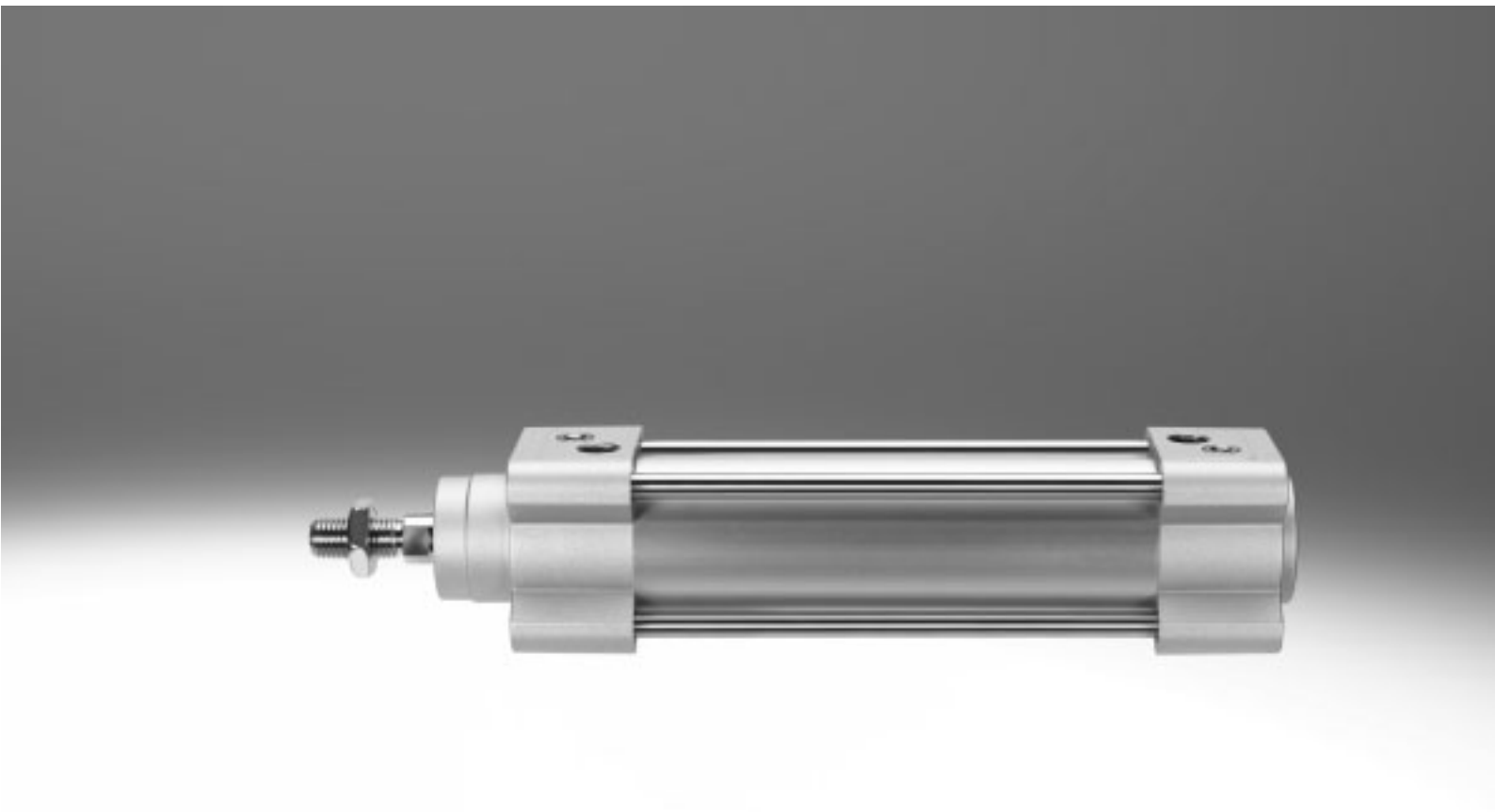
Standards-based cylinders DSBG to ISO 15552

FESTO



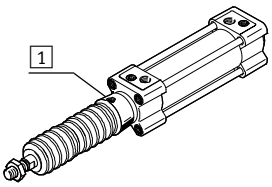
Standards-based cylinders DSBG to ISO 15552

Key features

At a glance

- Standards-based cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24 562, NF E 49 003.1 and UNI 10290)
- Sturdy tie rod design
- Double-acting
- For contactless position sensing
- Available 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:
  - P cushioning: elastic cushioning rings/pads 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
- High flexibility thanks to the wide range of variants

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



The bellows kit is a leak-free system. To prevent unwanted media from being drawn in, the supply and exhaust air must be ducted via a pressure compensation hole in the connection part 1.
The kit protects the piston rod, seal and bearings 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 feature P2. The required piston rod extension is automatically taken into consideration. This means that there is no need to specify a value for feature ...E.

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

Position sensing/force control

With position sensor SMAT-8M, SMAT-8E, SDAT ➔ 43

Analogue position feedback possible

- Analogue output
  - 0 ... 10 V
  - 0 ... 20 mA

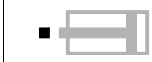
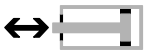
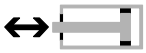
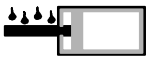
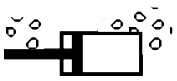
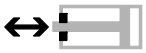
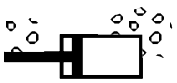
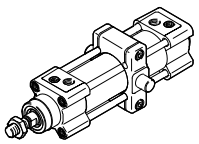
With proportional pressure regulator VPPM

Infinite adjustment of the gripping force possible

- Setpoint input
  - 0 ... 10 V
  - 4 ... 20 mA

Standards-based cylinders DSBG, to ISO 15552

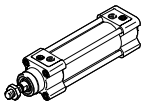
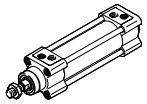
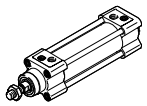
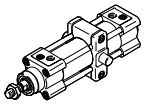
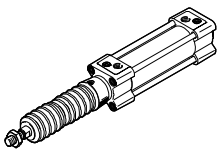
Key features

Variants from the modular product system			
Symbol	Key features		Description
	Q	Square piston rod	Protection against rotation. For correctly oriented feeding
	L	Low friction	At high piston speeds, considerably greater efficiency than other versions. The special materials considerably reduce system wear. Low-friction movements are therefore possible, especially during rapid stroke movements.
	U	Uniform, slow movement	Low break-away pressure, suitable for slow stroke movements at a constant, judder-free speed over the full stroke range.
	L1	Low friction for balancer applications	At low piston speeds, low-friction operation is achieved in both directions. Special geometry of the seal enables virtually identical running characteristics regardless of the operating pressure. Additionally with low break-away pressure. Not suitable for applications with transverse loading on the piston rod
	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	Scraper variant	Hard scraper: The cylinder is equipped with a hard-chrome plated piston rod and a hard scraper, which protects against dry, dusty and viscous media
	A3	Scraper 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	Scraper variant	Metal scraper The cylinder is fitted with a hard-chrome 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	Piston rod extension	–
	...L	Piston rod thread extension	–
	...V	Swivel mounting position	• Swivel mounting, position freely selectable • Position can be moved at any time

New
DSBG-...-L1

Standards-based cylinders DSBG, to ISO 15552

Product range overview

Function	Design	Type	Piston ∅	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-...-P2 – With bellows								
		DSBG-...-P2	32, 40, 50, 63, 80, 100	10 ... 500	■	■	■	■	■

Standards-based cylinders DSBG, to ISO 15552

Product range overview

Type	Position sensing	High corrosion protection	Temperature range 0 ... +120 °C	Temperature range –40 ... +80 °C	Temperature range 0 ... +150 °C	Scraper variant hard scraper (ring)	Scraper variant for unlubricated operation	Scraper variant metal scraper	EU certification	Piston rod extension	Piston rod thread extension
	A	R3	T1	T3	T4	A2	A3	A6	EX4	...E	...L
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-...-P2 – With bellows											
DSBG-...-P2	■	■	–	–	–	–	–	–	–	■	■

Standards-based cylinders DSBG, to ISO 15552

Type codes

DSBG	–			–	32	–	50	–			–	PPV	A

Type

Double-acting	
DSBG	Standards-based cylinder

Protection against rotation

–	Without protection against rotation
Q	With protection against rotation

Running characteristics

–	Standard
L	Low friction
U	Constant, slow movement
L1	Low friction for balancer applications

Piston ∅ [mm]

Stroke [mm]

Piston rod

–	Piston rod at one end
T	Through piston rod

Piston rod thread type

–	Male thread
F	Female thread

Cushioning

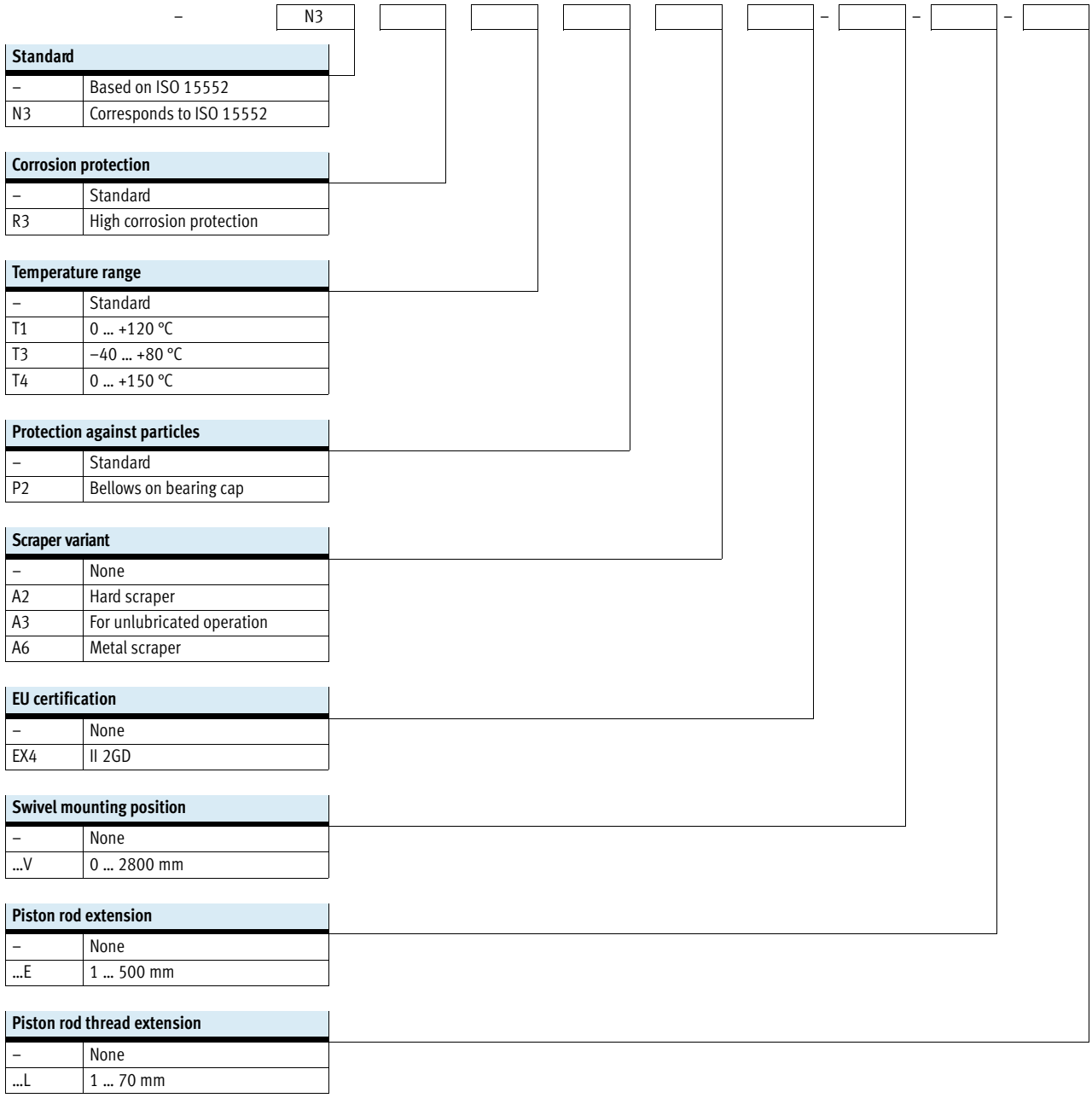
P	Elastic cushioning rings/pads at both ends
PPS	Pneumatic cushioning, self-adjusting at both ends
PPV	Pneumatic cushioning, adjustable at both ends

Position sensing

A	Via proximity sensor

Standards-based cylinders DSBG, to ISO 15552

Type code



Standard	
–	Based on ISO 15552
N3	Corresponds to ISO 15552

Corrosion protection	
–	Standard
R3	High corrosion protection

Temperature range	
–	Standard
T1	0 … +120 °C
T3	–40 … +80 °C
T4	0 … +150 °C

Protection against particles	
–	Standard
P2	Bellows on bearing cap

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

EU certification	
–	None
EX4	II 2GD

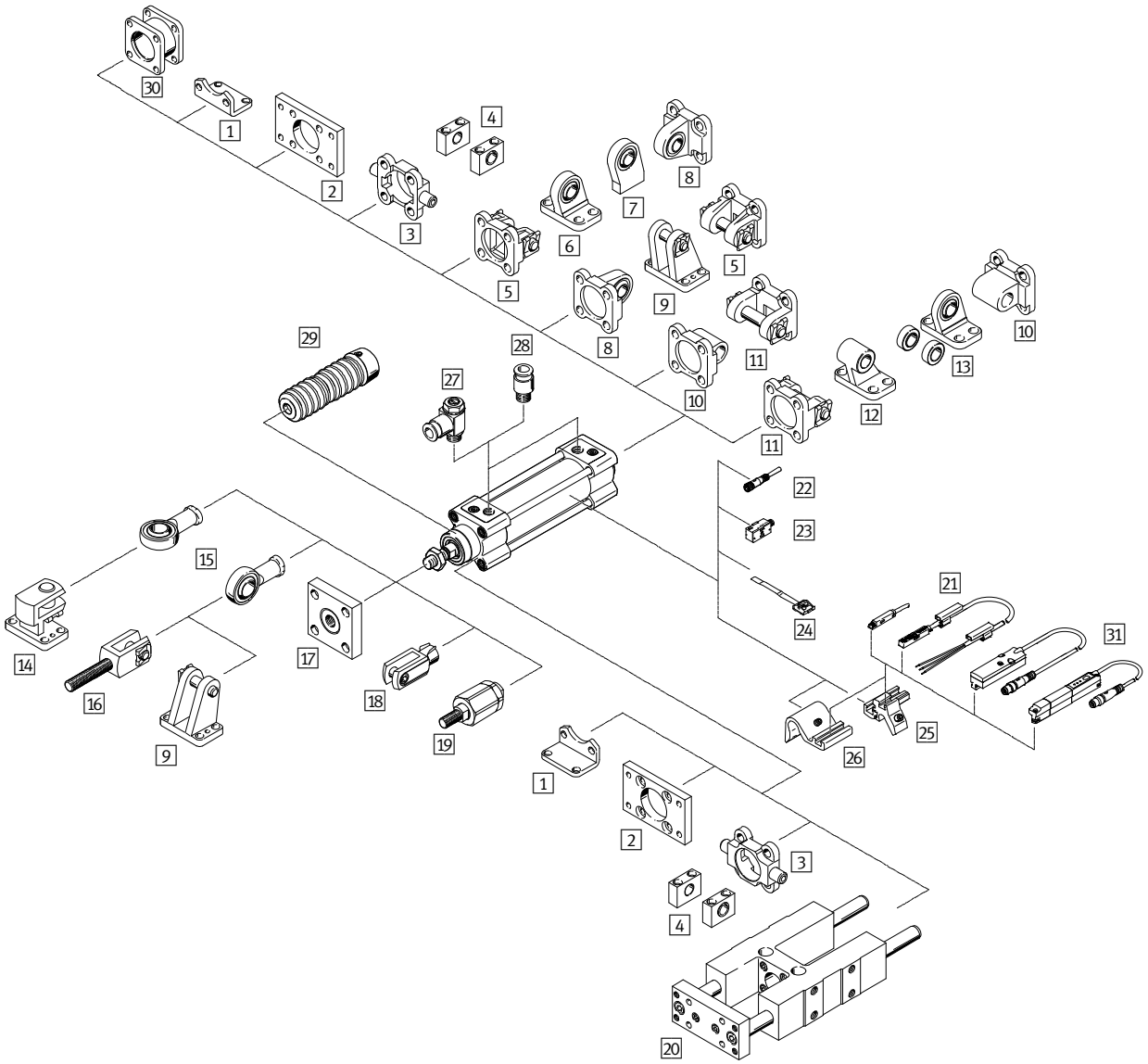
Swivel mounting position	
–	None
…V	0 … 2800 mm

Piston rod extension	
–	None
…E	1 … 500 mm

Piston rod thread extension	
–	None
…L	1 … 70 mm

Standards-based cylinders DSBG, to ISO 15552

Peripherals overview



Mounting components and accessories					
	Description	DSBG-...			➔ Page/ Internet
			-L/-U/ -L1	-T	
1 Foot mounting HNC/CRHNC	For bearing or end caps	■	■	■	26
2 Flange mounting FNC/CRFNG	– For bearing or end caps – Cannot be used on the bearing cap in combination with bellows kit DADB	■	■	■	27
3 Trunnion flange ZNCF/CRZNG	– For bearing or end caps – Cannot be used on the bearing cap in combination with bellows kit DADB	■	■	■	28
4 Trunnion support LNZG/CRLNZG	–	■	■	■	29
5 Swivel flange SNC	For end caps	■	■	–	30
6 Clevis foot LSNG	With spherical bearing	■	■	–	34

Standards-based cylinders DSBG, to ISO 15552

Peripherals overview

Mounting components and accessories						
		Description	DSBG-...			➔ Page/ Internet
				-L/-U/ -L1	-T	
7	Clevis foot LSNSG	Weld-on, with spherical bearing	■	■	–	34
8	Swivel flange SNCS/CRSNCS/SNCS-...-R3	With spherical bearing for end caps	■	■	–	32
9	Clevis foot LBG/LBG-...-R3	–	■	■	–	34
10	Swivel flange SNCL	For end caps	■	■	–	33
11	Swivel flange SNCB/SNCB-...-R3	For end caps	■	■	–	31
12	Clevis foot LNG/CRLNG	–	■	■	–	34
13	Clevis foot LSN	With spherical bearing	■	■	–	34
14	Right-angle clevis foot LQG	–	■	■	■	34
15	Rod eye SGS/CRSGS	With spherical bearing	■	■	■	35
16	Rod clevis SGA	With male thread	■	■	■	35
17	Coupling piece KSG	To compensate for radial deviations	■	■	■	35
	Coupling piece KSZ	For cylinders with a non-rotating piston rod to compensate for radial deviations	■	■	■	35
18	Rod clevis SG/CRSG	Permits a swivel motion of the cylinder in one plane	■	■	■	35
19	Self-aligning rod coupler FK, CRFK	For compensating radial and angular misalignments	■	■	■	35
20	Guide unit FENG	For protecting standards-based cylinders against rotation at high torque loads	■	■	■	41
21	Proximity sensor SME/SMT-8M	Can be integrated in the cylinder profile barrel	■	■	■	42
22	Connecting cable NEBU	–	■	■	■	42
23	Proximity sensor SMPO-1-H-B	–	■	■	■	44
24	Mounting kit SMBS	For proximity sensor SMPO-1-H-B	■	■	■	44
25	Mounting kit SMBZ-8- ...	For proximity sensor SME/SMT-8M, for piston ∅ 32 ... 100	■	■	■	43
26	Sensor bracket DASP-M4- ...	For proximity sensor SME/SMT-8M, for piston ∅ 125	■	■	■	43
27	One-way flow control valve GRLA	For speed regulation	■	■	■	44
28	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	■	■	■	qs
29	Bellows kit DADB	– Protects the cylinder (piston rod, seal and bearings) against a wide range of media and thus prevents premature wear – Can only be used in combination with an extended piston rod (E)	■	–	■	36
30	Multi-position kit DPNC	For connecting two cylinders with identical piston diameters to form a multi-position cylinder	■	–	■	40
31	Position sensor SMAT, SDAT	– Continuously senses the position of the piston – Has an analogue output	■	■	■	43

Standards-based cylinders DSBG, to ISO 15552

Technical data

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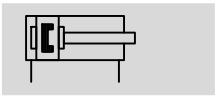
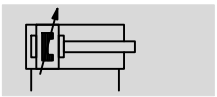
Function

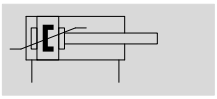
P cushioning



PPV cushioning



PPS cushioning



ISO DIN VDMA

Diameter
32 ... 125 mm

Stroke length
1 ... 2800 mm

www.festo.com

General technical data								
Piston ∅		32	40	50	63	80	100	125
Design		Piston/piston rod/cylinder barrel						
Mode of operation		Double-acting						
Pneumatic port		G⅛	G¼	G¼	G⅜	G⅜	G½	G½
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/pads 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 sensor						
Type of mounting		Via internal thread/accessories						
Mounting position		Any						

Standards-based cylinders DSBG, to ISO 15552

Technical data

Operating and environmental conditions								
Piston ∅		32	40	50	63	80	100	125
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure								
DSBG-...	[bar]	0.6 ... 12		0.4 ... 12				0.2 ... 10
DSBG-...-L[1)]	[bar]	0.3 ... 12	0.25 ... 12			0.2 ... 12	0.15 ... 12	–
DSBG-...-U[1)]	[bar]	0.1 ... 12				0.05 ... 12		0.05 ... 10
DSBG-...-L1[1)]	[bar]	0.3 ... 12	0.25 ... 12			0.2 ... 12	0.15 ... 12	0.1 ... 10
DSBG-...-T3/-A2	[bar]	1 ... 12						1 ... 10
DSBG-...-A3	[bar]	1.5 ... 12		1 ... 12	0.6 ... 12			0.6 ... 10
DSBG-...-A6	[bar]	2 ... 12	1.5 ... 12					1.5 ... 10
Ambient temperature[2)]								
DSBG-...	[°C]	–20 ... +80						
DSBG-...-L/-A1	[°C]	0 ... +80						
DSBG-...-L1	[°C]	0 ... +60						
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 class 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 sensors
3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
4) Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

Standards-based cylinders DSBG, to ISO 15552

Technical data

Weight [g]							
Piston ∅	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	25	30	47	50	78	87	–
Moving mass with 0 mm stroke	115	170	332	391	757	890	–
Moving mass per 10 mm stroke	8	11	20	20	31	31	–
DSBG-...-T							
Product weight with 0 mm stroke	581	924	1523	2103	3243	4353	7450
Additional weight per 10 mm stroke	34	50	76	97	123	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

ATEX[1)]	
ATEX category for gas	II 2G
Type of (ignition) protection for gas	c T4
ATEX category for dust	II 2D
Type of (ignition) protection for dust	c T120°C
Explosion-proof ambient temperature	−20°C ≤ Ta ≤ +60°C
CE marking (see declaration of conformity)	As per EU Explosion Protection Directive (ATEX)

1) Note the ATEX certification of the accessories.

Forces [N] and impact energy [J]							
Piston ∅	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

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{Intrinsic} + m_{Load}}}$$

Maximum permissible load:

$$m_{Load} = \frac{2 \times E_{perm.}}{v^2} - m_{Intrinsic}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
$m_{Intrinsic}$ Moving mass (drive)
m_{Load} Moving payload

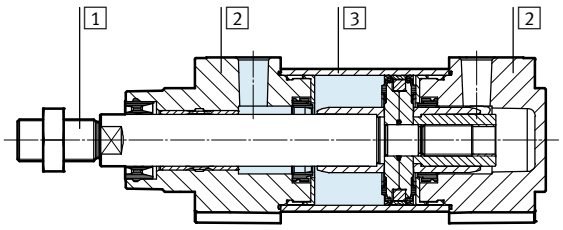
Standards-based cylinders DSBG, to ISO 15552

Technical data

FESTO

Materials

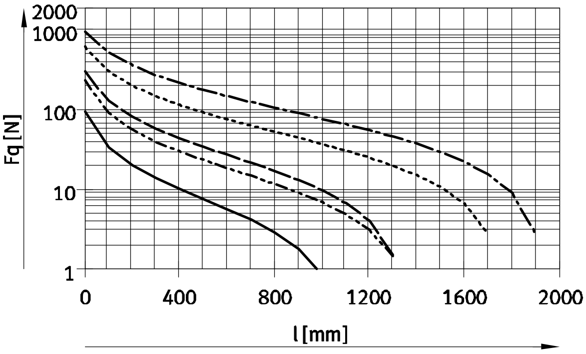
Sectional view



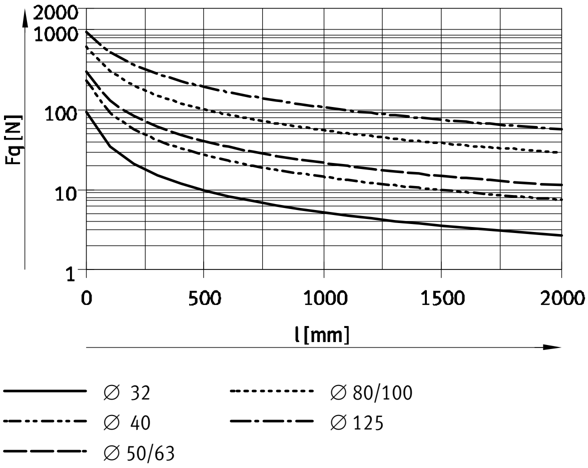
Standards-based cylinder		
1	Piston rod, tie rod	
	DSBG-...	High-alloy steel
	DSBG-...-R3	High-alloy stainless steel
	DSBG-...-A2/-A6	Hard-chromium plated tempered steel
2	Cover	Die-cast aluminium, coated
3	Cylinder barrel	Anodised wrought aluminium alloy
–	Piston rod seal	
	DSBG-...	PUR
	DSBG-...-L/-U	FPM
	DSBG-...-L1	HNBR
	DSBG-...-T1/-T4/-A1	FPM
	DSBG-...-T3	PUR (suitable for low temperatures)
	DSBG-...-A3	UHMW-PE
	Rod wiper seal	
	DSBC-...-A6	CuZn
	Buffer seal	
	DSBG-...	PUR
	DSBG-...-U	FPM
	DSBG-...-T1/-T4	FPM
	DSBG-...-T3	PUR (suitable for low temperatures)
	Cushioning boss	
	DSBG-...	POM
	DSBG-...-L/-U	Aluminium
	DSBG-...-T1/-T3/-T4	Aluminium
–	Note on materials	
	DSBG-...	RoHS compliant
	DSBG-...-L/-U/-T3/-T4/-A3	Contains paint-wetting impairment substances

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

Horizontal mounting



Vertical mounting



Note

No transverse forces are permitted in combination with feature DSBG-...-L1.

Permissible torsional backlash with variant Q – With protection against rotation

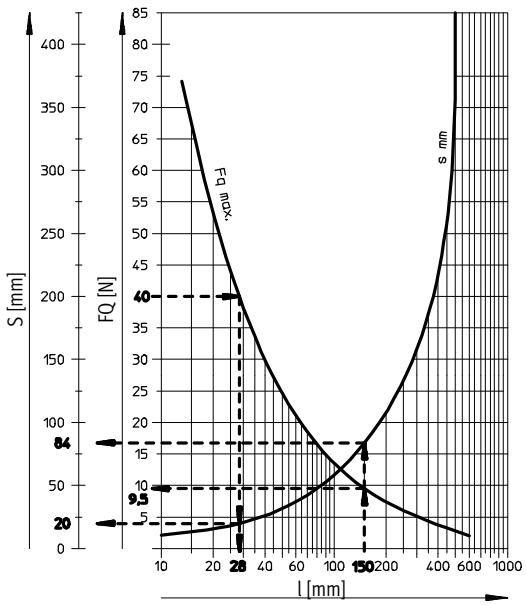
Piston ∅		32	40	50	63	80	100
Torsional backlash	[°]	±0.65	±0.6	±0.45	±0.45	±0.45	±0.45

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

Q – With protection against rotation

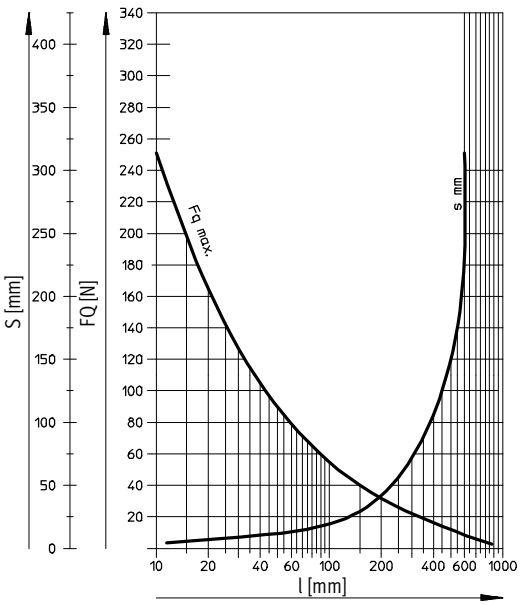
∅ 32

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



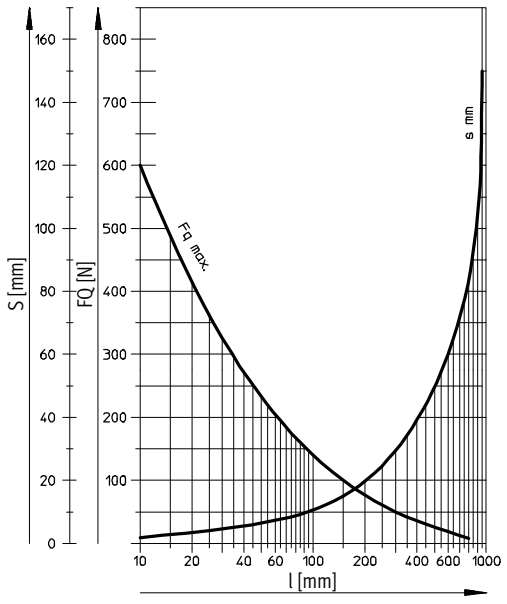
∅ 40

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



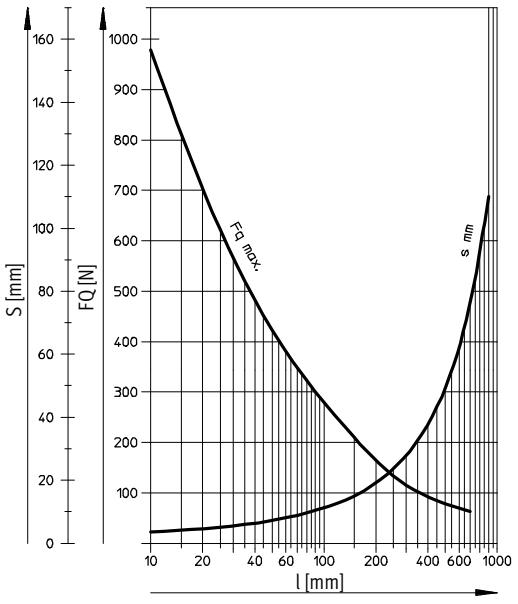
∅ 50/63

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



∅ 80/100

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



Examples for piston ∅ 32 mm

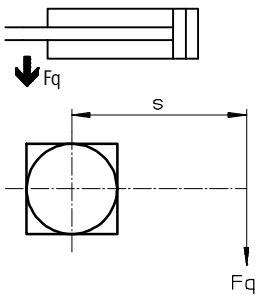
Example 1:
Stroke length l = 150 mm
Result: Permissible
Transverse force Fq
= 9.5 N
Lever arm s = 84 mm

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

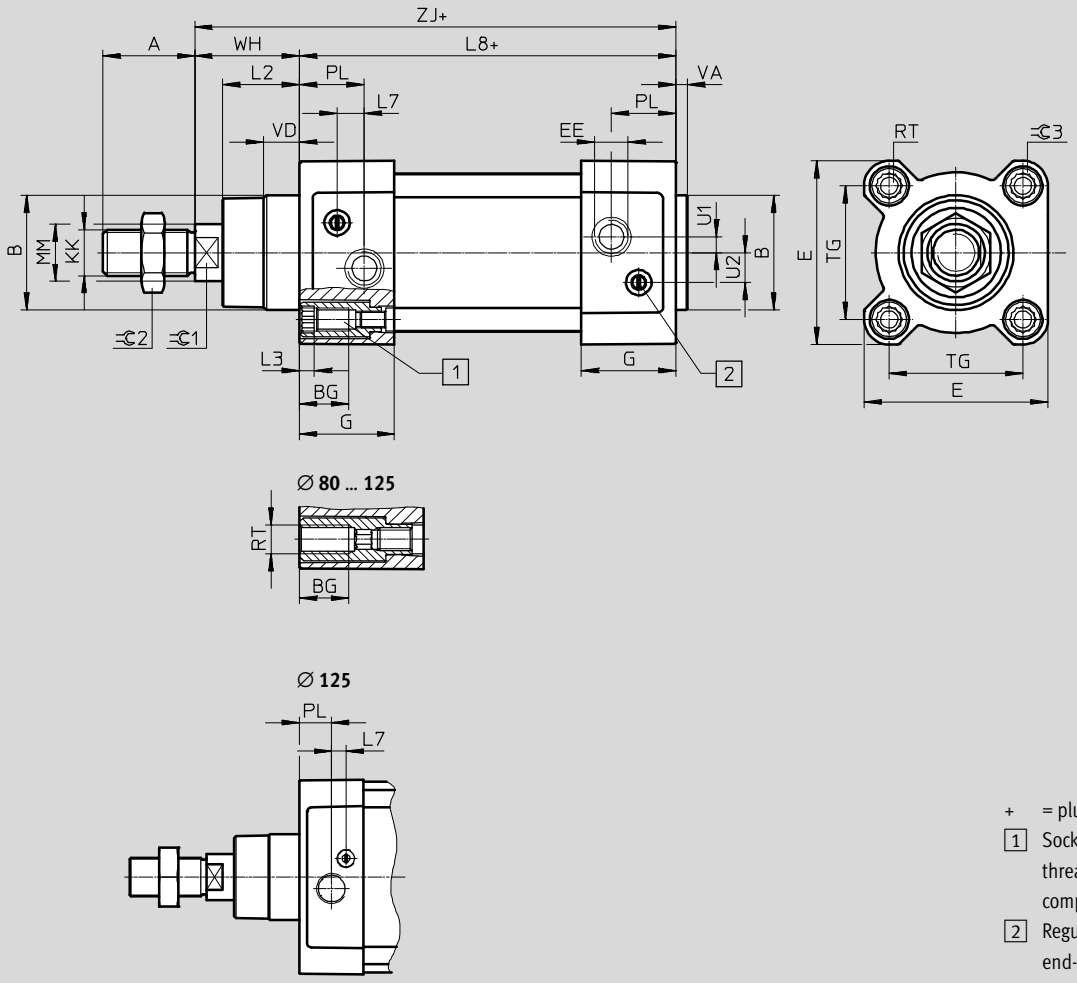
Example 3:
Stroke length l = 150 mm
Lever arm s = 100 mm

$$Fq = \frac{\text{Max. torque 800 Nmm}}{\text{Lever arm 100 mm}}$$

= 8 N
Result: Permissible
Fq = 8 N < Fqmax. = 9.5 N

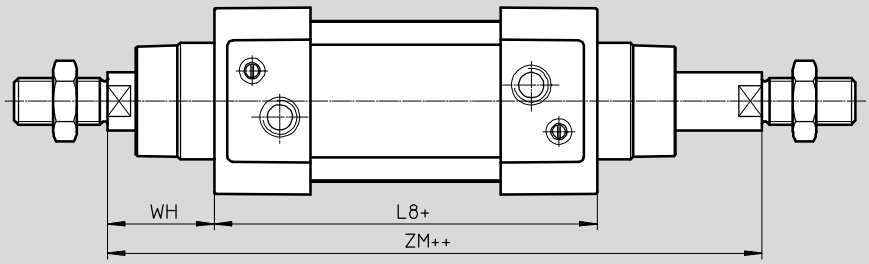


Dimensions Download CAD data ➔ **www.festo.com**



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

Variant
T – Through piston rod



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

Standards-based cylinders DSBG, to ISO 15552

Technical data

∅ [mm]	A −0.5	B ∅ d11	BG Min.	E +0.5	EE	G −0.2	U2 ±0.1	U1 ±0.1	KK
32	22	30	16	45	G⅛	28	5.7	5.25	M10x1.25
40	24	35	16	54	G¼	33	8	4	M12x1.25
50	32	40	16	64	G¼	33	10.4	5.5	M16x1.5
63	32	45	16	75	G⅜	40.5	12.75	6.25	M16x1.5
80	40	45	17	93	G⅜	43	12.5	8	M20x1.5
100	40	55	17	110	G½	48	13.5	10	M20x1.5
125	54	60	20	136	G½	44.7	13	8	M27x2

∅ [mm]	L2	L3 Max.	L7	L8 ±0.4	MM ∅	PL ±0.1	RT	TG ±0.3
32	$18_{-0.2}$	5	6.5	94	12	19.5	M6	32.5
40	$21.3_{-0.2}$	5	7.5	105	16	22.5	M6	38
50	$26.8_{-0.2}$	5	9.5	106	20	22.5	M8	46.5
63	$27_{-0.2}$	5	9	121	20	27.5	M8	56.5
80	$34.2_{-0.2}$	–	11	128	25	30	M10	72
100	$38_{-0.2}$	–	7.5	138	25	31.5	M10	89
125	$45_{-0.3}$	–	10	160	32	22.5	M12	110

∅ [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	16	6
40	$4_{-0.2}$	10.5	28.7	133.9	164.8	13	18	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

Dimensions – Variants

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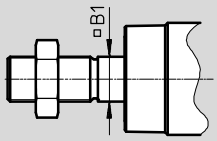
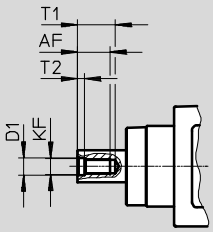
Q – With protection against rotation



Note

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

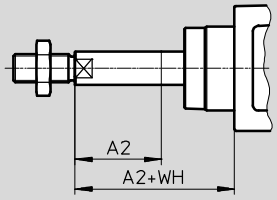
F – Female thread



Note

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

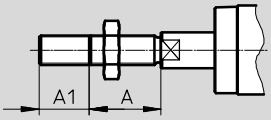
...E – Piston rod extension



Note

Piston rod extension at one end in combination with the variant T. Piston rod extension only at the square piston rod in combination with the variant T and Q.

...L – Piston rod thread extension



Note

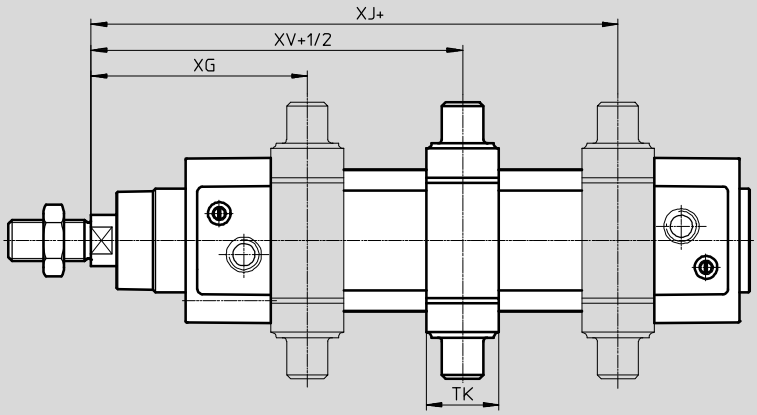
In combination with variant T, the piston rod thread is extended at both ends.

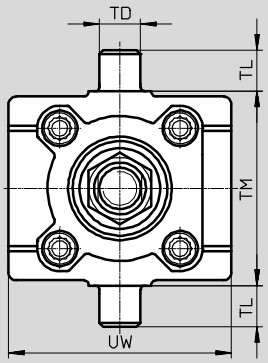
∅	A	A1		A2		AF
[mm]		Min.	Max.	Min.	Max.	Min.
32	22	1	35	1	500	12
40	24	1	35	1	500	12
50	32	1	70	1	500	16
63	32	1	70	1	500	16
80	40	1	70	1	500	20
100	40	1	70	1	500	20
125	54	1	70	1	500	32

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

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.

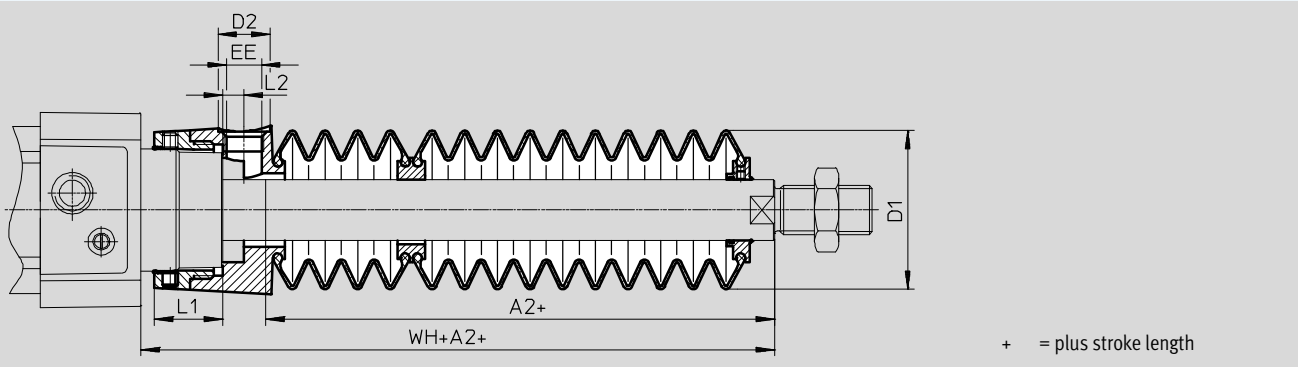
\+ = plus stroke length
+½ = plus half stroke length

∅ [mm]	TD ∅ e9	TK	TL h14	TM h14
32	12	20	12	50
40	16	25	16	63
50	16	28	16	75
63	20	30	20	90
80	20	32	20	110
100	25	38	25	132
125	25	44	25	160

∅ [mm]	UW	XG Min.	XJ Max.	XV
32	65	64±1.4	81±1.4	73±1.4
40	72	74.2±1.4	88.4±1.4	81.2±1.4
50	86	82.6±1.4	94.8±1.4	88.6±1.4
63	98	91.4±1.8	101.6±1.8	96.4±1.8
80	110	104.4±1.8	114.6±1.8	109.4±1.8
100	136	116.3±1.8	120.5±1.8	118.3±1.8
125	160	131.7±1.8	158.3±1.8	145±1.8

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

P2 – Bellows on bearing cap



\+ = plus stroke length

∅	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	G⅛	12.9	5.4	55	28	46	14	G⅛	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

∅	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	G¼	22.35	7	63.6	28	57	17	G¼	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

∅	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	G¼	28	4	70.4	25	93	17	G¼	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

Standards-based cylinders DSBG, to ISO 15552

Technical data

FESTO

Ordering data					
Piston ∅ [mm]	Stroke [mm]	With PPV cushioning Part No.	Type	With PPS cushioning 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 ➔ 24

Ordering data						
Piston ∅ [mm]	Stroke [mm]	With PPV cushioning Part No.	Type		With PPS cushioning 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 ➔ 24

Standards-based cylinders DSBG, to ISO 15552

Technical data

Ordering data						
Piston ∅ [mm]	Stroke [mm]	With PPV cushioning Part No.	Type		With PPS cushioning 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 ➔ 24

Standards-based cylinders DSBG to ISO 15552

FESTO

Ordering data – Modular product system

Ordering table

Size			32	40	50	63	80	100	125	Condi-tions	Code		Entry code
M	Module no.		**1634484**	**1645477**	**1646707**	**1646738**	**1646769**	**1646799**	**2045493**				
	Function		Standards-based cylinder, double-acting, based on ISO 15552								**DSBG**		DSBG
O	Protection against rotation		None										
			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**		
M	Piston ∅	[mm]	32	40	50	63	80	100	125		**-...**		
	Stroke	[mm]	1 ... 2800								**-...**		
O	Piston rod		Piston rod at one end										
			Through piston rod								**-T**		
	Piston rod thread type		Male thread										
			Female thread							4	**F**		
M	Cushioning		Elastic cushioning rings/pads at both ends								**-P**		
			Pneumatic cushioning, self-adjusting at both ends							5	**-PPS**		
			Pneumatic cushioning, adjustable at both ends								**-PPV**		
↓	Position sensing		For proximity sensor								**A**		A

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 ...L
5 **PPS** Not with T1, T3, T4

Note

If feature 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 (➔ 11) is applicable for strokes up to 500 mm.

Note

If feature L1 is used in combination with strokes of above 500 mm, suitable measures must be taken to support the piston rod.
The operating pressure (➔ 11) is applicable for strokes up to 500 mm.

M Mandatory data
O Options

Transfer order code

	DSBG	–		–		–		–		–		A

Ordering table

Size		32	40	50	63	80	100	125	Conditions	Code		Entry code
↓	Standard	Based on ISO 15552										
O		Corresponds to 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**		
	Protection against particles	Standard										
		Bellows on bearing cap						–	8	**P2**		
	Scraper variant	None										
		Hard scraper								**A2**		
		For unlubricated operation								**A3**		
		Metal scraper								**A6**		
	EU certification	None										
		II 2GD							9	**EX4**		
	Swivel mounting position [mm]	None										
		0 … 2800								**-…V**		
	Piston rod extension [mm]	None										
		1 … 500							10	**-…E**		
	Piston rod thread extension [mm]	None										
		1 … 35		1 … 70					10	**-…L**		

6 **R3** Not with A2, A6, …V
7 **T1, T3, T4** Not with P2, A2, A3, EX4
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
10 **…E, …L** Only up to strokes of 2000 mm

Note

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

Note

When selecting feature …E in combination with feature P2, the part of the piston rod extension …E is not covered by the bellows.

Note

When feature P2 is selected in combination with feature T (through piston rod), the bellows is mounted on one side only.

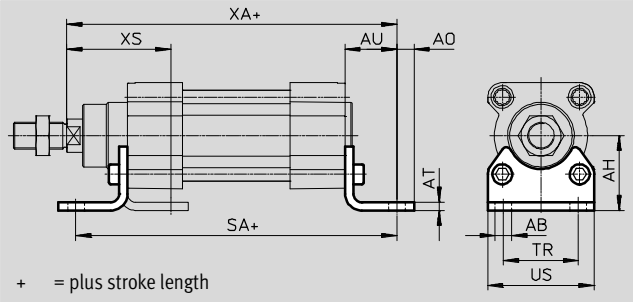
M Mandatory data
O Options

Transfer order code

– | | | | | | | – | | – | | – | |

Foot mounting HNC/CRHNC

Materials:
HNC: Galvanised steel
CRHNC: High-alloy steel
Free of copper and PTFE



Dimensions and ordering data

For ∅ [mm]	AB ∅	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

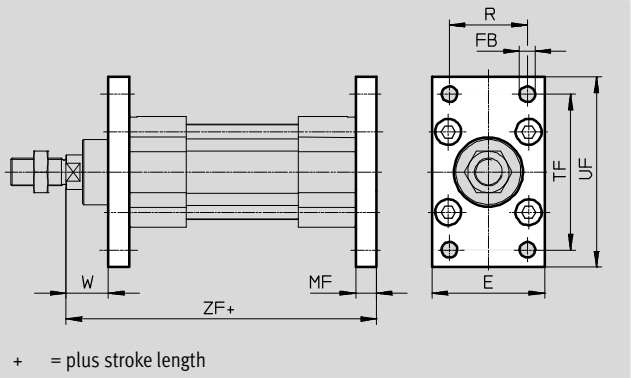
For ∅	Basic design				Corrosion resistant			
	CRC[1]	Weight	Part No.	Type[2]	CRC[1]	Weight	Part No.	Type[2]
[mm]		[g]				[g]		
32	2	144	**174369**	**HNC-32**	4	139	**176937**	**CRHNC-32**
40	2	193	**174370**	**HNC-40**	4	188	**176938**	**CRHNC-40**
50	2	353	**174371**	**HNC-50**	4	341	**176939**	**CRHNC-50**
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 may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
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, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.

2) Suitable for ATEX

Flange mounting FNC/CRFNG

Materials:
FNC: Galvanised steel
CRFNG: High-alloy steel
Free of copper and PTFE
RoHS compliant



Dimensions and ordering data

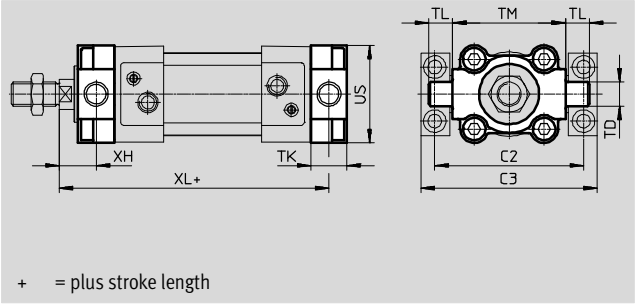
For ∅ [mm]	E	FB ∅ H13	MF	R	TF	UF	W	ZF
32	45	7	10	32	64	80	16	129.1
40	54	9	10	36	72	90	18.7	143.9
50	65	9	12	45	90	110	23.6	153.8
63	75	9	12	50	100	120	23.9	169.1
80	93	12	16	63	126	150	29.4	189.6
100	110	14	16	75	150	175	33.3	203.5
125	132	16	20	90	180	210	45	245

For ∅	Basic design				Corrosion resistant			
	CRC[1]	Weight	Part No.	Type[2]	CRC[1]	Weight	Part No.	Type[2]
[mm]		[g]				[g]		
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, 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, for instance in the chemical or food industries. These applications may need to be supported by special tests (➔ also FN 940082) using appropriate media.
2) Suitable for ATEX

Trunnion flange ZNCF/CRZNG

Materials:
ZNCF: Stainless steel casting
CRZNG: Electropolished stainless steel casting
Free of copper and PTFE
RoHS compliant



\+ = plus stroke length

Dimensions and ordering data

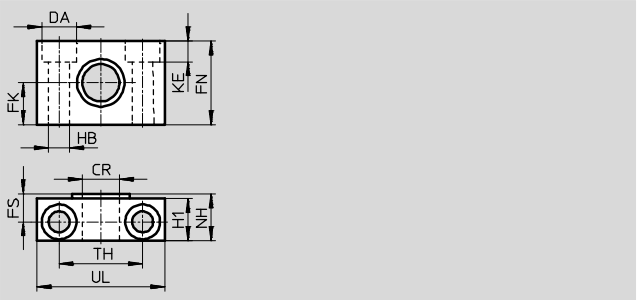
For ∅ [mm]	C2	C3	TD ∅ e9	TK	TL	TM	US	XH	XL
32	71	86	12	16	12	50	45	18	127.1
40	87	105	16	20	16	63	54	18.7	143.9
50	99	117	16	24	16	75	64	23.6	153.8
63	116	136	20	24	20	90	75	23.9	169.1
80	136	156	20	28	20	110	93	31.4	187.6
100	164	189	25	38	25	132	110	30.3	206.5
125	192	217	25	50	25	160	131	40	250

For ∅	Basic design				Corrosion resistant			
	CRC[1]	Weight	Part No.	Type[2]	CRC[1]	Weight	Part No.	Type[2]
[mm]		[g]				[g]		
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 may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
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, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.
2) Suitable for ATEX

Trunnion support LNZG

Materials:
Trunnion support: Anodised aluminium
Plain bearing: Plastic
Free of copper and PTFE
RoHS compliant



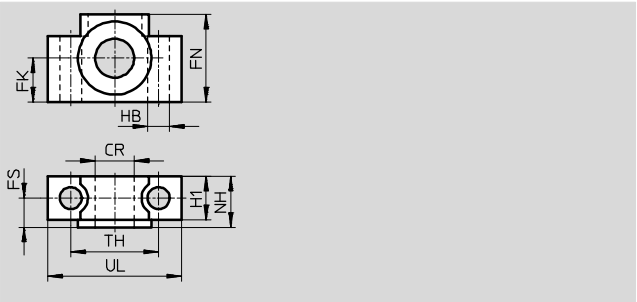
Dimensions and ordering data

For ∅ [mm]	CR ∅ D11	DA ∅ H13	FK ∅ ±0.1	FN	FS	H1	HB ∅ 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 may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Trunnion support CRLNZG

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



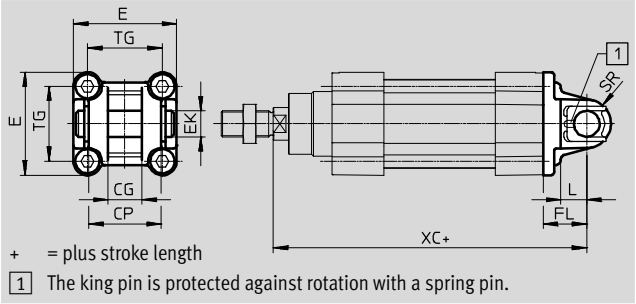
Dimensions and ordering data

For ∅ [mm]	CR ∅ D11	FK ∅ ±0.1	FN	FS	H1	HB ∅ 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, for instance in the chemical or food industries. These applications may need to be supported by special tests (➔ also FN 940082) using appropriate media.

Swivel flange SNC

Materials:
Die-cast aluminium
RoHS-compliant



\+ = plus stroke length

1 The king pin is protected against rotation with a spring pin.

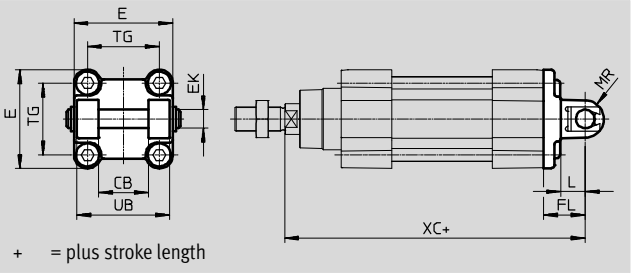
Dimensions and ordering data

For ∅ [mm]	CG H14	CP h14	E	EK ∅ 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	2	93	**174383**	**SNC-32**
40	16	40	54–0.5	12	25	16	12	38	158.9	2	140	**174384**	**SNC-40**
50	21	45	64–0.6	16	27	16	12	46.5	168.8	2	234	**174385**	**SNC-50**
63	21	51	75–0.6	16	32	21	16	56.5	189.1	2	331	**174386**	**SNC-63**
80	25	65	93–0.8	20	36	22	16	72	209.6	2	618	**174387**	**SNC-80**
100	25	75	110+0.3/–0.8	20	41	27	20	89	228.5	2	865	**174388**	**SNC-100**
125	37	97	131–0.8	30	50	30	25	110	275	2	1728	**174389**	**SNC-125**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Suitable for ATEX areas

Swivel flange
SNCB/SNCB-...-R3

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



Dimensions and ordering data

For ∅ [mm]	CB H14	E	EK ∅ 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 ∅ [mm]	Basic design				R3 – High corrosion protection			
	CRC[1)]	Weight [g]	Part No.	Type	CRC[1)]	Weight [g]	Part No.	Type
32	2	103	**174390**	**SNCB-32**	3	100	**176944**	**SNCB-32-R3**
40	2	155	**174391**	**SNCB-40**	3	151	**176945**	**SNCB-40-R3**
50	2	232	**174392**	**SNCB-50**	3	228	**176946**	**SNCB-50-R3**
63	2	375	**174393**	**SNCB-63**	3	371	**176947**	**SNCB-63-R3**
80	2	636	**174394**	**SNCB-80**	3	632	**176948**	**SNCB-80-R3**
100	2	1035	**174395**	**SNCB-100**	3	986	**176949**	**SNCB-100-R3**
125	2	1860	**174396**	**SNCB-125**	3	1776	**176950**	**SNCB-125-R3**

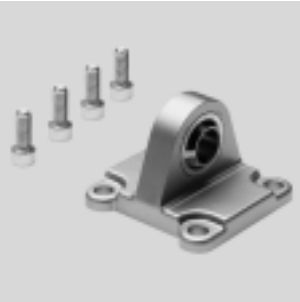
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

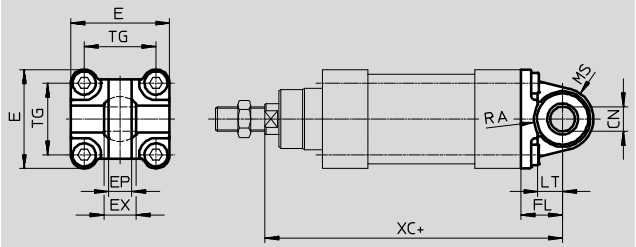
Standards-based cylinders DSBG, to ISO 15552

Accessories

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

Materials:
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 ∅	CN ∅		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

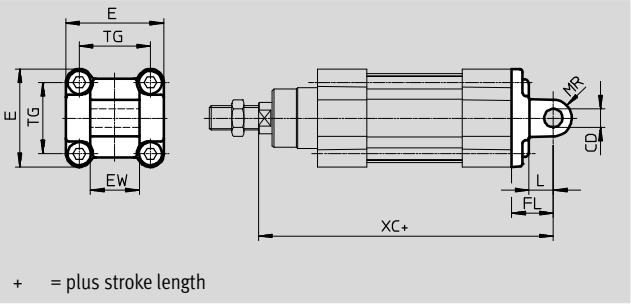
For ∅	LT	MS		RA		TG	XC
		DSBG	DSBG-...-R3	DSBG +1	DSBG-...-R3 +1		
[mm]							
32	13	15+0.5	15+0.5	14.5	14.5	32.5	141.1
40	16	17+0.5	17+0.5	17.5	17.5	38	158.9
50	16	20+0.5	20+0.5	18.5	19	46.5	168.8
63	21	23–0.5	22+0.5	23	23	56.5	189.1
80	22	28–0.5	27+0.5	25	25	72	209.6
100	27	30±0.5	30±0.5	95	100	89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

For ∅	Basic version				High corrosion protection			
	CRC[1)]	Weight	Part No.	Type	CRC[1)]	Weight	Part No.	Type
[mm]		[g]				[g]		
32	2	86	**174397**	**SNCS-32**	4	161	**2895920**	**CRSNCS-32**
40	2	122	**174398**	**SNCS-40**	4	239	**2895921**	**CRSNCS-40**
50	2	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 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and 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, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.

Swivel flange SNCL

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



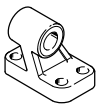
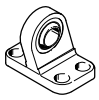
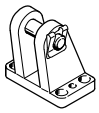
\+ = plus stroke length

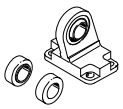
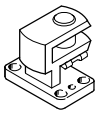
Dimensions and ordering data

For ∅ [mm]	CD ∅ 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	2	71	**174404**	**SNCL-32**
40	12	$54_{-0.5}$	28	25	16	12	38	158.9	2	95	**174405**	**SNCL-40**
50	12	$64_{-0.6}$	32	27	16	12	46.5	168.8	2	158	**174406**	**SNCL-50**
63	16	$75_{-0.6}$	40	32	21	16	56.5	189.1	2	225	**174407**	**SNCL-63**
80	16	$93_{-0.8}$	50	36	22	16	72	209.6	2	436	**174408**	**SNCL-80**
100	20	$110^{+0.3}_{-0.8}$	60	41	27	20	89	228.5	2	606	**174409**	**SNCL-100**
125	25	$131_{-0.8}$	70	50	30	25	110	275	2	1135	**174410**	**SNCL-125**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

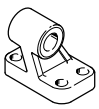
Ordering data – Mounting components — Technical data ➔ Internet: clevis foot

Description	For ∅	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**

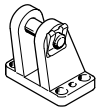
Description	For ∅	Part No.	Type
Clevis foot LSN			
	32	**5561**	**LSN-32**
	40	**5562**	**LSN-40**
	50	**5563**	**LSN-50**
	63	**5564**	**LSN-63**
	80	**5565**	**LSN-80**
	100	**5566**	**LSN-100**
	125	**6987**	**LSN-125**
Clevis foot LSNSG			
	32	**31747**	**LSNSG-32**
	40	**31748**	**LSNSG-40**
	50	**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

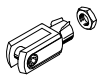
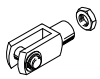
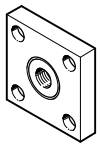
Ordering data – Mounting components, corrosion-resistant — Technical data ➔ Internet: crlng

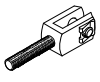
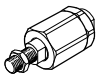
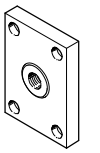
Description	For ∅	Part No.	Type
Clevis foot CRLNG			
	32	**161840**	**CRLNG-32**
	40	**161841**	**CRLNG-40**
	50	**161842**	**CRLNG-50**
	63	**161843**	**CRLNG-63**
	80	**161844**	**CRLNG-80**
	100	**161845**	**CRLNG-100**
	125	**176951**	**CRLNG-125**

Ordering – Mounting attachments, high corrosion protection — Technical data ➔ Internet: clevis foot

Designation	For ∅	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	**2078337**	**LBG-125-R3**

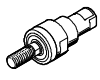
Ordering data – Piston rod attachments — Technical data ➔ Internet: piston-rod attachment

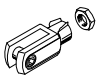
Description	For ∅	Part No.	Type
Rod eye SGS			
	32	**9261**	**SGS-M10x1,25**
	40	**9262**	**SGS-M12x1,25**
	50	**9263**	**SGS-M16x1,5**
	63		
	80	**9264**	**SGS-M20x1,5**
	100		
	125	**10774**	**SGS-M27x2**
Rod clevis SG[1]			
	32	**6144**	**SG-M10x1,25**
	40	**6145**	**SG-M12x1,25**
	50	**6146**	**SG-M16x1,5**
	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**

Description	For ∅	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 — Technical data ➔ Internet: piston-rod attachment

Description	For ∅	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		

Description	For ∅	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

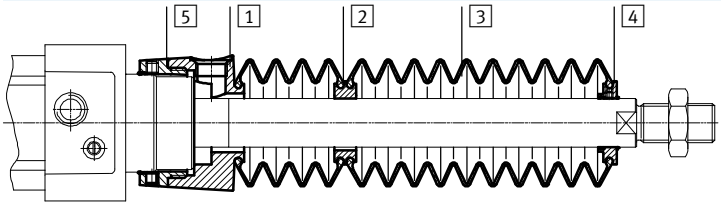
Bellows kit DADB

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

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

Materials

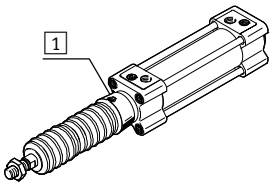
Sectional view



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

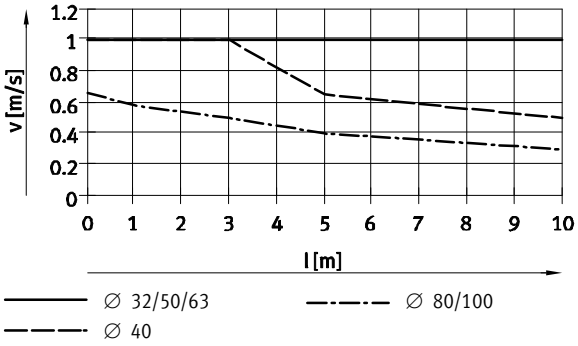
Weight [g]						
Type DADB-V6- Stroke [mm]	32	40	50	63	80	100
10 … 50	29	42	71	69	99	124
51 … 125	41	56	91	89	127	152
126 … 175	52	68	105	103	140	165
176 … 250	66	85	129	127	193	218
251 … 300	79	100	147	145	231	255
301 … 350	92	115	166	164	268	293
351 … 375	92	115	167	165	259	284
376 … 425	104	129	185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

Travel speed v as a function of tubing length l

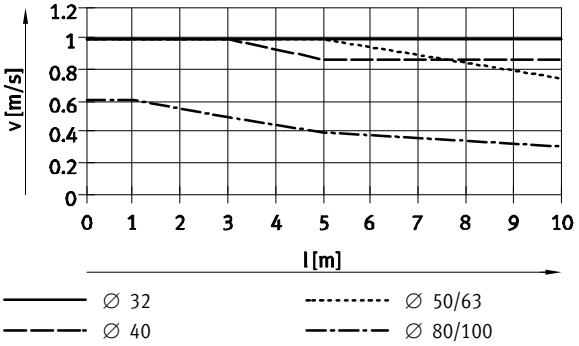


The bellows kit is a leak-free system. To prevent unwanted media from being drawn in, the supply and exhaust air must be ducted via a pressure compensation hole in the connection part 1.
The pressure generated in the bellows kit by the positioning motion is primarily defined by the travel speed and tubing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

Advancing



Retracting



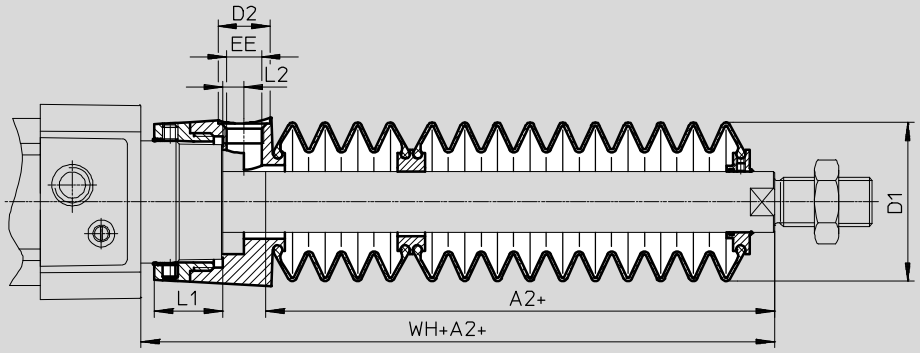
- Note

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.

Tubing size and push-in fitting for pressure compensation hole

∅ [mm]	Tubing O.D. [mm]	Push-in fitting Part No.	Type
32, 40	8	**186109**	**QS-G⅛-8-I**
		578376	**NPQH-DK-G18-Q8-P10**
		578362	**NPQH-D-G18-S8-P10**
50, 63, 80, 100	12	**186350**	**QS-G¼-12**
		578344	**NPQH-D-G14-Q12-P10**
		578366	**NPQH-D-G14-S12-P10**

Dimensions Download CAD data ➔ **www.festo.com**



\+ = plus stroke length

∅	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	G⅛	12.9	5.4	55	28	46	14	G⅛	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

∅	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	G¼	22.35	7	63.6	28	57	17	G¼	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

∅	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	G¼	28	4	70.4	25	93	17	G¼	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

Ordering data – Bellows kit

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

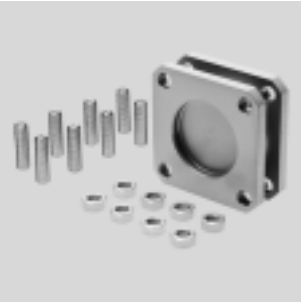
The necessary dimension for order code E as a function of piston diameter and cylinder stroke as well as the corresponding bellows kit is indicated in the table below:

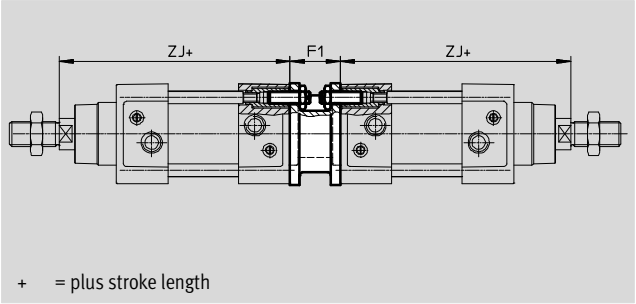
Order example:
Selected standards-based cylinder:
DSBG-32-320-PPV-A- ...
The dimension for the corresponding E value (see table):
112 mm
Complete type code for standards-based cylinder:
DSBG-32-320-PPV-A- ...-112E
The corresponding bellows kit:
DADB-V6-32-S301-350

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

Multi-position kit DPNC

Materials:
Flange: Wrought aluminium alloy
Threaded pins, hex nuts: Galvanised steel





\+ = plus stroke length

Dimensions and ordering data

For ∅ [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

Note

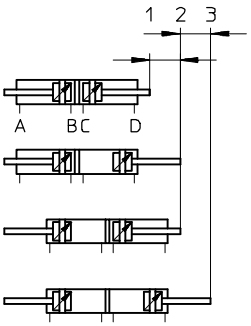
The maximum overall stroke length must not be exceeded when combining cylinders and multi-position kits.

Connecting two cylinders with identical piston ∅ as a 3 or 4-position cylinder

A 3 or 4-position cylinder consists of two separate cylinders whose piston rods advance in opposing directions. This means that depending on actuation and stroke division, this type of cylinder can assume up to four positions. In each case the cylinder is driven 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.

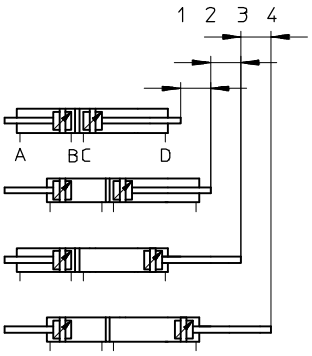
To achieve 3 positions

Two cylinders with identical stroke length must be connected together.

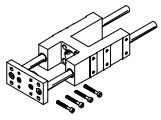


To achieve 4 positions

Two cylinders with different stroke lengths must be connected together.

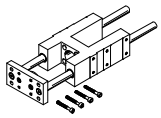


Ordering data – Guide units for fixed strokes (recirculating ball bearing guide only) Technical data ➔ Internet: feng



Stroke [mm]	Part No.	Type[1)]	Stroke [mm]	Part No.	Type[1)]
For ∅ 32 mm			For ∅ 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 ∅ 50 mm			For ∅ 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 ∅ 80 mm			For ∅ 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**

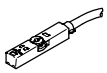
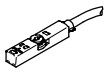
Ordering data – Guide units for variable strokes Technical data ➔ Internet: feng



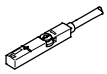
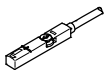
For ∅ [mm]	Stroke [mm]	With recirculating ball bearing guide Part No.	Type[1)]	With plain-bearing guide Part No.	Type[1)]
32	10 … 500	**34487**	**FENG-32-…-KF**	**34481**	**FENG-32-…-GF**
40	10 … 500	**34488**	**FENG-40-…-KF**	**34482**	**FENG-40-…-GF**
50	10 … 500	**34489**	**FENG-50-…-KF**	**34483**	**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

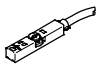
Ordering data – Proximity sensor for T-slot, magneto-resistive — Technical data ➔ Internet: smt

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Inserted 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 connector M8x1, 3-pin	0.3	**574334**	**SMT-8M-A-PS-24V-E-0,3-M8D**
			Plug connector 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 connector M8x1, 3-pin	0.3	**574339**	**SMT-8M-A-NS-24V-E-0,3-M8D**
N/C contact						
	Inserted 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 sensors for T-slot, magnetic reed — Technical data ➔ Internet: sme

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Inserted 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 connector 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, magneto-resistive, for ATEX zone — Technical data ➔ Internet: smt

	Type of mounting	ATEX category		Switching output	Electrical connection	Cable length [m]	Part No.	Type
		Gas	Dust					
N/O contact								
	Insertable in the slot from above, flush with the cylinder profile, short design	II 3G	II 3D	PNP	Plug connector M8x1, 3-wire	0.3	**574342**	**SMT-8M-A-PS-24V-E-0,3-M8D-EX2**

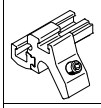
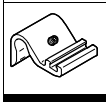
Ordering data – Safety clip for ATEX zone

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

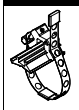
Ordering data – Connecting cables — Technical data ➔ Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541334**	**NEBU-M8G3-K-5-LE3**
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541363**	**NEBU-M12G5-K-2.5-LE3**
			5	**541364**	**NEBU-M12G5-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541341**	**NEBU-M8W3-K-5-LE3**
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541367**	**NEBU-M12W5-K-2.5-LE3**
			5	**541370**	**NEBU-M12W5-K-5-LE3**

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

	For ∅	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 sensor SME/SMT-8 Technical data ➔ Internet: smbr

	For ∅	Mounting	CRC[1)]	Part No.	Type
	32 … 100	On the cylinder barrel via clamping strap	4	**538937**	**SMBR-8-8/100-S6**

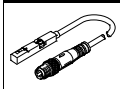
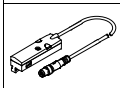
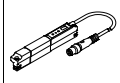
1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (➔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

Position sensor

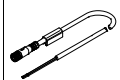
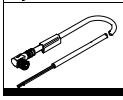
The position sensor continuously senses the position of the piston.

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

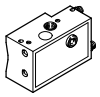
Ordering data – Position sensor for T-slot Technical data ➔ Internet: position sensor

	For ∅	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	–	Inserted in the slot from above	Plug connector M8x1, 4-pin, in-line	0.3	**553744**	**SMAT-8M-U-E-0,3-M8D**
	125	0 … 50	0 … 10	4 … 20	Inserted into the slot lengthwise	Plug M8x1, 4-pin, right angle	–	**540191**	**SMAT-8E-S50-IU-M8**
						Plug connector M8x1, 4-pin, in-line	0.3	**570134**	**SMAT-8E-S50-IU-E-0,3-M8D**
	32 … 125	0 … 50	–	4 … 20	Inserted in the slot from above	Plug connector 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**

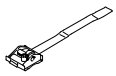
Ordering data – Connecting cables Technical data ➔ Internet: nebu

	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**

Ordering data – Rectangular proximity sensors, pneumatic — Technical data ➔ Internet: smpo

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

Ordering data – Mounting kit for proximity sensor SMPO-1 — Technical data ➔ Internet: smbs

	For ∅	Mounting	Part No.	Type
	32 ... 100 mm	On the cylinder barrel via clamping strap	**151226**	**SMBS-2**

Ordering data – One-way flow control valves — Technical data ➔ Internet: grl

	Port		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-1/4-QS-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**