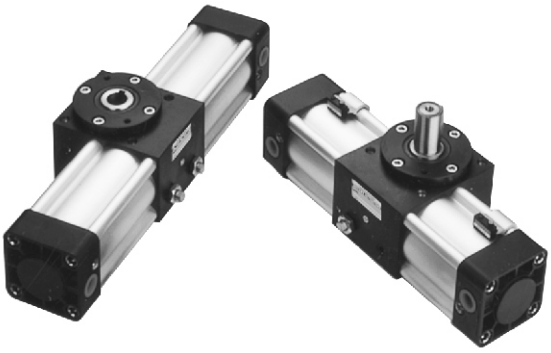
MRT* series

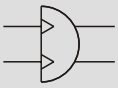
ROTARY ACTUATOR

Mindman



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.

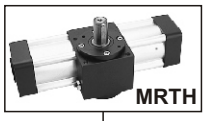
Specification:

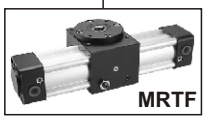
Model		MRTF, MRTH, MRTH-D		
Tube I.D. (mm)		40	63	80
Standard rotation (mm)		90±5° , 180±5°		
Initial position of slot (mm)		See dimensional feature		
Medium		Filtered air with or without lubrication		
Operating pressure range		1.3~7 kgf/cm^2		
Ambient temperature		−5~+60℃ (No freezing)		
Max. allowable 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

Order example:

MRTH − 40/ 90 − D

MODEL

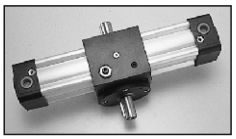




TUBE I.D.

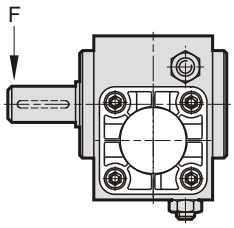
ROTATION
90: 90°
180: 180°

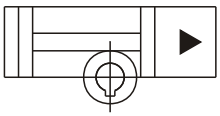
END ROD TYPE



D: double end rod type

Max. allowable radial trust:





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

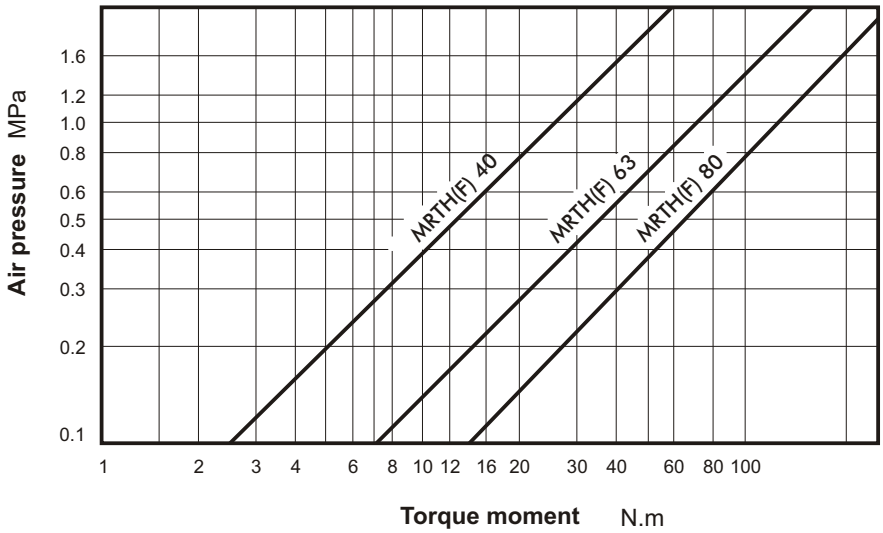
Model	MRTH, MRTF		
Tube I.D.(mm)	40	63	80
Constant K	0.3491	0.3927	0.4712

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^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

Mindman

How to order the seal kit

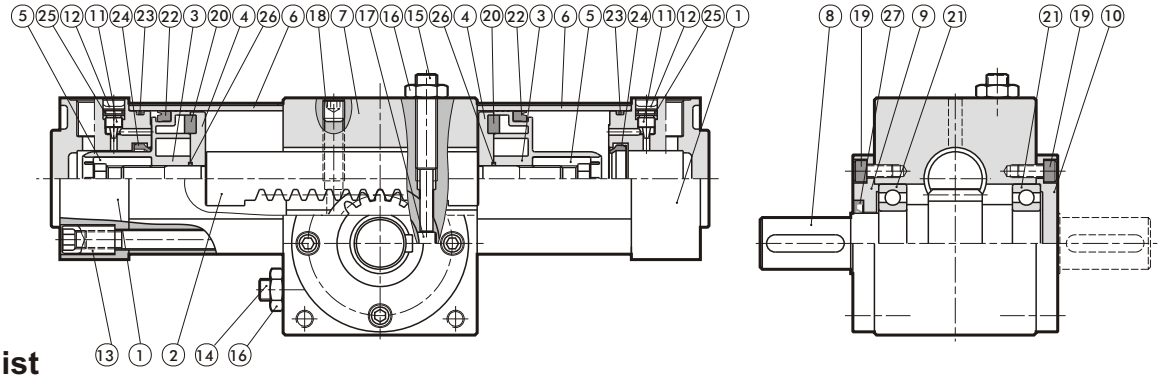
MRT□SK □

H
F

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

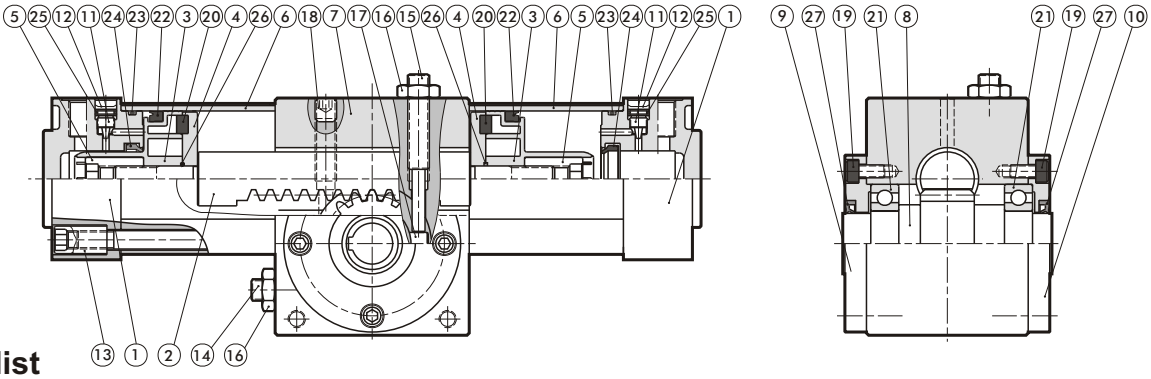
MRTH MRTH-D



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 packingt	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



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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

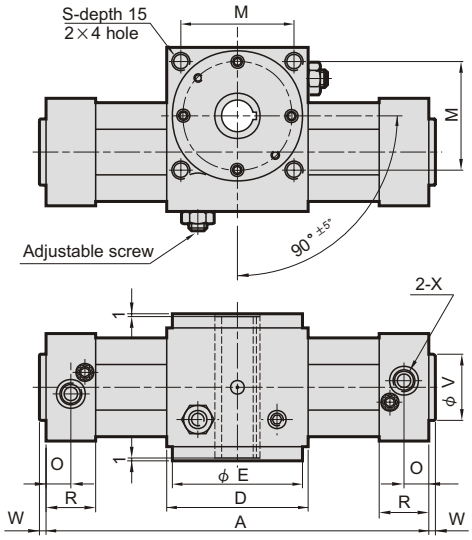
MRTH / MRTF Dimensions ϕ40~ϕ80

ROTARY ACTUATOR

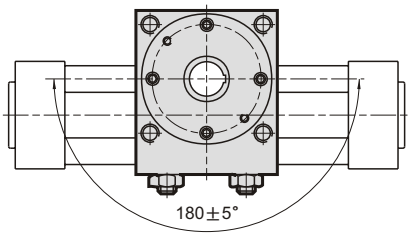
Mindman

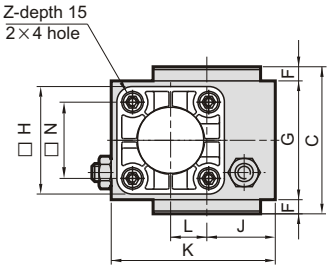
MRTF

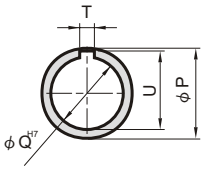
Angle of rotation 90°



Angle of rotation 180°





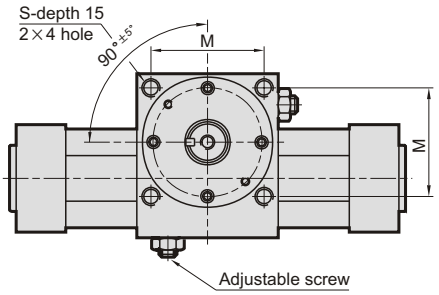


Dimensional table

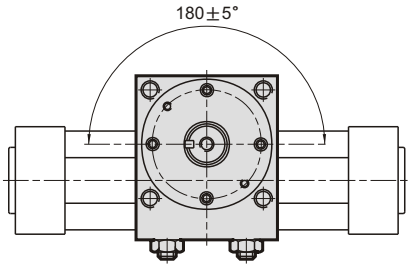
Model	A		C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
MRTF40	263	326	81	75	72	8	65	53	37.5	93	27.5	60	38	15	25	14	30	M6	5	16.5	35	4	G 1/4	M6
MRTF63	306	377	95	90	82	10	75	75	42.5	110	30	70	56.5	16	30	19	32	M8	6	22	45	5	G 3/8	M8
MRTF80	343	428	119	105	96	12	95	95	51.5	135	36	82	72	19	45	24	38	M10	6	27.5	45	5	G 3/8	M10

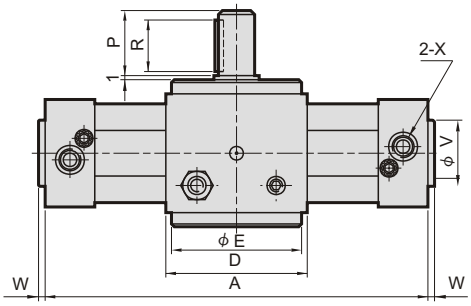
MRTH

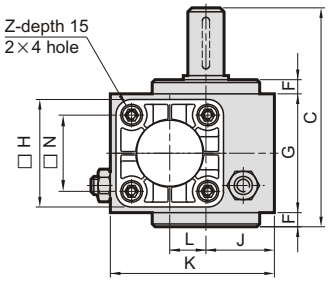
Angle of rotation 90°

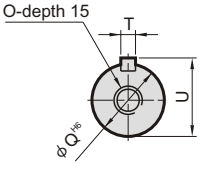


Angle of rotation 180°









Dimensional table

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	G 1/4	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	G 3/8	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	G 3/8	M10

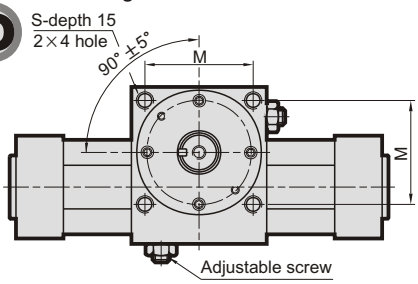
MRTH / MRTF Dimensions ϕ40~ϕ80

ROTARY ACTUATOR

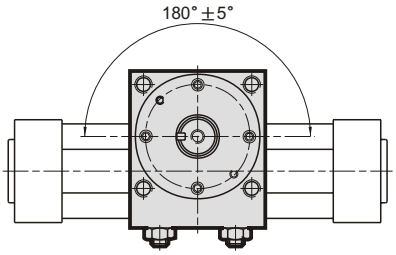
Mindman

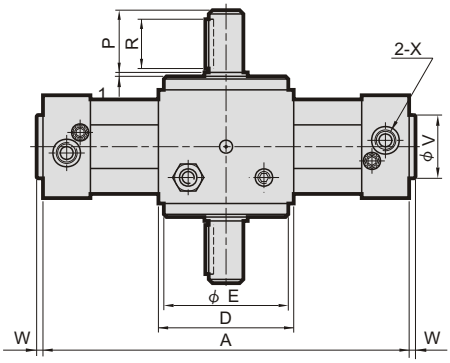
MRTH-D

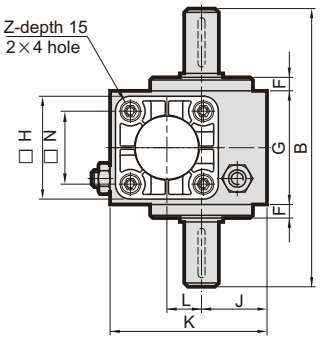
Angle of rotation 90°

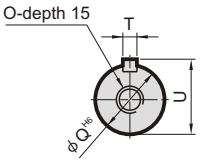


Angle of rotation 180°







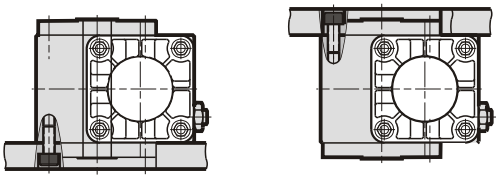


Dimensional table

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

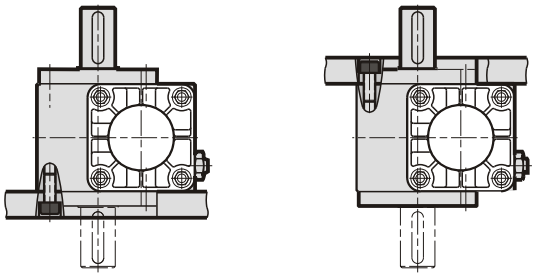
Mounting type

MRTF



Bottom mounting　　Top mounting

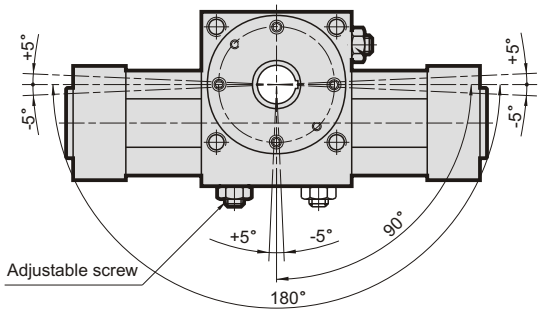
MRTH　MRTH-D



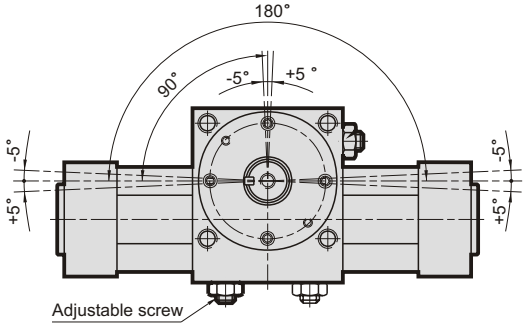
Bottom mounting　　Top mounting

Rotating direction and adjustable angle

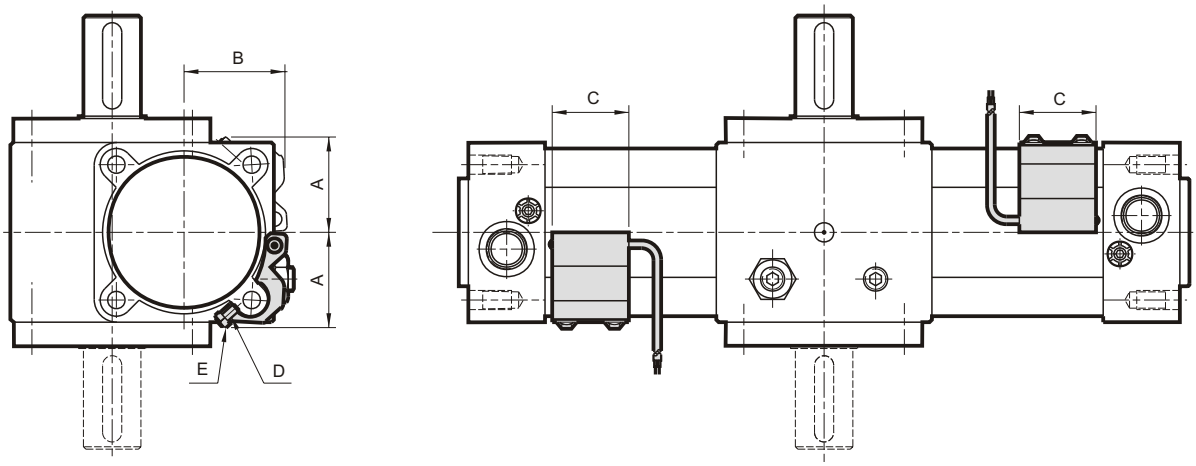
MRTF



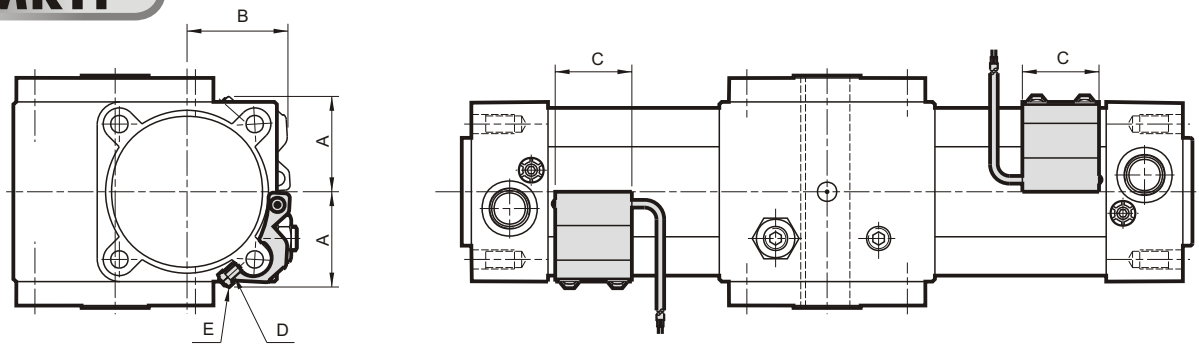
MRTH　MRTH-D



MRTH-D



MRTF

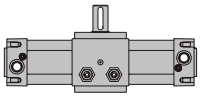
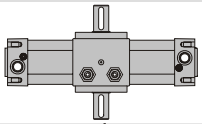
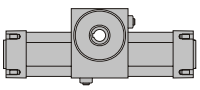


Dimensional table

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