

# RODLESS CYLINDER SERIES PU Ø 25, 32

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 foreign bodies entry, is made of harmonic steel.

The anodised 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 General Catalogue page 1.1/97).

There are plastic anti-wear guide shoes 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.

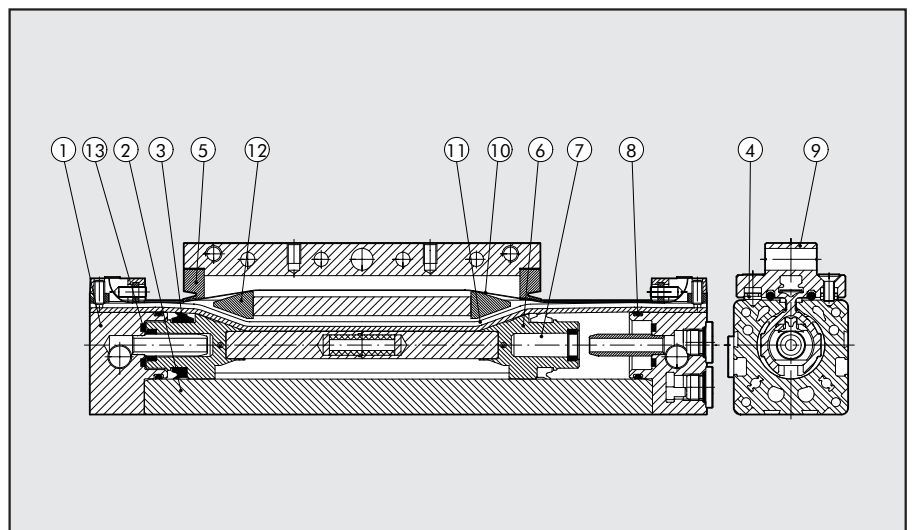
The balanced drive version avoids having to transmit transverse torques and forces to the carriage whenever the load is supported by guides outside the cylinder.



TECHNICAL DATA		POLYURETHANE
Operating pressure	bar	1 ÷ 8
	MPa	0.1 ÷ 0.8
	psi	14.5 ÷ 116
Temperature range	°C	-15 ÷ +80
	°F	-5 ÷ +176
Fluid		50µm unlubricated filtered air Lubrication, if used, must be continuous.
Bores	mm	Ø 25, 32
Type of construction		Double-acting rodless cylinder with direct transmission system
Strokes		100 to 5700 mm with 1mm interval
Recommended speeds	m/s	<2
Max. speed with decelerators	m/s	<2
Note on use		For versions no-stick slip, use no-lubricated air only
Weight	stroke = 0 g	ø25 = 1009; ø32 = 1535
	every mm g	ø25 = 2.54; ø32 = 3.72

## COMPONENTS

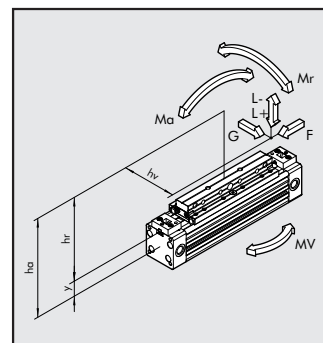
- ① CYLINDER HEAD: anodized aluminium alloy
- ② BARREL: profiled anodized aluminium alloy
- ③ PISTON GASKET: polyurethane
- ④ V-SHAPED GUIDE SHOE: Hostaform®
- ⑤ DUST SCRAPER: Hostaform®
- ⑥ PISTON: Hostaform®
- ⑦ CUSHIONING CONE: anodized aluminium alloy
- ⑧ STATIC O-RINGS: NBR
- ⑨ SLIDE: anodized aluminium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





### DIMENSIONING - FORCE AND TORQUE

Bore Ø	Centre Distance Y	Cushioning stroke [mm]	Actual Force F at 6 bar [N]		Max. load		Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
			F [N]	G [N]	L+ [N]	L- [N]			
25	16.5	20	250	350	480	350	22	5	10
32	20.1	20	420	450	650	450	40	10	20



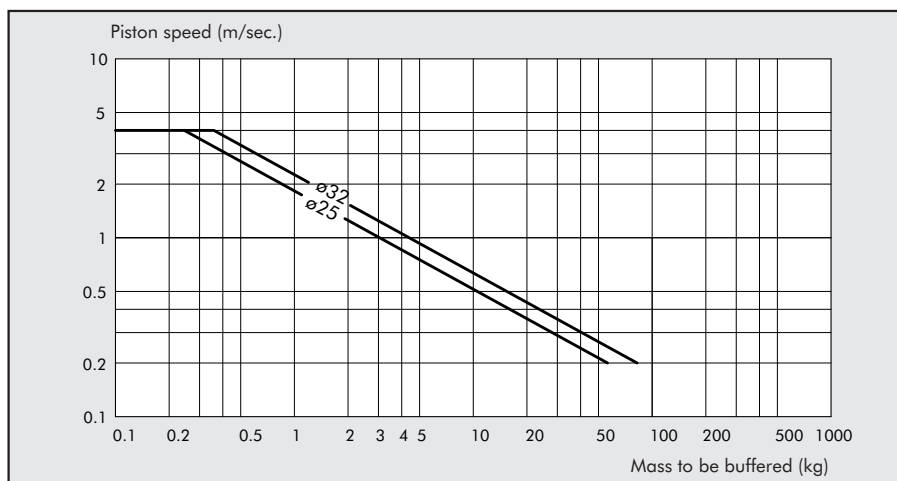
NB: When the cylinder is subjected simultaneously to torque and force, it is advisable to keep to the following equations.

$$Ma = F \times ha \quad Mr = L \times hv + G \times hr \quad Mv = F \times hv$$

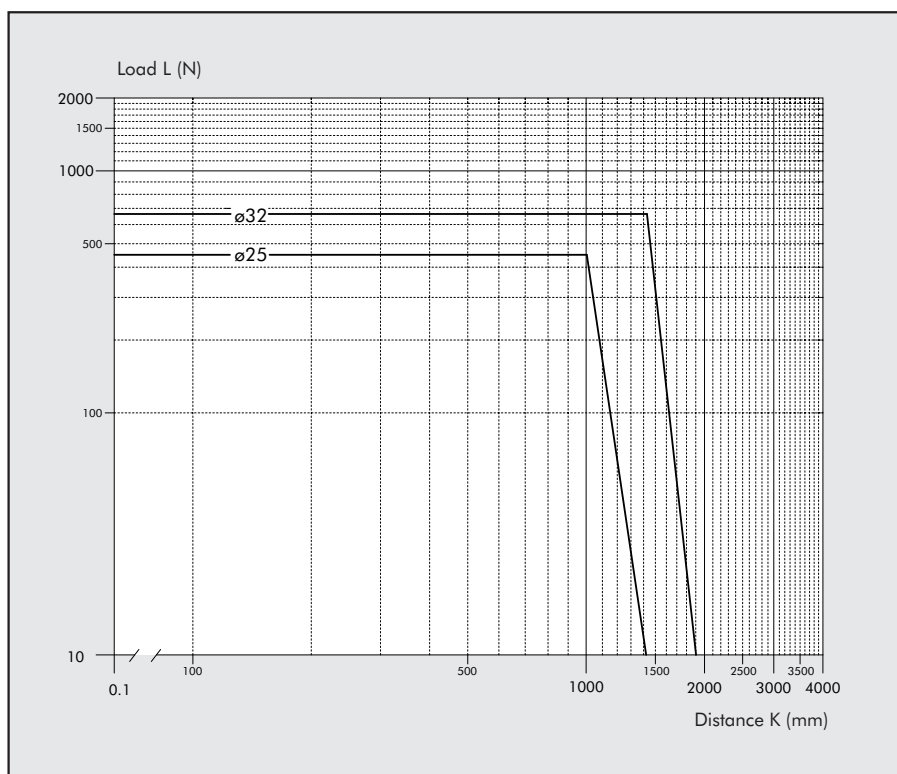
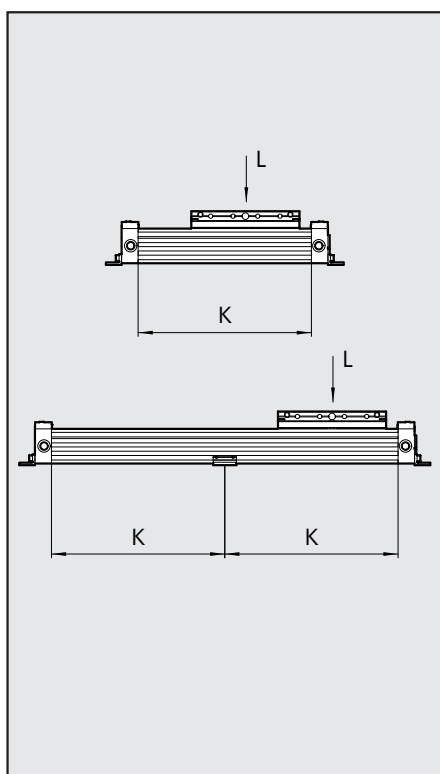
$$\frac{Mv}{Mv_{max}} \leq 1; \quad \frac{L}{L_{max}} \leq 1; \quad \frac{Ma}{Ma_{max}} + \frac{Mr}{Mr_{max}} + 0.22 \times \frac{Mv}{Mv_{max}} + 0.4 \frac{L}{L_{max}} \leq 1$$

### DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

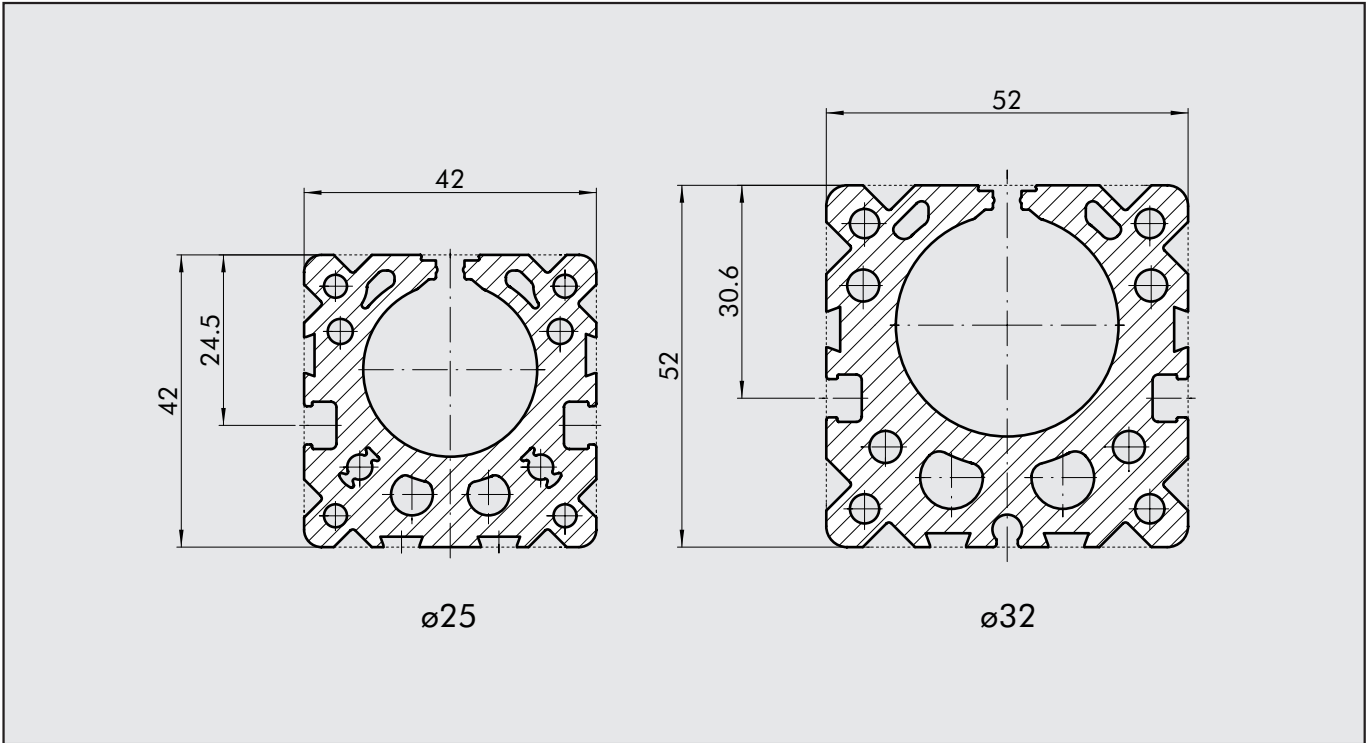
For the cylinder to reach the end-of-stroke position without intense or repeated impact which would damage it, it is necessary to annul the kinetic energy of the moving mass and the work generated. The maximum cushionable load depends on the traversing speed and the absorption of the air buffer supplied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



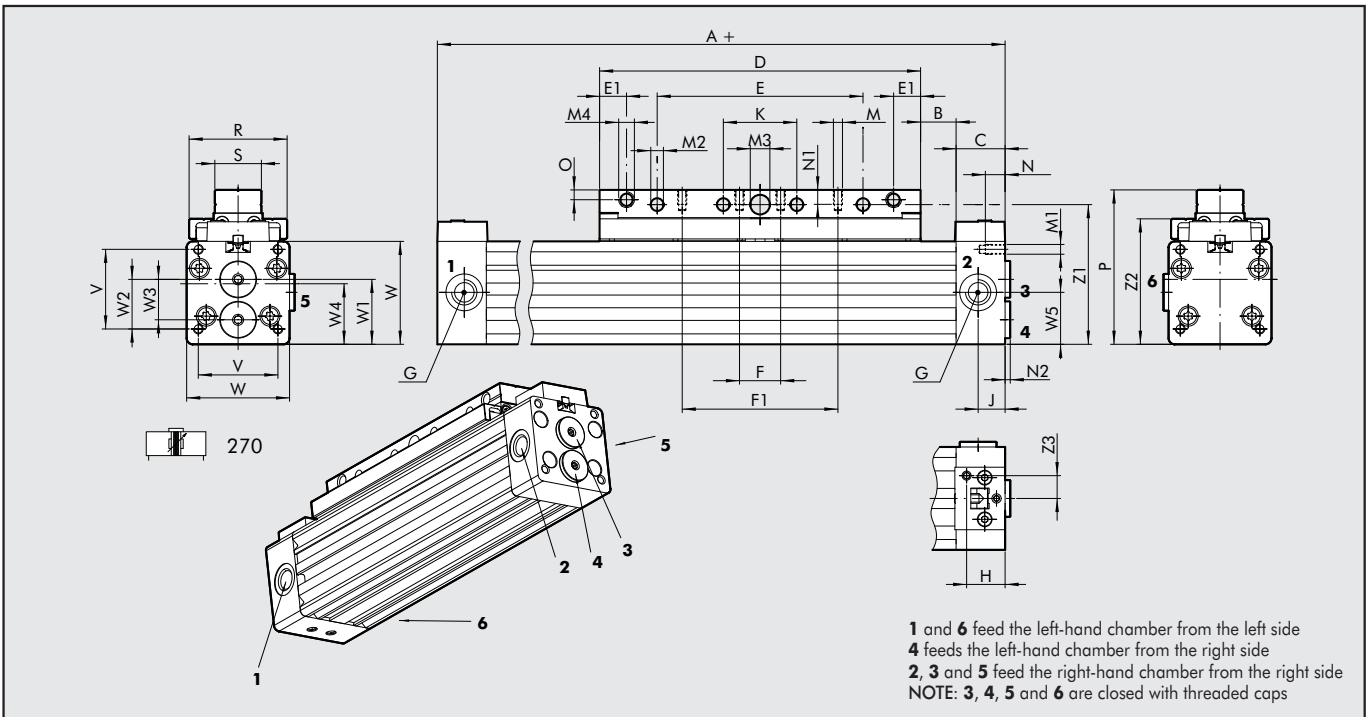
### MAXIMUM LOAD ACCORDING TO THE DISTANCE BETWEEN SUPPORTS



**BARREL CROSS SECTION**



**DIMENSIONS OF RODLESS CYLINDER Ø 25, 32**



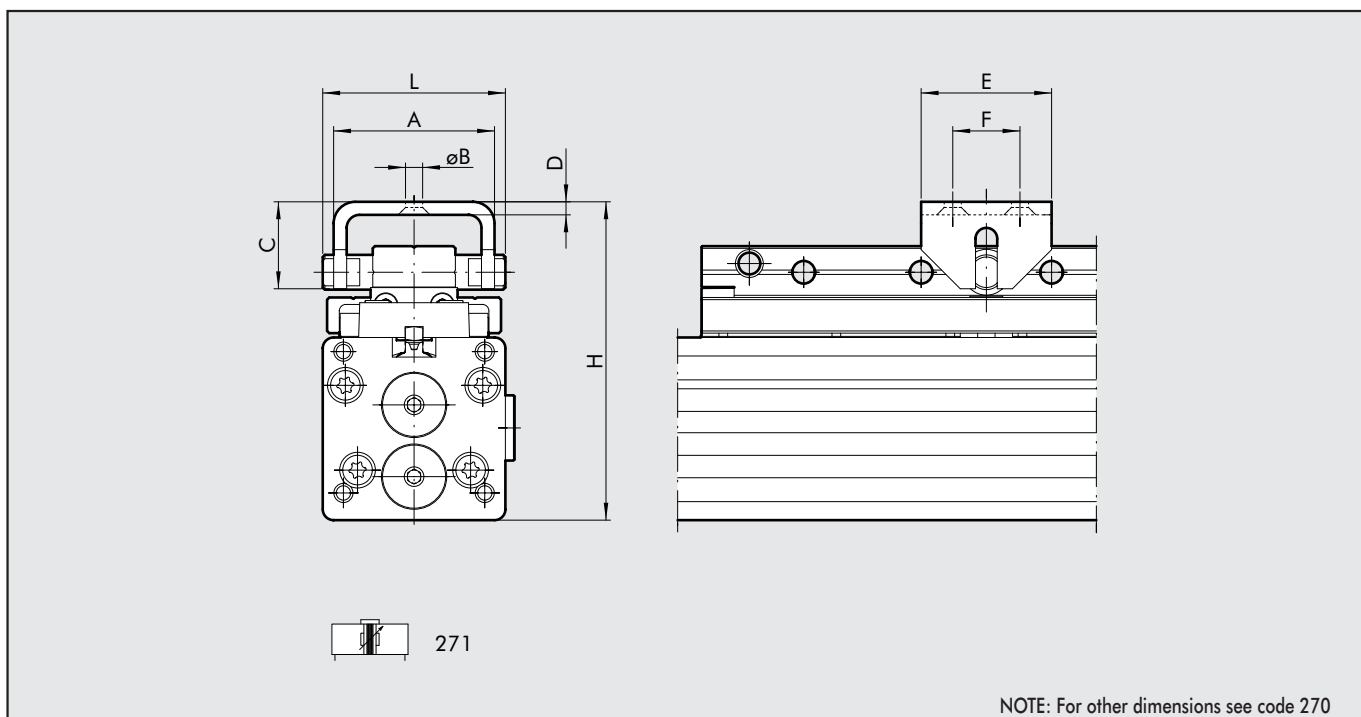
Ø	A	B	C	D	E	E1	F	F1	G	H	J	K	M	M1	M2	M3 <sup>H10</sup>	M4	N	N1	N2	O	P	R	S	V	W	W1	W2	W3
25	200	14.5	20	131	84	11	50	-	1/8	15.7	11	30	M5	M4	5.2	8	M6	13	7.5	2.1	4	63	40	19	32.5	42	26.5	20.3	16.5
32	250	25.8	20	171	124	11	30	100	1/8	15.7	11	50	M5	M5	5.2	8	M6	13.5	7.5	2.1	4	73	48	19	40	52	31.2	24.3	19

Ø	W4	W5	Z1	Z2	Z3
25	25.5	21.2	57	51.2	9.3
32	31.9	27	67	61	9.3



## RODLESS CYLINDER WITH SWING CARRIAGE

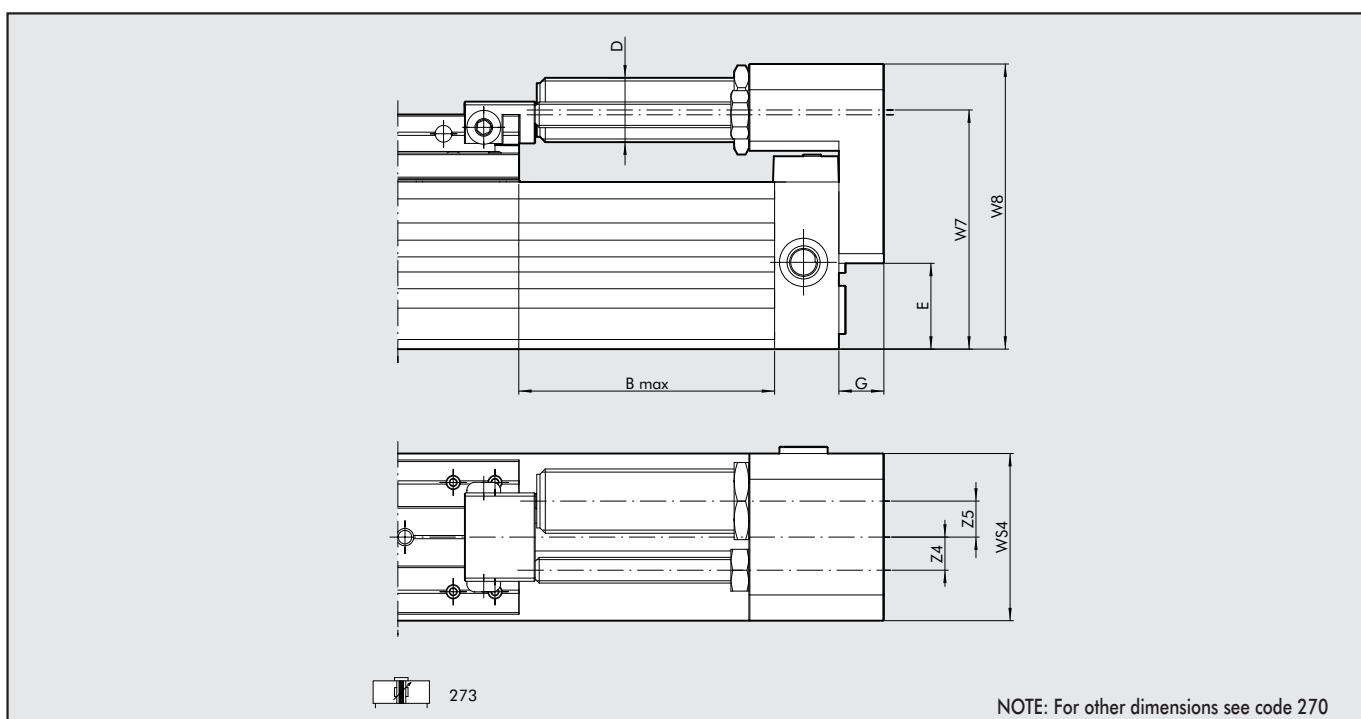
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NOTE: For other dimensions see code 270

Ø	A	ØB	C	D	E	F	H	L
25	37	5.5	20	3	30	16	73-75	42
32	37	5.5	20	3	30	16	83-85	42

## DIMENSIONS OF RODLESS CYLINDER + ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS



NOTE: For other dimensions see code 270

Ø	B Max	D	E	G	W7	W8	WS4	Z4	Z5	Corsa	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	18	34000	2800	530
32	75	M20x1.5	26,7	14	74,4	88,7	52	10,3	11,2	22	40	53700	3750	890

For graphs to help choose shock absorbers see page 8

### KEY TO CODES

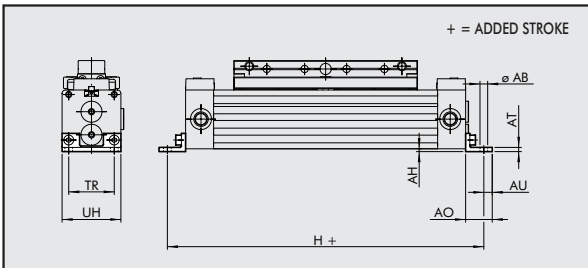
CYL	2	7	0	3	2 5	0 1 0 0	C	P
	TYPE				BORE	STROKE	CONFIGURATION	
	<b>27</b>	Rodless cylinder	<b>0</b> Double acting cushioned magnetic <b>1</b> Double acting with swing carriage <b>3</b> Double acting + adjustable limit switch and shock absorbers	<b>3</b> Magnetic <b>4</b> Non-magnetic <b>5</b> No stick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

■ For speed ≤ 0.2 m/s

## ACCESSORIES

### FOOT Ø 25; 32

Code      Ø    ØAB    AH    AO    AT    AU    TR    UH    H    Weight [g]

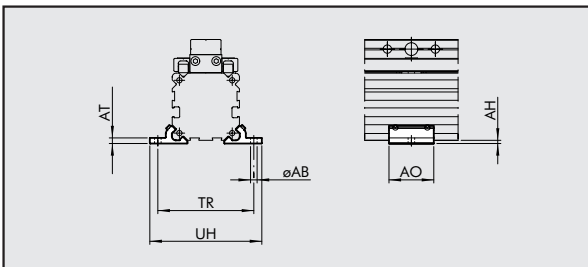


0950254041	25	5.5	2	19	3	6	32.5	42	226	30
0950324041	32	6.6	3	24	4	7	38	52	284	60

Note: Individually packed with 2 screws.

### INTERMEDIATE FOOT Ø 25; 32

Code      Ø    ØAB    AH    AO    AT    TR    UH    Weight [g]

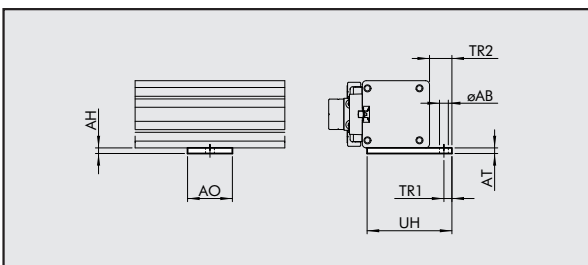


W0950257038	25	5.5	2	28	3.5	60	70	16
W0950327038	32	6.6	3	33	4	73	85	30

Nota: 2 brackets and 4 grub screws per pack

### SIDE INTERMEDIATE FOOT Ø 25; 32

Code      Ø    ØAB    AH    AO    AT    TR1    TR2    UH    Weight [g]



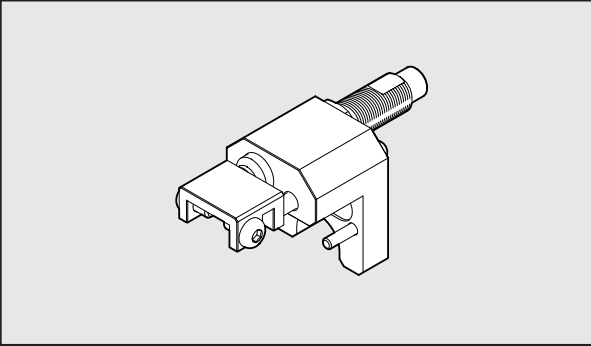
0950254051	25	5.5	3.5	28	3.5	5	14	57.5	20
0950324051	32	5.5	4	40	4	5	12	61	32

Nota: 1 bracket, 2 screws and 2 plates per pack



### ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS KIT

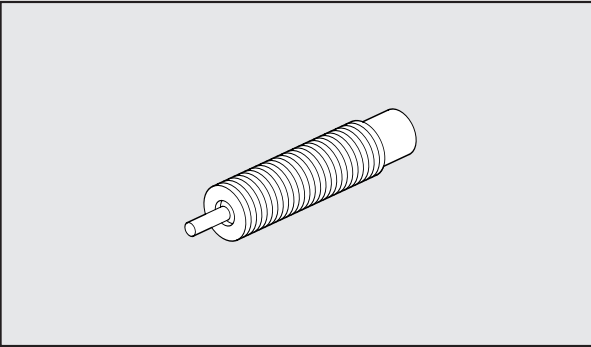
Code	Ø	Description	Weight [g]
0950254013	25	ACC. RODLESS CYLINDER LIMIT SWITCH AND SHOCK ABSORBERS ø25 series PU	220
0950324013	32	ACC. RODLESS CYLINDER LIMIT SWITCH AND SHOCK ABSORBERS ø32 series PU	420



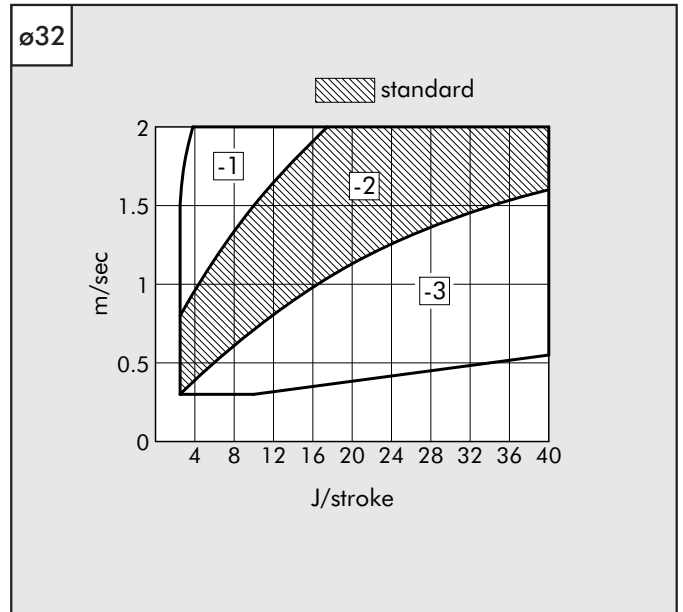
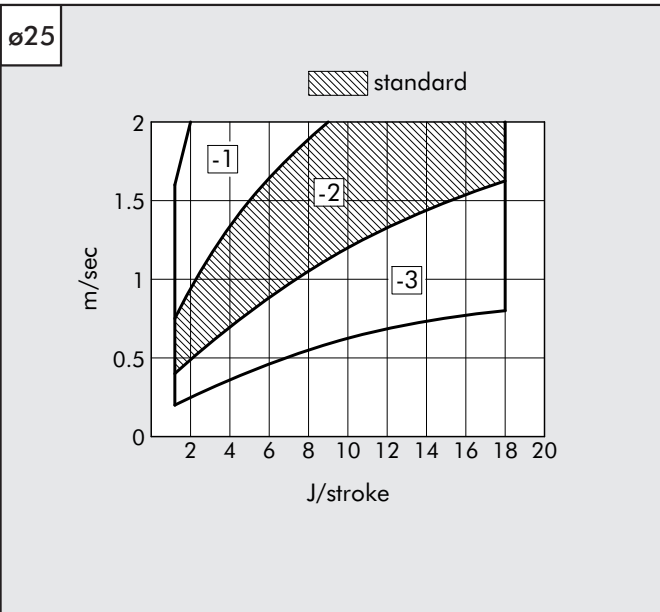
**Note:** supplied complete with 1 decelerator bracket, 1 standard decelerator, 1 decelerator nut, 1 limit switch grub screw, 1 limit switch grub screw nut, 1 limit switch block, 2 block screws and 2 decelerator bracket screws.

### SHOCK ABSORBERS

Code	Ø	Description
0950004004	ø25	Shock absorbers PR025 MC2 + nut M14x1.5
0950004005	ø32	Shock absorbers PR050 MC2 + nut M20x1.5



### GRAPHS TO HELP CHOOSE THE RIGHT SHOCK ABSORBERS



The dotted areas indicate that the SHOCK ABSORBERS is supplied standard. Other options can be selected depending on the speed [m/sec] and the maximum work force [J/stroke] to dissipate at each stroke. Refer to the diagrams above to select the correct option.

