

COMPACT GUIDED CYLINDER SERIES CMPGK



The CMPGK is a functional, sturdy guided compact cylinder with a built-in guide unit.

The piston rod guide bushings are mounted directly in the anodized aluminium alloy cylinder liner.

Two different types of guides can be mounted as required: sintered bronze bushings coupled with chromed and ground carbon steel piston rods, or ball recirculation bushings with chromed and ground hardened steel piston rods.

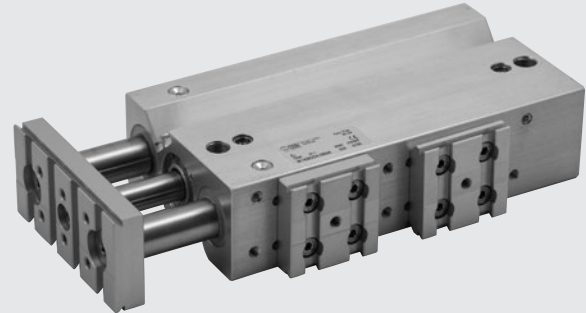
Grooves are provided on one side of the body to accommodate retractable sensors.

Currently available is either a non-cushioned version with the end-of-stroke stop cushioned by NBR front gaskets, or a cushioned one with pins that can be adjusted to regulate progressive braking.

The front plate features the typical V-lock dovetail with grooves and holes.

V-Lock fixing elements can be fitted to the main body on any of the three surfaces identified as UP, SIDE and DOWN. The chosen surface has a grid of threaded holes and pinholes with one or two V-Lock plates, depending on the stroke.

The plates are mounted in a preset position, but they can be moved on the grid as required.



TECHNICAL DATA		CUSHIONED	NON-CUSHIONED
Operating pressure	bar		1 to 10
	MPa		0.1 to 1
Temperature range	psi		14.5 to 145
	°C		-10 to +80
	°F		14 to 176
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous	
Bore	mm	16, 20, 25, 32, 40	
Standard stroke	mm	Ø 16: 20, 30, 40, 50	
		Ø 20: 20, 30, 40, 50, 75, 100, 150, 200	Ø 16: 30*, 40, 50, 75, 100, 150, 200
		Ø 25: 20, 30, 40, 50, 75, 100, 150	Ø 20: 25, 30, 40, 50, 75, 100, 150, 200
		Ø 32: 25, 50, 75, 100, 150, 175	Ø 25: 25, 30, 40, 50, 75, 100, 150, 200
		Ø 40: 25*, 50, 75, 100, 150, 175	Ø 32: 25, 50, 75, 100, 150, 200
Version		With bronze bushings - With ball bearings	
Sensor magnet		Standard	
Maximum impact energy	J	See diagram on next page	Ø 16: 0.06 Ø 20: 0.14 Ø 25: 0.2 Ø 32: 0.4 Ø 40: 0.6
Notes		* Side and Down versions only	

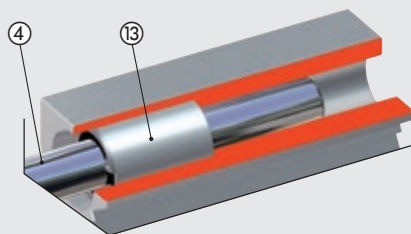
WEIGHTS

Ø	Non-cushioned		Cushioned	
	Weight [g] Stroke = 0	Weight [g] each mm	Weight [g] Stroke = 0	Weight [g] each mm
16	395	5.77	514	5.77
20	586	7.38	643	7.38
25	650	11.01	835	11.01
32	1042	17.51	1454	17.51
40	1128	19.04	1579	19.04

COMPONENTS

- ① BARREL: anodized aluminium alloy
- ② PISTON ROD: grinded chromed steel
- ③ GUIDE ROD: grinded chromed steel
- ④ GUIDE ROD: hardened and tempered chrome steel, grinded
- ⑤ REAR BASE: anodized aluminium alloy
- ⑥ FRONT BASE: anodized aluminium alloy
- ⑦ PISTON ROD GASKET: polyurethane
- ⑧ CUSHIONING GASKET: NBR
- ⑨ PISTON: aluminium alloy
- ⑩ MAGNET: plastoferrite
- ⑪ PISTON GASKET: NBR
- ⑫ SLIDE BUSHING: sintered bronze
- ⑬ BALL BEARINGS
- ⑭ DUST SCRAPER RING: NBR or FKM/FPM
- ⑮ GREASE NIPPLES: zinc-plated or stainless steel
- ⑯ FLANGE: anodized aluminium alloy
- ⑰ CUSHIONING NEEDLE: OT58 brass

Ball Bearings versions



Bronze bushings version

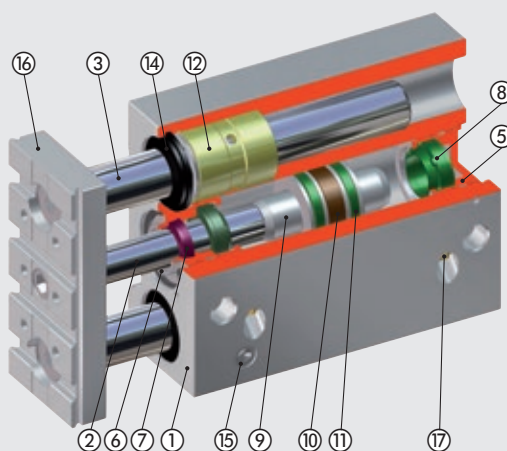
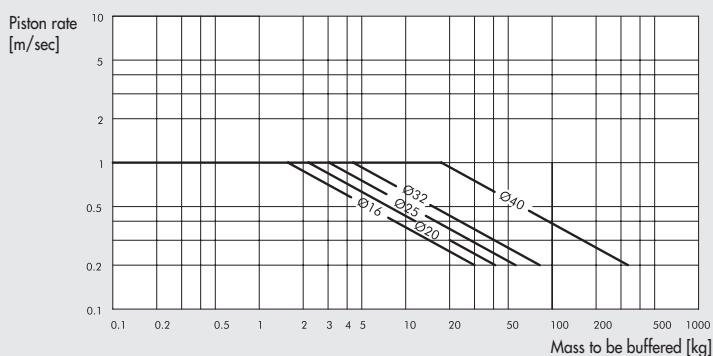
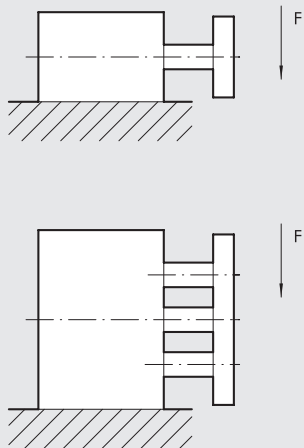


DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

For the cylinder to reach the end-of-stroke position without intense or repeated impact which would damage it, it is necessary to annul the kinetic energy of the moving mass and the work generated. The maximum cushionable load depends on the traversing speed and the absorption of the air buffer supplied standard with the various cylinders. The diagram shows the speeds and cushionable mass for the various diameters at a pressure of 6 bar.



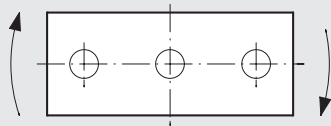
MAXIMUM SIDE LOAD



Ø mm	Guide unit	Stroke (mm)									
		20	25	30	40	50	75	100	150	175	200
16	Bushes	29	-	26	23	20	16	14	10	-	8
	Balls	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	68	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

N.B.: Forces are expressed in N

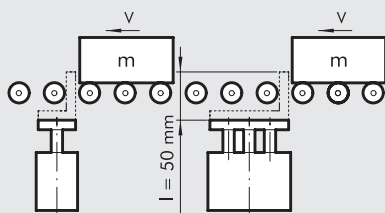
MAXIMUM TORQUE ON PLATE



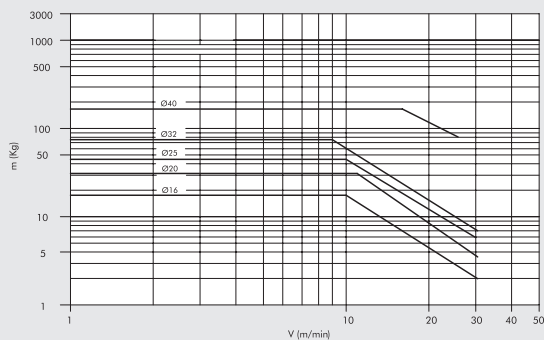
Ø mm	Guide unit	Stroke (mm)									
		20	25	30	40	50	75	100	150	175	200
16	Bushes	0.45	-	0.36	0.32	0.28	0.24	0.20	0.46	-	0.12
	Balls	0.60	-	0.50	0.72	0.65	0.54	0.45	0.35	-	0.25
20	Bushes	0.92	0.85	0.79	0.72	0.64	1.05	0.90	0.69	-	0.56
	Balls	1.28	-	1.08	1.78	1.59	1.24	1	0.61	-	0.49
25	Bushes	1.55	1.42	1.32	1.18	1.04	1.70	1.44	1.10	-	0.90
	Balls	1.98	1.78	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

N.B.: Forces are expressed in Nm

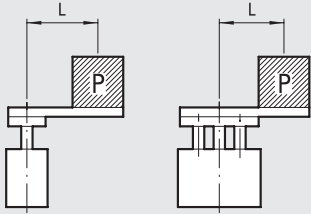
STOPPER FUNCTIONS



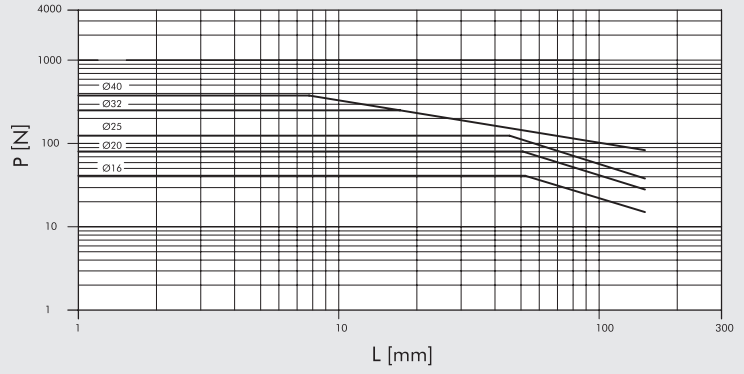
The graph refers to a 50 mm-stroke cylinder.



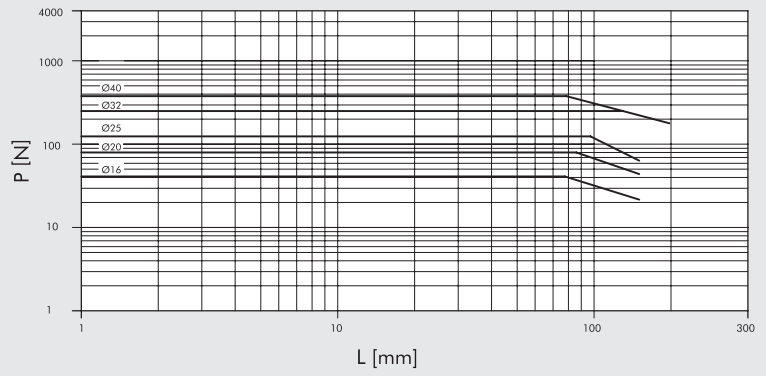
LIFTING FUNCTIONS



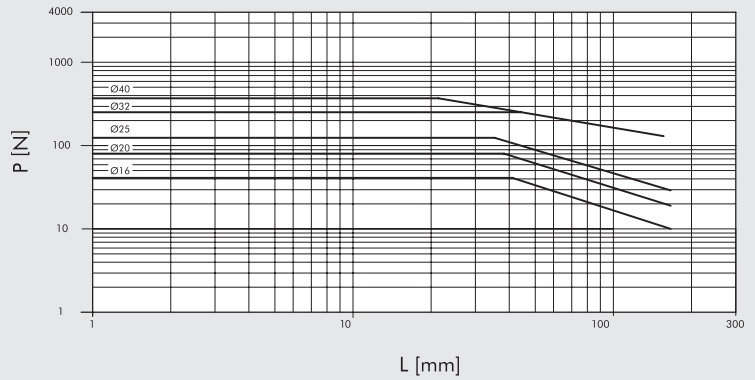
The graph refers from 25 to 50 mm-stroke cylinders with ball re-circulation guide unit



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

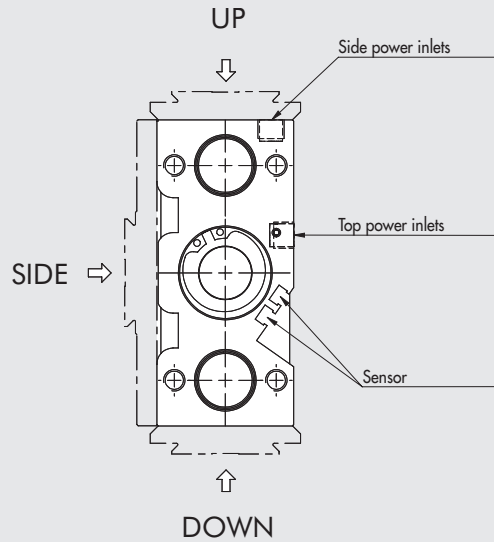


The graph refers to 50 mm-stroke cylinders with bushing guide unit



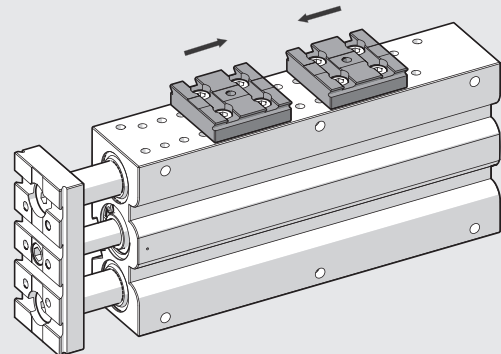
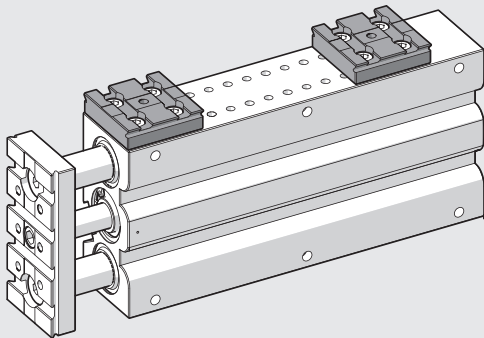
MOUNTING OPTIONS

The surface of the body on which to mount the V-Lock plates must be specified at the coding stage. The surface is identified by a letter **U** (Up), **S** (Side) or **D** (Down).

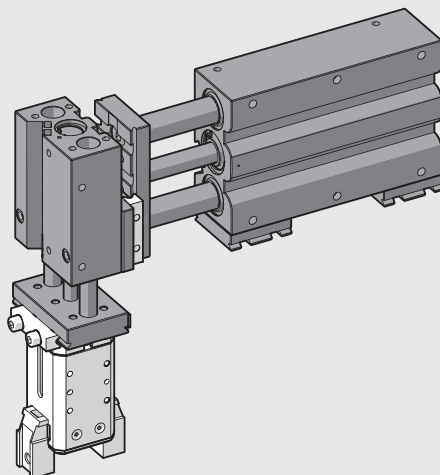


The chosen side of the CMPGK cylinder has a series of threaded holes and pinholes, and one or more V-Lock plates, depending on the stroke. The cylinder is delivered with a plate mounted in the foremost position and another, if provided, in the rearmost position.

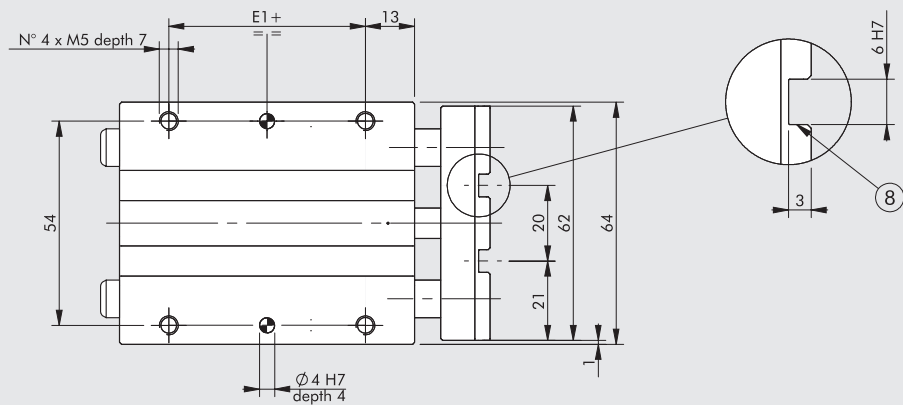
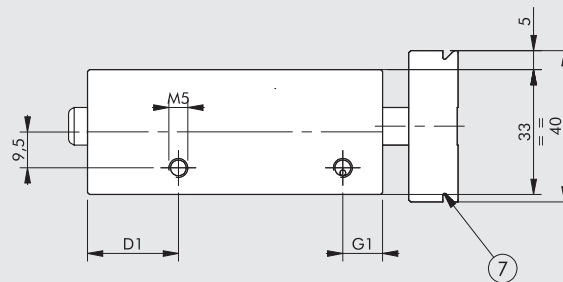
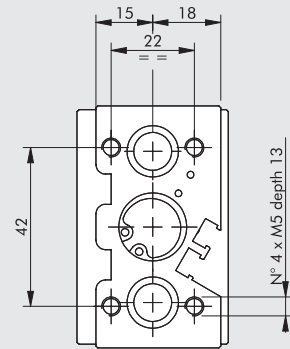
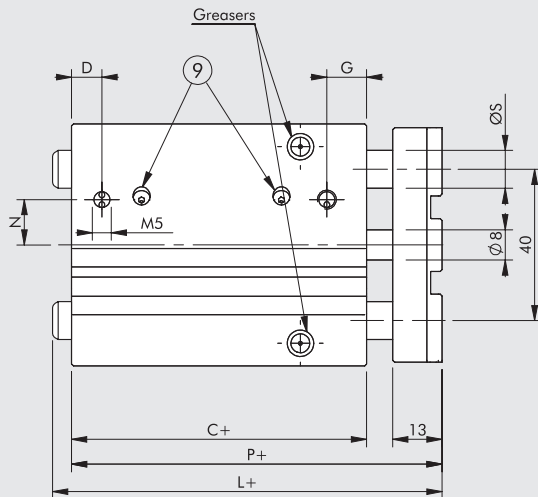
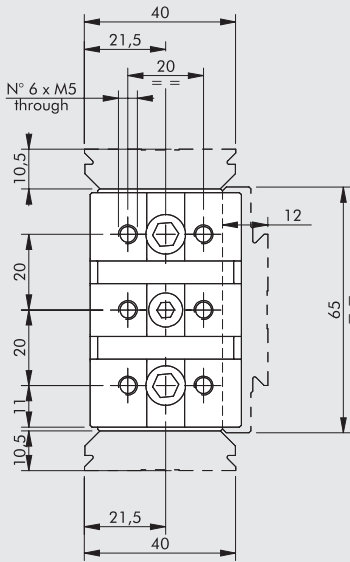
The V-Lock plates can be moved as required and fixed to any of the threaded holes.



EXAMPLES OF APPLICATION



DIMENSIONS OF Ø 16, BA AND BB NON-CUSHIONED VERSION
DIMENSIONS OF Ø 16, BA AND BB CUSHIONED VERSION



+ = ADD STROKE

- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key
- ⑨ Cushioning pins (in the cushioned version only)

Stroke	L ♦
0 to 50	49
75 to 200	77.5

Stroke	L
0 to 50	76
75 to 200	104.5

NON-CUSHIONED

C ♦	D	D1	E1	G	G1	L		N	P ♦	Ø S	
						BA*	BB**			BA*	BB**
33	8.5	20	7	11.5	11.5	see above	6.5	49	10	10	

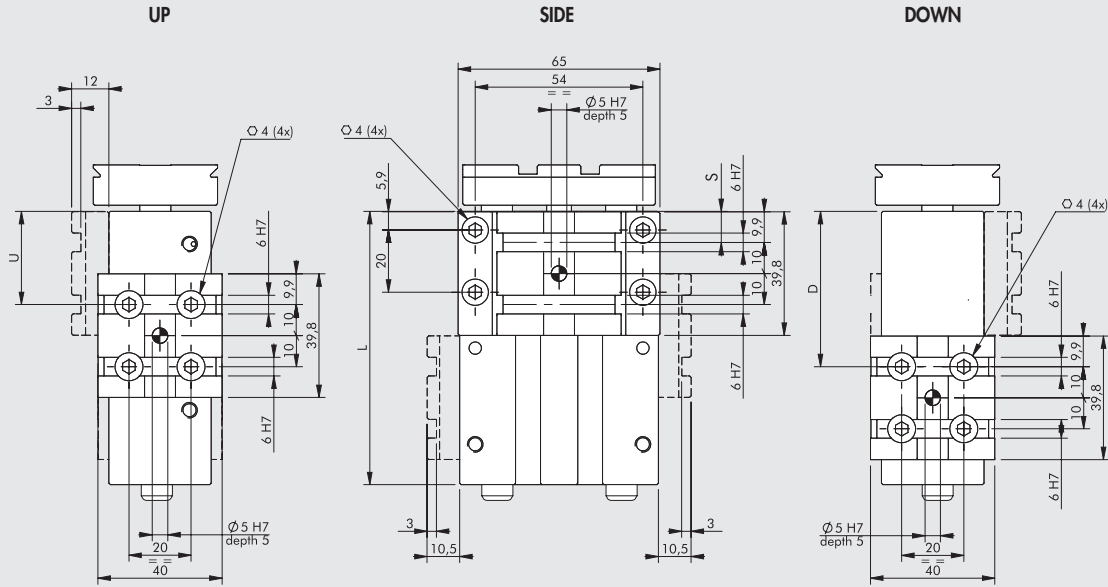
CUSHIONED

C	D	D1	E1	G	G1	L		N	P	Ø S	
						BA*	BB**			BA*	BB**
58	8	24	32	10.5	10.5	see above	12	74	10	10	

* Version BA (Bronze Bushings)
 ** Version BB (Ball Bearings)

♦ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

POSITION OF Ø 16 PLATES, BA AND BB NON-CUSHIONED VERSION
POSITION OF Ø 16 PLATES, BA AND BB CUSHIONED VERSION



NON-CUSHIONED

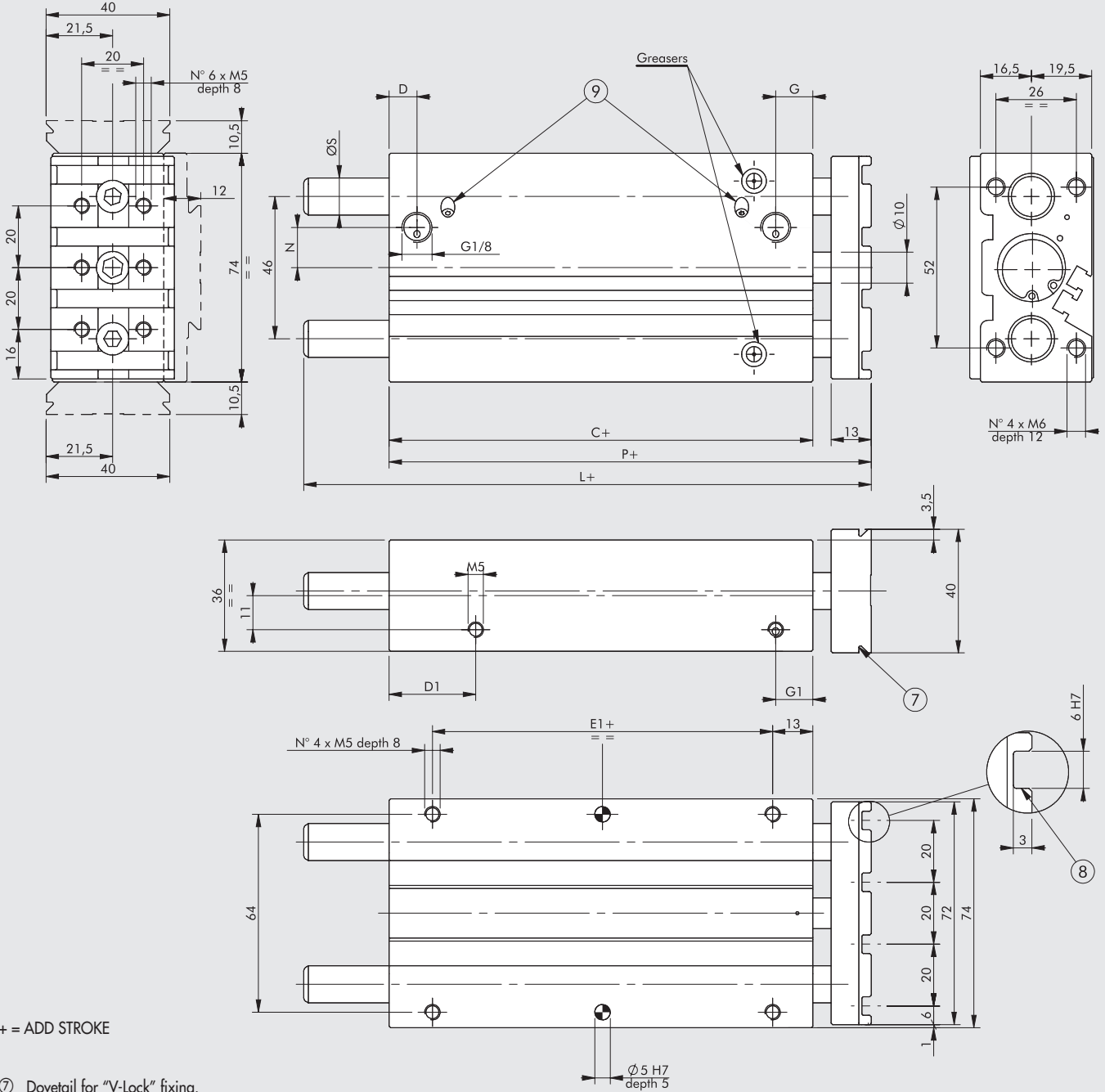
Stroke [mm]	30			40			50			75			100			150			200					
Position	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D			
Possible positions (see page A3.67)	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10
	-	-	30	* 30	30	30	* 30	-	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
									50	50	50	50	50	-	50	70	-	70	90	90	90	90	90	90
										* 70	70	70												
No. of V-Lock plates supplied	1			1			1			2			2			2			2					
L	63			73			83			108			133			183			233					

CUSHIONED

Stroke [mm]	20			30			40			50		
Position	U	S	D	U	S	D	U	S	D	U	S	D
Possible positions (see page A3.67)	-	10	-	-	10	-	-	10	-	-	10	-
	* 30	30	30	* 30	-	30	30	-	30	30	30	30
	-	-	50	-	-	50	* 50	-	50	* 50	50	50
							-	-	70	-	70	70
No. of V-Lock plates supplied	1			1			1			2		
L	78			88			98			108		

* Outlet side power supply not available

DIMENSIONS OF Ø 20, BA AND BB NON-CUSHIONED VERSION
DIMENSIONS OF Ø 20, BA AND BB CUSHIONED VERSION



+ = ADD STROKE

- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key
- ⑨ Cushioning pins (in the cushioned version only)

Stroke	L ◆
0 to 50	52
75 to 200	82

Stroke	L
0 to 50	81
75 to 200	108.5

NON-CUSHIONED

C ◆	D	D1	E1	G	G1	L		N	P ◆	Ø S	
						BA*	BB**			BA*	BB**
37	9	20	10	11	11	see above		8.5	52	12	10

CUSHIONED

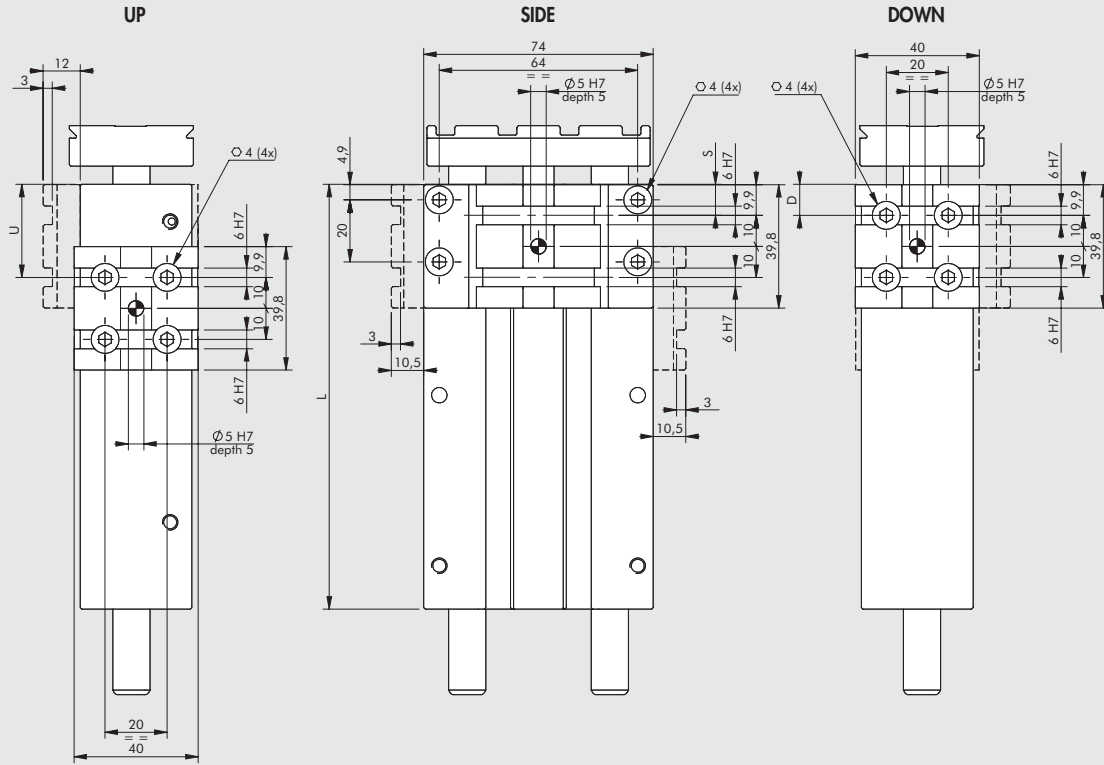
C	D	D1	E1	G	G1	L		N	P	Ø S	
						BA*	BB**			BA*	BB**
62	9	28	35	12	12	see above		13	81	12	10

* Version BA (Bronze Bushings)

** Version BB (Ball Bearings)

◆ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

POSITION OF Ø 20 PLATES, BA AND BB NON-CUSHIONED VERSION
POSITION OF Ø 20 PLATES, BA AND BB CUSHIONED VERSION



NON-CUSHIONED

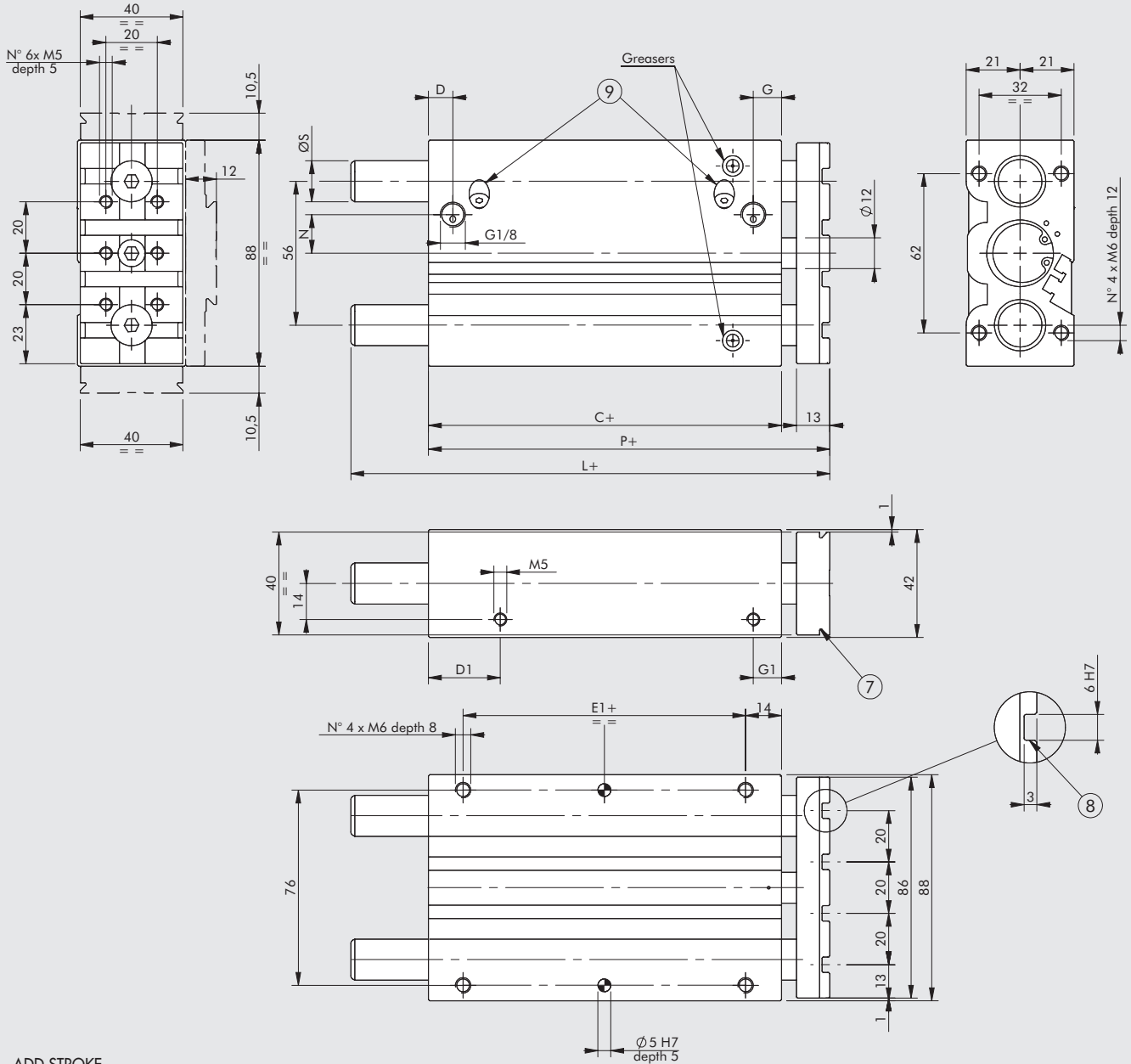
Stroke [mm]	25			30			40			50			75			100			150			200		
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D
Possible positions (see page A3.67)	■ 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10
	-	-	30	-	30	30	* 30	30	30	30	-	30	30	30	30	30	30	30	30	30	30	30	30	30
No. of V-Lock plates supplied	1			1			1			1			2			2			2			2		
L	62			67			77			87			112			137			187			237		

CUSHIONED

Stroke [mm]	20			30			40			50			75			100			150			200		
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D
Possible positions (see page A3.67)	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10	-	10	10
	* 30	-	30	* 30	-	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	-	-	50	-	-	50	* 50	50	50	* 50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
No. of V-Lock plates supplied	1			1			1			1			2			2			2			2		
L	82			92			102			112			137			162			212			262		

* Outlet side power supply not available ● Return side power supply not available ■ Side power supply not available

DIMENSIONS OF Ø 25, BA AND BB NON-CUSHIONED VERSION
DIMENSIONS OF Ø 25, BA AND BB CUSHIONED VERSION



+ = ADD STROKE

- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key
- ⑨ Cushioning pins (in the cushioned version only)

Stroke	L ◆
0 to 50	52.5
75 to 200	82.5

Stroke	L
0 to 50	81.5
75 to 200	111.5

NON-CUSHIONED

C ◆	D	D1	E1	G	G1	L		N	P ◆	Ø S	
						BA*	BB**			BA*	BB**
37.5	9	23	10	11	11	see above	8	52.5	16	16	

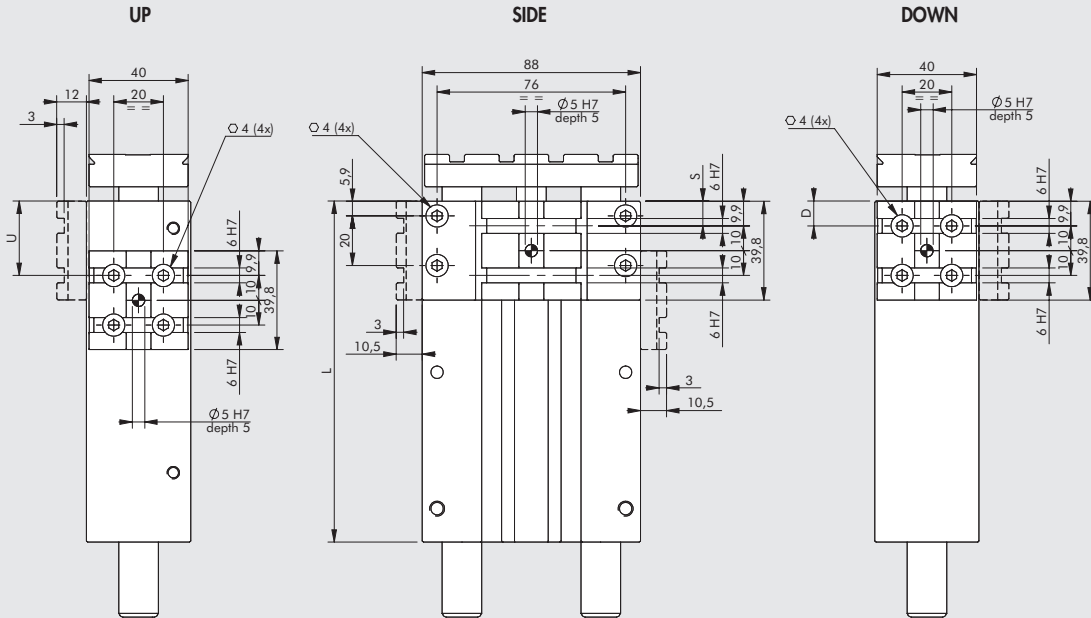
CUSHIONED

C	D	D1	E1	G	G1	L		N	P	Ø S	
						BA*	BB**			BA*	BB**
62.5	9.5	28	35	11	11	see above	15	81.5	16	16	

* Version BA (Bronze Bushings)
 ** Version BB (Ball Bearings)

◆ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

POSITION OF Ø 25 PLATES, BA AND BB NON-CUSHIONED VERSION
POSITION OF Ø 25 PLATES, BA AND BB CUSHIONED VERSION



NON-CUSHIONED

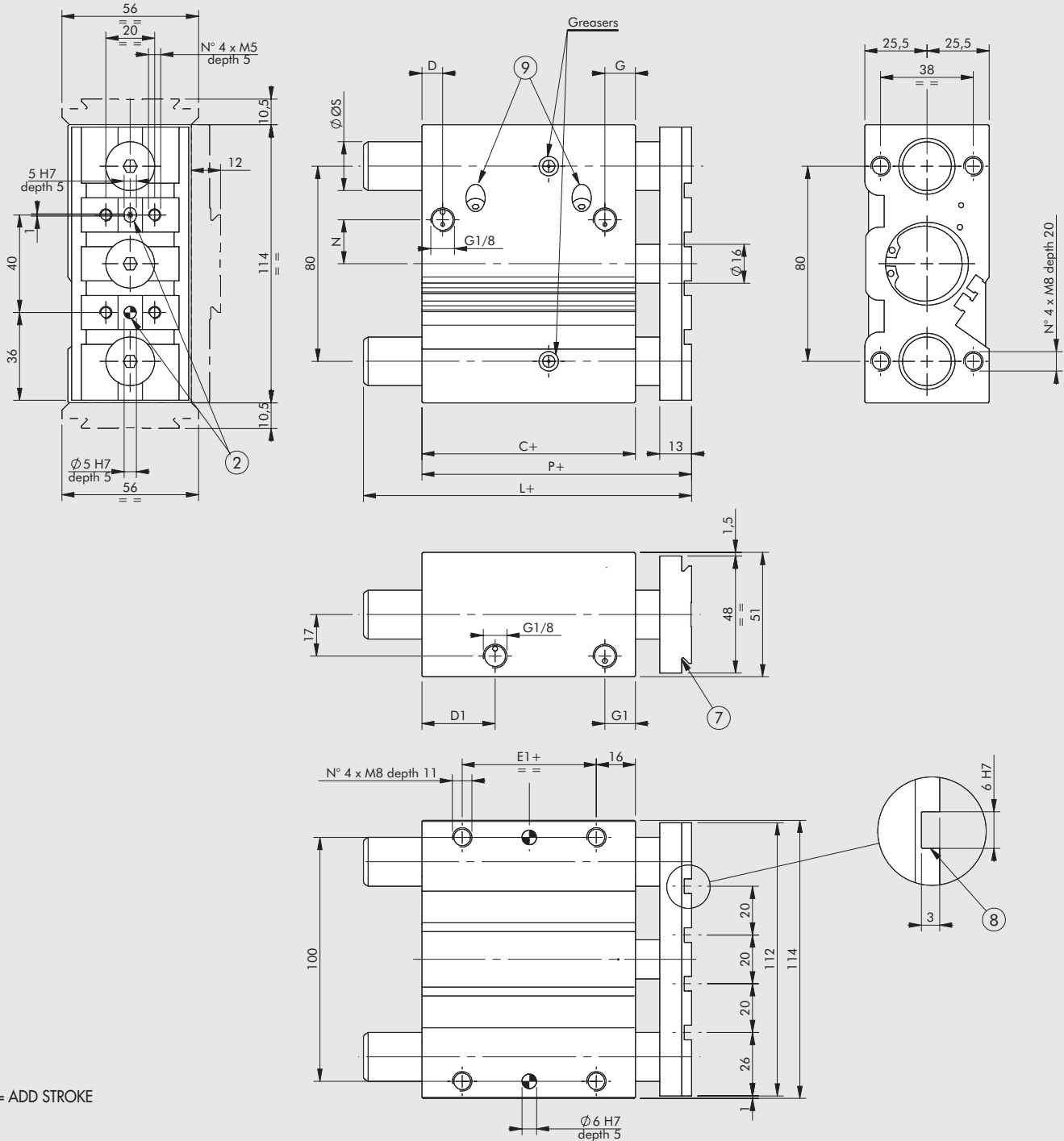
Stroke [mm]	25			30			40			50			75			100			150			200					
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D			
Possible positions (see page A3.67)	■ 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10
	-	-	30	-	30	30	* 30	30	30	* 30	-	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
							* 50	-	50	-	-	50	50	50	50	50	-	50	50	50	50	50	50	50	50	50	50
													* 70	70	70	70	-	70	70	70	70	70	70	70	70	70	70
																* 90	90	90	90	90	90	90	90	90	90	90	90
																-	-	110	110	110	110	110	110	110	110	110	110
																			* 130	130	130	130	130	130	130	130	130
																			-	150	150	150	150	150	150	150	150
																						170	170	170	170	170	170
																						* 190	190	190	190	190	190
																						-	-	210	-	-	210
No. of V-Lock plates supplied	1			1			1			1			2			2			2			2					
L	62.5			67.5			77.5			87.5			112.5			137.5			187.5			237.5					

CUSHIONED

Stroke [mm]	20			30			40			50			75			100			150					
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D			
Possible positions (see page A3.67)	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10			
	* 30	-	30	* 30	-	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	-	-	50	-	-	50	* 50	50	50	* 50	50	50	50	-	50	50	50	50	50	50	50	50	50	50
							-	-	70	-	70	70	70	-	70	70	-	70	70	70	70	70	70	70
													* 90	90	90	90	-	90	90	-	90	90	-	90
													* 110	-	110	* 110	110	110	110	-	110	110	-	110
																-	-	130	130	130	130	130	130	130
																			* 150	150	150	150	150	150
																			-	170	170	170	170	170
No. of V-Lock plates supplied	1			1			1			1			2			2			2					
L	82.5			92.5			102.5			112.5			137.5			162.5			212.5					

* Outlet side power supply not available ● Return side power supply not available ■ Side power supply not available

DIMENSIONS OF Ø 32, BA AND BB NON-CUSHIONED VERSION
DIMENSIONS OF Ø 32, BA AND BB CUSHIONED VERSION



+ = ADD STROKE

- ② Holes for centring pins
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key
- ⑨ Cushioning pins (in the cushioned version only)

NON-CUSHIONED

C	D	D1	E1	G	G1	L		N	P	$\varnothing S$	
						BA*	BB**			BA*	BB**
37.5	9	26.5	5	12.5	12.5	76.5	76.5	14	52.5	20	20

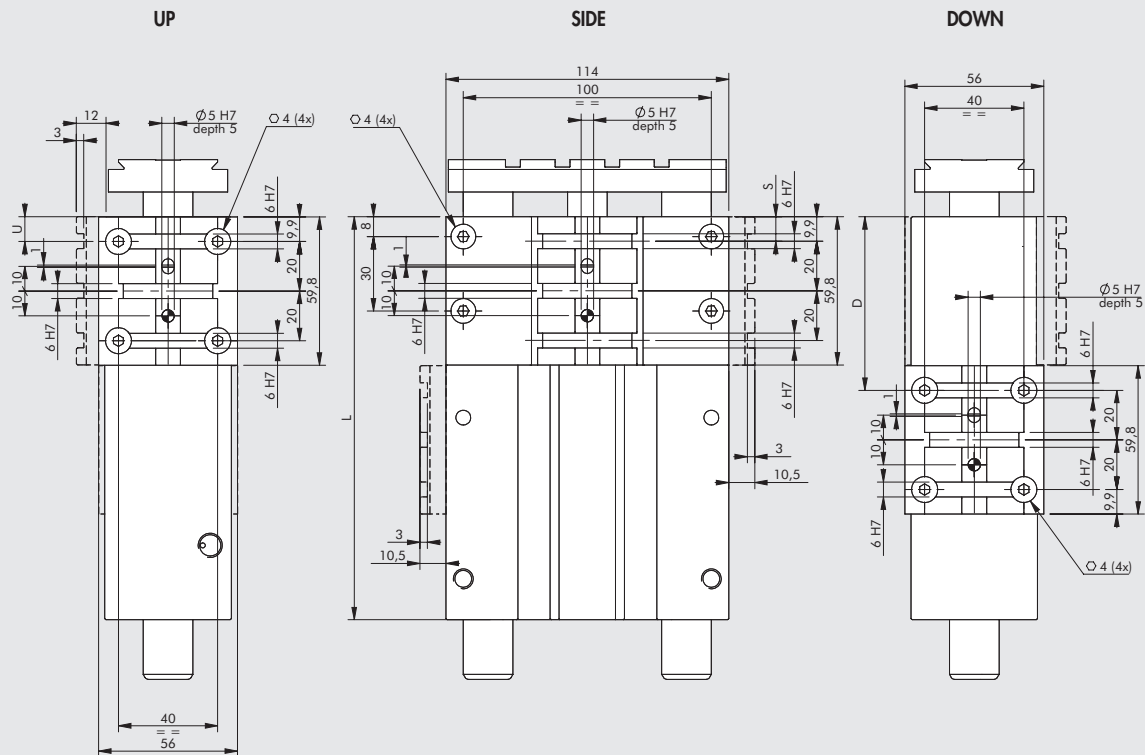
CUSHIONED

C	D	D1	E1	G	G1	L		N	P	$\varnothing S$	
						BA*	BB**			BA*	BB**
62.5	8.5	25	30	12.5	12.5	109.5	109.5	18	85.5	20	20

* Version BA (Bronze Bushings)

** Version BB (Ball Bearings)

◆ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

POSITION OF Ø 32 PLATES, BA AND BB NON-CUSHIONED VERSION
POSITION OF Ø 32 PLATES, BA AND BB CUSHIONED VERSION
**NON-CUSHIONED**

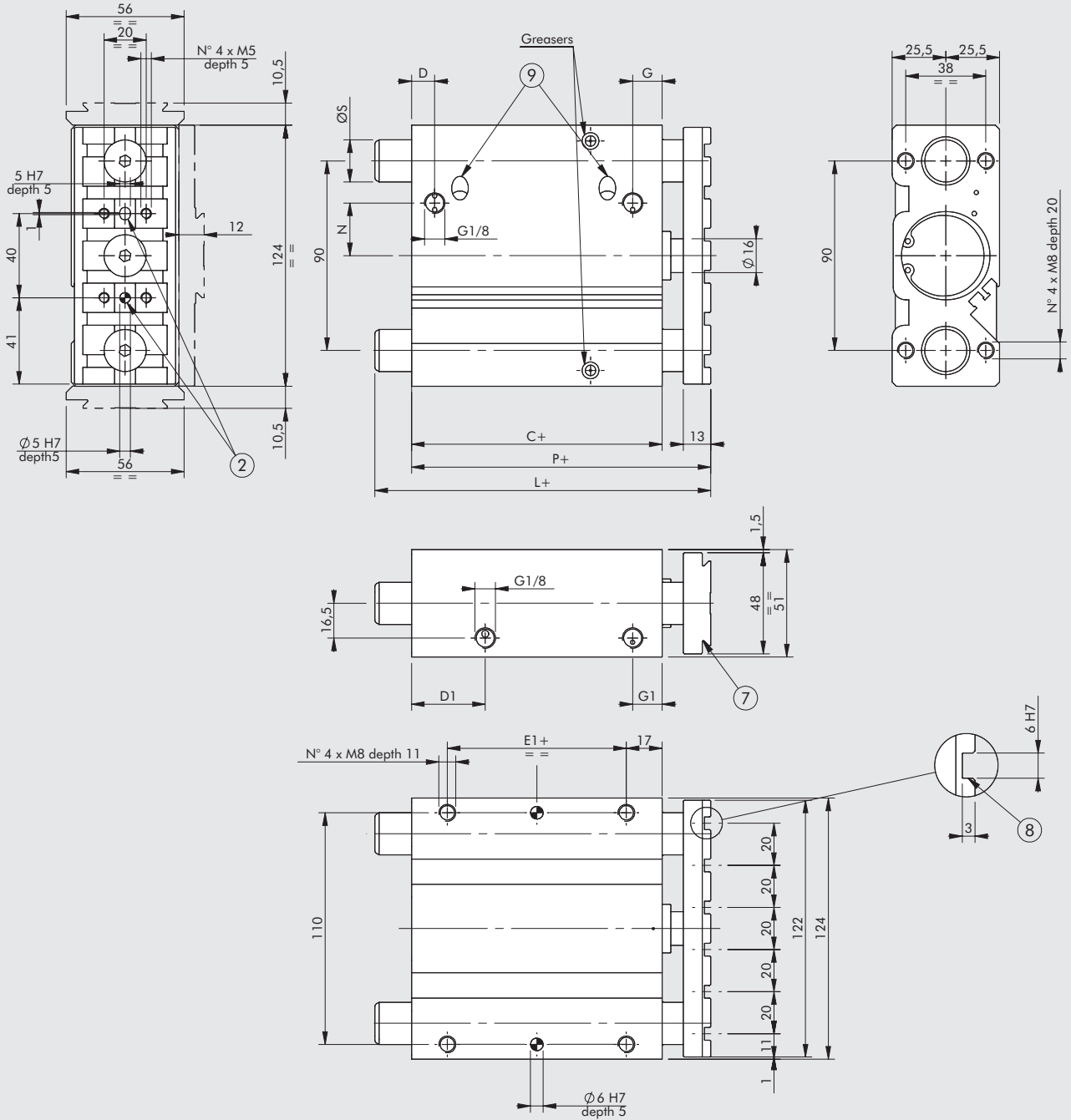
Stroke [mm]	25			50			75			100			150			200			
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	
Possible positions (see page A3.67)	■ 10	10	10	■ 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	
							-	40	-				*	70	-	70			
No. of V-Lock plates supplied	1			1			1			2			2			2			
L	62.5			87.5			112.5			137.5			187.5			237.5			

CUSHIONED

Stroke [mm]	25			50			75			100			150			175			
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	
Possible positions (see page A3.67)	■ 10	-	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	
							-	-	-	-	40	-	-	40	-	-	40	-	
							-	-	70	70	70	70	70	70	70	70	70	70	
							-	100	-	-	100	-	-	100	-	-	100	-	
													*	130	130	130	130	130	130
													-	160	-	-	160	-	
																-	-	190	
No. of V-Lock plates supplied	1			1			1			2			2			2			
L	87.5			112.5			137.5			162.5			212.5			237.5			

* Outlet side power supply not available ● Return side power supply not available ■ Side power supply not available

DIMENSIONS OF Ø 40, BA AND BB NON-CUSHIONED VERSION
DIMENSIONS OF Ø 40, BA AND BB CUSHIONED VERSION



+ = ADD STROKE

- ② Holes for centring pins
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key
- ⑨ Cushioning pins (in the cushioned version only)

NON-CUSHIONED

C	D	D1	E1	G	G1	L		N	P	Ø S	
						BA*	BB**			BA*	BB**
44	10	35	10	14	14	76.5	76.5	21	59	20	20

CUSHIONED

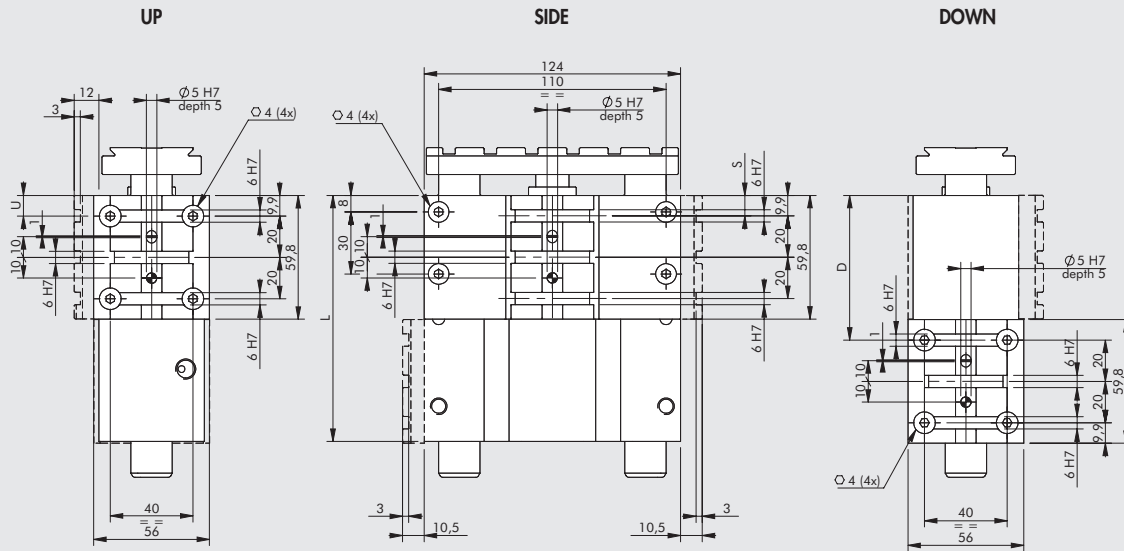
C	D	D1	E1	G	G1	L		N	P	Ø S	
						BA*	BB**			BA*	BB**
69	11	35	35	14	14	109.5	109.5	25	92	20	20

* Version BA (Bronze Bushings)

** Version BB (Ball Bearings)

◆ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

POSITION OF Ø 40 PLATES, BA AND BB NON-CUSHIONED VERSION
POSITION OF Ø 40 PLATES, BA AND BB CUSHIONED VERSION



ACTUATORS

COMPACT GUIDED CYLINDER SERIES CMPGK

NON-CUSHIONED

Stroke [mm]	50			75			100			150			200		
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D
Possible positions (see page A3.67)	■ 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10
	-	40	-	-	40	-	-	-	-	40	-	30	40	-	
	-	-	-	* 70	-	70	* 70	-	70	70	-	70	70	70	
									* 130	130	130	130	130	130	
												-	160	-	
												-	190	190	
No. of V-Lock plates supplied	1			1			1			2			2		
L	94			119			144			194			244		

CUSHIONED

Stroke [mm]	25			50			75			100			150			175		
	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D	U	S	D
Possible positions (see page A3.67)	-	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10	● 10	10	10
	-	40	-	-	40	-	-	-	-	40	-	-	40	-	-	40	-	-
				-	-	70	* 70	-	70	70	70	70	70	70	70	70	70	70
									-	100	-	-	100	-	-	100	-	-
												* 130	130	130	130	130	130	130
												-	160	-	-	160	-	-
															-	190	190	
No. of V-Lock plates supplied	1			1			1			2			2			2		
L	94			119			144			169			219			244		

* Outlet side power supply not available ● Return side power supply not available ■ Side power supply not available

KEY TO CODES

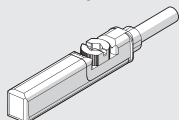
CYL	W143	032	2	050	U	K
	TYPE	DIAMETER	VERSION	STROKE	FIXING SIDE	FAMILY
	Compact guided cylinder	016 Ø 16 020 Ø 20 025 Ø 25 032 Ø 32 040 Ø 40	2 Non-cushioned with bronze bushings 3 Non-cushioned with ball bearings 4 Cushioned with bronze bushings 5 Cushioned with ball bearings	CUSHIONED VERSION Ø 16: 20, 30, 40, 50 Ø 20: 20, 30, 40, 50, 75, 100, 150, 200 Ø 25: 20, 30, 40, 50, 75, 100, 150 Ø 32: 25, 50, 75, 100, 150, 175 Ø 40: 25*, 50, 75, 100, 150, 175 NOT CUSHIONED VERSION ♦ Ø 16: 30*, 40, 50, 75, 100, 150, 200 Ø 20: 25, 30, 40, 50, 75, 100, 150, 200 Ø 25: 25, 30, 40, 50, 75, 100, 150, 200 Ø 32: 25, 50, 75, 100, 150, 200 Ø 40: 50, 75, 100, 150, 200 * Side and Down versions only ♦ Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above.	U Up S Side D Down	K V-Lock


ACCESSORIES

RETRACTABLE SENSOR

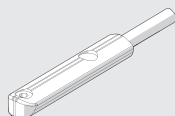
SENSOR, SQUARE TYPE 

Latest generation, secure fixing



SENSOR, OVAL TYPE 

Traditional



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

NOTES