Type codes

001	Series	
ADN	Compact cylinder, double-acting, based on ISO 21287	

002	Piston diameter	
20	20	
25	25	
32	32	
40	40	
50	50	
63	63	
80	80	
100	100	

003	Stroke	
...	10 ... 500	

004	Clamping unit	
KP	Attached	

005	Piston rod thread type	
A	Male thread	
I	Female thread	

006	Cushioning	
P	Elastic cushioning rings/plates on both sides	

007	Position sensing	
A	For proximity sensor	

008	Piston rod thread extension	
	None	
...K2	1 ... 30 mm	

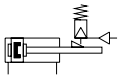
009	Custom thread	
“M6”K5	M6	
“M8”K5	M8	
“M10”K5	M10	
“M10x-1,25”K5	M10x1.25	
“M12”K5	M12	
“M16”K5	M16	
“M20x-1,5”K5	M20x1.5	
“M5”K5	M5	
“M20”K5	M20	

010	Piston rod extension	
	None	
...K8	1 ... 500 mm	

011	Captive rating plate	
	Rating plate, glued	
TL	Laser etched rating plate	

Datasheet

Function



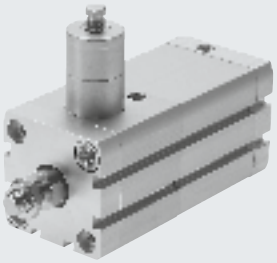
- Diameter
  20 ... 100 mm
- Stroke length
  10 ... 500 mm

Variants

K2

K5

K8



Note

If used in safety-oriented applications, additional measures are necessary, e.g. in Europe the standards listed in the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

General technical data									
Piston ø		20	25	32	40	50	63	80	100
Pneumatic connection									
Cylinders		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 backlash under load	[mm]	0.5				0.8			
Design		Piston							
		Piston rod							
		Cylinder barrel							
Cushioning		Elastic cushioning rings/pads at both ends							
Position sensing		Via proximity switch							
Type of mounting		With through-hole							
		With female thread							
		Via accessories							
Mounting position		Any							
Clamping type with operating direction		At both ends							

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/ pilot medium		Lubricated operation possible (in which case lubrication will always be required)
Operating pressure	[MPa]	0.15 ... 1
	[bar]	1.5 ... 10
Min. release pressure	[MPa]	0.3
	[bar]	3
Ambient temperature[1]	[°C]	–10 ... +80
Corrosion resistance class CRC[2]		2

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

Datasheet

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

Note

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

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

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

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

Forces [N]								
Piston ø	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

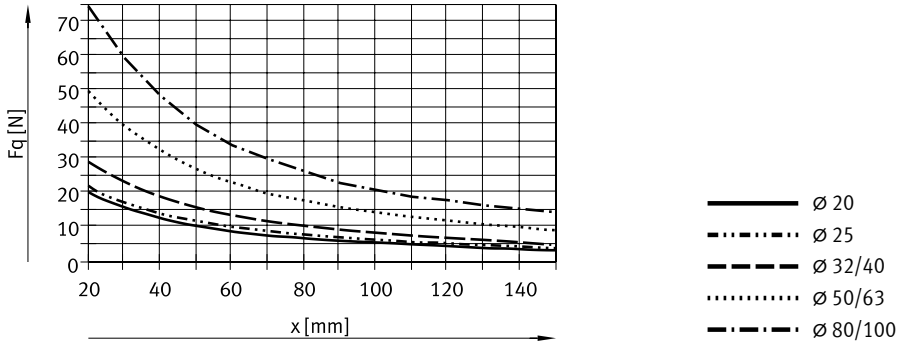
The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must not exceed the static holding force. The clamping unit is not backlash-free in the clamped condition if varying loads are applied to the piston rod

Actuation

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 compressed 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 projection x

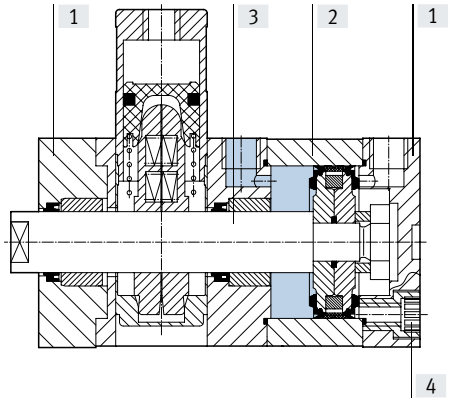


Weight [g]								
Piston ø	20	25	32	40	50	63	80	100
Product weight with 0 mm stroke	282	344	503	789	1268	1894	3973	5497
Additional weight per 10 mm stroke	22	26	29	45	60	68	93	112
Moving mass with 0 mm stroke	53	63	100	173	296	368	755	932
Additional mass per 10 mm stroke	6	6	9	16	25	25	39	39

Datasheet

Materials

Sectional view

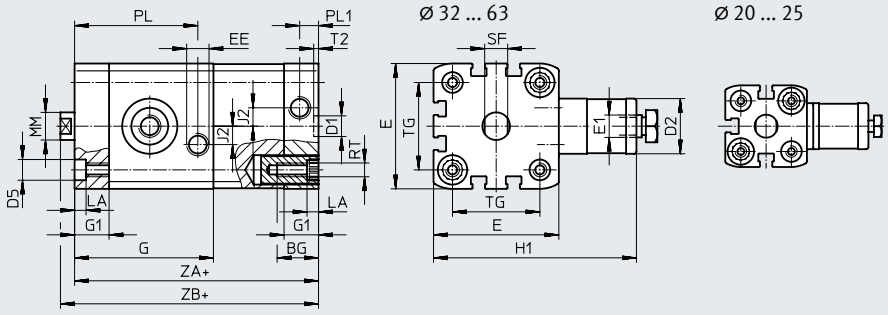


Compact cylinder			
[1]	Cover		Anodised aluminium
[2]	Cylinder barrel		Anodised aluminium
[3]	Piston rod		High-alloy steel
[4]	Flange screws	ø 20 ... 63	Galvanised steel
		ø 80 ... 100	Standard screws, galvanised steel
–	Seals		Polyurethane, nitrile rubber
	Note on materials		RoHS-compliant

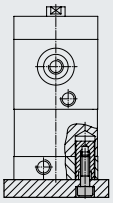
Datasheet

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

Ø 20 ... 63



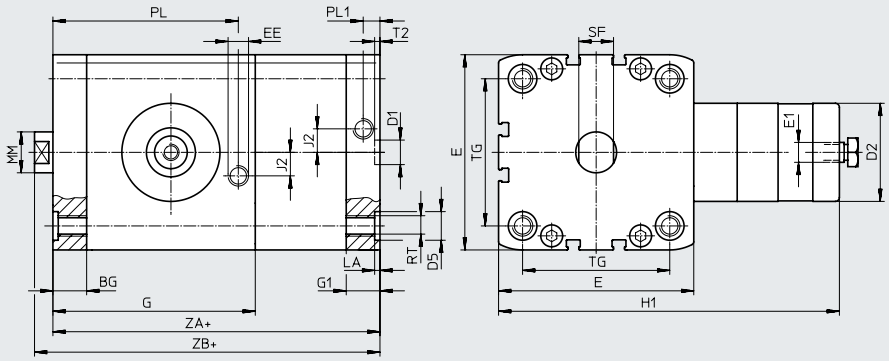
Only direct mounting is possible with this variant.



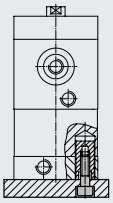
\+ = plus stroke length

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

Ø 80, 100



Only direct mounting is possible with this variant.



\+ = plus stroke length

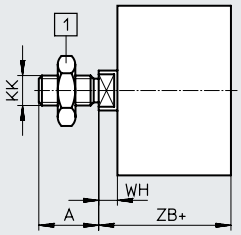
Ø [mm]	BG min.	D1 Ø H9	D2 Ø	D5 Ø	E	E1	EE	G	G1	H1	J2
20	19.5	9	20	9^{F9}	35.5 +0.3	M5	M5	49.8	12	63	2.6
25					39.5 +0.3			50.6		65	
32	26				47 +0.3		G1/8	56.4	15	68	6
40			24		54.5 +0.3	G1/8		60.4		89	8
50	27	12	30	12^{F9}	65.5 +0.3			67.4		108	
63			38		75.5 +0.3			76.8		120	11.5
80	17		48	15	95.5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

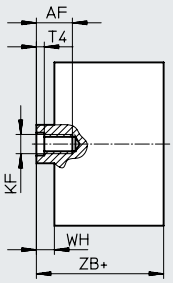
Ø [mm]	PW +0.2	MM Ø	PL +0.2	PL1 +0.2	RT	ST h13	T2 +0.2	TG ±0.2	ZA ±0.6	ZB +1.2
20	5	10	42.8	6	M5	9	2.1	22	74.8	80.8
25			44.6					26	77.6	83.1
32		12	49.6	8.2	M6	10		32.5	85.4	91.4
40		16	53.6			13		38	90.4	96.5
50		20	60.6		M8	17	2.6	46.5	97.4	105.6
63			70					56.5	110.8	118.9
80	2.6	25	90.7		M10	21		72	136.5	145.4
100			88.6	10.5				89	145.1	154.1

Datasheet

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

Basic version

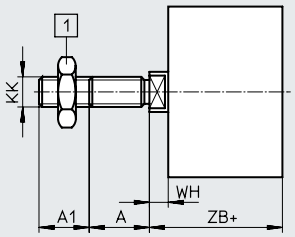




[1] Hex nut DIN 439-B
only with ø 32 ... 100

\+ = plus stroke length

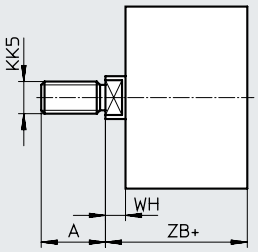
K2 – Extended male piston rod thread

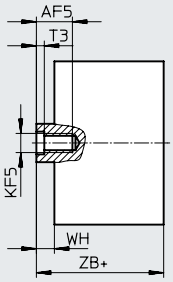


[1] Hex nut DIN 439-B
only with ø 32 ... 100

\+ = plus stroke length

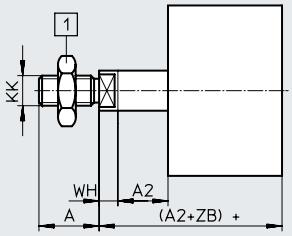
K5 – Custom piston rod thread

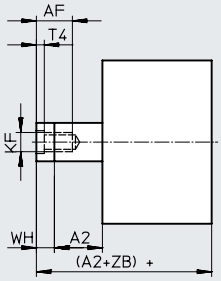




\+ = plus stroke length

K8 – Extended piston rod





[1] Hex nut DIN 439-B
only with ø 32 ... 100

\+ = plus stroke length

Datasheet

ø [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							

ø [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