

PNEUMATIC CYLINDERS

BSG CYLINDERS

• SERIES 19 - COMPACT CYLINDERS •

• SERIES B - BRASS CYLINDERS •

• SERIES MC - ROUND CYLINDERS •

• SERIES CB - SHORT STROKE •

• SERIES 39 - MINIATURE SHORT STROKE •

• SERIES 41 - SHORT STROKE •

• SERIES UR - ROTARY CYLINDERS •

• SERIES 70 - MINIATURE ROTARY CYLINDERS •

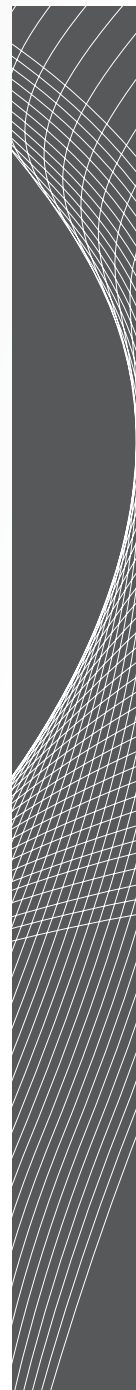
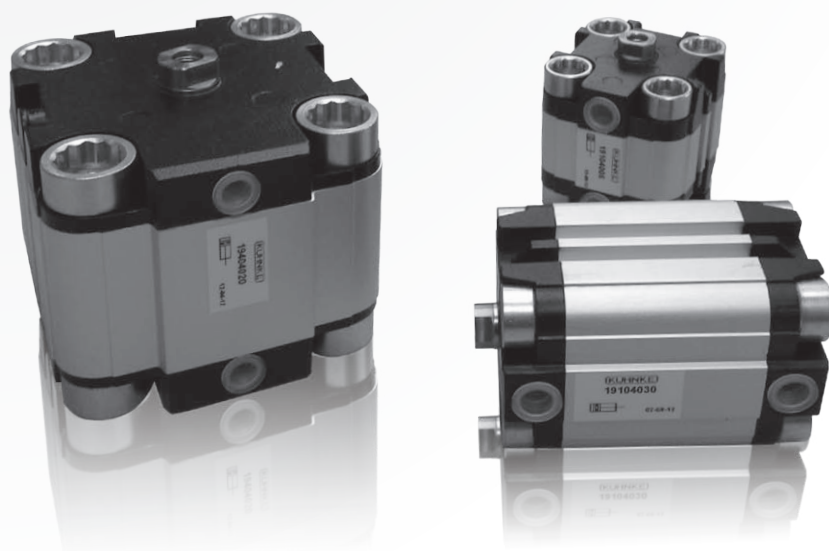
• SERIES Z - RODLESS CYLINDERS •

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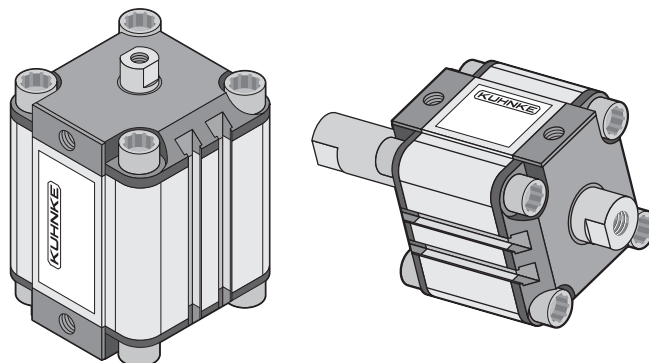
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SERIES 19 COMPACT CYLINDERS



COMPACT CYLINDERS

General Information



A versatile, robust and reliable design of cylinder for use where space is limited, these cylinders are suitable for a wide range of applications. Cylinder variations include: single or double acting,

through rod, torsion protected with or without magnetic piston, PUR or Viton seals, female or male threaded rod, also a full range of mounting accessories and sensors are available.

Technical Data

Piston diameters:	Ø 12, 16, 20, 25, 32, 40, 50, 63, 80, 100 (mm)										
Connection thread:	M5, G1/8, G1/4										
Cap:	Aluminium diecasting										
Piston rod:	Stainless steel										
Housing:	Aluminium section tube										
Piston rod bushing:	Maintenance free										
Seals:	PUR, special seals upon request										
Pressure range:	1.5 - 10 bar										
Operating medium:	Compressed air, prepared, lubricant not necessary										
Cushioning:	Integrated cushioning rings										
Operating temperature:	-20 °C to +80 °C										
Stroke limitation:	Max. stroke +1.5 mm										
Mounting type:	External cylinder bolts are internally female threaded										
Force at 6 bar:	Ø [mm]	12	16	20	25	32	40	50	63	80	100
	Single Acting <i>N [push]</i>	63	114	183	279	464	738	1.140	1.820	2.933	4.570
	Single Acting <i>N [spring]</i>	5	6	6	15	18	16	37	48	81	140
	Double Acting <i>N [push]</i>	68	121	188	295	483	754	1.178	1.870	3.016	4.712
	Double Acting <i>N [pull]</i>	51	91	140	247	415	686	1.057	1.749	2.828	4.418
	Through Rod <i>N [push/pull]</i>	51	91	140	247	415	686	1.057	1.749	2.828	4.418
Mounting position:	Any position										

Order Code

Order Code	19.	2	0	4.	025
Series Number	19				
Piston diameter					
Ø 12		7			
Ø 16		8			
Ø 20		9			
Ø 25		0			
Ø 32		1			
Ø 40		2			
Ø 50		3			
Ø 63		4			
Ø 80		5			
Ø 100		6			
Application					
standard (female threaded piston rod)			0		
through rod (female threaded piston rod)			3		
torsion protected			4		
male threaded piston rod			9		
Version					
single acting magnetic				5	
single acting non-magnetic				7	
double acting magnetic				4	
double acting non-magnetic				6	
Stroke					
mm					xxx

Special versions	KH.	1	0	4.	050.	zzzz
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zzzz = project number (assigned by factory)

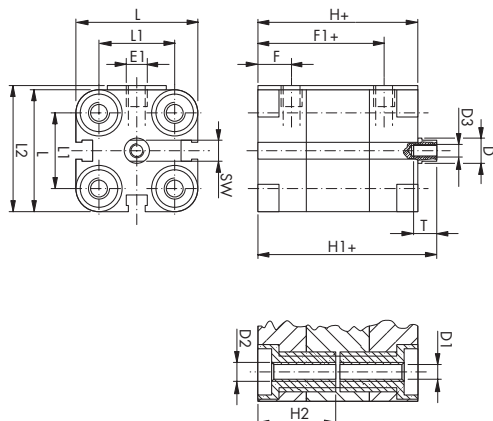
Accessories - Order Code

Order Code	19.	2	08.	11
Series Number	19			
Piston diameter				
diameter number as previous table		d		
Type				
accessories			08	
Application				
complete seal kit for non-magnetic cylinder				11

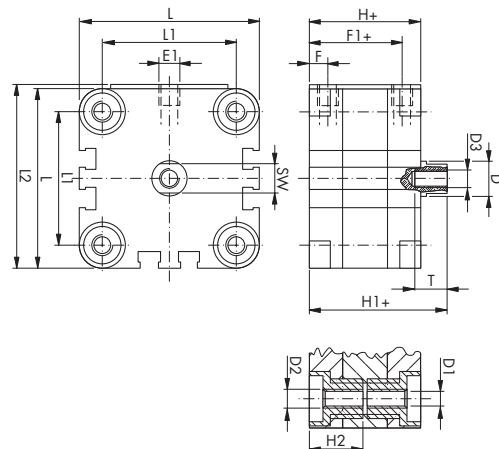
Compact Cylinders - Single Acting Type

Female Threaded Piston Rod

Piston Ø 12 - 25 mm



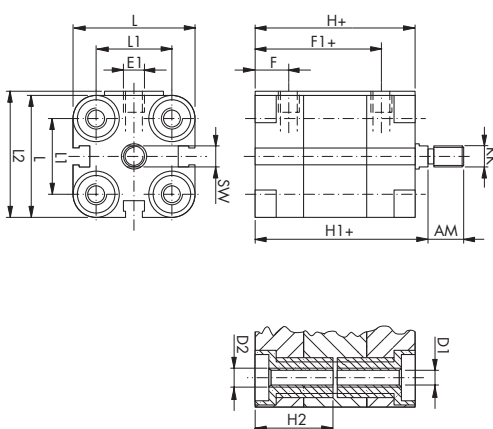
Piston Ø 32 - 100 mm



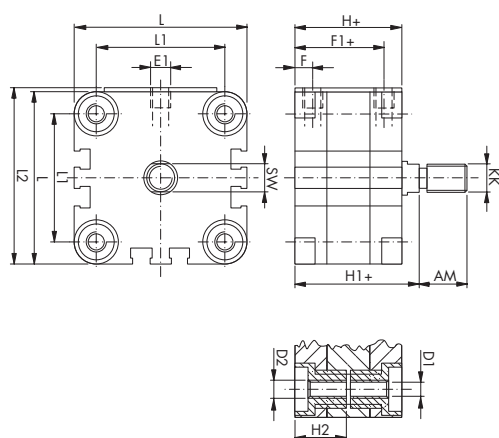
Ø	Stroke (mm)	D	D1	D2	D3	E1	F	F1	H	H1	H2	L	L1	L2	SW	T	Press. min. (bar)
12	5 - 10	6	3.5	M4	M3	M5	8	30	38	42.5	18.5	29	18	30	5	6	1.2
16	5 - 25	8	3.5	M4	M4	M5	8	30	38	42.5	18.5	29	18	30	7	8	1.2
20	5 - 25	10	4.5	M5	M5	M5	8	30	38	42.5	18.5	36	22	37.5	8	10	1
25	5 - 25	10	4.5	M5	M5	M5	8	31.5	39.5	45	18.5	40	26	41.5	8	10	1
32	5 - 25	12	5.5	M6	M6	G1/8	8	36.5	44.5	50.5	21.5	50	32	52	10	12	0.6
40	5 - 25	12	5.5	M6	M6	G1/8	8	37.5	45.5	52	21.5	60	42	62.5	10	12	0.6
50	10 - 25	16	6.5	M8	M8	G1/8	8	37.5	45.5	53	22	68	50	71	13	12	0.6
63	10 - 25	16	8.5	M10	M8	G1/8	8	42	50	57.5	24.5	87	62	91	13	12	0.6
80	10 - 25	20	8.5	M10	M10	G1/8	8.5	47.5	56	64	27.5	107	82	111	17	16	0.6
100	10 - 25	25	8.5	M10	M12	G1/4	10.5	56	66.5	76.5	32.5	128	103	133	22	20	0.6

Male Threaded Piston Rod

Piston Ø 12 - 25 mm



Piston Ø 32 - 100 mm

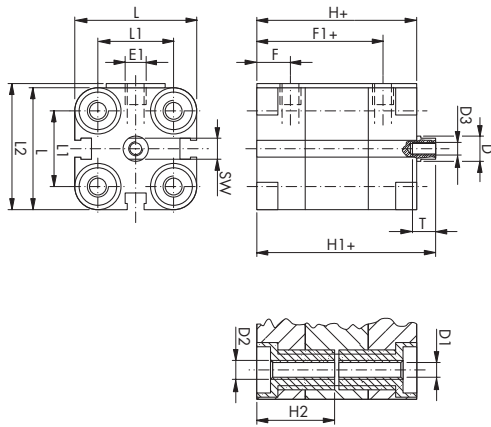


Ø	Stroke (mm)	AM	KK	AM	D1	D2	E1	F	F1	H	H1	H2	L	L1	L2	SW	Press. min. (bar)
12	5 - 10	16	M6	16	3.5	M4	M5	8	30	38	42.5	18.5	29	18	30	5	1.2
16	5 - 25	20	M8	20	3.5	M4	M5	8	30	38	42.5	18.5	29	18	30	7	1.2
20	5 - 25	22	M10x1.25	22	4.5	M5	M5	8	30	38	42.5	18.5	36	22	37.5	8	1
25	5 - 25	22	M10x1.25	22	4.5	M5	M5	8	31.5	39.5	45	18.5	40	26	41.5	8	1
32	5 - 25	22	M10x1.25	22	5.5	M6	G1/8	8	36.5	44.5	50.5	21.5	50	32	52	10	0.6
40	5 - 25	22	M10x1.25	22	5.5	M6	G1/8	8	37.5	45.5	52	21.5	60	42	62.5	10	0.6
50	10 - 25	24	M12x1.25	24	6.5	M8	G1/8	8	37.5	45.5	53	22	68	50	71	13	0.6
63	10 - 25	24	M12x1.25	24	8.5	M10	G1/8	8	42	50	57.5	24.5	87	62	91	13	0.6
80	10 - 25	32	M16x1.5	32	8.5	M10	G1/8	8.5	47.5	56	64	27.5	107	82	111	17	0.6
100	10 - 25	40	M20x1.5	40	8.5	M10	G1/4	10.5	56	66.5	76.5	32.5	128	103	133	22	0.6

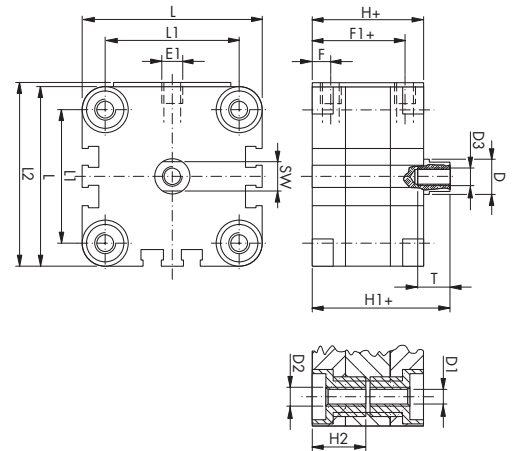
Compact Cylinders - Double Acting Type

Female Threaded Piston Rod

Piston Ø 12 - 25 mm



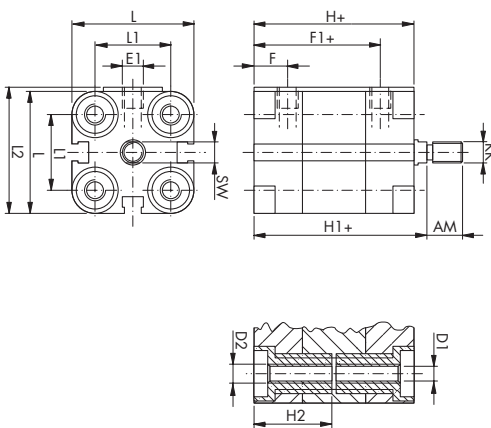
Piston Ø 32 - 100 mm



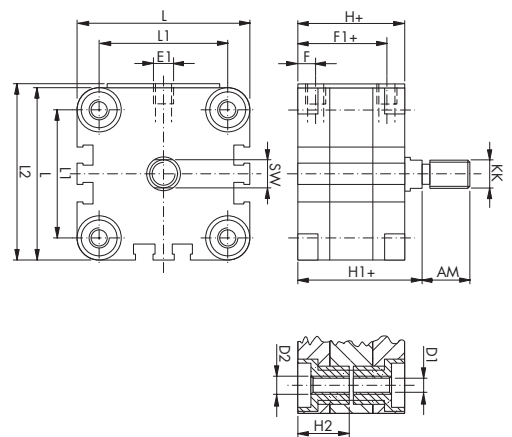
Ø	Stroke (mm)	D	D1	D2	D3	E1	F	F1	H	H1	H2	L	L1	L2	SW	T	Press. min. (bar)
12	5 - 200	6	3.5	M4	M3	M5	8	30	38	42.5	18.5	29	18	30	5	6	1
16	5 - 200	8	3.5	M4	M4	M5	8	30	38	42.5	18.5	29	18	30	7	8	1
20	5 - 200	10	4.5	M5	M5	M5	8	30	38	42.5	18.5	36	22	37.5	8	10	1
25	5 - 200	10	4.5	M5	M5	M5	8	31.5	39.5	45	18.5	40	26	41.5	8	10	1
32	5 - 300	12	5.5	M6	M6	G1/8	8	36.5	44.5	50.5	21.5	50	32	52	10	12	0.6
40	5 - 300	12	5.5	M6	M6	G1/8	8	37.5	45.5	52	21.5	60	42	62.5	10	12	0.6
50	10 - 300	16	6.5	M8	M8	G1/8	8	37.5	45.5	53	22	68	50	71	13	12	0.6
63	10 - 300	16	8.5	M10	M8	G1/8	8	42	50	57.5	24.5	87	62	91	13	12	0.6
80	10 - 400	20	8.5	M10	M10	G1/8	8.5	47.5	56	64	27.5	107	82	111	17	16	0.6
100	10 - 400	25	8.5	M10	M12	G1/4	10.5	56	66.5	76.5	32.5	128	103	133	22	20	0.6

Male Threaded Piston Rod

Piston Ø 12 - 25 mm



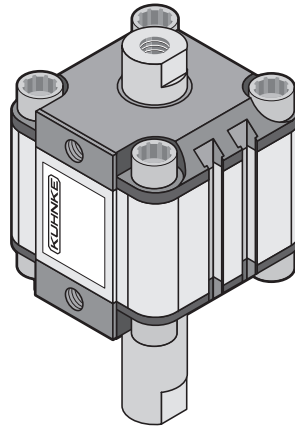
Piston Ø 32 - 100 mm



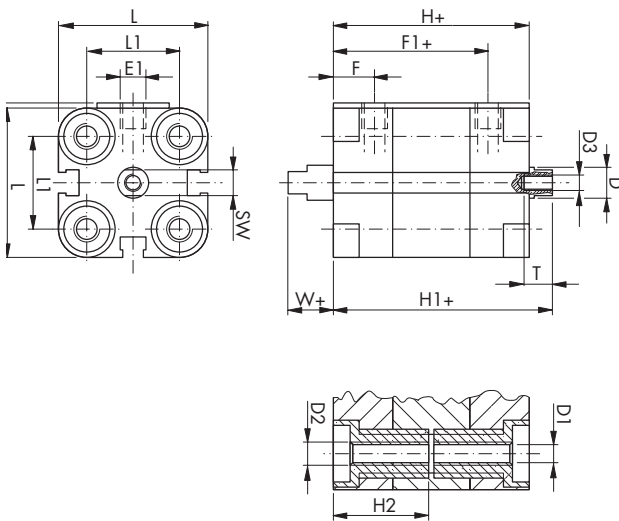
Ø	Stroke (mm)	AM	KK	AM	D1	D2	E1	F	F1	H	H1	H2	L	L1	L2	SW	Press. min. (bar)
12	5 - 200	16	M6	16	3.5	M4	M5	8	30	38	42.5	18.5	29	18	30	5	1
16	5 - 200	20	M8	20	3.5	M4	M5	8	30	38	42.5	18.5	29	18	30	7	1
20	5 - 200	22	M10x1.25	22	4.5	M5	M5	8	30	38	42.5	18.5	38	22	37.5	8	1
25	5 - 200	22	M10x1.25	22	4.5	M5	M5	8	31.5	39.5	45	18.5	40	26	41.5	8	1
32	5 - 300	22	M10x1.25	22	5.5	M6	G1/8	8	36.5	44.5	50.5	21.5	50	32	52	10	0.6
40	5 - 300	22	M10x1.25	22	5.5	M6	G1/8	8	37.5	45.5	52	21.5	60	42	62.5	10	0.6
50	10 - 300	24	M12x1.25	24	6.5	M8	G1/8	8	37.5	45.5	53	22	68	50	71	13	0.6
63	10 - 300	24	M12x1.25	24	8.5	M10	G1/8	8	42	50	57.5	24.5	87	62	91	13	0.6
80	10 - 400	32	M16x1.5	32	8.5	M10	G1/8	8.5	47.5	56	64	27.5	107	82	111	17	0.6
100	10 - 400	40	M20x1.5	40	8.5	M10	G1/4	10.5	56	66.5	76.5	32.5	128	103	133	22	0.6

Compact Cylinders - Double Acting & Through Rod Type

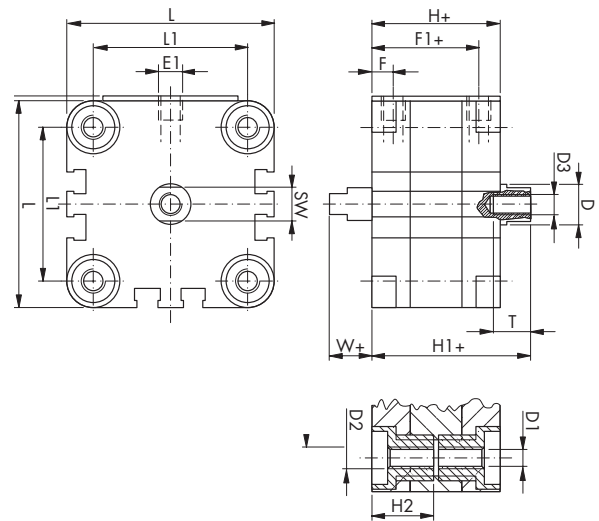
Female Threaded Piston Rod



Piston Ø 12 - 25 mm

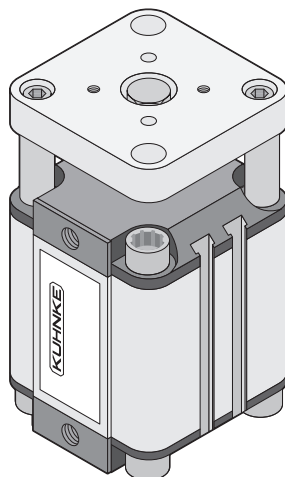


Piston Ø 32 - 100 mm

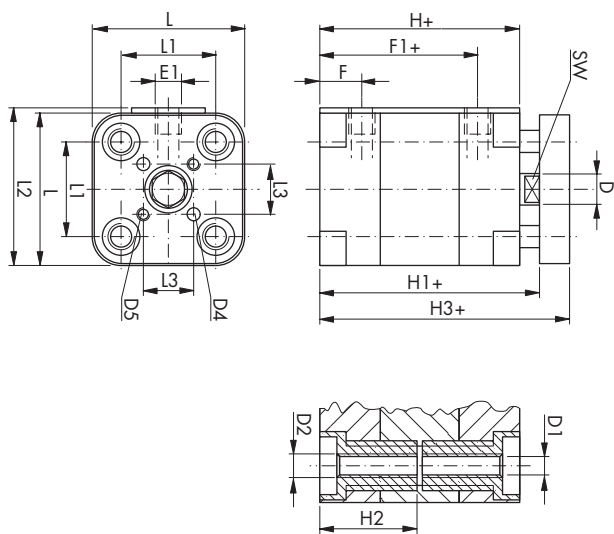


Ø	Stroke (mm)	D	D1	D2	D3	E1	F	F1	H	H1	H2	L	L1	L2	SW	T	W	Press. min. (bar)
12	5 - 200	6	3.5	M4	M3	M5	8	30	38	42.5	18.5	29	18	30	5	6	4.5	1
16	5 - 200	8	3.5	M4	M4	M5	8	30	38	42.5	18.5	29	18	30	7	8	4.5	1
20	5 - 200	10	4.5	M5	M5	M5	8	30	38	42.5	18.5	36	22	37.5	8	10	4.5	1
25	5 - 200	10	4.5	M5	M5	M5	8	31.5	39.5	45	18.5	40	26	41.5	8	10	5.5	1
32	5 - 300	12	5.5	M6	M6	G1/8	8	36.5	44.5	50.5	21.5	50	32	52	10	12	6	0.6
40	5 - 300	12	5.5	M6	M6	G1/8	8	37.5	45.5	52	21.5	60	42	62.5	10	12	6.5	0.6
50	10 - 300	16	6.5	M8	M8	G1/8	8	37.5	45.5	53	22	68	50	71	13	12	7.5	0.6
63	10 - 300	16	8.5	M10	M8	G1/8	8	42	50	57.5	24.5	87	62	91	13	12	7.5	0.6
80	10 - 400	20	8.5	M10	M10	G1/8	8.5	47.5	56	64	27.5	107	82	111	17	16	8	0.6
100	10 - 400	25	8.5	M10	M12	G1/4	10.5	56	66.5	76.5	32.5	128	103	133	22	20	10	0.6

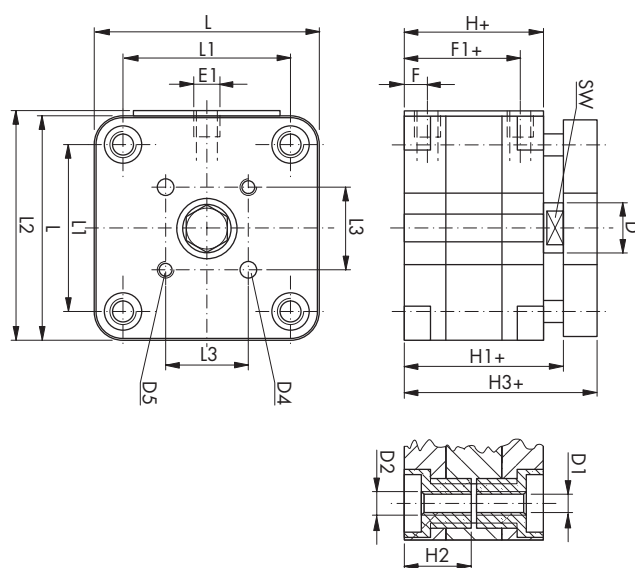
Compact Cylinders - Double Acting & Torsion Protected Type



Piston Ø 12 - 25 mm

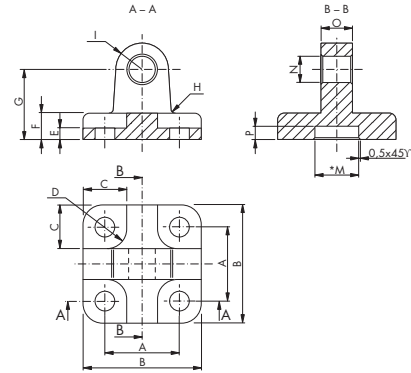
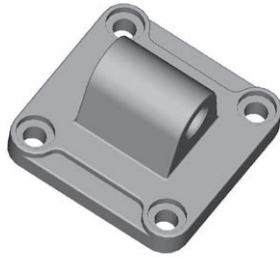


Piston Ø 32 - 100 mm



Ø	Stroke (mm)	D	D1	D2	D4	D5	E1	F	F1	H	H1	H2	H3	L	L1	L2	L3	SW	Press. min. (bar)
12	5 - 200	6	3.5	M4	3	M3	M5	8	30	38	42.5	18.5	48.5	29	18	30	9.9	5	1.5
16	5 - 200	8	3.5	M4	3	M3	M5	8	30	38	42.5	18.5	48.5	29	18	30	9.9	7	1.5
20	5 - 200	10	4.5	M5	4	M4	M5	8	30	38	42.5	18.5	50.5	36	22	37.5	12	8	1.5
25	5 - 200	10	4.5	M5	5	M5	M5	8	31.5	39.5	45	18.5	53	40	26	41.5	15.6	8	1.5
32	5 - 300	12	5.5	M6	5	M5	G1/8	8	36.5	44.5	50.5	21.5	60.5	50	32	52	19.8	10	1
40	5 - 300	12	5.5	M6	5	M5	G1/8	8	37.5	45.5	52	21.5	62	60	42	62.5	23.3	10	1
50	10 - 300	16	6.5	M8	6	M6	G1/8	8	37.5	45.5	53	22	65	68	50	71	29.7	13	1
63	10 - 300	16	8.5	M10	6	M6	G1/8	8	42	50	57.5	24.5	69.5	87	62	91	35.4	13	1
80	10 - 400	20	8.5	M10	8	M8	G1/8	8.5	47.5	56	64	27.5	78	107	82	111	46	17	0.6
100	10 - 400	25	8.5	M10	10	M10	G1/4	10.5	56	66.5	76.5	32.5	90.5	128	103	133	56.6	22	0.6

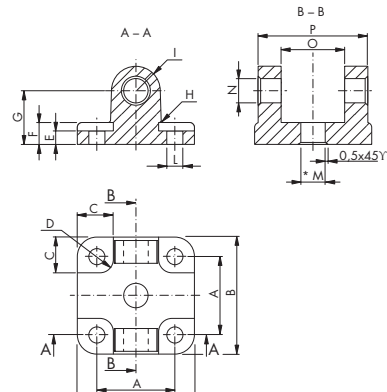
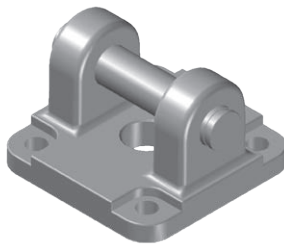
Male Trunnion - Piston Ø 12 - 25 mm



Code	Ø (mm)	A	B	C	D	E	F	G	H	I	L	M	N	O	P
19.002.07	12-16	18	27	10	5	3	6	16	2	6	5	10	6	12	3
19.002.09	20	22	34	11	5	3	6	20	2	8	6	12	8	16	3
19.002.00	25	26	38	11	5	3	6	20	2	8	6	12	8	16	3

Note: Fixing screws included.

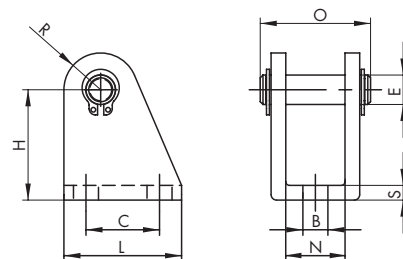
Female Trunnion - Piston Ø 32 - 100 mm



Code	Ø (mm)	A	B	C	D	E	F	G	H	I	L	M	N	O	P
19.001.01	32	32	48	14	6	6	9	22	3	10	7	14	10	26	45
19.001.02	40	42	58	14	6	6	9	25	3	13	7	14	12	28	52
19.001.03	50	50	66	16	8	7	11	27	3	13	9	18	12	32	60
19.001.04	63	62	83	18	9	7	11	32	4	15	11	18	16	40	70
19.001.05	80	82	102	19	9	10	13	36	4	15	11	23	16	50	90
19.001.06	100	103	123	19	9	10	15	41	4	20	11	28	20	60	110

Note: Bolt and fixing screws included.

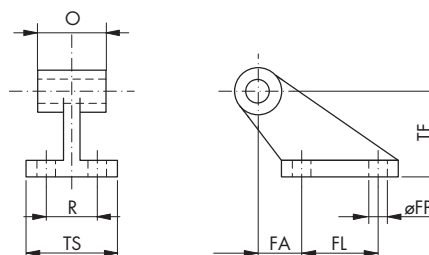
Trunnion



Code	Ø (mm)	B	E	C	H	L	N	O	R	S
26.313	12, 16	6	6	16	27	25	12	23	7	3
28.313	20, 25	7	8	20	30	32	16	30	10	4

Note: For use with male trunnion.

Square Angle Trunnion Mounting Bracket - Piston Ø 32 - 100 mm



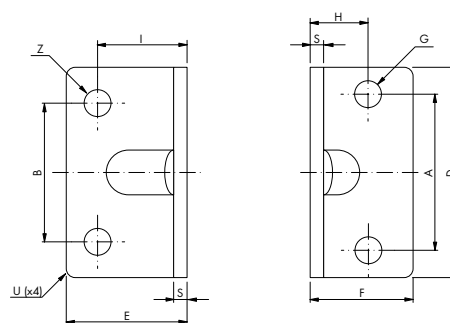
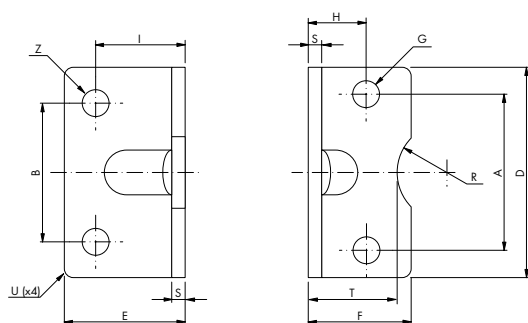
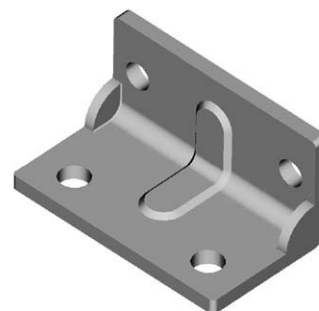
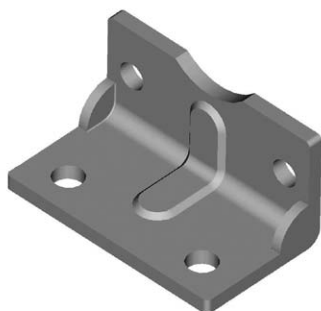
Code	Ø	R	TS	FP	FA	FL	TF	O
18.004.01	32	25	41	7	18	20	32	26
18.004.02	40	32	52	9	25	32	45	28
18.004.03	50	32	52	9	25	32	45	32
18.004.04	63	40	63	11	32	50	63	40
18.004.05	80	40	63	11	32	50	63	50
18.004.06	100	50	80	14	40	70	90	60

Note: For use with female trunnion.

Mounting Bracket

Piston Ø 12 - 32 mm

Piston Ø 40 - 100 mm



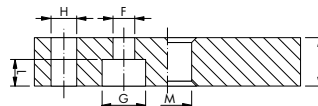
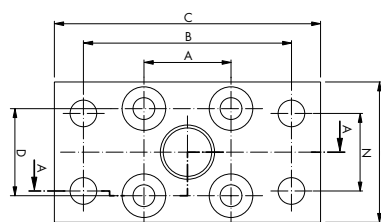
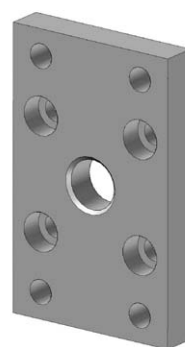
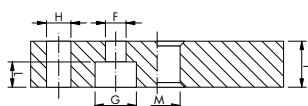
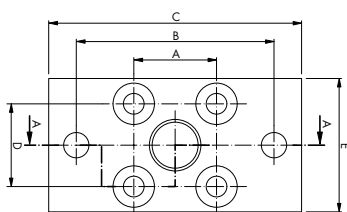
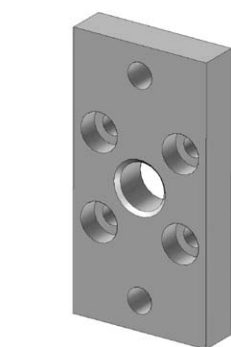
Code	Ø	B	C	D	E	F	G	H	I	S	T	R	U	Z
19.005.07	12-16	18	18	30	18	18	4	13	13	3	15	9	2	6
19.005.09	20	22	22	36	22	22	5	16	16	4	17	10	2	7
19.005.00	25	26	26	40	22	23	5	17	16	4	19	11	2	7
19.005.01	32	32	32	50	26	24	7	16	18	5	20	12	2	7
19.005.02	40	42	42	60	28	30	7	22	20	5	-	-	5	9
19.005.03	50	50	50	68	32	30	9	22	24	6	-	-	5	9
19.005.04	63	62	62	84	39	39	11	29	27	6	-	-	5	11
19.005.05	80	82	82	102	42	37	11	25	30	8	-	-	5	11
19.005.06	100	103	103	123	45	39	11	27	33	8	-	-	5	14

Note: The shipment includes 2 pcs and the fixing screws.

Mounting Plate

Piston Ø 12 - 25 mm

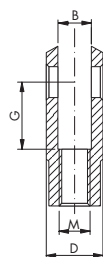
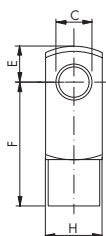
Piston Ø 32 - 100 mm



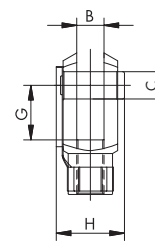
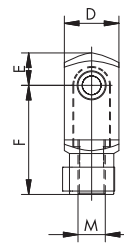
Code	Ø	A	B	C	D	E	F	G	H	I	L	M	N
19.006.07	12-16	18	43	55	18	29	5	9	6	10	5	10	—
19.006.09	20	22	55	70	22	36	6	10	7	10	5	12	—
19.006.00	25	26	60	76	26	40	6	10	7	10	5	12	—
19.006.01	32	32	65	80	32	50	7	11	7	10	6	14	32
19.006.02	40	42	82	102	42	60	7	11	9	10	6	14	36
19.006.03	50	50	90	110	50	68	9	15	9	12	9	18	45
19.006.04	63	62	110	130	62	87	11	18	9	15	11	18	50
19.006.05	80	82	135	160	82	107	11	18	12	15	11	23	63
19.006.06	100	103	163	190	103	128	11	18	14	15	11	28	75

Note: Fixing screws included.

Clevis



TYPE I

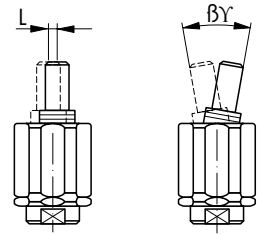
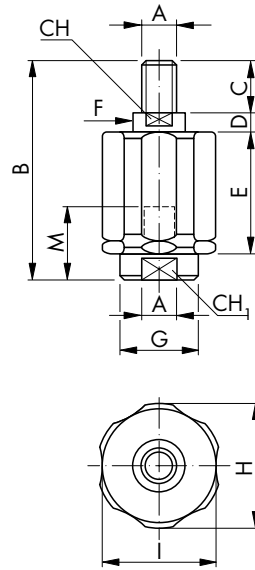


TYPE II

Code	Type	Ø	M	B	C	D	E	F	G	H
19.008.07	I	12	M6	6	6	12	7	24	12	12
19.008.08	I	16	M8	8	8	16	10	32	16	16
18.008.01	II	32	M10x1.25	10	10	20	12	40	20	26
18.008.02	II	40	M12x1.25	12	12	24	14	48	24	32
18.008.03	II	50	M16x1.5	16	16	32	19	64	32	40
18.008.03	II	63	M16x1.5	16	16	32	19	64	32	40
18.008.04	II	80	M20x1.5	20	20	40	25	80	40	48
18.008.04	II	100	M20x1.5	20	20	40	25	80	40	48

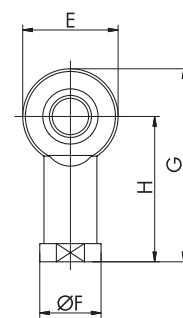
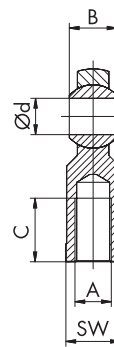
Note: Lockable pin included.

Self Aligning Joint



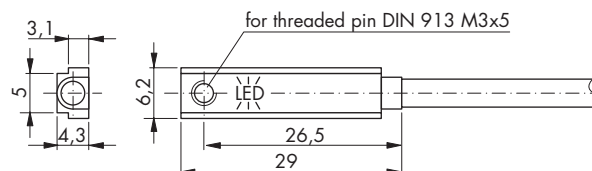
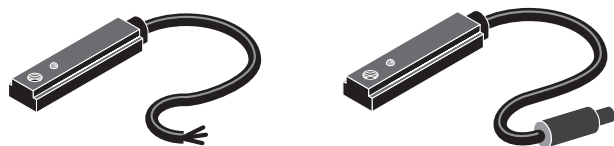
Code	Ø	A	B	C	D	E	F	G	H	I	L	M	CH	β°	CH1
19.010.07	12	M6	35	10	4	18	6	9	15	13	1	10	5	10	7
19.010.08	16	M8	57	20	4	29	8	13	19	17	2	20	7	10	11
19.010.09	20 - 40	M10 x 1.25	71	20	5	35	14	22	32	30	2	20	12	10	19
19.010.03	50 - 63	M12 x 1.25	75	24	5	35	14	22	32	30	2	20	12	10	19
19.010.05	80	M16 x 1.5	103	32	8	54	22	32	45	41	2	32	20	10	30
19.010.06	100	M20 x 1.5	119	40	8	54	22	32	45	41	2	40	20	10	30

Rod End - Spherical Bearing



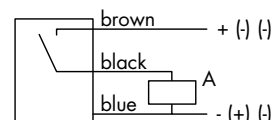
Code	Ø	A	B	C	d ^{H7}	E	F	G	H	SW
19.009.07	12	M6	9	12	6	20	13	40	30	11
19.009.08	16	M8	12	16	8	24	16	48	36	14
18.009.01	32	M10x1.25	14	20	10	28	19	57	43	17
18.009.02	40	M12x1.25	16	22	12	32	22	66	50	19
18.009.03	50	M16x1.5	21	28	16	42	27	85	64	22
18.009.03	63	M16x1.5	21	28	16	42	27	85	64	22
18.009.04	80	M20x1.5	25	33	20	50	34	102	77	30
18.009.04	100	M20x1.5	25	33	20	50	34	102	77	30

Position Transmitter



Position Transmitter REED (3 pole)

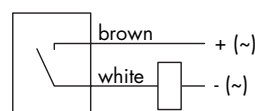
Switching output: closing contact
 Cable: 3 x 0.14 mm²
 Switching capacity: max 2 VA/W
 Switching voltage: 10 - 30 V AC/DC
 Switching current: max 100 mA
 Internal power consumption: ON: typ. 12 mA at 30 V DC
 Switching time: 1 ms
 Drop-out time: 0.05 ms
 Switching rate: max 200 Hz
 Service life: 10⁶ to 10⁷ switchings, depending on the load
 Ambient temperature range: -5°C to +70°C
 Protection class: IP67
 Status indicator: LED
 Housing material: plastic



Code	Description
33.19.100	with cable L = 2500 mm
33.19.200	plug M8, cable L = 300 mm

Position Transmitter REED (2 pole)

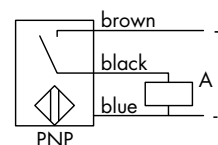
Switching output: closing contact
 Cable: 2 x 0.14 mm²
 Switching capacity: max 0.9 VA/W
 Switching voltage: 10 - 30 V AC/DC
 Switching current: max 30 mA
 Internal power consumption: ON: typ. 12 mA at 30 V DC
 Switching time: 1 ms
 Drop-out time: 0.05 ms
 Switching rate: max 200 Hz
 Service life: 10⁶ to 10⁷ switchings, depending on the load
 Ambient temperature range: -5°C to +70°C
 Protection class: IP67
 Status indicator: LED
 Housing material: plastic



Code	Description
33.19.130	with cable L = 2500 mm
33.19.140	plug M8, cable L = 300 mm

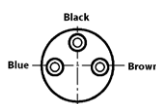
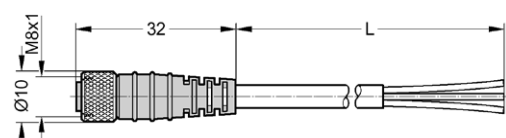
Electronic Position Transmitter

Length of over travelling: depending on magnetic field and fitting position
 Hysteresis: depending on magnetic field and fitting position
 Cable: 3 x 0.14 mm²
 Operating voltage: 10 - 30 VDC
 Residual ripple: < 10 % of UB
 Internal power consumption: 10 mA without load
 Collector resistor: integrated
 Switching current: max 130 mA (at +25°C)
 Switchable parallel capacity: ≤ 0.01 µF
 Voltage drop: ≤ 3 V at I_a = 130 mA
 Switching rate: 2 kHz
 Ambient temperature range: -5°C to +70°C
 Contact type: PNP (N.O.)
 Cross connection protection: integrated
 Short circuit protection: integrated
 Protection class: IP67
 Status indicator: LED
 Housing material: plastic



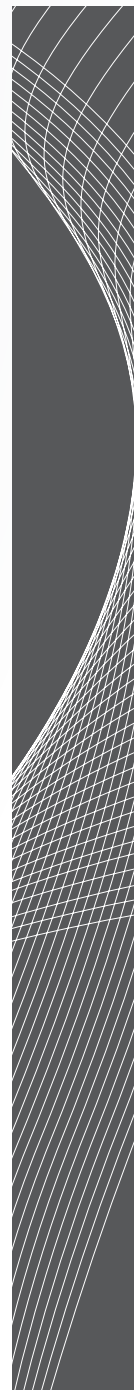
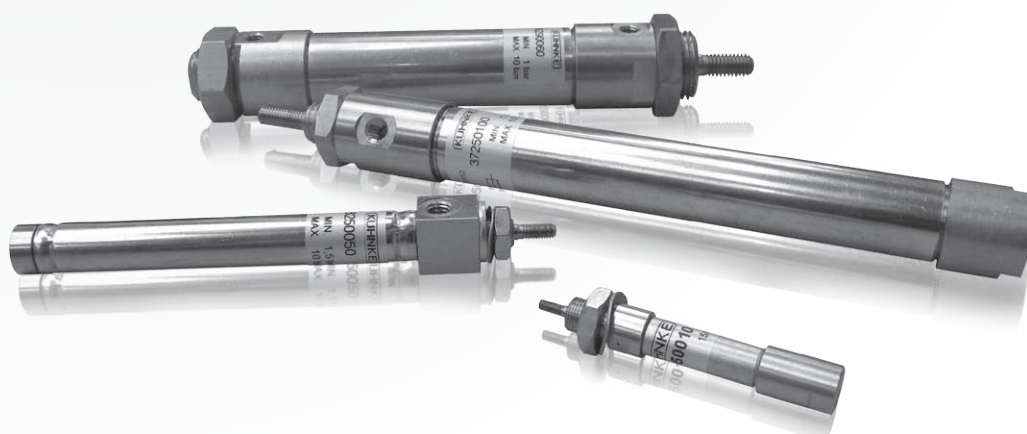
Code	Description
33.19.300	with cable L = 2500 mm
33.19.400	plug M8, cable L = 300 mm

M8 Connectors (female-straight)



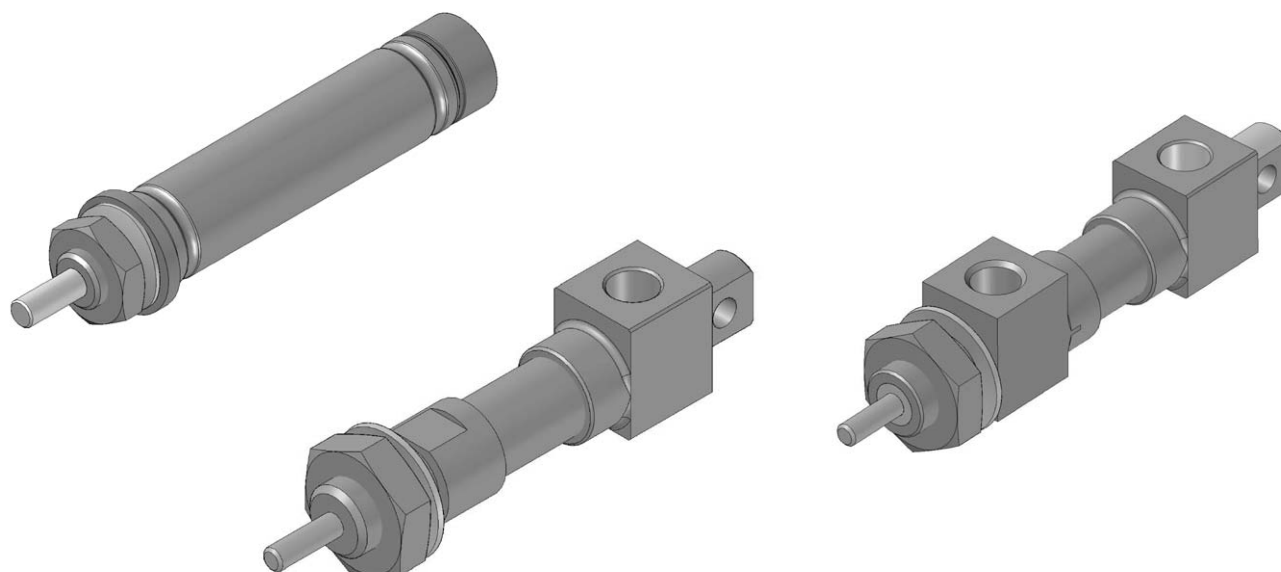
Code	Description
PL08B3.V250.30	cable L = 3000 mm
PL08B3.V250.50	cable L = 5000 mm

SERIES B BRASS CYLINDERS



BRASS CYLINDERS

General Information



Technical Data

Piston diameters:	Ø 3, 5, 8, 12, 16, 20, 25 (mm)														
Connection thread:	M5, G1/8														
Piston rod:	CrNi-steel, corrosion resistant														
Cylinder tube:	Brass														
Cushioning:	Plastic, impact resistant														
Seals:	NBR														
Operating medium:	Compressed air, prepared														
Lubricant:	Shell Tellus Oil C10 or equivalent														
Type:	Non magnetic														
Operating temperature:	-10 °C to +70 °C														
Assembling design:	Ø 8 chamfered Ø 3, 5, 12, 16, 20, 25 screwed														
Stroke tolerance:	Max. stroke +1.5 mm														
Stroke limitation:	The use of external stroke limiters are recommended for optimum life														
Spring force:	Designed for return of piston, not for any coupled mass Area ratio of piston with double acting cylinders (due to reduction of piston rod sections) Ø 5 6:5 Ø 12 6:5 Ø 20 7:6 Ø 8 5:4 Ø 16 7:6 Ø 25 7:6														
Pressure range:	Ø [mm]	3		5		8		12		16		20		25	
	Single Acting [bar]	3 - 10		2.5 - 10		2 - 10		1.5 - 10		1.5 - 10		1.5 - 10		1.5 - 10	
	Double Acting [bar]	-		2 - 10		1.5 - 10		1 - 10		1 - 10		0.5 - 10		0.5 - 10	
Mounting position:	Version "S" Mounting thread on cylinder nose only. Version "U" Mounting thread on both ends including rear trunnion.														

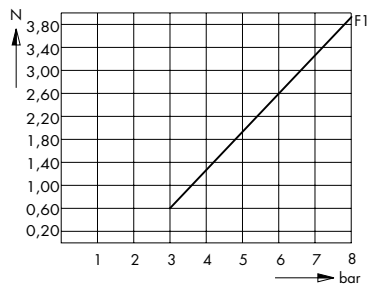
For special versions including through-rod, intermediate and extra-long stroke dimensions please contact our sales department.

Static Cylinder Characteristics

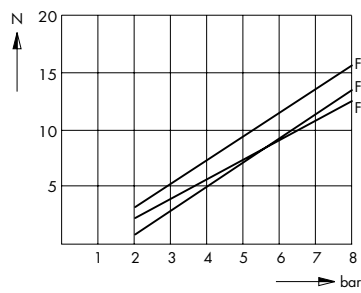
The cylinder characteristics should be multiplied by a factor of 0.5 - 0.7 for the dynamic behaviour.

SERIES B
BRASS CYLINDERS

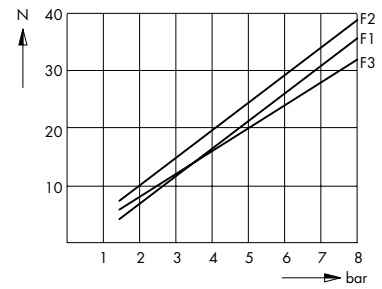
Ø 3 mm



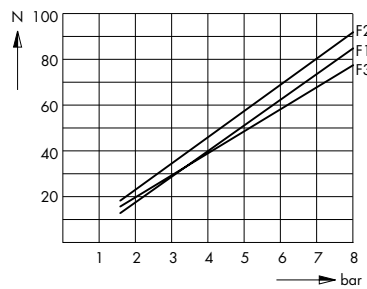
Ø 5 mm



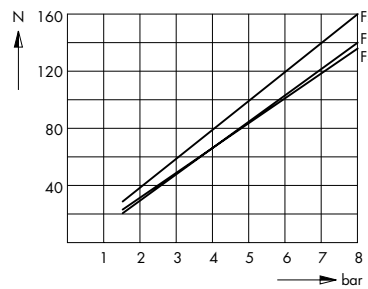
Ø 8 mm



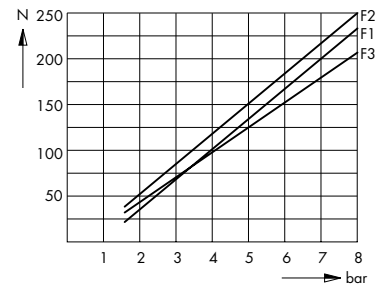
Ø 12 mm



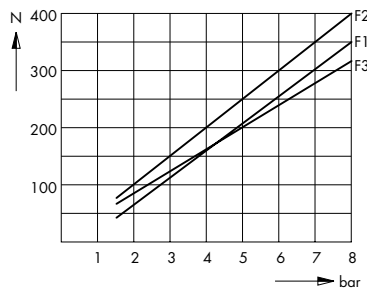
Ø 16 mm



Ø 20 mm



Ø 25 mm



$F1$ = single acting cylinders

$F2$ = double acting cylinders in forward stroke

$F3$ = double acting cylinders in return stroke

Order Code

Special Miniature Cylinder	Code
Special cylinder, piston diameter 3 mm, stroke 6 mm, single acting	40.100

Order Code	36.	25.	050
Piston diameter			
Ø 5	40		
Ø 8	38		
Ø 12	37		
Ø 16	36		
Ø 20	35		
Ø 25	34		
Design			
Type S - Single acting		15	
Type S - Double acting		25	
Type U - Single acting		19	
Type U - Double acting		29	
Through Rod (double acting)		60	
Stroke			
mm			xxx

Special versions	SP.7	dd.	zzzz
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zzzz = project number (assigned by factory)

Brass Cylinder - 40.100

The miniature cylinder with a piston diameter of 3 mm is for general purpose use in testing and other applications with limited space.

Acting: single acting

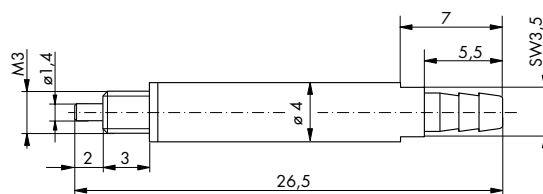
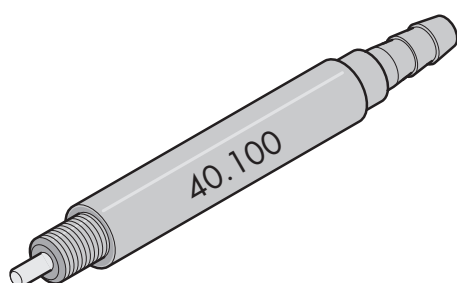
Stroke: 6 mm

Diameter: 3 mm

Cushioning: no

Mounting: M3 threaded mounting at piston rod end

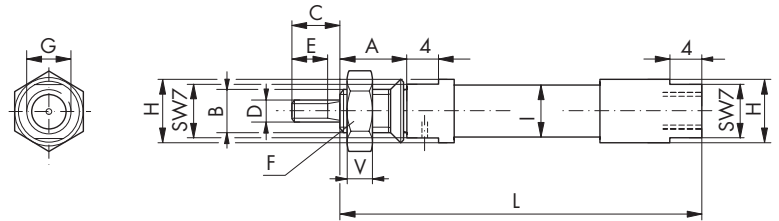
Pneumatic connection: male fitting for 4 x 1 tubing



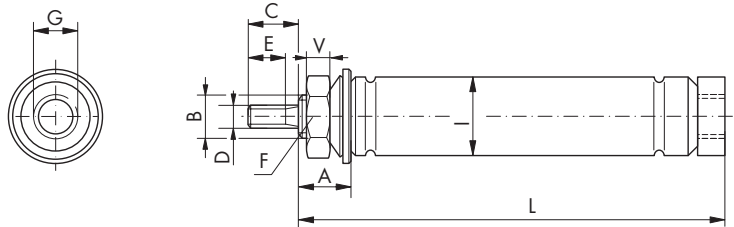
Code
40.100

Brass Cylinder - Type S Single Acting

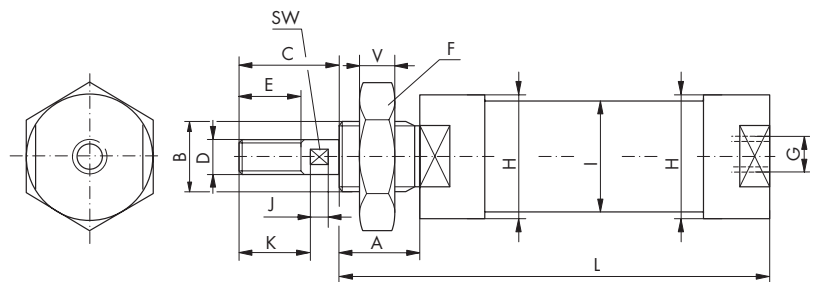
Piston Ø 5 mm



Piston Ø 8 mm



Piston Ø 12, 16, 20, 25 mm

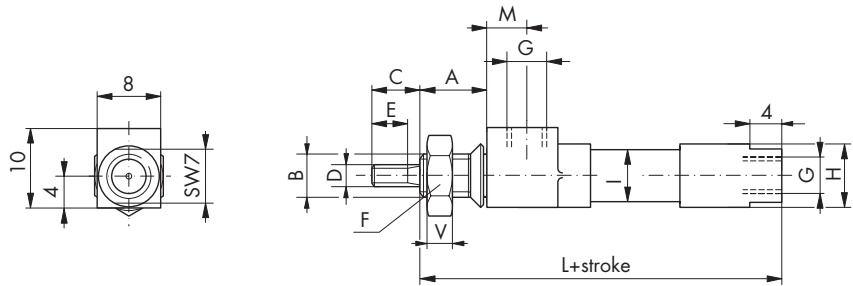


Ø	A	B	C	D	E	F	G	Ø H	Ø I	J	K	SW	V	Max stroke available
5	8	M6x0.5	6	M2	4.5	10	M5	8	6.5	-	-	-	3	25 mm
8	8	M6x0.5	7.5	M3	6	10	M5	-	10	-	-	-	3	50 mm
12	11	M10	14.5	M5	12	17	M5	18	16	-	-	-	5	62.5 mm
16	11	M18x1.5	15	M6	12	24	M5	22	20	-	-	-	6	80 mm
20	15	M22x1.5	19	M8	12	30	G1/8	27	24	4	12.5	7	6	80 mm
25	15	M24x1.5	22.5	M10	15	32	G1/8	32	29	4	16	7	6	80 mm

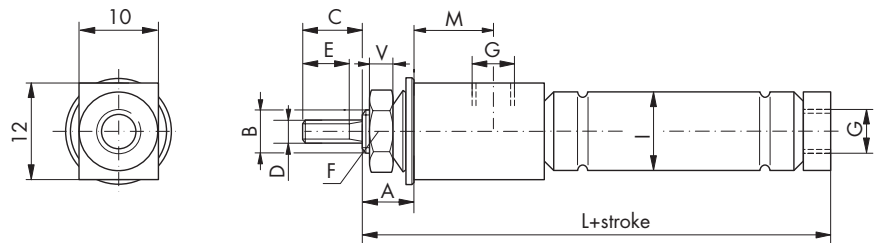
Ø	5	5	8	8	8	8	12	12	12	12	12	16	16	16	16	20	20	20	20	25	25	25	25
Stroke (mm)	10	25	12.5	25	37.5	50	12.5	25	37.5	50	62.5	20	40	60	80	20	40	60	80	20	40	60	80
L	45.5	60.5	52.5	73	94	114.5	62.5	86	109.5	133	156.5	74.5	111.5	148.5	185.5	79	116.5	154	191.5	79	116.5	154	191.5

Brass Cylinder - Type S Double Acting

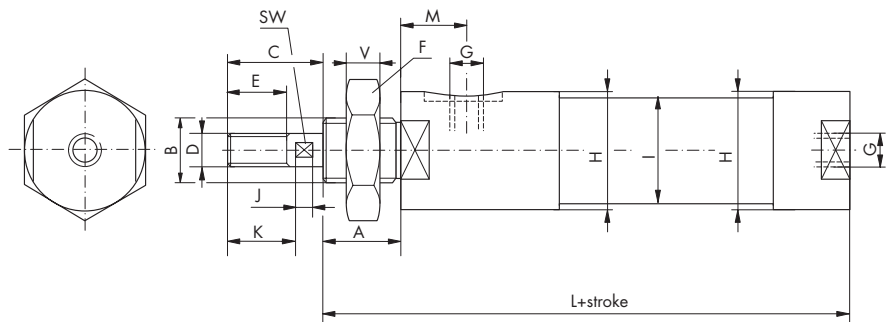
Piston Ø 5 mm



Piston Ø 8 mm



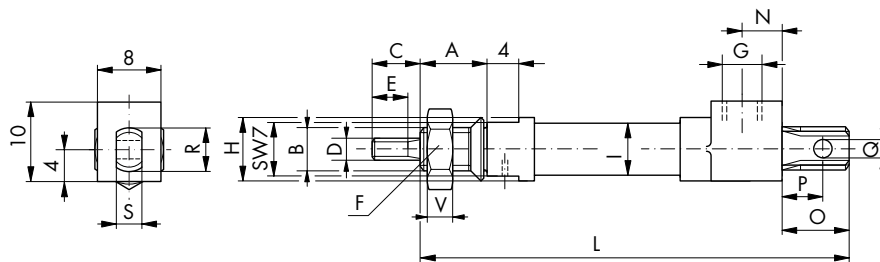
Piston Ø 12, 16, 20, 25 mm



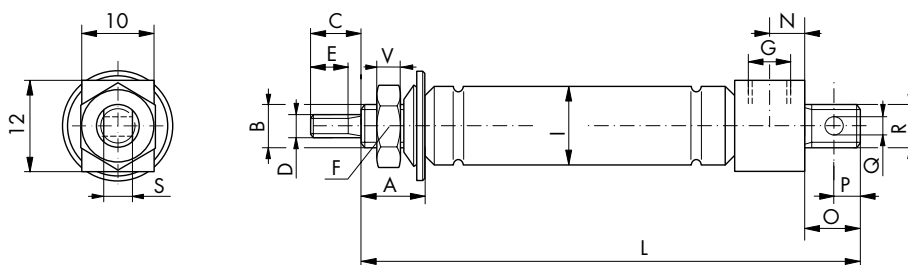
Ø	A	B	C	D	E	F	G	Ø H	Ø I	J	K	L	M	SW	V	Max stroke available
5	8	M6x0.5	6	M2	4.5	10	M5	8	6.5	-	-	29.5	4.3	-	3	50 mm
8	6.5	M6x0.5	7.5	M3	6	10	M5	-	10	-	-	46.5	7.3	-	3	150 mm
12	11	M10	14.5	M5	12	17	M5	18	16	-	-	54.5	10	-	5	300 mm
16	11	M18x1.5	15	M6	12	24	M5	22	20	-	-	54	6	-	6	350 mm
20	15	M22x1.5	21.5	M8	12	30	G1/8	27	24	4	12.5	68.5	9	7	6	500 mm
25	15	M24x1.5	25	M10	15	32	G1/8	32	29	4	16	68.5	9	9	6	500 mm

Brass Cylinder - Type U Single Acting

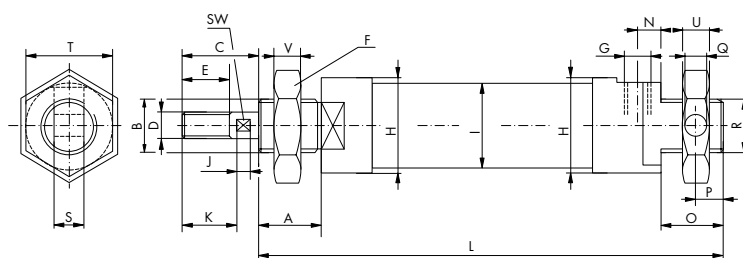
Piston Ø 5 mm



Piston Ø 8 mm



Piston Ø 12, 16, 20, 25 mm

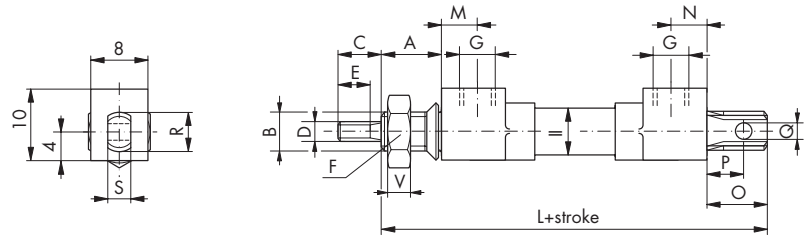


Ø	A	B	C	D	E	F	G	Ø H	Ø I	J	K	N	O	P	Q	R	S	SW	T	U	V	Max stroke available
5	8	M6x0.5	6	M2	4.5	10	M5	8	6.5	-	-	4.3	6.5	3.5	2.5	M6x0.5	3.6	-	-	-	3	25 mm
8	8	M6x0.5	7.5	M3	6	10	M5	10	-	-	-	4.3	6.5	3	2.5	M6x0.5	3.6	-	-	-	3	50 mm
12	11	M10	14.5	M5	12	17	M5	18	16	-	-	4.5	11	5	5	M10x0.75	6	-	17	5	5	62.5 mm
16	11	M18x1.5	15	M6	12	24	M5	22	20	-	-	4.5	13	7	6	M14x1.5	8.8	-	22	8	6	80 mm
20	15	M22x1.5	19	M8	12	30	G1/8	27	24	4	12.5	8.5	16	8	8	M22x1.5	13.8	7	-	-	6	80 mm
25	15	M24x1.5	22.5	M10	15	32	G1/8	32	29	4	16	8.5	16	8	8	M24x1.5	13.8	7	-	-	6	80 mm

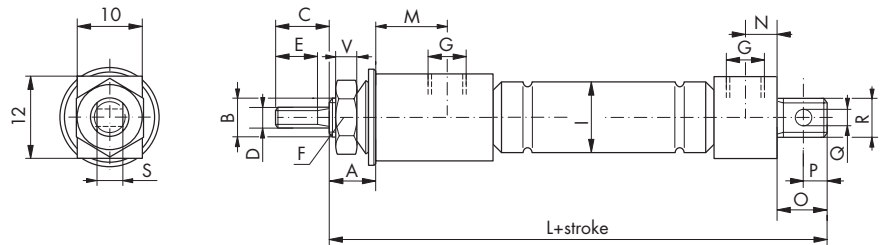
Ø	5	5	8	8	8	8	12	12	12	12	12	16	16	16	16	20	20	20	20	25	25	25	25
Stroke (mm)	10	25	12.5	25	37.5	50	12.5	25	37.5	50	62.5	20	40	60	80	20	40	60	80	20	40	60	80
L	52	67	63	83.5	104	125	76	99.5	123	146.5	170	90	127	164	201	102	139.5	177	214.5	102	139.5	177	214.5

Brass Cylinder - Type U Double Acting

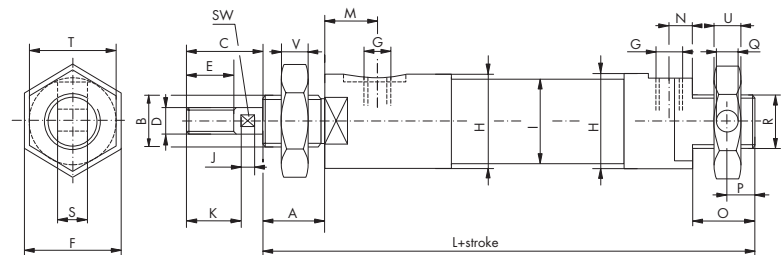
Piston Ø 5 mm



Piston Ø 8 mm



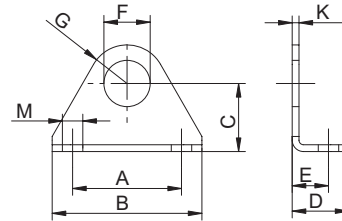
Piston Ø 12, 16, 20, 25 mm



Ø	A	B	C	D	E	F	G	ØH	ØI	J	K	L	M	N	O	P	Q	R	S	SW	T	U	V	Max stroke available
5	8	M6x0.5	6	M2	4.5	10	M5	-	6.5	-	-	36	4.3	4.3	6.5	3.5	2.5	M6x0.5	3.6	-	-	-	3	50 mm
8	6.5	M6x0.5	7.5	M3	6	10	M5	-	10	-	-	57	7.3	4.3	6.5	3	2.5	M6x0.5	3.6	-	-	-	3	150 mm
12	11	M10	14.5	M5	12	17	M5	18	16	-	-	68	10	4.5	11	5	5	M10x0.75	6	-	17	5	5	300 mm
16	11	M18x1.5	15	M6	12	24	M5	22	20	-	-	69.5	6	4.5	13	7	6	M14x1.5	8.8	-	22	8	6	350 mm
20	15	M22x1.5	21.5	M8	12	30	G1/8	27	24	4	12.5	91.5	9	8.5	16	8	8	M22x1.5	13.8	7	-	-	6	500 mm
25	15	M24x1.5	25	M10	15	32	G1/8	32	29	4	16	91.5	9	8.5	16	8	8	M24x1.5	13.8	9	-	-	6	500 mm

Mounting Bracket

Materials: Steel, galvanised



Code	Ø	A	B	C	D	E	F	G	H	K
38.302	5, 8	18	25	10	9.5	6	6.1	6	3.5	1.5
37.302	12	24	33	15	12.5	8	10.1	8.5	4.5	2
36.302	16 *	32	45	22	18	11.5	14.1	13.5	6.6	3
36.312	16	32	45	22	18	11.5	18.1	13.5	6.6	3
35.302	20	40	53	30	25	17	22.1	17	6.6	4.5
34.302	25	40	53	30	25	17	24.1	17	6.6	4.5

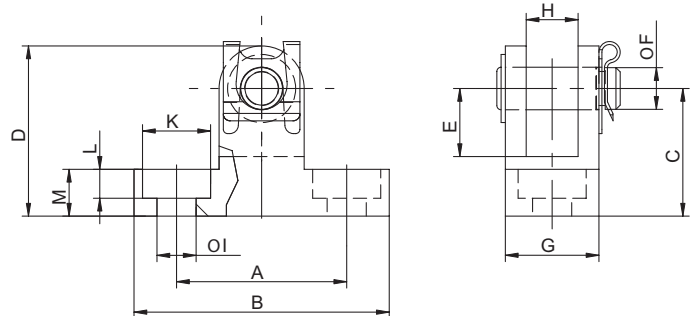
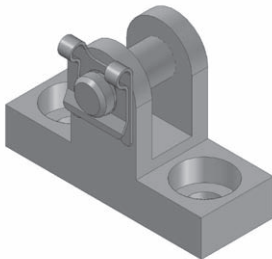
* Swivel-bearing side.

Trunnion

Trunnion material: Steel, galvanised

Bolt material: Steel, phosphorised

Retaining clip: Spring steel, phosphorised

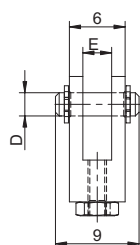
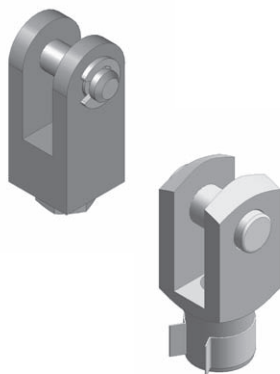


Code	Ø	A	B	C	D	E	F	G	H	I	K	L	M
38.303	5, 8	13	20	10	13	5	2.5	8	3.7	3.2	5.9	2	3.5
37.303	12	20	30	15	20	8	5	11	6.1	4.5	8	3.4	5.5
36.303	16	27	45	22	29	11	6	16	9	7	11	5	9
34.303	20, 25	27	45	30	40	17	8	28	14	7	11	4.8	12

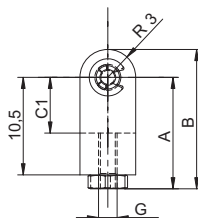
Clevis

Clevis materials: Steel, galvanised

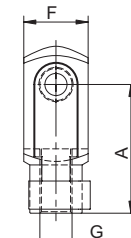
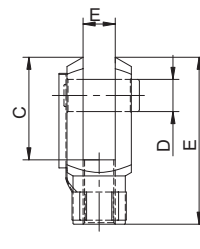
Bolt materials: Steel, phosphorised



TYPE I
(Supplied with nut)



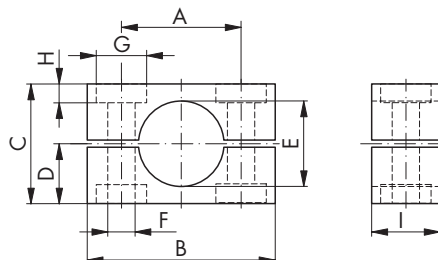
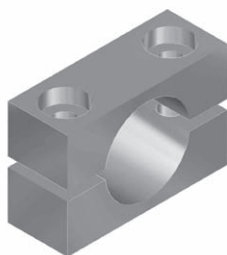
TYPE II
(Supplied with clip)



Code	Type	Ø	A	B	C	D	E	F	G	C1
40.304	I	5	12	15	6	2.5	3	6	M2	6
38.304	I	8	12	15	6	2.5	3	6	M3	6
37.304	II	12	20	26	16	5	5	10	M5	-
19.008.07	II	16	24	31	19	6	6	12	M6	-
19.008.08	II	20	32	42	26	8	8	16	M8	-
34.304	II	25	40	52	32	10	10	20	M10	-

Clamp

Materials: Steel, galvanised

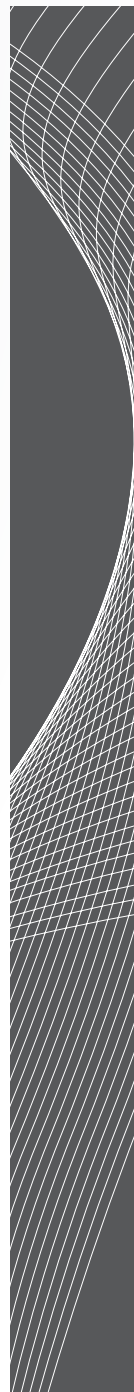
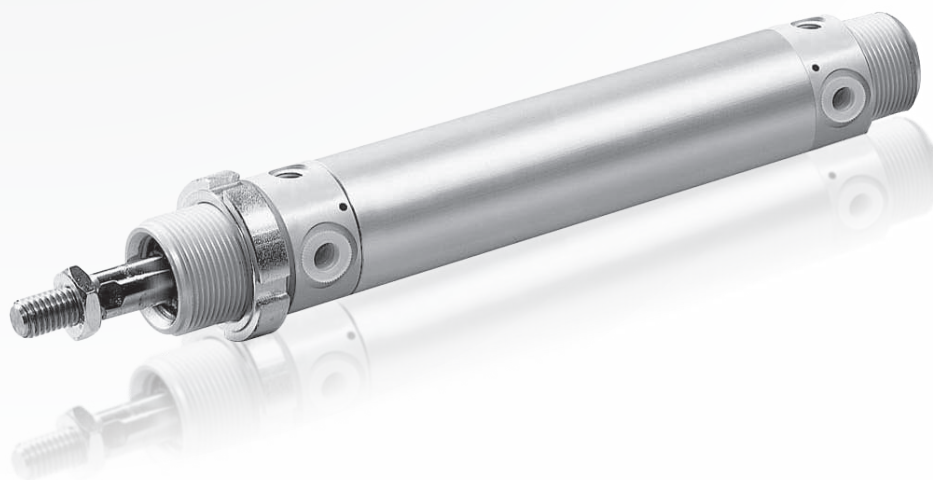


Code	Ø	A	B	C	D	E	Ø F	Ø G	H	I
38.300	8	14	22	14	7	10	3.2	6	2.2	8
37.310	12	22	32	21	11	16	4.3	8	3	10
36.300	16	26	40	25	13	20	5.3	10	3.7	15
35.300	20	32	45	33	17	24	6.4	11	6.5	16
34.300	25	37	50	41	21	29	6.4	11	6.5	20

Brass Cylinder Sealing Sets

Code	Piston dia.
34.400.01	Ø 25
35.400.01	Ø 20
36.400.01	Ø 16
37.400.02	Ø 12

SERIES MC
ROUND CYLINDERS



ROUND CYLINDERS

General Information

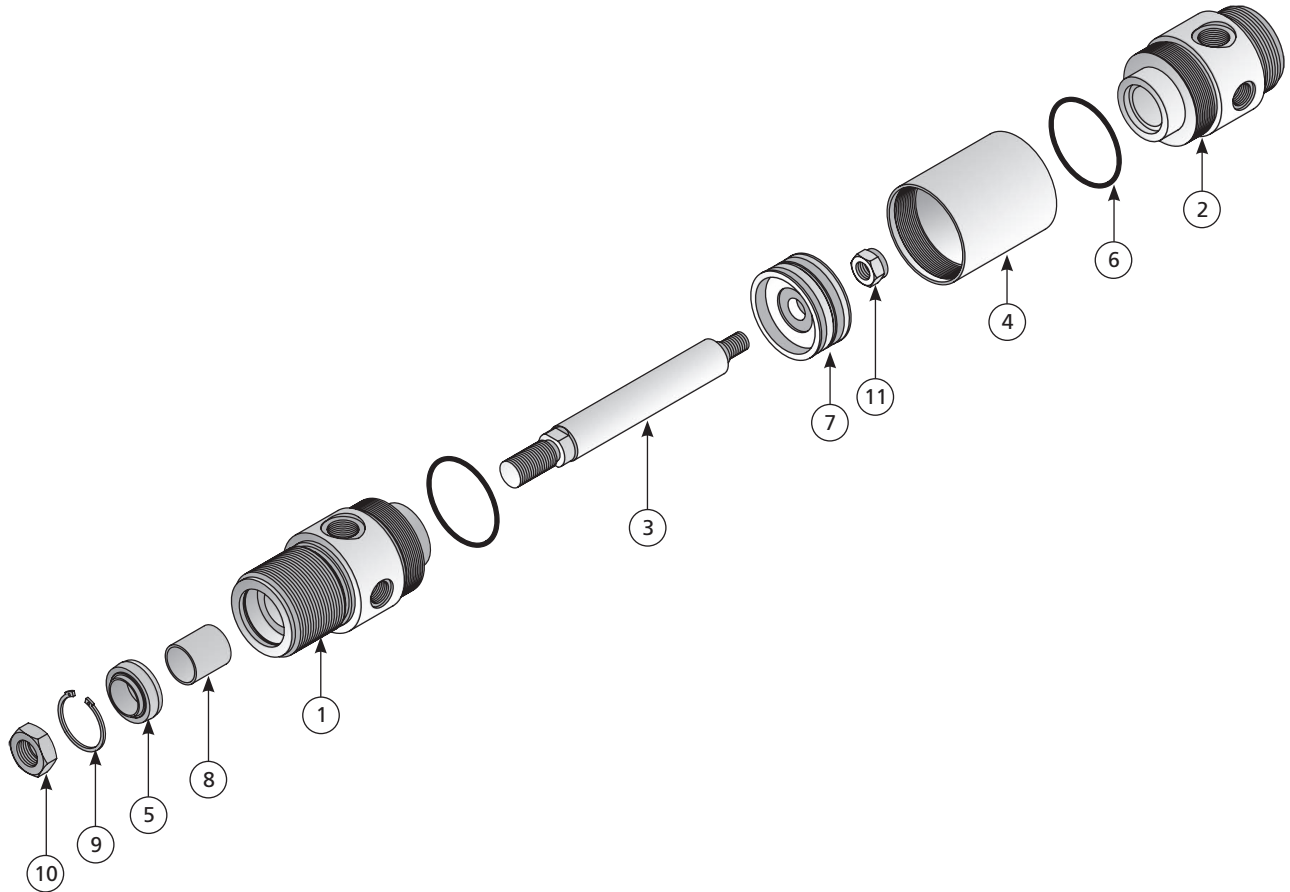


Technical Data

Piston diameters:	Ø 32, 40, 50, 63 (mm)
Ports:	Ø 32 = G1/8; Ø 40, Ø 50, Ø 63 = G1/4
Covers:	Anodised aluminum alloy
Piston rod:	C45 chromium-plated steel
Tube:	Anodised aluminum alloy
Seals:	NBR, Viton® (upon request)
Standard type:	Magnetic
Pressure range:	1 - 10 bar
Operating temperature:	NBR/PUR seals: -10 °C to +70 °C Viton® seals: -10 °C to +150 °C
Cushioning:	No (upon request only)
Assembling design:	Screwed
Operating medium:	Compressed air, dry, lubricant not necessary

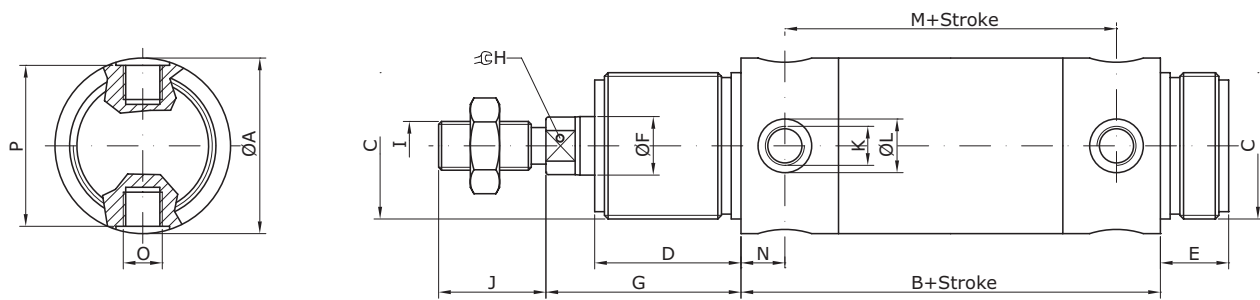
Please note: If Viton® seals are used with magnetic versions the temperature range is limited to 100°C

Exploded View



1. Front cover
2. Rear cover
3. Piston rod
4. Cylinder body
5. Piston rod seal (NBR)
6. O-ring (NBR)
7. Complete piston (NBR)
8. Piston rod guide bushing
9. Circlip
10. Piston rod nut
11. Nut

Dimensional Drawing



Ø	ØA	B	C	D	E	ØF	G	H	I	J	K	ØL	M	N	O	P
32	36	86	M30x1.5	30	14	12	40	10	M10x1.25	22	G1/8	16	68	9	M8x1	35
40	45	103	M38x1.5	35	16	16	45	13	M12x1.25	24	G1/4	18	79	12	M10x1	42.5
50	55	107	M45x1.5	38	18	20	50	17	M16x1.5	32	G1/4	18	83	12	M12x1.5	52.5
63	68	109	M45x1.5	38	18	20	50	17	M16x1.5	32	G1/4	18	85	12	M12x1.5	65

Order Code

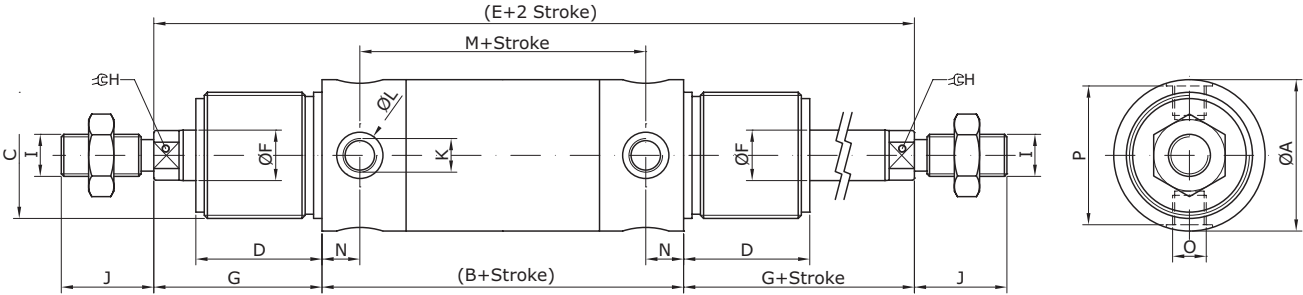
Order specifications		MC.	32.	0050.	DOM
Series Number		MC			
Piston diameter					
	Ø 32		32		
	Ø 40		40		
	Ø 50		50		
	Ø 63		63		
Stroke	mm			xxxx	
Version					
	double acting with magnetic piston				DOM
	single acting with magnetic piston				SOM
Design					
	standard				-
	through rod				01
	stainless steel piston rod				04
	Viton® seals				08

Special versions	MC.	dd.	zzzz
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zzzz = project no. (added by factory)

Through Piston Rod

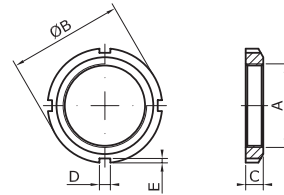
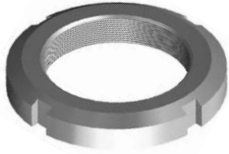
This is a double acting cylinder with piston rods at either end, each pressurised port creates a push/pull function.



SERIES MC
ROUND CYLINDERS

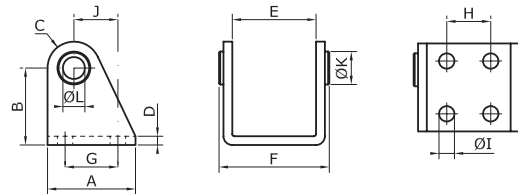
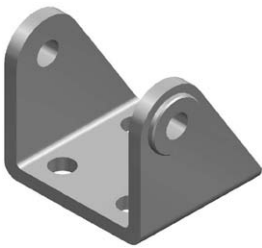
Ø	ØA	B	C	D	E	ØF	G	H	I	J	K	ØL	M	N	O	P
32	36	86	M30x1.5	30	166	12	40	10	M10x1.25	22	G 1/8	16	68	9	M8x1	33
40	45	103	M38x1.5	35	193	16	45	13	M12x1.25	24	G 1/4	20	79	12	M10x1	42.5
50	55	107	M45x1.5	38	207	20	50	17	M16x1.5	32	G 1/4	20	83	12	M12x1.5	52.5
63	68	109	M30x1.5	38	209	20	50	17	M16x1.5	32	G1/4	20	85	12	M12x1.5	65

Nose Fixing Nut



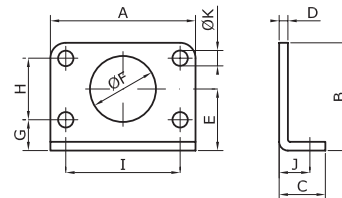
Code	Ø	A	ØB	C	D	E
GH.32.DOM	32	M30x1.5	45	7	5	2
GH.40.DOM	40	M38x1.5	52	8	5	2
GH.50.DOM	50-63	M45x1.5	65	10	6	2.5

Trunnion



Code	Ø	A	B	C	D	E	F	G	H	ØI	J	ØK	ØL
CF.32.DOM	32	40	35	12	4	38.1	50.1	24	20	7	20	15	10
CF.40.DOM	40	50	40	13	5	46.1	60.1	30	28	9	27	20	12
CF.50.DOM	50-63	54	45	14	6	57.1	74.1	34	36	9	30	23	14

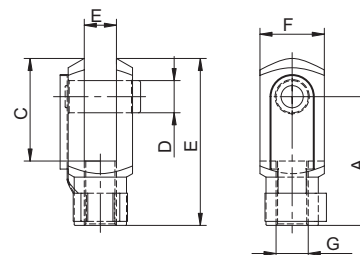
Mounting Bracket



Code	Ø	A	B	C	D	E	ØF	G	H	I	J	ØK
PN.32.DOM	32	60	49	21	4	28	30	14	28	52	14	7
PN.40.DOM	40	80	58	30	5	33	38	18	30	60	20	9
PN.50.DOM	50-63	90	70	30	6.0	40	45	20	40	70	20	9

Note: Complete kit with fixing pins.

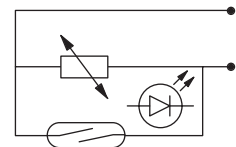
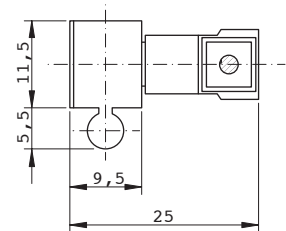
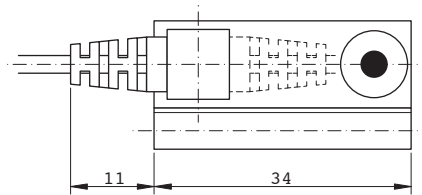
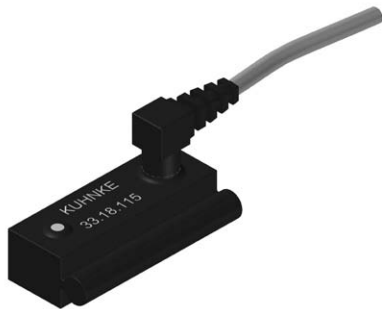
Clevis



Code	Ø	M	B	C	D	E	F	G	H
18.008.01	32	M10x1.25	10	10	20	12	40	20	26
18.008.02	40	M12x1.25	12	12	24	14	48	24	32
16.008.02	50-63	M16x1.5	18	12	26	13.0	51	25	44

Note: Lockable pin included.

Position Transmitter REED (2 pole with plug connector)

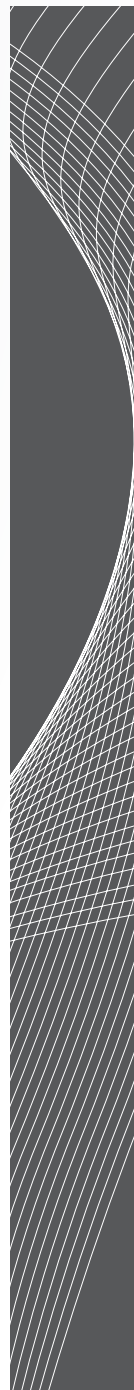


Switching output: N.O.
Switching capacity: max 10 VA
Switching voltage: 3-230 V AC/DC
Switching current: max 500 mA
Voltage drop: -
Switching time: 0.5 ms
Service life: 10⁷ operations, depending on the load
Housing material: plastic
Protection class: IP67
Ambient temperature range: -20°C to +85°C
Status indicator: LED

Code	Description
33.18.115	with cable L = 3000 mm

Please note that for the position transmitter fixing is suggest to use a plastic wrapper.

SERIES CB - 39 - 41 SHORT STROKE CYLINDERS



SHORT STROKE CYLINDERS

General Information



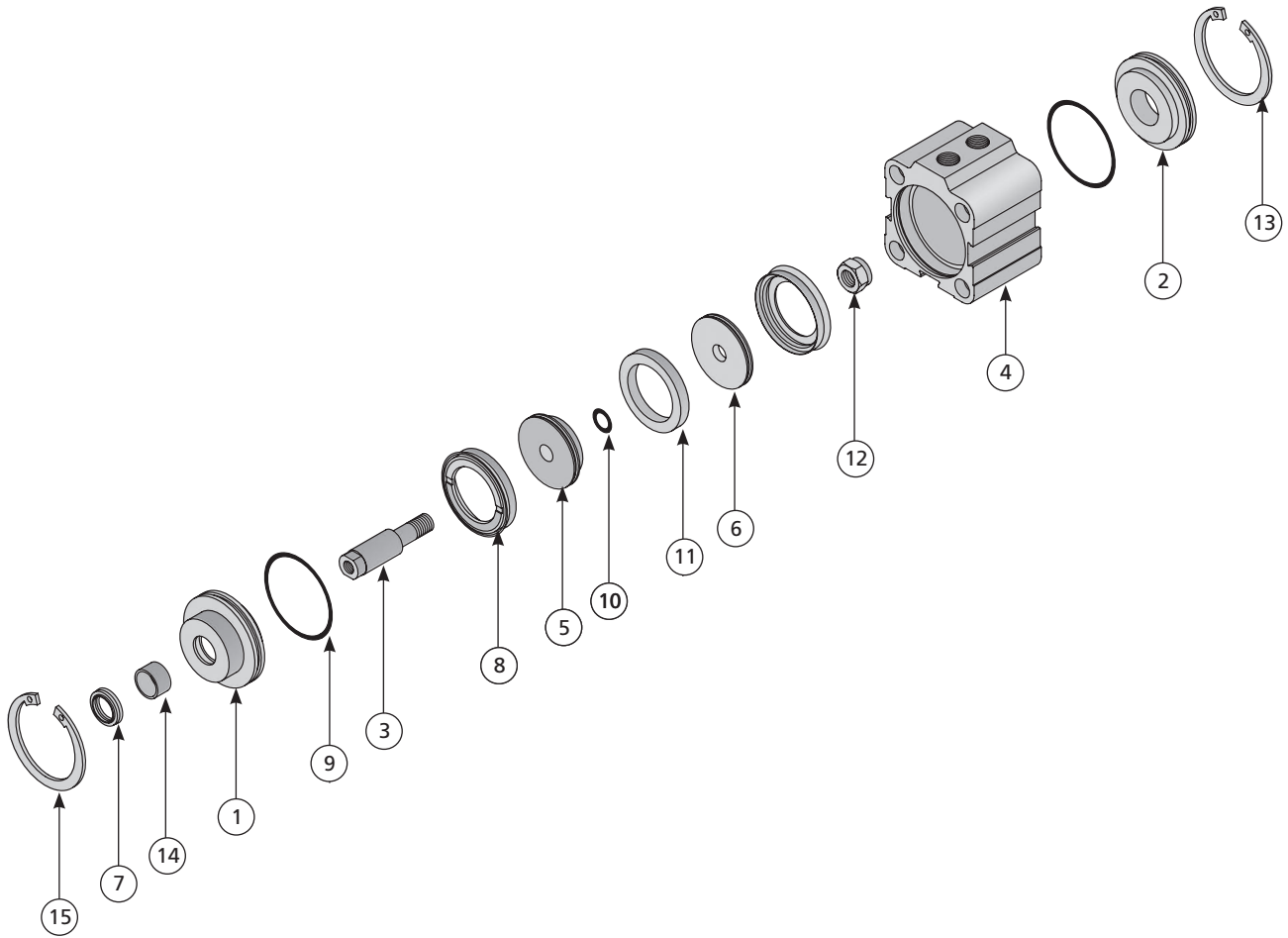
Short stroke cylinders are a reliable and robust design for use in applications where space is limited. Cylinder variations include; single or double acting, through rod, tandem, back-to-back, torsion pro-

tested with or without magnetic piston, PUR or Viton seals, female or male threaded rod, also a full range of mounting accessories and sensors are available.

Technical Data

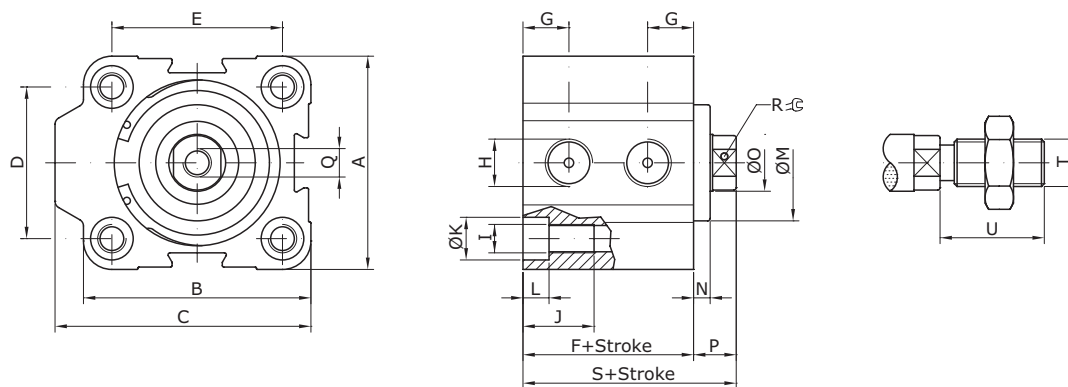
Piston diameters:	Ø 16, 20, 25, 32, 40, 50, 63, 80, 100 (mm)									
Ports:	Ø 16, Ø 20 = M5; Ø 25, Ø 32, Ø 40, Ø 50, Ø 63 = G1/8; Ø 80, Ø 100 = G1/4									
Covers:	Anodised aluminum alloy									
Piston rod (Ø 16 - 32):	Chromium plated stainless steel (stainless steel AISI 304)									
Piston rod (Ø 40 - 100):	C45 chromium plated steel									
Piston (Ø 16 - 32):	Neodymium									
Piston (Ø 40 - 100):	Plastoferrite									
Tube:	Anodised aluminum alloy									
Piston and piston rod:	PUR piston and piston rod (Viton® upon request)									
Other seals:	NBR									
Operating medium:	Compressed air, dry, lubricant not necessary									
Pressure range:	1.5 - 10 bar									
Operating temperature:	NBR/PUR seals: -10 °C to +70 °C Viton® seals: -10 °C to +150 °C									
Force at 6 bar:	Ø	16	20	25	32	40	50	63	80	100
	N [push]	115	175	280	470	730	1.140	1.820	2.950	4.600
	N [pull]	85	135	245	400	660	1.000	1.700	2.660	4.300

Exploded View



1. Front cover
2. Rear cover
3. Piston rod
4. Cylinder body
5. Front part of piston
6. Rear part of piston
7. Piston rod seal (PUR)
8. Rubber seal (PUR)
9. O-ring (NBR)
10. O-ring (NBR)
11. Magnetic ring
12. Fixing nut
13. End circlip
14. Piston rod guide bushing
15. Front circlip

Dimensional Drawing



Ø	A	B	C	D	E	F	G	H	I	J	ØK	L	ØM	N	ØO	P	Q	R	S	T	U
16	28	28	31	20	20	31	8	M5	M4	15	6	3.5	-	-	8	4.5	M5x7	7	36	M6	18
20	32	32	35	22	22	31	8.5	M5	M5	15	7	4.5	-	-	10	4.5	M5x7	8	36	M8	20
25	38	39	44.5	26	28	33	9	G1/8	M5	15	7	4.5	-	-	10	5.5	M5x7	8	39	M8	20
32	45	48	54	32	36	36	9.7	G1/8	M6	15	9	5.5	24.5	3.5	12	9	M6x12	10	45	M10x1.25	22
40	54.5	54.5	60	40	40	41	11.5	G1/8	M6	15	9	5.5	30	5.5	12	12	M6x12	10	53	M10x1.25	22
50	65	65	72.5	50	50	42	11.5	G1/8	M8	20	11	6.5	35	5.5	16	13	M8x16	13	55	M12x1.25	24
63	80	80	88	62	62	42	12	G1/8	M10	20	13.5	9	35	6.5	16	15	M8x16	13	57	M12x1.25	24
80	100	100	110	82	82	52	14	G1/4	M10	25	13.5	9	44	10	25	18	M10x18	22	70	M20x1.5	32
100	124	124	134	103	103	62	15	G1/4	M12	30	17	11	56	10	25	20	M12x20	22	82	M20x1.5	32

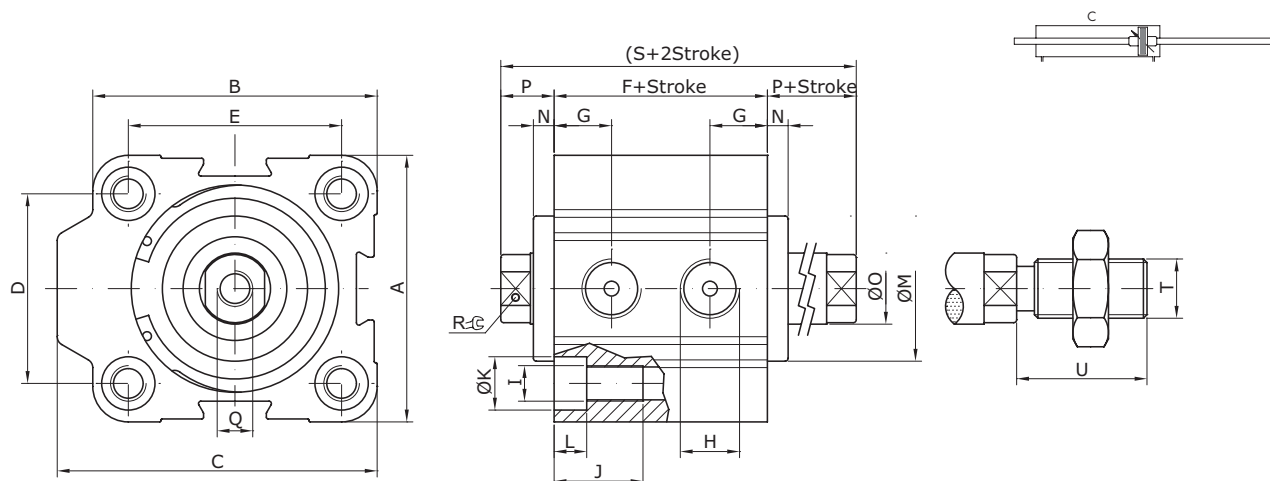
Order Code

Order specifications		CB	M.	032.	050.	DOM
Series Number		CB				
Design						
Piston diameter	magnetic		M			
	non-magnetic		S			
	torsion protected (magnetic)		A			
	torsion protected (non-magnetic)		B			
Stroke	Ø 16			016		
	Ø 20			020		
	Ø 25			025		
	Ø 32			032		
	Ø 40			040		
	Ø 50			050		
	Ø 63			063		
	Ø 80			080		
	Ø 100			100		
Stroke						
Version		mm			xxx	
Design	double acting					DOM
	single acting					SOM
Design	standard (female threaded piston rod)					-
	through piston rod (female threaded)					1
	tandem					2
	back-to-back					3
	stainless steel piston rod					4
	viton® seals (non-magnetic)					8
	male threaded piston rod					9

Special versions	CB	M	ddd	xxx	zzzz
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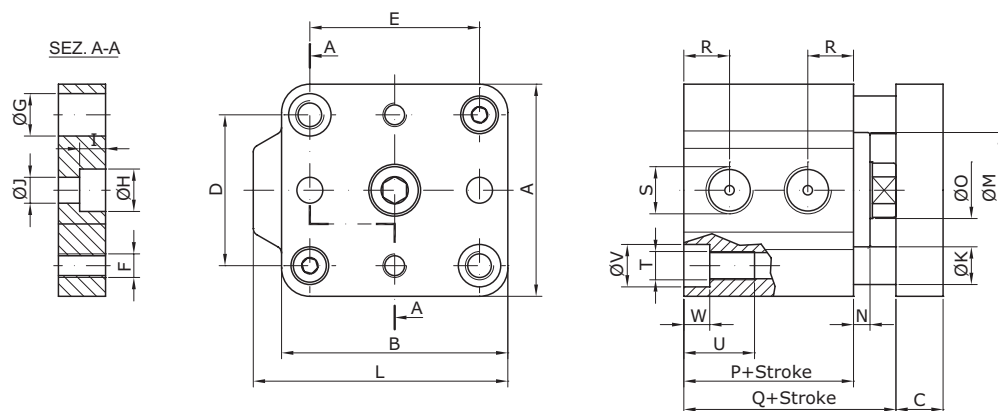
zzzz = project no. (added by factory)

Through Piston Rod



Ø	A	B	C	D	E	F	G	H	I	J	ØK	L	ØM	N	ØO	P	Q	R	S	T	U
16	28	28	31	20	20	31	8	M5	M4	15	6	3.5	-	-	8	4.5	M5x7	7	40	M6	18
20	32	32	35	22	22	31	8.5	M5	M5	15	7	4.5	-	-	10	4.5	M5x7	8	40	M8	20
25	38	39	44.5	26	28	33	9	G1/8	M5	15	7	4.5	-	-	10	5.5	M5x7	8	44	M8	20
32	45	48	54	32	36	36	9.7	G1/8	M6	15	9	5.5	24.5	3.5	12	9	M6x12	10	54	M10x1.25	22
40	54.5	54.5	60	40	40	41	11.5	G1/8	M6	15	9	5.5	30	5.5	12	12	M6x12	10	65	M10x1.25	22
50	65	65	2.5	50	50	42	11.5	G1/8	M8	20	11	6.5	35	5.5	16	13	M8x16	13	68	M12x1.25	24
63	80	80	88	62	62	42	12	G1/8	M10	20	13.5	9	35	6.5	16	15	M8x16	13	72	M12x1.25	24
80	100	100	110	82	82	52	14	G1/4	M10	25	13.5	9	44	10	25	18	M10x18	22	88	M20x1.5	32
100	124	124	134	103	103	62	15	G1/4	M12	30	17	11	56	10	25	20	M12x20	22	102	M20x1.5	32

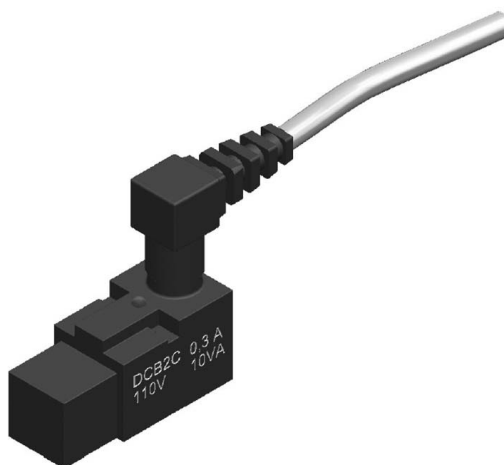
Short Stroke Cylinders - Double Acting & Torsion Protected Type



Ø	A	B	C	D	E	F	ØG	ØH	I	ØJ	ØK	L	M	ØN	ØO	P	Q	R	S	T	U	ØV	W
16	28	28	8	20	20	M3	6	6	3.5	3.5	4	32	-	-	8	31	35.5	8	M5	M4	15	6	3.5
20	32	32	8	22	22	M4	7	7.5	4.5	4.5	6	35	-	-	10	31	35.5	8.5	M5	M5	15	7	4.5
25	38	39	8	26	28	M4	7	7.5	4.5	4.5	6	44.5	-	-	10	33	38.5	9	G1/8	M5	15	7	4.5
32	45	48	10	32	36	M5	10	9	5.5	5.5	8	54	3.5	24.5	12	36	45	9.7	G1/8	M6	15	9	5.5
40	54.5	54.5	10	40	40	M5	10	9	5.5	5.5	8	60	5.5	30	12	41	53	11.5	G1/8	M6	15	9	5.5
50	65	65	12	50	50	M6	12	11	6.5	7	10	72.5	5.5	35	16	42	55	11.5	G1/8	M8	20	11	6.5
63	80	80	12	62	62	M6	14	11	6.5	7	10	88	6.5	35	16	42	57	12	G1/8	M10	20	13.5	9
80	100	100	15	82	82	M8	14	14	8.5	8.5	12	110	10	44	25	52	70	14	G1/4	M10	25	13.5	9
100	124	124	15	103	103	M8	17	14	8.5	8.5	12	134	10	56	25	62	82	15	G1/4	M12	30	17	11

Position Transmitter REED (2 pole with plug connector)

Switching capacity: max 10 VA
 Switching current: max 300 mA
 Switching voltage: 3 - 110 V AC/DC
 Switching time: 0.6 ms
 Housing material: plastic
 Ambient temperature range: -10°C to +70°C

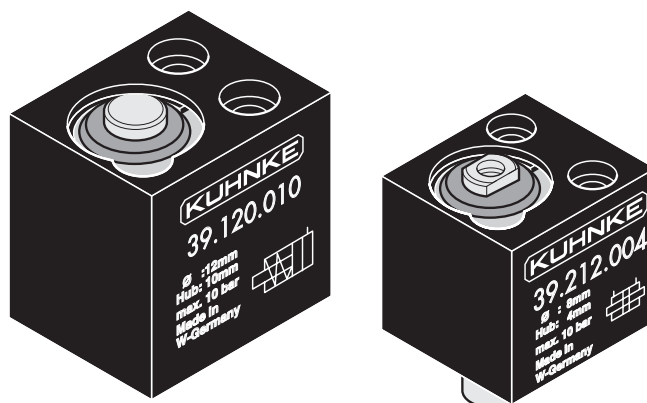


Code	Description
GA4MM	with cable L = 2000 mm

The shipment include the brackets to insert the position transmitter in the groove.

MINIATURE SHORT STROKE CYLINDERS

General Information



The miniature short stroke cylinders are particularly suitable for applications where a relatively big force and a short stroke are re-

quired. These cylinders are available as single or double acting with single or through rod versions.

Technical Data

Piston diameters:	Ø 8, 12, 20, 32, 50, 63 (mm)						
Ports:	Ø 8, Ø 12, Ø 20 = M5; Ø 32 = G1/8; Ø 50, Ø 63 = G1/4						
Housing:	Anodised aluminum alloy						
Piston rod:	Steel, corrosion resistant						
Cap:	Brass						
Seals:	Perbunan						
Operating medium:	Compressed air, prepared						
Lubricant:	Shell Tellus Oil C10 or equivalent						
Operating temperature:	-10 °C to +70 °C						
Operating pressure (bar):	Ø	8	12	20	32	50	63
	Single acting	2 - 10	1.5 - 10	1.5 - 10	1 - 10	1 - 10	0.5 - 10
	Double acting	1.5 - 10	1 - 10	0.5 - 10	0.5 - 10	0.5 - 10	0.5 - 10
Stroke limitation:	Max. + 1 mm						
Max. stroke:	50 mm						
Mounting:	Recesses in the top and bottom surfaces of the housing						

Upon request we can manufacture short stroke cylinders with intermediate strokes, alternative mountings and temperature ranges. Please note that in this case the cylinder will be a special type and the minimum order quantity will be 50 pcs.

Order Code

Order specifications		39.	2	6	2.	025
Series Number		39				
Design						
	Single acting		1			
	Double acting		2			
Piston diameter						
	Ø 8			1		
	Ø 12			2		
	Ø 20			3		
	Ø 32			4		
	Ø 50			6		
	Ø 63			7		
Type						
	Standard				0	
	Through piston rod				1	
Stroke						
	mm					xxx

Special versions	SP.739.	zzzz
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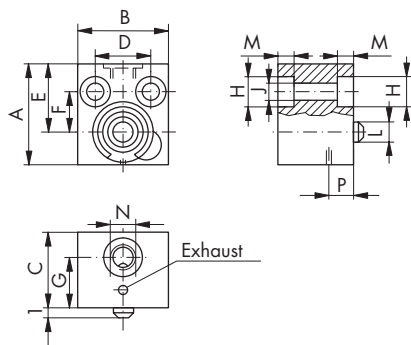
zzzz = project no. (added by factory)

Accessories - Sealing set complete to suit all versions

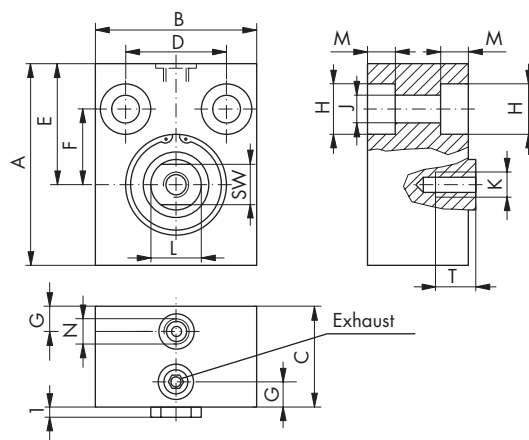
Ø	Code
8	39.601.01
12	39.601.02
20	39.601.03
32	39.601.04
50	39.601.05
63	39.601.06

Miniature Short Stroke Cylinders - Single Acting Type

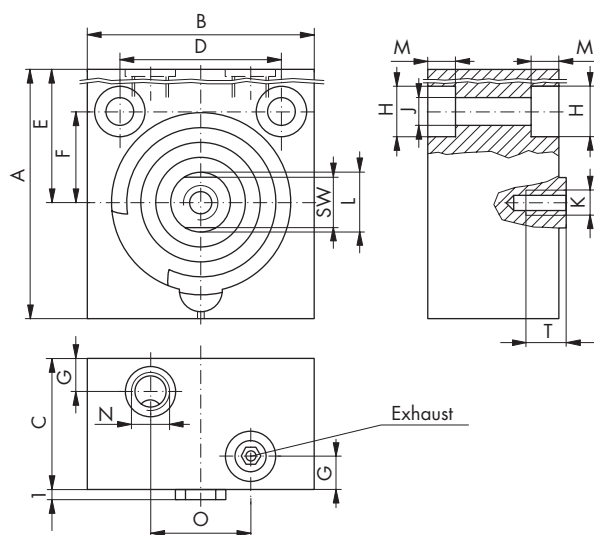
VERSION I



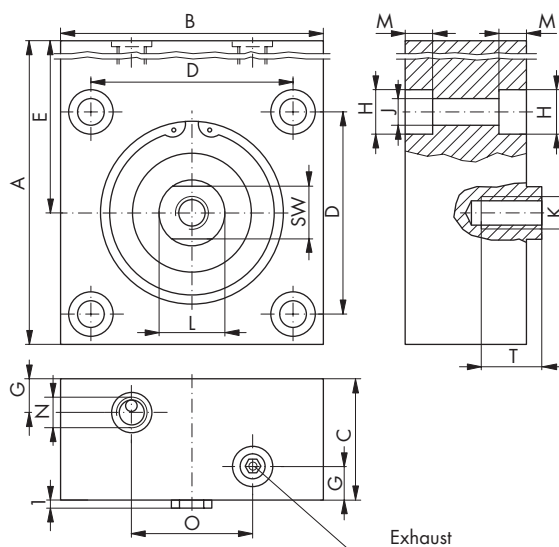
VERSION II



VERSION III



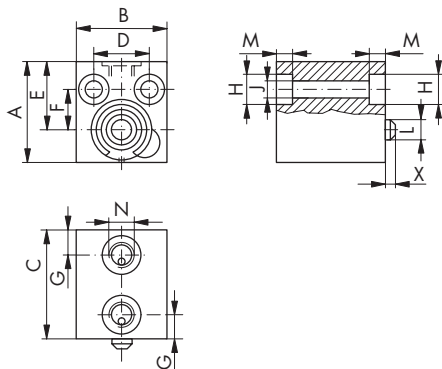
VERSION IV



Ø	Version	Stroke	A	B	C	D	E	F	G	H (Ø)	J (Ø)	K	L (Ø)	M	N	O	P	T	SW	Pressure force (N) at 6 bar
8	I	4	20	18	15	11	13,5	8	10	6	3,4	-	4	3,2	M5	-	4,9	-	-	25
12	I	4	25	20	15	13	16	9	10	6	3,4	-	5	3,4	M5	-	4,6	-	-	55
12	I	10	25	20	23	13	16	9	18	6	3,4	-	5	3,4	M5	-	4,6	-	-	55
20	II	4	40	32	20	20	24	15	5	10	5,5	M5	10	5,5	M5	-	-	8	8	165
20	II	10	40	32	26	20	24	15	5	10	5,5	M5	10	5,5	M5	-	-	8	8	165
32	III	5	55	45	26	32	32	18	10	10	5,5	M6	12	5,5	G1/8	20	-	14,5	10	445
32	III	10	55	45	31	32	32	18	10	10	5,5	M6	12	5,5	G1/8	20	-	14,5	10	445
32	III	25	55	45	46	32	32	18	10	10	5,5	M6	12	5,5	G1/8	20	-	14,5	10	445
50	IV	10	80	65	30	50	47,5	-	12	11	6,6	M8	16	6,8	G1/4	30	-	15	13	1100
50	IV	25	80	65	45	50	47,5	-	12	11	6,6	M8	16	6,8	G1/4	30	-	15	13	1100
63	IV	10	90	80	35	62	50	-	12	15	9	M8	16	9	G1/4	30	-	15	13	1760
63	IV	25	90	80	50	62	50	-	12	15	9	M8	16	9	G1/4	30	-	15	13	1760
Ø	8	12	12	20	20	32	32	32	50	50	63	63								
Mass (g)*	-	25	25	75	75	120	120	120	250	250	300	300								

* For greater fixed masses the stroke is to be limited externally.

VERSION V

[illegible]

Technical drawing of a mechanical part, showing three views: front view, side view, and top view. The drawing includes dimensions for various features:

- Front View:** Shows a circular base with concentric circles. Dimensions include:
 - A : Total height.
 - B : Total width.
 - D : Width of the top flange.
 - E : Height of the top flange.
 - F : Height of the base.
 - L : Distance from the center to the edge of the base.
 - SW : Width of the base.
- Side View:** Shows a cross-section of the part. Dimensions include:
 - M : Thickness of the top flange.
 - H : Height of the base.
 - T : Thickness of the base.
- Top View:** Shows a rectangular base with concentric circles. Dimensions include:
 - G : Width of the base.
 - N : Distance from the center to the edge of the base.
 - C : Distance from the center to the edge of the base.
 - X : Distance from the center to the edge of the base.

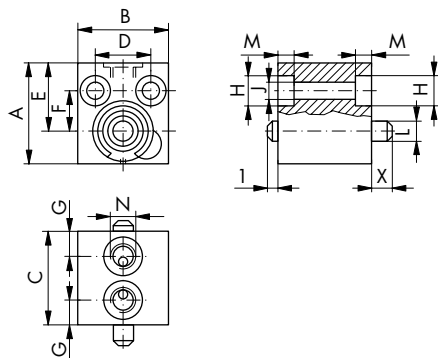
[illegible]

$\emptyset$	8	8	12	12	20	20	32	32	32	50	50	63	63
Mass (g)*	-	-	25	25	75	75	120	120	120	250	250	300	300

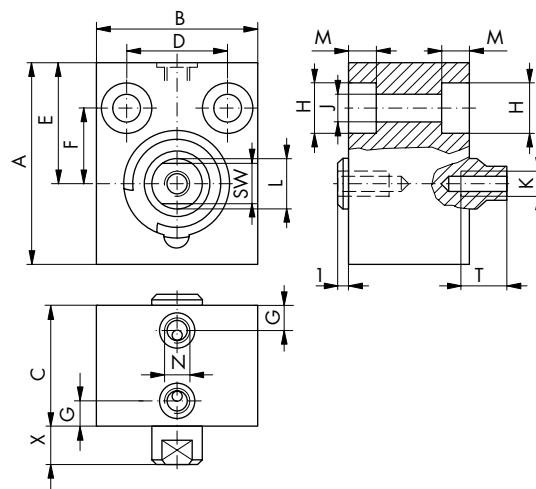
G | 46

Miniature Short Stroke Cylinders - Double Acting Through Rod

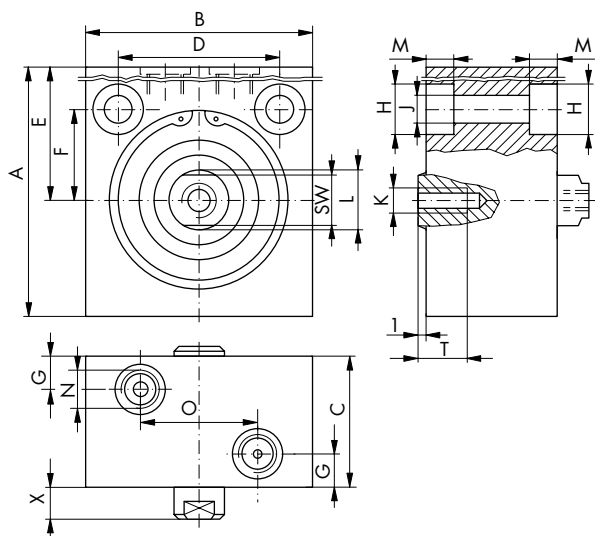
VERSION IX



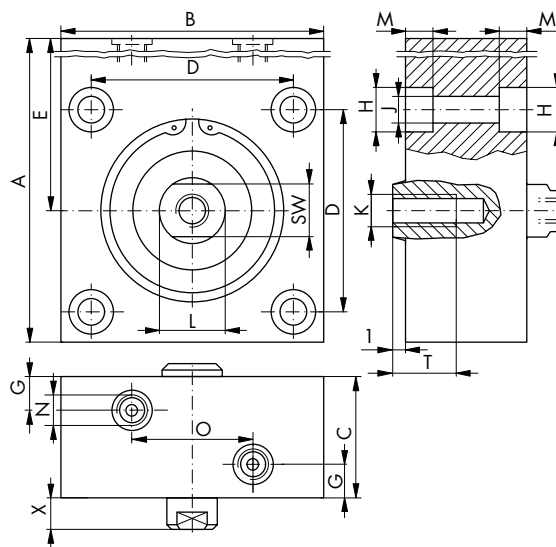
VERSION X



VERSION XI



VERSION XII



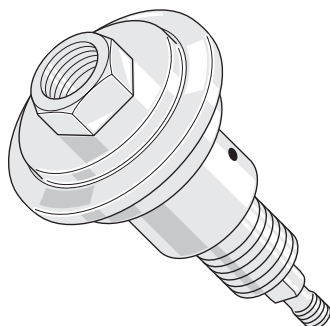
Ø	Version	Stroke	A	B	C	D	E	F	G	H (Ø)	J (Ø)	K	L (Ø)	M	N	O	X	T	SW	Pressure force (N) at 6 bar
8	IX	4	20	18	22	11	14	8	5	6	3	-	4	3	M5	-	5	-	-	23
8	IX	10	20	18	28	11	14	8	5	6	3	-	4	3	M5	-	11	-	-	23
12	IX	4	25	20	24	13	16	9	5	6	3	-	5	3	M5	-	5	-	-	55
12	IX	10	25	20	30	13	16	9	5	6	3	-	5	3	M5	-	11	-	-	55
20	X	4	40	32	25	20	24	15	5	10	6	M5	10	6	M5	-	8	8	8	138
20	X	10	40	32	31	20	24	15	5	10	6	M5	10	6	M5	-	14	8	8	138
32	XI	5	55	45	34	32	32	18	10	10	6	M6	12	6	G1/8	20	10	15	10	406
32	XI	10	55	45	39	32	32	18	10	10	6	M6	12	6	G1/8	20	15	15	10	406
32	XI	25	55	45	54	32	32	18	10	10	6	M6	12	6	G1/8	20	30	15	10	406
50	XII	10	80	65	37	50	48	-	12	11	7	M8	16	7	G1/4	30	15	15	13	1.037
50	XII	25	80	65	52	50	48	-	12	11	7	M8	16	7	G1/4	30	30	15	13	1.037
63	XII	10	90	80	42	62	50	-	12	15	9	M8	16	9	G1/4	30	15	15	13	1.715
63	XII	25	90	80	57	62	50	-	12	15	9	M8	16	9	G1/4	30	30	15	13	1.715

Ø	8	8	12	12	20	20	32	32	32	50	50	63	63
Mass (g)*	-	-	25	25	75	75	120	120	120	250	250	300	300

* For greater fixed masses the stroke is to be limited externally.

SHORT STROKE CYLINDERS

General Information



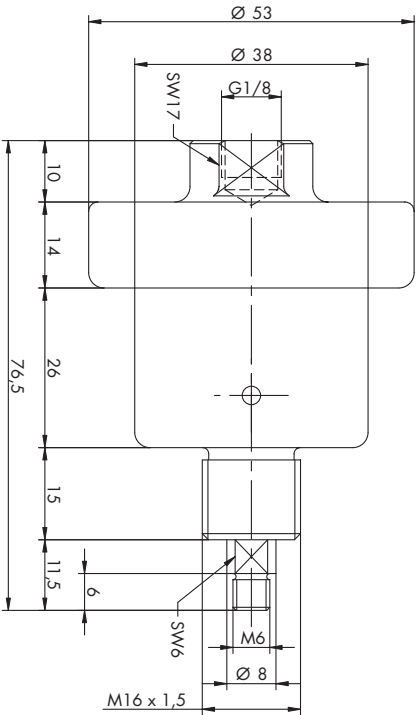
The small and reasonably priced short-stroke cylinder can be used where a relatively big force is required with a short stroke. It can be

directly mounted on machines and tools by means of its mounting thread.

Technical Data

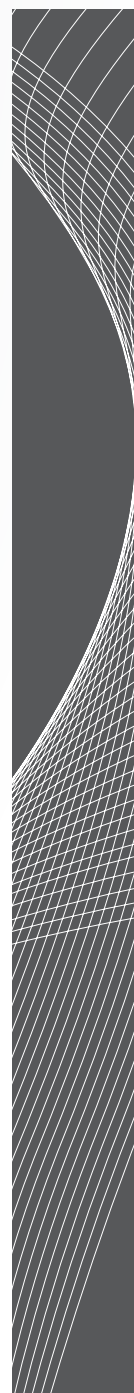
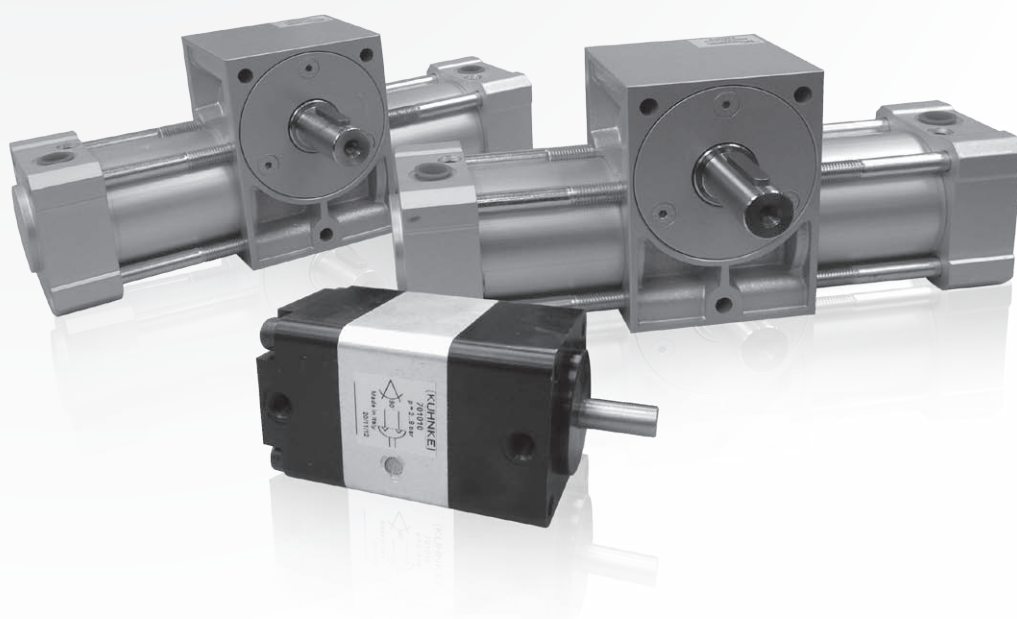
Piston diameters:	Ø 50 (mm)	
Ports:	Ø 50 = G1/8	
Housing:	Special deep drawn metal	
Piston rod:	Steel chromium plated	
Guide bush:	Self lubricating	
Operating medium:	Compressed air, dry, lubricant not necessary	
Version:	Single acting	
Design:	With membrane	
Pressure range:	1 - 8 bar	
Operating temperature:	-10 °C to +70 °C	
Force at 6 bar:	Ø (mm)	50
	N	500
Strokes:	8 mm	
Weight:	0.13 kg	

Dimensional Drawings



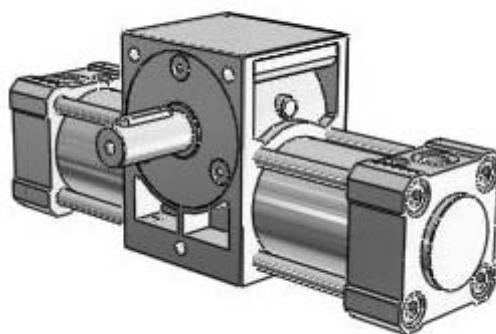
Code	$\varnothing$	Stroke
41.100	50	8 mm

SERIES UR - 70
ROTARY CYLINDERS



ROTARY CYLINDERS

General Information



Technical Data

Piston diameters:	Ø 25, 32, 40, 50, 63, 80, 100 (mm)
Ports:	Ø 25, Ø 32 = G1/8; Ø 40, Ø 50 = G1/4; Ø 63, Ø 80 = G3/8; Ø 100 = G1/2
Covers:	Cast light alloy, painted grey
Rack and pinion:	Hardened and tempered steel 39NiCrMo3
Tube:	Aluminium
Tie rods:	Galvanised steel
Seals:	PU 92 sh
Operating medium:	Compressed air, prepared, lubricant not necessary
Pressure range:	2 - 12 bar
Operating temperature:	-10 °C to +85 °C
Cushioning:	Present in the standard cylinder
Cushioning adjustment screw:	Present in the standard cylinder
Magnetic ring:	Present in the standard cylinder
Clearance between pinion and rack:	0.1° / 0.5°
Tolerance of rotation:	-0° / +2°

Order Code

Order specifications		UR.	050.	090.	PN
Series Number		UR			
Piston diameter					
	Ø 25		025		
	Ø 32		032		
	Ø 40		040		
	Ø 50		050		
	Ø 63		063		
	Ø 80		080		
	Ø 100		100		
Angle of rotation					
	from 10° to 720°			xxx	
Application					
	external pinion				PN
	pinion hole				PF

Theoretical Torque

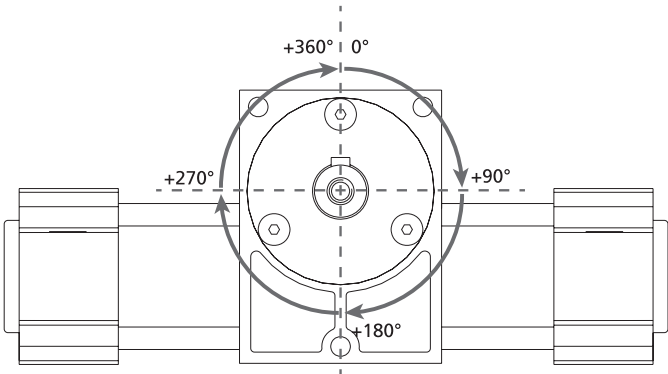
$M = p \times A \times R \times 10 \times m \text{ [Nm]}$

- p = pressure [bar]
- A = piston area [cm²]
- R = pitch radius of the pinion [m]
- m = performance (real quote 80%)

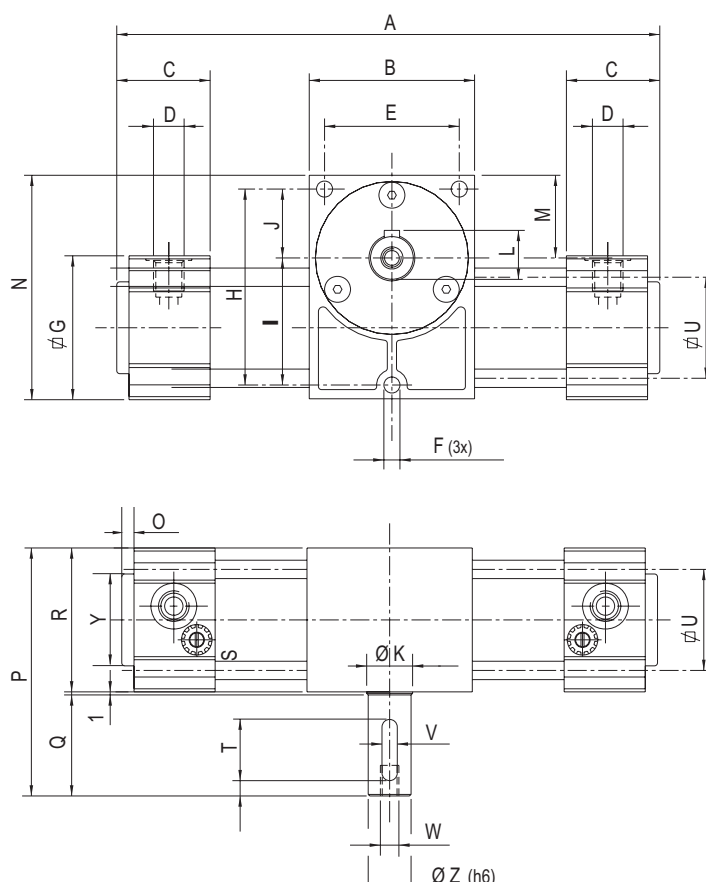
Diameter	A [cm²]	R [m]
Ø 25	4.9087	0.0125
Ø 32	8.0425	0.0150
Ø 40	12.5664	0.0180
Ø 50	19.6350	0.0210
Ø 63	31.1725	0.0240
Ø 80	50.2655	0.0350
Ø 100	78.5398	0.0400

Mounting Instruction

The centre position is provided with a key.
Clockwise rotation.



Drawings Dimension with Male Pinion



Ø	A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	degree 0°	incr. (mm/°)															
Ø 25	111	0.44	43	14.5	G1/8	34	5.25	35	50	32.85	17.15	12	11.2	21.65	59	-	64
Ø 32	141	0.52	54	30.5	G1/8	44	5.25	47	64	41.5	22.5	15	16	27	73	4	81
Ø 40	165	0.62	60	32	G1/4	46	6.5	52	70	47	23	17	17	29.5	83	4	90
Ø 50	181	0.74	75	32	G1/4	58	6.5	65	84	54.5	29.5	25	20.5	38.5	102	4	109
Ø 63	206	0.84	85	39	G3/8	69	8.5	75	100	65.1	34.9	30	22.5	42.9	116	4	123.5
Ø 80	237	1.22	110	38	G3/8	90	10.5	95	130	85.95	44.05	40	28	53.55	149	4	147
Ø 100	264	1.4	120	42	G1/2	96	10.5	115	148	100.5	47.5	55	38	59.2	171	4	181

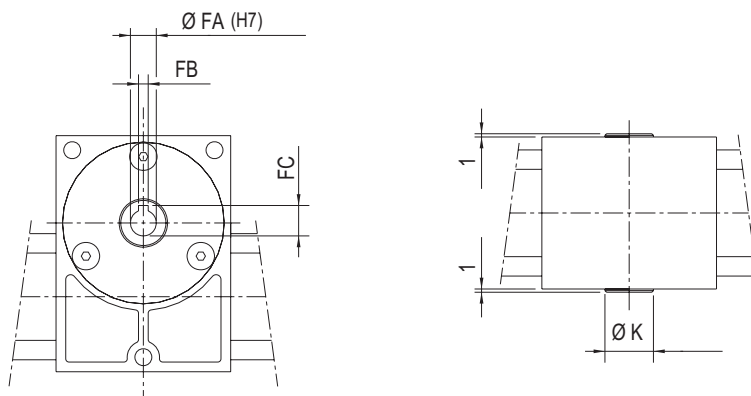
Ø	Q	R	S	T	U	V	W	Y d11	Z
Ø 25	25	38	4	18	25.5	3	M4	-	10
Ø 32	33	47	5	20	32.5	5	M5	30	14
Ø 40	33	56	5	20	38	5	M5	35	15
Ø 50	40	68	5	30	46.5	6	M6	40	18
Ø 63	44	78	4	35	56.5	6	M6	45	20
Ø 80	48	98	5	40	72	8	M8	45	25
Ø 100	60	120	5	50	89	10	M10	55	35

A = A degrees + [degrees * A incr. (mm/°)]

Calculation example for quote "A" [mm]

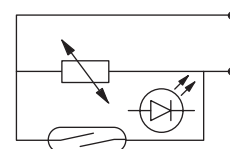
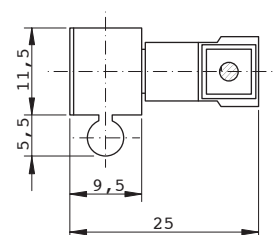
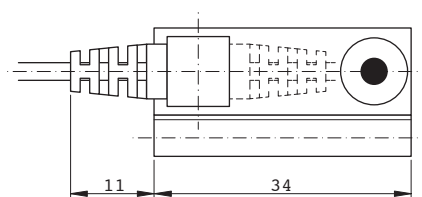
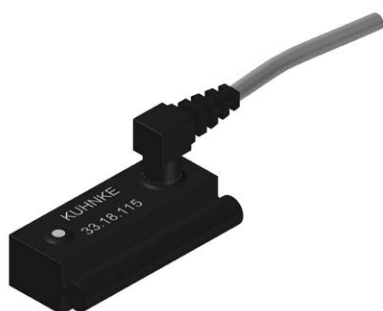
Angle	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100
A = 90°	150.6	187.8	220.8	247.6	281.6	346.8	390
A = 180°	190.2	234.6	276.6	314.2	357.2	456.6	516
A = 360°	269.4	328.2	388.2	447.4	508.4	676.2	768

Drawings Dimension with Pinion Hole



Dimension	$\varnothing 25$	$\varnothing 32$	$\varnothing 40$	$\varnothing 50$	$\varnothing 63$	$\varnothing 80$	$\varnothing 100$
FA	8	8	10	14	20	20	25
FB	3	3	3	5	6	6	8
FC	9	9.4	11.4	16.3	22.8	22.8	28.3
K	12	15	17	25	30	40	55

Position Transmitter REED (2 pole with plug connector)

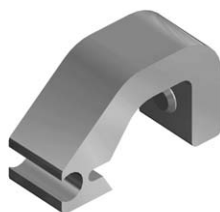


Switching output: N.O.
 Switching capacity: max 10 VA
 Switching voltage: 3-230 V AC/DC
 Switching current: max 500 mA
 Voltage drop: -
 Switching time: 0.5 ms
 Service life: 10^7 operations, depending on the load
 Housing material: plastic
 Protection class: IP67
 Ambient temperature range: -20°C to $+85^{\circ}\text{C}$
 Status indicator: LED

Code	Description
33.18.115	with cable L = 3000 mm

Fastening Clamps

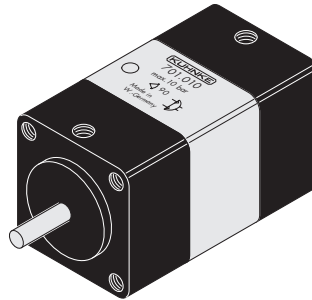
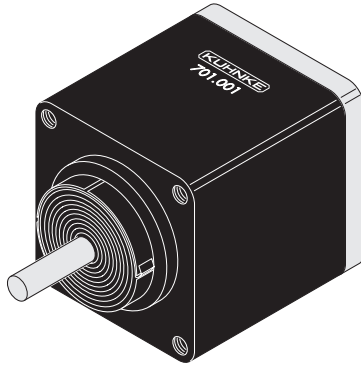
This clamp is used to fit position transmitter 33.18.115.



$\varnothing$	Code
32 - 40	33.009.01
50 - 63	33.009.03
80 - 100	33.009.05

MINIATURE ROTARY CYLINDERS

General Information



Pneumatically operated miniature rotary actuators are available in either single direction spring return or dual direction. The linear

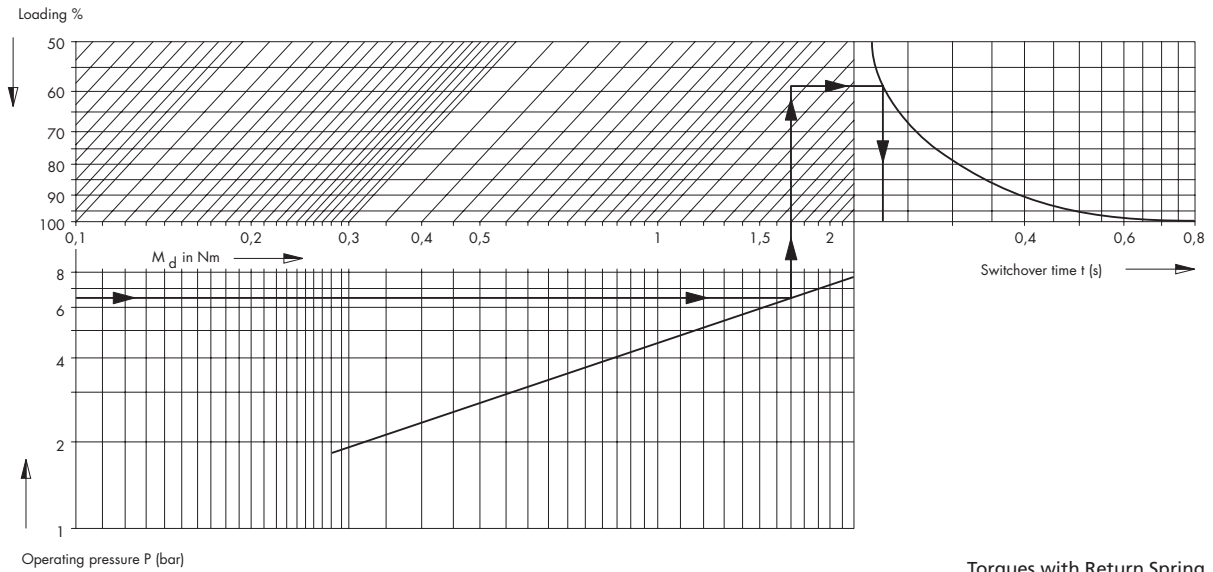
movement of an internal piston produces angular movement of the external shaft.

Technical Data

Piston diameters:	Ø35 for double acting, Ø50 for single and double acting		
Ports:	Ø 35 = M5; Ø 50 = G1/8		
Housing:	Anodised aluminium alloy		
Drive shaft:	CrNi steel, corrosion resistant		
Cover:	Anodised aluminium alloy		
Seals:	Perbunan, oil resistant		
Operating medium:	Compressed air, prepared		
Lubricant:	Shell Tellus Oil C10 or equivalent		
Version:	Single acting		
Return torque (Md):	Approx. 0,165 Nm		
Angular travel:*	Single acting Double acting		
Pressure range:	2 - 8 bar		
Operating temperature:	-10 °C to +70 °C		
Rotation:	Anti-clockwise or Clockwise Rotation		
Stroke volume:	Single acting	Ø 50	~ 7 cm ³
	Double acting	Ø 35	~ 7 cm ³ (for one switching cycle = forward motion and return)
	Double acting	Ø 50	~ 22 cm ³ (for one switching cycle = forward motion and return)
Stroke limitation:	The use of stroke limiters are recommended to achieve optimum life expectancy		

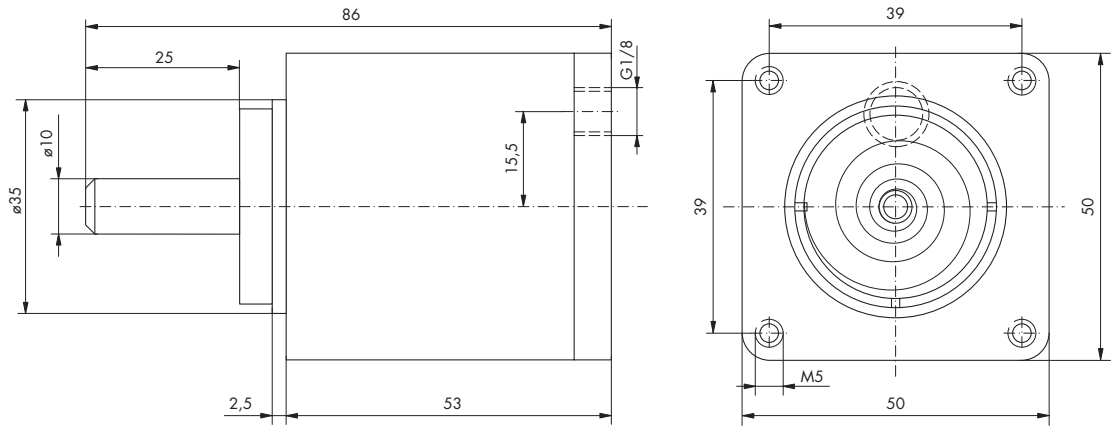
* The angle of rotation can be limited by fitting an external stop. Care must be taken that the angle is only limited in the forward movement of the shaft, i. e. the original position must be fully reached by the return spring when the actuator is exhausted.

Single Acting Miniature Rotary Actuators Torques



Torques with Return Spring
(with return torque set by factory)

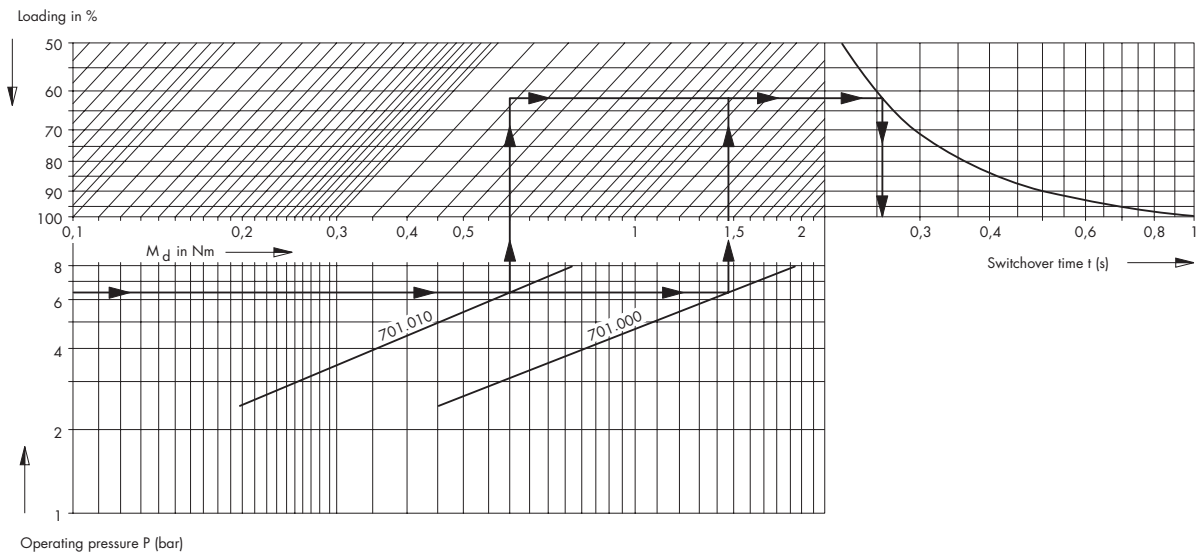
Drawings Dimension - Single Acting



SERIES UR - 70
ROTARY CYLINDERS

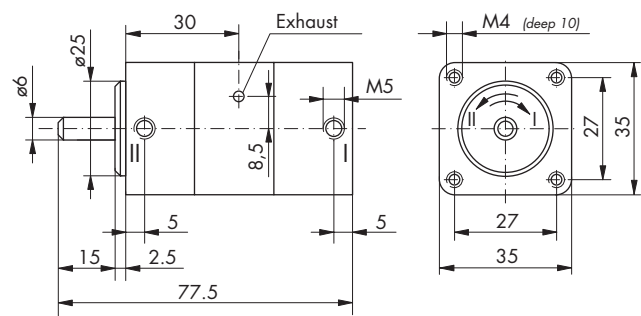
Code	Ø	Rotation	Symbol
701.001	50	Anti-clockwise rotation (looking at end of shaft)	
701.002	50	Clockwise rotation (looking at end of shaft)	

Double Acting Miniature Rotary Actuators Torques

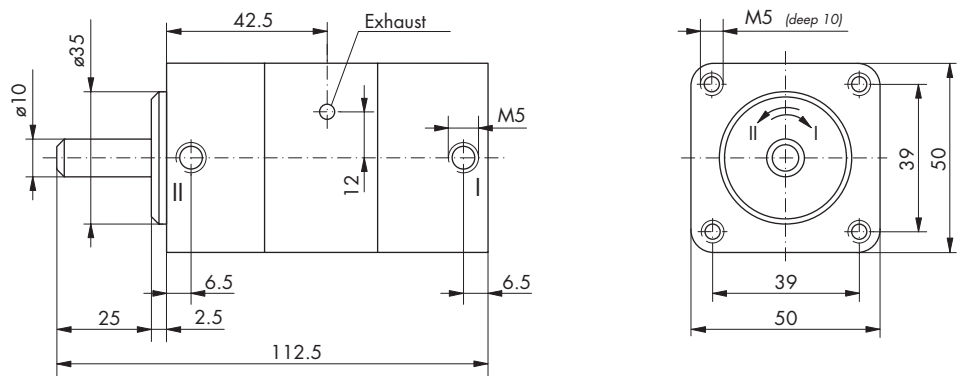


Drawings Dimension - Double Acting

Diameter 35 mm

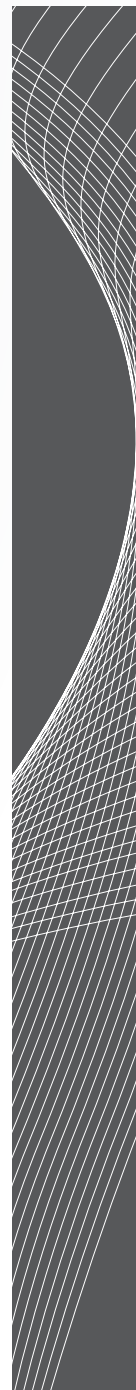
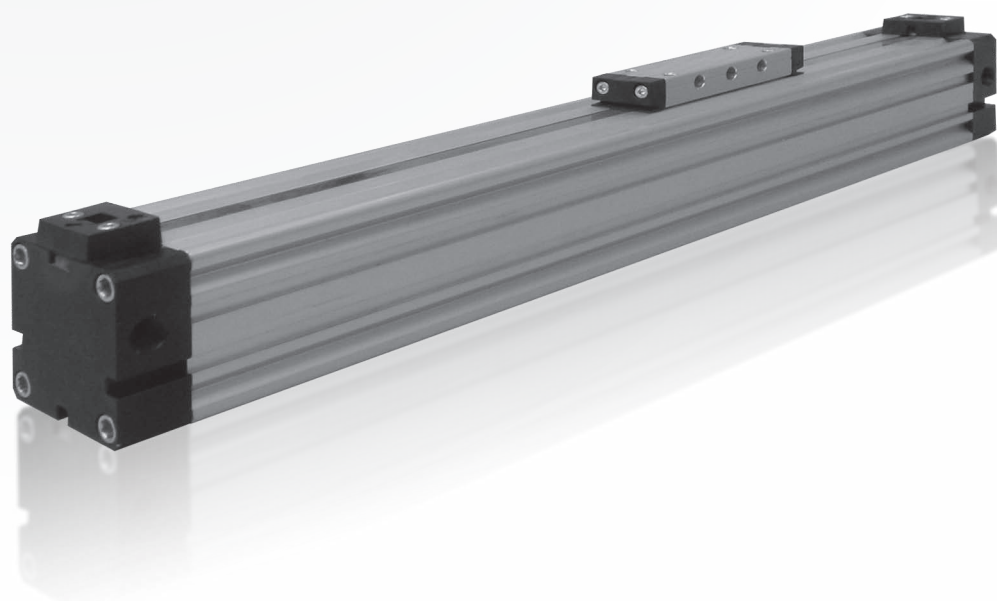


Diameter 50 mm



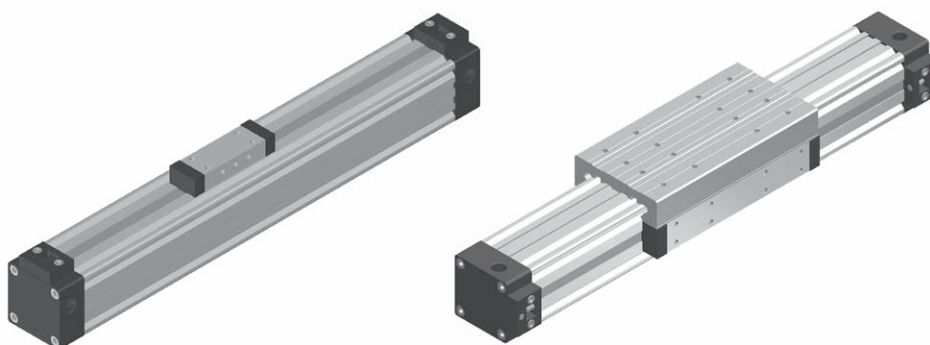
Code	$\varnothing$	Pressure applied	Symbol
701.010	35	connection I = direction of rotation I connection II = direction of rotation II	
701.000	50	connection I = direction of rotation I connection II = direction of rotation II	

SERIES Z
RODLESS CYLINDERS



RODLESS CYLINDERS

General Information



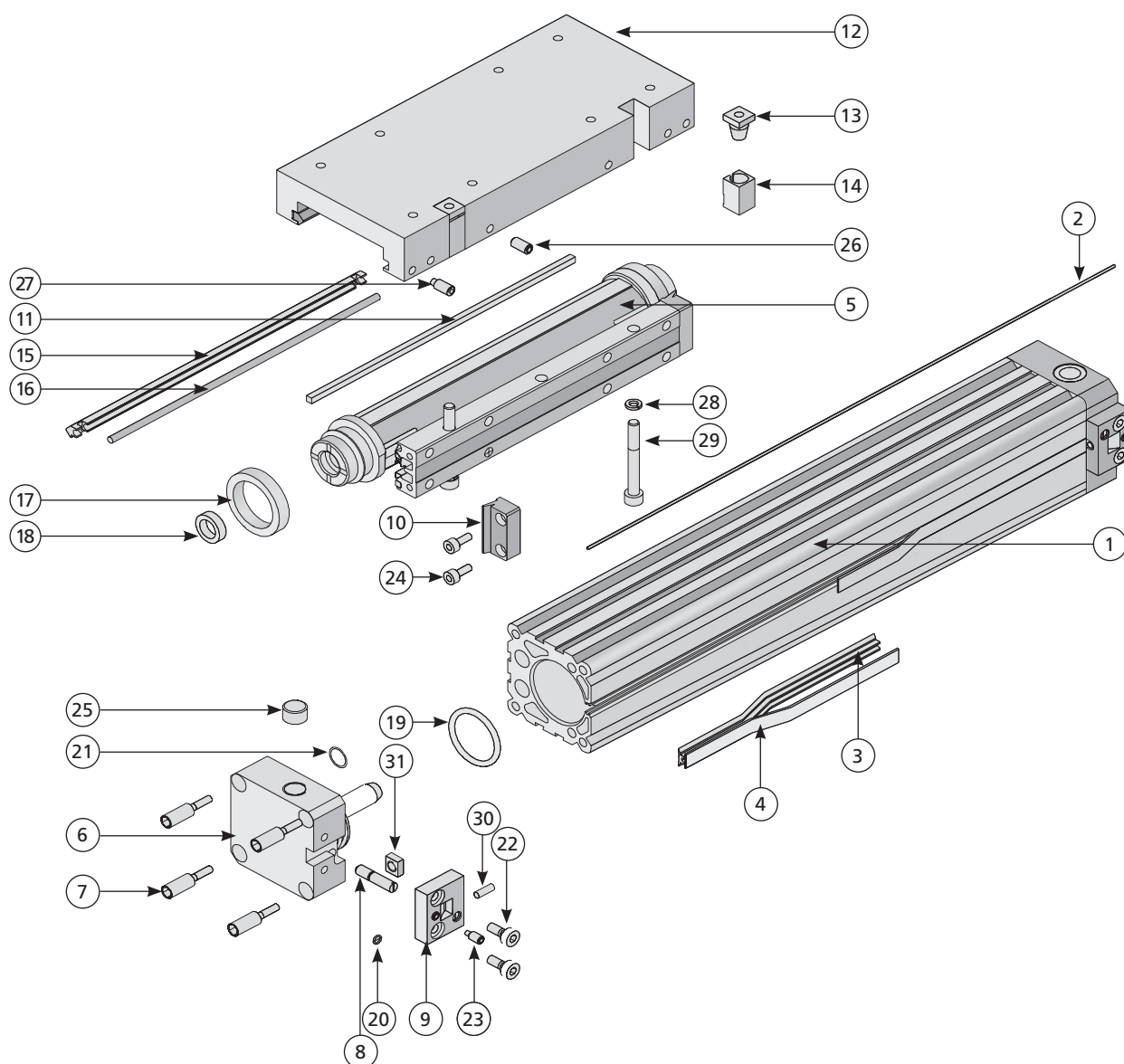
Rodless pneumatic cylinders are a device used to move loads where movement is required within the dimensions of the cylinder or where the space is limited and conventional cylinders are unsuitable. Ideally

used for long stroke applications and not subjected to bending, piston binding or uneven seal wear. Typically they are used in material handling, loading, feeding, lifting and profile cutting applications.

Technical Data

Piston diameters:	Ø 18, 25, 32, 40, 50, 63 (mm)						
Ports:	M7, G1/8, G1/4, G3/8						
Covers:	Aluminium						
Profiled tube:	Anodised aluminium profile						
Seals:	PUR						
Operating medium:	Filtered and slightly oiled or non-lubricated compressed air						
Pressure range:	2 - 8 bar						
Operating temperature:	PUR seals: -20 °C to +80 °C						
Cushioning length:	Ø	18	25	32	40	50	63
	mm	15	18	24	34	40	49
Force at 6 bar:	Ø	15	18	24	34	40	49
	N	140	270	440	680	1.060	1680
Max strokes:	1500 mm						

Exploded View

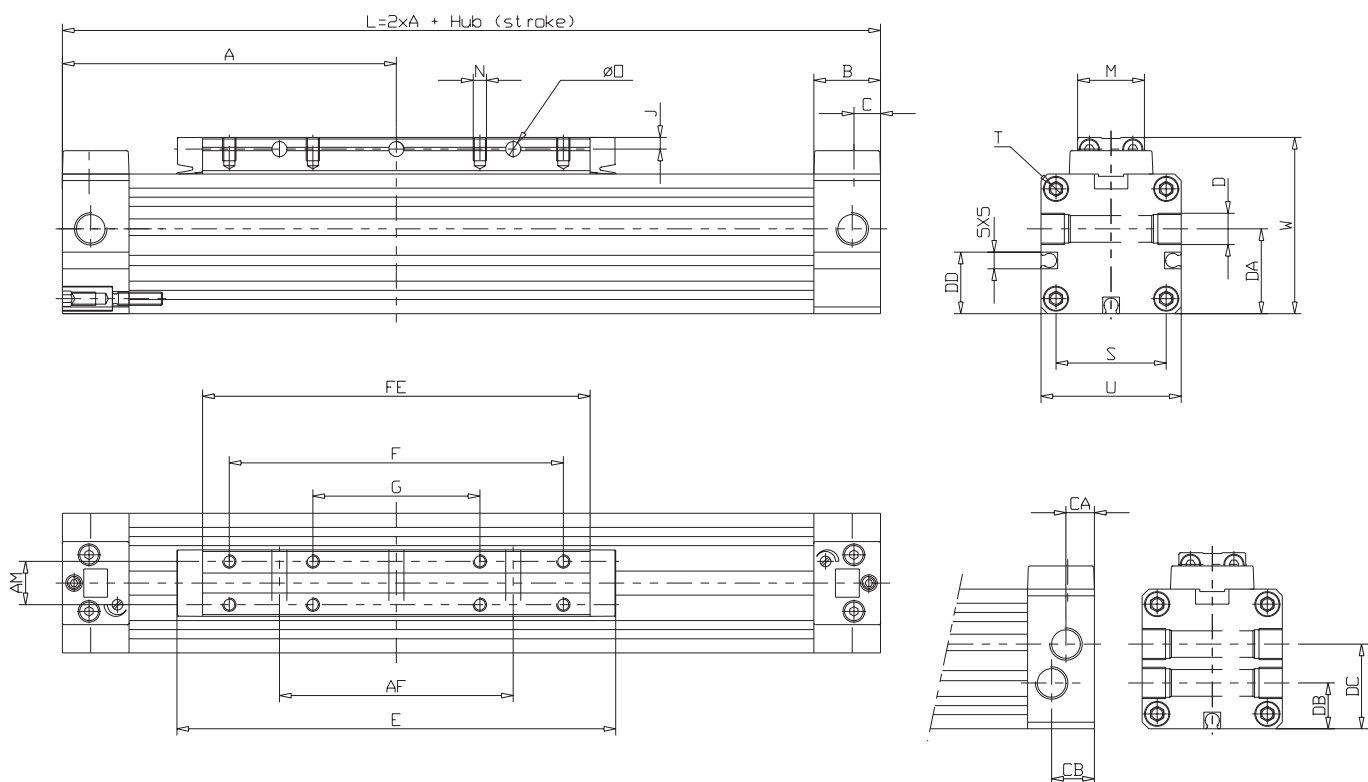


- | | |
|--------------------------------------|---|
| 1. Tube (Al anodised) | 17. Piston seal (PU) |
| 2. Round profile (TPU) | 18. Cushion ring (NBR) |
| 3. Sealing strip (PA) | 19. O-Ring (NBR) |
| 4. Cover strip (stainless steel) | 20. O-Ring (NBR) |
| 5. Tube (Al anodised) | 21. Flat seal (NBR) |
| 6. Endcap (Al anodised) | 22. Countersunk screw (zinc-plated steel) |
| 7. Special screw (zinc-plated steel) | 23. Grub screw with pin (zinc-plated steel) |
| 8. Cushioning pin (stainless steel) | 24. Cylinder head screw (zinc-plated steel) |
| 9. Strip cover (POM) | 25. Plug screw (zinc-plated steel) |
| 10. Head wiper (POM) | 26. Grub screw (zinc-plated steel) |
| 11. Wiper (POM) | 27. Grub screw with pin (zinc-plated steel) |
| 12. Carriage (Al anodised) | 28. Plain washer (zinc-plated steel) |
| 13. Cone nut (zinc-plated steel) | 29. Cylinder head screw (zinc-plated steel) |
| 14. Clamp wedge (Al anodised) | 30. Grub screw (zinc-plated steel) |
| 15. Guiding bar (POM) | 31. Square nut (zinc-plated steel) |
| 16. Press bar (stainless steel) | |

Order Code

Order Code		Z	S.	32.	0500	
Series Number		Z				
Design						
Piston diameter	standard		S			
	short (reduced dimensions)		K			
	guiding standard		F			
	guiding short (reduced dimensions)		FK			
Piston diameter	Ø 18			18		
	Ø 25			25		
	Ø 32			32		
	Ø 40			40		
	Ø 50			50		
	Ø 63			63		
Stroke						
Stroke	mm				XXXX	
Stroke	feeding from both sides					-
	feeding from one side					A

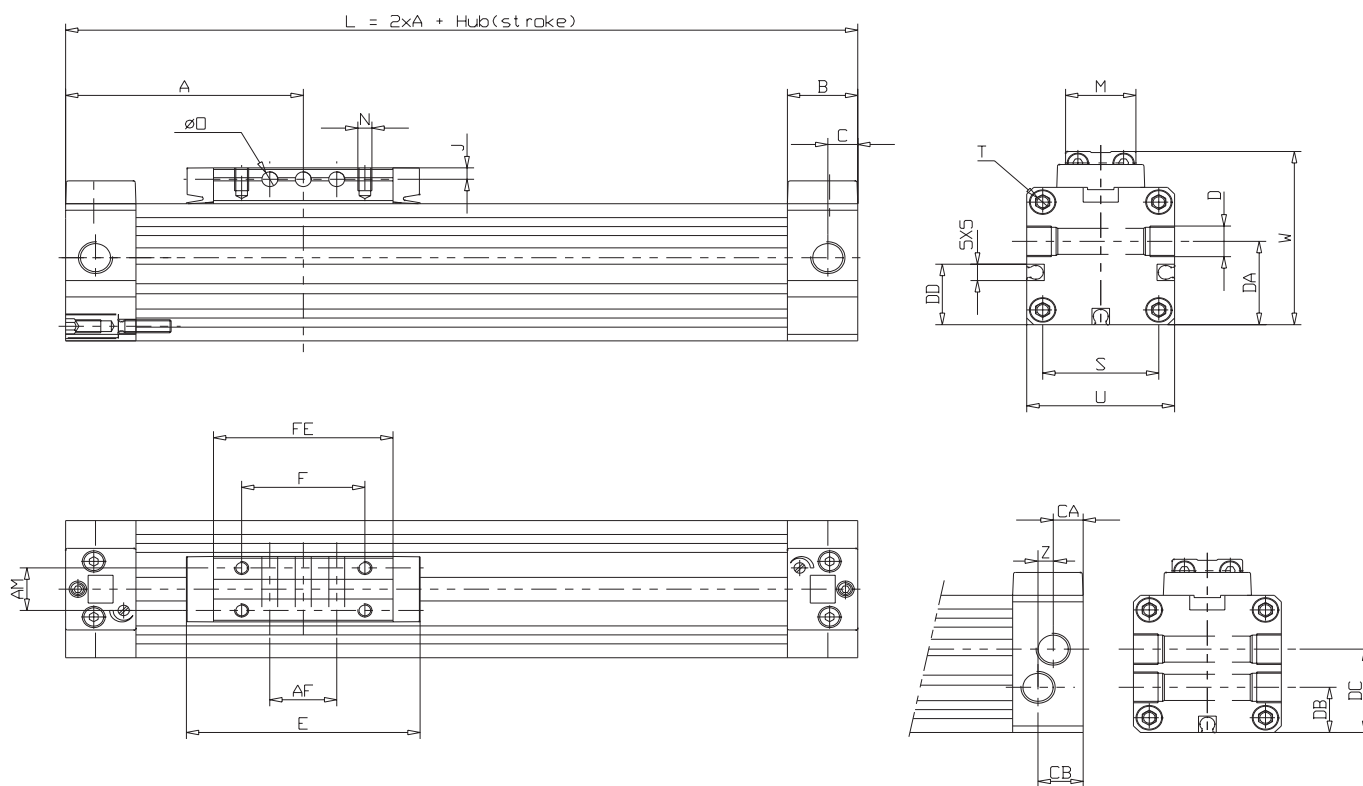
Rodless Cylinder ZS - Standard



Ø	A	AF	AM	B	C	CA	CB	D	DA	DB	DC	DD
Ø 18	80	50	10	16.5	6.5	-	-	M7x1 / 6	15.5	-	-	-
Ø 25	100	70	13	20	8.5	7	13	G1/8 x 8	25.5	14	28	18.5
Ø 32	120	100	16	20	8.5	7	13	G1/8 x 8	32	16	34.5	21
Ø 40	150	140	22	23	13	11	14.5	G1/4 x 12	37.5	18.5	41	29.5
Ø 50	180	180	29	23	13	12	14	G1/4 x 12	47.5	22,5	47.5	37
Ø 63	215	230	40	29	13	12,5	15,5	G3/8 x 12	59.5	24,5	59.5	44.5

Ø	E	F	FE	G	J	M	N	Ø O	S	T	U	W
Ø 18	103	75	90	-	3	15.5	M3 x 6	Ø 3.5	□ 23.5	M3 x 7	□ 30	39
Ø 25	131	100	116	50	3.5	20	M4 x 7	Ø 4.5	□ 33	M4 x 9	□ 42	53
Ø 32	171	140	156	70	4.5	25	M5 x 9	Ø 5.5	□ 41	M5 x 10	□ 52	65
Ø 40	220	180	220	90	5	33	M6 x 10	Ø 7	□ 51	M6 x 12	□ 63	79
Ø 50	280	220	260	110	6.5	42	M8 x 12.5	Ø 7	□ 63	M8 x 12	□ 78	96
Ø 63	333	280	313	140	8	54	M8 x 15	Ø 9	□ 78	M8 x 12	□ 93	113.5

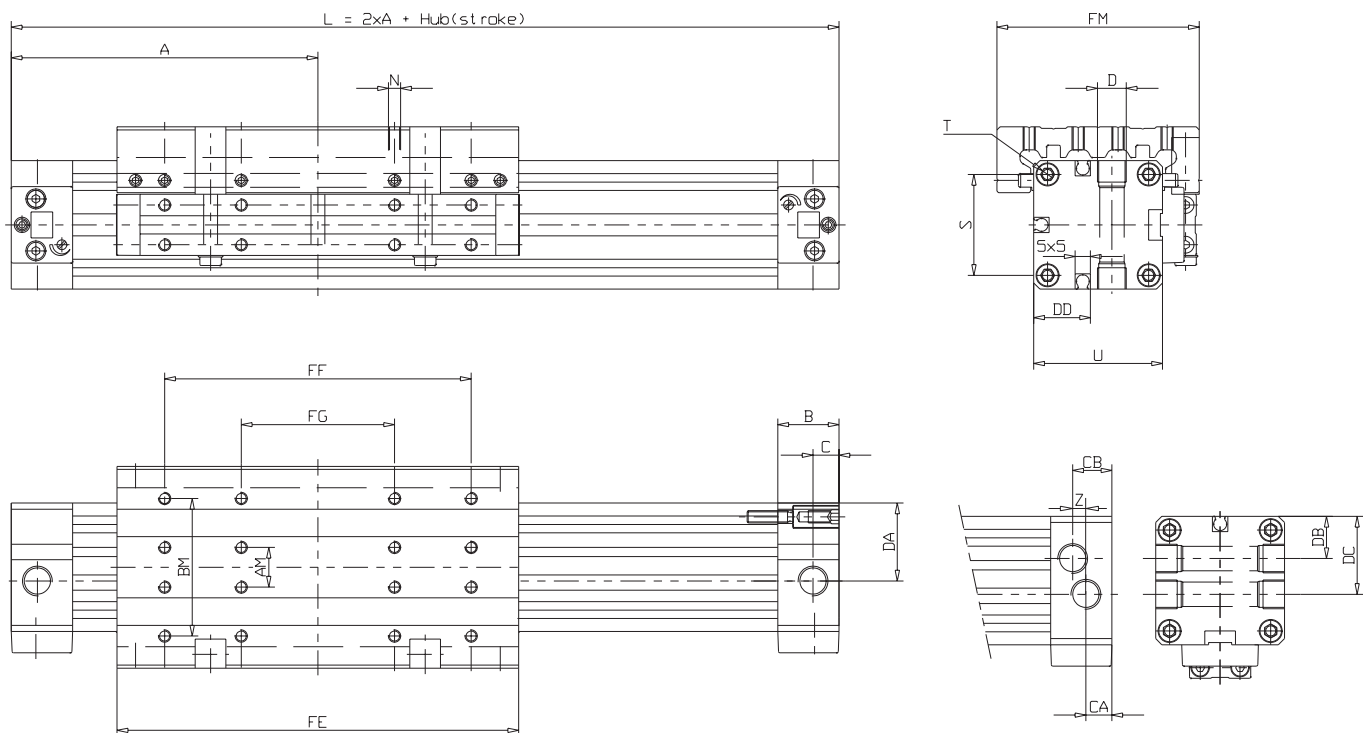
Rodless Cylinder ZK - Short cylinder



$\varnothing$	A	AF	AM	B	C	CA	CB	D	DA	DB	DC	DD
$\varnothing 18$	57.5	15	10	16.5	6.5	-	-	M7x1 / 6	17.5	-	-	-
$\varnothing 25$	67.5	19	13	20	8.5	7	13	G1/8 x 8	25.5	14	28	18.5
$\varnothing 32$	77.5	35	16	20	8.5	7	13	G1/8 x 8	32	17.5	34.5	21
$\varnothing 40$	95	50	22	24	13	9.5	14.5	G1/4 x 12	37.5	20	42	29.5
$\varnothing 50$	105	46	29	24	13	9.5	14.5	G1/4 x 12	47.5	26	52	37
$\varnothing 63$	125	70	40	30	13	11	18.5	G3/8 x 12.5	59.5	30	62	44.5

$\varnothing$	E	F	FE	J	M	N	$\varnothing O$	S	T	U	W	Z
$\varnothing 18$	58	30	90	3	15.5	M3 x 6	$\varnothing 3.5$	$\square 23.5$	M3 x 7	$\square 30$	39	-
$\varnothing 25$	66	35	116	3.5	20	M4 x 7	$\varnothing 4.5$	$\square 33$	M4 x 9	$\square 42$	53	6
$\varnothing 32$	86	55	156	4.5	25	M5 x 9	$\varnothing 5.5$	$\square 41$	M5 x 10	$\square 52$	65	6
$\varnothing 40$	110	70	220	5	33	M6 x 10	$\varnothing 7$	$\square 51$	M6 x 12	$\square 63$	79	5
$\varnothing 50$	130	70	260	6.5	42	M8 x 12.5	$\varnothing 7$	$\square 63$	M8 x 12	$\square 78$	96	5
$\varnothing 63$	153	100	313	8	54	M8 x 15	$\varnothing 9$	$\square 78$	M8 x 12	$\square 93$	113.5	7

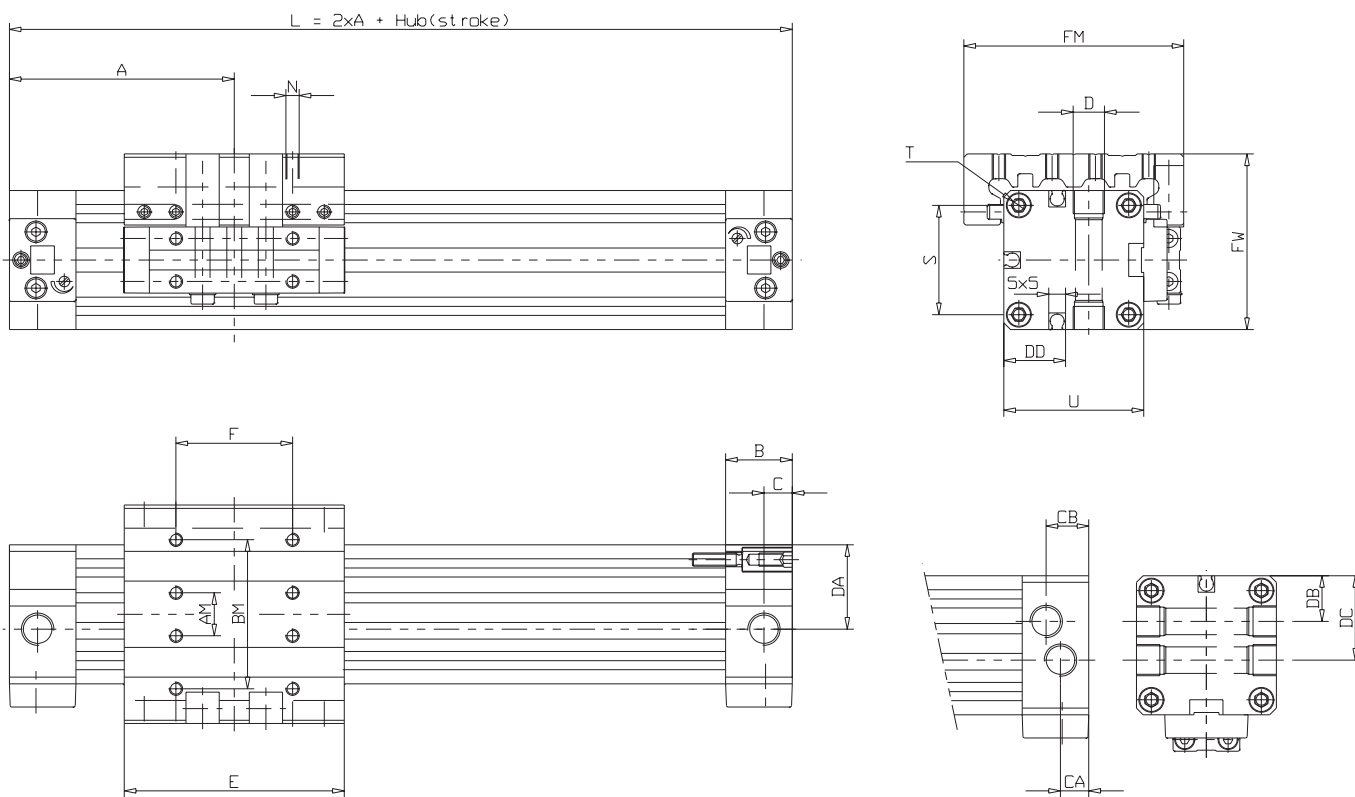
Rodless Cylinder ZF - Standard Guiding Cylinder



Ø	A	AM	B	BM	C	CA	CB	D	DA	DB	DC
Ø 18	80	10	16.5	35	6.5	-	-	M7x1 / 6	17.5	-	-
Ø 25	100	13	20	45	8.5	7	13	G1/8 x 8	25.5	14	28
Ø 32	120	16	20	55	8.5	7	13	G1/8 x 8	32	17.5	34.5
Ø 40	150	22	24	70	13	9.5	14.5	G1/4 x 12	37.5	20	42
Ø 50	180	29	24	85	13	9.5	14.5	G1/4 x 12	47.5	26	52
Ø 63	215	40	30	105	13	11	18.5	G3/8 x 12	59.5	30	62

Ø	DD	FE	FF	FG	FM	FW	N	S	T	U	Z
Ø 18	-	103	75	-	50	39	M4 x 7.5	□ 23.5	M3 x 7	□ 30	-
Ø 25	18.5	131	100	50	66	53	M4 x 8	□ 33	M4 x 9	□ 42	6
Ø 32	21	171	140	70	80	65	M5 x 10	□ 41	M5 x 10	□ 52	6
Ø 40	29.5	220	180	90	97	79	M6 x 12	□ 51	M6 x 12	□ 63	5
Ø 50	37	280	220	110	116	96	M8 x 16	□ 63	M8 x 12	□ 78	5
Ø 63	44.5	333	280	140	136	113.5	M8 x 16	□ 78	M8 x 12	□ 93	7

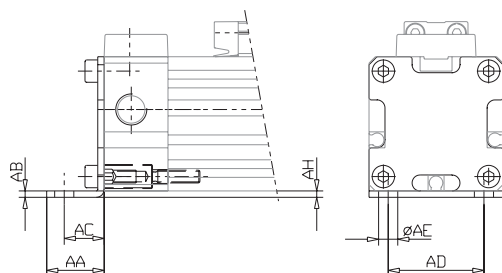
Rodless Cylinder ZFK - Short Guiding Cylinder



$\emptyset$	A	AM	B	BM	C	CA	CB	D	DA	DB
$\emptyset 18$	57.5	10	16.5	35	6.5	-	-	M7x1 / 6	17.5	-
$\emptyset 25$	67.5	13	20	45	8.5	7	13	G1/8 x 8	25.5	14
$\emptyset 32$	77.5	16	20	55	8.5	7	13	G1/8 x 8	32	17.5
$\emptyset 40$	95	22	24	70	13	9.5	14.5	G1/4 x 12	37.5	20
$\emptyset 50$	105	29	24	85	13	9.5	14.5	G1/4 x 12	47.5	26
$\emptyset 63$	125	40	30	105	13	11	18.5	G3/8 x 12.5	59.5	30

$\emptyset$	DC	DD	E	F	FM	FW	N	S	T	U
$\emptyset 18$	-	15	58	30	50	39	M4 x 7.5	□ 23.5	M3 x 7	□ 30
$\emptyset 25$	28	21	66	35	66	53	M4 x 8	□ 33	M4 x 9	□ 42
$\emptyset 32$	34.5	26	86	55	80	65	M5 x 10	□ 41	M5 x 10	□ 52
$\emptyset 40$	42	31.5	110	70	97	79	M6 x 12	□ 51	M6 x 12	□ 63
$\emptyset 50$	52	39	130	70	116	96	M8 x 16	□ 63	M8 x 12	□ 78
$\emptyset 63$	62	46.5	153	100	136	113.5	M8 x 16	□ 78	M8 x 12	□ 93

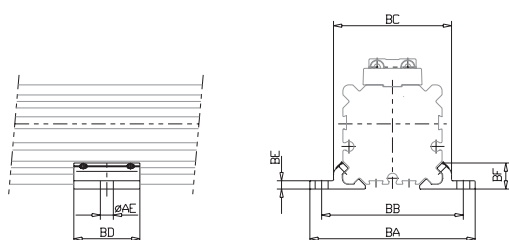
Mounting Bracket



Code	Ø	AA	AB	AC	AD	AE	AH
PK18	18	15	2	10	20	Ø 6	2
PK25	25	18	2	12.5	30	Ø 6	2
PK32	32	20	2.5	13.5	40	Ø 7	3
PK40	40	30	3	17.5	50	Ø 9	3.5
PK50	50	28	3	20	60	Ø 9	3
PK63	63	30	3	21	75	Ø 11	4.5

Note: The shipment includes 2 pieces.

Middle support

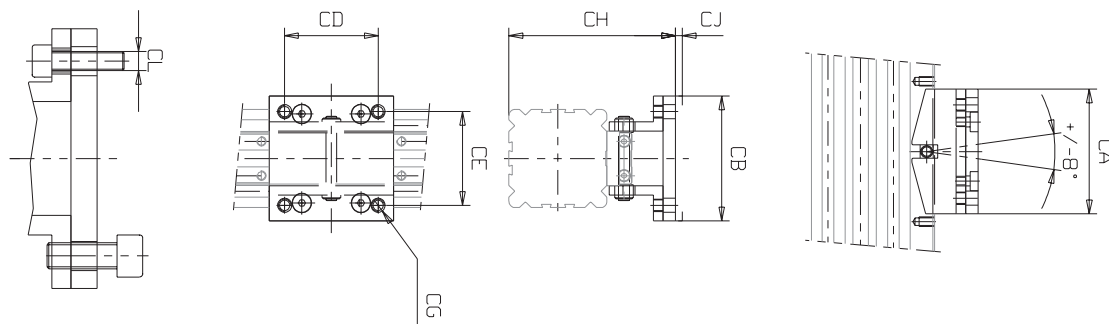


Code	Ø	AE	AH	BA	BB	BC	BD	BE	BF
MK18	18	Ø 6	2	56	46	36.5	23	2.5	8.25
MK25	25	Ø 6	2	70	60	50	28	3.5	11
MK32	32	Ø 7	3	85	73	61.5	33	4	13.8
MK40	40	Ø 9	3	105	90	75	38	4.5	16
MK50	50	Ø 9	3	122	106	91	43	5	19
MK63	63	Ø 11	4.5	144	125	107	48	6	22

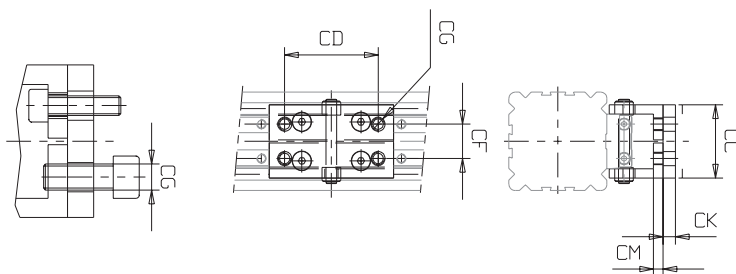
Note: The shipment includes 2 pieces.

Swinging bridge

Short



Wide



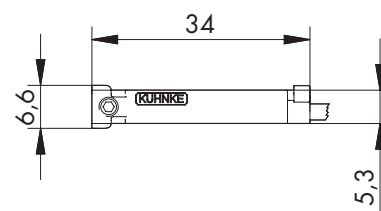
Short

Code	Ø	CA	CB	CD	CE	CG	CH	CJ	CL
FKC18	18	50	41.5	30	34	M5	54	2.5	M4
FKC25	25	60	50	40	38	M5	70	3	M4
FKC32	32	70	60	50	48	M6	86	3.5	M5
FKC40	40	80	80	60	60	M8	107	4.5	M6
FKC50	50	90	95	70	70	M8	123	4.5	M6
FKC63	63	100	120	80	90	M10	145.5	5	M8

Wide

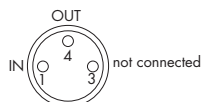
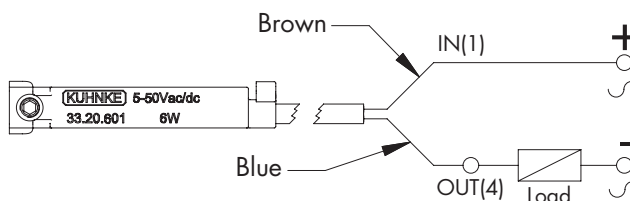
Code	Ø	CA	CC	CD	CF	CG	CK	CM
FKL18	18	50	25.5	30	9	M5	4	4
FKL25	25	60	30	40	14	M5	4	4
FKL32	32	70	37	50	16	M6	6	6
FKL40	40	80	47	60	22	M8	8	8
FKL50	50	90	56	70	30	M8	8	8
FKL63	63	100	73	80	40	M10	8	8

Position Transmitter



Position Transmitter REED (2 pole)

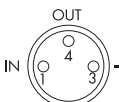
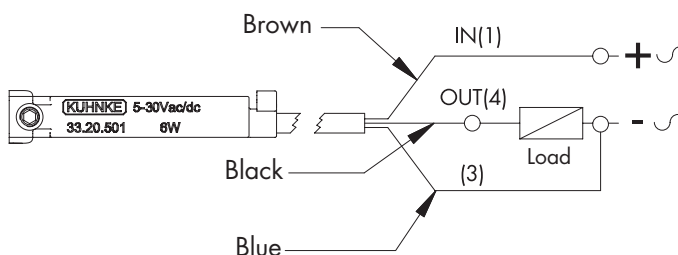
Contact type: N.O.
Cable: 2 x 0.14 mm²
Switching capacity: max 6 W
Switching voltage: 5-50 V AC/DC
Switching current: max 200 mA
Voltage drop: 3 V
Switching time: 0.6 ms
Switching rate: max 400 Hz
Service life: 10⁷ operations, depending on the load
Ambient temperature range: -5°C to +75°C
Protection class: IP67
Status indicator: LED
Housing material: plastic



Code	Description
33.20.601	with cable L = 2000 mm
33.20.681	socket M8, cable L = 300 mm

Position Transmitter REED (3 pole)

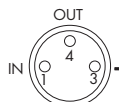
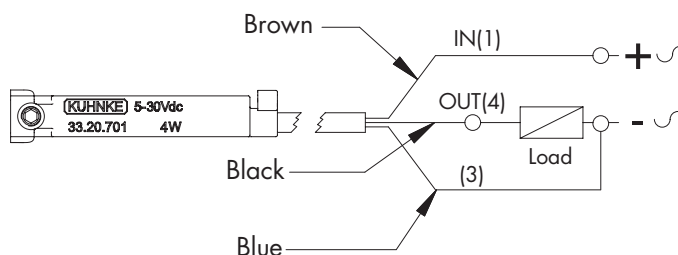
Contact type: N.O.
Cable: 3 x 0.14 mm²
Switching capacity: max 6 W
Switching voltage: 5-30 V AC/DC
Switching current: max 500 mA
Voltage drop: 0.1 V
Switching time: 0.6 ms
Switching rate: max 400 Hz
Service life: 10⁷ operations, depending on the load
Ambient temperature range: -5°C to +75°C
Protection class: IP67
Status indicator: LED
Housing material: plastic



Code	Description
33.20.501	with cable L = 2000 mm
33.20.581	socket M8, cable L = 300 mm

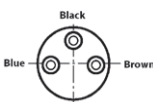
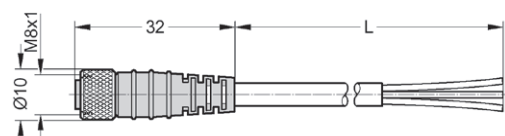
Electronic Position Transmitter

Contact Type: PNP (N.O.)
Cable: 3 x 0.14 mm²
Switching capacity: max 4 W
Switching voltage: 5-30 V DC
Switching current: max 200 mA
Voltage drop: 0.7 V
Switching time: 0.8 μs
Switching rate: max 1 kHz
Service life: 10¹¹ operations, depending on the load
Ambient temperature range: -5°C to +75°C
Protection class: IP67
Status indicator: LED
Housing material: plastic



Code	Description
33.20.701	with cable L = 2000 mm
33.20.781	socket M8, cable L = 300 mm

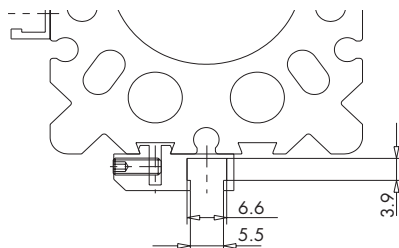
M8 Connectors (female straight)



Code	Description
PL08B3.V250.30	cable L = 3000 mm
PL08B3.V250.50	cable L = 5000 mm

Fastening Clamps

Code
KFS01



Position Transmitter Assembly



1. Insert the transmitter into the groove from the top.



2. Turn the transmitter 90° clockwise.



3. Lay the transmitter on the groove making sure that the locking tooth is well fixed.



4. Tighten the screw (max torque 0.3 Nm).

Position Transmitter Disassembly



1. Loosen the screw.



2. Unlock the tooth using a screwdriver.



3. Lift the transmitter from the groove.



4. Turn the transmitter 90° anti-clockwise and lift out.



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