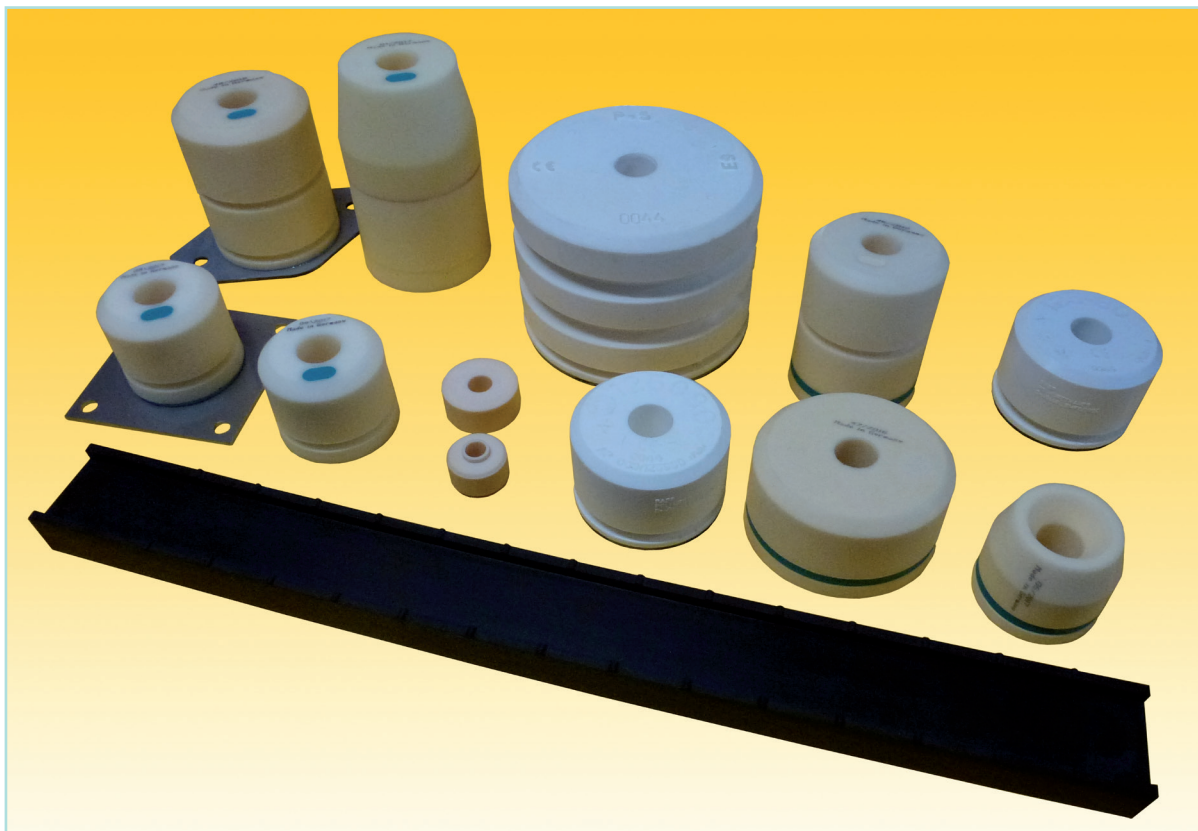


LIFT BUFFERS & DAMPING ELEMENTS



4

Lift buffers

- ▶ Certified to EN81-20/50 (lift directive 2014/33/EU)
- ▶ Certified to EN81-1/2

Cable spring buffers

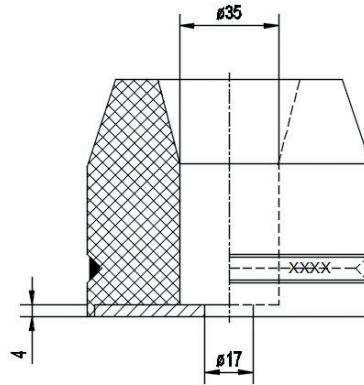
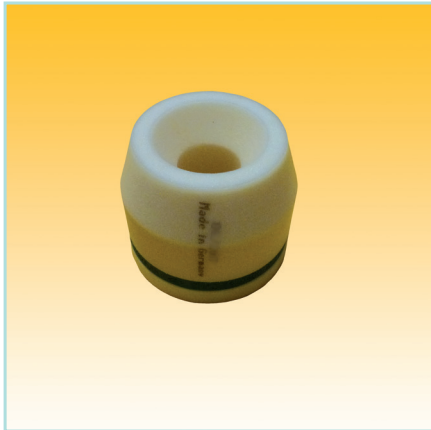
Dampers

Wall protection panels

■ MADE
■ IN
■ GERMANY



Lift buffers to EN81-20/50 (lift directive 2014/33/EU)



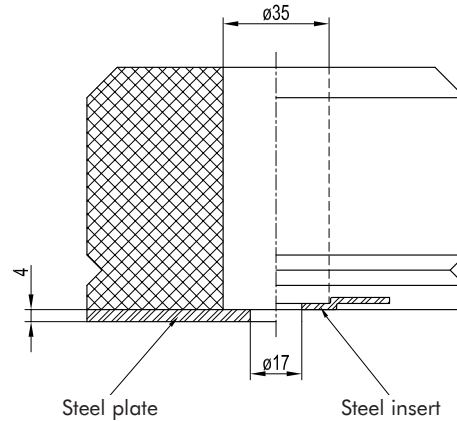
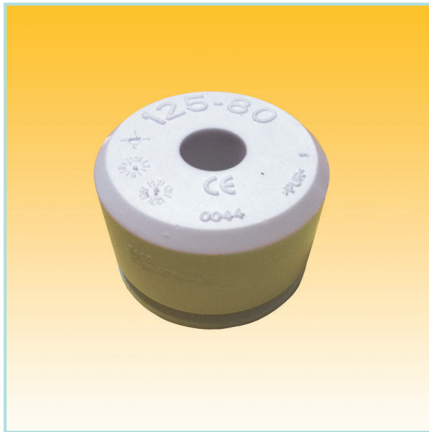
Cell-PU buffers for nominal speed up to $v = 1,0 \text{ m/s}$

| min./max. load ranges [kg] at nominal speed | | | | | | |
|---|---------|----------------|--------------|--------------|--------------|----------------|
| Type | Art.no. | Dimension [mm] | 0,5 m/s | 0,63 m/s | 0,8 m/s | 1,0 m/s |
| EN 10 | 320 210 | Ø 100 x 80 | 160 1.000 | 160 1.000 | 160 1.000 | 250 700 |
| EN 11 | 320 211 | Ø 100 x 80 | 355 1.306 | 355 1.306 | 355 1.306 | 355 1.306 |
| EN 12 | 320 212 | Ø 100 x 100 | 500 1.500 | 500 1.500 | 500 1.500 | 400 1.300 |
| EN 13 | 320 213 | Ø 125 x 80 | 700 2.250 | 700 2.250 | 700 2.250 | - |
| EN 15 | 320 215 | Ø 125 x 150 | 400 1.600 | 400 1.600 | 400 1.600 | 400 1.600 |
| EN 16 | 320 216 | Ø 100 x 80 | 410 1.339 | 410 1.339 | 410 1.339 | 410 1.339 |
| EN 17 | 320 217 | Ø 125 x 200 | 450 1.800 | 450 1.800 | 450 1.800 | 450 1.800 |
| EN 18 | 320 218 | Ø 165 x 80 | 900 3.000 | 900 3.000 | 900 3.000 | 1.250 2.000 |

- The buffers are type approved in compliance with DIN EN81-20/50 (EU type examination certificates upon request or for download in our webshop).
- Static load curves, please ask if required.
- Attention; diameter at max. damper compression $< 1.4 \times D$, particularly important when more buffers are put next to each other.
- Due to the foamed base plate, a detachment of the mounting plate from the buffer is impossible.

NEW

Lift buffers to EN81-20/50 (lift directive 2014/33/EU)



Cell-PU buffers for nominal speed up to $v = 1,0 \text{ m/s}$

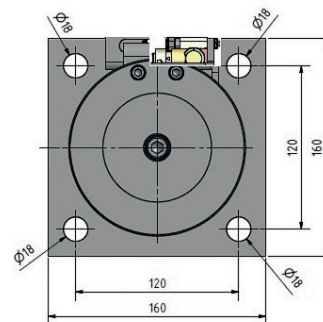
| min./max. load ranges [kg] at nominal speed | | | | | | | |
|---|-----------------|------------------|----------------|--------------|--------------|----------------|----------------|
| Type | Art.no. | | Dimension [mm] | 0,5 m/s | 0,63 m/s | 0,80 m/s | 1,00 m/s |
| | (A) Steel plate | (B) Steel insert | | | | | |
| A 11 | 320 311 | | ø 80 x 80 | 140 1.000 | 140 1.000 | 200 500 | 200 500 |
| NEW B 10 | 320 510 | | ø 80 x 80 | 140 1.650 | 140 1.650 | 180 700 | 180 700 |
| NEW B 11 | 320 511 | | ø 80 x 80 | 250 3.000 | 250 3.000 | 350 1.400 | 350 1.400 |
| A 12 | 320 312 | 321 312 | ø 100 x 80 | 200 1.650 | 200 1.650 | 350 700 | 350 700 |
| NEW B 12 | 320 512 | 321 512 | ø 100 x 80 | 330 3.900 | 330 3.900 | 450 1.700 | 450 1.700 |
| A 13 | 320 313 | 321 313 | ø 125 x 80 | 240 5.000 | 240 5.000 | 570 1.100 | 570 1.100 |
| NEW B 13 | 320 513 | 321 513 | ø 125 x 80 | 350 4.800 | 350 4.800 | 600 2.000 | 600 2.000 |
| A 14 | 320 314 | 321 314 | ø 165 x 80 | 470 7.800 | 470 7.800 | 1.300 1.800 | 1.300 1.800 |
| NEW B 14 | 320 514 | 321 514 | ø 165 x 80 | 700 9.400 | 700 9.400 | 950 3.600 | 950 3.600 |
| A 15 | 320 315 | 321 315 | ø 140 x 110 | 320 5.200 | 320 5.200 | 550 2.000 | 550 2.000 |
| NEW B 15 | 320 515 | 321 515 | ø 140 x 110 | 400 6.000 | 400 6.000 | 500 3.200 | 500 3.200 |

- The buffers are type approved in compliance with DIN EN81-20/50 (EU type examination certificates upon request or for download in our webshop).
- Static load curves, please ask if required.
- Max. transverse strain of all buffers is $< 1.4 \times D$. Please maintain the clearances if you install two or more buffers next to each other.
- Attention; max damper compression
- Please note, for buffers with steel insert (Art.no. 321...) at max. damper compression a seating of 1.4 times diameter is required. This is not necessary for buffers with a steel plate (Art.no. 320...).

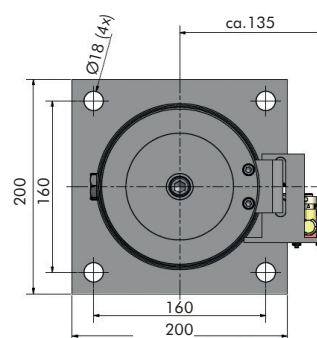


Hydraulic buffers

Buffers of type H6-H15 are energy dissipation according to EN81-20, EN81-50 5.5 and therefore universally applicable for the construction of elevators. Certified by type examination, they are permitted for universal use in traction and hydraulic lifts positioned below the car as well as below the counterweight. The buffers must only be fitted in vertical motion elevators with upward pointing piston rods.

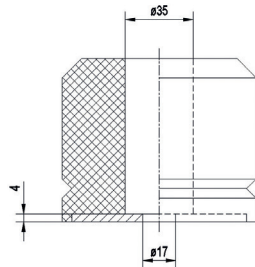
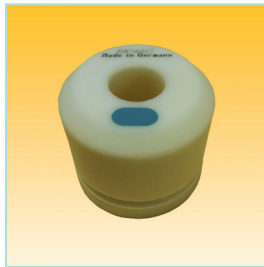


| Type | Art.no. | Dimension piston rod [mm] | Total height [mm] | max. nominal speed [m/s] | min./max. load [kg] |
|------|-----------|---------------------------|-------------------|--------------------------|---------------------|
| H11 | 320 400-A | Ø 40 x 80 | 305 | 1,00 | 450 3.500 |
| H12 | 320 401-A | Ø 40 x 120 | 385 | 1,30 | 450 3.500 |
| H13 | 320 402-A | Ø 40 x 175 | 495 | 1,60 | 450 3.500 |
| H14 | 320 403-A | Ø 40 x 275 | 715 | 2,00 | 450 3.500 |
| H15 | 320 404-A | Ø 40 x 430 | 1.065 | 2,50 | 450 3.500 |



| Type | Art.no. | Dimension piston rod [mm] | Total height [mm] | max. nominal speed [m/s] | min./max. load [kg] |
|------|---------|---------------------------|-------------------|--------------------------|---------------------|
| H6 | 320 405 | Ø 50 x 425 | 1.065 | 2,50 | 500 4.500 |
| H7 | 320 406 | Ø 50 x 695 | 1.665 | 3,20 | 500 4.500 |
| H8 | 320 407 | Ø 50 x 950 | 2.235 | 3,70 | 500 4.500 |

Lift buffers to EN81-1/2



These buffers may be used in lifts operating within the EU, used exclusively as a spare part of an original safety component.

This is only possible if a state-of-the-art buffer cannot be used. No EU declaration of conformity can be provided.

CE marking is not appropriate.

Cell-PU buffers for nominal speed up to $v = 1,0$ m/s

| min./max. load ranges [kg] at nominal speed | | | | | | |
|---|---------|-----------------------------|---------|----------|---------|---------|
| Type | Art.no. | Dimension [mm] | 0,5 m/s | 0,63 m/s | 0,8 m/s | 1,0 m/s |
| EN 2 | 320 202 | $\varnothing 100 \times 80$ | 190 | 190 | 190 | 190 |
| | | | 3.240 | 3.240 | 3.240 | 3.240 |
| EN 3 | 320 203 | $\varnothing 125 \times 80$ | 240 | 240 | 240 | 240 |
| | | | 6.510 | 6.510 | 6.510 | 6.510 |
| EN 4 | 320 204 | $\varnothing 165 \times 80$ | 290 | 290 | 290 | 290 |
| | | | 8.010 | 8.010 | 8.010 | 8.010 |

Cell-PU buffers for nominal speed up to $v = 1,0$ m/s

| min./max. load ranges [kg] at nominal speed | | | | | | | |
|---|-----------------|------------------|------------------------------|--------------|--------------|--------------|--------------|
| Type | Art.no. | | Dimension [mm] | 0,5 m/s | 0,63 m/s | 0,8 m/s | 1,0 m/s |
| | (A) Steel plate | (B) Plastic bush | | | | | |
| A 1 | 320 301 | | $\varnothing 80 \times 80$ | 120 1.500 | 120 1.300 | 160 1.200 | 200 1.000 |
| A 3 | 320 303 | 321 303 | $\varnothing 125 \times 80$ | 190 4.000 | 190 3.500 | 300 2.500 | 350 1.600 |
| A 4 | 320 304 | 321 304 | $\varnothing 165 \times 80$ | 180 6.500 | 230 5.500 | 350 4.200 | 500 3.500 |
| A 5 | 320 305 | 321 305 | $\varnothing 140 \times 110$ | 150 6.500 | 200 5.500 | 300 4.500 | 350 3.500 |
| A 6 | 320 306 | 321 306 | $\varnothing 100 \times 160$ | 120 5.000 | 150 4.500 | 180 4.000 | 230 3.500 |

Cell-PU buffers for nominal speed up to $v = 1,25$ m/s

| min./max. load ranges [kg] at nominal speed | | | | | | |
|---|---------|------------------------------|--------------|--------------|--------------|--------------|
| Type | Art.no. | Dimension [mm] | 0,63 m/s | 0,8 m/s | 1,0 m/s | 1,25 m/s |
| EN 5 | 320 205 | $\varnothing 125 \times 150$ | 600 1.707 | 600 1.707 | 600 1.707 | 600 1.707 |
| EN 7 | 320 207 | $\varnothing 125 \times 200$ | 400 1.050 | 400 1.050 | 400 1.050 | 400 1.050 |

Cell-PU buffers for nominal speed up to $v = 1,6$ m/s

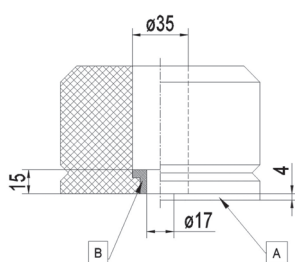
| min./max. load ranges [kg] at nominal speed | | | | | | |
|---|---------|------------------------------|--------------|--------------|--------------|--------------|
| Type | Art.no. | Dimension [mm] | 1,0 m/s | 1,25 m/s | 1,4 m/s | 1,6 m/s |
| EN 6*) | 320 206 | $\varnothing 180 \times 340$ | 630 1.700 | 630 1.700 | 630 1.700 | 630 1.700 |

• Static curves (available) on request

• Diameter at max. damper compression $< 1,4 \times D$; This applies particularly when more buffers are put next to each other.

*) square base plate; at max. load, deflection approx. 60%. - Certificate on request

Lift buffers to EN81-1/2



These buffers may be used in lifts operating within the EU, used exclusively as a spare part of an original safety component.

This is only possible if a state-of-the-art buffer cannot be used. No EU declaration of conformity can be provided.

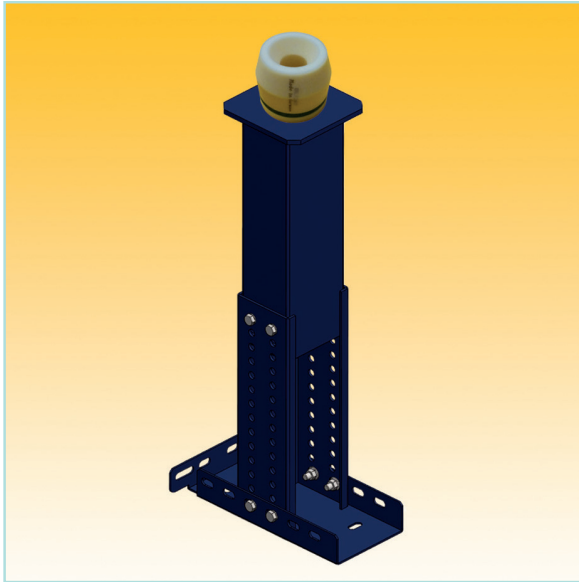
CE marking is not appropriate.

| min./max. load ranges [kg] at nominal speed | | | | | | |
|---|---------------|----------------|----------------|--------------|----------------|----------------|
| Type | Mounting type | | Dimension [mm] | 0,4 m/s | 0,63 m/s | 1,0 m/s |
| | Ⓐ Steel plate | Ⓑ Plastic bush | | | | |
| T 1 | 320 001 | | ∅ 80 x 80 | 153 1.450 | 153 1.300 | 233 503 |
| T 2 | 320 002 | 321 002 | ∅ 100 x 80 | 153 1.886 | 153 1 137 | 290 800 |
| T 3 | 320 003 | | ∅ 125 x 80 | 228 2.650 | 228 1.500 | 253 1.000 |
| T 4 | 320 004 | | ∅ 165 x 80 | 310 6.170 | 379 3.000 | 568 2.450 |
| T 5 | 320 005 | 321 005 | ∅ 220 x 80 | 465 9.200 | 1.000 7.100 | 1.344 6.000 |
| E 2 | 320 007 | 321 011 | ∅ 125 x 100 | 153 1.661 | 263 1.504 | 263 1.486 |
| E 5 | 320 013 | 321 013 | ∅ 140 x 100 | 203 2.744 | 203 2.120 | 203 1.980 |
| E 1 / T 6 | 320 006 | 321 006 | ∅ 100 x 160 | 103 1.344 | 128 1.030 | 128 927 |
| E 3 / T 8 | 320 008 | | ∅ 125 x 160 | 128 1.504 | 263 1.344 | 263 1.106 |
| E 13 | 320 021 | 321 021 | ∅ 140 x 160 | 203 3.117 | 303 2.120 | 303 2.046 |
| E 7 / T 9 | 320 009 | 321 008 | ∅ 165 x 160 | 278 3.434 | 395 3.117 | 465 3.035 |
| E 9 / T 10 | 320 010 | 321 009 | ∅ 220 x 160 | 465 7.567 | 568 7.043 | 1.344 6.500 |
| E 4 / T 7 | 320 015 | 321 012 | ∅ 125 x 200 | 103 1.661 | 153 1.504 | 253 1.442 |
| E 6 | 320 014 | 321 014 | ∅ 140 x 200 | 203 2.451 | 278 2.120 | 278 1.966 |
| E 11 | 320 012 | 321 015 | ∅ 140 x 250 | 228 2.744 | 228 2.744 | 228 2.502 |
| E 8 | 320 016 | 321 016 | ∅ 165 x 220 | 203 4.079 | 303 4.079 | 777 3.919 |
| E 10 | 320 011 | | ∅ 220x 220 | 465 8.132 | 727 8.000 | 1.604 8.000 |

| Type | Mounting type | | Dimension [mm] | 1,0 m/s | 1,25 m/s | 1,4 m/s |
|---------|---------------|--|----------------|--------------|--------------|--------------|
| | Ⓐ Steel plate | | | | | |
| E 6 HS | 320 014HS | | ∅ 140 x 200 | 310 1.344 | 310 930 | |
| E 10 HS | 320 011HS | | ∅ 220 x 220 | 672 2.907 | 800 2.010 | 955 1.344 |

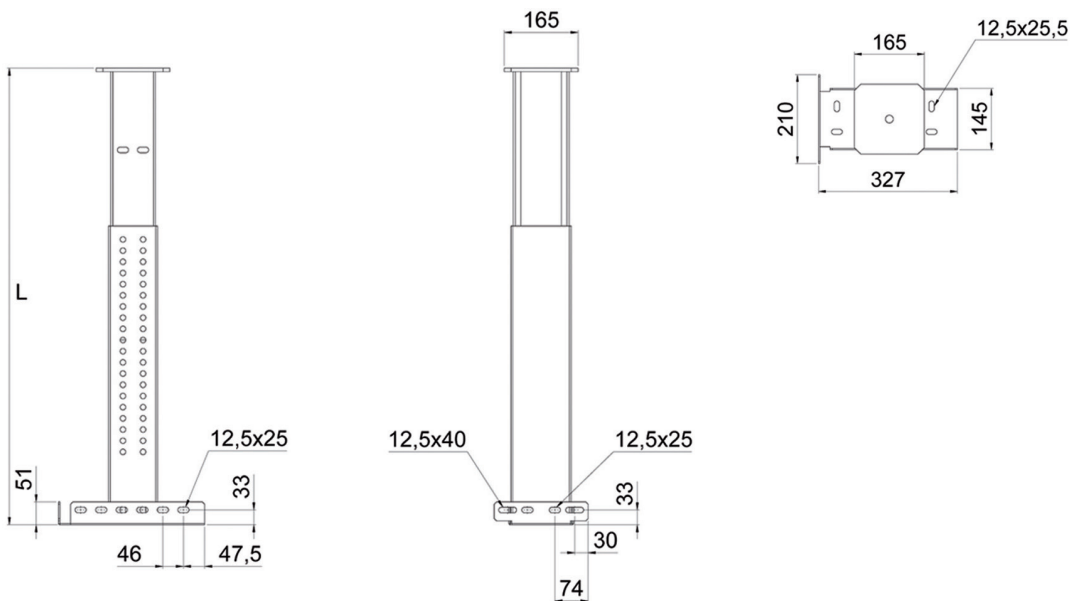
- Static curves on request
- Diameter at max. damper compression < 1,4 x D; This applies particularly when more buffers are put next to each other.

Buffer supports



The telescopic buffer supports are excellently suitable for new construction and modernisation in the shaft pit.

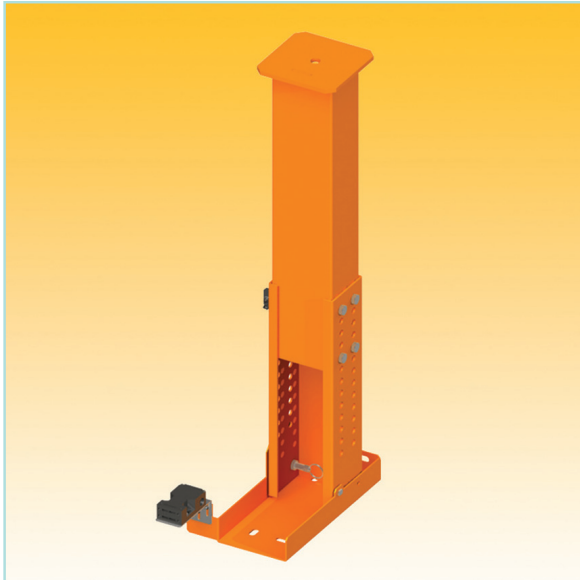
The exact height can be adjusted in the pit. The buffer height can also be modified, e.g. if the distance, which the lift can be moved below the lowest landing, is changed. The buffer supports consist of powder coated steel sheet. The buffer can be screwed to the floor with anchor bolts or it can be fixed in the pit with other stationary parts of the lift.



Maximum charge: 2.000kg per support
Maximum rated velocity: 1m/s

| Size | Art.no. | Length L [mm] |
|--------|---------|---------------|
| Size 1 | 321 350 | 193 - 293 |
| Size 2 | 321 351 | 290 - 415 |
| Size 3 | 321 352 | 416 - 716 |
| Size 4 | 321 353 | 696 - 1.021 |
| Size 5 | 321 354 | 1.005 - 1.405 |

Maintenance supports



The folding maintenance support is ideal for creating a temporary protected space in the pit. During normal operation the support lies on the floor. With a height of only 140mm it can be mounted in very small pits.

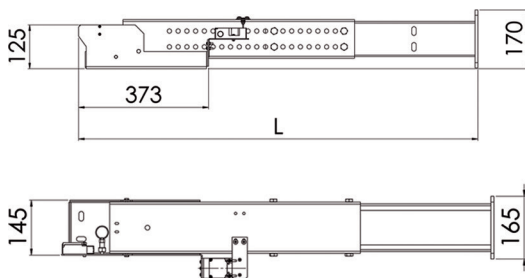
When entering the pit for maintenance or other works, the support has to be folded up. The support automatically locks into place when it reaches a vertical position. To fold it again, the locking bolt has to be released.

Both positions of the maintenance support are monitored by a safety switch with forced disconnection. The length of the support can be adjusted. Optionally a lift buffer can be mounted.

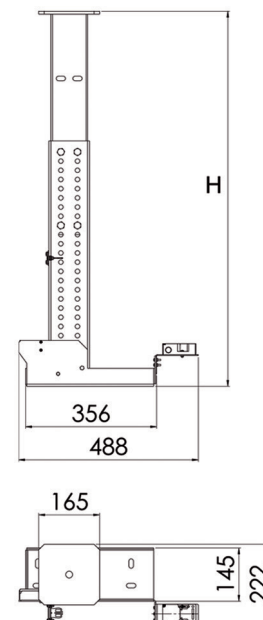
When the car rests on its fully compressed buffers, one size of the following safety spaces (per person) must be available, according to EN 81-20 5.2.5.8.1:

- Floor area 0.4m x 0.5m / height 2m (position: upright)
- Floor area 0.5m x 0.7m / height 1m (position: crouching)
- Floor area 0.7m x 1.5m / height 0.5m (position: lying)

Dimensional drawing maintenance support vertical



Dimensional drawing maintenance support horizontal



Maximum static load: 2.000kg per support
Maximum velocity: 1m/s

| Size | Art.no. | Height H vertical [mm] | Length L horizontal [mm] |
|--------|---------|------------------------|--------------------------|
| Size 1 | 321 360 | 500 - 770 | 630 - 900 |
| Size 2 | 321 361 | 700 - 1.000 | 820 - 1.150 |

Gemäß EN 81-21 5.7.2.1 muss die Wartungsstütze mit einem Aufsetzpuffer versehen werden.