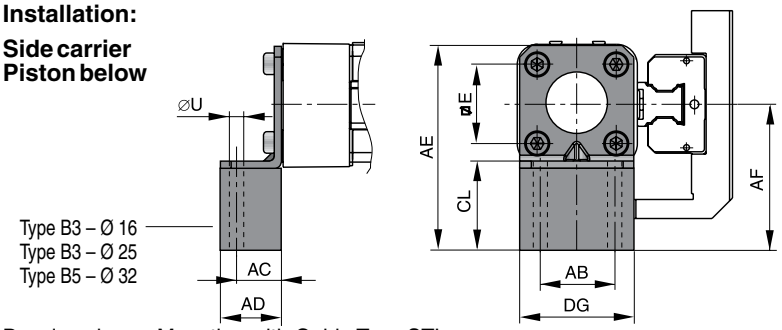
Installation:
Top carrier
Side piston



Drawing shows: Mounting with Guide Type STL

Series OSP-P STL16, STL25, STL32: Type B3 (Ø 32: B5)
Series OSP-P KF16, KF25, KF32: Type B3 (Ø 32: B5)

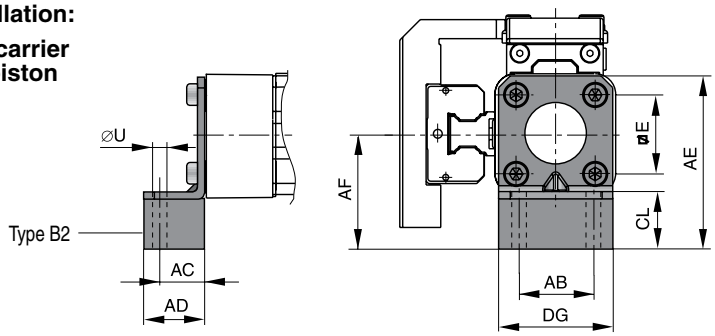
Installation:
Side carrier
Piston below



Drawing shows: Mounting with Guide Type STL

Series OSP-P STL16, STL25, STL32: Type B2
Series OSP-P KF16, KF25, KF32: Type B2

Installation:
Side carrier
Top piston



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) for End Cap Mounting Type: B1 to B5

Series Type	Mounting	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No. (pair)
OSP-P STL16	**B1**	18	3.6	18	10	14	28	15	2	26	**21135**
OSP-P KF16	**B2**	18	3.6	18	10	14	43	30	17	26	**21136**
	B3	18	3.6	18	10	14	55	42	29	26	**21137**
OSP-P STL25	**B1**	27	5.8	27	16	22	42	22	2.5	39	**20311**
OSP-P KF25	**B2**	27	5.8	27	16	22	57	37	17.5	39	**21138**
	B3	27	5.8	27	16	22	69	49	29.5	39	**21139**
OSP-P STL32	**B1**	36	6.6	36	18	26	55	30	3	50	**20313**
OSP-P KF32	**B2**	36	6.6	36	18	26	69	44	17	50	**21140**
	B5	36	6.6	36	18	26	90	65	9	50	**21141**

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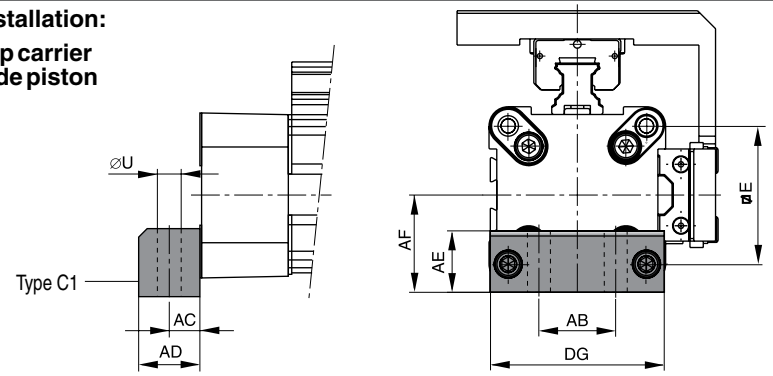
Series OSP-P STL40, STL50: Type C1
Series OSP-P KF40, KF50: Type C1

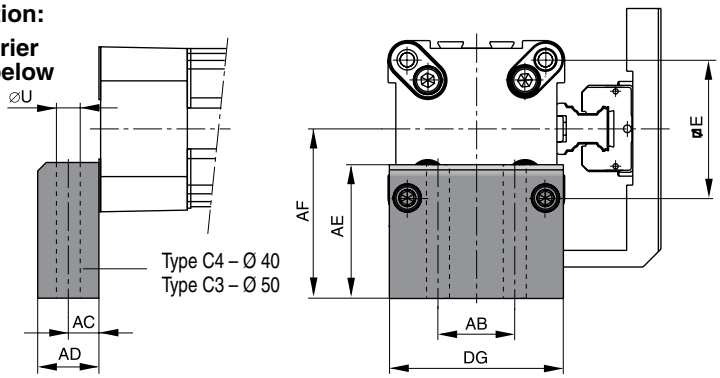
Installation:
Top carrier
Side piston



Drawing showes: Mounting with Guide Type STL

Series OSP-P STL40, STL50: Type C4 (Ø 50: C3)
Series OSP-P KF40, KF50: Type C4 (Ø 50: C3)

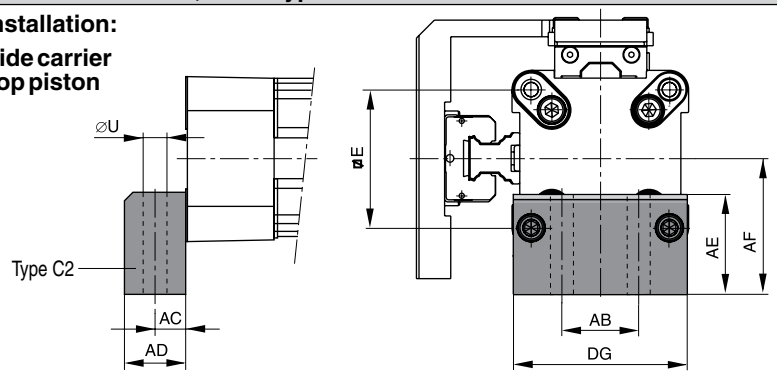
Installation:
Side carrier
Piston below



Drawing showes: Mounting with Guide Type STL

Series OSP-P STL40, STL50: Type C2
Series OSP-P KF40, KF50: Type C2

Installation:
Side carrier
Top piston



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) for End Cap Mounting Type: C1 to C4

Series Type	Mounting	E	ØU	AB	AC	AD	AE	AF	DG	Order No. (pair)
OSP-P STL40	**C1**	54	9	30	12.5	24	24	38	68	**4010**
OSP-P KF40	**C2**	54	9	30	12.5	24	37	51	68	**20338**
	C4	54	9	30	12.5	24	56	70	68	**20340**
OSP-P STL50	**C1**	70	9	40	12.5	24	30	48	86	**5010**
OSP-P KF50	**C2**	70	9	40	12.5	24	39	57	86	**20349**
	C3	70	9	40	12.5	24	54	72	86	**20350**

Ø 40 to 50 mm End Cap Mounting Type: C

for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-P STL**
- **Series OSP-P KF**

Material:
Anodized aluminum

The mountings are supplied in pairs.

B

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Linear Drive Accessories

Ø 16 to 50 Mid-Section Support Type: D1ST

B

for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-P STL**
- **Series OSP-P KF**

Note on Types D1ST
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the center of the actuator is different.

For design notes, see page
B70 (Series OSP-P STL)
B81 (Series OSP-P KF)

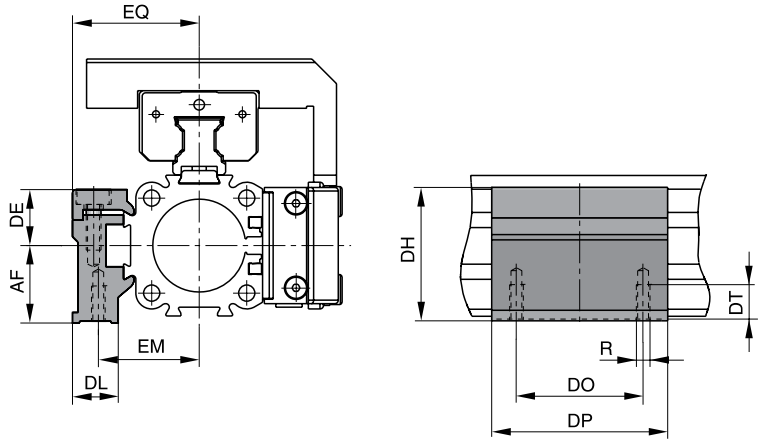
Mid-Section Support Type: E1ST to E5ST

for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-P STL**
- **Series OSP-P KF**

Series OSP-P STL16 to STL50: Type D1ST
Series OSP-P KF16 to KF50: Type D1ST

Mountings from below with 2 screws



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) Mid-Section Support D1ST

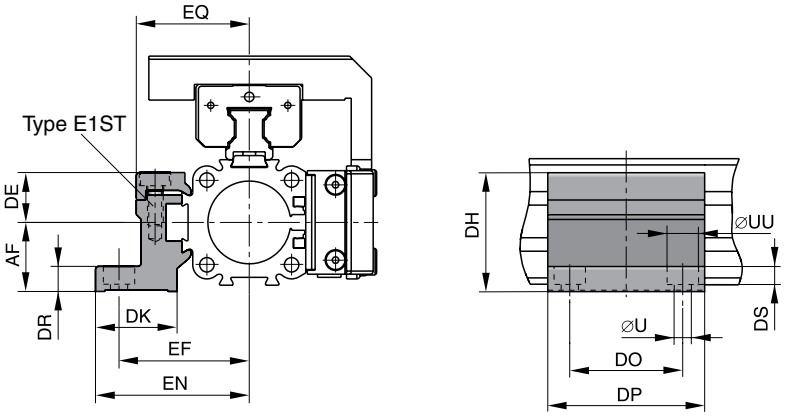
Series OSP-P	Mounting Type	R	AF	DE	DH	DL	DO	DP	DT	EM	EQ	Order No.
STL/KF16	**D1ST**	M3	15	14.2	29.2	14.6	18	30	6.5	20	27	**21125**
STL/KF25	**D1ST**	M5	22	16	38	13	36	50	10	28.5	36	**21126**
STL/KF32	**D1ST**	M5	30	16	46	13	36	60	10	35.5	43	**21127**
STL/KF40	**D1ST**	M6	38	23	61	19	45	60	11	38	48	**21128**
STL/KF50	**D1ST**	M6	48	23	71	19	45	60	11	45	57	**21129**

Order example: Type D1ST16 Order No. 21125

Series OSP-P STL16 to STL50: Type E1ST
Series OSP-P KF16 to KF50: Type E1ST

Installation:
Top carrier
Side position

Mounting from above / below using a cap screw



Drawing shows: Mounting with Guide Type STL

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Mid-Section Support Type: E1ST to E5ST

for Linear Drives with Recirculating Ball Bearing Guide

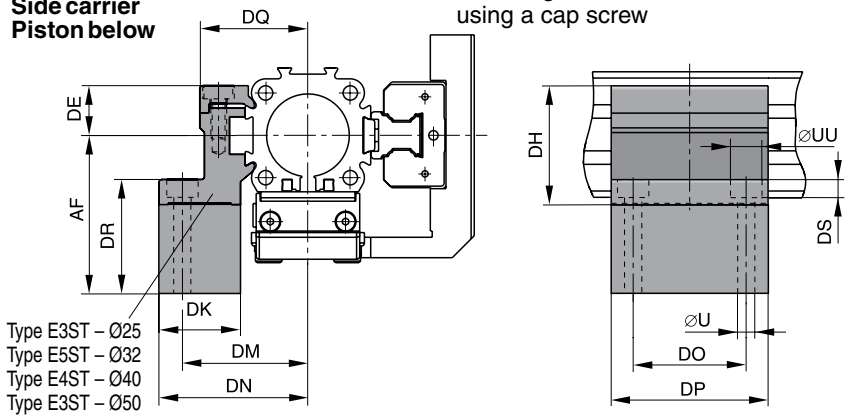
- **Series OSP-P STL**
- **Series OSP-P KF**

B

Series OSP-P STL25 to STL50: Type E3ST, E4ST, E5ST
Series OSP-P STL25 to STL50: Type E3ST, E4ST, E5ST

Installation:
Side carrier
Piston below

Mounting from above / below using a cap screw

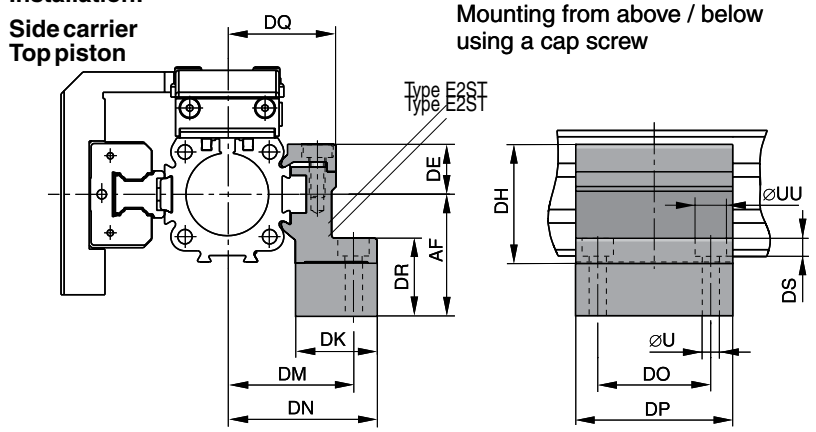


Drawing shows: Mounting with Guide Type STL

Series OSP-P STL16 to STL50: Type E2ST
Series OSP-P KF16 to KFL50: Type E2ST

Installation:
Side carrier
Top piston

Mounting from above / below using a cap screw



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) for Mid-Section Support E1ST to E5ST

Series OSP-P	Mounting Type	ØU	ØUU	AF	DE	DH	DK	DM	DN	DO	DP	DR	DQ	DS	EF	EN	EQ	Order No.
STL/KF16	**E1ST**	3.4	6	15	14.2	29.2	24	32	36.4	18	30	6	27	3.4	32	36.4	27	**21130**
STL/KF16	**E2ST**	3.4	6	30	14.2	29.2	24	32	36.4	18	30	21	27	3.4	32	36.4	27	**21142**
STL/KF25	**E1ST**	5.5	10	22	16	38	26	40	47.5	36	50	8	34.5	5.7	41.5	49	36	**21131**
STL/KF25	**E2ST**	5.5	10	37	16	38	26	40	47.5	36	50	23	34.5	5.7	41.5	49	36	**21143**
STL/KF25	**E3ST**	5.5	10	49	16	38	26	40	47.5	36	50	35	34.5	5.7	41.5	49	36	**21148**
STL/KF32	**E1ST**	5.5	10	30	16	46	27	46	54.5	36	60	10	40.5	5.7	48.5	57	43	**21132**
STL/KF32	**E2ST**	5.5	10	44	16	46	27	46	54.5	36	60	24	40.5	5.7	48.5	57	43	**21144**
STL/KF32	**E5ST**	5.5	10	65	16	46	27	46	54.5	36	60	45	40.5	5.7	48.5	57	43	**21151**
STL/KF40	**E1ST**	7	-	38	23	61	34	53	60	45	60	10	45	-	56	63	48	**21133**
STL/KF40	**E2ST**	7	-	51	23	61	34	53	60	45	60	23	45	-	56	63	48	**21145**
STL/KF40	**E4ST**	7	-	70	23	61	34	53	60	45	60	42	45	-	56	63	48	**21150**
STL/KF50	**E1ST**	7	-	48	23	71	34	59	67	45	60	10	52	-	64	72	57	**21134**
STL/KF50	**E2ST**	7	-	57	23	71	34	59	67	45	60	19	52	-	64	72	57	**21146**
STL/KF50	**E3ST**	7	-	72	23	71	34	59	67	45	60	34	52	-	64	72	57	**21149**

Order example: Type E1ST16 Order No. 21130

Parker Hannifin Corporation
Parker-Origa
Glendale Heights, Illinois
www.parker.com/pneu/rodless

Ordering Instructions / Part Numbering System for OSP-P STARLINE Series

B

6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPP	32	0	0	0	0	02500	0	2	0	B	0	0	0	0	0

Bore
16
25
32
40
50

Piston Style
0 Standard
1 Tandem
S Special

Air Connections / Porting
0 Standard (position #2)
1 end face (position #5)
2 single end porting
3 left stand (pos #2), right end face (pos#5)
4 right stand (pos #2), left end face (pos #5)
6 single end porting end face
A 3/2 Way valve VOE 24V = (25,32,40,50)
B 3/2 Way valve VOE 220V~/110V= (25,32,40,50)
C 3/2 Way valve VOE 48V=(25,32,40,50)
E 3/2 Way valve VOE 110V~ (25,32,40,50)
S Special

Note: Single End Porting on 16mm bore, then end caps cannot be rotated.

Seals
0 Standard
1 Viton
S Special

Lubrication
0 Standard
1 Slow Speed
4 Food
5 Clean Room
S Special

Corrosion Resist, Hardware
0 Standard
1 Stainless
S Special

Stroke
x x x x x

End Cap Position
0 l+r 0° = in front (pos #2)
1 l+r 90° = underneath (pos #3)
2 l+r 180° = at the back (pos # 4)
3 l+r 270° = same face as outerband (pos #2,1)
4 l 90° = underneath; r 0° = in front (pos #3,2)
5 l 180° = at the back; r 0° = in front (pos #4,2)
6 l 270° = same face as outerband; r 0° = in front (pos #1,2)
7 l 0° = in front; r 90° = underneath (pos #2, 3)
8 l 180° = at the back; r 90° = underneath (pos #4,3)
9 l 270° = same face as outerband; r 90° = underneath (pos #1,3)
A l 0° = in front; r 180° = at the back (pos #2,4)
B l 90° = underneath; r 180° = at the back (pos #3,4)
C l 270° = same face as outerband; r 180° = at the back (pos #1,4)
D l 0° = in front; r 270° = same face as outerband (pos #2,1)
E l 90° = underneath; r 270° = same face as outerband (pos #3,1)
F l 180° = at the back; r 270° = same face as outerband (pos #4,1)
S Special

Cushioning / Stops
0 Standard
2 VS soft left
3 VS hard left
4 VS soft right
5 VS hard right
6 VS soft both sides
7 VS hard both sides
S Special

Piston Mountings
0 none

Guides / Brakes
B STL Starline

add. Carriage
0 without
B Guide Carriage Starline STL

Dovetail Cover
0 Standard
X Without Cover Rail
S Special

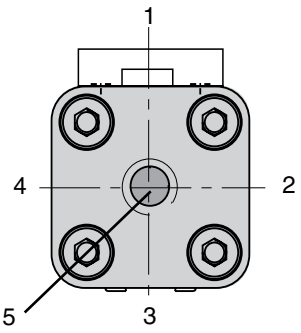
End Cap Mounts
0 without
4 B1 (16,25,32)
5 B2 (16,25,32)
6 B3 (16,25)
8 B5 (32)
9 C1 (40,50)
A C2 (40,50)
B C3 (50)
C C4 (40)

Note: Comes in pairs

Version

Switches / Measuring System
0 none
1 NO Reed-KL3045 Qty. 2
2 NC Reed-KL3048 Qty. 2
3 PNP KL3054+4041 Qty. 2
4 NPN KL3060+4041 Qty. 2
X 21240 SFI 0,1mm
Y 21241 SFI 1mm
Z 4650 SFA
S Special

Note: 2 switches will be supplied. For different quantity, please order as a separate line item.



Note: Position #2 is the standard location.

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