

Swivel/linear drive units DSL-B

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Swivel/linear drive units DSL-B

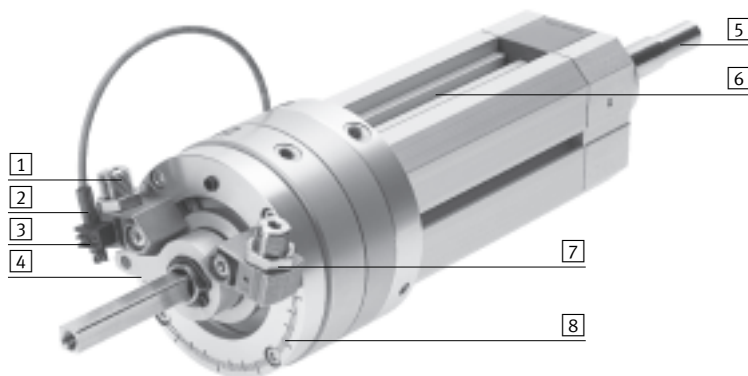
Key features

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At a glance

- High repetition accuracy thanks to cushioning components with fixed stop
- Swivel angle can be infinitely and accurately set
- The mechanical gearing between the stop element and swivel module prevents movement of the stop system under load
- Compact sensing of the swivel motion via proximity sensors SME/SMT-10F
- With plain-bearing guide
- With recirculating ball bearing guide
- Swivel motion of up to 270°
- Linear motion of up to 200 mm stroke
- Both motion types can be controlled individually or simultaneously
- High rotational energy during swivelling thanks to directly mounted, self-adjusting shock absorbers
- Supply ports at one end for quick, clear-cut tubing connections
- High precision thanks to recirculating ball bearing guide
 - Backlash-free swivel motion
 - Resists torque loads even during linear motion

The technology in detail



1 Cushioning • Choice of two types of cushioning, each with metal fixed stop: – Flexible cushioning elements – Hydraulic shock absorbers	2 Position sensing • Compact sensing of the swivel position using proximity sensors SME/SMT-10F	3 Sensor retainer • The proximity sensors are mounted directly on the stop system. The sensor retainer can be ordered as an accessory	4 Stop lever • The magnet in the stop lever enables the swivel angle to be sensed
5 Piston rod Mounting interface, for example for a gripper	6 Slot for proximity sensor • Compact sensing of the linear position using proximity sensors SME/SMT-8	7 Precision end position adjustment • After the lock nut is loosened, precision adjustment of the end positions is possible using an Allen key	8 Angle scale • The required angle can easily be preset using the scale

Mounting options

Direct mounting	Flange mounting	Flange mounting	Via slot nuts
	For size 16: The mounting thread on the bearing cap complies with DIN ISO 6432.	For sizes 20 ... 40: Mounting hole pattern to DIN ISO 6431, VDMA 24 562 and NF E 49 003.1.	

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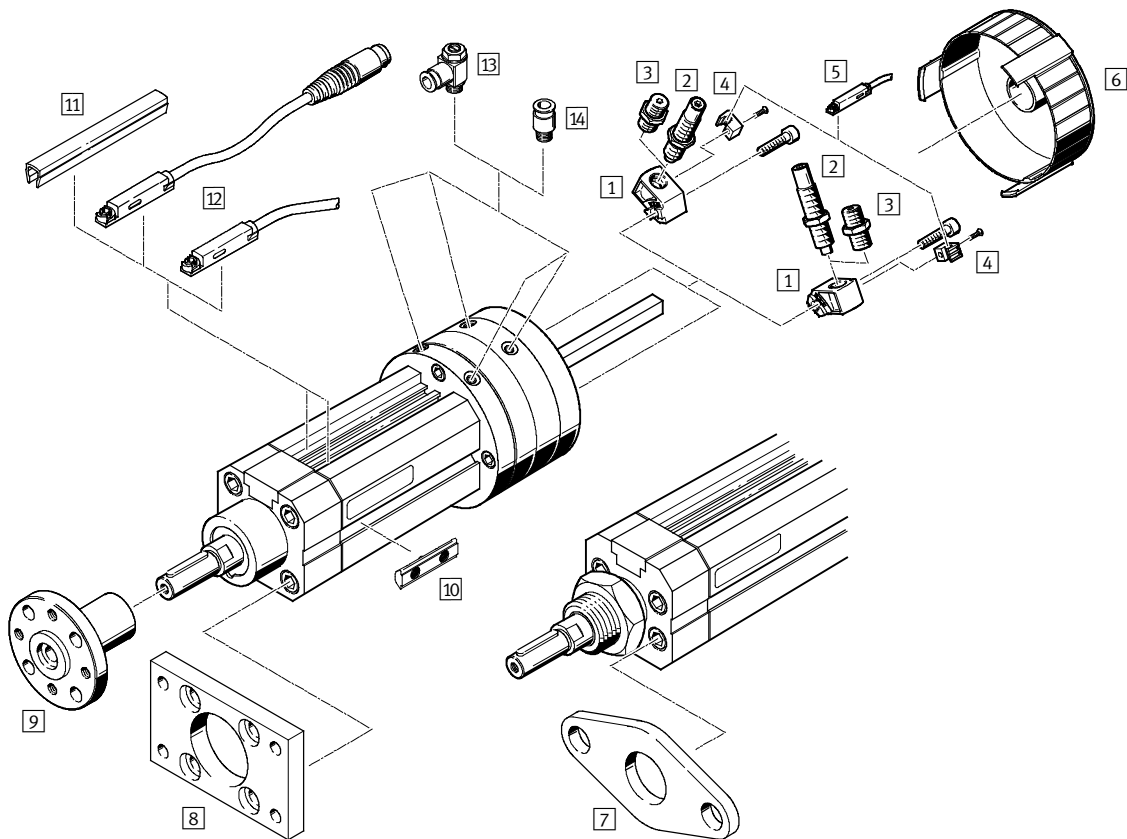
Type codes

		DSL	-	25	-	80	-	270	-	P	-	A	-	S2	-	KF	-	B
Type																		
Double-acting																		
DSL	Swivel/linear drive unit																	
Size																		
Stroke [mm]																		
Swivel angle																		
270	270°																	
End position cushioning																		
P	Flexible cushioning components at both ends																	
CC	Shock absorbers at both ends																	
Position sensing																		
A	Via proximity sensor																	
Piston rod																		
S2	Through piston rod																	
S20	Through, hollow piston rod																	
Guide																		
	Plain-bearing guide																	
KF	Recirculating ball bearing guide																	
Generation																		
B	B series																	

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Peripherals overview

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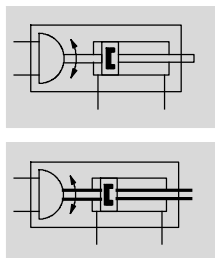
Accessories			
		Brief description	→ Page/Internet
1	Cushioning mount DSM-B	• For flexible cushioning components • For shock absorbers	18
2	Shock absorber DYSC	Self-adjusting shock absorbers with fixed stop	18
3	Cushioning kit DSM-...-P-B	Flexible cushioning components with fixed stop	18
4	Sensor retainer SL-DSM-B	For mounting proximity sensors SME/SMT-10	19
5	Proximity sensor SME/SMT-10F	For sensing the swivel position	19
6	Cover cap AKM	Reduces the risk of injury in the swivel range of the stop lever	18
7	Flange mounting FBN	For bearing cap of swivel/linear unit DSL-16	16
8	Flange mounting FNG	For bearing cap of swivel/linear units DSL-20 ... 40	16
9	Push-on flange FWSR	For retrofitting the swivel/linear unit DSL	17
10	Slot nut NST	For mounting the drive via the linear part	17
11	Slot cover ABP	To protect the proximity sensor cable and keep dirt out of the sensor/profile slots	20
12	Proximity sensor SME/SMT-8	For sensing the linear position	19
13	One-way flow control valve GRLA	For regulating speed	18
14	Push-in fitting QS	For connecting compressed air tubing with standard outside diameter	quick star

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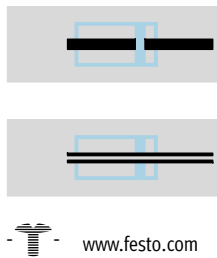
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Technical data

Function

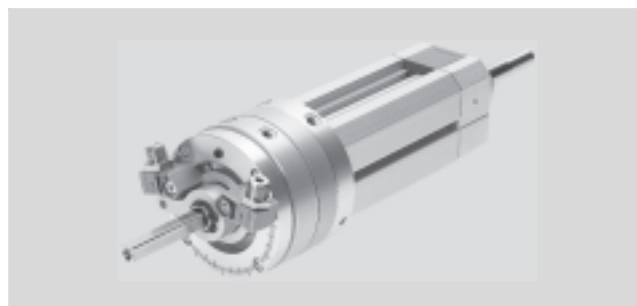


Variants



S2

S20



- Size
16 ... 40 mm
- Stroke length
10 ... 200 mm
- Force
1.25 ... 20 Nm

General technical data						
Size		16	20	25	32	40
Pneumatic connection		M5			G ¹ / ₈	
Constructional design		Vane-driven semi-rotary actuator in combination with a double-acting linear cylinder				
Cushioning	Swivel motion	P – Flexible cushioning components at both ends CC – Shock absorbers at both ends				
	Linear motion	P – Not adjustable at either end				
Max. swivel angle	with cushioning P	[°]	270	270	270	270
	with cushioning CC	[°]	246	246	246	240
Max. swivel angle backlash ^{1/4)}	with plain-bearing guide	[°]	2			
	with recirculating ball bearing guide	[°]	0.05			
Swivel angle adjustment ²⁾	with cushioning P	[°]	–6			
	with cushioning CC	[°]	–3			
Max. perm. swivel frequency ³⁾	with cushioning P	[Hz]	2	2	2	2
	with cushioning CC	[Hz]	1.5	1	1	0.7
Stroke	with plain-bearing guide	[mm]	10 ... 160			10 ... 200
	with recirculating ball bearing guide	[mm]	10 ... 100			
Max. impact velocity		[mm/s]	500			
Repetition accuracy of swivel motion ⁴⁾	with cushioning P	[°]	1			
	with cushioning CC	[°]	0.1			
Position sensing			Via proximity sensor			
Type of mounting			Clamped in T-slot			
			Via external thread			
Mounting position			Any			

1) In new condition

2) Per side

3) At max. swivel angle

4) Important: Where there is an external, alternating force, the swivel angle play of the respective variant (plain-bearing guide GF or recirculating ball bearing guide KF) must be added to the swivel angle.

Swivel/linear drive units DSL-B

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Operating and environmental conditions	
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 ... 8
Ambient temperature ¹⁾ [°C]	-10 ... +60
Corrosion resistance class CRC ²⁾	1

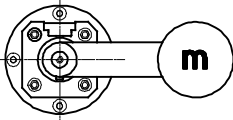
1) Note operating range of proximity sensors.

2) Corrosion resistance class 1 as per Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Forces and torques						
Size		16	20	25	32	40
Theoretical torque ¹⁾ [Nm]		1.25	2.5	5	10	20
Theoretical force, advancing ¹⁾	with plain-bearing guide [N]	102.5	159	246	422.5	660
	with recirculating ball bearing guide [N]	103.5	158	248	403.5	603
Theoretical force, retracting ¹⁾ [N]		73.5	120.5	173.5	294	495
Max. perm. effective load → 7 [kg]		1	3	6	9	14

1) Theoretical values at 6 bar

Observe max. dynamic torque load (linear motion)						
Size		16	20	25	32	40
	with plain-bearing guide [Nm]	0.1	0.2	0.45	0.8	1.1
	with recirculating ball bearing guide [Nm]	0.17	0.35	0.7	1.0	5.4

-  Note

The rotary vane is not suitable for use in defining end positions, i.e. the stop lever and the stops must not be removed.

With plain-bearing guide:

If the effective load is attached eccentrically, increased internal friction forces occur with horizontal installation, thereby causing a reduction of the effective force of the linear motion.

Weight [g]					
Size	16	20	25	32	40
Plain-bearing guide					
Cushioning P	695	1,090	1,510	2,985	5,150
Cushioning CC	697	1,130	1,605	3,020	5,205
Additional weight per 10 mm stroke	33	52	67	109	170
Recirculating ball bearing guide					
Cushioning P	745	1,180	1,660	3,265	5,300
Cushioning CC	747	1,220	1,755	3,300	5,355
Additional weight per 10 mm stroke	33	52	67	109	175

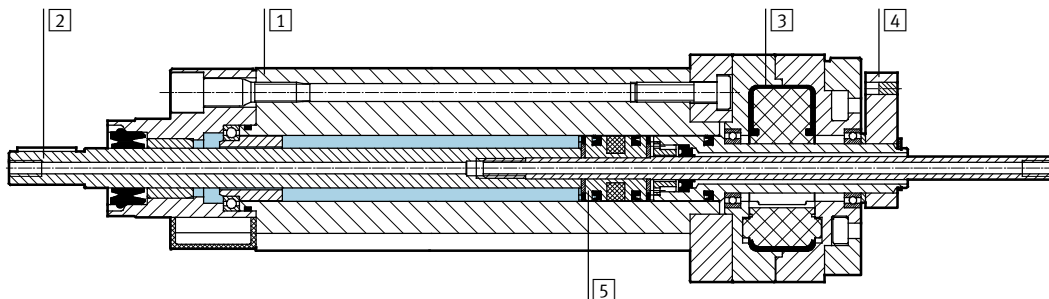
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Technical data

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Materials

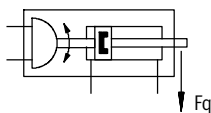
Sectional view



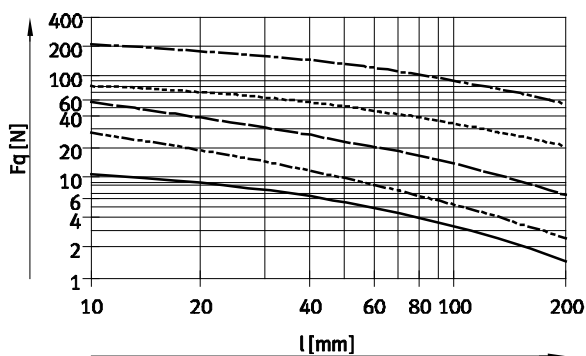
Swivel/linear drive unit

1	Cylinder barrel, housing	Wrought aluminium alloy, smooth anodised
2	Piston rod, shaft	Stainless steel, nickel plated
3	Rotary vane	Glass fibre reinforced plastic
4	Stop lever	Anodised aluminium
5	Piston	Brass
-	Fixed stops, shock absorber retainer	Stainless steel
-	Seals	Polyurethane

Lateral force F_q as a function of stroke length l

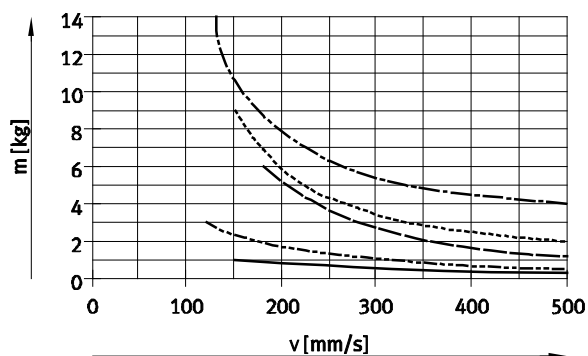
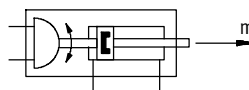


- Piston rod with bearings at both ends
- Resists high torques and lateral forces



— $\varnothing 16$
 - - $\varnothing 20$
 - · - $\varnothing 25$
 · · · $\varnothing 32$
 - - - $\varnothing 40$

Max. permissible effective load as a function of piston speed v



— $\varnothing 16$
 - - $\varnothing 20$
 - · - $\varnothing 25$
 · · · $\varnothing 32$
 - - - $\varnothing 40$

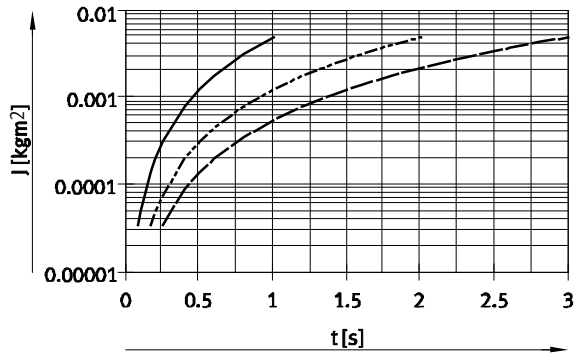
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Technical data

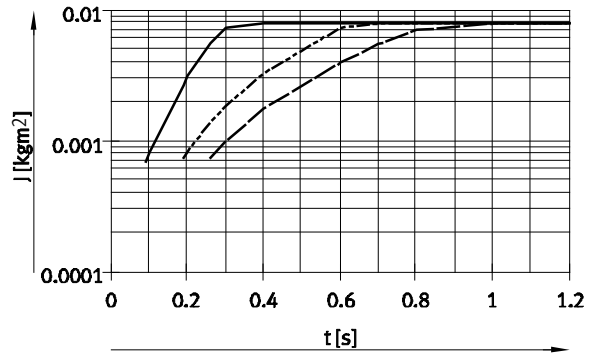
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Max. permissible mass moment of inertia J as a function of swivel time t

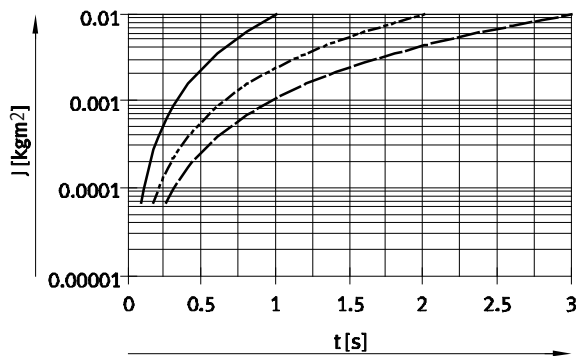
DSL-16-...-P



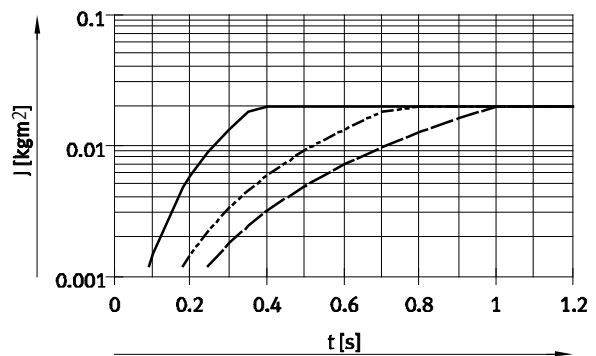
DSL-16-...-CC



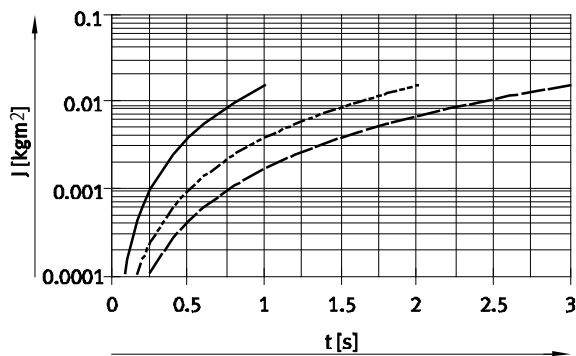
DSL-20-...-P



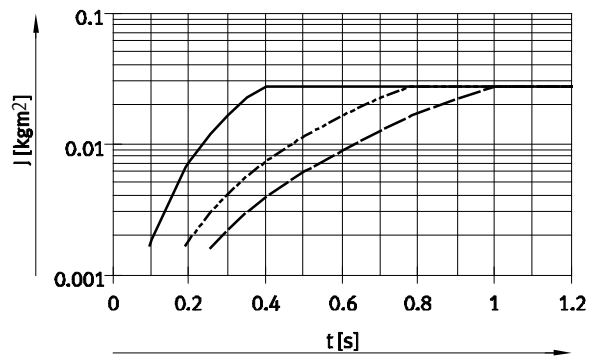
DSL-20-...-CC



DSL-25-...-P



DSL-25-...-CC



— 90°
 - - - 180°
 — 270°

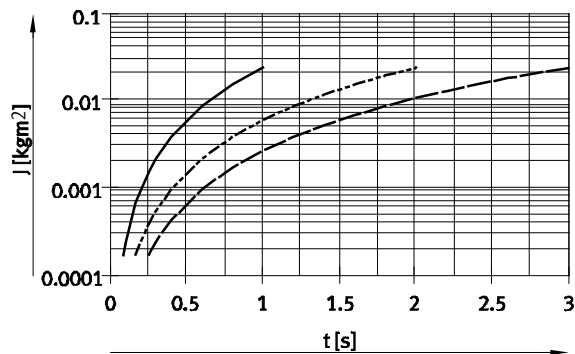
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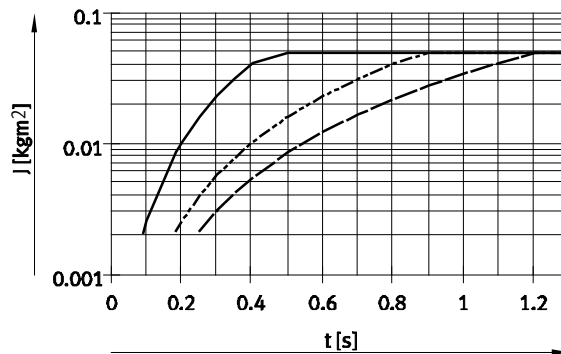
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Max. permissible mass moment of inertia J as a function of swivel time t

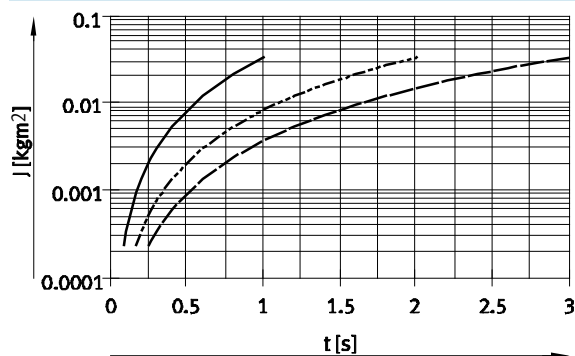
DSL-32-...-P



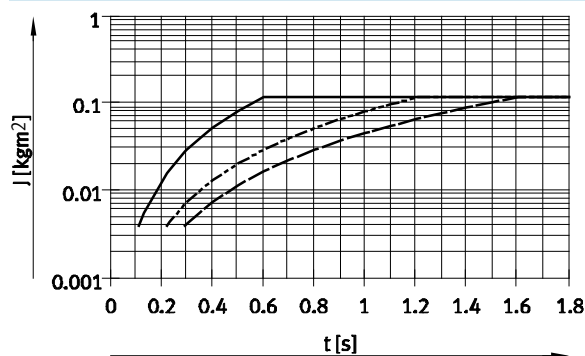
DSL-32-...-CC



DSL-40-...-P



DSL-40-...-CC



— 90°
- - - 180°
- · - 270°

In the graphs for the types DSL-...-CC, the swivel time is shown up to the point when the stop lever meets the shock absorber. The cushioning time of the shock absorber must be added in order to obtain total swivel time.

Cushioning time of the shock absorber

Size	16/20/25	32	40
Cushioning time [s]	0.1	0.25	0.3

- Note

Sizing software
Calculating inertia
→ www.festo.com

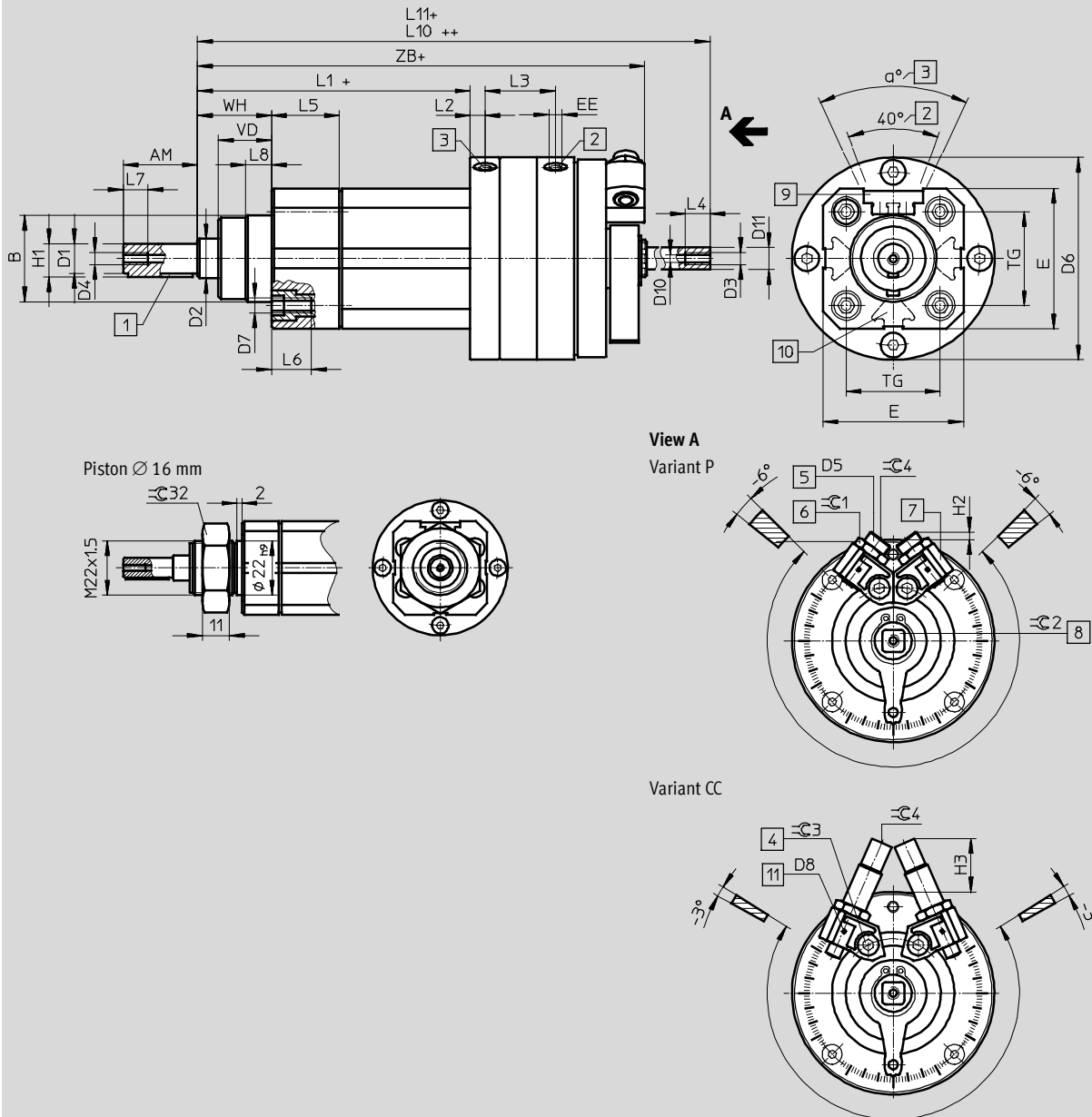
Swivel/linear drive units DSL-B

Technical data

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Dimensions

Download CAD data → www.festo.com



- | | | | |
|-------------------------------|--|---------------------------------------|--|
| 1 Woodruff key position at 0° | 4 Locking screw for clamping the stop | 7 Infinitely adjustable fixed stops | 10 Mounting slots |
| 2 Supply port, rotary part | 5 End position adjustment | 8 Manual override (square) | 11 Mounting thread for sensor retainer |
| 3 Supply port, linear part | 6 Lock nut for end position adjustment | 9 Slot for proximity sensor SME/SMT-8 | |

+ = plus stroke length

++ = plus 2 stroke lengths

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Technical data

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Size	AM	B Ø d11	D1 Ø g7	D2 Ø f8	D3 ¹⁾		D4		D5	D6 Ø ±0.2	D7	D8
					S2	S20	S2	S20				
16	20 ^{+0.2}	–	8	10	M3	M3	M3	M3	M8x1	58	–	M2
20	23 ^{+0.2}	30	10	12	M5	M5	M5	M5	M10x1	69	M6	M2
25	30 ^{+0.2}	35	12	16	M5	M5	M5	M5	M10x1	82	M6	M2
32	40 ^{+0.3}	40	16	20	M5	M5	M5	M5	M12x1	104	M8	M2
40	50 ^{+0.3}	45	20	25	M6	M7	M6	M7	M16x1	128	M8	M2

Size	D11 ¹⁾	E	EE	H1 max.	H2	H3	L1 ¹⁾	L2 ±0.2	L3	L4
16	–	38	M5	8.8	4.6	23.7	89 ^{+1.1/-1.3}	6	22.5 ^{+0.5}	9 ⁺²
20	–	50	M5	11.2	8.1	27.7	95 ^{+1.1/-1.3}	6	26.2 ^{+0.6}	10 ⁺¹
25	–	57	M5	13.5	4	22	100.5 ^{+1.2/-1.3}	6	29.5 ^{+0.6}	10 ⁺¹
32	–	72	G ¹ / ₈	18	6	30.5	111 ^{+1.3/-1.4}	9	39.5 ^{+0.6}	12.5 ⁺²
40	–	83.5	G ¹ / ₈	22.5	5.7	45.5	132 ^{+1.3/-1.4}	9	44.7 ^{+0.6}	6.5 ⁺²

Size	L5	L6 +2	L7	L8 ±0.3	L10 ¹⁾	TG	VD	WH	ZB ¹⁾
16	18 ^{+0.2}	–	9 ⁺²	–	159 ^{+0.8/-0.1}	–	22 ^{+0.2}	28 ^{+1.3/-1.7}	144.8 ^{+1.4/-1.5}
20	26 ^{–0.2}	17	10 ⁺¹	10.5	175 ^{+0.8/-0.1}	32.5	19 ^{+0.2}	26 ^{+1.3/-1.7}	161.8 ^{+1.4/-1.5}
25	27.5 ^{–0.2}	17	10 ⁺¹	10.5	186.5 ^{+0.8/-0.1}	38	21.5 ^{+0.2}	30 ^{+1.4/-1.7}	173.4 ^{+1.4/-1.2}
32	28.5 ^{–0.2}	21	12.5 ⁺²	12	224 ^{+0.6/-0.2}	46.5	28.5 ^{+0.3}	37 ^{+1.4/-1.8}	205 ^{+1.5/-1.9}
40	35 ^{–0.2}	18	14 ⁺²	15	263 ^{+0.6/-0.2}	56.5	34.7 ^{+0.3}	46 ^{+1.4/-1.8}	243.5 ^{+1.8/-1.9}

Size	α	≈C1	≈C2	≈C3	≈C4	Woodruff key to DIN 6885	D10 min. Ø S20
16	60°	10	5.5	2.5	2.5	A2x2x16	2.5
20	50°	13	7	3	3	A3x3x18	3.2
25	50°	13	9	4	3	A4x4x25	4.2
32	50°	15	10	5	4	A5x5x36	4.2
40	50°	19	12	8	5	A6x6x45	5.6

1) Deviating dimensions for variant with recirculating ball bearing guide KF

Size	Stroke	D3		D11 Ø h7	L1	L11		ZB
		S2	S20			S2 +0.8/-0.1	S20 +0.8/-0.1	
16	25	–	M3	6	104 ^{+1.1/-1.3}	*	198	159.6 ^{+1.4/-1.5}
	≤ 50					*	233	
	> 50					213	273	
20	≤ 50	–	M5	8	111 ^{+1.1/-1.3}	*	241	177.7 ^{+1.4/-1.5}
	> 50					225	291	
25	≤ 50	–	M5	10	129 ^{+1.2/-1.3}	*	266	201.2 ^{+1.4/-1.2}
	> 50					238	316	
32	≤ 50	–	M7	13	143 ^{+1.3/-1.4}	*	305	237 ^{+1.5/-1.9}
	> 50					253	355	
40	≤ 50	–	G ¹ / ₈	16	182 ^{+1.3/-1.4}	*	364	293.5 ^{+1.5/-1.9}
	> 50					*	414	
	> 100					352	464	

*) Profile rod does not protrude beyond the drive unit

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Technical data

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Ordering data – With plain bearing guide						
Version	Size	Stroke [mm]	P – Flexible cushioning components at both ends		CC – Shock absorbers at both ends	
			Part No.	Type	Part No.	Type
S2 – Through piston rod						
	16	25	556 390	DSL-16-25-270-P-A-S2-B	556 391	DSL-16-25-270-CC-A-S2-B
		40	556 396	DSL-16-40-270-P-A-S2-B	556 397	DSL-16-40-270-CC-A-S2-B
		50	556 402	DSL-16-50-270-P-A-S2-B	556 403	DSL-16-50-270-CC-A-S2-B
		80	556 408	DSL-16-80-270-P-A-S2-B	556 409	DSL-16-80-270-CC-A-S2-B
		100	556 414	DSL-16-100-270-P-A-S2-B	556 415	DSL-16-100-270-CC-A-S2-B
		10 ... 160	556 420	DSL-16-...-270-P-A-S2-B	556 421	DSL-16-...-270-CC-A-S2-B
	20	25	556 426	DSL-20-25-270-P-A-S2-B	556 427	DSL-20-25-270-CC-A-S2-B
		40	556 432	DSL-20-40-270-P-A-S2-B	556 433	DSL-20-40-270-CC-A-S2-B
		50	556 438	DSL-20-50-270-P-A-S2-B	556 439	DSL-20-50-270-CC-A-S2-B
		80	556 444	DSL-20-80-270-P-A-S2-B	556 445	DSL-20-80-270-CC-A-S2-B
		100	556 450	DSL-20-100-270-P-A-S2-B	556 451	DSL-20-100-270-CC-A-S2-B
		10 ... 160	556 456	DSL-20-...-270-P-A-S2-B	556 457	DSL-20-...-270-CC-A-S2-B
	25	25	556 462	DSL-25-25-270-P-A-S2-B	556 463	DSL-25-25-270-CC-A-S2-B
		40	556 468	DSL-25-40-270-P-A-S2-B	556 469	DSL-25-40-270-CC-A-S2-B
		50	556 474	DSL-25-50-270-P-A-S2-B	556 475	DSL-25-50-270-CC-A-S2-B
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		100	556 486	DSL-25-100-270-P-A-S2-B	556 487	DSL-25-100-270-CC-A-S2-B
		10 ... 160	556 492	DSL-25-...-270-P-A-S2-B	556 493	DSL-25-...-270-CC-A-S2-B
	32	25	556 498	DSL-32-25-270-P-A-S2-B	556 499	DSL-32-25-270-CC-A-S2-B
		40	556 504	DSL-32-40-270-P-A-S2-B	556 505	DSL-32-40-270-CC-A-S2-B
		50	556 510	DSL-32-50-270-P-A-S2-B	556 511	DSL-32-50-270-CC-A-S2-B
		80	556 516	DSL-32-80-270-P-A-S2-B	556 517	DSL-32-80-270-CC-A-S2-B
		100	556 522	DSL-32-100-270-P-A-S2-B	556 523	DSL-32-100-270-CC-A-S2-B
		10 ... 200	556 528	DSL-32-...-270-P-A-S2-B	556 529	DSL-32-...-270-CC-A-S2-B
	40	25	556 534	DSL-40-25-270-P-A-S2-B	556 535	DSL-40-25-270-CC-A-S2-B
		40	556 540	DSL-40-40-270-P-A-S2-B	556 541	DSL-40-40-270-CC-A-S2-B
		50	556 546	DSL-40-50-270-P-A-S2-B	556 547	DSL-40-50-270-CC-A-S2-B
		80	556 552	DSL-40-80-270-P-A-S2-B	556 553	DSL-40-80-270-CC-A-S2-B
		100	556 558	DSL-40-100-270-P-A-S2-B	556 559	DSL-40-100-270-CC-A-S2-B
		125	556 564	DSL-40-125-270-P-A-S2-B	556 565	DSL-40-125-270-CC-A-S2-B
		160	556 570	DSL-40-160-270-P-A-S2-B	556 571	DSL-40-160-270-CC-A-S2-B
		10 ... 200	556 576	DSL-40-...-270-P-A-S2-B	556 577	DSL-40-...-270-CC-A-S2-B

Swivel/linear drive units DSL-B

Technical data

FESTO

Ordering data – With plain bearing guide						
Version	Size	Stroke [mm]	P – Flexible cushioning components at both ends			CC – Shock absorbers at both ends
			Part No.	Type		Part No. Type
S20 – Through, hollow piston rod						
	16	25	556 393	DSL-16-25-270-P-A-S20-B		556 394 DSL-16-25-270-CC-A-S20-B
		40	556 399	DSL-16-40-270-P-A-S20-B		556 400 DSL-16-40-270-CC-A-S20-B
		50	556 405	DSL-16-50-270-P-A-S20-B		556 406 DSL-16-50-270-CC-A-S20-B
		80	556 411	DSL-16-80-270-P-A-S20-B		556 412 DSL-16-80-270-CC-A-S20-B
		100	556 417	DSL-16-100-270-P-A-S20-B		556 418 DSL-16-100-270-CC-A-S20-B
		10 ... 160	556 423	DSL-16-...-270-P-A-S20-B		556 424 DSL-16-...-270-CC-A-S20-B
	20	25	556 429	DSL-20-25-270-P-A-S20-B		556 430 DSL-20-25-270-CC-A-S20-B
		40	556 435	DSL-20-40-270-P-A-S20-B		556 436 DSL-20-40-270-CC-A-S20-B
		50	556 441	DSL-20-50-270-P-A-S20-B		556 442 DSL-20-50-270-CC-A-S20-B
		80	556 447	DSL-20-80-270-P-A-S20-B		556 448 DSL-20-80-270-CC-A-S20-B
		100	556 453	DSL-20-100-270-P-A-S20-B		556 454 DSL-20-100-270-CC-A-S20-B
		10 ... 160	556 459	DSL-20-...-270-P-A-S20-B		556 460 DSL-20-...-270-CC-A-S20-B
	25	25	556 465	DSL-25-25-270-P-A-S20-B		556 466 DSL-25-25-270-CC-A-S20-B
		40	556 471	DSL-25-40-270-P-A-S20-B		556 472 DSL-25-40-270-CC-A-S20-B
		50	556 477	DSL-25-50-270-P-A-S20-B		556 478 DSL-25-50-270-CC-A-S20-B
		80	556 483	DSL-25-80-270-P-A-S20-B		556 484 DSL-25-80-270-CC-A-S20-B
		100	556 489	DSL-25-100-270-P-A-S20-B		556 490 DSL-25-100-270-CC-A-S20-B
		10 ... 160	556 495	DSL-25-...-270-P-A-S20-B		556 496 DSL-25-...-270-CC-A-S20-B
	32	25	556 501	DSL-32-25-270-P-A-S20-B		556 502 DSL-32-25-270-CC-A-S20-B
		40	556 507	DSL-32-40-270-P-A-S20-B		556 508 DSL-32-40-270-CC-A-S20-B
		50	556 513	DSL-32-50-270-P-A-S20-B		556 514 DSL-32-50-270-CC-A-S20-B
		80	556 519	DSL-32-80-270-P-A-S20-B		556 520 DSL-32-80-270-CC-A-S20-B
		100	556 525	DSL-32-100-270-P-A-S20-B		556 526 DSL-32-100-270-CC-A-S20-B
		10 ... 200	556 531	DSL-32-...-270-P-A-S20-B		556 532 DSL-32-...-270-CC-A-S20-B
	40	25	556 537	DSL-40-25-270-P-A-S20-B		556 538 DSL-40-25-270-CC-A-S20-B
		40	556 543	DSL-40-40-270-P-A-S20-B		556 544 DSL-40-40-270-CC-A-S20-B
		50	556 549	DSL-40-50-270-P-A-S20-B		556 550 DSL-40-50-270-CC-A-S20-B
		80	556 555	DSL-40-80-270-P-A-S20-B		556 556 DSL-40-80-270-CC-A-S20-B
		100	556 561	DSL-40-100-270-P-A-S20-B		556 562 DSL-40-100-270-CC-A-S20-B
		125	556 567	DSL-40-125-270-P-A-S20-B		556 568 DSL-40-125-270-CC-A-S20-B
		160	556 573	DSL-40-160-270-P-A-S20-B		556 574 DSL-40-160-270-CC-A-S20-B
		10 ... 200	556 579	DSL-40-...-270-P-A-S20-B		556 580 DSL-40-...-270-CC-A-S20-B

Swivel/linear drive units DSL-B

Technical data

FESTO

Ordering data – With recirculating ball bearing guide						
Version	Size	Stroke [mm]	P – Flexible cushioning components at both ends		CC – Shock absorbers at both ends	
			Part No.	Type	Part No.	Type
S2 – Through piston rod						
	16	25	556 582	DSL-16-25-270-P-A-S2-KF-B	556 583	DSL-16-25-270-CC-A-S2-KF-B
		40	556 588	DSL-16-40-270-P-A-S2-KF-B	556 589	DSL-16-40-270-CC-A-S2-KF-B
		50	556 594	DSL-16-50-270-P-A-S2-KF-B	556 595	DSL-16-50-270-CC-A-S2-KF-B
		80	556 600	DSL-16-80-270-P-A-S2-KF-B	556 601	DSL-16-80-270-CC-A-S2-KF-B
		100	556 606	DSL-16-100-270-P-A-S2-KF-B	556 607	DSL-16-100-270-CC-A-S2-KF-B
		10 ... 100	556 612	DSL-16-...-270-P-A-S2-KF-B	556 613	DSL-16-...-270-CC-A-S2-KF-B
	20	25	556 618	DSL-20-25-270-P-A-S2-KF-B	556 619	DSL-20-25-270-CC-A-S2-KF-B
		40	556 624	DSL-20-40-270-P-A-S2-KF-B	556 625	DSL-20-40-270-CC-A-S2-KF-B
		50	556 630	DSL-20-50-270-P-A-S2-KF-B	556 631	DSL-20-50-270-CC-A-S2-KF-B
		80	556 636	DSL-20-80-270-P-A-S2-KF-B	556 637	DSL-20-80-270-CC-A-S2-KF-B
		100	556 642	DSL-20-100-270-P-A-S2-KF-B	556 643	DSL-20-100-270-CC-A-S2-KF-B
		10 ... 100	556 648	DSL-20-...-270-P-A-S2-KF-B	556 649	DSL-20-...-270-CC-A-S2-KF-B
	25	25	556 654	DSL-25-25-270-P-A-S2-KF-B	556 655	DSL-25-25-270-CC-A-S2-KF-B
		40	556 660	DSL-25-40-270-P-A-S2-KF-B	556 661	DSL-25-40-270-CC-A-S2-KF-B
		50	556 666	DSL-25-50-270-P-A-S2-KF-B	556 667	DSL-25-50-270-CC-A-S2-KF-B
		80	556 672	DSL-25-80-270-P-A-S2-KF-B	556 673	DSL-25-80-270-CC-A-S2-KF-B
		100	556 678	DSL-25-100-270-P-A-S2-KF-B	556 679	DSL-25-100-270-CC-A-S2-KF-B
		10 ... 100	556 684	DSL-25-...-270-P-A-S2-KF-B	556 685	DSL-25-...-270-CC-A-S2-KF-B
	32	25	556 690	DSL-32-25-270-P-A-S2-KF-B	556 691	DSL-32-25-270-CC-A-S2-KF-B
		40	556 696	DSL-32-40-270-P-A-S2-KF-B	556 697	DSL-32-40-270-CC-A-S2-KF-B
		50	556 702	DSL-32-50-270-P-A-S2-KF-B	556 703	DSL-32-50-270-CC-A-S2-KF-B
		80	556 708	DSL-32-80-270-P-A-S2-KF-B	556 709	DSL-32-80-270-CC-A-S2-KF-B
		100	556 714	DSL-32-100-270-P-A-S2-KF-B	556 715	DSL-32-100-270-CC-A-S2-KF-B
		10 ... 100	556 720	DSL-32-...-270-P-A-S2-KF-B	556 721	DSL-32-...-270-CC-A-S2-KF-B
	40	25	556 726	DSL-40-25-270-P-A-S2-KF-B	556 727	DSL-40-25-270-CC-A-S2-KF-B
		40	556 732	DSL-40-40-270-P-A-S2-KF-B	556 733	DSL-40-40-270-CC-A-S2-KF-B
		50	556 738	DSL-40-50-270-P-A-S2-KF-B	556 739	DSL-40-50-270-CC-A-S2-KF-B
		80	556 744	DSL-40-80-270-P-A-S2-KF-B	556 745	DSL-40-80-270-CC-A-S2-KF-B
		100	556 750	DSL-40-100-270-P-A-S2-KF-B	556 751	DSL-40-100-270-CC-A-S2-KF-B
		125	556 756	DSL-40-125-270-P-A-S2-KF-B	556 757	DSL-40-125-270-CC-A-S2-KF-B
		160	556 762	DSL-40-160-270-P-A-S2-KF-B	556 763	DSL-40-160-270-CC-A-S2-KF-B
		10 ... 160	556 768	DSL-40-...-270-P-A-S2-KF-B	556 769	DSL-40-...-270-CC-A-S2-KF-B

Swivel/linear drive units DSL-B

Technical data

FESTO

Ordering data – With recirculating ball bearing guide						
Version	Size	Stroke [mm]	P – Flexible cushioning components at both ends			CC – Shock absorbers at both ends
			Part No.	Type		Part No. Type
S20 – Through, hollow piston rod						
	16	25	556 585	DSL-16-25-270-P-A-S20-KF-B		556 586 DSL-16-25-270-CC-A-S20-KF-B
		40	556 591	DSL-16-40-270-P-A-S20-KF-B		556 592 DSL-16-40-270-CC-A-S20-KF-B
		50	556 597	DSL-16-50-270-P-A-S20-KF-B		556 598 DSL-16-50-270-CC-A-S20-KF-B
		80	556 603	DSL-16-80-270-P-A-S20-KF-B		556 604 DSL-16-80-270-CC-A-S20-KF-B
		100	556 609	DSL-16-100-270-P-A-S20-KF-B		556 610 DSL-16-100-270-CC-A-S20-KF-B
		10 ... 100	556 615	DSL-16-...-270-P-A-S20-KF-B		556 616 DSL-16-...-270-CC-A-S20-KF-B
	20	25	556 621	DSL-20-25-270-P-A-S20-KF-B		556 622 DSL-20-25-270-CC-A-S20-KF-B
		40	556 627	DSL-20-40-270-P-A-S20-KF-B		556 628 DSL-20-40-270-CC-A-S20-KF-B
		50	556 633	DSL-20-50-270-P-A-S20-KF-B		556 634 DSL-20-50-270-CC-A-S20-KF-B
		80	556 639	DSL-20-80-270-P-A-S20-KF-B		556 640 DSL-20-80-270-CC-A-S20-KF-B
		100	556 645	DSL-20-100-270-P-A-S20-KF-B		556 646 DSL-20-100-270-CC-A-S20-KF-B
		10 ... 100	556 651	DSL-20-...-270-P-A-S20-KF-B		556 652 DSL-20-...-270-CC-A-S20-KF-B
	25	25	556 657	DSL-25-25-270-P-A-S20-KF-B		556 658 DSL-25-25-270-CC-A-S20-KF-B
		40	556 663	DSL-25-40-270-P-A-S20-KF-B		556 664 DSL-25-40-270-CC-A-S20-KF-B
		50	556 669	DSL-25-50-270-P-A-S20-KF-B		556 670 DSL-25-50-270-CC-A-S20-KF-B
		80	556 675	DSL-25-80-270-P-A-S20-KF-B		556 676 DSL-25-80-270-CC-A-S20-KF-B
		100	556 681	DSL-25-100-270-P-A-S20-KF-B		556 682 DSL-25-100-270-CC-A-S20-KF-B
		10 ... 100	556 687	DSL-25-...-270-P-A-S20-KF-B		556 688 DSL-25-...-270-CC-A-S20-KF-B
	32	25	556 693	DSL-32-25-270-P-A-S20-KF-B		556 694 DSL-32-25-270-CC-A-S20-KF-B
		40	556 699	DSL-32-40-270-P-A-S20-KF-B		556 700 DSL-32-40-270-CC-A-S20-KF-B
		50	556 705	DSL-32-50-270-P-A-S20-KF-B		556 706 DSL-32-50-270-CC-A-S20-KF-B
		80	556 711	DSL-32-80-270-P-A-S20-KF-B		556 712 DSL-32-80-270-CC-A-S20-KF-B
		100	556 717	DSL-32-100-270-P-A-S20-KF-B		556 718 DSL-32-100-270-CC-A-S20-KF-B
		10 ... 100	556 723	DSL-32-...-270-P-A-S20-KF-B		556 724 DSL-32-...-270-CC-A-S20-KF-B
	40	25	556 729	DSL-40-25-270-P-A-S20-KF-B		556 730 DSL-40-25-270-CC-A-S20-KF-B
		40	556 735	DSL-40-40-270-P-A-S20-KF-B		556 736 DSL-40-40-270-CC-A-S20-KF-B
		50	556 741	DSL-40-50-270-P-A-S20-KF-B		556 742 DSL-40-50-270-CC-A-S20-KF-B
		80	556 747	DSL-40-80-270-P-A-S20-KF-B		556 748 DSL-40-80-270-CC-A-S20-KF-B
		100	556 753	DSL-40-100-270-P-A-S20-KF-B		556 754 DSL-40-100-270-CC-A-S20-KF-B
		125	556 759	DSL-40-125-270-P-A-S20-KF-B		556 760 DSL-40-125-270-CC-A-S20-KF-B
		160	556 765	DSL-40-160-270-P-A-S20-KF-B		556 766 DSL-40-160-270-CC-A-S20-KF-B
		10 ... 160	556 771	DSL-40-...-270-P-A-S20-KF-B		556 772 DSL-40-...-270-CC-A-S20-KF-B

Swivel/linear drive units DSL-B

Accessories

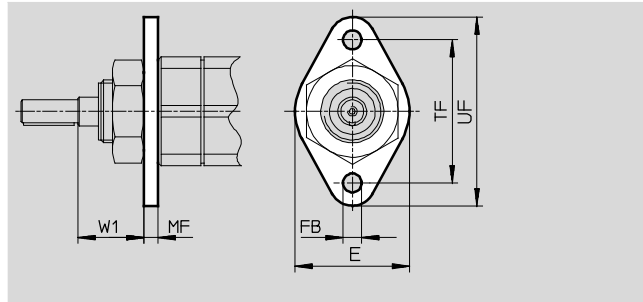
FESTO

Flange mounting FBN

Material:

Galvanised steel

Free of copper, PTFE and silicone



Dimensions and ordering data										
For size	E	FB Ø H13	MF	TF	UF	W1	CRC ¹⁾	Weight [g]	Part No.	Type
16	40	6.6	5	50	66	23	2	52	5 131	FBN-20/25

1) Corrosion resistance class 2 as per Festo standard 940 070

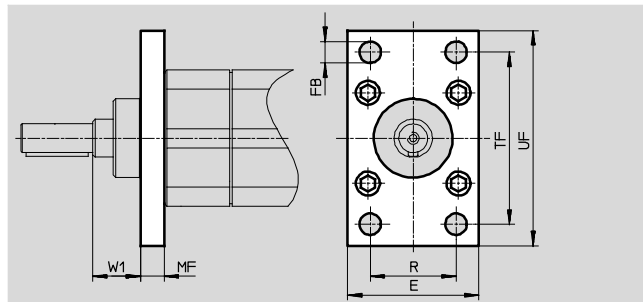
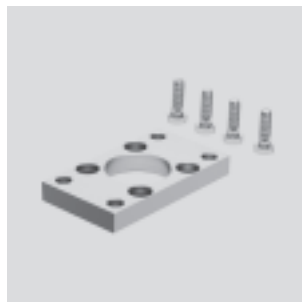
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Flange mounting FNG

Material:

Galvanised steel

Free of copper, PTFE and silicone



Dimensions and ordering data										
For size	E	FB Ø H13	MF	R	TF	UF	W1	CRC ¹⁾	Weight [g]	Part No. Type
20	45	7	10	32	64	80	16	1	221	32 940 FNG-32
25	54	9	10	36	72	90	20	1	291	32 941 FNG-40
32	65	9	12	45	90	110	25	1	536	32 942 FNG-50
40	75	9	12	50	100	120	34	1	679	32 943 FNG-63

1) Corrosion resistance class 1 as per Festo standard 940 070

Components with light corrosion exposure. Protection for transport and storage. Components without significant decorative function or surface, e.g. installed out of sight internally or behind covers.

Swivel/linear drive units DSL-B

FESTO

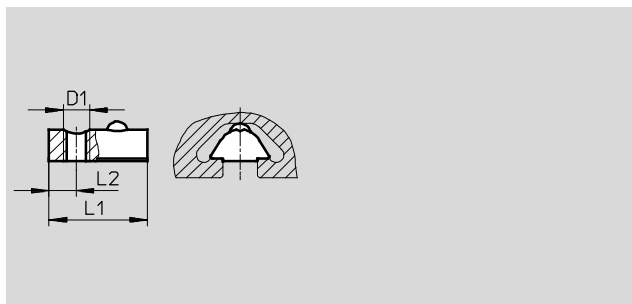
Accessories

Slot nut NST

Material:

Tempered steel, non-alloyed

Free of copper, PTFE and silicone



Dimensions and ordering data							
For size	D1	L1	L2	CRC ¹⁾	Weight [g]	Part No.	Type
16	M5	12	4	2	3	150 914	NST-5-M5
20							
25	M6	22.5	6.25	2	11	150 915	NST-8-M6
32							
40							

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

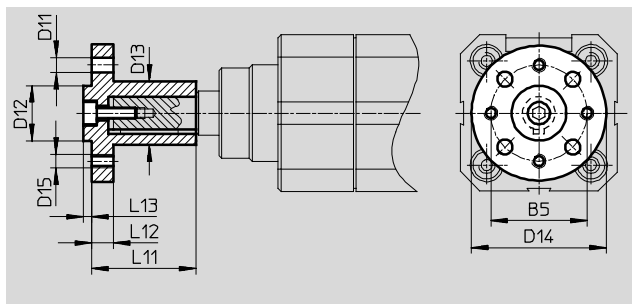
Push-on flange FWSR

The permissible tightening torque must not be exceeded when attaching additional components to the spigot shaft.

Material:

Wrought aluminium alloy, anodised

Free of copper, PTFE and silicone



Dimensions and ordering data													
For size	B5	D11 H13 Ø	D12 f8 Ø	D13 Ø	D14 Ø	D15	L11	L12	L13	Tightening torque [Nm]	CRC ¹⁾	Weight [g]	Part No. Type
16	25	3.4	14	15	35	M3	25	3	3	1.2	2	21	14 659 FWSR-12
20	28	4.5	16	17	40	M4	28	5	6	5.5	2	32	170 153 FWSR-16-M5
25	35	5.5	20	23	50	M5	38	8	3	5.5	2	70	170 154 FWSR-25-M5
32	45	6.6	28	28	60	M6	48	10	4	5.5	2	127	13 241 FWSR-32
40	54	9	36	38	70	M8	60	11	5	10	2	240	14 656 FWSR-40

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

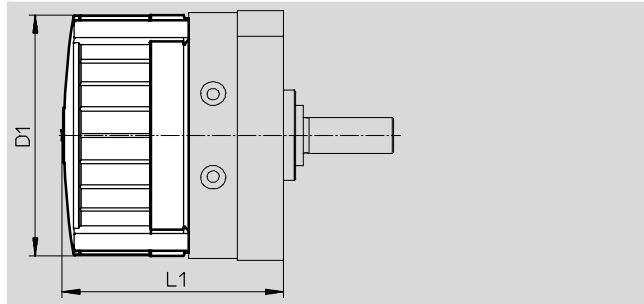
Swivel/linear drive units DSL-B

Accessories

FESTO

Cover cap AKM

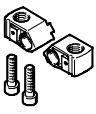
Material:
Polyamide



Dimensions and ordering data				
For size	D1 Ø	L1	Part No.	Type
16	59	56.2±1.2	549 194	AKM-12
20	70	68±1.2	549 195	AKM-16
25	83	73.4±1.2	549 196	AKM-25
32	105	89.7±1.5	549 197	AKM-32
40	130	107.1±1.5	549 198	AKM-40

Ordering data – Cushioning kits				
	For size	Remarks	Part No.	Type
	16	For cushioning mount DSM-...-B	550 657	DSM-12-P-B
	20, 25		550 658	DSM-16/25-P-B
	32		550 659	DSM-32-P-B
	40		550 660	DSM-40-P-B

Ordering data – Shock absorbers			Technical data → Internet: dysc	
	For size	Remarks	Part No.	Type
	16	For cushioning mount DSM-...-B	548 011	DYSC-5-5-Y1F
	20, 25		548 012	DYSC-7-5-Y1F
	32		548 013	DYSC-8-8-Y1F
	40		548 014	DYSC-12-12-Y1F

Ordering data – Cushioning mounts				
	For size	Remarks	Part No.	Type
	16	- For flexible cushioning components - For shock absorbers	547 900	DSM-12-B
	20		547 901	DSM-16-B
	25		547 902	DSM-25-B
	32		547 903	DSM-32-B
	40		547 904	DSM-40-B

Ordering data – One-way flow control valves				Technical data → Internet: grla	
	Connection		Material	Part No.	Type
	Thread	For tubing O.D.			
For exhaust air					
	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

Swivel/linear drive units DSL-B

Accessories

FESTO

Ordering data – Sensor retainer				
	For size	Remarks	Part No.	Type
	16, 20, 25, 32, 40	Can only be used in combination with proximity sensors SME-/SMT-10F	550 661	SL-DSM-B

Ordering data – Proximity sensors for C-slot, magneto-resistive					Technical data → Internet: smt-10	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Is clamped to the DSL-B using the sensor retainer	PNP	Cable, 3-wire, in-line	2.5	551 373	SMT-10M-PS-24V-E-2,5-L-OE
			Plug M8x1, 3-pin, in-line	0.3	551 375	SMT-10M-PS-24V-E-0,3-L-M8D

Ordering data – Proximity sensors for C-slot, magnetic reed					Technical data → Internet: sme-10	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Is clamped to the DSL-B using the sensor retainer	Contacting	Plug M8x1, 3-pin, in-line	0.3	551 367	SME-10M-DS-24V-E-0,3-L-M8D
			Cable, 3-wire, in-line	2.5	551 365	SME-10M-DS-24V-E-2,5-L-OE
			Cable, 2-wire, in-line	2.5	551 369	SME-10M-ZS-24V-E-2,5-L-OE

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-8	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	543 862	SME-8M-DS-24V-K-2,5-OE
				5.0	543 863	SME-8M-DS-24V-K-5,0-OE
			Cable, 2-wire	2.5	543 872	SME-8M-ZS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0.3	543 861	SME-8M-DS-24V-K-0,3-M8D
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150 855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150 857	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

Swivel/linear drive units DSL-B

Accessories

FESTO

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	541 333	NEBU-M8G3-K-2.5-LE3
			5	541 334	NEBU-M8G3-K-5-LE3
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 363	NEBU-M12G5-K-2.5-LE3
			5	541 364	NEBU-M12G5-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 338	NEBU-M8W3-K-2.5-LE3
			5	541 341	NEBU-M8W3-K-5-LE3
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 367	NEBU-M12W5-K-2.5-LE3
			5	541 370	NEBU-M12W5-K-5-LE3

Ordering data – Slot covers for T-slot					
	For Ø	Application	Assembly	Length [m]	Part No. Type
	16 ... 40	For sensor slots	Insertable from above	2x 0.5	151 680 ABP-5-S
	16, 20	For profile slots	Insertable from above	2x 0.5	151 681 ABP-5
	25 ... 40				151 682 ABP-8