

Series PU rodless cylinders have an internal strip for longitudinal tightness made of polyurethane (PU) with a harmonic steel wire core. This solution gives excellent air tightness values. It is particularly suitable for high-speed and highly cyclical applications, even with long strokes.

The external strip, which merely provides protection against of foreign bodies entry, is made of harmonic steel. The anodized aluminium cylinder liner has a T-slot on either side for housing the retracting sensors.

Cylinder control solenoid valves can also be housed in these slots and secured by means of plates and screws (see page **A1.54**). There are plastic anti-wear guide pads on either side of the carriage to increase the load capacity. They engage V-slots in the cylinder liner. All the cylinders incorporate adjustable pneumatic cushioning. One version has hydraulic decelerators + adjustable limit switches.

These can also be added at a later stage by purchasing the relevant kit.

The balanced drive version avoids having to transmit transverse torques and forces to the carriage whenever the load is supported by guides outside the cylinder.

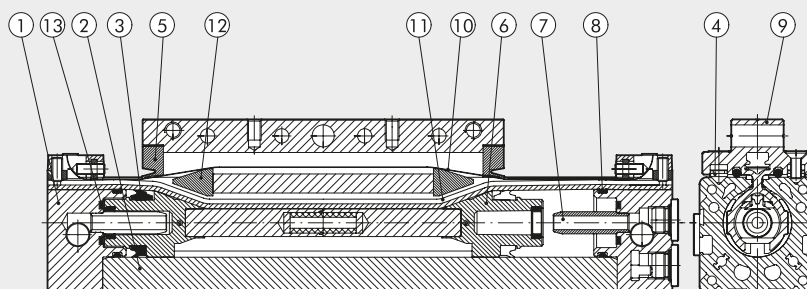


TECHNICAL DATA

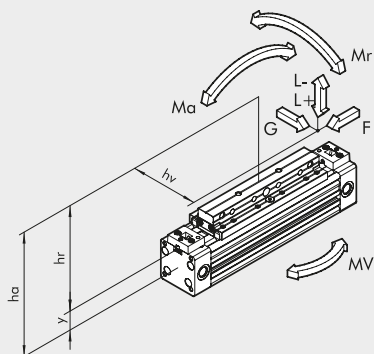
Operating pressure	bar	1 to 8
	MPa	0.1 to 0.8
	psi	14.5 to 116
Temperature range	°C	-10 to +80
	°F	14 to +176
Fluid		50 µm unlubricated filtered air Lubrication, if used, must be continuous
Bores	mm	Ø 25, 32, 40, 50
Type of construction		Double-acting rodless cylinder with direct transmission system
Strokes	mm	Ø 25 to 40: from 100 to 5700 mm with 1 mm interval Ø 50: from 100 to 5600 mm with 1 mm interval
Recommended speeds	m/s	< 2
Max. speed with decelerators	m/s	< 2
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

- ① CYLINDER HEAD: anodized aluminium alloy
- ② BARREL: profiled anodized aluminium alloy
- ③ PISTON GASKET: polyurethane
- ④ V-SHAPED GUIDE PAD: Hostaform®
- ⑤ DUST SCRAPER: Hostaform®
- ⑥ PISTON: Hostaform®
- ⑦ CUSHIONING CONE: anodized aluminium alloy
- ⑧ STATIC O-RINGS: NBR
- ⑨ SLIDE: anodized aluminium alloy
- ⑩ OUTER STRIP: stainless steel
- ⑪ INTERNAL STRAP: polyurethane + steel strands
- ⑫ DIRECTION CHANGE: Hostaform®
- ⑬ BUFFER: polyurethane



DIMENSIONING - FORCE AND TORQUE



Bore	Centre Distance Y	Cushioning stroke [mm]	Actual Force F at 6 bar [N]	G [N]	Max. load L+ [N]	Max. load L- [N]	Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
25	16.5	20	250	350	480	350	22	5	10
32	20.1	24	420	450	650	450	40	10	20
40	25.3	33	640	750	900	750	70	26	35
50	30.4	39	1000	900	1100	900	90	32	45

N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

$$Ma = F \times ha$$

$$Mr = L \times hv + G \times hr$$

$$Mv = F \times hv$$

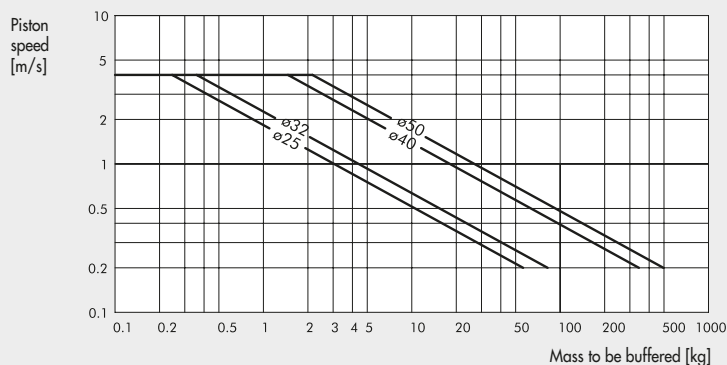
$$\frac{Mv}{Mv_{max}} \leq 1; \quad \frac{L}{L_{max}} \leq 1; \quad \frac{Ma}{Ma_{max}} + \frac{Mr}{Mr_{max}} + 0.22 \times \frac{Mv}{Mv_{max}} + 0.4 \times \frac{L}{L_{max}} \leq 1$$

DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

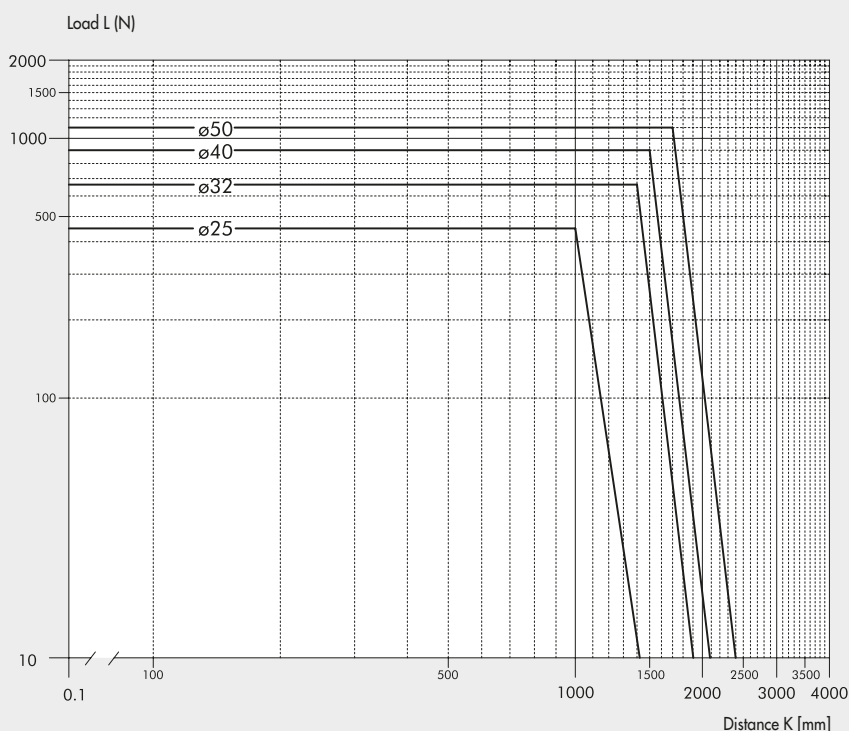
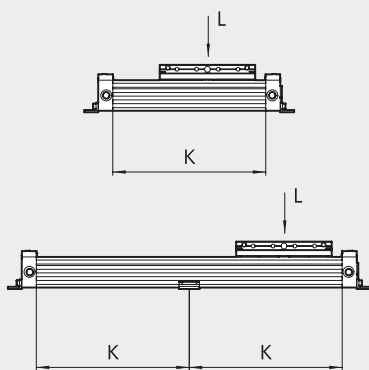
For the cylinder to reach the end-of-stroke position without intense or repeated impact which would damage it, it is necessary to annul the kinetic energy of the moving mass and the work generated.

The maximum cushionable load depends on the traversing speed and the absorption of the air buffer supplied standard with the various cylinders.

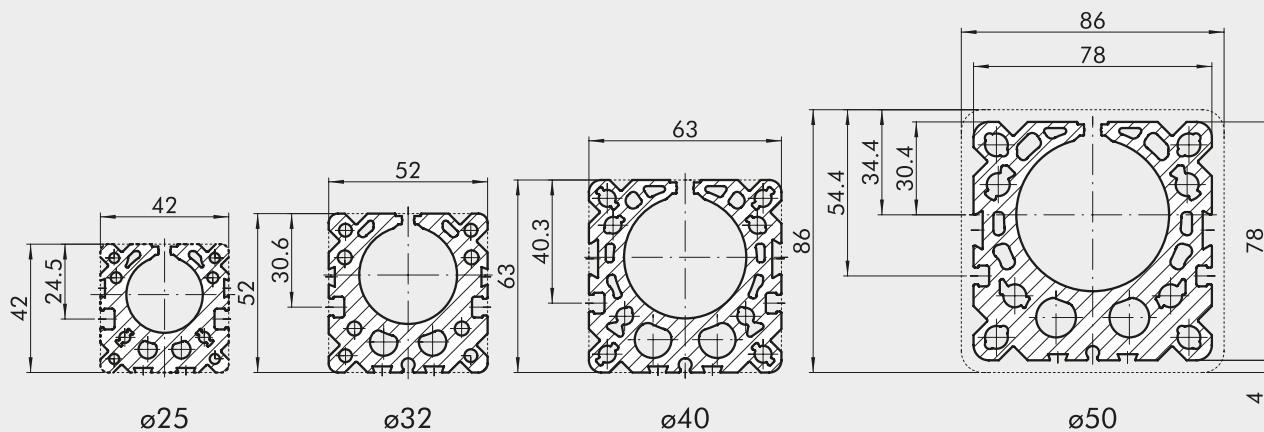
The diagram shows the speeds and cushionable mass for the various diameters at a pressure of 6 bar.



MAXIMUM LOAD ACCORDING TO THE DISTANCE BETWEEN SUPPORTS

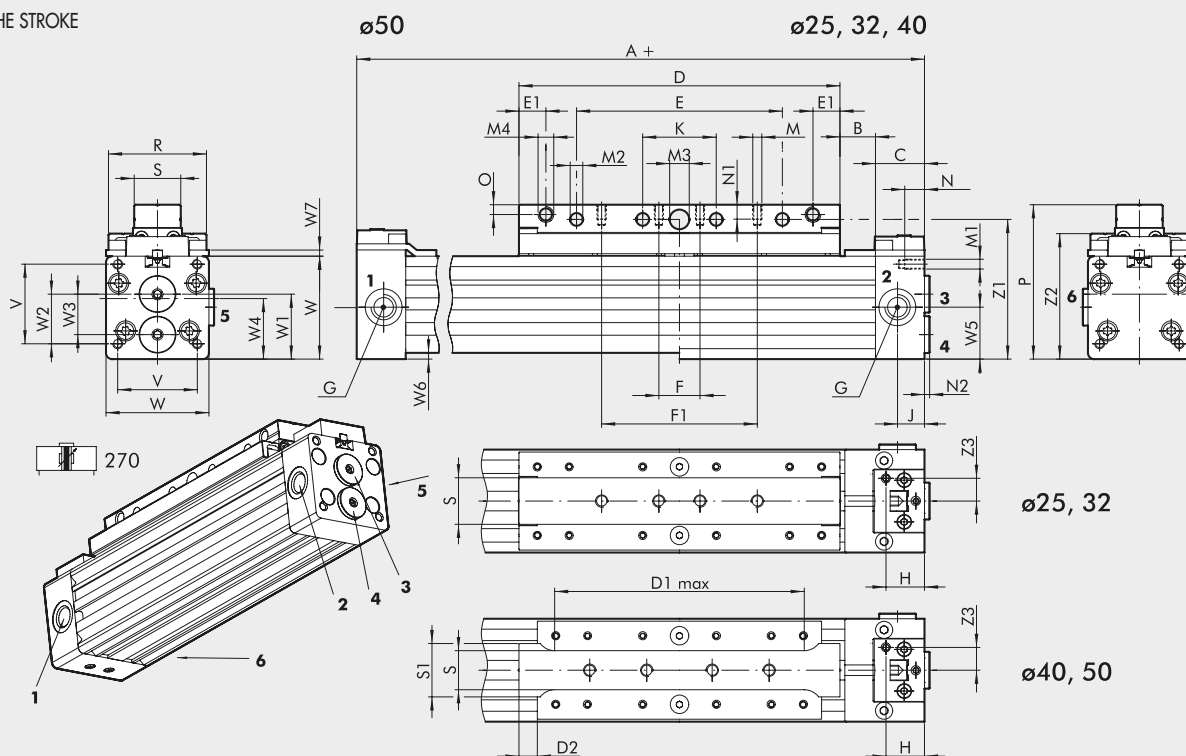


BARREL CROSS SECTION



DIMENSIONS

+ = ADD THE STROKE



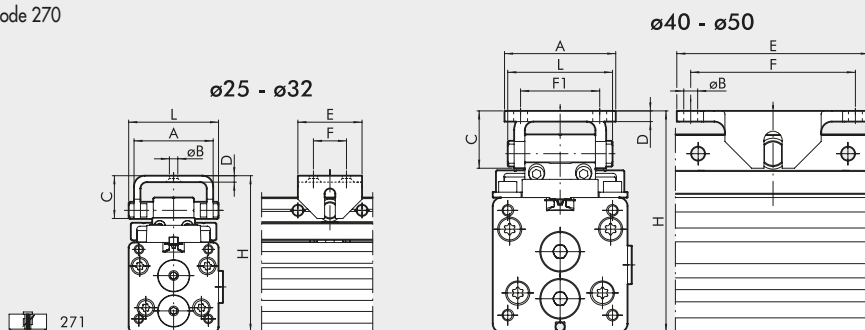
1 and 6 feed the left-hand chamber from the left side
 4 feeds the left-hand chamber from the right side
 2, 3 and 5 feed the right-hand chamber from the right side
 NOTE: 3, 4, 5 and 6 are closed with threaded caps

Ø	A	B	C	D	D1 max	D2	E	E1	F	F1	G	H	J	K	M	M1	M2	M3 H10	M4	N	N1	N2	O	P	R	S	S1	V	W	W1	W2
25	200	14.5	20	131	-	-	84	11	50	-	G1/8	15.7	11	30	M5	M4	5.2	8	M6	13	7.5	2.1	4	63	40	19	-	32.5	42	26.5	20.3
32	250	19.5	20	171	-	-	124	11	30	100	G1/8	15.7	11	50	M5	M5	5.2	8	M6	13.5	7.5	2.1	4	73	48	19	-	40	52	31.2	24.3
40	300	19.8	23	214.5	168	10	150	5.2	40	130	G1/4	18	12.5	70	M6	M5	6.5	10	M5	15	11	2	5.5	92.5	60	21	33	49	63	37.7	29.7
50	350	19.9	23	264.3	198	10	170	6.2	50	150	G1/4	18	12.5	80	M8	M6	8.5	12	M6	16	12.5	2	6.5	115	74	24	42	72	86	53.4	46.4

Ø	W3	W4	W5	W6	W7	Z1	Z2	Z3
25	16.5	25.5	21.2	-	2.5	57	51.2	9.3
32	19	31.9	27	-	2.5	67	61	9.3
40	22	37.7	31.5	-	2.5	83.5	75.7	11
50	31.8	51.6	43	4	2.5	106	97	11

RODLESS CYLINDER WITH SWING CARRIAGE

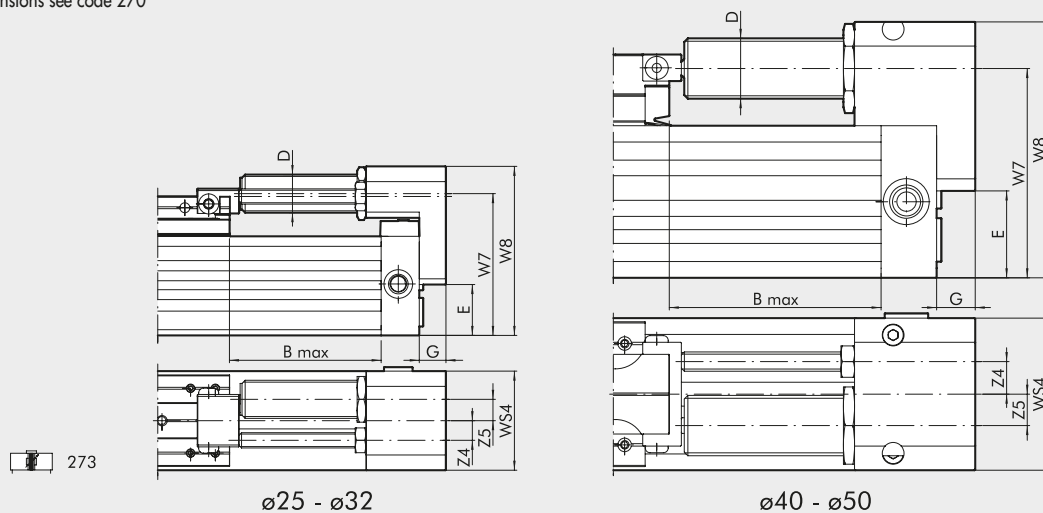
NOTE: For other dimensions see code 270



Ø	A	ØB	C	D	E	F	F1	H	L
25	37	5.5	20	3	30	16	-	73 - 75	42
32	37	5.5	20	3	30	16	-	83 - 85	42
40	52	6.5	26.8	5	90	77	37	103.5 - 105.5	49
50	52	6.5	26.8	5	90	77	37	125.3 - 128.3	49

DIMENSIONS VERSION WITH ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS

NOTE: For other dimensions see code 270



Ø	B Max	D	E	G	W7	W8	WS4	Z4	Z5	Stroke	Max. cushioned force		Max. impact force [N]	Max. thrust force [N]
											For stroke [J]	For hour [J]		
25	50	M14x1.5	21.5	12	61.5	72	42	9.2	6	16	26	34000	2800	530
32	75	M20x1.5	26.7	14	74.4	88.7	52	10.3	11.2	22	54	53700	3750	890
40	88	M25x1.5	36	16	86.7	106	63	13.5	13	25	90	70000	5500	1550
50	82	M25x1.5	49	20	108.5	129	86	17.5	9	25	90	70000	5500	1550

For graphs to help choose shock absorbers see page A1.173

KEY TO CODES

CYL	2 7 TYPE	0	3	2 5 BORE	0 1 0 0 STROKE	C	P GASKETS
	27 Rodless cylinder	0 Double-acting cushioned magnetic 1 Double-acting with swing carriage 3 Double-acting + adjustable limit switch and shock absorbers	3 Magnetic 4 No stick-slip 5 Non-magnetic	25 32 40 50	Ø 25 to 40: from 100 to 5700 mm Ø 50: from 100 to 5600 mm		P Polyurethane gaskets

■ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only.