Discontinue

RCS

Rotary clamp cylinder (single guide)

Special

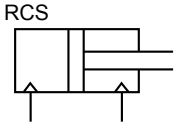
Features

Total length dimension is minimized to reduce installation space.
Through bolts can be used for improved mounting.
Tang and square tang can be selected for the rod end.

CONTENTS

Series variation

○: Custom order

Variation	Model No. JIS symbol	Bore size (mm)	Stroke length (mm)	Rotor stroke length (mm)	Clamp section stroke length (mm)	Mounting: Basic 00	Mounting: Rod side flange FA	Mounting: Head side flange FB	Option: Rod end square tang N4	Switch	Page
Double acting/ single rod	RCS 	φ16	17.5/27.5	7.5	10/20	○	○	○	○	○	1070

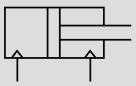
Discontinue

Rotary clamp cylinder (single guide)

RCS Series

● Bore size: φ16

JIS symbol



RoHS CAD

Specifications

Descriptions		RCS
Bore size mm		φ16
Actuation		Double acting
Working fluid		Compressed air
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)
Min. working pressure MPa		0.2 (≈29 psi, 2 bar)
Proof pressure MPa		1.6 (≈230 psi, 16 bar)
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)
Port size		M5
Working piston speed mm/s		50 to 200
Cushion		Rod side: rubber cushioned Head side: none
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)
Rotating angle		90°±10°
Rotating direction		Right/Left
Non-rotating accuracy (clamping): Initial value		±1.2°
Pressurized area mm^2	Pull	151
	Push	201
Durability		1 million times

Stroke length

Stroke length (mm)	Rotary stroke length (mm)	Clamp section stroke (mm)
17.5	7.5	10
27.5		20

Cylinder weight

(Unit: kg)

Stroke length (mm)	Weight	Additional weight with flange	Switch weight
17.5	0.14	0.07	0.02
27.5	0.17		

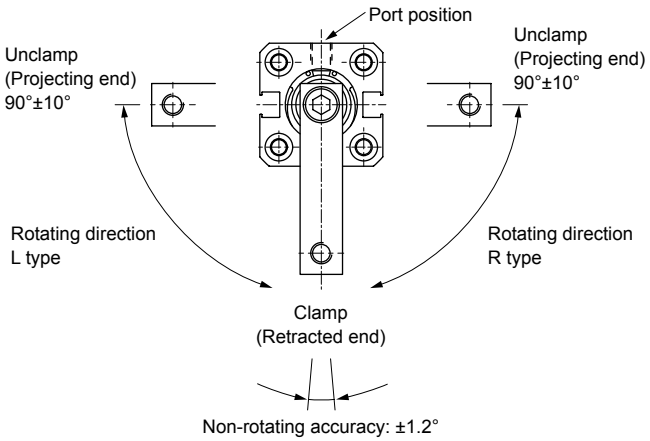
Switch specifications

● 1-color/2-color display

Descriptions	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3WH/ T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		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)
Leakage current	0 mA				1 mA or less		10 μA or less		
Weight g	1 m:18 3 m:49 5 m:80				1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

Rotating direction



How to order

Without switch (built-in magnet for switch)

RCS - 00 - 16 - 27.5 - R ——— N4

With switch (built-in magnet for switch)

RCS - 00 - 16 - 27.5 - R - T0H - R - N4

Ⓐ Mounting

Ⓐ Mounting	
00	Basic
FA	Rod side flange
FB	Head side flange

Ⓑ Bore size

Ⓑ Bore size (mm)	
16	φ16

Ⓒ Stroke length

Ⓒ Stroke length (mm)			
Stroke length	Bore size	Rotor	Clamp
17.5	φ16	7.5	10
27.5			20

Ⓓ Rotating direction

Ⓓ Rotating direction	
R	Clamp (Pull) looking from rod side: Rotated 90° in CW direction
L	Clamp (Pull) looking from rod side: Rotated 90° in CCW direction

Ⓔ Switch model No. *1

Ⓔ Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*	Reed	●	●	Without indicator lamp	2-wire
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*	Proximity		●	1-color display	3-wire
T3PH*	T3PV*	Proximity		●	1-color display (PNP output) (custom)	3-wire
T2WH*	T2WV*	Proximity		●	2-color display	2-wire
T3WH*	T3WV*	Proximity		●	2-color display	3-wire

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

Ⓕ Switch quantity

Ⓕ Switch quantity	
R	1 on rod side
H	1 on head side
D	2

Ⓖ Option

Ⓖ Option	
Blank	Rod end tang
N4	Rod end square tang

⚠ Precautions for model No. selection

*1: Switches are shipped with the product.

[Example of model No.]

RCS-00-16-27.5-R-T0H-R

Model: Rotary clamp cylinder double acting

Ⓐ Mounting : Basic
Ⓑ Bore size : φ16 mm
Ⓒ Stroke length : 27.5 mm
Ⓓ Rotating direction : Clamp (Pull) looking from rod side, rotated 90° in CW direction
Ⓔ Switch model No. : Reed T0H switch, lead wire length 1 m
Ⓕ Switch quantity : 1 on rod side
Ⓖ Option : Rod end tang

How to order switch

SW - T0H

Switch model No. (Item Ⓔ above)

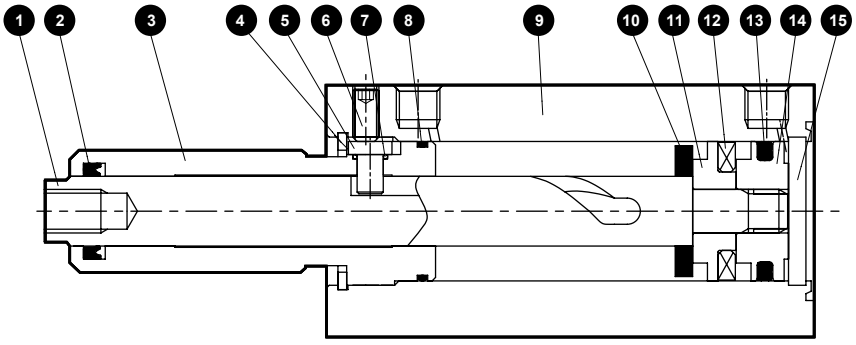
Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ16	Push	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2

Internal structure and parts list

● RCS



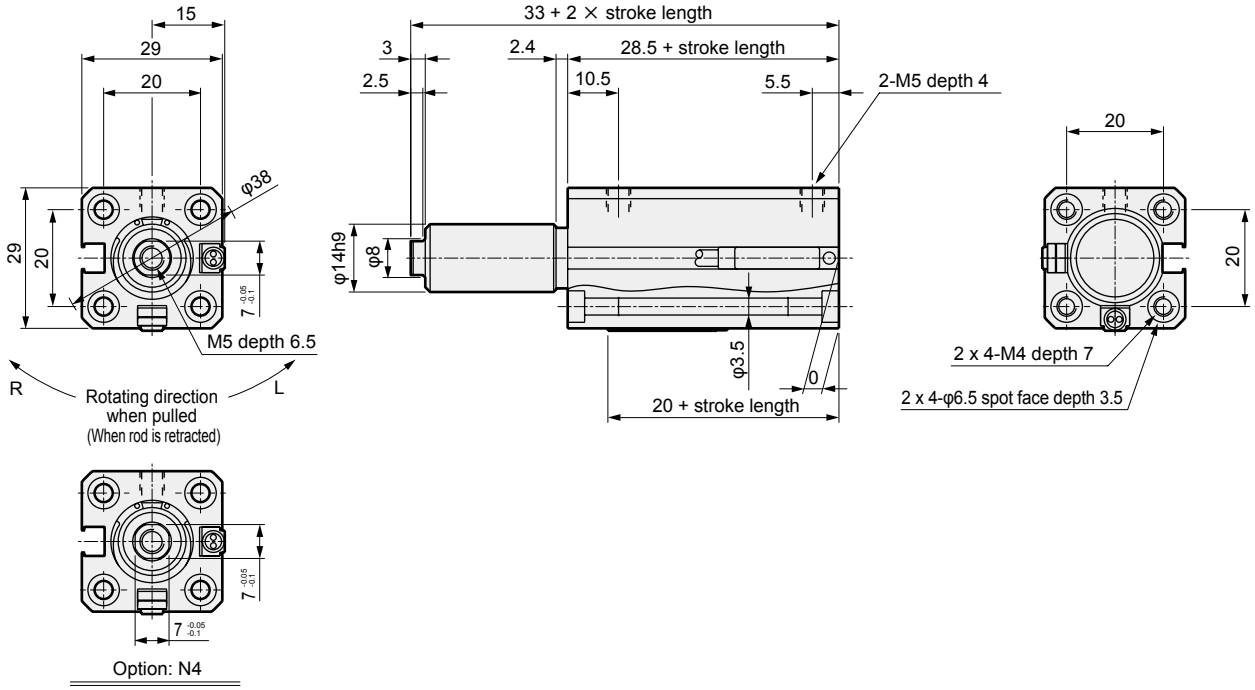
Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		10	Cushion rubber (R)	Urethane rubber	
2	Rod packing	Nitrile rubber		11	Spacer	Special resin	
3	Rod metal	Aluminum alloy		12	Magnet	Plastic	
4	Round R type snap ring	Steel		13	Piston packing	Nitrile rubber	
5	Pin	Stainless steel		14	Piston	Aluminum alloy	
6	Hexagon socket set screw	Steel		15	Cover	Stainless steel	
7	O-ring	Nitrile rubber			Flange bracket	Steel	For FA/FB
8	O-ring	Nitrile rubber			Hexagon socket button head bolt	Steel	For mounting flange bracket
9	Cylinder body	Aluminum alloy					

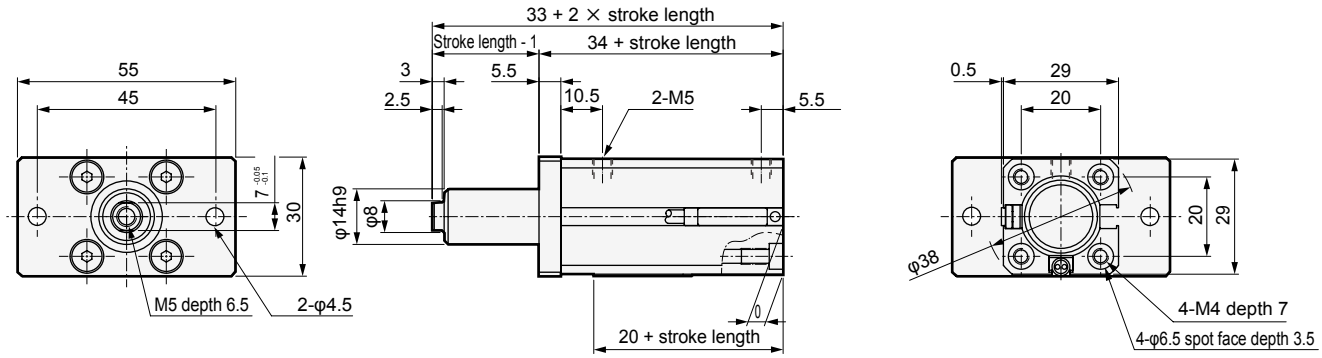
Note: This product cannot be disassembled.

Dimensions CAD

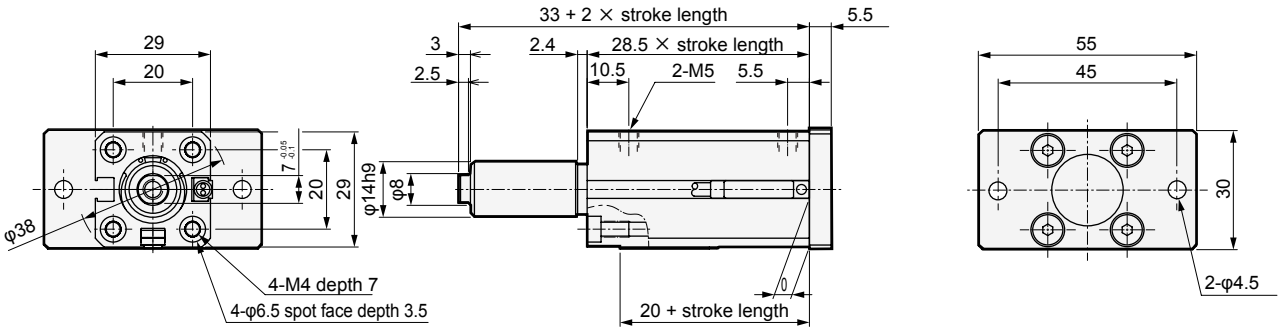
● Basic (00)



● Rod side flange (FA)



● Head side flange (FB)



Pneumatic components

Safety Precautions

Be sure to read this section before use.
Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Rotary clamp cylinder (single guide) RCS Series

Design/selection

⚠CAUTION

■ In this cylinder, the piston rod strokes while rotating by 90° during its operation.

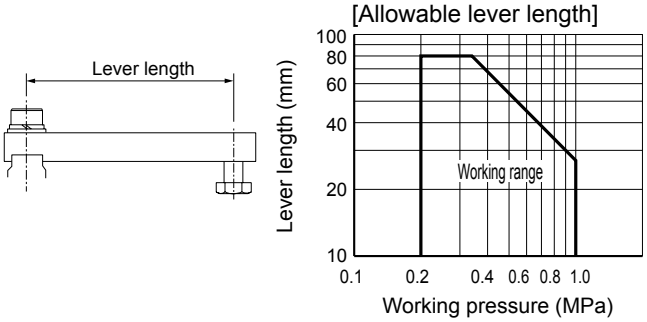
· Make sure that the lever mounted to the piston rod end does not interfere with the exterior while rotating.
· If the rotation of the lever attached to the piston rod end could cause bodily injury, be sure to provide safety measures by installing a protective cover, etc.

■ Clamp position

· Do not clamp during a rotation operation. Adjust the clamping position to be approx. 3mm or more before the stroke end position.
· Do not clamp the product so as to apply rotational force to the piston rod.
(a) Do not clamp the product in the rotational direction.
(b) Do not clamp the inclined portion.
(c) Do not use the product horizontally.
(d) Do not use if the workpiece moves while clamping.

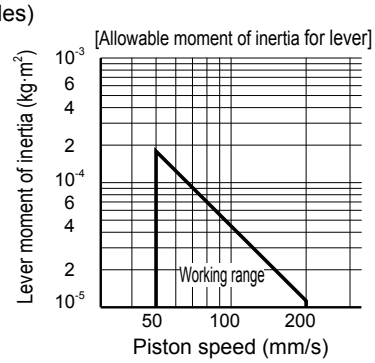
■ Lever length and working pressure

Set the lever length and working pressure within the range shown below.



■ Lever inertia moment and piston speed

Set the lever's moment of inertia and the piston speed within the range shown below. (Refer to RCC2 for selection examples)



■ Working environment

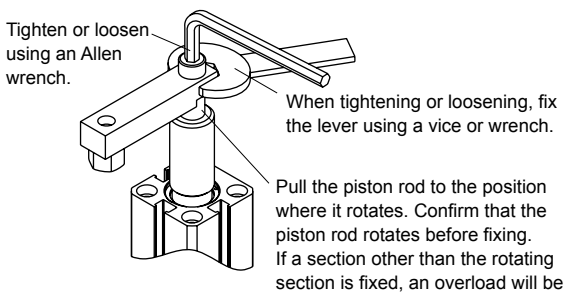
Coil scraper for welding environment is not supplied for this cylinder.

Mounting, installation and adjustment

⚠CAUTION

■ Mounting and removing the lever

Use the following procedures to attach and remove the lever. (Applying excessive rotational force to the piston rod may cause damage to the internal parts.)



■ Impact

Do not apply impact to the rod metal. There is a risk of damage.