

ROUND CYLINDER SERIES RNDC

Clean profile cylinders available in different versions:

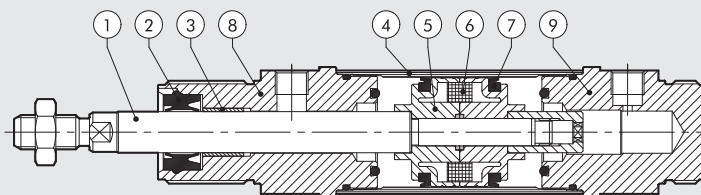
- configuration with or without magnet
- single- and double-acting - single or through-rod
- pneumatic cushioning on request
- range of gaskets available in NBR, POLYURETHANE and FKM/FPM (for high temperatures)



TECHNICAL DATA		POLYURETHANE	NBR	FKM/FPM	LOW TEMPERATURE
Max operating pressure	bar	10	10	10	10
	MPa	1	1	1	1
	psi	145	145	145	145
Temperature range	°C	-10 to +80	-10 to +80	-10 to +150 (non-magnetic cylinders)	-35 to +80
Fluid		Unlubricated air. Lubrication, if used, must be continuous			
Bores	mm	32; 40; 50			
Design		Screwed heads			
Versions		Double-acting, Double-acting through-rod, Double-acting cushioned, Double-acting through-rod cushioned, Single-acting, Single-acting through-rod, No stick-slip			
Magnet for sensors		All versions come complete with magnet. Supplied without magnet on request			
Standard strokes †	mm	Single-acting:	for bores Ø 32 to 50 strokes from 1 to 250		
		Double-acting:	for bores Ø 32 to 50 strokes from 1 to 500		
		† Maximum recommended strokes. Higher values can create operating problems			
Inrush pressure	bar	Ø 32 and 40: 0.4 - Ø 50: 0.3			
Forces generated at 6 bar thrust/retraction		See cylinder "General technical data" at the beginning of the chapter			
Weights		See cylinder "General technical data" at the beginning of the chapter			
Notes		For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air			

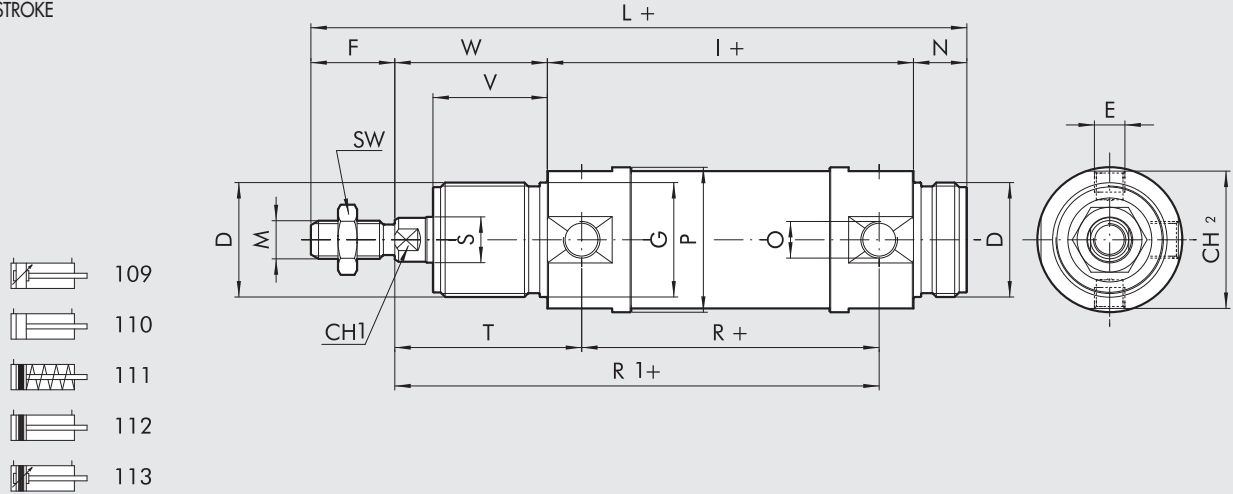
COMPONENTS

- ① PISTON ROD: C45 steel or stainless steel, thick chromed
- ② PISTON ROD GASKET: polyurethane, NBR or FKM/FPM
- ③ GUIDE BUSHING: steel strip with bronze and PTFE insert
- ④ BARREL: drawn anodised aluminium alloy
- ⑤ HALF-PISTON: self-lubricating technopolymer with integrated cushioning olives
- ⑥ MAGNET: plastroferrite
- ⑦ PISTON GASKET: polyurethane, NBR or FKM/FPM
- ⑧ HEAD: anodised aluminium alloy
- ⑨ HEAD: anodised aluminium alloy



DIMENSIONS OF STANDARD VERSIONS

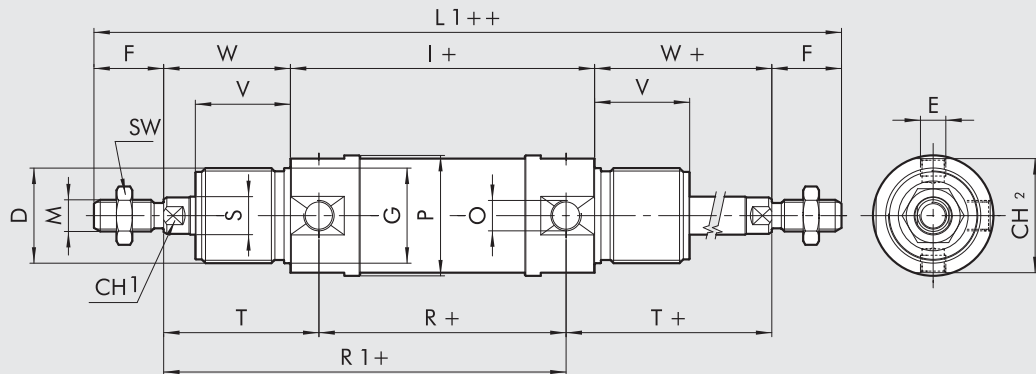
+ = ADD STROKE



- 109
- 110
- 111
- 112
- 113

DIMENSIONS OF THROUGH-ROD VERSIONS

+ = ADD STROKE
++ = ADD TWICE THE STROKE



- 104
- 114
- 115

DIMENSIONS OF STANDARD DOUBLE-ACTING AND THROUGH-ROD

Ø D	E	F	Ø G	CH1	I	L	M	N	O	Ø P	R	Ø S	SW	T	CH2	V	W	L1	
32	M30x1.5	M8x1	22	30	10	96	172	M10x1.25	14	G1/8	38	78	12	17	49	36	30	40	220
40	M38x1.5	M10x1	24	38	13	113	198	M12x1.25	16	G1/4	46	89	16	19	57	43	35	45	251
50	M45x1.5	M12x1.5	32	45	17	120	220	M16x1.5	18	G1/4	57	96	20	24	62	54	38	50	284

DIMENSIONS OF STANDARD SINGLE-ACTING AND THROUGH-ROD

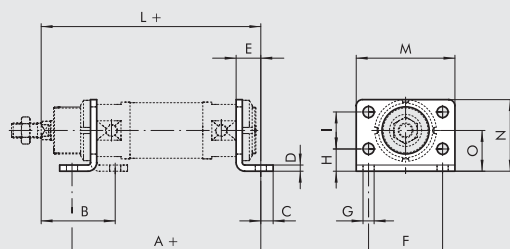
Lower limit	Stroke	Upper limit	I			L			R1			L1		
			Ø 32	Ø 40	Ø 50	Ø 32	Ø 40	Ø 50	Ø 32	Ø 40	Ø 50	Ø 32	Ø 40	Ø 50
0	< C ≤	50	96	113	120	172	198	220	127	146	158	220	251	284
50	< C ≤	100	125	145.5	155.5	201	230.5	255.5	156	178.5	193.5	249	283.5	319.5
100	< C ≤	150	154	178	191	230	263	291	185	211	229	278	316	355
150	< C ≤	200	183	210.5	226.5	259	295.5	326.5	214	243.5	264.5	307	348.5	390.5
200	< C ≤	250	212	243	262	288	328	362	243	276	300	336	381	426

For all the other values, see previous table, except for T and R which are both replaced by R1

ACCESSORIES FOR ROUND CYLINDER: FIXINGS

FOOT MODEL AC

+ = ADD STROKE

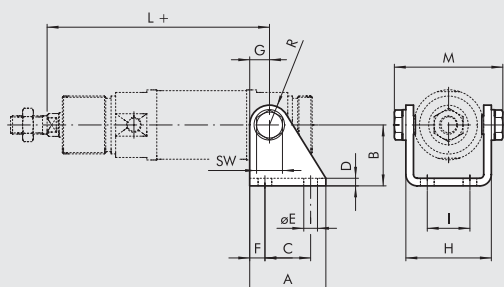


Code	Ø	A	B	C	D	E	F	G	H	I	L	M	N	O	Weight [g]
W0950320002	32	124	50	7	4	14	52	7	14	28	150	66	49	28	104
W0950400002	40	153	60	10	5	20	60	9	18	30	178	80	58	33	190
W0950500002	50	160	64	10	6	20	70	9	20	40	190	90	70	40	296

Note: Individually packed

COUNTER-HINGE MODEL BC

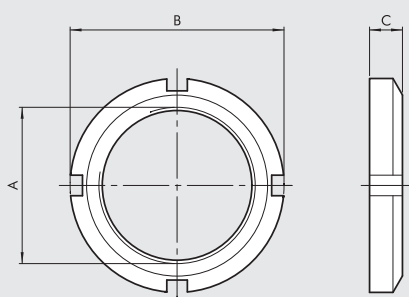
+ = ADD STROKE



Code	Ø	A	B	C	D	E	F	G	H	I	L	M	R	SW	Weight [g]
W0950320005	32	40	35	24	4	7	8	12	46.1	20	127	60	12	13	152
W0950400005	40	50	40	30	5	9	10	13	57.5	28	146	74	13	17	262
W0950500005	50	54	45	34	6	9	10	14	69.1	36	158	89	14	19	401

Note: Supplied with 2 screws

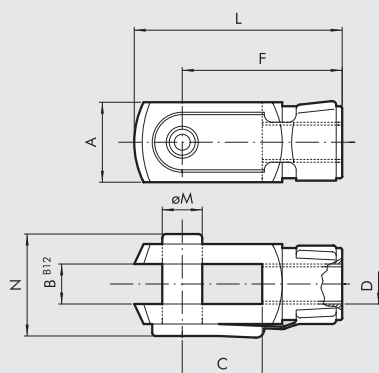
HEAD LOCK RING MODEL G



Code	Ø	A	B	C	Weight [g]
W0950320010	32	M30x1.5	45	7	46
W0950400010	40	M38x1.5	50	8	56
W0950500010	50	M45x1.5	58	9	124

Note: Individually packed

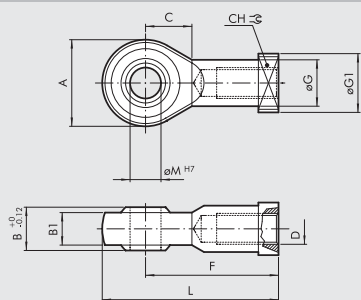
FORK MODEL GK-M



Code	Ø	Ø M	C	B	A	L	F	D	N	Weight [g]
W0950322020	32	10	20	10	20	52	40	M10x1.25	26	92
W0950402020	40	12	24	12	24	62	48	M12x1.25	32	148
W0950502020	50	16	32	16	32	83	64	M16x1.5	40	340

Note: Individually packed

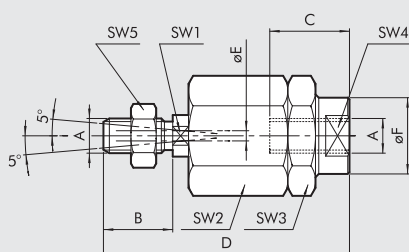
SPHERICAL JOINT MODEL GA-M



Code	Ø	øM	C	B1	B	A	L	F	D	øG	CH	Weight [g]
W0950322025	32	10	15	10.5	14	28	57	43	M10x1.25	15	17	78
W0950402025	40	12	17	12	16	32	66	50	M12x1.25	17.5	19	116
W0950502025	50	16	22	15	21	42	85	64	M16x1.5	22	22	226

Note: Individually packed

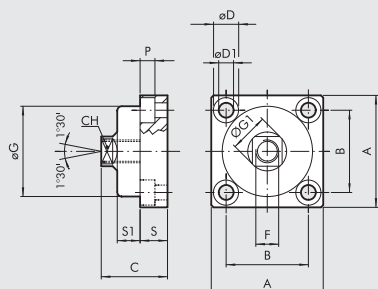
ARTICULATED JOINT MODEL GA-K



Code	Ø	A	B	C	D	øE	øF	SW1	SW2	SW3	SW4	SW5	Weight [g]
W0950322030	32	M10x1.25	20	20	71	4	22	12	30	30	19	17	216
W0950402030	40	M12x1.25	24	20	75	4	22	12	30	30	19	19	220
W0950502030	50	M16x1.5	32	32	103	4	32	20	41	41	30	24	620

Note: Individually packed

FLEXIBLE COLLAR - MODEL GA



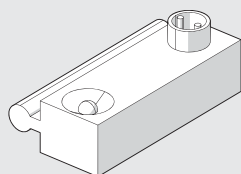
Code	Ø	A	B	C	CH	øD	øD1	F	øG	øG1	P	S	S1	Weight [g]
W0950326021	32	49	36	30	13	11	6.5	M10x1.25	39.5	17	6.5	12	10	172
W0950406021	40	59	42	36	15	14	8.5	M12x1.25	44	19	8.5	15	13.5	286
W0950506021	50	79	58	44	22	17	10.5	M16x1.5	59	26	10.5	20	15	628

Note: Individually packed

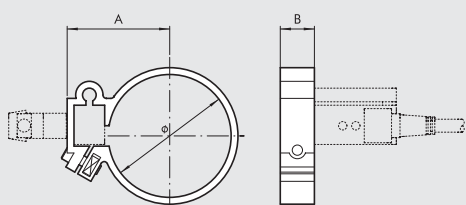
ACCESSORIES FOR ROUND CYLINDER: MAGNETIC SENSORS

SENSOR SERIES DSM

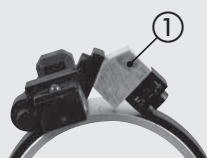
For codes and technical data, see **chapter A6**.



SENSOR CIRCLIP



Code	Bore	Model	Ø	A	B
W0950000132	32	Circlip DXF 36 - 32	36	29.5	10
W0950000140	40	Circlip DXF 45 - 40	45	34.5	10
W0950000150	50	Circlip DXF 52 - 50	55	38.5	10



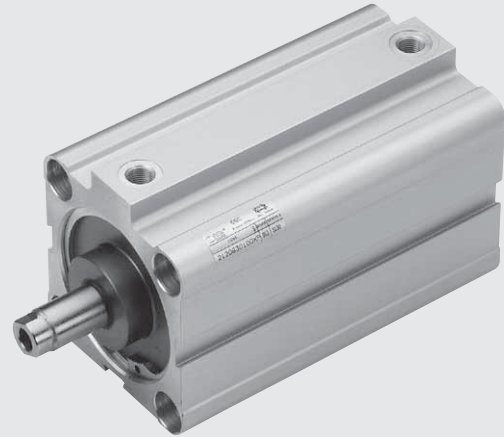
FOR MOUNTING ON THE CYLINDER Ø 50 INSERT THE ALUMINIUM SPACER ① YOU FIND IN THE PACKAGE

SHORT-STROKE CYLINDER SERIES SSCY



Compact cylinders suitable for installation in limited spaces:

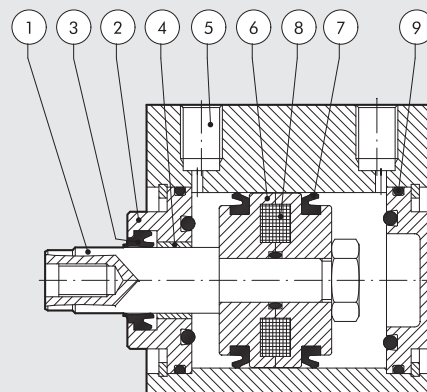
- configuration with or without magnet
- single or double-acting - single or through-rod
- anti-rotation version and with built-in fixings
- possible choice of NBR, POLYURETHANE or FKM/FPM gaskets
- special design on request.



TECHNICAL DATA		Polyurethane	NBR	FKM/FPM	Low Temperature						
Max operating pressure	bar	10	10	10	10						
	MPa	1	1	1	1						
Temperature range	°C	-10 to +80	-10 to +80	-10 to +150 (non-magnetic cylinders)	-35 to +80						
Fluid		Unlubricated air. Lubrication, if used, must be continuous									
Bores	mm	12; 16; 20; 25; 32; 40; 50; 63; 80; 100									
Design		With profile									
Standard strokes †	mm	Double acting: Ø 12 to Ø 25, stroke 5 to 50 mm Ø 32 to Ø 40, stroke 5 to 70 mm Ø 50 to Ø 63, stroke 5 to 110 mm Ø 80 to Ø 100, stroke 5 to 150 mm Single-acting: Ø 12 to Ø 25, stroke 5 to 25 mm Ø 32 to Ø 63, stroke 5 to 50 mm Anti-rotation: Ø 12 to Ø 63, stroke 5 to 120 mm Ø 80 to Ø 100, stroke 5 to 150 mm Perforated through-rod: Ø 20 to Ø 40, stroke 5 to 100 mm Ø 50 to Ø 63, stroke 5 to 130 mm Ø 80 to Ø 100, stroke 5 to 165 mm									
Versions		† Maximum recommended strokes. Higher values can create operating problems Double-acting, Double-acting through-rod, Single-acting retracted piston rod, Single acting extended piston rod, Single-acting through-rod, Perforated through-rod, Anti-rotation, Oscillating male, Oscillating female, No stick-slip									
Magnet for sensors		All versions come complete with magnet. Supplied without magnet on request									
Inrush pressure		Ø 12	Ø 16	Ø 20	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100
single piston rod	bar	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.4
through-rod	bar	1	0.8	0.8	0.8	0.6	0.4	0.4	0.4	0.4	0.4
Forces generated at 6 bar thrust/retraction		See cylinder "General technical data" at the beginning of the chapter									
Weight		See cylinder "General technical data" at the beginning of the chapter									
Notes		For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air									

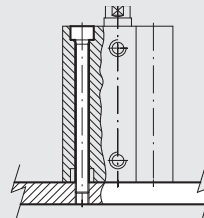
COMPONENTS

- PISTON ROD: C45 steel or stainless steel, thick chromed
- HEAD:
 - Ø 12 to 25 nichel-plated brass
 - Ø 32 to 100 anodised aluminium
- PISTON ROD GASKET: polyurethane, NBR or FKM/FPM
- GUIDE BUSHING: steel strip with bronze and PTFE insert
- BARREL: drawn anodised aluminium alloy
- HALF-PISTON:
 - Ø 12 to 63 acetal resin
 - Ø 80 to 100 in aluminium with PTFE guide pad
- PISTON GASKET: polyurethane, NBR or FKM/FPM
- MAGNET: Ø 12 to 25 neodymium - Ø 32 to 100 plastoferrite
- Static O-rings: NBR or FKM/FPM



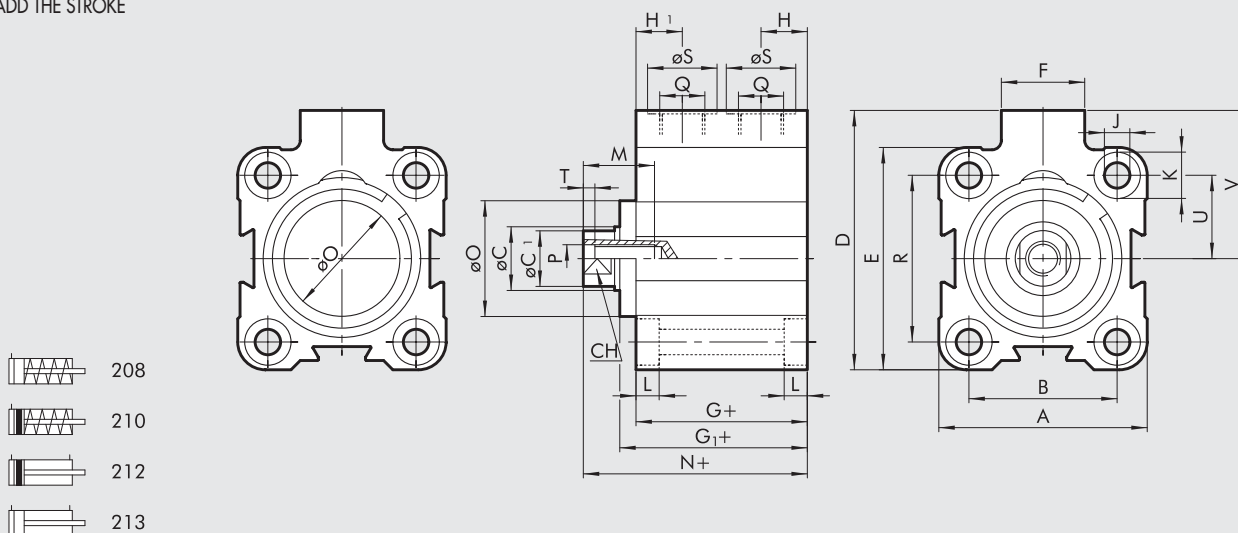
FIXING METHOD

Fix directly from above using long through-screws or tie rods.
Non-magnetic stainless steel must be used (e.g. AISI 304).



DIMENSIONS STANDARD VERSIONS

+ = ADD THE STROKE



DIMENSIONS OF DOUBLE ACTING

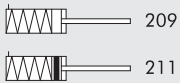
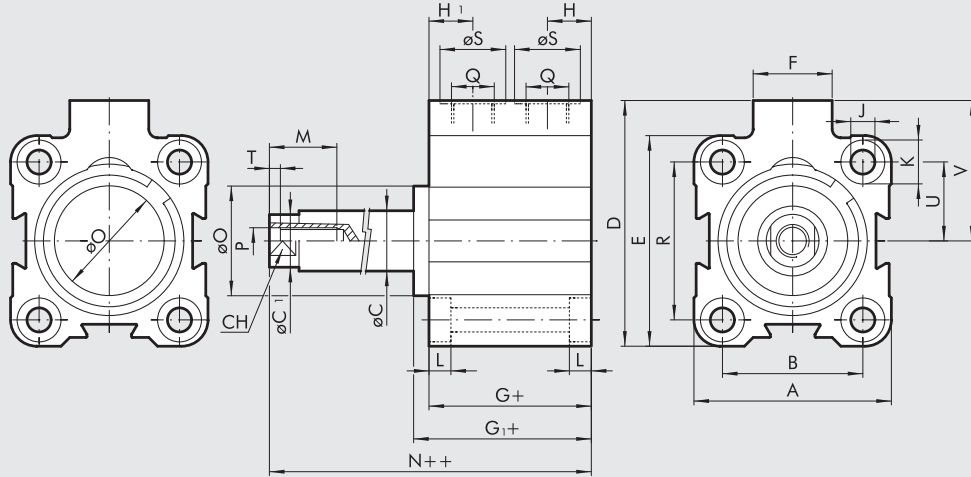
Ø	A	B	øC	øC ₁	D	E	F	G	G ₁	H	H ₁	J	K	L	M	N	øO	P	Q	R	øS	CH	T	U	V
12	23.5	13	6	5.5	28	26	11	32.5	-	6.5	10.5	3.7	6	3.7	7	38	-	M3	M5	-	8	5	2	9.5	16.5
16	28	20	8	7.5	33	28	11	33	-	6.7	10.5	3.7	6	3.7	10	37.5	-	M5	M5	20	8	7	2	10	19
20	32	22	10	9	37	32	11	32	-	6.5	10.5	4.6	7.5	4.6	10	37.6	-	M5	M5	22	8	8	2	11	21
25	37	26	10	9	47.5	39	18	33	36.5	8.5	8.5	4.6	7.5	4.6	10	42.5	20	M5	G1/8	28	15	8	2	14	28
32	45	32	12	11	56	48	18	37	40.8	10	10	5.5	10	5.7	15	48.3	25	M6	G1/8	36	15	10	2.5	18	32
40	54.5	40	12	11	62.7	54.5	18	39.5	44.7	10	10	5.5	10	5.7	15	53.2	30	M6	G1/8	40	15	10	2.5	20	35.5
50	66	50	16	15	73	66	18	39.5	46.2	11	11	6.6	11	6.8	18	54.3	35	M8	G1/8	50	15	13	3.5	25	40
63	80	62	16	15	88	80	23	42	48.7	12	12	9	15	9	18	57.7	35	M8	G1/8	62	15	13	3.5	31	48
80	100	82	20	19	110	100	26	57	67.2	14	14	9	15	9	18	75.2	44	M10	G1/4	82	19	17	4	41	60
100	124	103	25	24	134	124	26	64	74.7	15	15	11	18	11	20	84.3	56	M12	G1/4	103	19	22	5	51.5	72

DIMENSIONS OF SINGLE-ACTING, RETRACTED PISTON ROD

Ø	stroke	A	B	øC	øC ₁	D	E	F	G	G ₁	H	H ₁	J	K	L	M	N	øO	P	Q	R	øS	CH	T	U	V
12	5 to 25	23.5	13	6	5.5	28	26	11	32.5	-	6.5	10.5	3.7	6	3.7	7	38	-	M3	M5	-	8	5	2	9.5	16.5
16	5 to 25	28	20	8	7.5	33	28	11	33	-	6.7	10.5	3.7	6	3.7	10	37.5	-	M5	M5	20	8	7	2	10	19
20	5 to 25	32	22	10	9	37	32	11	32	-	6.5	10.5	4.6	7.5	4.6	10	37.6	-	M5	M5	22	8	8	2	11	21
25	5 to 25	37	26	10	9	47.5	39	18	33	36.5	8.5	8.5	4.6	7.5	4.6	10	42.5	20	M5	G1/8	28	15	8	2	14	28
32	5 to 25	45	32	12	11	56	48	18	37	40.8	10	10	5.5	10	5.7	15	48.3	25	M6	G1/8	36	15	10	2.5	18	32
	> 25 to 50								45	48.8							56.3									
40	5 to 25	54.5	40	12	11	62.7	54.5	18	39.5	44.7	10	10	5.5	10	5.7	15	53.2	30	M6	G1/8	40	15	10	2.5	20	35.5
	> 25 to 50								47.5	52.7							61.2									
50	5 to 25	66	50	16	15	73	66	18	39.5	46.2	11	11	6.6	11	6.8	18	54.3	35	M8	G1/8	50	15	13	3.5	25	40
	> 25 to 50								47.5	54.2							62.3									
63	5 to 25	80	62	16	15	88	80	23	42	48.7	12	12	9	15	9	18	62.3	35	M8	G1/8	62	15	13	3.5	31	48
	> 25 to 50								50	56.7							65.7									

DIMENSIONS OF SINGLE-ACTING EXTENDED PISTON ROD

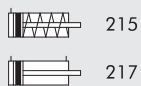
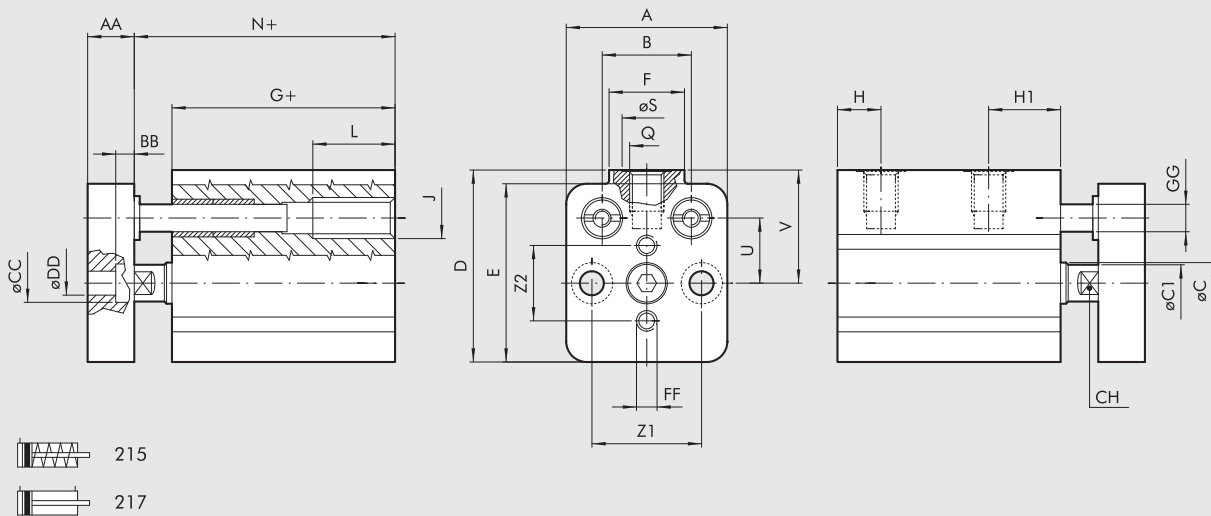
+ = ADD THE STROKE
 ++ = ADD TWICE THE STROKE



Ø	stroke	A	B	øC	øC ₁	D	E	F	G	G ₁	H	H ₁	J	K	L	M	N	øO	P	Q	R	øS	CH	T	U	V
12	5 to 25	23.5	13	6	5.5	28	26	11	32.5	-	6.5	10.5	3.7	6	3.7	7	38	-	M3	M5	-	8	5	2	9.5	16.5
16	5 to 25	28	20	8	7.5	33	28	11	33	-	6.7	10.5	3.7	6	3.7	10	37.5	-	M5	M5	20	8	7	2	10	19
20	5 to 25	32	22	10	9	37	32	11	32	-	6.5	10.5	4.6	7.5	4.6	10	37.6	-	M5	M5	22	8	8	2	11	21
25	5 to 25	37	26	10	9	47.5	39	18	33	36.5	8.5	8.5	4.6	7.5	4.6	10	42.5	20	M5	G1/8	28	15	8	2	14	28
32	5 to 25	45	32	12	11	56	48	18	37	40.8	10	10	5.5	10	5.7	15	48.3	25	M6	G1/8	36	15	10	2.5	18	32
	> 25 to 50								45	48.8							56.3									
40	5 to 25	54.5	40	12	11	62.7	54.5	18	39.5	44.7	10	10	5.5	10	5.7	15	53.2	30	M6	G1/8	40	15	10	2.5	20	35.5
	> 25 to 50								47.5	52.7							61.2									
50	5 to 25	66	50	16	15	73	66	18	39.5	46.2	11	11	6.6	11	6.8	18	54.3	35	M8	G1/8	50	15	13	3.5	25	40
	> 25 to 50								47.5	54.2							62.3									
63	5 to 25	80	62	16	15	88	80	23	42	48.7	12	12	9	15	9	18	57.7	35	M8	G1/8	62	15	13	3.5	31	48
	> 25 to 50								50	56.7							65.7									

DIMENSIONS OF Ø 12 ANTI-ROTATION

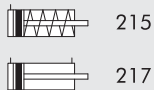
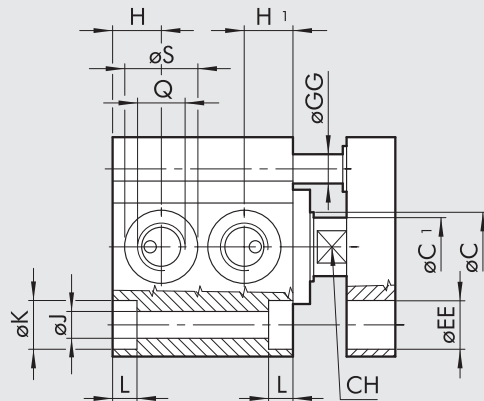
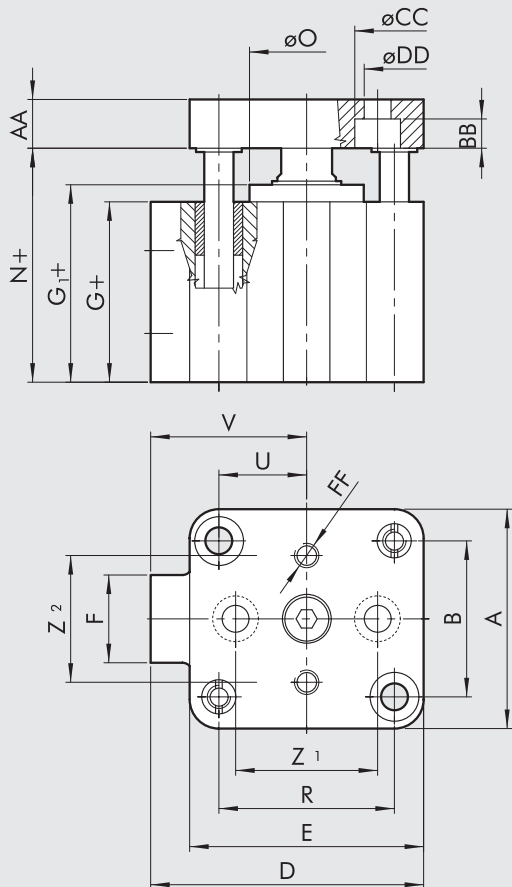
+ = ADD THE STROKE



Ø	A	B	øC	øC ₁	D	E	F	G	H	H ₁	J	L	N	Z ₁	Z ₂	Q	øS	CH	U	V	AA	BB	øCC	øDD	FF	øGG
12	23.5	13	6	5.5	28	26	11	32.5	6.5	10.5	M6	12	38	16	11	M5	8	5	9.5	16.5	8	3.5	6	3.5	M3	4

DIMENSIONS OF Ø 16 TO Ø 100 ANTI-ROTATION

+ = ADD THE STROKE



DOUBLE ACTING VERSION (217)

Ø	A	B	øC	øC ₁	D	E	F	G	G ₁	H	H ₁	J	K	L	N	Z ₁	Z ₂	Q	R	øS	CH	U	V	AA	BB	øCC	øDD	øEE	FF	øGG	øO
16	28	20	8	7.5	33	28	11	33	-	6.7	10.5	3.7	6	3.7	37.5	20	15	M5	20	8	7	10	19	8	3.5	6	3.5	6	M3	4	-
20	32	22	10	9	37	32	11	32	-	6.5	10.5	4.6	7.5	4.6	37.6	22	18	M5	22	8	8	11	21	8	5	7.5	4.5	7.5	M4	6	-
25	37	26	10	9	47.5	39	18	33	36.5	8.5	8.5	4.6	7.5	4.6	42.5	22	22	G1/8	28	15	8	14	28	8	5	7.5	4.5	8	M4	6	20
32	45	32	12	11	56	48	18	37	40.8	10	10	5.5	10	5.7	48.3	26	26	G1/8	36	15	10	18	32	10	6	10	5.5	10	M5	8	25
40	54.5	40	12	11	62.7	54.5	18	39.5	44.7	10	10	5.5	10	5.7	53.2	34	34	G1/8	40	15	10	20	35.5	10	6	10	5.5	10	M5	8	30
50	66	50	16	15	73	66	18	39.5	46.2	11	11	6.6	11	6.8	54.3	43	43	G1/8	50	15	13	25	40	12	7	11	6.5	11	M6	10	35
63	80	62	16	15	88	80	23	42	48.7	12	12	9	15	9	57.7	55	55	G1/8	62	15	13	31	48	12	9	14	9	15	M6	10	35
80	100	82	20	19	110	100	26	57	67.2	14	14	9	15	9	75.2	70	70	G1/4	82	19	17	41	60	14	9	14	9	15	M8	12	44
100	124	103	25	24	134	124	26	64	74.7	15	15	11	18	11	84.3	94	94	G1/4	103	19	22	51.5	72	17	9	14	9	18	M8	12	56

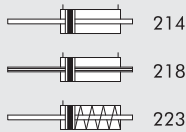
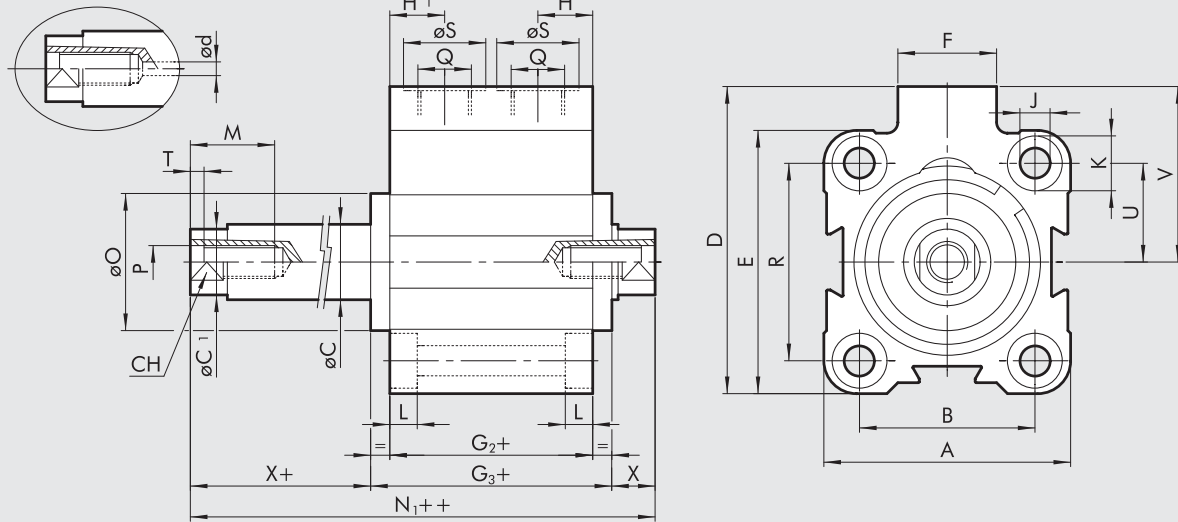
SINGLE-ACTING THROUGH-ROD VERSION (215)

Ø	Hub	A	B	øC	øC ₁	D	E	F	G	G ₁	H	H ₁	J	K	L	M	N	øO	P	Q	R	øS	CH	T	U	V
16	5-25	28	20	8	7.5	33	28	11	33	-	6.7	10.5	3.7	6	3.7	10	37.5	-	M5	M5	20	8	7	2	10	19
20	5-25	32	22	10	9	37	32	11	32	-	6.5	10.5	4.6	7.5	4.6	10	37.6	-	M5	M5	22	8	8	2	11	21
25	5-25	37	26	10	9	47.5	39	18	33	36.5	8.5	8.5	4.6	7.5	4.6	10	42.5	20	M5	G1/8	28	15	8	2	14	28
32	5-25	45	32	12	11	56	48	18	37	40.8	10	10	5.5	10	5.7	15	48.3	25	M6	G1/8	36	15	10	2.5	18	32
	> 25 - 50								45	48.8							56.3									
40	5-25	54.5	40	12	11	62.7	54.5	18	39.5	44.7	10	10	5.5	10	5.7	15	53.2	30	M6	G1/8	40	15	10	2.5	20	35.5
	> 25 - 50								47.5	52.7							61.2									
50	5-25	66	50	16	15	73	66	18	39.5	46.2	11	11	6.6	11	6.8	18	54.3	35	M8	G1/8	50	15	13	3.5	25	40
	> 25 - 50								47.5	54.2							62.3									
63	5-25	80	62	16	15	88	80	23	42	48.7	12	12	9	15	9	18	57.7	35	M8	G1/8	62	15	13	3.5	31	48
	> 25 - 50								50	56.7							65.7									

DIMENSIONS OF THROUGH-ROD

+ = ADD THE STROKE
 ++ = ADD TWICE THE STROKE

PERFORATED THROUGH-ROD



ACTUATORS

SHORT-STROKE CYLINDER – SERIES SSCY

DIMENSION OF DOUBLE ACTING THROUGH-ROD AND PERFORATED THROUGH-ROD

Ø	A	B	øC	øC ₁	D	ød**	E	F	G ₂	G ₃	H	H ₁	J	K	L	M	N ₁	øO	P	Q	R	øS	CH	T	U	V	X*
12	23.5	13	6	5.5	28	-	26	11	36.7	-	10.5	10.5	3.7	6	3.7	7	47.7	-	M3	M5	-	8	5	2	9.5	16.5	5.5
16	28	20	8	7.5	33	-	28	11	36.8	-	10.5	10.5	3.7	6	3.7	10	45.8	-	M5	M5	20	8	7	2	10	19	4.5
20	32	22	10	9	37	1.5	32	11	36	-	10.5	10.5	4.6	7.5	4.6	10	47.2	-	M5	M5	22	8	8	2	11	21	5.6
25	37	26	10	9	47.5	1.5	39	18	35.7	42.7	8.5	8.5	4.6	7.5	4.6	10	54.7	20	M5	G1/8	28	15	8	2	14	28	6
32	45	32	12	11	56	2.5	48	18	37	44.5	10	10	5.5	10	5.7	15	59.5	25	M6	G1/8	36	15	10	2.5	18	32	7.5
40	54.5	40	12	11	62.7	2.5	54.5	18	39.5	49.9	10	10	5.5	10	5.7	15	66.9	30	M6	G1/8	40	15	10	2.5	20	35.5	8.5
50	66	50	16	15	73	2.5	66	18	39.5	52.9	11	11	6.6	11	6.8	18	69.1	35	M8	G1/8	50	15	13	3.5	25	40	8.1
63	80	62	16	15	88	4	80	23	42	55.4	12	12	9	15	9	18	73.4	35	M8	G1/8	62	15	13	3.5	31	48	9
80	100	82	20	19	110	5	100	26	57	77.4	14	14	9	15	9	18	93.4	44	M10	G1/4	82	19	17	4	41	60	8
100	124	103	25	24	134	6	124	26	64	85.4	15	15	11	18	11	20	104.6	56	M12	G1/4	103	19	22	5	51.5	72	9.6

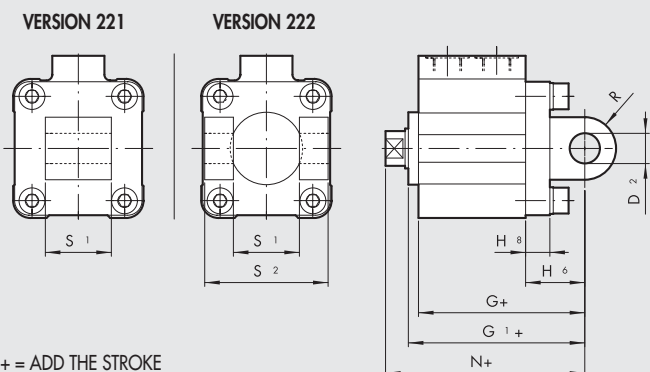
* for Ø 12, 16, 20: (N₁++) = (G₂+) + (X) + (X+)
 ** column for perforated through-rod only

DIMENSION OF SINGLE-ACTING THROUGH-ROD

Ø	stroke	A	B	øC	øC ₁	D	E	F	G ₂	G ₃	H	H ₁	J	K	L	M	N ₁	øO	P	Q	R	øS	CH	T	U	V	X*
12	5 to 25	23.5	13	6	5.5	28	26	11	36.7	-	10.5	10.5	3.7	6	3.7	7	47.7	-	M3	M5	-	8	5	2	9.5	16.5	5.5
16	5 to 25	28	20	8	7.5	33	28	11	36.8	-	10.5	10.5	3.7	6	3.7	10	45.8	-	M5	M5	20	8	7	2	10	19	4.5
20	5 to 25	32	22	10	9	37	32	11	36	-	10.5	10.5	4.6	7.5	4.6	10	47.2	-	M5	M5	22	8	8	2	11	21	5.6
25	5 to 25	37	26	10	9	47.5	39	18	35.7	42.7	8.5	8.5	4.6	7.5	4.6	10	57.7	20	M5	G1/8	28	15	8	2	14	28	6
32	5 to 25	45	32	12	11	56	48	18	37	44.5	10	10	5.5	10	5.7	15	59.5	25	M6	G1/8	36	15	10	2.5	18	32	7.5
	> 25 to 50								45	52.5							67.5										7.5
40	5 to 25	54.5	40	12	11	62.7	54.5	18	39.5	49.9	10	10	5.5	10	5.7	15	66.9	30	M6	G1/8	40	15	10	2.5	20	35.5	8.5
	> 25 to 50								47.5	57.9							74.9										8.5
50	5 to 25	66	50	16	15	73	66	18	39.5	52.9	11	11	6.6	11	6.8	18	69.1	35	M8	G1/8	50	15	13	3.5	25	40	8.1
	> 25 to 50								47.5	60.9							77.1										8.1
63	5 to 25	80	62	16	15	88	80	23	42	55.4	12	12	9	15	9	18	73.4	35	M8	G1/8	62	15	13	3.5	31	48	9
	> 25 to 50								50	63.4							81.4										9

* for Ø 12, 16, 20: (N₁++) = (G₂+) + (X) + (X+)

DIMENSIONS: SAME AS 221 VERSION (MALE HINGE MOD. BA) - SAME AS 222 VERSION (FEMALE HINGE MOD. B)



+ = ADD THE STROKE

Ø	Stroke	D ₂	G	G ₁	H ₆	H ₈	N	R	S ₁	S ₂
32	5 to 70	10	59	62.8	22	10	70.3	11	26	45
40	5 to 70	12	64.5	69.7	25	10	78.2	13	28	52
50	5 to 110	12	66.5	73.2	27	12	80.2	13	32	60
63	5 to 110	16	74	80.7	32	12	89.7	17	40	70

Note: For other dimensions, refer to the standard version

KEY TO CODES

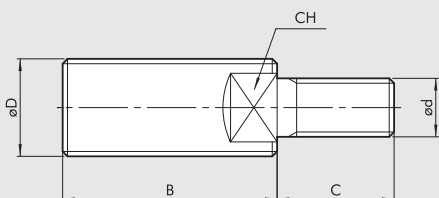
CYL	2 1 2 TYPE	0	4 0 BORE	0 0 1 0 STROKE	C MATERIAL	P GASKETS
■	208 Single-acting retracted rod, non-magnetic	0 Standard	12	For the maximum applicable strokes, look at the technical data	C C45 chrome rod, technopolymer piston rod Ø 12 to 63 mm	P Polyurethane gaskets
■	209 Single-acting extended rod, non-magnetic	S Non-magnetic	16		A C45 chrome rod, aluminium piston rod (standard Ø 80 to 100 mm)	N NBR gaskets
■	210 Single-acting, retracted rod	▲ G No stick-slip	20		X Stainless steel piston rod and nut	● V FKM/FPM gaskets
■	211 Single acting, extended rod		25		Z Stainless steel piston rod and nut	● B Low temperature
■	212 Double acting, magnetic		32			
■	213 Double acting, non-magnetic		40			
■	214 Double acting, through-rod		50			
■	215 Single-acting, retracted, anti-rotation		63			
■	217 Double acting, anti-rotation		80			
▼	218 Double acting, perforated through-rod		◆ 100			
	221 Oscillating male hinge (up to Ø 63 only)					
	222 Oscillating female hinge (up to Ø 63 only)					
■	223 Single-acting, through-rod					

- ◆ In the code of cylinder with letter in fourth position Ø 100 becomes A1
- Available up to Ø 63
- ▼ Available from Ø 20

- Only available for non-magnetic versions (S) and with aluminium piston (A or Z)
- ▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only

ACCESSORIES

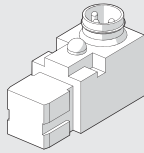
MALE NIPPLE FOR PISTON ROD



Code	Ø	Ø D	Ø d	B	C	CH	Weight [g]
219001200	12	M6	M3	16	6	4	3
219001600	16	M8	M5	20	9	6	8
219001600	20	M8	M5	20	9	6	8
219002500	25	M10x1.25	M5	22	9	7	12
219003200	32	M10x1.25	M6	22	12	7	14
219004000	40	M12x1.25	M6	24	12	10	14
219005000	50	M16x1.5	M8	32	15	13	20
219005000	63	M16x1.5	M8	32	15	13	20
219008000	80	M20x1.5	M10	40	15	17	96
219010000	100	M20x1.5	M12	40	18	17	102

MAGNETIC SENSORS

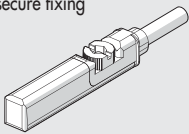
SENSOR SERIES DCB



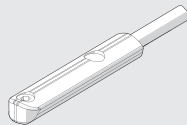
For codes and technical data, see **chapter A6**.

RETRACTABLE SENSOR

SENSOR, SQUARE TYPE
Latest generation,
secure fixing

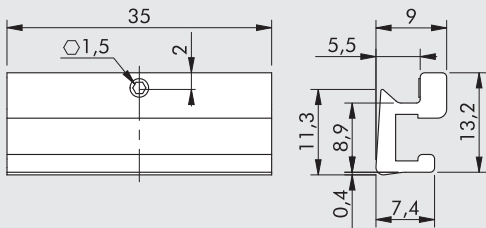


SENSOR, OVAL TYPE
Traditional



For codes and technical data, see **chapter A6**.

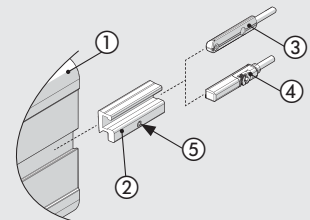
ADAPTER FOR RETRACTABLE SENSOR SQUARE AND OVAL TYPES



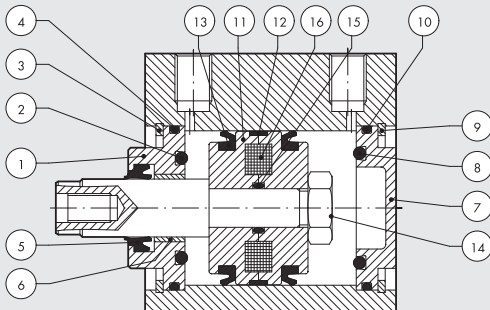
Code	Ø	Description
W0950001801	Ø 12 to 100	Sensor Adapter for SSC cylinders

ASSEMBLY DIAGRAM

- ① SSCY cylinder
- ② Sensor adapter for SSCY cylinders
- ③ Retractable sensor "oval type"
- ④ Retractable sensor "square type"
- ⑤ Grub screw for fixing adapter on profile



SPARES PARTS FOR SHORT-STROKE CYLINDERS

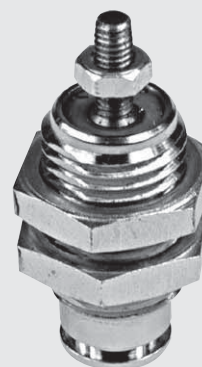


Code	Bores	Type	Parts
009 ... 0010	Ø 12 to 100	Complete polyurethane front head kit	① ② ③ ④ ⑤ ⑥
009 ... 0011	Ø 12 to 100	Complete NBR front head kit	① ② ③ ④ ⑤ ⑥
009 ... 0015	Ø 12 to 100	Complete NBR rear head kit	⑦ ⑧ ⑨ ⑩
009 ... 0021	Ø 12 to 100	Complete polyurethane piston kit	⑪ ⑫ ⑬ ⑭ ⑮
009 ... 0023	Ø 12 to 100	Complete NBR piston kit	⑪ ⑫ ⑬ ⑭ ⑮
009 ... 0005	Ø 12 to 100	Complete set of polyurethane gaskets	② ④ ⑤ ⑧ ⑩ ⑬ ⑮
009 ... 0006	Ø 12 to 100	Complete set of NBR gaskets	② ④ ⑤ ⑧ ⑩ ⑬ ⑮
009 ... 0007	Ø 12 to 100	Complete set of (high temperature) FKM/FPM gaskets	② ④ ⑤ ⑧ ⑩ ⑬ ⑮
009 ... 2008	Ø 12 to 63	Polyurethane piston rod gasket kit	⑤
009 ... 2008	Ø 80 to 100	Polyurethane piston rod gasket kit + seeger	⑤
009 ... 2009	Ø 12 to 63	NBR piston rod gasket kit	⑤
009 ... 2009	Ø 80 to 100	NBR piston rod gasket kit + seeger	⑤
009 ... 2010	Ø 12 to 63	FKM/FPM piston rod gasket kit	⑤
009 ... 2010	Ø 80 to 100	FKM/FPM piston rod gasket kit + seeger	⑤
009 ... 0031	Ø 12 to 100	Complete polyurethane front+rear head kit + piston	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮
009 ... 0033	Ø 12 to 100	Complete NBR front + rear head kit + piston	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮
009 ... 0001	Ø 12 to 100	Magnet	⑯

CARTRIDGE MICRO-CYLINDER SERIES CRTC

Single-acting micro-cylinders with threaded body for fixing in small space or directly inside the machine body, owing to the external O-ring which ensures perfect seal.

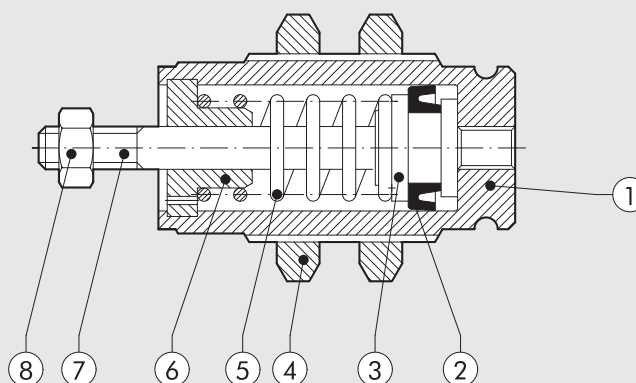
ATTENTION: in case of cycles with high frequencies it's advisable that the piston doesn't reach the end of the stroke during the rod coming out stage.



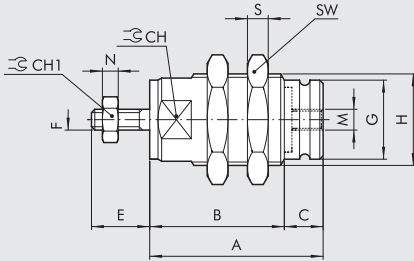
TECHNICAL DATA					
Operating pressure	bar	2 to 6			
	MPa	0.2 to 0.6			
Temperature range	°C	-10 to +80			
	Fluid	Lubricated or unlubricated air. Lubrication, if used, must be continuous			
Bores	mm	6; 10; 16			
Strokes	mm	5; 10; 15			
Port		M5			
Versions		Single-acting			
Design		Mechanically edged			
Seal OR on the body (not included in the supply)		Ø	OR		
		6	7x1		
		10	9.5x1.5		
		16	16x1.5		
Weight	g	Ø	STROKE		
			5	10	15
		6	14	16	19
		10	30	35	40
		16	76	84	90

COMPONENTS

- ① Nickel-plated brass body
- ② NBR rubber piston rod gasket (for Ø 6), polyurethane (for Ø 10 - Ø 16)
- ③ AISI 303 steel piston/piston rod (for Ø 6 - Ø 10)
Brass piston (for Ø 16)
- ④ Steel spring
- ⑤ Zinc-plated steel nut
- ⑥ Brass bushing
- ⑦ AISI 303 steel piston rod (for Ø 16)
- ⑧ Zinc-plated steel nut

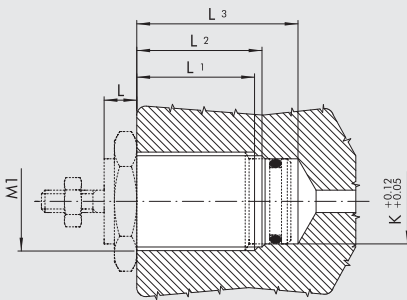


CARTRIDGE CYLINDER DIMENSIONS, Ø 6, 10, 16



Ø	A			B			C	CH	CH1	E	F	G	H	M	N	S	SW
	Stroke			Stroke													
6	19.5	26.5	33.5	14.5	21.5	28.5	5	9	5.5	8	M3	8.5	M10x1	M5	2.4	3	14
10	23	29.5	36.5	16	22.5	29.5	7	14	7	10.5	M4	12	M15x1.5	M5	2	4	19
16	27	32	37	21	26	31	6	20	8	13	M5	19	M22x1.5	M5	4	5	27

ASSEMBLY SEAT DIMENSIONS



Ø	L			L1			L2			L3			K	Hole	M1
	Stroke			Stroke			Stroke			Stroke					
6	5	5	5	10	17	24	11	18	25	16	24	31	8.5	9	M10x1
10	6	6	6	10	17	24	12	18.5	25.5	20	26	34	12	13.5	M15x1.5
16	7	7	7	14	19	24	15	20	25	26	31	36	19	20.5	M22x1.5

KEY TO CODES

Code	Description
W1000060005	CYL. CRTC-006-0005-S000-00
W1000060010	CYL. CRTC-006-0010-S000-00
W1000060015	CYL. CRTC-006-0015-S000-00
W1000100005	CYL. CRTC-010-0005-S000-00
W1000100010	CYL. CRTC-010-0010-S000-00
W1000100015	CYL. CRTC-010-0015-S000-00
W1000160005	CYL. CRTC-016-0005-S000-00
W1000160010	CYL. CRTC-016-0010-S000-00
W1000160015	CYL. CRTC-016-0015-S000-00

KEY TO CODES

CYL	C R T C	0 1 0	0 0 1 0	S 0 0 0	0 0	0 0
	TYPE	DIAMETER	STROKE	TYPE	FURTHER DESCRIPTION	SPECIAL DESIGN
	Cartridge microcylinder	006 010 016	0005 0010 0015	Single-acting retracted piston rod		

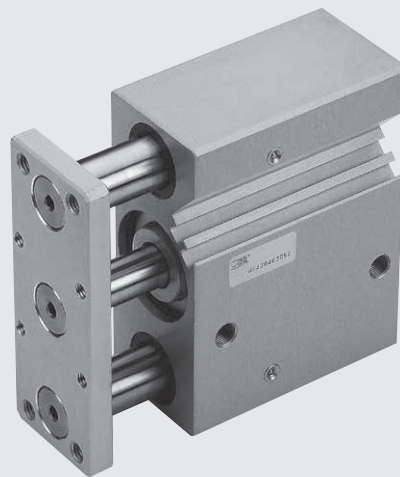
COMPACT GUIDED CYLINDER SERIES CMPG

The guided compact cylinder series CMPG is a robust and practical solution with a built-in guide unit. The rod guiding bushes are mounted directly in the anodized aluminium alloy lining.

Two guiding solutions are available: sintered bronze bushes coupled with ground carbon chromed steel rods, or ball recirculation bushes coupled with tempered, chromed and ground steel rods.

There are grooves on one side of the body to house the retractable sensors.

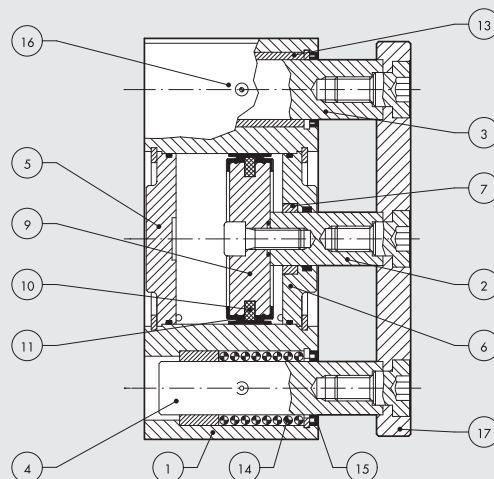
In the non-cushioned version, the stop is silenced by NBR front gaskets, and the cushioned version has adjustable pins to graduate braking. Threaded holes and calibrated holes are provided for fixing the dowel pins.



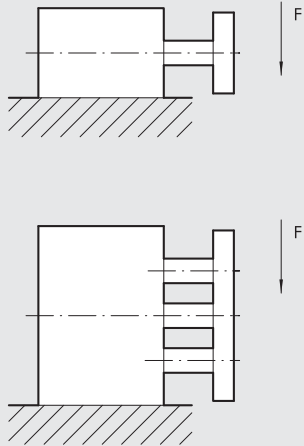
TECHNICAL DATA		CUSHIONED	NO-CUSHIONED
Operating pressure	bar		1 to 10
	MPa		0.1 to 1
	psi		14.5 to 145
	°C		-10 to +80
Temperature range	°C		-10 to +80
	°F		14 to 176
Fluid		Unlubricated air. Lubrication, if used, must be continuous	
Bores	mm	16; 20; 25; 32; 40; 50; 63	16; 20; 25; 32; 40; 50; 63; 80; 100
Strokes	mm	Ø 16: 20 - 30-40-50	Ø 16: 10-20-25-30-40-50-75-100-150-200
		Ø 20; Ø 25: 20-30-40-50-75-100-150	Ø 20; Ø 25: 20-25-30-40-50-75-100-150-200
		Ø 32 to Ø 63: 25-50-75-100-150-175	Ø 32 to Ø 100: 25-50-75-100-150-200
Version		With bronze bushings With ball bearings	
Weights		See cylinder "General technical data" at the beginning of the chapter	

COMPONENTS

- ① BARREL: anodized aluminium alloy
- ② PISTON ROD: grinded chrome steel
- ③ GUIDE ROD: grinded chrome steel
- ④ GUIDE ROD: hardened and tempered chrome steel
- ⑤ REAR BASE: anodized aluminium alloy
- ⑥ FRONT BASE: anodized aluminium alloy
- ⑦ GUIDE BUSHING: self-lubricating bronze
- ⑧ PISTON: aluminium alloy
- ⑨ MAGNET: plastoferrite
- ⑩ PISTON GASKET: polyurethane
- ⑪ SLIDE BUSHING: sintered bronze
- ⑫ BALL BEARINGS
- ⑬ DUST SCRAPER RING: NBR or FKM/FPM
- ⑭ GREASE NIPPLES: zinc-plated or stainless steel
- ⑮ FLANGE: anodized aluminium alloy



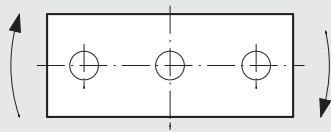
MAXIMUM SIDE LOAD



Ø mm	Guide unit	Stroke (mm)										
		10	20	25	30	40	50	75	100	150	175	200
16	Bushes	35	29	27	26	23	20	16	14	10	-	8
	Balls	29	31	-	27	38	34	29	24	12	-	8
20	Bushes	-	52	50	45	39	35	58	49	38	-	31
	Balls	-	56	-	48	79	70	54	50	27	-	32
25	Bushes	-	71	67	61	54	48	78	66	50	-	41
	Balls	-	72	-	62	78	73	60	52	37	-	30
32	Bushes	-	-	197	-	-	168	138	109	78	70	65
	Balls	-	-	89	-	-	60	276	217	138	122	110
40	Bushes	-	-	197	-	-	168	138	109	78	70	65
	Balls	-	-	89	-	-	60	276	217	138	122	110
50	Bushes	-	-	295	-	-	256	216	177	125	112	103
	Balls	-	-	138	-	-	89	393	314	184	163	148
63	Bushes	-	-	295	-	-	256	216	177	125	112	103
	Balls	-	-	138	-	-	89	393	314	184	163	148
80	Bushes	-	-	354	-	-	305	256	207	153	-	128
	Balls	-	-	236	-	-	158	864	687	413	-	335
100	Bushes	-	-	540	-	-	471	413	344	254	-	213
	Balls	-	-	471	-	-	314	1374	1074	629	-	511

N.B.: Forces are expressed in N

MAXIMUM TORQUE ON PLATE

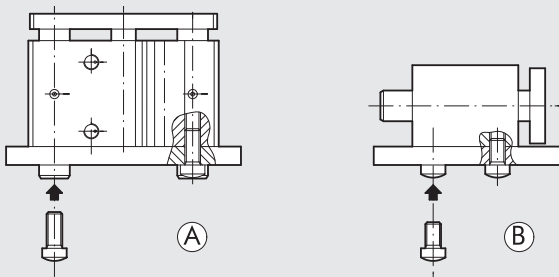


Ø mm	Guide unit	Stroke (mm)										
		10	20	25	30	40	50	75	100	150	175	200
16	Bushes	0.51	0.45	0.40	0.36	0.32	0.28	0.24	0.20	0.46	-	0.12
	Balls	0.74	0.60	-	0.50	0.72	0.65	0.54	0.45	0.35	-	0.25
20	Bushes	-	0.92	0.85	0.79	0.72	0.64	1.05	0.90	0.69	-	0.56
	Balls	-	1.28	-	1.08	1.78	1.59	1.24	1	0.61	-	0.49
25	Bushes	-	1.55	1.42	1.32	1.18	1.04	1.70	1.44	1.10	-	0.90
	Balls	-	1.98	-	1.70	2.16	2.20	1.66	1.4	1.02	-	0.82
32	Bushes	-	-	3.94	-	-	2.95	2.46	1.97	1.55	1.38	1.24
	Balls	-	-	1.97	-	-	1	2.96	2.44	2.40	2.43	2.18
40	Bushes	-	-	4.40	-	-	3.45	2.96	2.46	1.70	1.55	1.40
	Balls	-	-	2.46	-	-	1.45	6.38	5.4	3	2.73	2.40
50	Bushes	-	-	7.36	-	-	5.9	4.90	4.4	3	2.78	2.50
	Balls	-	-	3.45	-	-	2.44	10.8	8.35	4.5	4.06	3.60
63	Bushes	-	-	7.85	-	-	6.38	5.40	4.9	3.4	3.05	2.80
	Balls	-	-	3.94	-	-	2.46	11.77	9.3	5	4.46	4
80	Bushes	-	-	11.78	-	-	9.80	7.84	6.88	5.30	-	4.40
	Balls	-	-	9.34	-	-	5.88	31.38	24.5	10.40	-	11.7
100	Bushes	-	-	22.55	-	-	19.62	16.68	14.7	10.65	-	8.90
	Balls	-	-	21.56	-	-	13.73	63.72	49.1	26.6	-	21.6

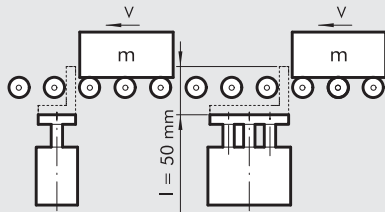
N.B.: Forces are expressed in Nm

ASSEMBLY OPTIONS

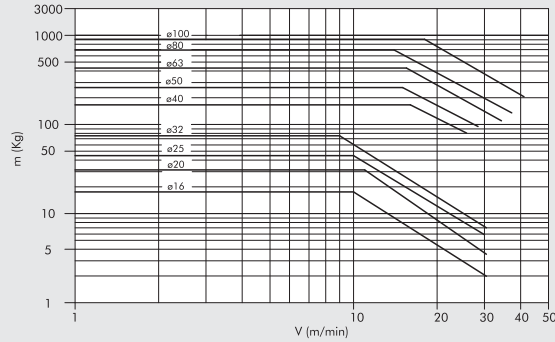
If the compact guided cylinder is mounted as shown in figure A, there need to be two through holes in the frame for the guide columns.



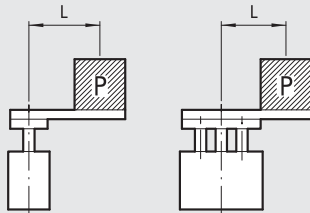
STOPPER FUNCTIONS



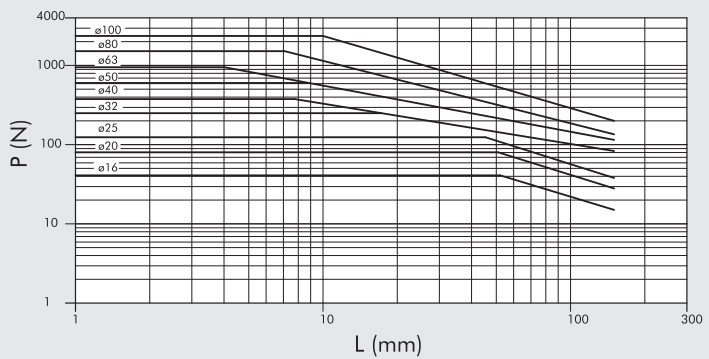
The graph refers to a 50mm-stroke cylinder with bushing guide unit



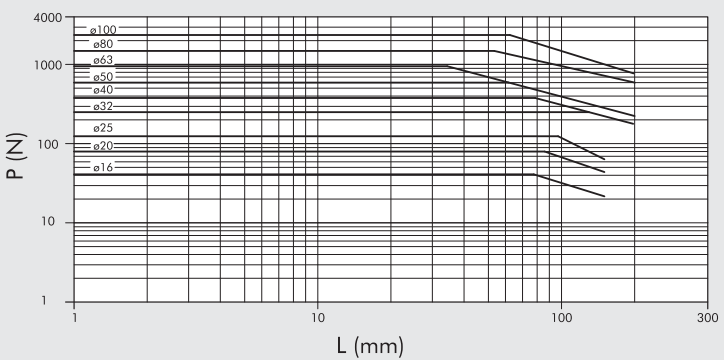
LIFTING FUNCTIONS



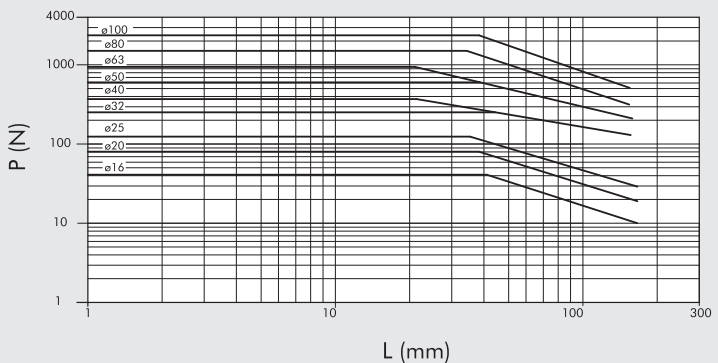
The graph refers from 25 to 50 mm-stroke cylinders with ball re-circulation guide unit



The graph refers from 75 to 100 mm-stroke cylinders with ball re-circulation guide unit

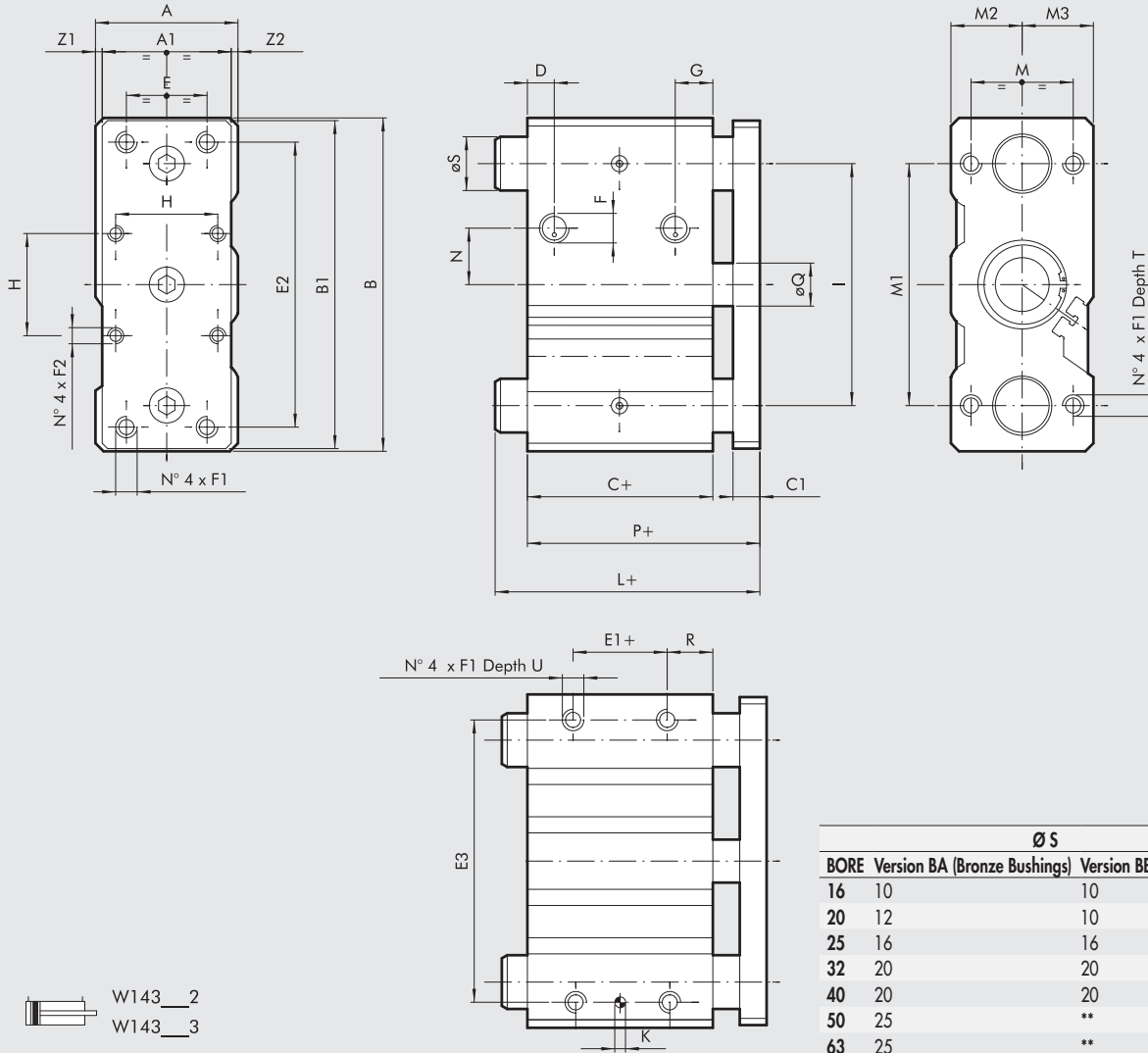


The graph refers to 50 mm-stroke cylinders with bushing guide unit



DIMENSIONS OF NO-CUSHIONED COMPACT GUIDED CYLINDERS

+ = ADD THE STROKE



BORE	Ø S	
	Version BA (Bronze Bushings)	Version BB (Ball Bearings)
16	10	10
20	12	10
25	16	16
32	20	20
40	20	20
50	25	**
63	25	**
80	28	25
100	35	30

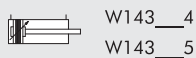
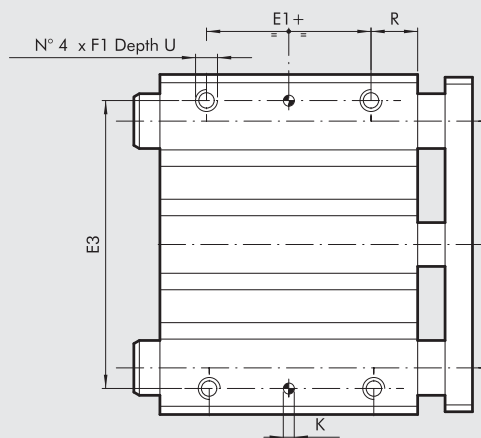
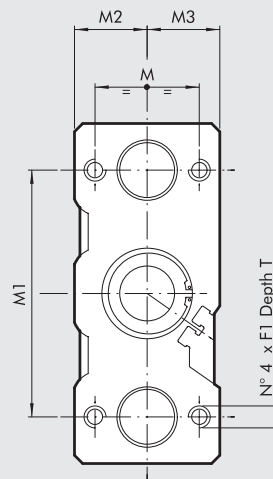
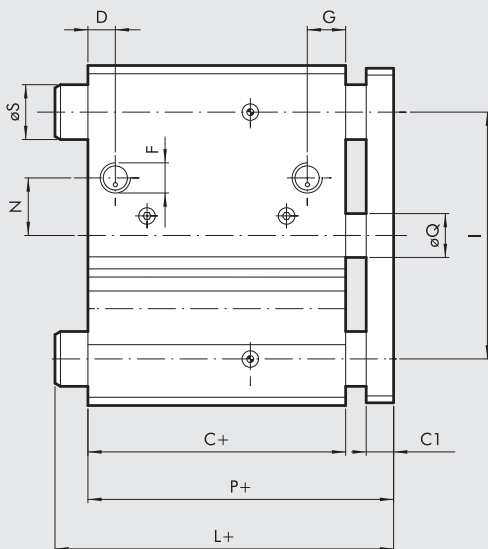
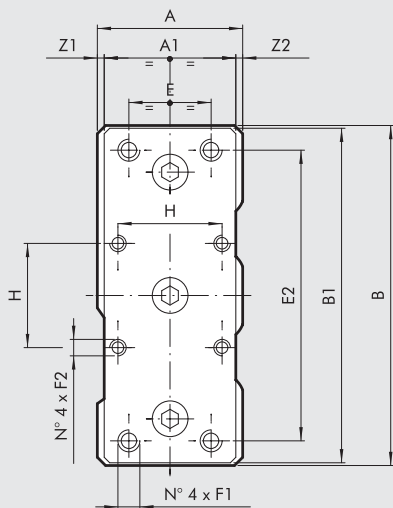
** for strokes 25 and 50 = 20
for strokes ≥75 = 25

BORE	stroke	
	0 to 50	75 to 200
16	55	74.5
20	49	79
25	49.5	79.5

Ø	A	A1	B	B1	C	C1	D	E	E1	E2	E3	F	F1	F2	G	H	K ^{Ø7}	I	L	M	M1	M2	M3	N	P	ØQ	R	T	U	Z1	Z2
16	33	25	64	62	33	10	9	16	7	52	54	M5	M5	-	10.5	-	4	40	*	22	42	15	18	6	46	8	13	20	8	5.5	2.5
20	36	29	74	72	37	10	9	18	10	60	64	1/8 M5	-	-	11	-	5	46	*	26	52	17	19	8	49	10	13	20	8	4.5	2.5
25	42	38	88	86	37.5	10	9	26	10	70	76	1/8 M6	-	-	11.5	-	5	56	*	32	62	21	21	8	49.5	12	14	25	9	2	2
32	51	48	114	112	37.5	10	9	30	5	96	100	1/8 M8	M6	12.5	32.5	6	80	73.5	38	80	25.5	25.5	14	49.5	16	16	20	11	1.5	1.5	
40	51	48	124	122	44	10	11	30	10	106	110	1/8 M8	M6	14	38	6	90	73.5	38	90	25.5	25.5	21	56	16	17	20	11	1.5	1.5	
50	59	56	140	138	44	12	11	40	10	120	124	1/4 M10	M8	14	46.5	6	100	83	44	100	29.5	29.5	27	58	20	17	25	12.5	1.5	1.5	
63	72	69	150	148	49	12	11	50	10	130	132	1/4 M10	M8	14	56.5	6	110	83	44	110	36	36	33	63	20	20	25	15	1.5	1.5	
80	92	88	188	185	56.5	16	15.5	60	15	160	166	3/8 M12	M10	19	72	6	140	93	56	140	46	46	36	74.5	25	21	30	18	2	2	
100	112	108	224	221	66	16	19	80	15	190	200	3/8 M14	M10	23	89	8	170	105	62	170	56	56	40	84	30	25	35	21	2	2	

DIMENSIONS OF CUSHIONED COMPACT GUIDED CYLINDERS

+ = ADD THE STROKE



Ø S		
BORE	Version BA (Bronze Bushings)	Version BB (Ball Bearings)
16	10	10
20	12	10
25	16	16
32	20	20
40	20	20
50	25	**
63	25	**

** for strokes 25 and 50 = 20
for strokes ≥75 = 25

* =	stroke	
	0 to 50	75 to 200
16	73	-
20	78	105.5
25	78.5	108.5

Ø	A	A1	B	B1	C	C1	D	E	E1	E2	E3	F	F1	F2	G	H	K ¹⁷	I	L	M	M1	M2	M3	N	P	ØQ	R	T	U	Z1	Z2
16	33	25	64	62	58	10	9	16	32	52	54	M5	M5	-	10.5	-	4	40	*	22	42	15	18	8	73	8	13	20	8	5.5	2.5
20	36	29	74	72	62	10	9	18	35	60	64	1/8 M5	-	-	11	-	5	46	*	26	52	16.5	19.5	8.5	78	10	13	20	8	4.5	2.5
25	42	38	88	86	62.5	10	9	26	35	70	76	1/8 M6	-	-	11.5	-	5	56	*	32	62	21	21	13.5	78.5	12	14	25	9	2	2
32	51	48	114	112	62.5	10	9	30	30	96	100	1/8 M8	M6	12.5	32.5	6	80	106.5	38	80	25.5	25.5	15	82.5	16	16.5	20	11	1.5	1.5	
40	51	48	124	122	69	10	11	30	35	106	110	1/8 M8	M6	14	38	6	90	106.5	38	90	25.5	25.5	20.5	89	16	17	20	11	1.5	1.5	
50	59	56	140	138	69	12	11	40	35	120	124	1/4 M10	M8	14	46.5	6	100	118	44	100	29.5	29.5	37	93	20	17	25	12.5	1.5	1.5	
63	72	69	150	148	74	12	11	50	35	130	132	1/4 M10	M8	14	56.5	6	110	118	44	110	36	36	31.5	98	20	20	25	15	1.5	1.5	

KEY TO CODES

W 1 4 3 TYPE	0 3 2 DIAMETER	2 VERSION	0 2 5 STROKE
	16 20 25 32 40 50 63 * 80 * A1=100	2 Bronze bushings 3 Ball bearings 4 Cushioned with bronze bushings 5 Cushioned with ball bearings	CUSHIONED VERSION Ø 16: 20, 30, 40, 50 Ø 20 to 25: 20, 30, 40, 50, 75, 100, 150 Ø 32 to 63: 25, 50, 75, 100, 150, 175 NOT CUSHIONED VERSION ♦ Ø 16: 10, 20, 25, 30, 40, 50, 75, 100, 150, 200 Ø 20 to 25: 20, 25, 30, 40, 50, 75, 100, 150, 200 Ø 32 to 100: 25, 50, 75, 100, 150, 200 ♦ Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above.

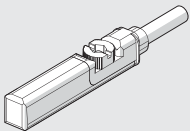
* Not cushioned version only

ACCESSORIES FOR COMPACT GUIDED CYLINDER: MAGNETIC SENSORS

RETRACTABLE SENSOR

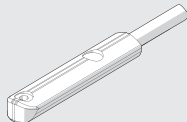
SENSOR, SQUARE TYPE

Latest generation,
secure fixing



SENSOR, OVAL TYPE

Traditional



For codes and technical data, see **chapter A6**.

NOTES