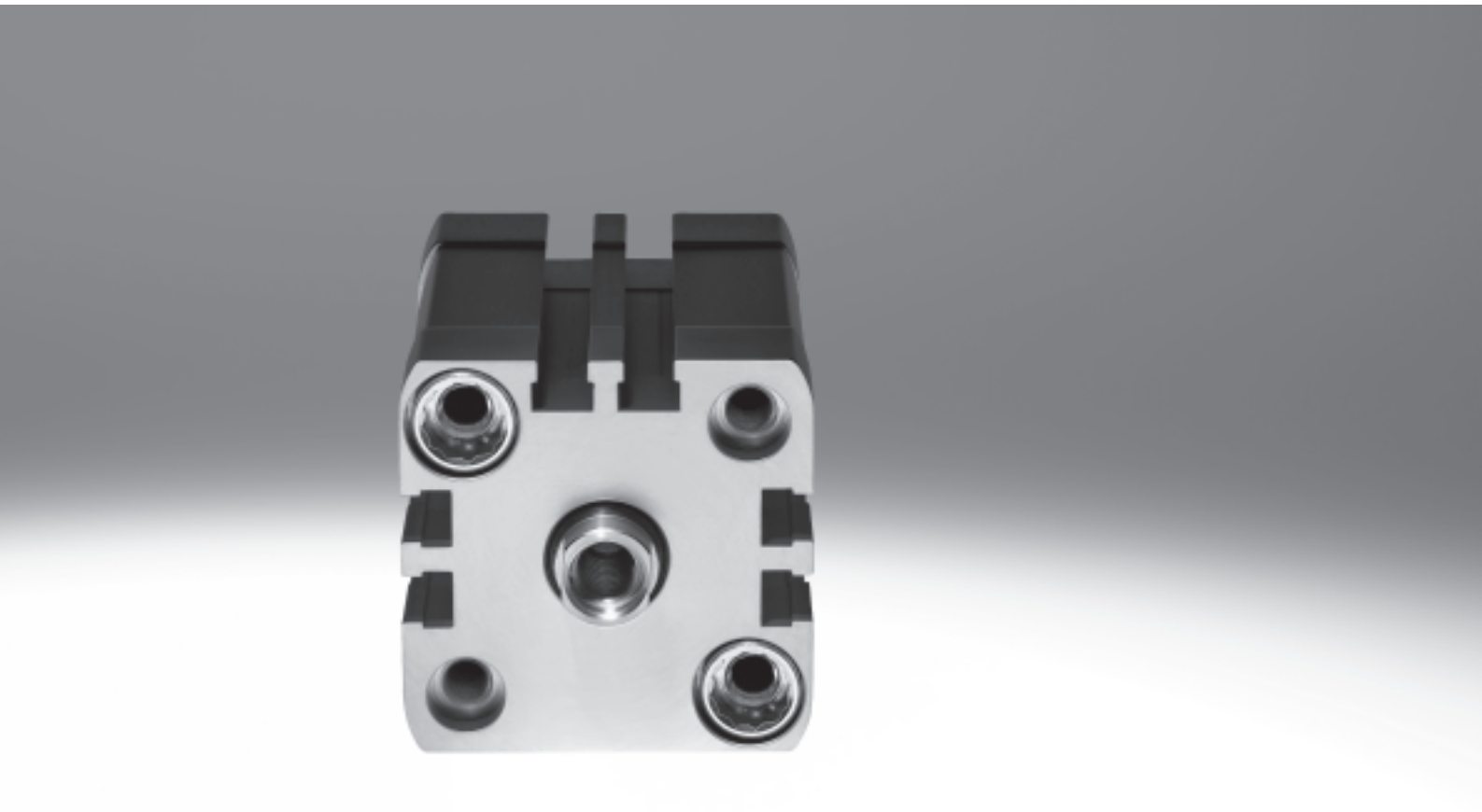
Compact cylinders ADN/AEN, to ISO 21287

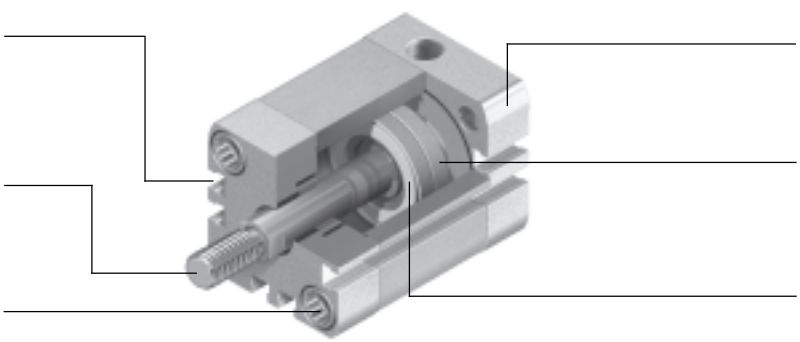
FESTO



Compact cylinders ADN/AEN, to ISO 21287

Key features

At a glance



More than the standard

- The compact cylinder series ADN/AEN complies with the standard ISO 21287
- The ADN/AEN is distinguished by its compact design and broad area of application thanks to the large number of variants
- The variants can be configured according to individual needs thanks to the modular product system

Powerful

- Flexible cushioning rings as standard for absorbing the residual energy facilitate high speeds and machine cycles
- Long service life thanks to exceptional cushioning characteristics and minimal friction factors
- The ADNP with bearing and end caps made of polymer is distinguished by its low weight

Convenient

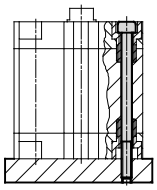
- Easy to mount with a comprehensive range of mounting accessories for just about every type of installation
- Highly flexible thanks to the wide range of variants
- Contactless position sensing using proximity sensors

Reliable

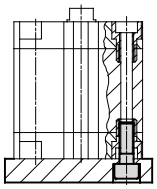
- Optimised manufacturing methods, patented technology and more than 40 years of experience in the field of cylinders make Festo and ADN/AEN a great team

Mounting options

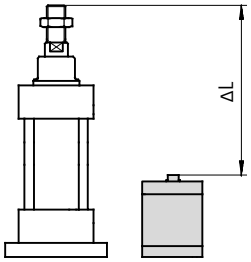
With through screw



Direct mounting



Size comparison between ISO 21287 and ISO 15552



- Space savings of up to 50% compared with the standard ISO 15552

Cushioning types

Cushioning P

Mode of operation

- The drive is equipped with polymer flexible end-position cushioning

Application

- Small loads
- Low speeds
- Small cushioning capacity

Advantages

- No adjustment required
- Time-saving

Cushioning PPS

Mode of operation

- The drive is equipped with self-adjusting, pneumatic end-position cushioning

Application

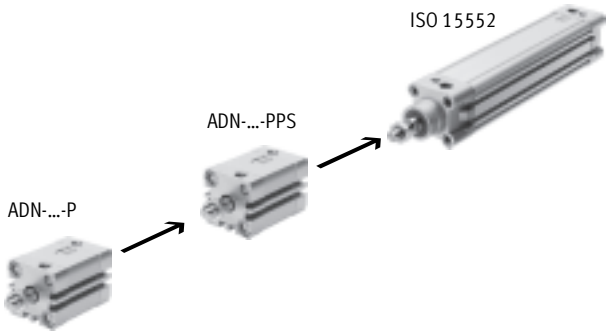
- Larger loads
- Higher speeds
- Larger cushioning capacity

Advantages

- No adjustment required
- Up to four times greater cushioning capacity than ADN-...-P
- Time-saving
- Noise reduction

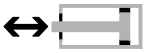
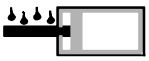
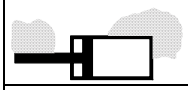
Cushioning capacity of ISO 21287 and ISO 15552

In terms of cushioning capacity, the compact cylinder ADN-...-PPS fills the gap between ADN-...-P and standard cylinders with ISO 15552.



Compact cylinders ADN, to ISO 21287

Key features

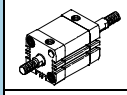
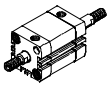
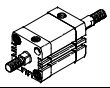
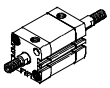
Variants from the modular product system			
Symbol	Key features		Description
	S1	Reinforced piston rod	Increased lateral forces. Absorbs many times more lateral force than a basic cylinder
	S2	Through piston rod	For working at both ends with the same force in the forward and return stroke, for attaching 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, judder-free speed over the full stroke of the cylinder. Seal contains silicone grease (not free of paint-wetting impairment substances)
	S11	Low friction	The special seals considerably reduce system wear. This corresponds to a considerably lower response pressure. Seal contains silicone grease (not free of paint-wetting impairment substances)
	S20	Through, hollow piston rod	For supplying vacuum, small parts, media, etc.
	K2	Extended male piston rod thread	–
	K5	Special piston rod thread	Metric standard thread to ISO
	K8	Extended piston rod	–
	K10	Smooth anodised aluminium piston rod	Ideal for use in welding environments: – Protection against welding spatter – Small working loads – Harder surface compared to steel – Long service life
	KP	With clamping unit	Integrated clamping unit on the piston rod
	EL	With end-position locking	Positive locking in the end position as a drop guard. If there is a drop in pressure, the piston rod is secured in its end position to prevent it from dropping
	Q	Square piston rod	Protection against rotation. For correctly oriented feeding
	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
	R8	Dust protection (wiper seal)	The cylinder is equipped with a hard-chrome plated piston rod and a rigid wiper seal, which protects against dry, dusty media
	TL	Captive rating plate	Laser etched rating plate. For easy identification of components when it comes to replacement, even after years in a harsh environment
	TT	Low temperature	Temperature resistance down to max. –40 °C

Software tools and configuration of Festo modular products
➔www.festo.com

Compact cylinders ADN, to ISO 21287

Product range overview

FESTO

Function	Version	Type	Piston ∅	Stroke		Position sensing	Cushioning	
							Fixed	Self-adjusting
			[mm]	[mm]		A	P	PPS
Double-acting	**Basic version**							
		**ADN**	12	5, 10, 15, 20, 25, 30, 40	1 ... 300	■	■	■ ∅ 32 ... 80
			16	5, 10, 15, 20, 25, 30, 40, 50	1 ... 300			
			20, 25	5, 10, 15, 20, 25, 30, 40, 50, 60	1 ... 300			
			32, 40, 50	5, 10, 15, 20, 25, 30, 40, 50, 60, 80	1 ... 400			
			63	10, 15, 20, 25, 30, 40, 50, 60, 80	1 ... 400			
			80, 100	10, 15, 20, 25, 30, 40, 50, 60, 80	1 ... 500			
			125	–	1 ... 500			
		**ADN-...-S2** Through piston rod	12, 16, 20, 25	–	1 ... 300	■	■	■ ∅ 32 ... 80
			32, 40, 50, 63	–	1 ... 400			
			80, 100, 125	–	1 ... 500			
		**ADN-...-S20** Through, hollow piston rod	16, 20, 25	–	1 ... 300	■	■	■ ∅ 32 ... 80
			32, 40, 50, 63	–	1 ... 400			
			80, 100, 125	–	1 ... 500			
	Reinforced piston rod							
		**ADN-...-S1**	25	–	5 ... 300	■	■	–
			40, 63	–	10 ... 400			
			100	–	10 ... 500			
	Non-rotating with square piston rod							
		**ADN-...-Q**	12, 16, 20, 25	–	1 ... 300	■	■	–
			32, 40, 50, 63	–	1 ... 400			
			80, 100, 125	–	1 ... 500			
		**ADN-...-Q-S2** Through piston rod	12, 16, 20, 25	–	1 ... 300	■	■	–
			32, 40, 50, 63	–	1 ... 400			
			80, 100, 125	–	1 ... 500			
		**ADN-...-Q-S20** Through, hollow piston rod	16, 20, 25	–	1 ... 200	■	■	–
			32, 40, 50, 63, 80	–	1 ... 300			
			100, 125	–	1 ... 400			
	Standard hole pattern, with clamping unit							
		**ADN-...-KP**	20, 25	–	10 ... 300	■	■	–
			32, 40, 50, 63	–	10 ... 400			
			80, 100	–	10 ... 500			
	Standard hole pattern, with end-position locking							
		**ADN-...-EL**	20, 25	–	10 ... 300	■	■	–
			32, 40, 50, 63	–	10 ... 400			
			80, 100	–	10 ... 500			
	With polymer end caps							
		**ADNP**	20, 25	5, 10, 15, 20, 25, 30, 40, 50, 60	–	■	■	–
			32, 40, 50	10, 15, 20, 25, 30, 40, 50, 60, 80				

Compact cylinders ADN, to ISO 21287

Product range overview

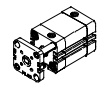
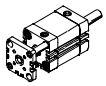
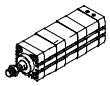
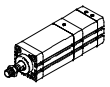
FESTO

Type	Male piston rod thread	Female piston rod thread	Extended male piston rod thread	Special piston rod thread	Extended piston rod	Smooth anodised piston rod	Heat-resistant seals max. 120 °C	Slow speed (constant motion)	Low friction	High corrosion protection	Dust protection	Low temperature	→ Page/Internet
	A	I	K2	K5	K8	K10	S6	S10	S11	R3	R8	TT	
Basic version													
ADN	■	■	■	■	■	■ ∅ 20 and above	■	■	■	■	■ ∅ 20 and above	■ ∅ 20 ... 100	13
ADN-...-S2 Through piston rod	■	■	■	■	■	–	■	–	–	–	–	■ ∅ 20 ... 100	13
ADN-...-S20 Through, hollow piston rod	■	–	■	■	■	–	■	–	–	–	–	–	13
Reinforced piston rod													
ADN-...-S1	■	■	■	■	■	–	■	–	–	■	–	–	13
Non-rotating with square piston rod													
ADN-...-Q	■	■	■	■	■	–	■	–	–	–	–	–	13
ADN-...-Q-S2 Through piston rod	■	■	■	■	■	–	■	–	–	–	–	–	13
ADN-...-Q-S20 Through, hollow piston rod	■	–	■	■	■	–	■	–	–	–	–	–	13
Standard hole pattern, with clamping unit													
ADN-...-KP	■	■	■	■	■	–	–	–	–	–	–	–	40
Standard hole pattern, with end-position locking													
ADN-...-EL	■	■	■	■	■	–	–	–	–	–	–	–	49
With polymer end caps													
ADNP	■	■	–	–	–	–	–	–	–	–	–	–	75

Compact cylinders ADN, to ISO 21287

Product range overview

FESTO

Function	Version	Type	Piston ∅	Stroke		Position sensing	Cushioning	
							Fixed	Self-adjusting
			[mm]	[mm]		A	P	PPS
Double-acting	Standard hole pattern, non-rotating with yoke							
		ADNGF	12	5, 10, 15, 20, 25, 30, 40	1 ... 200	■	■	■ ∅ 32 ... 80
			16	5, 10, 15, 20, 25, 30, 40, 50	1 ... 200			
			20, 25	5, 10, 15, 20, 25, 30, 40, 50, 60	3 ... 200			
			32, 40, 50	5, 10, 15, 20, 25, 30, 40, 50, 60, 80	5 ... 300			
			63, 80	10, 15, 20, 25, 30, 40, 50, 60, 80	5 ... 300			
			100	10, 15, 20, 25, 30, 40, 50, 60, 80	5 ... 400			
		ADNGF-...-S2 Through piston rod	12, 16	–	1 ... 200	■	■	■ ∅ 32 ... 80
			20, 25		3 ... 200			
			32, 40, 50, 63, 80, 100		5 ... 250			
	Standard hole pattern, high-force cylinder							
		ADNH	25	–	1 ... 150	■	■	–
			40					
			63					
			100					
	Standard hole pattern, multi-position cylinder							
		ADNM	25	–	1 ... 2,000	■	■	–
			40					
			63					
			100					

Compact cylinders ADN, to ISO 21287

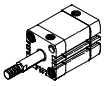
Product range overview

FESTO

Type	Male piston rod thread	Female piston rod thread	Extended male piston rod thread	Special piston rod thread	Extended piston rod	Heat-resistant seals max. 120 °C	→ Page/Internet
	A	I	K2	K5	K8	S6	
Standard hole pattern, non-rotating with yoke							
ADNGF	–	–	–	–	–	■	adngf
ADNGF-...-S2 Through piston rod	–	–	–	–	–	■	adngf
Standard hole pattern, high-force cylinder							
ADNH	■	■	■	■	■	■	adnh
Standard hole pattern, multi-position cylinder							
ADNM	■	■	■	■	■	■	adnh

Compact cylinders AEN, to ISO 21287

Product overview

Function	Version	Type	Piston ∅	Stroke	Position sensing	Cushioning
			[mm]	[mm]	A	P
Single-acting	**Basic version**					
		**AEN**	12	1 … 10	■	■
			16, 20, 25, 32, 40, 50, 63, 80, 100	1 … 25		
		**AEN-…-Z** pulling	12	1 … 10	■	■
			16, 20, 25, 32, 40, 50, 63, 80, 100	1 … 25		
	Non-rotating with square piston rod					
		**AEN-…-Q**	16	1 … 25	■	■
			20, 25, 32, 40, 50, 63, 80, 100	1 … 25		

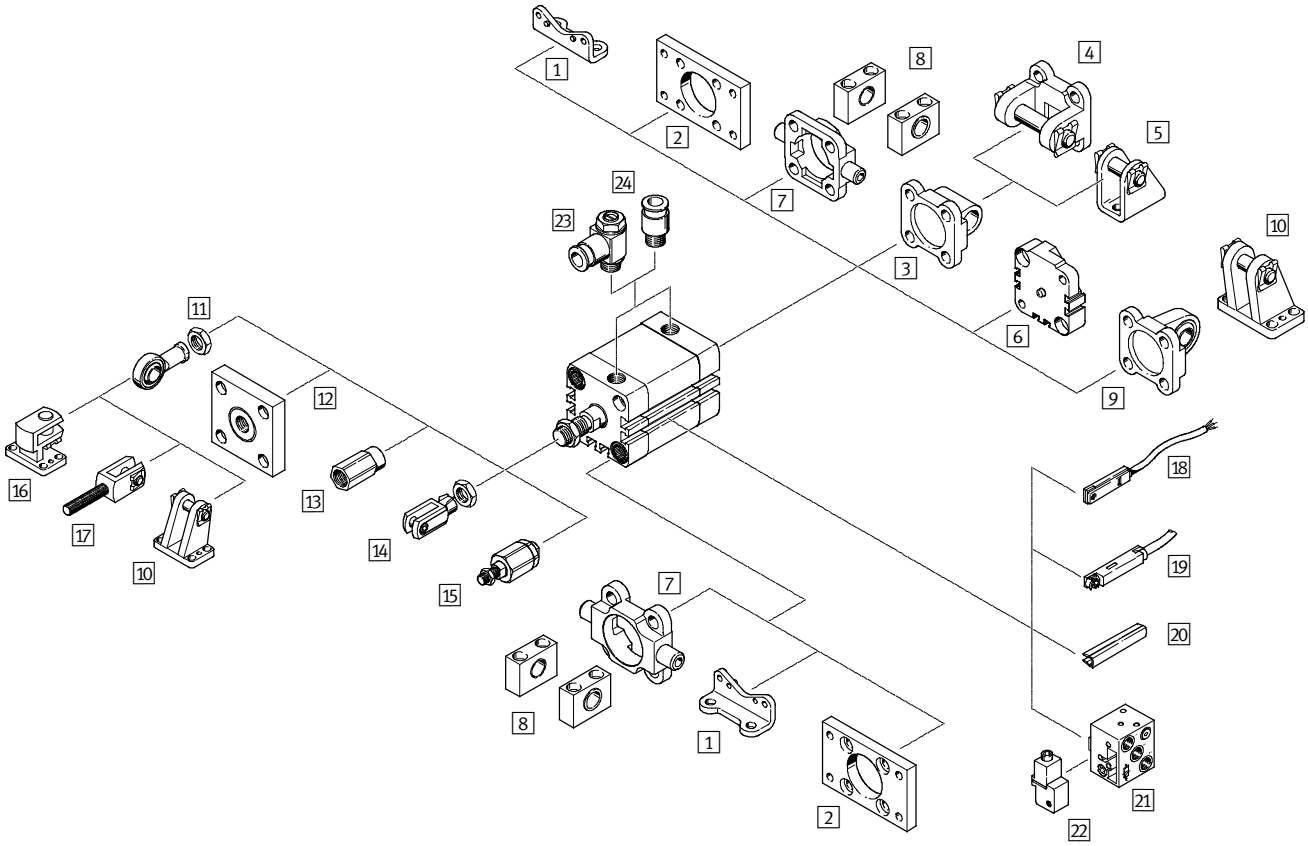
Compact cylinders AEN, to ISO 21287

Product overview

Type	Male piston rod thread	Female piston rod thread	Extended male piston rod thread	Special piston rod thread	Extended piston rod	Smooth anodised piston rod	Heat-resistant seals up to max. 120 °C	➔ Page/Internet
	A	I	K2	K5	K8	K10	S6	
Basic version								
AEN	■	■	■	■	■	■ ∅ 20 and above	■	59
AEN-...-Z pulling	■	■	■	■	■	■ ∅ 20 and above	■	59
Non-rotating with square piston rod								
AEN-...-Q	■	■	■	■	■	–	■	59

Compact cylinders ADN/AEN, to ISO 21287

Peripherals overview



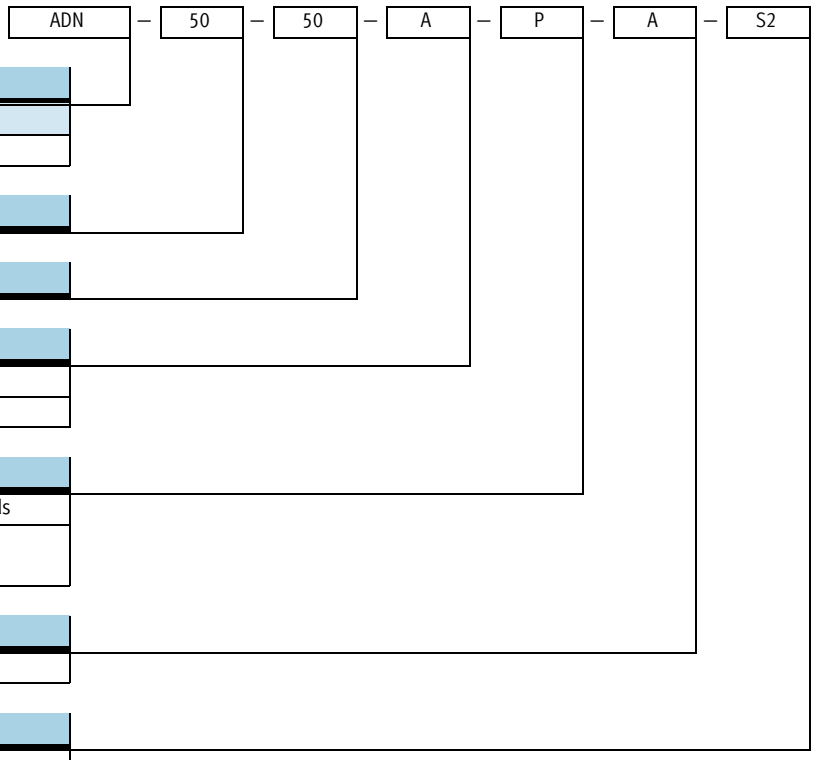
Compact cylinders ADN/AEN, to ISO 21287

Peripherals overview

Mounting attachments and accessories			
		Brief description	**➔ Page/Internet**
1	Foot mounting HNA	For bearing or end caps	79
2	Flange mounting FNC	For bearing or end caps	80
3	Swivel flange SNCL	For end caps	81
4	Swivel flange SNCB	For swivel flange SNCL	85
5	Clevis foot LBN/CRLBN	For swivel flange SNCL	84
6	Multi-position kit DPNA	For connecting two cylinders with identical piston ∅ to form a multi-position cylinder	83
7	Trunnion flange ZNCF/CRZNG	For bearing caps	86
8	Trunnion support LNZG	For trunnion flange ZNCF/CRZNG	87
9	Swivel flange SNCS	For end caps	82
10	Clevis foot LBG	For swivel flange SNCS	82
11	Rod eye SGS/CRSGS	With spherical bearing	88
12	Coupling piece KSG/KSZ	For compensating radial deviations	88
13	Adapter AD	For mounting a vacuum suction cup on a hollow cylinder piston rod	88
14	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	88
15	Self-aligning rod coupler FK	For compensating radial and angular deviations	88
16	Right-angle clevis foot LQG	For rod eye SGS	89
17	Rod clevis SGA	With male thread	88
18	Proximity sensor SME/SMT-8	Can be integrated in the sensor slot of the cylinder profile barrel	91
19	Proximity sensor SME/SMT-8M	Can be integrated in the sensor slot of the cylinder profile barrel	91
20	Slot cover ABP-5-S	For protecting the sensor cable and keeping dirt out of the sensor slots	91
21	Proximity sensor SMPO-8E	Pneumatic output signal	91
22	Mounting kit SMB-8E	For proximity sensor SMPO-8E	91
23	One-way flow control valve GRLA/GRLZ	For speed regulation	89
24	Push-in fitting QS	For connecting compressed air tubing with standard external diameters	quick star

Compact cylinders ADN, to ISO 21287

Type codes



Type	
Double-acting	
ADN	Compact cylinder

Piston ∅ [mm]	

Stroke [mm]	

Piston rod thread	
A	Male thread
I	Female thread

Cushioning	
P	Flexible cushioning rings/pads at both ends
PPS	Pneumatic cushioning, self-adjusting at both ends

Position sensing	
A	Via proximity sensor

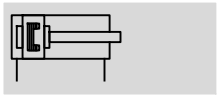
Variant	
Q	Square piston rod
S1	Reinforced piston rod
S2	Through piston rod
S20	Through, hollow piston rod
K2	Piston rod with extended male thread
K5	Piston rod with special thread
K8	Extended piston rod
K10	Smooth anodised piston rod
S6	Heat-resistant seals up to max. 120 °C
S10	Slow speed (constant motion)
S11	Low friction
R3	High corrosion protection
R8	Dust protection
TL	Captive rating plate
TT	Low temperature

Compact cylinders ADN, to ISO 21287

Technical data

FESTO

Function

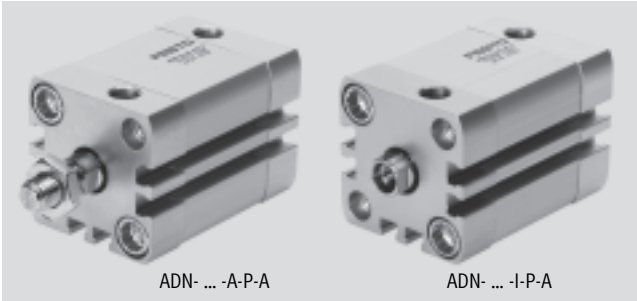


Variants ➔ 3

- Ø - Diameter
  12 ... 125 mm

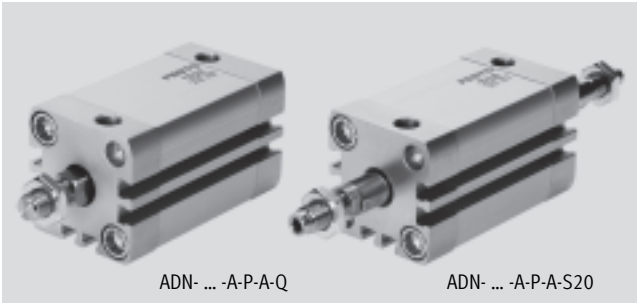
- I - Stroke length
  1 ... 500 mm

- www.festo.com



ADN- ... -A-P-A

ADN- ... -I-P-A



ADN- ... -A-P-A-Q

ADN- ... -A-P-A-S20

General technical data											
Piston ∅	12	16	20	25	32	40	50	63	80	100	125
Design	Piston										
	Piston rod										
	Cylinder barrel										
Mode of operation	Double-acting										
Cushioning											
P	Flexible cushioning rings/pads at both ends										
PPS	–				Pneumatic cushioning, self-adjusting at both ends					–	
Cushioning length											
PPS [mm]	–				4	5	6	7	7.5	–	
Position sensing	Via proximity sensor										
Type of mounting	Via through-hole										
	Via female thread										
	Via accessories										
Mounting position	Any										

Technical data – Basic version and variants						
Piston ∅	12	16	20	25	32	40
Pneumatic connection	M5	M5	M5	M5	G1/8	G1/8
Female piston rod thread						
–	M3	M4	M6	M6	M8	M8
K5	–	–	M5	M5	M6	M6
S1	–	–	–	M6	–	M10
K5-S1	–	–	–	M5	–	M8
Male piston rod thread						
–	M5	M6	M8	M8	M10x1.25	M10x1.25
K5	M6	M8	M10, M10x1.25	M10, M10x1.25	M10, M12	M10, M12
S1	–	–	–	M8	–	M12x1.25
K5-S1	–	–	–	M10, M10x1.25	–	M10x1.25, M12
Max. torsional backlash of piston rod [°]						
Q	2	1.8	1.6	1.6	1.2	1.2

Technical data – Basic version and variants					
Piston ∅	50	63	80	100	125
Pneumatic connection	G⅛	G⅛	G⅛	G⅛	G¼
Female piston rod thread					
–	M10	M10	M12	M12	M16
K5	M8	M8	M10	M10	–
S1	–	M12	–	M16	–
K5-S1	–	M10	–	–	–
Male piston rod thread					
–	M12x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5
K5	M12, M16	M12, M16	M16, M20	M16, M20, M20x1.5	M20
S1	–	M16x1.5	–	M20x1.5	–
K5-S1	–	M12x1.25, M16	–	M16x1.5, M20	–
Max. torsional backlash of piston rod [°]					
Q	1	1	0.8	0.8	0.8

Operating and environmental conditions											
Piston ∅	12	16	20	25	32	40	50	63	80	100	125
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		0.6 … 10								
PPS	–				1.5 … 10	1 … 10				–	
Q	1.3 … 10		1 … 10		0.8 … 10			0.6 … 10			
S1	–			1 … 10	–	1 … 10	–	1 … 10	–	1 … 10	–
S2, S20	1.5 … 10	1.3 … 10	1.2 … 10		1 … 10			0.8 … 10			
S6	1 … 10		0.6 … 10								
S11	0.45 … 10				0.25 … 10						
R8, TT	–		1.5 … 10			1 … 10					–
Ambient temperature[1] [°C]											
–	–20 … +80										
S6	0 … +120										
R3	–20 … +80										
TT	–		–40 … +80								–
Corrosion resistance class CRC[2]											
–	2										
R3	3										
ATEX	Specified types ➔ www.festo.com										

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 according to 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 according to Festo standard 940 070
Components subject to high corrosion stress. 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.

Forces [N] and impact energy [J]											
Piston ∅	12	16	20	25	32	40	50	63	80	100	125
Theoretical force at 6 bar, advancing											
–	68	121	188	295	483	754	1,178	1,870	3,016	4,712	7,363
S1	–	–	–	295	–	754	–	1,870	–	4,712	–
S2	51	90	141	247	415	686	1,057	1,750	2,827	4,524	7,069
Theoretical force at 6 bar, retracting											
–	51	90	141	247	415	686	1,057	1,750	2,827	4,524	7,069
S1	–	–	–	247	–	633	–	1,681	–	4,417	–
S2	51	90	141	247	415	686	1,057	1,750	2,827	4,524	7,069
Max. impact energy in the end positions											
–	0.07	0.15	0.2	0.3	0.4	0.7	1	1.3	1.8	2.5	3.3
S1	–	–	–	0.3	–	0.7	–	1.3	–	2.5	–
S6	0.035	0.075	0.1	0.15	0.2	0.35	0.5	0.65	0.9	1.25	1.75
K10	–	–	0.16	0.24	0.32	0.56	0.8	1	1.4	2	2.6
S20	–	0.016	0.024	0.083	0.15	0.39	0.48	0.62	0.8	0.9	0.95

Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$	Permissible impact velocity
$E_{perm.}$	Max. impact energy
m_{dead}	Moving load (drive)
m_{load}	Moving effective load

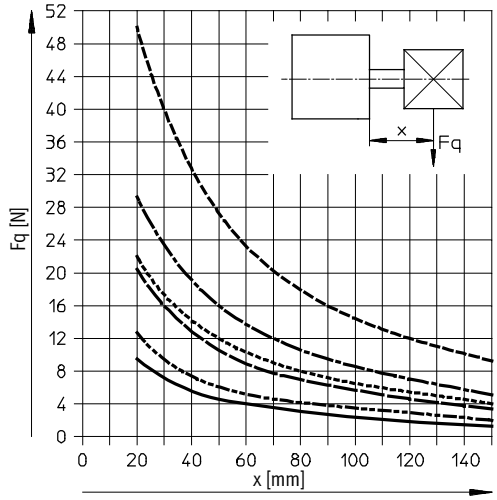
Note

In combination with PPS cushioning, the maximum impact energy is still obtained.

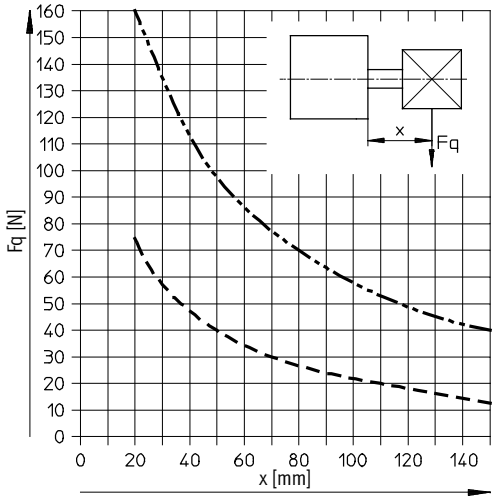
Max. energy conversion capacity [J]					
Piston ∅	32	40	50	63	80
For PPS cushioning	1	1.7	2.8	4.8	8

Max. lateral force Fq as a function of the projection x

∅ 12 ... 63



∅ 80 ... 125

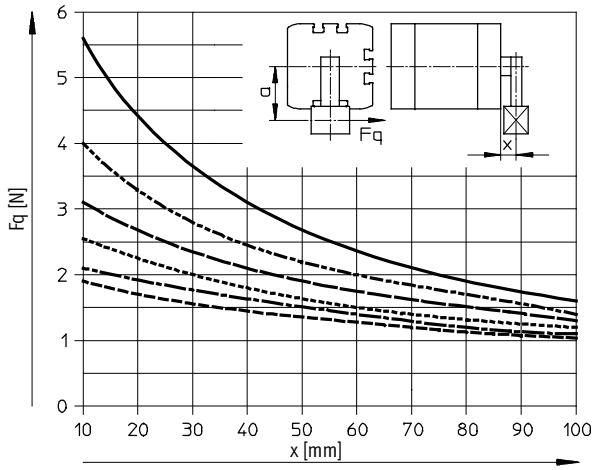


- ∅ 12
- ∅ 16
- ∅ 20
- ∅ 25
- ∅ 32/40
- ∅ 50/63
- ∅ 80/100
- ∅ 125

Max. lateral force Fq as a function of the projection x and the lever arm a

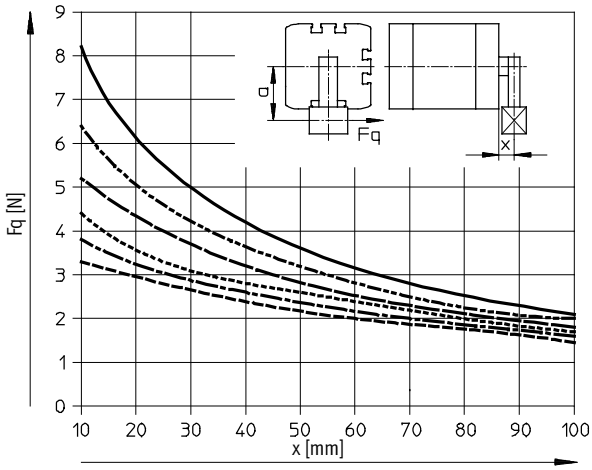
Q – Square piston rod

∅ 12



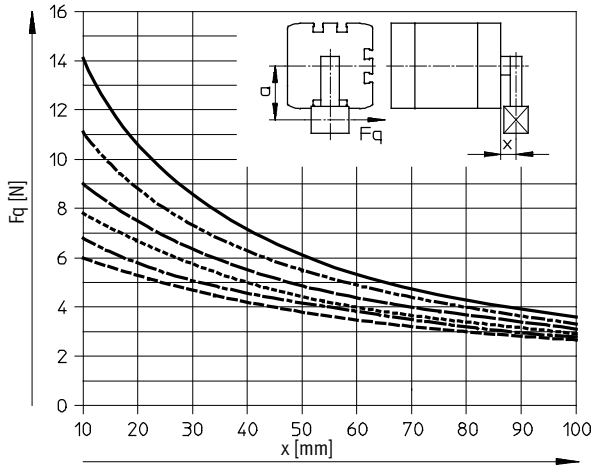
- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

∅ 16



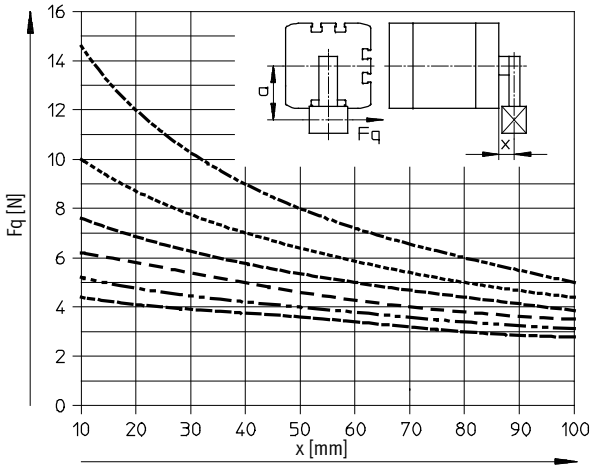
- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

∅ 20/25



- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

∅ 32/40



- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

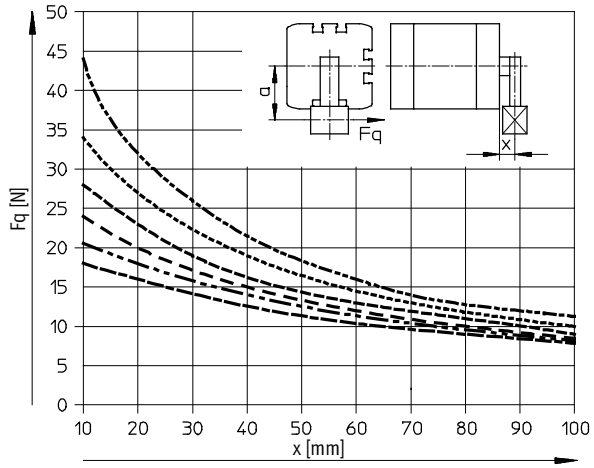
Note

- Torques on the piston rod are to be excluded with projections greater than those shown in the graphs.
- If a = 0, the corresponding lateral load line of the basic ADN version can be used (➔ 15).

Max. lateral force Fq as a function of the projection x and the lever arm a

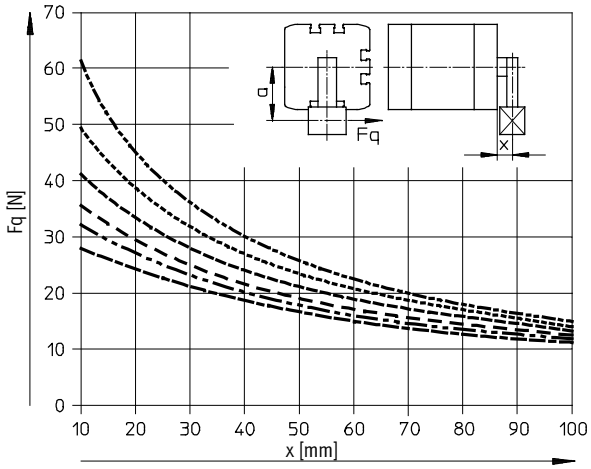
Q – Square piston rod

∅ 50/63



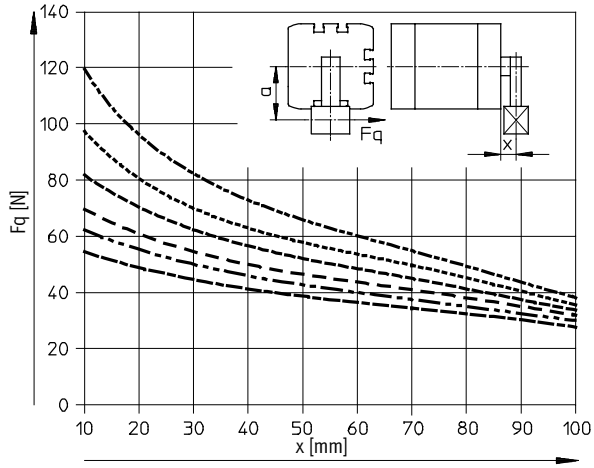
- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

∅ 80/100



- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

∅ 125



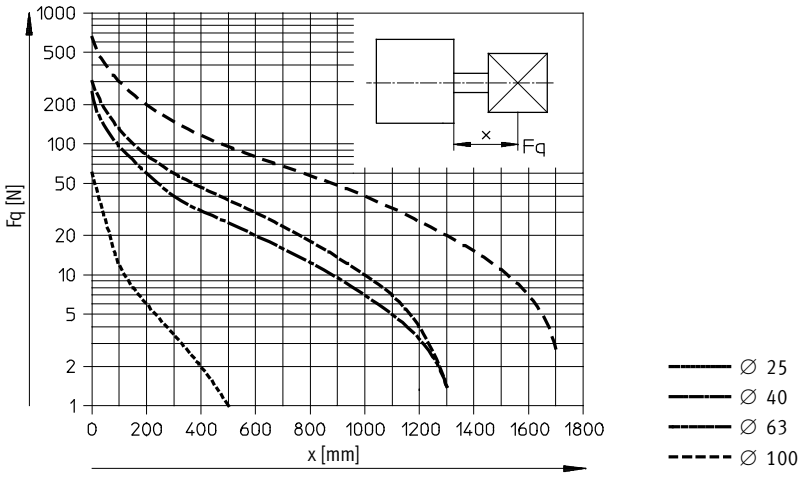
- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

Note

- Torques on the piston rod are to be excluded with projections greater than those shown in the graphs.
- If a = 0, the corresponding lateral load line of the basic ADN version can be used (➔ 15).

Max. lateral force Fq as a function of the projection x

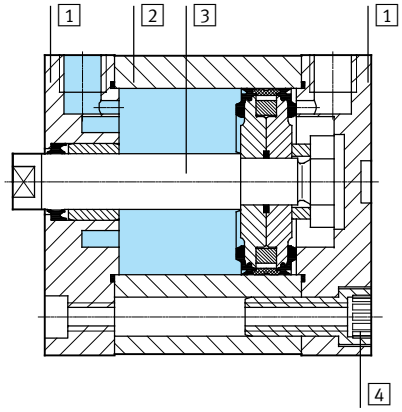
S1 – Reinforced piston rod



Weight [g]											
Piston ∅	12	16	20	25	32	40	50	63	80	100	125
Product weight with 0 mm stroke	77	79	131	156	265	346	540	722	1,300	2,154	2,880
Additional weight per 10 mm stroke	12	14	21	23	30	37	51	59	79	98	117
Moving load with 0 mm stroke	9	15	30	50	60	80	140	180	400	570	1,080
Additional load per 10 mm stroke	2	4	6	6	9	9	16	16	25	25	39

Materials

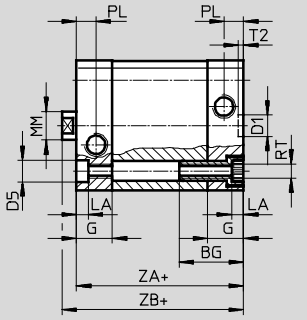
Sectional view



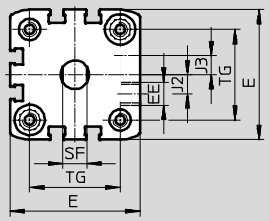
Compact cylinder		Basic version, Q	R8	S6, S10, S11	R3	K10
1	Bearing and end cap	Anodised aluminium				
2	Cylinder barrel	Anodised aluminium				
3	Piston rod	High-alloy steel	Hard-chromium plated tempered steel	High-alloy steel		Anodised aluminium
4	Flange screws					
	∅ 12 ... 16	High-alloy steel			High-alloy steel	–
	∅ 20 ... 25	Galvanised steel			High-alloy steel	Galvanised steel
	∅ 32 ... 63	Galvanised steel			Steel, zinc flake coating	Galvanised steel
	∅ 80 ... 125	Standard screws, galvanised steel			Standard screws, high-alloy steel	Standard screws, galvanised steel
–	Seals	Polyurethane		Fluoro elastomer	Polyurethane	
	Note on materials	RoHS-compliant				

Dimensions – Basic version Download CAD data ➔ **www.festo.com**

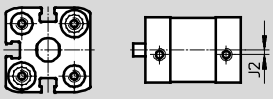
∅ 12 ... 63



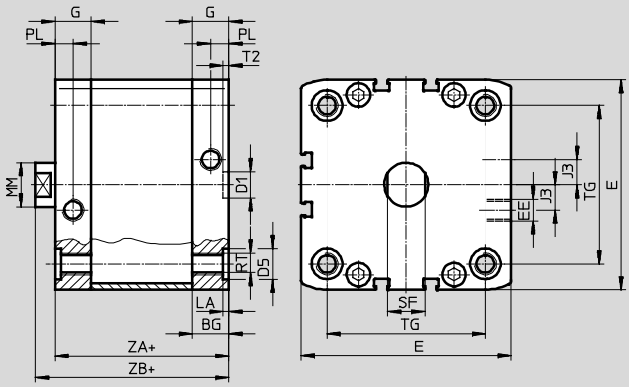
∅ 32 ... 63



∅ 12 ... 25 **∅ 12**



∅ 80 ... 125



\+ = plus stroke length

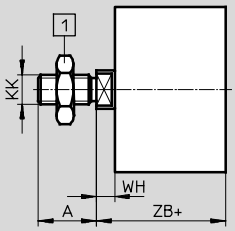
∅ [mm]	BG min.	D1 ∅ H9	D5 ∅ F9	E	EE	G	J2	J3	LA +0.2
12	17	9	6	27.5 +0.3	M5	10.5	2	–	3.5
16				29 +0.3		11	2.6		
20	19.5		9	35.5 +0.3		12			5
25				39.5 +0.3					
32	26			47 +0.3	G⅛	15	6		
40				54.5 +0.3			8		
50	27	12	12	65.5 +0.3			11.5		
63				75.5 +0.3					
80	17		15	95.5 +0.6		16.5			2.6
100	21.5			113.5 +0.6		21.5	20		
125	20		–	134.6 +0.3	G¼	20	21.15		–

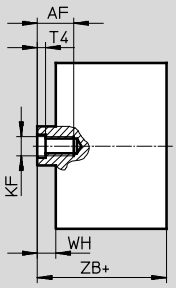
∅ [mm]	MM ∅ h8	PL +0.2	RT	SF h13	T2 +0.1	TG ±0.2	ZA ±0.3	ZB +1.2	ZB PPS +1.3
12	6	6	M4	5	2.1	16	35	39.2	–
16	8			7		18		39.7	
20	10		M5	9		22	37	42.5	
25						26	39	44.5	
32	12	8.2	M6	10		32.5	44	50	50.6
40						38	45	51.1	51.7
50	16		M8	13	2.6	46.5		52.7	53.2
63						56.5	49	56.5	57
80	20		M10	17		72	54	62.9	63.4
100		10.5				89	67	76	–
125	25		M12	21		110	81	92	

Dimensions – Variants

Download CAD data ➔ **www.festo.com**

Basic version

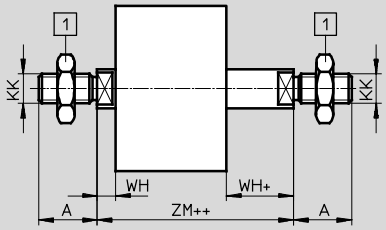


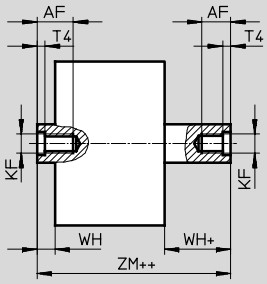


1 Hex nut DIN 439-B
only with ∅ 32 ... 125

\+ = plus stroke length

S2 – Through piston rod

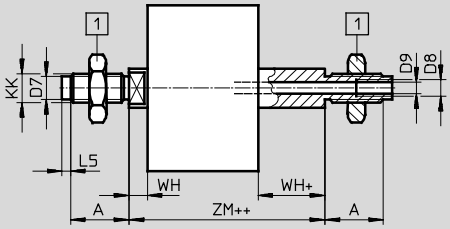




1 Hex nut DIN 439-B
only with ∅ 32 ... 125

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

S20 – Through, hollow piston rod



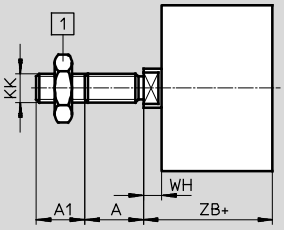
Note

In combination with variants S2/S20, the piston rod is extended at one end.

1 Hex nut DIN 439-B
only with ∅ 32 ... 125

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

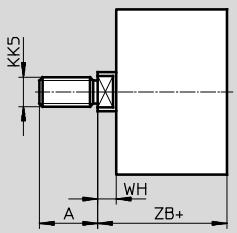
K2 – Extended male piston rod thread

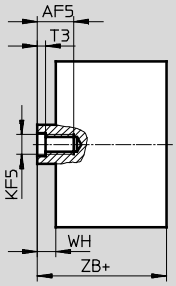


1 Hex nut DIN 439-B
only with ∅ 32 ... 125

\+ = plus stroke length

K5 – Special piston rod thread





\+ = plus stroke length

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

K8 – Extended piston rod

1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

R8 – Dust protection / TT – Low temperature

1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

∅ [mm]	A −0.5	A1	A2	AF min.	AF5 min.	B ∅	D7 ∅	D8	D9 ∅	L5	KF	KF5	KK
12	10	1 ... 10	1 ... 300	8	–	–	–	–	–	–	M3	–	M5
16	12			10			4.5		3.2	3	M4		M6
20	16	1 ... 20		14	12	18	6	–	3.8	2	M6	M5	M8
25													
32	19		1 ...400	16	14	27	8		4.5	3	M8	M6	M10x1.25
40													
50	22			20	16	31	10		6	3.5	M10	M8	M12x1.25
63													
80	28	1 ... 30	1 ... 500		20	35	–	G⅛	8	–	M12	M10	M16x1.5
100													
125	40	1 ... 40		25	–	–		G¼	11.7		M16	–	M20x1.5

∅ [mm]	KK5	T3	T4	VD	WH			ZB			ZM	
					+1.3	PPS +1.4	R8/TT +1.3	+1.2	PPS +1.3	R8/TT +1.2		PPS
12	M6	–	1.5	–	4.2	–	–	39.2	–	–	44.5 +0.5	–
16	M8				4.7			39.7			45.7 +0.5	
20	M10x1.25	2	2.6	5.2	5.5	–	10.5	42.5	–	47.5	49.5 +0.5	–
25	M10							44.5		49.5	51.5 +0.5	
32	M10	2.6	3.3	6.4	6	6.5	12.5	50	50.6	56.5	57.5 +0.5	58.6 +0.6
40	M12				6.1	6.6		51.1	51.7	57.5	58.6 +0.6	59.7 +0.7
50	M12	3.3	4.7		7.7	8.2	14.7	52.7	53.2	59.7	62.0 +0.6	63.1 +0.7
63	M16				7.5	8	14.6	56.5	57	63.6	65.4 +0.6	66.5 +0.7
80	M16	4.7	6.1		8.9	9.4	15.4	62.9	63.4	69.4	73.2 +0.6	74.3 +0.7
100	M20x1.5 M20				9	–	15.5	76	–	82.5	86.4 +0.6	–
125	M20	–	7	–	11	–	–	92	–	–	104.4 +0.6	–

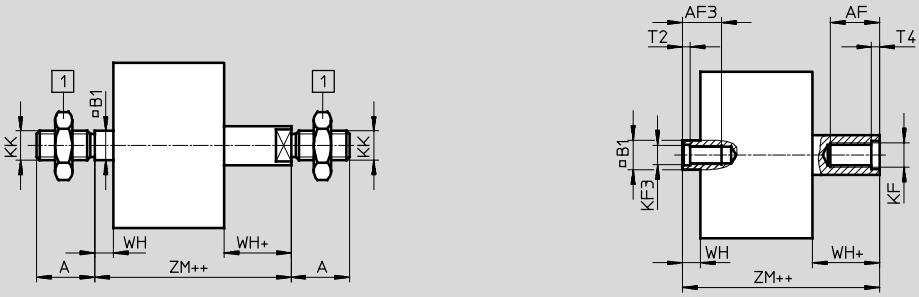
Dimensions – Variants Download CAD data ➔ **www.festo.com**

Q – Square piston rod

1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

Q-S2 – Square, through piston rod

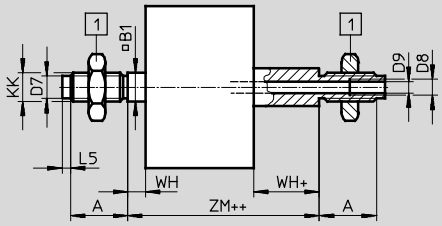


1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

Q-S20 – Square, through, hollow piston rod



\- - Note

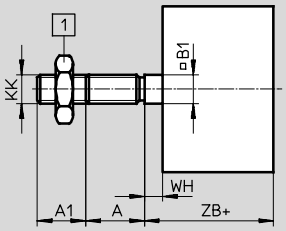
In combination with variants S2/S20, the piston rod is extended at one end on the square piston rod.

1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

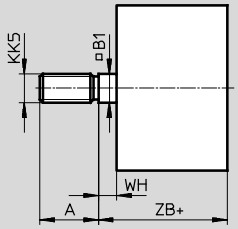
Q-K2 – Square piston rod with extended male thread



1 Hex nut DIN 439-B only with ∅ 32 ... 125

\+ = plus stroke length

Q-K5 – Square, special piston rod thread



\+ = plus stroke length

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

Q-K8 – Square, extended piston rod

1 Hex nut DIN 439-B
only with ∅ 32 … 125

\+ = plus stroke length

∅ [mm]	A −0.5	A1	A2	AF min.	AF3 min.	B1 □	D7 ∅	D8	D9 ∅
12	10	1 … 10	1 … 300	8	8	5.5	–	–	–
16	12			10	10	7	4.5		3.2
20	16	1 … 20		14	12	9	6		3.8
25									
32	19		1 …400	16	14	10	8		4.5
40									
50	22			20	16	12	10		6
63									
80	28	1 … 30	1 … 500	20	20	16	–	G⅛	8
100									
125	40	1 … 40		25	24	20		G¼	11.7

∅ [mm]	L5	KF	KF3	KK	KK5	T2	WH +1.3	ZB +1.2	ZM
12	–	M3	M3	M5	M6	1.5	4.2	39.2	44.5 +0.5
16	3	M4	M4	M6	M8		4.7	39.7	45.7 +0.5
20	2	M6	M5	M8	M10x1.25	2	5.5	42.5	49.5 +0.5
25					M10			44.5	51.5 +0.5
32	3	M8	M6	M10x1.25	M10	2.6	6	50	57.5 +0.5
40							6.1	51.1	58.6 +0.6
50	3.5	M10	M8	M12x1.25	M16	3.3	8.2	53.2	62.8 +0.6
63							8.1	57.1	66.6 +0.6
80	–	M12	M10	M16x1.5	M16	4.7	8.9	62.9	73.2 +0.6
100							9	76	86.4 +0.6
125		M16	M12	M20x1.5	M20	6.1	11	92	104.4 +0.6

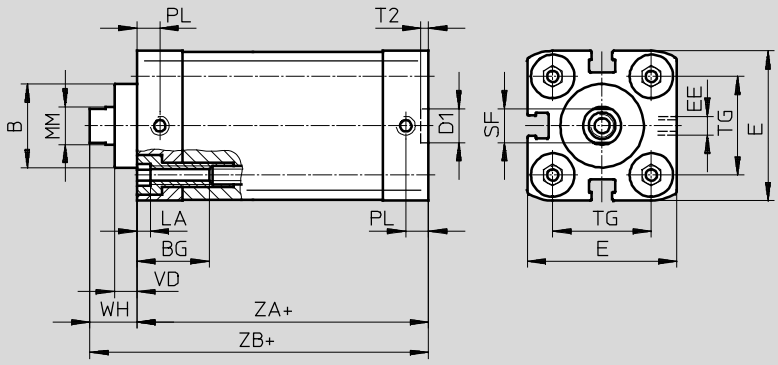
Compact cylinders ADN, to ISO 21287

Technical data

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

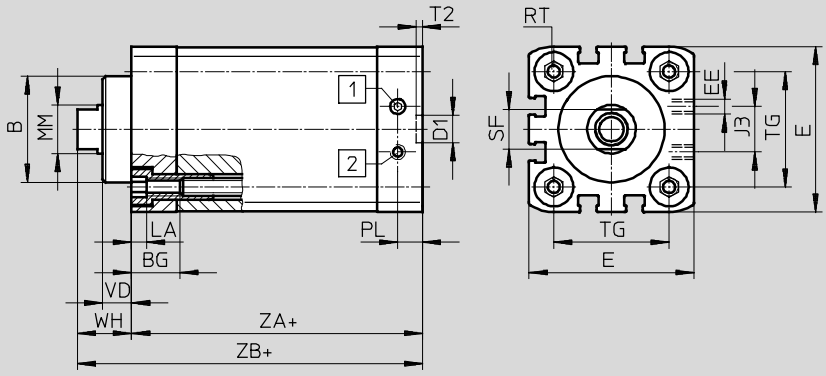
S1 – Reinforced piston rod

∅ 25



\+ = plus stroke length

∅ 40 ... 100



1 Cylinder extending
2 Cylinder retracting

\+ = plus stroke length

∅ [mm]	B ∅ f8	BG min.	D1 ∅ H9	E	EE	J3	LA	MM ∅ h9	PL
25	22	15	9	39.5 +0.3	M5	–	5	10	6
40	35	16		54.5 +0.3		15		16	8.2
63	42		12	75.5 +0.3	G1⁄8	23		20	
100	55	17		113.5 +0.6		40		25	10.5

∅ [mm]	RT	SF h13	T2 +0.1	TG ±0.2	VD	WH +1.3	ZA ±0.3	ZB +1.2
25	M5	9	2.1	26	6	11.8	39	50.9
40	M6	13		38	9.5	18	45	62.9
63	M8	17	2.6	56.5	12	21	49	70.2
100	M10	21		89	15.5	26.5	67	93.5

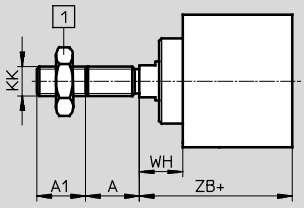
Dimensions – Variants Download CAD data ➔ **www.festo.com**

S1 – Reinforced piston rod

1 Hex nut DIN 439-B only with ∅ 40 ... 100

\+ = plus stroke length

S1-K2 – Reinforced piston rod with extended male thread



1 Hex nut DIN 439-B only with ∅ 40 ... 100

\+ = plus stroke length

S1-K5 – Extended piston rod with special piston rod thread

1 Hex nut DIN 439-B only with ∅ 40 ... 100

\+ = plus stroke length

S1-K8 – Reinforced piston rod with extended piston rod

1 Hex nut DIN 439-B only with ∅ 40 ... 100

\+ = plus stroke length

∅ [mm]	A −0.5	A1	A2	AF min.	AF5 min.	KF	KF5	KK	KK5	T3	T4	WH +1.3	ZB +1.2
25	16	1 ... 20	1 ... 300	14	12	M6	M5	M8	M10x1.25 M10	2	2.6	11.8	50.9
40	22		1 ... 400	20	16	M10	M8	M12x1.25	M10x1.25 M12	3.3	4.7	18	62.9
63	28				20	M12	M10	M16x1.5	M12x1.25 M16	4.7	6.1	21	70.2
100	40	1 ... 30	1 ... 500	25	–	M16	–	M20x1.5	M16x1.5 M20	–	7	26.5	93.5

Ordering data							
Type	Piston ∅	Stroke	I – Piston rod with female thread P – Flexible cushioning rings/pads at both ends			A – Male piston rod thread P – Flexible cushioning rings/pads at both ends	
	[mm]	[mm]	Part No.	Type		Part No.	Type
	12	5	**536211**	**ADN-12-5-I-P-A**		**536204**	**ADN-12-5-A-P-A**
		10	**536212**	**ADN-12-10-I-P-A**		**536205**	**ADN-12-10-A-P-A**
		15	**536213**	**ADN-12-15-I-P-A**		**536206**	**ADN-12-15-A-P-A**
		20	**536214**	**ADN-12-20-I-P-A**		**536207**	**ADN-12-20-A-P-A**
		25	**536215**	**ADN-12-25-I-P-A**		**536208**	**ADN-12-25-A-P-A**
		30	**536216**	**ADN-12-30-I-P-A**		**536209**	**ADN-12-30-A-P-A**
		40	**536217**	**ADN-12-40-I-P-A**		**536210**	**ADN-12-40-A-P-A**
	16	5	**536226**	**ADN-16-5-I-P-A**		**536219**	**ADN-16-5-A-P-A**
		10	**536227**	**ADN-16-10-I-P-A**		**536220**	**ADN-16-10-A-P-A**
		15	**536228**	**ADN-16-15-I-P-A**		**536221**	**ADN-16-15-A-P-A**
		20	**536229**	**ADN-16-20-I-P-A**		**536222**	**ADN-16-20-A-P-A**
		25	**536230**	**ADN-16-25-I-P-A**		**536223**	**ADN-16-25-A-P-A**
		30	**536231**	**ADN-16-30-I-P-A**		**536224**	**ADN-16-30-A-P-A**
		40	**536232**	**ADN-16-40-I-P-A**		**536225**	**ADN-16-40-A-P-A**
		50	**536341**	**ADN-16-50-I-P-A**		**536331**	**ADN-16-50-A-P-A**
	20	5	**536242**	**ADN-20-5-I-P-A**		**536234**	**ADN-20-5-A-P-A**
		10	**536243**	**ADN-20-10-I-P-A**		**536235**	**ADN-20-10-A-P-A**
		15	**536244**	**ADN-20-15-I-P-A**		**536236**	**ADN-20-15-A-P-A**
		20	**536245**	**ADN-20-20-I-P-A**		**536237**	**ADN-20-20-A-P-A**
		25	**536246**	**ADN-20-25-I-P-A**		**536238**	**ADN-20-25-A-P-A**
		30	**536247**	**ADN-20-30-I-P-A**		**536239**	**ADN-20-30-A-P-A**
		40	**536248**	**ADN-20-40-I-P-A**		**536240**	**ADN-20-40-A-P-A**
		50	**536249**	**ADN-20-50-I-P-A**		**536241**	**ADN-20-50-A-P-A**
		60	**536362**	**ADN-20-60-I-P-A**		**536352**	**ADN-20-60-A-P-A**
	25	5	**536259**	**ADN-25-5-I-P-A**		**536251**	**ADN-25-5-A-P-A**
		10	**536260**	**ADN-25-10-I-P-A**		**536252**	**ADN-25-10-A-P-A**
		15	**536261**	**ADN-25-15-I-P-A**		**536253**	**ADN-25-15-A-P-A**
		20	**536262**	**ADN-25-20-I-P-A**		**536254**	**ADN-25-20-A-P-A**
		25	**536263**	**ADN-25-25-I-P-A**		**536255**	**ADN-25-25-A-P-A**
		30	**536264**	**ADN-25-30-I-P-A**		**536256**	**ADN-25-30-A-P-A**
		40	**536265**	**ADN-25-40-I-P-A**		**536257**	**ADN-25-40-A-P-A**
		50	**536266**	**ADN-25-50-I-P-A**		**536258**	**ADN-25-50-A-P-A**
		60	**536383**	**ADN-25-60-I-P-A**		**536373**	**ADN-25-60-A-P-A**
	32	5	**536278**	**ADN-32-5-I-P-A**		**536268**	**ADN-32-5-A-P-A**
		10	**536279**	**ADN-32-10-I-P-A**		**536269**	**ADN-32-10-A-P-A**
		15	**536280**	**ADN-32-15-I-P-A**		**536270**	**ADN-32-15-A-P-A**
		20	**536281**	**ADN-32-20-I-P-A**		**536271**	**ADN-32-20-A-P-A**
		25	**536282**	**ADN-32-25-I-P-A**		**536272**	**ADN-32-25-A-P-A**
		30	**536283**	**ADN-32-30-I-P-A**		**536273**	**ADN-32-30-A-P-A**
		40	**536284**	**ADN-32-40-I-P-A**		**536274**	**ADN-32-40-A-P-A**
		50	**536285**	**ADN-32-50-I-P-A**		**536275**	**ADN-32-50-A-P-A**
		60	**536286**	**ADN-32-60-I-P-A**		**536276**	**ADN-32-60-A-P-A**
		80	**536287**	**ADN-32-80-I-P-A**		**536277**	**ADN-32-80-A-P-A**

Ordering data							
Type	Piston ∅	Stroke	I – Piston rod with female thread P – Flexible cushioning rings/pads at both ends			A – Male piston rod thread P – Flexible cushioning rings/pads at both ends	
	[mm]	[mm]	Part No.	Type		Part No.	Type
	40	5	536299	ADN-40-5-I-P-A		536289	ADN-40-5-A-P-A
		10	536300	ADN-40-10-I-P-A		536290	ADN-40-10-A-P-A
		15	536301	ADN-40-15-I-P-A		536291	ADN-40-15-A-P-A
		20	536302	ADN-40-20-I-P-A		536292	ADN-40-20-A-P-A
		25	536303	ADN-40-25-I-P-A		536293	ADN-40-25-A-P-A
		30	536304	ADN-40-30-I-P-A		536294	ADN-40-30-A-P-A
		40	536305	ADN-40-40-I-P-A		536295	ADN-40-40-A-P-A
		50	536306	ADN-40-50-I-P-A		536296	ADN-40-50-A-P-A
		60	536307	ADN-40-60-I-P-A		536297	ADN-40-60-A-P-A
		80	536308	ADN-40-80-I-P-A		536298	ADN-40-80-A-P-A
	50	5	536320	ADN-50-5-I-P-A		536310	ADN-50-5-A-P-A
		10	536321	ADN-50-10-I-P-A		536311	ADN-50-10-A-P-A
		15	536322	ADN-50-15-I-P-A		536312	ADN-50-15-A-P-A
		20	536323	ADN-50-20-I-P-A		536313	ADN-50-20-A-P-A
		25	536324	ADN-50-25-I-P-A		536314	ADN-50-25-A-P-A
		30	536325	ADN-50-30-I-P-A		536315	ADN-50-30-A-P-A
		40	536326	ADN-50-40-I-P-A		536316	ADN-50-40-A-P-A
		50	536327	ADN-50-50-I-P-A		536317	ADN-50-50-A-P-A
		60	536328	ADN-50-60-I-P-A		536318	ADN-50-60-A-P-A
		80	536329	ADN-50-80-I-P-A		536319	ADN-50-80-A-P-A
	63	10	536342	ADN-63-10-I-P-A		536332	ADN-63-10-A-P-A
		15	536343	ADN-63-15-I-P-A		536333	ADN-63-15-A-P-A
		20	536344	ADN-63-20-I-P-A		536334	ADN-63-20-A-P-A
		25	536345	ADN-63-25-I-P-A		536335	ADN-63-25-A-P-A
		30	536346	ADN-63-30-I-P-A		536336	ADN-63-30-A-P-A
		40	536347	ADN-63-40-I-P-A		536337	ADN-63-40-A-P-A
		50	536348	ADN-63-50-I-P-A		536338	ADN-63-50-A-P-A
		60	536349	ADN-63-60-I-P-A		536339	ADN-63-60-A-P-A
		80	536350	ADN-63-80-I-P-A		536340	ADN-63-80-A-P-A
	80	10	536363	ADN-80-10-I-P-A		536353	ADN-80-10-A-P-A
		15	536364	ADN-80-15-I-P-A		536354	ADN-80-15-A-P-A
		20	536365	ADN-80-20-I-P-A		536355	ADN-80-20-A-P-A
		25	536366	ADN-80-25-I-P-A		536356	ADN-80-25-A-P-A
		30	536367	ADN-80-30-I-P-A		536357	ADN-80-30-A-P-A
		40	536368	ADN-80-40-I-P-A		536358	ADN-80-40-A-P-A
		50	536369	ADN-80-50-I-P-A		536359	ADN-80-50-A-P-A
		60	536370	ADN-80-60-I-P-A		536360	ADN-80-60-A-P-A
		80	536371	ADN-80-80-I-P-A		536361	ADN-80-80-A-P-A
	100	10	536384	ADN-100-10-I-P-A		536374	ADN-100-10-A-P-A
		15	536385	ADN-100-15-I-P-A		536375	ADN-100-15-A-P-A
		20	536386	ADN-100-20-I-P-A		536376	ADN-100-20-A-P-A
		25	536387	ADN-100-25-I-P-A		536377	ADN-100-25-A-P-A
		30	536388	ADN-100-30-I-P-A		536378	ADN-100-30-A-P-A
		40	536389	ADN-100-40-I-P-A		536379	ADN-100-40-A-P-A
		50	536390	ADN-100-50-I-P-A		536380	ADN-100-50-A-P-A
		60	536391	ADN-100-60-I-P-A		536381	ADN-100-60-A-P-A
		80	536392	ADN-100-80-I-P-A		536382	ADN-100-80-A-P-A

Compact cylinders ADN, to ISO 21287

Technical data

FESTO

Ordering data							
Type	Piston ∅	Stroke	I – Piston rod with female thread PPS – Pneumatic cushioning, self-adjusting at both ends			A – Male piston rod thread PPS – Pneumatic cushioning, self-adjusting at both ends	
	[mm]	[mm]	Part No.	Type		Part No.	Type
	32	10	**572646**	**ADN-32-10-I-PPS-A**		**572655**	**ADN-32-10-A-PPS-A**
		15	**572647**	**ADN-32-15-I-PPS-A**		**572656**	**ADN-32-15-A-PPS-A**
		20	**572648**	**ADN-32-20-I-PPS-A**		**572657**	**ADN-32-20-A-PPS-A**
		25	**572649**	**ADN-32-25-I-PPS-A**		**572658**	**ADN-32-25-A-PPS-A**
		30	**572650**	**ADN-32-30-I-PPS-A**		**572659**	**ADN-32-30-A-PPS-A**
		40	**572651**	**ADN-32-40-I-PPS-A**		**572660**	**ADN-32-40-A-PPS-A**
		50	**572652**	**ADN-32-50-I-PPS-A**		**572661**	**ADN-32-50-A-PPS-A**
		60	**572653**	**ADN-32-60-I-PPS-A**		**572662**	**ADN-32-60-A-PPS-A**
		80	**572654**	**ADN-32-80-I-PPS-A**		**572663**	**ADN-32-80-A-PPS-A**
	40	10	**572664**	**ADN-40-10-I-PPS-A**		**572673**	**ADN-40-10-A-PPS-A**
		15	**572665**	**ADN-40-15-I-PPS-A**		**572674**	**ADN-40-15-A-PPS-A**
		20	**572666**	**ADN-40-20-I-PPS-A**		**572675**	**ADN-40-20-A-PPS-A**
		25	**572667**	**ADN-40-25-I-PPS-A**		**572676**	**ADN-40-25-A-PPS-A**
		30	**572668**	**ADN-40-30-I-PPS-A**		**572677**	**ADN-40-30-A-PPS-A**
		40	**572669**	**ADN-40-40-I-PPS-A**		**572678**	**ADN-40-40-A-PPS-A**
		50	**572670**	**ADN-40-50-I-PPS-A**		**572679**	**ADN-40-50-A-PPS-A**
		60	**572671**	**ADN-40-60-I-PPS-A**		**572680**	**ADN-40-60-A-PPS-A**
		80	**572672**	**ADN-40-80-I-PPS-A**		**572681**	**ADN-40-80-A-PPS-A**
	50	10	**572682**	**ADN-50-10-I-PPS-A**		**572691**	**ADN-50-10-A-PPS-A**
		15	**572683**	**ADN-50-15-I-PPS-A**		**572692**	**ADN-50-15-A-PPS-A**
		20	**572684**	**ADN-50-20-I-PPS-A**		**572693**	**ADN-50-20-A-PPS-A**
		25	**572685**	**ADN-50-25-I-PPS-A**		**572694**	**ADN-50-25-A-PPS-A**
		30	**572686**	**ADN-50-30-I-PPS-A**		**572695**	**ADN-50-30-A-PPS-A**
		40	**572687**	**ADN-50-40-I-PPS-A**		**572696**	**ADN-50-40-A-PPS-A**
		50	**572688**	**ADN-50-50-I-PPS-A**		**572697**	**ADN-50-50-A-PPS-A**
		60	**572689**	**ADN-50-60-I-PPS-A**		**572698**	**ADN-50-60-A-PPS-A**
		80	**572690**	**ADN-50-80-I-PPS-A**		**572699**	**ADN-50-80-A-PPS-A**

Compact cylinders ADN, to ISO 21287

Technical data

FESTO

Ordering data						
Type	Piston ∅	Stroke	I – Piston rod with female thread PPS – Pneumatic cushioning, self-adjusting at both ends		A – Male piston rod thread PPS – Pneumatic cushioning, self-adjusting at both ends	
	[mm]	[mm]	Part No.	Type	Part No.	Type
	63	10	**572700**	**ADN-63-10-I-PPS-A**	**572709**	**ADN-63-10-A-PPS-A**
		15	**572701**	**ADN-63-15-I-PPS-A**	**572710**	**ADN-63-15-A-PPS-A**
		20	**572702**	**ADN-63-20-I-PPS-A**	**572711**	**ADN-63-20-A-PPS-A**
		25	**572703**	**ADN-63-25-I-PPS-A**	**572712**	**ADN-63-25-A-PPS-A**
		30	**572704**	**ADN-63-30-I-PPS-A**	**572713**	**ADN-63-30-A-PPS-A**
		40	**572705**	**ADN-63-40-I-PPS-A**	**572714**	**ADN-63-40-A-PPS-A**
		50	**572706**	**ADN-63-50-I-PPS-A**	**572715**	**ADN-63-50-A-PPS-A**
		60	**572707**	**ADN-63-60-I-PPS-A**	**572716**	**ADN-63-60-A-PPS-A**
		80	**572708**	**ADN-63-80-I-PPS-A**	**572717**	**ADN-63-80-A-PPS-A**
	80	10	**572718**	**ADN-80-10-I-PPS-A**	**572727**	**ADN-80-10-A-PPS-A**
		15	**572719**	**ADN-80-15-I-PPS-A**	**572728**	**ADN-80-15-A-PPS-A**
		20	**572720**	**ADN-80-20-I-PPS-A**	**572729**	**ADN-80-20-A-PPS-A**
		25	**572721**	**ADN-80-25-I-PPS-A**	**572730**	**ADN-80-25-A-PPS-A**
		30	**572722**	**ADN-80-30-I-PPS-A**	**572731**	**ADN-80-30-A-PPS-A**
		40	**572723**	**ADN-80-40-I-PPS-A**	**572732**	**ADN-80-40-A-PPS-A**
		50	**572724**	**ADN-80-50-I-PPS-A**	**572733**	**ADN-80-50-A-PPS-A**
		60	**572725**	**ADN-80-60-I-PPS-A**	**572734**	**ADN-80-60-A-PPS-A**
		80	**572726**	**ADN-80-80-I-PPS-A**	**572735**	**ADN-80-80-A-PPS-A**

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, basic version and variants

FESTO

Ordering table

Size		12	16	20	25	32	40	Condi-tions	Code		Enter code
M	Module No.	**536 203**	**536 218**	**536 233**	**536 250**	**536 267**	**536 288**				
	Function	Compact cylinder, double-acting, based on ISO 21287							**ADN**		ADN
	Piston ∅ [mm]	12	16	20	25	32	40		**-...**		
	Stroke [mm]	1 ... 300				1 ... 400			**-...**		
	Piston rod thread	Male thread							**-A**		
		Female thread						1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends							**-P**		
		–				Pneumatic cushioning, self-adjusting at both ends		8	**-PPS**		
↓	Position sensing	Via proximity sensor							**-A**		-A

1 **I** Not with piston rod type S20.
Not with extended male thread K2

8 **PPS** Not with improved running performance K10, temperature resistance S6, low temperature TT, wiper seal R8

Transfer order code

	ADN	–		–		–		–		–	**A**	

Compact cylinders ADN, to ISO 21287

FESTO

Ordering data – Modular products, basic version and variants

Ordering table

Size		12	16	20	25	32	40	Conditions	Code		Enter code
0	Piston rod type	Through piston rod						2	-S2		
	[mm]	–	Through, hollow piston rod 1 ... 300			1 ... 400		2	-S20		
	Extended male thread [mm]	Piston rod with extended male thread 1 ... 10		1 ... 20					-...K2		
	Piston rod with special thread – Male thread	M6	M8	M10x1.25 M10	M10x1.25 M10	M10 M12	M10 M12		-"..."K5		
	Female thread	–	–	M5	M5	M6	M6				
	Extended piston rod [mm]	Extended piston rod 1 ... 300				1 ... 400		3	-...K8		
	Improved running performance	–	–	Smooth anodised aluminium coated piston rod				4	-K10		
	Temperature resistance	Heat-resistant seals up to max. 120 °C							-S6		
	Corrosion protection	High corrosion protection						5	-R3		
	Captive rating plate	Laser etched rating plate							-TL		
	Low temperature [°C]	–	–	–40 ... +80				6 7	-TT		
	Wiper seal	–	–	Dust protection				6	-R8		

2 **S2, S20** Not with improved running performance K10.
Not with corrosion protection R3.
Not with wiper seal R8

3 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

4 **K10** Not with extended male thread K2.
Not with special piston rod thread K5.
Not with corrosion protection R3

5 **R3** Not with captive rating plate TL.
Not with wiper seal R8

6 **TT, R8** Not with improved running performance K10.
Not with temperature resistance S6

7 **TT** Not with wiper seal R8

Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

Transfer order code

– ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Compact cylinders ADN, to ISO 21287

FESTO

Ordering data – Modular products, basic version and variants

Ordering table

Size		50	63	80	100	125	Condi-tions	Code		Enter code
M	Module No.	**536 309**	**536 330**	**536 351**	**536 372**	**536 393**				
	Function	Compact cylinder, double-acting, based on ISO 21287						**ADN**		ADN
	Piston ∅ [mm]	50	63	80	100	125		**-...**		
	Stroke [mm]	1 ... 400		1 ... 500				**-...**		
	Piston rod thread	Male thread						**-A**		
		Female thread					1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends						**-P**		
		Pneumatic cushioning, self-adjusting at both ends			–		8	**-PPS**		
↓	Position sensing	Via proximity sensor						**-A**		-A

1 **I** Not with piston rod type S20.
Not with extended male thread K2

8 **PPS** Not with improved running performance K10, temperature resistance S6, low temperature TT, wiper seal R8

Transfer order code

	ADN	–		–		–		–		–	**A**	

Compact cylinders ADN, to ISO 21287

FESTO

Ordering data – Modular products, basic version and variants

Ordering table

Size			50	63	80	100	125	Condi-tions	Code		Enter code
0	Piston rod type		Through piston rod					2	-S2		
			Through, hollow piston rod					2	-S20		
		[mm]	1 ... 400		1 ... 500						
	Extended male thread		Piston rod with extended male thread								
		[mm]	1 ... 20		1 ... 30		1 ... 40		-...K2		
	Piston rod with special thread	Male thread	M12 M16	M12 M16	M16 M20 M20x1.5	M16 M20 M20x1.5	M20		-"..."K5		
		Female thread	M8	M8	M10	M10	–				
	Extended piston rod		Extended piston rod								
		[mm]	1 ... 400		1 ... 500			3	-...K8		
	Improved running performance		Smooth anodised aluminium coated piston rod Restricted stroke					4	-K10		
		[mm]	2 ... 400	5 ... 400	5 ... 500						
	Temperature resistance		Heat-resistant seals up to max. 120 °C						-S6		
	Corrosion protection		High corrosion protection					5	-R3		
	Captive rating plate		Laser etched rating plate						-TL		
	Low temperature	[°C]	–40 ... +80				–	6 7	-TT		
	Wiper seal		Dust protection				–	6	-R8		

2 **S2, S20** Not with improved running performance K10.
Not with corrosion protection R3.
Not with wiper seal R8

3 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

4 **K10** Not with extended male thread K2.
Not with special piston rod thread K5.
Not with corrosion protection R3

5 **R3** Not with captive rating plate TL.
Not with wiper seal R8

6 **TT, R8** Not with improved running performance K10.
Not with temperature resistance S6

7 **TT** Not with wiper seal R8

Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

Transfer order code

– [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, S10 – Version with constant motion, S11 – Version with low friction

Ordering table

Size		12	16	20	25	32	40	Condi-tions	Code		Enter code
M	Module No.	**536 203**	**536 218**	**536 233**	**536 250**	**536 267**	**536 288**				
	Function	Compact cylinder, double-acting, based on ISO 21287							**ADN**		ADN
	Piston ∅ [mm]	12	16	20	25	32	40		**-...**		
	Stroke [mm]	1 ... 300				1 ... 400			**-...**		
	Piston rod thread	Male thread							**-A**		
		Female thread						1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends							**-P**		-P
	Position sensing	Via proximity sensor							**-A**		-A
O	Male thread extended [mm]	Extended male piston rod thread 1 ... 10		1 ... 20					**-...K2**		
	Special piston rod thread Male thread	M6	M8	M10x1.25 M10	M10x1.25 M10	M10 M12	M10 M12		**-"..."K5**		
	Female thread	–	–	M5	M5	M6	M6				
	Piston rod extended [mm]	Extended piston rod 1 ... 300				1 ... 400		2	**-...K8**		
	Improved running performance	–	–	Smooth anodised aluminium coated piston rod				3	**-K10**		
	Constant motion [mm]	Slow speed (constant motion at low piston speeds) Restricted stroke 20 ... 300				20 ... 400		4	**-S10**		
	Low friction	Low friction						5	**-S11**		
	Corrosion protection	High corrosion protection						6	**-R3**		
	Captive rating plate	Laser etched rating plate							**-TL**		

1 **I** Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

3 **K10** Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3

4 **S10** Not with low friction S11

5 **S11** Not with constant motion S10

6 **R3** Not with captive rating plate TL

- Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

Transfer order code

	ADN	-		-		-		-	P	-	A	-		-		-		-		-		-		-		-		-	

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, S10 – Version with constant motion, S11 – Version with low friction

Ordering table

Size			50	63	80	100	125	Condi-tions	Code		Enter code
M	Module No.		**536 309**	**536 330**	**536 351**	**536 372**	**536 393**				
	Function		Compact cylinder, double-acting, based on ISO 21287						**ADN**		ADN
	Piston ∅	[mm]	50	63	80	100	125		**-...**		
	Stroke	[mm]	1 ... 400		1 ... 500				**-...**		
	Piston rod thread		Male thread						**-A**		
			Female thread					1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends						**-P**		-P
	Position sensing		Via proximity sensor						**-A**		-A
O	Male thread extended		Extended male piston rod thread								
		[mm]	1 ... 20		1 ... 30		1 ... 40		**-...K2**		
	Special piston rod thread	Male thread	M12 M16	M12 M16	M16 M20 M20x1.5	M16 M20 M20x1.5	M20		**-"..."K5**		
		Female thread	M8	M8	M10	M10	–				
	Piston rod extended		Extended piston rod								
		[mm]	1 ... 400		1 ... 500			2	**-...K8**		
	Improved running performance		Smooth anodised aluminium coated piston rod Restricted stroke					3	**-K10**		
		[mm]	2 ... 400	5 ... 400	5 ... 500						
	Constant motion		Slow speed (constant motion at low piston speeds) Restricted stroke					4	**-S10**		
		[mm]	20 ... 400		20 ... 500						
	Low friction		Low friction					5	**-S11**		
	Corrosion protection		High corrosion protection					6	**-R3**		
	Captive rating plate		Laser etched rating plate						**-TL**		

1 **I** Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

3 **K10** Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3

4 **S10** Not with low friction S11

5 **S11** Not with constant motion S10

6 **R3** Not with captive rating plate TL

- Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

Transfer order code

	ADN	-		-		-		-	P	-	A	-		-		-		-		-		-		-		-		-		-	

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, Q – Version with square piston rod, non-rotating

Ordering table

Size		12	16	20	25	32	40	Condi-tions	Code		Enter code
M	Module No.	**536 203**	**536 218**	**536 233**	**536 250**	**536 267**	**536 288**				
	Function	Compact cylinder, double-acting, based on ISO 21287							**ADN**		ADN
	Piston ∅ [mm]	12	16	20	25	32	40		**-...**		
	Stroke [mm]	1 ... 300				1 ... 400			**-...**		
	Piston rod thread	Male thread							**-A**		
		Female thread						1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends							**-P**		-P
	Position sensing	Via proximity sensor							**-A**		-A
O	Protection against torsion	Square piston rod							**-Q**		-Q
	Type of piston rod	Through piston rod							**-S2**		
	[mm]	–	Through, hollow piston rod Restricted stroke 1 ... 200			1 ... 300			**-S20**		
	Male thread extended [mm]	Extended male piston rod thread 1 ... 10		1 ... 20					**-...K2**		
	Special piston rod thread Male thread	M6	M8	M10x1.25 M10	M10x1.25 M10	M10	M10		**-"..."K5**		
	Piston rod extended [mm]	Extended piston rod 1 ... 300				1 ... 400		2	**-...K8**		
	Temperature resistance	Heat-resistant seals up to max. 120 °C							**-S6**		
	Corrosion protection	High corrosion protection						3	**-R3**		
	Captive rating plate	Laser etched rating plate							**-TL**		

1 **I** Not with piston rod type S20
Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

3 **R3** Not with captive rating plate TL.

- Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and Q, K2, K5 or K8.

Transfer order code

	ADN	–		–		–		–	P	–	A	–	Q	–		–		–		–		–		–		–		–		–	

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, Q – Version with square piston rod, non-rotating

Ordering table

Size			50	63	80	100	125	Condi-tions	Code	Enter code
M	Module No.		**536 309**	**536 330**	**536 351**	**536 372**	**536 393**			
	Function		Compact cylinder, double-acting, based on ISO 21287						**ADN**	ADN
	Piston ∅	[mm]	50	63	80	100	125		**-...**	
	Stroke	[mm]	1 ... 400		1 ... 500				**-...**	
	Piston rod thread		Male thread						**-A**	
			Female thread					1	**-I**	
	Cushioning		Flexible cushioning rings/pads at both ends						**-P**	-P
	Position sensing		Via proximity sensor						**-A**	-A
O	Protection against torsion		Square piston rod						**-Q**	-Q
	Type of piston rod		Through piston rod						**-S2**	
			Through, hollow piston rod						**-S20**	
			Restricted stroke							
		[mm]	1 ... 300			1 ... 400				
	Male thread extended		Extended male piston rod thread							
		[mm]	1 ... 20		1 ... 30		1 ... 40		**-...K2**	
	Special piston rod thread	Male thread	M12	M12	M16	M16	M20		**-"..."K5**	
	Piston rod extended		Extended piston rod							
		[mm]	1 ... 400		1 ... 500			2	**-...K8**	
	Temperature resistance		Heat-resistant seals up to max. 120 °C						**-S6**	
	Corrosion protection		High corrosion protection					3	**-R3**	
	Captive rating plate		Laser etched rating plate						**-TL**	

1 **I** Not with piston rod type S20
Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

3 **R3** Not with captive rating plate TL.

- Note

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and Q, K2, K5 or K8.

Transfer order code

	ADN	-		-		-		-	P	-	A	-	Q	-		-		-		-		-		-		-		-	

Compact cylinders ADN, to ISO 21287

Ordering data – Modular products, S1 – Version with reinforced piston rod

Ordering table

Size			25	40	63	100	Condi-tions	Code		Enter code
M	Module No.		**536 250**	**536 288**	**536 330**	**536 372**				
	Function		Compact cylinder, double-acting, based on ISO 21287					**ADN**		ADN
	Piston ∅	[mm]	25	40	63	100		**-...**		
	Stroke	[mm]	5 ... 300	10 ... 400		10 ... 500		**-...**		
	Piston rod thread		Male thread					**-A**		
			Female thread				1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing		Via proximity sensor					**-A**		-A
O	Male thread extended	[mm]	Extended male piston rod thread 1 ... 20			1 ... 30		**-...K2**		
	Special piston rod thread	Male thread	M10x1.25 M10	M10x1.25 M12	M12x1.25 M16	M16x1.5 M20		**-"..."K5**		
		Female thread	M5	M8	M10	–				
	Piston rod extended	[mm]	Extended piston rod 1 ... 300	1 ... 400		1 ... 500	2	**-...K8**		
	Temperature resistance		Heat-resistant seals up to max. 120 °C					**-S6**		
	Reinforced piston rod		Reinforced piston rod or extended piston rod bearing					**-S1**		-S1
	Captive rating plate		Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

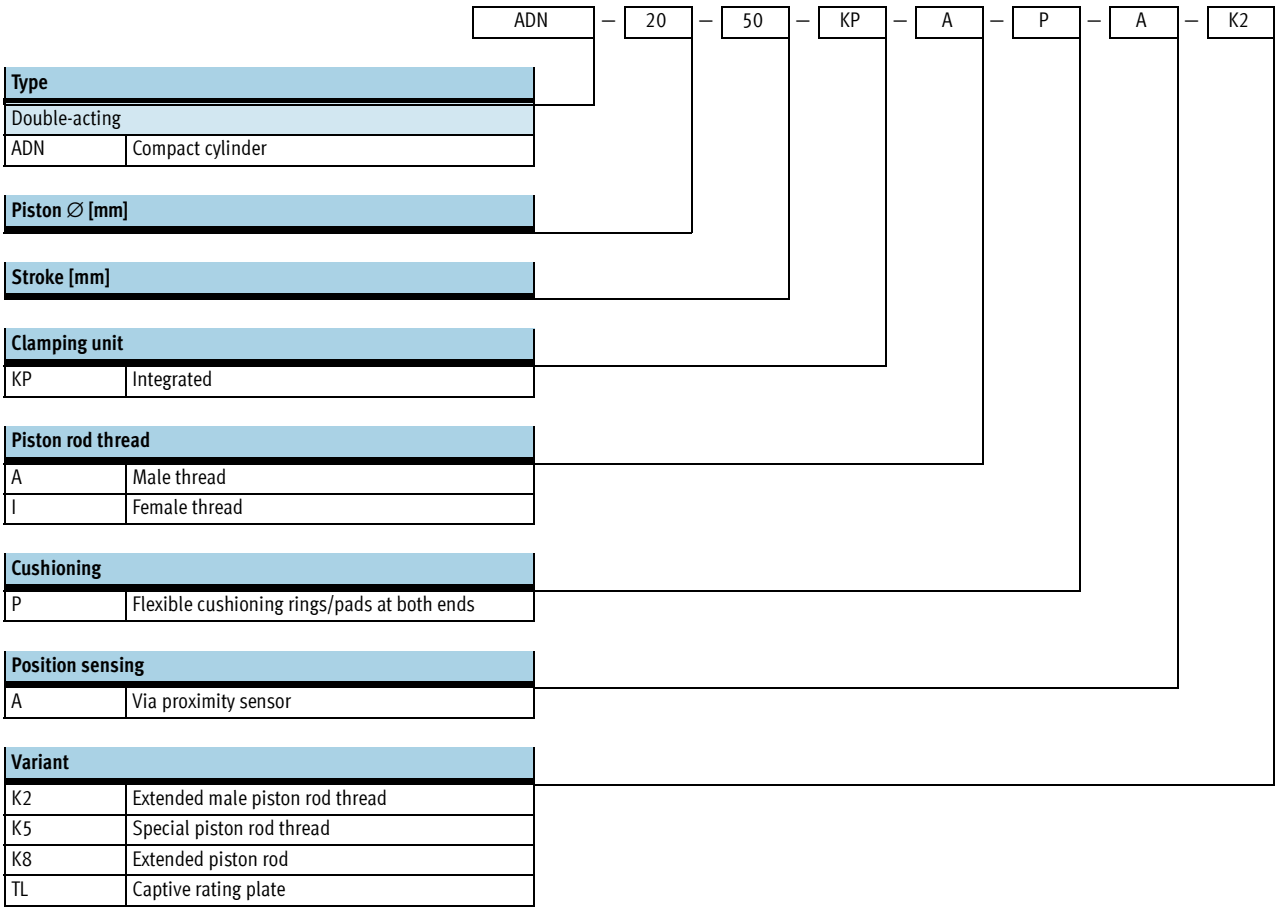
2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

	ADN	–		–		–		–	P	–	A	–		–		–		–		–	S1	–	

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Type codes



Type	
Double-acting	
ADN	Compact cylinder

Piston ∅ [mm]

Stroke [mm]

Clamping unit	
KP	Integrated

Piston rod thread	
A	Male thread
I	Female thread

Cushioning	
P	Flexible cushioning rings/pads at both ends

Position sensing	
A	Via proximity sensor

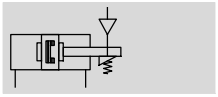
Variant	
K2	Extended male piston rod thread
K5	Special piston rod thread
K8	Extended piston rod
TL	Captive rating plate

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Technical data

FESTO

Function



- Ø - Diameter 20 ... 100 mm
- I - Stroke length 10 ... 500 mm

Variants

K2

K5

K8

- Note

Additional measures are required for use in safety-related control systems; 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 Ø		20	25	32	40	50	63	80	100
Pneumatic connection	Cylinder	M5	M5	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8
	KP	M5	M5	M5	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8
Female piston rod thread		M6		M8		M10		M12	
	K5	M5		M6		M8		M10	
Male piston rod thread		M8		M10x1.25		M12x1.25		M16x1.5	
	K5	M10, M10x1.25		M10, M12		M12, M16		M16, M20, M20x1.5	
Axial play under load	[mm]	0.5				0.8			
Constructional design		Piston							
		Piston rod							
		Cylinder barrel							
Cushioning		Flexible cushioning rings/pads at both ends							
Position sensing		Via proximity sensor							
Type of mounting		Via through-holes							
		Via female threads							
		Via accessories							
Mounting position		Any							
Clamping type with effective direction of action		From both sides							

Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	1.5 ... 10
Min. release pressure	[bar]	3
Ambient temperature[1]	[°C]	–10 ... +80
Corrosion resistance class CRC[2]		2

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 to 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

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Technical data

Impact energy [J]								
Piston ∅	20	25	32	40	50	63	80	100
Max. impact energy at the end positions	0.2	0.3	0.4	0.7	1	1.3	1.8	2.5

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Forces [N]								
Piston ∅	20	25	32	40	50	63	80	100
Theoretical force at 6 bar, advancing	188	295	483	754	1178	1870	3016	4712
Theoretical force at 6 bar, retracting	141	247	415	633	990	1682	2721	4418
Static holding force	350	350	600	1000	1400	2000	5000	5000

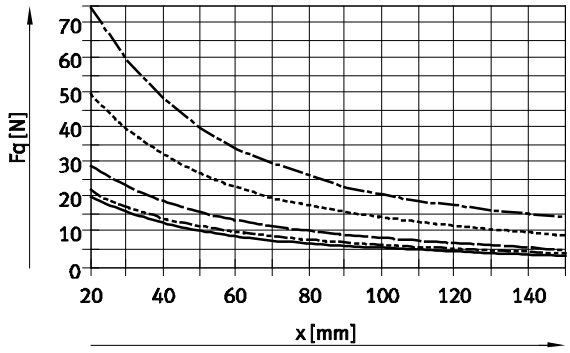
Note

The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must not exceed the static holding force. The clamping unit is not backlash-free in the clamped condition if varying loads are applied to the piston rod.

Activation:

The clamping unit may only be released if the forces at the piston have reached equilibrium. Otherwise, there is a risk of accidents due to sudden movement of the piston rod. Blocking off the air supply at both ends (e.g. with a 5/3-way valve) does not provide any safety.

Max. lateral force Fq as a function of the projection x



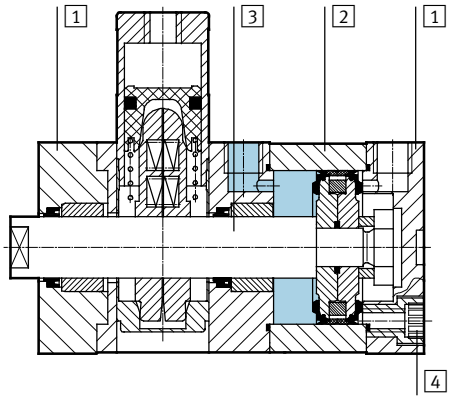
Weight [g]								
Piston ∅	20	25	32	40	50	63	80	100
Product weight with 0 mm stroke	282	344	503	789	1268	1894	3973	5497
Additional weight per 10 mm stroke	22	26	29	45	60	68	93	112
Moving load with 0 mm stroke	53	63	100	173	296	368	755	932
Additional load per 10 mm stroke	6	6	9	16	25	25	39	39

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Technical data

Materials

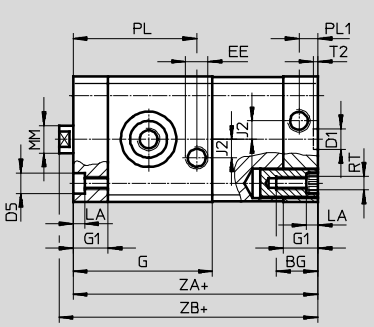
Sectional view



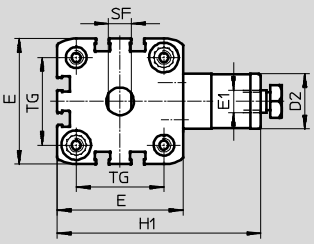
Compact cylinder			
1	Cover		Anodised aluminium
2	Cylinder barrel		Anodised aluminium
3	Piston rod		High-alloy steel
4	Flange screws	∅ 20 ... 63	Galvanised steel
		∅ 80 ... 100	Standard screws, galvanised steel
–	Seals		Polyurethane, nitrile rubber
	Note on materials		RoHS compliant

Dimensions – Basic version Download CAD data ➔ **www.festo.com**

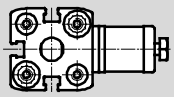
∅ 20 ... 63



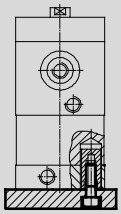
∅ 32 ... 63



∅ 20, 25

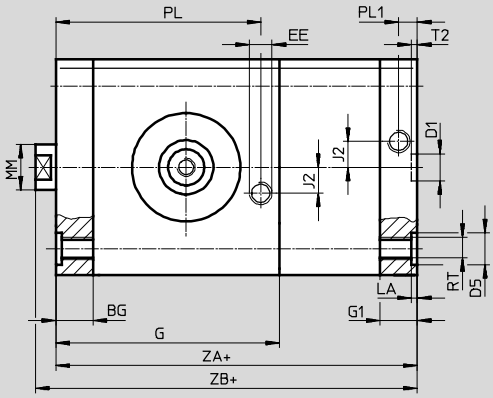


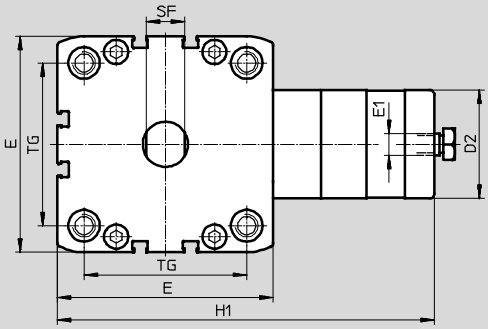
This variant only supports direct mounting.



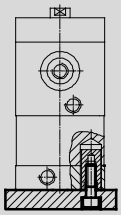
\+ = plus stroke length

∅ 80, 100





This variant only supports direct mounting.



\+ = plus stroke length

∅ [mm]	BG min.	D1 ∅ H9	D2 ∅	D5 ∅ F9	E	E1	EE	G	G1	H1	J2
20	19.5	9	20	9	35.5 +0.3	M5	M5	49.8	12	63	2.6
25					39.5 +0.3			50.6		65	
32	26				47 +0.3		G⅛	56.4	15	68	6
40			24		54.5 +0.3	G⅛		60.4		89	8
50	27	12	30	12	65.5 +0.3			67.4		108	
63			38		75.5 +0.3			76.8		120	11.5
80	17		48	15	95.5 +0.6			99	16.5	167	
100	21.5				113.5 +0.6			99.6	21.5	176	20

∅ [mm]	LA +0.2	MM ∅ h8	PL +0.2	PL1 +0.2	RT	SF h13	T2 +0.2	TG ±0.2	ZA ±0.3	ZB +1.2
20	5	10	42.8	6	M5	9	2.1	22	74.8	80.8
25			44.6					26	77.6	83.1
32		12	49.6	8.2	M6	10		32.5	85.4	91.4
40		16	53.6			13		38	90.4	96.5
50		20	60.6		M8	17	2.6	46.5	97.4	105.6
63			70					56.5	110.8	118.9
80	2.6	25	90.7		M10	21		72	136.5	145.4
100			88.6	10.5				89	145.1	154.1

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Technical data

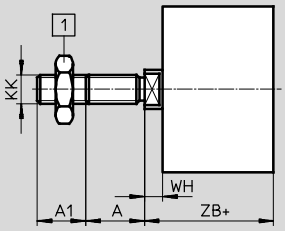
Dimensions – Variants Download CAD data ➔ **www.festo.com**

Basic version

1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

K2 – Extended male piston rod thread



1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

K5 – Special piston rod thread

\+ = plus stroke length

K8 – Extended piston rod

1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Technical data

∅ [mm]	A –0.5	A1	A2	AF min.	AF5 min.	KF	KF5
20	16	1 ... 20	1 ... 300	14	12	M6	M5
25							
32	19		1 ... 400	16	14	M8	M6
40							
50	22			20	16	M10	M8
63							
80	28	1 ... 30	1 ... 500		20	M12	M10
100							

∅ [mm]	KK	KK5	T3	T4	WH +1.3	ZB +1.2
20	M8	M10x1.25 M10	2	2.6	5.5	80.8
25						83.1
32	M10x1.25	M10 M12	2.6	3.3	6	91.4
40					6.1	96.5
50	M12x1.25	M12 M16	3.3	4.7	8.2	105.6
63					8.1	118.9
80	M16x1.5	M16 M20x1.5 M20	4.7	6.1	8.9	145.4
100					9	154.1

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Ordering data – Modular products

Ordering table

Size			20	25	32	40	Condi-tions	Code		Enter code
M	Module No.		**548 206**	**548 207**	**548 208**	**548 209**				
	Function		Compact cylinder, double-acting, standard port pattern, with clamping unit					**ADN**		ADN
	Piston ∅	[mm]	20	25	32	40		**-...**		
	Stroke	[mm]	10 ... 300		10 ... 400			**-...**		
	Clamping unit		Integrated					**-KP**		-KP
	Piston rod thread		Male thread					**-A**		
			Female thread				1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing		Via proximity sensor					**-A**		-A
O	Male thread extended	[mm]	Extended male piston rod thread 1 ... 20					**-...K2**		
	Special piston rod thread	Male thread	M10x1.25 M10	M10x1.25 M10	M10 M12	M10 M12		**-"...”K5**		
		Female thread	M5	M5	M6	M6				
	Piston rod extended	[mm]	Extended piston rod 1 ... 300		1 ... 400		2	**-...K8**		
	Captive rating plate		Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

	ADN	–		–		–	KP	–		–	P	–	A

Compact cylinders ADN-KP, standard port pattern, with clamping unit

Ordering data – Modular products

Ordering table

Size			50	63	80	100	Condi-tions	Code		Enter code
M	Module No.		**548 210**	**548 211**	**548 212**	**548 213**				
	Function		Compact cylinder, double-acting, standard port pattern, with clamping unit					**ADN**		ADN
	Piston ∅	[mm]	50	63	80	100		**-...**		
	Stroke	[mm]	10 ... 400		10 ... 500			**-...**		
	Clamping unit		Integrated					**-KP**		-KP
	Piston rod thread		Male thread					**-A**		
			Female thread				1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing		Via proximity sensor					**-A**		-A
O	Male thread extended		Extended male piston rod thread							
		[mm]	1 ... 20		1 ... 30			**-...K2**		
	Special piston rod thread	Male thread	M12 M16	M12 M16	M16 M20 M20x1.5	M16 M20 M20x1.5		**-"...”K5**		
		Female thread	M8	M8	M10	M10				
	Piston rod extended		Extended piston rod							
		[mm]	1 ... 400		1 ... 500		2	**-...K8**		
	Captive rating plate		Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

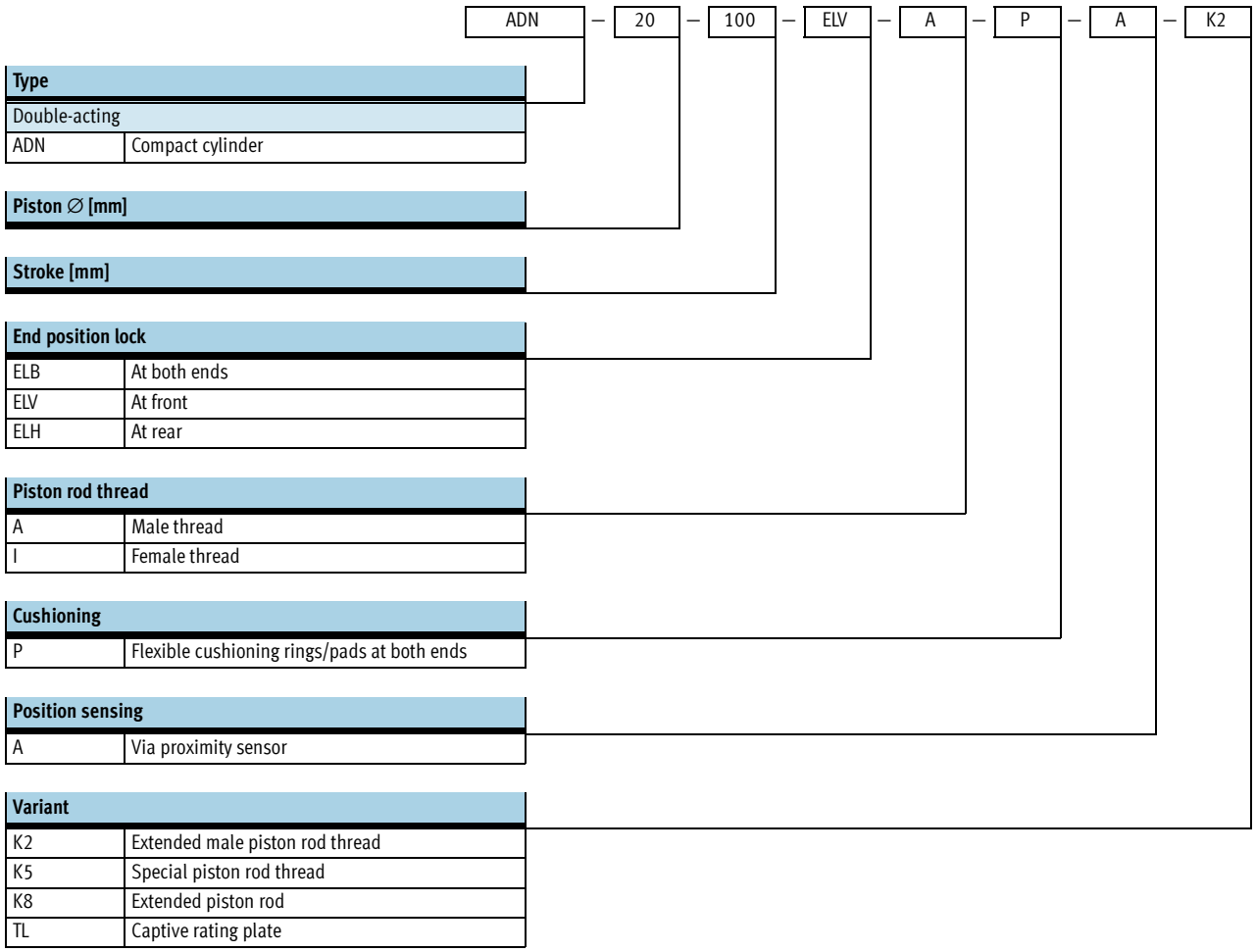
2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

– | | – | | – | | – | |

Compact cylinders ADN-EL, standard port pattern, with end position lock

Type codes



Type	
Double-acting	
ADN	Compact cylinder

Piston ∅ [mm]

Stroke [mm]

End position lock	
ELB	At both ends
ELV	At front
ELH	At rear

Piston rod thread	
A	Male thread
I	Female thread

Cushioning	
P	Flexible cushioning rings/pads at both ends

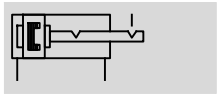
Position sensing	
A	Via proximity sensor

Variant	
K2	Extended male piston rod thread
K5	Special piston rod thread
K8	Extended piston rod
TL	Captive rating plate

Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

Function



Diameter
20 ... 100 mm

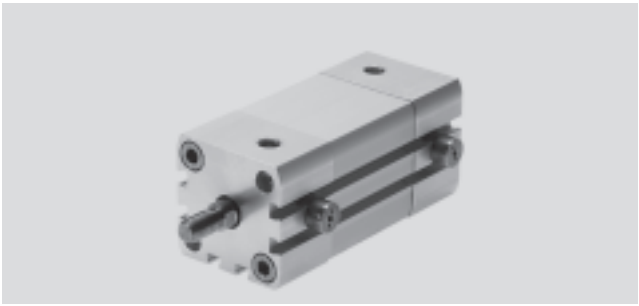
Stroke length
10 ... 500 mm

Variants

K2

K5

K8



Note

Additional measures are required for use in safety-related control systems; 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 ∅		20	25	32	40	50	63	80	100
Pneumatic connection		M5	M5	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8
Female piston rod thread		M6		M8		M10		M12	
	K5	M5		M6		M8		M10	
Male piston rod thread		M8		M10x1.25		M12x1.25		M16x1.5	
	K5	M10		M10		M12		M16	
Max. axial backlash with end position locked	[mm]	1.3						2.1	
Constructional design		Piston							
		Piston rod							
		Cylinder barrel							
End position lock	ELB	At both ends							
	ELV	At front							
	ELH	At rear							
Cushioning		Flexible cushioning rings/pads at both ends							
Position sensing		Via proximity sensor							
Type of mounting		Via female threads							
		Via accessories							
Mounting position		Any							

Note

- No screws with a head or similar may be used in place of the end position lock, as there is a risk that the function will be impaired if they are screwed in too deeply.
- The exhaust hole must not be closed.
- Locking can be performed from any stroke position, once the drive is brought mechanically into its end position.
- The end position lock has been designed to guard against the load dropping in case of pressure failure.
- Operation of the cylinder in conjunction with a 3-way valve (especially with the function “mid-position closed” and those with “metallic sealing”) should be avoided. The residual pressure that is enclosed on the locking side of the cylinder can release the locking function.
- The cylinder must not be operated with external stops (e.g. shock absorber, buffer, oil brake, etc.):
  - It may not be possible to reliably reach the internal end position.
  - The locking mechanism can wear out prematurely. (In the event of pressure drop in the opposite chamber to less than the locking pressure, the locking piston will prematurely fall to its end position.)

Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

Operating and environmental conditions									
Piston ∅		20	25	32	40	50	63	80	100
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)							
Operating pressure	[bar]	2.5 ... 10				1.5 ... 10			
Ambient temperature[1]	[°C]	–20 ... +80							
Corrosion resistance class CRC[2]		2							

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 to 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

Forces [N]								
Piston ∅	20	25	32	40	50	63	80	100
Theoretical force at 6 bar, advancing	188	295	483	754	1178	1870	3016	4712
Theoretical force at 6 bar, retracting	141	247	415	686	1057	1750	2827	4524
Static holding force	250	500			2000		5000	

Sizing example

- Note

When sizing pneumatic cylinders it is recommended as a basic principle that only 50% of the indicated theoretical forces (see above) be used.

Given:
Installation position = Vertical
Workpiece load = 44 kg
F = m x g = 44 kg x 9.81 m/s^2
= 431.6 N

To be calculated:
Suitable piston ∅

Analysis with 32 mm piston ∅:
Theoretical force at 6 bar, advancing = 483 N
50% of the theoretical force = 241.5 N
Static holding force with 32 mm piston ∅ = 500 N
The static force on the end position lock is within the permissible range (max. 500 N) with a workpiece load of 44 kg (431.6 N), however the cylinder would be at 89% capacity.

Result:
A cylinder with a piston ∅ of 40 mm is therefore recommended for this application.

Impact energy [J]								
Piston ∅	20	25	32	40	50	63	80	100
Max. impact energy at the end positions	0.2	0.3	0.4	0.7	1	1.3	1.8	2.5

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

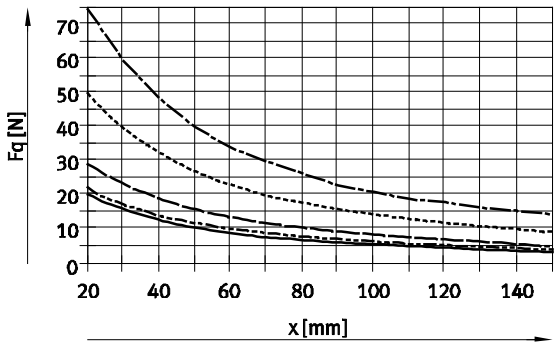
$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

- Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Max. lateral force Fq as a function of the projection x



∅ 20
∅ 25
∅ 32/40
∅ 50/63
∅ 80/100

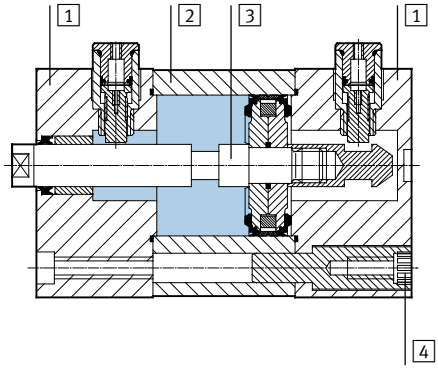
Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

Weight [g]								
Piston ∅	20	25	32	40	50	63	80	100
End position lock at both ends								
Product weight with 0 mm stroke	234	339	518	665	1334	1734	3300	4735
Additional weight per 10 mm stroke	22	26	29	38	51	59	79	98
Moving load with 0 mm stroke	43	53	85	101	199	248	475	637
Additional load per 10 mm stroke	6	6	9	9	16	16	25	25
End position lock at front								
Product weight with 0 mm stroke	177	248	387	498	922	1228	2296	3448
Additional weight per 10 mm stroke	22	26	29	38	51	59	79	98
Moving load with 0 mm stroke	35	46	75	98	175	225	464	626
Additional load per 10 mm stroke	6	6	9	9	16	16	25	25
End position lock at rear								
Product weight with 0 mm stroke	181	252	380	505	920	1217	2233	3409
Additional weight per 10 mm stroke	22	26	29	38	51	59	79	98
Moving load with 0 mm stroke	37	45	73	89	168	217	413	582
Additional load per 10 mm stroke	6	6	9	9	16	16	25	25

Materials

Sectional view

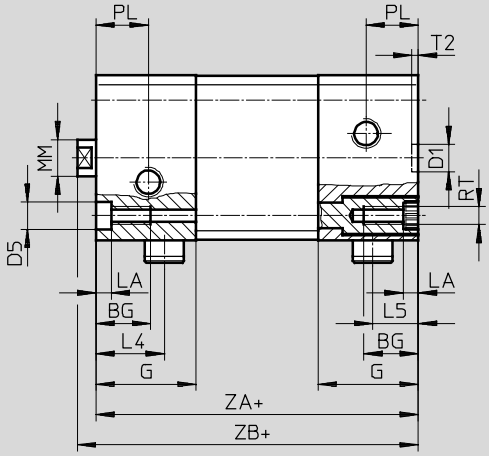


Compact cylinder			
1	Cover		Anodised aluminium
2	Cylinder barrel		Anodised aluminium
3	Piston rod		High-alloy steel
4	Flange screws	∅ 20 ... 63	Galvanised steel
		∅ 80 ... 100	Standard screws, galvanised steel
–	Seals		Polyurethane, nitrile rubber
	Note on materials		RoHS compliant

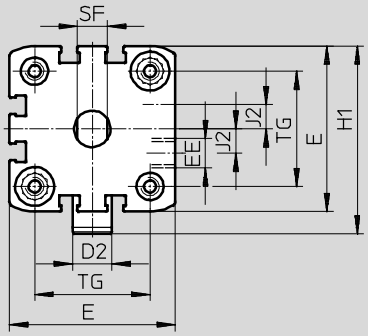
Dimensions – Basic version Download CAD data ➔ **www.festo.com**

ELB – End position lock at both ends

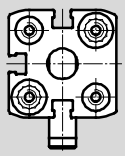
∅ 20 ... 63



∅ 32 ... 63

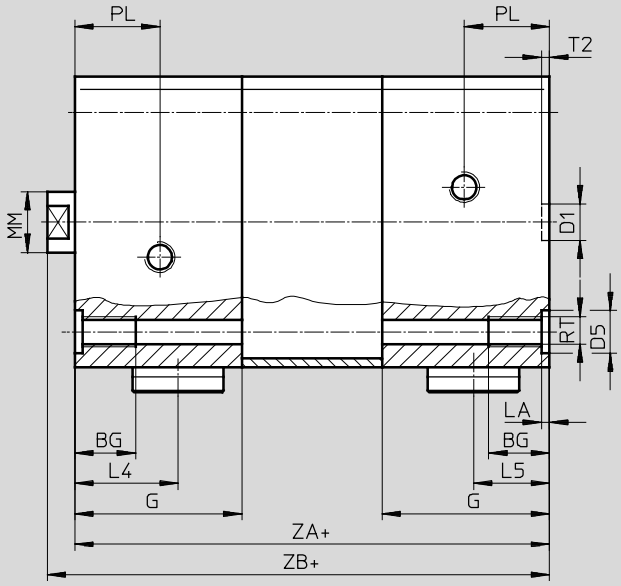


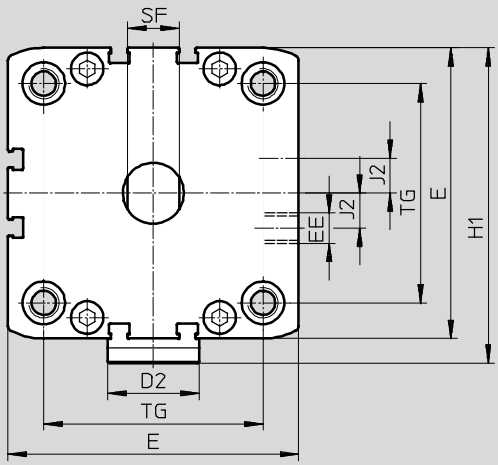
∅ 20, 25



\+ = plus stroke length

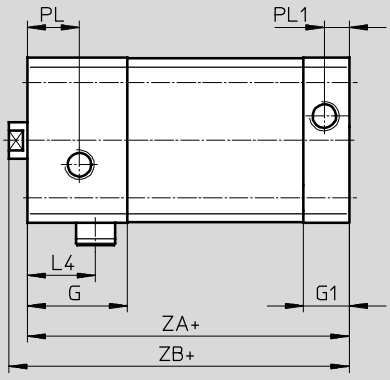
∅ 80 ... 100



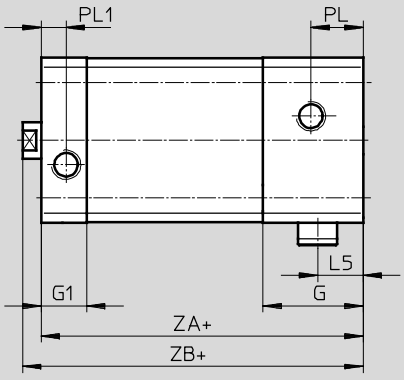


\+ = plus stroke length

ELV – End position lock at front



ELH – End position lock at rear



\+ = plus stroke length

Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

∅ [mm]	BG min.	D1 ∅ H9	D2 ∅	D5 ∅ F9	E	EE	G	G1	H1	J2	L4	L5
20	18	9	9	9	35.5 +0.3	M5	25	12	45.5	2.6	18.5	12.5
25			13		39.5 +0.3		29.5		53.3		20.8	14
32					47 +0.3	G⅛	33	15	58	6	22.5	15
40					54.5 +0.3				61.8	8		
50	20	12	20	12	65.5 +0.3		43		77		27.5	20.5
63					75.5 +0.3				82	11.5		21.7
80			30	15	95.5 +0.6		55	16.5	103.5		34	25
100					113.5 +0.6		57	21.5	113.5	20	35	27

∅ [mm]	LA +0.2	MM ∅ h8	PL	PL1	RT	SF h13	T2 +0.1	TG ±0.2	ZA ±0.3		ZB +1.2	
									ELB	ELV. ELH	ELB	ELV. ELH
20	5	10	6	6	M5	9	2.1	22	63	50	68.8	55.5
25								26	74	56.5	79.5	62
32		12	16	8.2	M6	10		32.5	80	62	86	68
40								38	81	63	87.1	69
50		16	21		M8	13	2.6	46.5	101	73	109.2	81.2
63								56.5	105	77	113.1	85.1
80	2.6	20	28		M10	17		72	131	92.5	139.9	101.4
100				10.5				89	138	102.5	147	111.5

Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

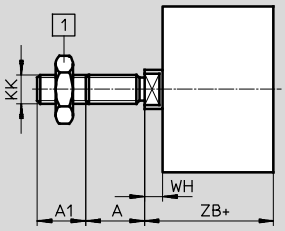
Dimensions – Variants Download CAD data ➔ **www.festo.com**

Basic version

1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

K2 – Extended male piston rod thread



1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

K5 – Special piston rod thread

\+ = plus stroke length

K8 – Extended piston rod

1 Hex nut to DIN 439-B only with ∅ 32 ... 100

\+ = plus stroke length

Compact cylinders ADN-EL, standard port pattern, with end position lock

Technical data

∅ [mm]	A –0.5	A1	A2	AF min.	AF5 min.	KF	KF5
20	16	1 ... 20	1 ... 300	14	12	M6	M5
25							
32	19		1 ... 400	16	14	M8	M6
40							
50	22			20	16	M10	M8
63							
80	28	1 ... 30	1 ... 500		20	M12	M10
100							

∅ [mm]	KK	KK5	T3	T4	WH +1.3	ZB +1.2 ELB	ZB +1.2 ELV. ELH
20	M8	M10x1.25 M10	2	2.6	5.5	68.8	55.5
25						79.5	62
32	M10x1.25	M10 M12	2.6	3.3	6	86	68
40					6.1	87.1	69
50	M12x1.25	M12 M16	3.3	4.7	8.2	109.2	81.2
63					8.1	113.1	85.1
80	M16x1.5	M16 M20x1.5 M20	4.7	6.1	8.9	139.9	101.4
100					9	147	111.5

Compact cylinders ADN-EL, standard port pattern, with end position lock

Ordering data – Modular products

Ordering table

	Size		20	25	32	40	Condi-tions	Code		Enter code
M	Module No.		**548 214**	**548 215**	**548 216**	**548 217**				
	Function		Compact cylinder, double-acting, standard port pattern, with end position lock					**ADN**		ADN
	Piston ∅	[mm]	20	25	32	40		**-...**		
	Stroke	[mm]	10 ... 300		10 ... 400			**-...**		
	End position lock		At both ends					**-ELB**		
			At front					**-ELV**		
			At rear					**-ELH**		
	Piston rod thread		Male thread					**-A**		
			Female thread				1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing		Via proximity sensor					**-A**		-A
O	Male thread extended	[mm]	Extended male piston rod thread 1 ... 20					**-...K2**		
	Special piston rod thread	Male thread	M10x1.25 M10	M10x1.25 M10	M10 M12	M10 M12		**-"..."K5**		
		Female thread	M5	M5	M6	M6				
	Piston rod extended	[mm]	Extended piston rod 1 ... 300		1 ... 400		2	**-...K8**		
	Captive rating plate		Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

	ADN	–		–		–		–		–	**P**	–	**A**

Compact cylinders ADN-EL, standard port pattern, with end position lock

Ordering data – Modular products

Ordering table

Size			50	63	80	100	Condi-tions	Code		Enter code
M	Module No.		**548 218**	**548 219**	**548 220**	**548 221**				
	Function		Compact cylinder, double-acting, standard port pattern, with end position lock					**ADN**		ADN
	Piston ∅	[mm]	50	63	80	100		**-...**		
	Stroke	[mm]	10 ... 400		10 ... 500			**-...**		
	End position lock		At both ends					**-ELB**		
			At front					**-ELV**		
			At rear					**-ELH**		
	Piston rod thread		Male thread					**-A**		
			Female thread				1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing		Via proximity sensor					**-A**		-A
O	Male thread extended		Extended male piston rod thread							
		[mm]	1 ... 20		1 ... 30			**-...K2**		
	Special piston rod thread	Male thread	M12 M16	M12 M16	M16 M20 M20x1.5	M16 M20 M20x1.5		**-"...”K5**		
		Female thread	M8	M8	M10	M10				
	Piston rod extended		Extended piston rod							
		[mm]	1 ... 400		1 ... 500		2	**-...K8**		
	Captive rating plate		Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

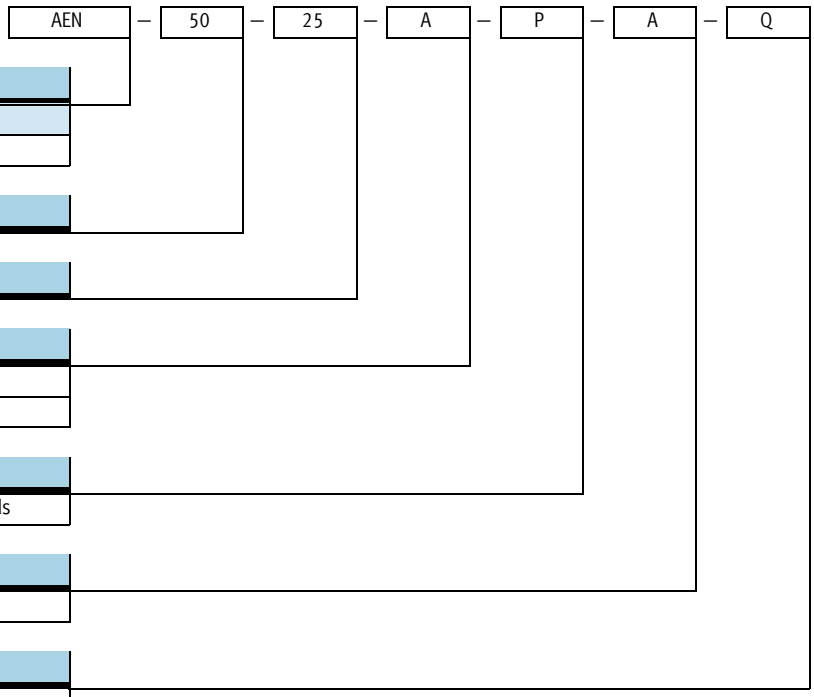
2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

– [ ] – [ ] – [ ] – [ ]

Compact cylinders AEN, to ISO 21287

Type codes



Type	
Single-acting	
AEN	Compact cylinder

Piston ∅ [mm]

Stroke [mm]

Piston rod thread	
A	Male thread
I	Female thread

Cushioning	
P	Flexible cushioning rings/pads at both ends

Position sensing	
A	Via proximity sensor

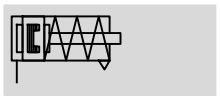
Variant	
Z	Single-acting, pulling
Q	Square piston rod
K2	Extended male piston rod thread
K5	Special piston rod thread
K8	Extended piston rod
K10	Smooth anodised piston rod
S6	Heat-resistant seals up to max. 120 °C
TL	Captive rating plate

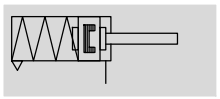
Compact cylinders AEN, to ISO 21287

Technical data

FESTO

Function





pulling

Diameter
12 ... 100 mm

Stroke length
1 ... 25 mm

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Variants

S6

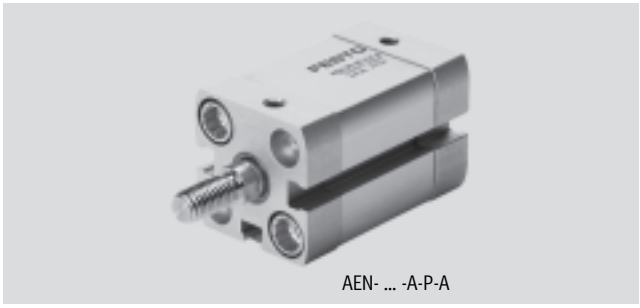
K2

K5

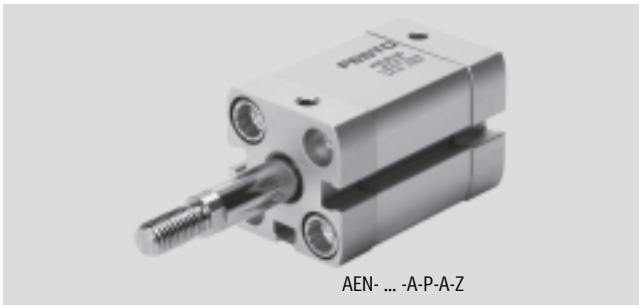
K8

K10

Q



AEN- ... -A-P-A



AEN- ... -A-P-A-Z

General technical data										
Piston ∅	12	16	20	25	32	40	50	63	80	100
Pneumatic connection	M5	M5	M5	M5	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8	G1⁄8
Piston rod thread										
Female	M3	M4	M6	M6	M8	M8	M10	M10	M12	M12
Male	M5	M6	M8	M8	M10x1.25	M10x1.25	M12x1.25	M12x1.25	M16x1.5	M16x1.5
Design	Piston									
	Piston rod									
	Cylinder barrel									
Cushioning	Flexible cushioning rings/pads at both ends									
Position sensing	Via proximity sensor									
Type of mounting	Via through-hole									
	Via female thread									
	Via accessories									
Mounting position	Any									

Operating and environmental conditions										
Piston ∅	12	16	20	25	32	40	50	63	80	100
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]										
–	1.5 ... 10		1 ... 10							
Z	1.7 ... 10	2.2 ... 10	1.3 ... 10		0.7 ... 10	0.6 ... 10				
Q	1.5 ... 10		1 ... 10							
Ambient temperature[1] [°C]										
–	–20 ... +80									
S6	0 ... +120									
Corrosion resistance class CRC[2]	2									

1) Note operating range of proximity sensors

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

Compact cylinders AEN, to ISO 21287

Technical data

Forces [N] and impact energy [J]										
Piston ∅	12	16	20	25	32	40	50	63	80	100
AEN										
Theoretical force at 6 bar, advancing	56	95	162	259	441	702	1,098	1,783	2,899	4,511
AEN-...-Z, pulling										
Theoretical force at 6 bar, retracting	39	65	115	211	373	634	977	1,663	2,610	4,323
Max. impact energy in the end positions	0.04	0.04	0.04	0.08	0.1	0.15	0.18	0.28	0.35	0.7

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

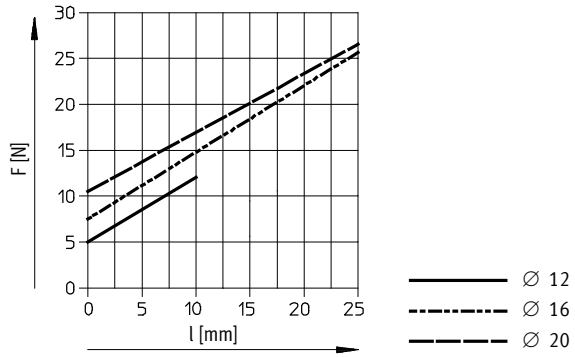
$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving effective load

- Note

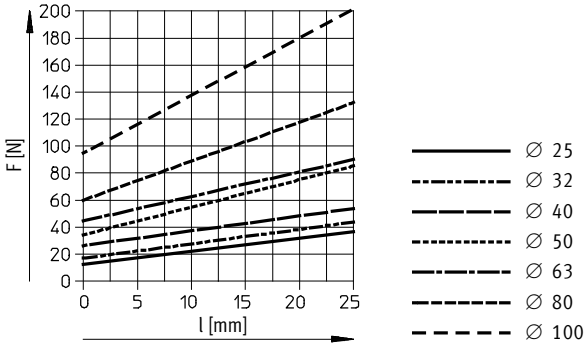
This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Spring return force F as a function of the stroke l

∅ 12 ... 20



∅ 25 ... 100



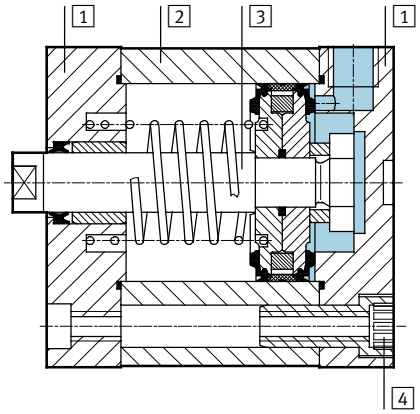
- Note

The degree of friction depends upon the mounting position and the type of load involved. Single-acting cylinders should as far as possible be operated without lateral forces.

Weight [g]										
Piston ∅	12	16	20	25	32	40	50	63	80	100
Product weight with 0 mm stroke	77	79	131	156	265	346	540	722	1,300	2,154
Additional weight per 10 mm stroke	12	14	21	23	30	37	51	59	79	98
Moving load with 0 mm stroke	9	15	30	50	60	80	140	180	400	570
Additional load per 10 mm stroke	2	4	6	6	9	9	16	16	25	25

Materials

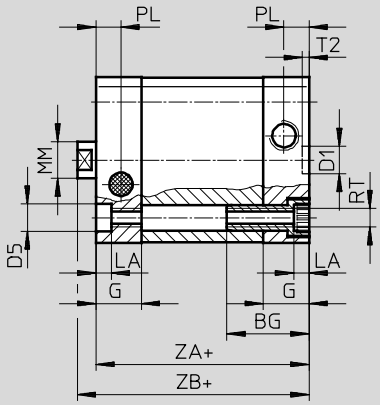
Sectional view



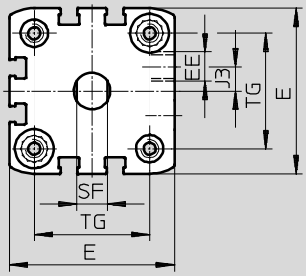
Compact cylinder			Basic version	S6
1	Bearing and end cap		Anodised aluminium	
2	Cylinder barrel		Anodised aluminium	
3	Piston rod		High-alloy steel	
4	Flange screws	∅ 12 ... 16	High-alloy steel	
		∅ 20 ... 63	Galvanised steel	
		∅ 80 ... 100	Standard screws, galvanised steel	
–	Seals		Polyurethane	Fluoro elastomer
	Note on materials		RoHS-compliant	

Dimensions – Basic version Download CAD data ➔ **www.festo.com**

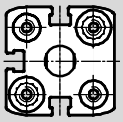
∅ 12 ... 63



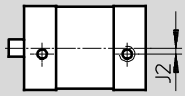
∅ 32 ... 63



∅ 12 ... 25

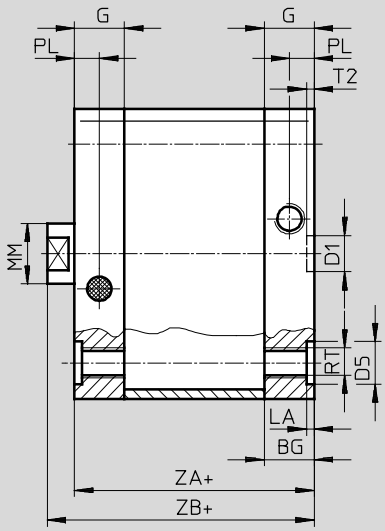


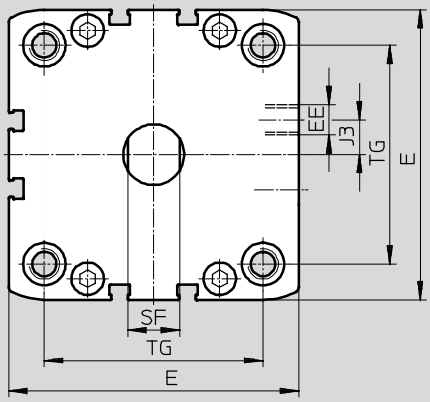
∅ 12



\+ = plus stroke length

∅ 80 ... 100





\+ = plus stroke length

Compact cylinders AEN, to ISO 21287

Technical data

∅ [mm]	BG min.	D1 ∅ H9	D5 ∅ F9	E	EE	G	J2	J3	LA +0.2
12	17	9	6	27.5 +0.3	M5	10.5	2	–	3.5
16				29 +0.3		11	2.6		
20	19.5		9	35.5 +0.3		12			5
25				39.5 +0.3					
32	26			47 +0.3	G⅛	15	6		
40				54.5+0.3			8		
50	27	12	12	65.5 +0.3			11.5		
63				75.5 +0.3					
80	17		15	95.5 +0.6		16.5			2.6
100	21.5			113.5 +0.6		21.5	20		

∅ [mm]	MM ∅ h8	PL +0.2	RT	SF h13	T2 +0.1	TG ±0.2	ZA ±0.3	ZB +1.2
12	6	6	M4	5	2.1	16	35	39.2
16	8			7		18		39.7
20	10		M5	9		22	37	42.5
25						26	39	44.5
32	12	8.2	M6	10		32.5	44	50
40						38	45	51.1
50	16		M8	13	2.6	46.5		53.2
63						56.5	49	57.1
80	20		M10	17		72	54	62.9
100		10.5				89	67	76

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

Basic version

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

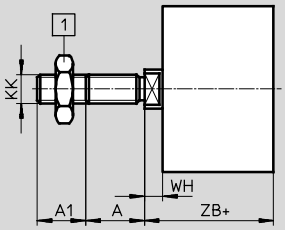
\+ = plus stroke length

Z – pulling

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

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

K2 – Extended male piston rod thread



1 Hex nut DIN 439-B
only with ∅ 32 ... 100

\+ = plus stroke length

K5 – Special piston rod thread

\+ = plus stroke length

K8 – Extended piston rod

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

\+ = plus stroke length

Compact cylinders AEN, to ISO 21287

Technical data

FESTO

∅ [mm]	A –0.5	A1	A2	AF min.	AF5 min.	KF	KF5
12	10	1 ... 10	1 ... 300	8	–	M3	–
16	12			10		M4	
20	16	1 ... 20		14	12	M6	M5
25							
32	19		1 ... 400	16	14	M8	M6
40							
50	22			20	16	M10	M8
63							
80	28	1 ... 30	1 ... 500		20	M12	M10
100							

∅ [mm]	KK	KK5	T3	T4	WH +1.3	ZB +1.2
12	M5	M6	–	1.5	4.2	39.2
16	M6	M8			4.7	39.7
20	M8	M10x1.25	2	2.6	5.5	42.5
25		M10				44.5
32	M10x1.25	M10	2.6	3.3	6	50
40		M12			6.1	51.1
50	M12x1.25	M12	3.3	4.7	8.2	53.2
63		M16			8.1	57.1
80	M16x1.5	M16	4.7	6.1	8.9	62.9
100		M20x1.5 M20			9	76

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

Q – Square piston rod

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

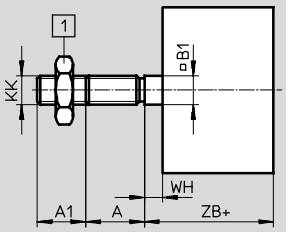
\+ = plus stroke length

Q – Z – pulling

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

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

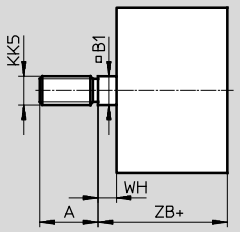
Q-K2 – Square piston rod with extended male thread



1 Hex nut DIN 439-B
only with ∅ 32 ... 100

\+ = plus stroke length

Q-K5 – Square, special piston rod thread



\+ = plus stroke length

Q-K8 – Square, extended piston rod

1 Hex nut DIN 439-B
only with ∅ 32 ... 100

\+ = plus stroke length

Compact cylinders AEN, to ISO 21287

Technical data

∅ [mm]	A –0.5	A1	A2	AF3 min.	B1 □	KF3
12	10	1 ... 10	1 ... 300	8	5.5	M3
16	12			10	7	M4
20	16	1 ... 20		12	9	M5
25						
32	19		1 ... 400	14	10	M6
40						
50	22			16	12	M8
63						
80	28	1 ... 30	1 ... 500	20	16	M10
100						

∅ [mm]	KK	KK5	T2	WH +1.3	ZB +1.2
12	M5	M6	1.5	4.2	39.2
16	M6	M8		4.7	39.7
20	M8	M10x1.25	2	5.5	42.5
25		M10			44.5
32	M10x1.25	M10	2.6	6	50
40				6.1	51.1
50	M12x1.25	M16	3.3	8.2	53.2
63				8.1	57.1
80	M16x1.5	M16	4.7	8.9	62.9
100				9	76

Compact cylinders AEN, to ISO 21287

Ordering data – Modular products, basic version and variants

Ordering table

Size		12	16	20	25	32	Condi-tions	Code	Enter code
M	Module No.	**536 414**	**536 415**	**536 416**	**536 417**	**536 418**			
	Function	Compact cylinder, single-acting, based on ISO 21287						**AEN**	AEN
	Piston ∅ [mm]	12	16	20	25	32		**-...**	
	Stroke [mm]	1 ... 10	1 ... 25					**-...**	
	Type of thread	Male thread						**-A**	
		Female thread					1	**-I**	
	Cushioning	Flexible cushioning rings/pads at both ends						**-P**	-P
	Position sensing	Via proximity sensor						**-A**	-A
O	Effective direction of action	Single-acting, pulling						**-Z**	
	Male thread extended [mm]	Extended male piston rod thread 1 ... 10		1 ... 20			2	**-...K2**	
	Special piston rod thread Male thread	M6	M8	M10x1.25 M10	M10x1.25 M10	M10 M12	2	**-"...”K5**	
	Female thread	–	–	M5	M5	M6			
	Piston rod extended [mm]	Extended piston rod 1 ... 10	1 ... 25				3	**-...K8**	
	Improved running performance	–	–	Smooth anodised aluminium coated piston rod				**-K10**	
	Temperature resistance	Heat-resistant seals up to max. 120 °C						**-S6**	
	Captive rating plate	Laser etched rating plate						**-TL**	

1 **I** Not with extended male thread K2

2 **K2, K5** Not with improved running performance K10

3 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

	AEN	–		–		–		–	**P**	–	**A**	

Compact cylinders AEN, to ISO 21287

Ordering data – Modular products, basic version and variants

Ordering table

Size			40	50	63	80	100	Condi-tions	Code		Enter code
M	Module No.		**536 419**	**536 420**	**536 421**	**536 422**	**536 423**				
	Function		Compact cylinder, single-acting, based on ISO 21287						**AEN**		AEN
	Piston ∅	[mm]	40	50	63	80	100		**-...**		
	Stroke	[mm]	1 ... 25						**-...**		
	Type of thread		Male thread						**-A**		
			Female thread					1	**-I**		
	Cushioning		Flexible cushioning rings/pads at both ends						**-P**		-P
	Position sensing		Via proximity sensor						**-A**		-A
O	Effective direction of action		Single-acting, pulling						**-Z**		
	Male thread extended	[mm]	Extended male piston rod thread 1 ... 20			1 ... 30		2	**-...K2**		
	Special piston rod thread	Male thread	M10 M12	M12 M16	M12 M16	M16 M20 M20x1.5	M16 M20 M20x1.5	2	**-"..."K5**		
		Female thread	M6	M8	M8	M10	M10				
	Piston rod extended	[mm]	Extended piston rod 1 ... 25					3	**-...K8**		
	Improved running performance		Smooth anodised aluminium coated piston rod						**-K10**		
	Temperature resistance		Heat-resistant seals up to max. 120 °C						**-S6**		
	Captive rating plate		Laser etched rating plate						**-TL**		

1 **I** Not with extended male thread K2

2 **K2, K5** Not with improved running performance K10

3 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

–		–		–		–		–		–		–	

Compact cylinders AEN, to ISO 21287

Ordering data – Modular products, Q – Version with square piston rod, non-rotating

Ordering table

Size		16	20	25	32	Condi-tions	Code		Enter code
M	Module No.	**536 415**	**536 416**	**536 417**	**536 418**				
	Function	Compact cylinder, single-acting, based on ISO 21287					**AEN**		AEN
	Piston ∅ [mm]	16	20	25	32		**-...**		
	Stroke [mm]	1 ... 25					**-...**		
	Type of thread	Male thread					**-A**		
		Female thread				1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends					**-P**		-P
	Position sensing	Via proximity sensor					**-A**		-A
O	Effective direction of action	Single-acting, pulling					**-Z**		
	Protection against torsion	Square piston rod					**-Q**		-Q
	Male thread extended [mm]	Extended male piston rod thread 1 ... 10	1 ... 20				**-...K2**		
	Special piston rod thread Male thread	M8	M10x1.25 M10	M10x1.25 M10	M10		**-"..."K5**		
	Piston rod extended [mm]	Extended piston rod 1 ... 25				2	**-...K8**		
	Temperature resistance	Heat-resistant seals up to max. 120 °C					**-S6**		
	Captive rating plate	Laser etched rating plate					**-TL**		

1 **I** Not with extended male thread K2

2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

	AEN	–		–		–		–	**P**	–	**A**	

Compact cylinders AEN, to ISO 21287

Ordering data – Modular products, Q – Version with square piston rod, non-rotating

Ordering table

	Size	40	50	63	80	100	Conditions	Code		Enter code
M	Module No.	**536 419**	**536 420**	**536 421**	**536 422**	**536 423**				
	Function	Compact cylinder, single-acting, based on ISO 21287						**AEN**		AEN
	Piston ∅ [mm]	40	50	63	80	100		**-...**		
	Stroke [mm]	1 ... 25						**-...**		
	Type of thread	Male thread						**-A**		
		Female thread					1	**-I**		
	Cushioning	Flexible cushioning rings/pads at both ends						**-P**		-P
	Position sensing	Via proximity sensor						**-A**		-A
O	Effective direction of action	Single-acting, pulling						**-Z**		
	Protection against torsion	Square piston rod						**-Q**		-Q
	Male thread extended [mm]	Extended male piston rod thread								
		1 ... 20			1 ... 30			**-...K2**		
	Special piston rod thread Male thread	M10	M12	M12	M16	M16		**-"..."K5**		
	Piston rod extended [mm]	Extended piston rod								
		1 ... 25					2	**-...K8**		
	Temperature resistance	Heat-resistant seals up to max. 120 °C						**-S6**		
	Captive rating plate	Laser etched rating plate						**-TL**		

1 **I** Not with extended male thread K2

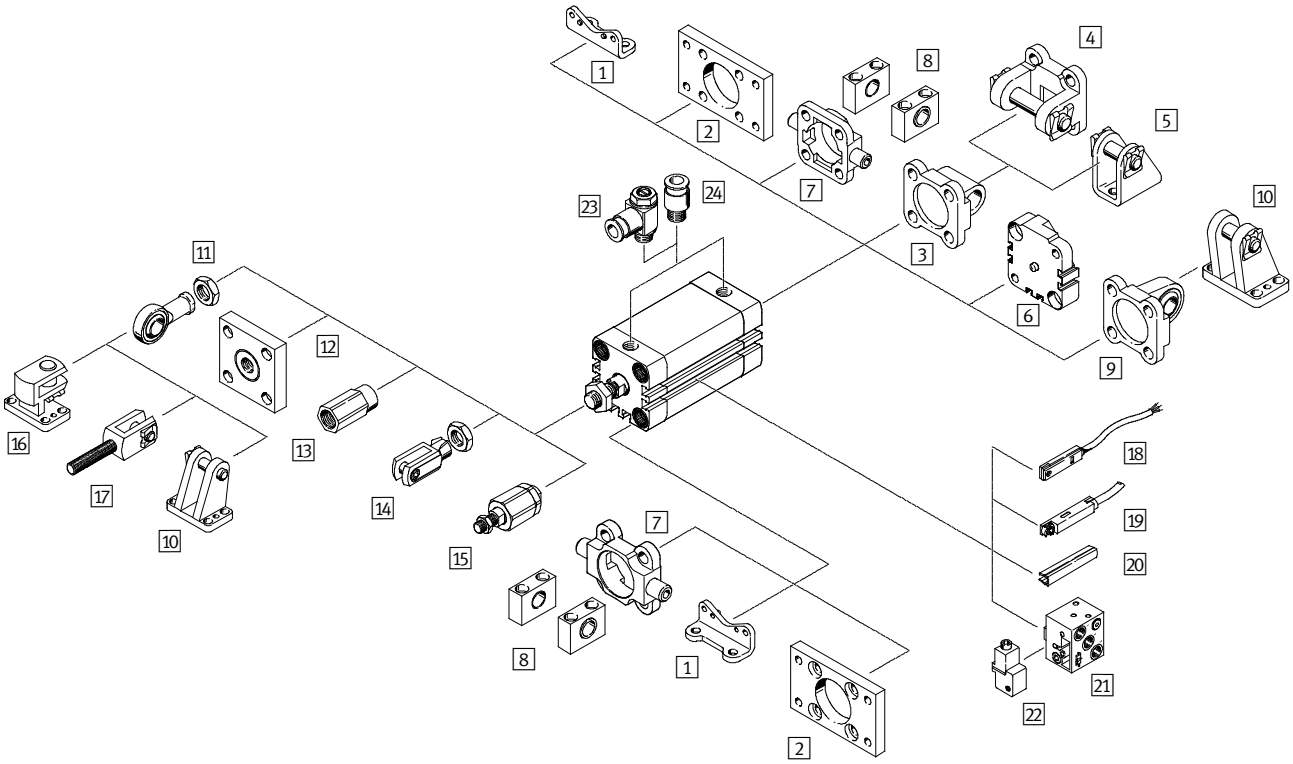
2 **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

Transfer order code

– | | – | Q | – | | – | | – | | – | | – | |

Compact cylinders ADNP, to ISO 21287, with polymer end caps

Peripherals overview



Compact cylinders ADNP, to ISO 21287, with polymer end caps

Peripherals overview

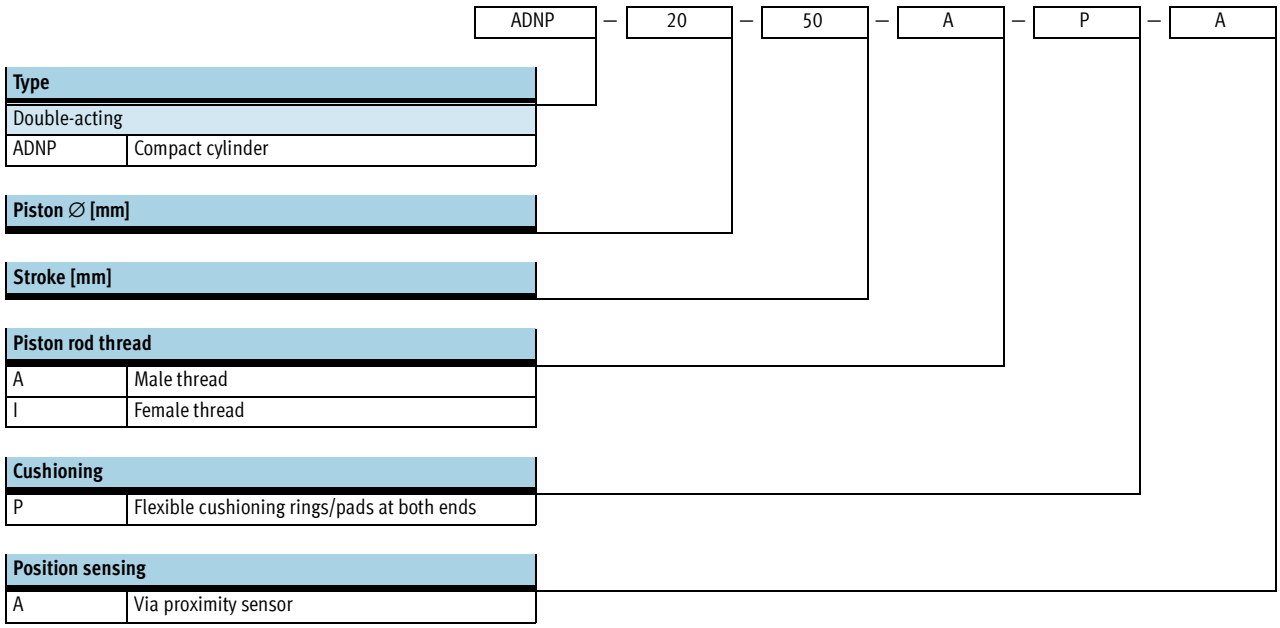
Mounting attachments and accessories			
		Brief description	→ Page/Internet
1	Foot mounting HNA	For bearing or end caps	79
2	Flange mounting FNC	For bearing or end caps	80
3	Swivel flange SNCL	For end caps	81
4	Swivel flange SNCB	For swivel flange SNCL	85
5	Clevis foot LBN/CRLBN	For swivel flange SNCL	84
6	Multi-position kit DPNA	For connecting two cylinders with identical piston ∅ to form a multi-position cylinder	83
7	Trunnion flange ZNCF/CRZNG	For bearing caps	86
8	Trunnion support LNZG	For trunnion flange ZNCF/CRZNG	87
9	Swivel flange SNCS	For end caps	82
10	Clevis foot LBG	For swivel flange SNCS	82
11	Rod eye SGS/CRSGS	With spherical bearing	88
12	Coupling piece KSG/KSZ	For compensating radial deviations	88
13	Adapter AD	For mounting a vacuum suction cup on a hollow cylinder piston rod	88
14	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	88
15	Self-aligning rod coupler FK	For compensating radial and angular deviations	88
16	Right-angle clevis foot LQG	For rod eye SGS	89
17	Rod clevis SGA	With male thread	88
18	Proximity sensor SME/SMT-8	Can be integrated in the sensor slot of the cylinder profile barrel	91
19	Proximity sensor SME/SMT-8M	Can be integrated in the sensor slot of the cylinder profile barrel	91
20	Slot cover ABP-5-S	For protecting the sensor cable and keeping dirt out of the sensor slots	91
21	Proximity sensor SMPO-8E	Pneumatic output signal	91
22	Mounting kit SMB-8E	For proximity sensor SMPO-8E	91
23	One-way flow control valve GRLA/GRLZ	For speed regulation	89
24	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	quick star

Note

For the compressed air ports only push-in fittings or one-way flow control valves with cylindrical connecting thread (M or G thread) may be used.

Compact cylinders ADNP, to ISO 21287, with polymer end caps

Type codes



Type	
Double-acting	
ADNP	Compact cylinder

Piston ∅ [mm]

Stroke [mm]

Piston rod thread	
A	Male thread
I	Female thread

Cushioning	
P	Flexible cushioning rings/pads at both ends

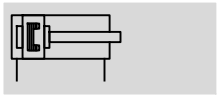
Position sensing	
A	Via proximity sensor

Compact cylinders ADNP, to ISO 21287, with polymer end caps

Technical data

FESTO

Function



Diameter
20 ... 50 mm

Stroke length
5 ... 80 mm

www.festo.com

ADNP-...-A-P-A

ADNP-...-I-P-A

General technical data						
Piston ∅		20	25	32	40	50
Pneumatic connection		M5	M5	G1⁄8	G1⁄8	G1⁄8
Piston rod thread	Female	M6	M6	M8	M8	M10
	Male	M8	M8	M10x1.25	M10x1.25	M10x1.25
Constructional design		Piston				
		Piston rod				
		Cylinder barrel				
Cushioning		Flexible cushioning rings/pads at both ends				
Position sensing		Via proximity sensor				
Type of mounting		Via through-holes				
		Via female threads				
		Via accessories				
Mounting position		Any				

Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	0.6 ... 10
Ambient temperature[1]	[°C]	–10 ... +60
Corrosion resistance class CRC[2]		2

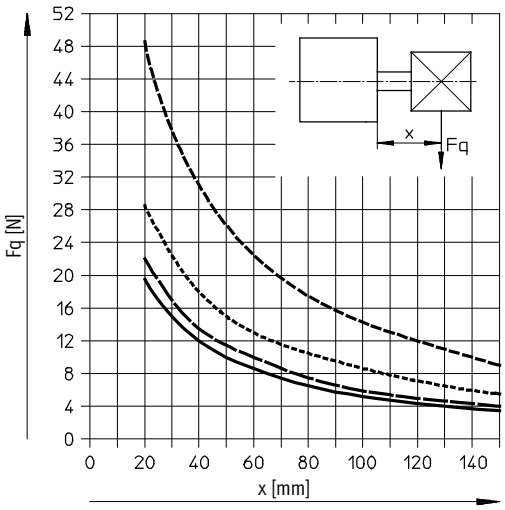
1) Note operating range of proximity sensors
2) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Compact cylinders ADNP, to ISO 21287, with polymer end caps

Technical data

Forces [N] and impact energy [J]					
Piston ∅	20	25	32	40	50
Theoretical force at 6 bar, advancing	188	295	483	754	1178
Theoretical force at 6 bar, retracting	141	247	415	686	1057
Max. impact energy at the end positions	0.16	0.24	0.32	0.56	0.80

Max. lateral force Fq as a function of the projection x

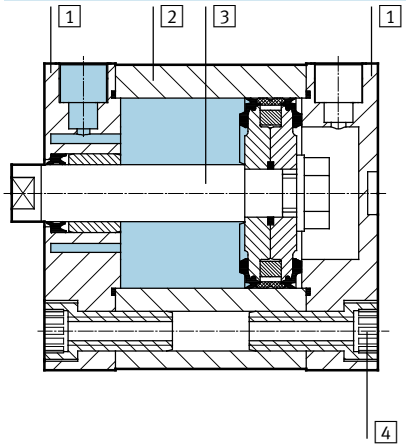


∅ 20
∅ 25
∅ 32/40
∅ 50

Weight [g]					
Piston ∅	20	25	32	40	50
Product weight with 0 mm stroke	115	116	204	240	380
Additional weight per 10 mm stroke	17	19	24	32	41
Moving load with 0 mm stroke	20	20	45	55	94
Additional load per 10 mm stroke	2	2	3	3	6

Materials

Sectional view



Compact cylinder		
1	Cover	Polyarylamide
2	Cylinder barrel	Smooth anodised aluminium
3	Piston rod	Smooth anodised aluminium, steel insert with male thread
4	Flange screws	Galvanised steel
–	Seals	Polyurethane, nitrile rubber
	Note on materials	RoHS compliant

Compact cylinders ADNP, to ISO 21287, with polymer end caps

Technical data

FESTO

Dimensions – Basic version

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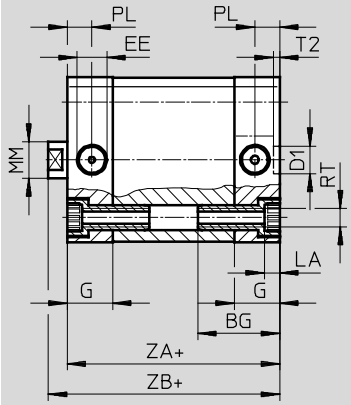
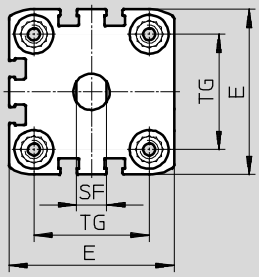
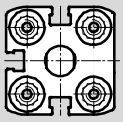
∅ 20 ... 50



∅ 32 ... 50



∅ 20, 25



Note

For the compressed air ports only push-in fittings or one-way flow control valves with cylindrical connecting thread (M or G thread) may be used.

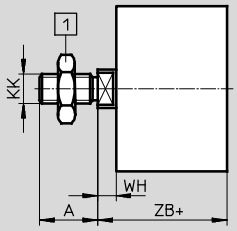
\+ = plus stroke length

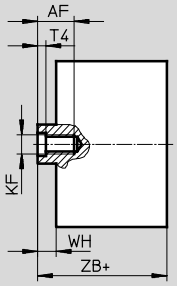
∅ [mm]	BG min.	D1 ∅ H9	EE	E +0.3	G	LA +0.2	MM ∅ h8	PL	RT	SF h13	T2 +0.1	TG ±0.2	ZA ±0.3	ZB +1.2
20	19.5	9	M5	35.5	12	5	10	6	M5	8	2.1	22	37	42.5
25			M5	39.5								26	39	44.5
32	26		G⅛	47	15		12	8.2	M6	10		32.5	44	50
40			G⅛	54.5								38	45	51.1
50	27	12	G⅛	65.5			16		M8	13		46.5		53.2

Dimensions – Variants

Download CAD data ➔ www.festo.com

Basic version





[1] Hex nut to DIN 439-B only with ∅ 32 ... 50

\+ = plus stroke length

∅ [mm]	A −0.5	AF min.	KF	KK	T4	WH +1.3	ZB +1.2
20	16	14	M6	M8	2.6	5.5	42.5
25							44.5
32	19	16	M8	M10x1.25	3.3	6	50
40						6.1	51.1
50	22	20	M10	M12x1.25	4.7	8.2	53.2

New

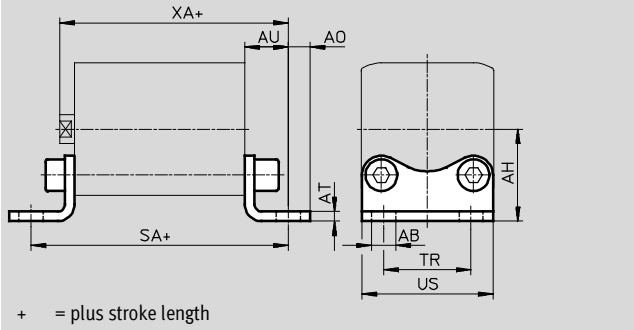
Compact cylinders ADNP, to ISO 21287, with polymer end caps

Technical data

Ordering data							
Type	Piston ∅ [mm]	Stroke [mm]	Female piston rod thread			Male piston rod thread	
			Part No.	Type		Part No.	Type
	20	5	571971	ADNP-20-5-I-P-A		571926	ADNP-20-5-A-P-A
		10	571972	ADNP-20-10-I-P-A		571927	ADNP-20-10-A-P-A
		15	571973	ADNP-20-15-I-P-A		571928	ADNP-20-15-A-P-A
		20	571974	ADNP-20-20-I-P-A		571929	ADNP-20-20-A-P-A
		25	571975	ADNP-20-25-I-P-A		571930	ADNP-20-25-A-P-A
		30	571976	ADNP-20-30-I-P-A		571931	ADNP-20-30-A-P-A
		40	571977	ADNP-20-40-I-P-A		571932	ADNP-20-40-A-P-A
		50	571978	ADNP-20-50-I-P-A		571933	ADNP-20-50-A-P-A
		60	571979	ADNP-20-60-I-P-A		571934	ADNP-20-60-A-P-A
	25	5	571980	ADNP-25-5-I-P-A		571935	ADNP-25-5-A-P-A
		10	571981	ADNP-25-10-I-P-A		571936	ADNP-25-10-A-P-A
		15	571982	ADNP-25-15-I-P-A		571937	ADNP-25-15-A-P-A
		20	571983	ADNP-25-20-I-P-A		571938	ADNP-25-20-A-P-A
		25	571984	ADNP-25-25-I-P-A		571939	ADNP-25-25-A-P-A
		30	571985	ADNP-25-30-I-P-A		571940	ADNP-25-30-A-P-A
		40	571986	ADNP-25-40-I-P-A		571941	ADNP-25-40-A-P-A
		50	571987	ADNP-25-50-I-P-A		571942	ADNP-25-50-A-P-A
		60	571988	ADNP-25-60-I-P-A		571943	ADNP-25-60-A-P-A
	32	10	571989	ADNP-32-10-I-P-A		571944	ADNP-32-10-A-P-A
		15	571990	ADNP-32-15-I-P-A		571945	ADNP-32-15-A-P-A
		20	571991	ADNP-32-20-I-P-A		571946	ADNP-32-20-A-P-A
		25	571992	ADNP-32-25-I-P-A		571947	ADNP-32-25-A-P-A
		30	571993	ADNP-32-30-I-P-A		571948	ADNP-32-30-A-P-A
		40	571994	ADNP-32-40-I-P-A		571949	ADNP-32-40-A-P-A
		50	571995	ADNP-32-50-I-P-A		571950	ADNP-32-50-A-P-A
		60	571996	ADNP-32-60-I-P-A		571951	ADNP-32-60-A-P-A
		80	571997	ADNP-32-80-I-P-A		571952	ADNP-32-80-A-P-A
	40	10	571998	ADNP-40-10-I-P-A		571953	ADNP-40-10-A-P-A
		15	571999	ADNP-40-15-I-P-A		571954	ADNP-40-15-A-P-A
		20	572000	ADNP-40-20-I-P-A		571955	ADNP-40-20-A-P-A
		25	572001	ADNP-40-25-I-P-A		571956	ADNP-40-25-A-P-A
		30	572002	ADNP-40-30-I-P-A		571957	ADNP-40-30-A-P-A
		40	572003	ADNP-40-40-I-P-A		571958	ADNP-40-40-A-P-A
		50	572004	ADNP-40-50-I-P-A		571959	ADNP-40-50-A-P-A
		60	572005	ADNP-40-60-I-P-A		571960	ADNP-40-60-A-P-A
		80	572006	ADNP-40-80-I-P-A		571961	ADNP-40-80-A-P-A
	50	10	572007	ADNP-50-10-I-P-A		571962	ADNP-50-10-A-P-A
		15	572008	ADNP-50-15-I-P-A		571963	ADNP-50-15-A-P-A
		20	572009	ADNP-50-20-I-P-A		571964	ADNP-50-20-A-P-A
		25	572010	ADNP-50-25-I-P-A		571965	ADNP-50-25-A-P-A
		30	572011	ADNP-50-30-I-P-A		571966	ADNP-50-30-A-P-A
		40	572012	ADNP-50-40-I-P-A		571967	ADNP-50-40-A-P-A
		50	572013	ADNP-50-50-I-P-A		571968	ADNP-50-50-A-P-A
		60	572014	ADNP-50-60-I-P-A		571969	ADNP-50-60-A-P-A
		80	572015	ADNP-50-80-I-P-A		571970	ADNP-50-80-A-P-A

Foot mounting HNA

Material:
HNA: Galvanised steel
HNA-...-R3: Steel with protective coating
Free of copper and PTFE
RoHS-compliant



Dimensions and ordering data

For ∅ [mm]	AB ∅ H14	AH JS14	AO	AT ±0.5	AU ±0.2	SA	TR ±0.2	US –0.5	XA
12	5.8	21	5	3	13	61	16	26	52.2
16		22	4.75				18	27.5	52.9
20	7	27	6.25	4	16	69	22	34.5	58.7
25		29				71	26	38.5	60.7
32		33.5	7			76	32	46	66.2
40	10	38	9		18	81	36	54	69.2
50		45	8	5	21	87	45	64	74.2
63		50				91	50	75	78.2
80	12	63	10.5	6	26	106	63	63	89
100	14.5	74	12.5		27	121	75	110	103

For ∅ [mm]	Basic version				R3 – High corrosion protection			
	CRC[1)]	Weight [g]	Part No.	Type	CRC[1)]	Weight [g]	Part No.	Type
12	1	39	**537 237**	**HNA-12**	3	39	**537 252**	**HNA-12-R3**
16	1	42	**537 238**	**HNA-16**	3	42	**537 253**	**HNA-16-R3**
20	1	84	**537 239**	**HNA-20**	3	84	**537 254**	**HNA-20-R3**
25	1	90	**537 240**	**HNA-25**	3	90	**537 255**	**HNA-25-R3**
32	1	123	**537 241**	**HNA-32**	3	123	**537 256**	**HNA-32-R3**
40	1	157	**537 242**	**HNA-40**	3	157	**537 257**	**HNA-40-R3**
50	1	278	**537 243**	**HNA-50**	3	278	**537 258**	**HNA-50-R3**
63	1	328	**537 244**	**HNA-63**	3	328	**537 259**	**HNA-63-R3**
80	1	634	**537 249**	**HNA-80**	3	634	**537 260**	**HNA-80-R3**
100	1	814	**537 250**	**HNA-100**	3	814	**537 261**	**HNA-100-R3**

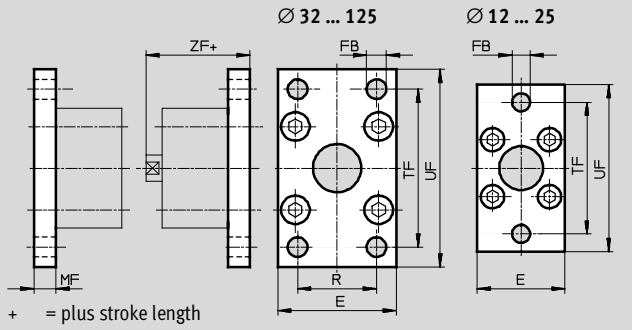
1) Corrosion resistance class 1 to Festo standard 940 070
Components with light corrosion exposure. Protection for transport and storage. Components without significant decorative function or surface, e.g. installed out of sight internally or behind covers.
Corrosion resistance class 3 to Festo standard 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

Compact cylinders ADN/AEN, to ISO 21287

Accessories

Flange mounting FNC

Material:
Galvanised steel
Free of copper and PTFE
RoHS-compliant



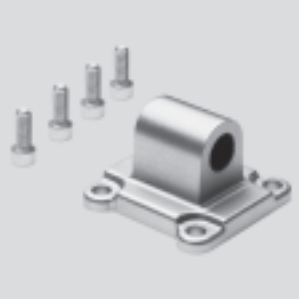
Dimensions and ordering data

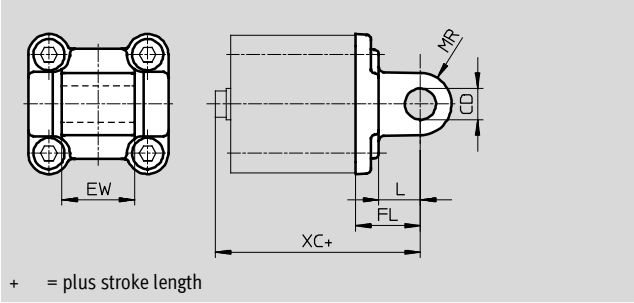
For ∅ [mm]	E	FB ∅	MF	R	TF	UF ±1	ZF	CRC[1]	Weight [g]	Part No.	Type
12	28	5.5	8	–	40	50	47.2	1	79	**537 245**	**FNC-12**
16	29				43	55	47.9	1	88	**537 246**	**FNC-16**
20	36	6.6			55	70	50.7	1	141	**537 247**	**FNC-20**
25	40				60	76	52.7	1	165	**537 248**	**FNC-25**
32	45	7	10	32	64	80	60.2	1	221	**174 376**	**FNC-32**
40	54	9		36	72	90	61.2	1	291	**174 377**	**FNC-40**
50	65		12	45	90	110	65.2	1	536	**174 378**	**FNC-50**
63	75			50	100	120	69.2	1	679	**174 379**	**FNC-63**
80	93	12	16	63	126	150	79	1	1495	**174 380**	**FNC-80**
100	110	14		75	150	175	92	1	2041	**174 381**	**FNC-100**
125	132	16	20	90	180	210	112	1	3775	**174 382**	**FNC-125**

1) Corrosion resistance class 1 to Festo standard 940 070
Components with light corrosion exposure. Protection for transport and storage. Components without significant decorative function or surface, e.g. installed out of sight internally or behind covers.

Swivel flange SNCL

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





\+ = plus stroke length

Dimensions and ordering data

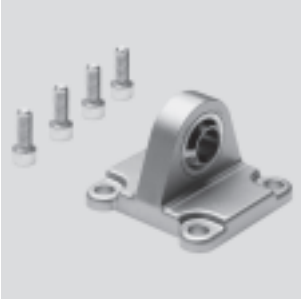
For ∅ [mm]	CD ∅ H9	EW	FL ±0.2	L	MR	XC
12	6	12_{h12}	16	10	6	55.2
16						55.9
20	8	16_{h12}	20	14	8	62.7
25						64.7
32	10	$26_{-0.2/-0.6}$	22	13	10	72.2
40	12	$28_{-0.2/-0.6}$	25	16	12	75.2
50		$32_{-0.2/-0.6}$	27			80.2
63	16	$40_{-0.2/-0.6}$	32	21	16	89.2
80		$50_{-0.2/-0.6}$	36	22		99
100	20	$60_{-0.2/-0.6}$	41	27	20	117
125	25	$70_{-0.2/-0.6}$	50	30	25	142

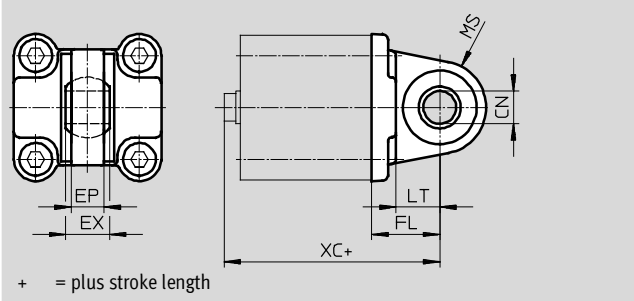
For ∅ [mm]	Basic version				R3 – High corrosion protection			
	CRC[1]	Weight [g]	Part No.	Type	CRC[1]	Weight [g]	Part No.	Type
12	2	20	**537 790**	**SNCL-12**	3	20	**537 794**	**SNCL-12-R3**
16	2	25	**537 791**	**SNCL-16**	3	25	**537 795**	**SNCL-16-R3**
20	2	40	**537 792**	**SNCL-20**	3	40	**537 796**	**SNCL-20-R3**
25	2	45	**537 793**	**SNCL-25**	3	45	**537 797**	**SNCL-25-R3**
32	2	85	**174 404**	**SNCL-32**	–	–	–	
40	2	115	**174 405**	**SNCL-40**	–	–	–	
50	2	180	**174 406**	**SNCL-50**	–	–	–	
63	2	270	**174 407**	**SNCL-63**	–	–	–	
80	2	480	**174 408**	**SNCL-80**	–	–	–	
100	2	700	**174 409**	**SNCL-100**	–	–	–	
125	2	1300	**174 410**	**SNCL-125**	–	–	–	

1) Corrosion resistance class 2 to 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 to 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

Swivel flange SNCS

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





Dimensions and ordering data

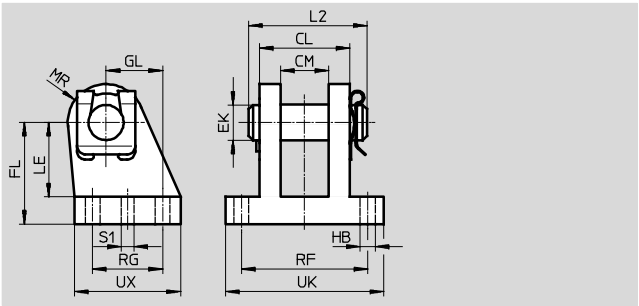
For ∅ [mm]	CN ∅ H7	EP ±0.2	EX	FL ±0.2	LT	MS	XC	CRC[1]	Weight [g]	Part No.	Type
32	10	10.5	14	22	13	15	72.2	2	85	**174 397**	**SNCS-32**
40	12	12	16	25	16	17	75.2	2	125	**174 398**	**SNCS-40**
50	16	15	21	27	16	20	80.2	2	210	**174 399**	**SNCS-50**
63	16	15	21	32	21	22	89.2	2	280	**174 400**	**SNCS-63**
80	20	18	25	36	22	27	99	2	540	**174 401**	**SNCS-80**
100	20	18	25	41	27	29	117	2	700	**174 402**	**SNCS-100**
125	30	25	37	50	30	39	142	2	1410	**174 403**	**SNCS-125**

1) Corrosion resistance class 2 to 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

Clevis foot LBG

The clevis foot is secured against rotation with a dowel pin.

Material:
Nodular graphite cast iron
Free of copper and PTFE
RoHS-compliant



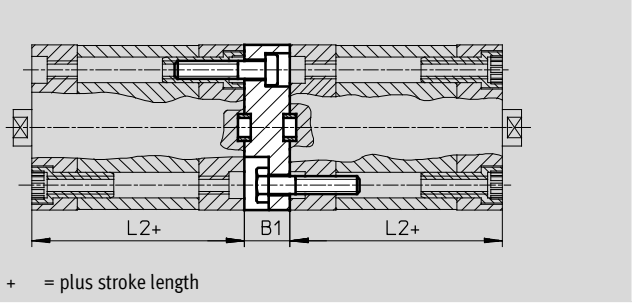
Dimensions and ordering data

For ∅ [mm]	CL ±0.2	CM	EK ∅	FL	GL	HB ∅	L2	LE	MR	RF	RG	S1 ∅	UK	UX	CRC[1]	Weight [g]	Part No.	Type
32	28	14.1	10	32	16±0.25	6.8	35	24	12	42	20±0.3	4.8	56	36	2	220	**31 761**	**LBG-32**
40	30	16.1	12	36	20±0.3	6.8	39	26	14	44	26±0.3	5.8	58	41.5	2	300	**31 762**	**LBG-40**
50	40	21.1	16	45	25±0.3	9.2	50	33	15	56	31±0.4	5.8	70	47	2	540	**31 763**	**LBG-50**
63	40	21.1	16	50	25±0.3	9	50	38	17	56	31±0.4	7.8	70	45	2	580	**31 764**	**LBG-63**
80	50	25.1	20	63	30	11	60	49	18	70	36	7.8	89	55	2	1050	**31 765**	**LBG-80**
100	50	25.1	20	71	41	11	60	56	22	70	46	9.8	89	65	2	1375	**31 766**	**LBG-100**
125	80	37.2	30	90	60	14	89	70	26	106	70	11.8	128	96	2	4140	**31 767**	**LBG-125**

1) Corrosion resistance class 2 to 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

Multi-position kit DPNA

Material:
Flange: Aluminium
Screws: Galvanised steel
Free of copper and PTFE
RoHS-compliant



\+ = plus stroke length

Dimensions and ordering data

For ∅ [mm]	L2	B1	Max. overall stroke length [mm]	CRC[1)]	Part No.	Type
12	35	13	600	2	**537 263**	**DPNA-12**
16			600	2	**537 264**	**DPNA-16**
20	37		600	2	**537 265**	**DPNA-20**
25	39		600	2	**537 266**	**DPNA-25**
32	44	15	800	2	**537 267**	**DPNA-32**
40	45		800	2	**537 268**	**DPNA-40**
50			800	2	**537 269**	**DPNA-50**
63	49		800	2	**537 270**	**DPNA-63**
80	54	17	1000	2	**537 271**	**DPNA-80**
100	67	19.5	1000	2	**537 272**	**DPNA-100**

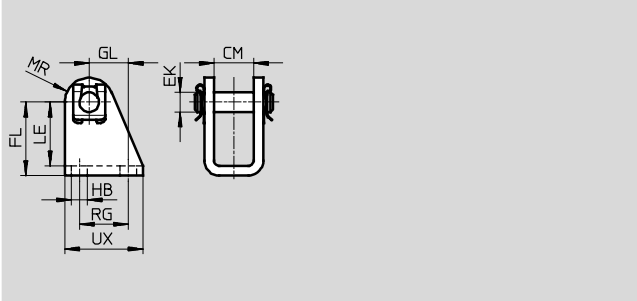
1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

- Note

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

Clevis foot LBN

Material:
Galvanised steel
Free of copper and PTFE
RoHS-compliant



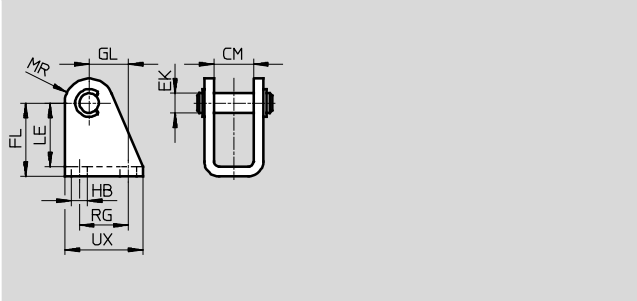
Dimensions and ordering data

For ∅ [mm]	CM	EK ∅	FL	GL	HB ∅	LE	MR	RG	UX	CRC[1]	Weight [g]	Part No.	Type
12/16	12.1	6	27 +0.3/–0.2	13	5.5	24	7	15	25	2	40	**6 058**	**LBN-12/16**
20/25	16.1	8	30 +0.4/–0.2	16	6.6	26	10	20	32	2	81	**6 059**	**LBN-20/25**

1) Corrosion resistance class 2 to 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

Clevis foot CRLBN, stainless steel

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



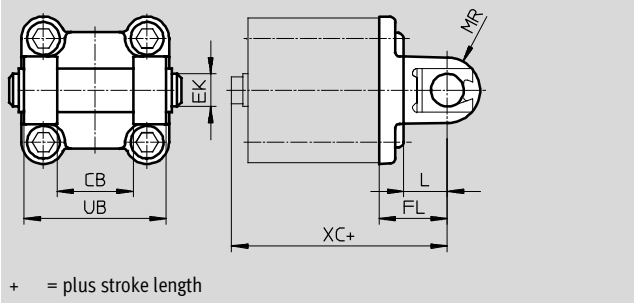
Dimensions and ordering data

For ∅ [mm]	CM	EK ∅	FL	GL	HB	LE	MR	RG	UX	CRC[1]	Weight [g]	Part No.	Type
12/16	12.1	6	27 +0.3/–0.2	13	5.5	24	7	15	25	4	55	**161 862**	**CRLBN-12/16**
20/25	16.1	8	30 +0.4/–0.2	16	6.6	26	10	20	32	4	62	**161 863**	**CRLBN-20/25**

1) Corrosion resistance class 4 to 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

Swivel flange
SNCB/SNCB-...-R3

Material:
SNCB: Die-cast aluminium
SNCB-...-R3: Die-cast aluminium with protective coating, high corrosion protection
Free of copper and PTFE
RoHS-compliant



\+ = plus stroke length

Dimensions and ordering data

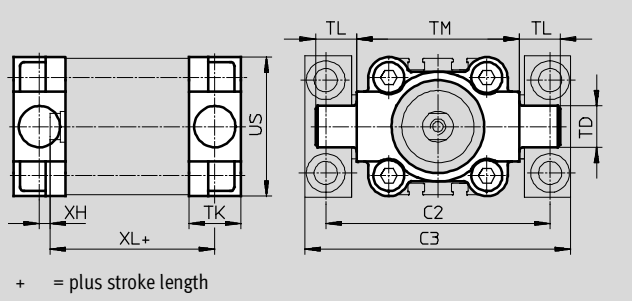
For ∅ [mm]	CB H14	EK ∅ e8	FL ±0.2	L	MR	UB h14	XC
32	26	10	22	13	8.5	45	72
40	28	12	25	16	12	52	76
50	32	12	27	16	12	60	80
63	40	16	32	21	16	70	89
80	50	16	36	22	16	90	99
100	60	20	41	27	20	110	117
125	70	25	50	30	25	130	142

For ∅	Basic version				R3 – High corrosion protection			
	CRC[1)]	Weight [g]	Part No.	Type	CRC[1)]	Weight [g]	Part No.	Type
[mm]								
32	2	103	**174 390**	**SNCB-32**	3	100	**176 944**	**SNCB-32-R3**
40	2	155	**174 391**	**SNCB-40**	3	151	**176 945**	**SNCB-40-R3**
50	2	232	**174 392**	**SNCB-50**	3	228	**176 946**	**SNCB-50-R3**
63	2	375	**174 393**	**SNCB-63**	3	371	**176 947**	**SNCB-63-R3**
80	2	636	**174 394**	**SNCB-80**	3	632	**176 948**	**SNCB-80-R3**
100	2	1035	**174 395**	**SNCB-100**	3	986	**176 949**	**SNCB-100-R3**
125	2	1860	**174 396**	**SNCB-125**	3	1776	**176 950**	**SNCB-125-R3**

1) Corrosion resistance class 2 to 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 to 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

Trunnion flange ZNCF/CRZNG

Material:
ZNCF: Special steel casting
CRZNG: Electrolytically polished special steel casting
Free of copper and PTFE
RoHS-compliant



Dimensions and ordering data

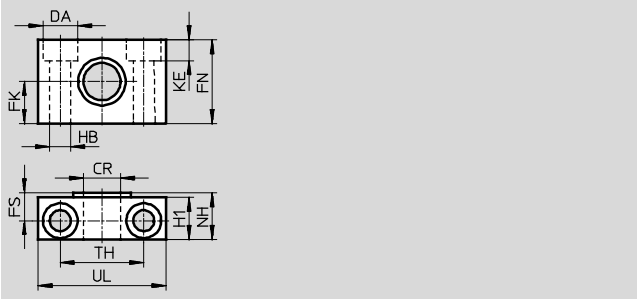
For ∅ [mm]	C2	C3	TD ∅ e9	TK	TL	TM	US	XH	XL
32	71	86	12	16	12	50	45	2	52
40	87	105	16	20	16	63	54	4	55
50	99	117	16	24	16	75	64	4	57
63	116	136	20	24	20	90	75	4	61
80	136	156	20	28	20	110	93	5	81
100	164	189	25	38	25	132	110	10	86
125	192	217	25	50	25	160	131	14	106

For ∅ [mm]	Basic version				R3 – High corrosion protection			
	CRC[1)]	Weight [g]	Part No.	Type	CRC[1)]	Weight [g]	Part No.	Type
32	2	130	**174 411**	**ZNCF-32**	4	150	**161 852**	**CRZNG-32**
40	2	240	**174 412**	**ZNCF-40**	4	260	**161 853**	**CRZNG-40**
50	2	390	**174 413**	**ZNCF-50**	4	430	**161 854**	**CRZNG-50**
63	2	600	**174 414**	**ZNCF-63**	4	640	**161 855**	**CRZNG-63**
80	2	1150	**174 415**	**ZNCF-80**	4	1300	**161 856**	**CRZNG-80**
100	2	2030	**174 416**	**ZNCF-100**	4	2400	**161 857**	**CRZNG-100**
125	2	3490	**174 417**	**ZNCF-125**	4	3600	**185 362**	**CRZNG-125**

1) Corrosion resistance class 2 to 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 to 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

Trunnion support LNZG

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

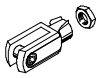
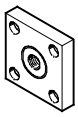
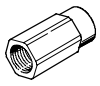


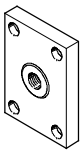
Dimensions and ordering data

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	**32 959**	**LNZG-32**
40, 50	16	15	18	36	12	18	9	9	21	36	55	2	129	**32 960**	**LNZG-40/50**
63, 80	20	18	20	40	13	20	11	11	23	42	65	2	178	**32 961**	**LNZG-63/80**
100, 125	25	20	25	50	16	24.5	14	13	28.5	50	75	2	306	**32 962**	**LNZG-100/125**

1) Corrosion resistance class 2 to 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

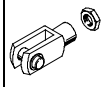
Ordering data – Piston rod attachments — Technical data ➔ Internet: piston-rod attachment

Designation	For ∅	Part No.	Type
Rod eye SGS			
	12	–	
	16	**9 254**	**SGS-M6**
	20, 25	**9 255**	**SGS-M8**
	32, 40	**9 261**	**SGS-M10x1,25**
	50, 63	**9 262**	**SGS-M12x1,25**
	80, 100	**9 263**	**SGS-M16x1,5**
	125	**9 264**	**SGS-M20x1,5**
Rod clevis SG			
	12	–	
	16	**3 110**	**SG-M6**
	20, 25	**3 111**	**SG-M8**
	32, 40	**6 144**	**SG-M10x1,25**
	50, 63	**6 145**	**SG-M12x1,25**
	80, 100	**6 146**	**SG-M16x1,5**
	125	**6 147**	**SG-M20x1,5**
Coupling piece KSG			
	12, 16, 20, 25	–	
	32, 40	**32 963**	**KSG-M10x1,25**
	50, 63	**32 964**	**KSG-M12x1,25**
	80, 100	**32 965**	**KSG-M16x1,5**
	125	**32 966**	**KSG-M20x1,5**
Adapter AD			
	12	–	
	16	**157 328**	**AD-M6-M5**
		157 329	**AD-M6-⅛**
		157 330	**AD-M6-¼**
	20	**157 331**	**AD-M8-⅛**
	25	**157 332**	**AD-M8-¼**
	32	**157 333**	**AD-M10x1,25-⅛**
	40	**157 334**	**AD-M10x1,25-¼**
	50	**160 256**	**AD-M12x1,25-¼**
	63	**160 257**	**AD-M12x1,25-⅜**

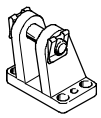
Designation	For ∅	Part No.	Type
Rod clevis SGA used in combination with rod eye SGS			
	12, 16, 20, 25	–	
	32, 40	**32 954**	**SGA-M10x1,25**
	50, 63	**10 767**	**SGA-M12x1,25**
	80, 100	**10 768**	**SGA-M16x1,5**
	125	**10 769**	**SGA-M20x1,5**
Self-aligning rod coupler FK			
	12	**30 984**	**FK-M5**
	16	**2 061**	**FK-M6**
	20, 25	**2 062**	**FK-M8**
	32, 40	**6 140**	**FK-M10x1,25**
	50, 63	**6 141**	**FK-M12x1,25**
	80, 100	**6 142**	**FK-M16x1,5**
	125	**6 143**	**FK-M20x1,5**
Coupling piece KSZ			
	12	–	
	16	**36 123**	**KSZ-M6**
	20, 25	**36 124**	**KSZ-M8**
	32, 40	**36 125**	**KSZ-M10x1,25**
	50, 63	**36 126**	**KSZ-M12x1,25**
	80, 100	**36 127**	**KSZ-M16x1,5**
	125	**36 128**	**KSZ-M20x1,5**

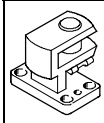
Ordering data – Corrosion and acid resistant piston rod attachments — Technical data ➔ Internet: crsg

Designation	For ∅	Part No.	Type
Rod eye CRSGS			
	12	–	
	16	**195 580**	**CRSGS-M6**
	20, 25	**195 581**	**CRSGS-M8**
	32, 40	**195 582**	**CRSGS-M10x1,25**
	50, 63	**195 583**	**CRSGS-M12x1,25**
	80, 100	**195 584**	**CRSGS-M16x1,5**
	125	**195 585**	**CRSGS-M20x1,5**

Designation	For ∅	Part No.	Type
Rod clevis CRSG			
	12	–	
	16, 20	**13 567**	**CRSG-M6**
	20, 25	**13 568**	**CRSG-M8**
	32, 40	**13 569**	**CRSG-M10x1,25**
	50, 63	**13 570**	**CRSG-M12x1,25**
	80, 100	**13 571**	**CRSG-M16x1,5**
	125	**13 572**	**CRSG-M20x1,5**

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

Designation	For ∅	Part No.	Type
Clevis foot LBG for rod eye SGS			
	32, 40	**31 761**	**LBG-32**
	50, 63	**31 762**	**LBG-40**
	80, 100	**31 763**	**LBG-50**
		31 764	**LBG-63**
	125	**31 765**	**LBG-80**
		31 766	**LBG-100**

Designation	For ∅	Part No.	Type
Right-angle clevis foot LQG for rod eye SGS			
	32, 40	**31 768**	**LQG-32**
	50, 63	**31 769**	**LQG-40**
	80, 100	**31 770**	**LQG-50**
		31 771	**LQG-63**
	125	**31 772**	**LQG-80**
		31 773	**LQG-100**

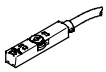
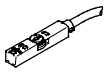
Ordering data – One-way flow control valves — Technical data ➔ Internet: grla

	Connection		Material	Part No.	Type
	For ∅	For tubing O.D.			
For exhaust air					
	12, 16, 20, 25	3	Metal design	**193 137**	**GRLA-M5-QS-3-D**
		4		**193 138**	**GRLA-M5-QS-4-D**
		6		**193 139**	**GRLA-M5-QS-6-D**
	32, 40, 50, 63, 80, 100	3		**193 142**	**GRLA-⅛-QS-3-D**
		4		**193 143**	**GRLA-⅛-QS-4-D**
		6		**193 144**	**GRLA-⅛-QS-6-D**
		8		**193 145**	**GRLA-⅛-QS-8-D**
	125	6		**193 146**	**GRLA-¼-QS-6-D**
		8		**193 147**	**GRLA-¼-QS-8-D**
		10		**193 148**	**GRLA-¼-QS-10-D**

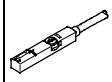
Ordering data – One-way flow control valves — Technical data ➔ Internet: grlz

	Connection		Material	Part No.	Type
	For ∅	For tubing O.D.			
For supply air					
	12, 16, 20, 25	3	Metal design	**193 153**	**GRLZ-M5-QS-3-D**
		4		**193 154**	**GRLZ-M5-QS-4-D**
		6		**193 155**	**GRLZ-M5-QS-6-D**
	32, 40, 50, 63, 80, 100	3		**193 156**	**GRLZ-⅛-QS-3-D**
		4		**193 157**	**GRLZ-⅛-QS-4-D**
		6		**193 158**	**GRLZ-⅛-QS-6-D**
		8		**193 159**	**GRLZ-⅛-QS-8-D**
	125	–		**151 195**	**GRLZ-¼-B**

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**

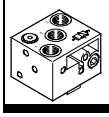
Ordering data – Proximity sensors for T-slot, magnetic reed — Technical data ➔ Internet: sme

	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	**543 862**	**SME-8M-DS-24V-K-2,5-OE**
				5.0	**543 863**	**SME-8M-DS-24V-K-5,0-OE**
			Cable, 2-wire	2.5	**543 872**	**SME-8M-ZS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543 861**	**SME-8M-DS-24V-K-0,3-M8D**
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	**150 855**	**SME-8-K-LED-24**
			Plug M8x1, 3-pin	0.3	**150 857**	**SME-8-S-LED-24**
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	**160 251**	**SME-8-O-K-LED-24**

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

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541 333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541 334**	**NEBU-M8G3-K-5-LE3**
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541 363**	**NEBU-M12G5-K-2.5-LE3**
			5	**541 364**	**NEBU-M12G5-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541 338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541 341**	**NEBU-M8W3-K-5-LE3**
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541 367**	**NEBU-M12W5-K-2.5-LE3**
			5	**541 370**	**NEBU-M12W5-K-5-LE3**

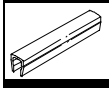
Ordering data – Rectangular proximity sensors, pneumatic — Technical data ➔ Internet: smpo

	Pneumatic connection	Part No.	Type
3/2-way valve, normally closed			
	Female thread M5	**178 563**	**SMPO-8E**

Ordering data – Mounting kits for proximity sensors SMPO-8E — Technical data ➔ Internet: smb

	Assembly	Part No.	Type
	Clamped in T-slot	**178 230**	**SMB-8E**

Ordering data – Slot cover for T-slot

	Assembly	Length	Part No.	Type
	Insertable from above	2x 0.5 m	**151 680**	**ABP-5-S**