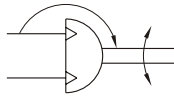


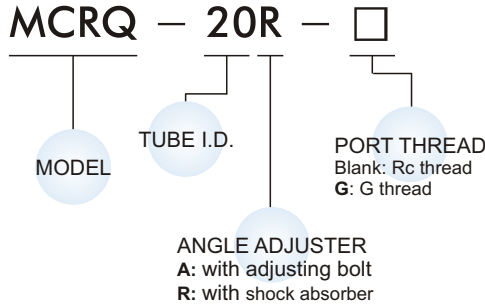
Features

- Centering boss and locating hole for accurate positioning.
- Operating range of table is 0°~190° by angle adjusting screw.
- Compact design using double rack and single pinion.
- Hollow shaft standard for wiring and piping.
- Possible to fit shock absorbers as stops.
- Ease of mounting with integral table.

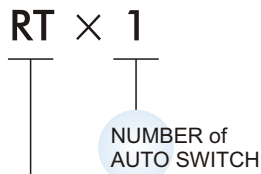
Symbol



Order example



Auto switch type



AUTO SWITCH TYPE

Perpendicular	In-line	Style
RTV	RT	Reed switch
RTNV	RTN	NPN
RTPV	RTP	PNP

Specification

Model	MCRQ					
Acting type	Double acting					
Tube I.D. (mm)	φ 15	φ 20	φ 25	φ 32	φ 40	
Port size	M5 × 0.8	Rc1/8				
Medium	Air (Non-lube)					
Max. operating pressure	adjusting bolt	1 MPa				
	shock absorber	0.6 MPa (※1)				
Min. operating pressure	0.1 MPa (※2)					
Ambient temperature	0~+60°C (No freezing)					
Allowable surge pressure	1.5 MPa					
Cushion	adjusting bolt	Rubber bumper	Rubber bumper or Air cushion			
	shock absorber	Shock absorber	Shock absorber or Air cushion			
Angle adjustment range	0° to 190°(max.)(※3)					
Minimum rotation that will not allow decrease of energy absorption ability	52°	40°	60°	62°	82°	
Weight (kg)	adjusting bolt	0.60	1.31	2.10	4.18	7.67
	shock absorber	0.61	1.31	2.12	4.19	7.72
Sensor switch (※)	RT: Reed switch, RTN: NPN, RTP: PNP					

※ RT specification, please refer to page V-18.

※1. The maximum operating pressure of the actuator is restricted by the maximum allowable thrust of the shock absorber.

※2. No-load conditions.

※3. Be careful if the rotation angle of a type with internal shock absorber is set below the value in the table below, the piston stroke will be smaller than the shock absorber's effective stroke, resulting in decreased energy absorption ability.

Theoretic force

unit: N · m

Model	Operating pressure (MPa)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
MCRQ-15	0.18	0.36	0.53	0.71	0.89	1.07	1.25	1.42	1.60	1.78
MCRQ-20	0.55	1.09	1.64	2.18	2.73	3.19	3.82	4.37	4.91	5.45
MCRQ-25	0.93	1.85	2.78	3.71	4.64	5.57	6.50	7.43	8.35	9.28
MCRQ-32	2.03	4.05	6.08	8.11	10.1	12.2	14.2	16.2	18.2	20.3
MCRQ-40	3.96	7.92	11.9	15.8	19.8	23.8	27.7	31.7	35.6	39.6

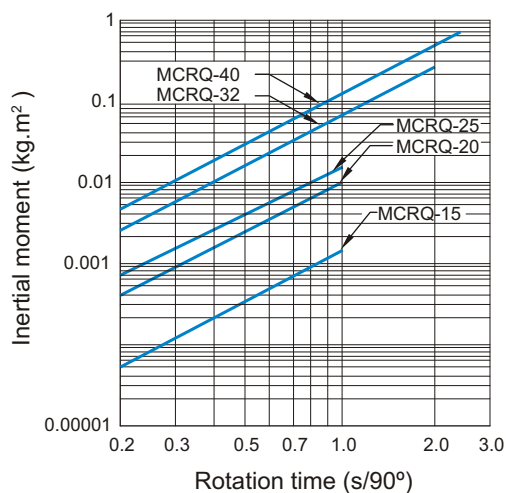
Allowable kinetic energy and rotation time adjustment range

Model	Allowable kinetic energy (J)		Rotation time adjustment range for stable operation(s/90°)	
	Adjustment bolt	Internal shock adsorber	Adjustment bolt	Internal shock adsorber
MCRQ-15	0.007	0.039	0.2 to 1.0	0.2 to 0.7
MCRQ-20	0.048	0.116		
MCRQ-25	0.081	0.294		
MCRQ-32	0.32	1.6	0.2 to 2.0	0.2 to 1.0
MCRQ-40	0.56	2.9	0.2 to 2.5	

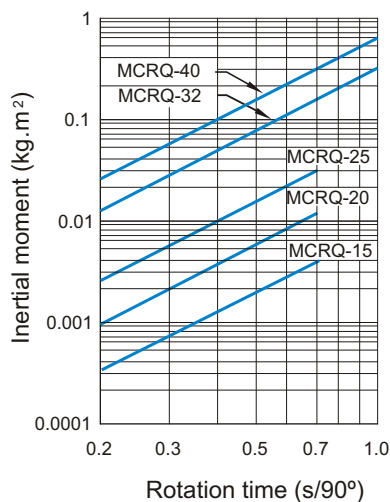
※ Be careful if a type with internal absorber is used below the minimum speed, the energy absorption ability will decrease drastically.

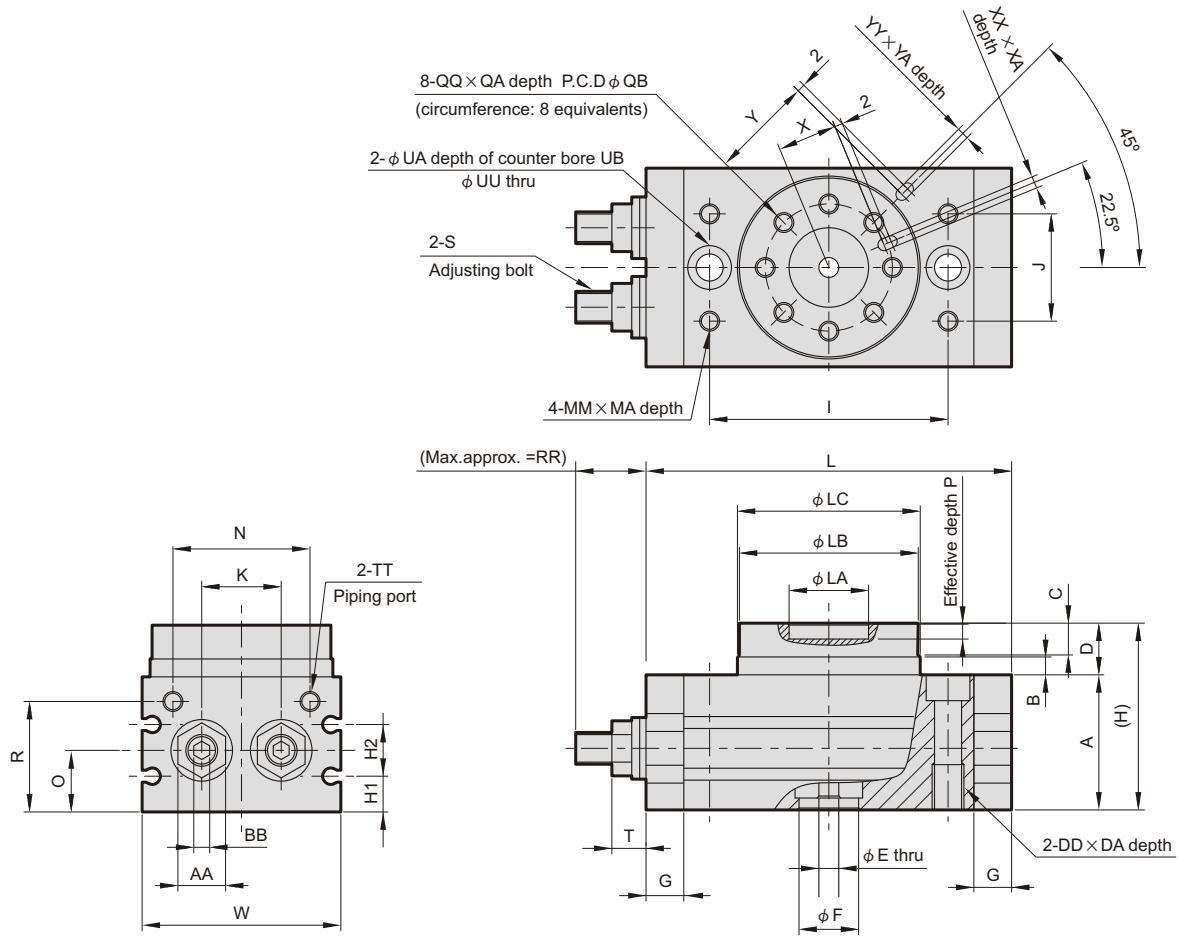
Inertial moment

With adjustment bolt



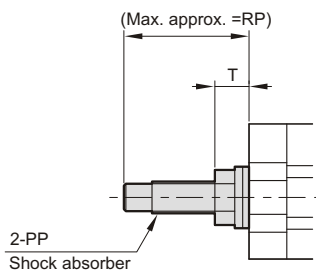
With internal shock absorber





MCRQ-15~25R

With shock absorber



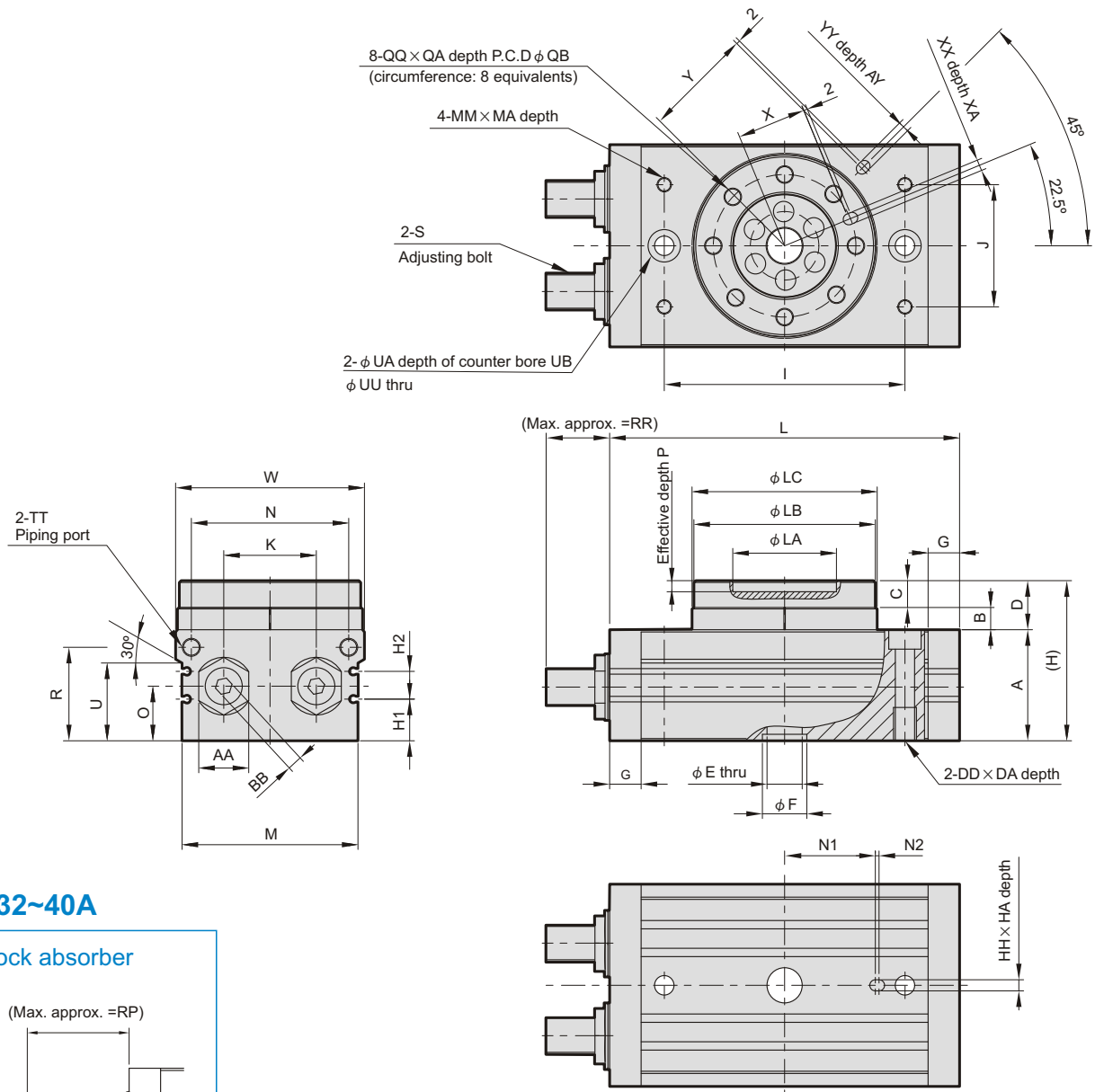
With adjust bolt, internal shock absorber

Tube I.D.	Adjustment angle per rotation of angle adjustment screw
15	10.2°
20	6.5°
25	8.2°

(mm)

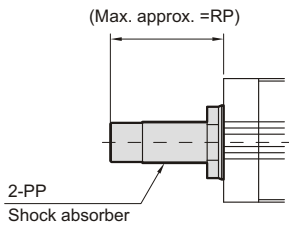
Code Tube I.D.	A	AA	B	BB	C	D	DA	DD	E	F	G	H	H1	H2	I	J	K	L	LA	LB	LC	MA	MM	N
15	34	12	4.5	4	8	13	12	M8 \times 1.25	5	15H9	9.5	47	9	13	60	27	20	92	20H9	45h9	46h9	8	M5 \times 0.8	34.5
20	40	14	6.5	5	10	17	15	M10 \times 1.5	9	22H9	12	57	11.5	14	84	37	29	127	32H9	65h9	67h9	8	M6 \times 1	50
25	46	19	7.5	6	12	20	18	M12 \times 1.75	10	26H9	15.5	66	14.5	15	100	50	38	152	35H9	75h9	77h9	8	M8 \times 1.25	63

Code Tube I.D.	O	P	PP	QA	QB	QQ	R	RP	RR	S	T	TT	UA	UB	UU	W	X	XA	XX	Y	YA	YY
15	15.5	4	PN-0806	8	32	M5 \times 0.8	27.8	31.5	17.7	M8 \times 1	8.6	M5 \times 0.8	11	6.5	6.8	50	15	3.5	3H9	27	3.5	3H9
20	18.5	4.5	PN-1007	10	48	M6 \times 1	32	34.7	25	M10 \times 1	10.6	Rc1/8	14	8.5	8.6	70	23	4.5	4H9	39	4.5	4H9
25	22	5	PN-1412	12	55	M8 \times 1.25	37.5	51.7	31.4	M14 \times 1.5	14	Rc1/8	18	10.5	10.5	80	26.5	5.5	5H9	45	5.5	5H9



MCRQ-32~40A

With shock absorber



With adjust bolt, internal shock absorber

TUBE I.D.	Adjustment angle per rotation of angle adjustment screw
32	6.1°
40	4.9°

(mm)

Code Tube I.D.	A	AA	B	BB	C	D	DA	DD	E	F	G	H	H1	H2	HA	HH	I	J	K	L	LA	LB	LC	M	MA
32	59	27	12	8	14.5	27	18	M12 \times 1.75	19	24H9	17	86	22	15	4.5	6H9	130	66	50	189	56H9	98h9	100h9	95	10
40	74	36	15	10	16.5	32	25	M16 \times 2	24	32H9	24	106	29	15	6.5	8H9	150	80	60	240	64H9	116h9	118h9	113	13

Code Tube I.D.	MM	N	N1	N2	O	P	PP	QA	QB	QQ	R	RP	RR	S	TT	U	UA	UB	UU	W	X	XA	XX
32	M8 \times 1.25	85	49	2	29.5	6	PN-2015	14.5	77	M10 \times 1.5	50.5	55.5	34.3	M20 \times 1.5	Rc1/8	42	17.5	10.5	10.4	102	37.5	6.5	6H9
40	M12 \times 1.75	103	54	2	36.5	9	PN-2725	16.5	90	M12 \times 1.75	65.5	74.7	40.2	M27 \times 1.5	Rc1/8	57	20	12.5	14.2	120	44	8.5	8H9

Code Tube I.D.	Y	YA	YY
32	59	4.5	6H9
40	69	4.5	8H9