# Series RTC

AVENTICS™

AVENTICS Series RTC Rodless cylinders

EMERSON™

## Series RTC

The AVENTICS Series RTC rodless cylinders offer optimized stroke length in a compact size. The unique oval piston shape and one-piece slide/piston unit are just two characteristic features of RTC Series rodless cylinders besides their many common equipment options. They are available in four variants: as a basic version, slide bearing, compact guide and heavy duty versions for large loads. With different key strengths, they cover a large range of movements and positions. This saves space and facilitates machine design. The range of applications extends from piston diameters of 16 mm up to 80 mm and stroke lengths up to 9900 mm. The cylinders feature extreme repeatability and cover a large speed range from 0.01 m/s to >20 m/s.

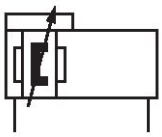
- Oval piston enables higher loads and torques, and highly compact designs
- Comprehensive range with many variants and options enables configurations that are individually tailored to the application
- One-piece slide and piston increase stability
- Minimal leakage and a wide range of speeds thanks to a special internal sealing strip and grease

# Product overview

# Product overview

## Rodless cylinders, Series RTC-BV

Guide: integrated guide
Cushioning: Pneumatically
Version rodless cylinder: Basic Version
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Ports | M7 | G 1/8 | G 1/8 | G 1/4 | G 1/4 | G 3/8 |
| Stroke 100 | R480143252 | R480141454 | - | - | - | - |
| 200 | R480143255 | R480141455 | R480141462 | - | - | - |
| 300 | R480143256 | R480141456 | R480141463 | - | - | - |
| 400 | R480143257 | R480141457 | R480141464 | R480141472 | R480148854 | R480147730 |
| 500 | R480143258 | R480141458 | R480141465 | R480141473 | R480146166 | R480147713 |
| 600 | R480143259 | R480141459 | R480141466 | R480141474 | R480149081 | R480146014 |
| 700 | R480143260 | R480141460 | R480141468 | R480141475 | R480145947 | R480145948 |
| 800 | - | R480141461 | R480141469 | R480141476 | R480148600 | R480147223 |
| 900 | - | - | R480141470 | R480141477 | R480147023 | R480146204 |
| 1000 | - | - | R480141471 | R480141478 | R480149199 | R480147036 |

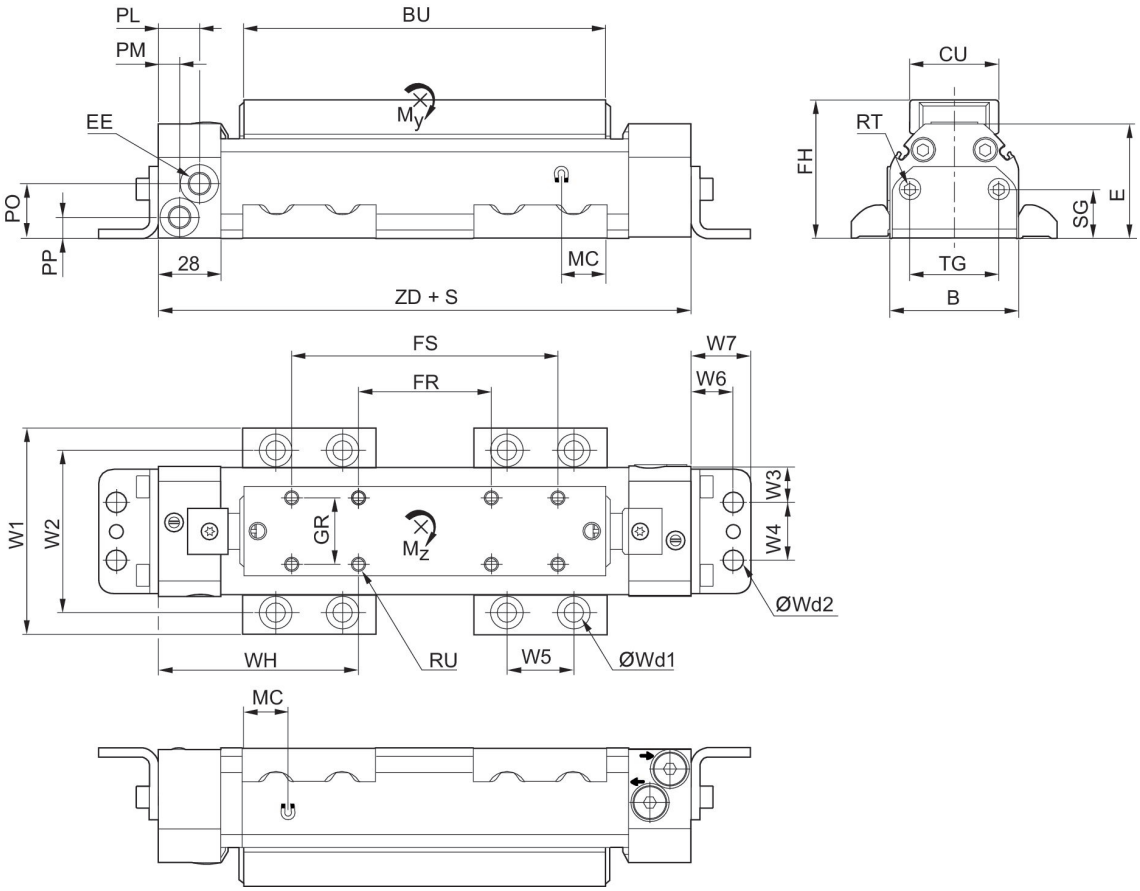
| Piston Ø | 80 mm |
|---|---|
| Ports | G 3/8 |
| Stroke 100 | - |
| 200 | - |
| 300 | - |
| 400 | R480147731 |
| 500 | R480147714 |
| 600 | R480146210 |
| 700 | R480155522 |
| 800 | R480147699 |
| 900 | R480156948 |
| 1000 | R480147700 |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Retracting piston force | 127 N | 309 N | 507 N | 792 N | 1237 N | 1964 N |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Extracting piston force | 127 N | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Cushioning energy | 1.5 J | 4 J | 7 J | 10 J | 15 J | 25 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.014 kg | 0.023 kg | 0.031 kg | 0.044 kg | 0.065 kg | 0.098 kg |
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 0.45 kg | 0.82 kg | 1.39 kg | 2.09 kg | 3.37 kg | 5.65 kg |

| Piston Ø | 80 mm |
|---|---|
| Retracting piston force | 3146 N |
| Extracting piston force | 3146 N |
| Cushioning energy | 40 J |
| Cushioning length | 20 mm |
| Weight 10 mm stroke | 0.157 kg |
| Working pressure min./max. | 2 bar ... 8 bar |
| Weight 0 mm stroke | 9.71 kg |

Dimensions in mm




S = stroke

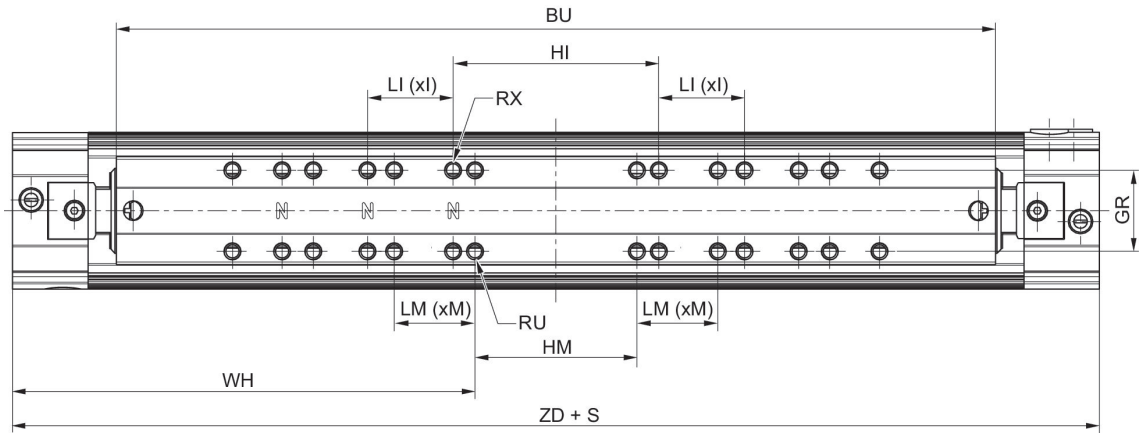
| Piston Ø | B | BU | CU | E | EE | FH | FR | FS | GR |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 34 | 118 | 26 | 36 | M7 | 41 | 60 | 100 | 20 |
| 25 | 44 | 147 | 26 | 45.5 | G 1/8 | 50.6 | 40 | 100 | 20 |
| 32 | 58 | 163 | 40 | 51.5 | G 1/8 | 62.1 | 60 | 120 | 30 |
| 40 | 70 | 182 | 40 | 60.5 | G 1/4 | 71.1 | 60 | 120 | 30 |
| 50 | 92 | 205 | 40 | 67.5 | G 1/4 | 78.3 | 60 | 140 | 30 |
| 63 | 112 | 233 | 55 | 82.5 | G 3/8 | 93.3 | 100 | 180 | 40 |
| 80 | 140 | 269 | 55 | 103.5 | G 3/8 | 114.2 | 100 | 180 | 40 |

| Piston Ø | MC | PL | PM | PO | PP | RT 1) | RU 2) | SG | TG |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 12 | 21.5 | 9 | 13.1 | 7.5 | M5 | M4 | 17.3 | 19 |
| 25 | 15 | 20 | 8 | 21.5 | 9.3 | M5 | M4 | 17.3 | 19 |
| 32 | 20 | 18.5 | 9.5 | 24.5 | 9.5 | M6 | M6 | 22 | 40 |
| 40 | 17 | 18 | 10 | 31.5 | 11 | M6 | M6 | 22 | 40 |
| 50 | 23 | 16 | 16 | 35.5 | 12.5 | M8 | M6 | 22 | 40 |
| 63 | 25 | 14 | 14 | 45.5 | 14.5 | M8 | M8 | 30 | 80 |
| 80 | 27 | 14 | 14 | 59.5 | 16.5 | M8 | M8 | 30 | 80 |

| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 63 | 45.5 | 8 | 18 | 30 | 13.5 | 19.8 | M6 | M6 |
| 25 | 73 | 55.5 | 13 | 18 | 30 | 13.5 | 19.8 | M6 | M6 |
| 32 | 93 | 72.5 | 16 | 26 | 30 | 19 | 26.8 | M8 | M8 |
| 40 | 105 | 84.5 | 22 | 26 | 30 | 19 | 26.8 | M8 | M8 |
| 50 | 140 | 114.5 | 11 | 70 | 40 | 22 | 32.7 | M12 | M12 |
| 63 | 160 | 134.5 | 31 | 50 | 40 | 22 | 32.7 | M12 | M12 |
| 80 | 188 | 162.5 | 45 | 50 | 40 | 22 | 32.7 | M12 | M12 |

| Piston Ø | WH | ZD | Moving mass kg |
|---|---|---|---|
| 16 | 63.5 | 187 | 0.08 |
| 25 | 87.5 | 215 | 0.16 |
| 32 | 90 | 240 | 0.32 |
| 40 | 101.5 | 263 | 0.49 |
| 50 | 117.1 | 294.2 | 0.73 |
| 63 | 116.5 | 333.2 | 1.31 |
| 80 | 130.5 | 361 | 2.14 |

Dimensions
For long slide




S = stroke

## Dimensions

| Piston Ø | BU | GR | HI | LI | I | HM | LM | M | RU |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 236 | 20 | 50.8 | 38.1 | 2 | 60 | 20 | 3 | M4 |
| 25 | 294 | 20 | 76.2 | 31.75 | 2 | 40 | 30 | 3 | M4 |
| 32 | 326 | 30 | 76.2 | 31.75 | 2 | 60 | 30 | 3 | M6 |
| 40 | 364 | 30 | 76.2 | 31.75 | 3 | 60 | 30 | 4 | M6 |
| 50 | 410 | 30 | 76.2 | 31.75 | 3* | 60 | 40 | 3 | M6 |
| 63 | 466 | 40 | 152.4 | 38.1 | 2 | 100 | 40 | 3 | M8 |
| 80 | 538 | 40 | 152.4 | 38.1 | 3 | 100 | 40 | 4 | M8 |

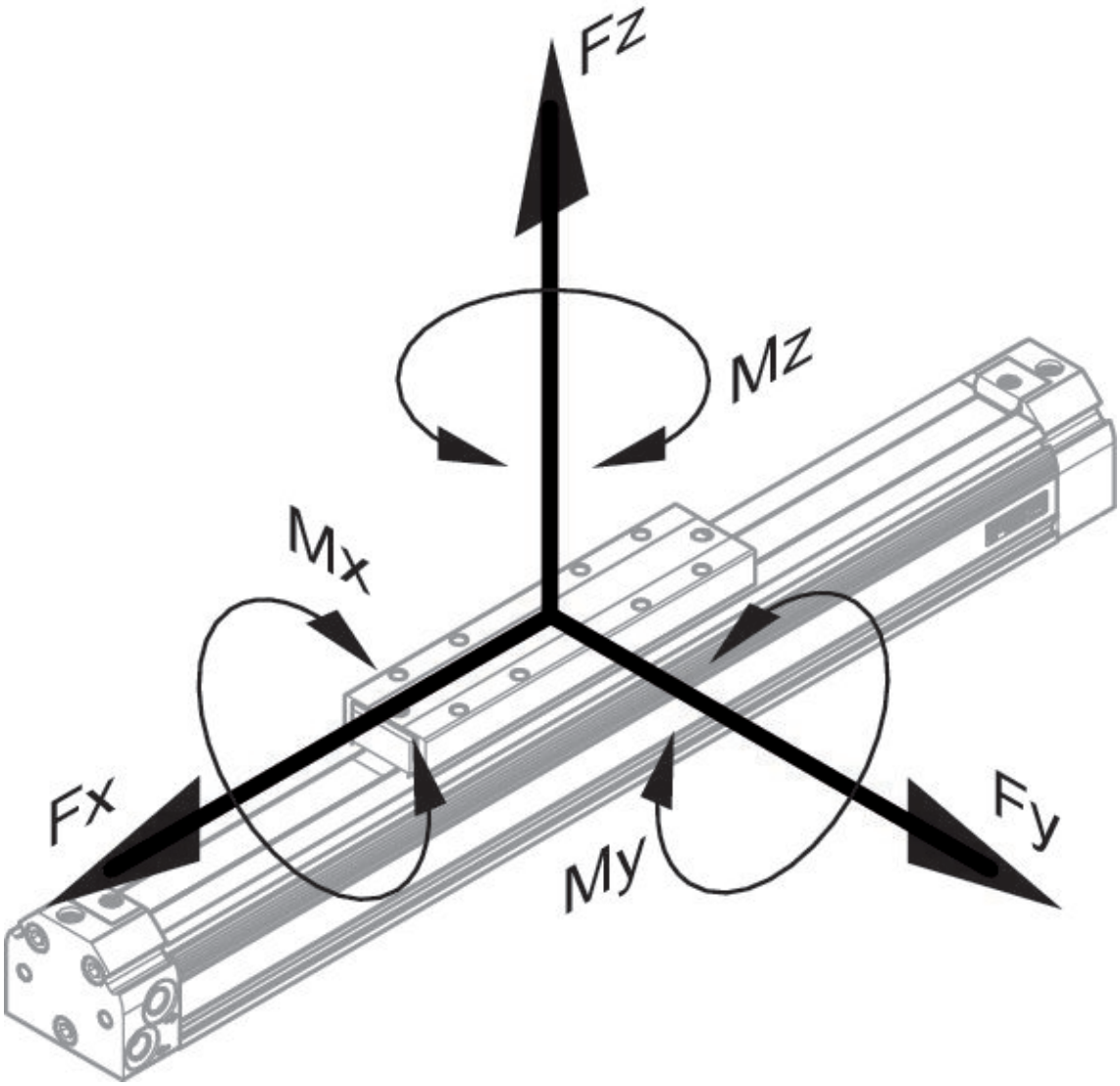
| Piston Ø | RX | MCF | WH | ZD |
|---|---|---|---|---|
| 16 | 8-36 UNF | 258 | 122.5 | 305 |
| 25 | 8-36 UNF | 313 | 161 | 362 |
| 32 | 1/4-20 UNC | 344 | 171.5 | 403 |
| 40 | 1/4-20 UNC | 387 | 192.5 | 445 |
| 50 | 1/4-20 UNC | 431 | 219.6 | 499.2 |
| 63 | 5/16-18 UNC | 492 | 233 | 566.2 |
| 80 | 5/16-18 UNC | 557 | 265 | 630 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz




## Max. play and recommended max. lever arm length

| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 16 | 0,25° | 2,0° ±1° | 324 | 188 | 324 |
| 25 | 0,25° | 2,0° ±1° | 434 | 246 | 434 |
| 32 | 0,3° | 1,5° ±0,5° | 480 | 278 | 480 |
| 40 | 0,2° | 1,0° ±0,3° | 550 | 316 | 550 |
| 50 | 0,2° | 1,0° ±0,3° | 634 | 362 | 634 |
| 63 | 0,15° | 1,0° ±0,3° | 736 | 418 | 736 |
| 80 | 0,15° | 1,0° ±0,3° | 870 | 490 | 870 |

## Static moment M [Nm]

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 16 | 800 | 150 | 1100 | 4 | 50 | 16 |
| 25 | 1800 | 210 | 3800 | 12 | 100 | 24 |
| 32 | 2200 | 550 | 6600 | 36 | 160 | 86 |
| 40 | 3500 | 650 | 8000 | 56 | 280 | 110 |
| 50 | 5000 | 750 | 9000 | 70 | 460 | 140 |
| 63 | 6800 | 850 | 13000 | 90 | 680 | 180 |
| 80 | 9500 | 1000 | 13000 | 110 | 1000 | 220 |

## Dynamic moment M [Nm]

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 16 | 0.4 | 20 | 4 |
| 25 | 1 | 48 | 6 |
| 32 | 4 | 84 | 24 |
| 40 | 6 | 150 | 30 |
| 50 | 9 | 256 | 40 |
| 63 | 15 | 390 | 48 |
| 80 | 20 | 600 | 56 |

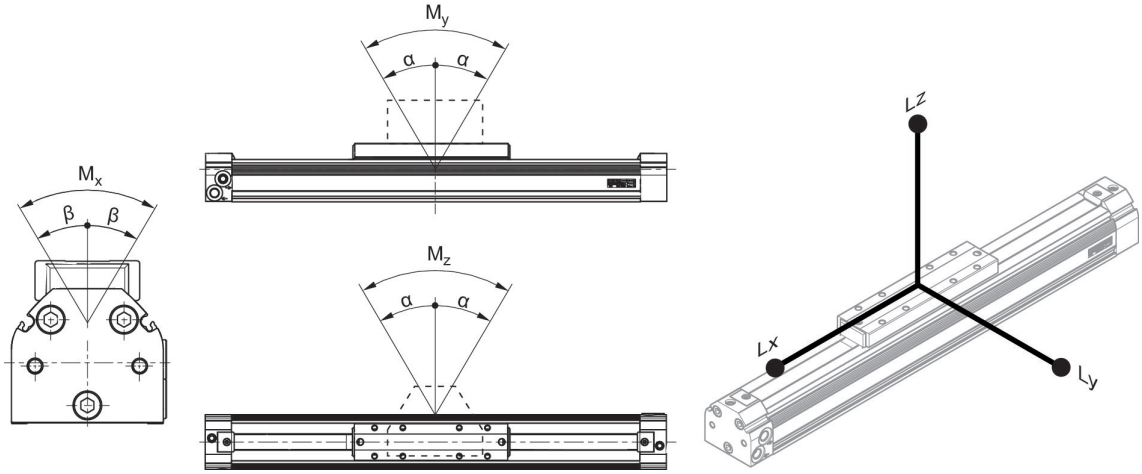
## Static moment M [Nm]

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 16 | 800 | 150 | 1100 | 2 | 25 | 8 |
| 25 | 1800 | 210 | 3800 | 6 | 50 | 12 |
| 32 | 2200 | 550 | 6600 | 18 | 80 | 43 |
| 40 | 3500 | 650 | 8000 | 28 | 140 | 55 |
| 50 | 5000 | 750 | 9000 | 35 | 230 | 70 |
| 63 | 6800 | 850 | 13000 | 45 | 340 | 90 |
| 80 | 9500 | 1000 | 13000 | 55 | 500 | 110 |

## Dynamic moment M [Nm]

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 16 | 0.4 | 10 | 2 |
| 25 | 1 | 24 | 3 |
| 32 | 4 | 42 | 12 |
| 40 | 6 | 75 | 15 |
| 50 | 9 | 128 | 20 |
| 63 | 15 | 195 | 24 |
| 80 | 20 | 300 | 28 |

Max. play and recommended max. lever arm length

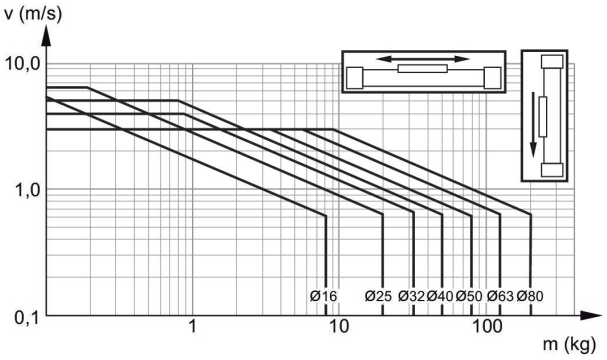



L = lever arm
M = moment (Nm)

## Max. play and recommended max. lever arm length

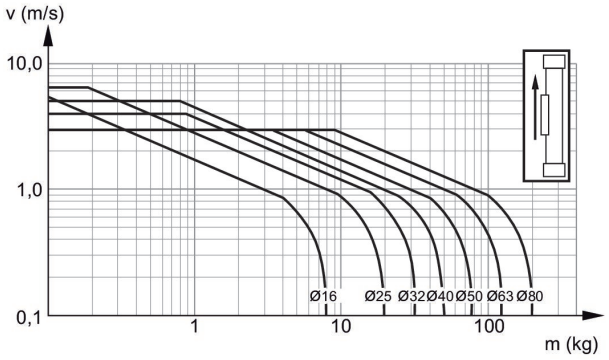
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 16 | 0,5° | 2,0° ±1° | 162 | 94 | 162 |
| 25 | 0,5° | 2,0° ±1° | 217 | 123 | 217 |
| 32 | 0,6° | 1,5° ±0,5° | 240 | 139 | 240 |
| 40 | 0,4° | 1,0° ±0,3° | 275 | 158 | 275 |
| 50 | 0,4° | 1,0° ±0,3° | 317 | 181 | 317 |
| 63 | 0,3° | 1,0° ±0,3° | 368 | 209 | 368 |
| 80 | 0,3° | 1,0° ±0,3° | 435 | 245 | 435 |

## Limit diagram for pneumatic cushioning with horizontal mounting



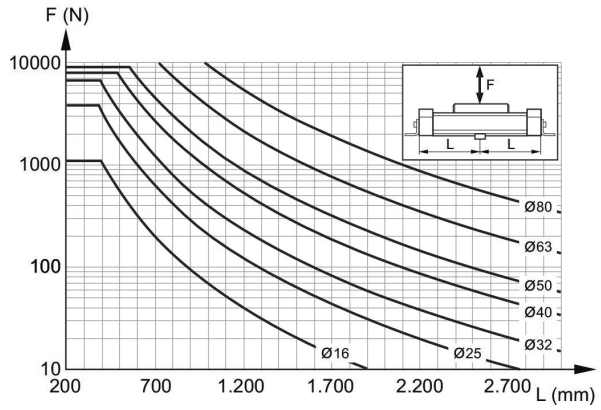

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

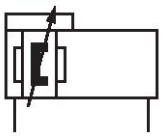
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-BV

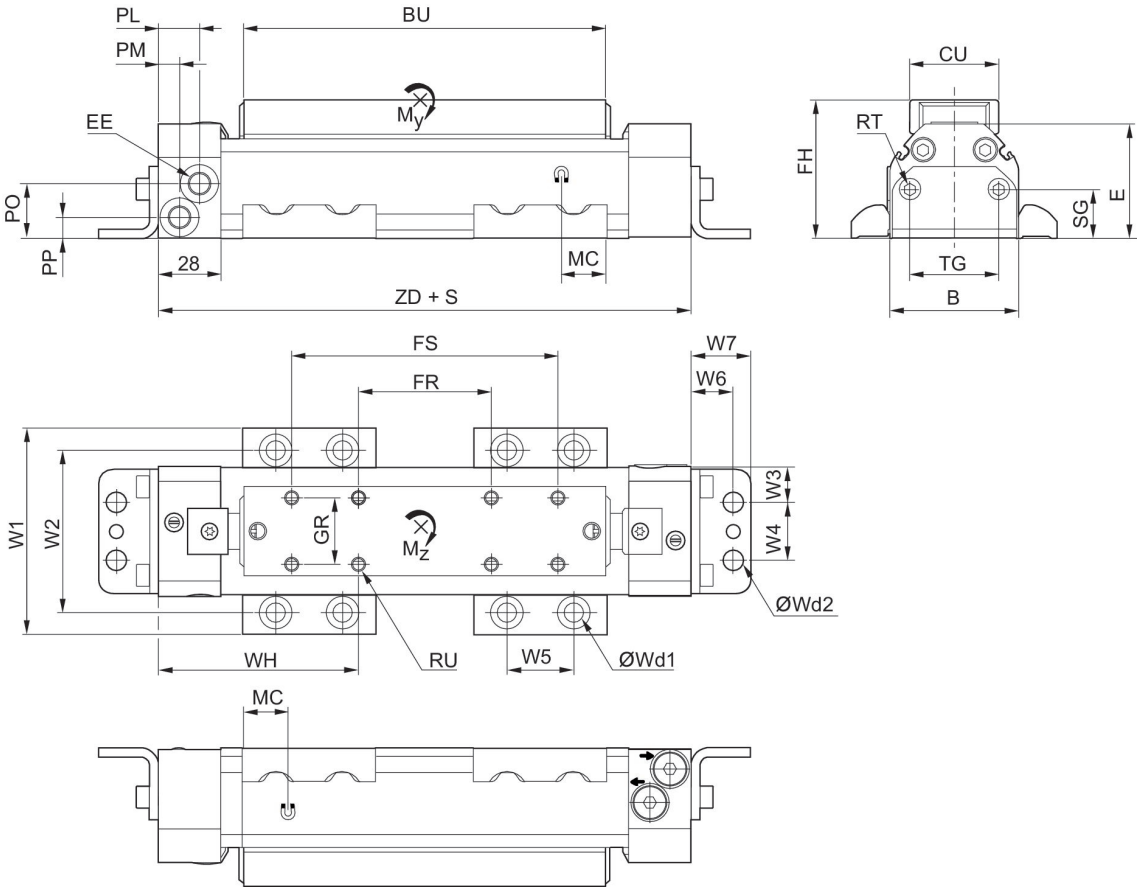
Guide: integrated guide
Cushioning: Pneumatically
Version rodless cylinder: Basic Version
Functional principle: Double-acting
: with magnetic piston
Temperature resistance: -25 °C cold-resistant
Ambient temperature min./max.: -25 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 32 mm | 40 mm | 50 mm | 63 mm | 80 mm |
|---|---|---|---|---|---|
| Ports | G 1/8 | G 1/4 | G 1/4 | G 3/8 | G 3/8 |
| Stroke 100 | R481608171 | R481608181 | R481608191 | R481608201 | R481608211 |
| 200 | R481608172 | R481608182 | R481608192 | R481608202 | R481608212 |
| 300 | R481608173 | R481608183 | R481608193 | R481608203 | R481608213 |
| 400 | R481608174 | R481608184 | R481608194 | R481608204 | R481608214 |
| 500 | R481608175 | R481608185 | R481608195 | R481608205 | R481608215 |
| 600 | R481608176 | R481608186 | R481608196 | R481608206 | R481608216 |
| 700 | R481608177 | R481608187 | R481608197 | R481608207 | R481608217 |
| 800 | R481608178 | R481608188 | R481608198 | R481608208 | R481608218 |
| 900 | R481608179 | R481608189 | R481608199 | R481608209 | R481608219 |
| 1000 | R481608180 | R481608190 | R481608200 | R481608210 | R481608220 |

| Piston Ø | 32 mm | 40 mm | 50 mm | 63 mm | 80 mm |
|---|---|---|---|---|---|
| Retracting piston force | 507 N | 792 N | 1237 N | 1964 N | 3146 N |
| Extracting piston force | 507 N | 792 N | 1237 N | 1964 N | 3146 N |
| Cushioning energy | 7 J | 10 J | 15 J | 25 J | 40 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.031 kg | 0.031 kg | 0.031 kg | 0.031 kg | 0.031 kg |
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 1.39 kg | 1.39 kg | 1.39 kg | 1.39 kg | 1.39 kg |

Dimensions in mm




S = stroke

| Piston Ø | B | BU | CU | E | EE | FH | FR | FS | GR |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 58 | 163 | 40 | 51.5 | G 1/8 | 62.1 | 60 | 120 | 30 |
| 40 | 70 | 182 | 40 | 60.5 | G 1/4 | 71.1 | 60 | 120 | 30 |
| 50 | 92 | 205 | 40 | 67.5 | G 1/4 | 78.3 | 60 | 140 | 30 |
| 63 | 112 | 233 | 55 | 82.5 | G 3/8 | 93.3 | 100 | 180 | 40 |
| 80 | 140 | 269 | 55 | 103.5 | G 3/8 | 114.2 | 100 | 180 | 40 |

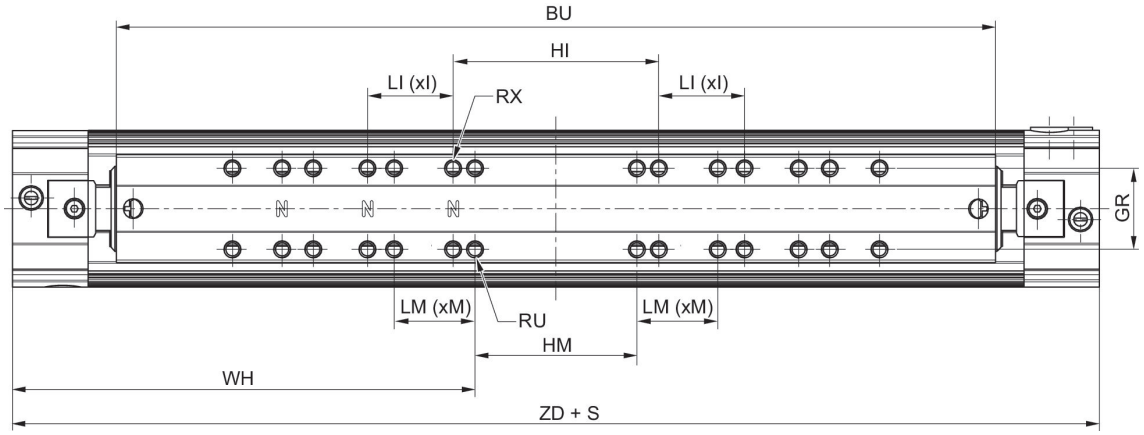
| Piston Ø | MC | PL | PM | PO | PP | RT 1) | RU 2) | SG | TG |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 20 | 18.5 | 9.5 | 24.5 | 9.5 | M6 | M6 | 22 | 40 |
| 40 | 17 | 18 | 10 | 31.5 | 11 | M6 | M6 | 22 | 40 |
| 50 | 23 | 16 | 16 | 35.5 | 12.5 | M8 | M6 | 22 | 40 |
| 63 | 25 | 14 | 14 | 45.5 | 14.5 | M8 | M8 | 30 | 80 |
| 80 | 27 | 14 | 14 | 59.5 | 16.5 | M8 | M8 | 30 | 80 |

| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 93 | 72.5 | 16 | 26 | 30 | 19 | 26.8 | M8 | M8 |
| 40 | 105 | 84.5 | 22 | 26 | 30 | 19 | 26.8 | M8 | M8 |
| 50 | 140 | 114.5 | 11 | 70 | 40 | 22 | 32.7 | M12 | M12 |
| 63 | 160 | 134.5 | 31 | 50 | 40 | 22 | 32.7 | M12 | M12 |
| 80 | 188 | 162.5 | 45 | 50 | 40 | 22 | 32.7 | M12 | M12 |

| Piston Ø | WH | ZD | Moving mass kg |
|---|---|---|---|
| 32 | 90 | 240 | 0.32 |
| 40 | 101.5 | 263 | 0.49 |
| 50 | 117.1 | 294.2 | 0.73 |
| 63 | 116.5 | 333.2 | 1.31 |
| 80 | 130.5 | 361 | 2.14 |

1) thread depth: 6 mm for piston Ø 16–25 mm, 10 mm for piston Ø 32–50 mm, 15 mm for piston Ø 63–80 mm
2) thread depth: 9 mm for piston Ø 16–40 mm, 12 mm for piston Ø 50–63 mm

Dimensions
For long slide




S = stroke

| Piston Ø | BU | GR | HI | LI | (xI) | HM | LM | (xM) | RU |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 326 | 30 | 76.2 | 31.75 | 2 | 60 | 30 | 3 | M6 |
| 40 | 364 | 30 | 76.2 | 31.75 | 3 | 60 | 30 | 4 | M6 |
| 50 | 410 | 30 | 76.2 | 31.75 | 3 | 60 | 40 | 3 | M6 |
| 63 | 466 | 40 | 152.4 | 38.1 | 2 | 100 | 40 | 3 | M8 |
| 80 | 538 | 40 | 152.4 | 38.1 | 3 | 100 | 40 | 4 | M8 |

| Piston Ø | RX | WH | ZD |
|---|---|---|---|
| 32 | 1/4-20 UNC | 171.5 | 403 |
| 40 | 1/4-20 UNC | 192.5 | 445 |
| 50 | 1/4-20 UNC | 219.6 | 499.2 |
| 63 | 5/16-18 UNC | 233 | 566.2 |
| 80 | 5/16-18 UNC | 265 | 630 |

## Weight [kg]

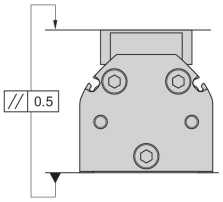
| Ø | Weight<br>0 mm stroke | +10 mm stroke |
|---|---|---|
| 32 | 2.31 | 0.031 |
| 40 | 3.5 | 0.044 |
| 50 | 5.57 | 0.065 |
| 63 | 9.4 | 0.098 |
| 80 | 16.31 | 0.157 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

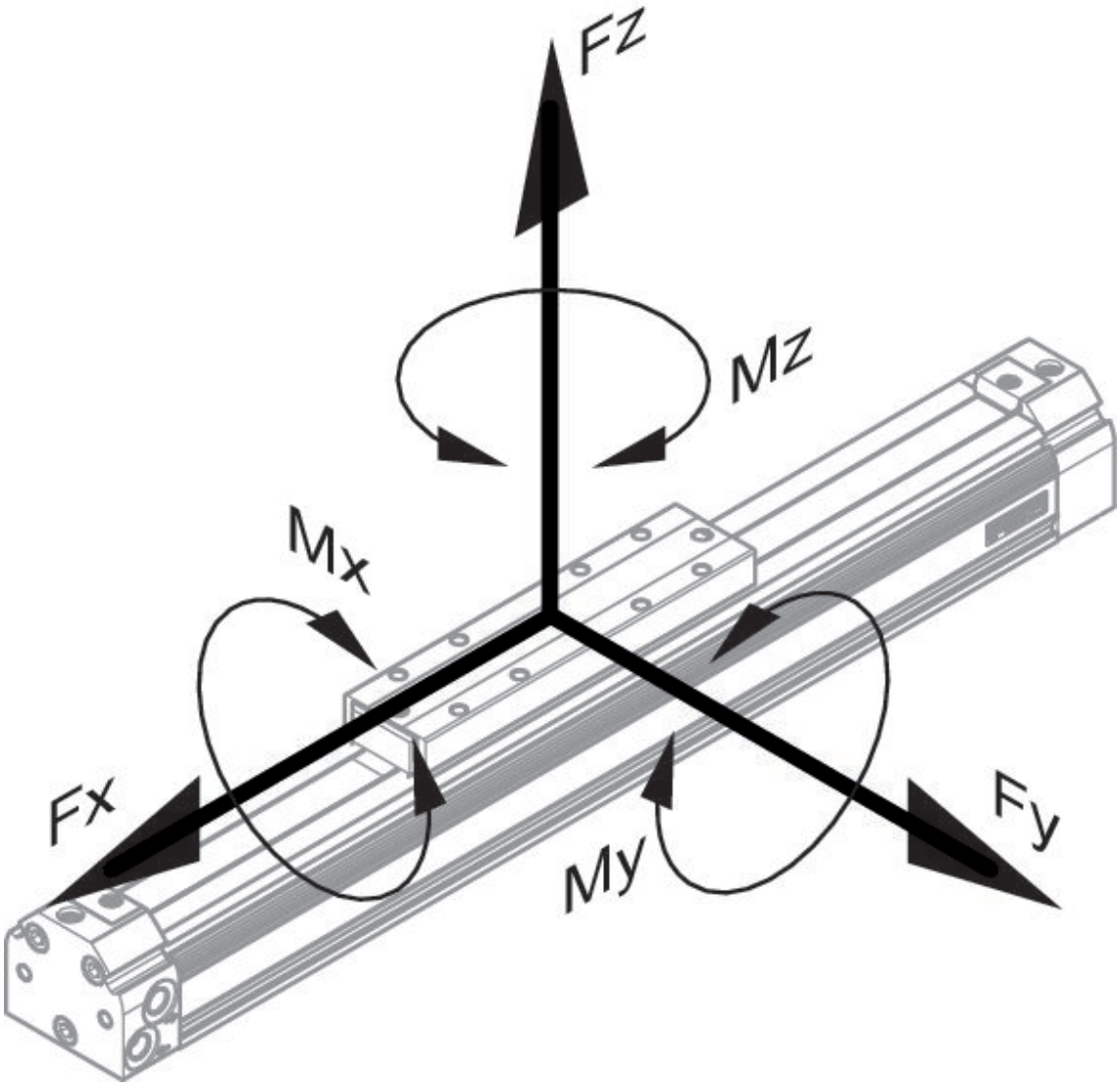
$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible parallelism offset



Permissible forces Fx, Fy, Fz and torques Mx, My, Mz




## static, for long slide

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 32 | 2200 | 550 | 6600 | 36 | 160 | 86 |
| 40 | 3500 | 650 | 8000 | 56 | 280 | 110 |
| 50 | 5000 | 750 | 9000 | 70 | 460 | 140 |
| 63 | 6800 | 850 | 13000 | 90 | 680 | 180 |
| 80 | 9500 | 1000 | 13000 | 110 | 1000 | 220 |

## dynamic, for long slide

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 32 | 4 | 84 | 24 |
| 40 | 6 | 150 | 30 |
| 50 | 9 | 256 | 40 |
| 63 | 15 | 390 | 48 |
| 80 | 20 | 600 | 56 |

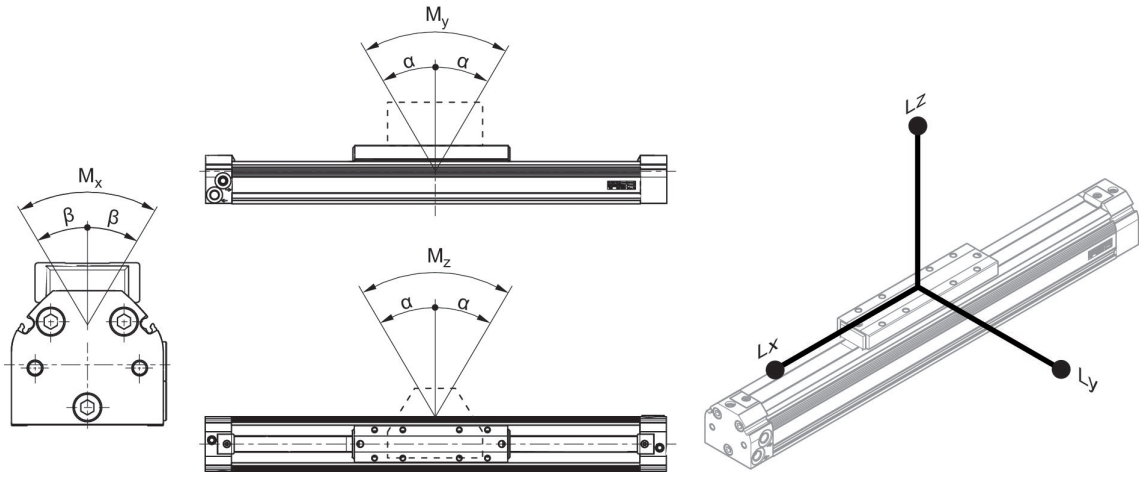
## static

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 32 | 2200 | 550 | 6600 | 18 | 80 | 43 |
| 40 | 3500 | 650 | 8000 | 28 | 140 | 55 |
| 50 | 5000 | 750 | 9000 | 35 | 230 | 70 |
| 63 | 6800 | 850 | 13000 | 45 | 340 | 90 |
| 80 | 9500 | 1000 | 13000 | 55 | 500 | 110 |

## dynamic

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 32 | 4 | 42 | 12 |
| 40 | 6 | 75 | 15 |
| 50 | 9 | 128 | 20 |
| 63 | 15 | 195 | 24 |
| 80 | 20 | 300 | 28 |

Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

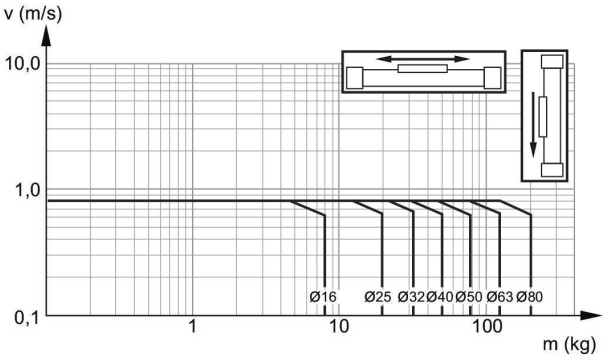
## For long slide

| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 32 | 0,3° | 1,5° ±0,5° | 480 | 278 | 480 |
| 40 | 0,2° | 1,0° ±0,3° | 550 | 316 | 550 |
| 50 | 0,2° | 1,0° ±0,3° | 634 | 362 | 634 |
| 63 | 0,15° | 1,0° ±0,3° | 736 | 418 | 736 |
| 80 | 0,15° | 1,0° ±0,3° | 870 | 490 | 870 |

## Max. play and recommended max. lever arm length

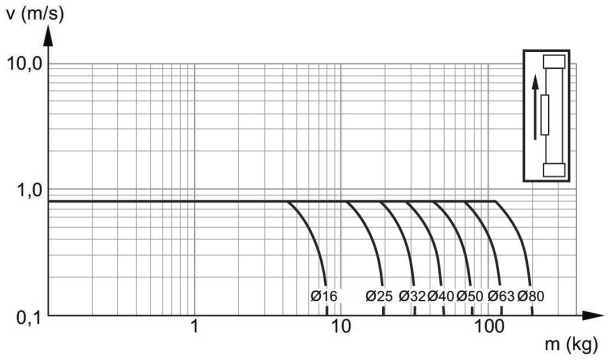
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 32 | 0,6° | 1,5° ±0,5° | 240 | 139 | 240 |
| 40 | 0,4° | 1,0° ±0,3° | 275 | 158 | 275 |
| 50 | 0,4° | 1,0° ±0,3° | 317 | 181 | 317 |
| 63 | 0,3° | 1,0° ±0,3° | 368 | 209 | 368 |
| 80 | 0,3° | 1,0° ±0,3° | 435 | 245 | 435 |

## Limit diagram for pneumatic cushioning with horizontal mounting



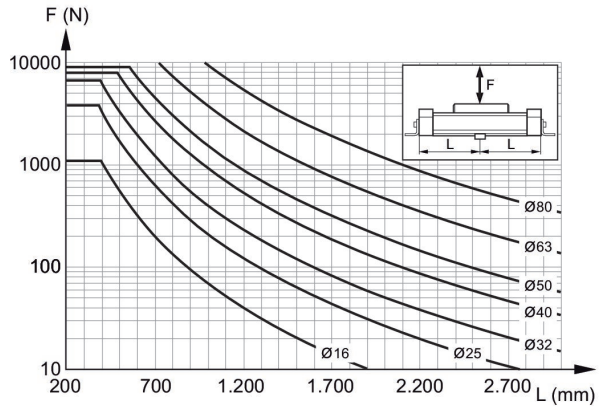

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

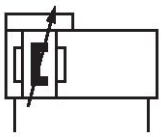
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-SB

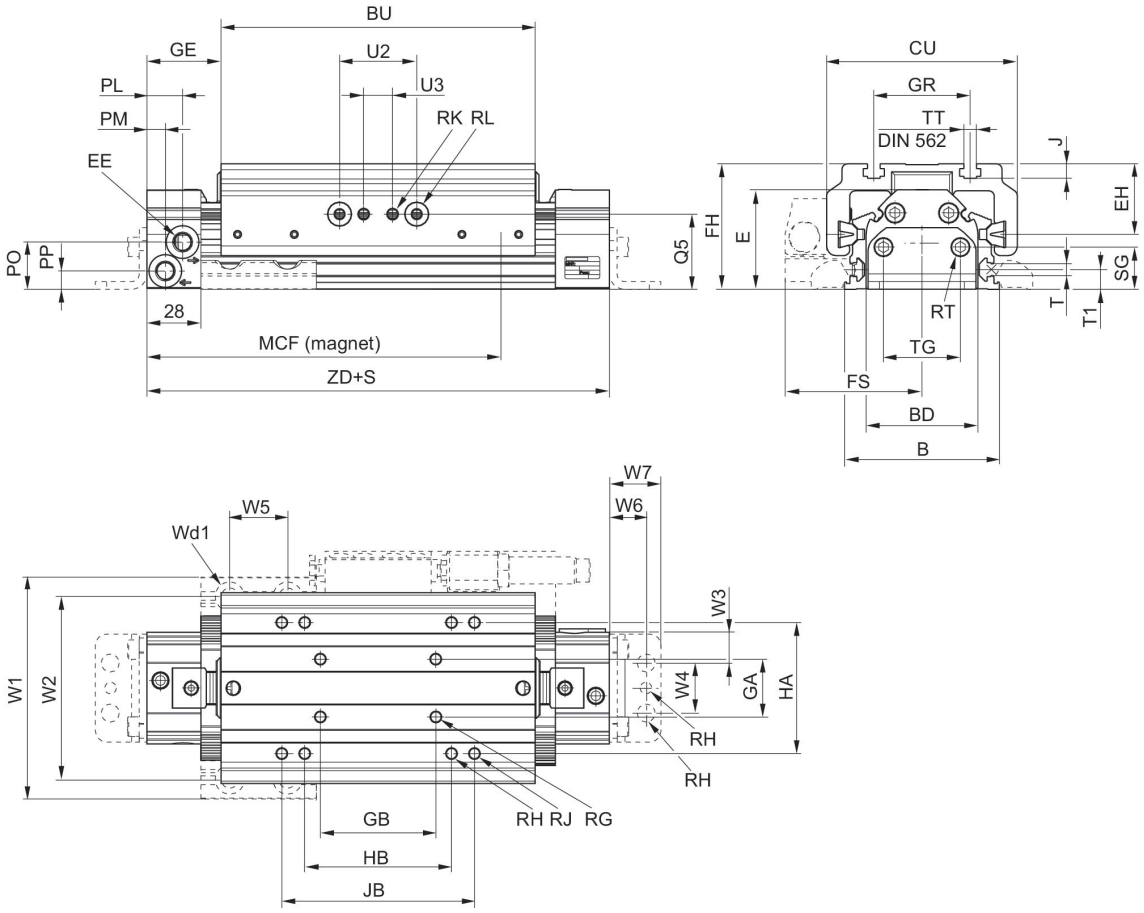
Guide: Slide bearing guide
Cushioning: Pneumatically
Version rodless cylinder: rail guide
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 25 mm | 32 mm | 40 mm | 50 mm |
|---|---|---|---|---|
| Ports | G 1/8 | G 1/8 | G 1/4 | G 1/4 |
| Stroke 100 | R480470710 | R480677234 | R480470700 | R480695199 |
| 200 | R480470711 | R480470720 | R480470701 | R480695200 |
| 300 | R480470712 | R480470721 | R480470702 | R480695201 |
| 400 | R480470713 | R480470722 | R480470703 | R480695202 |
| 500 | R480470714 | R480470723 | R480470704 | R480695203 |
| 600 | R480470715 | R480470724 | R480470705 | R480695204 |
| 700 | R480470716 | R480470725 | R480470706 | R480695205 |
| 800 | R480470717 | R480470726 | R480470707 | R480695206 |
| 900 | R480470718 | R480470727 | R480470708 | R480695207 |
| 1000 | R480470719 | R480470728 | R480470709 | R480695208 |

| Piston Ø | 25 mm | 32 mm | 40 mm | 50 mm |
|---|---|---|---|---|
| Retracting piston force | 309 N | 507 N | 792 N | 1237 N |
| Extracting piston force | 309 N | 507 N | 792 N | 1237 N |
| Cushioning energy | 4 J | 7 J | 10 J | 15 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.033 kg | 0.04 kg | 0.049 kg | 0.078 kg |
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 1.34 kg | 2.1 kg | 2.85 kg | 4.5 kg |

Dimensions in mm




S = stroke

## For long slide

| Piston Ø | BU | HB | JB | MCF | ZD |
|---|---|---|---|---|---|
| 25 | 294 | 101.6 | 160 | 312 | 362 |
| 32 | 326 | 101.6 | 200 | 345 | 403 |
| 40 | 364 | 127 | 240 | 388 | 445 |
| 50 | 410 | 152.4 | 240 | 434 | 499 |

## Dimensions

| Piston Ø | B | BU | BD | CU | EE | EH | FH | FS | GA |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 67,3 | 147 | 44 | 81 | G 1/8 | 28 | 55.1 | 62 | 18 |
| 32 | 80,3 | 163 | 58 | 99 | G 1/8 | 36,6 | 65.1 | 71 | 30 |
| 40 | 89,3 | 182 | 70 | 108 | G 1/4 | 41 | 71 | 75.5 | 30 |
| 50 | 117,5 | 205 | 92 | 134 | G 1/4 | 37,6 | 78,2 | 97.5 | 40 |

| Piston Ø | GB | GE | GR | HA | HB | J | JB | MCF | PL |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 60 | 34 | 40 | 54.4 | 63.5 | 5.9 | 80 | 165 | 20 |
| 32 | 60 | 38.5 | 50 | 68 | 76.2 | 7.5 | 100 | 182 | 18.5 |
| 40 | 60 | 40.5 | 50 | 80 | 101.6 | 7.5 | 120 | 205 | 18 |
| 50 | 60 | 44.6 | 70 | 100 | 127 | 9.8 | 160 | 230 | 16 |

| Piston Ø | PM | PO | PP | Q5 | RG | RH | RJ | RK | RL |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 8 | 21.5 | 9.3 | 38.8 | M4 | 1/4-28 UNF | M6 | M6 | Ø12.01 H7 |
| 32 | 9.5 | 24.5 | 9.5 | 39 | M6 | 1/4-28 UNF | M6 | M6 | Ø12.01 H7 |
| 40 | 10 | 31.5 | 11 | 44.6 | M6 | 1/4-28 UNF | M6 | M6 | Ø12.01 H7 |
| 50 | 16 | 35,3 | 12,3 | 68.6 | M8 | 1/4-28 UNF | M8 | M8 | Ø12.01 H7 |

| Piston Ø | RT 1) | SG | T | TT | T1 | TG | U2 | U3 | W1 |
|---|---|---|---|---|---|---|---|---|---|
| 25 | M5 | 17.3 | N6 | M4 | 10.1 | 19 | 40 | 15 | 96 |
| 32 | M6 | 22 | N6 | M6 | 10.1 | 40 | 40 | 15 | 115 |
| 40 | M6 | 22 | N6 | M6 | 11.2 | 40 | 40 | 15 | 124 |
| 50 | M8 | 22 | M8 | M8 | 14.1 | 40 | 72 | 40 | 165 |

| Piston Ø | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 | Wd3 |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 79 | 7 | 18 | 30 | 13.5 | 19.8 | Ø6.8 | Ø6.8 | Ø4G8 |
| 32 | 95 | 15 | 26 | 30 | 19 | 26.8 | Ø8.8 | Ø9.2 | Ø6G8 |
| 40 | 104 | 15 | 26 | 30 | 19 | 26.8 | Ø8.8 | Ø9.2 | Ø6G8 |
| 50 | 140 | 11 | 70 | 40 | 22 | 32.7 | Ø13 | Ø13.7 | Ø6G8 |

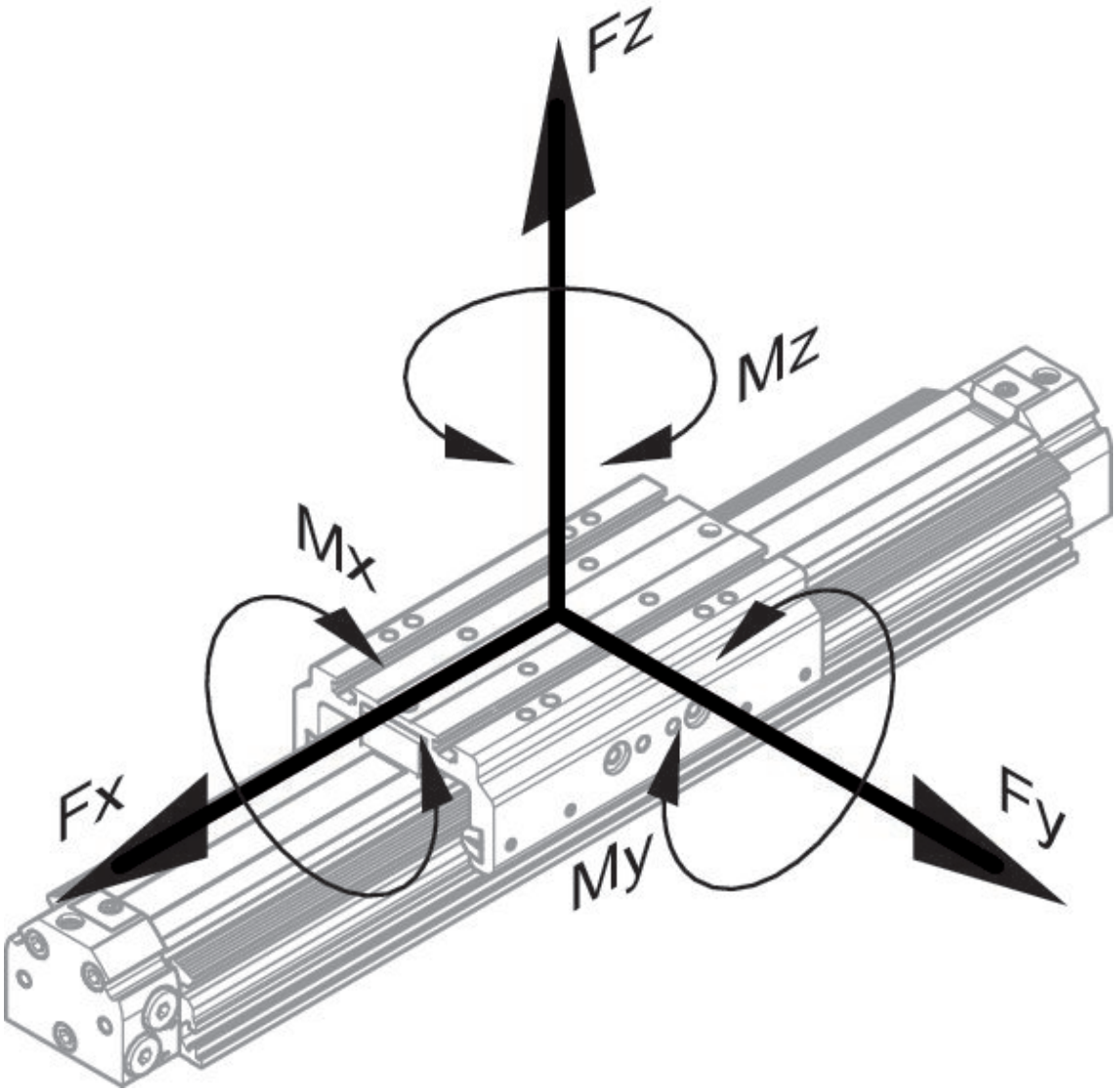
| Piston Ø | ZD |
|---|---|
| 25 | 215 |
| 32 | 240 |
| 40 | 263 |
| 50 | 294 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz




## static, for long slide

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 25 | 1800 | 1200 | 3200 | 42 | 160 | 160 |
| 32 | 2200 | 1400 | 3800 | 96 | 310 | 310 |
| 40 | 2700 | 1400 | 3800 | 109 | 362 | 362 |
| 50 | 3400 | 2000 | 4500 | 140 | 500 | 500 |

## dynamic, for long slide

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 25 | 1,4 | 60 | 60 |
| 32 | 6 | 90 | 90 |
| 40 | 8 | 100 | 100 |
| 50 | 12 | 160 | 160 |

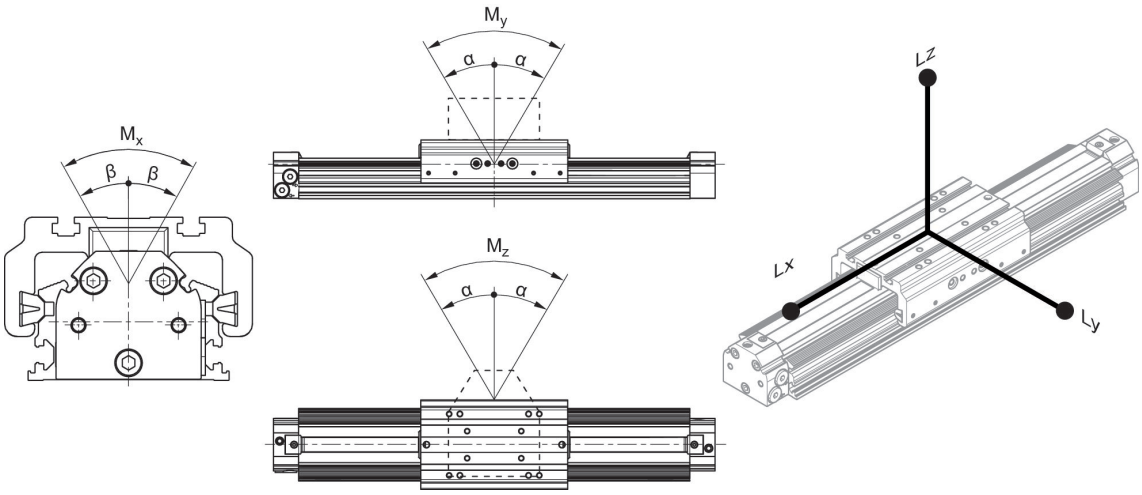
## static

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 25 | 1800 | 700 | 2300 | 32 | 50 | 50 |
| 32 | 2200 | 1000 | 2600 | 73 | 91 | 91 |
| 40 | 2700 | 1000 | 2600 | 83 | 111 | 111 |
| 50 | 3400 | 1500 | 2900 | 140 | 270 | 140 |

## dynamic

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 25 | 1.4 | 30 | 30 |
| 32 | 6 | 45 | 45 |
| 40 | 8 | 50 | 50 |
| 50 | 12 | 80 | 80 |

Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

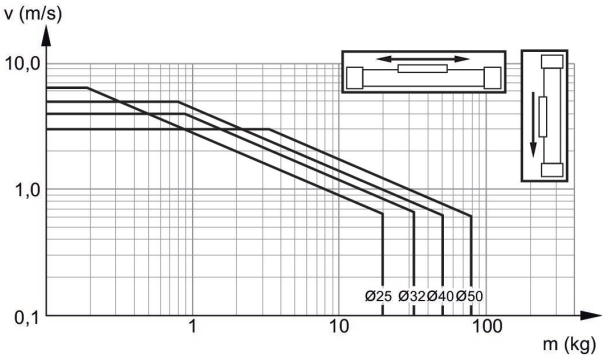
## For long slide

| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 25 | ≤ 0,2° | ≤ 0,3° | 550 | 110 | 550 |
| 32 | ≤ 0,1° | ≤ 0,3° | 610 | 320 | 610 |
| 40 | ≤ 0,1° | ≤ 0,3° | 610 | 320 | 610 |
| 50 | ≤ 0,1° | ≤ 0,3° | 760 | 400 | 760 |

## Max. play and recommended max. lever arm length

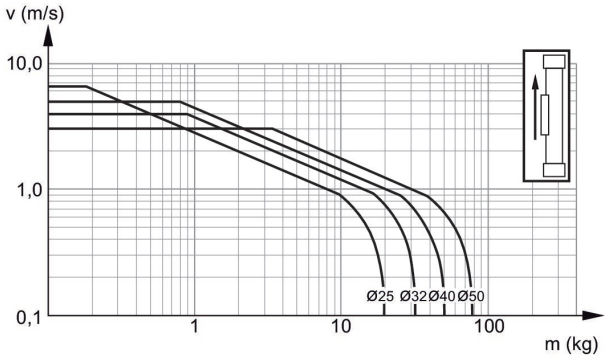
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 25 | ≤ 0,2° | ≤ 0,3° | 200 | 110 | 200 |
| 32 | ≤ 0,2° | ≤ 0,3° | 240 | 120 | 240 |
| 40 | ≤ 0,2° | ≤ 0,3° | 240 | 120 | 240 |
| 50 | ≤ 0,2° | ≤ 0,3° | 300 | 150 | 300 |

## Limit diagram for pneumatic cushioning with horizontal mounting



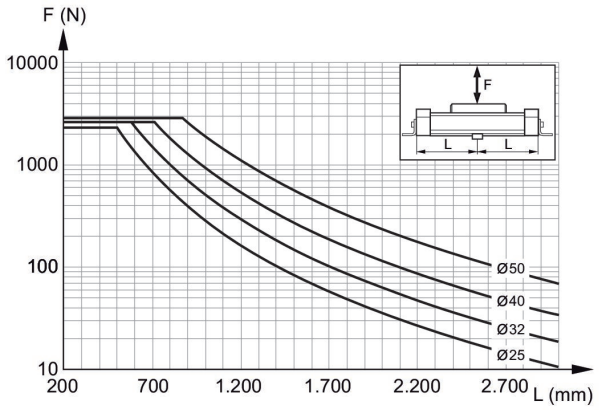

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

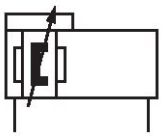
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-SB

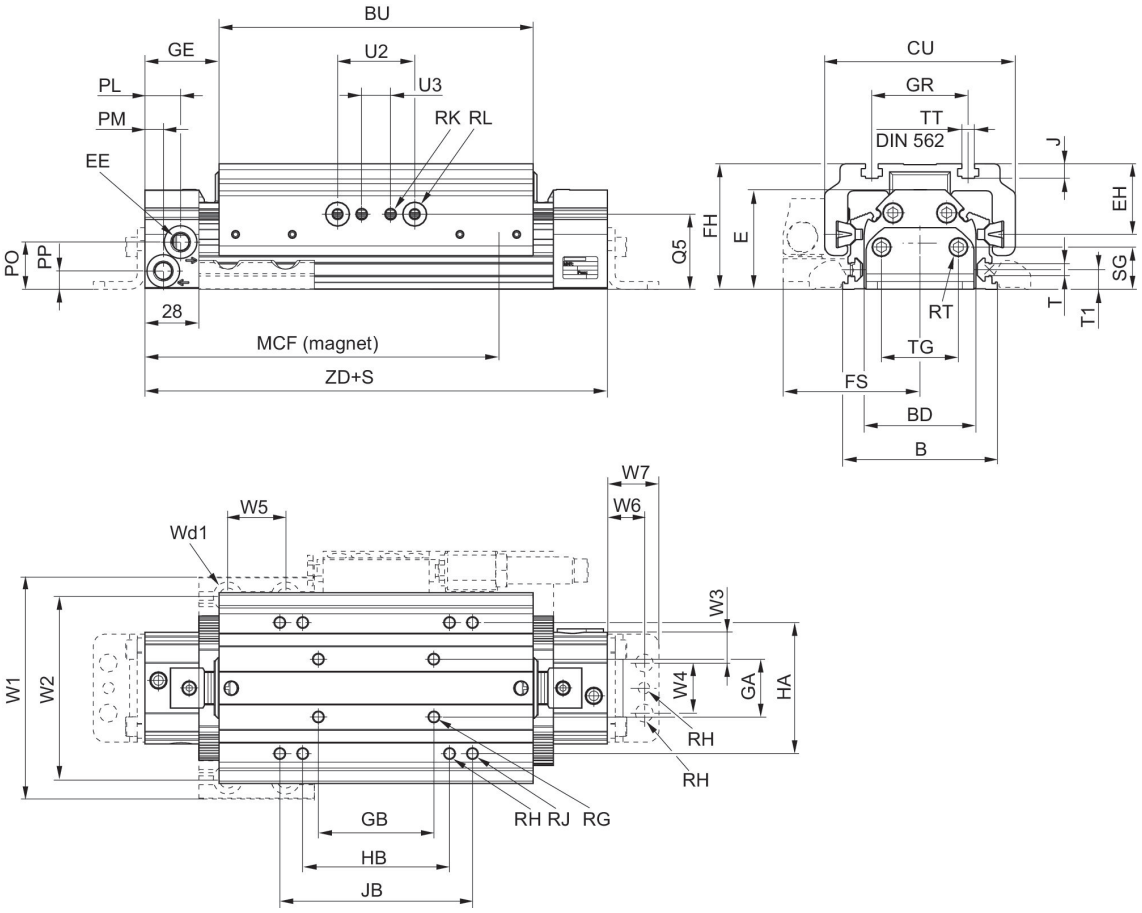
Guide: Slide bearing guide
Cushioning: Pneumatically
Functional principle: Double-acting
: with magnetic piston
Temperature resistance: -25 °C cold-resistant
Ambient temperature min./max.: -25 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 32 mm | 40 mm | 50 mm |
|---|---|---|---|
| Ports | G 1/8 | G 1/4 | G 1/4 |
| Stroke 100 | R481608221 | R481608231 | R481608241 |
| 200 | R481608222 | R481608232 | R481608242 |
| 300 | R481608223 | R481608233 | R481608243 |
| 400 | R481608224 | R481608234 | R481608244 |
| 500 | R481608225 | R481608235 | R481608245 |
| 600 | R481608226 | R481608236 | R481608246 |
| 700 | R481608227 | R481608237 | R481608247 |
| 800 | R481608228 | R481608238 | R481608248 |
| 900 | R481608229 | R481608239 | R481608249 |
| 1000 | R481608230 | R481608240 | R481608250 |

| Piston Ø | 32 mm | 40 mm | 50 mm |
|---|---|---|---|
| Retracting piston force | 507 N | 792 N | 1237 N |
| Extracting piston force | 507 N | 792 N | 1237 N |
| Cushioning energy | 7 J | 10 J | 15 J |
| Cushioning length | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.049 kg | 0.049 kg | 0.078 kg |
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 2.85 kg | 2.85 kg | 4.5 kg |

Dimensions in mm




S = stroke

## Dimensions

| Piston Ø | B | BU | BD | CU | EE | EH | FH | FS | GA |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 80,3 | 163 | 58 | 99 | G 1/8 | 36,6 | 65.1 | 71 | 30 |
| 40 | 89,3 | 182 | 70 | 108 | G 1/4 | 41 | 71 | 75.5 | 30 |
| 50 | 117,5 | 205 | 92 | 134 | G 1/4 | 37,6 | 78,2 | 97.5 | 40 |

| Piston Ø | GB | GE | GR | HA | HB | J | JB | MCF | PL |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 60 | 38.5 | 50 | 68 | 76.2 | 7.5 | 100 | 182 | 18.5 |
| 40 | 60 | 40.5 | 50 | 80 | 101.6 | 7.5 | 120 | 205 | 18 |
| 50 | 60 | 44.6 | 70 | 100 | 127 | 9.8 | 160 | 230 | 16 |

| Piston Ø | PM | PO | PP | Q5 | RG | RH | RJ | RK | RL |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 9.5 | 24.5 | 9.5 | 39 | M6 | 1/4-28 UNF | M6 | M6 | Ø12.01 H7 |
| 40 | 10 | 31.5 | 11 | 44.6 | M6 | 1/4-28 UNF | M6 | M6 | Ø12.01 H7 |
| 50 | 16 | 35,3 | 12,3 | 68.6 | M8 | 1/4-28 UNF | M8 | M8 | Ø12.01 H7 |

| Piston Ø | RT 1) | SG | T | TT | T1 | TG | U2 | U3 | W1 |
|---|---|---|---|---|---|---|---|---|---|
| 32 | M6 | 22 | N6 | M6 | 10.1 | 40 | 40 | 15 | 115 |
| 40 | M6 | 22 | N6 | M6 | 11.2 | 40 | 40 | 15 | 124 |
| 50 | M8 | 22 | M8 | M8 | 14.1 | 40 | 72 | 40 | 165 |

| Piston Ø | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 | Wd3 |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 95 | 15 | 26 | 30 | 19 | 26.8 | Ø8.8 | Ø9.2 | Ø6G8 |
| 40 | 104 | 15 | 26 | 30 | 19 | 26.8 | Ø8.8 | Ø9.2 | Ø6G8 |
| 50 | 140 | 11 | 70 | 40 | 22 | 32.7 | Ø13 | Ø13.7 | Ø6G8 |

| Piston Ø | ZD |
|---|---|
| 32 | 240 |
| 40 | 263 |
| 50 | 294 |

1) thread depth: 6 mm

## For long slide

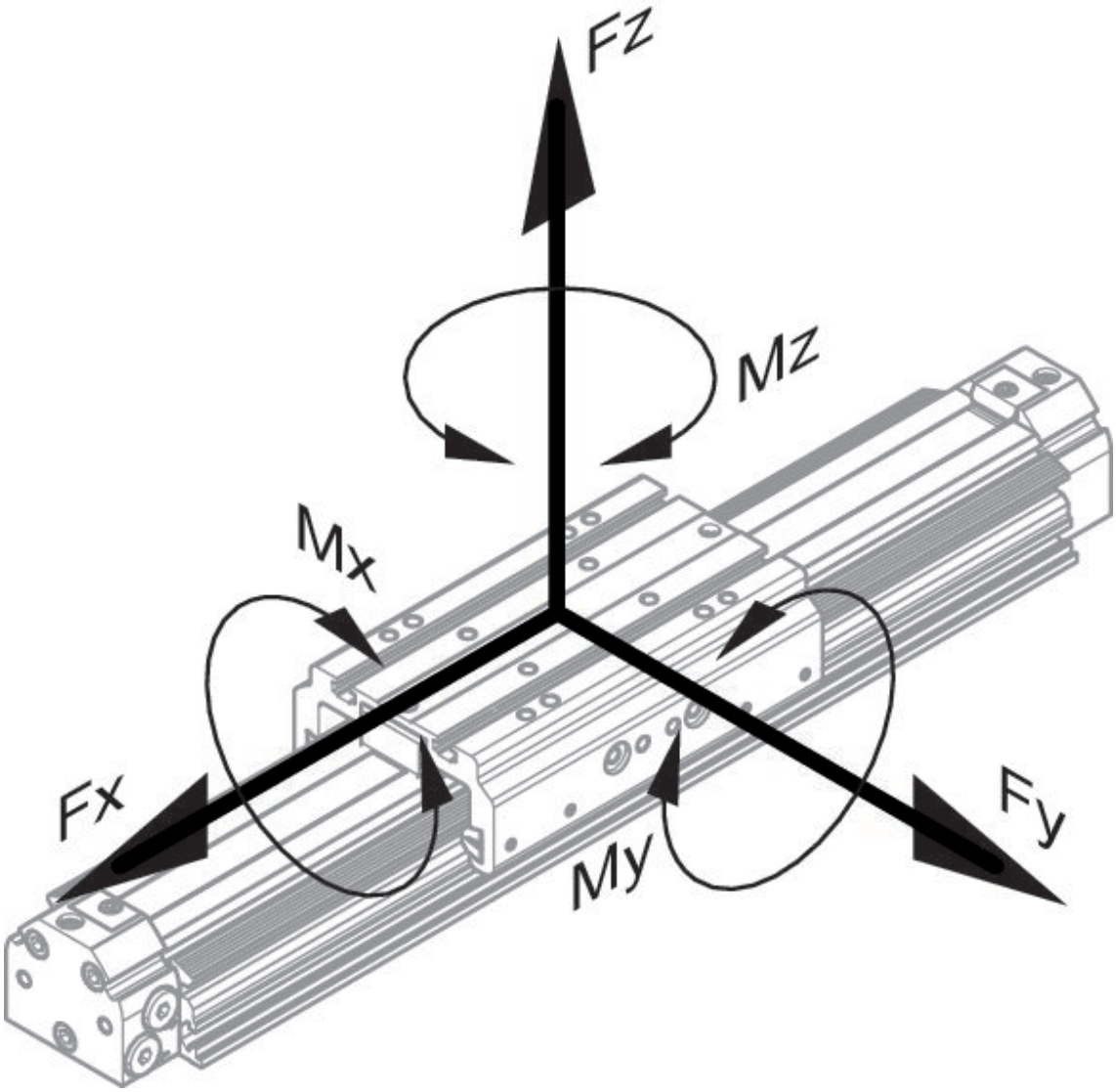
| Piston Ø | BU | HB | JB | MCF | ZD |
|---|---|---|---|---|---|
| 32 | 326 | 101.6 | 200 | 345 | 403 |
| 40 | 364 | 127 | 240 | 388 | 445 |
| 50 | 410 | 152.4 | 240 | 434 | 499 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz




## For long slide

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 32 | 6 | 90 | 90 |
| 40 | 8 | 100 | 100 |
| 50 | 12 | 160 | 160 |

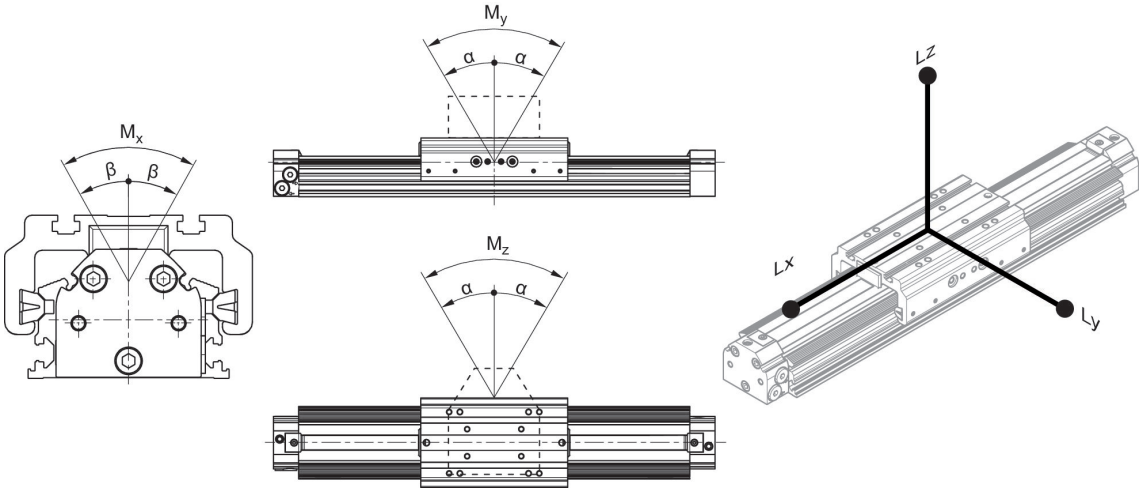
## static

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 32 | 2200 | 1000 | 2600 | 73 | 91 | 91 |
| 40 | 2700 | 1000 | 2600 | 83 | 111 | 111 |
| 50 | 3400 | 1500 | 2900 | 140 | 270 | 140 |

## dynamic

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 32 | 6 | 45 | 45 |
| 40 | 8 | 50 | 50 |
| 50 | 12 | 80 | 80 |

Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

## For long slide

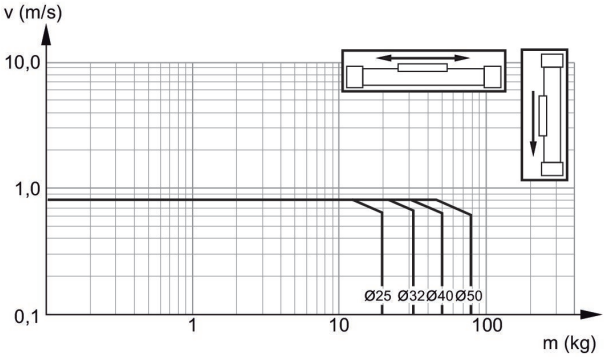
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 32 | ≤ 0,1° | ≤ 0,3° | 610 | 320 | 610 |
| 40 | ≤ 0,1° | ≤ 0,3° | 610 | 320 | 610 |
| 50 | ≤ 0,1° | ≤ 0,3° | 760 | 400 | 760 |

| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 32 | ≤ 0,2° | ≤ 0,3° | 240 | 120 | 240 |
| 40 | ≤ 0,2° | ≤ 0,3° | 240 | 120 | 240 |
| 50 | ≤ 0,2° | ≤ 0,3° | 300 | 150 | 300 |

## static, for long slide

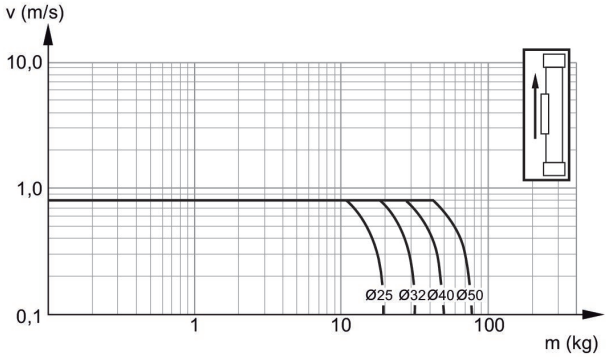
| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 32 | 2200 | 550 | 6600 | 36 | 160 | 86 |
| 40 | 3500 | 650 | 8000 | 56 | 280 | 110 |
| 50 | 5000 | 750 | 9000 | 70 | 460 | 140 |
| 63 | 6800 | 850 | 13000 | 90 | 680 | 180 |
| 80 | 9500 | 1000 | 13000 | 110 | 1000 | 220 |

### Limit diagram for pneumatic cushioning with horizontal mounting



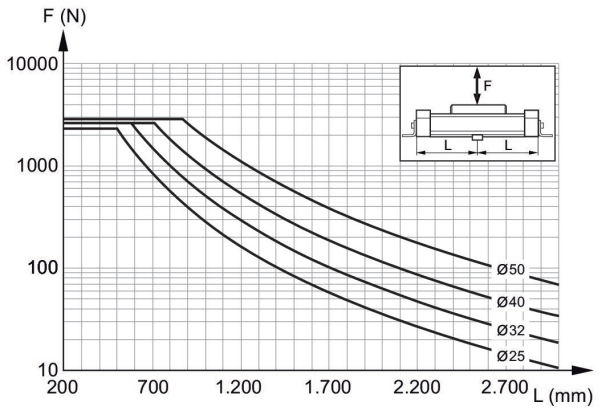

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

### Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

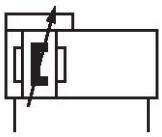
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-CG

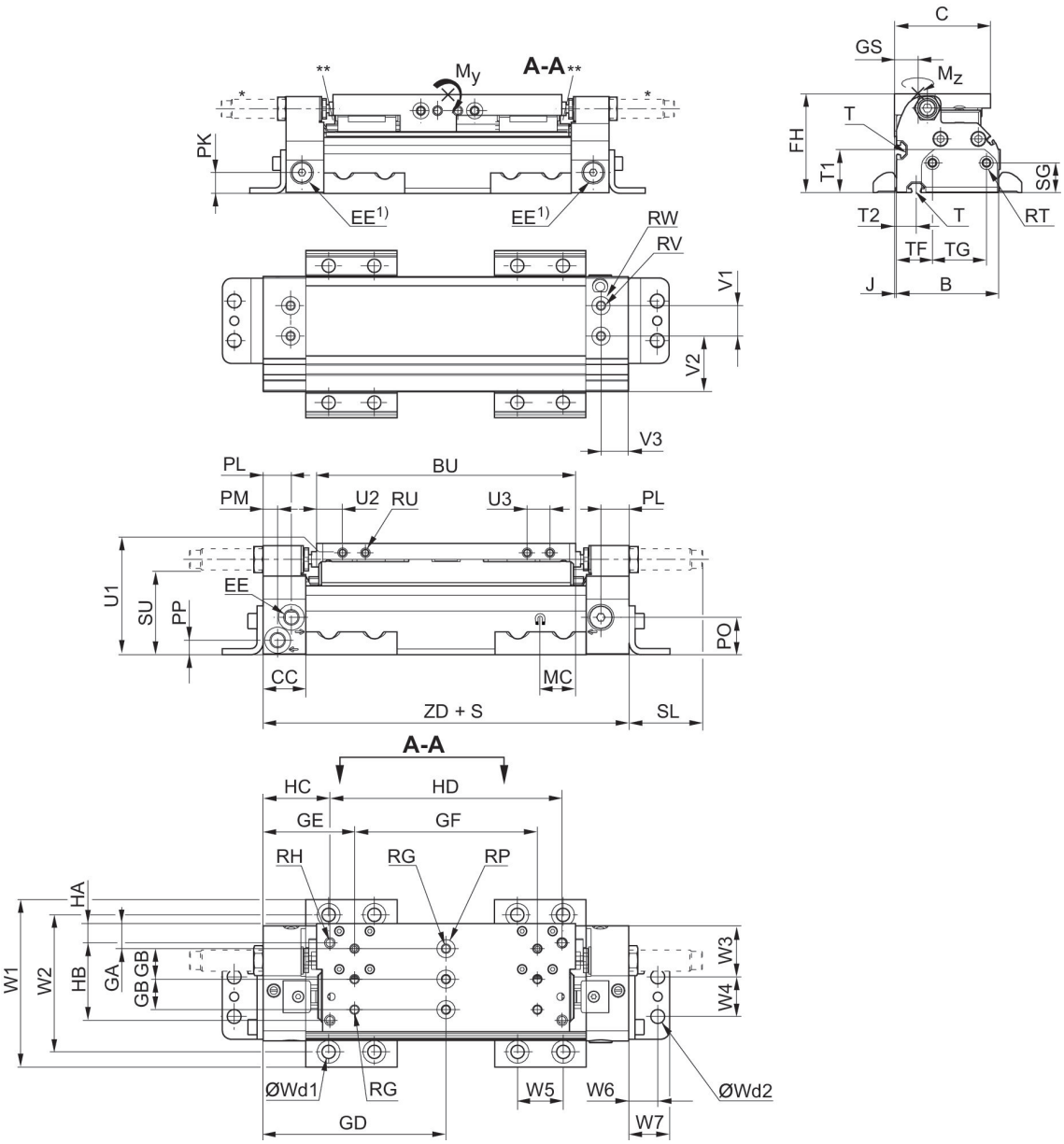
Guide: ball rail guide
Cushioning: Pneumatically
Version rodless cylinder: Compact Guide
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm |
|---|---|---|---|---|
| Ports | M7 | G 1/8 | G 1/8 | G 1/4 |
| Stroke 200 | R480148169 | R480146993 | R480154848 | R480156966 |
| 300 | R480148470 | R480146765 | R480154708 | R480150407 |
| 400 | R480153838 | R480147184 | R480148680 | R480153577 |
| 500 | R480147715 | R480146182 | R480146674 | R480146348 |
| 600 | R480146105 | R480147519 | R480146692 | R480149794 |
| 700 | R480156308 | R480146193 | R480146396 | R480156967 |
| 800 | - | R480148254 | R480153429 | R480146347 |
| 900 | - | - | R480156962 | R480156968 |
| 1000 | - | - | R480153428 | R480147888 |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm |
|---|---|---|---|---|
| Retracting piston force | 127 N | 309 N | 507 N | 792 N |
| Extracting piston force | 127 N | 309 N | 507 N | 792 N |
| Cushioning energy | 1.5 J | 4 J | 7 J | 10 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.026 kg | 0.041 kg | 0.056 kg | 0.075 kg |
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 0.94 kg | 1.64 kg | 2.43 kg | 3.92 kg |

Dimensions




S = stroke
T = Type of t-groove nut
1) Auxiliary air feeding
An example configuration is illustrated. The delivered product may thus deviate from the illustration.
* Shock absorber optional in end cover for diameters 16-40
** RTC-CG 16 & 25: 2x Lube ports on each runner block, RTC-CG 32 & 40: Lube nipple of funnel type with thread connection M3

| Piston Ø | Part No. | B | C | BU | CC | EE | FH | GA | GB |
|---|---|---|---|---|---|---|---|---|---|
| 16 | R480148169 | 50 | 51 | 122 | 28 | 3xM7 | 54 | 7 | 20 |
| 25 | R480146993 | 62.5 | 58.1 | 147 | 28 | 3xG 1/8 | 65 | 6 | 20 |
| 32 | R480154848 | 75.5 | 71 | 170 | 28 | 3xG 1/8 | 73 | 16.5 | 20 |
| 40 | R480156966 | 85.5 | 74 | 186 | 28 | 3xG 1/4 | 94.4 | 16.5 | 20 |

| Piston Ø | GD | GE | GF | GS | HA | HB | HC | HD | J |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 93.5 | 38.5 | 110 | 11.5 | 7.6 | 38.1 | 68.1 | 50.8 | 2 |
| 25 | 107.5 | 53.5 | 108 | 15 | 5.1 | 45.7 | 38.9 | 137.2 | 1.5 |
| 32 | 120 | 60 | 120 | 17.5 | 12.7 | 50.8 | 43.8 | 152.4 | 1.5 |
| 40 | 131.6 | 71.6 | 120 | 18.5 | 12.7 | 50.8 | 55.4 | 152.4 | 1.5 |

| Piston Ø | MC | PK | PL | PM | PN | PO | PP | RG 1) | RH 2) |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 12 | 11.9 | 18 | 7 | 7 | 13.3 | 7.3 | M5 | UNC 1/4-20 |
| 25 | 15 | 10.1 | 20 | 8 | 9 | 21.5 | 9.3 | M5 | UNC 1/4-20 |
| 32 | 20 | 15 | 18.5 | 9.5 | 12 | 24.5 | 9.5 | M6 | UNC 1/4-20 |
| 40 | 17 | 18 | 18 | 10 | 11 | 31.5 | 10.5 | M6 | UNC 1/4-20 |

| Piston Ø | RP | RT 3) | RU 4) | RV | RW | SG | SL | SU | T |
|---|---|---|---|---|---|---|---|---|---|
| 16 | Ø 9 | M5 | M5 | M5x8 | Ø 9H8x1,6 | 17.3 | 33.2 | 38.6 | N4 |
| 25 | Ø 9 | M5 | M6 | M5x8 | Ø 9H8x1,6 | 17.3 | 49.3 | 47.1 | N6 |
| 32 | Ø 12 | M6 | M6 | M6x10 | Ø 12H8x2,1 | 22 | 48.3 | 55.5 | N6 |
| 40 | Ø 12 | M6 | M6 | M6x10 | Ø 12H8x2,1 | 22 | 45.1 | 73.4 | N6 |

| Piston Ø | V1 | V2 | V3 | W1 | W2 | W3 | W4 | W5 | W6 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 20 | 6 | 14 | 78.4 | 61.4 | 24 | 18 | 30 | 13.5 |
| 25 | 20 | 26.5 | 18 | 90.9 | 73.9 | 31.5 | 18 | 30 | 13.5 |
| 32 | 20 | 36.5 | 18 | 109.9 | 89.9 | 33.5 | 26 | 30 | 19 |
| 40 | 20 | 40.5 | 18 | 119.9 | 99.9 | 37.5 | 26 | 30 | 19 |

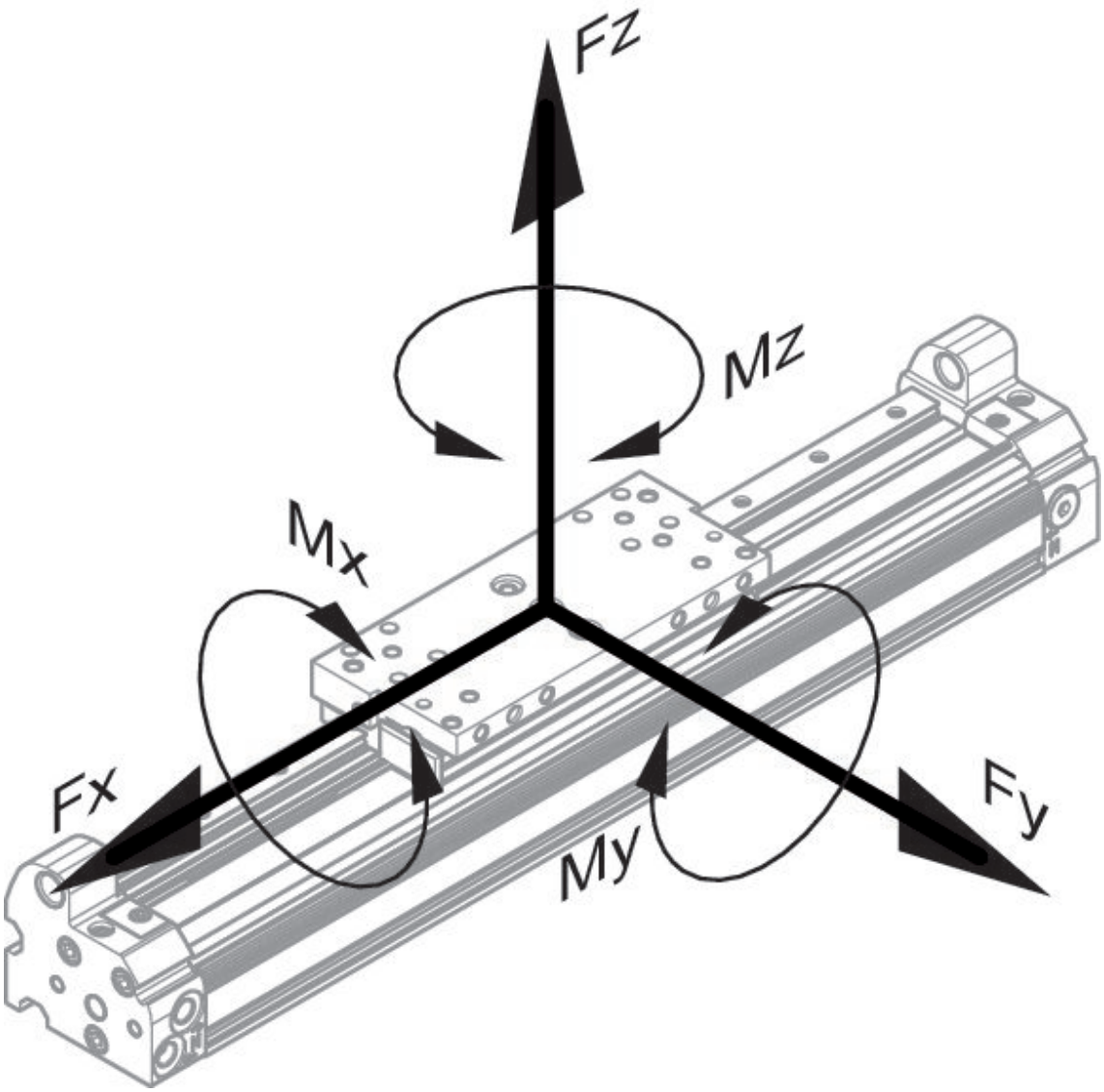
| Piston Ø | W7 | Wd1 | Wd2 | T1 | T2 | TF | TG | U1 | U2 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 19.8 | M6 | M6 | 18.5 | 10.5 | 25.5 | 19 | 48 | 13 |
| 25 | 19.8 | M6 | M6 | 26.6 | 13.5 | 31 | 19 | 59 | 12.5 |
| 32 | 26.8 | M8 | M8 | 31.5 | 14.5 | 26.5 | 40 | 67 | 17 |
| 40 | 26.8 | M8 | M8 | 41.4 | 13 | 30.5 | 40 | 79.4 | 25 |

| Piston Ø | U3 | ZD | Moving mass kg |
|---|---|---|---|
| 16 | 15 | 187 | 0.22 |
| 25 | 27 | 215 | 0.4 |
| 32 | 34 | 240 | 0.47 |
| 40 | 34 | 263.1 | 0.97 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.



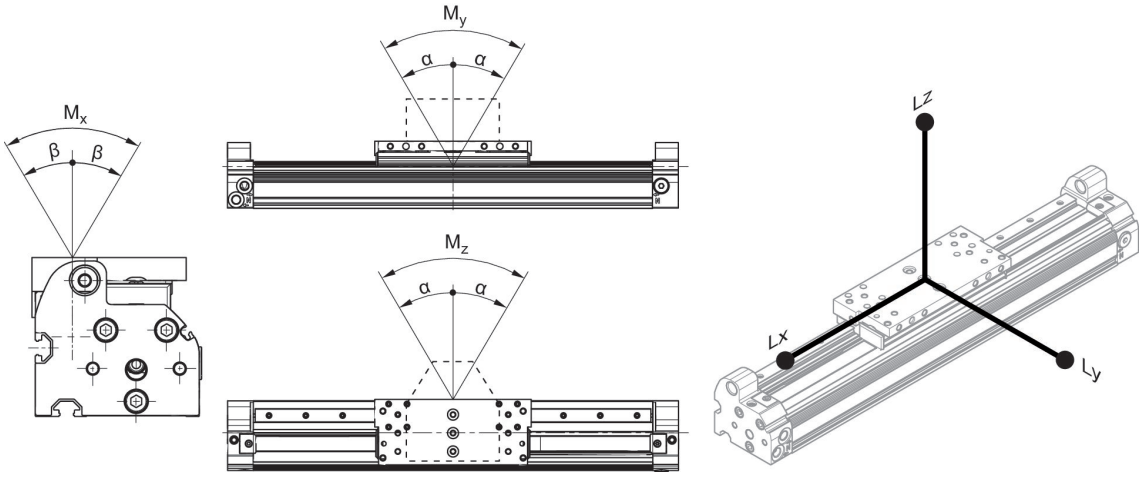

## static

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 16 | 744 | 744 | 744 | 4 | 30 | 30 |
| 25 | 1456 | 1456 | 1456 | 10 | 78 | 78 |
| 32 | 1840 | 1840 | 2646 | 22 | 158 | 110 |
| 40 | 1640 | 1640 | 4284 | 36 | 284 | 109 |

## dynamic

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 16 | 4 | 30 | 30 |
| 25 | 10 | 78 | 78 |
| 32 | 22 | 158 | 110 |
| 40 | 36 | 284 | 109 |

Max. play and recommended max. lever arm length

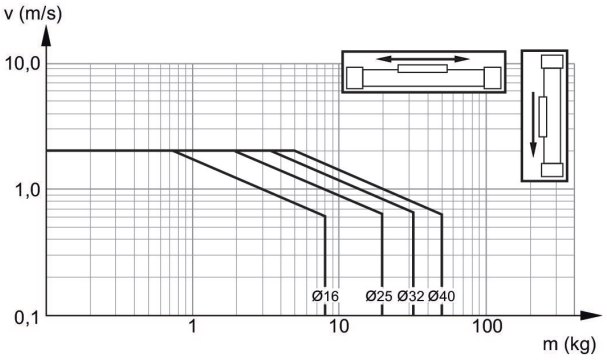



L = lever arm
M = moment (Nm)

## Max. play and recommended max. lever arm length

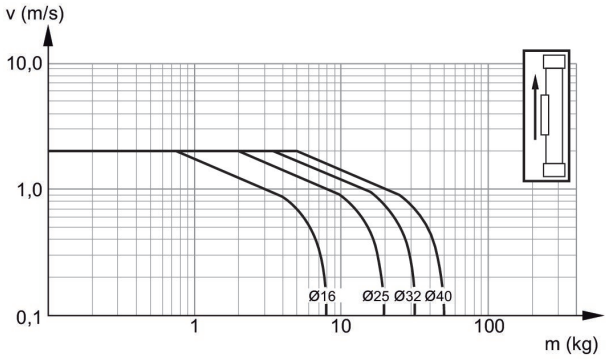
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 16 | <0,1° | <0,2° | 328 | 328 | 328 |
| 25 | <0,1° | <0,2° | 424 | 424 | 424 |
| 32 | <0,1° | <0,2° | 480 | 480 | 480 |
| 40 | <0,1° | <0,2° | 532 | 532 | 532 |

## Limit diagram for pneumatic cushioning with horizontal mounting



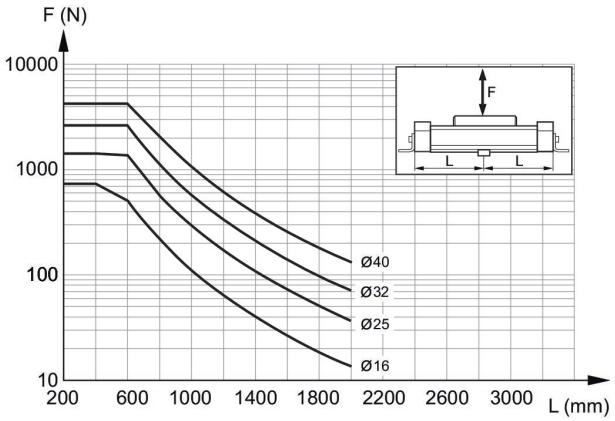

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

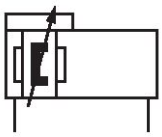
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-HD

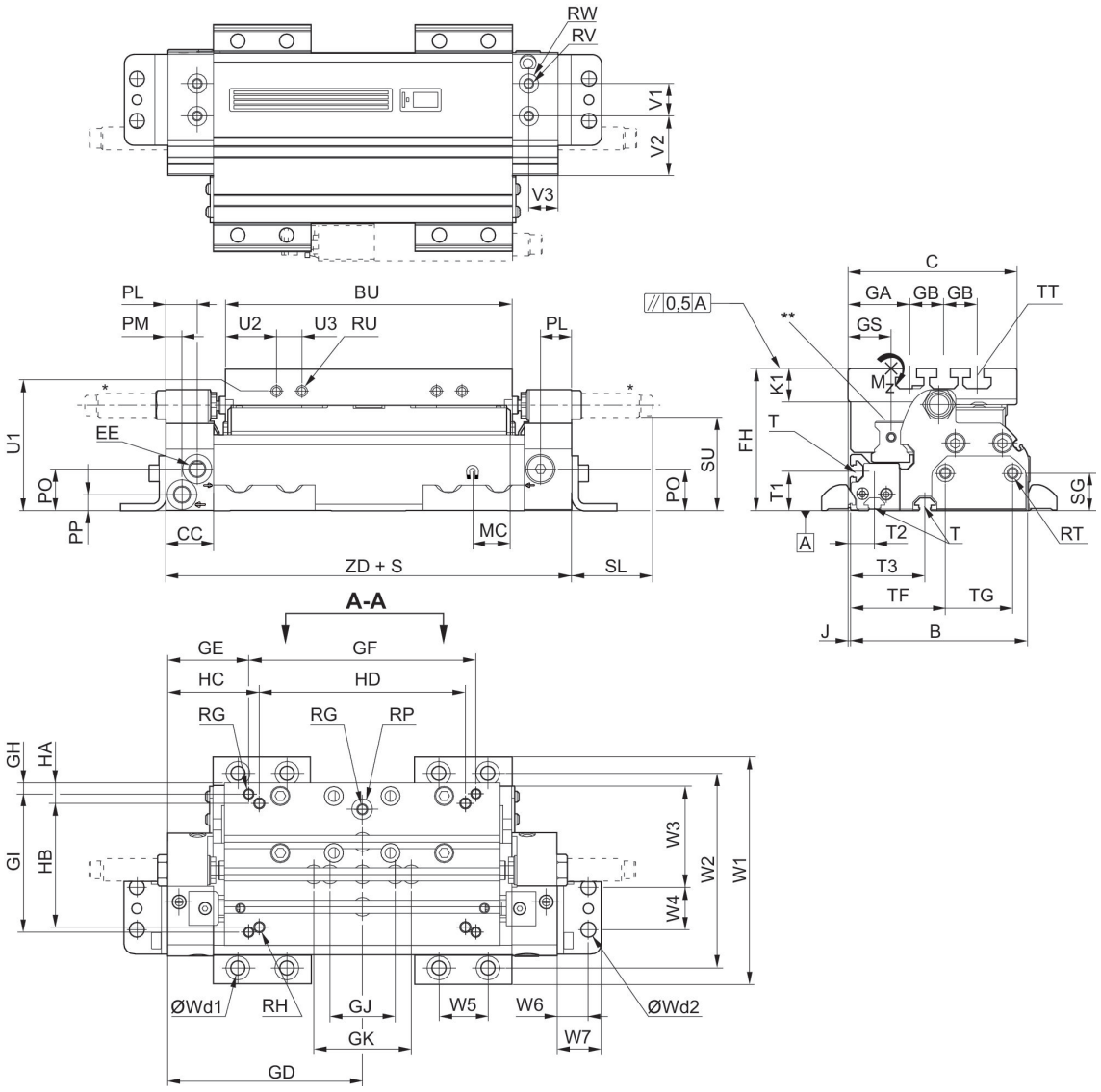
Guide: ball rail guide
Cushioning: Pneumatically
Version rodless cylinder: Heavy Duty
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 4 bar ... 8 bar



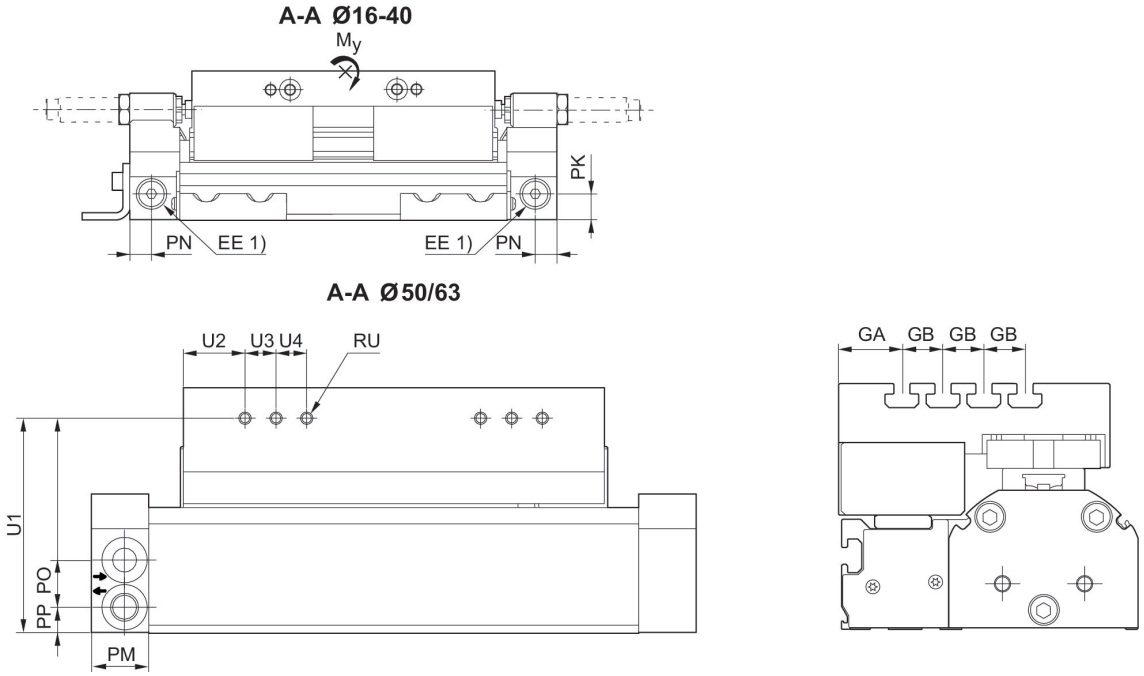
| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Ports | M7 | G 1/8 | G 1/8 | G 1/4 | G 1/4 | G 3/8 |
| Stroke 200 | R480156949 | R480149659 | R480154726 | R480155259 | - | - |
| 300 | R480156950 | R480149553 | R480148820 | R480154424 | - | - |
| 400 | R480156951 | R480150759 | R480148602 | R480154425 | R480155175 | R480156946 |
| 500 | R480147724 | R480147725 | R480147726 | R480147727 | R480147728 | R480147729 |
| 600 | R480156953 | R480153574 | R480148603 | R480148971 | R480146987 | R480156947 |
| 700 | R480156954 | R480156959 | R480154001 | R480149554 | R480156943 | R480149638 |
| 800 | - | R480155572 | R480150325 | R480156710 | R480149774 | R480154379 |
| 900 | - | - | R480156963 | R480156969 | R480156944 | R480149592 |
| 1000 | - | - | R480148582 | R480150515 | R480149030 | R480149031 |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Retracting piston force | 127 N | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Extracting piston force | 127 N | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Cushioning energy | 1.5 J | 4 J | 7 J | 10 J | 15 J | 25 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.047 kg | 0.071 kg | 0.086 kg | 0.128 kg | 0.162 kg | 0.193 kg |
| Working pressure min./max. | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar |
| Weight 0 mm stroke | 1.62 kg | 2.96 kg | 3.9 kg | 6.58 kg | 8.94 kg | 11.75 kg |

Ø 16 ... 63 mm




S = stroke
T = Type of t-groove nut
TT = Type of t-groove nut
* Shock absorber optional in end cover for diameters 16-40
** RTC-HD 16 & 25: funnel type lube nipple with thread M3, RTC-HD 32 - 63: lube nipple DIN 71412 with thread M6




1) Auxiliary air feeding
An example configuration is illustrated. The delivered product may thus deviate from the illustration.

| Piston Ø | B | C | BU | CC | EE | FH | GA | GB | GD |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 82 | 82 | 122 | 28 | M7 | 60 | 27 | 20 | 93.5 |
| 25 | 103 | 99.5 | 147 | 28 | G 1/8 | 70 | 26 | 20 | 107.5 |
| 32 | 105 | 100 | 170 | 28 | G 1/8 | 83.8 | 36.5 | 20 | 120 |
| 40 | 132 | 122 | 186 | 28 | G 1/4 | 97.7 | 36.5 | 20 | 131.5 |
| 50 | 144.5 | 132.5 | 205 | 28 | G 1/4 | 119.4 | 31 | 20 | 147.3 |
| 63 | 161 | 139 | 233 | 28 | G 3/8 | 129.4 | 31 | 20 | 166.5 |

| Piston Ø | GE | GF | GH | GI | GJ | GK | GS | HA | HB |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 43.5 | 100 | 5 | 20/20/20 | 40 | – | 32 | 7.6 | 69.9 |
| 25 | 52.5 | 110 | 16 | 20/40 | 40 | – | 37 | 6.4 | 83.8 |
| 32 | 50 | 140 | 6.7 | 85 | 40 | 60 | 25.5 | 12.7 | 76.2 |
| 40 | 46.5 | 170 | 12 | 100 | 40 | 60 | 31.5 | 12.7 | 101.6 |
| 50 | 52.3 | 190 | 10 | 100 | 40 | 60 | 31.5 | 15.2 | 99.06 |
| 63 | 71.5 | 190 | 10 | 100 | 40 | 60 | 31.5 | 15.2 | 101.6 |

| Piston Ø | HC | HD | J | K1 | MC | PK | PL | PM | PN |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 55.4 | 76.2 | 1.5 | 20.7 | 12 | 11.9 | 18 | 7 | 7 |
| 25 | 44 | 127 | 1.5 | 21.4 | 15 | 10.1 | 20 | 8 | 9 |
| 32 | 56.5 | 127 | 1.5 | 19.7 | 20 | 15 | 18.5 | 9.5 | 12 |
| 40 | 55.4 | 152.4 | 1.5 | 25.6 | 17 | 18 | 18 | 10 | 11 |
| 50 | 66 | 162.6 | 1.5 | 28.6 | 23 | N/A | 16 | 16 | N/A |
| 63 | 59.8 | 213.4 | 1.5 | 28.6 | 25 | N/A | 14 | 14 | N/A |

| Piston Ø | PO | PP | RG 1) | RH 2) | RP | RT 3) | RU 4) | RV | RW |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 13.3 | 7.3 | M5 | UNC 1/4-20 | Ø 9 | M5 | M5 | M5x8 | Ø 9H8x1,6 |
| 25 | 21.5 | 9.3 | M5 | UNC 1/4-20 | Ø 9 | M5 | M6 | M5x8 | Ø 9H8x1,6 |
| 32 | 24.5 | 9.5 | M6 | UNC 1/4-20 | Ø 12 | M6 | M6 | M6x10 | Ø 12H8x2,1 |
| 40 | 31.5 | 10.5 | M6 | UNC 1/4-20 | Ø 12 | M6 | M6 | M6x10 | Ø 12H8x2,1 |
| 50 | 35 | 12 | M8 | UNC 5/16-18 | Ø 12 | M8 | M5 | - | - |
| 63 | 45.5 | 14.5 | M8 | UNC 5/16-18 | Ø 12 | M8 | M5 | - | - |

| Piston Ø | SG | SL | SU | T | TT | V1 | V2 | V3 | W1 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 17.3 | 33.2 | 38.6 | N4 | N6 | 20 | 6 | 14 | 110.4 |
| 25 | 17.3 | 49.3 | 47.1 | N6 | N6 | 20 | 26.5 | 18 | 131.4 |
| 32 | 22 | 48.3 | 55.5 | N6 | N8 | 20 | 36.5 | 18 | 139.4 |
| 40 | 22 | 45.1 | 73.4 | N6 | N8 | 20 | 40.5 | 18 | 166.4 |
| 50 | 22 | N/A | N/A | N8 | N8 | - | - | - | 192.1 |
| 63 | 30 | N/A | N/A | N8 | N8 | - | - | - | 208.6 |

| Piston Ø | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 | T1 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 93.4 | 56 | 18 | 30 | 13.5 | 19.8 | M6 | M6 | 20.8 |
| 25 | 114.4 | 72 | 18 | 30 | 16.5 | 19.8 | M6 | M6 | 20 |
| 32 | 119.4 | 63 | 26 | 30 | 19 | 26.8 | M8 | M8 | 23 |
| 40 | 146.4 | 84 | 26 | 30 | 19 | 26.8 | M8 | M8 | 24.7 |
| 50 | 166.9 | 63.5 | 70 | 40 | 22 | 32.7 | M12 | M12 | 35.6 |
| 63 | 183.4 | 80 | 50 | 40 | 22 | 32.7 | M12 | M12 | 45.6 |

| Piston Ø | T2 | T3 | TF | TG | U1 | U2 | U3 | U4 | ZD |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 13.7 | – | 55.5 | 19 | 47 | 16.5 | 15 | 15 | 187 |
| 25 | 14 | 54 | 71.5 | 19 | 60 | 18 | 21.5 | 15 | 215 |
| 32 | 14 | 44 | 56 | 40 | 71 | 30 | 21 | 15 | 240 |
| 40 | 29.5 | 59.5 | 77 | 40 | 82.7 | 30 | 29 | 15 | 263.1 |
| 50 | 18.5 | 43.5 | 78.5 | 40 | 104.4 | 30 | 15 | 15 | 294.6 |
| 63 | 17 | 39.5 | 65 | 80 | 114.4 | 30 | 15 | 15 | 333 |

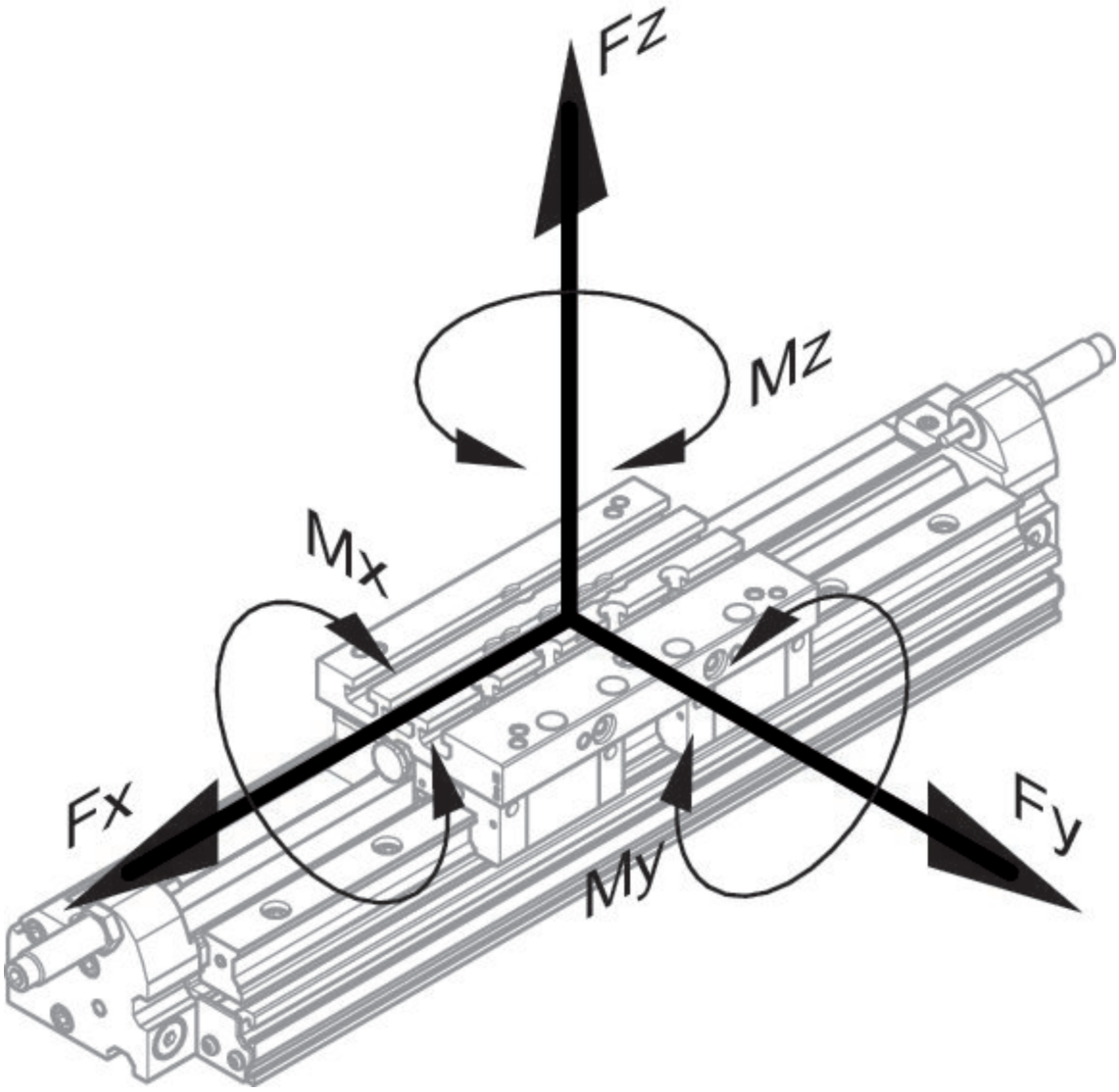
| Piston Ø | Moving mass kg |
|---|---|
| 16 | 0.64 |
| 25 | 1.25 |
| 32 | 1.4 |
| 40 | 2.57 |
| 50 | 3.19 |
| 63 | 3.46 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz



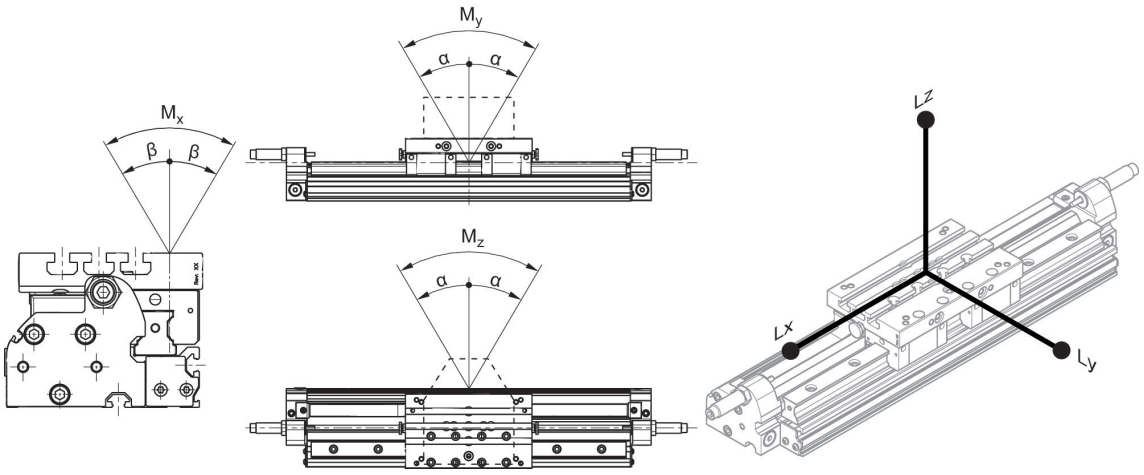

## static

| Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|
| 16 | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| 25 | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| 32 | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| 40 | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| 50 | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| 63 | 6840 | 6840 | 13922 | 254 | 1120 | 551 |

## dynamic

| Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|
| 16 | 34 | 138 | 53 |
| 25 | 100 | 336 | 114 |
| 32 | 154 | 502 | 190 |
| 40 | 254 | 764 | 376 |
| 50 | 254 | 924 | 455 |
| 63 | 254 | 1120 | 551 |

Max. play and recommended max. lever arm length

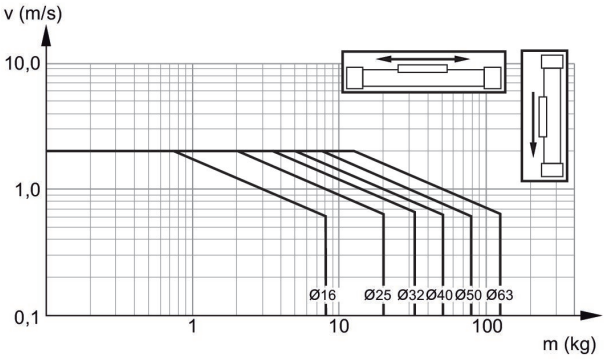



L = lever arm
M = moment (Nm)

## Max. play and recommended max. lever arm length

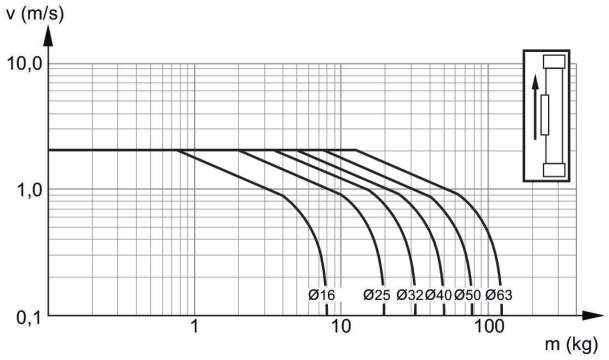
| Piston Ø | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|
| 16 | <0,1° | <0,2° | 260 | 260 | 260 |
| 25 | <0,1° | <0,2° | 344 | 344 | 344 |
| 32 | <0,1° | <0,2° | 404 | 404 | 404 |
| 40 | <0,1° | <0,2° | 440 | 440 | 440 |
| 50 | <0,1° | <0,2° | 532 | 532 | 532 |
| 63 | <0,1° | <0,2° | 644 | 644 | 644 |

## Limit diagram for pneumatic cushioning with horizontal mounting



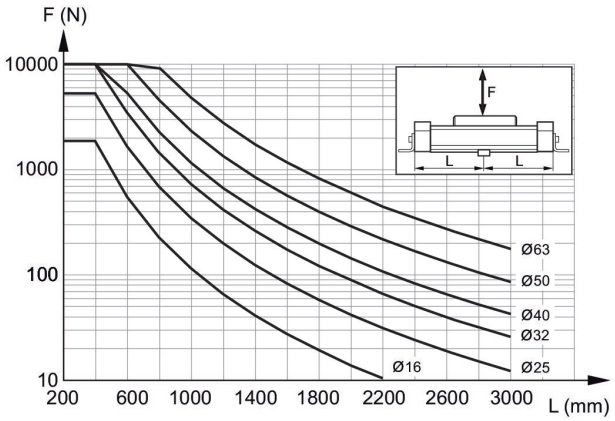

$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Limit diagram for pneumatic cushioning with vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

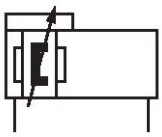
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-BV

Guide: integrated guide
Cushioning: Pneumatically
Version rodless cylinder: Basic Version
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Stroke 203.2 | R480676512 | R480671858 | R480676497 | R480608664 | R480676501 | R480676505 |
| 304.8 | R480675040 | R480166639 | R480619494 | R480625302 | R480676502 | R480676506 |
| 406.4 | R480667889 | R480650963 | R480626326 | R480620235 | R480624463 | R480639391 |
| 508 | R480672796 | R480647667 | R480172271 | R480183023 | R480622115 | R480676508 |
| 609.6 | R480165989 | R480165988 | R480156697 | R480163516 | R480167039 | R480166465 |
| 762 | R480676513 | R480636912 | R480609968 | R480676499 | R480663900 | R480624024 |
| 1219.2 | R480163786 | R480671651 | R480635630 | R480635629 | R480627034 | R480182176 |
| 1371.6 | R480676514 | R480178373 | R480175775 | R480178601 | R480676504 | R480165501 |
| 1524 | R480676515 | R480635887 | R480651961 | R480607963 | R480636843 | R480619999 |

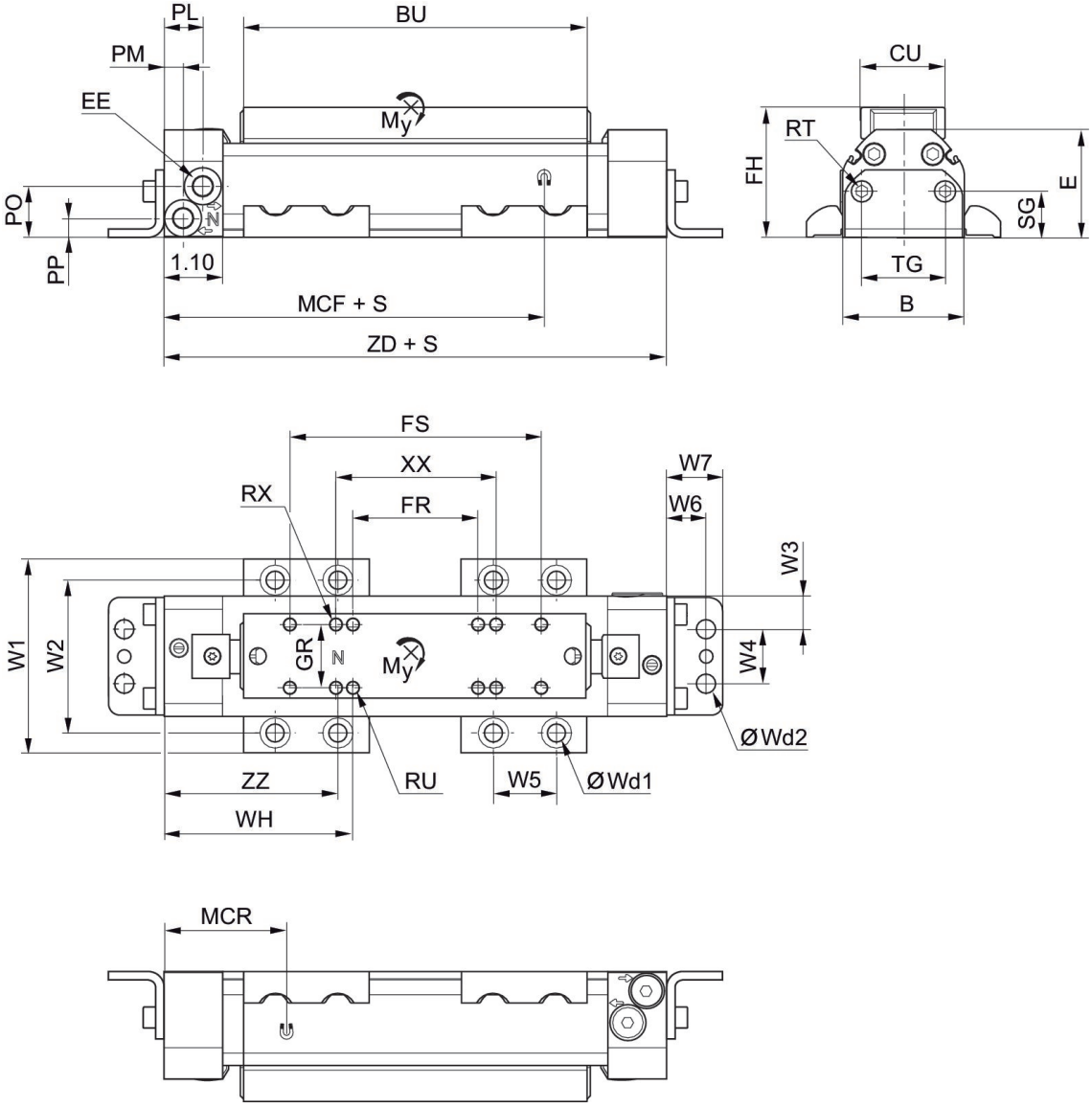
| Piston Ø | 80 mm |
|---|---|
| Stroke 203.2 | R480676498 |
| 304.8 | R480676500 |
| 406.4 | R480676503 |
| 508 | R480676507 |
| 609.6 | R480166464 |
| 762 | R480676509 |
| 1219.2 | R480642983 |
| 1371.6 | R480676510 |
| 1524 | R480676511 |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Extracting piston force | 127 N | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Cushion-ing energy | 1.5 J | 4 J | 7 J | 10 J | 15 J | 25 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.014 kg | 0.023 kg | 0.031 kg | 0.044 kg | 0.065 kg | 0.098 kg |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|---|
| Working pressure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 0.45 kg | 0.82 kg | 1.39 kg | 2.09 kg | 3.37 kg | 5.65 kg |

| Piston Ø | 80 mm |
|---|---|
| Extracting piston force | 3146 N |
| Cushioning energy | 40 J |
| Cushioning length | 20 mm |
| Weight 10 mm stroke | 0.157 kg |
| Working pressure min./max. | 2 bar ... 8 bar |
| Weight 0 mm stroke | 9.71 kg |

Dimensions in inches




S = stroke

## Dimensions in inches

| Piston Ø | B | BU | CU | E | EE | FH | FR | FS | GR |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 1.34 | 4.65 | 1.02 | 1.42 | *10-32 UNF/M7 | 1.61 | 2.36 | 3.94 | 0.79 |
| 25 | 1.73 | 5.79 | 1.02 | 1.79 | 1/8 NPTF | 1.99 | 1.57 | 3.94 | 0.79 |
| 32 | 2.28 | 6.42 | 1.57 | 2.03 | 1/8 NPTF | 2.44 | 2.36 | 4.72 | 1.18 |
| 40 | 2.76 | 7.17 | 1.57 | 2.38 | 1/4 NPTF | 2.8 | 2.36 | 4.72 | 1.18 |
| 50 | 3.62 | 8.07 | 1.57 | 2.66 | 1/4 NPTF | 3.08 | 2.36 | 5.51 | 1.18 |
| 63 | 4.41 | 9.17 | 2.17 | 3.25 | 3/8 NPTF | 3.67 | 3.94 | 7.09 | 1.57 |
| 80 | 5.51 | 10.59 | 2.17 | 4.07 | 3/8 NPTF | 4.5 | 3.94 | 7.09 | 1.57 |

| Piston Ø | PL | PM | PO | PP | RT 1) | RU 2) | RX | SG | TG |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 0.85 | 0.35 | 13,1 | 0.52 | M4 | M4 | 8-36 UNF | 0.68 | 0.75 |
| 25 | 0.79 | 0.31 | 21,5 | 0.85 | M5 | M4 | 8-36 UNF | 0.68 | 0.75 |
| 32 | 0.73 | 0.37 | 24,5 | 0.96 | M6 | M6 | 1/4-20 UNC | 0.87 | 1.57 |
| 40 | 0.71 | 0.39 | 31,5 | 1.24 | M6 | M6 | 1/4-20 UNC | 0.87 | 1.57 |
| 50 | 0.63 | 0.63 | 35,5 | 1.4 | M8 | M6 | 1/4-20 UNC | 0.87 | 1.57 |
| 63 | 0.55 | 0.55 | 45,5 | 1.79 | M8 | M8 | 1/4-20 UNC | 1.18 | 3.15 |
| 80 | 0.55 | 0.55 | 59,5 | 2.34 | M8 | M8 | 1/4-20 UNC | 1.18 | 3.15 |

| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 2.48 | 1.79 | 0.31 | 0.71 | 1.18 | 0.53 | 0.78 | M6 | M6 |
| 25 | 2.87 | 2.19 | 0.51 | 0.71 | 1.18 | 0.53 | 0.78 | M6 | M6 |
| 32 | 3.66 | 2.85 | 0.63 | 1.02 | 1.18 | 0.75 | 1.06 | M8 | M8 |
| 40 | 4.13 | 3.33 | 0.87 | 1.02 | 1.18 | 0.75 | 1.06 | M8 | M8 |
| 50 | 5.51 | 4.51 | 0.43 | 2.76 | 1.57 | 0.87 | 1.29 | M12 | M12 |
| 63 | 6.3 | 5.3 | 1.22 | 1.97 | 1.57 | 0.87 | 1.29 | M12 | M12 |
| 80 | 7.4 | 6.4 | 1.77 | 1.97 | 1.57 | 0.87 | 1.29 | M12 | M12 |

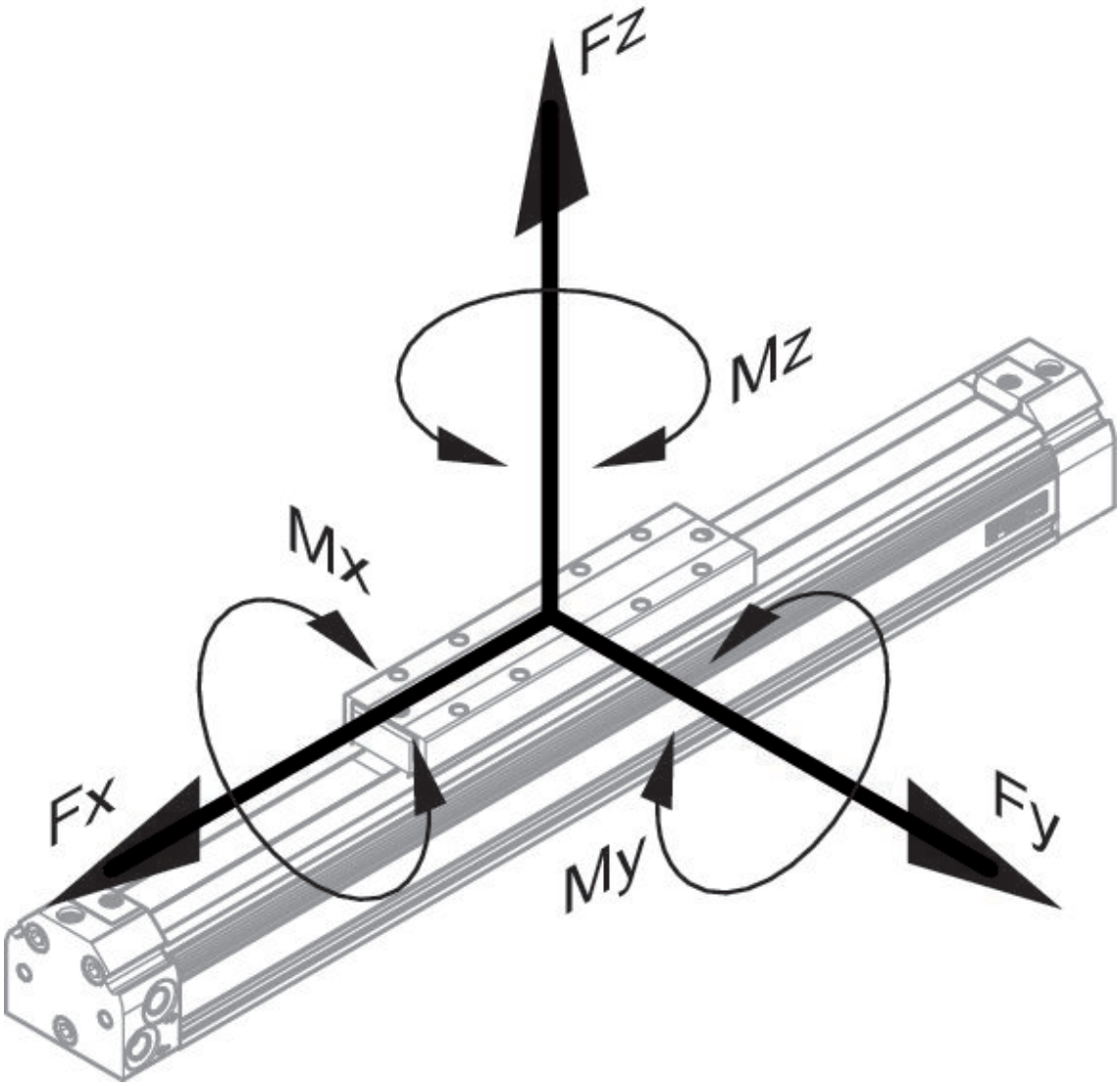
| Piston Ø | ZZ | WH | ZD | Moving mass kg |
|---|---|---|---|---|
| 16 | 2.68 | 2.5 | 7.36 | 0.17 |
| 25 | 2.73 | 3.44 | 8.46 | 0.35 |
| 32 | 3.22 | 3.54 | 9.45 | 0.71 |
| 40 | 3.68 | 4 | 10.35 | 1.08 |
| 50 | 4.29 | 4.61 | 9.82 | 1.61 |
| 63 | 5.06 | 4.59 | 13.12 | 2.29 |
| 80 | 5.61 | 5.14 | 14.21 | 4.71 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz



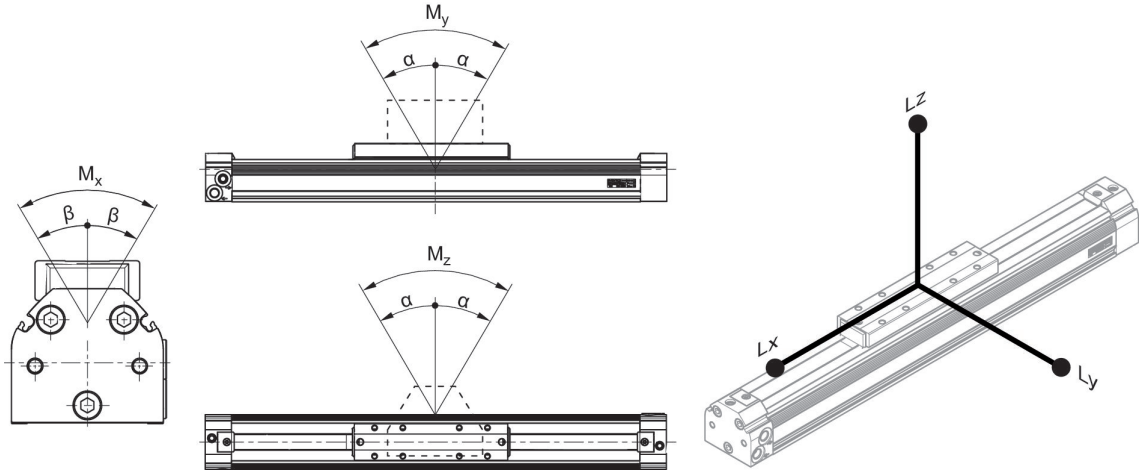

## static

| Piston Ø | Ø [inch] | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|---|
| 16 | 5/8 | 800 | 150 | 1100 | 2 | 25 | 8 |
| 25 | 1 | 1800 | 210 | 3800 | 6 | 50 | 12 |
| 32 | 1 1/4 | 2200 | 550 | 6600 | 18 | 80 | 43 |
| 40 | 1 1/2 | 3500 | 650 | 8000 | 28 | 140 | 55 |
| 50 | 2 | 5000 | 750 | 9000 | 35 | 230 | 70 |
| 63 | 2 1/2 | 6800 | 850 | 13000 | 45 | 340 | 90 |
| 80 | 3 | 9500 | 1000 | 13000 | 55 | 500 | 110 |

## dynamic

| Piston Ø | Ø [inch] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|
| 16 | 5/8 | 0.42 | 10 | 2 |
| 25 | 1 | 1 | 24 | 3 |
| 32 | 1 1/4 | 3.8 | 42 | 12 |
| 40 | 1 1/2 | 6 | 75 | 15 |
| 50 | 2 | 9.1 | 128 | 20 |
| 63 | 2 1/2 | 14.5 | 195 | 24 |
| 80 | 3 | 20 | 300 | 28 |

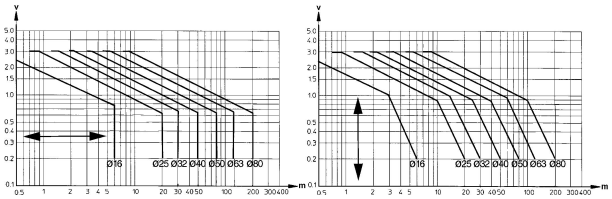
Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

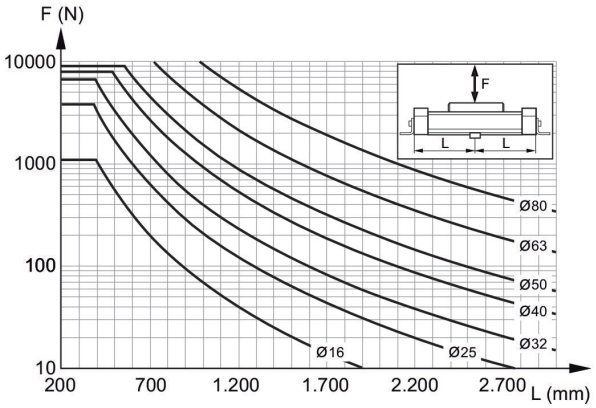
| Piston Ø | Ø [inch] | α | β |
|---|---|---|---|
| 16 | 5/8 | 0.5° | 0.2° |
| 25 | 1 | 0.5° | 0.2° |
| 32 | 1 1/4 | 0.6° | 1.5° |
| 40 | 1 1/2 | 0.4° | 1.0° |
| 50 | 2 | 0.4° | 1.0° |
| 63 | 2 1/2 | 0.3° | 1.0° |
| 80 | 3 | 0.3° | 1.0° |

## Limit diagram for pneumatic cushioning for horizontal or vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

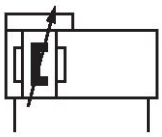
## Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-CG

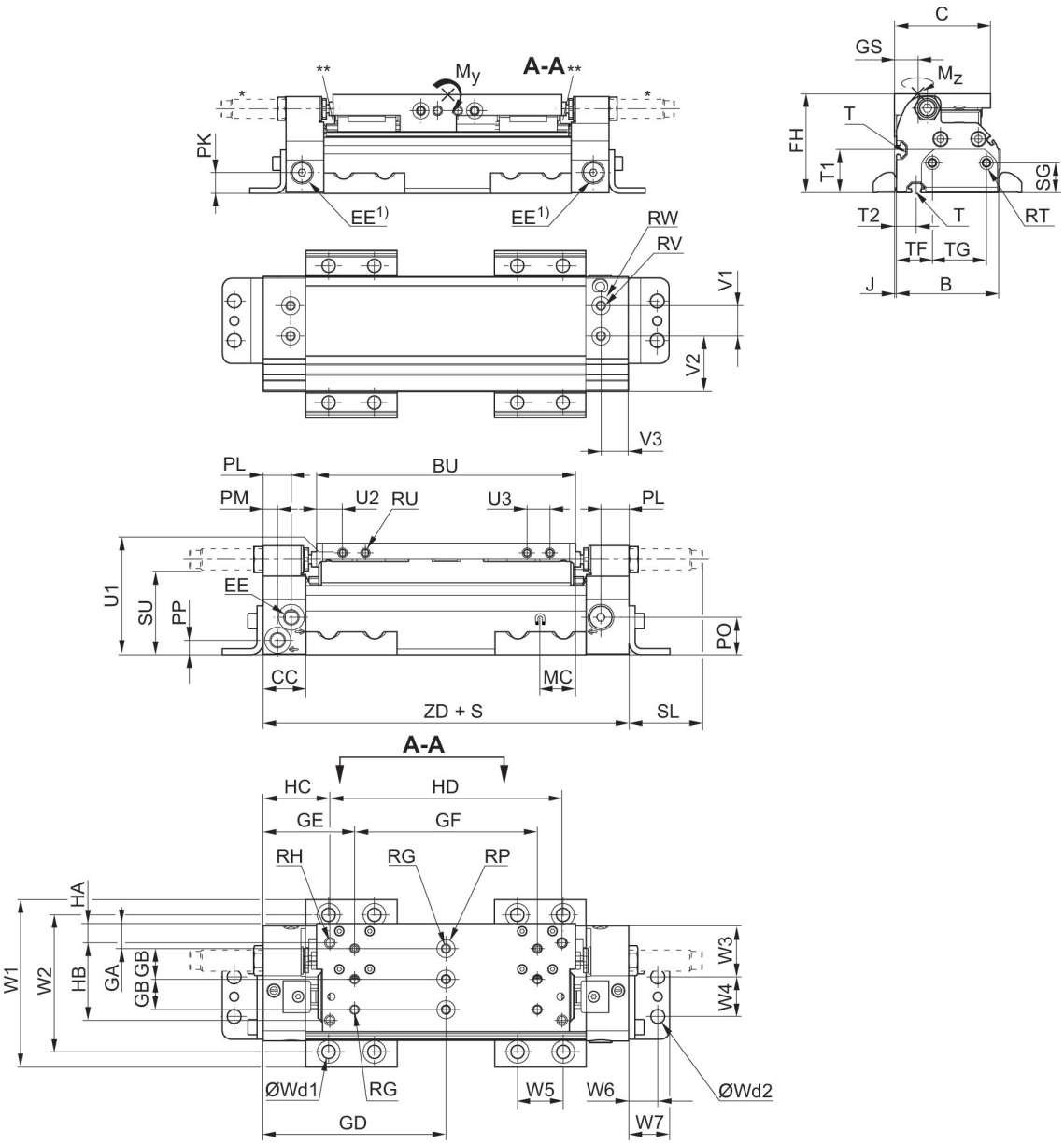
Guide: ball rail guide
Cushioning: Pneumatically
Version rodless cylinder: Compact Guide
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 2 bar ... 8 bar



| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm |
|---|---|---|---|---|
| Stroke 152.4 | R480161097 | R480676520 | R480639375 | R480676522 |
| 304.8 | R480676516 | R480635761 | R480610198 | R480676523 |
| 609.6 | R480676517 | R480656723 | R480168891 | R480174815 |
| 1016 | R480676518 | R480639928 | R480676521 | R480676524 |
| 1524 | R480676519 | R480625335 | R480608061 | R480606820 |

| Piston Ø | 16 mm | 25 mm | 32 mm | 40 mm |
|---|---|---|---|---|
| Extracting piston force | 127 N | 309 N | 507 N | 792 N |
| Cushion-ing energy | 1.5 J | 4 J | 7 J | 10 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.026 kg | 0.041 kg | 0.056 kg | 0.075 kg |
| Working pres-sure min./max. | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar | 2 bar ... 8 bar |
| Weight 0 mm stroke | 0.94 kg | 1.64 kg | 2.43 kg | 3.92 kg |

Dimensions in inches




S = stroke
T = Type of t-groove nut
1) Auxiliary air feeding
An example configuration is illustrated. The delivered product may thus deviate from the illustration.
* Shock absorber optional in end cover for diameters 16-40
** RTC-CG 16 & 25: 2x Lube ports on each runner block, RTC-CG 32 & 40: Lube nipple of funnel type with thread connection M3

## Dimensions in inches

| Piston Ø | B | C | BU | CC | EE | FH | GA | GB | GD |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 1.97 | 2.01 | 4.8 | 1.1 | *10-32/M7 | 2.13 | 0.28 | 0.79 | 3.68 |
| 25 | 2.46 | 2.29 | 5.79 | 1.1 | 1/8 NPTF | 2.56 | 0.24 | 0.79 | 4.23 |
| 32 | 2.97 | 2.8 | 6.69 | 1.1 | 1/8 NPTF | 2.87 | 0.65 | 0.79 | 4.72 |
| 40 | 3.37 | 2.91 | 7.32 | 1.1 | 1/8 NPTF | 3.72 | 0.65 | 0.79 | 5.18 |

| Piston Ø | GE | GF | GS | HA | HB | HC | HD | J | MC |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 1.52 | 4.33 | 0.45 | 0.3 | 1.5 | 2.68 | 2 | 0.08 | 0.47 |
| 25 | 2.11 | 4.25 | 0.59 | 0.2 | 1.8 | 1.53 | 5.4 | 0.06 | 0.59 |
| 32 | 2.36 | 4.72 | 0.69 | 0.5 | 2 | 1.72 | 6 | 0.06 | 0.79 |
| 40 | 2.82 | 4.72 | 0.73 | 0.5 | 2 | 2.18 | 6 | 0.06 | 0.67 |

| Piston Ø | PK | PL | PM | PN | PO | PP | RG 1) | RH 2) | RP |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 0.47 | 0.71 | 0.28 | 0.28 | 0.52 | 0.29 | M5 | 4xUNC 1/4-20 | Ø 9 |
| 25 | 0.4 | 0.79 | 0.31 | 0.35 | 0.85 | 0.37 | M5 | 4xUNC 1/4-20 | Ø 9 |
| 32 | 0.59 | 0.73 | 0.37 | 0.47 | 0.96 | 0.37 | M6 | 4xUNC 1/4-20 | Ø 12 |
| 40 | 0.71 | 0.71 | 0.39 | 0.43 | 1.24 | 0.41 | M6 | 4xUNC 1/4-20 | Ø 12 |

| Piston Ø | RT 3) | RU 4) | SG | SL | SU | T | W1 | W2 | W3 |
|---|---|---|---|---|---|---|---|---|---|
| 16 | M5 | M5 | 0.68 | 1.31 | 1.52 | N4 | 3.09 | 2.42 | 0.94 |
| 25 | M5 | M6 | 0.68 | 1.94 | 1.85 | N6 | 3.58 | 2.91 | 0.14 |
| 32 | M6 | M6 | 0.87 | 1.9 | 2.19 | N6 | 4.33 | 3.54 | 1.32 |
| 40 | M6 | M6 | 0.87 | 1.78 | 2.89 | N6 | 4.72 | 3.93 | 1.48 |

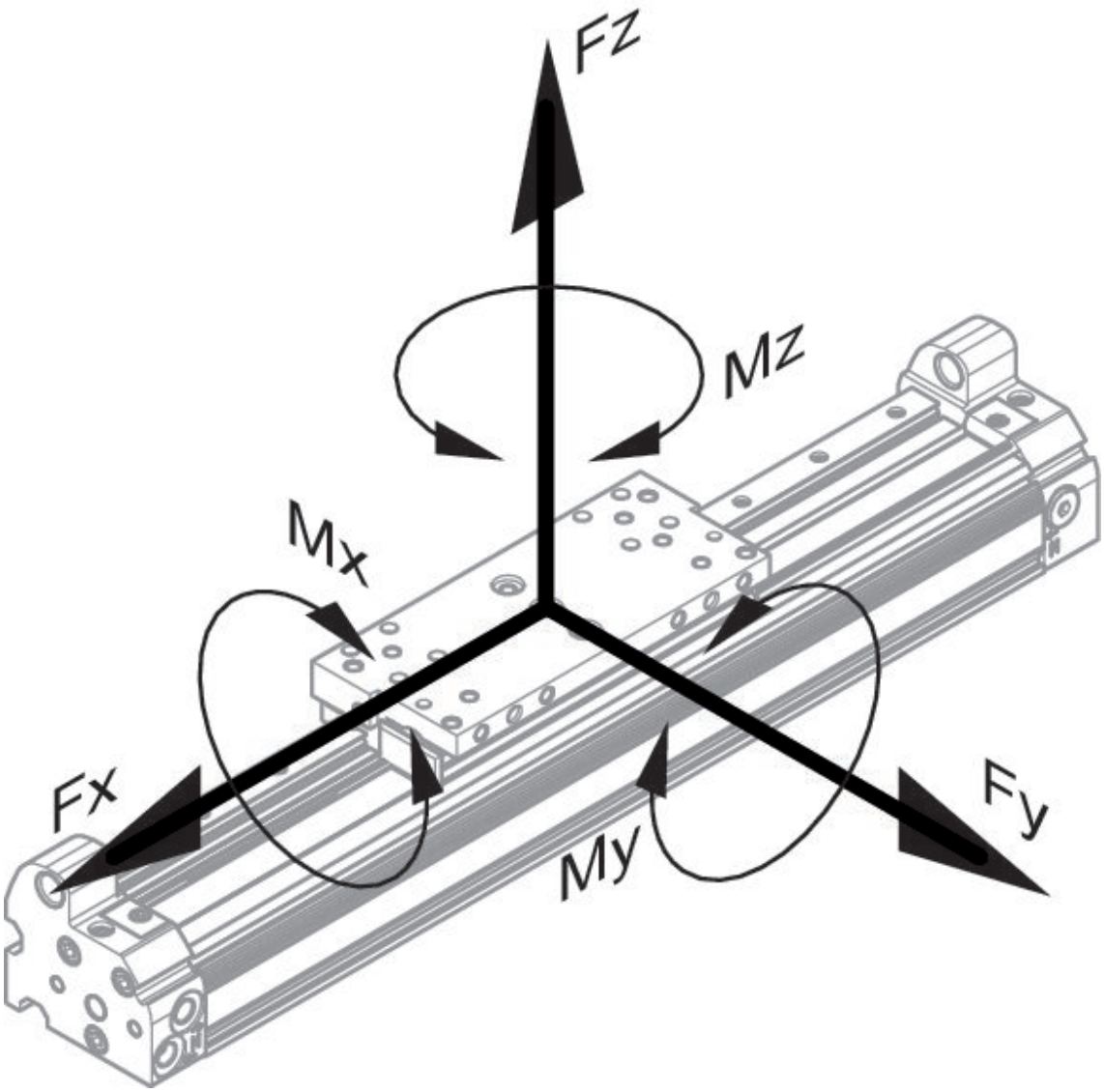
| Piston Ø | W4 | W5 | W6 | W7 | Wd1 | Wd2 | T1 | T2 | TF |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 0.71 | 1.18 | 0.53 | 0.78 | M6 | M6 | 0.73 | 0.41 | 1 |
| 25 | 0.71 | 1.18 | 0,53 | 0.78 | M6 | M6 | 1.05 | 0.53 | 1.22 |
| 32 | 1.02 | 1.18 | 0.75 | 1.06 | M8 | M8 | 1.24 | 0.57 | 1.04 |
| 40 | 1.02 | 1.18 | 0.75 | 1.06 | M8 | M8 | 1.63 | 0.51 | 1.2 |

| Piston Ø | TG | U1 | U2 | U3 | ZD | Moving mass kg |
|---|---|---|---|---|---|---|
| 16 | 0.75 | 1.89 | 0.51 | 0.59 | 7.36 | 0.485 |
| 25 | 0.75 | 2.32 | 0.51 | 1.06 | 8.46 | 0.882 |
| 32 | 1.57 | 2.64 | 0.67 | 1.34 | 9.45 | 1.036 |
| 40 | 1.57 | 3.13 | 0.98 | 1.34 | 10.36 | 2.138 |

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.



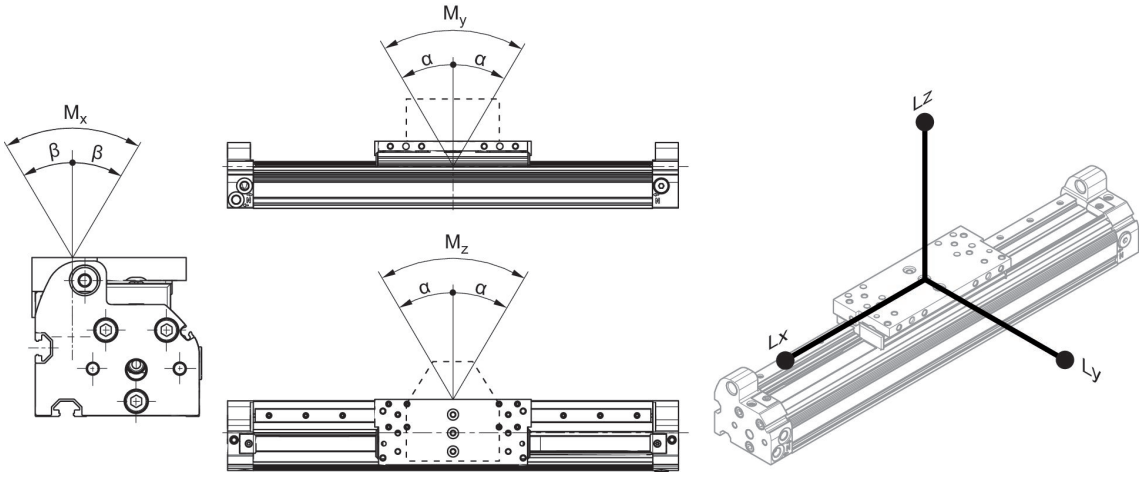

## dynamic

| Piston Ø | Ø [inch] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|
| 16 | 5/8 | 4 | 30 | 30 |
| 25 | 1 | 10 | 78 | 78 |
| 32 | 1 1/4 | 22 | 158 | 110 |
| 40 | 1 1/2 | 36 | 284 | 109 |

## static

| Piston Ø | Ø [inch] | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|---|
| 16 | 5/8 | 744 | 744 | 744 | 4 | 30 | 30 |
| 25 | 1 | 1456 | 1456 | 1456 | 10 | 78 | 78 |
| 32 | 1 1/4 | 1840 | 1840 | 2646 | 22 | 158 | 110 |
| 40 | 1 1/2 | 1640 | 1640 | 4284 | 36 | 284 | 109 |

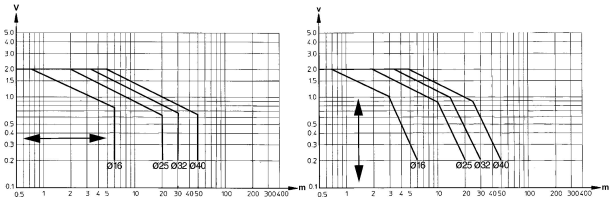
Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

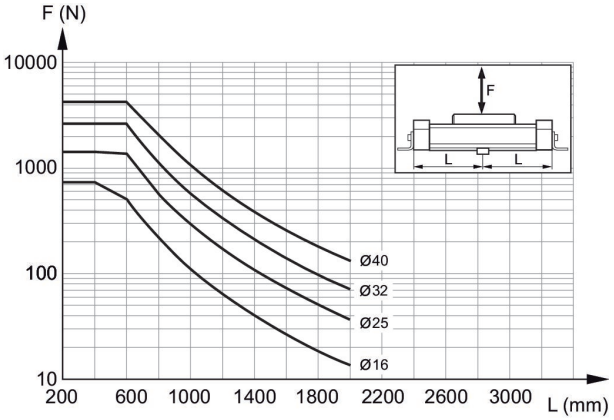
| Piston Ø | Ø [inch] | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|---|
| 16 | 5/8 | <0,1° | <0,2° | 328 | 328 | 328 |
| 25 | 1 | <0,1° | <0,2° | 424 | 424 | 424 |
| 32 | 1 1/4 | <0,1° | <0,2° | 480 | 480 | 480 |
| 40 | 1 1/2 | <0,1° | <0,2° | 532 | 532 | 532 |

### Limit diagram for pneumatic cushioning for horizontal or vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

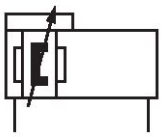
### Support span




Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## Rodless cylinders, Series RTC-HD

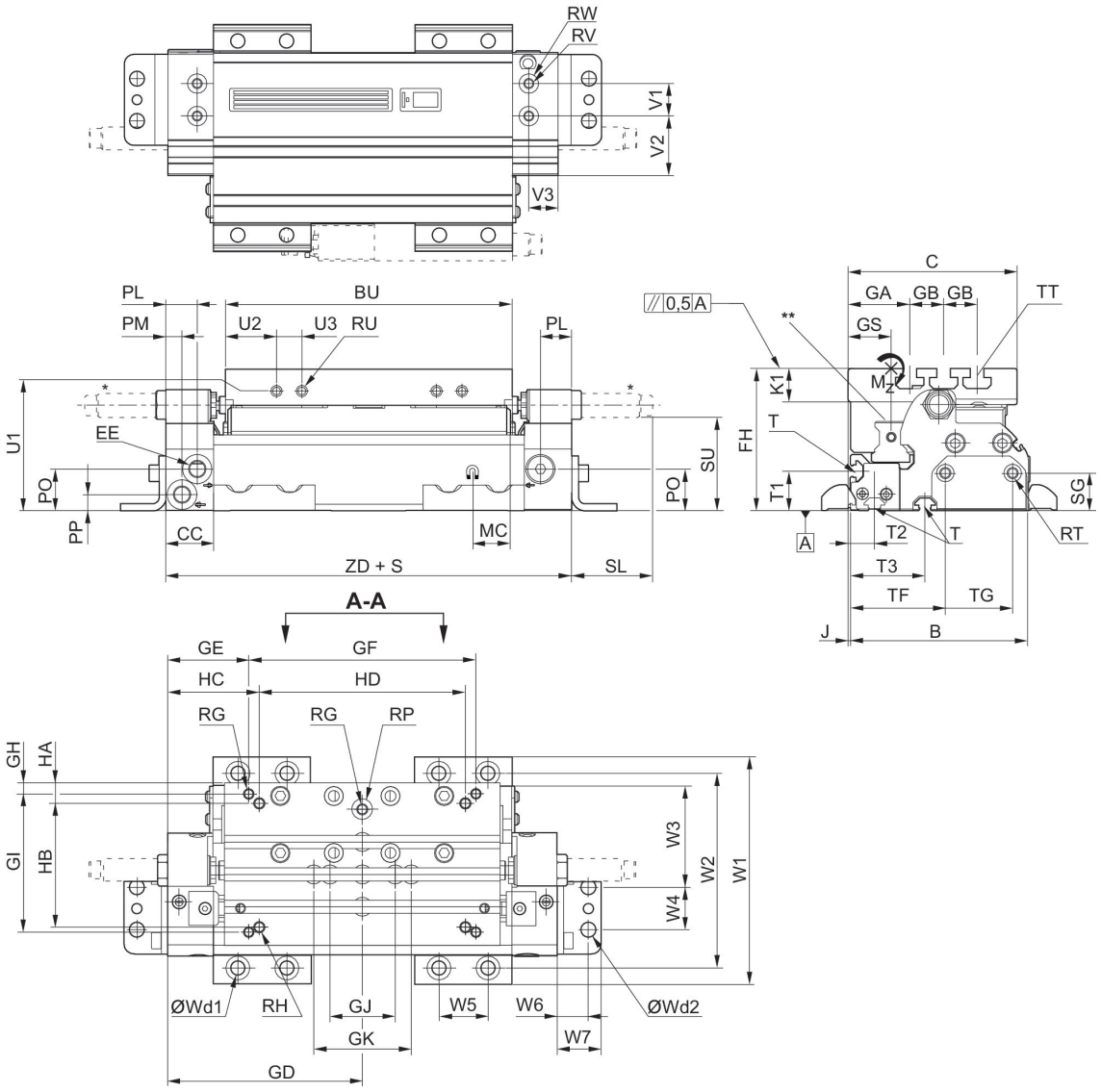
Guide: ball rail guide
Cushioning: Pneumatically
Version rodless cylinder: Heavy Duty
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 4 bar ... 8 bar



| Piston Ø | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|
| Stroke 203.2 | R480676537 | R480676527 | R480676548 | R480636524 | R480676533 |
| 304.8 | R480676538 | R480676542 | R480676549 | R480676530 | R480172938 |
| 406.4 | R480676539 | R480676543 | R480676550 | R480676553 | R480624465 |
| 508 | R480641671 | R480628417 | R480676551 | R480676554 | R480653340 |
| 609.6 | R480165994 | R480165995 | R480619943 | R480669357 | R480172944 |
| 762 | R480676540 | R480676544 | R480676529 | R480676555 | R480676557 |
| 1219.2 | R480673624 | R480676545 | R480180094 | R480644142 | R480641138 |
| 1371.6 | R480676541 | R480676546 | R480627168 | R480676531 | R480676534 |
| 1524 | R480625336 | R480607665 | R480181358 | R480676556 | R480181400 |
| 2540 | R480676526 | R480676547 | R480676552 | R480676532 | R480676535 |

| Piston Ø | 25 mm | 32 mm | 40 mm | 50 mm | 63 mm |
|---|---|---|---|---|---|
| Extracting piston force | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Cushioning energy | 4 J | 7 J | 10 J | 15 J | 25 J |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm | 20 mm |
| Weight 10 mm stroke | 0.071 kg | 0.086 kg | 0.128 kg | 0.162 kg | 0.193 kg |
| Working pressure min./max. | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar | 4 bar ... 8 bar |
| Weight 0 mm stroke | 2.96 kg | 3.9 kg | 6.58 kg | 8.94 kg | 11.75 kg |

Dimensions in inches




S = stroke
T = Type of t-groove nut
TT = Type of t-groove nut
* Shock absorber optional in end cover for diameters 16-40
** RTC-HD 16 & 25: funnel type lube nipple with thread M3, RTC-HD 32 - 63: lube nipple DIN 71412 with thread M6

## Dimensions in inches

| Piston Ø | Ø [inch] | B | C | BU | CC | EE | EF | EG | FH |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 1 | 4.6 | 3.92 | 5.79 | 1.1 | 1/8 NPTF | – | – | 2.76 |
| 32 | 1 1/4 | 4.13 | 3.94 | 6.69 | 1.1 | 1/8 NPTF | – | – | 3.3 |
| 40 | 1 1/2 | 5.2 | 4.8 | 7.32 | 1.1 | 1/4 NPTF | – | – | 3.85 |
| 50 | 2 | 5.69 | 5.22 | 8.07 | 1.1 | 1/4 NPTF | Ø 4,59 | Ø 0,91 | 4.7 |
| 63 | 2 1/2 | 6.34 | 5.47 | 9.17 | 1.1 | 3/8 NPTF | Ø 0,59 | Ø 1,04 | 5.09 |

| Piston Ø | GA | GB | GD | GE | GF | GH | GI | GJ | GK |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 1.02 | 0.79 | 4.23 | 4.23 | 4.33 | 0.63 | 20/40 | 1.57 | – |
| 32 | 1.44 | 0.79 | 4.72 | 4.72 | 5.51 | 0.26 | 85 | 1.57 | 2.36 |
| 40 | 1.44 | 0.79 | 5.18 | 5.18 | 6.69 | 0.47 | 100 | 1.57 | 2.36 |
| 50 | 1.22 | 0.79 | 5.8 | 5.8 | 7.48 | 0.39 | 100 | 1.57 | 2.36 |
| 63 | 1.22 | 0.79 | 6.56 | 6.56 | 7.48 | 0.39 | 100 | 1.57 | 2.36 |

| Piston Ø | GS | HA | HB | HC | HD | J | K1 | MC | PK |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 1.46 | 0,25 | 3,3 | 1,732 | 5 | 0.06 | 0.84 | 0.59 | 0.4 |
| 32 | 1 | 0,5 | 3 | 2,224 | 5 | 0.06 | 0.78 | 0.79 | 0.59 |
| 40 | 1.24 | 0,5 | 4 | 2,181 | 6 | 0.06 | 1.01 | 0.67 | 0.71 |
| 50 | 1.24 | 0,6 | 3,9 | 2,598 | 6.4 | 0.06 | 1.3 | 0.91 | – |
| 63 | 1.24 | 0,6 | 4 | 2,354 | 8.4 | 0.06 | 1.3 | 0.98 | – |

| Piston Ø | PL | PM | PN | PO | PP | PR | PQ | RG 1) | RH 2) |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 0.79 | 0.31 | 0.35 | 0.85 | 0.37 | – | – | M5 | 4xUNC 1/4-20 |
| 32 | 0.73 | 0.37 | 0.47 | 0.96 | 0.37 | – | – | M6 | 4xUNC 1/4-20 |
| 40 | 0.71 | 0.39 | 0.43 | 1.24 | 0.41 | – | – | M6 | 4xUNC 1/4-20 |
| 50 | 0.63 | 0.63 | – | 1.38 | 0.47 | 0.84 | 1.22 | M8 | 4xUNC 5/16-18 |
| 63 | 0.55 | 0.55 | – | 1.79 | 0.57 | 1.06 | 0.98 | M8 | 4xUNC 5/16-18 |

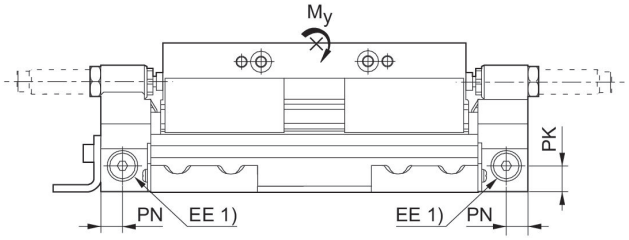
| Piston Ø | RP | RQ | RT 3) | RU 4) | SG | SL | SU | T | TT |
|---|---|---|---|---|---|---|---|---|---|
| 25 | Ø 9 | M6 | M5 | M6 | 0.68 | 1.94 | 1.85 | N6 | N6 |
| 32 | Ø 12 | M6 | M6 | M6 | 0.87 | 1.9 | 2.19 | N6 | N8 |
| 40 | Ø 12 | M8 | M6 | M6 | 0.87 | 1.78 | 2.89 | N6 | N8 |
| 50 | Ø 12 | M8 | M8 | M5 | 0.87 | – | – | N8 | N8 |
| 63 | Ø 12 | M8 | M8 | M5 | 1.18 | – | – | N8 | N8 |

| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 5.17 | 4.5 | 2.83 | 0.71 | 0.05 | 0,53 | 0.78 | M6 | M6 |
| 32 | 5.49 | 4.7 | 2.48 | 1.02 | 0.05 | 0.75 | 1.06 | M8 | M8 |
| 40 | 6.55 | 5.76 | 3.31 | 1.02 | 0.05 | 0.75 | 1.06 | M8 | M8 |
| 50 | 7.56 | 6.57 | 2.5 | 2.76 | 0.06 | 0.87 | 1.29 | M12 | M12 |
| 63 | 8.21 | 7.22 | 3.15 | 1.97 | 0.06 | 0.87 | 1.29 | M12 | M12 |

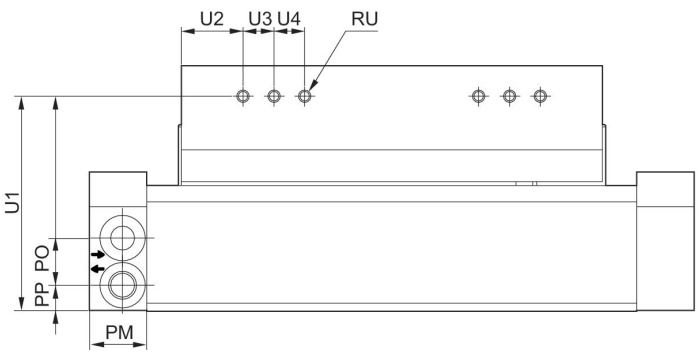
| Piston Ø | T1 | T2 | T3 | TF | TG | U1 | U2 | U3 | U4 |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 0.79 | 0.55 | 2.13 | 2.81 | 0.75 | 2.24 | 0,7 | 0,85 | 0.59 |
| 32 | 0.91 | 0.55 | 1.73 | 2.2 | 1.57 | 2.8 | 1.18 | 0,83 | 0.59 |
| 40 | 0.97 | 1.16 | 2.34 | 3.03 | 1.57 | 3.26 | 1.18 | 1,14 | 0.59 |
| 50 | 1.4 | 0.73 | 1.71 | 3.09 | 1.57 | 4,1 | 1.18 | 0.59 | 0.59 |
| 63 | 1.8 | 0.67 | 1.56 | 2.56 | 3.15 | 4.5 | 1.18 | 0.59 | 0.59 |

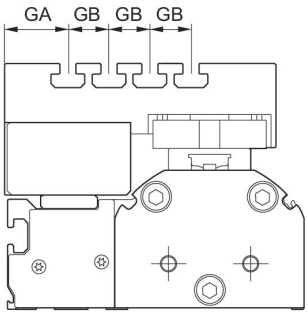
| Piston Ø | ZD | Moving mass [lbs] |
|---|---|---|
| 25 | 8.46 | 2.75 |
| 32 | 9.45 | 3.09 |
| 40 | 9.3 | 5.67 |
| 50 | 11.6 | 7.03 |
| 63 | 13.11 | 7.63 |

**A-A Ø16-40**




**A-A Ø50/63**



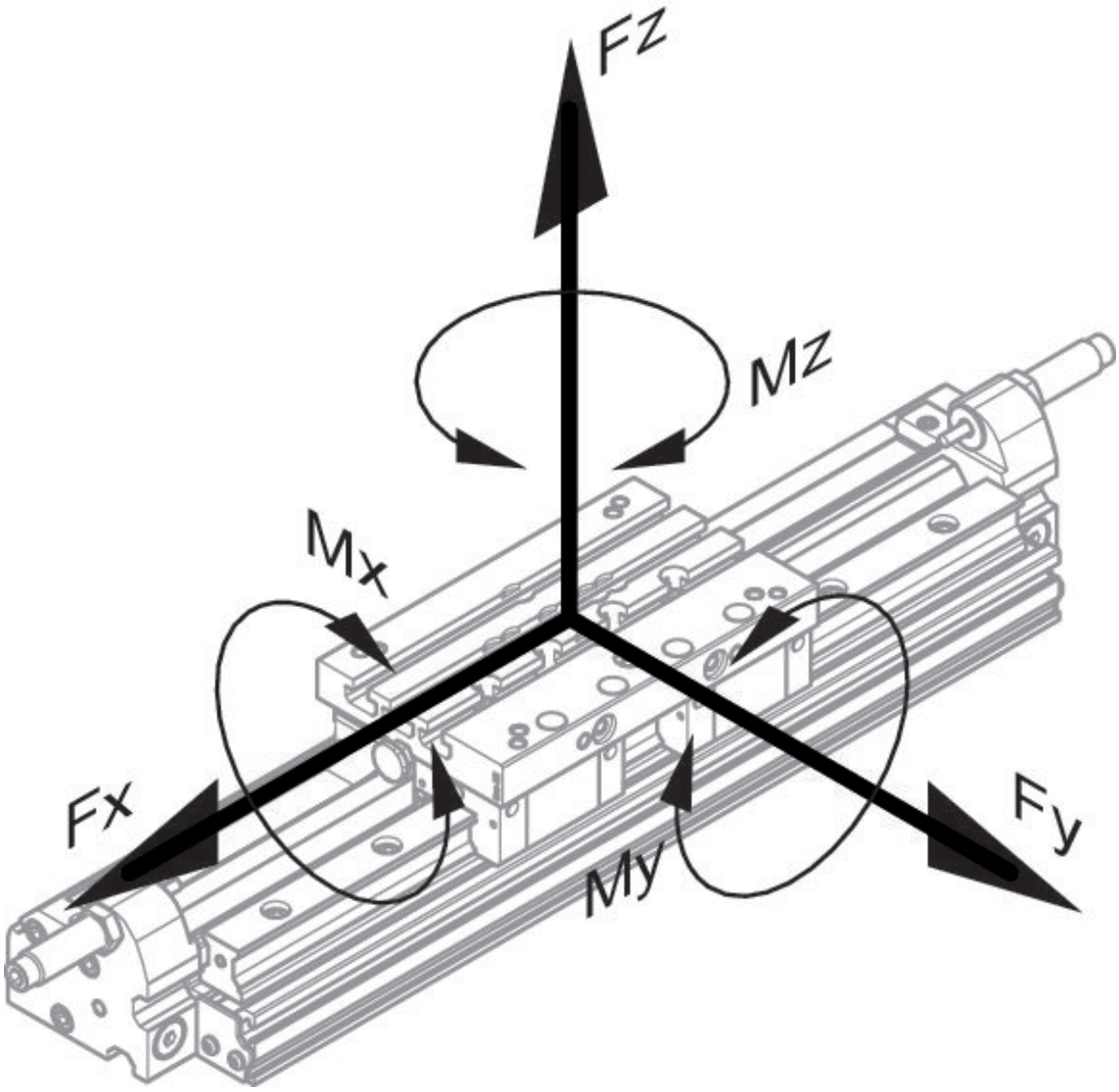

1) Auxiliary air feeding
An example configuration is illustrated. The delivered product may thus deviate from the illustration.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz



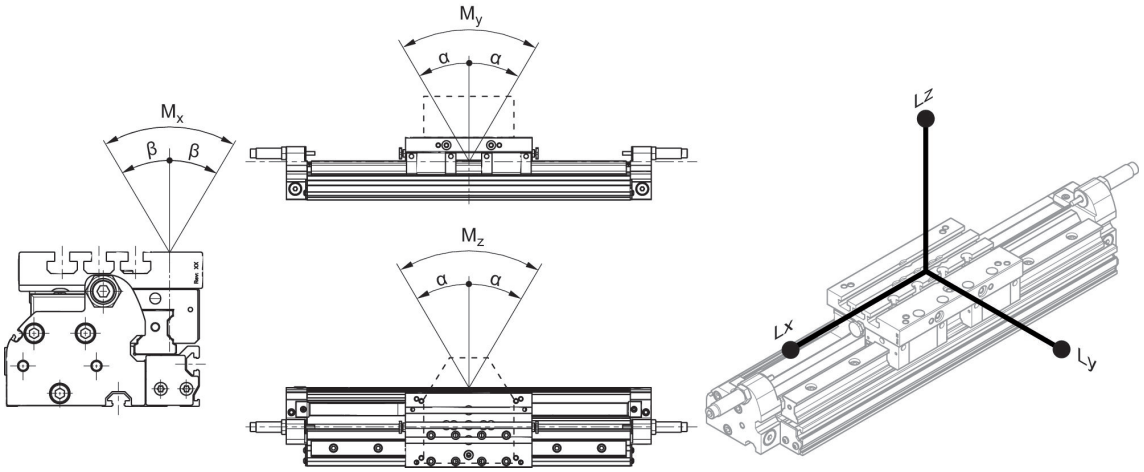

## static

| Piston Ø | Ø [inch] | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|---|---|---|
| 25 | 1 | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| 32 | 1 1/4 | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| 40 | 1 1/2 | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| 50 | 2 | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| 63 | 2 1/2 | 6840 | 6840 | 13922 | 254 | 1120 | 551 |

## dynamic

| Piston Ø | Ø [inch] | Mx [Nm] | My [Nm] | Mz [Nm] |
|---|---|---|---|---|
| 25 | 1 | 100 | 336 | 114 |
| 32 | 1 1/4 | 154 | 502 | 190 |
| 40 | 1 1/2 | 254 | 764 | 376 |
| 50 | 2 | 254 | 924 | 455 |
| 63 | 2 1/2 | 254 | 1120 | 551 |

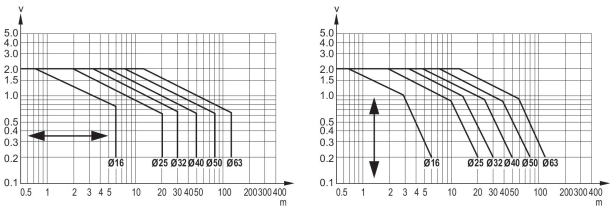
Max. play and recommended max. lever arm length




L = lever arm
M = moment (Nm)

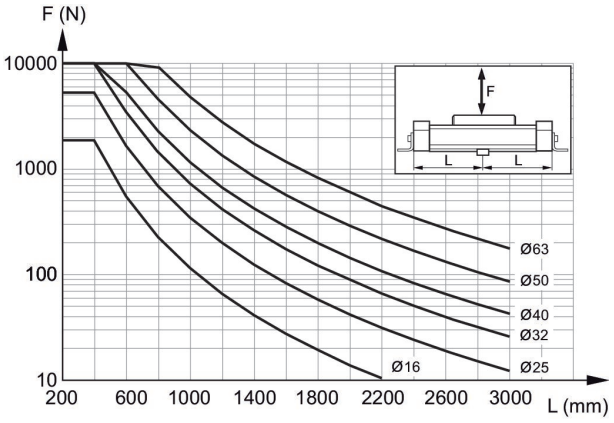
| Piston Ø | Ø [inch] | α | β | Lx | Ly | Lz |
|---|---|---|---|---|---|---|
| 25 | 1 | <0,1° | <0,2° | 344 | 344 | 344 |
| 32 | 1 1/4 | <0,1° | <0,2° | 404 | 404 | 404 |
| 40 | 1 1/2 | <0,1° | <0,2° | 440 | 440 | 440 |
| 50 | 2 | <0,1° | <0,2° | 532 | 532 | 532 |
| 63 | 2 1/2 | <0,1° | <0,2° | 644 | 644 | 644 |

## Limit diagram for pneumatic cushioning for horizontal or vertical mounting




$v_t$ = Piston velocity [m/s] m = Cushionable mass [kg]
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

## Support span

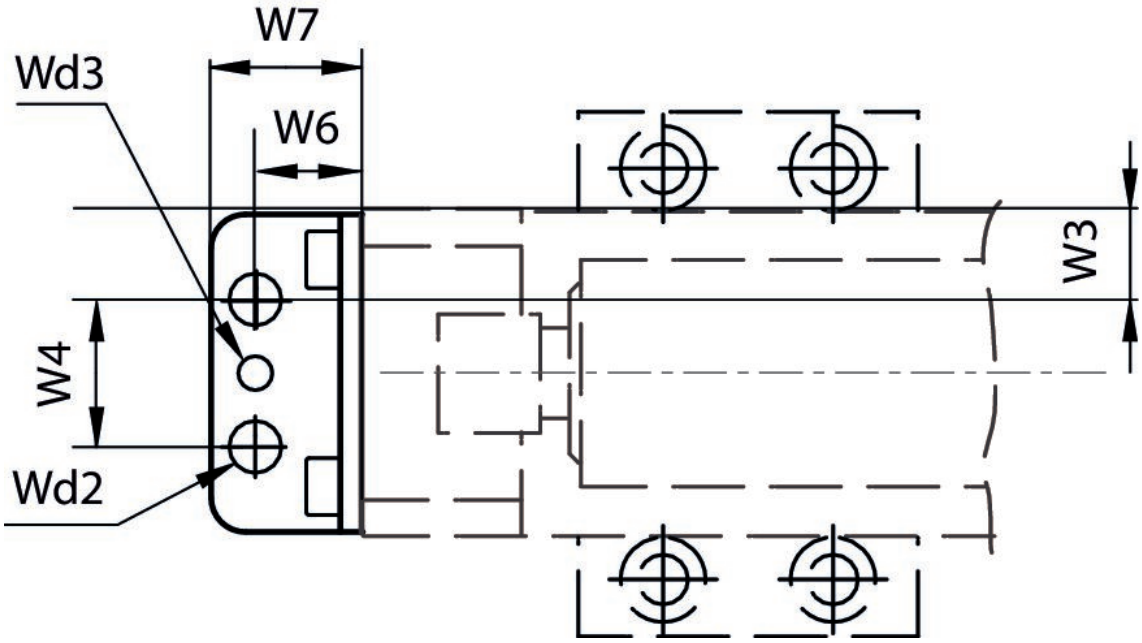



Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

## End cover mounting, Series MF1

For series: RTC

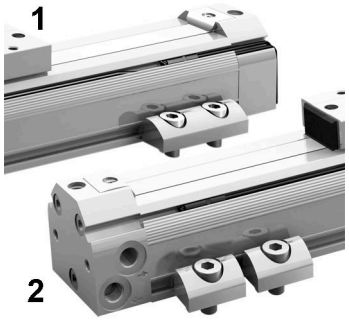
| Suitable piston Ø [mm] | Material | Part No. |
|---|---|---|
| 16, 25 | Steel, chrome-plated | R402002728 |
| 32, 40 | Steel, chrome-plated | R402002729 |
| 50 | Steel, chrome-plated | R402002730 |
| 63, 80 | Steel, chrome-plated | R402002731 |




| Piston Ø | Part No. | For series | W3 | W4 | W6 | W7 | Wd2 | Wd3 |
|---|---|---|---|---|---|---|---|---|
| 16, 25 | R402002728 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 8 / 13 | 18 | 13,5 | 19,8 | M6 | Ø4 G8 |
| 32, 40 | R402002729 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 16 / 22 | 26 | 19 | 26,8 | M8 | Ø6 G8 |
| 50 | R402002730 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 11 | 70 | 22 | 32,7 | Ø13,7 | Ø6 G8 |
| 63, 80 | R402002731 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 31 / 45 | 50 | 22 | 32,7 | Ø13,7 | Ø6 G8 |

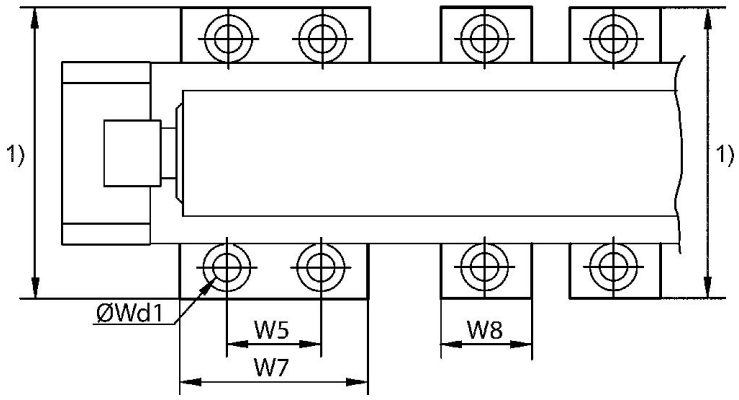
## Foot mountings for rodless cylinder Series RTC

For series: RTC




| Piston diameter [mm] | Material | Part No. |
|---|---|---|
| 16, 25 | Aluminum | R402003401 |
| 32, 40 | Aluminum | R402003402 |
| 50, 63, 80 | Aluminum | R402003403 |
| 16, 25 | Aluminum | R402003404 |
| 32, 40 | Aluminum | R402003405 |
| 50, 63, 80 | Aluminum | R402005912 |

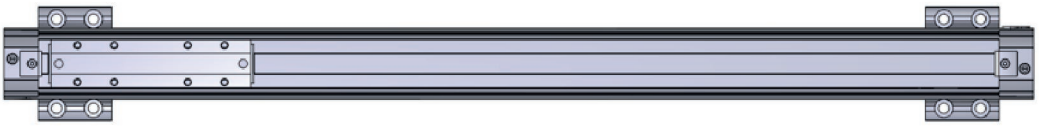
Dimensions




1) see data sheet for the respective product variant

| Series | Part No. | Piston Ø | For series | Wd1 | W5 | W7 | W8 | Fig. |
|---|---|---|---|---|---|---|---|---|
| M41 | R402003401 | 16, 25 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 6,8 | 30 | 60 | – | Fig. 1 |
| M41 | R402003402 | 32, 40 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 8,8 | 30 | 60 | – | Fig. 1 |
| M41 | R402003403 | 50, 63, 80 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 13 | 40 | 80 | – | Fig. 1 |
| M48 | R402003404 | 16, 25 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 6,8 | – | – | 30 | Fig. 2 |
| M48 | R402003405 | 32, 40 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 8,8 | – | – | 30 | Fig. 2 |
| M48 | R402005912 | 50, 63, 80 | RTC-BV, RTC-CG, RTC-HD, RTC-SB | 13 | – | – | 40 | Fig. 2 |

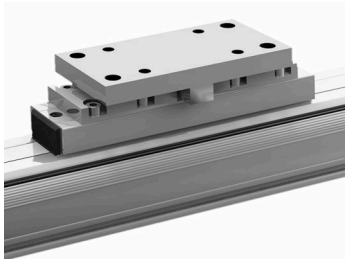
Number
Foot mounting



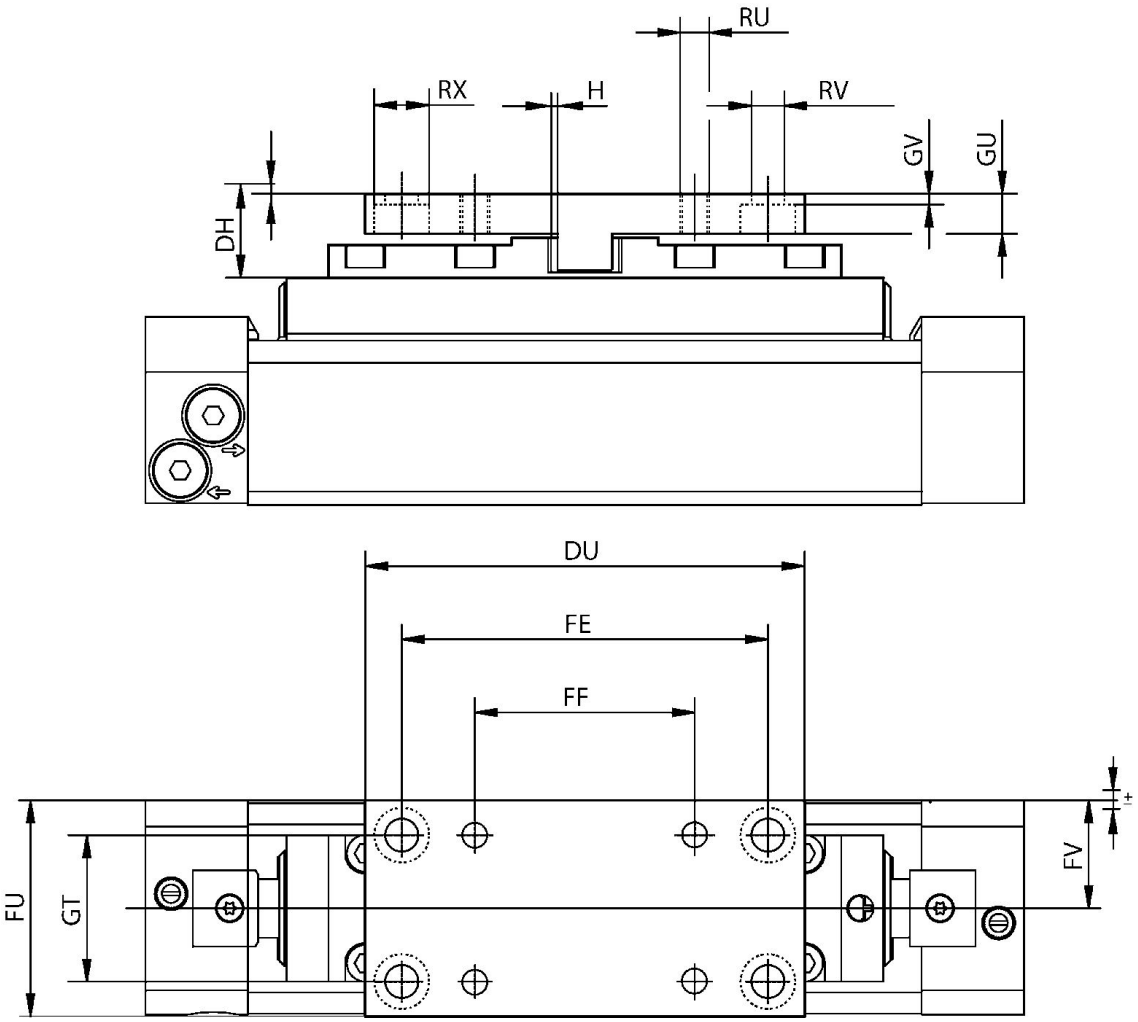
| Piston Ø | 2 sets up to a stroke length of | 3 sets up to a stroke length of | 1 additional set per stroke length of |
|---|---|---|---|
| 16 | 1200 | 1600 | 800 |
| 25 | 1400 | 1800 | 900 |
| 32 | 1500 | 2000 | 1000 |
| 40 | 1600 | 2100 | 1050 |
| 50 | 1700 | 2200 | 1100 |
| 63 | 1900 | 2400 | 1200 |
| 80 | 2300 | 3000 | 1500 |

## Compensating coupling, Series S44

For series: RTC



| Suitable piston Ø [mm] | Material | Part No. |
|---|---|---|
| 16, 25 | Aluminum | R402002403 |
| 32, 40 | Aluminum | R402002404 |
| 50, 63, 80 | Aluminum | R402002405 |

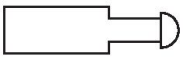



| Piston Ø | Part No. | DH | DU | FU | FV | FE | FF | GT | GU |
|---|---|---|---|---|---|---|---|---|---|
| 16, 25 | R402002403 | 17,5–20 | 95 | 34 | 17 ±8 | 80 | 60 | 20 | 9 |
| 32, 40 | R402002404 | 23–27 | 120 | 59 | 29,5 ±14 | 100 | 60 | 40 | 11 |
| 50, 63, 80 | R402002405 | 30,5–35 | 150 | 90 | 45 ±24 | 120 | 80 | 60 | 15 |

| Piston Ø | GV | H | RU | RV | RX |
|---|---|---|---|---|---|
| 16, 25 | 3 | 0,15–0,4 | M6 | 6.6 | 11 |
| 32, 40 | 3 | 0,15–0,4 | M8 | 9 | 15 |
| 50, 63, 80 | 5 | 0,15–0,4 | M10 | 11 | 15 |

## Industrial shock absorber, Series SA2-RC for Rodless cylinders, RTC series

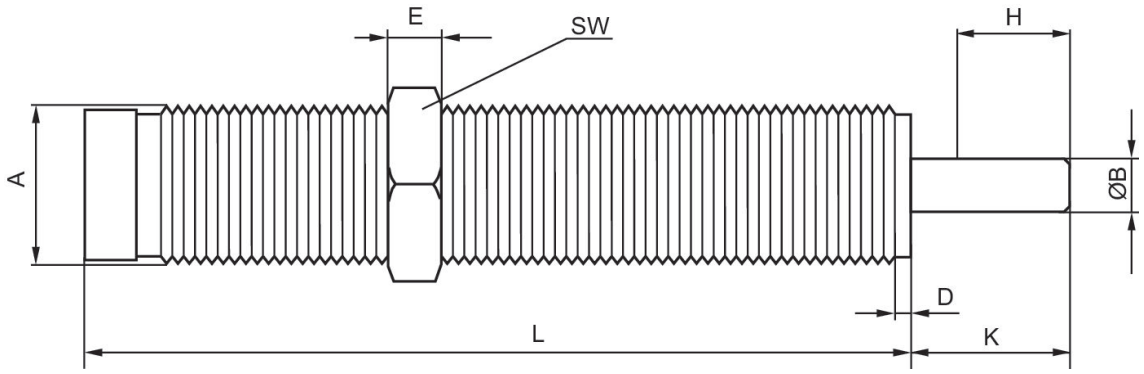
For series: RTC
Ambient temperature min./max.: -10 °C ... 60 °C



| Mounting thread | Stroke [mm] | Max. energy absorption/stroke [Nm] | Max. energy absorption/hour [Nm] | Effective mass $m_e$ min. [kg] | Effective mass $m_e$ max. [kg] | Min. return spring force [N] | Max. return spring force [N] | Part No. |
|---|---|---|---|---|---|---|---|---|
| M12x1 | 10 | 14 | 30000 | 0.5 | 1.8 | 3.5 | 7 | R412010695 |
| M12x1 | 10 | 14 | 30000 | 1.5 | 7.7 | 3.5 | 7 | R412010696 |
| M12x1 | 10 | 14 | 30000 | 5 | 57 | 3.5 | 7 | R412010697 |
| M14x1,5 | 14 | 30 | 50000 | 3.5 | 17 | 13 | 23 | R412010698 |
| M14x1,5 | 14 | 30 | 50000 | 9.9 | 76 | 13 | 23 | R412010699 |
| M14x1,5 | 14 | 30 | 50000 | 62 | 252 | 13 | 23 | R412010700 |
| M20x1,5 | 13 | 65 | 52000 | 7.5 | 36 | 12 | 23 | R412010701 |
| M20x1,5 | 13 | 65 | 52000 | 20 | 160 | 12 | 23 | R412010702 |
| M20x1,5 | 13 | 65 | 52000 | 130 | 610 | 12 | 23 | R412010703 |

| Min. impact speed [m/s] | Max. impact speed [m/s] | Part No. |
|---|---|---|
| 3.5 | 5 | R412010695 |
| 1.9 | 4.3 | R412010696 |
| 0.7 | 2.4 | R412010697 |
| 1.9 | 4.1 | R412010698 |
| 0.9 | 2.5 | R412010699 |
| 0.5 | 1 | R412010700 |
| 1.9 | 4.2 | R412010701 |
| 0.9 | 2.6 | R412010702 |
| 0.5 | 1 | R412010703 |

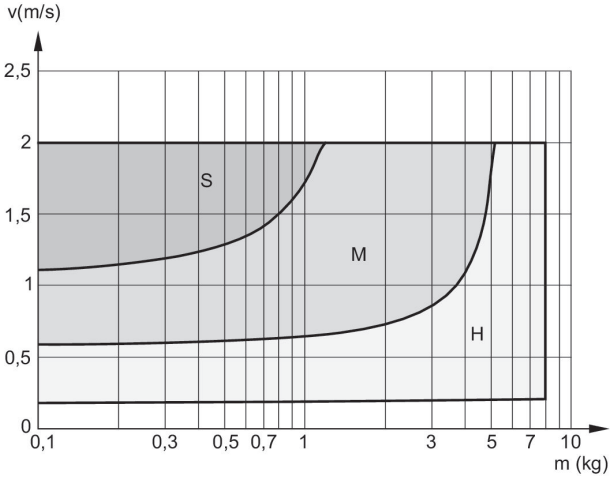
Dimensions




H = stroke
A = mounting thread

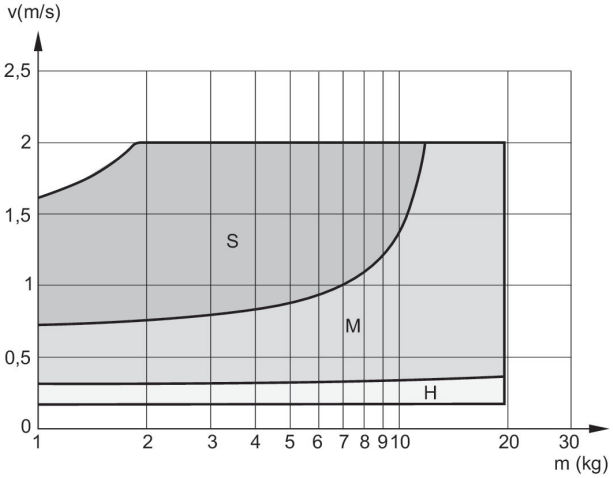
| Part No. | Type | Mounting thread | ØB | D | E | H | K | L | SW |
|---|---|---|---|---|---|---|---|---|---|
| R412010695 | SA2-RT | M12x1 | 4 | 2.5 | 4 | 10 | 15 | 52 | 14 |
| R412010696 | SA2-RT | M12x1 | 4 | 2.5 | 4 | 10 | 15 | 52 | 14 |
| R412010697 | SA2-RT | M12x1 | 4 | 2.5 | 4 | 10 | 15 | 52 | 14 |
| R412010698 | SA2-RT | M14x1,5 | 4 | 2.5 | 5 | 14 | 18.5 | 69 | 17 |
| R412010699 | SA2-RT | M14x1,5 | 4 | 2.5 | 5 | 14 | 18.5 | 69 | 17 |
| R412010700 | SA2-RT | M14x1,5 | 4 | 2.5 | 5 | 14 | 18.5 | 69 | 17 |
| R412010701 | SA2-RT | M20x1,5 | 6 | 2.5 | 6 | 13 | 18 | 75 | 24 |
| R412010702 | SA2-RT | M20x1,5 | 6 | 2.5 | 6 | 13 | 18 | 75 | 24 |
| R412010703 | SA2-RT | M20x1,5 | 6 | 2.5 | 6 | 13 | 18 | 75 | 24 |

## Cushioning diagram Ø 16 mm



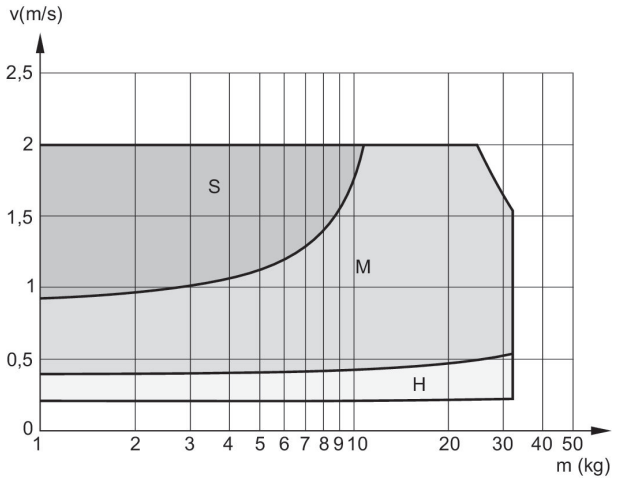

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 25 mm



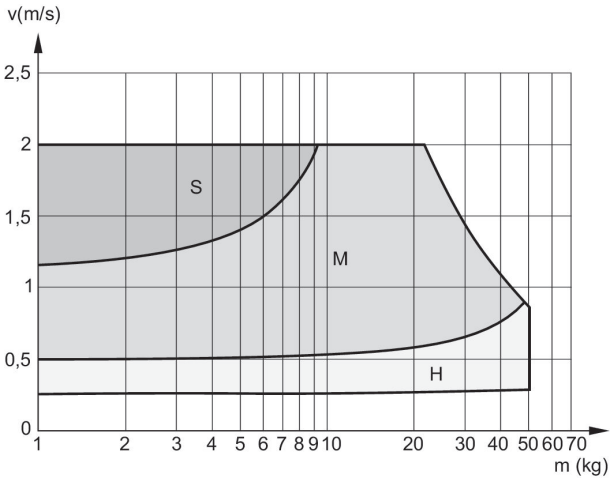

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 32 mm



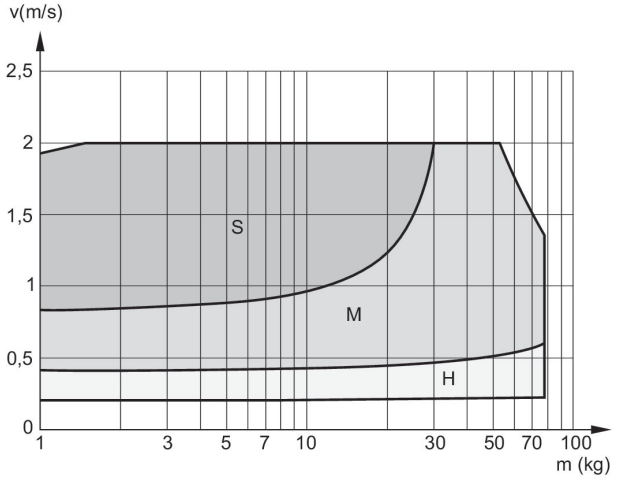

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 40 mm



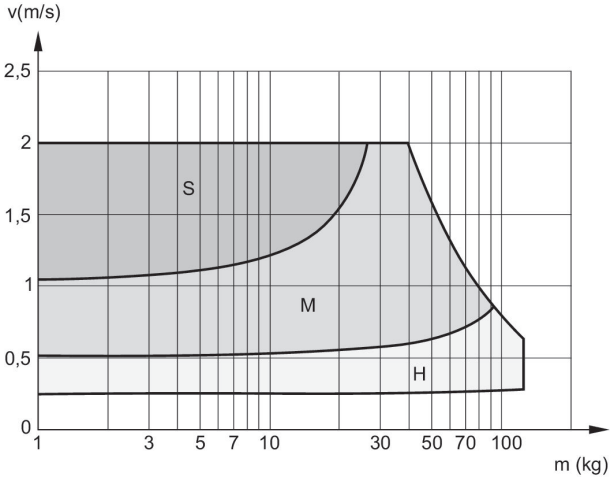

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 50 mm




V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

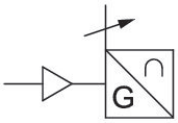
## Cushioning diagram Ø 63 mm




V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Sensors, Series SM6-AL

Electrical connection 2, thread size: M8x1
Certificates: cULus
Electrical connection 2, number of poles: 4-pin
Ambient temperature min./max.: -20 °C ... 70 °C

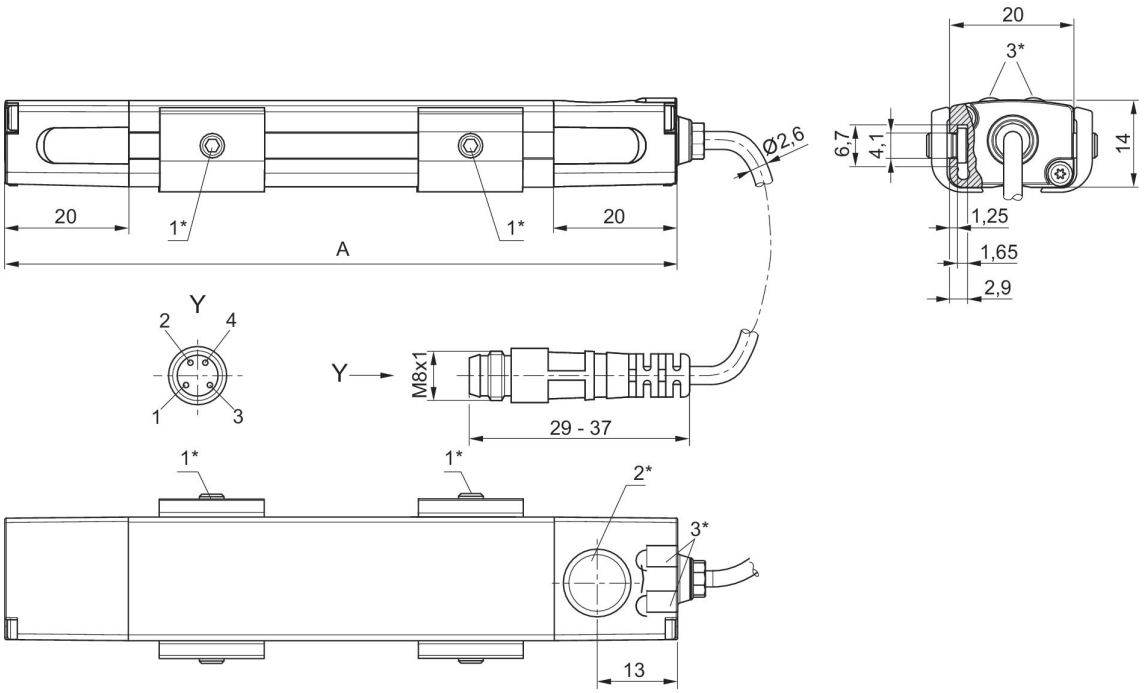



| Switch descr. | Cable length L [m] | max. measuring range [mm] | Overall length Sensor [mm] | Incl. number of sensor clamp pairs [piece] | Version | Part No. |
|---|---|---|---|---|---|---|
| Analog | 0.3 | 107 | 109 | 2 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010880 |
| Analog | 0.3 | 143 | 145 | 2 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010881 |
| Analog | 0.3 | 179 | 181 | 2 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010882 |
| Analog | 0.3 | 215 | 217 | 2 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010883 |
| Analog | 0.3 | 251 | 253 | 2 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010884 |
| Analog | 0.3 | 287 | 289 | 3 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010885 |
| Analog | 0.3 | 323 | 325 | 3 | short circuit resistant, Pro- | R412010886 |

| Switch descr. | Cable length L [m] | max. measuring range [mm] | Overall length Sensor [mm] | Incl. number of sensor clamp pairs [piece] | Version | Part No. |
|---|---|---|---|---|---|---|
| | | | | | tected against polarity reversal, Overload protection | |
| Analog | 0.3 | 359 | 361 | 3 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010887 |
| Analog | 0.3 | 395 | 397 | 3 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010888 |
| Analog | 0.3 | 431 | 433 | 3 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010889 |
| Analog | 0.3 | 467 | 469 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010890 |
| Analog | 0.3 | 503 | 505 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010891 |
| Analog | 0.3 | 539 | 541 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010892 |
| Analog | 0.3 | 575 | 577 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010893 |
| Analog | 0.3 | 611 | 613 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010894 |
| Analog | 0.3 | 647 | 649 | 4 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010895 |
| Analog | 0.3 | 683 | 685 | 5 | short circuit resistant, Pro- | R412010896 |

| Switch descr. | Cable length L [m] | max. measuring range [mm] | Overall length Sensor [mm] | Incl. number of sensor clamp pairs [piece] | Version | Part No. |
|---|---|---|---|---|---|---|
| | | | | | tected against polarity reversal, Overload protection | |
| Analog | 0.3 | 719 | 721 | 5 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010897 |
| Analog | 0.3 | 755 | 757 | 5 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010898 |
| Analog | 0.3 | 791 | 793 | 5 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010899 |
| Analog | 0.3 | 827 | 829 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010900 |
| Analog | 0.3 | 863 | 865 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010901 |
| Analog | 0.3 | 899 | 901 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010902 |
| Analog | 0.3 | 935 | 937 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010903 |
| Analog | 0.3 | 971 | 973 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010904 |
| Analog | 0.3 | 1007 | 1009 | 6 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010905 |

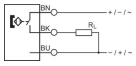
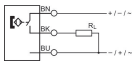
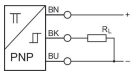
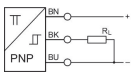
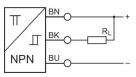
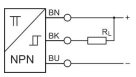
Dimensions




1* = threaded pin M3x11 2* = teach area 3* = LED
A = sensor length
Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2/IO-Link), EN 60947-5-7
LED 1: yellow = measuring operation, red = error
LED 2: green = voltage signal, blue = current signal

## Sensors, Series ST4, open cable ends, Certificate UL (Underwriters Laboratories)

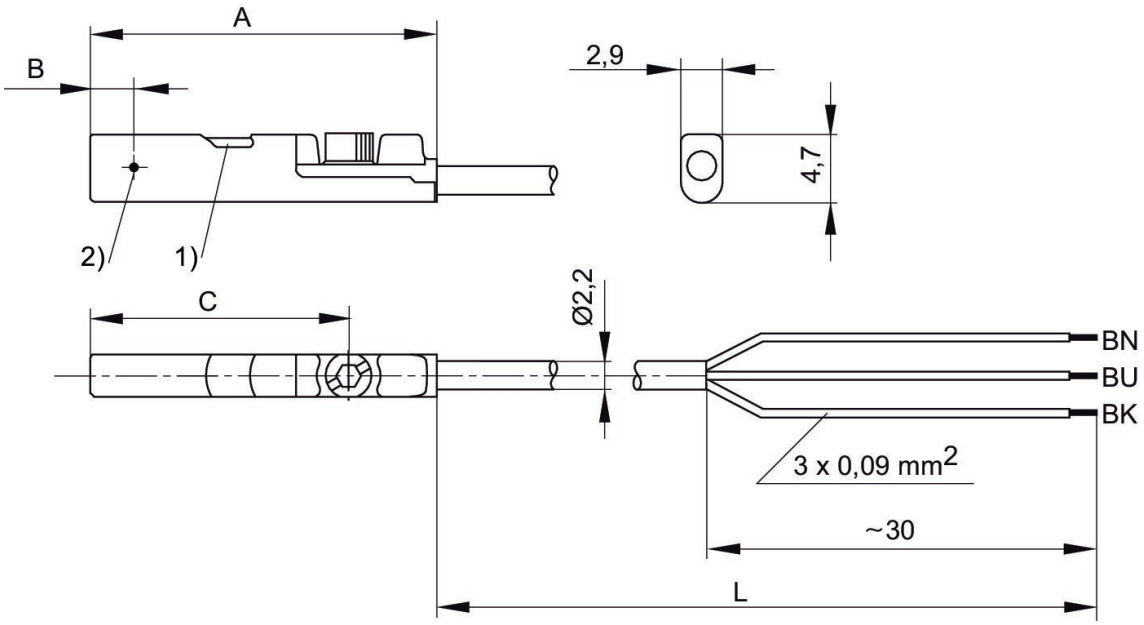
For series: PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
Certificates: UL (Underwriters Laboratories), cULus, RoHS
Ambient temperature min./max.: -30 °C ... 80 °C

| | Direct mounting for series | Switch descr. | Cable length L [m] | Max. DC switching current [A] | Max. AC switching current [A] | Min. operating voltage DC [V DC] | Max. operating voltage DC [V DC] | Part No. |
|---|---|---|---|---|---|---|---|---|
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | Reed | 3 | 0.13 | 0.13 | 5 | 30 | R412019488 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | Reed | 5 | 0.13 | 0.13 | 5 | 30 | R412019489 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | electronic PNP | 3 | 0.1 | | 10 | 30 | R412019680 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | electronic PNP | 5 | 0.1 | | 10 | 30 | R412019681 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | NPN | 3 | 0.1 | | 10 | 30 | R412019684 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | NPN | 5 | 0.1 | | 10 | 30 | R412019685 |

| Version | Part No. |
|---|---|
| Protected against polarity reversal | R412019488 |
| Protected against polarity reversal | R412019489 |
| short circuit resistant, Protected against | R412019680 |

| Version | Part No. |
|---|---|
| polarity reversal | |
| short circuit resistant, Protected against polarity reversal | R412019681 |
| short circuit resistant, Protected against polarity reversal | R412019684 |
| short circuit resistant, Protected against polarity reversal | R412019685 |

Dimensions

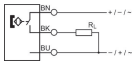
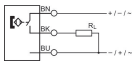
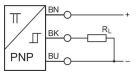
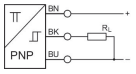



1) LED 2) Switching point
L = cable length BN = brown, BK = black, BU = blue

| Part No. | A | B | C |
|---|---|---|---|
| R412019488 | 26.3 | 6.3 | 20.3 |
| R412019489 | 26.3 | 6.3 | 20.3 |
| R412019680 | 23.7 | 2.8 | 17.7 |
| R412019681 | 23.7 | 2.8 | 17.7 |
| R412019684 | 23.7 | 2.8 | 17.7 |
| R412019685 | 23.7 | 2.8 | 17.7 |

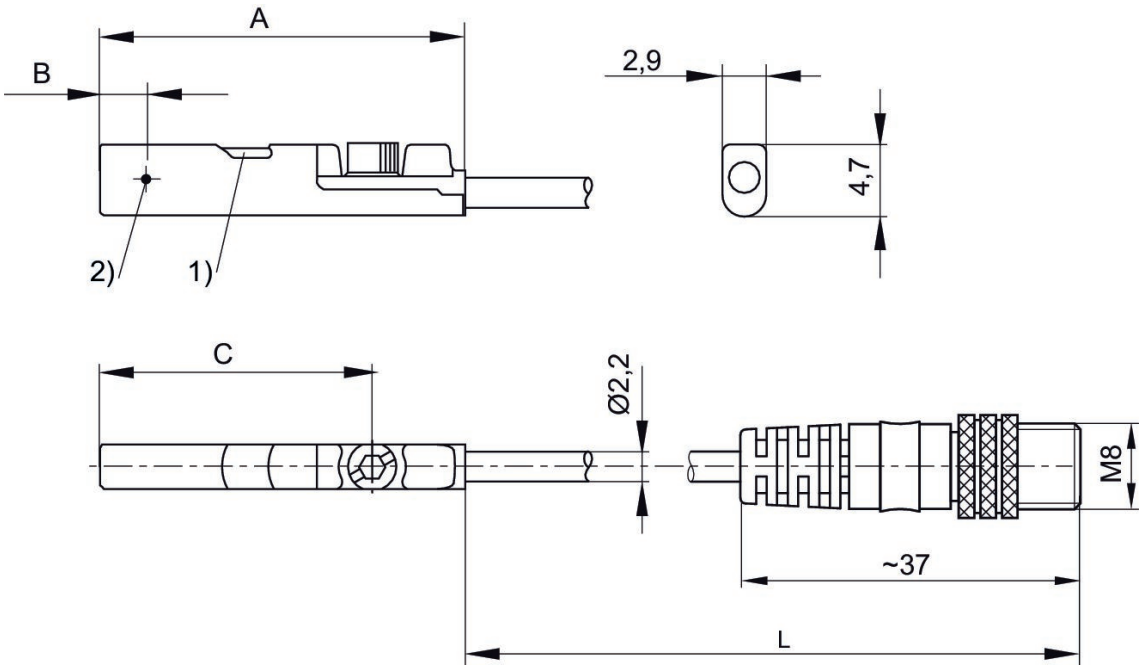
## Sensors, Series ST4, plug M8, with knurled screw

For series: PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
Electrical connection 2, thread size: M8
Certificates: UL (Underwriters Laboratories), cULus, RoHS
Electrical connection 2, number of poles: 3-pin
Ambient temperature min./max.: -30 °C ... 80 °C

| | Direct mounting for series | Switch descr. | Cable length L [m] | Max. DC switching current [A] | Max. AC switching current [A] | Min. operating voltage DC [V DC] | Max. operating voltage DC [V DC] | Part No. |
|---|---|---|---|---|---|---|---|---|
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | Reed | 0.3 | 0.13 | 0.13 | 5 | 30 | R412019490 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | Reed | 0.5 | 0.13 | 0.13 | 5 | 30 | R412019686 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | electronic PNP | 0.3 | 0.1 | | 10 | 30 | R412019493 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | electronic PNP | 0.5 | 0.1 | | 10 | 30 | R412019687 |

| Version | Part No. |
|---|---|
| Protected against polarity reversal | R412019490 |
| Protected against polarity reversal | R412019686 |
| short circuit resistant, Protected against polarity reversal | R412019493 |
| short circuit resistant, Protected against polarity reversal | R412019687 |

Dimensions

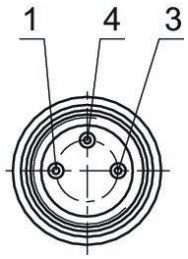



1) LED 2) Switching point
L = cable length

| Part No. | A | B | C |
|---|---|---|---|
| R412019490 | 26.3 | 6.3 | 20.3 |
| R412019686 | 26.3 | 6.3 | 20.3 |
| R412019493 | 23.7 | 2.8 | 17.7 |
| R412019687 | 23.7 | 2.8 | 17.7 |

## R412019490, R412019686, R412019493, R412019687

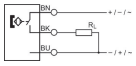
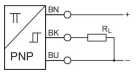
Pin assignment M8x1 (3-pin)




| Pin | Allocation |
|---|---|
| 1 | (+) |
| 3 | (-) |
| 4 | (OUT) |

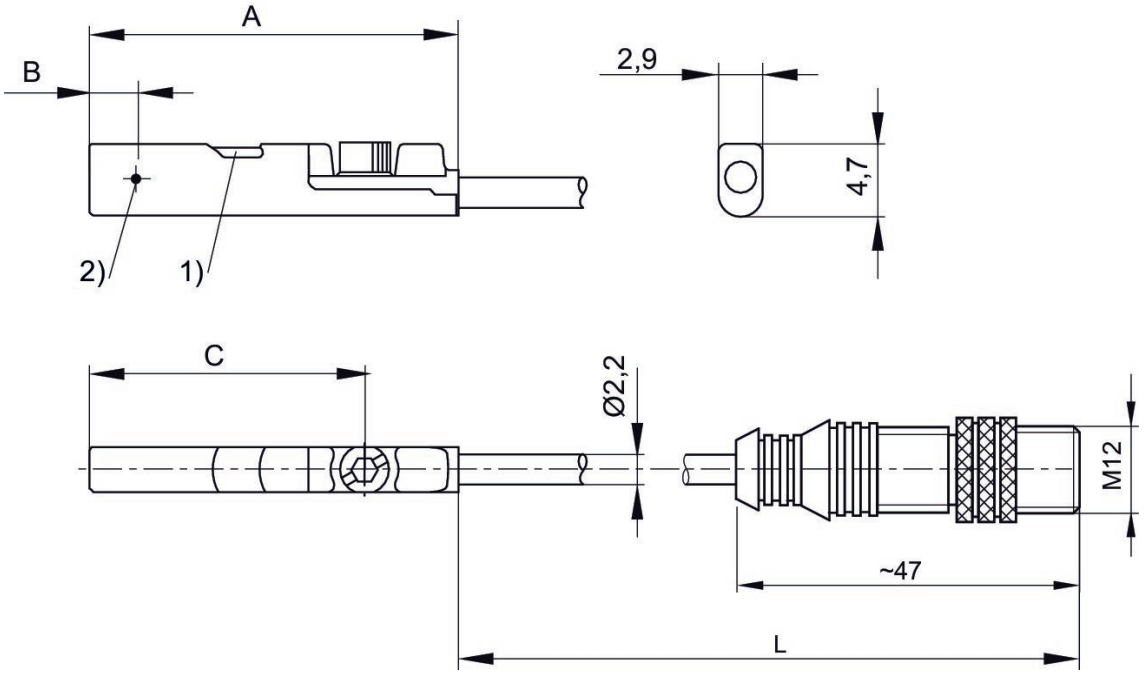
## Sensors, Series ST4, plug M12, with knurled screw

For series: PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
Electrical connection 2, thread size: M12
Certificates: UL (Underwriters Laboratories), cULus, RoHS
Electrical connection 2, number of poles: 3-pin
Ambient temperature min./max.: -30 °C ... 80 °C

| | Direct mounting for series | Switch descr. | Cable length L [m] | Max. DC switching current [A] | Max. AC switching current [A] | Min. operating voltage DC [V DC] | Max. operating voltage DC [V DC] | Part No. |
|---|---|---|---|---|---|---|---|---|
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | Reed | 0.3 | 0.13 | 0.13 | 5 | 30 | R412019688 |
|  | PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI | electronic PNP | 0.3 | 0.1 | | 10 | 30 | R412019689 |

| Version | Part No. |
|---|---|
| Protected against polarity reversal | R412019688 |
| short circuit resistant, Protected against polarity reversal | R412019689 |

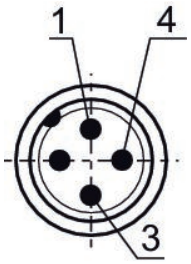
Dimensions




1) LED 2) Switching point
L = cable length

| Part No. | A | B | C |
|---|---|---|---|
| R412019688 | 26.3 | 6.3 | 20.3 |
| R412019689 | 23.7 | 2.8 | 17.7 |

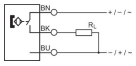
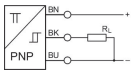
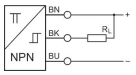
## R412019688, R412019689




| Pin | Allocation |
|---|---|
| 1 | (+) |
| 3 | (-) |
| 4 | (OUT) |

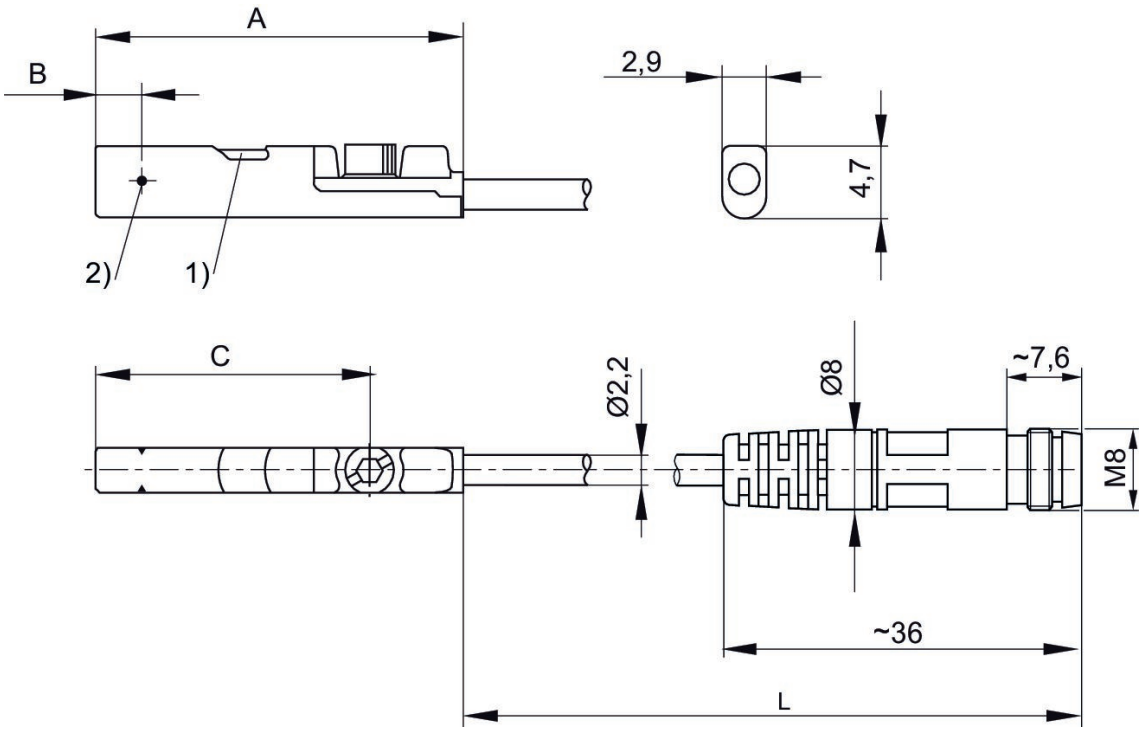
## Sensors, Series ST4, plug M8

For series: PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI
Electrical connection 2, thread size: M8
Certificates: UL (Underwriters Laboratories), cULus, RoHS
Electrical connection 2, number of poles: 3-pin
Ambient temperature min./max.: -30 °C ... 80 °C

| | Direct mounting for series | Switch descr. | Cable length L [m] | Max. DC switching current [A] | Max. AC switching current [A] | Min. operating voltage DC [V DC] | Max. operating voltage DC [V DC] | Part No. |
|---|---|---|---|---|---|---|---|---|
|  | PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI | Reed | 0.3 | 0.13 | 0.13 | 5 | 30 | R412019682 |
|  | PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI | electronic PNP | 0.3 | 0.1 | | 10 | 30 | R412019683 |
|  | PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI | NPN | 0.3 | 0.1 | | 10 | 30 | R412019694 |

| Version | Part No. |
|---|---|
| Protected against polarity reversal | R412019682 |
| short circuit resistant, Protected against polarity reversal | R412019683 |
| short circuit resistant, Protected against polarity reversal | R412019694 |

Dimensions

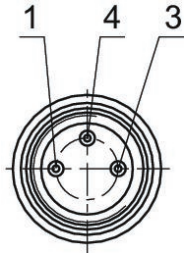



1) LED 2) Switching point
L = cable length

| Part No. | A | B | C |
|---|---|---|---|
| R412019682 | 26.3 | 6.3 | 20.3 |
| R412019683 | 23.7 | 2.8 | 17.7 |
| R412019694 | 23.7 | 2.8 | 17.7 |

## R412019682, R412019683, R412019694

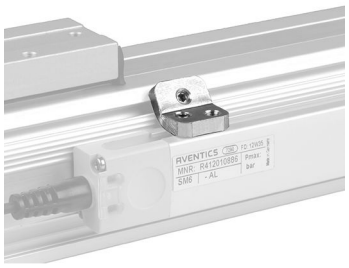
Pin assignment M8x1 (3-pin)




| Pin | Allocation |
|---|---|
| 1 | (+) |
| 3 | (-) |
| 4 | (OUT) |

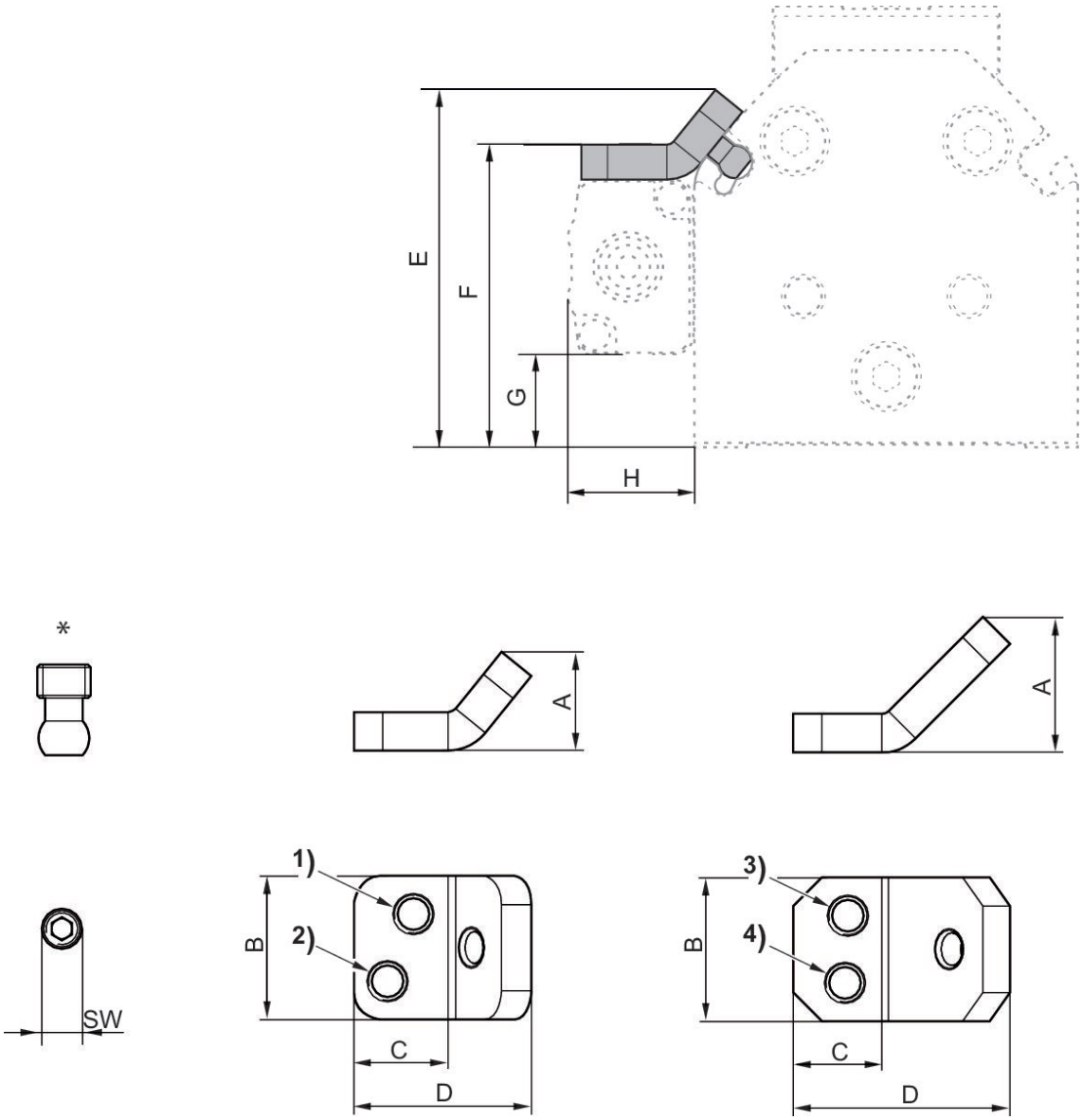
## Sensor mounting, Series CB1

To mount on series: RTC



| Material | Part No. |
|---|---|
| Aluminum | R412022298 |

Dimensions



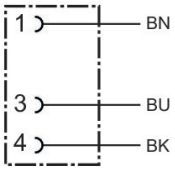

* Threaded pin (brass)
2 clamp mounting sets for SM6-AL 109 - 469 mm 3 clamp mounting sets for SM6-AL 505 - 793 mm 4 clamp mounting sets for SM6-AL 829 - 1009 mm

| Piston Ø | Note | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 1) | 10.3 | 15 | 9.8 | 18.5 | 41 | 34.7 | 10.7 | 14.4 |
| 32 | 2) | 10.3 | 15 | 9.8 | 18.5 | 46.7 | 40.4 | 16.4 | 14.4 |
| 40 | 3) | 14.2 | 15 | 9.2 | 22.6 | 55 | 45.2 | 21.1 | 14.4 |
| 50 | 4) | 14.2 | 15 | 9.2 | 22.6 | 60.6 | 50.5 | 26.5 | 14.4 |

| Piston Ø | SW |
|---|---|
| 25 | 2 |
| 32 | 2 |
| 40 | 2 |
| 50 | 2 |

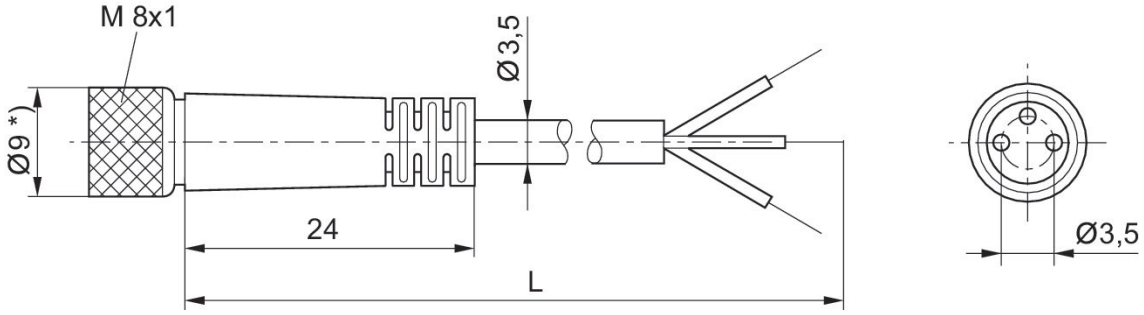
## Round plug connector, Series CON-RD, open cable ends, straight

Electrical connection 1: Socket ... M8x1 ... 3-pin ... A-coded ... straight
Electrical connection 2: open cable ends ... 3-pin
Shielding: unshielded




| Operational voltage | Electrical connection 1, type | Electrical connection 1, thread size | Electrical connection 1, number of poles | Electrical connection 1, coding | Electrical connection 2, type | Electrical connection 2, number of poles | Cable length [m] | Part No. |
|---|---|---|---|---|---|---|---|---|
| 36 V DC / 30 V AC | Socket | M8x1 | 3-pin | A-coded | open cable ends | 3-pin | 2 | 8946201312 |
| 60 V DC / 110 V AC | Socket | M8x1 | 3-pin | A-coded | open cable ends | 3-pin | 15 | 8946201332 |

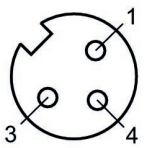
Dimensions




L = length
*) With 15 m cable length Ø12

### 8946201312, 8946201332

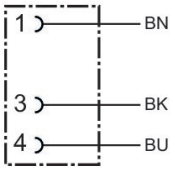
Pin assignment, socket




(1) BN=brown (3) BU=blue (4) BK=black

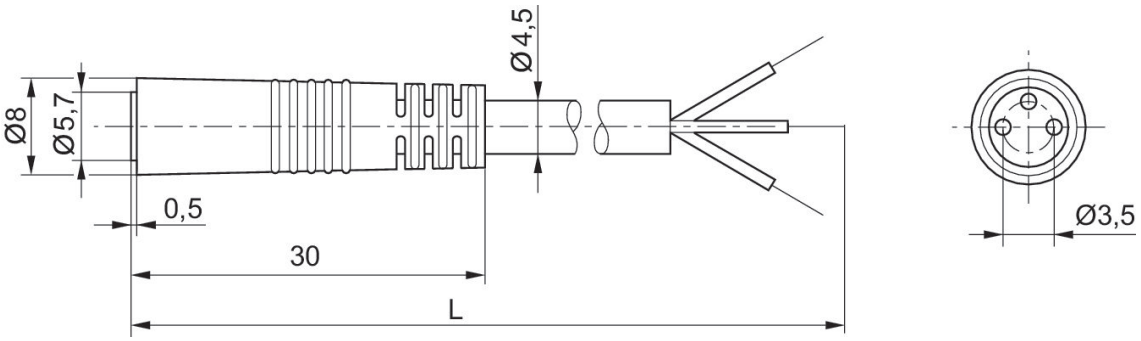
## Round plug connector, Series CON-RD

Electrical connection 1: Socket ... Snap Ø8 ... 3-pin ... straight
Electrical connection 2: without wire end ferrule, tin-plated ... 3-pin




| Operational voltage | Electrical connection 1, type | Electrical connection 1, thread size | Electrical connection 1, number of poles | Electrical connection 2, type | Electrical connection 2, number of poles | Cable length [m] | Part No. |
|---|---|---|---|---|---|---|---|
| 48 V AC/DC | Socket | Snap Ø8 | 3-pin | open cable ends | 3-pin | 2.5 | 8946016112 |

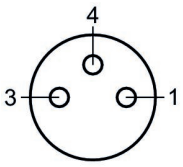
Dimensions




L = length

### 8946016112

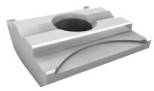
Pin assignment, socket




(1) BN=brown (2) BK=black (3) BU=blue

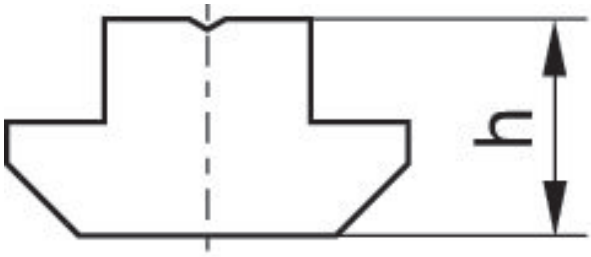
## T-groove nut

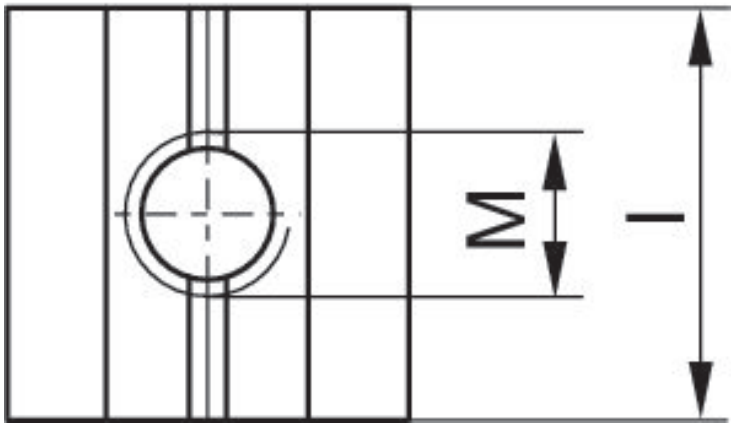
For series: CKP, GPC, RTC



| Type | Scope of delivery [piece] | for series | Weight [kg] | Part No. |
|---|---|---|---|---|
| N6 | 10 | CKP, GPC, RTC | 0.003 | 3842523142 |
| N8 | 100 | CKP, GPC, RTC | 0.007 | 3842514931 |

Dimensions




| Part No. | Type | M | h | l |
|---|---|---|---|---|
| 3842523142 | N6 | M5 | 4 | 20 |
| 3842514931 | N8 | M8 | 6 | 16 |

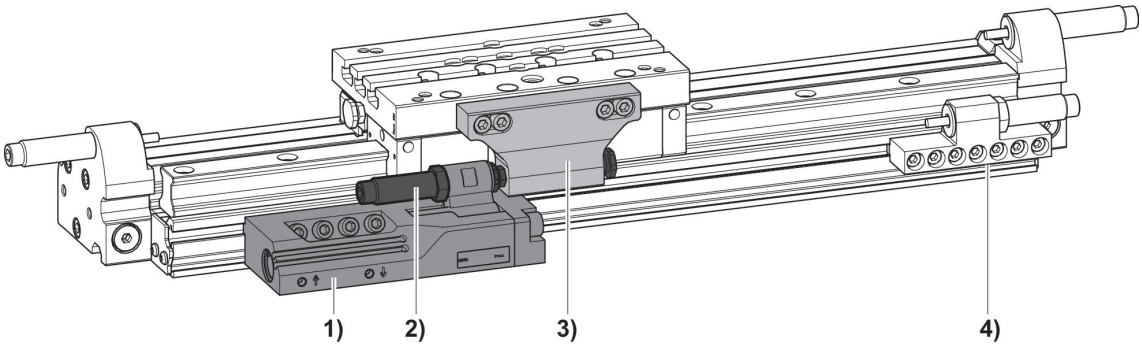
For N4 grooves on CKP 16 a square nut according to DIN 557 can be used.

## Kit for intermediate position

Functional principle: Double-acting
Ambient temperature min./max.: -10 °C ... 60 °C
Medium temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 4 bar ... 8 bar

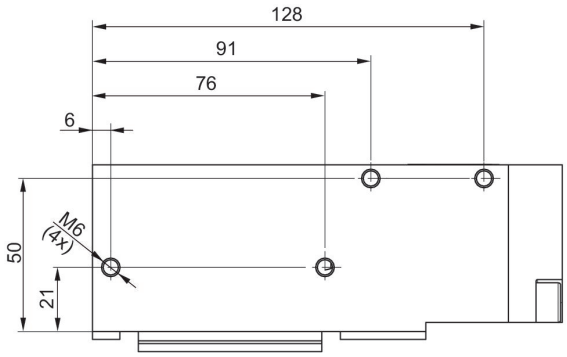
| Piston | Functional principle | Part No. |
|---|---|---|
| with magnetic piston | Double-acting | R412024700 |

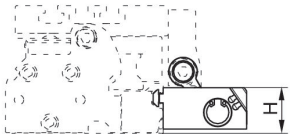
Overview drawing

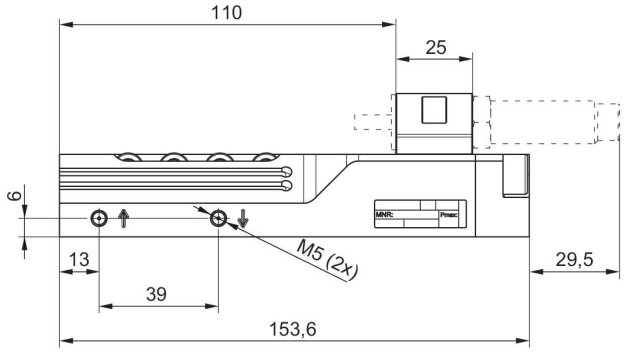


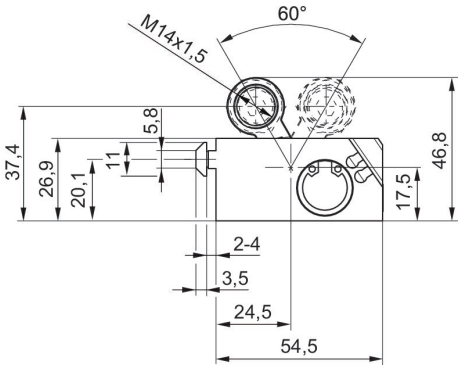

1) Intermediate stop
2) Shock absorber kit
3) Stop
4) Holder for the shock absorber: see stroke length adjustment kit for details

Dimensions

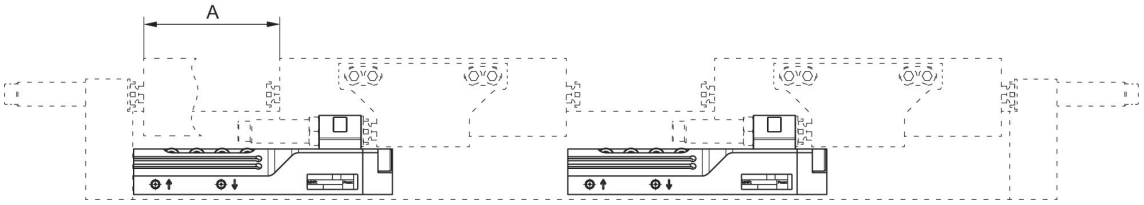


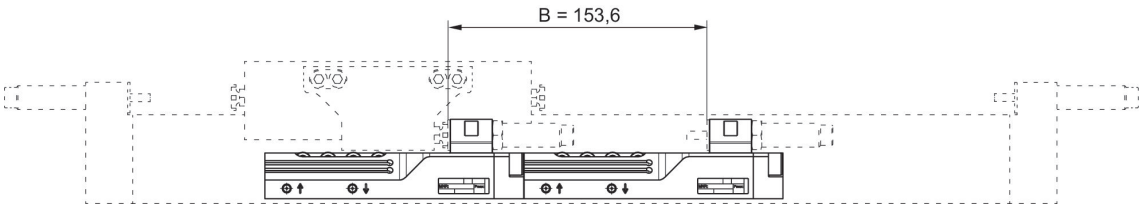




Direction of travel: left
Stopper position A restricted




Direction of travel: right
No restriction of the stopper position

Multiple installation
Minimum stopper distance B

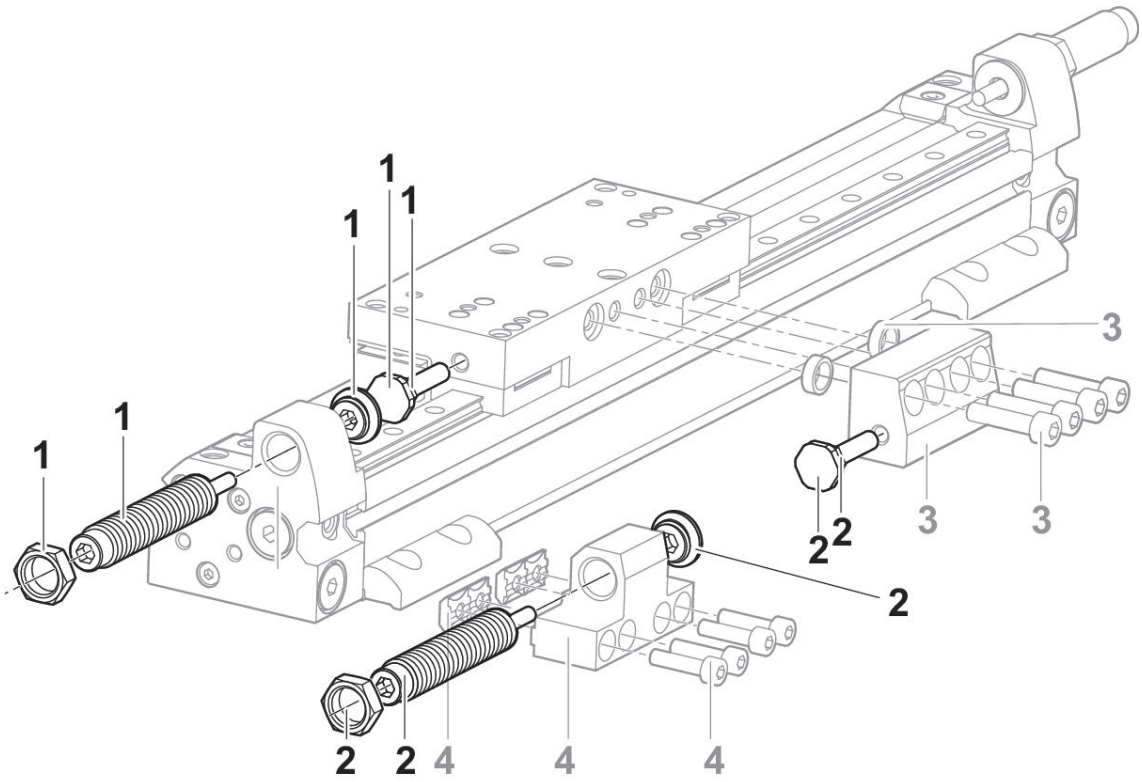



| Type | A | H |
|---|---|---|
| RTC-CG25 | 92,5 | 33,5 |
| RTC-CG32 | 80 | 38,5 |
| RTC-CG40 | 79,5 | 48,5 |
| RTC-HD25 | 92,5 | 27 |
| RTC-HD32 | 80 | 30 |
| RTC-HD40 | 79,5 | 31,5 |

## Shock absorber kit for stroke length adjustment

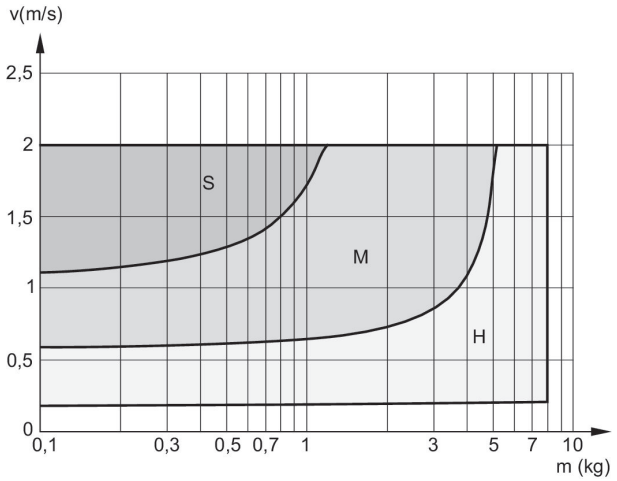
For series: RTC-HD, RTC-CG, CKP

| Moving mass | Diameter | Part No. |
|---|---|---|
| < 8 kg | Ø 16 mm | R412019543 |
| < 4 kg | Ø 16 mm | R402002804 |
| > 4 kg | Ø 16 mm | R402003618 |
| < 8 kg | Ø 25 mm, Ø 32 mm, Ø 40 | R402002805 |
| > 8 kg | Ø 25 mm, Ø 32 mm, Ø 40 | R402003619 |
| > 4 kg | Ø 25 mm, Ø 32 mm, Ø 40 mm | R412019544 |
| < 23 kg | Ø 50 ... 63 mm | R402002806 |
| > 23 kg | Ø 50 ... 63 mm | R402003620 |
| > 4 kg | Ø 50 mm, Ø 63 mm | R412019545 |



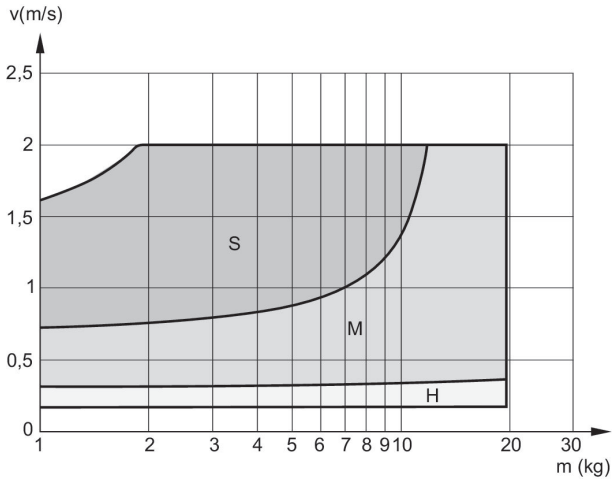

1) Shock absorber kit
2) Shock absorber kit
3) Stop
4) Holder for shock absorber

## Cushioning diagram Ø 16 mm



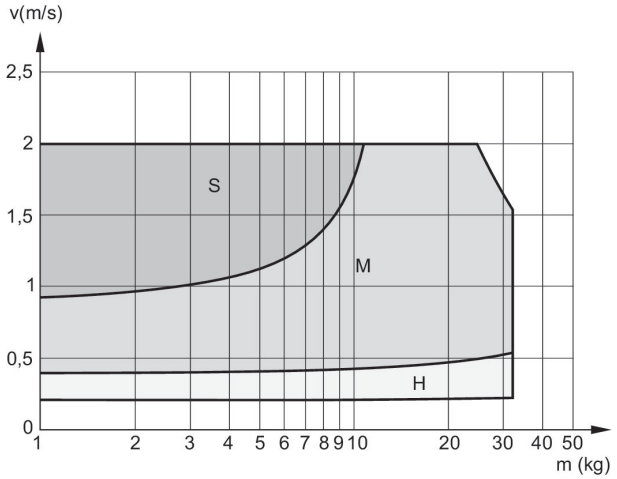

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 25 mm



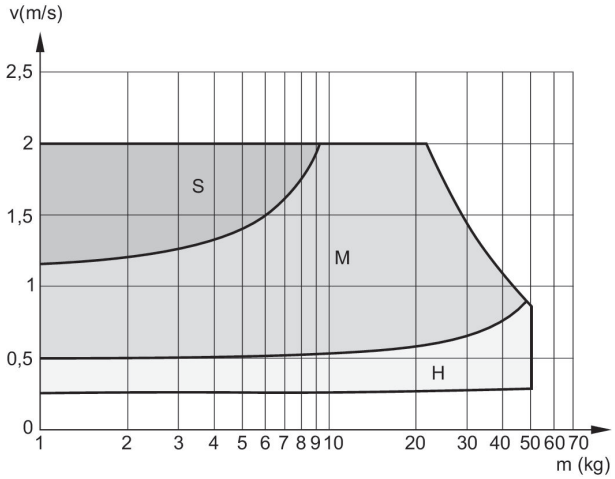

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 32 mm



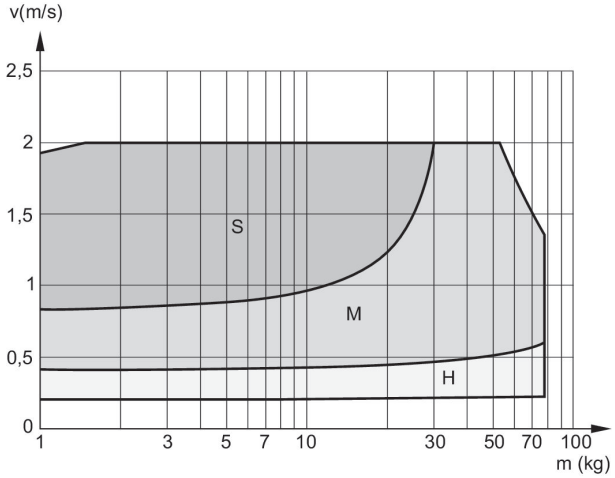

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 40 mm



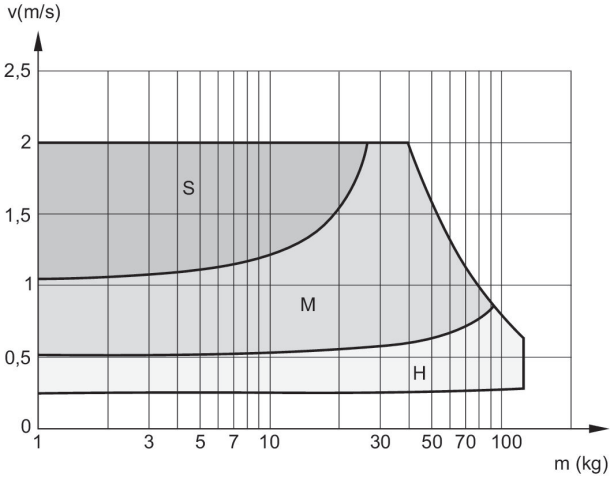

V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Cushioning diagram Ø 50 mm




V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

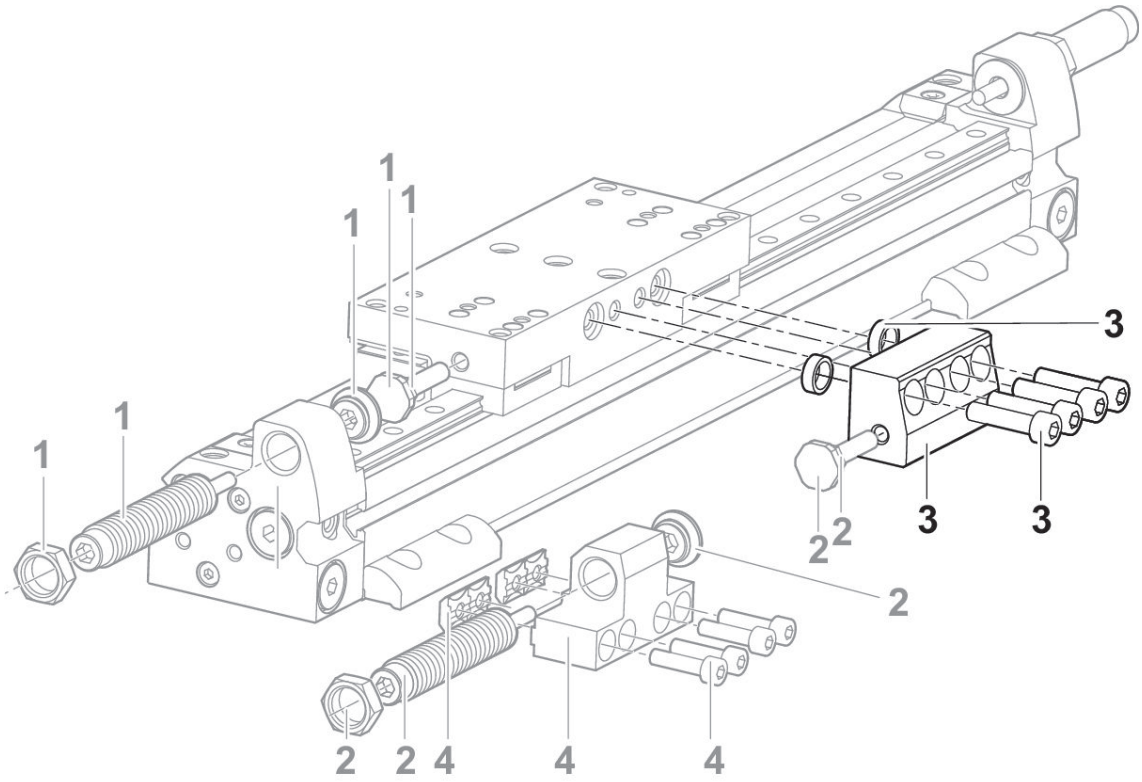
## Cushioning diagram Ø 63 mm




V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

## Stop for stroke length adjustment

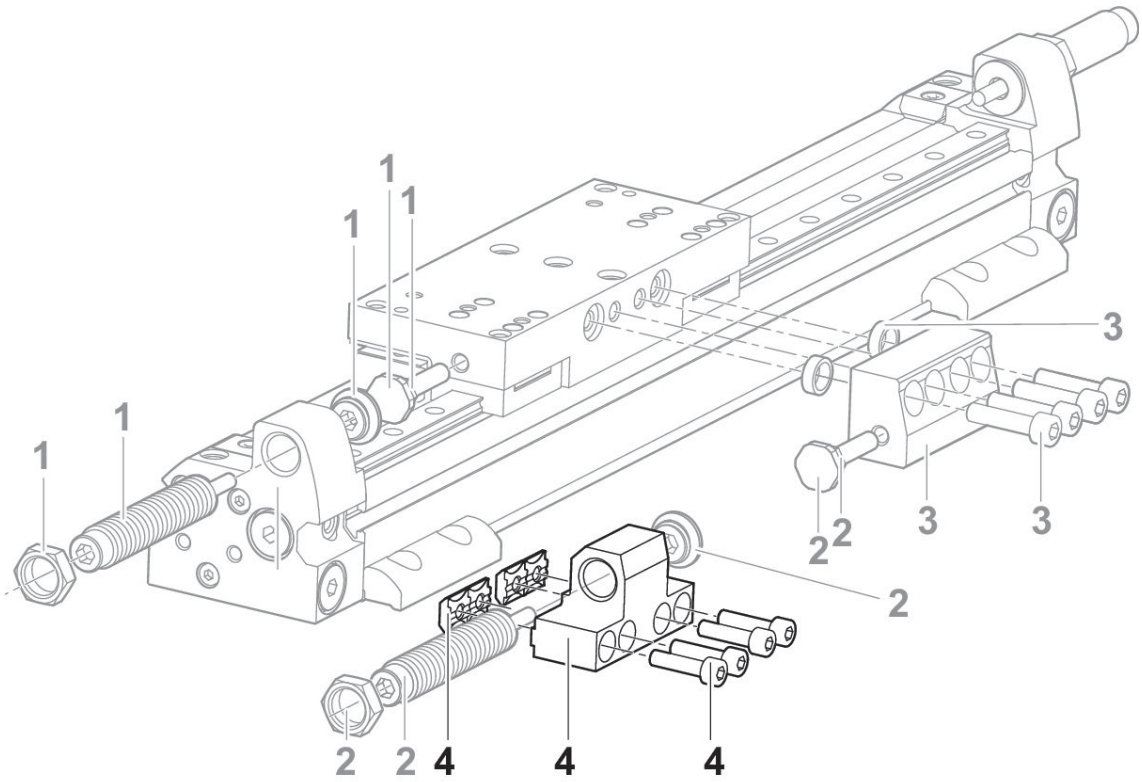
| Diameter | Part No. |
|---|---|
| Ø 16 mm | R402002695 |
| Ø 25 mm (-HD), Ø 25, 32 mm (-CG,-SB) | R402002696 |
| Ø 32 mm | R402002698 |
| Ø 40 | R402002699 |
| Ø 40 | R402002700 |
| Ø 50 mm | R412027259 |
| Ø 50 ... 63 mm | R402002701 |




1) Shock absorber kit
2) Shock absorber kit
3) Stop
4) Holder for shock absorber

## Holder for the shock absorber for stroke length adjustment

| Diameter | Part No. |
|---|---|
| Ø 25 mm | R412025646 |
| Ø 32 mm, Ø 40 mm | R412025647 |
| Ø 50 mm | R412027256 |
| Ø 16 mm | R402002702 |
| Ø 25 mm | R402002703 |
| Ø 32 mm, Ø 40 mm | R402002704 |
| Ø 50 mm, Ø 63 mm | R402003397 |




1) Shock absorber kit
2) Shock absorber kit
3) Stop
4) Holder for shock absorber

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