


# Compact Cylinder Ø 12-100 mm

Series SZ....  
Series SZD....  
Series SZV....

## Versions:

- single acting without cushioning
- double acting without cushioning
- for contactless position sensing
- with through piston rod
- non-rotating
- ATEX-Version 

## Special versions:

- with non-standard stroke lengths
- non-rotating with through piston rod

Compact cylinders are especially suitable for short stroke clamping tasks.

- minimum space requirements
- high clamping forces
- fast response times



## Characteristics

Characteristics	Symbol	Unit	Description					
General Features								
Type			Compact cylinder					
Series			SZ..., SZD..., SZV....					
System			Piston rod cylinder					
SZ6....			Double acting without cushioning For contactless position sensing					
SZ7....			Single acting without cushioning For contactless position sensing					
SZK3....			Single acting without cushioning					
SZD6...			With through piston rod Double acting without cushioning For contactless position sensing					
SZV6...			Non-rotating Double acting without cushioning For contactless position sensing					
Mounting								
Series	SZ..., SZD..		4 screws					
	SZV...		2 screws					
	SZK....		Ø 32 mm: 2 screws Ø 50 - 63 mm: 4 screws See drawing for size dimensions					
Ambient temperature range	$T_{min}$ $T_{max}$	°C	-10					Note: When using below freezing point (°C) please contact us for advice
		°C	+70					
Medium temperature range	$T_{max}$	°C	+70					
Weight (mass)		kg	See table for details					
Medium			Filtered and lubricated or filtered and unlubricated compressed air					
Lubrication			Oil mist lubrication compatible with Buna N					
Material								
Housing			Aluminium profile, anodised					
End cap, top			Aluminium, brass					
SZK3...			Ø12-40: brass, Ø50-100: Al					
SZ7..., SZ6..., SZV6....								
End cap, bottom			Aluminium					
Piston rod			Steel, high-alloy					
Seal			Oil resistant rubber					
Pneumatic Characteristics – Series SZ 6..., SZ7..., SZD6..., SZK3...								
Nominal pressure	$p_n$	bar	6					
Piston diameter		mm	12	16	20	25	32	
Operating pressure range								
SZK3...	$p_{max}$	bar	–	–	–	–	10	
SZ7..., SZ6..., SZV6...	$p_{min/max}$	bar	1-10	1-10	1-10	1-10	1-10	
SZD6...	$p_{min/max}$	bar	–	–	1-10	1-10	1-10	
	$p_{min/max}$	bar	2.5-10	2-10	2-10	1.5-10	1.5-10	
Piston diameter		mm	40	50	63	80	100	
Operating pressure range								
SZK3...	$p_{max}$	bar	–	10	10	–	–	
SZ7..., SZ6..., SZV6...	$p_{min/max}$	bar	1-10	1-10	1-10	1-10	1-10	
SZD6...	$p_{min/max}$	bar	1-10	1-10	1-10	–	–	
	$p_{min/max}$	bar	2.5-10	2-10	2-10	1.5-10	1.5-10	

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Piston force and air consumption see page 9, dimensions see page 80, 82, order instructions see page 83, 84

Characteristics – Continuation						
Piston diameter	mm	12	16	20	25	32
Port size						
SZK3...		–	–	–	–	G1/8
SZ7..., SZ6..., SZV6...		M5	M5	M5	G1/8	G1/8
SZD6...		–	–	–	–	G1/8
SZD6...		M5	M5	M5	G1/8	G1/8
Piston diameter	mm	40	50	63	80	100
Port size						
SZK3...		–	G1/8	G1/8	–	–
SZ7..., SZ6..., SZV6...		G1/8	G1/8	G1/8	G1/4	G1/4
SZD6...		G1/8	G1/8	G1/8	–	–
SZD6...		G1/8	G1/8	G1/8	G1/4	G1/4
Piston diameter	mm	12	16	20	25	32
Piston rod diameter						
SZK3...		–	–	–	–	12
SZ7..., SZ6..., SZV6...		6	8	10	12	12
SZD6...		–	–	10	12	12
SZD6...		6	8	10	12	12
Piston diameter	mm	40	50	63	80	100
Piston rod diameter						
SZK3...		–	16	16	–	–
SZ7..., SZ6..., SZV6...		16	20	20	25	32
SZD6...		16	20	20	–	–
SZD6...		16	20	20	25	32
Stroke length						
SZK3...	mm	Ø32: 5, 10, Ø50-63: 10				
SZ7...	mm	max. 25, standard stroke lengths see order instructions				
SZ6..., SZD6..., SZV6...	mm	max. 80, standard stroke lengths see order instructions				
		Further stroke lengths on request				
Piston force and air consumption		See page 9				

#### Spring Return Force in N\*

Series	Stroke length (mm)	F <sub>min</sub> (N)									
		Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
SZK3...	1 <sup>1)</sup>	–	–	–	–	53	–	173	254	–	–
SZ7...	5	8	15	23	26	38	48	–	–	–	–
SZ7...	10	6	12	19	21	28	38	70	90	114	138
SZ7...	25	–	11	19	20	28	38	48	67	90	120

\* theoretical value

<sup>1)</sup> stroke lengths for series SZK3...: Ø32: 5 mm, 10 mm, Ø50-63: 10 mm

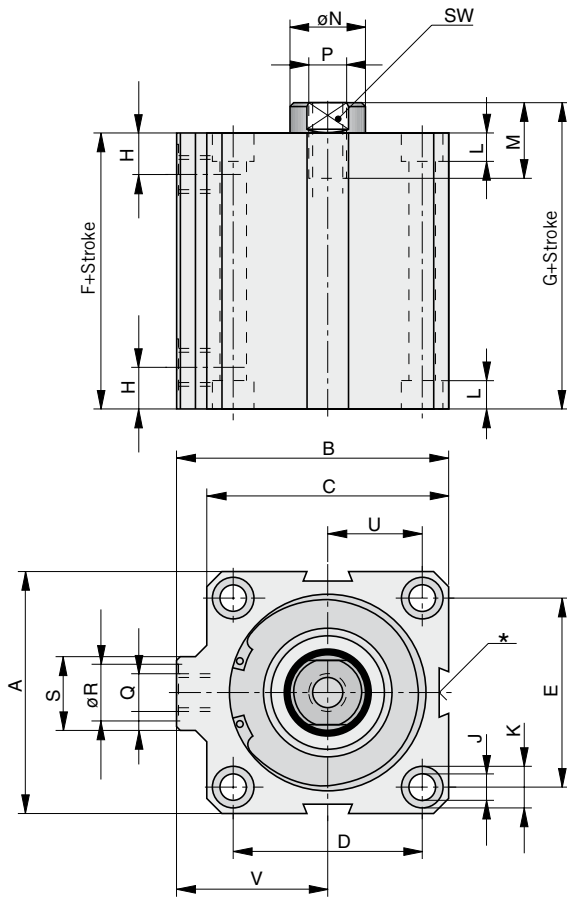
#### Weight (mass) kg

Series	Cylinder diameter																			
	Ø12		Ø16		Ø20		Ø25		Ø32		Ø40		Ø50		Ø63		Ø80		Ø100	
	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*	1*	2*
SZK3...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SZ7...	0.050	0.013	0.080	0.018	0.110	0.022	0.160	0.033	0.230	0.042	0.350	0.059	0.500	0.080	0.900	0.108	1.300	0.138	2.100	0.213
SZ6...	0.050	0.013	0.080	0.018	0.110	0.022	0.160	0.033	0.230	0.042	0.350	0.059	0.500	0.080	0.900	0.108	1.300	0.138	2.100	0.213
SZD6...	0.060	0.015	0.100	0.022	0.140	0.028	0.200	0.042	0.280	0.051	0.430	0.075	0.640	0.104	1.060	0.133	1.560	0.176	2.540	0.276
SZV6...	–	–	–	–	0.220	0.024	0.280	0.036	0.350	0.046	0.480	0.065	0.650	0.090	1.200	0.115	–	–	–	–

\* 1 = Weight for cylinder with 10 mm stroke

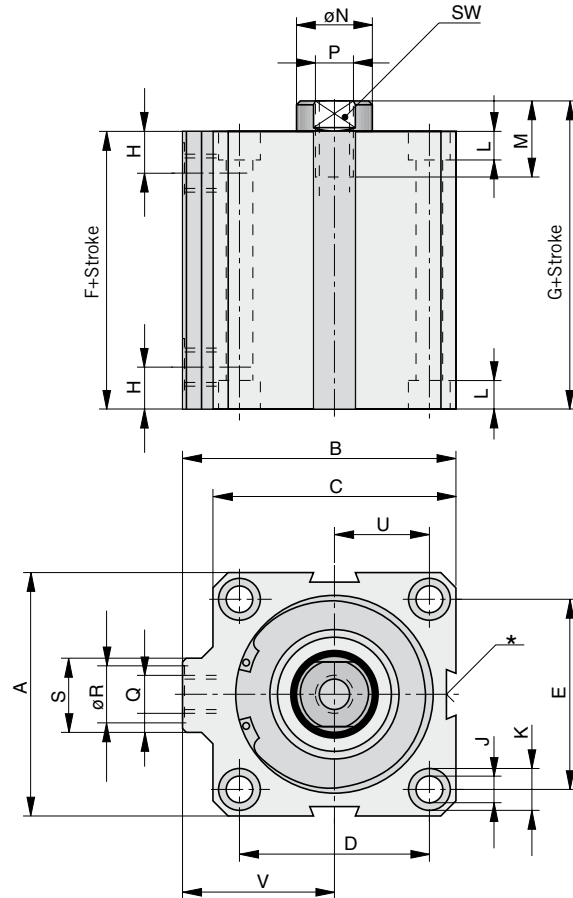
2 = Weight per additional 10 mm stroke length for series SZK3... stroke see table

Dimensions – Cylinder, Series SZ7..., Ø 12 – 100 mm



\* are omitted for cyl. Ø12 to 20 mm

Dimensions – Cylinder, Series SZ6..., Ø 12 – 100 mm



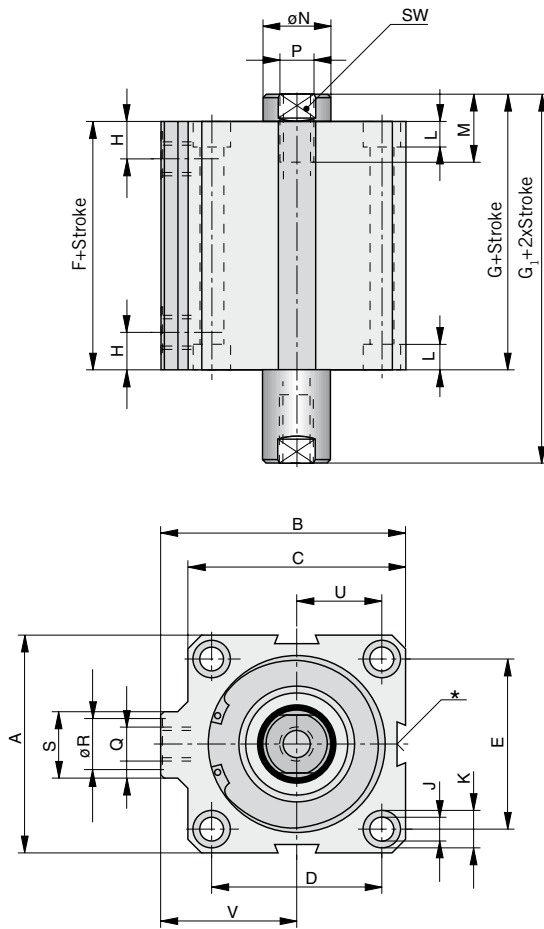
\* are omitted for cyl. Ø12 to 20 mm

Dimension Table (mm), dimensions depending on stroke – Series SZ7..., SZ6..., SZD6..., SZV...,

Cyl. Ø	Standard stroke lengths (mm) SZ7...	Standard stroke lengths (mm) SZ6...	F+stroke SZ7...	G+stroke SZ7...	F+stroke SZ6... SZV6... **	G+stroke SZ6... SZV6... **	F+Hub SZD6...	G+stroke SZD6...	G <sub>1</sub> +2xstroke SZD6...
12	5/10	5/10	34	38.5	34	38.5	34	38.5	43
16	5/10	5/10/15/25	34.5	40	34.5	40	34.5	40	45.5
16	15/25	–	44.5	50	–	–	–	–	–
20	5/10	5/10/15/25/50	36	42	36	42	36	42	48
20	15/25	–	46	52	–	–	–	–	–
25	5/10	5/10/15/25/50	38.5	45	38.5	45	38.5	45	51.5
25	15/25	–	48.5	55	–	–	–	–	–
32	5/10/15/25	5/10/15/25/50/80	39	45.5	39	45.5	39	45.5	52.5
40	5/10/15/25	5/10/15/25/50/80	41.5	48.5	41.5	48.5	41.5	48.5	55.5
50	10/15/25	10/15/25/50/80	45	53.5	45	53.5	45	53.5	61.5
63	10/15/25	10/15/25/50/80	52.5	60.5	52.5	60.5	52.5	60.5	69.5
80	10/15/25	10/15/25/50/80	57	66.5	57	66.5	57	66.5	76
100	10/15/25	10/15/25/50/80	58.5	69.5	58.5	69.5	58.5	69.5	80.5

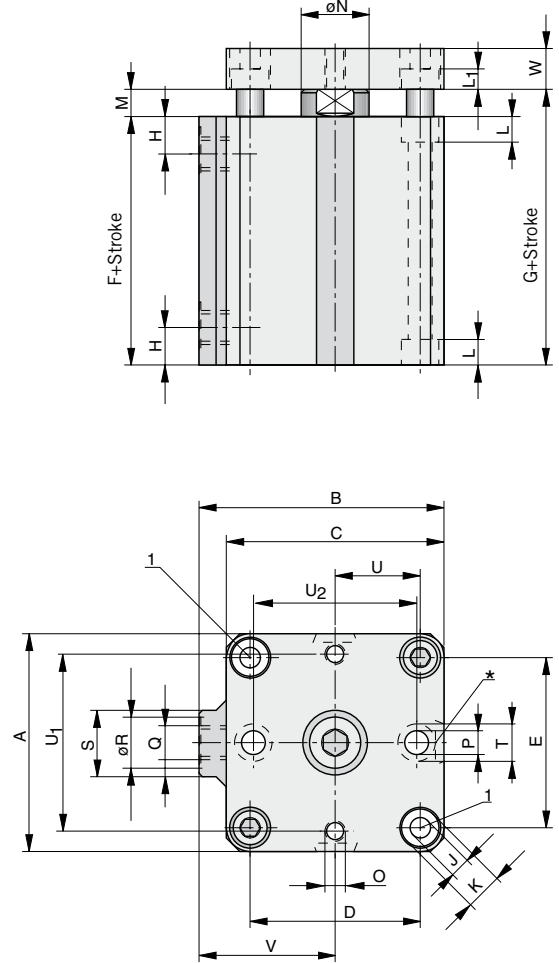
\*\* only Ø20 – 63 mm

Dimensions – Cylinder, Series SZD6..., Ø 12 – 100 mm



\* are omitted for cyl. Ø12 to 20 mm

Dimensions – Cylinder, Series SZV6..., Ø 20 – 63 mm

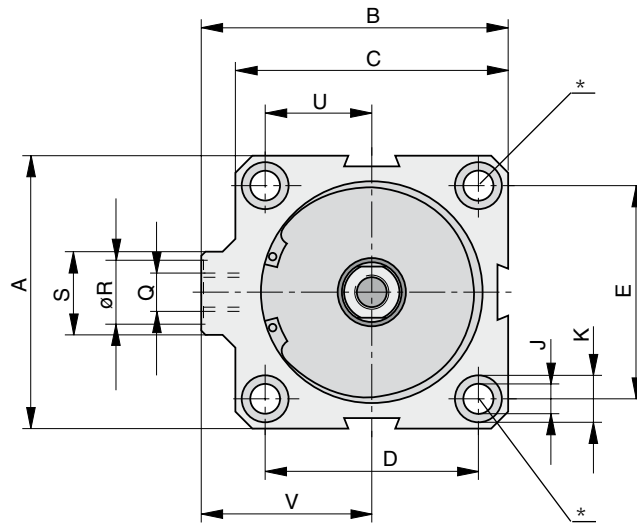
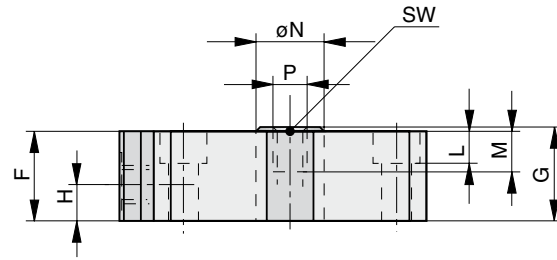


\* is omitted for cyl. Ø 20 mm  
<sup>1)</sup> Mounting holes for cylinder

Dimension Table (mm), general dimensions – Series SZ7..., SZ6..., SZD6..., SZV...,

Cyl. Ø	A	B	C	D	E	H	ØJ	ØK	L	L <sub>1</sub>	M	ØN	P	Q	ØR	S	U	V	W	SW
12	23	27	25	17.4	13	10	4.0	6	3.5	–	6	6	M3	M5	8	11	8.6	14.5	–	5
16	28	30	28	20	20	10.5	4.0	6	3.5	–	8	8	M4	M5	8	11	10	16	–	6
20	32	34	32	22	22	11	4.5	7.5	4.8	5	8	10	M5	M5	8	11	11	18	8	8
25	37	44	39	28	26	11.5	4.5	7.5	4.8	5	12	12	M6	G1/8	15	19	14	24.5	8	10
32	45	52	48	36	32	11.5	5.5	10	5.8	6	12	12	M8	G1/8	15	19	18	28	10	10
40	55	59	55	41	41	12.5	6.7	11	6.8	6	12	16	M8	G1/8	15	19	20.5	31.5	10	13
50	64	72	64	50	50	13.5	6.7	11	6.8	7	17.5	20	M10	G1/8	15	19	25	40	12	17
63	80	88	80	62	62	15.5	8.5	14	8.3	9	17.5	20	M12	G1/8	15	23	31	48	12	17
80	94	104	94	73	73	16	8.5	14	8.3	–	25	25	M16	G1/4	19	23	36.5	57	–	22
100	117	125.5	117	90.5	90.5	16	10.5	18	11	–	28	32	M20	G1/4	19	23	45.25	67	–	27

Dimensions – Cylinder, Series SZK3..., Ø 32, 50, 63 mm



\* is omitted for cyl. Ø32 mm

Series	A	B	C	D	E	F	G	H	J	K	L	M	ØN	Q	P	ØR	S	U	V	SW
SZK3032/5	45	52	48	-	32	27	28	8.5	5.5	10	5.7	12	12	G1/8	M6	15	19	18	28	10
SZK3032/10	45	52	48	-	32	32	33	8.5	5.5	10	5.7	12	12	G1/8	M6	15	19	18	28	10
SZK3050/10	64	72	64	50	50	30	31	8.5	6.7	11	6.8	12	16	G1/8	M8	15	19	25	40	13
SZK3063/10	80	88	80	62	62	35	36	8.5	8.5	14	8.3	12	16	G1/8	M8	15	23	31	48	13


Accessories

Magnetic Switch



Piston force and air consumption see page 9, order instructions see page 83, 84

**Order Instructions – Cylinder, Series SZ7 ....., Ø 12 – 100 mm**

System	Symbol	Piston-Ø	Order Instructions	
			Type	Order-No.
Single acting without cushioning For contactless position sensing		12	SZ7012/..	PA67330-....
		16	SZ7016/..	PA67340-....
		20	SZ7020/..	PA67350-....
		25	SZ7025/..	PA67360-....
		32	SZ7032/..	PA58160-....
		40	SZ7040/..	PA59070-....
		50	SZ7050/..	PA60140-....
		63	SZ7063/..	PA61090-....
		80	SZ7080/..	PA62100-....
		100	SZ7100/..	PA63010-....

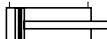
Complete Stroke Length (mm)

(4-digit)

Standard Stroke Lengths

Cyl. Ø	Stroke Lengths (mm)
12	5, 10
16, 20, 25, 32, 40	5, 10, 15, 25
50, 63, 80, 100	10, 15, 25

**Order Instructions – Cylinder, Series SZ6 ....., Ø 12 – 100 mm**

System	Symbol	Piston-Ø	Order Instructions	
			Type	Order-No.
Double acting without cushioning For contactless position sensing		12	SZ6012/..	PA67290-....
		16	SZ6016/..	PA67300-....
		20	SZ6020/..	PA67310-....
		25	SZ6025/..	PA67320-....
		32	SZ6032/..	PA58150-....
		40	SZ6040/..	PA59060-....
		50	SZ6050/..	PA60150-....
		63	SZ6063/..	PA61100-....
		80	SZ6080/..	PA62090-....
		100	SZ6100/..	PA63000-....

Complete Stroke Length (mm)

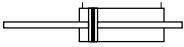
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Standard Stroke Lengths

Cyl. Ø	Stroke Lengths (mm)
12	5, 10
16	5, 10, 15, 25
20, 25	5, 10, 15, 25, 50
32, 40	5, 10, 15, 25, 50, 80
50, 63, 80, 100	10, 15, 25, 50, 80

Further stroke lengths available on request.

### Order Instructions – Cylinder, Series SZD6...., Ø 12 – 100 mm

System	Symbol	Piston-Ø	Order Instructions	
			Type	Order-No.
With through piston rod Double acting without cushioning For contactless position sensing		12	SZD6012/..	PA67610-....
		16	SZD6016/..	PA67620-....
		20	SZD6020/..	PA67630-....
		25	SZD6025/..	PA67640-....
		32	SZD6032/..	PA58230-....
		40	SZD6040/..	PA59150-....
		50	SZD6050/..	PA60220-....
		63	SZD6063/..	PA61160-....
		80	SZD6080/..	PA62120-....
		100	SZD6100/..	PA63030-....

Complete Stroke Length (mm)


(4-digit)

Standard Stroke Lengths

Cyl. Ø	Stroke Lengths (mm)
12	5, 10
16	5, 10, 15, 25
20, 25	5, 10, 15, 25, 50
32, 40	5, 10, 15, 25, 50, 80
50, 63, 80, 100	10, 15, 25, 50, 80

Further stroke lengths available on request.

### Order Instructions – Cylinder, Series SZV6...., Ø 20 – 63 mm

System	Symbol	Piston-Ø	Order Instructions	
			Type	Order-No.
Non-rotating Double acting without cushioning For contactless position sensing		20	SZV6020/..	PA67370-....
		25	SZV6025/..	PA67380-....
		32	SZV6032/..	PA58190-....
		40	SZV6040/..	PA59100-....
		50	SZV6050/..	PA60130-....
		63	SZV6063/..	PA61080-....

Complete Stroke Length (mm)

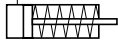
(4-digit)

Standard Stroke Lengths

Cyl. Ø	Stroke Lengths (mm)
20, 25	5, 10, 15, 25, 50
32, 40	5, 10, 15, 25, 50, 80
50, 63, 80, 100	10, 15, 25, 50, 80

Further stroke lengths available on request.

### Order Instructions – Cylinder, Series SZK3...., Ø 32, 50, 63 mm

System	Symbol	Piston-Ø	Order Instructions	
			Type	Order-No.
Single acting		32	SZK3032/5	PD35344-0005
		32	SZK3032/10	PD35344-0010
		50	SZK3050/10	PD35331-0010
		63	SZK3063/10	PD35346-0010

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