



- Maximum torsional rigidity for high forces
- Widely-spaced piston rods for high loadcapacity
- Plain bearing or recirculating ball bearing guide

Specified types in accordance with ATEX directive for potentially explosive atmospheres

➔ www.festo.com/en/ex

Slide units SPZ, twin piston

Key features

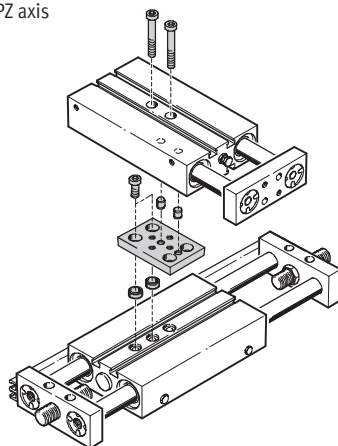
Multi-axis and drive combinations

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

Adapter kits

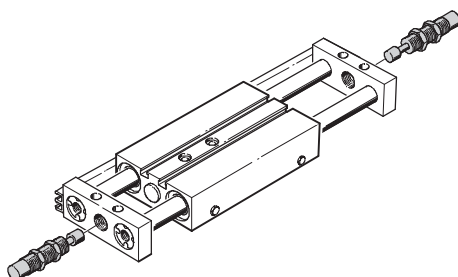
→ Volume 5

DPZ-/SPZ axis

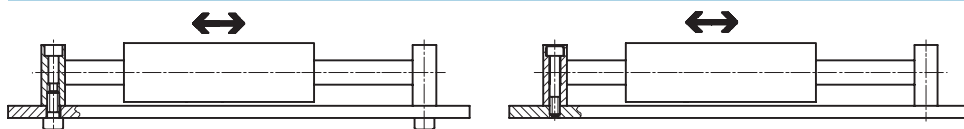


Shock absorbers for slide operation

- 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

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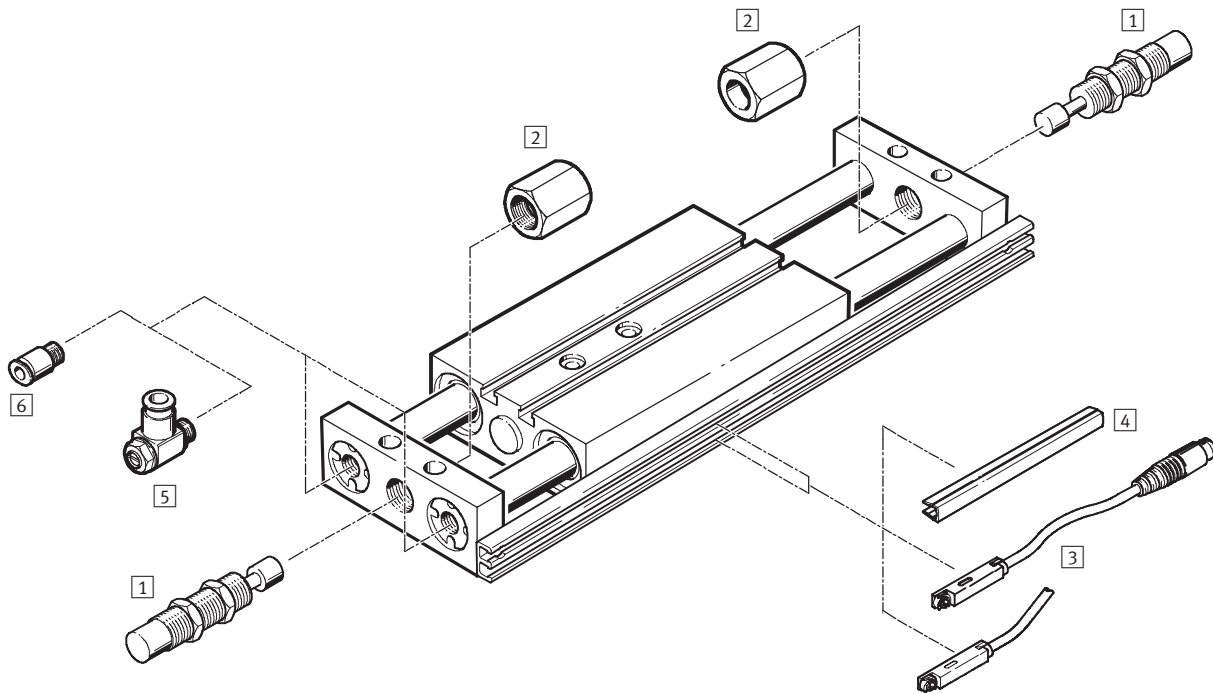
Function	Version	Piston $\varnothing$ [mm]	Stroke [mm]	Position sensing A	Plain bearing guide GF	Recirculating ball bearing guide KF	Heat resistant seals up to 120 °C S6
Double- acting		10	10, 25, 40, 50	■	■	■	■ Plain bearing guide
		16, 20, 25, 32	10, 25, 40, 50, 80, 100				

		SPZ	–	16	–	100	–	P	–	A	–	KF	–	S6
Type														
Double-acting														
SPZ	Slide unit													
Piston $\varnothing$ [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													
Variant with plain bearing guide														
S6	Heat resistant seals up to 120 °C													

Slide units SPZ, twin piston

Peripherals overview

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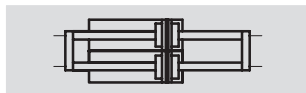
Accessories				
	Brief description	Piston Ø		→ Page
		10, 16 mm	20, 25, 32 mm	
1 Shock absorber YSR-C	Hydraulic shock absorber with rapidly increasing cushioning characteristic	■	■	1 / 6.1-78
2 Stop limiters YSRA	Stroke limiter for shock absorber	■ Plain bearing guide	■ Plain bearing guide	1 / 6.1-78
3 Proximity sensor SME/SMT-8	Can be integrated in the cylinder profile barrel	■	■	1 / 6.1-79
4 Slot cover ABP-5-S	To protect the sensor cable and keep dirt out of the sensor slots	■	■	1 / 6.1-79
5 One-way flow control valve GRLA	To regulate speed	■	■	1 / 6.1-80
6 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	■	■	Volume 3
– Centring pin ZBS	4 pieces included in scope of delivery	■	–	1 / 6.1-80
– Centring sleeve ZBH	4 pieces included in scope of delivery	–	■	1 / 6.1-80

Slide units SPZ, twin piston

Technical data

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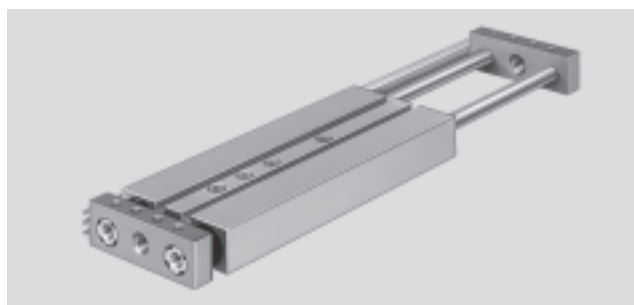
Function



Variants



S6



Ø - Diameter
10 ... 32 mm

— - Stroke length
10 ... 100 mm

- www.festo.com/en/Spare_parts_service

General technical data					
Piston Ø	10	16	20	25	32
Pneumatic connection	M5	M5	M5	M5	G¼
Operating medium	Filtered compressed air, lubricated or unlubricated				
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
		S6	
Ambient temperature ¹⁾ [°C]	-20 ... +80		-20 ... +80
Corrosion resistance class CRC ²⁾	2		—

1) Note operating range of proximity sensors.

2) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

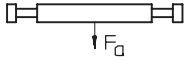
Forces [N]					
Piston Ø	10	16	20	25	32
Theoretical force at 6 bar, advancing	60	180	282	452	724
Theoretical force at 6 bar, retracting	60	180	282	452	724

Slide units SPZ, twin piston

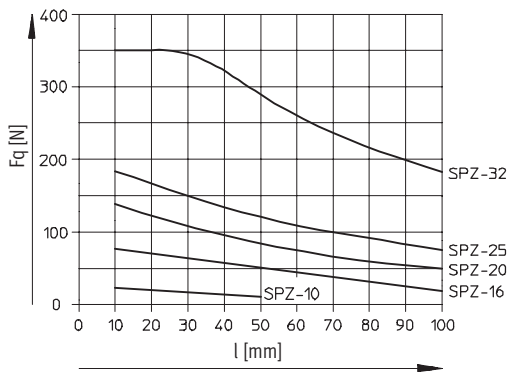
Technical data

FESTO

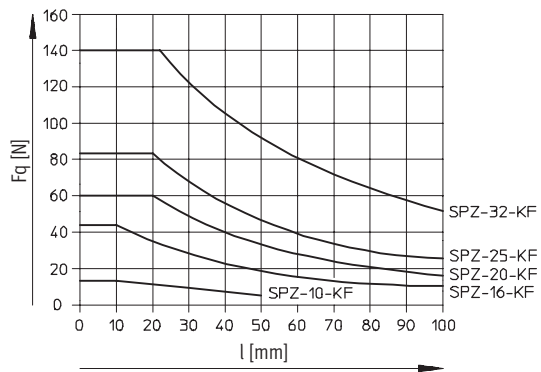
Permissible lateral force F_q as a function of stroke l



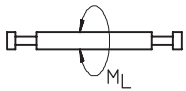
Plain-bearing guide GF



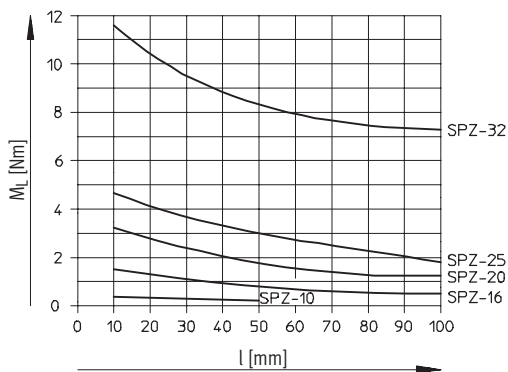
Recirculating ball bearing guide KF



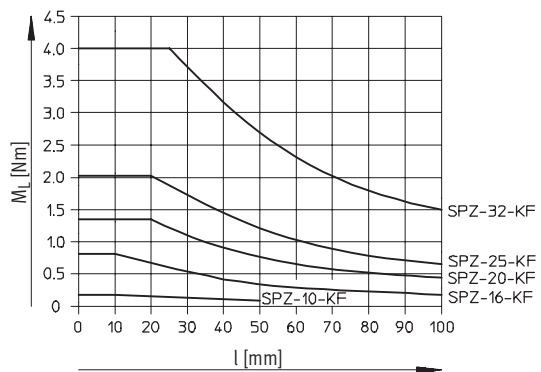
Permissible torque M_L as a function of stroke l



Plain-bearing guide GF



Recirculating ball bearing guide KF



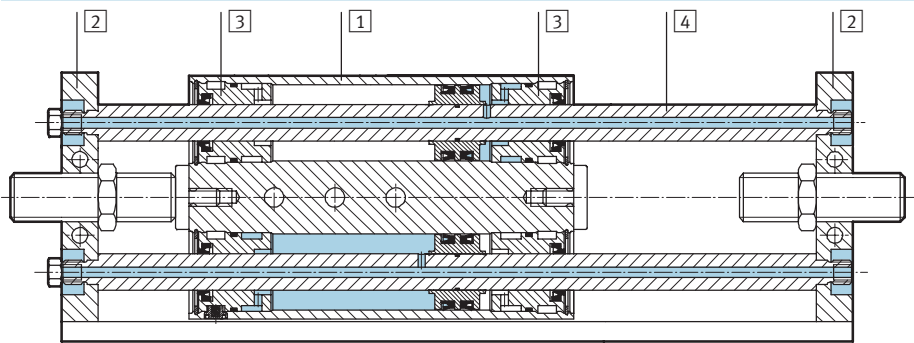
Slide units SPZ, twin piston

Technical data



Materials

Sectional view



Variant		Basic version	S6
1	Housing	Wrought aluminium alloy	Wrought aluminium alloy
2	Yoke plate	Tool steel	Tool steel
3	Plug cap	GF Brass	Brass
		KF Wrought aluminium alloy	Wrought aluminium alloy
4	Piston rod	GF High-alloy stainless steel	High-alloy stainless steel
		KF Tempered steel	Tempered steel
–	Seals	Polyurethane, nitrile rubber	Flurocarbon rubber, nitrile rubber

Slide units SPZ, twin piston

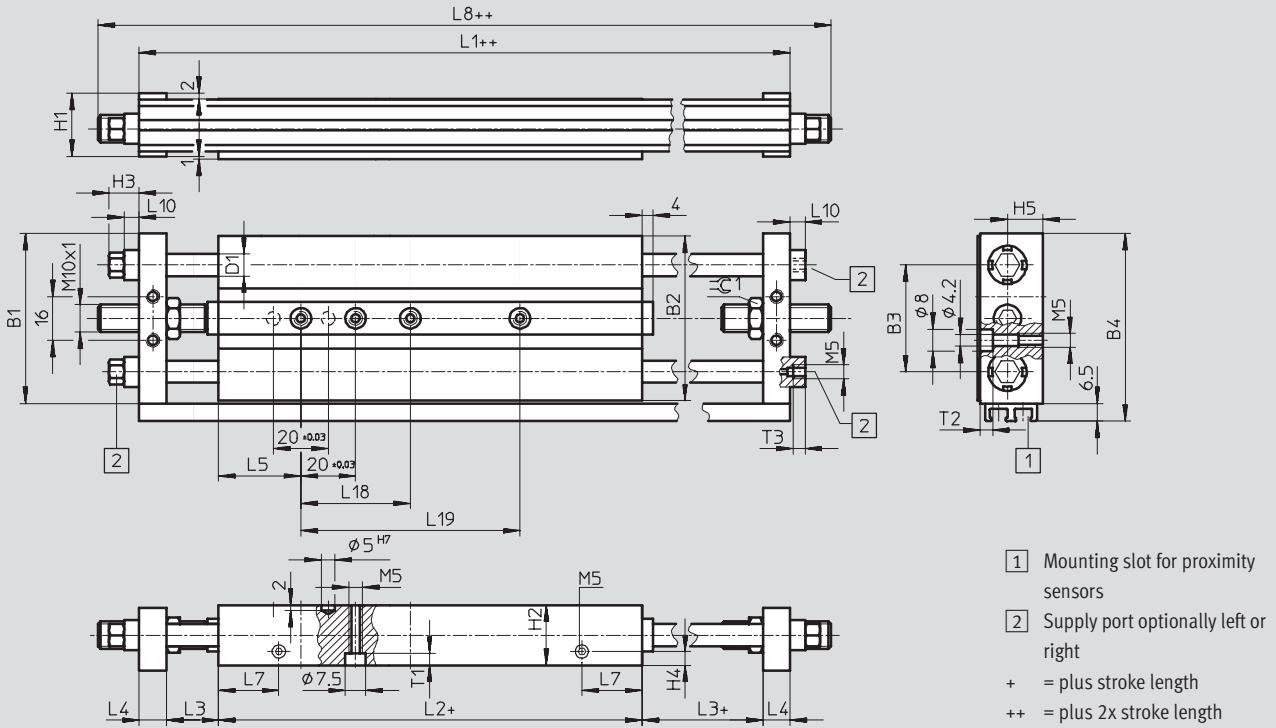
Technical data

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Dimensions

Download CAD data → www.festo.com/en/engineering

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



Ø	B1	B2	B3	B4	D1 Ø	H1	H2	H3	H4	H5	L1
[mm]											
10	52	50	33	58.5	6	20	19	10	4.5	11.5	129.6
16	62	60	39	68.5	8	23	22	11	6	13	132.6

Ø	L2	L3	L4	L5	L7	L8	L10	T1	T2	T3	⌀C1
[mm]											
10	71.6	19	10	30	23.4	159.6	4.5	4.4	3.4	5	13
16	74.6	19	10	30	22	162.6	5.5	4.4	4.6	4.5	13

Stroke	L18 ±0.03	L19 ±0.03
[mm]		
10	–	–
25	–	–
40	40	–
50	40	–
80	40	80
100	40	80

Slide units SPZ, twin piston

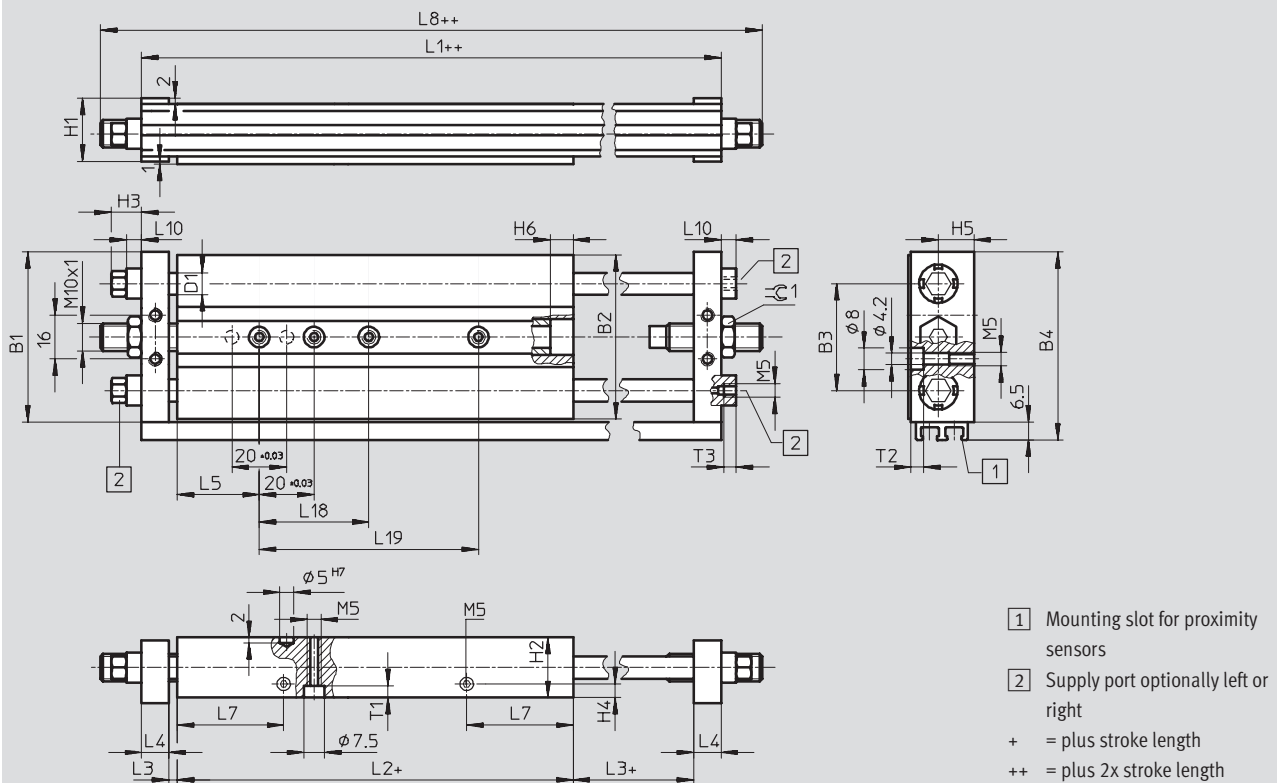
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com/en/engineering

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



Ø	B1	B2	B3	B4	D1 Ø	H1	H2	H3	H4	H5	H6	L1
[mm]												
10	52	50	33	58.5	6	20	19	10	5	11.5	7.5	129.6
16	62	60	39	68.5	8	23	22	11	5	13	7.5	132.6

Ø	L2	L3	L4	L5	L7	L8	L10	T1	T2	T3	≈C1
[mm]											
10	107.6	1	10	30	40.7	159.6	4.5	4.4	3.4	5	13
16	106.6	3	10	30	38.9	158.6	5.5	4.4	4.6	4.5	13

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

Technical data

Download CAD data → www.festo.com/en/engineering

Technical drawing of the SSI 1000 sensor assembly, showing three views: front, side, and top.

Legend:

- 1 Mounting slot for prox sensors
- 2 Supply port optionally right

Dimensions and Labels:

- Front View:** L8++, L1++, H1, 2, 1, H2, H3, H6, B1, B5, D7, D1, B2, T3, L6, 20^{+0.03}, L5, 20^{+0.03}, L18, L19, $\phi 9^{H7}$, D3, 2.1, M6, 2.1, 10, D5, L7, L3, L2+, L3+, L4, H4.
- Side View:** B3, D4, D6, T2, D8, 6.5, B4, H5.
- Top View:** L4, L3, L2+, L3+, L4, H4.

Notes:

- + = plus stroke length
- ++ = plus 2x stroke length

- 1 Mounting slot for proximity sensors
 - 2 Supply port optionally left or right
- + = plus stroke length
++ = plus 2x stroke length

Ø [mm]	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7	L8	T1	T2	T3	≈G1
20	7	14	4	146.6	76.6	23	12	30	–	22.8	178.6	5.4	5	6	15
25	10	17	4.5	160.6	76.6	30	12	28	38	20.2	194.6	6.4	5	6	19
32	11.5	21	4.5	170.1	80.1	30	15	35	45	25	204.1	6.4	6.5	10	19

Stroke [mm]	L18 ±0.03	L19 ±0.03
10	–	–
25	–	–
40	40	–
50	40	–
80	40	80
100	40	80

Slide units SPZ, twin piston

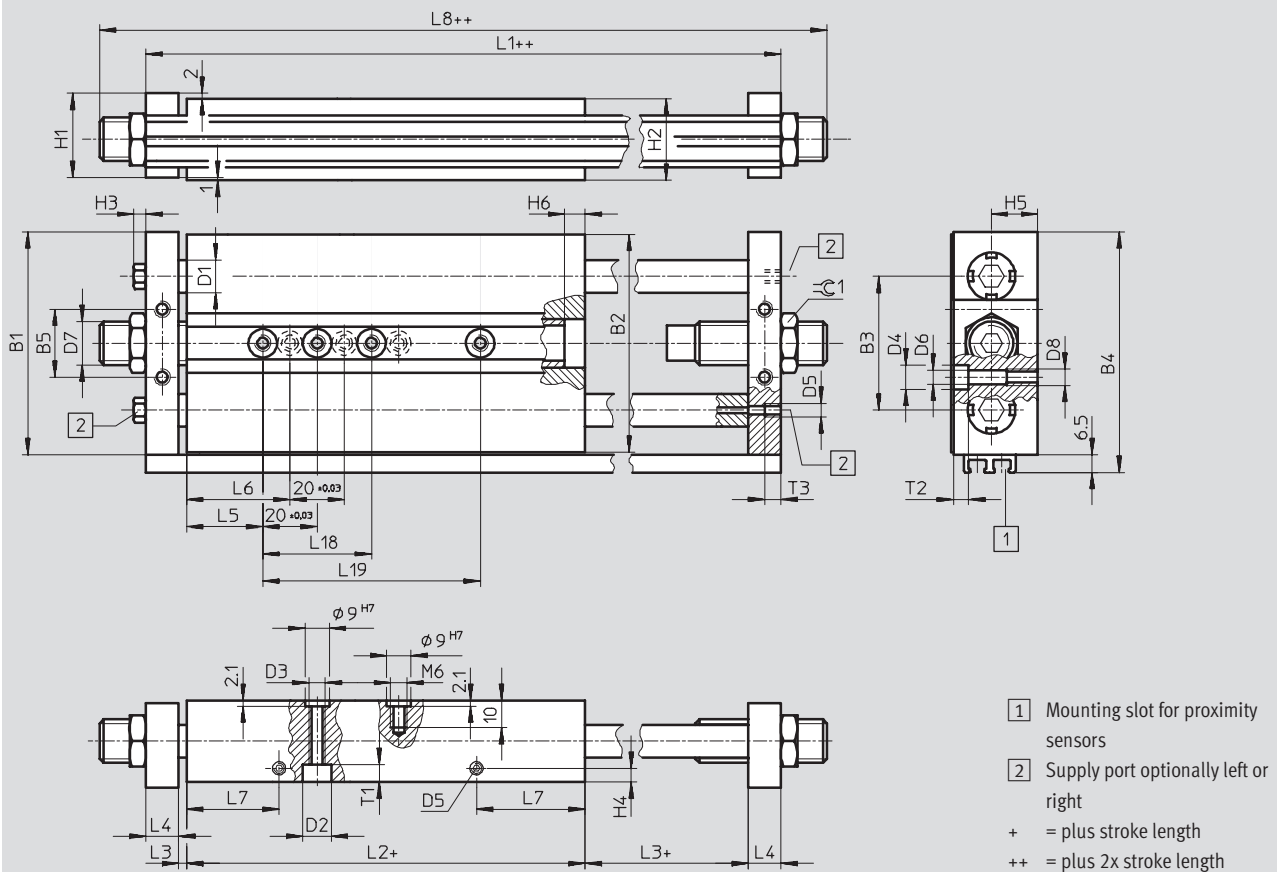
Technical data

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Dimensions

Download CAD data → www.festo.com/en/engineering

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



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

Ø	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7	L8	T1	T2	T3	≈C1
[mm]															
20	5	14	6.5	146.6	120.6	1	12	30	–	43.4	184.6	5.4	5	6	15
25	5	17	7.5	160.6	130.6	3	12	28	38	40	202.6	6.4	5	6	19
32	7.5	21	7.5	170.1	134.1	3	15	35	45	44.9	206.1	6.4	6.5	10	19

Stroke	L18 ±0.03	L19 ±0.03
[mm]		
10	–	–
25	–	–
40	40	–
50	40	–
80	40	80
100	40	80

Slide units SPZ, twin piston

Technical data

FESTO

Ordering data – Basic version						
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	32 714	SPZ-10-10-P-A	162 166	SPZ-10-10-P-A-KF
		25	32 715	SPZ-10-25-P-A	162 167	SPZ-10-25-P-A-KF
		40	32 716	SPZ-10-40-P-A	162 168	SPZ-10-40-P-A-KF
		50	32 717	SPZ-10-50-P-A	162 169	SPZ-10-50-P-A-KF
	16	10	32 719	SPZ-16-10-P-A	162 171	SPZ-16-10-P-A-KF
		25	32 720	SPZ-16-25-P-A	162 172	SPZ-16-25-P-A-KF
		40	32 721	SPZ-16-40-P-A	162 173	SPZ-16-40-P-A-KF
		50	32 722	SPZ-16-50-P-A	162 174	SPZ-16-50-P-A-KF
		80	32 723	SPZ-16-80-P-A	162 175	SPZ-16-80-P-A-KF
		100	32 724	SPZ-16-100-P-A	162 176	SPZ-16-100-P-A-KF
	20	10	32 726	SPZ-20-10-P-A	162 178	SPZ-20-10-P-A-KF
		25	32 727	SPZ-20-25-P-A	162 179	SPZ-20-25-P-A-KF
		40	32 728	SPZ-20-40-P-A	162 180	SPZ-20-40-P-A-KF
		50	32 729	SPZ-20-50-P-A	162 181	SPZ-20-50-P-A-KF
		80	32 730	SPZ-20-80-P-A	162 182	SPZ-20-80-P-A-KF
		100	32 731	SPZ-20-100-P-A	162 183	SPZ-20-100-P-A-KF
	25	10	32 733	SPZ-25-10-P-A	162 185	SPZ-25-10-P-A-KF
		25	32 734	SPZ-25-25-P-A	162 186	SPZ-25-25-P-A-KF
		40	32 735	SPZ-25-40-P-A	162 187	SPZ-25-40-P-A-KF
		50	32 736	SPZ-25-50-P-A	162 188	SPZ-25-50-P-A-KF
		80	32 737	SPZ-25-80-P-A	162 189	SPZ-25-80-P-A-KF
		100	32 738	SPZ-25-100-P-A	162 190	SPZ-25-100-P-A-KF
	32	10	159 721	SPZ-32-10-P-A	162 192	SPZ-32-10-P-A-KF
		25	159 722	SPZ-32-25-P-A	162 193	SPZ-32-25-P-A-KF
		40	159 723	SPZ-32-40-P-A	162 194	SPZ-32-40-P-A-KF
		50	159 724	SPZ-32-50-P-A	162 195	SPZ-32-50-P-A-KF
		80	159 725	SPZ-32-80-P-A	162 196	SPZ-32-80-P-A-KF
		100	159 726	SPZ-32-100-P-A	162 197	SPZ-32-100-P-A-KF

1) 4 centring pins or sleeves are included in the scope of delivery.

Slide units SPZ, twin piston

Technical data

FESTO

Ordering data – Variant			
Type	Piston Ø [mm]	Stroke [mm]	Plain-bearing guide GF Part No. Type ¹⁾
S6 – Heat resistant seals up to 120 °C			
	10	10	159 730 SPZ-10-10-P-A-S6
		25	159 731 SPZ-10-25-P-A-S6
		40	159 732 SPZ-10-40-P-A-S6
		50	159 733 SPZ-10-50-P-A-S6
	16	10	159 734 SPZ-16-10-P-A-S6
		25	159 735 SPZ-16-25-P-A-S6
		40	159 736 SPZ-16-40-P-A-S6
		50	159 737 SPZ-16-50-P-A-S6
		80	159 738 SPZ-16-80-P-A-S6
		100	159 739 SPZ-16-100-P-A-S6
	20	10	159 743 SPZ-20-10-P-A-S6
		25	159 744 SPZ-20-25-P-A-S6
		40	159 745 SPZ-20-40-P-A-S6
		50	159 746 SPZ-20-50-P-A-S6
		80	159 747 SPZ-20-80-P-A-S6
		100	159 748 SPZ-20-100-P-A-S6
	25	10	159 752 SPZ-25-10-P-A-S6
		25	159 753 SPZ-25-25-P-A-S6
		40	159 754 SPZ-25-40-P-A-S6
		50	159 755 SPZ-25-50-P-A-S6
		80	159 756 SPZ-25-80-P-A-S6
		100	159 757 SPZ-25-100-P-A-S6
	32	10	159 762 SPZ-32-10-P-A-S6
		25	159 763 SPZ-32-25-P-A-S6
		40	159 764 SPZ-32-40-P-A-S6
		50	159 765 SPZ-32-50-P-A-S6
		80	159 766 SPZ-32-80-P-A-S6
		100	159 767 SPZ-32-100-P-A-S6

1) 4 centring pins or sleeves are included in the scope of delivery.

Slide units SPZ, twin piston

Accessories

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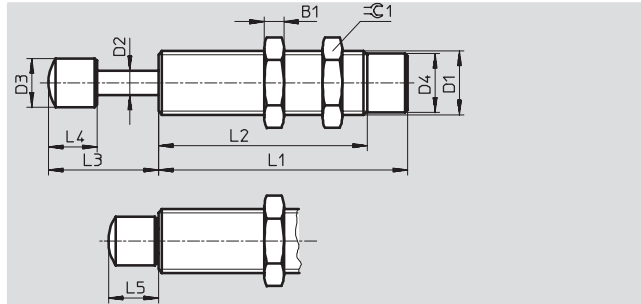
Shock absorber YSR-C

Material:

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

YSR-12-12-C: Galvanised steel

Free of copper, PTFE and silicone



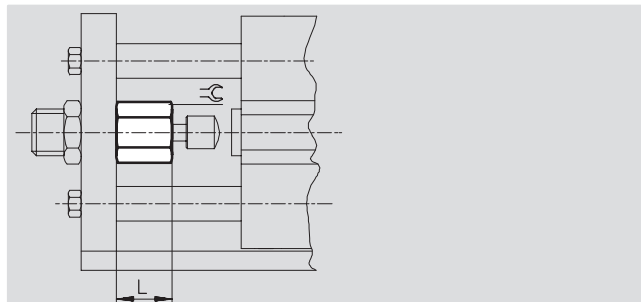
Dimensions and ordering data													Part No.	Type
For Ø	B1	D1	D2	D3	D4	L1	L2	L3	L4	L5	≅			
[mm]			Ø	Ø	Ø	±0.1	±0.3	+0.7/-0.35	±0.2	+0.55/-0.25				
10, 16	3.5	M10x1	3	6 ±0.1	8.6 ±0.05	34	23	12.3	7	7.3	13		160 272	YSR-7-5-C
20	4	M12x1	4	8 ±0.2	10.4 ±0.1	46	33	16.3	8	8.3	15		34 571	YSR-8-8-C
25, 32	5	M16x1	6	12 ±0.2	14.5 ±0.1	64	51	24.5	12	12.5	19		34 572	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	150 932 YSRA-7-C
20	19	15	YSR-8-8-C	28	150 933 YSRA-8-C
25, 32	25.5	19	YSR-12-12-C	48	150 934 YSRA-12-C

Slide units SPZ, twin piston

Accessories

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Ordering data – Proximity sensors for T-slot, magneto-resistive							Technical data → 1 / 10.2-13	
	Mounting	Switch output	Electrical connection			Cable length [m]	Part No.	Type
			Cable	M8 plug	M12 plug			
NO contact								
	Insertable from above	PNP	3-core	–	–	2.5	525 898	SMT-8F-PS-24V-K2,5-OE
		NPN					525 909	SMT-8F-NS-24V-K2,5-OE
		–	2-core	–	–	2.5	525 908	SMT-8F-ZS-24V-K2,5-OE
		PNP	–	3-pin	–	0.3	525 899	SMT-8F-PS-24V-K0,3-M8D
		NPN					525 910	SMT-8F-NS-24V-K0,3-M8D
		PNP	–	–	3-pin	0.3	525 900	SMT-8F-PS-24V-K0,3-M12
	Insertable from end, flush with the cylinder profile	PNP	3-core	–	–	2.5	175 436	SMT-8-PS-K-LED-24-B
			–	3-pin	–	0.3	175 484	SMT-8-PS-S-LED-24-B
NC contact								
	Insertable from above	PNP	3-core	–	–	7.5	525 911	SMT-8F-PO-24V-K7,5-OE

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data ➔ 1 / 10.2-18		
	Mounting	Electrical connection		Cable length [m]	Part No.	Type	
		Cable	M8 plug				
NO contact							
	Insertable from above	3-core	–	2.5	525 895	SME-8F-DS-24V-K2,5-OE	
				5.0	525 897	SME-8F-DS-24V-K5,0-OE	
		2-core	–	2.5	525 907	SME-8F-ZS-24V-K2,5-OE	
		–	3-pin	0.3	525 896	SME-8F-DS-24V-K0,3-M8D	
	Insertable from end, flush with the cylinder profile	3-core	–	2.5	150 855	SME-8-K-LED-24	
		–	3-pin	0.3	150 857	SME-8-S-LED-24	
NC contact							
	Insertable from end, flush with the cylinder profile	3-wire	–	7.5	160 251	SME-8-O-K-LED-24	

Ordering data – Plug sockets with cable							Technical data➔ 1 / 10.2-114	
	Mounting	Switch output		Connection	Cable length [m]	Part No.	Type	
		PNP	NPN					
Straight socket								
	M8 union nut			3-pin	2.5	159 420	SIM-M8-3GD-2,5-PU	
					5	159 421	SIM-M8-3GD-5-PU	
	M12 union nut			3-pin	2.5	159 428	SIM-M12-3GD-2,5-PU	
					5	159 429	SIM-M12-3GD-5-PU	
Angled socket								
	M8 union nut			3-pin	2.5	159 422	SIM-M8-3WD-2,5-PU	
					5	159 423	SIM-M8-3WD-5-PU	
	M12 union nut			3-pin	2.5	159 430	SIM-M12-3WD-2,5-PU	
					5	159 431	SIM-M12-3WD-5-PU	

Ordering data – Slot cover for T-slot				
	Mounting	Length	Part No.	Type
	Insertable from above	2x 0.5 m	151 680	ABP-5-S

Slide units SPZ, twin piston

Accessories

FESTO

Ordering data – One-way flow control valves				Technical data → Volume 2	
	Connection		Material	Part No.	Type
	Thread	For tubing O.D.			
	M5	3	Metal design	193 137	GRLA-M5-QS-3-D
		4		193 138	GRLA-M5-QS-4-D
		6		193 139	GRLA-M5-QS-6-D
	G1/8	3		193 142	GRLA-1/8-QS-3-D
		4		193 143	GRLA-1/8-QS-4-D
		6		193 144	GRLA-1/8-QS-6-D
		8		193 145	GRLA-1/8-QS-8-D

Ordering data – Accessories					
	For dia. [mm]	Material	Part No.	Type	PE ¹⁾
Centring pin ZBS			Technical data➔ 1 / 10.1-18		
	10, 16	Stainless steel	150 928	ZBS-5	10
		Free of copper, PTFE and silicone			
Centring sleeve ZBH			Technical data➔ 1 / 10.1-18		
	20, 25, 30	Stainless steel	150 927	ZBH-9	10
		Free of copper, PTFE and silicone			

1) Packaging unit quantity