

Rodless cylinders, Series RTC-HD

R480156947

AVENTICS
Series RTC
Rodless
cylinders

2024-04-22

AVENTICS Series RTC Rodless cylinders

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.



Technical data

| | |
|--|--|
| Industry | Industrial |
| Piston Ø | 63 mm |
| Stroke | 600 mm |
| Ports | G 3/8 |
| Functional principle | Double-acting |
| Magnetic piston | with magnetic piston |
| Guide | ball rail guide |
| Version rodless cylinder | Heavy Duty |
| Easy2Combine | Easy2Combine capable with connection kit |
| Piston force | 1964 N |
| Pressure for determining piston forces | 6,3 bar |
| Cushioning length | 20 mm |
| Cushioning energy | 25 J |
| Cushioning | Pneumatically |
| Cushioning | adjustable |
| Max. speed | 2 m/s |
| Stroke max. | 3700 mm |
| Min. working pressure | 4 bar |
| Max. working pressure | 8 bar |

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| | |
|------------------------------------|---------------------|
| Min. ambient temperature | -10 °C |
| Max. ambient temperature | 60 °C |
| Medium | Compressed air |
| Min. oil content of compressed air | 0 mg/m ³ |
| Max. oil content of compressed air | 1 mg/m ³ |
| Max. particle size | 5 µm |
| Weight 0 mm stroke | 11.75 kg |
| Weight +10 mm stroke | 0.193 kg |

Material

| | |
|-------------------------|---------------------------------|
| Material cylinder tube | Aluminum |
| Surface cylinder tube | anodized |
| Material front cover | Aluminum |
| Surface cover | anodized |
| Seal material | Polyurethane |
| Material sealing strips | Polyurethane Stainless Steel |
| Material guide rail | Aluminum |
| Surface ball rail table | anodized |
| Material guide rail | Steel, chrome-plated |
| Surface guide rail | hardened |
| Part No. | R480156947 |

Technical information

The pressure dew point must be at least 15 °C less than 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.

thread depth: 12 mm for piston Ø 16–25, 16 mm for piston Ø 32–40, 14 mm for piston Ø 50–63

thread depth: 12,7 mm for piston Ø 16–63 mm

thread depth: 9 mm for piston Ø 16–40 mm, 12 mm for piston Ø 50–63 mm

thread depth: 10 mm for piston Ø 16–63 mm

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

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in <https://www.emerson.com/en-us/support>).

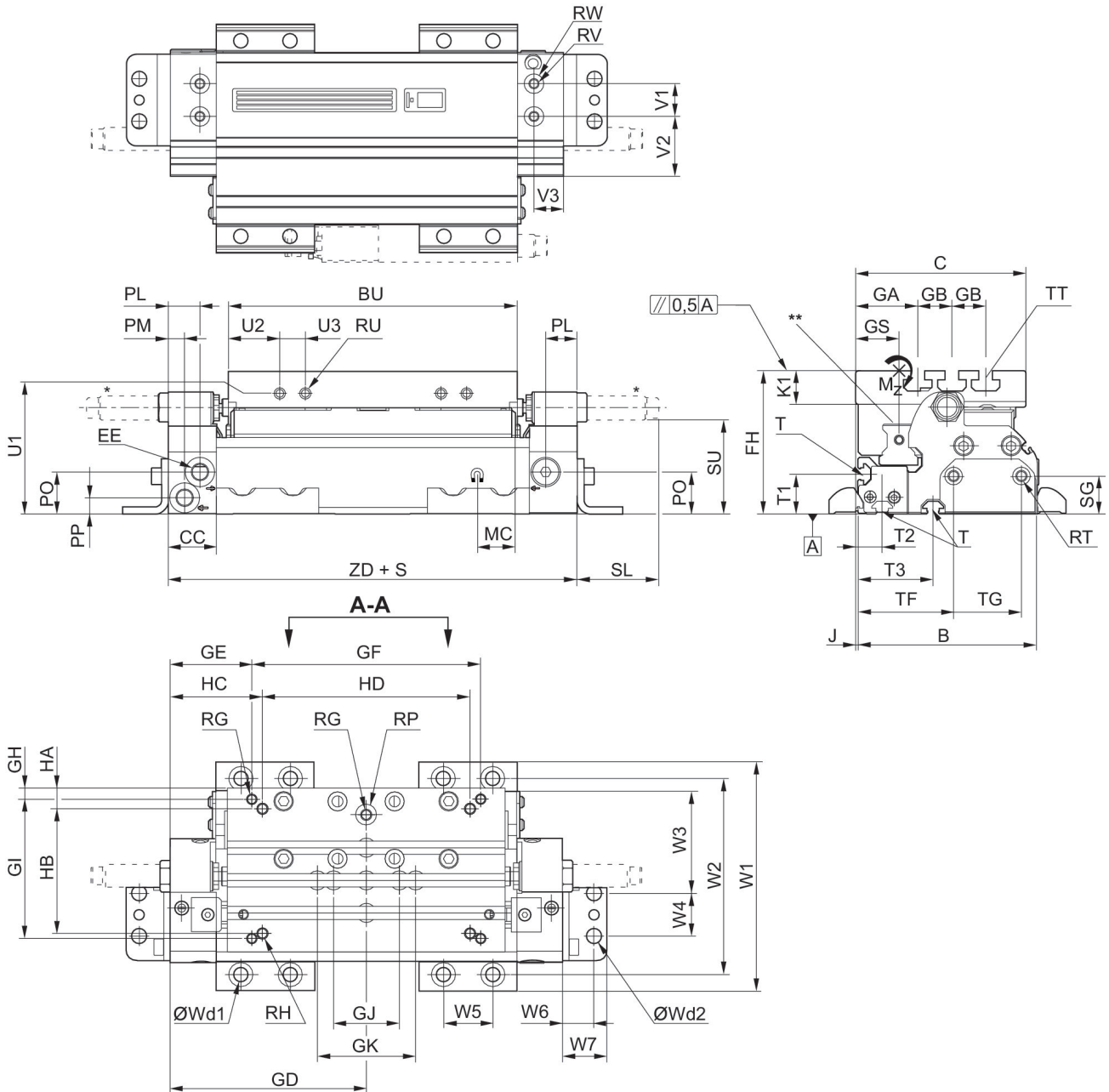
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Ø 16 ... 63 mm

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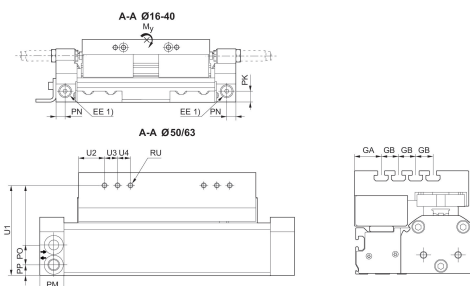
S = stroke

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



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1) Auxiliary air feeding

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

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| Piston Ø | Part No. | B | C | BU | CC | EE | FH | GA | GB |
|----------|------------|-------|-------|-----|----|-------|-------|------|----|
| 63 mm | R480156949 | 82 | 82 | 122 | 28 | M7 | 60 | 27 | 20 |
| 63 mm | R480149659 | 103 | 99.5 | 147 | 28 | G 1/8 | 70 | 26 | 20 |
| 63 mm | R480154726 | 105 | 100 | 170 | 28 | G 1/8 | 83.8 | 36.5 | 20 |
| 63 mm | R480155259 | 132 | 122 | 186 | 28 | G 1/4 | 97.7 | 36.5 | 20 |
| 63 mm | R480155175 | 144.5 | 132.5 | 205 | 28 | G 1/4 | 119.4 | 31 | 20 |
| 63 mm | R480156946 | 161 | 139 | 233 | 28 | G 3/8 | 129.4 | 31 | 20 |

| Piston Ø | GD | GE | GF | GH | GI | GJ | GK | GS | HA |
|----------|-------|------|-----|-----|----------|----|----|------|------|
| 63 mm | 93.5 | 43.5 | 100 | 5 | 20/20/20 | 40 | - | 32 | 7.6 |
| 63 mm | 107.5 | 52.5 | 110 | 16 | 20/40 | 40 | - | 37 | 6.4 |
| 63 mm | 120 | 50 | 140 | 6.7 | 85 | 40 | 60 | 25.5 | 12.7 |
| 63 mm | 131.5 | 46.5 | 170 | 12 | 100 | 40 | 60 | 31.5 | 12.7 |
| 63 mm | 147.3 | 52.3 | 190 | 10 | 100 | 40 | 60 | 31.5 | 15.2 |
| 63 mm | 166.5 | 71.5 | 190 | 10 | 100 | 40 | 60 | 31.5 | 15.2 |

| Piston Ø | HB | HC | HD | J | K1 | MC | PK | PL | PM |
|----------|-------|------|-------|-----|------|----|------|------|-----|
| 63 mm | 69.9 | 55.4 | 76.2 | 1.5 | 20.7 | 12 | 11.9 | 18 | 7 |
| 63 mm | 83.8 | 44 | 127 | 1.5 | 21.4 | 15 | 10.1 | 20 | 8 |
| 63 mm | 76.2 | 56.5 | 127 | 1.5 | 19.7 | 20 | 15 | 18.5 | 9.5 |
| 63 mm | 101.6 | 55.4 | 152.4 | 1.5 | 25.6 | 17 | 18 | 18 | 10 |
| 63 mm | 99.06 | 66 | 162.6 | 1.5 | 28.6 | 23 | N/A | 16 | 16 |
| 63 mm | 101.6 | 59.8 | 213.4 | 1.5 | 28.6 | 25 | N/A | 14 | 14 |

| Piston Ø | PN | PO | PP | RG 1) | RH 2) | RP | RT 3) | RU 4) | RV |
|----------|-----|------|------|-------|-------------|------|-------|-------|-------|
| 63 mm | 7 | 13.3 | 7.3 | M5 | UNC 1/4-20 | Ø 9 | M5 | M5 | M5x8 |
| 63 mm | 9 | 21.5 | 9.3 | M5 | UNC 1/4-20 | Ø 9 | M5 | M6 | M5x8 |
| 63 mm | 12 | 24.5 | 9.5 | M6 | UNC 1/4-20 | Ø 12 | M6 | M6 | M6x10 |
| 63 mm | 11 | 31.5 | 10.5 | M6 | UNC 1/4-20 | Ø 12 | M6 | M6 | M6x10 |
| 63 mm | N/A | 35 | 12 | M8 | UNC 5/16-18 | Ø 12 | M8 | M5 | - |
| 63 mm | N/A | 45.5 | 14.5 | M8 | UNC 5/16-18 | Ø 12 | M8 | M5 | - |

| Piston Ø | RW | SG | SL | SU | T | TT | V1 | V2 | V3 |
|----------|------------|------|------|------|----|----|----|------|----|
| 63 mm | Ø 9H8x1,6 | 17.3 | 33.2 | 38.6 | N4 | N6 | 20 | 6 | 14 |
| 63 mm | Ø 9H8x1,6 | 17.3 | 49.3 | 47.1 | N6 | N6 | 20 | 26.5 | 18 |
| 63 mm | Ø 12H8x2,1 | 22 | 48.3 | 55.5 | N6 | N8 | 20 | 36.5 | 18 |
| 63 mm | Ø 12H8x2,1 | 22 | 45.1 | 73.4 | N6 | N8 | 20 | 40.5 | 18 |
| 63 mm | - | 22 | N/A | N/A | N8 | N8 | - | - | - |
| 63 mm | - | 30 | N/A | N/A | N8 | N8 | - | - | - |

| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|----------|-------|-------|----|----|----|------|------|-----|-----|
| 63 mm | 110.4 | 93.4 | 56 | 18 | 30 | 13.5 | 19.8 | M6 | M6 |
| 63 mm | 131.4 | 114.4 | 72 | 18 | 30 | 16.5 | 19.8 | M6 | M6 |
| 63 mm | 139.4 | 119.4 | 63 | 26 | 30 | 19 | 26.8 | M8 | M8 |

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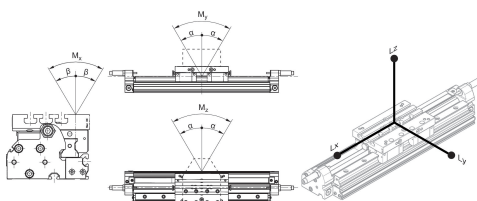
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| Piston Ø | W1 | W2 | W3 | W4 | W5 | W6 | W7 | Wd1 | Wd2 |
|----------|-------|-------|------|----|----|----|------|-----|-----|
| 63 mm | 166.4 | 146.4 | 84 | 26 | 30 | 19 | 26.8 | M8 | M8 |
| 63 mm | 192.1 | 166.9 | 63.5 | 70 | 40 | 22 | 32.7 | M12 | M12 |
| 63 mm | 208.6 | 183.4 | 80 | 50 | 40 | 22 | 32.7 | M12 | M12 |

| Piston Ø | T1 | T2 | T3 | TF | TG | U1 | U2 | U3 | U4 |
|----------|------|------|------|------|----|-------|------|------|----|
| 63 mm | 20.8 | 13.7 | – | 55.5 | 19 | 47 | 16.5 | 15 | 15 |
| 63 mm | 20 | 14 | 54 | 71.5 | 19 | 60 | 18 | 21.5 | 15 |
| 63 mm | 23 | 14 | 44 | 56 | 40 | 71 | 30 | 21 | 15 |
| 63 mm | 24.7 | 29.5 | 59.5 | 77 | 40 | 82.7 | 30 | 29 | 15 |
| 63 mm | 35.6 | 18.5 | 43.5 | 78.5 | 40 | 104.4 | 30 | 15 | 15 |
| 63 mm | 45.6 | 17 | 39.5 | 65 | 80 | 114.4 | 30 | 15 | 15 |

| Piston Ø | ZD | Moving mass kg |
|----------|-------|----------------|
| 63 mm | 187 | 0.64 |
| 63 mm | 215 | 1.25 |
| 63 mm | 240 | 1.4 |
| 63 mm | 263.1 | 2.57 |
| 63 mm | 294.6 | 3.19 |
| 63 mm | 333 | 3.46 |

Max. play and recommended max. lever arm length



L = lever arm

M = moment (Nm)

| Part No. | Piston Ø | α | β | Lx | Ly | Lz |
|------------|----------|----------|---------|-----|-----|-----|
| R480156949 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480156950 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480156951 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480147724 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480156953 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480156954 | 63 mm | <0,1° | <0,2° | 260 | 260 | 260 |
| R480149659 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480149553 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480150759 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480147725 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480153574 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480156959 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480155572 | 63 mm | <0,1° | <0,2° | 344 | 344 | 344 |
| R480154726 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |

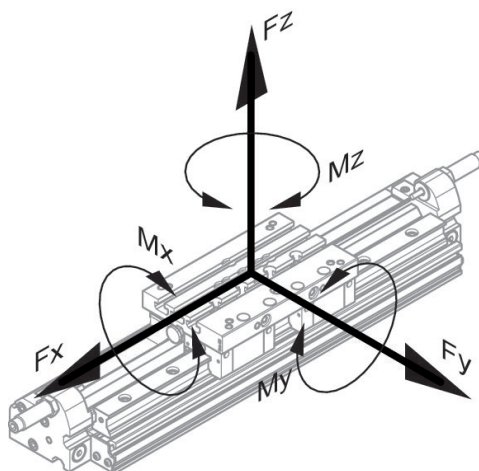
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| Part No. | Piston Ø | α | β | Lx | Ly | Lz |
|------------|----------|----------|---------|-----|-----|-----|
| R480148820 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480148602 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480147726 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480148603 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480154001 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480150325 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480156963 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480148582 | 63 mm | <0,1° | <0,2° | 404 | 404 | 404 |
| R480155259 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480154424 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480154425 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480147727 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480148971 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480149554 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480156710 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480156969 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480150515 | 63 mm | <0,1° | <0,2° | 440 | 440 | 440 |
| R480155175 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480147728 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480146987 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480156943 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480149774 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480156944 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480149030 | 63 mm | <0,1° | <0,2° | 532 | 532 | 532 |
| R480156946 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |
| R480147729 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |
| R480156947 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |
| R480149638 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |
| R480154379 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |
| R480149592 | 63 mm | <0,1° | <0,2° | 644 | 644 | 644 |



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static

| Part No. | Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|------------|----------|--------|--------|--------|---------|---------|---------|
| R480156949 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480156950 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480156951 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480147724 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480156953 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480156954 | 63 mm | 1640 | 1640 | 4284 | 34 | 138 | 53 |
| R480149659 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480149553 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480150759 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480147725 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480153574 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480156959 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480155572 | 63 mm | 2640 | 2640 | 7810 | 100 | 336 | 114 |
| R480154726 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480148820 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480148602 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480147726 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480148603 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480154001 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480150325 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480156963 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480148582 | 63 mm | 3760 | 3760 | 9952 | 154 | 502 | 190 |
| R480155259 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480154424 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480154425 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480147727 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480148971 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480149554 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480156710 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480156969 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480150515 | 63 mm | 6840 | 6840 | 13922 | 254 | 764 | 376 |
| R480155175 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480147728 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480146987 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480156943 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480149774 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480156944 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480149030 | 63 mm | 6840 | 6840 | 13922 | 254 | 924 | 455 |
| R480156946 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |
| R480147729 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |
| R480156947 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |
| R480149638 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |

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| Part No. | Piston Ø | Fx [N] | Fy [N] | Fz [N] | Mx [Nm] | My [Nm] | Mz [Nm] |
|------------|----------|--------|--------|--------|---------|---------|---------|
| R480154379 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |
| R480149592 | 63 mm | 6840 | 6840 | 13922 | 254 | 1120 | 551 |

dynamic

| Part No. | Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|------------|----------|---------|---------|---------|
| R480156949 | 63 mm | 34 | 138 | 53 |
| R480156950 | 63 mm | 34 | 138 | 53 |
| R480156951 | 63 mm | 34 | 138 | 53 |
| R480147724 | 63 mm | 34 | 138 | 53 |
| R480156953 | 63 mm | 34 | 138 | 53 |
| R480156954 | 63 mm | 34 | 138 | 53 |
| R480149659 | 63 mm | 100 | 336 | 114 |
| R480149553 | 63 mm | 100 | 336 | 114 |
| R480150759 | 63 mm | 100 | 336 | 114 |
| R480147725 | 63 mm | 100 | 336 | 114 |
| R480153574 | 63 mm | 100 | 336 | 114 |
| R480156959 | 63 mm | 100 | 336 | 114 |
| R480155572 | 63 mm | 100 | 336 | 114 |
| R480154726 | 63 mm | 154 | 502 | 190 |
| R480148820 | 63 mm | 154 | 502 | 190 |
| R480148602 | 63 mm | 154 | 502 | 190 |
| R480147726 | 63 mm | 154 | 502 | 190 |
| R480148603 | 63 mm | 154 | 502 | 190 |
| R480154001 | 63 mm | 154 | 502 | 190 |
| R480150325 | 63 mm | 154 | 502 | 190 |
| R480156963 | 63 mm | 154 | 502 | 190 |
| R480148582 | 63 mm | 154 | 502 | 190 |
| R480155259 | 63 mm | 254 | 764 | 376 |
| R480154424 | 63 mm | 254 | 764 | 376 |
| R480154425 | 63 mm | 254 | 764 | 376 |
| R480147727 | 63 mm | 254 | 764 | 376 |
| R480148971 | 63 mm | 254 | 764 | 376 |
| R480149554 | 63 mm | 254 | 764 | 376 |
| R480156710 | 63 mm | 254 | 764 | 376 |
| R480156969 | 63 mm | 254 | 764 | 376 |
| R480150515 | 63 mm | 254 | 764 | 376 |
| R480155175 | 63 mm | 254 | 924 | 455 |
| R480147728 | 63 mm | 254 | 924 | 455 |
| R480146987 | 63 mm | 254 | 924 | 455 |
| R480156943 | 63 mm | 254 | 924 | 455 |
| R480149774 | 63 mm | 254 | 924 | 455 |
| R480156944 | 63 mm | 254 | 924 | 455 |
| R480149030 | 63 mm | 254 | 924 | 455 |
| R480156946 | 63 mm | 254 | 1120 | 551 |

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| Part No. | Piston Ø | Mx [Nm] | My [Nm] | Mz [Nm] |
|------------|----------|---------|---------|---------|
| R480147729 | 63 mm | 254 | 1120 | 551 |
| R480156947 | 63 mm | 254 | 1120 | 551 |
| R480149638 | 63 mm | 254 | 1120 | 551 |
| R480154379 | 63 mm | 254 | 1120 | 551 |
| R480149592 | 63 mm | 254 | 1120 | 551 |