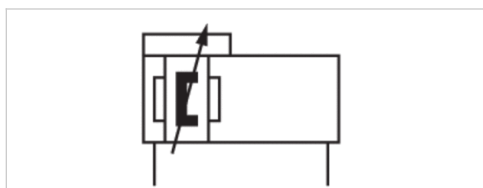


## Rodless cylinder, Series RTC-HD

- Ports 10-32 UNF - 3/8 NPTF
- Ø 25-63 mm
- double-acting
- with magnetic piston
- ball rail guide
- Heavy Duty
- Cushioning Pneumatically adjustable
- Easy2Combine capable with connection kit



|                                                                                                           |                |
|-----------------------------------------------------------------------------------------------------------|----------------|
| Working pressure min./max.                                                                                | 4 ... 8 bar    |
| Ambient temperature min./max.                                                                             | -10 ... 60 °C  |
| Medium                                                                                                    | Compressed air |
| Max. particle size                                                                                        | 5 µm           |
| Oil content of compressed air                                                                             | 0 ... 1 mg/m³  |
| Pressure for determining piston forces                                                                    | 6.3 bar        |
| An example configuration is illustrated.<br>The delivered product may thus deviate from the illustration. |                |

### Technical data

| 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 |

### Technical data

| Piston Ø          | 25 mm | 32 mm | 40 mm | 50 mm  | 63 mm  |
|-------------------|-------|-------|-------|--------|--------|
| Piston force      | 309 N | 507 N | 792 N | 1237 N | 1964 N |
| Cushioning length | 20 mm | 20 mm | 20 mm | 20 mm  | 20 mm  |
| Cushioning energy | 4 J   | 7 J   | 10 J  | 15 J   | 25 J   |

| Piston Ø           | 25 mm    | 32 mm    | 40 mm    | 50 mm    | 63 mm    |
|--------------------|----------|----------|----------|----------|----------|
| Speed max.         | 2 m/s    | 2 m/s    | 2 m/s    | 2 m/s    | 2 m/s    |
| Weight 0 mm stroke | 2,96 kg  | 3,9 kg   | 6,58 kg  | 8,94 kg  | 11,75 kg |
| +10 mm stroke      | 0,071 kg | 0,086 kg | 0,128 kg | 0,162 kg | 0,193 kg |
| Stroke max.        | 4300 mm  | 4300 mm  | 4300 mm  | 4300 mm  | 4300 mm  |

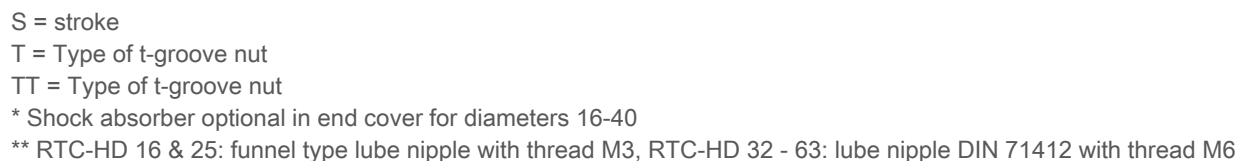
## Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
The delivered product is lubricated for lifetime.  
Use hydraulic shock absorbers for precise end position adjustment.  
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

## Technical information

| Material        |                              |
|-----------------|------------------------------|
| Cylinder tube   | Aluminum, anodized           |
| Cap             | Aluminum, anodized           |
| Seal            | Polyurethane                 |
| Sealing strips  | Polyurethane Stainless steel |
| Ball rail table | Aluminum, anodized           |
| Guide rail      | Steel, hardened              |

Dimensions in inches



## Dimensions in inches

| Piston Ø | Ø [inch] | B    | C    | BU   | CC  | EE       | EF     | EG     | FH   | GA   | GB   | GD   | GE   | GF   | GH   |
|----------|----------|------|------|------|-----|----------|--------|--------|------|------|------|------|------|------|------|
| 25 mm    | 1        | 4.6  | 3.92 | 5.79 | 1.1 | 1/8 NPTF | –      | –      | 2.76 | 1.02 | 0.79 | 4.23 | 4.23 | 4.33 | 0.63 |
| 32 mm    | 1 1/4    | 4.13 | 3.94 | 6.69 | 1.1 | 1/8 NPTF | –      | –      | 3.3  | 1.44 | 0.79 | 4.72 | 4.72 | 5.51 | 0.26 |
| 40 mm    | 1 1/2    | 5.2  | 4.8  | 7.32 | 1.1 | 1/4 NPTF | –      | –      | 3.85 | 1.44 | 0.79 | 5.18 | 5.18 | 6.69 | 0.47 |
| 50 mm    | 2        | 5.69 | 5.22 | 8.07 | 1.1 | 1/4 NPTF | Ø 4,59 | Ø 0,91 | 4.7  | 1.22 | 0.79 | 5.8  | 5.8  | 7.48 | 0.39 |
| 63 mm    | 2 1/2    | 6.34 | 5.47 | 9.17 | 1.1 | 3/8 NPTF | Ø 0,59 | Ø 1,04 | 5.09 | 1.22 | 0.79 | 6.56 | 6.56 | 7.48 | 0.39 |

| Piston Ø | GI    | GJ   | GK   | GS   | HA   | HB  | HC    | HD  | J    | K1   | MC   | PK   | PL   | PM   | PN   | PO   | PP   | PR   |
|----------|-------|------|------|------|------|-----|-------|-----|------|------|------|------|------|------|------|------|------|------|
| 25 mm    | 20/40 | 1.57 | –    | 1.46 | 0,25 | 3,3 | 1,732 | 5   | 0.06 | 0.84 | 0.59 | 0.4  | 0.79 | 0.31 | 0.35 | 0.85 | 0.37 | –    |
| 32 mm    | 85    | 1.57 | 2.36 | 1    | 0,5  | 3   | 2,224 | 5   | 0.06 | 0.78 | 0.79 | 0.59 | 0.73 | 0.37 | 0.47 | 0.96 | 0.37 | –    |
| 40 mm    | 100   | 1.57 | 2.36 | 1.24 | 0,5  | 4   | 2,181 | 6   | 0.06 | 1.01 | 0.67 | 0.71 | 0.71 | 0.39 | 0.43 | 1.24 | 0.41 | –    |
| 50 mm    | 100   | 1.57 | 2.36 | 1.24 | 0,6  | 3,9 | 2,598 | 6.4 | 0.06 | 1.3  | 0.91 | –    | 0.63 | 0.63 | –    | 1.38 | 0.47 | 0.84 |
| 63 mm    | 100   | 1.57 | 2.36 | 1.24 | 0,6  | 4   | 2,354 | 8.4 | 0.06 | 1.3  | 0.98 | –    | 0.55 | 0.55 | –    | 1.79 | 0.57 | 1.06 |

| Piston Ø | PQ   | RG 1) | RH 2)         | RP   | RQ | RT 3) | RU 4) | SG   | SL   | SU   | T  | TT | W1   | W2   | W3   |
|----------|------|-------|---------------|------|----|-------|-------|------|------|------|----|----|------|------|------|
| 25 mm    | –    | M5    | 4xUNC 1/4-20  | Ø 9  | M6 | M5    | M6    | 0.68 | 1.94 | 1.85 | N6 | N6 | 5.17 | 4.5  | 2.83 |
| 32 mm    | –    | M6    | 4xUNC 1/4-20  | Ø 12 | M6 | M6    | M6    | 0.87 | 1.9  | 2.19 | N6 | N8 | 5.49 | 4.7  | 2.48 |
| 40 mm    | –    | M6    | 4xUNC 1/4-20  | Ø 12 | M8 | M6    | M6    | 0.87 | 1.78 | 2.89 | N6 | N8 | 6.55 | 5.76 | 3.31 |
| 50 mm    | 1.22 | M8    | 4xUNC 5/16-18 | Ø 12 | M8 | M8    | M5    | 0.87 | –    | –    | N8 | N8 | 7.56 | 6.57 | 2.5  |
| 63 mm    | 0.98 | M8    | 4xUNC 5/16-18 | Ø 12 | M8 | M8    | M5    | 1.18 | –    | –    | N8 | N8 | 8.21 | 7.22 | 3.15 |

| Piston Ø | W4   | W5   | W6   | W7   | Wd1 | Wd2 | T1   | T2   | T3   | TF   | TG   | U1   | U2   | U3   | U4   | ZD    |
|----------|------|------|------|------|-----|-----|------|------|------|------|------|------|------|------|------|-------|
| 25 mm    | 0.71 | 0.05 | 0.53 | 0.78 | M6  | M6  | 0.79 | 0.55 | 2.13 | 2.81 | 0.75 | 2.24 | 0,7  | 0,85 | 0.59 | 8.46  |
| 32 mm    | 1.02 | 0.05 | 0.75 | 1.06 | M8  | M8  | 0.91 | 0.55 | 1.73 | 2.2  | 1.57 | 2.8  | 1.18 | 0,83 | 0.59 | 9.45  |
| 40 mm    | 1.02 | 0.05 | 0.75 | 1.06 | M8  | M8  | 0.97 | 1.16 | 2.34 | 3.03 | 1.57 | 3.26 | 1.18 | 1,14 | 0.59 | 9.3   |
| 50 mm    | 2.76 | 0.06 | 0.87 | 1.29 | M12 | M12 | 1.4  | 0.73 | 1.71 | 3.09 | 1.57 | 4,1  | 1.18 | 0.59 | 0.59 | 11.6  |
| 63 mm    | 1.97 | 0.06 | 0.87 | 1.29 | M12 | M12 | 1.8  | 0.67 | 1.56 | 2.56 | 3.15 | 4.5  | 1.18 | 0.59 | 0.59 | 13.11 |

| Piston Ø | M [lb] 5) |
|----------|-----------|
| 25 mm    | 2.75      |
| 32 mm    | 3.09      |
| 40 mm    | 5.67      |
| 50 mm    | 7.03      |
| 63 mm    | 7.63      |

1) Thread depth: 0.47 inch for piston Ø 5/8 - 1, 0.63 inch for piston Ø 5/8 - 1 1/2, 0.55 inch for piston Ø 5/8 - 3

2) Thread depth: 0.50 inch for piston Ø 5/8 - 3

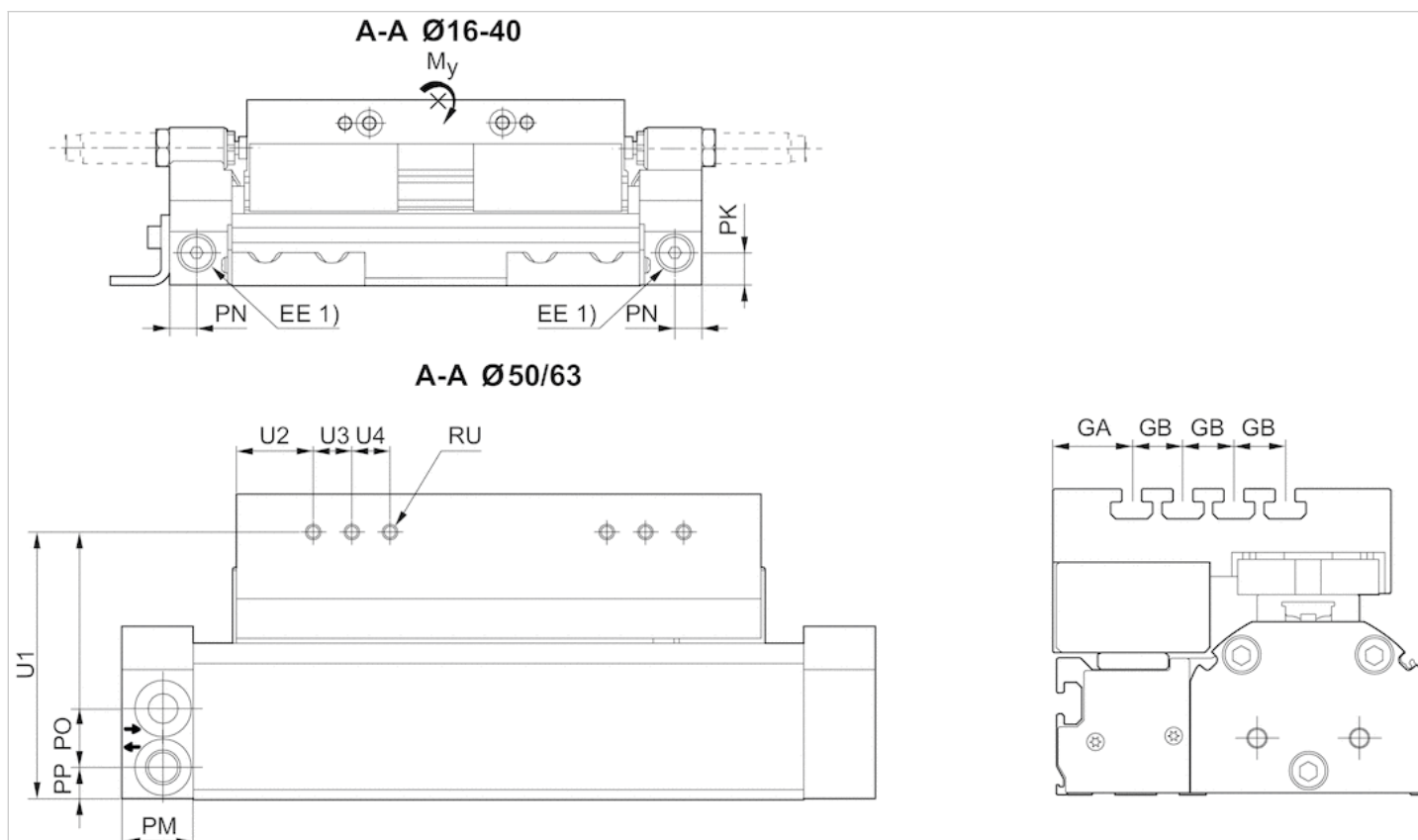
3) Thread depth: 0.35 inch for piston Ø 5/8 - 1 1/2, 0.47 inch for piston Ø 5/8 - 3

4) Thread depth: 0.40 inch for piston Ø 5/8 - 3

5) M = moving mass

\* Can be selected in the configurator (M7 for high-speed applications)

## Dimensions



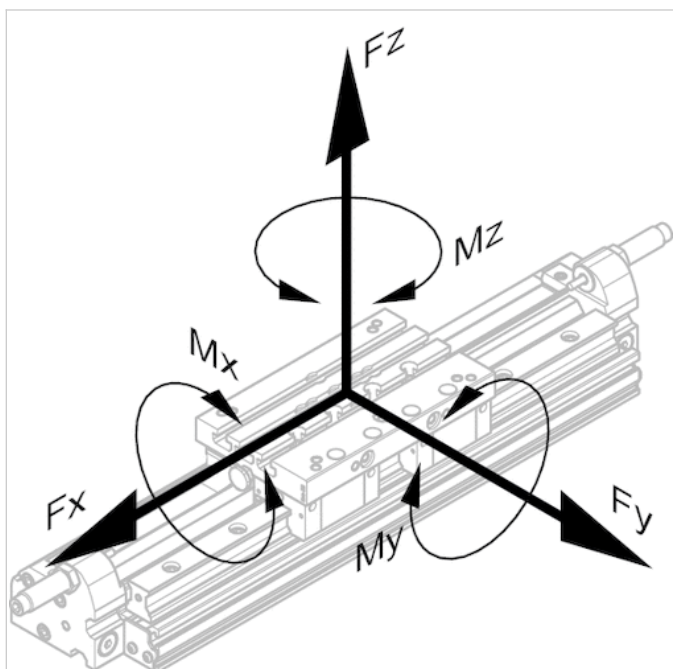
1) Auxiliary air feeding

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

## Permissible forces $F_x$ $F_y$ $F_z$ and torques $M_x$ $M_y$ $M_z$

$$\frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + \frac{M_z}{M_{z_{\max.}}} \leq 1$$

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 on the <http://www.aventics.com>.



## dynamic

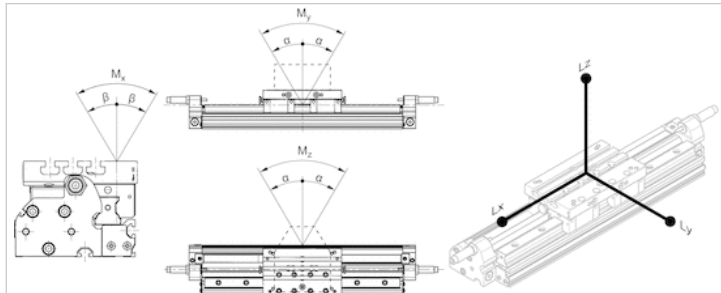
| Piston Ø | Ø [inch] | Mx [Nm] | My [Nm] | Mz [Nm] |
|----------|----------|---------|---------|---------|
| 25 mm    | 1        | 100     | 336     | 114     |
| 32 mm    | 1 1/4    | 154     | 502     | 190     |
| 40 mm    | 1 1/2    | 254     | 764     | 376     |
| 50 mm    | 2        | 254   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

## static

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

## Dimensions

Max. play and recommended max. lever arm length



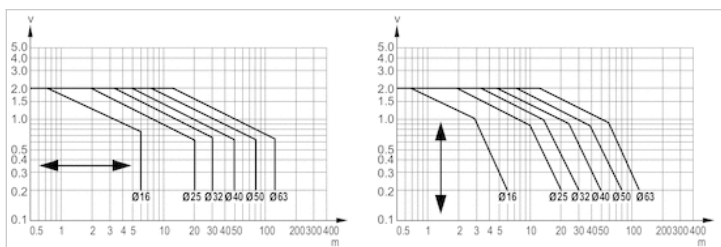
L = lever arm  
M = Torques

## Dimensions

| Piston Ø | Ø [inch] | $\alpha$ | $\beta$ | Lx  | Ly  | Lz  |
|----------|----------|----------|---------|-----|-----|-----|
| 25 mm    | 1        | 0,1°     | 0,2°    | 344 | 344 | 344 |
| 32 mm    | 1 1/4    | 0,1°     | 0,2°    | 404 | 404 | 404 |
| 40 mm    | 1 1/2    | 0,1°     | 0,2°    | 440 | 440 | 440 |
| 50 mm    | 2        | 0,1°     | 0,2°    | 532 | 532 | 532 |
| 63 mm    | 2 1/2    | 0,1°     | 0,2°    | 644 | 644 | 644 |

## Diagrams

Limit diagram for pneumatic cushioning for horizontal or vertical mounting

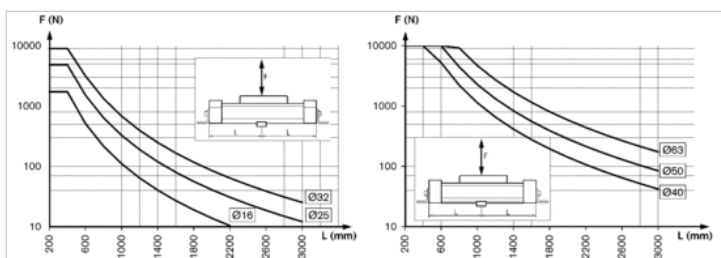


v = Piston velocity [m/s]

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