

Slide units SPZ, twin piston

FESTO



- 1 - Type discontinued
Available up until 2018

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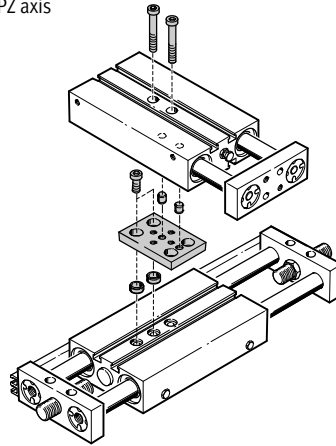
Slide units SPZ, twin piston

Key features

Multi-axis and drive combinations

The slide unit SPZ can be combined with different drives. An adapter kit is required for mounting between the two drives.

DPZ-/SPZ axis

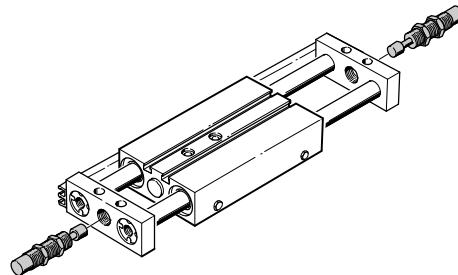


Adapter kits

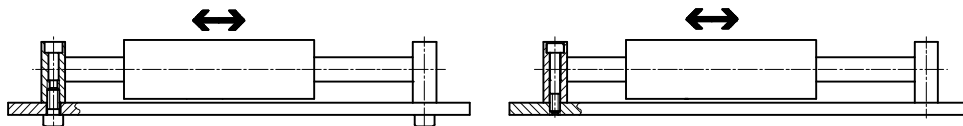
→ www.festo.com

Shock absorbers for slide operation

- From 30 ... 900 mm/s
- In slide operation, shock absorbers provide highly dynamic but gentle operating characteristics



Slide operation SPZ-...



Slide units SPZ, twin piston

Overview and type codes

Function	Version	Piston Ø	Stroke	Position sensing	Plain bearing guide	Recirculating ball bearing guide
		[mm]	[mm]	A	GF	KF
Double-acting		10	10, 25, 40, 50	■	■	■
		16, 20, 25, 32	10, 25, 40, 50, 80, 100			

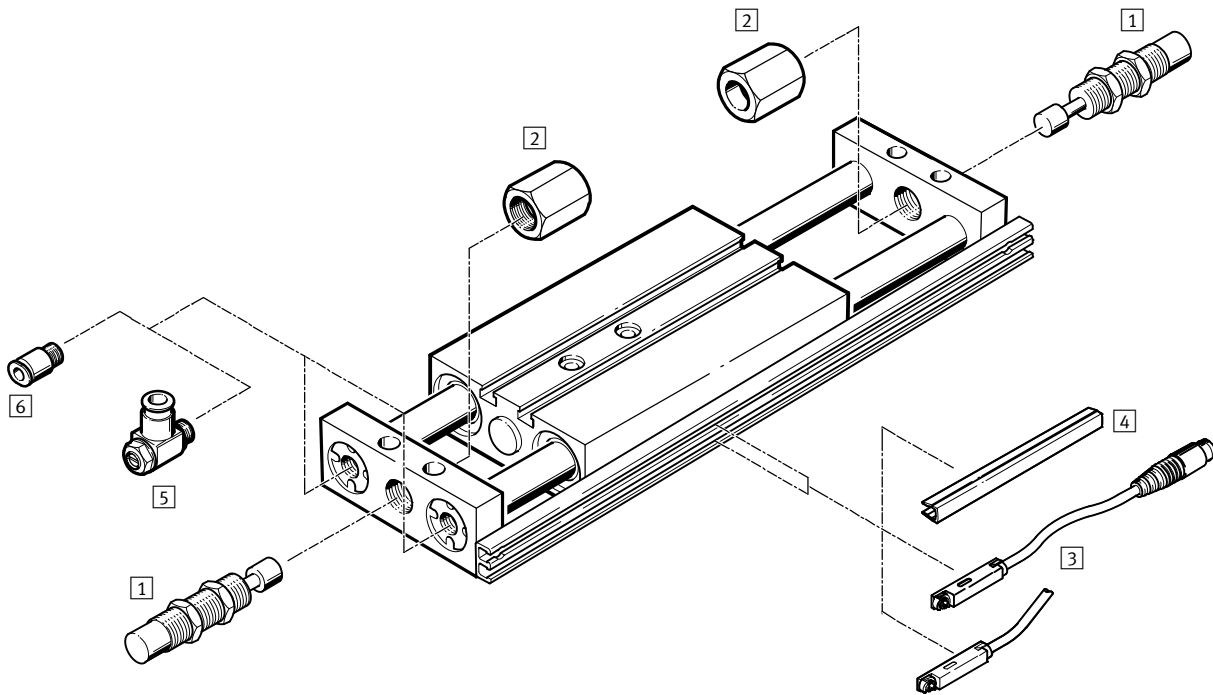
SPZ		-	16	-	100	-	P	-	A	-	KF
Type											
Double-acting											
SPZ	Slide unit										
Piston Ø [mm]											
Stroke [mm]											
Cushioning											
P	Flexible cushioning rings/plates at both ends										
Position sensing											
A	For proximity sensor										
Guide											
	Plain bearing guide										
KF	Recirculating ball bearing guide										

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Peripherals overview

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Accessories				
	Description	Piston Ø		→ Page/Internet
		10, 16 mm	20, 25, 32 mm	
1	Shock absorber YSR-C	Hydraulic shock absorber with rapidly increasing cushioning characteristic	■	13
2	Stop limiters YSRA	Stroke limiter for shock absorber	■	13
3	Proximity sensor SME/SMT-8	Can be integrated in the cylinder profile barrel	■	14
4	Slot cover ABP-5-S	To protect the sensor cable and keep dirt out of the sensor slots	■	14
5	One-way flow control valve GRLA	To regulate speed	■	15
6	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	■	qs
-	Centring pin ZBS	2 pieces included in scope of delivery	■	15
-	Centring sleeve ZBH	2 pieces included in scope of delivery	■	15
-	Adapters	For drive/drive combinations	■	16
		For drive/gripper combinations	■	gripper

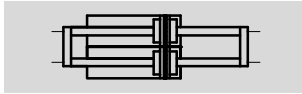
- 2 - Type discontinued
Available up until 2018

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Slide units SPZ, twin piston

Technical data

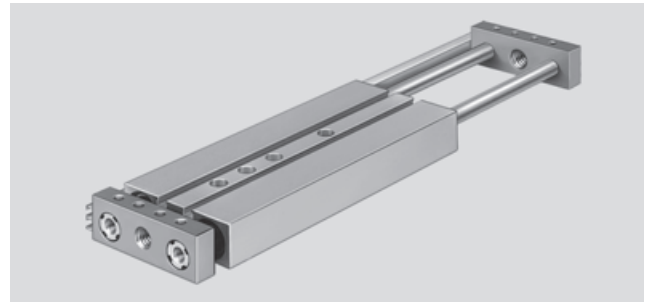
Function



- Ø - Diameter
10 ... 32 mm

- I - Stroke length
10 ... 100 mm

- T - www.festo.com



General technical data					
Piston Ø	10	16	20	25	32
Pneumatic connection	M5	M5	M5	M5	G1/8
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Operating pressure [bar]	2,5 ... 10	1 ... 10			
Constructional design	Slide				
	Parallel piston rods				
Cushioning	Flexible cushioning rings/plates at both ends				
Position sensing	For proximity sensing				
Type of mounting	Via through-holes				
	With female thread				
	With mounting plate				
Mounting position	Any				
Protection against torsion/guide	Parallel piston rods/with plain-bearing guide or ball bearing guide				

Ambient conditions		
Variant	Plain-bearing guide GF	Recirculating ball bearing guide KF
Ambient temperature ¹⁾ [°C]	-20 ... +80	
Corrosion resistance class CRC ²⁾	2	-

1) Note operating range of proximity sensors.

2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

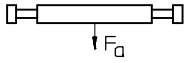
Forces [N]					
Piston Ø	10	16	20	25	32
Theoretical force at 6 bar, advancing	60	180	282	452	724
Theoretical force at 6 bar, retracting	60	180	282	452	724

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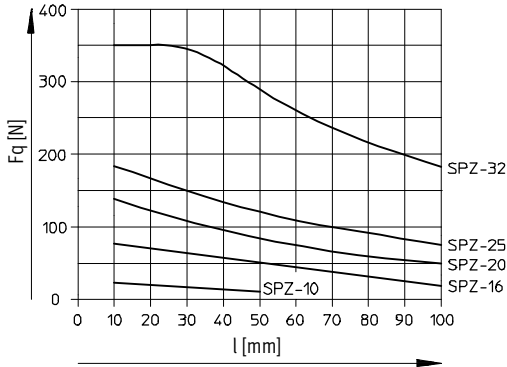
Technical data

FESTO

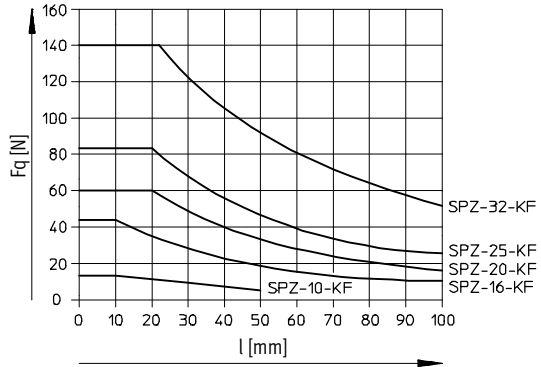
Permissible lateral force F_Q as a function of stroke l



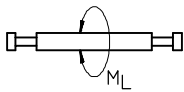
Plain-bearing guide GF



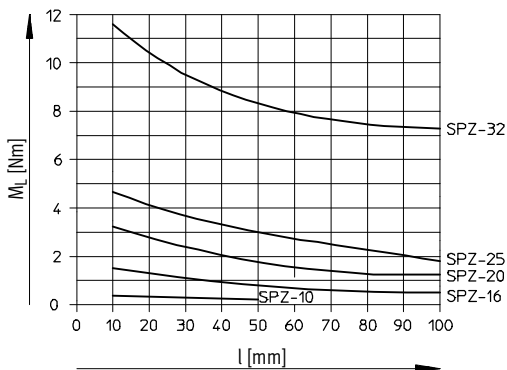
Recirculating ball bearing guide KF



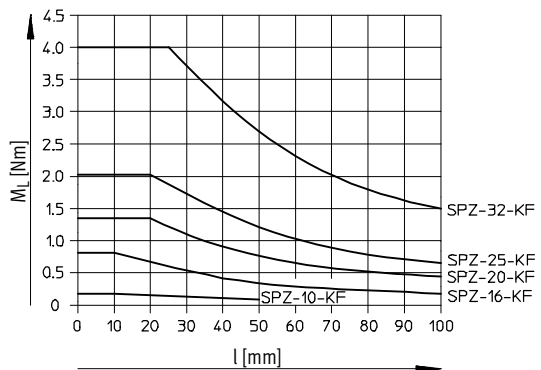
Permissible torque M_L as a function of stroke l



Plain-bearing guide GF



Recirculating ball bearing guide KF

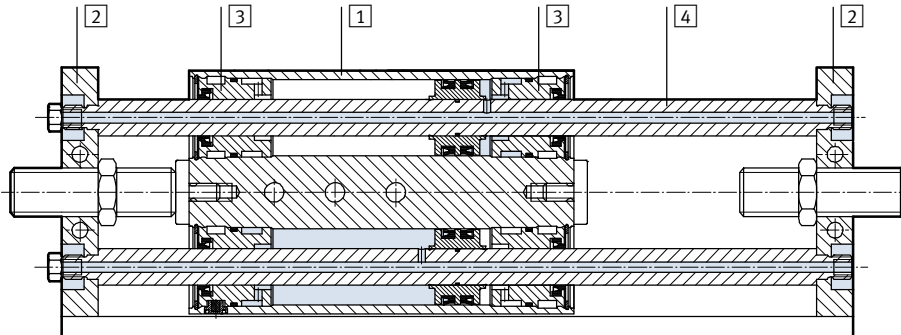


Slide units SPZ, twin piston

Technical data

Materials

Sectional view



Slide unit

1	Housing		Wrought aluminium alloy
2	Yoke plate		Tool steel
3	Plug cap	GF	Brass
		KF	Wrought aluminium alloy
4	Piston rod	GF	High-alloy stainless steel
		KF	Tempered steel
-	Seals		Polyurethane, nitrile rubber

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Available up until 2018

Slide units SPZ, twin piston

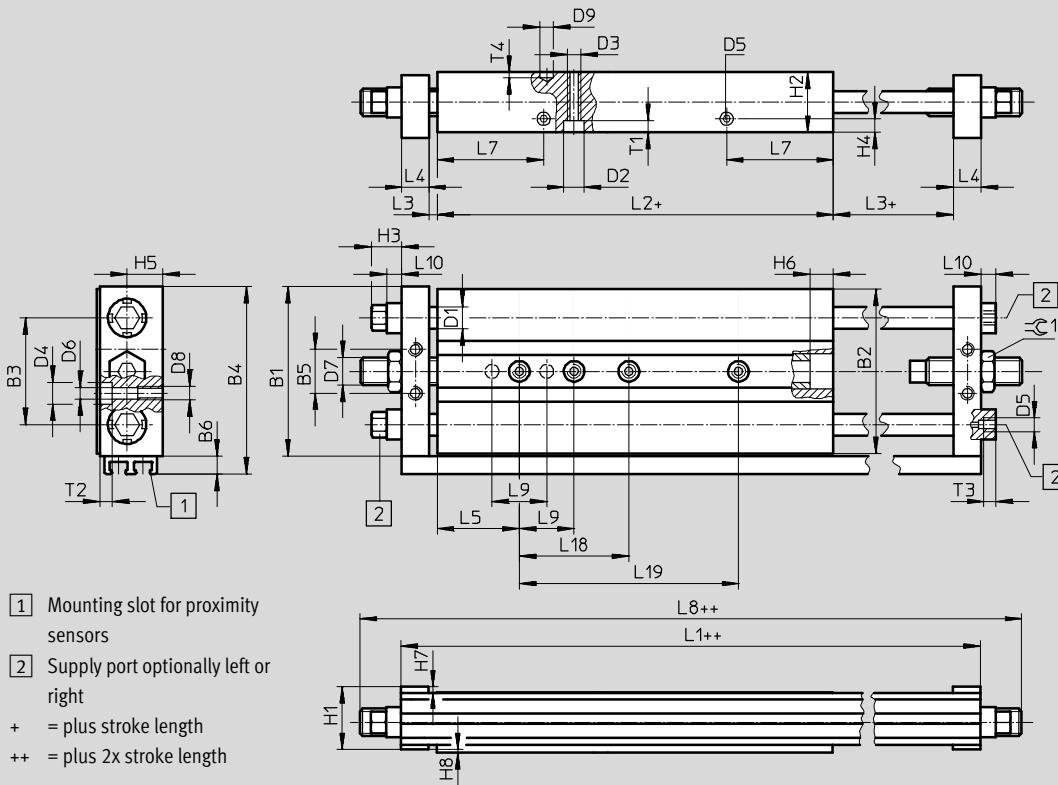
Technical data

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Dimensions

Download CAD data → www.festo.com

Piston Ø 10, 16 mm, plain-bearing guide GF



Ø	B1	B2	B3	B4	B5	B6	D1 Ø	D2 Ø	D3	D4 Ø	D5	D6 Ø	D7	D8	D9 Ø H7	H1	H2	H3
[mm]																		
10	52	50	33	58.5	16	6.5	6	7.5	M5	8	M5	4.2	M10x1	M5	5	20	19	10
16	62	60	39	68.5	16	6.5	8	7.5	M5	8	M5	4.2	M10x1	M5	5	23	22	11

Ø	H4	H5	H6	H7	H8	L1	L2	L3	L4	L5	L7	L8	L9 ¹⁾	L10	T1	T2	T3	T4	≈C1
[mm]																			
10	5	11.5	4	2	1	129.6	71.6	19	10	30	23.4	159.6	20	4.5	4.4	3.4	5	2	13
16	5	13	4	2	1	132.6	74.6	19	10	30	22	162.6	20	5.5	4.4	4.6	4.5	2	13

Stroke	L18 ¹⁾ ±0.03	L19 ¹⁾ ±0.03
[mm]		
10	—	—
25	—	—
40	40	—
50	40	—
80	40	80
100	40	80

1) Tolerance for centring hole ±0.03 mm
Tolerance for thread ±0.2 mm

Slide units SPZ, twin piston

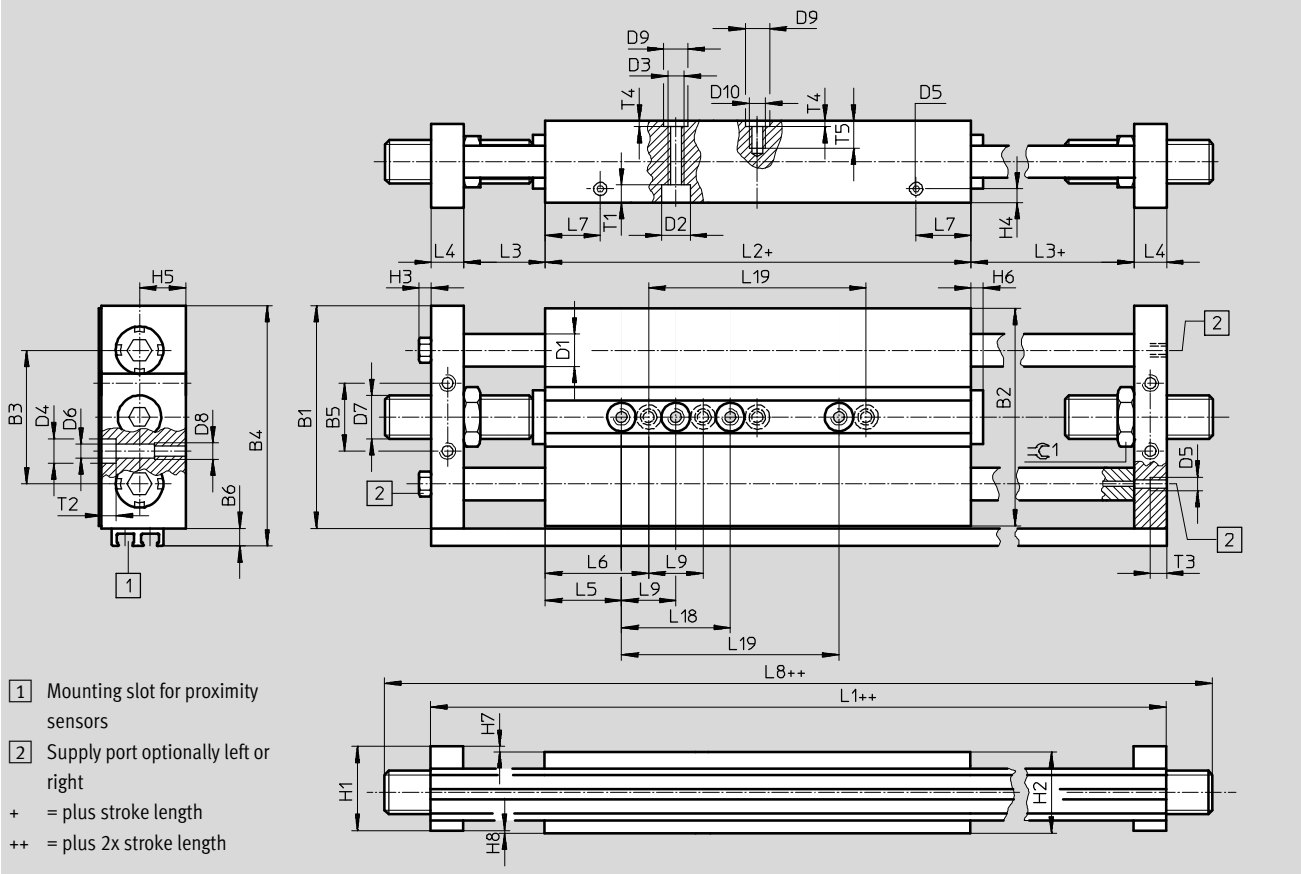
Technical data

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Dimensions

Download CAD data → www.festo.com

Piston Ø 10, 16 mm, recirculating ball bearing guide KF



Ø	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	D5	D6	D7	D8	D9	H1	H2	H3	H4
[mm]							Ø	Ø		Ø		Ø			Ø H7				
10	52	50	33	58.5	16	6.5	6	7.5	M5	8	M5	4.2	M10x1	M5	5	20	19	10	5
16	62	60	39	68.5	16	6.5	8	7.5	M5	8	M5	4.2	M10x1	M5	5	23	22	11	5

Ø	H5	H6	H7	H8	L1	L2	L3	L4	L5	L7	L8	L9 ¹⁾	L10	T1	T2	T3	T4	⊖1
[mm]																		
10	11.5	7.5	2	1	129.6	107.6	1	10	30	40.7	159.6	20	4.5	4.4	3.4	5	2	13
16	13	7.5	2	1	132.6	106.6	3	10	30	38.9	158.6	20	5.5	4.4	4.6	4.5	2	13

Stroke	L18 ¹⁾	L19 ¹⁾
[mm]	±0.03	±0.03
10	—	—
25	—	—
40	40	—
50	40	—
80	40	80
100	40	80

1) Tolerance for centring hole ±0.03 mm
Tolerance for thread ±0.2 mm

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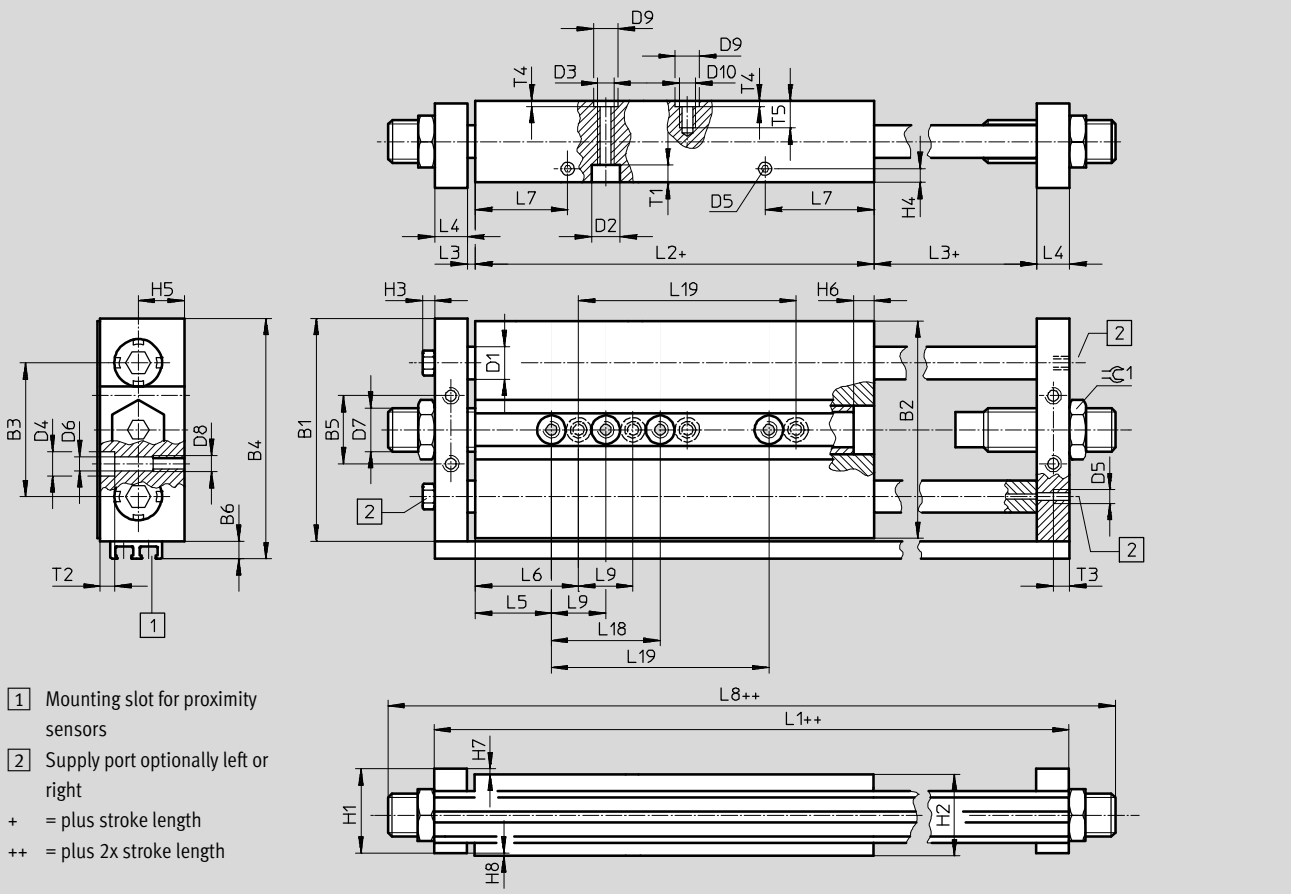
Technical data

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Dimensions

Download CAD data → www.festo.com

Piston Ø 20, 25, 32 mm, plain-bearing guide GF



Ø	B1	B2	B3	B4	B5	B6	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5	D6 Ø	D7	D8	D9 Ø H7	D10	H1	H2	H3
[mm]																			
20	74	72	45.6	80.5	23	6.5	10	9	M6	9.5	M5	5.2	M12x1	M6	9	M6	25	24	5
25	82	80	49.2	88.5	25	6.5	12	10.5	6.4	9.5	M5	5.2	M16x1	M6	9	M6	31	30	5
32	100	98	57	106.5	24	6.5	16	10.5	6.4	10.5	G1/8	6.2	M16x1	M8	9	M6	39	38	-

Ø	H4	H5	H6	H7	H8	L1	L2	L3	L4	L5	L6	L7	L8	L9 ¹⁾	T1	T2	T3	T4	T5	≤C1
[mm]																		+0.2		
20	5	14	4	2	1	146.6	76.6	23	12	30	-	22.8	178.6	20	5.4	5	6	2.1	10	15
25	5	17	4.5	2	1	160.6	76.6	30	12	28	38	20.2	194.6	20	6.4	5	6	2.1	10	19
32	7.5	21	4.5	2	1	170.1	80.1	30	15	35	45	25	204.1	20	6.4	6.5	10	2.1	10	19

Stroke	L18 ¹⁾ ±0.03	L19 ¹⁾ ±0.03
[mm]		
10	-	-
25	-	-
40	40	-
50	40	-
80	40	80
100	40	80

1) Tolerance for centring hole ±0.03 mm
Tolerance for thread ±0.2 mm

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Slide units SPZ, twin piston

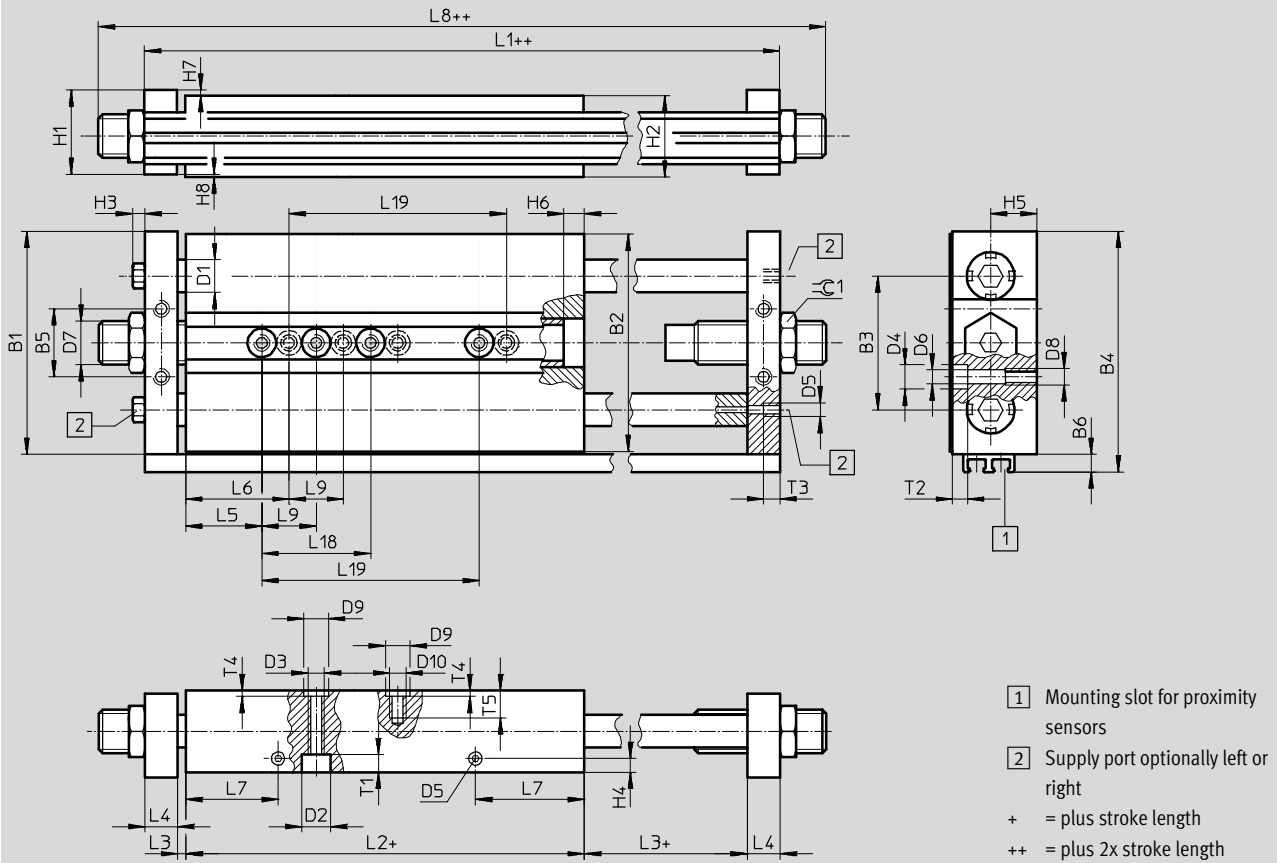
Technical data

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Dimensions

Download CAD data → www.festo.com

Piston Ø 20, 25, 32 mm, recirculating ball bearing guide KF



Ø	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	H1	H2	H3
[mm]							Ø	Ø	Ø	Ø		Ø			Ø				
20	74	72	45.6	80.5	23	6.5	10	9	M6	9.5	M5	5.2	M12x1	M6	9	M6	25	24	5
25	82	80	49.2	88.5	25	6.5	12	10.5	6.4	9.5	M5	5.2	M16x1	M6	9	M6	31	30	5
32	100	98	57	106.5	24	6.5	16	10.5	6.4	10.5	G1/8	6.2	M16x1	M8	9	M6	39	38	-

Ø	H4	H5	H6	H7	H8	L1	L2	L3	L4	L5	L6	L7	L8	L9 ¹⁾	T1	T2	T3	T4	T5	≅1
[mm]																		+0.2		
20	5	14	6.5	2	1	146.6	120.6	1	12	30	-	43.4	184.6	20	5.4	5	6	2.1	10	15
25	5	17	7.5	2	1	160.6	130.6	3	12	28	38	40	202.6	20	6.4	5	6	2.1	10	19
32	7.5	21	7.5	2	1	170.1	134.1	3	15	35	45	44.9	206.1	20	6.4	6.5	10	2.1	10	19

Stroke	L18 ¹⁾	L19 ¹⁾
[mm]	±0.03	±0.03
10	-	-
25	-	-
40	40	-
50	40	-
80	40	80
100	40	80

1) Tolerance for centring hole ±0.03 mm
Tolerance for thread ±0.2 mm

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Slide units SPZ, twin piston

Technical data

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Ordering data						
Type	Piston Ø [mm]	Stroke [mm]	Plain-bearing guide GF		Recirculating ball bearing guide KF	
			Part No.	Type ¹⁾	Part No.	Type ¹⁾
	10	10	32714	SPZ-10-10-P-A	162166	SPZ-10-10-P-A-KF
		25	32715	SPZ-10-25-P-A	162167	SPZ-10-25-P-A-KF
		40	32716	SPZ-10-40-P-A	162168	SPZ-10-40-P-A-KF
		50	32717	SPZ-10-50-P-A	162169	SPZ-10-50-P-A-KF
	16	10	32719	SPZ-16-10-P-A	162171	SPZ-16-10-P-A-KF
		25	32720	SPZ-16-25-P-A	162172	SPZ-16-25-P-A-KF
		40	32721	SPZ-16-40-P-A	162173	SPZ-16-40-P-A-KF
		50	32722	SPZ-16-50-P-A	162174	SPZ-16-50-P-A-KF
		80	32723	SPZ-16-80-P-A	162175	SPZ-16-80-P-A-KF
		100	32724	SPZ-16-100-P-A	162176	SPZ-16-100-P-A-KF
	20	10	32726	SPZ-20-10-P-A	162178	SPZ-20-10-P-A-KF
		25	32727	SPZ-20-25-P-A	162179	SPZ-20-25-P-A-KF
		40	32728	SPZ-20-40-P-A	162180	SPZ-20-40-P-A-KF
		50	32729	SPZ-20-50-P-A	162181	SPZ-20-50-P-A-KF
		80	32730	SPZ-20-80-P-A	162182	SPZ-20-80-P-A-KF
		100	32731	SPZ-20-100-P-A	162183	SPZ-20-100-P-A-KF
	25	10	32733	SPZ-25-10-P-A	162185	SPZ-25-10-P-A-KF
		25	32734	SPZ-25-25-P-A	162186	SPZ-25-25-P-A-KF
		40	32735	SPZ-25-40-P-A	162187	SPZ-25-40-P-A-KF
		50	32736	SPZ-25-50-P-A	162188	SPZ-25-50-P-A-KF
		80	32737	SPZ-25-80-P-A	162189	SPZ-25-80-P-A-KF
		100	32738	SPZ-25-100-P-A	162190	SPZ-25-100-P-A-KF
	32	10	159721	SPZ-32-10-P-A	162192	SPZ-32-10-P-A-KF
		25	159722	SPZ-32-25-P-A	162193	SPZ-32-25-P-A-KF
		40	159723	SPZ-32-40-P-A	162194	SPZ-32-40-P-A-KF
		50	159724	SPZ-32-50-P-A	162195	SPZ-32-50-P-A-KF
		80	159725	SPZ-32-80-P-A	162196	SPZ-32-80-P-A-KF
		100	159726	SPZ-32-100-P-A	162197	SPZ-32-100-P-A-KF

1) 2 centring pins or sleeves are included in the scope of delivery.

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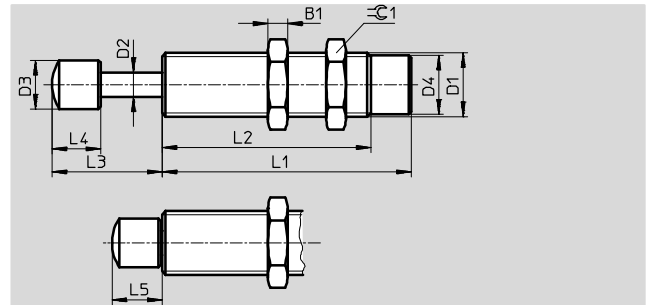
Accessories

Shock absorber YSR-C

Material:

YSR-7-5-C, YSR-8-8-C: Nickel-plated
brass

YSR-12-12-C: Galvanised steel
Free of copper, PTFE and silicone



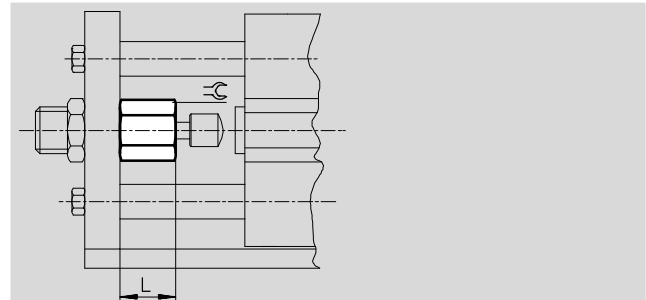
Dimensions and ordering data												Part No.	Type
For Ø	B1	D1	D2 Ø	D3 Ø	D4 Ø	L1 ±0.1	L2 ±0.3	L3 +0.7/-0.35	L4 ±0.2	L5 +0.55/-0.25	≅		
[mm]													
10, 16	3.5	M10x1	3	6 ±0.1	8.6 ±0.05	34	23	12.3	7	7.3	13	160272	YSR-7-5-C
20	4	M12x1	4	8 ±0.2	10.4 ±0.1	46	33	16.3	8	8.3	15	34571	YSR-8-8-C
25, 32	5	M16x1	6	12 ±0.2	14.5 ±0.1	64	51	24.5	12	12.5	19	34572	YSR-12-12-C

Stop limiter YSRA

for use when shock absorbers are
fitted
(not in the case of recirculating ball
bearing guide)

Material:

Steel



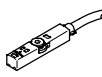
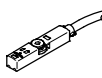
Dimensions and ordering data					
For Ø	L	≅	For shock absorbers	Weight	Part No. Type
[mm]				[g]	
10, 16	15	13	YSR-7-5-C	12	150932 YSRA-7-C
20	19	15	YSR-8-8-C	28	150933 YSRA-8-C
25, 32	25.5	19	YSR-12-12-C	48	150934 YSRA-12-C

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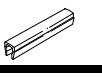
Accessories

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Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D
			Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12
		NPN	Cable, 3-wire	2.5	574338	SMT-8M-A-NS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574339	SMT-8M-A-NS-24V-E-0,3-M8D
N/C contact						
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	7.5	574340	SMT-8M-A-PO-24V-E-7,5-OE

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE
				5.0	543863	SME-8M-DS-24V-K-5,0-OE
			Cable, 2-wire	2.5	543872	SME-8M-ZS-24V-K-2,5-OE
				Plug M8x1, 3-pin	0.3	543861
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333	NEBU-M8G3-K-2.5-LE3
			5	541334	NEBU-M8G3-K-5-LE3
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3
			5	541364	NEBU-M12G5-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3
			5	541341	NEBU-M8W3-K-5-LE3
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367	NEBU-M12W5-K-2.5-LE3
			5	541370	NEBU-M12W5-K-5-LE3

Ordering data – Slot cover for T-slot					
	Mounting	Length		Part No.	Type
	Insertable from above	2x 0.5 m		151680	ABP-5-S

- 2 - Type discontinued
Available up until 2018

FESTO

Slide units SPZ, twin piston

Accessories

Ordering data – One-way flow control valves				Technical data → Internet: grla	
	Connection		Material	Part No.	Type
	Thread	For tubing O.D.			
	M5	3	Metal design	193137	GRLA-M5-QS-3-D
		4		193138	GRLA-M5-QS-4-D
		6		193139	GRLA-M5-QS-6-D
	G1/8	3		193142	GRLA-1/8-QS-3-D
		4		193143	GRLA-1/8-QS-4-D
		6		193144	GRLA-1/8-QS-6-D
		8		193145	GRLA-1/8-QS-8-D

Ordering data – Accessories					
	For dia. [mm]	Material	Part No.	Type	PE ¹⁾
Centring pin ZBS			Technical data ➔ Internet: zbs		
	10, 16	Stainless steel Free of copper, PTFE and silicone	150928	ZBS-5	10
Centring sleeve ZBH			Technical data ➔ Internet: zbh		
	20, 25, 30	Stainless steel Free of copper and PTFE	150927	ZBH-9	10

1) Packaging unit quantity

- 1 - Type discontinued
Available up until 2018

Slide units SPZ, twin piston

Accessories

FESTO

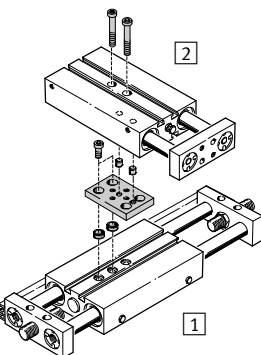
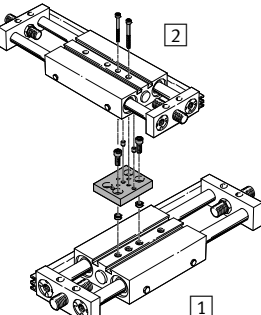
Adapter kit
BPL

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant



Note

The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit				Download CAD data → www.festo.com	
Combination	1 Drive	2 Drive	Adapter kit		
	Size	Size	CRC ¹⁾	Part No.	Type
DPZ/SPZ	DPZ	SPZ	BPL		
	20, 25, 32	10, 16	2	150929	BPL-1
	20, 25, 32	20		150930	BPL-2
	25, 32	25		150931	BPL-3
	32	32		150931	BPL-3
SPZ/SPZ	SPZ	SPZ	BPL		
	20, 25, 32	10, 16	2	150929	BPL-1
	20, 25, 32	20		150930	BPL-2
	25, 32	25		150931	BPL-3
	32	32		150931	BPL-3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

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Subject to change