



- Reacts quickly thanks to minimal break-away force
- Meets the highest requirements for running characteristics, service life and load carrying ability
- Extensive range of accessories

Round cylinders DSNU/ESNU

Key features

At a glance

- Round cylinders with piston diameter from 32 to 63 mm
- The series is not repairable
- Piston rod and cylinder barrel made of stainless steel
- The cap is roller burnished onto the barrel
- Good running performance and long service life thanks to smooth, hard inner surface of cylinder barrel
- Three cushioning variants available
 - P cushioning
 - PPV cushioning
 - PPS cushioning

Wide choice of variants

DSNU-...

- Cylinder barrel made from stainless steel
- Bearing and end caps made from wrought aluminium alloy



DSNU/ESNU-...MA

- Bearing cap with flange thread
- Short end cap with axial air connection



DSNU-...MQ

- Bearing cap with flange thread
- Short end cap with lateral air connection



DSNU-...MH

- Direct mounting on the bearing cap
- Short end cap with lateral air connection



DSNU-...KP

- With clamping unit













Cushioning types

	P cushioning	PPS cushioning	PPV cushioning
Mode of operation	<ul style="list-style-type: none"> • The drive is equipped with polymer flexible end position cushioning 	<ul style="list-style-type: none"> • The drive is equipped with self-adjusting end position cushioning 	<ul style="list-style-type: none"> • The drive is equipped with adjustable end position cushioning
Application	<ul style="list-style-type: none"> • Small loads • Low speeds • Low impact energies 	<ul style="list-style-type: none"> • Small to medium loads • Low to medium speeds • Medium impact energies 	<ul style="list-style-type: none"> • Medium to high loads • High speeds • High impact energies
Advantages	<ul style="list-style-type: none"> • No adjustment required • Time-saving 	<ul style="list-style-type: none"> • No adjustment required • Time-saving • Powerful 	<ul style="list-style-type: none"> • Very powerful

Round cylinders DSNU/ESNU

Key features

Additional variants		
Symbol	Key features	Description
	S2 Through piston rod	For working at both ends with the same force in the forward and return stroke, for attaching external stops
	S6 Heat-resistant seals	Temperature resistance up to max. 120 °C
	S10 Constant motion (slow speed) at low piston speeds	Suitable for slow stroke movements at a constant, stick-slip-free speed over the full stroke of the cylinder. Seal contains silicone grease (not free of paint-wetting impairment substances)
	S11 Low friction	Special seals considerably reduce friction. This means a considerably lower response pressure. Seal contains silicone grease (not free of paint-wetting impairment substances)
	K2 Extended male piston rod thread	–
	K3 Female piston rod thread	–
	K5 Special piston rod thread	Metric standard thread to ISO
	K6 Shortened male piston rod thread	–
	K8 Extended piston rod	–
	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

Longer service life thanks to the bellows kit DADB



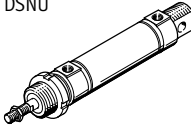
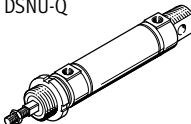
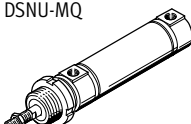
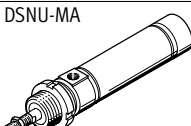
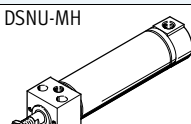
The bellows kit is a leak-free system. To prevent unwanted media being drawn in, the supply and exhaust air must be ducted via a pressure compensation hole in the connection part 1.

The kit protects the piston rod, seal and bearings from a wide range of media, for example:

- dust,
- chips,
- oil,
- grease,
- fuel.

Round cylinders DSNU

Product range overview

Function	Version	Piston Ø [mm]	Stroke [mm]	Variable stroke ¹⁾ [mm]	Piston rod						
					Through S2	Extended K8	Male thread			Female thread K3	
							Extended K2	Shortened K6	Special thread K5		
Double- acting	Basic version with position sensing										
	DSNU 	32, 40, 50, 63	25, 40, 50, 80, 100, 125, 160, 200, 250, 320	1 ... 500	■	■	■	■	■	■	
	DSNU – Standard cylinder with piston Ø 8 ... 25										
	Protected against rotation										
	DSNU-Q 	32	-	5 ... 300	■	■	■	■	■	■	
		40, 50	-	5 ... 400							
		63	-	5 ... 500							
	DSNU-Q – Standard cylinder with piston Ø 8 ... 25										
	Lateral air connection										
	DSNU-MQ 	32, 40, 50, 63	-	1 ... 500	-	■	■	■	■	■	
DSNU-MQ – Standard cylinder with piston Ø 8 ... 25											
Axial air connection											
DSNU-MA 	32, 40, 50, 63	-	1 ... 500	-	■	■	■	■	■		
DSNU-MA – Standard cylinder with piston Ø 8 ... 25											
Direct mounting											
DSNU-MH 	32, 40, 50, 63	-	1 ... 500	-	■	■	■	■	■		
DSNU-MH – Standard cylinder with piston Ø 8 ... 25											

1) Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing

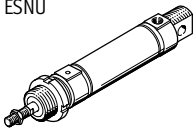
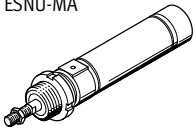
Round cylinders DSNU

Product range overview

Version	Cushioning			Position sensing	Clamping unit	Heat-resistant seal	Slow speed (constant motion)	Low friction	Corrosion protection	Wiper seal	→ Page/ Internet
	Fixed	Adjustable	Self-adjusting								
	P	PPV	PPS								
Basic version with position sensing											
DSNU	■	■	■	■	■	■	■	■	■	■	11
DSNU – Standard cylinder with piston Ø 8 ... 25											dsnu
Protected against rotation											
DSNU-Q	■	■	-	■	■	■	■	■	■	-	20
DSNU-Q – Standard cylinder with piston Ø 8 ... 25											dsnu
Lateral air connection											
DSNU-MQ	■	■	■	■	■	■	-	-	■	■	11
DSNU-MQ – Standard cylinder with piston Ø 8 ... 25											dsnu
Axial air connection											
DSNU-MA	■	-	-	■	■	■	-	-	■	-	11
DSNU-MA – Standard cylinder with piston Ø 8 ... 25											dsnu
Direct mounting											
DSNU-MH	■	■	-	■	-	■	-	-	■	-	11
DSNU-MH – Standard cylinder with piston Ø 8 ... 25											dsnu

Round cylinders ESNU

Product range overview

Function	Version	Piston Ø [mm]	Stroke [mm]	Variable stroke ¹⁾ [mm]	Fixed cushioning P	Position sensing A
Single-acting	Basic version with position sensing					
	ESNU 	32, 40, 50, 63	10, 25, 50	1 ... 50	■	■
	ESNU – Standard cylinder with piston Ø 8 ... 25					
	Axial air connection					
ESNU-MA 	32, 40, 50, 63	–	1 ... 50	■	■	
ESNU-MA – Standard cylinder with piston Ø 8 ... 25						

1) Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing

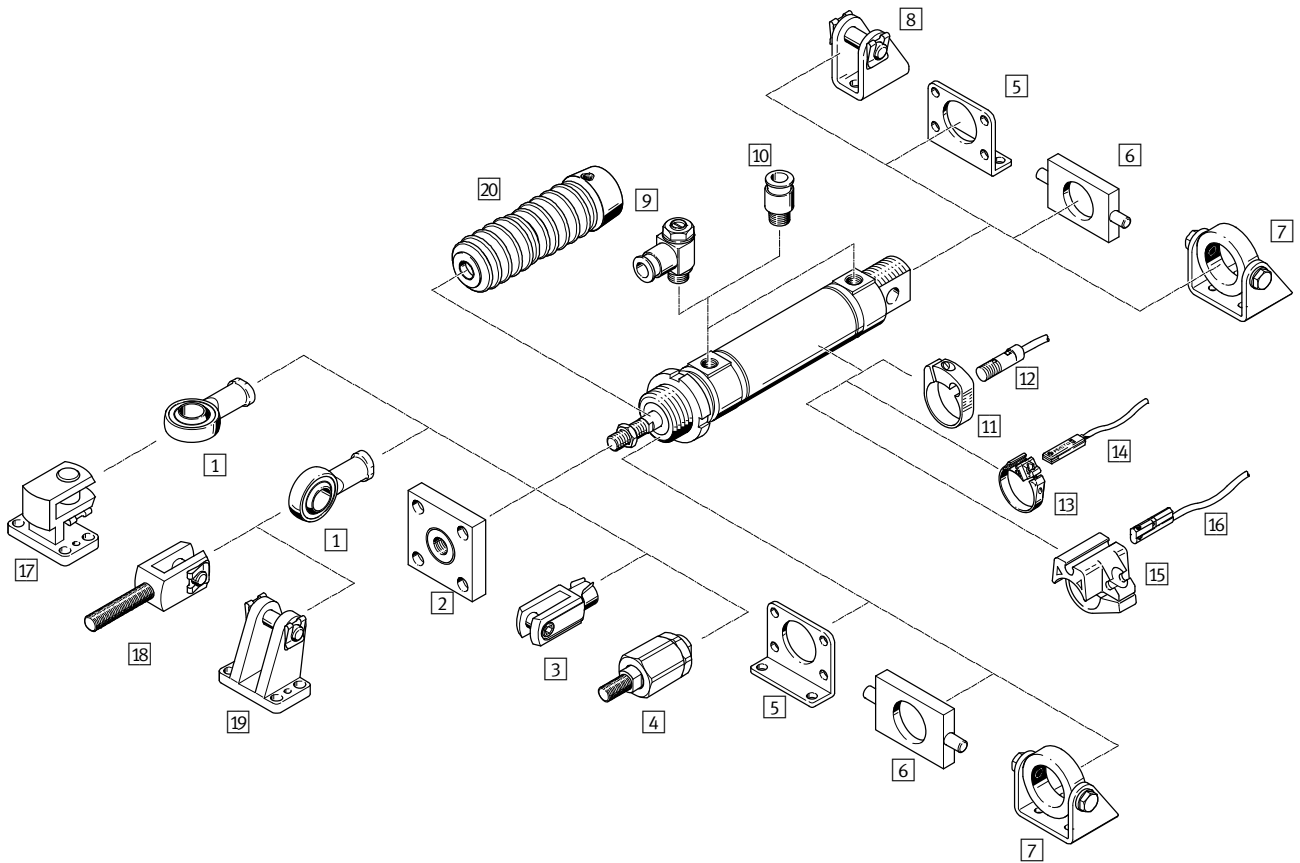
Round cylinders ESNU

Product range overview

Version	Piston rod					→ Page/Internet
	Extended	Male thread			Female thread	
		Extended	Shortened	Special thread		
K8	K2	K6	K5	K3		
Basic version with position sensing						
ESNU	■	■	■	■	■	32
ESNU – Standard cylinder with piston Ø 8 ... 25						esnu
Axial air connection						
ESNU-MA	■	■	■	■	■	32
ESNU-MA – Standard cylinder with piston Ø 8 ... 25						esnu

Round cylinders DSNU/ESNU

Peripherals overview

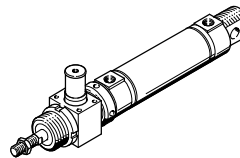
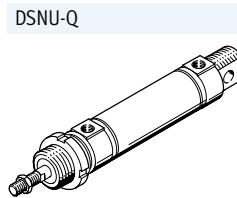
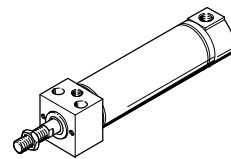
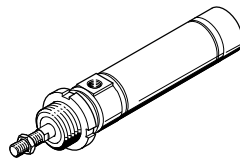
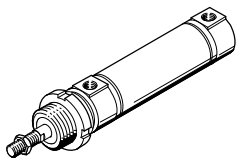


Variants

DSNU-MQ

DSNU-MA

DSNU-MH

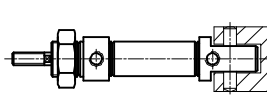
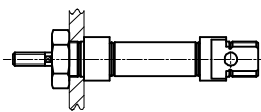
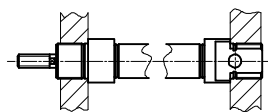


Mounting options

Mounting front and rear

Mounting via hex nut

Swivel mounting

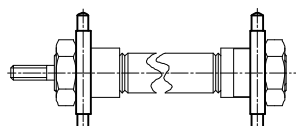
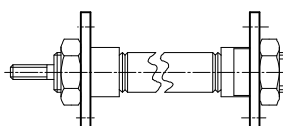
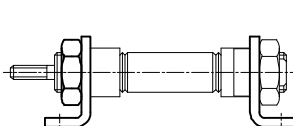
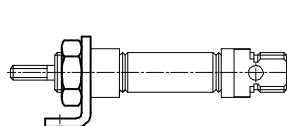


Foot mounting (for short strokes)

Foot mounting

Flange mounting


Swivel mounting



Round cylinders DSNU/ESNU

Peripherals overview

Mounting attachments and accessories							
	DSNU/ESNU	DSNU/ESNU MA	DSNU MQ	MH	KP	DSNU-Q	→ Page/Internet
1	Rod eye SGS/CRSGS	■	■	■	■	■	41
2	Coupling piece KSG/KSZ	■	■	■	■	■	41
3	Rod clevis SG/CRSG	■	■	■	■	■	41
4	Self-aligning rod coupler FK/CRFK	■	■	■	■	■	41
5	Foot mounting HBN/CRH	■	■	■	-	■	38
	Flange mounting FBN/CRFV	■	■	■	-	■	38
6	Swivel mounting ¹⁾ WBN	■	■	■	-	■	39
7	Swivel mounting ¹⁾ SBN	■	■	■	-	■	39
8	Clevis foot LBN/CRLBN	■	-	-	-	■	40
9	One-way flow control valve GRLA/GRLZ/CRGRLA	■	■	■	■	■	41
10	Push-in fitting QS	■	■	■	■	■	quick star
11	Mounting kit CRSMBR	■	■	■	■	■	47
12	Proximity sensor SMEO/SMTO/CRSMEO-4	■	■	■	■	■	47
13	Mounting kit SMBR-8	■	■	■	■	■	48
14	Proximity sensor SME/SMT-8	■	■	■	■	■	48
15	Mounting kit SMBR-10	■	■	■	■	■	49
16	Proximity sensor SME/SMT-10	■	■	■	■	■	49
17	Right-angle clevis foot LQG	■	■	■	■	■	40
18	Rod clevis SGA	■	■	■	■	■	41
19	Clevis foot LBG	■	■	■	■	■	40
20	Bellows kit ²⁾ DADB	■	■	■	-	-	40

 Note

1) Cannot be used on the bearing cap in combination with bellows kit DADB.

2) The bellows kit protects the cylinder (piston rod, seal and bearings) against a wide range of media and thus prevents premature wear.

It can only be used in combination with an extended piston rod (K8).

Round cylinders DSNU/ESNU

Type codes

	DSNU	–	32	–	80	–	PPV	–	A	–	MQ
Type											
Double-acting											
DSNU	Round cylinder										
Single-acting											
ESNU	Round cylinder										
Piston Ø [mm]											
Stroke [mm]											
Cushioning											
P	Flexible cushioning rings/pads at both ends										
PPV	Pneumatic cushioning, adjustable at both ends										
PPS	Pneumatic cushioning, self-adjusting at both ends										
Position sensing											
A	Via proximity sensor										
Variant											
MQ	Lateral air connection										
MA	Axial air connection										
MH	With mounting flange on bearing cap										

Modular product system

Individually configurable

DSNU → 28

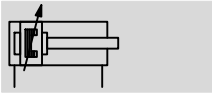
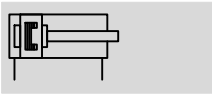
ESNU → 36

- Square piston rod (protection against rotation)
- Through piston rod (piston rod type)
- Extended male piston rod thread
- Male piston rod thread, shortened at one end
- Female piston rod thread (female thread)
- Special piston rod thread (special thread)
- Piston rod extended at front
- Clamping unit on the piston rod
- Heat-resistant seals for temperatures up to 120 °C (temperature resistance)
- Slow speed (constant motion at low piston rod speeds)
- Low friction
- ATEX certification II 2GD
- All external cylinder surfaces conform to corrosion resistance class CRC 3 (corrosion protection)
- Dust protection (wiper seal)

Round cylinders DSNU

Technical data

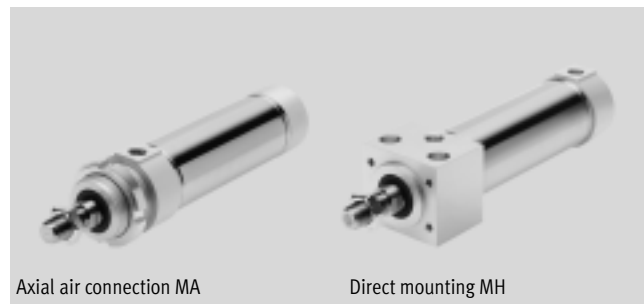
Function



- \varnothing - Diameter
32 ... 63 mm

- | - Stroke length
1 ... 500 mm

Variants
→ 18



General technical data					
Piston \varnothing		32	40	50	63
Pneumatic connection		G1/8	G1/4	G1/4	G3/8
Piston rod thread		M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design		Piston			
		Piston rod			
		Cylinder barrel			
Cushioning	P	Flexible cushioning rings/pads at both ends			
	PPV	Adjustable cushioning at both ends			
	PPS	Self-adjusting cushioning at both ends			
Cushioning length	PPV	[mm] 14	18	20	21
	PPS	[mm] 14	18	20	21
Position sensing		Via proximity sensor			
Type of mounting		Direct mounting (MH variant only)			
		Via accessories			
Mounting position		Any			

Operating conditions					
Piston \varnothing		32	40	50	63
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Operating pressure [bar]	Basic version	1 ... 10			
	S10	0.5 ... 10		0.4 ... 10	
	S11	0.2 ... 10	-	0.2 ... 10	

Round cylinders DSNU

Technical data

Ambient conditions					
Round cylinder	Basic version	S6	S10	S11	R3
Ambient temperature ¹⁾ [°C]	-20 ... +80	0 ... +120	+5 ... +80		-20 ... +80
Corrosion resistance class CRC ²⁾	2	2	2	2	3

1) Note operating range of proximity sensors.

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

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

Corrosion resistance class 3 as per Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

ATEX ¹⁾	
ATEX category for gas	II 2G
Explosion ignition protection type for gas	c T4
ATEX category for dust	II 2D
Explosion ignition protection type for dust	c 120°C
Explosion-proof temperature rating	-20°C ≤ Ta ≤ +60°C
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

1) Make sure that the accessories are suited for ATEX application.

Speed [mm/s]					
Piston Ø		32	40	50	63
Speed with stick-slip-free operation, horizontal, without load, at 6 bar	S10	8 ... 100			5 ... 100
Minimum speed, advancing	S11	<1 ¹⁾			
Minimum speed, retracting	S11	<1 ¹⁾			

1) Measurements of less than 1 mm/s were not conducted.

Force [N] and impact energy [J]					
Piston Ø		32	40	50	63
Theoretical force at 6 bar, advancing		483	753	1,178	1,870
Theoretical force at 6 bar, retracting		415	633	990	1,682
Impact energy at the end positions for P cushioning ¹⁾		0.40	0.70	1	1.3

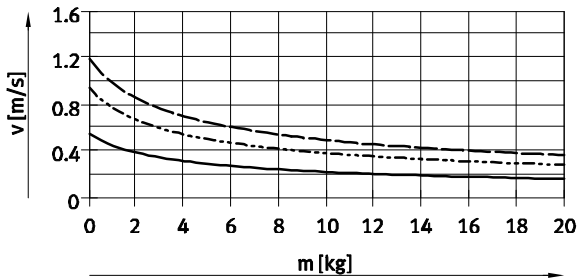
1) The values are reduced by approx. 50% at an ambient temperature of 80 °C.

Round cylinders DSNU

Technical data

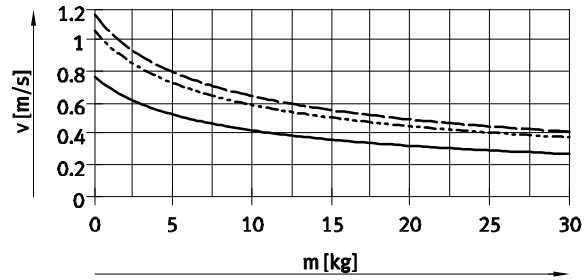
Mean piston velocity v as a function of applied load m in combination with PPS cushioning

Piston $\varnothing 32$



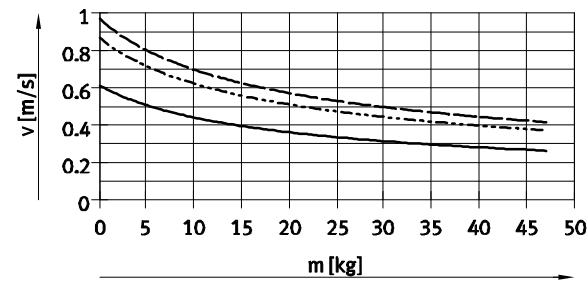
- DSNU-32-50
- - - DSNU-32-100
- · - DSNU-32-200

Piston $\varnothing 40$



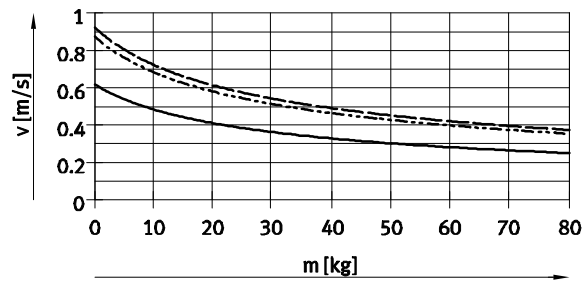
- DSNU-40-50
- - - DSNU-40-100
- · - DSNU-40-200

Piston $\varnothing 50$



- DSNU-50-50
- - - DSNU-50-100
- · - DSNU-50-200

Piston $\varnothing 63$



- DSNU-63-50
- - - DSNU-63-100
- · - DSNU-63-200

- · - Note
Mean piston velocity
= stroke/movement time

- · - Note

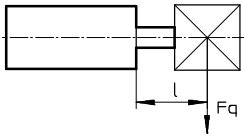
Design software for P cushioning → ProDrive	Additional graphs for PPS cushioning → www.festo.com	Design software for PPV cushioning → ProDrive
---	---	---

Round cylinders DSNU

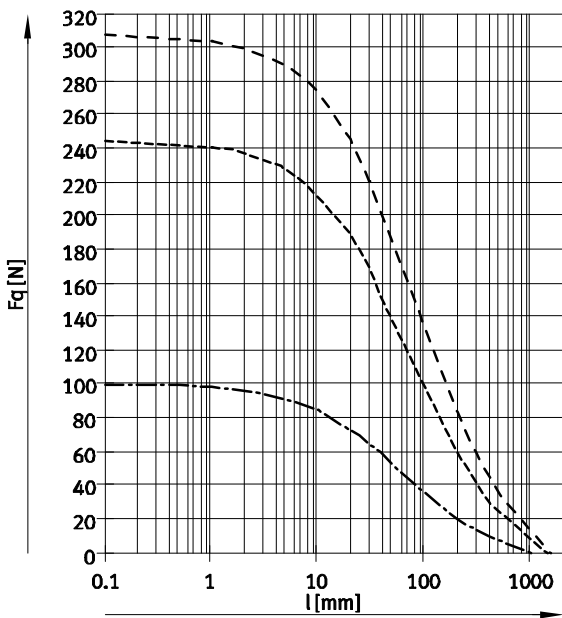
Technical data

Weight [g]				
Piston \varnothing	32	40	50	63
Product weight with 0 mm stroke	370.5	661	1,087	1,445
Additional weight per 10 mm stroke	15.5	24	40	44

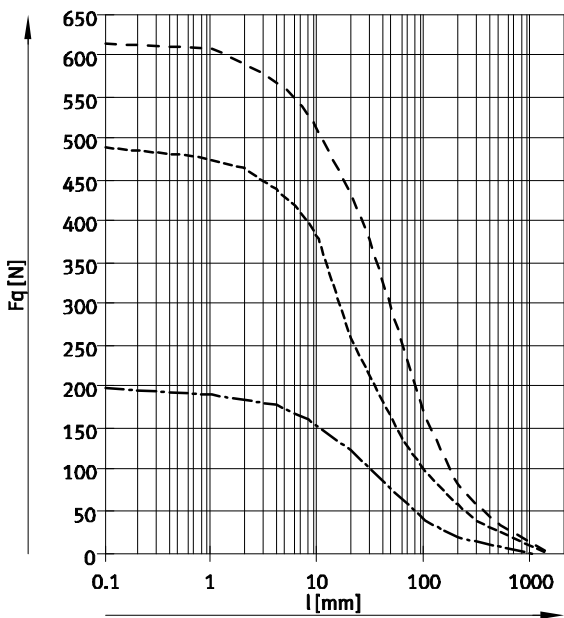
Max. lateral force F_q as a function of projection l



Basic version



S2 – Through piston rod



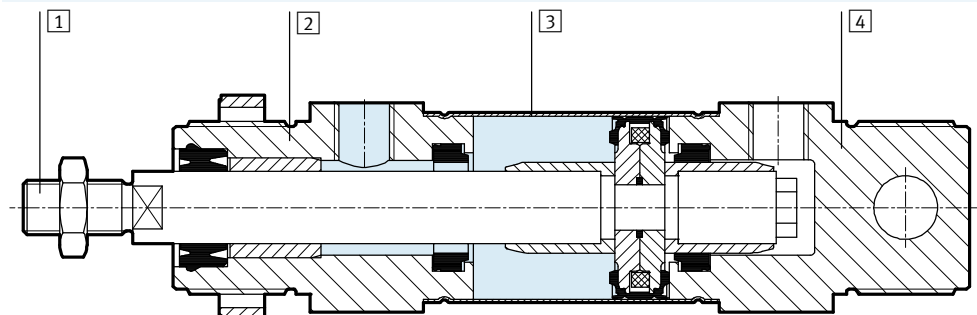
- $\varnothing 32$
- $\varnothing 40$
- $\varnothing 50/63$

Round cylinders DSNU

Technical data

Materials

Sectional view



Round cylinder	Basic version	S6	S10	S11	R3
1 Piston rod	High-alloy steel				High-alloy stainless steel
2 Bearing cap	Anodised aluminium				
3 Cylinder barrel	High-alloy stainless steel				
4 End cap	Anodised aluminium				
- Seals	Polyurethane, nitrile rubber	Fluoro rubber	Fluoro rubber, polyurethane		Polyurethane, nitrile rubber
Note on materials	RoHS compliant				

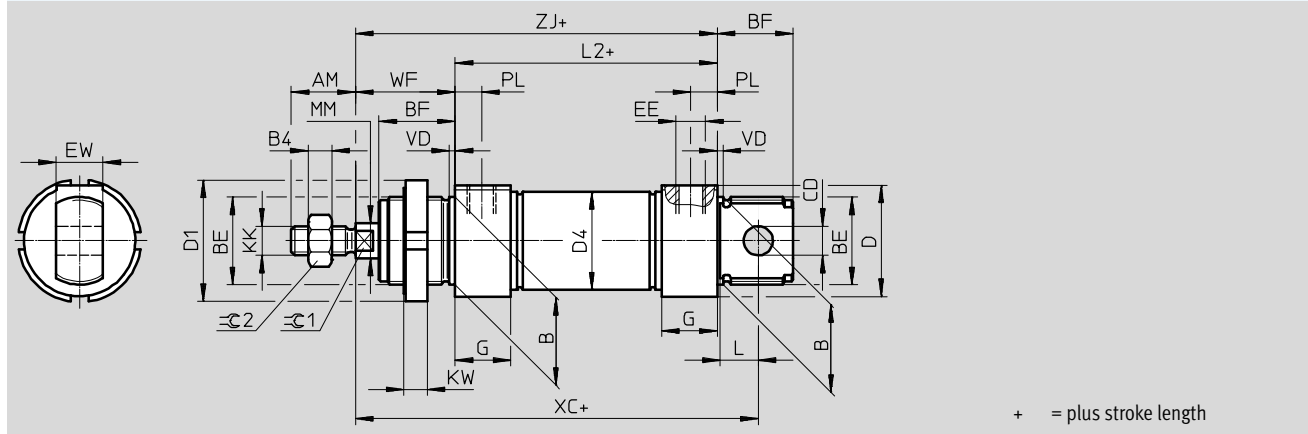
Round cylinders DSNU

Technical data

Dimensions

Download CAD data → www.festo.com

Basic version



+ = plus stroke length

∅	AM	B	B4	BE	BF	CD	D	D1	D4	EE	EW	G
[mm]		∅ h9				∅ E10	∅	∅	∅			
32	22	30	5	M30x1.5	26	10	38	42	33.6	G $\frac{1}{8}$	16	19
40	24	38	6	M38x1.5	30	12	46	50	41.6	G $\frac{1}{4}$	18	25
50	32	45	8	M45x1.5	33	16	57	60	52.4		21	
63							70		65.4	G $\frac{3}{8}$		

∅	KK	KW	L	L2	MM	PL	VD	WF	XC	ZJ	∅1	∅2
[mm]					∅				±1			
32	M10x1.25	8	13	69.5	12	9	2	34	117.5	103.5	10	16
40	M12x1.25	10	15	84.6	16	12	3	39	139.6	123.6	13	18
50	M16x1.5		16	86.2	20			44	147.2	130.2	17	24
63				94.2	13	45		156.2	139.2			

Round cylinders DSNU

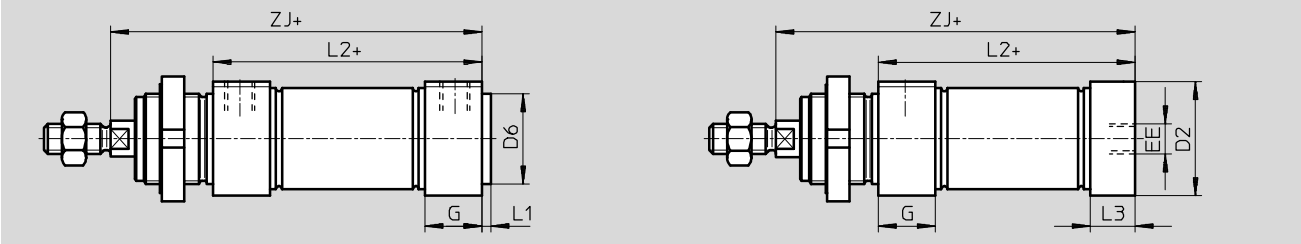
Technical data

Dimensions

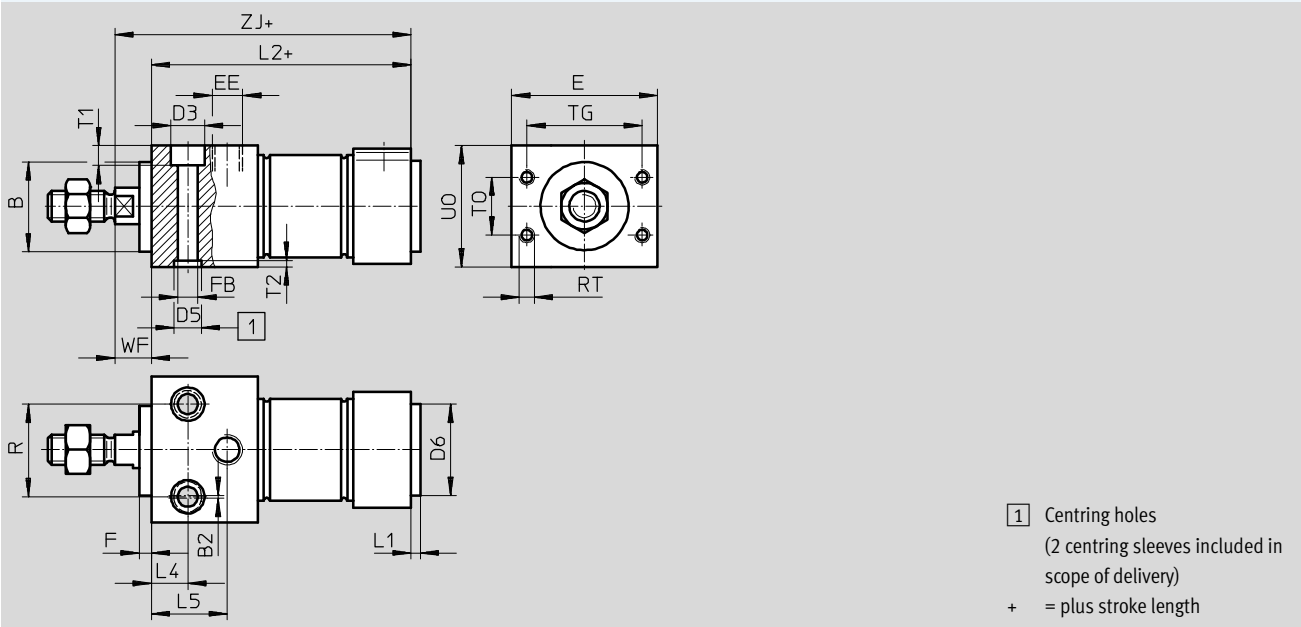
Download CAD data → www.festo.com

MQ – Lateral air connection

MA – Axial air connection



MH – Direct mounting



- 1 Centring holes
(2 centring sleeves included in scope of delivery)
- + = plus stroke length

Ø [mm]	B Ø h9	B2	E	EE	G	F	FB Ø	D2 Ø	D3	D5 Ø	D6 Ø	L1	L2		
													-MQ	-MA	-MH
32	30	1	48	G1/8	19	4	6.6	34	11	9	30	3	69.5	65.5	85.5
40	38		54	G1/4	25		9	42	14	12	38		4	84.6	77.6
50	45	2	64	G3/8	28	4	11	66	18	15	45	4	86.2	86.2	109.2
63			72										94.2	94.2	117.2

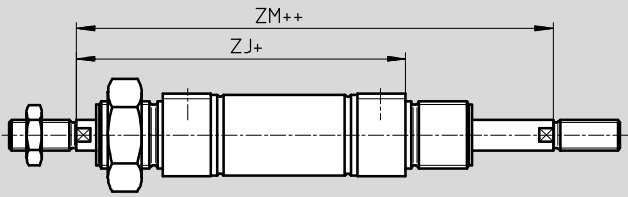
Ø [mm]	L3	L4	L5	R	RT	T0	T1	T2	TG	U0	WF	ZJ		
												-MQ	-MA	-MH
32	15	12	25	30	M5	19	6.6	2.1	38	40	12	103.5	99.5	97.5
40	18	15	32	38		24	9	2.6	42	48		123.6	116.5	116.6
50	25		35	42	M6	32	15	3.1	50	58	130.2	130.2	124.2	
63	28	36	44	M8	36	11			52	72	139.2	139.2	132.2	

Round cylinders DSNU

Technical data

Dimensions Download CAD data → www.festo.com

S2 – Through piston rod

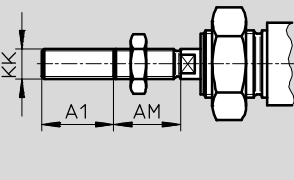


- - Note

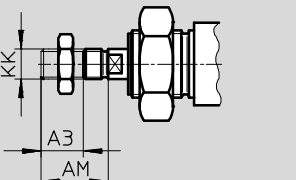
The thread types at both piston rod ends are identical. In combination with variant Q, the left-hand piston rod end is square, the right-hand piston rod end round.

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

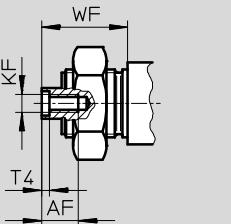
K2 – Extended male piston rod thread



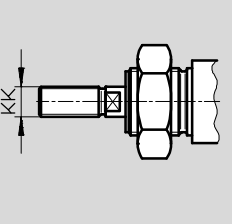
K6 – Shortened male piston rod thread



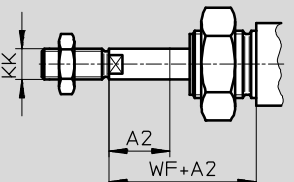
K3 – Female piston rod thread



K5 – Special piston rod thread



K8 – Extended piston rod



- - Note


If variant K8 is required in combination with S2, the piston rod will only be extended on one side.

∅ [mm]	A1 max.	A2 max.	A3 max.	AF	AM	KF	KK		T4	WF	ZJ			ZM
							Basic thread	Special thread ¹⁾			-MQ	-MA	-MH	
32	35	500	8	12	22	M6	M10x1.25	M10	2.6	34	103.5	99.5	97.5	137.5
40					24	M8	M12x1.25	M12	3.3	39	123.6	111.6	116.6	162.6
50	70		10	16	32	M10	M16x1.5	M16	4.7	44	130.2	130.2	124.2	174.2
63										45	139.2	139.2	132.2	184.2

1) The special threads are only available as male threads. The scope of delivery does not include a hex nut for the piston rod thread

Round cylinders DSNU

Technical data

Ordering data										
Type	Piston Ø [mm]	Stroke [mm]	P – Flexible cushioning rings/ pads at both ends		PPV – Pneumatic cushioning, adjustable at both ends		PPS – Pneumatic cushioning, self-adjusting at both ends			
			A – With position sensing		A – With position sensing		A – With position sensing			
			Part No.	Type	Part No.	Type	Part No.	Type		
	32	25	195 980	DSNU-32-25-P-A	196 020	DSNU-32-25-PPV-A	559 295	DSNU-32-25-PPS-A		
		40	195 981	DSNU-32-40-P-A	196 021	DSNU-32-40-PPV-A	559 296	DSNU-32-40-PPS-A		
		50	195 982	DSNU-32-50-P-A	196 022	DSNU-32-50-PPV-A	559 297	DSNU-32-50-PPS-A		
		80	195 983	DSNU-32-80-P-A	196 023	DSNU-32-80-PPV-A	559 298	DSNU-32-80-PPS-A		
		100	195 984	DSNU-32-100-P-A	196 024	DSNU-32-100-PPV-A	559 299	DSNU-32-100-PPS-A		
		125	195 985	DSNU-32-125-P-A	196 025	DSNU-32-125-PPV-A	559 300	DSNU-32-125-PPS-A		
		160	195 986	DSNU-32-160-P-A	196 026	DSNU-32-160-PPV-A	559 301	DSNU-32-160-PPS-A		
		200	195 987	DSNU-32-200-P-A	196 027	DSNU-32-200-PPV-A	559 302	DSNU-32-200-PPS-A		
		250	195 988	DSNU-32-250-P-A	196 028	DSNU-32-250-PPV-A	559 303	DSNU-32-250-PPS-A		
		320	195 989	DSNU-32-320-P-A	196 029	DSNU-32-320-PPV-A	559 304	DSNU-32-320-PPS-A		
			40	25	195 990	DSNU-40-25-P-A	196 030	DSNU-40-25-PPV-A	559 305	DSNU-40-25-PPS-A
				40	195 991	DSNU-40-40-P-A	196 031	DSNU-40-40-PPV-A	559 306	DSNU-40-40-PPS-A
50	195 992			DSNU-40-50-P-A	196 032	DSNU-40-50-PPV-A	559 307	DSNU-40-50-PPS-A		
80	195 993			DSNU-40-80-P-A	196 033	DSNU-40-80-PPV-A	559 308	DSNU-40-80-PPS-A		
100	195 994			DSNU-40-100-P-A	196 034	DSNU-40-100-PPV-A	559 309	DSNU-40-100-PPS-A		
125	195 995			DSNU-40-125-P-A	196 035	DSNU-40-125-PPV-A	559 310	DSNU-40-125-PPS-A		
160	195 996			DSNU-40-160-P-A	196 036	DSNU-40-160-PPV-A	559 311	DSNU-40-160-PPS-A		
200	195 997			DSNU-40-200-P-A	196 037	DSNU-40-200-PPV-A	559 312	DSNU-40-200-PPS-A		
250	195 998			DSNU-40-250-P-A	196 038	DSNU-40-250-PPV-A	559 313	DSNU-40-250-PPS-A		
320	195 999			DSNU-40-320-P-A	196 039	DSNU-40-320-PPV-A	559 314	DSNU-40-320-PPS-A		
	50			25	196 000	DSNU-50-25-P-A	196 040	DSNU-50-25-PPV-A	559 315	DSNU-50-25-PPS-A
				40	196 001	DSNU-50-40-P-A	196 041	DSNU-50-40-PPV-A	559 316	DSNU-50-40-PPS-A
		50	196 002	DSNU-50-50-P-A	196 042	DSNU-50-50-PPV-A	559 317	DSNU-50-50-PPS-A		
		80	196 003	DSNU-50-80-P-A	196 043	DSNU-50-80-PPV-A	559 318	DSNU-50-80-PPS-A		
		100	196 004	DSNU-50-100-P-A	196 044	DSNU-50-100-PPV-A	559 319	DSNU-50-100-PPS-A		
		125	196 005	DSNU-50-125-P-A	196 045	DSNU-50-125-PPV-A	559 320	DSNU-50-125-PPS-A		
		160	196 006	DSNU-50-160-P-A	196 046	DSNU-50-160-PPV-A	559 321	DSNU-50-160-PPS-A		
		200	196 007	DSNU-50-200-P-A	196 047	DSNU-50-200-PPV-A	559 322	DSNU-50-200-PPS-A		
		250	196 008	DSNU-50-250-P-A	196 048	DSNU-50-250-PPV-A	559 323	DSNU-50-250-PPS-A		
		320	196 009	DSNU-50-320-P-A	196 049	DSNU-50-320-PPV-A	559 324	DSNU-50-320-PPS-A		
			63	25	196 010	DSNU-63-25-P-A	196 050	DSNU-63-25-PPV-A	559 325	DSNU-63-25-PPS-A
				40	196 011	DSNU-63-40-P-A	196 051	DSNU-63-40-PPV-A	559 326	DSNU-63-40-PPS-A
50	196 012			DSNU-63-50-P-A	196 052	DSNU-63-50-PPV-A	559 327	DSNU-63-50-PPS-A		
80	196 013			DSNU-63-80-P-A	196 053	DSNU-63-80-PPV-A	559 328	DSNU-63-80-PPS-A		
100	196 014			DSNU-63-100-P-A	196 054	DSNU-63-100-PPV-A	559 329	DSNU-63-100-PPS-A		
125	196 015			DSNU-63-125-P-A	196 055	DSNU-63-125-PPV-A	559 330	DSNU-63-125-PPS-A		
160	196 016			DSNU-63-160-P-A	196 056	DSNU-63-160-PPV-A	559 331	DSNU-63-160-PPS-A		
200	196 017			DSNU-63-200-P-A	196 057	DSNU-63-200-PPV-A	559 332	DSNU-63-200-PPS-A		
250	196 018			DSNU-63-250-P-A	196 058	DSNU-63-250-PPV-A	559 333	DSNU-63-250-PPS-A		
320	196 019			DSNU-63-320-P-A	196 059	DSNU-63-320-PPV-A	559 334	DSNU-63-320-PPS-A		

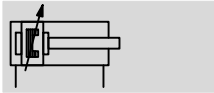
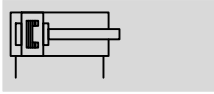
 Note

Variable strokes and additional variants can be configured and ordered through the DSNU modular product system → 28.

Round cylinders DSNU-Q, protected against rotation

Technical data

Function



⌀ - Diameter
32 ... 63 mm

┆ - Stroke length
5 ... 500 mm



General technical data				
Piston ⌀	32	40	50	63
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design	Piston			
	Protected against rotation with square piston rod			
Max. torque at the piston rod [Nm]	0.8	1.1	1.5	1.5
Cushioning	Flexible cushioning rings/pads at both ends			
	Pneumatic cushioning, adjustable at both ends			
Cushioning length (PPV) [mm]	14	18	20	21
Position sensing	Via proximity sensor			
Type of mounting	Via accessories			
Mounting position	Any			

Operating conditions				
Piston ⌀	32	40	50	63
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Operating pressure [bar]	1 ... 10			

Ambient conditions		
Round cylinder	Basic version	R3
Ambient temperature ¹⁾ [°C]	-20 ... +80	
Corrosion resistance class CRC ²⁾	2	3

1) Note operating range of proximity sensors
 2) Corrosion resistance class 2 as per Festo standard 940 070
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
 Corrosion resistance class 3 as per Festo standard 940 070
 Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Round cylinders DSNU-Q, protected against rotation

Technical data

ATEX ¹⁾	
ATEX category for gas	II 2G
Explosion ignition protection type for gas	c T4
ATEX category for dust	II 2D
Explosion ignition protection type for dust	c 120°C
Explosion-proof temperature rating	-20°C ≤ Ta ≤ +60°C
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

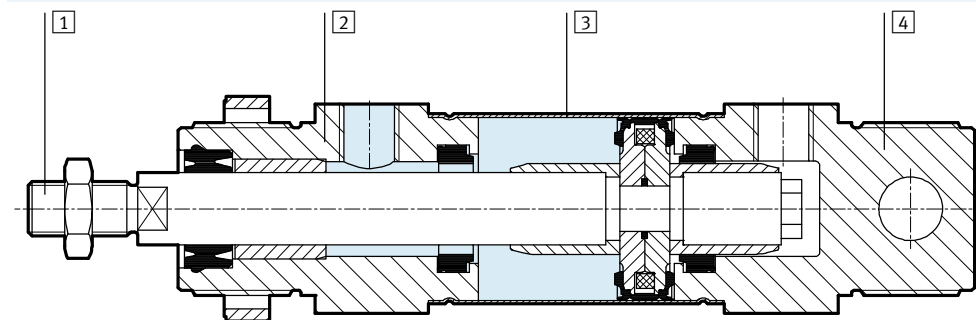
1) Make sure that the accessories are suited for ATEX application.

Force [N] and impact energy [J]				
Piston Ø	32	40	50	63
Theoretical force at 6 bar, advancing	483	753	1,178	1,870
Theoretical force at 6 bar, retracting	415	633	990	1,682
Impact energy at the end positions	0.40	0.70	1	1.3

Weight [g]				
Piston Ø	32	40	50	63
Product weight with 0 mm stroke	370.5	661	1,087	1,445
Additional weight per 10 mm stroke	15.5	24	40	44

Materials

Sectional view



Round cylinder	Basic version	R3
1 Piston rod	High-alloy steel	High-alloy stainless steel
2 Bearing cap	Anodised aluminium	
3 Cylinder barrel	High-alloy stainless steel	
4 End cap	Anodised aluminium	
- Seals	Polyurethane, nitrile rubber	
Note on materials	RoHS compliant	

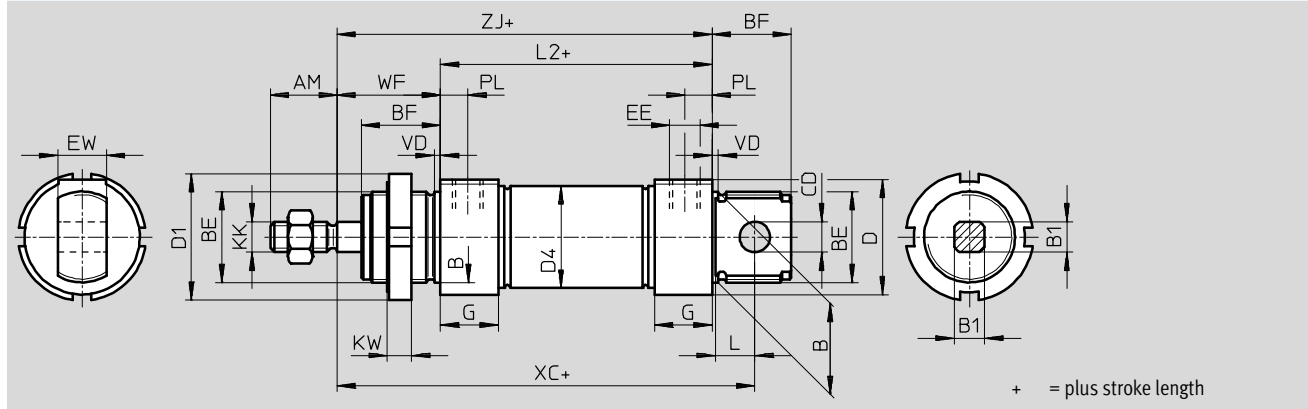
Round cylinders DSNU-Q, protected against rotation

Technical data

Dimensions

Download CAD data → www.festo.com

Basic version



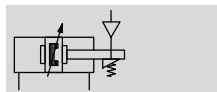
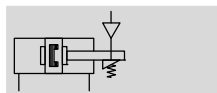
∅	AM	B	B1	BE	BF	CD	D	D1	D4	EE	EW
[mm]		∅ h9	□			∅ E10	∅	∅	∅		
32	22	30	10	M30x1.5	26	10	38	42	33.6	G1/8	16
40	24	38	12	M38x1.5	30	12	46	50	41.6	G1/4	18
50	32	45	16	M45x1.5	33	16	57	60	52.4	G1/4	21
63	32	45	16	M45x1.5	33	16	70	60	65.4	G3/8	21

∅	G	KK	KW	L	L2	PL	VD	WF	XC	ZJ
[mm]									±1	
32	19	M10x1.25	8	13	69.5	9	2	34	117.5	103.5
40	25	M12x1.25	10	15	84.6	12	3	39	139.6	123.6
50	25	M16x1.5	10	16	86.2	12	3	44	147.2	130.2
63	28	M16x1.5	10	16	94.2	13	3	45	156.2	139.2

Round cylinders DSNU-KP, with clamping unit

Technical data

Function



- \varnothing - Diameter
32 ... 63 mm

- | - Stroke length
1 ... 500 mm

-  - Note

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed. Without additional measures in accordance with statutory minimum requirements, the product is not suitable for use in safety-related sections of control systems.



General technical data					
Piston \varnothing		32	40	50	63
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Piston rod thread		M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design		Piston			
		Piston rod			
		Cylinder barrel			
Cushioning	P	Flexible cushioning rings/pads at both ends			
	PPV	Pneumatic cushioning, adjustable at both ends			
	PPS	Cushioning, self-adjusting at both ends			
Cushioning length	PPV	[mm] 14	18	20	21
	PPS	[mm] 14	18	20	21
Position sensing		Via proximity sensor			
Type of mounting		Via through-holes			
		Via accessories			
Mounting position		Any			
Clamping unit holding force [N]		600	1,000	1,400	2,000
Axial play under load [mm]		0.5		0.8	
Clamping unit pneumatic connection		M5	G $\frac{1}{8}$	G $\frac{1}{8}$	G $\frac{1}{8}$

Operating conditions					
Piston \varnothing		32	40	50	63
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Operating pressure [bar]		3 ... 10			

Ambient conditions		
Round cylinder	Basic version	R3
Ambient temperature ¹⁾ [°C]	-10 ... +80	
Corrosion resistance class CRC ²⁾	2	3

1) Note operating range of proximity sensors

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

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

Corrosion resistance class 3 as per Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

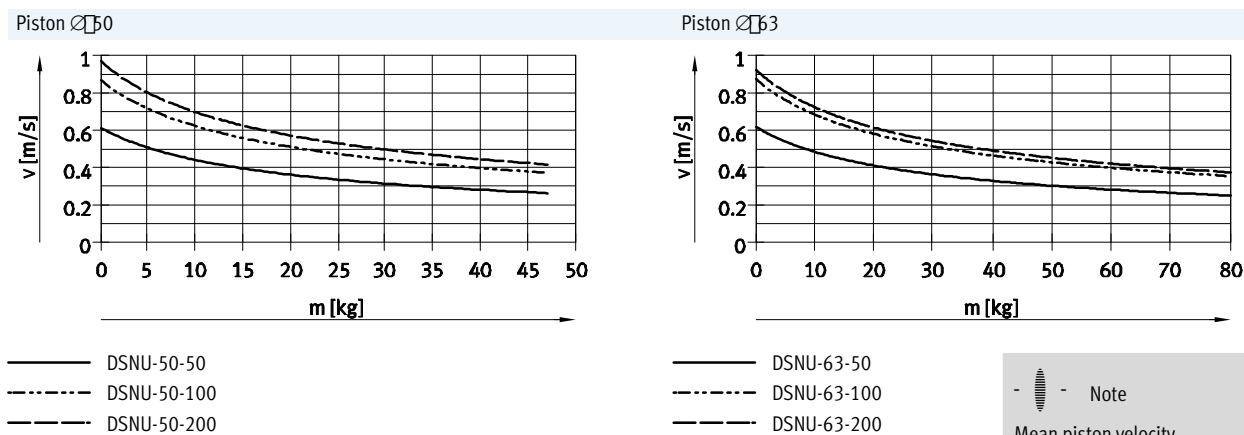
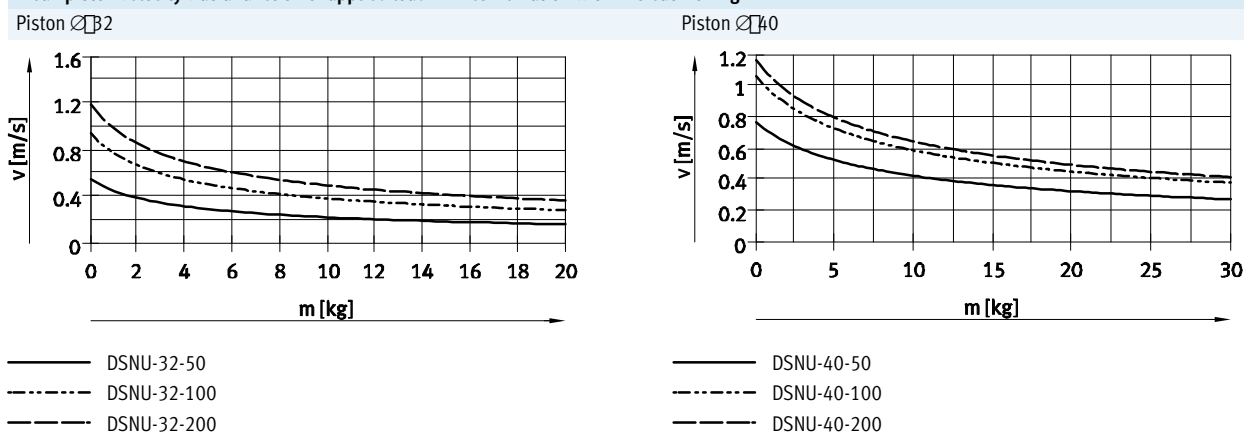
Round cylinders DSNU-KP, with clamping unit

Technical data

Force [N] and impact energy [J]				
Piston \varnothing	32	40	50	63
Theoretical force at 6 bar, advancing	483	753	1,178	1,870
Theoretical force at 6 bar, retracting	415	633	990	1,682
Impact energy at the end positions ¹⁾	0.40	0.70	1	1.3

1) The values are reduced by approx. 50% at an ambient temperature of 80 °C.

Mean piston velocity v as a function of applied load m in combination with PPS cushioning



Note
 Mean piston velocity
 = stroke/movement time

Note

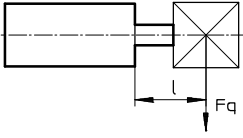
Design software for P cushioning → ProDrive	Additional graphs for PPS cushioning → www.festo.com	Design software for PPV cushioning → ProDrive
--	--	--

Weight [g]				
Piston \varnothing	32	40	50	63
Product weight with 0 mm stroke	711.5	1,287	2,059	2,556
Additional weight per 10 mm stroke	15.5	24	40	44

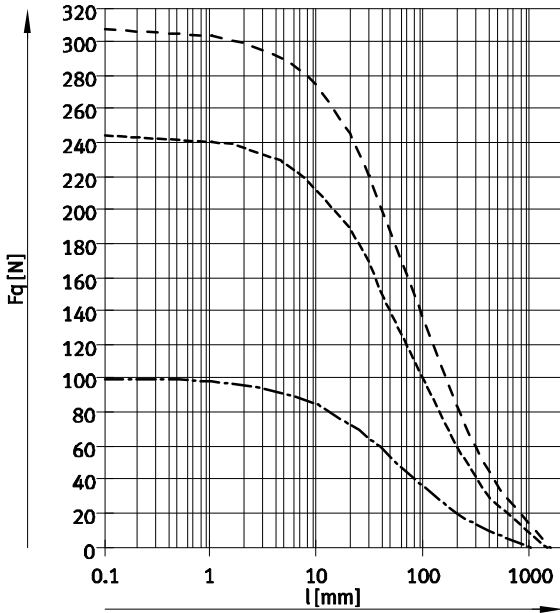
Round cylinders DSNU-KP, with clamping unit

Technical data

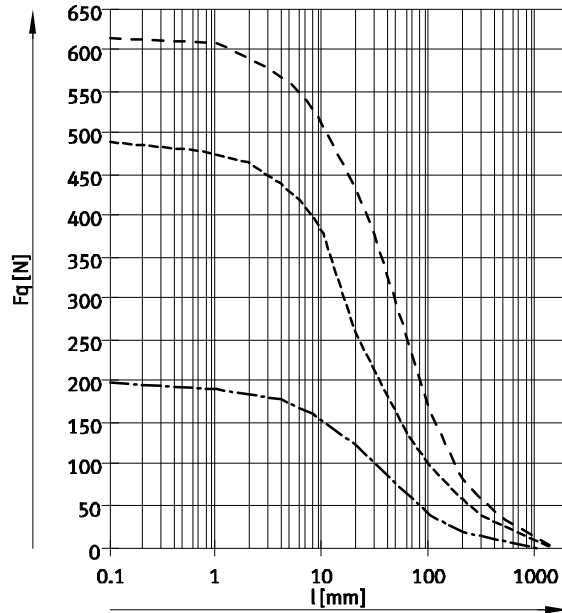
Max. lateral force F_q as a function of projection l



Basic version



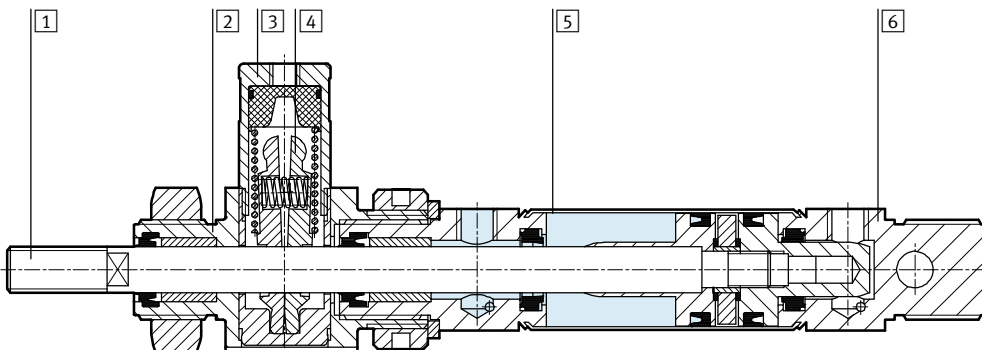
S2 – Through piston rod



- Ø 32
- Ø 40
- Ø 50/63

Materials

Sectional view



Round cylinder	Basic version	R3
1 Piston rod	High-alloy steel	High-alloy stainless steel
2 Bearing cap	Anodised aluminium	
3 Housing, clamping unit	Wrought aluminium alloy	
4 Clamping jaws	Brass	
5 Cylinder barrel	High-alloy stainless steel	
6 End cap	Anodised aluminium	
- Piston, clamping unit	Polyacetate	
- Spring	Spring steel	
- Seals	Polyurethane, nitrile rubber	
Note on materials	RoHS compliant	

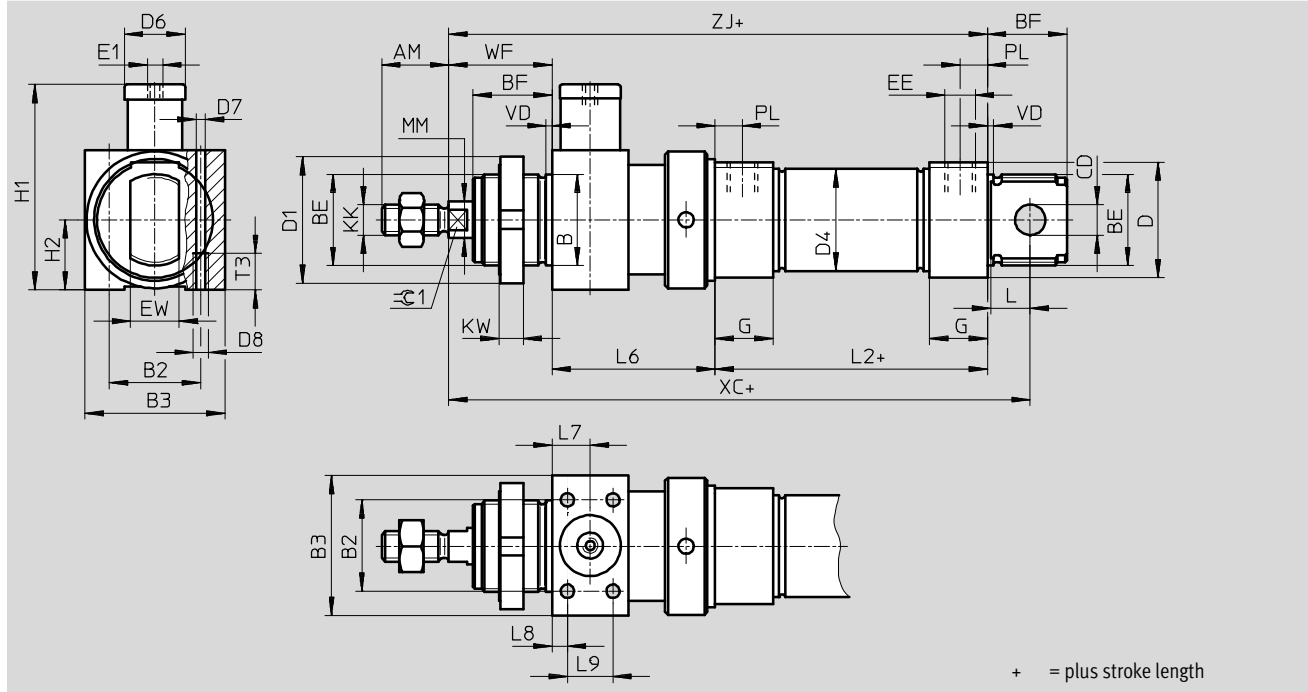
Round cylinders DSNU-KP, with clamping unit

Technical data

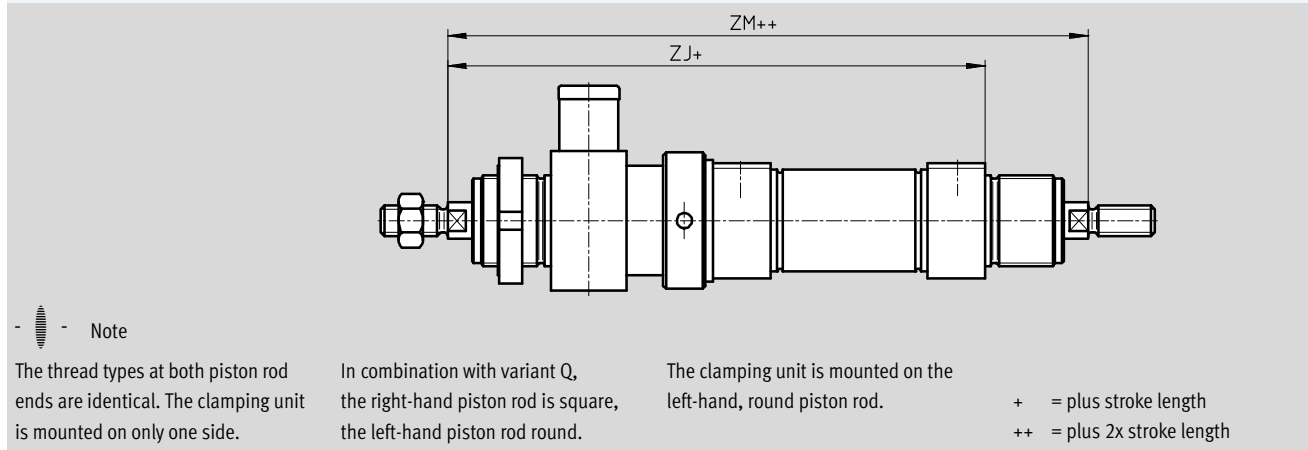
Dimensions

Download CAD data → www.festo.com

Basic version



S2 – Through piston rod



Round cylinders DSNU-KP, with clamping unit

Technical data

∅ [mm]	AM	B ∅ h9	B2	B3	BE	BF	CD ∅ E10	D ∅	D1 ∅	D4 ∅	D6	D7
32	22	30	30	46	M30x1.5	26	10	38	42	33.6	20	4.4
40	24	38	36	56	M38x1.5	30	12	46	50	41.6	24	6.8
50	32	45	50	65	M45x1.5	33	16	57	60	52.4	30	8.5
63			54	72	M45x1.5			70		65.4	38	

∅ [mm]	D8	E1	EE	EW	G	H1	H2	KK	KW	MM ∅	L	L2
32	M5	M5	G $\frac{1}{8}$	16	19	67.5	23	M10x1.25	8	12	13	69.5
40	M8	G $\frac{1}{8}$	G $\frac{1}{4}$	18	25	89	28	M12x1.25	10	16	15	84.6
50	M10	G $\frac{1}{8}$		21		107.5	32.5	M16x1.5		20	16	86.2
63		G $\frac{1}{8}$	G $\frac{3}{8}$	28	121.5	36	94.2					


∅ [mm]	L6	L7	L8	L9	T3	PL	VD	WF	XC	ZJ	ZM	≈±1
	±0.75								±1			
32	55	12.5	5	15	12	9	2	34.5	173	159	191	10
40	69	17	7	20	18	12	3	40.5	210.1	194.1	230.1	13
50	78	20		26	20			45.5	226.7	209.7	250.7	17
63	86	24	8	32	21	13		46.5	243.7	226.7	268.7	

Round cylinders DSNU

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
M Module No.	193992	193993	193994	193995			
Function	Double-acting round cylinder					DSNU	DSNU
Piston Ø [mm]	32	40	50	63		-...	
Stroke [mm]	1 ... 500					-...	
Cushioning	Flexible cushioning rings/pads at both ends					-P	
	Pneumatic cushioning, adjustable at both ends				1	-PPV	
	Pneumatic cushioning, self-adjusting at both ends				15	-PPS	
O Position sensing	Via proximity sensor				2	-A	
Cylinder end cap	Lateral air connection, end cap				3	-MQ	
	Axial air connection, end cap				4	-MA	
	Mounting flange at front (direct mounting), bearing cap				5	-MH	
Type of piston rod	Through piston rod				6	-S2	
Extended male thread [mm]	Piston rod with extended male thread						
	1 ... 35	1 ... 70			7	-...K2	

- | | | | |
|---------------------|---------------------------|----------------------|---|
| 1 PPV | Not with MA | 5 MH | Not with combination S6-R3 |
| 2 A | Minimum stroke: 10 mm | | Not with KP, S10, S11, R8 |
| 3 MQ | Not with S2, S10, S11 | 6 S2 | Not with MQ, MA, S10, S11 |
| 4 MA | Not with S2, S10, S11, R8 | 7 K2 | Not with K3, K6 |
| | | 15 PPS | Not with MA, MH, S6, S10, S11
and not with combination MQ-R3 |

 Note
 The bellows kit DADB must not be used in combination with the variant MH.
 The running characteristics change slightly when the bellows kit DADB is combined with the variant S10 or S11.

Transfer order code

DSNU - - - - - - - -

Round cylinders DSNU

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
↓ Shortened male thread	Piston rod with shortened male thread						
0 [mm]	1 ... 8		1 ... 10		8	-...K6	
Female thread	Piston rod with female thread						
	(M6)	(M8)	(M10)		9	-K3	
Special thread	Piston rod with special thread						
	M10	M12	M16			-“...”K5	
Piston rod extended at one end	Extended piston rod at one end						
[mm]	1 ... 500					...K8	
Clamping unit	Attached				10	-KP	
Temperature resistance	Heat-resistant seals for temperatures up to 120 °C				11	-S6	
Slow speed (constant motion)	Slow speed (constant motion at low piston speeds)				12	-S10	
Running characteristics	Low friction				13	-S11	
Corrosion protection	High corrosion protection				14	-R3	
Wiper seal	Metal wiper seal					-R8	
EU certification	II 2GD				15	-EX4	

- 8 **K6** Not with K3
- 9 **K3** Not with K5
- 10 **KP** Not with S6, S10, S11, R3, R8

- 11 **S6** Not with S10, S11
- 12 **S10** Not with S11, R3, R8
- 13 **S11** Not with R3, R8
- 14 **R3** Not with R8
- 15 **EX4** Not with KP and S6

Transfer order code

- [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - []


Round cylinders DSNU-Q, protected against rotation

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
M Module No.	193992	193993	193994	193995			
Function	Double-acting round cylinder					DSNU	DSNU
Piston Ø [mm]	32	40	50	63		-...	
Stroke [mm]	1 ... 500					-...	
Cushioning	Flexible cushioning rings/pads at both ends					-P	
	Pneumatic cushioning, adjustable at both ends				1	-PPV	
O Position sensing	Via proximity sensor				2	-A	
Cylinder end cap	Lateral air connection, end cap				3	-MQ	
	Axial air connection, end cap				3	-MA	
	Mounting flange at front (direct mounting), bearing cap				4	-MH	
Protection against rotation	Square piston rod					-Q	-Q
	Restricted stroke [mm] 5 ... 300 5 ... 400 5 ... 500						
Type of piston rod	Through piston rod					-S2	
Extended male thread [mm]	Piston rod with extended male thread						
	1 ... 35		1 ... 70		5	-...K2	

- 1 PPV** Not with MA
- 2 A** Minimum stroke: 10 mm
- 3 MQ, MA** Not with S2

- 4 MH** Not with combinations: Q-R3, S6-R3
- 5 K2** Not with KP

 - Note
The bellows kit DADB must not be used in combination with the variant Q.

Transfer order code

DSNU - - - - - - - **Q** - -

Round cylinders DSNU-Q, protected against rotation

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
↓ Shortened male thread	Piston rod with shortened male thread						
0 [mm]	1 ... 8		1 ... 10		6	-...K6	
Female thread	Piston rod with female thread						
	(M6)	(M8)	(M10)		7	-K3	
Special thread	Piston rod with special thread						
	M10	M12	M16			-“...”K5	
Piston rod extended at one end	Extended piston rod at one end						
[mm]	1 ... 500						...K8
Clamping unit	Attached				8	-KP	
Temperature resistance	Heat-resistant seals for temperatures up to 120 °C					-S6	
Corrosion protection	High corrosion protection					-R3	
EU certification	II 2GD				9	-EX4	

6 **K6** Not with K3
7 **K3** Not with K5

8 **KP** Only with S2
Not with S6, R3

9 **EX4** Not with KP

Transfer order code

- [] - [] - [] - [] - [] - [] - [] - []

Round cylinders ESNU

Technical data

Function



Ø - Diameter
32 ... 63 mm

l - Stroke length
1 ... 50 mm

Additional variants

→ 35



General technical data				
Piston Ø	32	40	50	63
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design	Piston			
	Piston rod			
	Cylinder barrel			
Cushioning	Flexible cushioning rings/pads at both ends			
Position sensing	Via proximity sensor			
Type of mounting	Via accessories			
Mounting position	Any			

Operating conditions				
Piston Ø	32	40	50	63
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]			
Note on operating/ pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Operating pressure [bar]	1.2 ... 10			

Ambient conditions		
Round cylinder		
Ambient temperature ¹⁾ [°C]	-20 ... +80	
Corrosion resistance class CRC ²⁾	2	

1) Note operating range of proximity sensors.

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

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

Round cylinders ESNU

Technical data

Force [N] and impact energy [J]				
Piston Ø	32	40	50	63
Theoretical force at 6 bar, advancing	442	688	1,071	1,763
Spring return force 10 mm stroke	36	60	95	95
Spring return force 25 mm stroke	30	50	82	82
Spring return force 50 mm stroke	20	30	60	60
Impact energy at the end positions ¹⁾	0.40	0.70	1	1.3

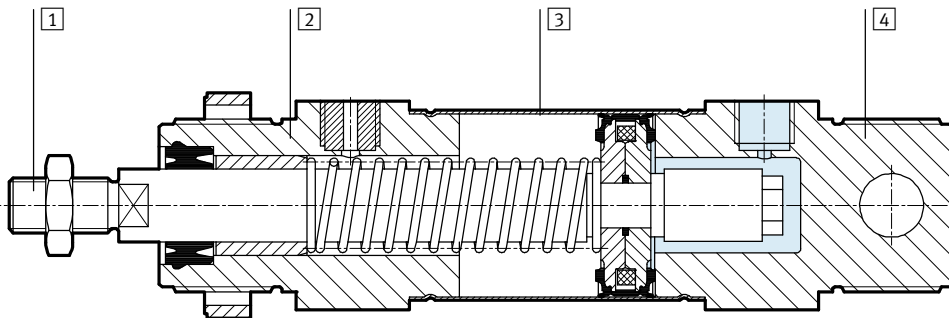
1) The values are reduced by approx. 50% at an ambient temperature of 80 °C.

Weight ESNU-... [g]				
Piston Ø	32	40	50	63
Product weight with 0 mm stroke	370.5	661	1,087	1,445
Additional weight per 10 mm stroke	15.5	24	40	44

Weight ESNU-...-MA [g]				
Piston Ø	32	40	50	63
Product weight with 0 mm stroke	330	585	1,013	1,369
Additional weight per 10 mm stroke	15.5	24	40	44

Materials

Sectional view



Round cylinder	
1	Piston rod High-alloy steel
2	Bearing cap Anodised aluminium
3	Cylinder barrel High-alloy stainless steel
4	End cap Anodised aluminium
-	Seals Polyurethane, nitrile rubber
-	Spring Spring steel
Note on materials RoHS compliant	

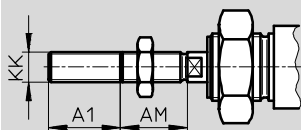
Round cylinders ESNU

Technical data

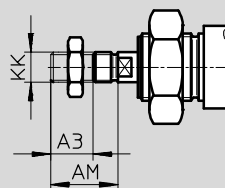
Dimensions

Download CAD data → www.festo.com

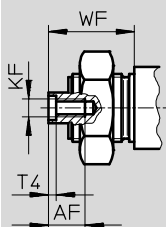
K2 – Extended male piston rod thread



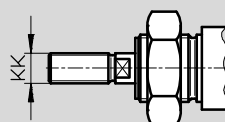
K6 – Shortened male piston rod thread



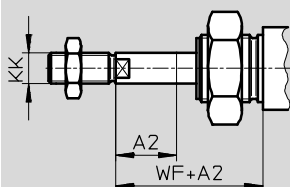
K3 – Female piston rod thread



K5 – Special piston rod thread



K8 – Extended piston rod



∅ [mm]	A1 max.	A2 max.	A3 max.	AF	AM	KF	KK		T4	WF
							Basic thread	Special thread ¹⁾		
32	35	50	8	12	22	M6	M10x1.25	M10	2.6	34
40							M12x1.25	M12		
50			10	16	32	M10	M16x1.5	M16	4.7	44
63										

1) The special threads are only available as male threads. The scope of delivery does not include a hex nut for the piston rod thread.

Ordering data

Type	Piston ∅ [mm]	Stroke [mm]	Without position sensing		With position sensing	
			Part No.	Type	Part No.	Type
	32	10	195 870	ESNU-32-10-P	196 376	ESNU-32-10-P-A
		25	195 871	ESNU-32-25-P	196 377	ESNU-32-25-P-A
		50	195 872	ESNU-32-50-P	196 378	ESNU-32-50-P-A
	40	10	195 873	ESNU-40-10-P	196 379	ESNU-40-10-P-A
		25	195 874	ESNU-40-25-P	196 380	ESNU-40-25-P-A
		50	195 875	ESNU-40-50-P	196 381	ESNU-40-50-P-A
	50	10	195 876	ESNU-50-10-P	196 382	ESNU-50-10-P-A
		25	195 877	ESNU-50-25-P	196 383	ESNU-50-25-P-A
		50	195 878	ESNU-50-50-P	196 384	ESNU-50-50-P-A
	63	10	195 879	ESNU-63-10-P	196 385	ESNU-63-10-P-A
		25	195 880	ESNU-63-25-P	196 386	ESNU-63-25-P-A
		50	195 881	ESNU-63-50-P	196 387	ESNU-63-50-P-A

Round cylinders ESNU

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
M Module No.	194002	194003	194004	194005			
Function	Single-acting round cylinder					ESNU	ESNU
Piston Ø [mm]	32	40	50	63		-...	
Stroke [mm]	1 ... 50					-...	
Cushioning	Flexible cushioning rings/pads at both ends					-P	-P
O Position sensing	Via proximity sensor				1	-A	
↓ End cap	Axial air connection					-MA	

1 **A** Minimum stroke: 10 mm

Transfer order code

Round cylinders ESNU

Ordering data – Modular products

Ordering table							
Size	32	40	50	63	Condi- tions	Code	Enter code
↓ 0	Extended male thread [mm]	Piston rod with extended male thread 1 ... 35			2	-...K2	
	Shortened male thread [mm]	Piston rod with shortened male thread 1 ... 8 1 ... 10				-...K6	
	Female thread	(M6)	(M8)	(M10)	3	-K3	
	Special thread	Piston rod with special thread M10 M12 M16				-“...”K5	
	Extended piston rod [mm]	Extended piston rod 1 ... 50				...K8	

- 2 **K2** Not with female thread K3, shortened male thread K6
- 3 **K3** Not with special thread K5, shortened male thread K6

Transfer order code

- - - -

Round cylinders DSNU/ESNU

Accessories

Foot mounting HBN/CRH

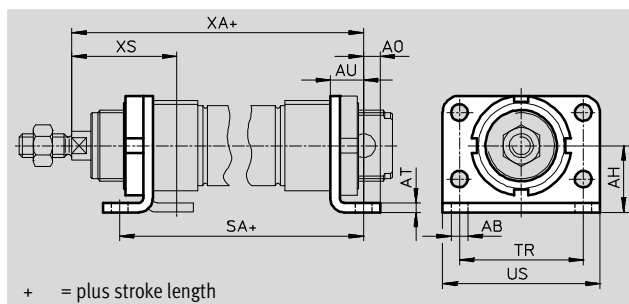
Material:

HBN: Galvanised steel

CRH: High-alloy stainless steel

Free of copper and PTFE

RoHS-compliant



Dimensions and ordering data

For Ø [mm]	AB Ø	AH	AO	AT	AU	SA		TR	US	XA		XS	
							-KP				-KP		
32	7	28	7	4	14	97.5	151	52	66	117.5	171	44	-
40	9	33	10	5	20	124.6	192.1	60	80	138.6	206.1	49	-
50	9	40	10	6	20	126.2	202.7	70	90	150.2	226.7	58	-
63	9	45	10	6	20	134.2	218.7	76	96	159.2	243.7	59	-

For Ø [mm]	Basic version				High corrosion protection			
	CRC ¹⁾	Weight [g]	Part No.	Type	CRC ¹⁾	Weight [g]	Part No.	Type
32	2	247	195851	HBN-32x2	4	237	162951	CRH-32
40	2	446	195852	HBN-40x2	4	341	162952	CRH-40
50	2	666	195853	HBN-50x2	4	559	162953	CRH-50
63	2	816	195854	HBN-63x2	4	680	162954	CRH-63

Flange mounting FBN/CRFV

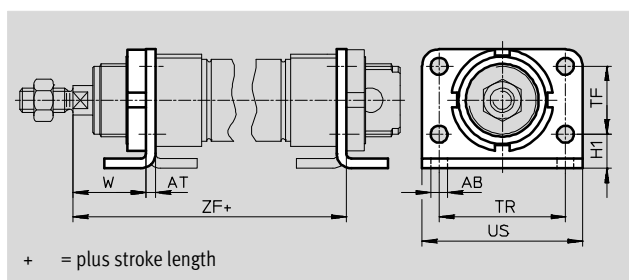
Material:

FBN: Galvanised steel

CRFV: High-alloy stainless steel

Free of copper and PTFE

RoHS-compliant



Dimensions and ordering data

For Ø [mm]	AB Ø	AT	H1	TF	TR	US	W	ZF	
									-KP
32	7	4	14	28	52	66	30	107.5	161
40	9	5	18	30	60	80	29	123.6	191.1
50	9	6	20	40	70	90	38	136.2	212.6
63	9	6	20	50	76	96	39	145.2	229.7

For Ø [mm]	Basic version				High corrosion protection			
	CRC ¹⁾	Weight [g]	Part No.	Type	CRC ¹⁾	Weight [g]	Part No.	Type
32	2	102	195855	FBN-32	4	102	161858	CRFV-32
40	2	190	195856	FBN-40	4	190	161859	CRFV-40
50	2	290	195857	FBN-50	4	290	161860	CRFV-50
63	2	365	195858	FBN-63	4	365	161861	CRFV-63

1) Corrosion resistance class 2 as per Festo standard 940 070
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
 Corrosion resistance class 4 as per Festo standard 940 070
 Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

Round cylinders DSNU/ESNU

Accessories

Swivel mounting WBN

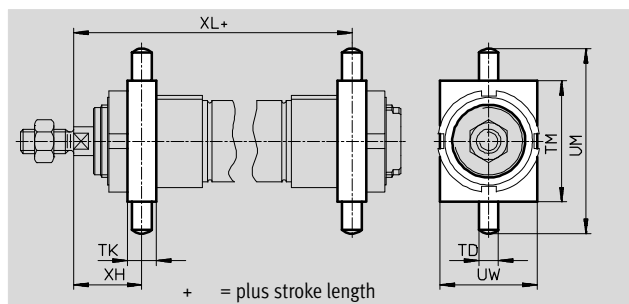
Material:

Galvanised steel

Free of copper and PTFE

RoHS-compliant

Cannot be used on the bearing cap in combination with bellows kit DADB.



Dimensions and ordering data

For Ø [mm]	TD Ø f8	TK	TM	UM	UW	XH	XL		CRC ¹⁾	Weight [g]	Part No.	Type
								-KP				
32	8	12	50	76	40	28	109.5	163	2	130	195863	WBN-32
40	10	15	60	92	50	31.5	126.1	193.6	2	240	195864	WBN-40
50	12	20	80	116	65	34	140.2	216.7	2	610	195865	WBN-50/63
63	12	20	80	116	65	35	149.2	233.7	2	610	195865	WBN-50/63

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

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

Swivel mounting SBN

Material:

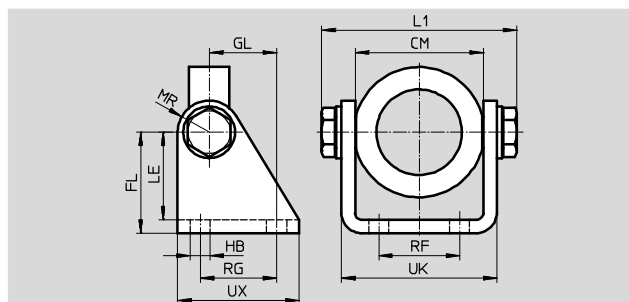
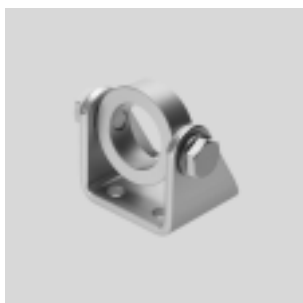
Mounting ring: Wrought aluminium alloy, anodised

Bearing: Bronze

Screws: Galvanised steel

Bracket: Steel

Cannot be used on the bearing cap in combination with bellows kit DADB.



Dimensions and ordering data

For Ø [mm]	CM	FL	GL	HB	L1 max.	LE	MR	RF	RG	UK	UX	CRC ¹⁾	Weight [g]	Part No.	Type
40	57.1+0.2	45	30	9	88.2	39	14	36	34	69.1	54	2	465	539925	SBN-40
50/63	70.1+0.4	50	34	9	102.2	44	16	42	35	82.1	65	2	670	539926	SBN-50/63

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

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

Round cylinders DSNU/ESNU

Accessories

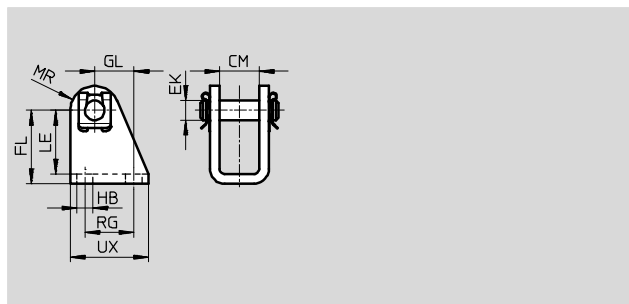
Clevis foot LBN/CRLBN

Material:

LBN: Galvanised steel

CRLBN: High-alloy stainless steel

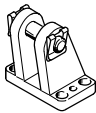
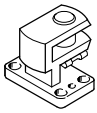
Free of copper and PTFE



Dimensions and ordering data									
For Ø	CM	EK	FL	GL	HB	LE	MR	RG	UX
[mm]		Ø							
32	16.1	10	35 +0.4/-0.2	18.5	6.6	31	11	24	35
40	18.1	12	40 +0.4/-0.2	24.5	9	35	13	30	45
50, 63	21.1	16	45 +0.5/-0.2	28	9	39	14	34	50





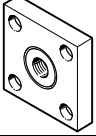
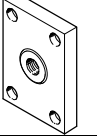
For Ø	Basic version				High corrosion protection			
	CRC ¹⁾	Weight [g]	Part No.	Type	CRC ¹⁾	Weight [g]	Part No.	Type
32	2	109	195860	LBN-32	4	107	195866	CRLBN-32
40	2	192	195861	LBN-40	4	184	195867	CRLBN-40
50, 63	2	302	195862	LBN-50/63	4	289	195868	CRLBN-50/63




- 1) Corrosion resistance class 2 as per Festo standard 940 070
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
 Corrosion resistance class 4 as per Festo standard 940 070
 Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

Ordering data – Mounting attachments				Technical data → Internet: clevis foot			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
 Clevis foot LBG	32	31761	LBG-32	 Right-angle clevis foot LQG	32	31768	LQG-32
	40	31762	LBG-40		40	31769	LQG-40
	50	31763	LBG-50		50	31770	LQG-50
	63	31764	LBG-63		63	31771	LQG-63

Round cylinders DSNU/ESNU



Accessories


Ordering data – Piston rod attachments				Technical data → Internet: piston rod attachment			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SGA			
	32	9261	SGS-M10x1,25		32	32954	SGA-M10x1,25
	40	9262	SGS-M12x1,25		40	10767	SGA-M12x1,25
	50	9263	SGS-M16x1,5		50	10768	SGA-M16x1,5
	63						
Rod clevis SG				Self-aligning rod coupler FK			
	32	6144	SG-M10x1,25		32	6140	FK-M10x1,25
	40	6145	SG-M12x1,25		40	6141	FK-M12x1,25
	50	6146	SG-M16x1,5		50	6142	FK-M16x1,5
	63						
Coupling piece KSG				Coupling piece KSZ			
	32	32963	KSG-M10x1,25		32	36125	KSZ-M10x1,25
	40	32964	KSG-M12x1,25		40	36126	KSZ-M12x1,25
	50	32965	KSG-M16x1,5		50	36127	KSZ-M16x1,5
	63						

Ordering data – Piston rod attachments, corrosion-resistant				Technical data → Internet: crsg			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye CRSGS				Rod clevis CRSG			
	32	195582	CRSGS-M10x1,25		32	13569	CRSG-M10x1,25
	40	195583	CRSGS-M12x1,25		40	13570	CRSG-M12x1,25
	50	195584	CRSGS-M16x1,5		50	13571	CRSG-M16x1,5
	63						
Self-aligning rod coupler CRFK							
	32	2305778	CRFK-M10x1,25				
	40	2305779	CRFK-M12x1,25				
	50	2490673	CRFK-M16x1,5				
	63						

Round cylinders DSNU/ESNU

Accessories

Ordering data – One-way flow control valves				Technical data → Internet: grl			
	Connection		Material	Part No.	Type		
	Thread	For tubing O.D.					
For exhaust air							
	G $\frac{1}{8}$	3	Metal design	193142	GRLA- $\frac{1}{8}$ -QS-3-D		
		4		193143	GRLA- $\frac{1}{8}$ -QS-4-D		
		6		193144	GRLA- $\frac{1}{8}$ -QS-6-D		
		8		193145	GRLA- $\frac{1}{8}$ -QS-8-D		
	G $\frac{1}{4}$	6		193146	GRLA- $\frac{1}{4}$ -QS-6-D		
		8		193147	GRLA- $\frac{1}{4}$ -QS-8-D		
		10		193148	GRLA- $\frac{1}{4}$ -QS-10-D		
	G $\frac{3}{8}$	6		193149	GRLA- $\frac{3}{8}$ -QS-6-D		
		8		193150	GRLA- $\frac{3}{8}$ -QS-8-D		
		10		193151	GRLA- $\frac{3}{8}$ -QS-10-D		
	For supply air						
		G $\frac{1}{8}$		3	Metal design	193156	GRLZ- $\frac{1}{8}$ -QS-3-D
4			193157	GRLZ- $\frac{1}{8}$ -QS-4-D			
6			193158	GRLZ- $\frac{1}{8}$ -QS-6-D			
8			193159	GRLZ- $\frac{1}{8}$ -QS-8-D			

Ordering data – One-way flow control valves, corrosion-resistant				Technical data → Internet: crgla	
	Connection		Material	Part No.	Type
	Thread	For push-in fitting			
For exhaust air					
	G $\frac{1}{8}$	CRQS/CRQSL/CRQST	Electrolytically polished stainless steel casting	161404	CRGRLA- $\frac{1}{8}$ -B
	G $\frac{1}{4}$			161405	CRGRLA- $\frac{1}{4}$ -B
	G $\frac{3}{8}$			161406	CRGRLA- $\frac{3}{8}$ -B

Round cylinders DSNU/ESNU

Accessories

Bellows kit DADB



General technical data		32	40	50	63
Type DADB-S1-					
Max. cylinder stroke range ¹⁾	DSNU [mm]	10 ... 500	10 ... 500	10 ... 500	10 ... 500
	ESNU ²⁾ [mm]	10 ... 50	10 ... 50	10 ... 50	10 ... 50
Type of mounting		Via threaded pin			
Mounting position		Any			
Resistance to media		Dust, chips, oil, grease, fuel (→ Internet: media resistance)			
Ambient temperature ³⁾	[°C]	-10 ... +80			
Protection class		IP54			
Corrosion resistance class CRC ⁴⁾		3			

1) In combination with the bellows kit DADB.

2) Slight change in the spring return force.

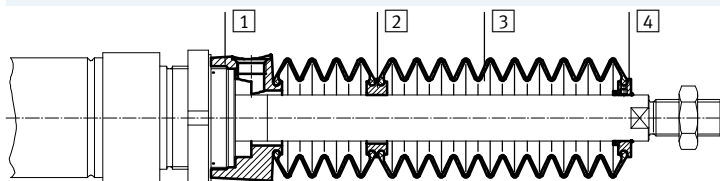
3) Note operating range of proximity sensors and cylinder.

4) Corrosion resistance class 3 as per Festo standard 940 070

Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

Materials

Sectional view



Bellows		
1	Connection	Polyamide
2	Intermediate piece	Polyamide
3	Bellows	Nitrile rubber
4	End piece	Polyamide
-	O-ring	Nitrile rubber
	Note on materials	Free of copper and PTFE RoHS-compliant

Weight [g]				
Type DADB-S1- Stroke [mm]	32	40	50	63
10 ... 50	29	34	55	55
51 ... 125	41	49	75	75
126 ... 175	51	60	89	89
176 ... 250	66	78	113	113
251 ... 300	79	93	131	131
301 ... 350	92	108	149	149
351 ... 375	92	108	151	151
376 ... 425	104	122	169	169
426 ... 475	117	137	187	187
476 ... 500	117	137	189	189

Round cylinders DSNU/ESNU

Accessories

Travel velocity v as a function of tubing length l

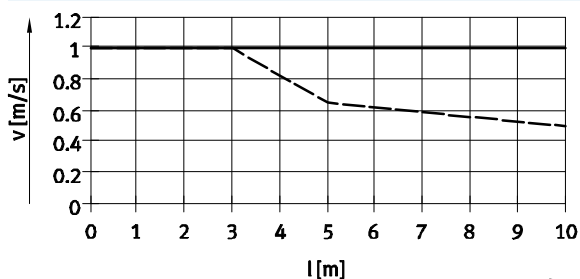


The bellows kit is a leak-free system. To prevent unwanted media being drawn in, the supply and exhaust air must be ducted via a pressure compensation hole in the connection

part 1. The pressure generated in the bellows kit by the positioning motion is primarily defined by travel velocity

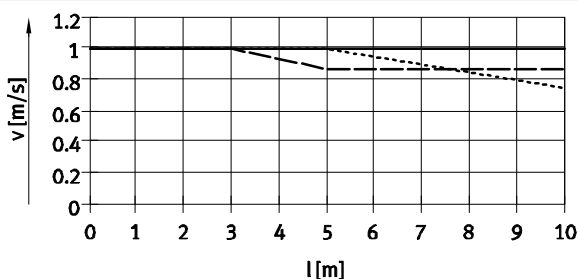
and tubing length. The recommended tubing length based on the travel velocity of the drive can be read from the graph.

Advancing



— Ø 32/50/63
- - - Ø 40

Returning



— Ø 32
- - - Ø 40
..... Ø 50/63

Note
The push-in fittings opposite must be used for the pressure compensation hole.
Silencers can also be used as an alternative. This reduces the travel velocity slightly.

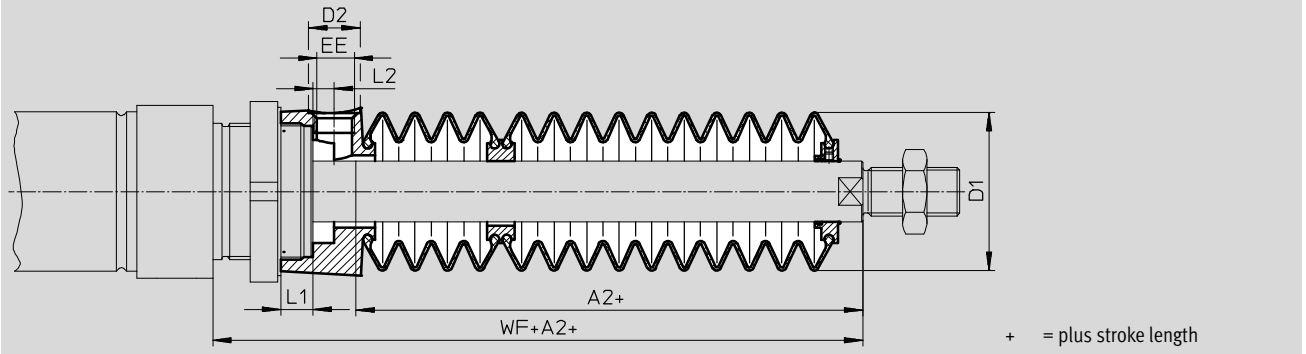
Tubing size and push-in fitting for pressure compensation hole			
Ø [mm]	Tubing O.D. [mm]	Push-in fitting	
		Part No.	Type
32, 40	8	186109	QS-G ¹ / ₈ -8-I
		578376	NPQH-DK-G18-Q8-P10
		578362	NPQH-D-G18-S8-P10
50, 63	12	186350	QS-G ¹ / ₄ -12
		578344	NPQH-D-G14-Q12-P10
		578366	NPQH-D-G14-S12-P10

Round cylinders DSNU/ESNU

Accessories

Dimensions

Download CAD data → www.festo.com



Ø Stroke [mm]	32						40							
	A2 ¹⁾	D1 max.	D2	EE	L1	L2	WF+A2	A2 ¹⁾	D1 max.	D2	EE	L1	L2	WF+A2
10 ... 50	30	38	14	G1/8	12.9	5.4	64	29	46	14	G1/8	8.1	5.4	68
51 ... 125	48						82	44						83
126 ... 175	63						97	57						96
176 ... 250	82						116	73						112
251 ... 300	97						131	87						126
301 ... 350	113						147	101						140
351 ... 375	115						149	102						141
376 ... 425	131						165	116						155
426 ... 475	147						181	131						170
476 ... 500	149						183	132						171

Ø Stroke [mm]	50/63						
	A2 ¹⁾	D1 max.	D2	EE	L1	L2	WF+A2
10 ... 50	30	57	17	G1/4	10.65	7	74/75
51 ... 125	48						92/93
126 ... 175	58						102/103
176 ... 250	77						121/122
251 ... 300	88						132/133
301 ... 350	99						143/144
351 ... 375	106						150/151
376 ... 425	117						161/162
426 ... 475	128						172/173
476 ... 500	135						179/180

1) The dimension corresponds to the K8 value (extended piston rod) of the drive

Round cylinders DSNU/ESNU

Accessories

Ordering data – Bellows kit

An extended piston rod (order code K8) is absolutely necessary when using a bellows kit.
 → Ordering data – Modular products.

The necessary dimension for K8 as a function of piston diameter and cylinder stroke as well as the associated bellows kit is indicated in the following table:

Order example:
 Selected standard cylinder:
 DSNU-32-320-PPV-A-MQ-...
 Dimension for the corresponding K8 value (see table):
 113 mm
 Complete type designation for the standard cylinder:
 DSNU-32-320-PPV-A-MQ-...-113K8
 Associated bellows kit:
 DADB-S1-32-S301-350

Cylinder data			Bellows kit	
∅	Stroke	Dimension for K8	Part No.	Type
[mm]	[mm]	[mm]		
32	10 ... 50	30	553441	DADB-S1-32-S10-50
	51 ... 125	48	553443	DADB-S1-32-S51-125
	126 ... 175	63	553445	DADB-S1-32-S126-175
	176 ... 250	82	553447	DADB-S1-32-S176-250
	251 ... 300	97	553449	DADB-S1-32-S251-300
	301 ... 350	113	553451	DADB-S1-32-S301-350
	351 ... 375	115	553453	DADB-S1-32-S351-375
	376 ... 425	131	553455	DADB-S1-32-S376-425
	426 ... 475	147	553457	DADB-S1-32-S426-475
	476 ... 500	149	553459	DADB-S1-32-S476-500


Cylinder data			Bellows kit	
∅	Stroke	Dimension for K8	Part No.	Type
[mm]	[mm]	[mm]		
40	10 ... 50	29	553461	DADB-S1-40-S10-50
	51 ... 125	44	553463	DADB-S1-40-S51-125
	126 ... 175	57	553465	DADB-S1-40-S126-175
	176 ... 250	73	553467	DADB-S1-40-S176-250
	251 ... 300	87	553469	DADB-S1-40-S251-300
	301 ... 350	101	553471	DADB-S1-40-S301-350
	351 ... 375	102	553473	DADB-S1-40-S351-375
	376 ... 425	116	553475	DADB-S1-40-S376-425
	426 ... 475	131	553477	DADB-S1-40-S426-475
	476 ... 500	132	553479	DADB-S1-40-S476-500


50	10 ... 50	30	553481	DADB-S1-50-S10-50
	51 ... 125	48	553483	DADB-S1-50-S51-125
	126 ... 175	58	553485	DADB-S1-50-S126-175
	176 ... 250	77	553487	DADB-S1-50-S176-250
	251 ... 300	88	553489	DADB-S1-50-S251-300
	301 ... 350	99	553491	DADB-S1-50-S301-350
	351 ... 375	106	553493	DADB-S1-50-S351-375
	376 ... 425	117	553495	DADB-S1-50-S376-425
	426 ... 475	128	553497	DADB-S1-50-S426-475
	476 ... 500	135	553499	DADB-S1-50-S476-500


63	10 ... 50	30	553501	DADB-S1-63-S10-50
	51 ... 125	48	553503	DADB-S1-63-S51-125
	126 ... 175	58	553505	DADB-S1-63-S126-175
	176 ... 250	77	553507	DADB-S1-63-S176-250
	251 ... 300	88	553509	DADB-S1-63-S251-300
	301 ... 350	99	553511	DADB-S1-63-S301-350
	351 ... 375	106	553513	DADB-S1-63-S351-375
	376 ... 425	117	553515	DADB-S1-63-S376-425
	426 ... 475	128	553517	DADB-S1-63-S426-475
	476 ... 500	135	553519	DADB-S1-63-S476-500


Round cylinders DSNU/ESNU

Accessories

Ordering data – Proximity sensors, round design, magneto-resistive							Technical data → Internet: smto	
	Assembly	Switching output	Electrical connection		Cable length [m]	Connection direction	Part No.	Type
			Cable	Plug M8				
N/O contact								
	Via accessories	PNP	3-wire	–	2.5	In-line	152836	SMT0-4U-PS-K-LED-24
			–	3-pin	–	In-line	152742	SMT0-4U-PS-S-LED-24
		NPN	3-wire	–	2.5	In-line	152837	SMT0-4U-NS-K-LED-24
			–	3-pin	–	In-line	152743	SMT0-4U-NS-S-LED-24

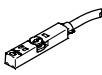
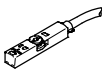
Ordering data – Proximity sensors, round design, magnetic reed							Technical data → Internet: smeo	
	Assembly	Electrical connection		Cable length [m]	Connection direction	Part No.	Type	
		Cable	Plug M8					
N/O contact								
	Via accessories	3-wire	–	2.5	In-line	36198	SME0-4U-K-LED-24	
			5	In-line	175401	SME0-4U-K5-LED-24		
		–	3-pin	–	In-line	151526	SME0-4U-S-LED-24-B	

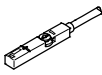


Ordering data – Proximity sensors, round design, magnetic reed, corrosion-resistant							Technical data → Internet: crsmeo	
	Assembly	Electrical connection		Cable length [m]	Connection direction	Part No.	Type	
		Cable	Plug M8					
N/O contact								
	Via accessories	3-wire	–	2.5	In-line	161775	CRSMEO-4-K-LED-24	


Ordering data – Mounting kits for proximity sensors SME0/SMT0/CRSMEO						Technical data → Internet: crsmbr	
Designation	For Ø					Part No.	Type
Mounting kit CRSMBR, corrosion-resistant							
	32					163888	CRSMBR-32
	40					163889	CRSMBR-40
	50					163890	CRSMBR-50
	63					163891	CRSMBR-63

Round cylinders DSNU/ESNU

Accessories


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



Ordering data – Proximity sensors for T-slot, magnetic reed						Technical data → Internet: sme
	Type of mounting	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
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160251	SME-8-O-K-LED-24

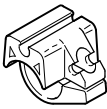
Ordering data – Mounting kits for proximity sensors SME/SMT-8					Technical data → Internet: smbr
Designation	For Ø	Part No.	Type		
Mounting kit SMBR-8					
	32	175097	SMBR-8-32		
	40	175098	SMBR-8-40		
	50	175099	SMBR-8-50		
	63	175100	SMBR-8-63		



Round cylinders DSNU/ESNU

Accessories

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above	PNP	Cable, 3-wire, in-line	2.5	551373	SMT-10M-PS-24V-E-2,5-L-OE	
			Plug M8x1, 3-pin, in-line	0.3	551375	SMT-10M-PS-24V-E-0,3-L-M8D	
			Plug M8x1, 3-pin, lateral	0.3	551376	SMT-10M-PS-24V-E-0,3-Q-M8D	

Ordering data – Proximity sensors for C-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above	Contacting	Plug M8x1, 3-pin, in-line	0.3	551367	SME-10M-DS-24V-E-0,3-L-M8D	
			Cable, 3-wire, in-line	2.5	551365	SME-10M-DS-24V-E-2,5-L-OE	
			Cable, 2-wire, in-line	2.5	551369	SME-10M-ZS-24V-E-2,5-L-OE	
	Insertable in the slot lengthwise	Contacting	Plug M8x1, 3-pin, in-line	0.3	173212	SME-10-SL-LED-24	
			Cable, 3-wire, in-line	2.5	173210	SME-10-KL-LED-24	

Ordering data – Mounting kits for proximity sensors SME/SMT-10					Technical data → Internet: smbr	
Designation	For Ø		Part No.	Type		
Mounting kit SMBR-10						
	32		175105	SMBR-10-32		
	40		175106	SMBR-10-40		
	50		175107	SMBR-10-50		
	63		175108	SMBR-10-63		

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		