

RCS2

Special function

Rotary clamp cylinder (single guide)

ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63

Overview

A rotary clamp cylinder with a simple structure which helps save space, realizing workpiece clamping in tight spaces.



CONTENTS

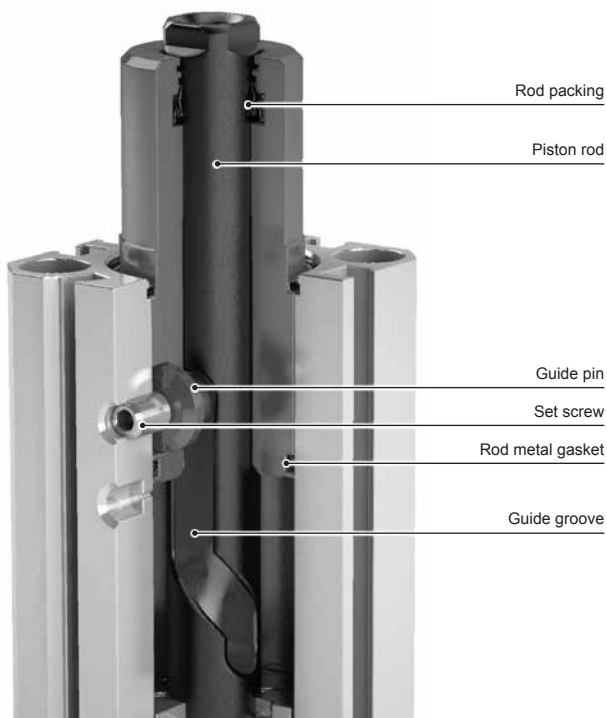
Product introduction	1064
Series variation	1066
● Double acting/single rod (RCS2)	1068
● Double acting/packing material fluoro rubber (RCS2-T2)	1078
● Double acting/anti-spatter adherence (RCS2-G4)	1084
Technical data	1090
⚠ Safety precautions	1092

The cylinder switches T2YH, T2YV, T3YH, and T3YV are scheduled for end of production at the end of December 2023.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Simple design makes compact

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Simple structure helps save space

Single guide structure

A guide groove is used on the piston rod and slid against the guide pin to perform linear and rotational motion.

High maintainability

Consumable parts can be replaced

Guide pins and packing parts can be replaced.

Easy clamp lever orientation

Two widths across flats machining of rod end

Orienting the clamp lever can be done easily by using the rod end 2 WAF as a reference.



Cylinder switches for a variety of applications

A diverse lineup

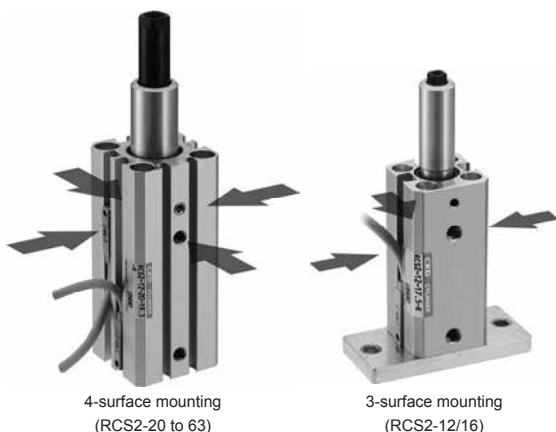
The T-shaped and miniature F-shaped switches can be mounted.

2-color display AC magnetic field cylinder switch (T2YD, T2YDT) can be mounted



Enables high visibility

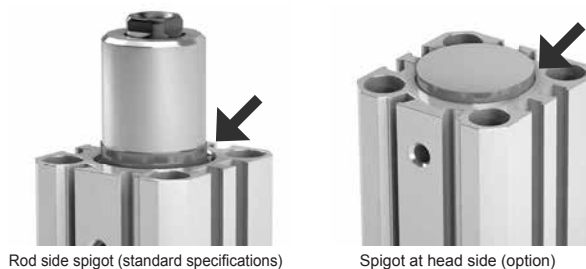
Multi-surface mounting that stresses visibility is possible.



High installation reproducibility

Reduce centering time during cylinder replacement

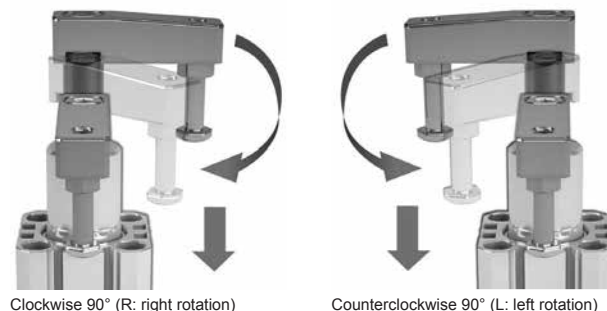
Centering during cylinder replacement can be done easily using a spigot.



Combination of rotary motion and linear motion

Clamp lever rotates 90°

Because the clamp lever rotates 90° when unclamped, workpiece setting and takeout are easy.



clamping a reality

Structure that considers environment conditions

A coil scraper is equipped as standard.

A coil scraper with a bore size of $\varnothing 20$ or more is equipped as standard. Removes spatter on the rod surface and prevents it from entering the cylinder.

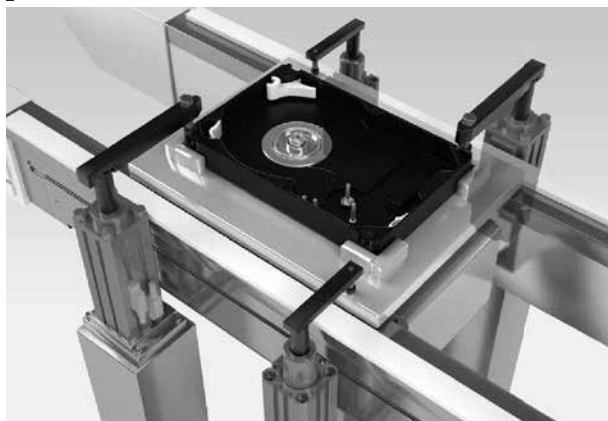
Anti-spatter adherence (G4) can also be selected

Anti-spatter adherence specification G4 is available, including a lubricator with fiber composite containing anti-spatter adherence agent and a coil scraper installed (bore size $\varnothing 32$ or more). It provides even better prevention of spatter adhering to the piston rod during arc welding.

Packing material fluoro rubber (variation code: T2) can be selected

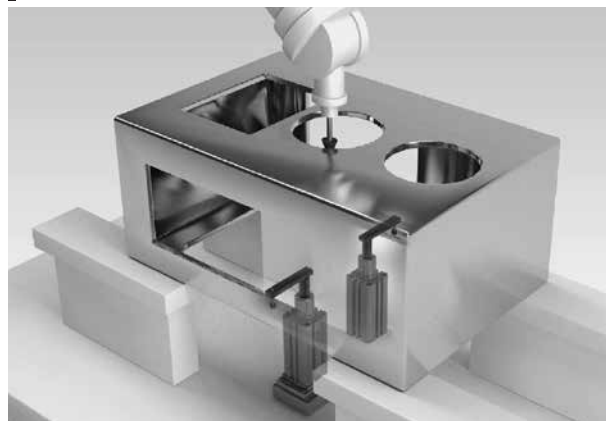
Usage examples

Jigs (pallets) on the conveyor and workpiece clamps



* Short lever: RCS2 Long lever: RCC2

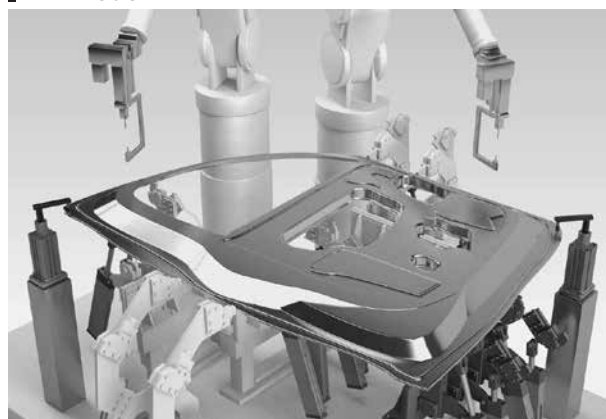
Workpiece clamp for dry burr removal and finishing process



Transport robot workpiece auxiliary holder



Welding jig workpiece clamp

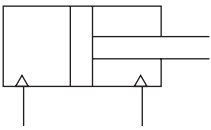
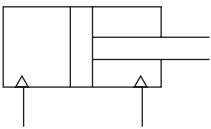
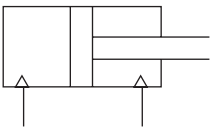


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Series variation

Rotary clamp cylinder RCS2 Series

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Variation	Model No. JIS symbol	Bore size (mm)	Stroke (mm)								
			17.5	19.5	25	29	27.5	29.5	35	39	
Double acting/single rod	RCS2 	ø12/ø16	●				●				
		ø20/ø25		●				●			
		ø32/ø40			●				●		
		ø50/ø63				●				●	
Double acting Packing material fluoro rubber	RCS2-T2 	ø12/ø16	●				●				
		ø20/ø25		●				●			
		ø32/ø40			●				●		
		ø50/ø63				●				●	
Double acting Anti-spatter adherence	RCS2-G4 	ø32/ø40			●				●		
		ø50/ø63				●				●	

●: Standard, ○: Option, ■: Not available

	Stroke (mm)						Rotary stroke (mm)	Clamp stroke (mm)	Mounting			Option	Accessory	Switch	Page
									Basic	Rod side flange	Head side flange	Spigot at head side	Clamp lever		
	37.5	39.5	45	49	65	69	(mm)	(mm)	00	FA	FB	H	A		
	●	■	■	■	■	■	7.5	10/20/30	○	○	○	○	○	○	1068
	■	●	■	■	■	■	9.5								
	■	■	●	■	●	■	15								
	■	■	■	●	■	●	19	30 / 50							
	●	■	■	■	■	■	7.5	10/20/30	○	○	○	○	○	○	1078
	■	●	■	■	■	■	9.5								
	■	■	●	■	●	■	15								
	■	■	■	●	■	●	19	30 / 50							
	■	■	●	■	●	■	15	10/20/30	○	○	○	○	○	○	1084
	■	■	■	●	■	●	19	30 / 50							

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Rotary clamp cylinder/single guide double acting/single rod

RCS2 Series

● Bore size: $\phi 12/\phi 16/\phi 20/\phi 25/\phi 32/\phi 40/\phi 50/\phi 63$

● Double acting
JIS symbol



Specifications

1 MPa $\approx$ 145.0 psi, 1 MPa = 10 bar

Item		RCS2							
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0 (≈145 psi, 10 bar)							0.6 (≈87 psi, 6 bar)
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar) (*1)							
Proof pressure	MPa	1.6 (≈232 psi, 16 bar)							
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)							
Port size	Rc, NPT, G	M5				1/8		1/4	
Stroke tolerance	mm	+1.0 0		+1.2 0					
Working piston speed	mm/s	50 to 200							
Cushion		Rod side: rubber cushioned, Head side: no cushioning							
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)							
Turning ratio		90° ±10°							
Rotation direction		Right/Left							
Non-rotating accuracy (clamping, default value)		±1.4°	±1.2°			±0.9°		±0.7°	
Pressurized area	Pull side	84	150	201	377	603	1056	1649	2803
	Push side	113	201	314	490	804	1256	1963	3117

*1: With constant pressurization

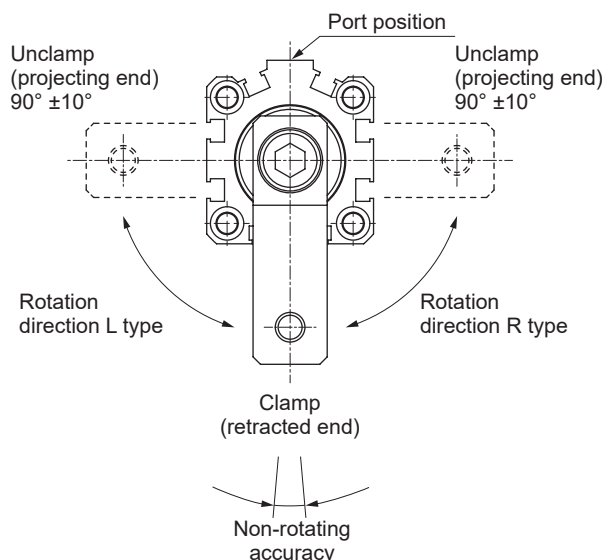
Stroke

Bore size (mm)	Stroke (mm)	Rotary stroke *1 (mm)	Clamp stroke *2 (mm)
$\phi 12, \phi 16$	17.5, 27.5, 37.5	7.5	10, 20, 30
$\phi 20, \phi 25$	19.5, 29.5, 39.5	9.5	10, 20, 30
$\phi 32, \phi 40$	25, 35, 45, 65	15	10, 20, 30, 50
$\phi 50, \phi 63$	29, 39, 49, 69	19	10, 20, 30, 50

*1: The rotary stroke is the dimension of forward action when rotating from the unclamp end in the clamping direction.

*2: The clamp stroke is the dimension of forward action in the clamping direction after rotation.

Rotating angle/rotation direction/non-rotating accuracy



Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/T1V	T2H/ T2V	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*2) T2YDT	
Applications	Programmable controller For relay, compact solenoid valve	Dedicated for programmable controller			Programmable controller, For relay				Programmable controller, For relay		Programmable controller, relay/C circuit (no indicator lamp), for serial connection		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Power supply voltage	-				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	24 VDC ±10%
Load current	5 to 100mA	5 to 20mA(*1)			100 mA or less		50 mA or less		5 to 50mA	7 to 20mA	50 mA or less	20 mA or less	5 to 50mA	7 to 20mA	7 to 10mA	5 to 20 mA (*1)
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)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	1 mA or less with 100 VAC, 2 mA or less with 200 VAC	1 mA or less			10 µA or less				0mA							1 mA or less
Weight g	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80		1 m: 18 3 m: 49 5 m: 80				1 m: 33 3 m: 87 5 m: 142			1 m: 61 3 m: 166 5 m: 272

*1: The above 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)

*2: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Switch specifications (F-switch)

● 1-color/2Color display

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/ F2YV	F3H/F3V	F3PH/F3PV (Made to order)	F3YH/ F3YV
Applications	Programmable controller Dedicated	Programmable controller,For relay	Programmable controller Dedicated		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20mA	50 mA or less	5 to 20mA		100 mA or less	50 mA or less	
Indicator lamp	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight	g 1 m: 10 3 m: 29						

*1: The F-switch uses a bend-resistant lead wire.

Cylinder weight

(Unit: g)

Bore size (mm)	Stroke (mm)														Rod side flange (FA)	Head side flange (FB)	Switch weight
	17.5	19.5	25	29	27.5	29.5	35	39	37.5	39.5	45	49	65	69			
ø12	69				84				99						49	49	Refer to the weight in the switch specifications above.
ø16	100				123				146						59	59	
ø20		212				252				292					114	114	
ø25		267				314				361					125	125	
ø32			333				372				411		489		145	145	
ø40			554				629				704		854		193	193	
ø50				997				1118				1239		1481	335	335	
ø63				1373				1526				1679		1985	464	464	

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	11.3	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02 x 10 ²	1.13 x 10 ²
	Pull	8.5	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	20.1	40.2	60.3	80.4	1.01 x 10 ²	1.21 x 10 ²	1.41 x 10 ²	1.61 x 10 ²	1.81 x 10 ²	2.01 x 10 ²
	Pull	15.1	30.2	45.2	60.3	75.4	90.5	1.06 x 10 ²	1.21 x 10 ²	1.36 x 10 ²	1.51 x 10 ²
ø20	Push	31.4	62.8	94.2	1.26 x 10 ²	1.57 x 10 ²	1.88 x 10 ²	2.20 x 10 ²	2.51 x 10 ²	2.83 x 10 ²	3.14 x 10 ²
	Pull	20.1	40.2	60.3	80.4	1.01 x 10 ²	1.21 x 10 ²	1.41 x 10 ²	1.61 x 10 ²	1.81 x 10 ²	2.01 x 10 ²
ø25	Push	49.1	98.2	1.47 x 10 ²	1.96 x 10 ²	2.45 x 10 ²	2.95 x 10 ²	3.44 x 10 ²	3.93 x 10 ²	4.42 x 10 ²	4.91 x 10 ²
	Pull	37.8	75.6	1.13 x 10 ²	1.51 x 10 ²	1.89 x 10 ²	2.27 x 10 ²	2.64 x 10 ²	3.02 x 10 ²	3.40 x 10 ²	3.78 x 10 ²
ø32	Push	80.4	1.61 x 10 ²	2.41 x 10 ²	3.22 x 10 ²	4.02 x 10 ²	4.83 x 10 ²	5.63 x 10 ²	6.43 x 10 ²	7.24 x 10 ²	8.04 x 10 ²
	Pull	60.3	1.21 x 10 ²	1.81 x 10 ²	2.41 x 10 ²	3.02 x 10 ²	3.62 x 10 ²	4.22 x 10 ²	4.83 x 10 ²	5.43 x 10 ²	6.03 x 10 ²
ø40	Push	1.26 x 10 ²	2.51 x 10 ²	3.77 x 10 ²	5.03 x 10 ²	6.28 x 10 ²	7.54 x 10 ²	8.80 x 10 ²	1.01 x 10 ³	1.13 x 10 ³	1.26 x 10 ³
	Pull	1.06 x 10 ²	2.11 x 10 ²	3.17 x 10 ²	4.22 x 10 ²	5.28 x 10 ²	6.33 x 10 ²	7.39 x 10 ²	8.44 x 10 ²	9.50 x 10 ²	1.06 x 10 ³
ø50	Push	1.96 x 10 ²	3.93 x 10 ²	5.89 x 10 ²	7.85 x 10 ²	9.82 x 10 ²	1.18 x 10 ³	1.37 x 10 ³	1.57 x 10 ³	1.77 x 10 ³	1.96 x 10 ³
	Pull	1.65 x 10 ²	3.30 x 10 ²	4.95 x 10 ²	6.60 x 10 ²	8.25 x 10 ²	9.90 x 10 ²	1.15 x 10 ³	1.32 x 10 ³	1.48 x 10 ³	1.65 x 10 ³
ø63	Push	3.12 x 10 ²	6.23 x 10 ²	9.35 x 10 ²	1.25 x 10 ³	1.56 x 10 ³	1.87 x 10 ³	-	-	-	-
	Pull	2.80 x 10 ²	5.61 x 10 ²	8.41 x 10 ²	1.12 x 10 ³	1.40 x 10 ³	1.68 x 10 ³	-	-	-	-

How to order

Without switch (built-in magnet for switch)

RCS2 - 00 - 12 - 17.5 - R - H A

With switch (built-in magnet for switch)

RCS2 - 00 - 12 - 17.5 - R - T0H - D - H A

A Mounting

B Bore size

C Port thread

D Stroke

E Rotation direction

F Switch model No.

Precautions for model No. selection

*1: For A Mounting format "FA" or "FB", H Option "H" cannot be selected.

*2: F-switch cannot be selected.

[Example of model No.]

RCS2-00-12-17.5-R-T0H-D-HA

Model: Rotary clamp cylinder/double acting

- A Mounting : Basic
- B Bore size : $\phi 12$ mm
- C Port thread : M5
- D Stroke : 17.5 mm
- E Rotation direction : Rotates 90° in CW direction when retracted
- F Switch model No. : Reed T0H switch, lead wire 1 m
- G Switch quantity : With both sides
- H Option : Spigot at head side
- I Accessory : Clamp lever

G Switch quantity

H Option

I Accessory

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

B Bore size (mm)	
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

C Port thread	
Blank	Rc thread (M5 for $\phi 25$ and less)
N	NPT thread ($\phi 32$ and over)
G	G thread ($\phi 32$ and over)

D Stroke (mm)	
Refer to the stroke table on the following page.	

E Rotation direction	
See the following page for details.	
R	Rotates 90° in CW direction when retracted
L	Rotates 90° in CCW direction when retracted

Straight Lead wire		L-shaped Lead wire	Contact	Voltage		Indicator	Lead wire	Bore size							
								12	16	20	25	32	40	50	63
T0H*	T0V*		Reed	AC	DC	1-color LED	2-wire	●	●	●	●	●	●	●	●
T5H*	T5V*		Reed	AC	DC	No indicator lamp	2-wire	●	●	●	●	●	●	●	●
T8H*	T8V*		Reed	AC	DC	1-color LED	2-wire	●	●	●	●	●	●	●	●
T1H*	T1V*		Proximity	AC	DC	1-color LED (PNP output)	2-wire	●	●	●	●	●	●	●	●
T2H*	T2V*		Proximity	AC	DC	1-color LED	2-wire	●	●	●	●	●	●	●	●
T3H*	T3V*		Proximity	AC	DC	1-color LED (PNP output)	3-wire	●	●	●	●	●	●	●	●
T3PH*	T3PV*		Proximity	AC	DC	1-color LED (PNP output)	3-wire	●	●	●	●	●	●	●	●
T2WH*	T2WV*		Proximity	AC	DC	2-color LED	2-wire	●	●	●	●	●	●	●	●
T2YH*	T2YV*		Proximity	AC	DC	2-color LED	2-wire	●	●	●	●	●	●	●	●
T3WH*	T3WV*		Proximity	AC	DC	2-color LED	3-wire	●	●	●	●	●	●	●	●
T3YH*	T3YV*		Proximity	AC	DC	2-color LED	3-wire	●	●	●	●	●	●	●	●
T2YD*	-		Proximity	AC	DC	2-color LED	2-wire	●	●	●	●	●	●	●	●
T2YD*	-		Proximity	AC	DC	AC magnetic field	2-wire	●	●	●	●	●	●	●	●
T2JH*	T2JV*		Proximity	AC	DC	1-color LED off-delay	2-wire	●	●	●	●	●	●	●	●
F2S*			Proximity	AC	DC	1-color LED	2-wire	●	●	●	●	●	●	●	●
F3S*			Proximity	AC	DC	1-color LED	3-wire	●	●	●	●	●	●	●	●
F2H*	F2V*		Proximity	AC	DC	1-color LED	2-wire	●	●	●	●	●	●	●	●
F3H*	F3V*		Proximity	AC	DC	1-color LED	3-wire	●	●	●	●	●	●	●	●
F3PH*	F3PV*		Proximity	AC	DC	1-color LED (PNP output) (made to order)	3-wire	●	●	●	●	●	●	●	●
F2YH*	F2YV*		Proximity	AC	DC	2-color LED	2-wire	●	●	●	●	●	●	●	●
F3YH*	F3YV*		Proximity	AC	DC	2-color LED	3-wire	●	●	●	●	●	●	●	●

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	With both sides

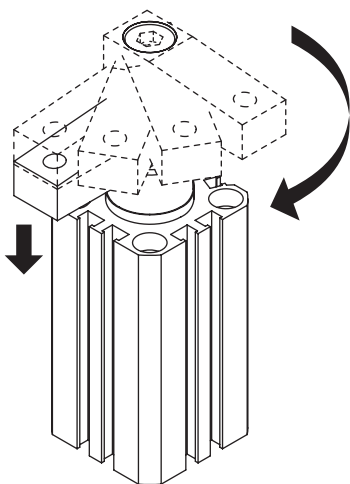
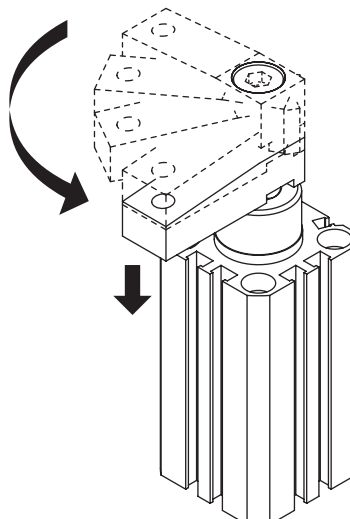
H Option	
Blank	No option
H	Spigot at head side

I Accessory (included at shipment)	
Blank	No accessories
A	Clamp lever

[Stroke table]

Stroke	Bore size								Rotation stroke	Clamp stroke
	12	16	20	25	32	40	50	63		
17.5	●	●							7.5	10
19.5			●	●					9.5	10
25					●	●			15	10
29							●	●	19	10
27.5	●	●							7.5	20
29.5			●	●					9.5	20
35					●	●			15	20
39							●	●	19	20
37.5	●	●							7.5	30
39.5			●	●					9.5	30
45					●	●			15	30
49							●	●	19	30
65					●	●			15	50
69							●	●	19	50

[Rotation direction]

R	Rotates 90° in CW direction when retracted	L	Rotates 90° in CCW direction when retracted
			

Discrete switch model No. Flange kit model No.

SW - T0H3

Switch model No.
(Item **F** on page 1070)

RCS2 - FA - 12

Bore size
(Item **B** on page 1070)

Clamp lever kit model No.

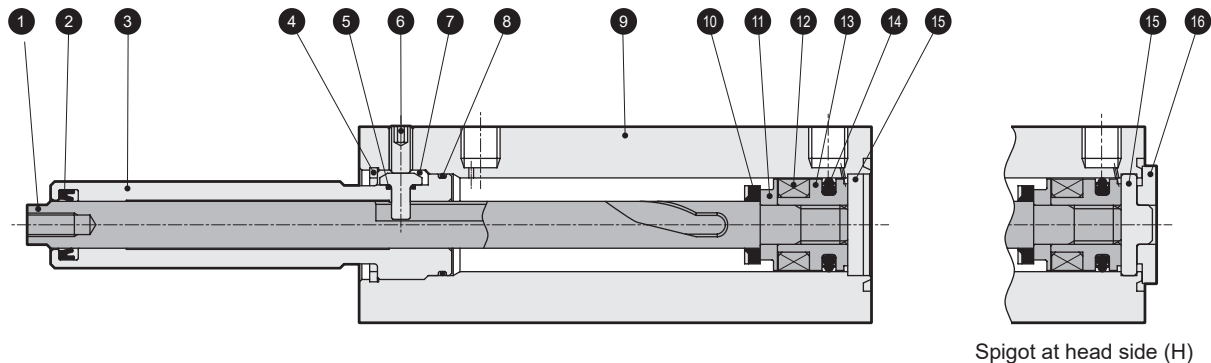
RCS2 - A - 12

Code	Applicable bore size
12	ø12
16	ø16
20	ø20, ø25
32	ø32, ø40
50	ø50, ø63

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

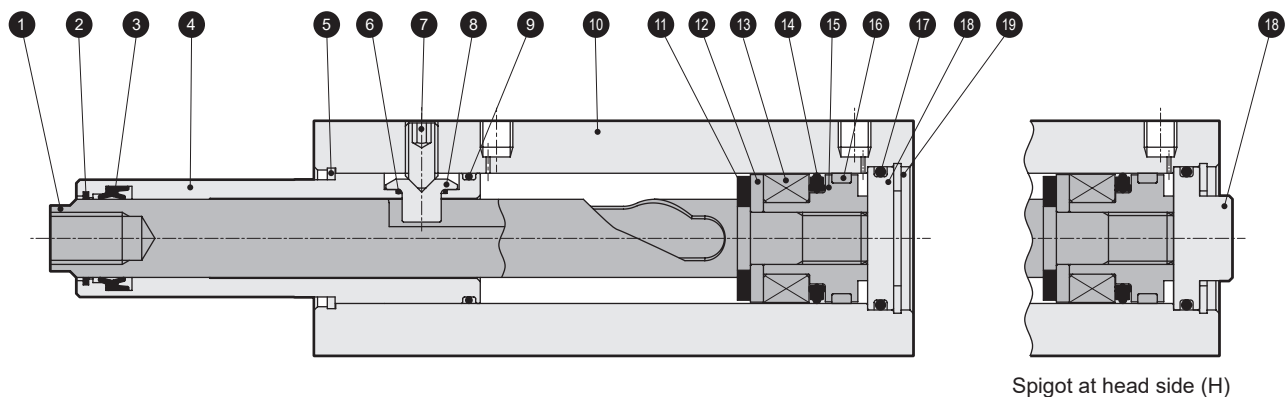
Internal structure and parts list (ø12, ø16, ø20, ø25)

● RCS2-12/16



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	10	Cushion rubber (R)	Urethane rubber	
2	Rod packing	Nitrile rubber		11	Spacer	ø12: Aluminum alloy ø16: Special plastic	Zinc chromate
3	Rod metal	Aluminum alloy	Hard alumite	12	Magnet	Plastic	
4	Round R type snap ring	Steel	Zinc phosphate	13	Piston	Aluminum alloy	Zinc chromate
5	Guide pin gasket	Nitrile rubber		14	Piston packing	Nitrile rubber	
6	Hexagon socket set screw	Stainless steel		15	Cover	Stainless steel	
7	Guide pin	Steel	Special treatment	16	Spigot ring	Aluminum alloy	Zinc chromate
8	Rod metal gasket	Nitrile rubber					
9	Body	Aluminum alloy	Hard alumite				

● RCS2-20/25



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	11	Cushion rubber (R)	Urethane rubber	
2	Coil scraper	Copper alloy		12	Spacer	Aluminum alloy	Zinc chromate
3	Rod packing	Nitrile rubber		13	Magnet	Plastic	
4	Rod metal	Aluminum alloy	Hard alumite	14	Piston packing	Nitrile rubber	
5	Circlip	Steel		15	Piston	Aluminum alloy	Zinc chromate
6	Guide pin gasket	Nitrile rubber		16	Wear ring	Polyacetal resin	
7	Hexagon socket set screw	Stainless steel		17	Cover gasket	Nitrile rubber	
8	Guide pin	Steel	Special treatment	18	Base plate	Aluminum alloy	Zinc chromate
9	Rod metal gasket	Nitrile rubber		19	C-snap ring	Steel	Zinc phosphate
10	Body	Aluminum alloy	Hard alumite				

Consumable parts list

● Packing kit

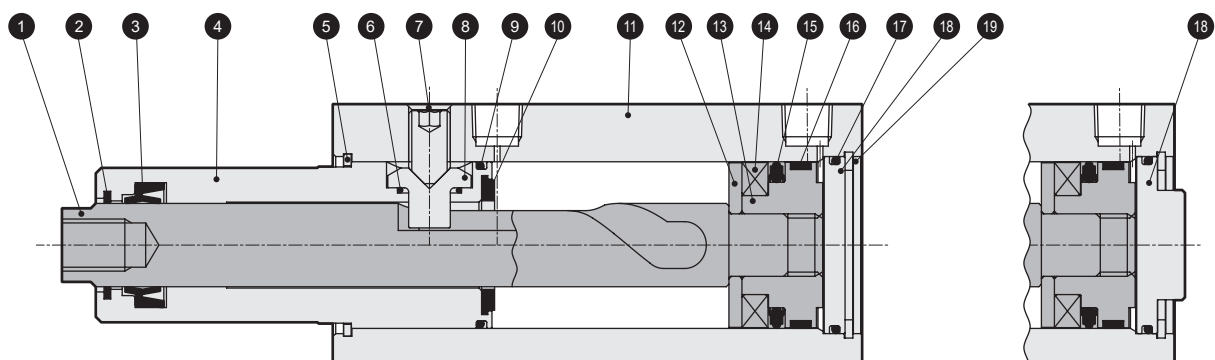
Bore size (mm)	Kit No.	Consumable parts No.
ø12	RCS2-12K	2 5 8 10 14
ø16	RCS2-16K	
ø20	RCS2-20K	2 3 6 9 11 14 16 17
ø25	RCS2-25K	

● Guide pin kit

Bore size (mm)	Kit No.	Consumable parts No.
ø12	RCS2-G-12	6 7
ø16	RCS2-G-16	
ø20	RCS2-G-20	7 8
ø25	RCS2-G-25	

Internal structure and parts list (ø32, ø40, ø50, ø63)

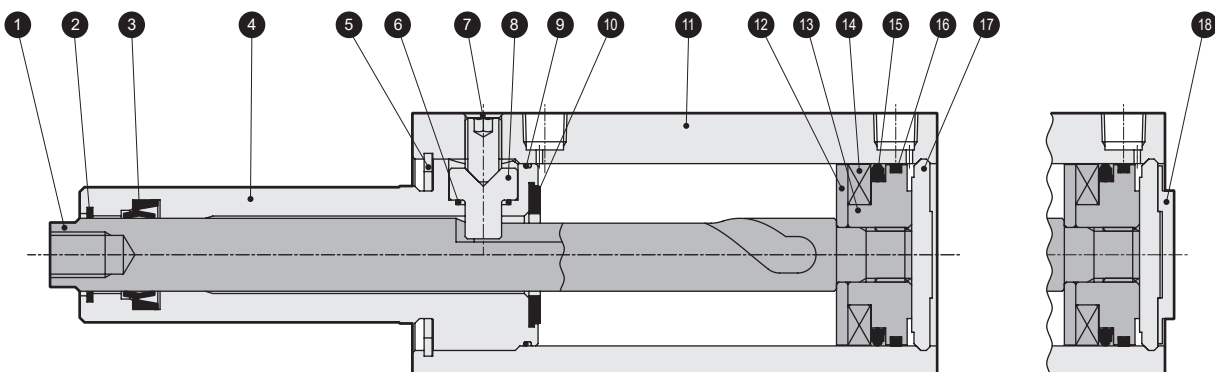
● RCS2-32



Spigot at head side (H)

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	11	Body	Aluminum alloy	Hard alumite
2	Coil scraper	Copper alloy		12	Spacer	Aluminum alloy	
3	Rod packing	Nitrile rubber		13	Piston	Aluminum alloy	Zinc chromate
4	Rod metal	Aluminum alloy	Hard alumite	14	Magnet	Plastic	
5	Circlip	Steel		15	Piston packing	Nitrile rubber	
6	Guide pin gasket	Nitrile rubber		16	Wear ring	Polyacetal resin	
7	Hexagon socket set screw	Stainless steel		17	Cover gasket	Nitrile rubber	
8	Guide pin	Steel	Special treatment	18	Base plate	Aluminum alloy	Zinc chromate
9	Rod metal gasket	Nitrile rubber		19	C-snap ring	Steel	Zinc phosphate
10	Cushion rubber (R)	Urethane rubber					

● RCS2-40/50/63



Spigot at head side (H)

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	10	Cushion rubber (R)	Urethane rubber	
2	Coil scraper	Copper alloy		11	Body	Aluminum alloy	Hard alumite
3	Rod packing	Nitrile rubber		12	Spacer	Aluminum alloy	
4	Rod metal	Aluminum alloy	Hard alumite	13	Piston	Aluminum alloy	Zinc chromate
5	C-snap ring	Steel	Zinc phosphate	14	Magnet	Plastic	
6	Guide pin gasket	Nitrile rubber		15	Piston packing	Nitrile rubber	
7	Hexagon socket set screw	Stainless steel		16	Wear ring	Polyacetal resin	
8	Guide pin	Steel	Special treatment	17	Cover	Aluminum alloy	
9	Rod metal gasket	Nitrile rubber		18	Spigot ring	Aluminum alloy	Zinc chromate

Consumable parts list

● Packing kit

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-32K	2 3 6 9 10 15 16 17
ø40	RCS2-40K	
ø50	RCS2-50K	2 3 6 9 10 15 16
ø63	RCS2-63K	

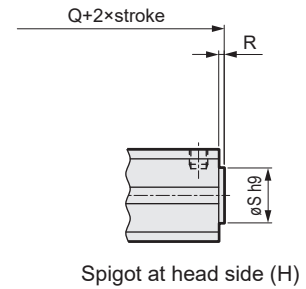
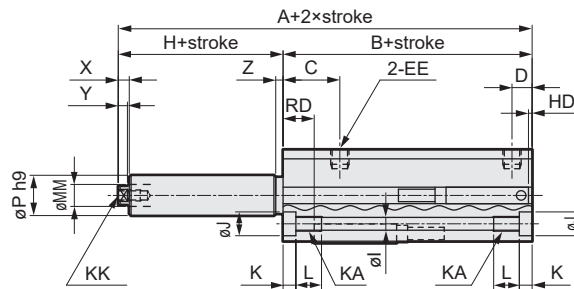
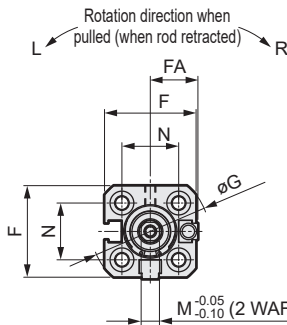
● Guide pin kit

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-G-32	7 8
ø40	RCS2-G-40	
ø50	RCS2-G-50	7 8
ø63	RCS2-G-63	

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

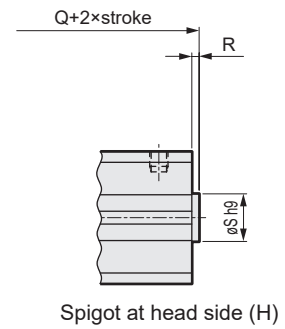
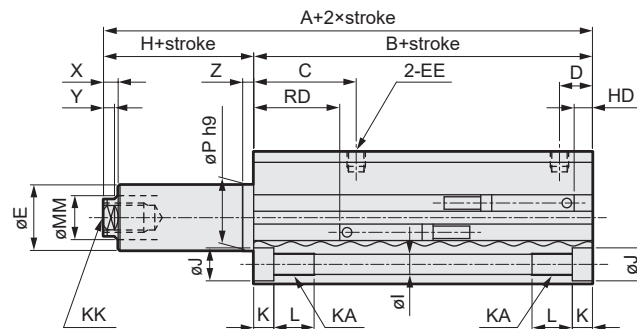
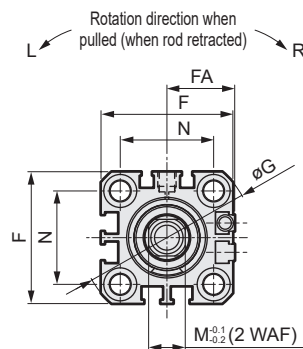
Dimensions (basic shape: 00)

● RCS2-00-12/16



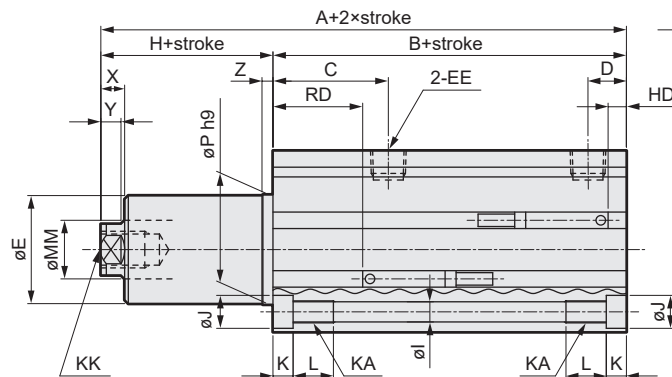
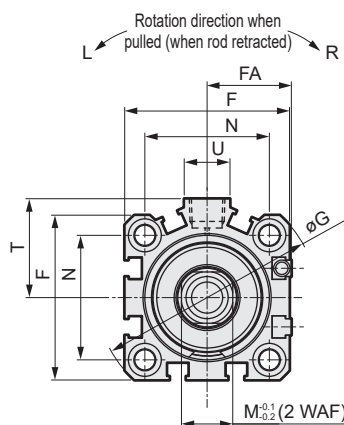
Spigot at head side (H)

● RCS2-00-20/25



Spigot at head side (H)

● RCS2-00-32/40/50/63



Spigot at head side (H)

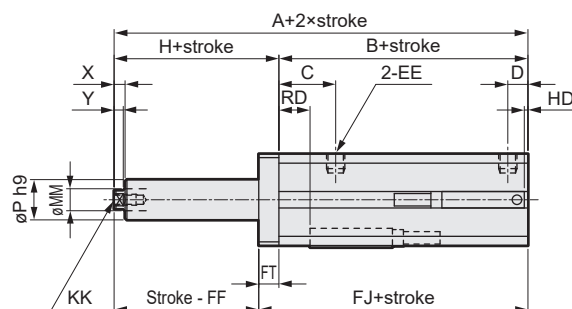
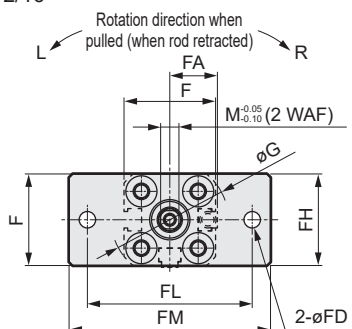
Code	Basic (00) dimensions table																										
Bore size	A	B	C	D	E	EE	F	G	H	I	J	K	KA	KK	L	M	MM	N	P	Q	R	S	T	U	X	Y	Z
ø12	33	28	15.5	5.5	—	M5 depth 4	25	32	5	3.5	6.5	3.5	M4	M3 depth 5.5	7	5	6	15.5	11	34.5	1.5	15	—	—	3	2.5	2
ø16	33.5	28.5	15	5.5	—	M5 depth 4	29	38	5	3.5	6.5	3.5	M4	M5 depth 6.5	7	7	8	20	14	34.9	1.5	20	—	—	3	2.5	2.2
ø20	53.5	52.5	28	9	17.9	M5 depth 4	36	47	1	5.5	9	5.5	M6	M8 depth 11	11	10	12	25.5	18	55.5	2	13	—	—	4	3	3
ø25	54.5	53.5	27.5	10.5	22.5	M5 depth 4	40	51	1	5.5	9	5.5	M6	M8 depth 11	11	10	12	28	23	56.5	2	15	—	—	4	3	3
ø32	63.5	56.5	31.5	10.5	29.5	Rc1/8	45	60	7	5.5	9	5.5	M6	M10 depth 12	11	14	16	34	30	65.5	2	21	27	12.5	6.5	5.5	3
ø40	64.5	50	29	9	29.5	Rc1/8	52	69	14.5	5.5	9	5.5	M6	M10 depth 12	11	14	16	40	30	66.5	2	28	31	15	6.5	5.5	3
ø50	74	57.5	34	11.5	36.5	Rc1/4	64	86	16.5	6.9	11	6.5	M8	M12 depth 16	14	17	20	50	37	76	2	35	39	18	7.5	5.5	3.5
ø63	77	61	34.5	10.5	47.5	Rc1/4	77	103	16	8.7	14	9	M10	M12 depth 16	20	17	20	60	48	79	2	35	45.5	23	7.5	5.5	3.5

Code	Switch model No.															
	T2, T3, T3P, T0, T5				T1, T2YD, T2YDT				T2Y, T3Y, T2J				T2W, T3W			
Bore size	RD	HD	FA		RD	HD	FA		RD	HD	FA		RD	HD	FA	
ø12	8.5	0.5	13 (16.5)	—	—	—	—	—	—	—	—	—	10.5	2.5	13 (16.5)	—
ø16	9	0.5	15 (18.5)	—	—	—	—	—	—	—	—	—	11	2.5	15 (18.5)	—
ø20	23.5	10	18.5 (22)	22.5	9	29.3 (32.3)	22.5	9	24.3 (27.3)	25.5	12	18.5 (22)	17.5	4	24.3 (27.3)	27
ø25	24.5	9.5	20.5 (24)	23.5	8.5	31.3 (34.3)	23.5	8.5	26.3 (29.3)	26.5	11.5	20.5 (24)	18.5	3.5	26.3 (29.3)	28
ø32	26.5	10.5	23 (26.5)	25.5	9.5	33.8 (36.8)	25.5	9.5	28.8 (31.8)	28.5	12.5	23 (26.5)	20.5	4.5	28.8 (31.8)	—
ø40	23.5	7.5	26.5 (30)	22.5	6.5	37.3 (40.3)	22.5	6.5	32.3 (35.3)	25.5	9.5	26.5 (30)	17.5	1.5	32.3 (35.3)	—
ø50	28.5	10	32.5 (36)	27.5	9	43.3 (46.3)	27.5	9	38.3 (41.3)	30.5	12	32.5 (36)	22.5	4	38.3 (41.3)	—
ø63	27.5	14.5	39 (42.5)	26.5	13.5	49.8 (52.8)	26.5	13.5	44.8 (47.8)	29.5	16.5	39 (42.5)	21.5	8.5	44.8 (47.8)	—

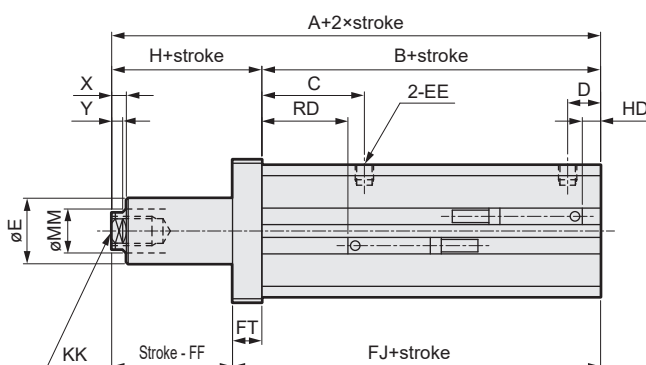
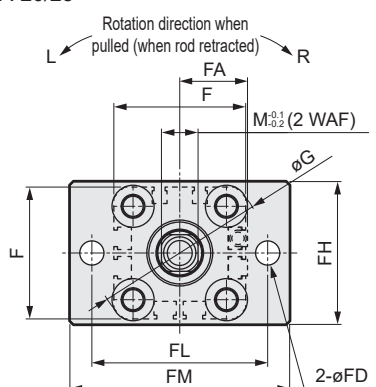
*1: Dimensions in () of FA are for L-shaped lead wire. *2: Bore size ø20 and layout port surface ø25 are for F-switch only.

Dimensions (rod side flange: FA)

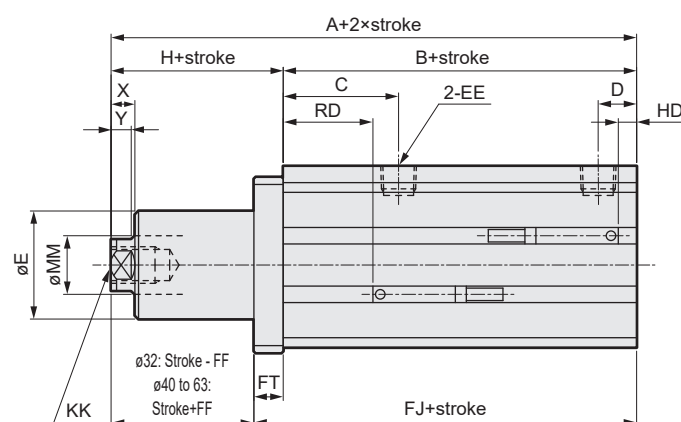
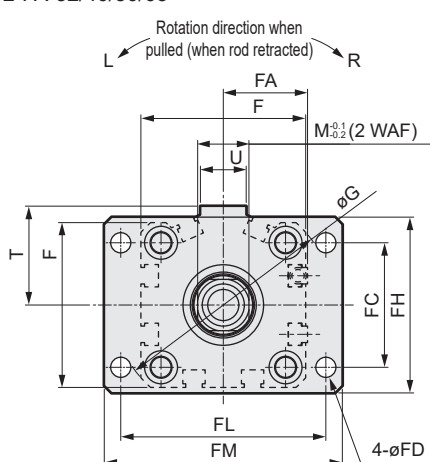
● RCS2-FA-12/16



● RCS2-FA-20/25



● RCS2-FA-32/40/50/63



Code	Rod side flange (FA) dimensions table																									
Bore size	A	B	C	D	E	EE	F	G	H	KK	M	MM	P	T	U	X	Y	FC	FD	FF	FJ	FH	FL	FM	FT	
ø12	33	28	15.5	5.5	—	M5 depth 4	25	32	5	M3 depth 5.5	5	6	11	—	—	3	2.5	—	4.5	0.5	33.5	25	45	55	5.5	
ø16	33.5	28.5	15	5.5	—	M5 depth 4	29	38	5	M5 depth 6.5	7	8	14	—	—	3	2.5	—	4.5	0.6	34	30	45	55	5.5	
ø20	53.5	52.5	28	9	17.9	M5 depth 4	36	47	1	M8 depth 11	10	12	—	—	—	4	3	—	6.6	7	60.5	39	48	60	8	
ø25	54.5	53.5	27.5	10.5	22.5	M5 depth 4	40	51	1	M8 depth 11	10	12	—	—	—	4	3	—	6.6	7	61.5	42	52	64	8	
ø32	63.5	56.5	31.5	10.5	29.5	Rc1/8	45	60	7	M10 depth 12	14	16	—	27	12.5	6.5	5.5	34	5.5	1	64.5	48	56	65	8	
ø40	64.5	50	29	9	29.5	Rc1/8	52	69	14.5	M10 depth 12	14	16	—	31	15	6.5	5.5	40	5.5	6.5	58	54	62	72	8	
ø50	74	57.5	34	11.5	36.5	Rc1/4	64	86	16.5	M12 depth 16	17	20	—	39	18	7.5	5.5	50	6.6	7.5	66.5	67	76	89	9	
ø63	77	61	34.5	10.5	47.5	Rc1/4	77	103	16	M12 depth 16	17	20	—	45.5	23	7.5	5.5	60	9	7	70	80	92	108	9	

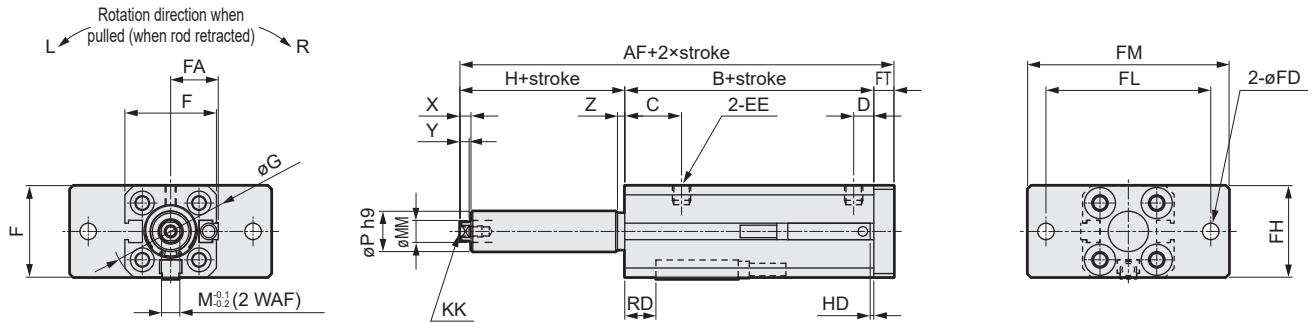
Code	Switch model No.															
	T2, T3, T3P, T0, T5				T1, T2YD, T2YDT				T2Y, T3Y, T2J				T2W, T3W			
Bore size	RD	HD	FA		RD	HD	FA		RD	HD	FA		RD	HD	FA	
ø12	8.5	0.5	13 (16.5)	—	—	—	—	—	—	—	—	—	10.5	2.5	13 (16.5)	—
ø16	9	0.5	15 (18.5)	—	—	—	—	—	—	—	—	—	11	2.5	15 (18.5)	—
ø20	23.5	10	18.5 (22)	22.5	9	29.3 (32.3)	22.5	9	24.3 (27.3)	25.5	12	18.5 (22)	17.5	4	24.3 (27.3)	27
ø25	24.5	9.5	20.5 (24)	23.5	8.5	31.3 (34.3)	23.5	8.5	26.3 (29.3)	26.5	11.5	20.5 (24)	18.5	3.5	26.3 (29.3)	28
ø32	26.5	10.5	23 (26.5)	25.5	9.5	33.8 (36.8)	25.5	9.5	28.8 (31.8)	28.5	12.5	23 (26.5)	20.5	4.5	28.8 (31.8)	—
ø40	23.5	7.5	26.5 (30)	22.5	6.5	37.3 (40.3)	22.5	6.5	32.3 (35.3)	25.5	9.5	26.5 (30)	17.5	1.5	32.3 (35.3)	—
ø50	28.5	10	32.5 (36)	27.5	9	43.3 (46.3)	27.5	9	38.3 (41.3)	30.5	12	32.5 (36)	22.5	4	38.3 (41.3)	—
ø63	27.5	14.5	39 (42.5)	26.5	13.5	49.8 (52.8)	26.5	13.5	44.8 (47.8)	29.5	16.5	39 (42.5)	21.5	8.5	44.8 (47.8)	—

*1: Dimensions in () of FA are for L-shaped lead wire. *2: Bore size ø20 and layout port surface ø25 are for F-switch only.

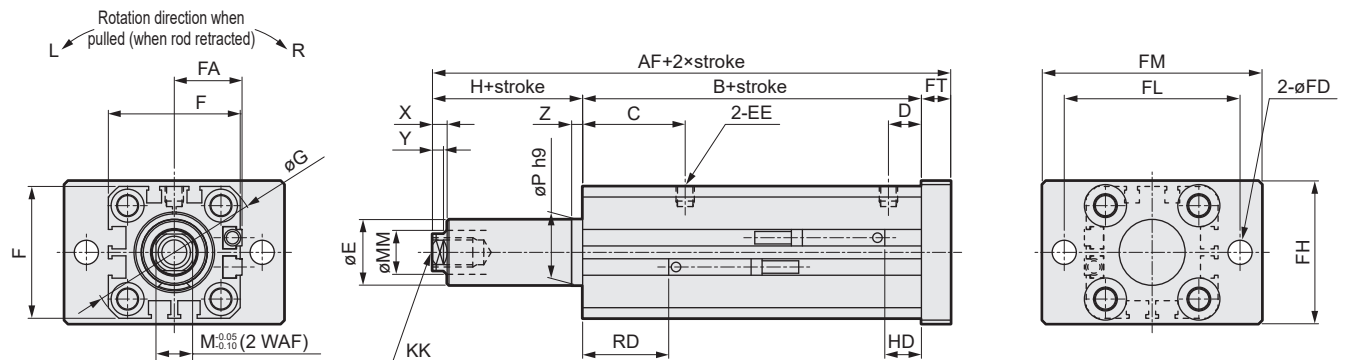
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions (head side flange: FB)

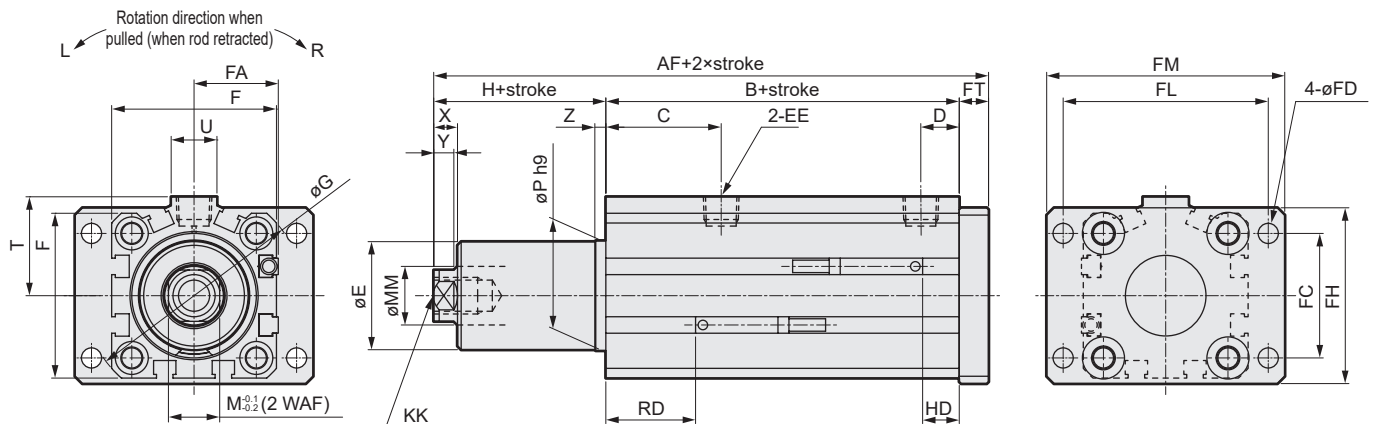
● RCS2-FB-12/16



● RCS2-FB-20/25



● RCS2-FB-32/40/50/63

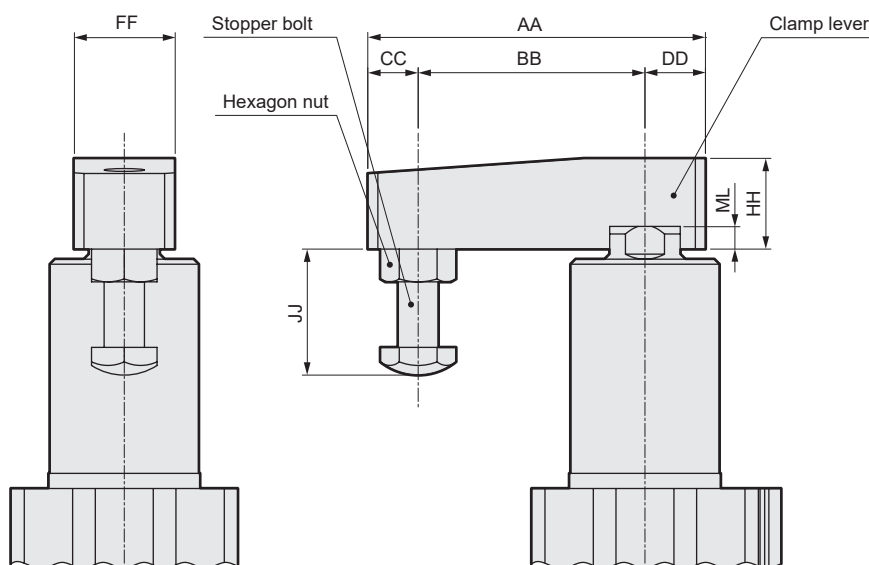
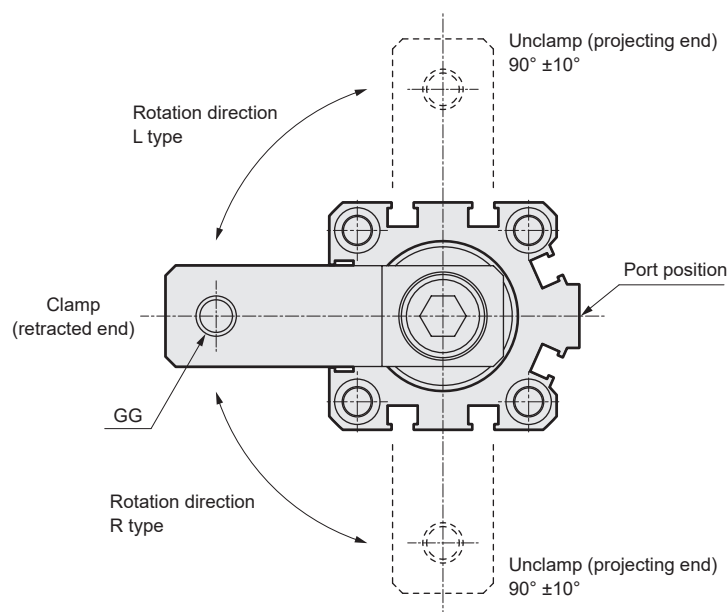


Code	Head side flange (FB) dimensions table																			
Bore size	AF	B	C	D	E	EE	F	G	H	KK	M	MM	P	T	U	X	Y	Z	FC	FD
ø12	38.5	28	15.5	5.5	—	M5 depth 4	25	32	5	M3 depth 5.5	5	6	11	—	—	3	2.5	2	—	4.5
ø16	39	28.5	15	5.5	—	M5 depth 4	29	38	5	M5 depth 6.5	7	8	14	—	—	3	2.5	2.2	—	4.5
ø20	61.5	52.5	28	9	17.9	M5 depth 4	36	47	1	M8 depth 11	10	12	18	—	—	4	3	3	—	6.6
ø25	62.5	53.5	27.5	10.5	22.5	M5 depth 4	40	51	1	M8 depth 11	10	12	23	—	—	4	3	3	—	6.6
ø32	71.5	56.5	31.5	10.5	29.5	Rc1/8	45	60	7	M10 depth 12	14	16	30	27	12.5	6.5	5.5	3	34	5.5
ø40	72.5	50	29	9	29.5	Rc1/8	52	69	14.5	M10 depth 12	14	16	30	31	15	6.5	5.5	3	40	5.5
ø50	83	57.5	34	11.5	36.5	Rc1/4	64	86	16.5	M12 depth 16	17	20	37	39	18	7.5	5.5	3.5	50	6.6
ø63	86	61	34.5	10.5	47.5	Rc1/4	77	103	16	M12 depth 16	17	20	48	45.5	23	7.5	5.5	3.5	60	9

Code	Switch model No.															
Bore size	T2, T3, T3P, T0, T5				T1, T2YD, T2YDT				T2Y, T3Y, T2J				T2W, T3W			
	RD	HD	FA	FA	RD	HD	FA	FA	RD	HD	FA	FA	RD	HD	FA	FA
ø12	8.5	0.5	13 (16.5)	—	—	—	—	—	—	—	—	—	10.5	2.5	13 (16.5)	—
ø16	9	0.5	15 (18.5)	—	—	—	—	—	—	—	—	—	11	2.5	15 (18.5)	—
ø20	23.5	10	18.5 (22)	22.5	9	29.3 (32.3)	22.5	9	24.3 (27.3)	25.5	12	18.5 (22)	17.5	4	24.3 (27.3)	27
ø25	24.5	9.5	20.5 (24)	23.5	8.5	31.3 (34.3)	23.5	8.5	26.3 (29.3)	26.5	11.5	20.5 (24)	18.5	3.5	26.3 (29.3)	28
ø32	26.5	10.5	23 (26.5)	25.5	9.5	33.8 (36.8)	25.5	9.5	28.8 (31.8)	28.5	12.5	23 (26.5)	20.5	4.5	28.8 (31.8)	—
ø40	23.5	7.5	26.5 (30)	22.5	6.5	37.3 (40.3)	22.5	6.5	32.3 (35.3)	25.5	9.5	26.5 (30)	17.5	1.5	32.3 (35.3)	—
ø50	28.5	10	32.5 (36)	27.5	9	43.3 (46.3)	27.5	9	38.3 (41.3)	30.5	12	32.5 (36)	22.5	4	38.3 (41.3)	—
ø63	27.5	14.5	39 (42.5)	26.5	13.5	49.8 (52.8)	26.5	13.5	44.8 (47.8)	29.5	16.5	39 (42.5)	21.5	8.5	44.8 (47.8)	—

*1: Dimensions in () of FA are for L-shaped lead wire. *2: Bore size ø20 and layout port surface ø25 are for F-switch only.

Clamp lever dimensions



Code Bore size (mm)	With clamp lever									Moment of inertia (kg/m ²)	
	AA	BB	CC	DD	FF	GG	HH	JJ	ML	Single clamp lever	With stopper bolt
ø12	29	20	4	5	8	M3x0.5	8	8 to 18	2	1.9x10 ⁻⁶	2.7x10 ⁻⁶
ø16	36	25	5	6	11	M4x0.7	11	8 to 18	2	7.3x10 ⁻⁶	9.8x10 ⁻⁶
ø20, 25	51	35	7	9	16	M6x1.0	14	12 to 22	2.5	3.6x10 ⁻⁵	5x10 ⁻⁵
ø32, 40	67	45	10	12	20	M8x1.25	18	15 to 25	4.5	1.3x10 ⁻⁴	1.8x10 ⁻⁴
ø50, 63	88	65	10	13	22	M10x1.5	22	30 to 40	4.5	4x10 ⁻⁴	6.2x10 ⁻⁴

Clamp lever, stopper bolt, and hexagon nut are made of steel.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Rotary clamp cylinder/single guide double acting/packing material fluoro rubber

RCS2-T2 Series

● Bore size: $\phi 12/\phi 16/\phi 20/\phi 25/\phi 32/\phi 40/\phi 50/\phi 63$

● Double acting
JIS symbol

RoHS

Specifications

1 MPa $\approx$ 145.0 psi, 1 MPa = 10 bar

Item		RCS2-T2							
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0 (≈145 psi, 10 bar)							0.6 (≈87 psi, 6 bar)
Min. working pressure	MPa	0.2 (≈29 psi, 2 bar) (*1)					0.1 (≈15 psi, 1 bar)		
Proof pressure	MPa	1.6 (≈232 psi, 16 bar)							
Ambient temperature	°C	5 (41°F) to 60 (140°F)							
Port size	Rc, NPT, G	M5				1/8		1/4	
Stroke tolerance	mm	+1.0 0		+1.2 0					
Working piston speed	mm/s	50 to 200							
Cushion		Rod side: rubber cushioned, Head side: no cushioning							
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)							
Turning ratio		90° ±10°							
Rotation direction		Right/Left							
Non-rotating accuracy (clamping, default value)		±1.4°	±1.2°			±0.9°		±0.7°	
Pressurized area	Pull side	84	150	201	377	603	1056	1649	2803
	Push side	113	201	314	490	804	1256	1963	3117

*1: With constant pressurization

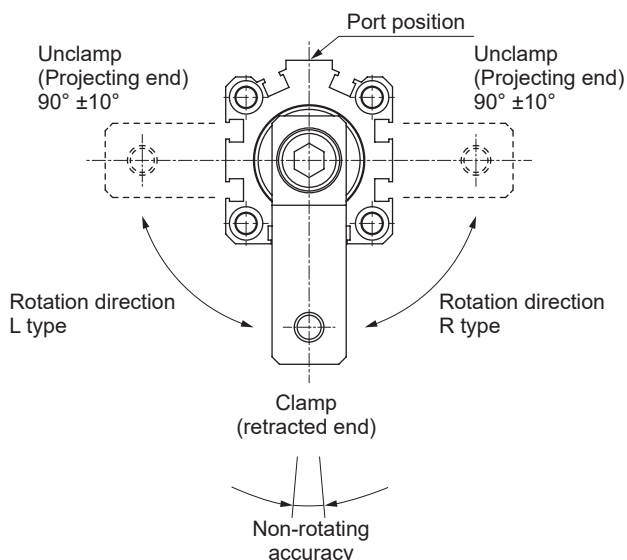
Stroke

Bore size (mm)	Stroke (mm)	Rotary stroke *1 (mm)	Clamp stroke *2 (mm)
$\phi 12, \phi 16$	17.5, 27.5, 37.5	7.5	10, 20, 30
$\phi 20, \phi 25$	19.5, 29.5, 39.5	9.5	10, 20, 30
$\phi 32, \phi 40$	25, 35, 45, 65	15	10, 20, 30, 50
$\phi 50, \phi 63$	29, 39, 49, 69	19	10, 20, 30, 50

*1: The rotary stroke is the dimension of forward action when rotating from the unclamp end in the clamping direction.

*2: The clamp stroke is the dimension of forward action in the clamping direction after rotation.

Rotating angle/rotation direction/non-rotating accuracy



Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/T1V	T2H/T2V	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*2)	
Applications	Programmable controller For relay, compact solenoid valve	Dedicated for programmable controller			Programmable controller, For relay				Programmable controller, For relay		Programmable controller, relay/C circuit (no indicator lamp), for serial connection		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Power supply voltage	-				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	24 VDC ±10%
Load current	5 to 100mA	5 to 20mA (*1)			100 mA or less		50 mA or less		5 to 50mA	7 to 20mA	50 mA or less	20 mA or less	5 to 50mA	7 to 20mA	7 to 10mA	5 to 20 mA (*1)
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)		No indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	1 mA or less with 100 VAC, 2 mA or less with 200 VAC	1 mA or less			10 µA or less				0mA						1 mA or less	
Weight g	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80		1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80		1 m: 33 3 m: 87 5 m: 80		1 m: 33 3 m: 87 5 m: 142		1 m: 61 3 m: 166 5 m: 272	

*1: The above 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)

*2: Switch for AC magnetic field (T2YD) cannot be used in direct-current magnetic field.

Switch specifications (F-switch)

● 1Color/2-colorIndicator

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/ F2YV	F3H/F3V	F3PH/F3PV (Made to order)	F3YH/ F3YV
Applications	Programmable controller dedicated	For programmable controller, relay	Programmable controller dedicated		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20mA	50 mA or less	5 to 20mA		100 mA or less	50 mA or less	
Indicator lamp	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 µA or less	1 mA or less		10 µA or less		
Weight	g 1 m: 10 3 m: 29						

*1: The F-switch uses a bend-resistant lead wire.

Cylinder weight

(Unit: g)

Bore size(mm)	Stroke (mm)														Rod side flange(FA)	Head side flange(FB)	Switch weight
	17.5	19.5	25	29	27.5	29.5	35	39	37.5	39.5	45	49	65	69			
ø12	69				84				99						49	49	Refer to the weight in the switch specifications above.
ø16	100				123				146						59	59	
ø20		212				252				292					114	114	
ø25		267				314				361					125	125	
ø32			333				372				411		489		145	145	
ø40			554				629				704		854		193	193	
ø50				997				1118				1239		1481	335	335	
ø63				1373				1526				1679		1985	464	464	

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02 x 10 ²	1.13 x 10 ²
	Pull	-	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	40.2	60.3	80.4	1.01 x 10 ²	1.21 x 10 ²	1.41 x 10 ²	1.61 x 10 ²	1.81 x 10 ²	2.01 x 10 ²
	Pull	-	30.2	45.2	60.3	75.4	90.5	1.06 x 10 ²	1.21 x 10 ²	1.36 x 10 ²	1.51 x 10 ²
ø20	Push	-	62.8	94.2	1.26 x 10 ²	1.57 x 10 ²	1.88 x 10 ²	2.20 x 10 ²	2.51 x 10 ²	2.83 x 10 ²	3.14 x 10 ²
	Pull	-	40.2	60.3	80.4	1.01 x 10 ²	1.21 x 10 ²	1.41 x 10 ²	1.61 x 10 ²	1.81 x 10 ²	2.01 x 10 ²
ø25	Push	-	98.2	1.47 x 10 ²	1.96 x 10 ²	2.45 x 10 ²	2.95 x 10 ²	3.44 x 10 ²	3.93 x 10 ²	4.42 x 10 ²	4.91 x 10 ²
	Pull	-	75.6	1.13 x 10 ²	1.51 x 10 ²	1.89 x 10 ²	2.27 x 10 ²	2.64 x 10 ²	3.02 x 10 ²	3.40 x 10 ²	3.78 x 10 ²
ø32	Push	-	1.61 x 10 ²	2.41 x 10 ²	3.22 x 10 ²	4.02 x 10 ²	4.83 x 10 ²	5.63 x 10 ²	6.43 x 10 ²	7.24 x 10 ²	8.04 x 10 ²
	Pull	-	1.21 x 10 ²	1.81 x 10 ²	2.41 x 10 ²	3.02 x 10 ²	3.62 x 10 ²	4.22 x 10 ²	4.83 x 10 ²	5.43 x 10 ²	6.03 x 10 ²
ø40	Push	1.26 x 10 ²	2.51 x 10 ²	3.77 x 10 ²	5.03 x 10 ²	6.28 x 10 ²	7.54 x 10 ²	8.80 x 10 ²	1.01 x 10 ³	1.13 x 10 ³	1.26 x 10 ³
	Pull	1.06 x 10 ²	2.11 x 10 ²	3.17 x 10 ²	4.22 x 10 ²	5.28 x 10 ²	6.33 x 10 ²	7.39 x 10 ²	8.44 x 10 ²	9.50 x 10 ²	1.06 x 10 ³
ø50	Push	1.96 x 10 ²	3.93 x 10 ²	5.89 x 10 ²	7.85 x 10 ²	9.82 x 10 ²	1.18 x 10 ³	1.37 x 10 ³	1.57 x 10 ³	1.77 x 10 ³	1.96 x 10 ³
	Pull	1.65 x 10 ²	3.30 x 10 ²	4.95 x 10 ²	6.60 x 10 ²	8.25 x 10 ²	9.90 x 10 ²	1.15 x 10 ³	1.32 x 10 ³	1.48 x 10 ³	1.65 x 10 ³
ø63	Push	3.12 x 10 ²	6.23 x 10 ²	9.35 x 10 ²	1.25 x 10 ³	1.56 x 10 ³	1.87 x 10 ³	-	-	-	-
	Pull	2.80 x 10 ²	5.61 x 10 ²	8.41 x 10 ²	1.12 x 10 ³	1.40 x 10 ³	1.68 x 10 ³	-	-	-	-

RCS2-T2 Series

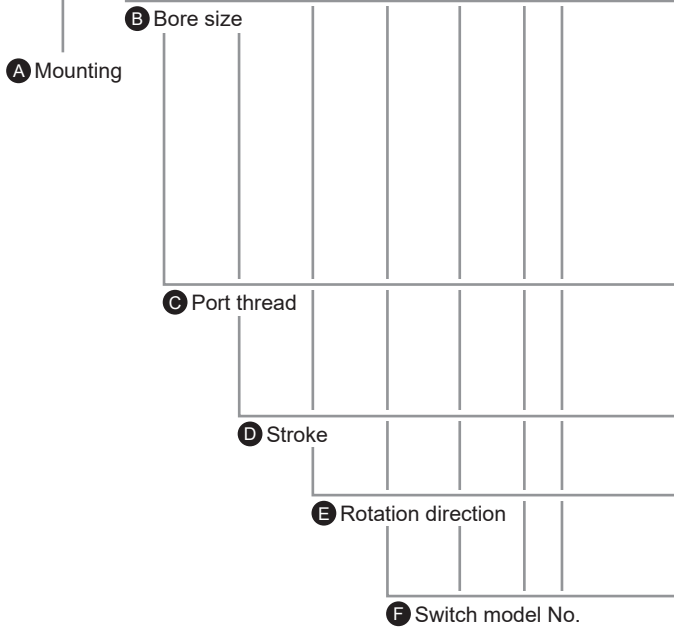
How to order

Without switch (built-in magnet for switch)

RCS2-T2 - 00 - 12 - 17.5 - R - H - A

With switch (built-in magnet for switch)

RCS2-T2 - 00 - 12 - 17.5 - R - T0H - D - H - A



Precautions for model No. selection

*1: For **A** Mounting format "FA" or "FB", **H** Option "H" cannot be selected.

*2: F-switch cannot be selected.

[Example of model No.]

RCS2-T2-00-12-17.5-R-T0H-D-HA

Model: Rotary clamp cylinder/double acting/packing material fluoro rubber

- A** Mounting : Basic
- B** Bore size : $\phi 12$ mm
- C** Port thread : M5
- D** Stroke : 17.5 mm
- E** Rotation direction : Rotates 90° in CW direction when retracted
- F** Switch model No. : Reed T0H switch, lead wire 1 m
- G** Switch quantity : With both sides
- H** Option : Spigot at head side
- I** Accessory : Clamp lever

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

B Bore size (mm)	
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

C Port thread	
Blank	Rc thread (M5 for $\phi 25$ and less)
N	NPT thread ($\phi 32$ and over)
G	G thread ($\phi 32$ and over)

D Stroke (mm)	
Refer to the stroke table on the following page.	

E Rotation direction	
See the following page for details.	
R	Rotates 90° in CW direction when retracted
L	Rotates 90° in CCW direction when retracted

Straight Lead wire		L-shaped Lead wire	Contact	Voltage		Indicator	Lead wire	Bore size							
								12	16	20	25	32	40	50	63
T0H*	T0V*		Reed	AC	DC	1-color LED	2-wire								
T5H*	T5V*		Reed			No indicator lamp	2-wire								
T8H*	T8V*		Reed			1-color LED	2-wire								
T1H*	T1V*		Proximity			1-color LED	2-wire								
T2H*	T2V*		Proximity			1-color LED	2-wire								
T3H*	T3V*		Proximity			1-color LED (PNP output)	3-wire								
T3PH*	T3PV*		Proximity			2-color LED	2-wire								
T2WH*	T2WV*		Proximity			2-color LED	2-wire								
T2YH*	T2YV*		Proximity			2-color LED	2-wire								
T3WH*	T3WV*		Proximity			2-color LED	3-wire								
T3YH*	T3YV*		Proximity			2-color LED	3-wire								
T2YD*	-		Proximity			AC magnetic field	2-wire								
T2YD*	-		Proximity			1-color LED off-delay	2-wire								
T2JH*	T2JV*		Proximity			1-color LED	2-wire								
F2S*			Proximity			1-color LED	2-wire								
F3S*			Proximity			1-color LED	3-wire								
F2H*	F2V*		Proximity			1-color LED	2-wire								
F3H*	F3V*		Proximity			1-color LED	2-wire								
F3PH*	F3PV*		Proximity			1-color LED (PNP output) (made to order)	3-wire								
F2YH*	F2YV*		Proximity			2-color LED	2-wire								
F3YH*	F3YV*		Proximity			2-color LED	3-wire								

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	With both sides

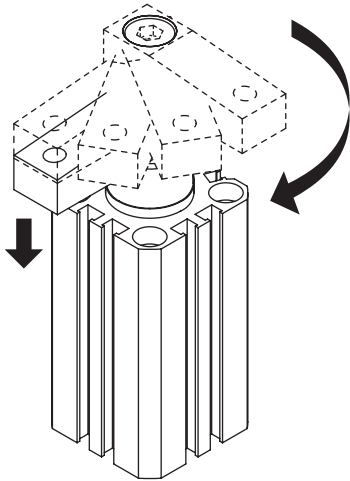
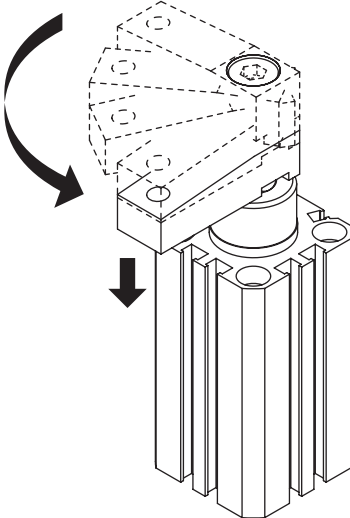
H Option	
Blank	No option
H	Spigot at head side

I Accessory (included at shipment)	
Blank	No accessories
A	Clamp lever

[Stroke table]

Stroke	Bore size								Rotation stroke	Clamp stroke
	12	16	20	25	32	40	50	63		
17.5	●	●							7.5	10
19.5			●	●					9.5	10
25					●	●			15	10
29							●	●	19	10
27.5	●	●							7.5	20
29.5			●	●					9.5	20
35					●	●			15	20
39							●	●	19	20
37.5	●	●							7.5	30
39.5			●	●					9.5	30
45					●	●			15	30
49							●	●	19	30
65					●	●			15	50
69							●	●	19	50

[Rotation direction]

R	Rotates 90° in CW direction when retracted	L	Rotates 90° in CCW direction when retracted
			

Discrete switch model No. Flange kit model No.

SW - T0H3

Switch model No.
(Item **F** on page 1080)

RCS2 - FA - 12

Bore size
(Item **B** on page 1080)

Clamp lever kit model No.

RCS2 - A - 12

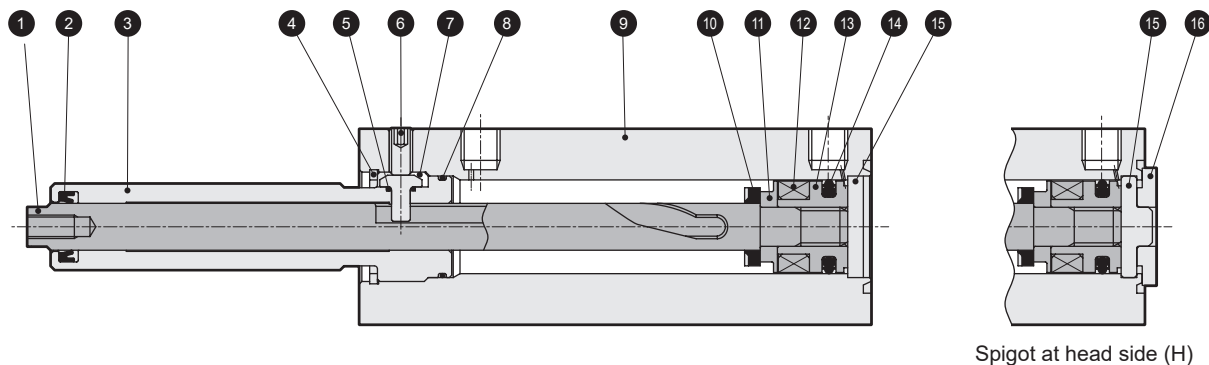
Code	Applicable bore size
12	ø12
16	ø16
20	ø20, ø25
32	ø32, ø40
50	ø50, ø63

* Dimensions are the same as the RCS2 Series basic shape. Refer to pages 1074 to 1077.

RCS2-T2 Series

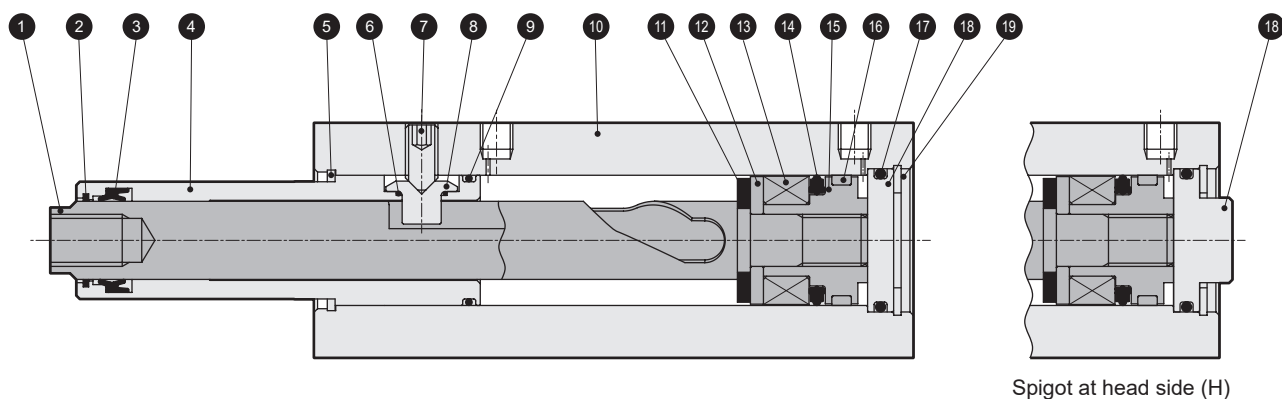
Internal structure and parts list (ø12, ø16, ø20, ø25)

● RCS2-T2-12/16



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	10	Cushion rubber (R)	Urethane rubber	
2	Rod packing	Fluoro rubber		11	Spacer	ø12: Aluminum alloy ø16: Special plastic	Zinc chromate
3	Rod metal	Aluminum alloy	Hard alumite	12	Magnet	Plastic	
4	Round R type snap ring	Steel	Zinc phosphate	13	Piston	Aluminum alloy	Zinc chromate
5	Guide pin gasket	Fluoro rubber		14	Piston packing	Fluoro rubber	
6	Hexagon socket set screw	Stainless steel		15	Cover	Stainless steel	
7	Guide pin	Steel	Special treatment	16	Spigot ring	Aluminum alloy	Zinc chromate
8	Rod metal gasket	Fluoro rubber					
9	Body	Aluminum alloy	Hard alumite				

● RCS2-T2-20/25



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	11	Cushion rubber (R)	Urethane rubber	
2	Coil scraper	Copper alloy		12	Spacer	Aluminum alloy	Zinc chromate
3	Rod packing	Fluoro rubber		13	Magnet	Plastic	
4	Rod metal	Aluminum alloy	Hard alumite	14	Piston packing	Fluoro rubber	
5	Circlip	Steel		15	Piston	Aluminum alloy	Zinc chromate
6	Guide pin gasket	Fluoro rubber		16	Wear ring	Polyacetal resin	
7	Hexagon socket set screw	Stainless steel		17	Cover gasket	Fluoro rubber	
8	Guide pin	Steel	Special treatment	18	Base plate	Aluminum alloy	Zinc chromate
9	Rod metal gasket	Fluoro rubber		19	C-snap ring	Steel	Zinc phosphate
10	Body	Aluminum alloy	Hard alumite				

Consumable parts list

● Packing kit

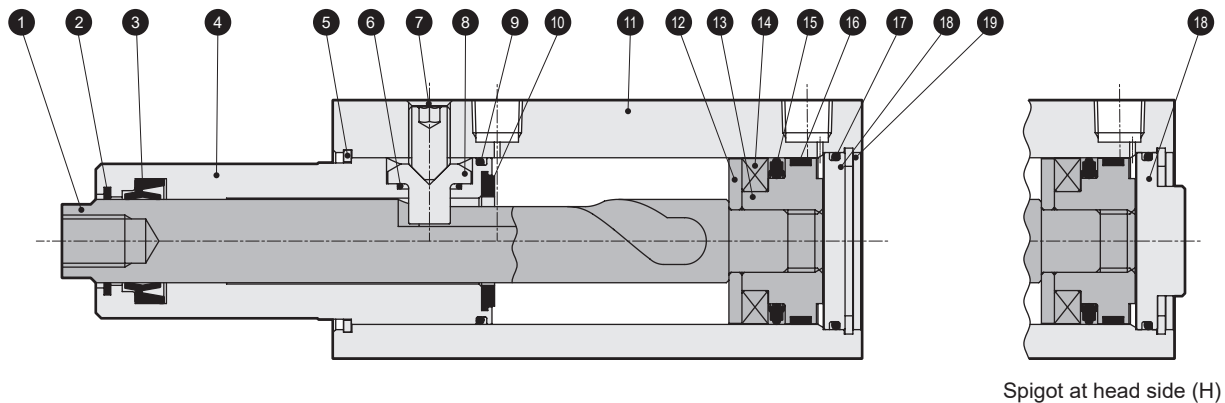
Bore size (mm)	Kit No.	Consumable parts No.
ø12	RCS2-T2-12K	2 5 8 10 14
ø16	RCS2-T2-16K	
ø20	RCS2-T2-20K	2 3 6 9 11 14 16 17
ø25	RCS2-T2-25K	

● Guide pin kit

Bore size (mm)	Kit No.	Consumable parts No.
ø12	RCS2-G-12	6 7
ø16	RCS2-G-16	
ø20	RCS2-G-20	7 8
ø25	RCS2-G-25	

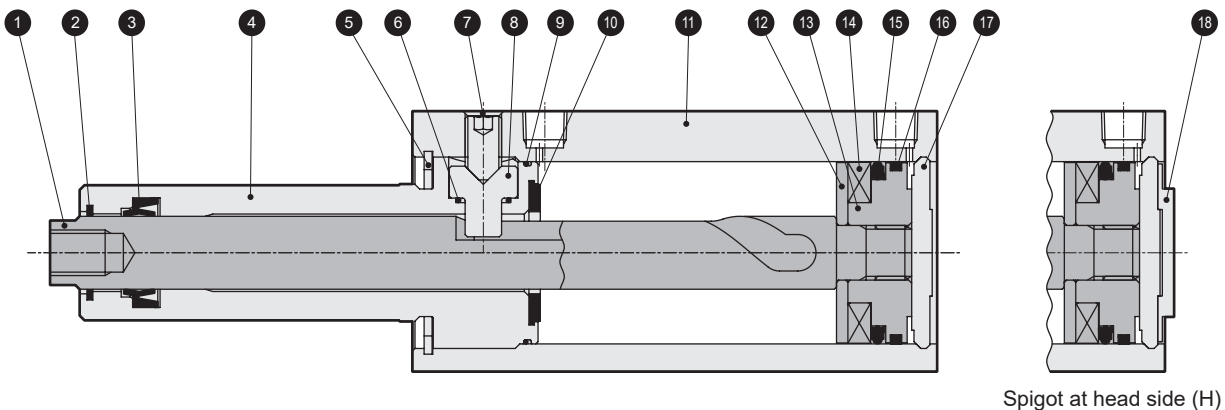
Internal structure and parts list (ø32, ø40, ø50, ø63)

● RCS2-T2-32



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	11	Body	Aluminum alloy	Hard alumite
2	Coil scraper	Copper alloy		12	Spacer	Aluminum alloy	
3	Rod packing	Fluoro rubber		13	Piston	Aluminum alloy	Zinc chromate
4	Rod metal	Aluminum alloy	Hard alumite	14	Magnet	Plastic	
5	Circlip	Steel		15	Piston packing	Fluoro rubber	
6	Guide pin gasket	Fluoro rubber		16	Wear ring	Polyacetal resin	
7	Hexagon socket set screw	Stainless steel		17	Cover gasket	Fluoro rubber	
8	Guide pin	Steel	Special treatment	18	Base plate	Aluminum alloy	Zinc chromate
9	Rod metal gasket	Fluoro rubber		19	C-snap ring	Steel	Zinc phosphate
10	Cushion rubber (R)	Urethane rubber					

● RCS2-T2-40/50/63



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	10	Cushion rubber (R)	Urethane rubber	
2	Coil scraper	Copper alloy		11	Body	Aluminum alloy	Hard alumite
3	Rod packing	Fluoro rubber		12	Spacer	Aluminum alloy	
4	Rod metal	Aluminum alloy	Hard alumite	13	Piston	Aluminum alloy	Zinc chromate
5	C-snap ring	Steel	Zinc phosphate	14	Magnet	Plastic	
6	Guide pin gasket	Fluoro rubber		15	Piston packing	Fluoro rubber	
7	Hexagon socket set screw	Stainless steel		16	Wear ring	Polyacetal resin	
8	Guide pin	Steel	Special treatment	17	Cover	Aluminum alloy	
9	Rod metal gasket	Fluoro rubber		18	Spigot ring	Aluminum alloy	Zinc chromate

Consumable parts list

● Packing kit

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-T2-32K	2 3 6 9 10 15 16 17
ø40	RCS2-T2-40K	
ø50	RCS2-T2-50K	2 3 6 9 10 15 16
ø63	RCS2-T2-63K	

● Guide pin kit

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-G-32	7 8
ø40	RCS2-G-40	
ø50	RCS2-G-50	7 8
ø63	RCS2-G-63	

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCM
 LCR
 LCG
 LCW
 LCX
 STM
 STG
 STS/STL
 STR2
 UCA2
 ULK*
 JSK/M2
 JSG
 JSC3/JSC4
 USSD
 UFCD
 USC
 UB
 JSB3
 LMB
 LML
 HCM
 HCA
 LBC
 CAC4
 UCAC2
 CAC-N
 UCAC-N
 RCS2
 RCC2
 PCC
 SHC
 MCP
 GLC
 MFC
 BBS
 RRC
 GRC
 RV3*
 NHS
 HRL
 LN
 Hand
 Chuk
 MecHnd/Chuk
 ShkAbs
 FJ
 FK
 SpdContr
 Ending



Rotary clamp cylinder/single guide double acting/anti-spatter adherence

RCS2 - G4 Series

● Bore size: $\varnothing 32/\varnothing 40/\varnothing 50/\varnothing 63$

● Double acting
 JIS symbol



Specifications

1 MPa $\approx$ 145.0 psi, 1 MPa = 10 bar

Item		RCS2-G4				
Bore size		mm	ø32	ø40	ø50	ø63
Actuation			Double acting			
Working fluid			Compressed air			
Max. working pressure		MPa	1.0 (≈145 psi, 10 bar)			0.6 (≈87 psi, 6 bar)
Min. working pressure		MPa	0.1 (≈15 psi, 1 bar)			
Proof pressure		MPa	1.6 (≈232 psi, 16 bar)			
Ambient temperature		°C	-10 (14°F) to 60 (140°F) (no freezing)			
Port size		Rc, NPT, G	1/8		1/4	
Stroke tolerance		mm	+1.2 0			
Working piston speed		mm/s	50 to 200			
Cushion			Rod side: rubber cushioned, Head side: no cushioning			
Lubrication			Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			
Turning ratio			90° ±10°			
Rotation direction			Right/Left			
Non-rotating accuracy (clamping, default value)			±0.9°		±0.7°	
Pressurized area	mm ²	Pull side	603	1056	1649	2803
		Push side	804	1256	1963	3117

*1: With constant pressurization

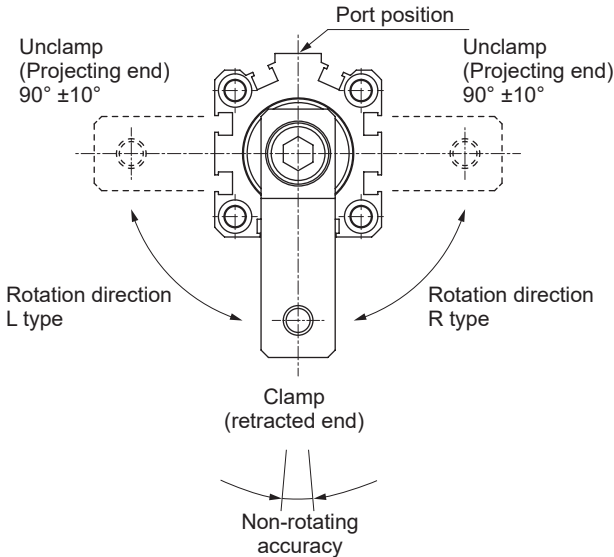
Stroke

Bore size (mm)	Stroke (mm)	Rotary stroke *1 (mm)	Clamp stroke *2 (mm)
$\varnothing 32, \varnothing 40$	25, 35, 45, 65	15	10, 20, 30, 50
$\varnothing 50, \varnothing 63$	29, 39, 49, 69	19	10, 20, 30, 50

*1: The rotary stroke is the dimension of forward action when rotating from the unclamp end in the clamping direction.

*2: The clamp stroke is the dimension of forward action in the clamping direction after rotation.

Rotating angle/rotation direction/non-rotating accuracy



Switch specifications

Item	Proximity 2-wire		
	T2YD		T2YDT
Applications	Dedicated for programmable controller		
Indicator	Red/green LED (Lit when ON)		
Load voltage	24 VDC $\pm 10\%$		
Load current	5 to 20 mA DC (*1)		
Internal voltage drop	6 V or less		
Leakage current	1.0 mA or less		
Output delay time *2 (ON delay, OFF delay)	60 ms or less		
Lead wire length *3	1 m (oil resistant vinyl cabtyre cable 2-conductor 0.5 mm ²)	1 m (flame-resistant vinyl cabtyre cable 2-conductor 0.5 mm ²)	
Insulation resistance	100 M Ω or more at 500 VDC megger		
Withstand voltage	No failure after 1 minute of 1,000 VAC application.		
Impact resistance	980 m/s ²		
Ambient temperature	-10 to +60°C		
Degree of protection	JIS C0920 (water-tight), IEC standards IP67, oil resistance		
Weight g	1 m: 61	3 m: 166	5 m: 272

*1 : The above 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)

*2 : Indicates the time from magnetic sensor detection of the piston magnet until switch output.

*3 : 3 m and 5 m lead wires are available as options.

*4 : This switch cannot be used in DC magnetic fields.

Cylinder weight

(Unit: g)

Bore size (mm)	Stroke (mm)								Rod side flange (FA)	Head side flange (FB)	Switch weight
	25	29	35	39	45	49	65	69			
ø32	333		372		411		489		145	145	
ø40	554		629		704		854		193	193	
ø50		997		1118		1239		1481	335	335	
ø63		1373		1526		1679		1985	464	464	

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	80.4	1.61×10 ²	2.41×10 ²	3.22×10 ²	4.02×10 ²	4.83×10 ²	5.63×10 ²	6.43×10 ²	7.24×10 ²	8.04×10 ²
	Pull	60.3	1.21×10 ²	1.81×10 ²	2.41×10 ²	3.02×10 ²	3.62×10 ²	4.22×10 ²	4.83×10 ²	5.43×10 ²	6.03×10 ²
ø40	Push	1.26×10 ²	2.51×10 ²	3.77×10 ²	5.03×10 ²	6.28×10 ²	7.54×10 ²	8.80×10 ²	1.01×10 ³	1.13×10 ³	1.26×10 ³
	Pull	1.06×10 ²	2.11×10 ²	3.17×10 ²	4.22×10 ²	5.28×10 ²	6.33×10 ²	7.39×10 ²	8.44×10 ²	9.50×10 ²	1.06×10 ³
ø50	Push	1.96×10 ²	3.93×10 ²	5.89×10 ²	7.85×10 ²	9.82×10 ²	1.18×10 ³	1.37×10 ³	1.57×10 ³	1.77×10 ³	1.96×10 ³
	Pull	1.65×10 ²	3.30×10 ²	4.95×10 ²	6.60×10 ²	8.25×10 ²	9.90×10 ²	1.15×10 ³	1.32×10 ³	1.48×10 ³	1.65×10 ³
ø63	Push	3.12×10 ²	6.23×10 ²	9.35×10 ²	1.25×10 ³	1.56×10 ³	1.87×10 ³	—	—	—	—
	Pull	2.80×10 ²	5.61×10 ²	8.41×10 ²	1.12×10 ³	1.40×10 ³	1.68×10 ³	—	—	—	—

RCS2-G4 Series

How to order

Without switch (built-in magnet for switch)

RCS2-G4 - 00 - 32 - 25 - R - H A

With switch (built-in magnet for switch)

RCS2-G4 - 00 - 32 - 25 - R - T2YD3 - D - H A

A Mounting

B Bore size

C Port thread

D Stroke

E Rotation direction

F Switch model No.

G Switch quantity

H Option

I Accessory

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

B Bore size (mm)	
32	ø32
40	ø40
50	ø50
63	ø63

C Port thread	
Blank	Rc thread
N	NPT thread
G	G thread

D Stroke (mm)						
Stroke	Bore size				Rotation stroke	Clamp stroke
	32	40	50	63		
25	●	●			15	10
29			●	●	19	10
35	●	●			15	20
39			●	●	19	20
45	●	●			15	30
49			●	●	19	30
65	●	●			15	50
69			●	●	19	50

E Rotation direction		See the following page for details.
R	Rotates 90° in CW direction when retracted	
L	Rotates 90° in CCW direction when retracted	

F Switch model No.				
Lead wire	Contact	Voltage	Indicator	Lead wire
T2YD*	Proximity	DC	2-color LED (Dedicated for AC magnetic field)	2-wire
T2YDT*				2-wire (Flame-resistant cable)

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	With both sides

H Option	
Blank	No option
H	Spigot at head side

I Accessory (included at shipment)	
Blank	No accessories
A	Clamp lever

⚠ Precautions for model No. selection

*1: For A Mounting format "FA" or "FB", H Option "H" cannot be selected.

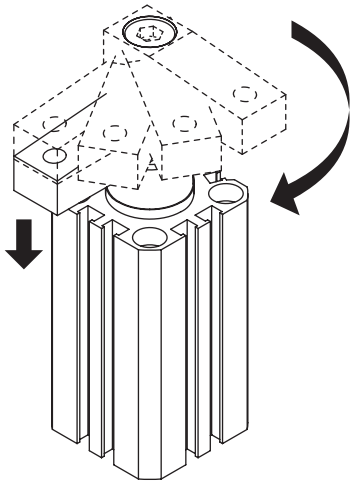
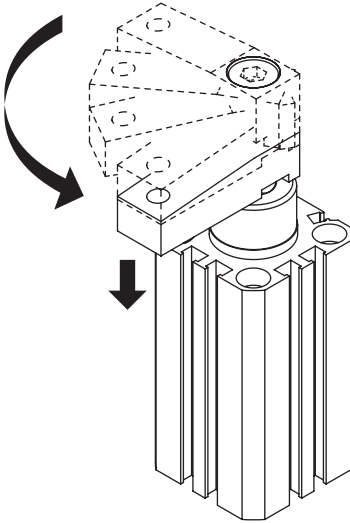
[Example of model No.]

RCS2-G4-00-32-25-R-T2YD3-D-HA

Model: Rotary clamp cylinder/double acting/anti-spatter adherence

- A Mounting : Basic
- B Bore size : ø32 mm
- C Port thread : Rc thread
- D Stroke : 25 mm
- E Rotation direction : Rotates 90° in CW direction when retracted
- F Switch model No. : Proximity T2YD switch, lead wire 3 m
- G Switch quantity : With both sides
- H Option : Spigot at head side
- I Accessory : Clamp lever

[Rotation direction]

R	Rotates 90° in CW direction when retracted	L	Rotates 90° in CCW direction when retracted
			

Discrete switch model No. Flange kit model No.

SW - T2YD3

Switch model No.
(Item **F** on page 1086)

RCS2 - FA - 32

Bore size
(Item **B** on page 1086)

Clamp lever kit model No.

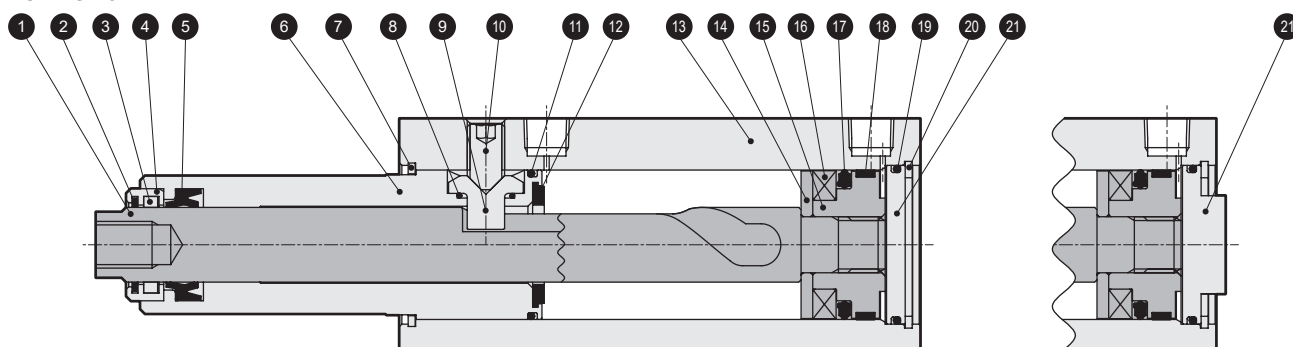
RCS2 - A - 32

Code	Applicable bore size
32	ø32, ø40
50	ø50, ø63

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list

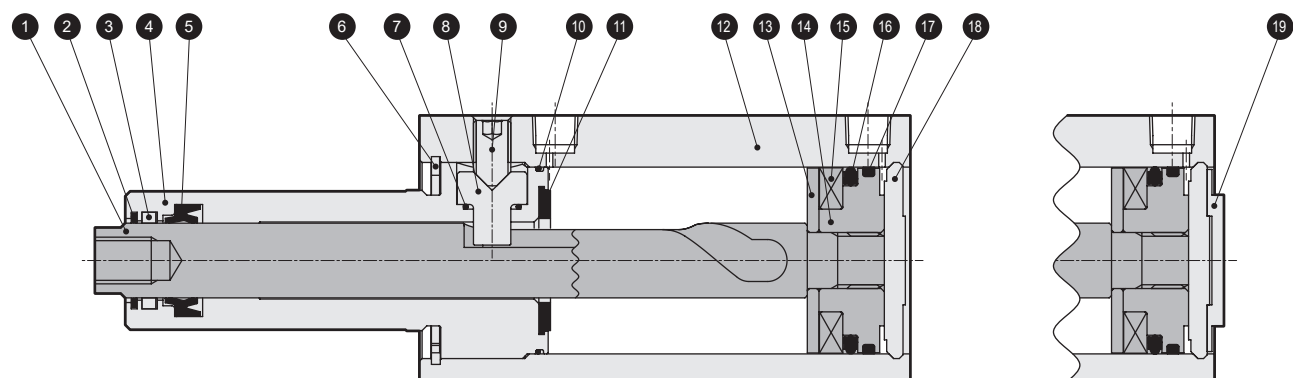
● RCS2-G4-32



Spigot at head side (H)

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	12	Cushion rubber	Urethane rubber	
2	Coil scraper	Copper alloy		13	Body	Aluminum alloy	Hard alumite
3	Lube keeper			14	Spacer	Aluminum alloy	Zinc chromate
4	Holder	Aluminum alloy	Zinc chromate	15	Piston	Aluminum alloy	Zinc chromate
5	Rod packing	Nitrile rubber		16	Piston magnet	Plastic	
6	Rod metal	Aluminum alloy	Hard alumite	17	Piston packing	Nitrile rubber	
7	Circlip	Steel	Zinc phosphate	18	Wear ring	Polyacetal resin	
8	Guide pin gasket	Nitrile rubber		19	Cover gasket	Nitrile rubber	
9	Guide pin	Steel	Special treatment	20	C-snap ring	Steel	Zinc phosphate
10	Hexagon socket set screw	Stainless steel		21	Base plate	Aluminum alloy	Zinc chromate
11	Rod metal gasket	Nitrile rubber					

● RCS2-G4-40/50/63



Spigot at head side (H)

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel	Special treatment	11	Cushion rubber	Urethane rubber	
2	Coil scraper	Copper alloy		12	Body	Aluminum alloy	Hard alumite
3	Lube keeper			13	Spacer	Aluminum alloy	Zinc chromate
4	Rod metal	Aluminum alloy	Hard alumite	14	Piston	Aluminum alloy	Zinc chromate
5	Rod packing	Nitrile rubber		15	Piston magnet	Plastic	
6	C-snap ring	Steel	Zinc phosphate	16	Piston packing	Nitrile rubber	
7	Guide pin gasket	Nitrile rubber		17	Wear ring	Polyacetal resin	
8	Guide pin	Steel	Special treatment	18	Cover	Aluminum alloy	Zinc chromate
9	Hexagon socket set screw	Stainless steel		19	Spigot ring	Aluminum alloy	Zinc chromate
10	Rod metal gasket	Nitrile rubber					

Consumable parts list

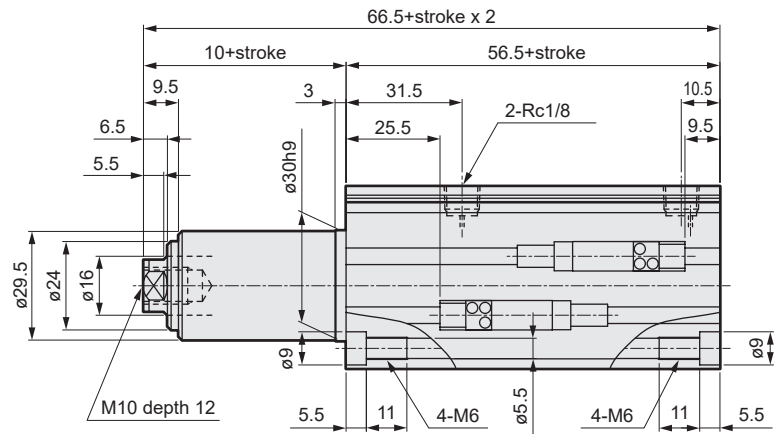
● Packing kit (There is no lubricator in the kit.)

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-32K	2 5 8 11 12 17 18 19
ø40	RCS2-40K	
ø50	RCS2-50K	2 5 7 10 11 16 17
ø63	RCS2-63K	

● Guide pin kit

Bore size (mm)	Kit No.	Consumable parts No.
ø32	RCS2-G-32	9 10
ø40	RCS2-G-40	
ø50	RCS2-G-50	8 9
ø63	RCS2-G-63	

● RCS2-G4-00-32



Refer to page 1074.

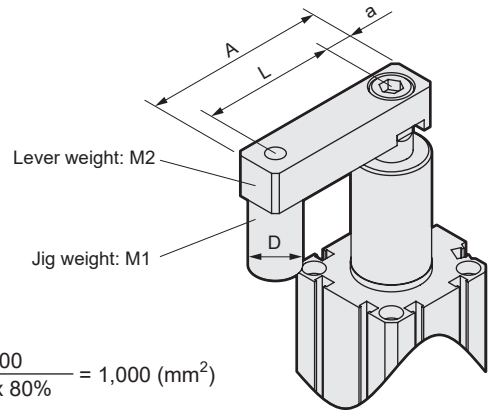
Refer to pages 1075 and 1076.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
Mechnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Technical data (selection example)

[Specifications]

- Required clamping force: 400 N
- Working pressure: 0.5 MPa
- Maximum piston speed: 100 mm/s
- Lever shape
 - M2: 0.31 kg L: 0.08 m
 - A: 0.1 m a: 0.01 m
- Jig shape
 - M1: 0.04 kg D: 0.02 m



1. Calculate the required pressurized area.

$$\text{Required pressurized area (mm}^2\text{)} = \frac{\text{Required clamping force (N)}}{\text{Working pressure (MPa)} \times \text{efficiency}} = \frac{400}{0.5 \times 80\%} = 1,000 \text{ (mm}^2\text{)}$$

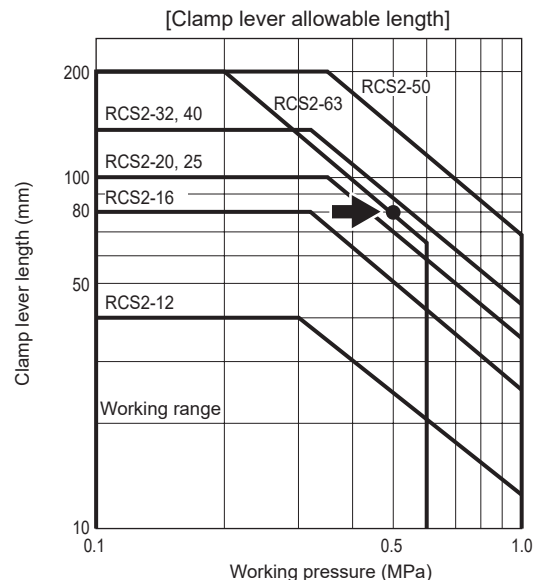
Note) Efficiency varies depending on the shape and material of the clamp lever.

2. Select the cylinder size from the pressurized area (retracted side) given in the specifications list.

ø40 pressurized area: 1,055 (mm²) > required pressurized area: 1,000 (mm²)

3. Confirm the allowable length for the clamp lever.

Working pressure 0.5 MPa, clamp lever length 80 mm
⇒ Within usable range



4. Confirm the allowable moment of inertia for the clamp lever.

Calculating moment of inertia
(Use the formula of concentrated load on page 1091)

$$\text{Moment of inertia } I = M_1 (R_1^2 + K_1^2) + \frac{M_2 R_2^2}{3}$$

$$R_1 = L, R_2 = A - a, K_1^2 = \frac{D^2}{8}$$

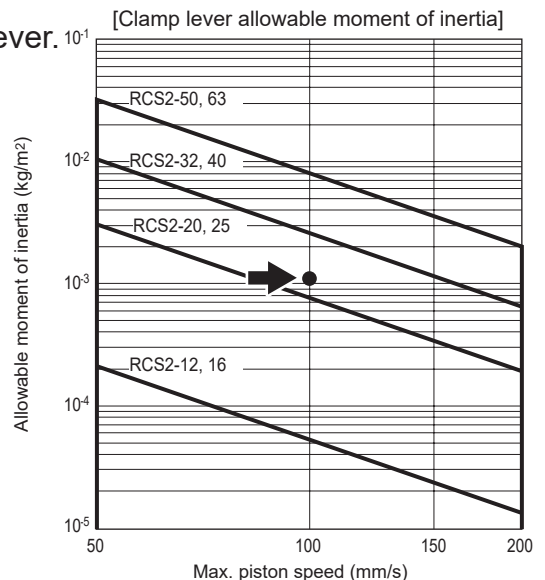
$$I = 0.04 \times (0.08^2 + \frac{0.02^2}{8}) + \frac{0.31 \times (0.1 - 0.01)^2}{3}$$

$$= 1.10 \times 10^{-3} \text{ kg/m}^2$$

Moment of inertia $1.10 \times 10^{-3} \text{ kg/m}^2$

Maximum piston speed 100 mm/s

⇒ Within usable range



Based on the above, size ø40 is selected.

Figure for moment of inertia calculation

Shape	Sketch	Requirements	Moment of inertia I kg/m ²	Radius of rotation K _r ²	Remarks
Dial plate		● Diameter d (m) ● Weight M (kg)	$I = \frac{Md^2}{8}$	$\frac{d^2}{8}$	● No mounting direction
Stepped dial plate		● Diameter d₁ (m) ● Diameter d₂ (m) ● Weight d₁ section M₁ (kg) ● Weight d₂ section M₂ (kg)	$I = \frac{1}{8}(M_1d_1^2 + M_2d_2^2)$	$\frac{d_1^2 + d_2^2}{8}$	● Ignore when the d₂ section is extremely small compared to the d₁ section
Bar (center of rotation at end)		● Bar length R (m) ● Weight M (kg)	$I = \frac{MR^2}{3}$	$\frac{R^2}{3}$	● Mounting direction is horizontal
Thin rod		● Bar length R₁ ● Bar length R₂ ● Weight M₁ ● Weight M₂	$I = \frac{M_1R_1^2}{3} + \frac{M_2R_2^2}{3}$	$\frac{R_1^2 + R_2^2}{3}$	● Mounting direction is horizontal
Bar (center of rotation at CG)		● Bar length R (m) ● Weight M (kg)	$I = \frac{MR^2}{12}$	$\frac{R^2}{12}$	● No mounting direction
Thin rectangular parallelepiped		● Plate length a₁ ● Side length a₂ ● Side length b ● Weight M₁ ● Weight M₂	$I = \frac{M_1}{12}(4a_1^2 + b^2) + \frac{M_2}{12}(4a_2^2 + b^2)$	$\frac{(4a_1^2 + b^2) + (4a_2^2 + b^2)}{12}$	● Mounting direction is horizontal
Rectangular parallelepiped		● Side length a (m) ● Side length b (m) ● Weight M (kg)	$I = \frac{M}{12}(a^2 + b^2)$	$\frac{a^2 + b^2}{12}$	● No mounting direction
Concentrated load		● Shape of concentrated load ● Length to center of gravity of concentrated load R₁ ● Arm length R₂ (m) ● Concentrated load weight M₁ (kg) ● Arm weight M₂ (kg)	$I = M_1(R_1^2 + k_1^2) + \frac{M_2R_2^2}{3}$	Calculate k ₁ ² according to shape of concentrated load	● Mounting direction is horizontal ● When M₂ is extremely small compared to M₁, it may be calculated as M₂ = 0

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Pneumatic components

Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for cylinders in general and Intro Page 80 for cylinder switches.

Product-specific cautions: Rotary clamp cylinder/single guide RCS2 Series

Design/selection

1. Common

⚠ WARNING

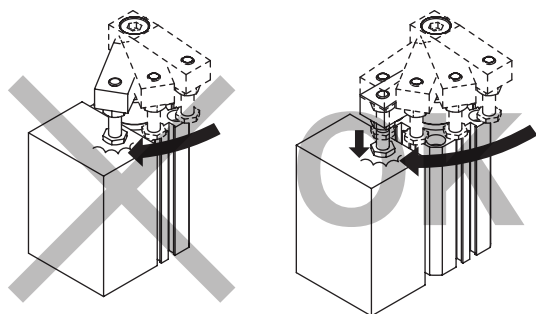
■ Precautions for operation

The piston rod of this cylinder swivels 90° during operation. Make sure that the clamp lever mounted to the piston rod end does not interfere with the exterior while rotating. If the rotation of the clamp lever could cause bodily injury, be sure to provide safety measures by installing a protective cover, etc., to the clamp lever's surroundings.

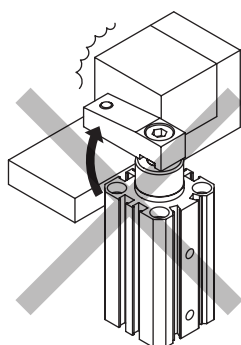
⚠ CAUTION

■ Using this product with rotation applied to the piston rod may lead to damage, malfunctions, or decreased non-rotating accuracy. Be sure to observe the following precautions.

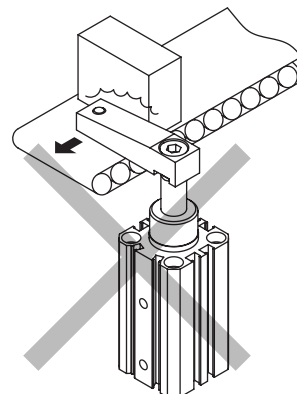
1. Do not clamp the product mid-rotary stroke. Adjust the clamping position to be approx. 3 mm or more before the stroke end position.



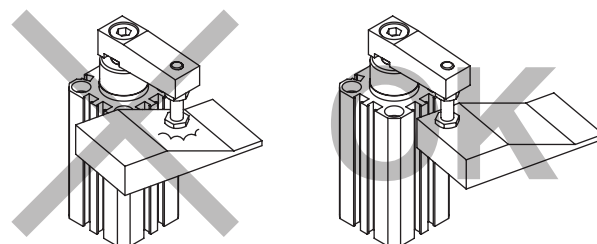
2. Do not clamp the product in the rotational direction.



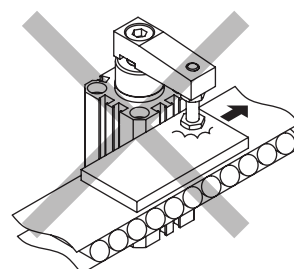
3. Do not use as a stopper.



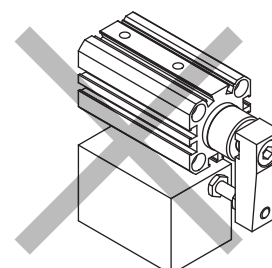
4. Do not clamp the inclined portion.



5. Do not move the workpiece with exterior power while clamping.

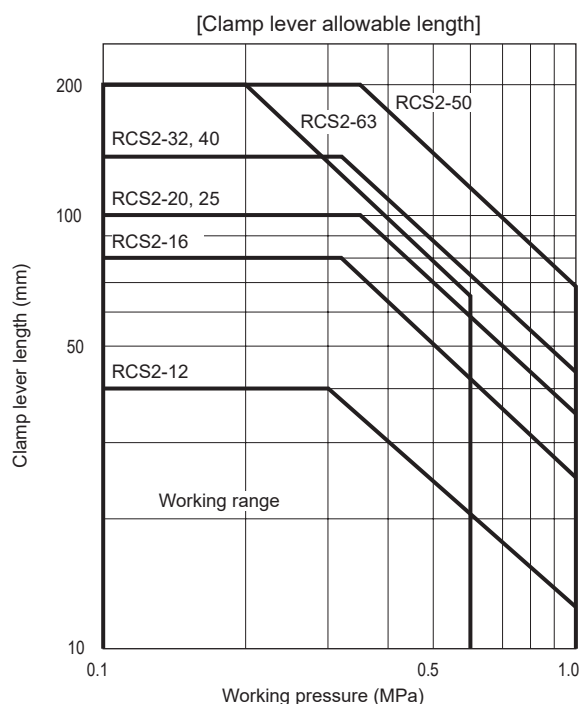
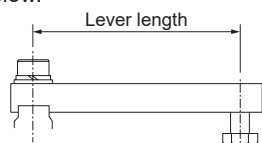


6. Do not install horizontally.



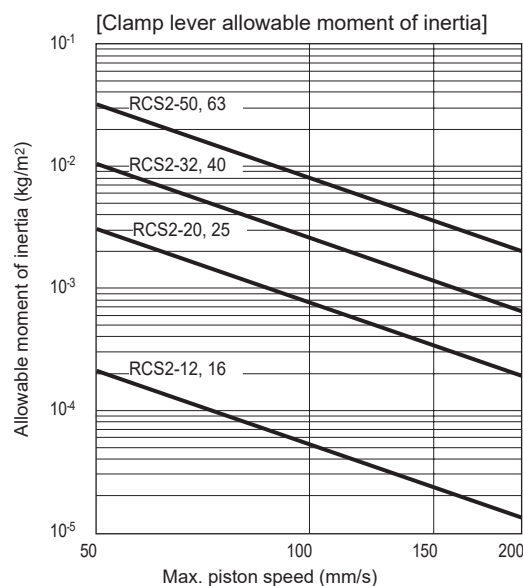
■ Clamp lever allowable length and working pressure

The upper limit of the clamp lever's allowable length differs depending on the working pressure. Set it to within the range shown below.



■ Clamp lever allowable moment of inertia and piston speed

The upper limit of the clamp lever's allowable moment of inertia differs depending on the piston speed. Set it to within the range shown below.



2. Anti-spatter adherence RCS2-G4

■ The durability of this cylinder is improved in comparison to standard cylinders when used in an atmosphere exposed to spatter. However, durability may be shorter than the standard cylinder when used other than in an atmosphere exposed to spatter. Do not use this cylinder in atmospheres other than those with spatter.

■ Anti-spatter adherence agent is volatile. If the anti-spatter adherence agent starts drying up on the rod surface, apply the agent to the rod surface again.

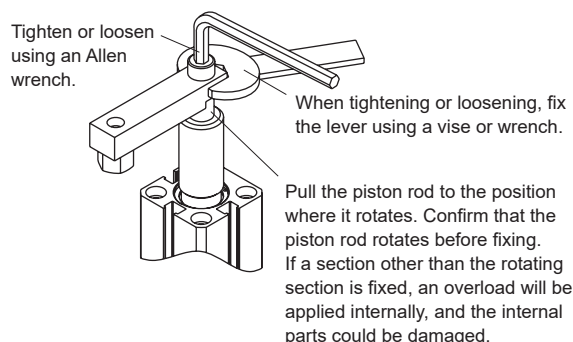
Mounting, installation and adjustment

⚠ WARNING

- The piston rod of this cylinder strokes while swiveling (90°) during operation. As the lever mounted to the piston rod end rotates, do not insert your hands or enter the drive zone during operation.

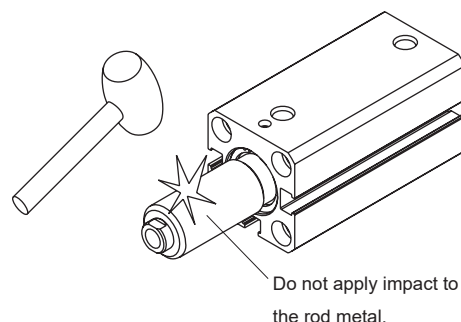
⚠ CAUTION

- 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.



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending