

### 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.

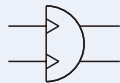
### Specification

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	1.34J
	180°	0.58J	1.54J	3.03J
Max. allowable radial trust	52.5kg	74kg	91.5kg	
Sensor switch (※)	LN01A	LN02A	LN03A	

**MRTH** Male pivot gear (standard type)

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

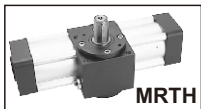
**MRTF** Female pivot gear



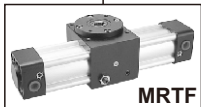
### Order example

MRTH - 40/ 90 - D

MODEL



MRTH

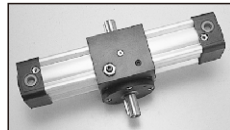


MRTF

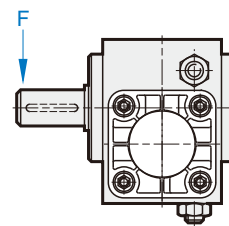
TUBE I.D.

ROTATION  
90: 90°  
180: 180°

END ROD TYPE



D: double end rod type



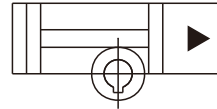
※ LN\*\*A specification, please refer to page 5-15.

### Max. allowable radial trust

### 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



### 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 MRTF40	90°	0.1571	0.2352	0.3133	0.3915	0.4696	0.5477	0.6259	0.7040	0.7821	0.8603
	180°	0.3141	0.4704	0.6267	0.7829	0.9392	1.0955	1.2517	1.4080	1.5643	1.7205
MRTH63 MRTF63	90°	0.4383	0.6564	0.8744	1.0925	1.3105	1.5286	1.7466	1.9647	2.1828	2.4008
	180°	0.8766	1.3127	1.7488	2.1850	2.6211	3.0572	3.4933	3.9294	4.3655	4.8016
MRTH80 MRTF80	90°	0.8480	1.2698	1.6917	2.1135	2.5354	2.9572	3.3791	3.8009	4.2228	4.6447
	180°	1.6959	2.5396	3.3834	4.2271	5.0708	5.9145	6.7582	7.6019	8.4456	9.2893

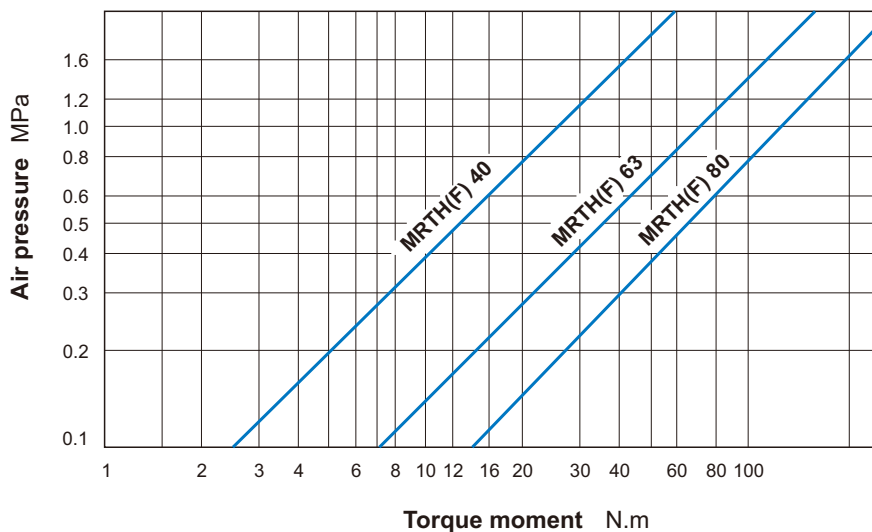
Model	MRTH, MRTF		
Tube I.D.(mm)	40	63	80
Constant K	0.3491	0.3927	0.4712

### 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 <sup>2</sup> )
Dg:	Rotation
P:	Air pressure (MPa)
K:	Constant
n:	Cycle of operation (cycle/min)

### Output torque table

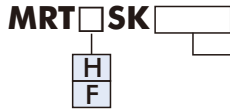


# MRTH / MRTF Inside structure and parts list



## ROTARY ACTUATOR

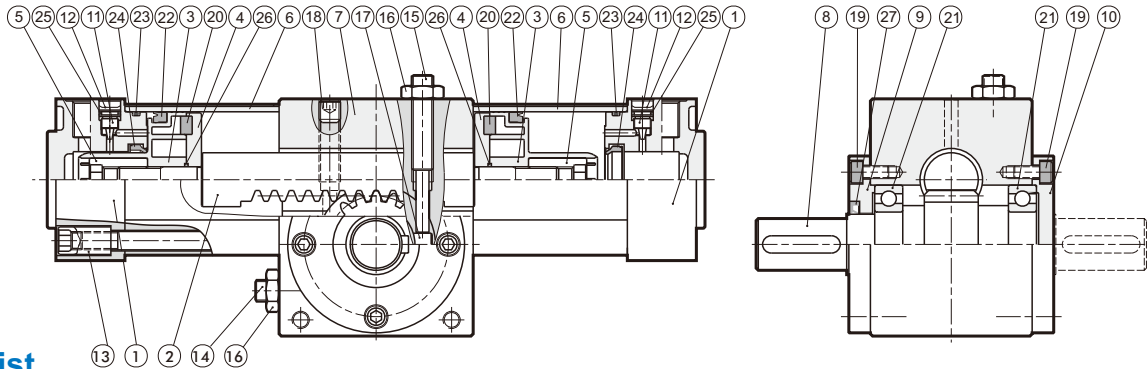
### How to order the seal kit



Tube I.D.	Seal kit	Tube I.D.	Seal kit
40	MRTHSK40 - Including No.22,23,24,25,26,27	40	MRTFSK40 - Including No.22,23,24,25,26,27
63	MRTHSK63 - Including No.22,23,24,25,26,27	63	MRTFSK63 - Including No.22,23,24,25,26,27
80	MRTHSK80 - Including No.22,23,24,25,26,27	80	MRTFSK80 - Including No.22,23,24,25,26,27

### MRTH

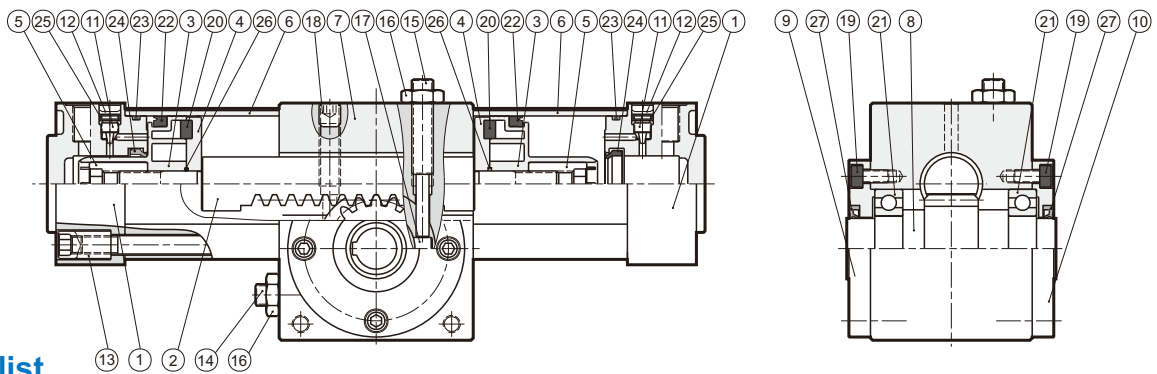
### MRTH-D



### 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

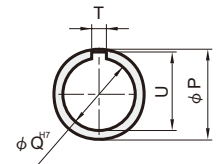
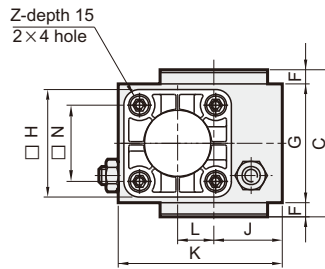
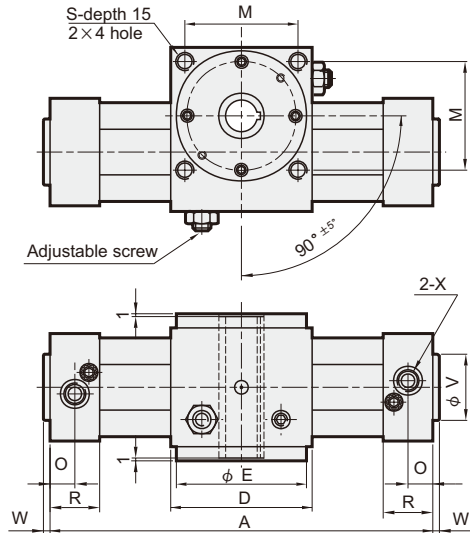
No.	Part name	Quantity	No.	Part name	Quantity	No.	Part name	Quantity
1	End cap	2	10	End cover	1	19	Hexagon socket head screw	8
2	Rack	1	11	Cushion needle	2	20	Magnet	2
3	Piston	2	12	Washer	2	21	Ball bearing	2
4	Magnet holder	2	13	Tie bolt	8	22	Piston packing	2
5	Piston nut	2	14	Adjusting screw	1	23	Cylinder 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

## ROTARY ACTUATOR

### MRTF

Angle of rotation 90°

Angle of rotation 180°

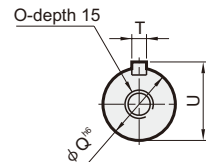
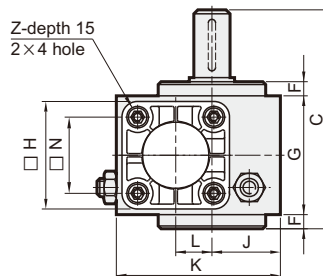
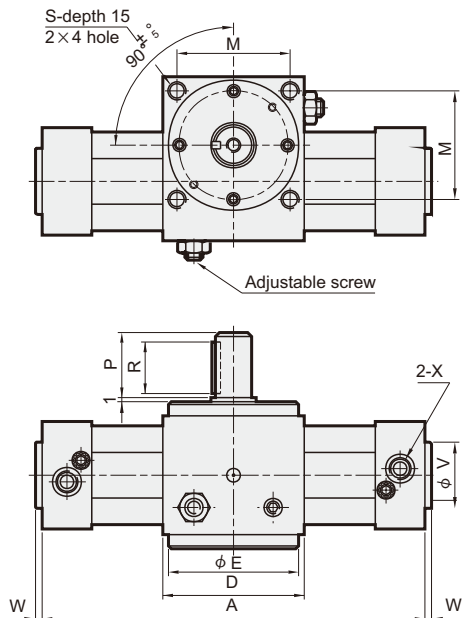


Model	A		C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
MRTF40	263	326	81	75	72	8	65	53	37.5	93	27.5	60	38	15	25	14	30	M6	5	16.5	35	4	G1/4	M6
MRTF63	306	377	95	90	82	10	75	75	42.5	110	30	70	56.5	16	30	19	32	M8	6	22	45	5	G3/8	M8
MRTF80	343	428	119	105	96	12	95	95	51.5	135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

### MRTH

Angle of rotation 90°

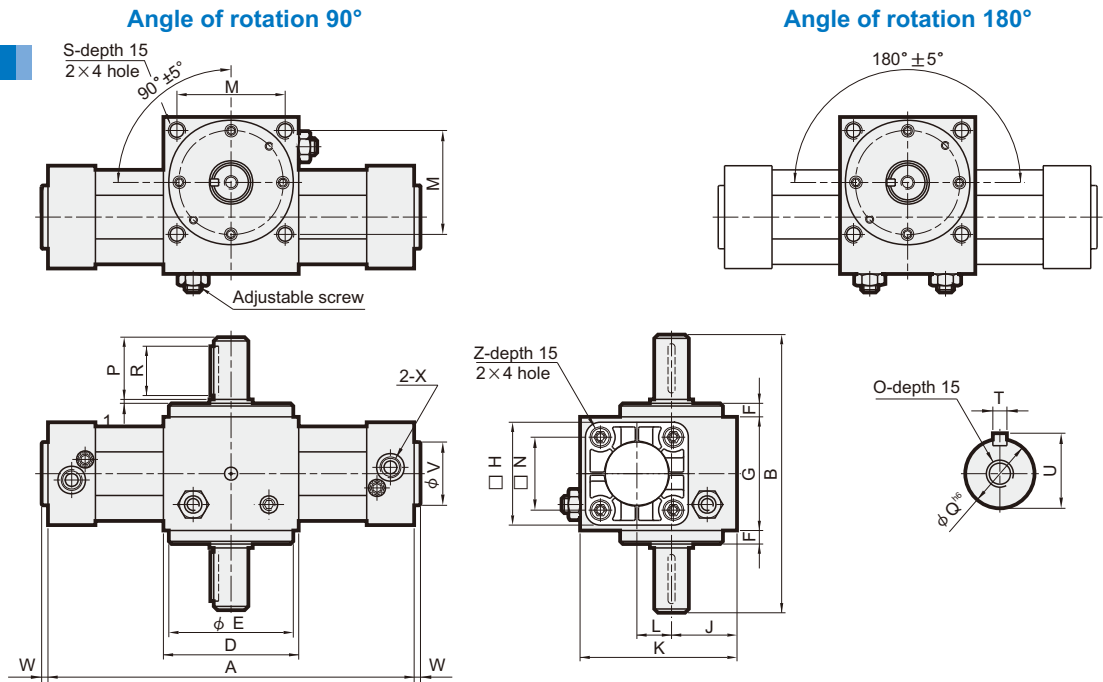
Angle of rotation 180°



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	6	G3/8	M10

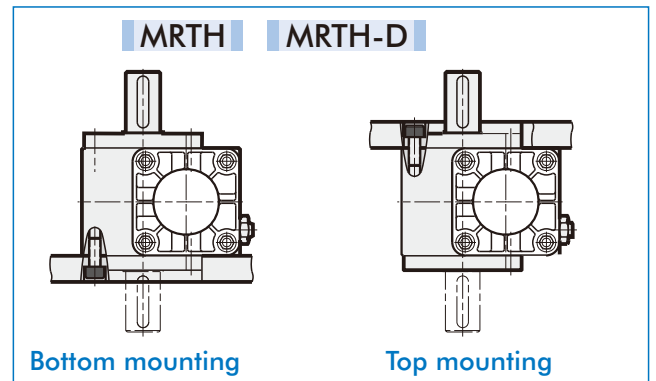
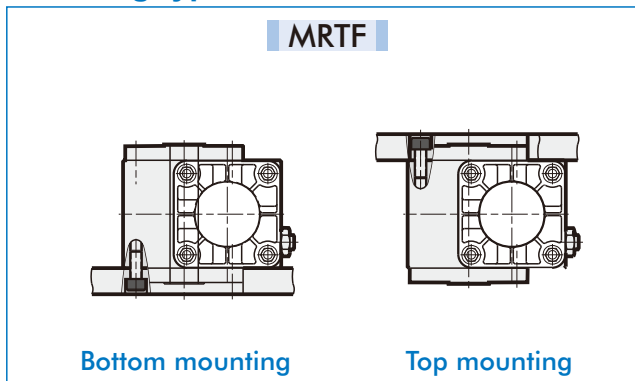
## ROTARY ACTUATOR

### MRTH-D

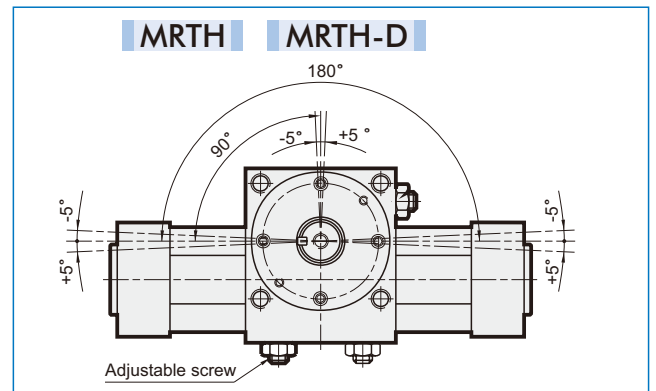
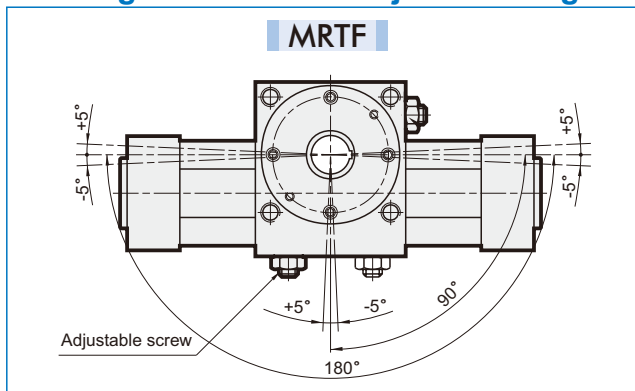


Model	A		B	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
MRTH40-D	263	326	143	75	72	8	65	53	37.5	93	27.5	60	38	M5	30	16	25	M6	5	18	35	4	G1/4	M6
MRTH63-D	306	377	181	90	82	10	75	75	42.5	110	30	70	56.5	M8	42	24	36	M8	8	27	45	5	G3/8	M8
MRTH80-D	343	428	221	105	96	12	95	95	51.5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

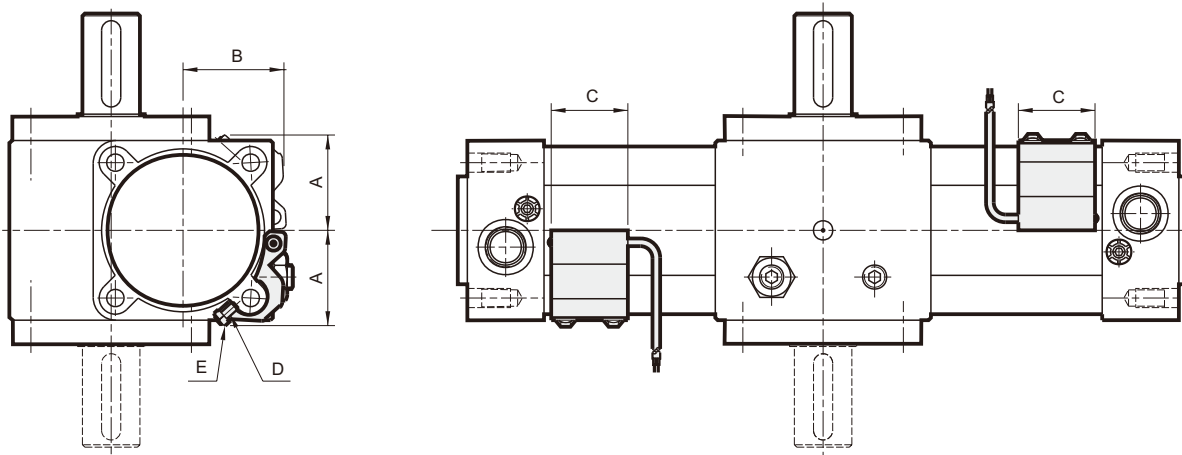
### Mounting type



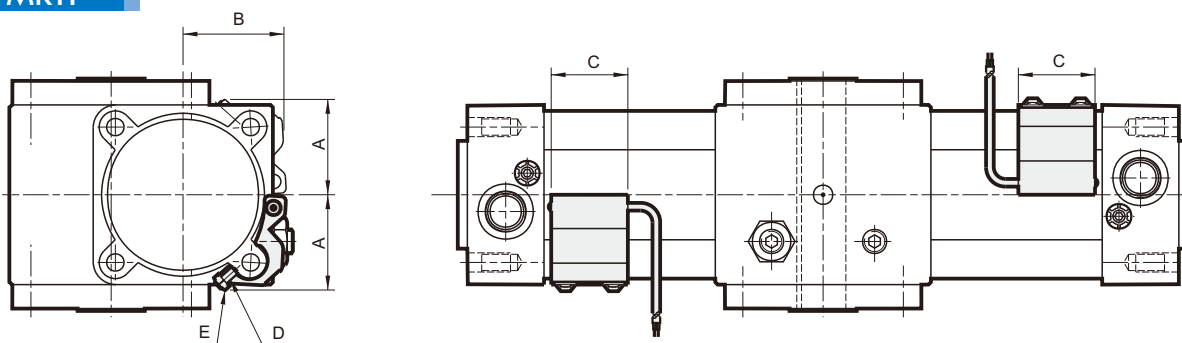
### Rotating direction and adjustable angle



### 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