

# Rack-and-pinion gears, Series TRR

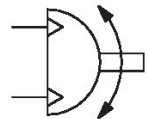
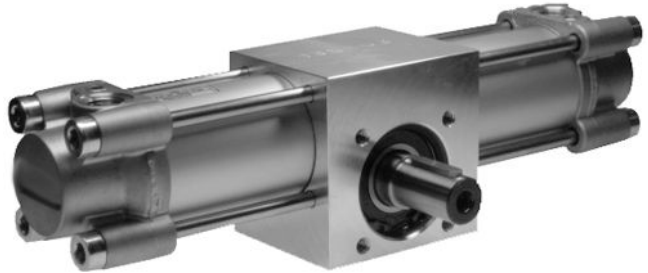
0822935206

AVENTICS  
Series TRR  
Rotary  
actuators

2024-04-05

## AVENTICS Series TRR Rotary actuators

The AVENTICS Series TRR is a rotary cylinder based on two ISO cylinders and a rack and pinion gearbox to generate high torques with adjustable angle.



## Technical data

|  |                         |
|--|-------------------------|
| Industry   | Industrial              |
| Diameter   | 100 mm                  |
| Compressed air connection                        | G 1/2                   |
| Magnetic piston                                  | with magnetic piston    |
| Rotary compact module version                    | Double piston with rack |
| Frame size                                       | TRR-100                 |
| Axis diameter                                    | 35 mm                   |
| Theoretical torque at                            | 6,3 bar                 |
| Rotation angle tolerance                         | 0° / +3°                |
| Direction of rotation                            | counterclockwise        |
| Max. play (radial)                               | 0.75 °                  |
| Theoretical torque                               | 111 Nm                  |
| Cushioning                                       | Pneumatically           |
| Cushioning                                       | Non-adjustable          |
| Cushioning angle                                 | 45 °                    |
| Stroke/10° angle of rotation                     | 5.2 mm                  |
| Min. angle of rotation                           | 0 °                     |
| Max. angle of rotation                           | 360 °                   |
| Tolerance in 0° position not under pressure min. | -1.5 °                  |

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Max. tolerance in 0° position not under pressure 1.5 °

~~Min. working pressure 2 bar~~

Max. working pressure 10 bar

Min. ambient temperature -20 °C

Max. ambient temperature 80 °C

Min. medium temperature -20 °C

Max. medium temperature 80 °C

Medium Compressed air

Min. oil content of compressed air 0 mg/m<sup>3</sup>

Max. oil content of compressed air 1 mg/m<sup>3</sup>

Max. particle size 5 µm

Weight 19.1 kg

## Material

Housing material Aluminum

Material front cover Die-cast aluminum

Seal material Polyurethane

Material axis Steel, chrome-plated

Part No. 0822935206

## Technical information

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

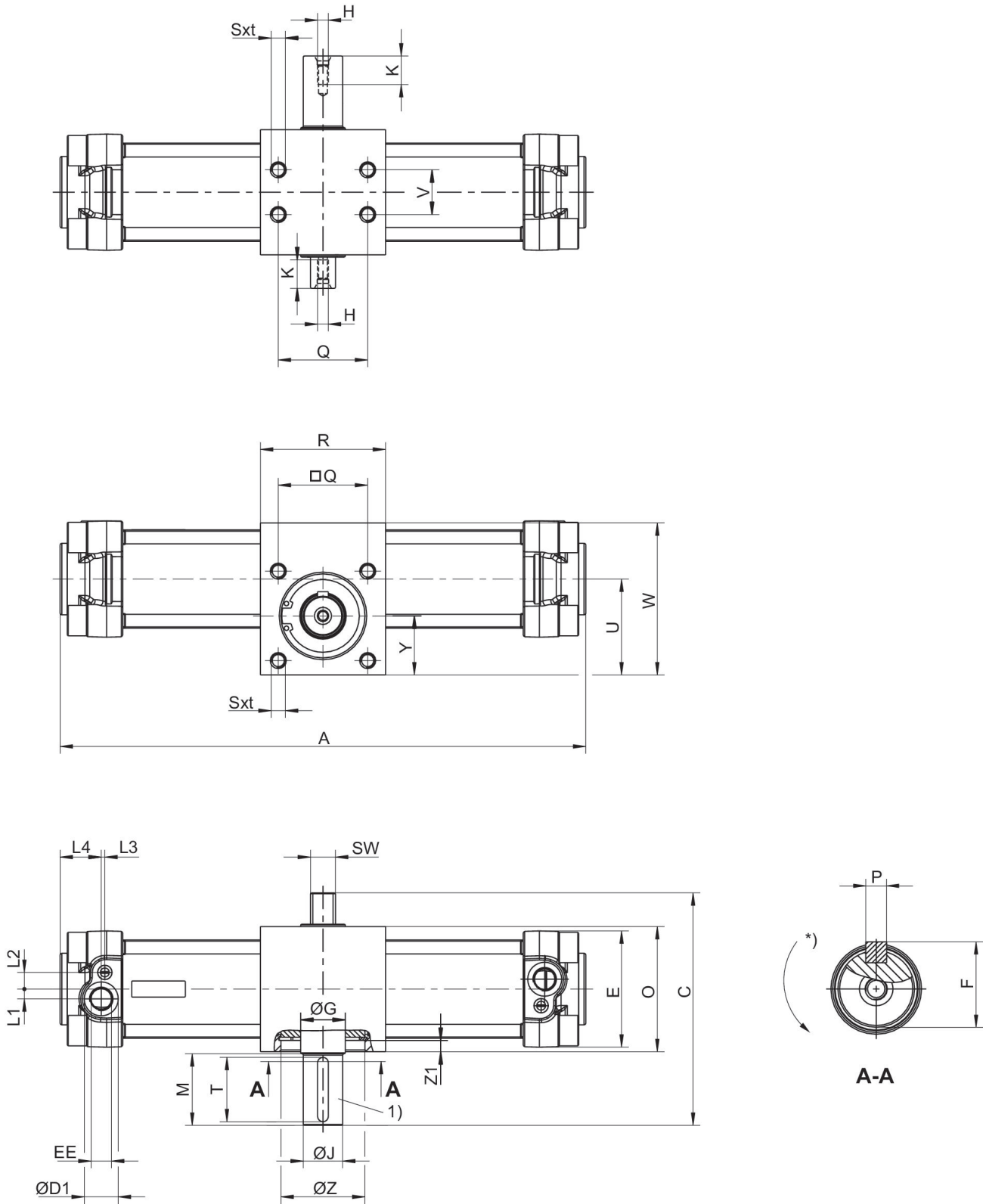
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## Dimensions



1) Parallel key and slot dimensions according to DIN 6885

\* Direction of rotation

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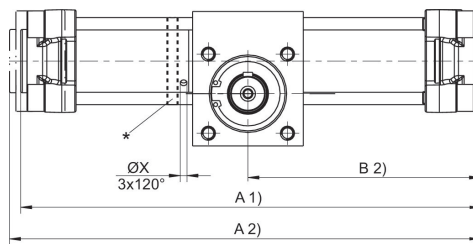
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| Frame size | Ø   | C     | ØD1 | E   | EE    | F    | ØG | H       | ØJ k6 |
|------------|-----|-------|-----|-----|-------|------|----|---------|-------|
| TRR-32     | 32  | 103.5 | 15  | 47  | G 1/8 | 16   | 17 | M5x12,5 | 14    |
| TRR-40     | 40  | 110   | 19  | 53  | G 1/4 | 19   | 20 | M5x12,5 | 17    |
| TRR-50     | 50  | 130   | 19  | 65  | G 1/4 | 24.5 | 25 | M6x16   | 22    |
| TRR-63     | 63  | 142.5 | 23  | 75  | G 3/8 | 28   | 30 | M8x19   | 25    |
| TRR-80     | 80  | 175   | 23  | 95  | G 3/8 | 33   | 35 | M8x19   | 30    |
| TRR-100    | 100 | 190   | 27  | 115 | G 1/2 | 38   | 40 | M10x22  | 35    |

| Frame size | L1  | L2   | L3  | L4 | M  | O   | P     | Q  | R   |
|------------|-----|------|-----|----|----|-----|-------|----|-----|
| TRR-32     | 5   | 7.5  | 4.2 | 20 | 30 | 55  | 5x25  | 33 | 63  |
| TRR-40     | 5.5 | 9.5  | 5.2 | 24 | 30 | 60  | 5x25  | 40 | 70  |
| TRR-50     | 5.5 | 9.3  | 2   | 23 | 40 | 70  | 6x36  | 50 | 70  |
| TRR-63     | 9   | 11.7 | 2   | 28 | 40 | 80  | 8x36  | 60 | 80  |
| TRR-80     | 8   | 15   | 2.5 | 28 | 50 | 100 | 8x45  | 80 | 106 |
| TRR-100    | 12  | 14   | 4   | 29 | 50 | 114 | 10x45 | 80 | 125 |

| Frame size | Sxt    | SW | U    | V  | W   | Y    | ØZ H7 | Z1   |
|------------|--------|----|------|----|-----|------|-------|------|
| TRR-32     | M6x9   | 11 | 40.7 | 18 | 63  | 25   | 35    | 4    |
| TRR-40     | M6x9   | 13 | 43.5 | 22 | 70  | 26.5 | 42    | 4.25 |
| TRR-50     | M8x12  | 14 | 53.5 | 25 | 85  | 33   | 47    | 6.25 |
| TRR-63     | M8x12  | 17 | 65   | 35 | 105 | 40   | 55    | 7    |
| TRR-80     | M10x15 | 22 | 84.5 | 50 | 135 | 53   | 62    | 9.5  |
| TRR-100    | M10x15 | 22 | 91.5 | 60 | 150 | 53   | 80    | 16.5 |

## Rotation angle setting



\* Rotation angle setting via rotation of the setting ring. The nuts of the tie rod must be loosened and tightened with the torque Ma. 0-position: parallel key on top (piston stop on the right).

Tightening torque TRR-50, TRR-63: 9-10 Nm Tightening torque TRR-80, TRR-100: 18-20 Nm  
1) Min.  
2) Max.

## Adjustable angle of rotation

| Frame size | Ø   | A 1) 90° | A 1) 180° | A 1) 360° | A 2) 90° | A 2) 180° | A 2) 360° | B 2) 90° | B 2) 180° |
|------------|-----|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|
| TRR-50     | 50  | 292      | 339       | 434       | 299      | 345       | 440       | 150      | 173       |
| TRR-63     | 63  | 337      | 400       | 525       | 344      | 407       | 533       | 173      | 204       |
| TRR-80     | 80  | 388      | 458       | 600       | 399      | 470       | 611       | 200      | 235       |
| TRR-100    | 100 | 440      | 533       | 722       | 451      | 544       | 733       | 226      | 273       |

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| Frame size | B 2) 360° | ØX  |
|------------|-----------|-----|
| TRR-50     | 220       | 4.2 |
| TRR-63     | 267       | 4.2 |
| TRR-80     | 306       | 4.2 |
| TRR-100    | 366       | 4.2 |

1) Min.

2) Max.

## Non-adjustable angle of rotation

| Frame size | Ø   | A 2) 90° | A 2) 180° | A 2) 360° | B 2) 90° | B 2) 180° | B 2) 360° | ØX |
|------------|-----|----------|-----------|-----------|----------|-----------|-----------|----|
| TRR-32     | 32  | 251      | 285       | 357       | 126      | 143       | 179       | –  |
| TRR-40     | 40  | 265      | 304       | 383       | 133      | 152       | 192       | –  |
| TRR-50     | 50  | 295      | 342       | 436       | 148      | 171       | 218       | –  |
| TRR-63     | 63  | 338      | 401       | 527       | 169      | 200       | 264       | –  |
| TRR-80     | 80  | 390      | 460       | 602       | 195      | 230       | 301       | –  |
| TRR-100    | 100 | 440      | 536       | 724       | 220      | 268       | 362       | –  |

2) Max.