

The standard rodless band cylinder are equipped with internal pneumatic cushioning. However, the band cylinder can bear heavier loads at higher velocities than that of which the cylinder cushion can absorb. Shock absorbers are used to increase the cylinder's service life and broaden the application range for the chosen cylinder.

Selecting the necessary absorber:

- Define the following values:
 - m** = Weight of the load to be moved (kg)
 - V** = Final velocity (m/s)
 - d** = Cylinder diameter (mm)
 - P** = Pressure (bar)
 - C** = Cycles per hour
 - s** = Cushioning length (m)
- Calculate to determine the shock absorber for your application.



Example: Moving load with proportional force

m = 80 kg **P** = 6 bar
V = 1 m/s **C** = 100/h
d = 50 mm **s** = 0,02 m

Kinetic energy to be absorbed

$$W1 = \frac{m \times V^2}{2} = \frac{80 \times 1^2}{2} = 40 \text{ Nm}$$

$$Fp = 0,078 \times d^2 \times P$$

$$= 0,078 \times 50^2 \times 6$$

$$= 1170 \text{ Nm}$$

Propelling force to be absorbed

$$W2 = Fp \times s$$

$$= 1170 \times 0,02 = 23,4 \text{ Nm}$$

Total energy to be absorbed

$$W3 = W1 + W2 = 40 + 23,4 = 63,4 \text{ Nm}$$

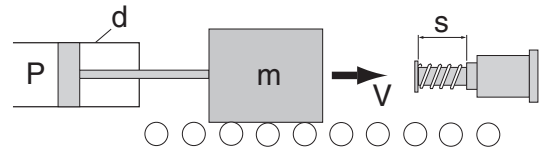
Total energy to be absorbed per hour

$$W4 = W3 \times C = 63,4 \times 100 = 6340 \text{ Nm/h}$$

Effective weight

$$Me = \frac{2 \times W3}{V^2} = \frac{2 \times 63,4}{1^2} = 126,8 \text{ Nm}$$

Selected catalogue number: **88144810**



SPECIFICATIONS

stroke (mm)	effective weight Me		max. energy absorbed		Ø thread (mm)	catalogue number
	min. (kg)	max. (kg)	by stroke W3 (Nm)	by hour W4 (Nm)		
Non-adjustable shock absorber						
12,5	0,9	10	17	34000	M14 x 1,5	88144804
12,5	8,6	86	17	34000	M14 x 1,5	88144805
12,5	68	205	17	34000	M14 x 1,5	88144806
12,5	2,3	25	25	45000	M20 x 1,5	88144807
12,5	23	230	25	45000	M20 x 1,5	88144808
12,5	182	910	25	45000	M20 x 1,5	88144809
25,4	9	136	68	68000	M25 x 1,5	88144810
25,4	113	1130	68	68000	M25 x 1,5	88144811
25,4	400	2273	68	68000	M25 x 1,5	88144812
Adjustable shock absorber						
12,7	2,3	182	17	23000	M20 x 1,5	88144813
25,4	4,5	546	70	23000	M25 x 1,5	88144814

ACCESSORIES

designation (mm)	Ø thread (mm)	catalogue number
fastening nut	M14 x 1,5	43400514
	M20 x 1,5	43400515
	M25 x 1,5	43400516
flexible stop	M14 x 1,5	43400517
	M20 x 1,5	43400518
	M25 x 1,5	43400519

