

Rotary actuator Rack & pinion

RRC Series

- Size: 8/32/63
- Oscillating angle: 90°/180°/270°

JIS symbol



RoHS CAD

Specifications

Item		RRC		
Size		8	32	63
Effective torque*1 N·m		0.7	3.1	5.6
Actuation		Rack and pinion mechanism		
Working fluid		Compressed air		
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)		
Min. working pressure*2 MPa		0.1 (≈15 psi, 1 bar)		
Proof pressure MPa		1.6 (≈230 psi, 16 bar)		
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)		
Port size		Rc1/8		
Oscillating angle tolerance °		90^{+8}_{+1}, 180^{+8}_{+1}, 270^{+8}_{+1}		
Cushion		Rubber cushion	Air cushion	
Effective cushion length mm		-	4.8	5.8
Allowable absorbed energy J		0.05	0.21	0.41
Volumetric capacity cm^3	90°	3	12	22
	180°	6	24	44
	270°	9	36	66
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)		

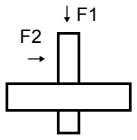
*1 : Effective torque value is at working pressure 0.5 MPa.
*2 : When using RRC-8 with max. oscillating angle, the working pressure is to be 0.3 MPa and over.
*3 : Adjustable angle is available as an option. Refer to page 1291.

Max. load

Use the load applied to the shaft at the values below or less.

Unit: N

Model No. / Load direction	RRC-8	RRC-32	RRC-63
Thrust load F1	9.8	39.2	58.8
Radial load F2	19.6	78.4	117.6



Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						
	T1H/ T1V	T2H/ T2V	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		
Output method	-				NPN output	PNP output	NPN output	NPN output	-						
Pwr. supp. V.	-				10 to 28 VDC				-						
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA						
Weight g	1 m: 33	1 m:18	1 m: 33	1 m:18	1 m:18		1 m: 33	1 m:18	1 m:18				1 m: 33		
	3 m: 87	3 m:49	3 m: 87	3 m:49	3 m:49		3 m: 87	3 m:49	3 m:49				3 m: 87		
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80	5 m:80				5 m:142		

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

Cylinder weight

Unit: kg

Oscillating angle / Model No.	90°	180°	270°	Switch weight (per 1 pc.)	Switch mounting bracket 90°	180°	270°
RRC-8	0.39	0.43	0.49	Refer to the weight in the switch specifications.	0.005		
RRC-32	1.02	1.23	1.45		0.011	0.013	0.015
RRC-63	1.68	2.03	2.37		0.012	0.014	0.016

(Example) Product weight of RRC-8-90-T2H-D

Body weight..... 0.39 kg
Switch weight ..... 0.018 2 pcs. = 0.036 kg
Switch mounting bracket weight.... 0.005 2 pcs. = 0.010 kg
Product weight ..... 0.39 kg + 0.036 kg + 0.010 kg = 0.436 kg

How to order

Without switch (built-in magnet for switch)

RRC - 8 - 90 — A

With switch (built-in magnet for switch)

RRC - 8 - 90 - T2H - R - A

Ⓐ Size

Ⓑ Max. oscillating angle

Ⓒ Switch model No.
* indicates the lead wire length.

Ⓓ Switch quantity

Ⓔ Option

Code	Description
Ⓐ Size	
Model No.	**Effective torque**
8	0.7 [N·m]
32	3.1 [N·m]
63	5.6 [N·m]
Ⓑ Max. oscillating angle	
90	90°
180	180°
270	270°

Ⓒ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Indicator	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***		●	●	Without indicator lamp	
T8H*	**T8V***		●	●	1-color display	
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***			●		3-wire
T3H*	**T3V***			●		
T2WH*	**T2WV***			●	2-color display	2-wire
T2YH*	**T2YV***			●		2-wire
T3WH*	**T3WV***			●		3-wire
T3YH*	**T3YV***			●		3-wire
T3PH*	**T3PV***			●	1-color display	3-wire

*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

Ⓓ Switch quantity	
R	With clockwise rotation detection 1 piece
L	With counterclockwise rotation detection 1 piece
D	2

Ⓔ Option	
A	Adjustable angle
P6	Copper and PTFE free

[Example of model No.]

RRC-8-90-T2H-R-A

Model: Rotary actuator rack & pinion

Ⓐ Size : 8
Ⓑ Max. oscillating angle : 90°
Ⓒ Switch model No. : Proximity T2H switch, lead wire 1 m
Ⓓ Switch quantity : With clockwise rotation detection 1 piece
Ⓔ Option : Adjustable angle

How to order switch

● Switch body + mounting bracket set (including rail)

RRC - T2H* - 8 - 90
Ⓒ Ⓐ Ⓑ

Switch model No. (Item Ⓒ above) | Size (Item Ⓐ above) | Max. oscillating angle (Item Ⓑ above)

● Switch body only

SW - T2H*

Switch model No. (Item Ⓒ above)

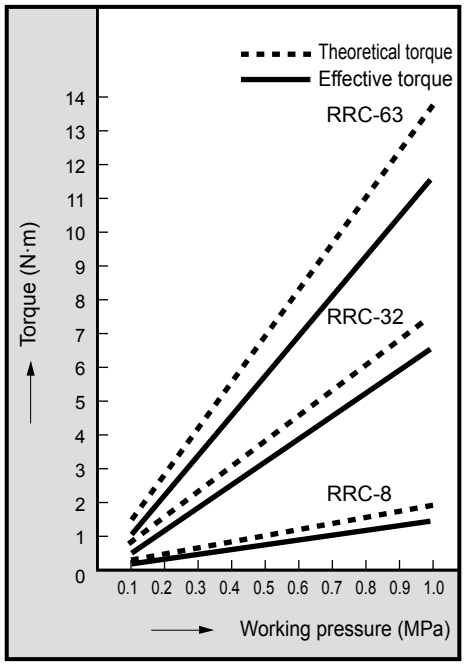
● Mounting bracket set (including rail)

RRC - T - 8 - 90

Bracket

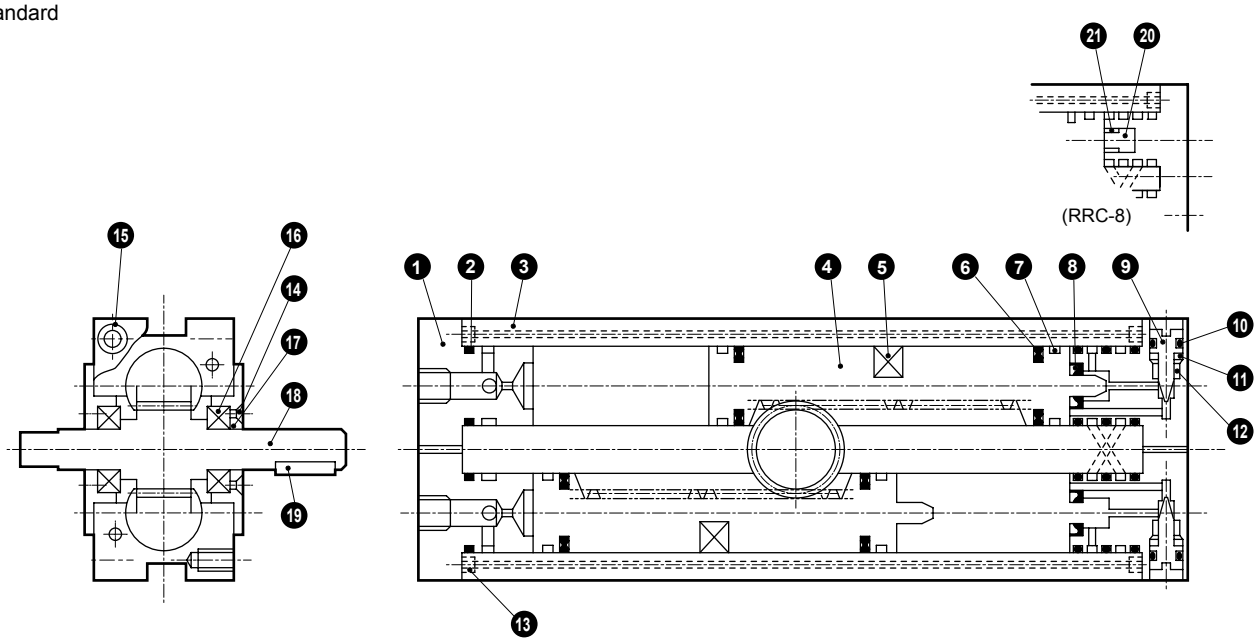
Size (Item Ⓐ above) | Max. oscillating angle (Item Ⓑ above)

Torque

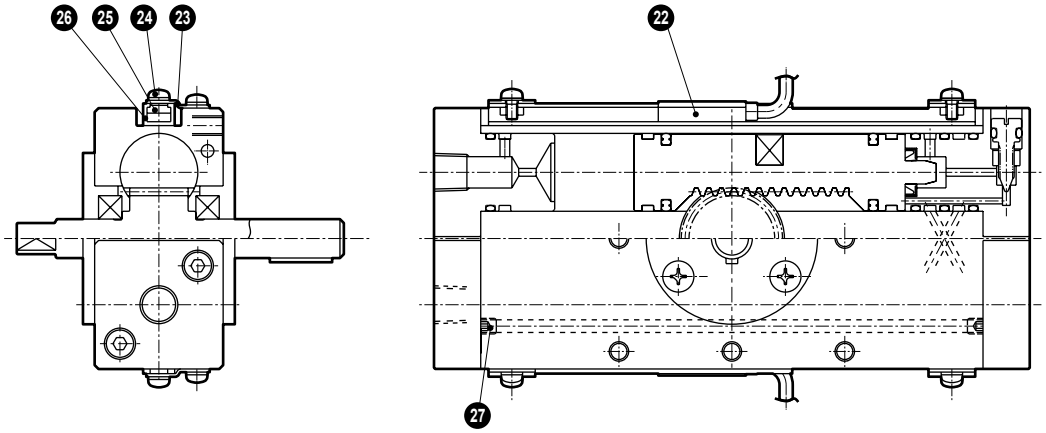


Internal structure and parts list

● Standard



● With switch



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Cap (2)	Aluminum alloy		16	Bearing	——	
2	Cap gasket	Nitrile rubber		17	Cover	Aluminum alloy	
3	Body	Aluminum alloy		18	Shaft	Steel	
4	Piston	Stainless steel		19	Key	Steel	
5	Magnet	Plastic		20	Cushion rubber	Urethane rubber	RRC-8 only
6	Piston packing	Nitrile rubber		21	DU bush	——	RRC-8 only
7	Wear ring	Acetal resin		22	Switch	——	
8	Cushion packing	Nitrile rubber	Excluding RRC-8	23	Stop plate	Stainless steel	
9	Needle	Copper alloy	Excluding RRC-8	24	Phillips pan head machine screw/captive washer	Steel	
10	Needle gasket	Nitrile rubber	Excluding RRC-8	25	Fixing nut	Stainless steel	
11	Cap (1)	Aluminum alloy		26	Switch rail	Aluminum alloy	
12	U nut	Steel	Excluding RRC-8	27	Hexagon socket set screw	Steel	
13	Hexagon socket set screw	Alloy steel					
14	Phillips flat head machine screw	Steel					
15	Hexagon socket head cap screw	Alloy steel					

Repair parts list

Model No.	Kit No.	Repair parts No.
RRC-8	RRC-8K	❷ ❻ ❼
RRC-32	RRC-32K	❷ ❻ ❼ ❽ ❿
RRC-63	RRC-63K	

Note: Specify the kit No. when placing an order.