

COMPACT GUIDED CYLINDER SERIES MULTIFIX

This functional and heavy-duty cylinder is a further development of the well-known and proven CMPG series. It is designed to allow the fixing on multiple sides using different methods, compressed air supply on both sides and double sensor slots, on both the upper and lower side.

The bushing guides of the piston rods are fitted directly into the anodized aluminium alloy cylinder liner.

There are two possible guiding solutions: sintered bronze bushings coupled with piston rods made of ground chromed carbon steel or ball recirculating bushings coupled with hardened, chromed and ground steel.

A silenced version with elastic end-stroke elements and a version with pneumatic cushioning with adjustable pins to control the braking are also available.



TECHNICAL DATA		SILENCED	WITH PNEUMATIC CUSHIONING
Operating pressure	bar		1 to 10
	MPa		0.1 to 1
	psi		14.5 to 145
Temperature range	°C		-20 to +80
	°F		14 to 176
			Unlubricated air. Lubrication, if used, must be continuous
Fluid			
Bores	mm	16; 20; 25; 32; 40	
Strokes	mm	Ø 16: 10-20-30-40-50-75-100-125-150-175-200-250	Ø 16: 25-50-75-100-125-150-175-200-250
		Ø 20, Ø 25: 20-30-40-50-75-100-125-150-175-200	Ø 20 ÷ 40: 25-50-75-100-125-150-175-200-250-300
		250-300-350-400	350-400
		Ø 32 ÷ 40: 25-50-75-100-125-150-175-200-250-300	
		350-400	
		Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above	
Version		With bronze bushings, with ball recirculating bearings	
Magnet for sensors		Yes	
Inrush pressure	bar		
		with bronze bushings	
		with ball recirculating bearings	
		Ø 16; 20; 25 = 0.8	
		Ø 32; 40 = 0.5	
		Ø 16; 20; 25 = 0.6	
		Ø 32; 40 = 0.4	
Forces generated in thrust/retraction		See cylinder "General technical data" at the beginning of the chapter	

WEIGHTS [kg]

SILENCED VERSION

Bore	Strokes [mm]															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
16	0.3	0.35	-	0.4	0.45	0.5	0.7	0.85	1	1.15	1.3	1.45	1.6	-	-	-
20	-	0.55	-	0.65	0.75	0.85	1.15	1.35	1.55	1.75	1.95	2.15	2.5	2.9	3.3	3.7
25	-	0.9	-	1.05	1.2	1.35	1.9	2.25	2.55	2.85	3.15	3.35	4	4.35	4.7	5
32	-	-	1.5	-	-	1.85	2.25	2.6	3	3.35	3.7	4.05	5.2	5.9	6.6	7.3
40	-	-	1.75	-	-	2.15	2.55	2.95	3.35	3.75	4.15	4.55	5.8	6.6	7.4	8.2

VERSION WITH PNEUMATIC CUSHIONING

Bore	Strokes [mm]											
	25	50	75	100	125	150	175	200	250	300	350	400
16	0.55	0.65	0.8	0.95	1.2	1.35	1.5	1.65	1.8	-	-	-
20	0.8	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5
25	1.3	1.6	2	2.4	2.7	3	3.3	3.6	4.2	4.8	5.4	6
32	1.8	2.1	2.5	2.9	3.3	3.7	4.1	4.5	5.3	6.1	6.9	7.7
40	2.1	2.5	2.9	3.4	3.8	4.2	4.6	5	6.1	7.1	8.2	9.3

COMPONENTS SILENCED VERSION

- ① BODY: anodized extruded aluminium alloy
 - ② PISTON ROD: grinded chromed steel
 - ③ REAR BASE: anodized aluminium alloy
 - ④ FRONT BASE: anodized aluminium alloy
 - ⑤ PISTON: aluminium alloy
 - ⑥ MAGNET: plastoferrite
 - ⑦ PISTON GASKET: NBR or polyurethane
 - ⑧ GASKET O-Ring: NBR
 - ⑨ FLANGE: anodized aluminium alloy
 - ⑩ ELASTIC BUFFER: polyurethane
 - ⑪ THREADED PLUG: nickel-plated brass with O-Ring
- N.B.: when using side compressed air supplies, unscrew the caps and tighten them onto the threads of the compressed air supplies on the upper side.

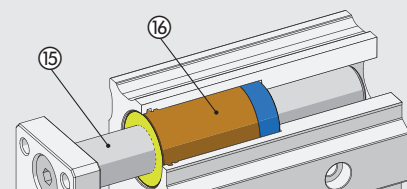
Version with bronze bushings

- ⑫ GUIDE ROD: grinded chromed steel
- ⑬ SLIDE BUSHING: sintered bronze
- ⑭ WIPER RING: NBR

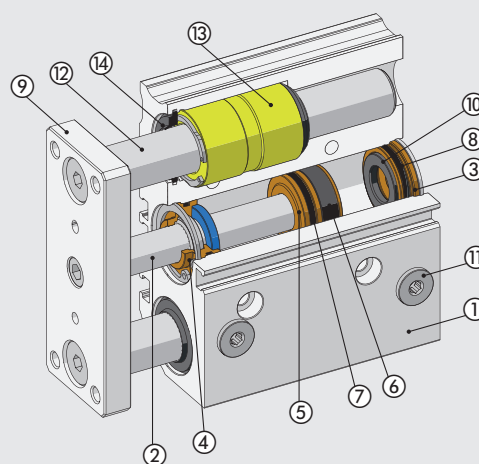
Version with ball recirculating bearings

- ⑮ GUIDE ROD: tempered and chromed chrome steel
- ⑯ BALL RECIRCULATING BEARING

Version with ball recirculating bearings



Version with bronze bushings



COMPONENTS VERSION WITH PNEUMATIC CUSHIONING

- ① BODY: anodized extruded aluminium alloy
 - ② PISTON ROD: grinded chromed steel
 - ③ REAR BASE: anodized aluminium alloy
 - ④ FRONT BASE: anodized aluminium alloy
 - ⑤ PISTON: aluminium alloy
 - ⑥ MAGNET: plastoferrite
 - ⑦ PISTON GASKET: NBR or polyurethane
 - ⑧ GASKET O-Ring: NBR
 - ⑨ FLANGE: anodized aluminium alloy
 - ⑩ CUSHIONING GASKET: NBR
 - ⑪ CUSHIONING NEEDLE: brass
 - ⑫ THREADED PLUG: nickel-plated brass with O-Ring
- N.B.: when using side compressed air supplies, unscrew the caps and tighten them onto the threads of the compressed air supplies on the upper side.

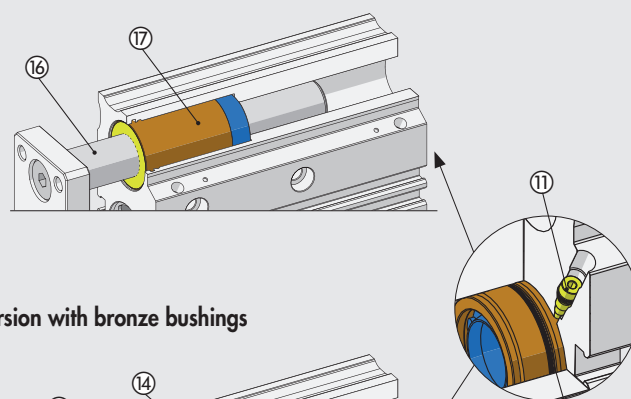
Version with bronze bushings

- ⑬ GUIDE ROD: grinded chromed steel
- ⑭ SLIDE BUSHING: sintered bronze
- ⑮ WIPER RING: NBR

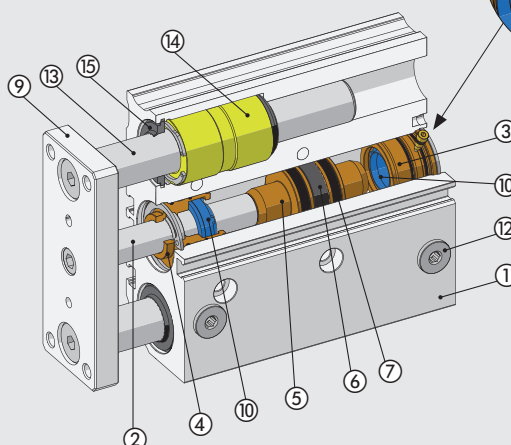
Version with ball recirculating bearings

- ⑯ GUIDE ROD: tempered and chromed chrome steel
- ⑰ BALL RECIRCULATING BEARING

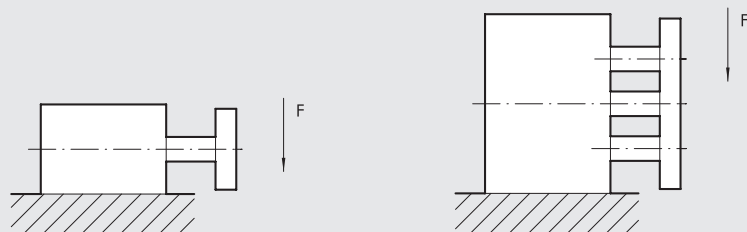
Version with ball recirculating bearings



Version with bronze bushings



MAXIMUM SIDE LOAD

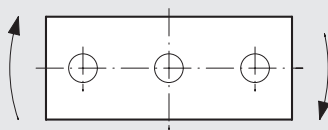


Ø [mm]	Guide unit	Stroke [mm]															
		10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
16	Bushes	40	35	32	29	25	24	25	20	19	18	16	13	10			
	Balls	35	38	33	30	29	28	35	24	21	19	16	13	10			
20	Bushes	-	40	35	33	32	30	63	52	49	40	36	32	26	22	14	10
	Balls	-	40	34	32	31	28	55	50	45	38	34	30	25	21	12	8
25	Bushes	-	70	60	50	40	36	80	70	65	55	50	45	35	25	18	10
	Balls	-	70	60	50	40	36	65	55	62	52	45	42	30	23	15	6
32	Bushes	-	-	140	130	125	120	150	120	110	90	80	70	50	40	20	10
	Balls	-	-	120	115	110	100	180	140	125	120	110	90	80	60	30	15
40	Bushes	-	-	140	130	125	120	150	120	110	90	80	70	50	40	20	10
	Balls	-	-	120	115	110	100	180	140	125	120	110	90	80	60	30	15

Centre of gravity distance from the front plane = 50 mm

N.B.: Forces are expressed in N

MAXIMUM TORQUE ON PLATE



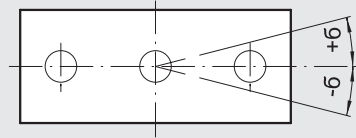
Ø [mm]	Guide unit	Stroke [mm]															
		10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
16	Bushes	0.71	0.60	0.54	0.50	0.44	0.39	0.71	0.60	0.52	0.45	0.41	0.37	0.31	-	-	-
	Balls	1.02	0.76	0.62	0.61	1.02	0.89	0.67	0.54	0.44	0.38	0.33	0.29	0.24	-	-	-
20	Bushes	-	1.08	1.03	0.96	0.85	0.77	1.94	1.68	1.48	1.32	1.19	1.09	0.93	0.80	0.71	0.64
	Balls	-	1.30	1.13	1.06	2.24	2.00	1.57	1.29	1.38	1.21	1.06	0.96	0.78	0.67	0.58	0.50
25	Bushes	-	1.81	1.67	1.60	1.42	1.29	3.05	2.65	2.33	2.08	1.88	1.72	1.46	1.28	1.12	1.01
	Balls	-	2.17	2.01	1.80	3.47	3.11	2.45	2.03	2.11	1.83	1.63	1.45	1.19	1.01	0.88	0.76
32	Bushes	-	-	6.54	-	-	5.28	5.86	5.12	4.55	4.10	3.72	3.41	2.93	2.55	2.27	2.04
	Balls	-	-	6.13	-	-	5.04	5.26	4.65	6.53	5.96	5.49	5.08	4.42	3.89	3.48	3.13
40	Bushes	-	-	7.21	-	-	5.83	6.46	5.64	5.02	4.51	4.10	3.76	3.22	2.82	2.50	2.26
	Balls	-	-	6.75	-	-	5.55	5.79	5.11	7.19	6.57	6.05	5.59	4.86	4.28	3.82	3.45

N.B.: Forces are expressed in Nm

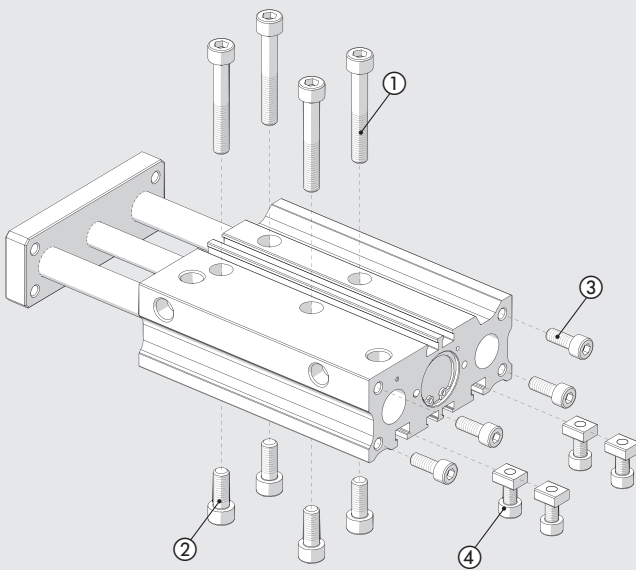
TORSIONAL BACKLASH

Torsional backlash δ with piston rods retracted and without applied loads.

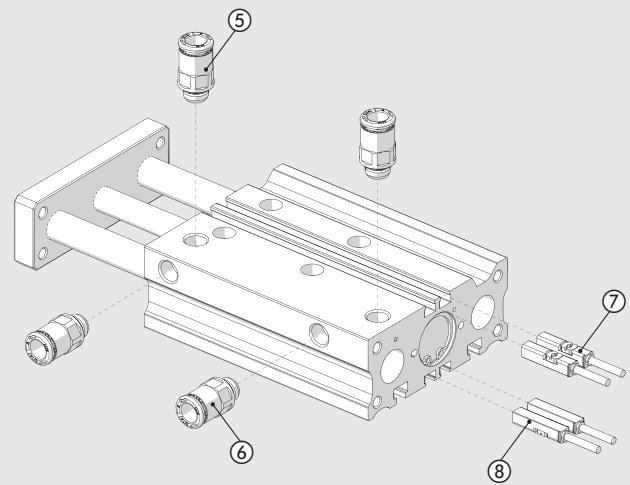
Torsional backlash δ	δ [mm]				
	16	20	25	32	40
With bronze bushings	$\pm 0,07$	$\pm 0,06$	$\pm 0,06$	$\pm 0,05$	$\pm 0,05$
With ball recirculating bearings	$\pm 0,05$	$\pm 0,04$	$\pm 0,04$	$\pm 0,03$	$\pm 0,03$



MOUNTING OPTIONS



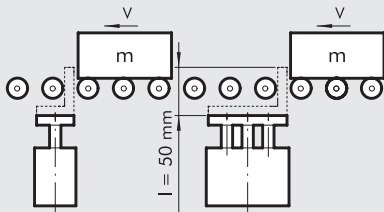
- ① Fixing with through screws
- ② Fixing with threaded holes
- ③ Fixing from the back side, using threaded holes
- ④ Fixing with plugs inserted into the T-slots



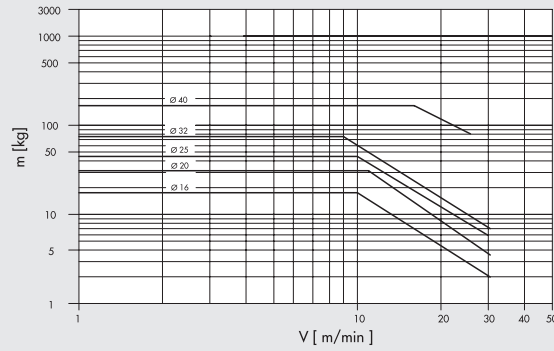
- ⑤ Compressed air supply on the upper side
- ⑥ Compressed air supply on the lateral side
- ⑦ Two sensor slots on the upper side
- ⑧ Two sensor slots on the lower side

NOTES

STOPPER FUNCTIONS

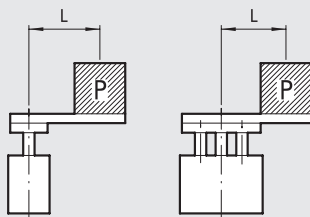


The graph refers to a cylinder with a maximum stroke of 50 mm and with bushing guides.

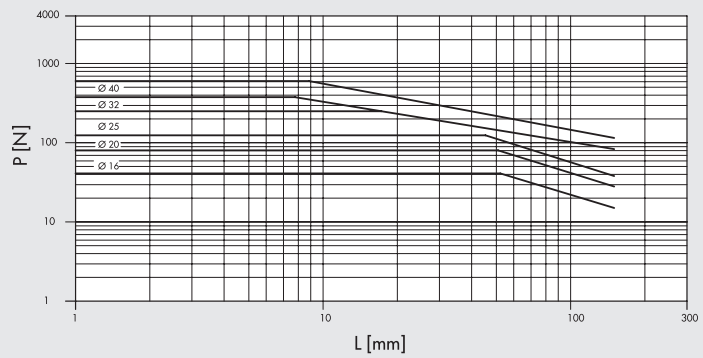


N.B.: The version with a ball bushing must not be used as a stopper.

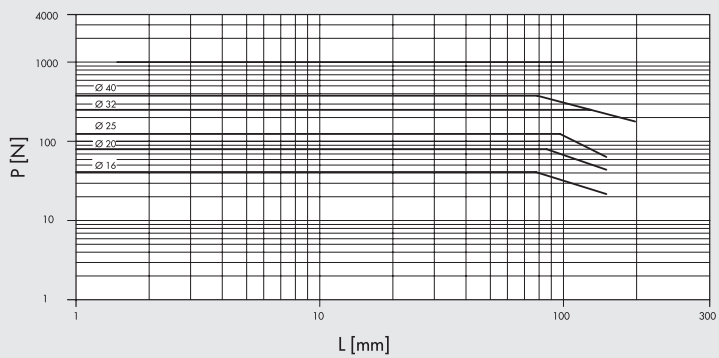
LIFTING FUNCTIONS



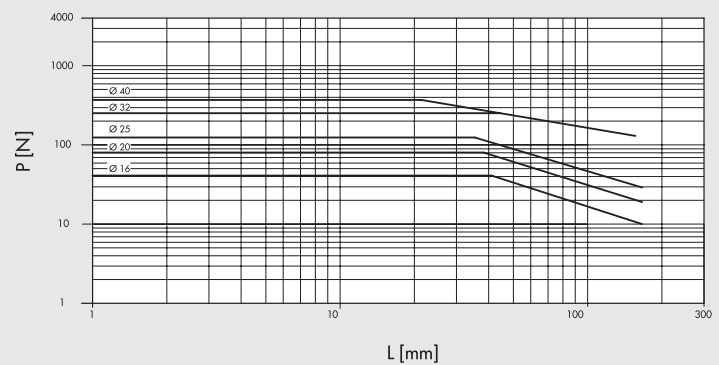
The graph refers to cylinders with a stroke of up to 50 mm with a ball recirculation guide.



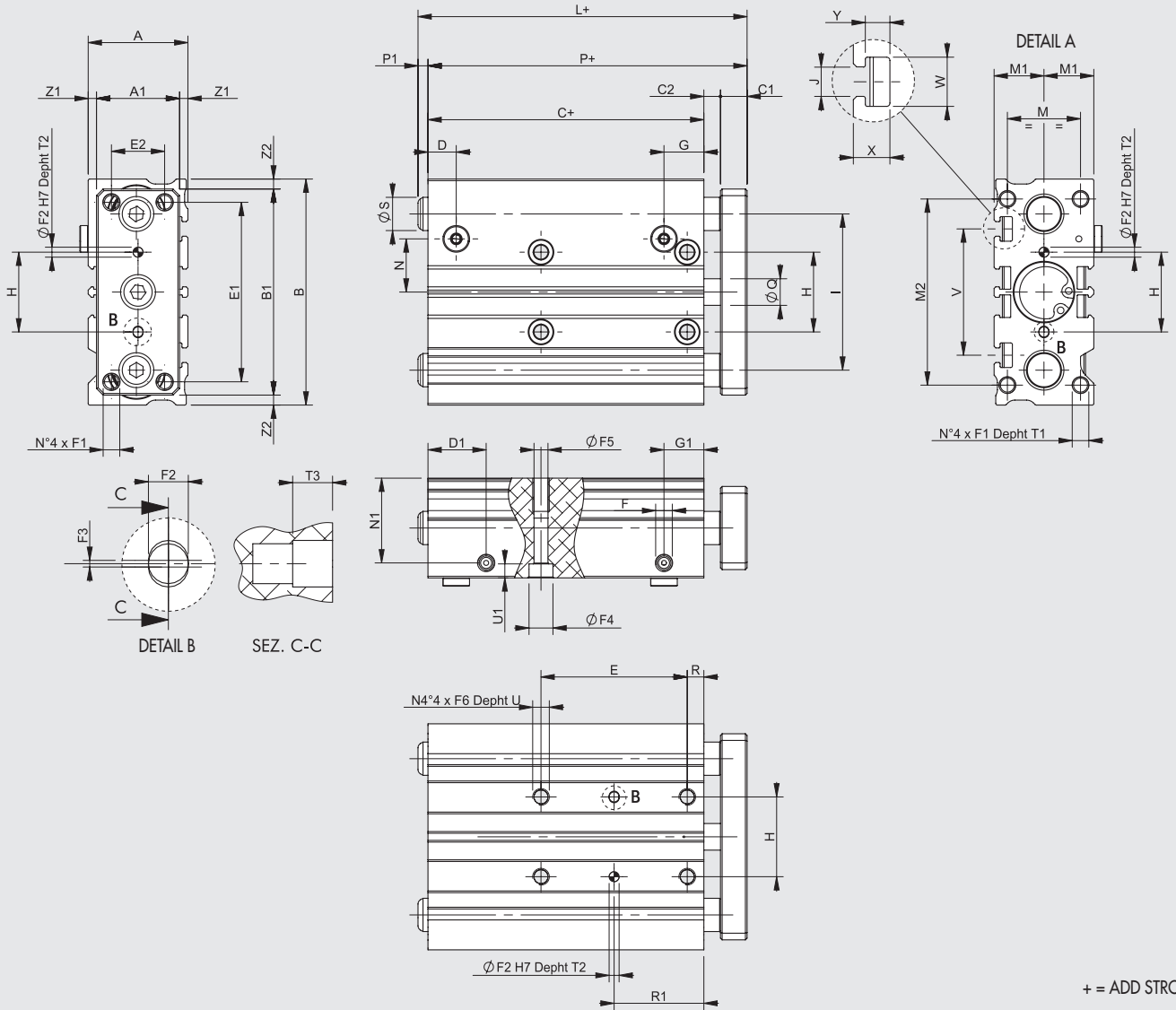
The graph refers to cylinders with a stroke greater than 50 mm with a ball recirculation guide.



The graph refers to cylinders with a bushing guide.



DIMENSIONS SILENCED VERSION



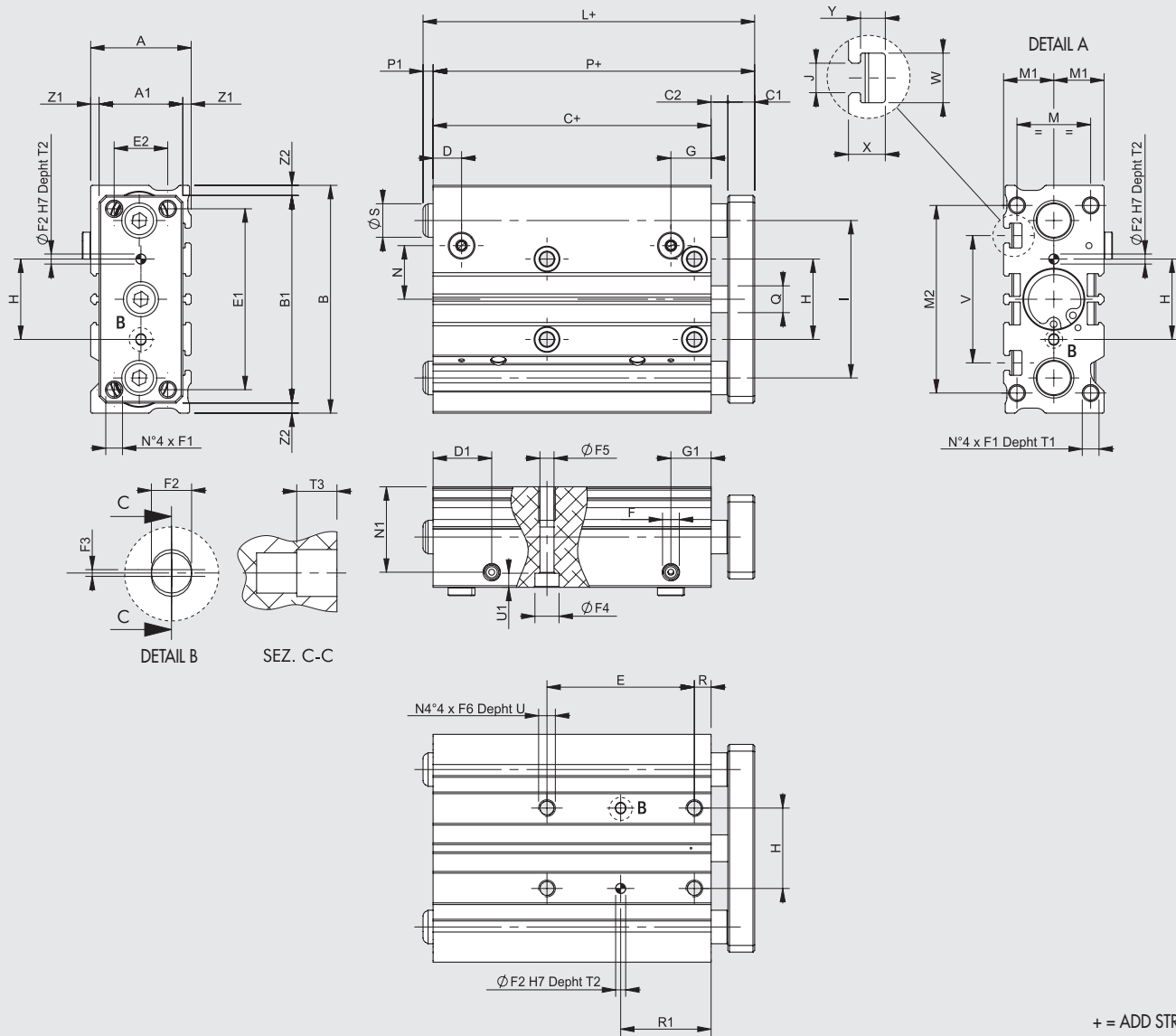
+ = ADD STROKE

Ø	A	A1	B	B1	C	C1	C2	D	D1	E1	E2	F	F1	F2 ^{H7}	F3	F4	F5	F6	G	G1	H ^{±0.025}	I	J	M	M1	M2
16	30	25	68	62	33	8	5	8.5	17.5	54	16	M5	M5	3	0.5	7.2	4.2	M5	12	12	24	47	4.4	22	15	56
20	36	30	83	81	37	10	6	9.5	24.5	70	18	G1/8	M5	3	0.5	8.8	5.2	M6	10.5	10.5	28	54	5.4	24	18	72
25	42	38	101	91	37.5	10	6	10	24.5	78	26	G1/8	M6	4	0.5	8.8	5.2	M6	10	10	34	68	5.4	30	21	82
32	48	44	112	110	37.5	12	10	10	28	96	30	G1/8	M8	4	0.5	10.2	6.8	M8	10.5	10.5	42	78	6.5	34	24	98
40	54	44	120	118	44	12	10	12.5	31	104	30	G1/8	M8	4	0.5	10.2	6.8	M8	12.5	12.5	50	86	6.5	40	27	106

Ø	N	N1	P	Q	R	S	T1	T2	T3	U	U1	V	W	X	Y	Z1	Z2
16	16	25.5	46	8	5	10	10	6	3	10	4.2	38	7.4	5.5	3.7	2.5	3
20	25	29.5	53	10	17	12	12	6	3	12	5.2	44	8.4	7	4.5	3	1
25	25.5	36	53.5	12	17	16	12	6	3	12	5.2	50	8.4	7	4.5	2	5
32	35.5	41	59.5	16	21	20	16	6	3	16	6.2	63	10.5	7.5	5.5	2	1
40	36	46.5	66	16	22	20	16	6	3	16	6.2	72	10.5	7.5	5.5	5	1

Ø	E Stroke					R1 Stroke					L Stroke			P1 Stroke		
	10-30	40-100	125-200	250-300	350-400	10-30	40-100	125-200	250-300	350-400	10-50	75-200	250-400	10-50	75-200	250-400
16	24	44	110	200	-	17	27	60	105	-	49	79	109	3	33	63
20	24	44	120	200	300	29	39	77	117	167	58	88	118	5	35	65
25	24	44	120	200	300	29	39	77	117	167	70.5	103	118	17	49.5	64.5
32	24	48	124	200	300	33	45	83	121	171	88	88	138	28.5	28.5	78.5
40	24	48	124	200	300	34	46	84	122	172	88	88	138	22	22	72

DIMENSIONS WITH PNEUMATIC CUSHIONING VERSION



+ = ADD STROKE

Ø	A	A1	B	B1	C	C1	C2	D	D1	E1	E2	F	F1	F2 ^{H7}	F3	F4	F5	F6	G	G1	H ^{±0.025}	I	J	M	M1	M2
16	30	25	68	62	58	8	5	8.5	17.5	54	16	M5	M5	3	0.5	7.2	4.2	M5	12	12	24	47	4.4	22	15	56
20	36	30	83	81	62	10	6	9	24.5	70	18	G1/8	M5	3	0.5	8.8	5.2	M6	11.5	11.5	28	54	5.4	24	18	72
25	42	38	101	91	62.5	10	6	9.5	24.5	78	26	G1/8	M6	4	0.5	8.8	5.2	M6	10	10	34	68	5.4	30	21	82
32	48	44	112	110	62.5	12	10	9	28	96	30	G1/8	M8	4	0.5	10.2	6.8	M8	9	9	42	78	6.5	34	24	98
40	54	44	120	118	69	12	10	10	31	104	30	G1/8	M8	4	0.5	10.2	6.8	M8	10	10	50	86	6.5	40	27	106

Ø	N	N1	P	Q	R	S	T1	T2	T3	U	U1	V	W	X	Y	Z1	Z2
16	16	25.5	71	8	5	10	10	6	3	10	4.2	38	7.4	5.5	3.7	2.5	3
20	25	29.5	78	10	17	12	12	6	3	12	5.2	44	8.4	7	4.5	3	1
25	25.5	36	78.5	12	17	16	12	6	3	12	5.2	50	8.4	7	4.5	2	5
32	35.5	41	84.5	16	21	20	16	6	3	16	6.2	63	10.5	7.5	5.5	2	1
40	36	46.5	91	16	22	20	16	6	3	16	6.2	72	10.5	7.5	5.5	5	1

Ø	E Stroke				R1 Stroke				L Stroke			P1 Stroke		
	25-75	100-175	200-250	300-400	25-75	100-175	200-250	300-400	25-50	75-200	250-400	25-50	75-200	250-400
16	44	110	200	-	27	60	105	-	71	79	109	0	8	38
20	44	120	200	300	39	77	117	167	78	88	118	0	10	40
25	44	120	200	300	39	77	117	167	78.5	103	118	0	24.5	39.5
32	48	124	200	300	45	83	121	171	88	88	138	3.5	3.5	53.5
40	48	124	200	300	46	84	122	172	91	91	138	0	0	47

KEY TO CODES

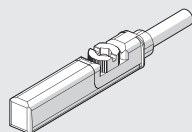
W 1 4 3	0 2 0	D	0 7 5
TYPE	DIAMETER	VERSION	STROKE
Compact guided cylinder	016 16 020 20 025 25 032 32 040 40	A Bronze bushings, silenced B Ball recirculating bearings, silenced C Bronze bushings with pneumatic cushioning D Ball recirculating bearings with pneumatic cushioning	SILENCED VERSION ♦ Ø 16: 10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250 Ø 20 ÷ 25: 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400 Ø 32 ÷ 40: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400 WITH PNEUMATIC CUSHIONING VERSION Ø 16: 25, 50, 75, 100, 125, 150, 175, 200, 250 Ø 20 ÷ 40: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400 ♦ Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above.

ACCESSORIES

RETRACTABLE SENSOR

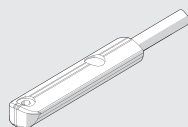
SENSOR, SQUARE TYPE

Latest generation,
secure fixing



SENSOR, OVAL TYPE

Traditional



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

NOTES