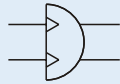


MRTH Male pivot gear (standard type)

MRTH-D Male pivot gear (double end rod type)

MRTF Female pivot gear



Features

- Hard anodised aluminium body is standard.
- Clean lines with high functionality.
- Carbon steel rack and pinion with low backlash.
- Simple adjustment of rotary movement.
- Magnetic as standard.

Specification

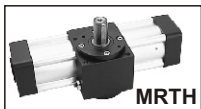
| Model | MRTF, MRTH, MRTH-D | | |
|----------------------------------|--|--------|--------|
| Tube I.D. (mm) | 40 | 63 | 80 |
| Standard rotation (mm) | 90±5° , 180±5° | | |
| Initial position of slot (mm) | See dimensional feature | | |
| Medium | Filtered air with or without lubrication | | |
| Operating pressure range | 0.13~0.7 MPa | | |
| Ambient temperature | -5~+60°C (No freezing) | | |
| Max. allowable axial thrust (kg) | 10 | 12 | 20 |
| Max. allowable kinetic energy | 90° | 0.266J | 0.675J |
| | 180° | 0.58J | 1.54J |
| Max. allowable radial trust | 52.5kg | 74kg | 91.5kg |
| Sensor switch (※) | LN01A | LN02A | LN03A |

※ LN**A specification, please refer to page V-19.

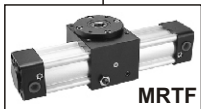
Order example

MRTH - 40/ 90 - D

MODEL



MRTH

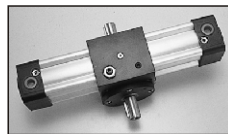


MRTF

TUBE I.D.

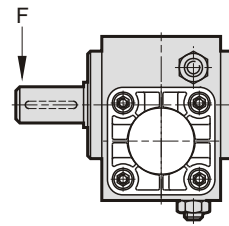
ROTATION
90: 90°
180: 180°

END ROD TYPE

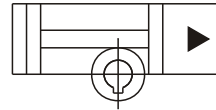


D: double end rod type

Max. allowable radial trust



ROTARY ACTUATOR



Compressed air consumption for a complete cycle

unit: L/cycle

| Model | Rotation | Operating pressure (MPa) | | | | | | | | | |
|--------|----------|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| MRTH40 | 90° | 0.1571 | 0.2352 | 0.3133 | 0.3915 | 0.4696 | 0.5477 | 0.6259 | 0.7040 | 0.7821 | 0.8603 |
| MRTF40 | 180° | 0.3141 | 0.4704 | 0.6267 | 0.7829 | 0.9392 | 1.0955 | 1.2517 | 1.4080 | 1.5643 | 1.7205 |
| MRTH63 | 90° | 0.4383 | 0.6564 | 0.8744 | 1.0925 | 1.3105 | 1.5286 | 1.7466 | 1.9647 | 2.1828 | 2.4008 |
| MRTF63 | 180° | 0.8766 | 1.3127 | 1.7488 | 2.1850 | 2.6211 | 3.0572 | 3.4933 | 3.9294 | 4.3655 | 4.8016 |
| MRTH80 | 90° | 0.8480 | 1.2698 | 1.6917 | 2.1135 | 2.5354 | 2.9572 | 3.3791 | 3.8009 | 4.2228 | 4.6447 |
| MRTF80 | 180° | 1.6959 | 2.5396 | 3.3834 | 4.2271 | 5.0708 | 5.9145 | 6.7582 | 7.6019 | 8.4456 | 9.2893 |

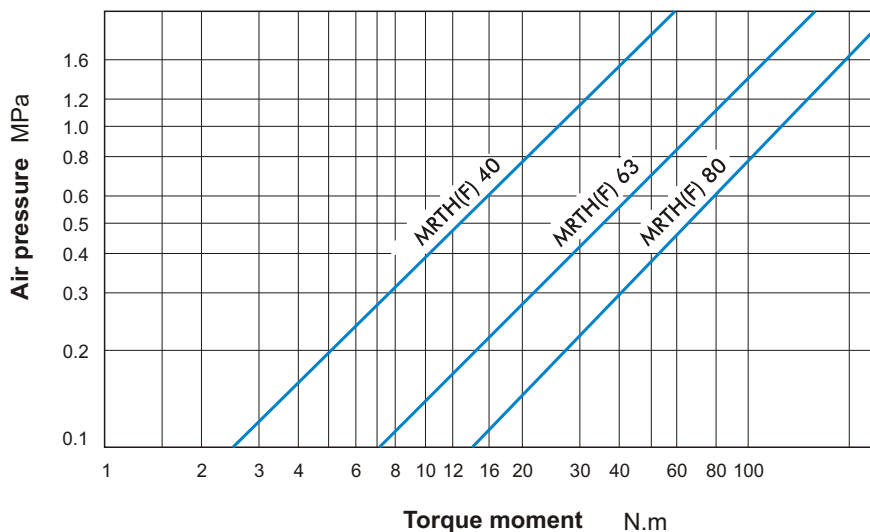
| Model | MRTH, MRTF | | |
|---------------|------------|--------|--------|
| Tube I.D.(mm) | 40 | 63 | 80 |
| Constant K | 0.3491 | 0.3927 | 0.4712 |

The method of calculation (Compressed air consumption)

$$Q = 2 \times K \times A \times n \times Dg \times \frac{P + 0.101}{0.101} \times 10^{-6}$$

| | |
|-----|-------------------------------------|
| Q: | Compressed air consumption(L/cycle) |
| A: | Piston area (mm ²) |
| Dg: | Rotation |
| P: | Air pressure (MPa) |
| K: | Constant |
| n: | Cycle of operation (cycle/min) |

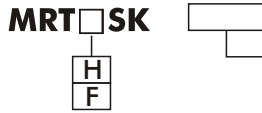
Output torque table



MRTH / MRTF Inside structure and parts list

ROTARY ACTUATOR

How to order the seal kit

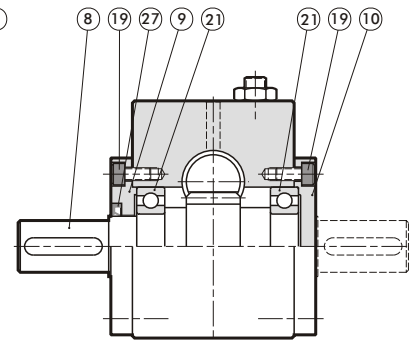
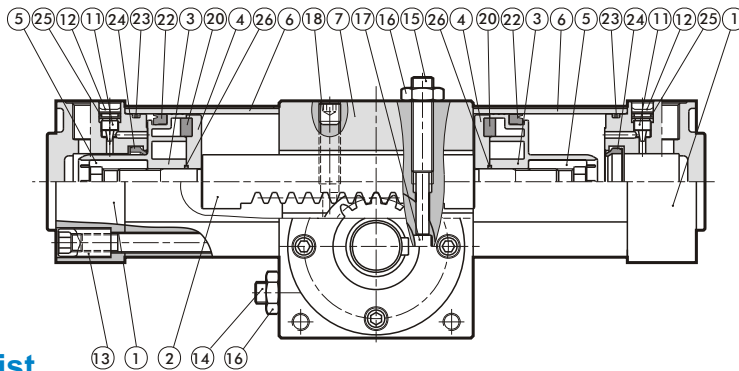


| Tube I.D. | Seal kit |
|-----------|---|
| 40 | MRTHSK40 - Including No.22,23,24,25,26,27 |
| 63 | MRTHSK63 - Including No.22,23,24,25,26,27 |
| 80 | MRTHSK80 - Including No.22,23,24,25,26,27 |

| Tube I.D. | Seal kit |
|-----------|---|
| 40 | MRTFSK40 - Including No.22,23,24,25,26,27 |
| 63 | MRTFSK63 - Including No.22,23,24,25,26,27 |
| 80 | MRTFSK80 - Including No.22,23,24,25,26,27 |

MRTH

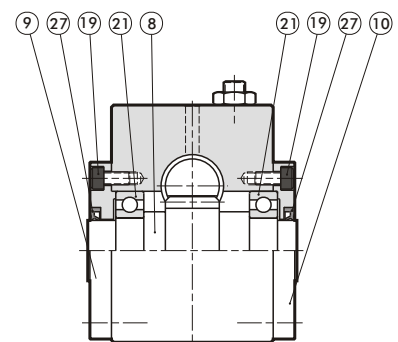
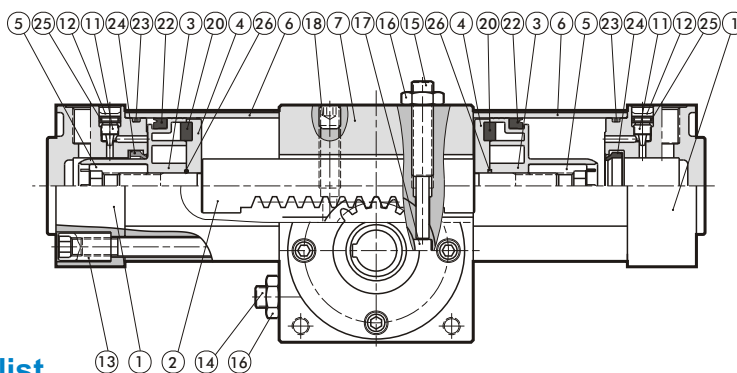
MRTH-D



Parts list

| No. | Part name | Quantity | No. | Part name | Quantity | No. | Part name | Quantity |
|-----|---------------|----------|-----|-----------------|----------|-----|---------------------------|----------|
| 1 | End cap | 2 | 10 | End cover | 1 | 19 | Hexagon socket head screw | 8 |
| 2 | Rack | 1 | 11 | Cushion needle | 2 | 20 | Magnet | 2 |
| 3 | Piston | 2 | 12 | Washer | 2 | 21 | Ball bearing | 2 |
| 4 | Magnet holder | 2 | 13 | Tie bolt | 8 | 22 | Piston packing | 2 |
| 5 | Piston nut | 2 | 14 | Adjusting screw | 1 | 23 | Cylinder gasket | 2 |
| 6 | Cylinder tube | 2 | 15 | Adjusting screw | 1 | 24 | Cushion packing | 2 |
| 7 | Housing | 1 | 16 | Lock nut | 2 | 25 | Needle gasket | 2 |
| 8 | Pinion shaft | 1 | 17 | Stopper pin | 1 | 26 | Piston gasket | 2 |
| 9 | End cover | 1 | 18 | Set screw | 1 | 27 | Rod packing | 1 |

MRTF



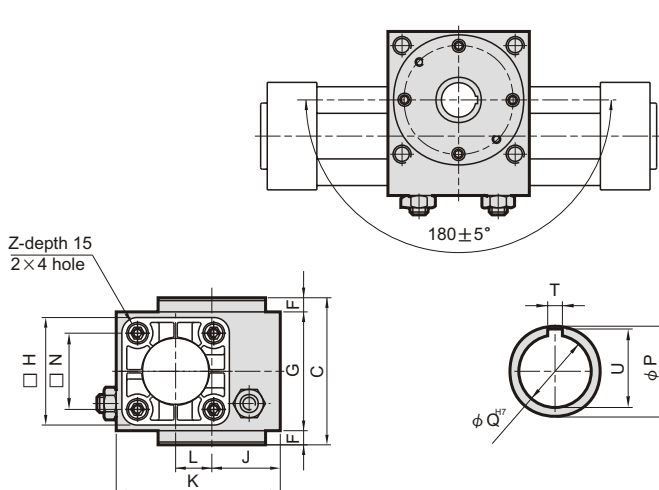
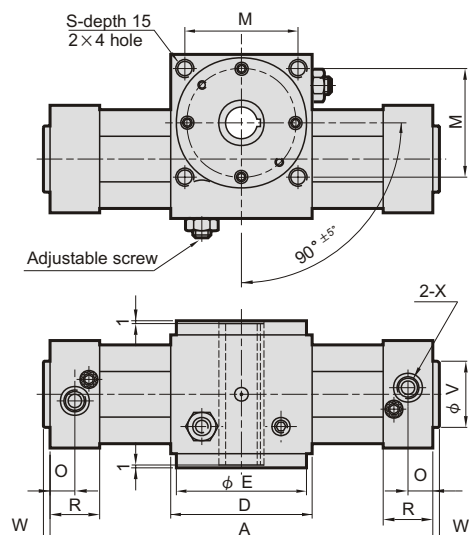
Parts list

| No. | Part name | Quantity | No. | Part name | Quantity | No. | Part name | Quantity |
|-----|---------------|----------|-----|-----------------|----------|-----|---------------------------|----------|
| 1 | End cap | 2 | 10 | End cover | 1 | 19 | Hexagon socket head screw | 8 |
| 2 | Rack | 1 | 11 | Cushion needle | 2 | 20 | Magnet | 2 |
| 3 | Piston | 2 | 12 | Washer | 2 | 21 | Ball bearing | 2 |
| 4 | Magnet holder | 2 | 13 | Tie bolt | 8 | 22 | Piston packing | 2 |
| 5 | Piston nut | 2 | 14 | Adjusting screw | 1 | 23 | Cylinder gasket | 2 |
| 6 | Cylinder tube | 2 | 15 | Adjusting screw | 1 | 24 | Cushion packing | 2 |
| 7 | Housing | 1 | 16 | Lock nut | 2 | 25 | Needle gasket | 2 |
| 8 | Pinion shaft | 1 | 17 | Stopper pin | 1 | 26 | Piston gasket | 2 |
| 9 | End cover | 1 | 18 | Set screw | 1 | 27 | Rod packing | 2 |

MRTF

Angle of rotation 90°

Angle of rotation 180°

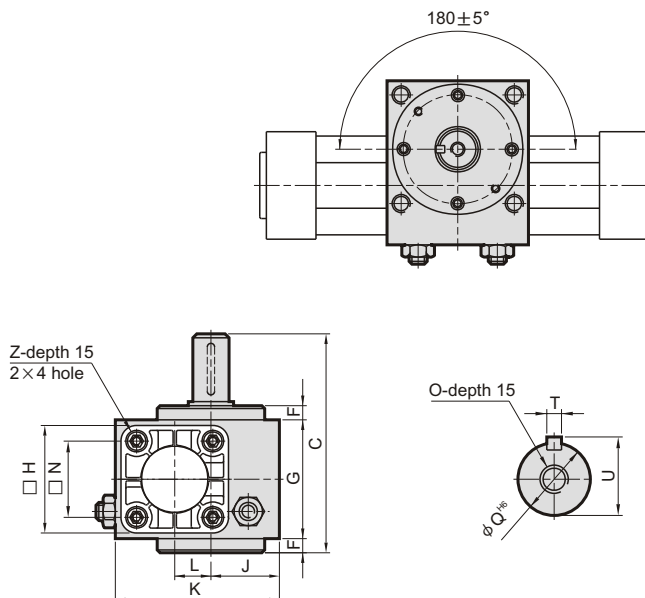
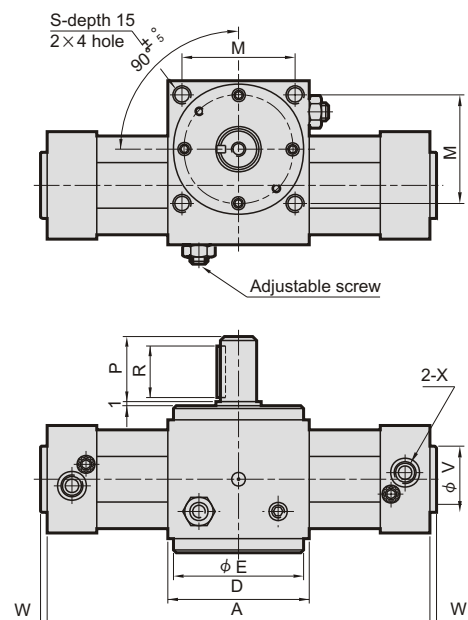


| Model | A | | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Z |
|--------|-----|------|-----|-----|----|----|----|----|------|-----|------|----|------|----|----|----|----|-----|---|------|----|---|------|-----|
| | 90° | 180° | | | | | | | | | | | | | | | | | | | | | | |
| MRTF40 | 263 | 326 | 81 | 75 | 72 | 8 | 65 | 53 | 37.5 | 93 | 27.5 | 60 | 38 | 15 | 25 | 14 | 30 | M6 | 5 | 16.5 | 35 | 4 | G1/4 | M6 |
| MRTF63 | 306 | 377 | 95 | 90 | 82 | 10 | 75 | 75 | 42.5 | 110 | 30 | 70 | 56.5 | 16 | 30 | 19 | 32 | M8 | 6 | 22 | 45 | 5 | G3/8 | M8 |
| MRTF80 | 343 | 428 | 119 | 105 | 96 | 12 | 95 | 95 | 51.5 | 135 | 36 | 82 | 72 | 19 | 45 | 24 | 38 | M10 | 6 | 27.5 | 45 | 5 | G3/8 | M10 |

MRTH

Angle of rotation 90°

Angle of rotation 180°



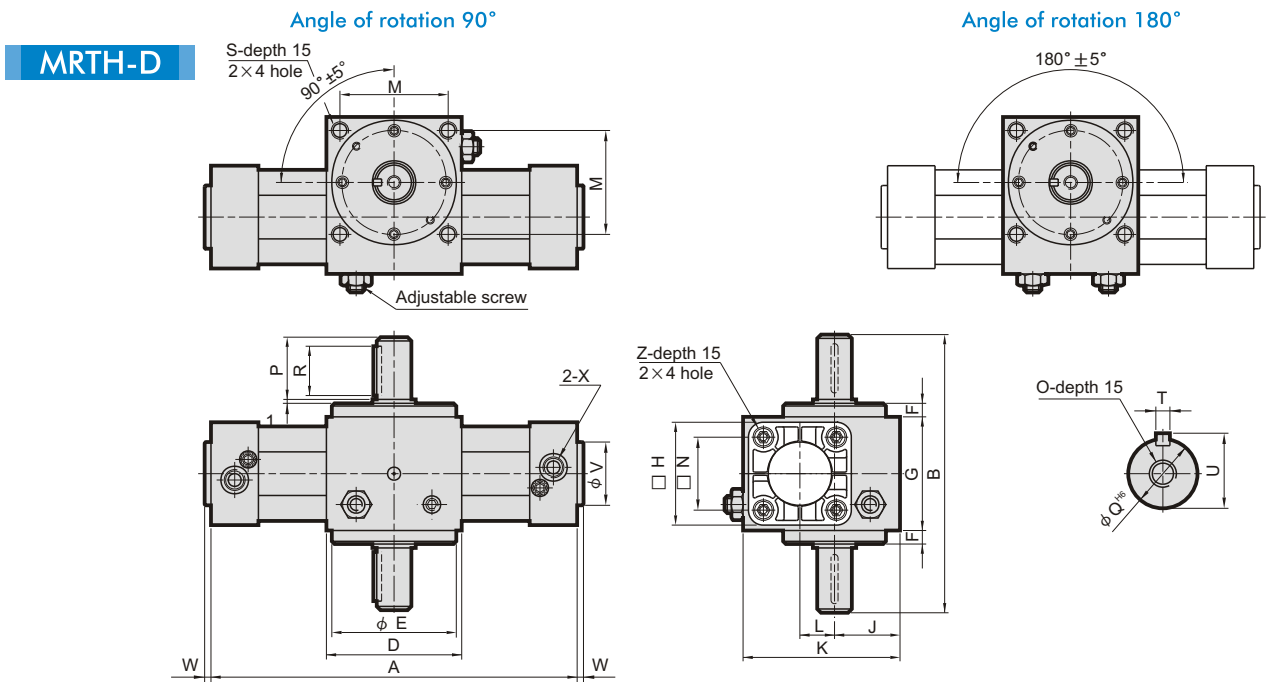
| Model | A | | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Z |
|--------|-----|------|-----|-----|----|----|----|----|------|-----|------|----|------|----|----|----|----|-----|---|----|----|---|------|-----|
| | 90° | 180° | | | | | | | | | | | | | | | | | | | | | | |
| MRTH40 | 263 | 326 | 112 | 75 | 72 | 8 | 65 | 53 | 37.5 | 93 | 27.5 | 60 | 38 | M5 | 30 | 16 | 25 | M6 | 5 | 18 | 35 | 4 | G1/4 | M6 |
| MRTH63 | 306 | 377 | 138 | 90 | 82 | 10 | 75 | 75 | 42.5 | 110 | 30 | 70 | 56.5 | M8 | 42 | 24 | 36 | M8 | 8 | 27 | 45 | 5 | G3/8 | M8 |
| MRTH80 | 343 | 428 | 170 | 105 | 96 | 12 | 95 | 95 | 51.5 | 135 | 36 | 82 | 72 | M8 | 50 | 28 | 45 | M10 | 8 | 31 | 45 | 5 | G3/8 | M10 |

MRTH / MRTF Dimensions $\phi 40 \sim \phi 80$



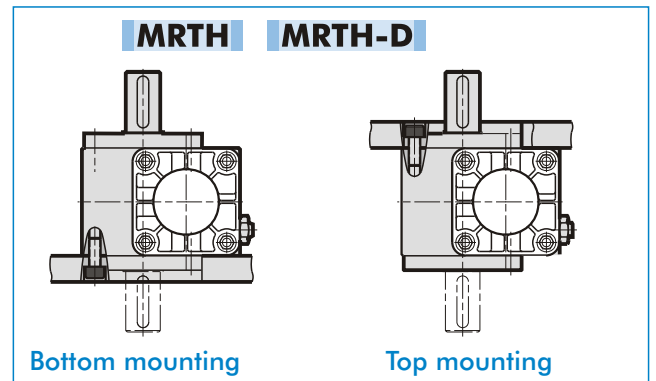
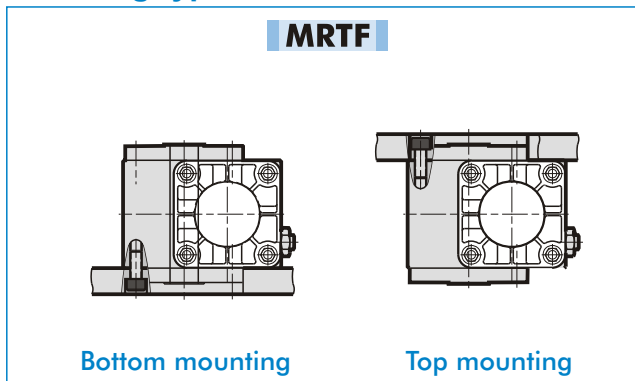
ROTARY ACTUATOR

Mindman

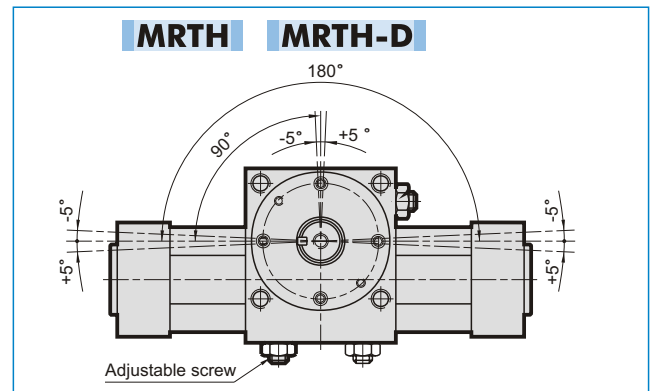
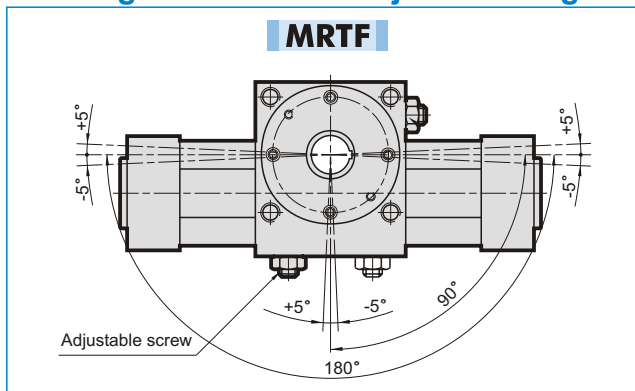


| Model | A | | B | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Z |
|----------|-----|-----|-----|-----|----|----|----|----|------|-----|------|----|------|----|----|----|----|-----|---|----|----|---|------|-----|
| | 90 | 180 | | | | | | | | | | | | | | | | | | | | | | |
| MRTH40-D | 263 | 326 | 143 | 75 | 72 | 8 | 65 | 53 | 37.5 | 93 | 27.5 | 60 | 38 | M5 | 30 | 16 | 25 | M6 | 5 | 18 | 35 | 4 | G1/4 | M6 |
| MRTH63-D | 306 | 377 | 181 | 90 | 82 | 10 | 75 | 75 | 42.5 | 110 | 30 | 70 | 56.5 | M8 | 42 | 24 | 36 | M8 | 8 | 27 | 45 | 5 | G3/8 | M8 |
| MRTH80-D | 343 | 428 | 221 | 105 | 96 | 12 | 95 | 95 | 51.5 | 135 | 36 | 82 | 72 | M8 | 50 | 28 | 45 | M10 | 8 | 31 | 45 | 5 | G3/8 | M10 |

Mounting type

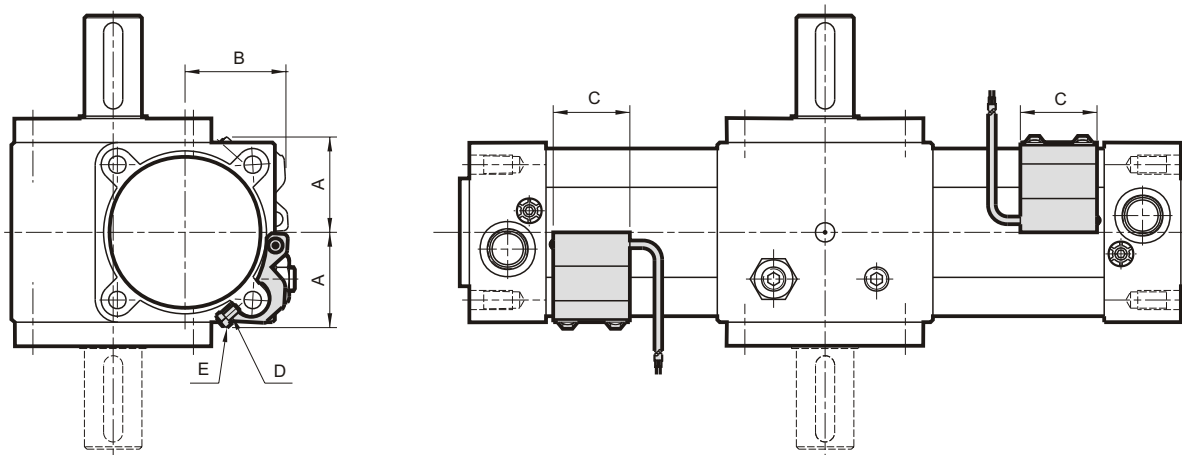


Rotating direction and adjustable angle

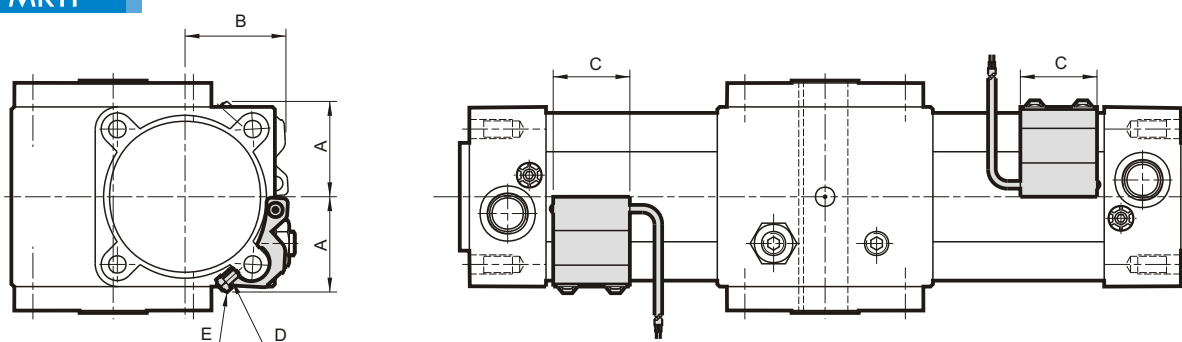


Mindman

MRTH-D



MRTF



| Tube I.D. | Sensor switch | A | B | C | D | E |
|-----------|---------------|------|----|----|----------|----|
| 40 | LN01A | 29 | 32 | 32 | M4 × 8L | M4 |
| 63 | LN02A | 40 | 43 | 32 | M4 × 10L | M4 |
| 80 | LN03A | 49.5 | 52 | 32 | M4 × 12L | M4 |

Cylinder weight

unit: kg

| Tube I.D. | MRTH | | MRTH-D | | MRTF | | Sensor switch |
|-----------|------|-------|--------|-------|------|------|---------------|
| | 90° | 180° | 90° | 180° | 90° | 180° | |
| 40 | 3.00 | 3.10 | 3.05 | 3.15 | 2.84 | 2.94 | 0.065 |
| 63 | 5.40 | 5.80 | 5.55 | 5.95 | 5.07 | 5.47 | 0.066 |
| 80 | 9.75 | 10.30 | 9.99 | 10.54 | 9.19 | 9.74 | 0.086 |