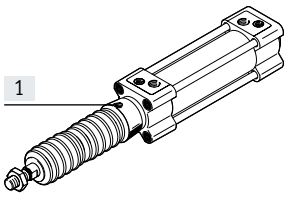
Standards-based cylinders DSBG, ISO 15552

Characteristics

At a glance

- Standards-based cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA24562, NFE49003.1 and UNI 10290)
- Sturdy tie rod design
- Double-acting
- For contactless position sensing
- Optionally with protection against rotation
- EX4: for use in potentially explosive areas
- Extensive range of accessories makes it possible to install the cylinder virtually anywhere
- Three types of cushioning available:
  - Elastic cushioning: elastic cushioning rings/plates at both ends
  - PPS cushioning: pneumatic cushioning, self-adjusting at both ends
  - PPV cushioning: pneumatic cushioning, adjustable at both ends
- The variants can be configured according to individual needs using a modular product system
- Wide range of variants provides high level of flexibility

DSBG-...-P2 – With bellows kit DADB, to ISO 15552



The bellows protects the piston rod, the seal and the bearing from the effects of a wide range of media, which has a positive impact on the service life of these components.

The bellows kit is a leak-free system. To prevent unwanted media from being drawn in, the supply and exhaust air for the kit must be ducted via a pressure compensation hole in the connection part [1].

The kit protects the piston rod, seal and bearing against a wide variety of media, for example:
- Dust
- Chippings
- Oil
- Grease
- Fuel

Ordering the bellows kit

An extended piston rod is absolutely essential if a bellows kit is to be used. The bellows kit can be ordered via the modular product system or as an accessory. The following must be noted in this case:

Ordering via the modular product system:
The bellows kit is supplied mounted on the bearing cap using characteristic P2. The required piston rod extension is automatically taken into consideration. This means that there is no need to specify a value for characteristic ...E.

Ordering as an accessory:
If the bellows kit is ordered as an accessory, the required value
➔ page 39
must be entered for characteristic ...E in the modular product system.

Position sensing/force control

With position transmitter SMAT, SDAT ➔ page 43

Analogue position feedback possible
- Analogue output
  - 0 ... 10 V

With proportional-pressure regulator VPPM

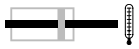
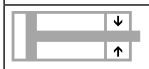
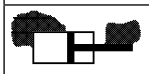
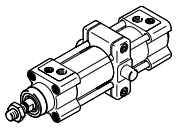
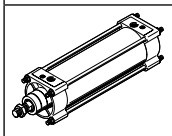
Infinite adjustment of the gripping force possible
- Setpoint value input
  - 0 ... 10 V
  - 4 ... 20 mA

Variants from the modular product system

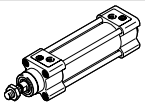
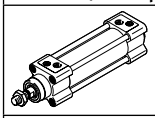
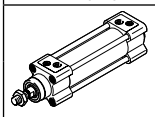
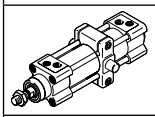
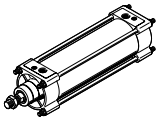
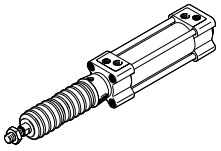
Symbol	Characteristics		Description
	Q	Square piston rod	Protection against rotation. For correctly oriented feeding
	L	Low friction	• Break-away pressure: low • Dynamic response: Suitable for very fast movements, especially at low operating pressures Application example: Very dynamic movements with no standstill

Characteristics

Variants from the modular product system

Symbol	Characteristics		Description
	U	Constant, slow movement	• Break-away pressure: very low • Dynamic response: Suitable for very slow, constant and stick-slip-free movements Application example: Slow, constant feed motion
	L1	Low friction for balancer applications	• Break-away pressure: low • Dynamic response: Suitable for slow movements with constant application of pressure at one end. System friction is independent of operating pressure Application example: Applications for load balancing (balancer, belt tensioner with constant feed motion)
	T	Through piston rod	For working at both ends with the same force in the forward and return stroke, for attaching external stops
	F	Female piston rod thread	–
	R3	High corrosion protection	All external cylinder surfaces comply with corrosion resistance class 3 to Festo standard 940 070. The piston rod is made from corrosion- and acid-resistant steel
	T1	Heat-resistant seals	Temperature range 0 ... +120°C
	T3	Low temperature	Temperature range –40 ... +80°C
	T4	Heat-resistant seals	Temperature range 0 ... +150°C
	A2	Wiper variant	Hard scraper: The cylinder has a hard-chromium plated piston rod and a hard scraper, which protects against dry, dusty and viscous media
	A3	Wiper variant	Unlubricated operation: Cleaning processes degrease the piston rod. A special piston rod seal designed for unlubricated operation permits a longer service life compared to the standard seal.
	A6	Wiper variant	Metal scraper: The cylinder has a hard-chromium plated piston rod and metal scraper, which scrapes off hard particles (e.g. welding spatter) sticking to the piston rod. For use in welding systems, for example
	...E	Extended piston rod	1 ... 500 mm
	...L	Extended piston rod thread	1 ... 70 mm
	...S	Shortened piston rod thread	1 ... 44 mm
	M...	Piston rod thread	Piston rod thread version: M16/M16x1.5/M20/M20x1.5/M24/M27
	...V	Swivel mounting position	• Swivel mounting, position freely selectable • Position can be moved at any time
	Thread length of spacer bolts: ...LB2 ...LB3	 on the bearing cap on the end cap	• Variable thread length: 20 ... 140 mm • Optionally on the bearing or end cap

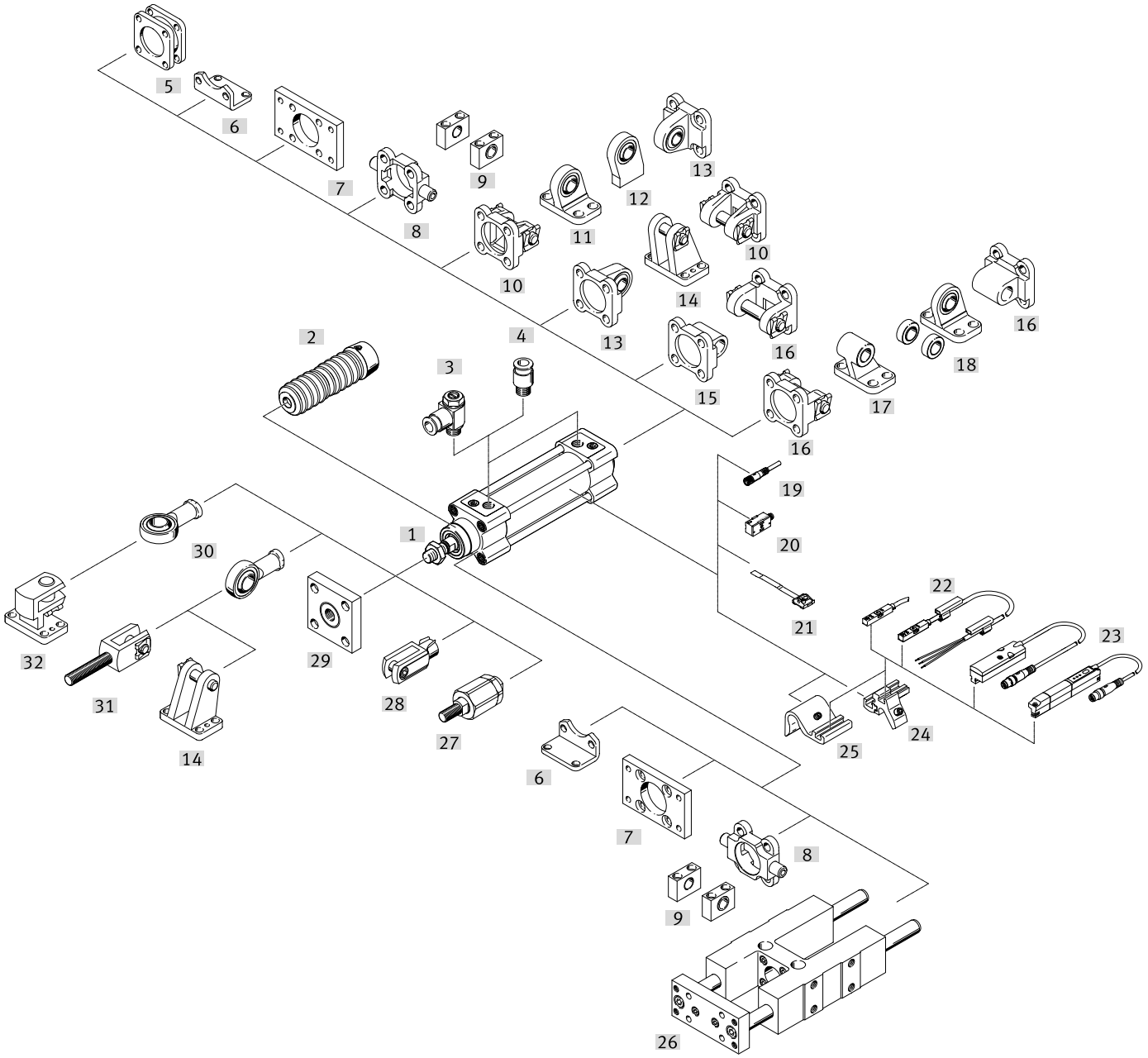
Product range overview

Function	Design	Type	Piston diameter	Stroke	Through piston rod	Female piston rod thread	Cushioning		
			[mm]	[mm]	T	F	P	PPS	PPV
Double-acting	**DSBG-...**								
		DSBG-...	32, 40, 50, 63, 80, 100, 125	1 ... 2800	■	■	■	■	■
	DSBG-...-Q – With protection against rotation								
		DSBG-...-Q	32, 40, 50, 63, 80, 100	1 ... 1500	■	■	■	■	■
	DSBG-...-L/-U/-L1 – With special running characteristics								
		DSBG-...-L	32, 40, 50, 63, 80, 100	1 ... 2800	–	■	■	■	■
		DSBG-...-U	32, 40, 50, 63, 80, 100, 125	1 ... 2800	–	■	■	■	■
		DSBG-...-L1	32, 40, 50, 63, 80, 100, 125	10 ... 1000	–	■	■	■	–
	DSBG-...-...V – With swivel mounting position								
		DSBG-...-...V	32, 40, 50, 63, 80, 100, 125	10 ... 2800	■	■	■	■	■
	DSBG-...-...LB2/3 – With spacer bolts on the bearing/end cap								
		DSBG-...-...LB2/3	80, 100, 125	10 ... 2800	■	■	■	■	■
	DSBG-...-P2 – With bellows								
		DSBG-...-P2	32, 40, 50, 63, 80, 100	10 ... 500	■	■	■	■	■

Product range overview

Type	Position sensing	High corrosion protection	Temperature range 0 ... +120°C	Temperature range –40 ... +80°C	Temperature range 0 ... +150°C	Wiper variant Hard scraper	Wiper variant for unlubricated operation	Wiper variant Metal scraper	EU certification	Extended piston rod	Extended piston rod thread	Shortened piston rod thread
	A	R3	T1	T3	T4	A2	A3	A6	EX4	...E	...L	...S
DSBG-...												
DSBG-...	■	■	■	■	■	■	■	■	■	■	■	■
DSBG-...-Q – With protection against rotation												
DSBG-...-Q	■	■	■	–	–	–	–	–	■	■	■	■
DSBG-...-L/-U/-L1 – With special running characteristics												
DSBG-...-L	■	–	–	–	–	–	–	–	–	■	■	■
DSBG-...-U	■	–	–	–	–	–	–	–	–	■	■	■
DSBG-...-L1	■	–	–	–	–	–	–	–	–	■	■	■
DSBG-...-...V – With swivel mounting position												
DSBG-...-...V	■	–	■	■	■	■	■	■	■	■	■	■
DSBG-...-...LB2/3 – With spacer bolts on the bearing/end cap												
DSBG-...-...LB2/3	■	■	■	■	■	■	■	■	■	■	■	■
DSBG-...-P2 – With bellows												
DSBG-...-P2	■	■	–	–	–	–	–	–	–	■	■	■

Peripherals overview



Mounting components and accessories

		Description	DSBG-...			→ Page/ Internet
				-L/-U/ -L1	-T	
[1]	Standards-based cylinder DSBG	Standards-based cylinder without accessories, basic version				9
[2]	Bellows kit DADB	• Protects the cylinder (piston rod, seal and bearing) against a wide range of media and thus prevents premature wear • Can only be used in combination with an extended piston rod (E)	■	–	■	36
[3]	One-way flow control valve GRLA	For speed regulation	■	■	■	44
[4]	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	■	■	■	qs
[5]	Multi-position kit DPNC	For connecting two cylinders with identical piston diameters to form a multi-position cylinder	■	–	■	40

Peripherals overview

Mounting components and accessories

		Description	DSBG-...			→ Page/ Internet
				-L/-U/ -L1	-T	
[6]	Foot mounting HNC/CRHNC	For bearing or end caps	■	■	■	26
[7]	Flange mounting FNC/CRFNG	• For bearing or end caps • Cannot be used on the bearing cap in combination with the bellows kit DADB	■	■	■	27
[8]	Trunnion flange ZNCF/CRZNG	• For bearing or end caps • Cannot be used on the bearing cap in combination with the bellows kit DADB	■	■	■	28
[9]	Trunnion support LNZG/CRLNZG	–	■	■	■	29
[10]	Swivel flange SNC	For end caps	■	■	–	30
[11]	Clevis foot LSNG	With spherical bearing	■	■	–	34
[12]	Clevis foot LSNSG	Weld-on, with spherical bearing	■	■	–	34
[13]	Swivel flange SNCS/CRSNCS/SNCS-...-R3	With spherical bearing for end caps	■	■	–	32
[14]	Clevis foot LBG/LBG-...-R3	–	■	■	–	34
[15]	Swivel flange SNCL	For end caps	■	■	–	33
[16]	Swivel flange SNCB/SNCB-...-R3	For end caps	■	■	–	31
[17]	Clevis foot LNG/CRLNG	–	■	■	–	34
[18]	Clevis foot LSN	With spherical bearing	■	■	–	34
[19]	Connecting cable NEBU	–	■	■	■	43
[20]	Proximity switch SMPO-1-H-B	–	■	■	■	44
[21]	Mounting kit SMBS	For proximity switch SMPO-1-H-B	■	■	■	43
[22]	Proximity switch SME/SMT-8M/SDBT-MS	Can be integrated in the cylinder profile barrel	■	■	■	42
[23]	Position transmitter SMAT, SDAT	• Continuously senses the position of the piston • Has an analogue output	■	■	■	43
[24]	Mounting kit SMBZ-8- ...	For proximity switch SME/SMT-8M, for piston diameter 32 ... 100	■	■	■	43
[25]	Sensor bracket DASP-M4- ...	For proximity switch SME/SMT-8M, for piston diameter 125	■	■	■	43
[26]	Guide unit FENG	For protecting standards-based cylinders against rotation at high torques	■	■	■	41
[27]	Self-aligning rod coupler FK, CRFK	For compensating radial and angular deviations	■	■	■	35
[28]	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	■	35
[29]	Coupling piece KSG	For compensating radial deviations	■	■	■	35
	Coupling piece KSZ	For cylinders with a non-rotating piston rod to compensate radial deviations	■	■	■	35
[30]	Rod eye SGS/CRSGS	With spherical bearing	■	■	■	35
[31]	Rod clevis SGA	With male thread	■	■	■	35
[32]	Right-angle clevis foot LQG	–	■	■	■	34

Type codes

001	Series	
DSBG	Standards-based cylinder, double-acting, based on ISO 15552	

002	Protection against rotation	
	None	
Q	With protection against rotation	

003	Running characteristics	
	Standard	
L	Low friction	
U	Uniform, slow movement	
L1	Low friction for balancer applications	

004	Central swivel mounting	
	None	
Y	Central	
V	Central, clamped	

005	Piston diameter	
32	32	
40	40	
50	50	
63	63	
80	80	
100	100	
125	125	
160	160	
200	200	
250	250	
320	320	

006	Stroke	
...	1 ... 2800	

007	Piston rod type	
	At one end	
T	Through piston rod	

008	Piston rod thread type	
	Male thread	
F	Female thread	

009	Piston rod bearing version	
SL	Sintered bearing	
	Polymer bearing	

010	Cushioning	
P	Elastic cushioning rings/plates on both sides	
PPS	Pneumatic cushioning, self-adjusting at both ends	
PPV	Pneumatic cushioning, adjustable at both ends	

011	Position sensing	
	None	
A	For proximity sensor	

012	Standard	
	Not according to standard	
N3	Conforms to ISO 15552	

013	Corrosion protection	
	Standard	
R3	High corrosion protection	

014	Temperature range	
	Standard	
T1	Heat-resistant seals max. 120°C	
T3	-40 ... +80°C	
T4	0 ... +150°C	

015	Protection against particles	
	Standard	
P2	Bellows on bearing cap	

016	Scraper variant	
	None	
A2	Hard scraper	
A3	For unlubricated operation	
A6	Metal scraper	

017	EU certification	
	None	
EX4	II 2GD	

018	Swivel mounting position	
	None	
...V	163 ... 2483 mm	

019	Trunnion flange mounting position, positive locking	
	None	
...Y	With	

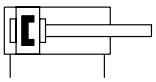
020	Piston rod extension	
	None	
...E	1 ... 500 mm	

021	Piston rod thread extension	
	None	
...L	0 ... 70 mm	

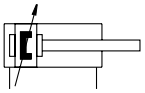
022	Piston rod thread shortening	
	None	
...S	0 ... 86 mm	

Data sheet

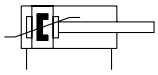
Function
Elastic cushioning



PPV cushioning



PPS cushioning



Diameter
32 ... 125 mm

Stroke length
1 ... 2800 mm

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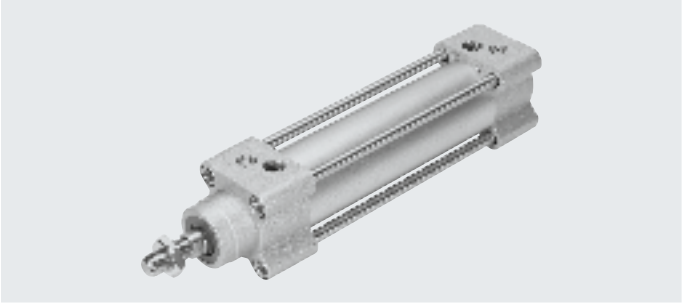


General technical data								
Piston diameter		32	40	50	63	80	100	125
Design		Piston/piston rod/cylinder barrel						
Mode of operation		Double-acting						
Pneumatic connection		G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2
Stroke								
DSBG-...	[mm]	1 ... 2800						
DSBG-...-Q	[mm]	1 ... 1500						–
DSBG-...-L1	[mm]	10 ... 1000						
DSBG-...-P2	[mm]	10 ... 500						–
DSBG-...-...E	[mm]	1 ... 2000						
DSBG-...-...L	[mm]	1 ... 2000						
Cushioning								
DSBG-...-P		Elastic cushioning rings/plates at both ends						
DSBG-...-PPV		Pneumatic cushioning, adjustable at both ends						
DSBG-...-PPS		Pneumatic cushioning, self-adjusting at both ends						
Cushioning length								
DSBG-...-PPV	[mm]	17	19	22	22	31	31	45
Position sensing		Via proximity switch						
Type of mounting		With female thread/accessories						
Mounting position		Any						

Data sheet

Operating and environmental conditions								
Piston diameter		32	40	50	63	80	100	125
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure								
DSBG-...	[MPa]	0.06 ... 1.2		0.04 ... 1.2				0.02 ... 1.0
	[bar]	0.6 ... 12		0.4 ... 12				0.2 ... 10
DSBG-...-Q	[MPa]	0.1 ... 1.2						–
	[bar]	1 ... 12						–
DSBG-...-Q-T1	[MPa]	0.1 ... 0.8						–
	[bar]	1 ... 8						–
DSBG-...-L[1]	[MPa]	0.03 ... 1.2	0.025 ... 1.2			0.02 ... 1.2	0.015 ... 1.2	–
	[bar]	0.3 ... 12	0.25 ... 12			0.2 ... 12	0.15 ... 12	–
DSBG-...-U[1]	[MPa]	0.01 ... 1.2				0.005 ... 1.2		0.005 ... 1.0
	[bar]	0.1 ... 12				0.05 ... 12		0.05 ... 10
DSBG-...-L1[1]	[MPa]	0.03 ... 1.2	0.025 ... 1.2			0.02 ... 1.2	0.015 ... 1.2	0.01 ... 1.0
	[bar]	0.3 ... 12	0.25 ... 12			0.2 ... 12	0.15 ... 12	0.1 ... 10
DSBG-...-T3/-A2	[MPa]	0.1 ... 1.2						0.1 ... 1.0
	[bar]	1 ... 12						1 ... 10
DSBG-...-T3-A6	[MPa]	0.15 ... 1.2						
	[bar]	1.5 ... 12						
DSBG-...-A3	[MPa]	0.15 ... 1.2		0.1 ... 1.2	0.06 ... 1.2			0.06 ... 1.0
	[bar]	1.5 ... 12		1 ... 12	0.6 ... 12			0.6 ... 10
DSBG-...-A6	[MPa]	0.15 ... 1.2						
	[bar]	1.5 ... 12						
Ambient temperature[2]								
DSBG-...	[°C]	–20 ... +80						
DSBG-...-L/-U	[°C]	+5 ... +80						
DSBG-...-L1	[°C]	0 ... +60						
DSBG-...-A1	[°C]	0 ... +80						
DSBG-...-A6	[°C]	–20 ... +80						
DSBG-...-T1-A6	[°C]	0 ... +120						
DSBG-...-T3-A6	[°C]	–40 ... +80						
DSBG-...-T4-A6	[°C]	0 ... +150						
DSBG-...-T1	[°C]	0 ... +120						
DSBG-...-T3	[°C]	–40 ... +80						
DSBG-...-T4	[°C]	0 ... +150						
DSBG-...-P2	[°C]	–10 ... +80						–
DSBG-...-EX4	[°C]	–20 ... +60						
Corrosion resistance CRC								
DSBG-...		2[3]						
DSBG-...-R3		3[4]						

1) Values apply only for strokes ≤ 500 mm and after 10 double strokes.
In combination with cushioning PPV/PPS, the specifications only apply outside the cushioning range

2) Note operating range of proximity switches.

3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

4) Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Weight [g]							
Piston diameter	32	40	50	63	80	100	125
DSBG-...							
Product weight with 0 mm stroke	465	740	1190	1740	2660	3665	6611
Additional weight per 10 mm stroke	25	35	52	55	85	94	143
Moving mass with 0 mm stroke	110	205	365	430	810	1000	2245
Moving mass per 10 mm stroke	9	16	25	25	39	39	63
DSBG-...-Q							
Product weight with 0 mm stroke	503	755	1241	1821	2717	3827	–
Additional weight per 10 mm stroke	24	30	47	50	78	87	–
Moving mass with 0 mm stroke	103	170	332	391	757	890	–
Moving mass per 10 mm stroke	8	11	20	20	32	32	–

Data sheet

Weight [g]							
Piston diameter	32	40	50	63	80	100	125
DSBG-...-L1							
Product weight with 0 mm stroke	465	741	1200	1759	2651	3693	6651
Additional weight per 10 mm stroke	25	35	52	55	85	94	143
Moving mass with 0 mm stroke	110	206	375	449	801	1028	2285
Moving mass per 10 mm stroke	9	16	25	25	39	39	63
DSBG-...-T							
Product weight with 0 mm stroke	581	924	1523	2103	3243	4353	7450
Additional weight per 10 mm stroke	34	51	77	80	124	133	206
Moving mass with 0 mm stroke	181	339	613	684	1292	1516	3084
Moving mass per 10 mm stroke	18	32	50	50	78	78	126
DSBG-...-F							
Product weight with 0 mm stroke	453	721	1145	1695	2570	3575	6389
Additional weight per 10 mm stroke	25	35	52	55	85	94	143
Moving mass with 0 mm stroke	98	186	320	385	720	910	2023
Moving mass per 10 mm stroke	9	16	25	25	39	39	63
DSBG-...E							
Additional weight per piston rod extension of 10 mm	9	16	25	25	39	39	63
DSBG-...L							
Additional weight per piston rod extension of 10 mm	6	8	14	14	22	22	41

ATEX[1]	
ATEX category for gas	II 2G
Type of ignition protection for gas	Ex h IIC T4 Gb
ATEX category for dust	II 2D
Type of ignition protection for dust	Ex h IIIC T120°C Db
Explosion-proof ambient temperature	–20°C ≤ Ta ≤ +60°C
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
UKCA marking (see declaration of conformity)	To UK EX instructions
Explosion protection certification outside the EU	EPL Gb (GB)
	EPL Db (GB)

1) Note the ATEX certification of the accessories.

Forces [N] and impact energy [J]							
Piston diameter	32	40	50	63	80	100	125
Theoretical force at 6 bar, advancing	483	754	1178	1870	3016	4712	7363
Theoretical force at 6 bar, retracting	415	633	990	1682	2721	4418	6881
Max. impact energy in the end positions							
DSBG-...	0.4	0.7	1.0	1.3	1.8	2.5	3.3
DSBG-...-L/-U/-T1/-T3/-T4	0.2	0.35	0.5	0.65	0.9	1.25	1.65
DSBG-...-L1	0.1	0.2	0.3	0.4	0.9	1.25	1.65

Permissible impact velocity: $V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$

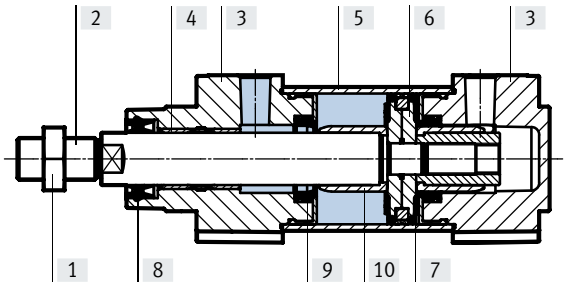
Maximum permissible mass: $m_2 = \frac{2 \times E}{v^2} - m_1$

V	Perm. impact velocity
E	Max. impact energy
m1	Moving mass (drive)
m2	Moving payload

Data sheet

Materials

Sectional view

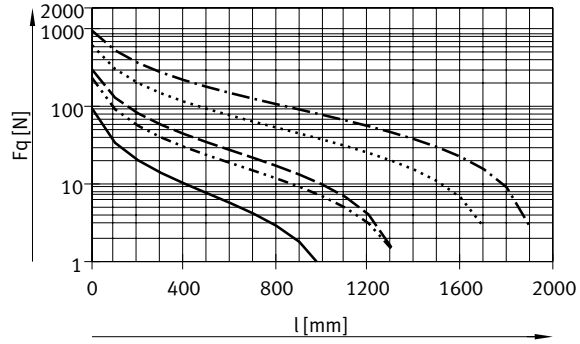


Standards-based cylinder		
[1]	Nut	Galvanised steel
[2]	Piston rod	
	DSBG-...	High-alloy steel
	DSBG-...-R3	High-alloy stainless steel
	DSBG-...-A2/-A6/-T3-A6	Hard-chrome-plated tempered steel
	DSBG-...T1-A6	High-alloy stainless steel, hard chrome-plated
[3]	Cover	Coated die-cast aluminium
[4]	Bearing	
	DSBG-...	POM
	DSBG-...-A2	Bronze
	DSBG-...-L/-U/-T1/-T1-A6/-T4-A6	Metal polymer compound
[5]	Cylinder barrel	Anodised wrought aluminium alloy
[6]	Piston	Anodised wrought aluminium alloy
[7]	Piston seal	
	DSBG-...	TPE-U(PU)
	DSBG-...-L/-U/-T1/-T4	FPM
	DSBG-...-T3	TPE-U(PU) (suitable for low temperatures)
	DSBG-...-L1	HNBR
[8]	Piston rod wiper seal	
	DSBG-...	TPE-U(PU)
	DSBG-...-L/-U	FPM
	DSBG-...-L1	HNBR
	DSBG-...-T1/-T4/-A1	FPM
	DSBG-...-T3	TPE-U(PU) (suitable for low temperatures)
	DSBG-...-A3	UHMW-PE
[9]	Buffer seal	
	DSBG-...	PUR
	DSBG-...-L	TPE-U(PU)
	DSBC-...-U/-T1/-T1-A6/-T4	FPM
	DSBG-...-T3	PUR (suitable for low temperatures)
[10]	Cushion piston	
	DSBG-...	POM
	DSBG-...-L/-T1/-T1-A6	Metal polymer compound
	DSBG-...-T4/-T4-A6	Anodised wrought aluminium alloy
–	Tie rods	
	DSBG-...	Steel, high-alloy
	DSBG-...-R3	High-alloy stainless steel
–	Rod wiper seal	
	DSBG-...-A6/-T3-A6	CuZn
	DSBG-...	POM
	DSBG-...-L/-U	Aluminium
	DSBG-...-T1/-T3/-T4	Aluminium
	DSBG-...-T4-A6	Brass
–	Spacer bolt	
	DSBC-...-...LB2/-...LB3	High-alloy stainless steel
–	Swivel mounting	
	DSBC-...-...V	Painted spheroidal graphite cast iron
–	Collar nut	Galvanised steel
–	Note on materials	RoHS-compliant
	PWIS conformity	
	DSBG-...	VDMA 24364-B1/B2-L
	DSBG-...-L/U/-T3/-T4/-A3	VDMA 24364 zone III
	Cleanroom class	
	DSBG-32 ... 50	Class 6 to ISO 14644-1

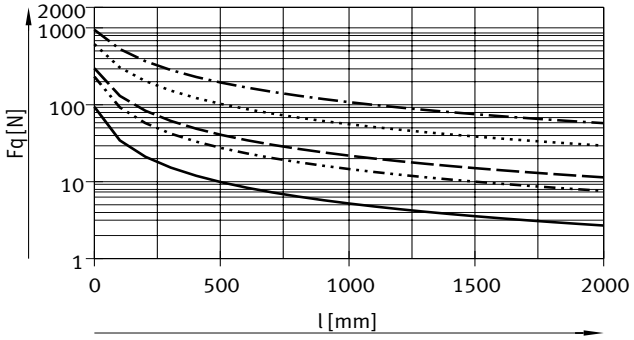
Data sheet

Max. transverse load Fq as a function of stroke length l

Horizontal installation



Vertical installation



Diameter 32
Diameter 40
Diameter 50/63
Diameter 80/100
Diameter 125

Note

No transverse loads are permitted in combination with characteristic DSBG-...-L1.

Permissible torsional backlash with variant Q – With protection against rotation							
Piston diameter		32	40	50	63	80	100
Torsional backlash	[°]	±0.65	±0.6	±0.45	±0.45	±0.45	±0.45

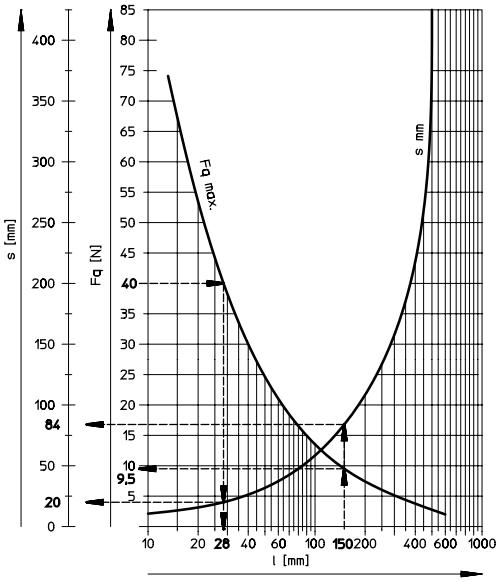
Data sheet

Max. transverse load Fq as a function of stroke length l and lever arm s

Q – With protection against rotation

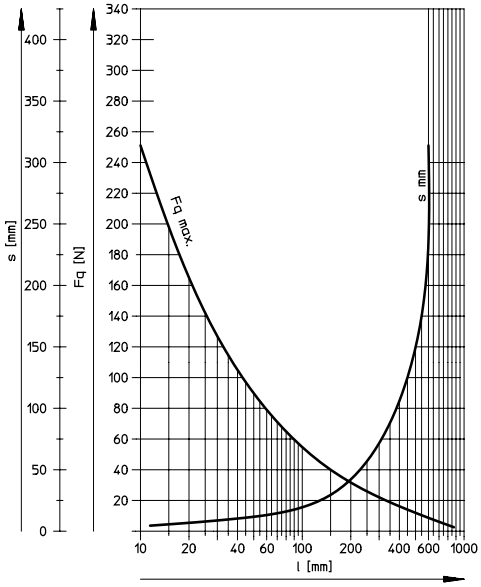
Diameter 32

Max. torque = 800 Nmm/max. stroke = 300 mm



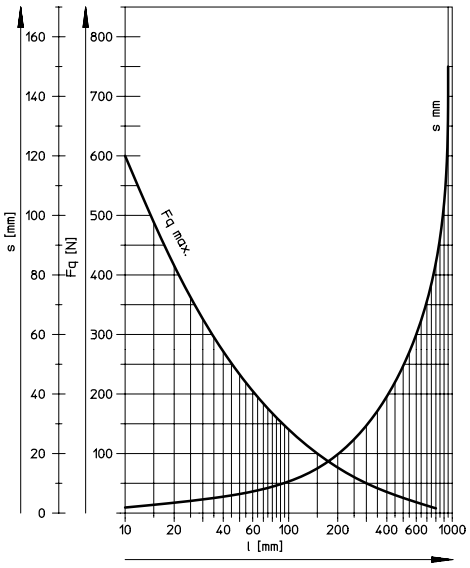
Diameter 40

Max. torque = 1100 Nmm/max. stroke = 400 mm



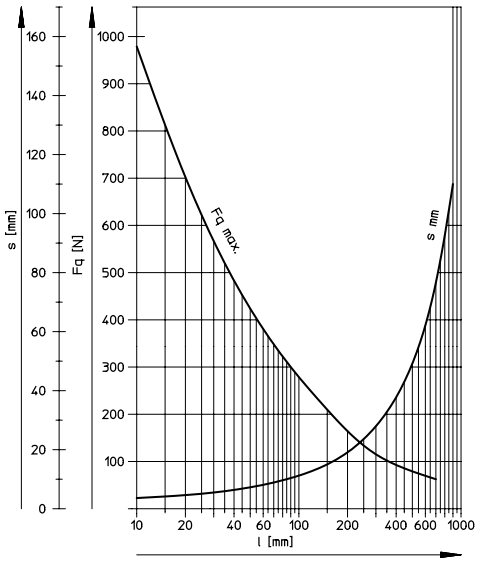
Diameter 50/63

Max. torque = 1500 Nmm/max. stroke = 500 mm



Diameter 80/100

Max. torque = 3000 Nmm/max. stroke = 600 mm



Data sheet

Examples for piston diameter 32 mm

Example 1:
Stroke length l = 150 mm
Result: permissible
Transverse load Fq = 9.5 N
Lever arm s = 84 mm

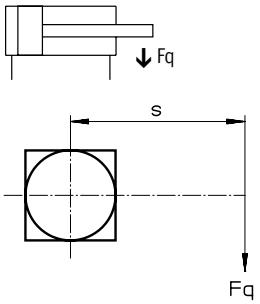
Example 2:
Transverse load Fq = 40 N
Result: permissible
Stroke length l = 28 mm
Lever arm s = 20 mm

Example 3:
Stroke length l = 150 mm
Lever arm s = 100 mm

$$F_q = \frac{M}{s} = \frac{800\ Nmm}{100\ mm}$$

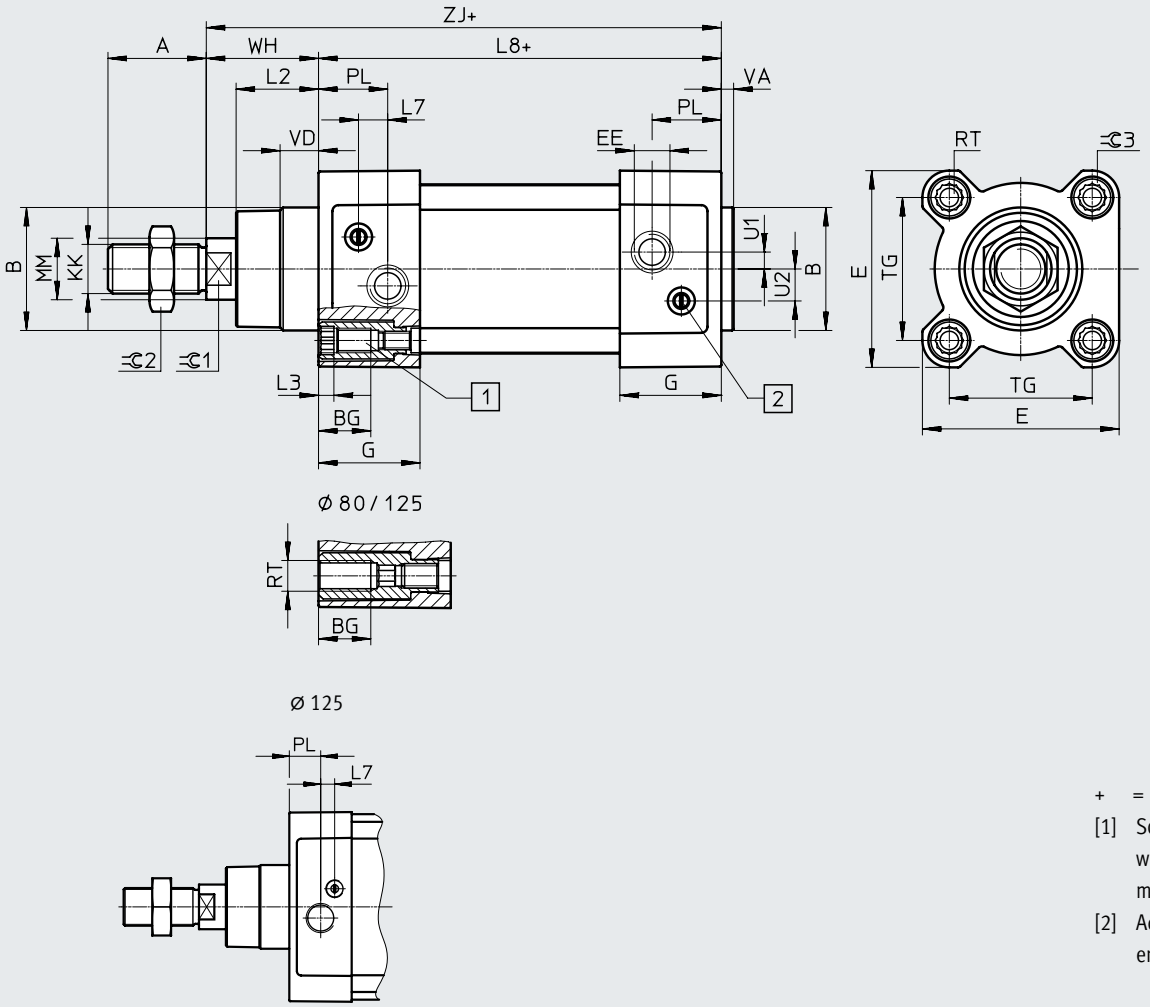
M = max. torque
s = lever arm

Result: permissible
Fq= 8 N ‹ $Fq_{max.}$ = 9.5 N



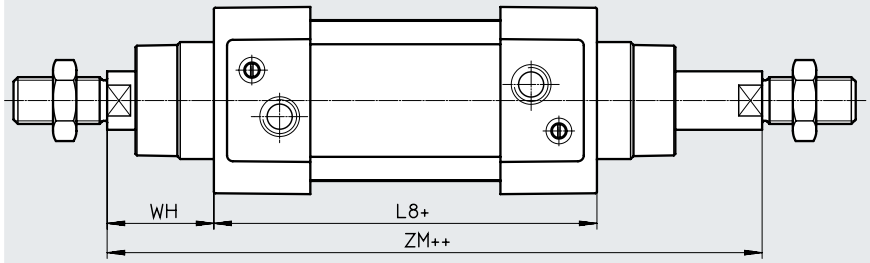
Data sheet

Dimensions Download CAD data ➔ www.festo.com



\+ = plus stroke length
[1] Socket head screw with female thread for mounting components
[2] Adjusting screw for adjustable end-position cushioning (PPV)

Variant
T – Through piston rod



\+ = plus stroke length
++ = plus 2x stroke length

Data sheet

ø [mm]	A –0.5	B ø d11	BG min.	E +0.5	EE	G –0.2	L2	L3 max.
32	22	30	16	45	G1/8	28	$18_{-0.2}$	5
40	24	35	16	54	G1/4	33	$21.3_{-0.2}$	5
50	32	40	16	64	G1/4	33	$26.8_{-0.2}$	5
63	32	45	16	75	G3/8	40.5	$27_{-0.2}$	5
80	40	45	17	93	G3/8	43	$34.2_{-0.2}$	–
100	40	55	17	110	G1/2	48	$38_{-0.2}$	–
125	54	60	20	136	G1/2	44.7	$45_{-0.3}$	–

ø [mm]	L7	L8 ±0.4	MM ø	PL ±0.1	RT	TG ±0.3	U1 ±0.1	U2 ±0.1
32	6.5	94	12	19.5	M6	32.5	5.25	5.7
40	7.5	105	16	22.5	M6	38	4	8
50	9.5	106	20	22.5	M8	46.5	5.5	10.4
63	9	121	20	27.5	M8	56.5	6.25	12.75
80	11	128	25	30	M10	72	8	12.5
100	7.5	138	25	31.5	M10	89	10	13.5
125	10	160	32	22.5	M12	110	8	13

ø [mm]	VA	VD +0.5	WH +2.2	ZJ +1.8	ZM +1	=⌀1	=⌀2	=⌀3
32	$4_{-0.2}$	10	25	119.1	146.1	10	17	6
40	$4_{-0.2}$	10.5	28.7	133.9	164.8	13	19	6
50	$4_{-0.2}$	11.5	35.6	141.8	179.8	17	24	8
63	$4_{-0.2}$	15	35.9	157.1	195.4	17	24	8
80	$4_{-0.2}$	15.7	45.4	173.6	221	22	30	6
100	$4_{-0.2}$	19.2	49.3	187.5	238.8	22	30	6
125	$6_{-0.3}$	20.5	64.1	225	290	27	41	8

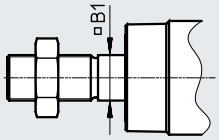
ø	KK	
	DSBG-...	
[mm]		-M... [1]
32	M10x1.25	–
40	M12x1.25	–
50	M16x1.5	–
63	M16x1.5	–
80	M20x1.5	M16/M16x1.5/M20
100	M20x1.5	M16/M16x1.5/M20
125	M27x2	M16/M16x1.5/M20/M20x1.5/M24/M27

1) Threads with smaller nominal diameter than in the basic version can generally not withstand such high loads. If necessary, the screw connection must be engineered.

Data sheet

Dimensions – Variants Download CAD data ➔ www.festo.com

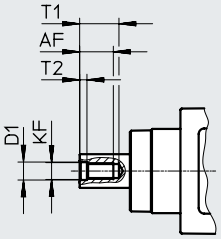
Q – With protection against rotation



Note

In combination with variant T, the piston rod is protected against rotation at one end.

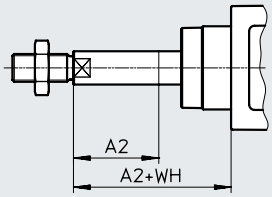
F – Female thread



Note

In combination with variant T, the piston rod has female threads at both ends.

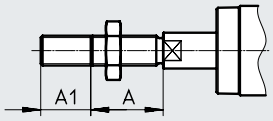
...E – Extended piston rod



Note

In combination with variant T, the piston rod is extended at one end.
In combination with variants T and Q, the piston rod is extended only at the square piston rod.

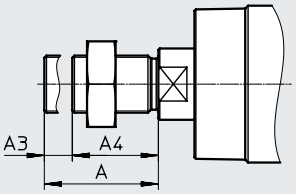
...L – Extended piston rod thread



Note

In combination with variant T, the piston rod thread is extended at both ends.

.....S – Shortened piston rod thread



Effective thread length: A4 = A – A3

Note

In combination with variant T, the piston rod thread is shortened at both ends.

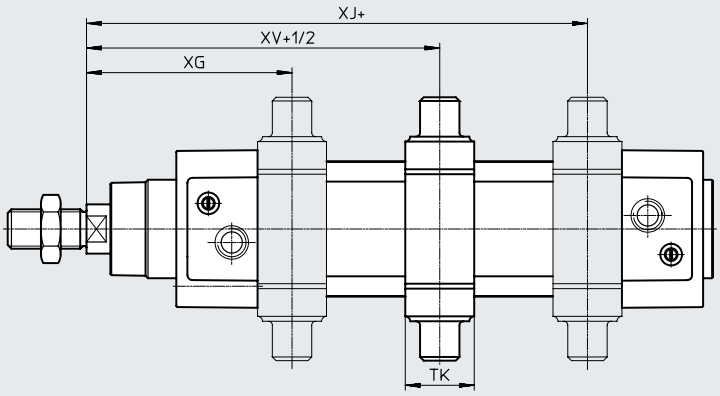
ø	A	A1		A2		A3	
[mm]		min.	max.	min.	max.	min.	max.
32	22	1	35	1	500	–	–
40	24	1	35	1	500	–	–
50	32	1	70	1	500	–	–
63	32	1	70	1	500	–	–
80	40	1	70	1	500	1	30
100	40	1	70	1	500	1	30
125	54	1	70	1	500	1	44

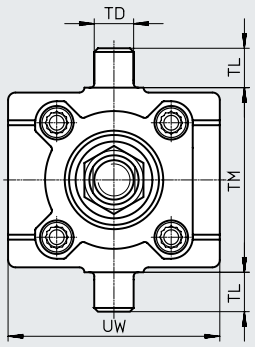
ø	AF	B1	D1	KF	T1	T2	WH
[mm]	min.				max.		+2.2
32	12	10	6.4	M6	16	2.6	25
40	12	12	8.4	M8	16	3.3	28.7
50	16	16	10.5	M10	21	4.7	35.6
63	16	16	10.5	M10	21	4.7	35.9
80	20	20	13	M12	26.5	6.1	45.4
100	20	20	13	M12	26.5	6.1	49.3
125	32	–	17	M16	40	8	64.1

Data sheet

Dimensions – Variants Download CAD data ➔ www.festo.com

...V – Swivel mounting position





Note

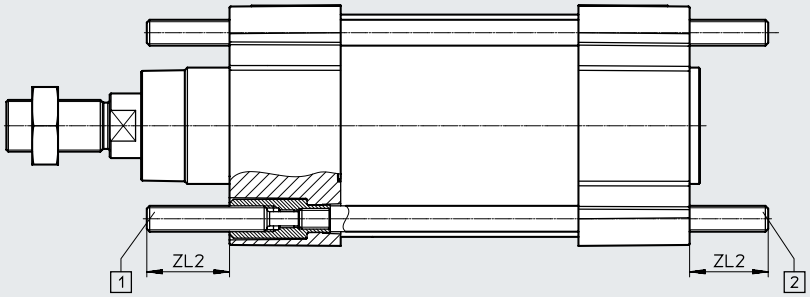
The dimensions for the swivel mounting position (...V) refer to the basic design without piston rod extension.

The swivel mounting can be moved at any time.

\+ = plus stroke length
+1/2 = plus half stroke length

Ø [mm]	TD Ø e9	TK	TL h14	TM h14	UW	XG min.	XJ max.	XV
32	12	20	12	50	65	64±1.4	81±1.4	73±1.4
40	16	25	16	63	72	74.2±1.4	88.4±1.4	81.2±1.4
50	16	28	16	75	86	82.6±1.4	94.8±1.4	88.6±1.4
63	20	30	20	90	98	91.4±1.8	101.6±1.8	96.4±1.8
80	20	32	20	110	110	104.4±1.8	114.6±1.8	109.4±1.8
100	25	38	25	132	136	116.3±1.8	120.5±1.8	118.3±1.8
125	25	44	25	160	160	131.7±1.8	158.3±1.8	145±1.8

...LB2/-LB3 – Thread length of spacer bolts



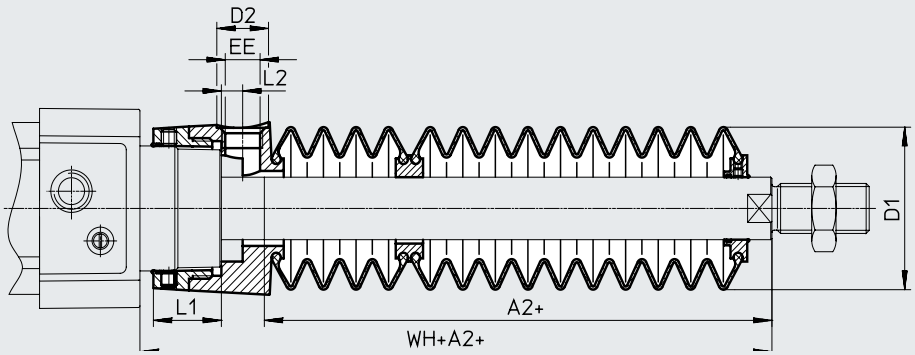
[1] = DSBG-...-LB2 (on the bearing cap)
[2] = DSBG-...-LB3 (on the end cap)

Ø [mm]	ZL2 ±1 min.	max.
80	20	140
100	20	140
125	24	140

Data sheet

Dimensions – Variants Download CAD data ➔ www.festo.com

P2 – Bellows on the bearing cap



\+ = plus stroke length

ø	32							40						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	29	38	14	G1/8	12.9	5.4	55	28	46	14	G1/8	16.3	5.4	56.7
51 ... 125	47						73	43						71.7
126 ... 175	61						87	56						84.7
176 ... 250	80						106	72						100.7
251 ... 300	96						122	86						114.7
301 ... 350	112						138	100						128.7
351 ... 375	114						140	101						129.7
376 ... 425	130						156	115						143.7
426 ... 475	145						171	130						158.7
476 ... 500	147						173	131						159.7

ø	50							63						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	28	57	17	G1/4	22.35	7	63.6	28	57	17	G1/4	22.4	7	63.9
51 ... 125	46						81.6	46						81.9
126 ... 175	56						91.6	56						91.9
176 ... 250	73						108.6	73						108.9
251 ... 300	86						121.6	86						121.9
301 ... 350	97						132.6	97						132.9
351 ... 375	105						140.6	105						140.9
376 ... 425	116						151.6	116						151.9
426 ... 475	126						161.6	126						161.9
476 ... 500	134						169.6	134						169.9

ø	80							100						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	25	93	17	G1/4	28	4	70.4	25	93	17	G1/4	28	4	74.3
51 ... 125	37						82.4	37						86.3
126 ... 175	49						94.4	49						98.3
176 ... 250	62						107.4	62						111.3
251 ... 300	74						119.4	74						123.3
301 ... 350	86						131.4	86						135.3
351 ... 375	87						132.4	87						136.3
376 ... 425	98						143.4	98						147.3
426 ... 475	110						155.4	110						159.3
476 ... 500	111						156.4	111						160.3

1) The dimension corresponds to the E value (piston rod extension) of the drive

Data sheet

Ordering data

Piston diam. [mm]	Stroke [mm]	With PPV cushioning		With PPS cushioning	
		Part no.	Type	Part no.	Type
32	25	**1638842**	**DSBG-32-25-PPVA-N3**	**1645460**	**DSBG-32-25-PPSA-N3**
	40	**1638843**	**DSBG-32-40-PPVA-N3**	**1645461**	**DSBG-32-40-PPSA-N3**
	50	**1638844**	**DSBG-32-50-PPVA-N3**	**1645462**	**DSBG-32-50-PPSA-N3**
	80	**1638845**	**DSBG-32-80-PPVA-N3**	**1645463**	**DSBG-32-80-PPSA-N3**
	100	**1638846**	**DSBG-32-100-PPVA-N3**	**1645464**	**DSBG-32-100-PPSA-N3**
	125	**1638848**	**DSBG-32-125-PPVA-N3**	**1645465**	**DSBG-32-125-PPSA-N3**
	160	**1638849**	**DSBG-32-160-PPVA-N3**	**1645466**	**DSBG-32-160-PPSA-N3**
	200	**1638850**	**DSBG-32-200-PPVA-N3**	**1645467**	**DSBG-32-200-PPSA-N3**
	250	**1638851**	**DSBG-32-250-PPVA-N3**	**1645468**	**DSBG-32-250-PPSA-N3**
	320	**1638852**	**DSBG-32-320-PPVA-N3**	**1645469**	**DSBG-32-320-PPSA-N3**
	400	**1638853**	**DSBG-32-400-PPVA-N3**	**1645470**	**DSBG-32-400-PPSA-N3**
	500	**1638854**	**DSBG-32-500-PPVA-N3**	**1645471**	**DSBG-32-500-PPSA-N3**
	1 ... 2800	**1634781**	**DSBG-32-...-PPVA-N3**	**1634560**	**DSBG-32-...-PPSA-N3**
40	25	**1646547**	**DSBG-40-25-PPVA-N3**	**1646559**	**DSBG-40-25-PPSA-N3**
	40	**1646548**	**DSBG-40-40-PPVA-N3**	**1646560**	**DSBG-40-40-PPSA-N3**
	50	**1646549**	**DSBG-40-50-PPVA-N3**	**1646561**	**DSBG-40-50-PPSA-N3**
	80	**1646550**	**DSBG-40-80-PPVA-N3**	**1646562**	**DSBG-40-80-PPSA-N3**
	100	**1646551**	**DSBG-40-100-PPVA-N3**	**1646563**	**DSBG-40-100-PPSA-N3**
	125	**1646552**	**DSBG-40-125-PPVA-N3**	**1646564**	**DSBG-40-125-PPSA-N3**
	160	**1646553**	**DSBG-40-160-PPVA-N3**	**1646565**	**DSBG-40-160-PPSA-N3**
	200	**1646554**	**DSBG-40-200-PPVA-N3**	**1646566**	**DSBG-40-200-PPSA-N3**
	250	**1646555**	**DSBG-40-250-PPVA-N3**	**1646567**	**DSBG-40-250-PPSA-N3**
	320	**1646556**	**DSBG-40-320-PPVA-N3**	**1646568**	**DSBG-40-320-PPSA-N3**
	400	**1646557**	**DSBG-40-400-PPVA-N3**	**1646569**	**DSBG-40-400-PPSA-N3**
	500	**1646558**	**DSBG-40-500-PPVA-N3**	**1646570**	**DSBG-40-500-PPSA-N3**
	1 ... 2800	**1644503**	**DSBG-40-...-PPVA-N3**	**1645473**	**DSBG-40-...-PPSA-N3**
50	25	**1646709**	**DSBG-50-25-PPVA-N3**	**1646723**	**DSBG-50-25-PPSA-N3**
	40	**1646710**	**DSBG-50-40-PPVA-N3**	**1646724**	**DSBG-50-40-PPSA-N3**
	50	**1646711**	**DSBG-50-50-PPVA-N3**	**1646725**	**DSBG-50-50-PPSA-N3**
	80	**1646712**	**DSBG-50-80-PPVA-N3**	**1646726**	**DSBG-50-80-PPSA-N3**
	100	**1646713**	**DSBG-50-100-PPVA-N3**	**1646727**	**DSBG-50-100-PPSA-N3**
	125	**1646714**	**DSBG-50-125-PPVA-N3**	**1646728**	**DSBG-50-125-PPSA-N3**
	160	**1646715**	**DSBG-50-160-PPVA-N3**	**1646729**	**DSBG-50-160-PPSA-N3**
	200	**1646716**	**DSBG-50-200-PPVA-N3**	**1646730**	**DSBG-50-200-PPSA-N3**
	250	**1646717**	**DSBG-50-250-PPVA-N3**	**1646731**	**DSBG-50-250-PPSA-N3**
	320	**1646718**	**DSBG-50-320-PPVA-N3**	**1646732**	**DSBG-50-320-PPSA-N3**
	400	**1646719**	**DSBG-50-400-PPVA-N3**	**1646733**	**DSBG-50-400-PPSA-N3**
	500	**1646720**	**DSBG-50-500-PPVA-N3**	**1646734**	**DSBG-50-500-PPSA-N3**
	1 ... 2800	**1646708**	**DSBG-50-...-PPVA-N3**	**1646722**	**DSBG-50-...-PPSA-N3**

Note

Other variants in the modular product system ➔ page 24

Data sheet

Ordering data

Piston diam. [mm]	Stroke [mm]	With PPV cushioning		With PPS cushioning	
		Part no.	Type	Part no.	Type
63	25	**1646740**	**DSBG-63-25-PPVA-N3**	**1646754**	**DSBG-63-25-PPSA-N3**
	40	**1646741**	**DSBG-63-40-PPVA-N3**	**1646755**	**DSBG-63-40-PPSA-N3**
	50	**1646742**	**DSBG-63-50-PPVA-N3**	**1646756**	**DSBG-63-50-PPSA-N3**
	80	**1646743**	**DSBG-63-80-PPVA-N3**	**1646757**	**DSBG-63-80-PPSA-N3**
	100	**1646744**	**DSBG-63-100-PPVA-N3**	**1646758**	**DSBG-63-100-PPSA-N3**
	125	**1646745**	**DSBG-63-125-PPVA-N3**	**1646760**	**DSBG-63-125-PPSA-N3**
	160	**1646746**	**DSBG-63-160-PPVA-N3**	**1646761**	**DSBG-63-160-PPSA-N3**
	200	**1646747**	**DSBG-63-200-PPVA-N3**	**1646762**	**DSBG-63-200-PPSA-N3**
	250	**1646748**	**DSBG-63-250-PPVA-N3**	**1646763**	**DSBG-63-250-PPSA-N3**
	320	**1646749**	**DSBG-63-320-PPVA-N3**	**1646764**	**DSBG-63-320-PPSA-N3**
	400	**1646750**	**DSBG-63-400-PPVA-N3**	**1646765**	**DSBG-63-400-PPSA-N3**
	500	**1646751**	**DSBG-63-500-PPVA-N3**	**1646766**	**DSBG-63-500-PPSA-N3**
	1 ... 2800	**1646739**	**DSBG-63-...-PPVA-N3**	**1646753**	**DSBG-63-...-PPSA-N3**
80	25	**1646771**	**DSBG-80-25-PPVA-N3**	**1646785**	**DSBG-80-25-PPSA-N3**
	40	**1646772**	**DSBG-80-40-PPVA-N3**	**1646786**	**DSBG-80-40-PPSA-N3**
	50	**1646773**	**DSBG-80-50-PPVA-N3**	**1646787**	**DSBG-80-50-PPSA-N3**
	80	**1646774**	**DSBG-80-80-PPVA-N3**	**1646788**	**DSBG-80-80-PPSA-N3**
	100	**1646775**	**DSBG-80-100-PPVA-N3**	**1646789**	**DSBG-80-100-PPSA-N3**
	125	**1646776**	**DSBG-80-125-PPVA-N3**	**1646790**	**DSBG-80-125-PPSA-N3**
	160	**1646777**	**DSBG-80-160-PPVA-N3**	**1646791**	**DSBG-80-160-PPSA-N3**
	200	**1646778**	**DSBG-80-200-PPVA-N3**	**1646792**	**DSBG-80-200-PPSA-N3**
	250	**1646779**	**DSBG-80-250-PPVA-N3**	**1646793**	**DSBG-80-250-PPSA-N3**
	320	**1646780**	**DSBG-80-320-PPVA-N3**	**1646794**	**DSBG-80-320-PPSA-N3**
	400	**1646781**	**DSBG-80-400-PPVA-N3**	**1646795**	**DSBG-80-400-PPSA-N3**
	500	**1646782**	**DSBG-80-500-PPVA-N3**	**1646796**	**DSBG-80-500-PPSA-N3**
	1 ... 2800	**1646770**	**DSBG-80-...-PPVA-N3**	**1646784**	**DSBG-80-...-PPSA-N3**
100	25	**1646801**	**DSBG-100-25-PPVA-N3**	**1646815**	**DSBG-100-25-PPSA-N3**
	40	**1646802**	**DSBG-100-40-PPVA-N3**	**1646816**	**DSBG-100-40-PPSA-N3**
	50	**1646803**	**DSBG-100-50-PPVA-N3**	**1646817**	**DSBG-100-50-PPSA-N3**
	80	**1646804**	**DSBG-100-80-PPVA-N3**	**1646818**	**DSBG-100-80-PPSA-N3**
	100	**1646805**	**DSBG-100-100-PPVA-N3**	**1646819**	**DSBG-100-100-PPSA-N3**
	125	**1646806**	**DSBG-100-125-PPVA-N3**	**1646820**	**DSBG-100-125-PPSA-N3**
	160	**1646807**	**DSBG-100-160-PPVA-N3**	**1646821**	**DSBG-100-160-PPSA-N3**
	200	**1646808**	**DSBG-100-200-PPVA-N3**	**1646822**	**DSBG-100-200-PPSA-N3**
	250	**1646809**	**DSBG-100-250-PPVA-N3**	**1646823**	**DSBG-100-250-PPSA-N3**
	320	**1646810**	**DSBG-100-320-PPVA-N3**	**1646824**	**DSBG-100-320-PPSA-N3**
	400	**1646811**	**DSBG-100-400-PPVA-N3**	**1646825**	**DSBG-100-400-PPSA-N3**
	500	**1646812**	**DSBG-100-500-PPVA-N3**	**1646826**	**DSBG-100-500-PPSA-N3**
	1 ... 2800	**1646800**	**DSBG-100-...-PPVA-N3**	**1646814**	**DSBG-100-...-PPSA-N3**

Note

Other variants in the modular product system ➔ page 24

Data sheet

Ordering data

Piston diam. [mm]	Stroke [mm]	With PPV cushioning		With PPS cushioning	
		Part no.	Type	Part no.	Type
125	25	**2159622**	**DSBG-125-25-PPVA-N3**	**2159907**	**DSBG-125-25-PPSA-N3**
	40	**2159623**	**DSBG-125-40-PPVA-N3**	**2159908**	**DSBG-125-40-PPSA-N3**
	50	**2159624**	**DSBG-125-50-PPVA-N3**	**2159909**	**DSBG-125-50-PPSA-N3**
	80	**2159625**	**DSBG-125-80-PPVA-N3**	**2159910**	**DSBG-125-80-PPSA-N3**
	100	**2159626**	**DSBG-125-100-PPVA-N3**	**2159911**	**DSBG-125-100-PPSA-N3**
	125	**2159627**	**DSBG-125-125-PPVA-N3**	**2159912**	**DSBG-125-125-PPSA-N3**
	160	**2159628**	**DSBG-125-160-PPVA-N3**	**2159913**	**DSBG-125-160-PPSA-N3**
	200	**2159629**	**DSBG-125-200-PPVA-N3**	**2159915**	**DSBG-125-200-PPSA-N3**
	250	**2159630**	**DSBG-125-250-PPVA-N3**	**2159916**	**DSBG-125-250-PPSA-N3**
	320	**2159631**	**DSBG-125-320-PPVA-N3**	**2159917**	**DSBG-125-320-PPSA-N3**
	400	**2159632**	**DSBG-125-400-PPVA-N3**	**2159918**	**DSBG-125-400-PPSA-N3**
	500	**2159633**	**DSBG-125-500-PPVA-N3**	**2159919**	**DSBG-125-500-PPSA-N3**
	1 ... 2800	**2158455**	**DSBG-125-...-PPVA-N3**	**2158471**	**DSBG-125-...-PPSA-N3**

Note

Other variants in the modular product system ➔ page 24

Ordering data – Modular product system

Ordering table

Size		32	40	50	63	80	100	125	Conditions	Code	Enter code
Module no.		**1634484**	**1645477**	**1646707**	**1646738**	**1646769**	**1646799**	**2045493**			
Function		Standards-based cylinder, double-acting, based on ISO 15552								**DSBG**	DSBG
Protection against rotation		Without									
		With protection against rotation						–	[1]	**-Q**	
Running characteristics		Standard									
		Low friction						–	[2]	**L**	
		Constant, slow movement							[2]	**U**	
		Low friction for balancer applications							[3]	**L1**	
Piston diameter	[mm]	32	40	50	63	80	100	125		**-...**	
Stroke	[mm]	1 ... 2800								**-...**	
Piston rod type		At one end									
		Through piston rod								**-T**	
Piston rod thread type		Male thread									
		Female thread							[4]	**F**	
Cushioning		Elastic cushioning rings/plates at both ends								**-P**	
		Pneumatic cushioning, self-adjusting at both ends							[5]	**-PPS**	
		Pneumatic cushioning, adjustable at both ends								**-PPV**	
Position sensing		Via proximity switch								**A**	A
Standard		Based on ISO 15552									
		Complies with ISO 15552								**-N3**	
Corrosion protection		Standard									
		High corrosion protection							[6]	**R3**	
Temperature range		Standard									
	[°C]	Heat-resistant seals up to max. 120							[7]	**T1**	
	[°C]	–40 ... +80							[7]	**T3**	
	[°C]	0 ... +150							[7]	**T4**	

[1] Q — Not with L, U, N3, T3, T4, P2, A2, A3, A6; Only up to stroke of 1500 mm
[2] L, U — Not with T, R3, T1, T3, T4, P2, A2, A3, A6, EX4
[3] L1 — Not with T, PPV, R3, T1, T3, T4, P2, A2, A3, A6, EX4
[4] F — Not with N3, ...L, M...
[5] PPS — Not with T1, T3, T4
[6] R3 — Not with A2, A6, ...V
[7] T1, T3, T4 — Not with P2, A2, A3, EX4

Note

If characteristic L is used in combination with transverse loads or strokes of above 500 mm, suitable measures must be taken to support the piston rod.
The operating pressure (➔ page 10) is applicable for strokes up to 500 mm.

Note

If characteristic L1 is used in combination with strokes of above 500 mm, suitable measures must be taken to support the piston rod.
The operating pressure (➔ page 10) is applicable for strokes up to 500 mm.

Ordering data – Modular product system

Ordering table

Size		32	40	50	63	80	100	125	Conditions	Code	Enter code
Protection against particles		Standard									
		Bellows on bearing cap						–	[8]	**P2**	
Wiper variant		None									
		Hard scraper								**A2**	
		For unlubricated operation								**A3**	
		Metal scraper								**A6**	
EU certification		None									
		II 2GD							[9]	**EX4**	
Swivel mounting position	[mm]	Without									
		0 ... 2800								**-...V**	
Extended piston rod	[mm]	Without									
		1 ... 500							[10]	**-...E**	
Extended piston rod thread	[mm]	Without									
		1 ... 35		1 ... 70					[10]	**-...L**	
Shortened piston rod thread	[mm]	Without									
		–				1 ... 30		1 ... 44		**-...S**	
Piston rod thread		Standard (→ 17)									
		–				M16			[11]	**-M16**	
						M16x1.5			[11]	**-M16P**	
						M20			[11]	**-M20**	
						–		M20x1.5	[11]	**-M20P**	
								M24	[11]	**-M24**	
								M27	[11]	**-M27**	
Thread length of spacer bolts	[mm]	Without									
		–				On the bearing cap			[11]	**-...LB2**	
						20 ... 140		24 ... 140			
		–				On the end cap			[11]	**-...LB3**	
						20 ... 140		24 ... 140			

[8] P2 Not with N3, A2, A3, A6, EX4
Only for strokes 10 ... 500 mm
[9] EX4 Not with T1, T3, T4, P2, A3, A6, ...LB2, ...LB3
[10] ...E, ...L Only up to stroke of 2000 mm.
Not with N3
[11] M..., LB... Not with N3

Note

The piston rod extension for the bellows is automatically taken into consideration when characteristic P2 is selected. This means that there is no need to specify a value for characteristic ...E.

Note

When characteristic ...E is selected in combination with characteristic P2, the part of the piston rod extension ...E is not covered by the bellows.

Note

When characteristic P2 is selected in combination with characteristic T (through piston rod), the bellows is mounted at one end only.

Note

If a thread smaller than the standard thread is selected for characteristic M... (piston rod thread), this may reduce the load capacity.

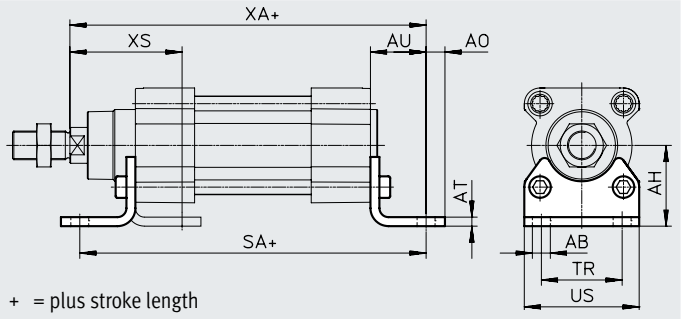
Note

When characteristic M... is selected, the piston rod nut is not included.

Accessories

Foot mounting HNC/CRHNC

Material:
HNC: galvanised steel
CRHNC: high-alloy steel
Free of copper and PTFE



Dimensions and ordering data

For diam. [mm]	AB ø	AH	AO	AT	AU	SA	TR	US	XA	XS
32	7	32	6.5	4	24	142	32	45	143.1	46
40	10	36	9	4	28	161	36	54	161.9	52.7
50	10	45	9.5	5	32	170	45	64	173.8	62.6
63	10	50	12.5	5	32	185	50	75	189.1	62.9
80	12	63	15	6	41	210	63	93	214.6	80.4
100	14.5	71	17.5	6	41	220	75	110	228.5	84.3
125	16.5	90	22	8	45	250	90	131	270	102

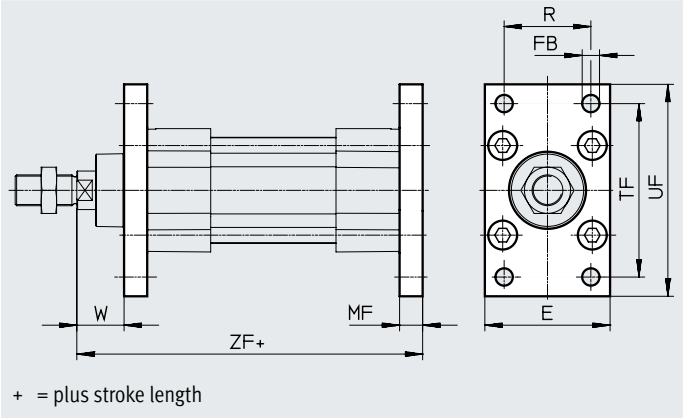
For diam.	Basic type				Corrosion-resistant			
[mm]	CRC[1]	Weight [g]	Part no.	Type[2]	CRC[1]	Weight [g]	Part no.	Type[2]
32	2	144	**174369**	**HNC-32**	4	139	**176937**	**CRHNC-32**
40	2	193	**174370**	**HNC-40**	4	188	**176938**	**CRHNC-40**
50	2	353	**174371**	**HNC-50**	4	341	**176939**	**CRHNC-50**
63	2	436	**174372**	**HNC-63**	4	424	**176940**	**CRHNC-63**
80	2	829	**174373**	**HNC-80**	4	809	**176941**	**CRHNC-80**
100	2	1009	**174374**	**HNC-100**	4	990	**176942**	**CRHNC-100**
125	2	1902	**174375**	**HNC-125**	4	1920	**176943**	**CRHNC-125**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.
2) Suitable for ATEX

Accessories

Flange mounting FNC/CRFNG

Material:
FNC: galvanised steel
CRFNG: high-alloy steel
Free of copper and PTFE
RoHS-compliant



+ = plus stroke length

Dimensions and ordering data

For diam. [mm]	E	FB ø H13	MF	R	TF	UF	W	ZF
32	45	7	10	32	64	80	16	129.1
40	54	9	10	36	72	90	18.7	143.9
50	65	9	12	45	90	110	23.6	153.8
63	75	9	12	50	100	120	23.9	169.1
80	93	12	16	63	126	150	29.4	189.6
100	110	14	16	75	150	175	33.3	203.5
125	132	16	20	90	180	210	45	245

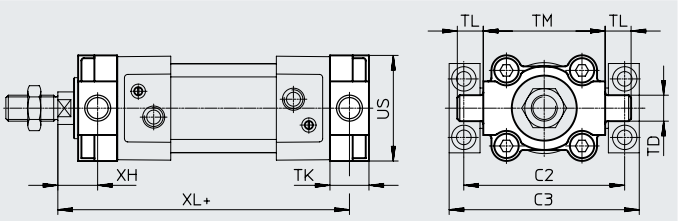
For diam.	Basic type				Corrosion-resistant			
[mm]	CRC[1]	Weight [g]	Part no.	Type[2]	CRC[1]	Weight [g]	Part no.	Type[2]
32	1	221	**174376**	**FNC-32**	4	220	**161846**	**CRFNG-32**
40	1	291	**174377**	**FNC-40**	4	291	**161847**	**CRFNG-40**
50	1	536	**174378**	**FNC-50**	4	526	**161848**	**CRFNG-50**
63	1	679	**174379**	**FNC-63**	4	680	**161849**	**CRFNG-63**
80	1	1495	**174380**	**FNC-80**	4	1508	**161850**	**CRFNG-80**
100	1	2041	**174381**	**FNC-100**	4	2054	**161851**	**CRFNG-100**
125	1	3775	**174382**	**FNC-125**	4	3787	**185363**	**CRFNG-125**

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.
2) Suitable for ATEX

Accessories

Trunnion flange ZNCF/CRZNG

Material:
ZNCF: stainless steel casting
CRZNG: electropolished stainless steel casting
Free of copper and PTFE
RoHS-compliant



+ = plus stroke length

Dimensions and ordering data

For diam. [mm]	C2	C3	TD ø e9	TK	TL	TM	US	XH	XL
32	71	86	12	16	12	50	45	18	127.1
40	87	105	16	20	16	63	54	18.7	143.9
50	99	117	16	24	16	75	64	23.6	153.8
63	116	136	20	24	20	90	75	23.9	169.1
80	136	156	20	28	20	110	93	31.4	187.6
100	164	189	25	38	25	132	110	30.3	206.5
125	192	217	25	50	25	160	131	40	250

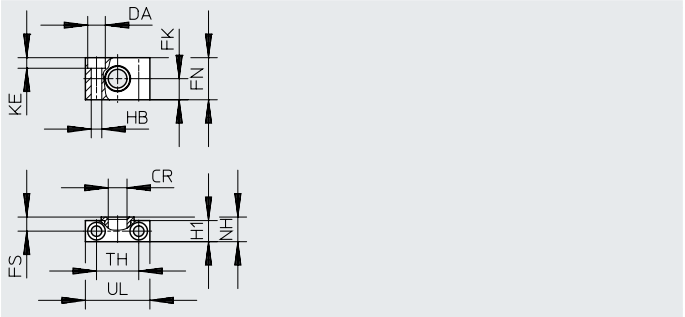
For diam.	Basic type				Corrosion-resistant			
[mm]	CRC[1]	Weight [g]	Part no.	Type[2]	CRC[1]	Weight [g]	Part no.	Type[2]
32	2	150	**174411**	**ZNCF-32**	4	150	**161852**	**CRZNG-32**
40	2	285	**174412**	**ZNCF-40**	4	285	**161853**	**CRZNG-40**
50	2	473	**174413**	**ZNCF-50**	4	473	**161854**	**CRZNG-50**
63	2	687	**174414**	**ZNCF-63**	4	687	**161855**	**CRZNG-63**
80	2	1296	**174415**	**ZNCF-80**	4	1296	**161856**	**CRZNG-80**
100	2	2254	**174416**	**ZNCF-100**	4	2254	**161857**	**CRZNG-100**
125	2	3484	**174417**	**ZNCF-125**	4	3484	**185362**	**CRZNG-125**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.
2) Suitable for ATEX

Accessories

Trunnion support LNZG

Material:
Trunnion support: anodised aluminium
Plain bearing: plastic
Free of copper and PTFE
RoHS-compliant



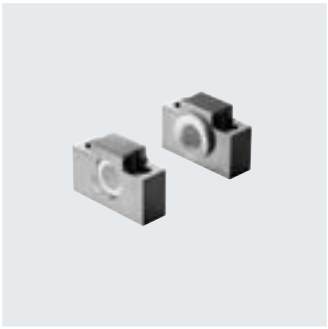
Dimensions and ordering data

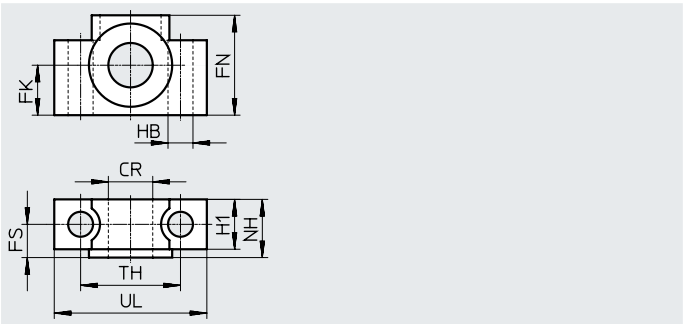
For diam. [mm]	CR ø D11	DA ø H13	FK ø ±0.1	FN	FS	H1	HB ø H13	KE	NH	TH ±0.2	UL	CRC[1]	Weight [g]	Part no.	Type
32	12	11	15	30	10.5	15	6.6	6.8	18	32	46	2	83	**32959**	**LNZG-32**
40, 50	16	15	18	36	12	18	9	9	21	36	55	2	129	**32960**	**LNZG-40/50**
63, 80	20	18	20	40	13	20	11	11	23	42	65	2	178	**32961**	**LNZG-63/80**
100, 125	25	20	25	50	16	24.5	14	13	28.5	50	75	2	306	**32962**	**LNZG-100/125**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Trunnion support CRLNZG

Material:
High-alloy steel
Free of copper and PTFE
RoHS-compliant





Dimensions and ordering data

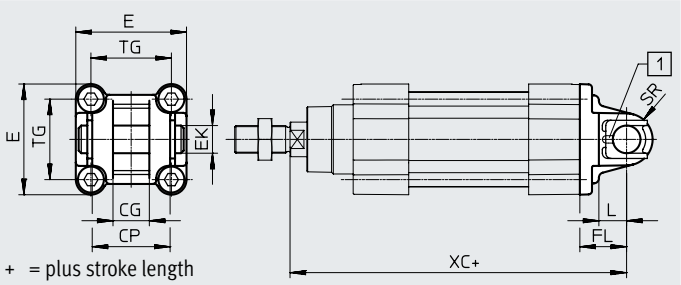
For diam. [mm]	CR ø D11	FK ø ±0.1	FN	FS	H1	HB ø H13	NH	TH ±0.2	UL	CRC[1]	Weight [g]	Part no.	Type
32	12	15	30	10.5	15	6.6	18	32	46	4	205	**161874**	**CRLNZG-32**
40, 50	16	18	36	12	18	9	21	36	55	4	323	**161875**	**CRLNZG-40/50**
63, 80	20	20	40	13	20	11	23	42	65	4	435	**161876**	**CRLNZG-63/80**
100, 125	25	25	50	16	24.5	14	28.5	50	75	4	739	**161877**	**CRLNZG-100/125**

1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.

Accessories

Swivel flange SNC

Material:
Die-cast aluminium
RoHS-compliant



\+ = plus stroke length

[1] The pivot pin is secured against rotation with a spring pin.

Dimensions and ordering data

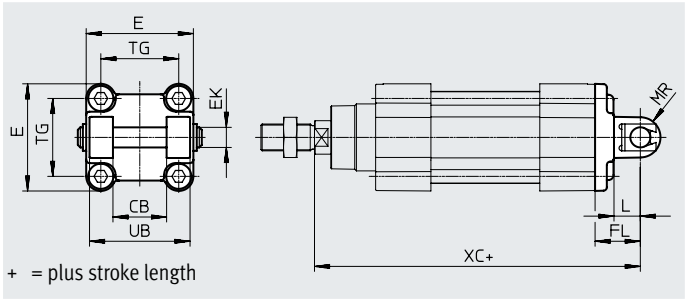
For diam. [mm]	CG H14	CP h14	E	EK ø H9	FL ±0.2	L	SR	TG	XC	CRC[1]	Weight [g]	Part no.	Type[2]
32	14	34	45+0.2/–0.5	10	22	13	10	32.5	141.1	1	93	**174383**	**SNC-32**
40	16	40	$54_{-0.5}$	12	25	16	12	38	158.9	1	140	**174384**	**SNC-40**
50	21	45	$64_{-0.6}$	16	27	16	12	46.5	168.8	1	234	**174385**	**SNC-50**
63	21	51	$75_{-0.6}$	16	32	21	16	56.5	189.1	1	331	**174386**	**SNC-63**
80	25	65	$93_{-0.8}$	20	36	22	16	72	209.6	1	618	**174387**	**SNC-80**
100	25	75	110+0.3/–0.8	20	41	27	20	89	228.5	1	865	**174388**	**SNC-100**
125	37	97	$131_{-0.8}$	30	50	30	25	110	275	1	1728	**174389**	**SNC-125**

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
2) Suitable for ATEX

Accessories

Swivel flange
SNCB/SNCB-...-R3

Material:
SNCB: die-cast aluminium
SNCB-...-R3: die-cast aluminium with protective coating
Free of copper and PTFE
RoHS-compliant



Dimensions and ordering data

For diam. [mm]	CB H14	E	EK ø H9/e8	FL ±0.2	L	MR –0.5	TG	UB h14	XC
32	26	45+0.2/–0.5	10	22	13	8.5	32.5	45	141.1
40	28	54–0.5	12	25	16	12	38	52	158.9
50	32	64–0.6	12	27	16	12	46.5	60	168.8
63	40	75–0.6	16	32	21	16	56.5	70	189.1
80	50	93–0.8	16	36	22	16	72	90	209.6
100	60	110+0.3/–0.8	20	41	27	20	89	110	228.5
125	70	131–0.8	25	50	30	25	110	130	275

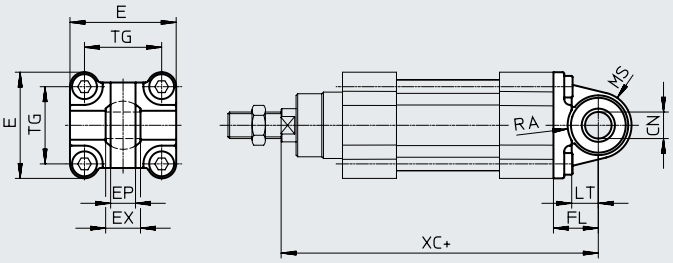
For diam.	Basic type				R3 – High corrosion protection			
[mm]	CRC[1)]	Weight [g]	Part no.	Type	CRC[1)]	Weight [g]	Part no.	Type
32	1	103	**174390**	**SNCB-32**	3	100	**176944**	**SNCB-32-R3**
40	1	155	**174391**	**SNCB-40**	3	151	**176945**	**SNCB-40-R3**
50	1	232	**174392**	**SNCB-50**	3	228	**176946**	**SNCB-50-R3**
63	1	375	**174393**	**SNCB-63**	3	371	**176947**	**SNCB-63-R3**
80	1	636	**174394**	**SNCB-80**	3	632	**176948**	**SNCB-80-R3**
100	1	1035	**174395**	**SNCB-100**	3	986	**176949**	**SNCB-100-R3**
125	1	1860	**174396**	**SNCB-125**	3	1776	**176950**	**SNCB-125-R3**

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Accessories

Swivel flange
SNCS/CRSNCS/SNCS-...-R3

Material:
SNCS 32 ... 50:
Die-cast aluminium
SNCS 63 ... 125:
Wrought aluminium alloy
CRSNCS 32 ... 80:
High-alloy stainless steel
SNCS-...-R3 100 ... 125:
Wrought aluminium alloy with protective coating
RoHS-compliant



\+ = plus stroke length

Dimensions and ordering data

For diam.	CN Ø		E		EP	EX	FL
[mm]	DSBG-...	DSBG-...-R3	DSBG-...	DSBG-...-R3	±0.2		±0.2
32	10$^{+0.013}$	10+0.015/–0.04	45+0.2/–0.5	45–0.5	10.5	14	22
40	12$^{+0.015}$	12+0.018/–0.04	54$_{-0.5}$	54$_{-0.5}$	12	16	25
50	16$^{+0.015}$	16+0.018/–0.04	64$_{-0.6}$	64$_{-0.6}$	15	21	27
63	16$^{+0.015}$	16+0.018/–0.04	74.5±0.5	75$_{-0.6}$	15	21	32
80	20$^{+0.018}$	20+0.021/–0.04	92.2±0.8	93$_{-0.8}$	18	25	36
100	20$^{+0.018}$	20+0.021/–0.04	109+1/–0.7	109+1/–0.7	18	25	41
125	30$^{+0.018}$	30+0.021/–0.04	132+1/–0.7	132+1/–0.7	25	37	50

For diam.	LT	MS		RA		TG	XC
		DSBG	DSBG-...-R3	DSBG +1	DSBG-...-R3 +1		
[mm]							
32	13	15$^{+0.5}$	15$^{+0.5}$	14.5	14.5	32.5	141.1
40	16	17$^{+0.5}$	17$^{+0.5}$	17.5	17.5	38	158.9
50	16	20$^{+0.5}$	20$^{+0.5}$	18.5	19	46.5	168.8
63	21	23$_{-0.5}$	22$^{+0.5}$	23	23	56.5	189.1
80	22	28$_{-0.5}$	27$^{+0.5}$	25	25	72	209.6
100	27	30±0.5	30±0.5	95	100	89	228.5
125	30	39±0.5	39±0.5	100	100	110	275

For diam.	Basic type				High corrosion protection			
	CRC[1)]	Weight	Part no.	Type	CRC[1)]	Weight	Part no.	Type
[mm]		[g]				[g]		
32	1	86	**174397**	**SNCS-32**	4	161	**2895920**	**CRSNCS-32**
40	1	122	**174398**	**SNCS-40**	4	239	**2895921**	**CRSNCS-40**
50	1	216	**174399**	**SNCS-50**	4	403	**2895922**	**CRSNCS-50**
63	2	281	**174400**	**SNCS-63**	4	576	**2895923**	**CRSNCS-63**
80	2	557	**174401**	**SNCS-80**	4	1173	**2895924**	**CRSNCS-80**
100	2	683	**174402**	**SNCS-100**	3	684	**2895925**	**SNCS-100-R3**
125	2	1369	**174403**	**SNCS-125**	3	1369	**2895926**	**SNCS-125-R3**

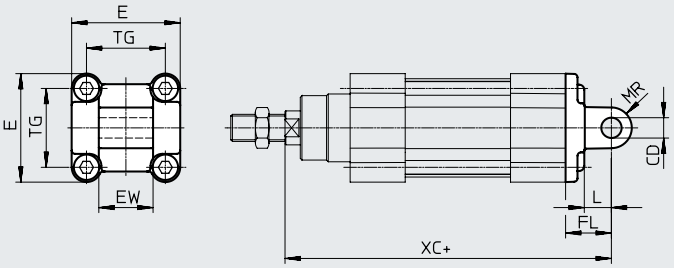
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.
Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.

Accessories

Swivel flange SNCL

Material:
Die-cast aluminium
Free of copper and PTFE
RoHS-compliant



\+ = plus stroke length

Dimensions and ordering data

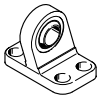
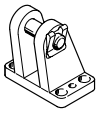
For diam. [mm]	CD ø H9	E	EW h12	FL ±0.2	L	MR	TG	XC	CRC[1]	Weight [g]	Part no.	Type
32	10	$45^{+0.2}_{-0.5}$	26	22	13	10	32.5	141.1	1	71	**174404**	**SNCL-32**
40	12	$54_{-0.5}$	28	25	16	12	38	158.9	1	95	**174405**	**SNCL-40**
50	12	$64_{-0.6}$	32	27	16	12	46.5	168.8	1	158	**174406**	**SNCL-50**
63	16	$75_{-0.6}$	40	32	21	16	56.5	189.1	1	225	**174407**	**SNCL-63**
80	16	$93_{-0.8}$	50	36	22	16	72	209.6	1	436	**174408**	**SNCL-80**
100	20	$110^{+0.3}_{-0.8}$	60	41	27	20	89	228.5	1	606	**174409**	**SNCL-100**
125	25	$131_{-0.8}$	70	50	30	25	110	275	1	1135	**174410**	**SNCL-125**

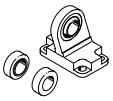
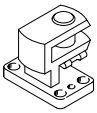
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Accessories

Ordering data – Mounting components

Data sheets → Internet: clevis foot

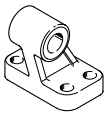
Designation	For diameter	Part no.	Type
Clevis foot LNG			
	32	**33890**	**LNG-32**
	40	**33891**	**LNG-40**
	50	**33892**	**LNG-50**
	63	**33893**	**LNG-63**
	80	**33894**	**LNG-80**
	100	**33895**	**LNG-100**
	125	**33896**	**LNG-125**
Clevis foot LSNG			
	32	**31740**	**LSNG-32**
	40	**31741**	**LSNG-40**
	50	**31742**	**LSNG-50**
	63	**31743**	**LSNG-63**
	80	**31744**	**LSNG-80**
	100	**31745**	**LSNG-100**
	125	**31746**	**LSNG-125**
Clevis foot LBG[1]			
	32	**31761**	**LBG-32**
	40	**31762**	**LBG-40**
	50	**31763**	**LBG-50**
	63	**31764**	**LBG-63**
	80	**31765**	**LBG-80**
	100	**31766**	**LBG-100**
	125	**31767**	**LBG-125**

Designation	For diameter	Part no.	Type
Clevis foot LSN			
	32	**5561**	**LSN-32**
	40	**5562**	**LSN-40**
	50	**5563**	**LSN-50**
	63	**5564**	**LSN-63**
	80	**5565**	**LSN-80**
	100	**5566**	**LSN-100**
	125	**6987**	**LSN-125**
Clevis foot LSNSG			
	32	**31747**	**LSNSG-32**
	40	**31748**	**LSNSG-40**
	50	**31749**	**LSNSG-50**
	63	**31750**	**LSNSG-63**
	80	**31751**	**LSNSG-80**
	100	**31752**	**LSNSG-100**
	125	**31753**	**LSNSG-125**
Right-angle clevis foot LQG[1]			
	32	**31768**	**LQG-32**
	40	**31769**	**LQG-40**
	50	**31770**	**LQG-50**
	63	**31771**	**LQG-63**
	80	**31772**	**LQG-80**
	100	**31773**	**LQG-100**
	125	**31774**	**LQG-125**

1) Suitable for ATEX

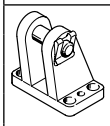
Ordering data – Mounting components, corrosion-resistant

Data sheets → Internet: crlng

Designation	For diameter	Part no.	Type
Clevis foot CRLNG			
	32	**161840**	**CRLNG-32**
	40	**161841**	**CRLNG-40**
	50	**161842**	**CRLNG-50**
	63	**161843**	**CRLNG-63**
	80	**161844**	**CRLNG-80**
	100	**161845**	**CRLNG-100**
	125	**176951**	**CRLNG-125**

Ordering data – Mounting components, high corrosion protection

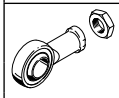
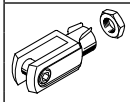
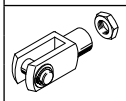
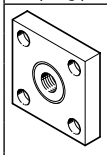
Data sheets → Internet: clevis foot

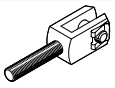
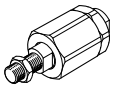
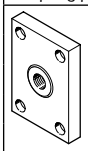
Designation	For diameter	Part no.	Type
Clevis foot LBG-R3			
	32	**2078790**	**LBG-32-R3**
	40	**2078792**	**LBG-40-R3**
	50	**2078794**	**LBG-50-R3**
	63	**2078795**	**LBG-63-R3**
	80	**2078797**	**LBG-80-R3**
	100	**2078799**	**LBG-100-R3**
	125	**2078837**	**LBG-125-R3**

Accessories

Ordering data – Piston rod attachments

Data sheets → Internet: piston rod attachment

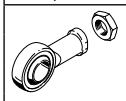
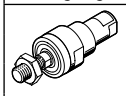
Designation	For diameter	Part no.	Type
Rod eye SGS			
	32	**9261**	**SGS-M10x1.25**
	40	**9262**	**SGS-M12x1.25**
	50	**9263**	**SGS-M16x1.5**
	63		
	80	**9264**	**SGS-M20x1.5**
	100		
	125	**10774**	**SGS-M27x2**
Rod clevis SG[1]			
	32	**6144**	**SG-M10x1.25**
	40	**6145**	**SG-M12x1.25**
	50	**6146**	**SG-M16x1.5**
	63		
	80	**6147**	**SG-M20x1.5**
	100		
	125	**14987**	**SG-M27x2-B**
Coupling piece KSG[1]			
	32	**32963**	**KSG-M10x1.25**
	40	**32964**	**KSG-M12x1.25**
	50	**32965**	**KSG-M16x1.5**
	63		
	80	**32966**	**KSG-M20x1.5**
	100		
	125	**32967**	**KSG-M27x2**

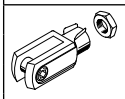
Designation	For diameter	Part no.	Type
Rod clevis SGA[1]			
	32	**32954**	**SGA-M10x1.25**
	40	**10767**	**SGA-M12x1.25**
	50	**10768**	**SGA-M16x1.5**
	63		
	80	**10769**	**SGA-M20x1.5**
	100		
	125	**10770**	**SGA-M27x2**
Self-aligning rod coupler FK[1]			
	32	**6140**	**FK-M10x1.25**
	40	**6141**	**FK-M12x1.25**
	50	**6142**	**FK-M16x1.5**
	63		
	80	**6143**	**FK-M20x1.5**
	100		
	125	**10485**	**FK-M27x2**
Coupling piece KSZ[1]			
	32	**36125**	**KSZ-M10x1.25**
	40	**36126**	**KSZ-M12x1.25**
	50	**36127**	**KSZ-M16x1.5**
	63		
	80	**36128**	**KSZ-M20x1.5**
	100		
	125	**–**	**–**

1) Suitable for ATEX

Ordering data – Piston rod attachments, corrosion-resistant

Data sheets → Internet: piston rod attachment

Designation	For diameter	Part no.	Type
Rod eye CRSGS			
	32	**195582**	**CRSGS-M10x1.25**
	40	**195583**	**CRSGS-M12x1.25**
	50	**195584**	**CRSGS-M16x1.5**
	63		
	80	**195585**	**CRSGS-M20x1.5**
	100		
	125	**195586**	**CRSGS-M27x2**
Self-aligning rod coupler CRFK[1]			
	32	**2305778**	**CRFK-M10x1.25**
	40	**2305779**	**CRFK-M12x1.25**
	50	**2490673**	**CRFK-M16x1.5**
	63		
	80	**2545677**	**CRFK-M20x1.5**
	100		

Designation	For diameter	Part no.	Type
Rod clevis CRSG[1]			
	32	**13569**	**CRSG-M10x1.25**
	40	**13570**	**CRSG-M12x1.25**
	50	**13571**	**CRSG-M16x1.5**
	63		
	80	**13572**	**CRSG-M20x1.5**
	100		
	125	**185361**	**CRSG-M27x2**

1) Suitable for ATEX

Accessories

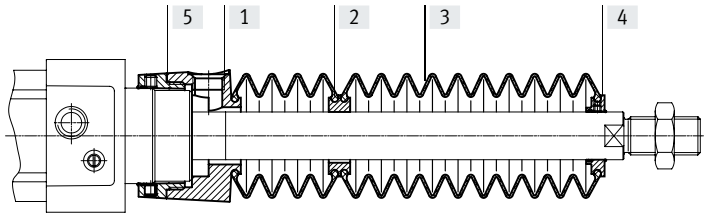
Bellows kit DADB

General technical data							
Type DADB-V6-		32	40	50	63	80	100
Max. stroke range of the cylinder[1]	[mm]	10 ... 500	10 ... 500	10 ... 500	10 ... 500	10 ... 500	10 ... 500
Type of mounting		Via threaded pin					
Mounting position		Any					
Media resistance		Dust, chippings, oil, grease, fuel (→ Internet: media resistance)					
Ambient temperature[2]	[°C]	–10 ... +80					
Degree of protection		IP54					
Corrosion resistance CRC[3]		3					

1) In combination with the bellows kit DADB
2) Note operating range of proximity switches and cylinder
3) Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Materials

Sectional view



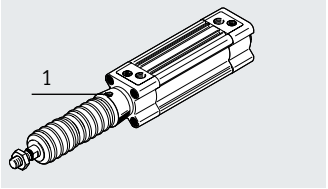
Bellows		
[1]	Connection	Polyamide
[2]	Adapter	Polyamide
[3]	Bellows	NBR
[4]	End piece	Polyamide
[5]	Connector	Polyamide
–	O-ring	NBR
	Note on materials	Free of copper and PTFE
		RoHS-compliant

Weight [g]

Type DADB-V6- Stroke [mm]	32	40	50	63	80	100
10 ... 50	29	42	71	69	99	124
51 ... 125	41	56	91	89	127	152
126 ... 175	52	68	105	103	140	165
176 ... 250	66	85	129	127	193	218
251 ... 300	79	100	147	145	231	255
301 ... 350	92	115	166	164	268	293
351 ... 375	92	115	167	165	259	284
376 ... 425	104	129	185	183	296	321
426 ... 475	117	144	204	202	334	359
476 ... 500	117	144	205	203	324	349

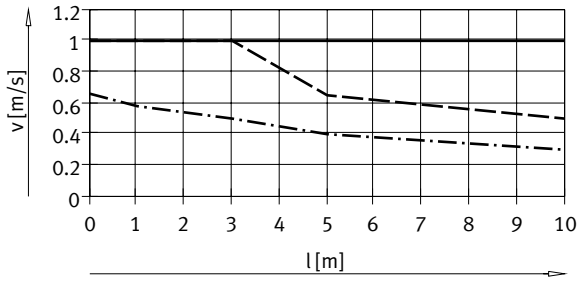
Accessories

Travel speed v as a function of tubing length l



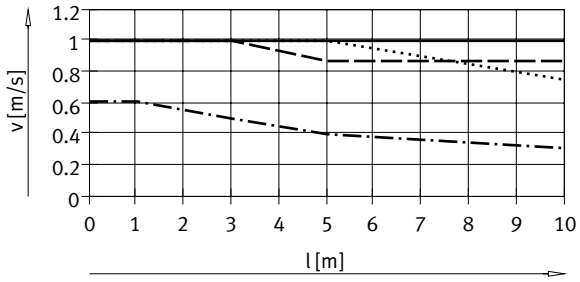
The bellows kit is a leak-free system. To prevent unwanted media from being drawn in, the supply and exhaust air for the kit must be ducted via a pressure compensation hole in the connection part [1].
The pressure generated in the bellows kit by the positioning motion is primarily defined by the travel speed and the tubing length. The recommended tubing length based on the travel speed of the drive can be read from the graph.

Advancing



Diameter 32/50/63
Diameter 40
Diameter 80/100

Retracting



Diameter 32
Diameter 40
Diameter 50/63
Diameter 80/100

Note

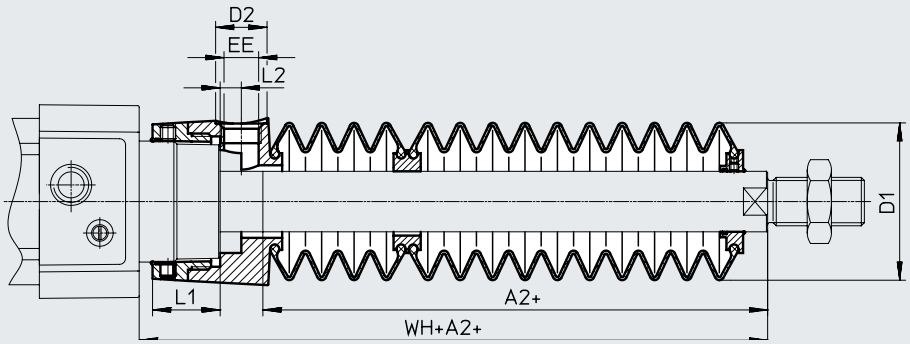
The push-in fittings in the adjacent table must be used for the pressure compensation hole.
Silencers can be used as an alternative. This reduces the travel speed slightly.

Tube size and push-in fitting for pressure compensation hole

ø [mm]	Tubing O.D. [mm]	Push-in fitting Part no.	Type
32, 40	8	**186109**	**QS-G1/8-8-I**
		578376	**NPQH-DK-G18-Q8-P10**
		578362	**NPQH-D-G18-S8-P10**
50, 63, 80, 100	12	**186350**	**QS-G1/4-12**
		578344	**NPQH-D-G14-Q12-P10**
		578366	**NPQH-D-G14-S12-P10**

Accessories

Dimensions Download CAD data ➔ www.festo.com



\+ = plus stroke length

ø	32							40						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	29	38	14	G1/8	12.9	5.4	55	28	46	14	G1/8	16.3	5.4	56.7
51 ... 125	47						73	43						71.7
126 ... 175	61						87	56						84.7
176 ... 250	80						106	72						100.7
251 ... 300	96						122	86						114.7
301 ... 350	112						138	100						128.7
351 ... 375	114						140	101						129.7
376 ... 425	130						156	115						143.7
426 ... 475	145						171	130						158.7
476 ... 500	147						173	131						159.7

ø	50							63						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	28	57	17	G1/4	22.35	7	63.6	28	57	17	G1/4	22.4	7	63.9
51 ... 125	46						81.6	46						81.9
126 ... 175	56						91.6	56						91.9
176 ... 250	73						108.6	73						108.9
251 ... 300	86						121.6	86						121.9
301 ... 350	97						132.6	97						132.9
351 ... 375	105						140.6	105						140.9
376 ... 425	116						151.6	116						151.9
426 ... 475	126						161.6	126						161.9
476 ... 500	134						169.6	134						169.9

ø	80							100						
Stroke [mm]	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2	A2[1]	D1 max.	D2	EE	L1	L2	WH+A2
10 ... 50	25	93	17	G1/4	28	4	70.4	25	93	17	G1/4	28	4	74.3
51 ... 125	37						82.4	37						86.3
126 ... 175	49						94.4	49						98.3
176 ... 250	62						107.4	62						111.3
251 ... 300	74						119.4	74						123.3
301 ... 350	86						131.4	86						135.3
351 ... 375	87						132.4	87						136.3
376 ... 425	98						143.4	98						147.3
426 ... 475	110						155.4	110						159.3
476 ... 500	111						156.4	111						160.3

1) The dimension corresponds to the E value (piston rod extension) of the drive

Accessories

Ordering data – Bellows kit

An extended piston rod (order code E) is absolutely essential when using a bellows kit ➔ Ordering data – Modular product system.

The necessary dimension for order code E as a function of piston diameter and cylinder stroke as well as the corresponding bellows kit is indicated in the table below:

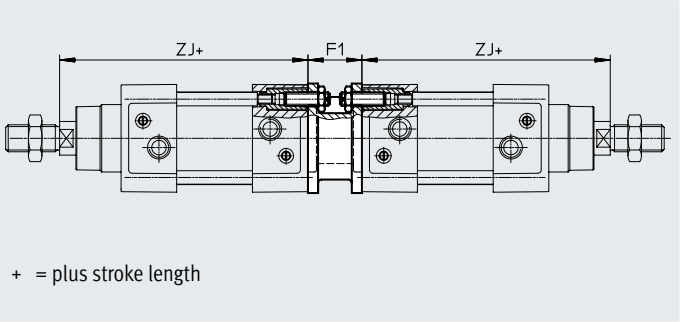
Order example:
Selected standards-based cylinder:
DSBG-32-320-PPV-A-...
The dimension for the corresponding E value (see table):
112 mm
Complete order reference for standards-based cylinder:
DSBG-32-320-PPV-A-...-112E
The corresponding bellows kit:
DADB-V6-32-S301-350

Cylinder data			Bellows kit		Cylinder data			Bellows kit	
ø [mm]	Stroke [mm]	Dimension for E [mm]	Part no.	Type	ø [mm]	Stroke [mm]	Dimension for E [mm]	Part no.	Type
32	10 ... 50	29	**553271**	**DADB-V6-32-S10-50**	40	10 ... 50	28	**553291**	**DADB-V6-40-S10-50**
	51 ... 125	47	**553273**	**DADB-V6-32-S51-125**		51 ... 125	43	**553293**	**DADB-V6-40-S51-125**
	126 ... 175	61	**553275**	**DADB-V6-32-S126-175**		126 ... 175	56	**553295**	**DADB-V6-40-S126-175**
	176 ... 250	80	**553277**	**DADB-V6-32-S176-250**		176 ... 250	72	**553297**	**DADB-V6-40-S176-250**
	251 ... 300	96	**553279**	**DADB-V6-32-S251-300**		251 ... 300	86	**553399**	**DADB-V6-40-S251-300**
	301 ... 350	112	**553281**	**DADB-V6-32-S301-350**		301 ... 350	100	**553301**	**DADB-V6-40-S301-350**
	351 ... 375	114	**553283**	**DADB-V6-32-S351-375**		351 ... 375	101	**553303**	**DADB-V6-40-S351-375**
	376 ... 425	130	**553285**	**DADB-V6-32-S376-425**		376 ... 425	115	**553305**	**DADB-V6-40-S376-425**
	426 ... 475	145	**553287**	**DADB-V6-32-S426-475**		426 ... 475	130	**553307**	**DADB-V6-40-S426-475**
	476 ... 500	147	**553289**	**DADB-V6-32-S476-500**		476 ... 500	131	**553309**	**DADB-V6-40-S476-500**
50	10 ... 50	28	**553311**	**DADB-V6-50-S10-50**	63	10 ... 50	28	**553331**	**DADB-V6-63-S10-50**
	51 ... 125	46	**553313**	**DADB-V6-50-S51-125**		51 ... 125	46	**553333**	**DADB-V6-63-S51-125**
	126 ... 175	56	**553315**	**DADB-V6-50-S126-175**		126 ... 175	56	**553335**	**DADB-V6-63-S126-175**
	176 ... 250	73	**553317**	**DADB-V6-50-S176-250**		176 ... 250	73	**553337**	**DADB-V6-63-S176-250**
	251 ... 300	86	**553319**	**DADB-V6-50-S251-300**		251 ... 300	86	**553339**	**DADB-V6-63-S251-300**
	301 ... 350	97	**553321**	**DADB-V6-50-S301-350**		301 ... 350	97	**553341**	**DADB-V6-63-S301-350**
	351 ... 375	105	**553323**	**DADB-V6-50-S351-375**		351 ... 375	105	**553343**	**DADB-V6-63-S351-375**
	376 ... 425	116	**553325**	**DADB-V6-50-S376-425**		376 ... 425	116	**553345**	**DADB-V6-63-S376-425**
	426 ... 475	126	**553327**	**DADB-V6-50-S426-475**		426 ... 475	126	**553347**	**DADB-V6-63-S426-475**
	476 ... 500	134	**553329**	**DADB-V6-50-S476-500**		476 ... 500	134	**553349**	**DADB-V6-63-S476-500**
80	10 ... 50	25	**553351**	**DADB-V6-80-S10-50**	100	10 ... 50	25	**553371**	**DADB-V6-100-S10-50**
	51 ... 125	37	**553353**	**DADB-V6-80-S51-125**		51 ... 125	37	**553373**	**DADB-V6-100-S51-125**
	126 ... 175	49	**553355**	**DADB-V6-80-S126-175**		126 ... 175	49	**553375**	**DADB-V6-100-S126-175**
	176 ... 250	62	**553357**	**DADB-V6-80-S176-250**		176 ... 250	62	**553377**	**DADB-V6-100-S176-250**
	251 ... 300	74	**553359**	**DADB-V6-80-S251-300**		251 ... 300	74	**553379**	**DADB-V6-100-S251-300**
	301 ... 350	86	**553361**	**DADB-V6-80-S301-350**		301 ... 350	86	**553381**	**DADB-V6-100-S301-350**
	351 ... 375	87	**553363**	**DADB-V6-80-S351-375**		351 ... 375	87	**553383**	**DADB-V6-100-S351-375**
	376 ... 425	98	**553365**	**DADB-V6-80-S376-425**		376 ... 425	98	**553385**	**DADB-V6-100-S376-425**
	426 ... 475	110	**553367**	**DADB-V6-80-S426-475**		426 ... 475	110	**553387**	**DADB-V6-100-S426-475**
	476 ... 500	111	**553369**	**DADB-V6-80-S476-500**		476 ... 500	111	**553389**	**DADB-V6-100-S476-500**

Accessories

Multi-position kit DPNC

Material:
Flange: wrought aluminium alloy
Threaded pins, hex nuts: galvanised steel



+ = plus stroke length

Note

The maximum overall stroke length must not be exceeded when combining cylinders and multi-position kits.

Dimensions and ordering data

For diam. [mm]	F1	ZJ +1.8	Max. complete stroke [mm]	Weight [g]	Part no.	Type[1]
32	27	119.1	500	292	**174418**	**DPNC-32**
40	27	133.9	800	410	**174419**	**DPNC-40**
50	32	141.8	800	335	**174420**	**DPNC-50**
63	28	157.1	700	390	**174421**	**DPNC-63**
80	38	173.6	1000	847	**174422**	**DPNC-80**
100	38	187.5	900	1200	**174423**	**DPNC-100**
125	48	225	1000	2102	**174424**	**DPNC-125**

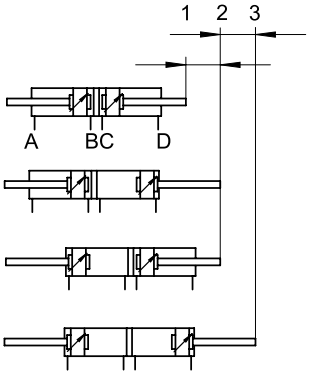
1) Suitable for ATEX

Connecting two cylinders with identical piston diameters to form a three or four-position cylinder

A three or four-position cylinder consists of two separate cylinders whose piston rods advance in opposing directions. This means that depending on the actuation and stroke pattern, this type of cylinder can assume up to four positions. In each case the cylinder is moved precisely against a stop. Note that when one end of the piston rod is fixed, the cylinder barrel executes the movement. The line connections to the cylinder must be flexible.

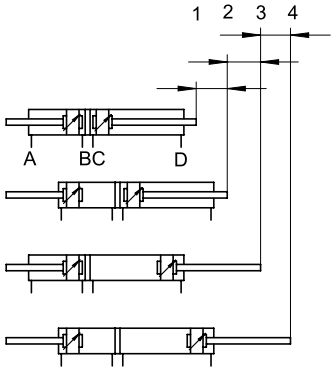
To achieve 3 positions

Two cylinders with identical stroke length must be connected together.



To achieve 4 positions

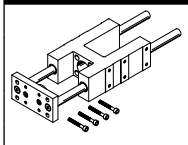
Two cylinders with different stroke lengths must be connected together.



Accessories

Ordering data – Guide units for fixed strokes (recirculating ball bearing guide only)

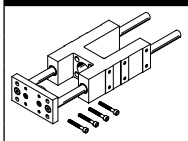
Data sheets → Internet: feng



Stroke [mm]	Part no.	Type[1)]	Stroke [mm]	Part no.	Type[1)]
For diam. 32 mm			**For diam. 40 mm**		
10 … 50	**34493**	**FENG-32-50-KF**	10 … 50	**34499**	**FENG-40-50-KF**
10 … 100	**34494**	**FENG-32-100-KF**	10 … 100	**34500**	**FENG-40-100-KF**
10 … 160	**34495**	**FENG-32-160-KF**	10 … 160	**34501**	**FENG-40-160-KF**
10 … 200	**34496**	**FENG-32-200-KF**	10 … 200	**34502**	**FENG-40-200-KF**
10 … 250	**150289**	**FENG-32-250-KF**	10 … 250	**34503**	**FENG-40-250-KF**
10 … 320	**34497**	**FENG-32-320-KF**	10 … 320	**34504**	**FENG-40-320-KF**
10 … 400	**150290**	**FENG-32-400-KF**	10 … 400	**150291**	**FENG-40-400-KF**
10 … 500	**34498**	**FENG-32-500-KF**	10 … 500	**34505**	**FENG-40-500-KF**
For diam. 50 mm			**For diam. 63 mm**		
10 … 50	**34506**	**FENG-50-50-KF**	10 … 50	**34513**	**FENG-63-50-KF**
10 … 100	**34507**	**FENG-50-100-KF**	10 … 100	**34514**	**FENG-63-100-KF**
10 … 160	**34508**	**FENG-50-160-KF**	10 … 160	**34515**	**FENG-63-160-KF**
10 … 200	**34509**	**FENG-50-200-KF**	10 … 200	**34516**	**FENG-63-200-KF**
10 … 250	**34510**	**FENG-50-250-KF**	10 … 250	**34517**	**FENG-63-250-KF**
10 … 320	**34511**	**FENG-50-320-KF**	10 … 320	**34518**	**FENG-63-320-KF**
10 … 400	**150292**	**FENG-50-400-KF**	10 … 400	**34519**	**FENG-63-400-KF**
10 … 500	**34512**	**FENG-50-500-KF**	10 … 500	**34520**	**FENG-63-500-KF**
For diam. 80 mm			**For diam. 100 mm**		
10 … 50	**34521**	**FENG-80-50-KF**	10 … 50	**34529**	**FENG-100-50-KF**
10 … 100	**34522**	**FENG-80-100-KF**	10 … 100	**34530**	**FENG-100-100-KF**
10 … 160	**34523**	**FENG-80-160-KF**	10 … 160	**34531**	**FENG-100-160-KF**
10 … 200	**34524**	**FENG-80-200-KF**	10 … 200	**34532**	**FENG-100-200-KF**
10 … 250	**34525**	**FENG-80-250-KF**	10 … 250	**34533**	**FENG-100-250-KF**
10 … 320	**34526**	**FENG-80-320-KF**	10 … 320	**34534**	**FENG-100-320-KF**
10 … 400	**34527**	**FENG-80-400-KF**	10 … 400	**34535**	**FENG-100-400-KF**
10 … 500	**34528**	**FENG-80-500-KF**	10 … 500	**34536**	**FENG-100-500-KF**

Ordering data – Guide units for variable strokes

Data sheets → Internet: feng



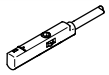
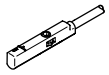
For diameter [mm]	Stroke [mm]	With recirculating ball bearing guide Part no.	Type[1)]	With plain-bearing guide Part no.	Type[1)]
32	10 … 500	**34487**	**FENG-32-...-KF**	**34481**	**FENG-32-...-GF**
40	10 … 500	**34488**	**FENG-40-...-KF**	**34482**	**FENG-40-...-GF**
50	10 … 500	**34489**	**FENG-50-...-KF**	**34483**	**FENG-50-...-GF**
63	10 … 500	**34490**	**FENG-63-...-KF**	**34484**	**FENG-63-...-GF**
80	10 … 500	**34491**	**FENG-80-...-KF**	**34485**	**FENG-80-...-GF**
100	10 … 500	**34492**	**FENG-100-...-KF**	**34486**	**FENG-100-...-GF**

1) Suitable for ATEX

Accessories

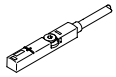
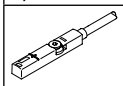
Ordering data – Proximity switches for T-slot, magneto-resistive

Data sheets → Internet: smt

	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, 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 the cylinder profile, short design	PNP	Cable, 3-wire	7.5	**574340**	**SMT-8M-A-PO-24V-E-7.5-OE**

Ordering data – Proximity switches for T-slot, magnetic reed

Data sheets → Internet: sme

	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	**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**	**SME-8M-DS-24V-K-0.3-M8D**
N/C contact						
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	**546799**	**SME-8M-DO-24V-K-7.5-OE**

Ordering data – Proximity sensor for T-slot, NAMUR

Data sheets → Internet: sdbt

	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	NAMUR	Cable, 2-wire	5	**579071**	**SDBT-MS-20NL-ZN-E-5-LE-EX6**
				10	**579072**	**SDBT-MS-20NL-ZN-E-10-LE-EX6**

Ordering data – Safety clip for ATEX zone

	Description	For size	Part no.	Type
	• Protects "equipment that is not intrinsically safe" against simple disconnection, here the plug of the proximity switch SMT and connecting cable NEBU • ATEX category: gas: II 3G / dust: II 3D	Plug M8x1	**548067**	**NEAU-M8-GD**

Ordering data – Connecting cables

Data sheets → 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**

Accessories

Ordering data – Mounting kits for proximity switches SME/SMT-8

	For diameter	Materials	Part no.	Type
	32 ... 100	Rail: anodised wrought aluminium alloy Screws: high-alloy stainless steel Free of copper and PTFE	**537806**	**SMBZ-8-32/100**
	125		**1451483**	**DASP-M4-125-A**

Ordering data – Mounting kit for proximity switches SME/SMT-8

Data sheets → Internet: smbr

	For diameter	Mounting	CRC[1)]	Part no.	Type
	32 ... 100	On the cylinder barrel using clamping strap	4	**538937**	**SMBR-8-8/100-S6**

1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.

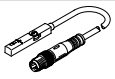
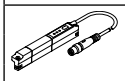
Position transmitter

The position transmitter continuously senses the position of the piston.

It has an analogue output with an output signal in proportion to the piston position.

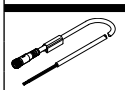
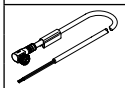
Ordering data – Position transmitters for T-slot

Data sheets → Internet: position transmitter

	For diam.	Position measuring range	Analogue output [V]	Analogue output [mA]	Type of mounting	Electrical connection	Cable length [m]	Part no.	Type
	32 ... 125	0 ... 40	0 ... 10	–	Insertable in the slot from above	Plug M8x1, 4-pin, in-line	0.3	**553744**	**SMAT-8M-U-E-0.3-M8D**
	32 ... 125	0 ... 50	–	4 ... 20	Insertable in the slot from above	Plug M8x1, 4-pin, in-line	0.3	**1531265**	**SDAT-MHS-M50-1L-SA-E-0.3-M8**
		0 ... 80						**1531266**	**SDAT-MHS-M80-1L-SA-E-0.3-M8**
		0 ... 100						**1531267**	**SDAT-MHS-M100-1L-SA-E-0.3-M8**
		0 ... 125						**1531268**	**SDAT-MHS-M125-1L-SA-E-0.3-M8**
		0 ... 160						**1531269**	**SDAT-MHS-M160-1L-SA-E-0.3-M8**
		0 ... 50	0 ... 10	–				**8115394**	**SDAT-MHS-M50-1L-SV-E-0.3-M8**

Ordering data – Connecting cables

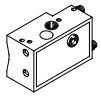
Data sheets → Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	**541342**	**NEBU-M8G4-K-2.5-LE4**
			5	**541343**	**NEBU-M8G4-K-5-LE4**
	Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	**541344**	**NEBU-M8W4-K-2.5-LE4**
			5	**541345**	**NEBU-M8W4-K-5-LE4**

Accessories

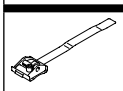
Ordering data – Proximity switch in block design, pneumatic

Data sheets → Internet: smpo

	Mounting	Pneumatic connection	Part no.	Type
3/2-way valve, normally closed				
	Via accessories	Barbed fitting for tubing I.D. 3 mm	**31008**	**SMPO-1-H-B**

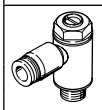
Ordering data – Mounting kit for proximity switch SMPO-1

Data sheets → Internet: smbs

	For diameter	Mounting	Part no.	Type
	32 ... 100 mm	On the cylinder barrel using clamping strap	**151226**	**SMBS-2**

Ordering data – One-way flow control valves

Data sheets → Internet: grla

	Connection		Material	Part no.	Type
	Thread	For tubing O.D.			
For exhaust air					
	G1/8	4	Metal design	**193143**	**GRLA-1/8-QS-4-D**
		6		**193144**	**GRLA-1/8-QS-6-D**
		8		**193145**	**GRLA-1/8-QS-8-D**
	G1/4	6		**193146**	**GRLA-1/4-QS-6-D**
		8		**193147**	**GRLA-1/4-QS-8-D**
		10		**193148**	**GRLA-1/4QS-10-D**
	G3/8	6		**193149**	**GRLA-3/8-QS-6-D**
		8		**193150**	**GRLA-3/8-QS-8-D**
		10		**193151**	**GRLA-3/8-QS-10-D**
	G1/2	12		**193152**	**GRLA-1/2-QS-12-D**