

RCS2

Rotary Clamp Cylinder (Single Guide Type)

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

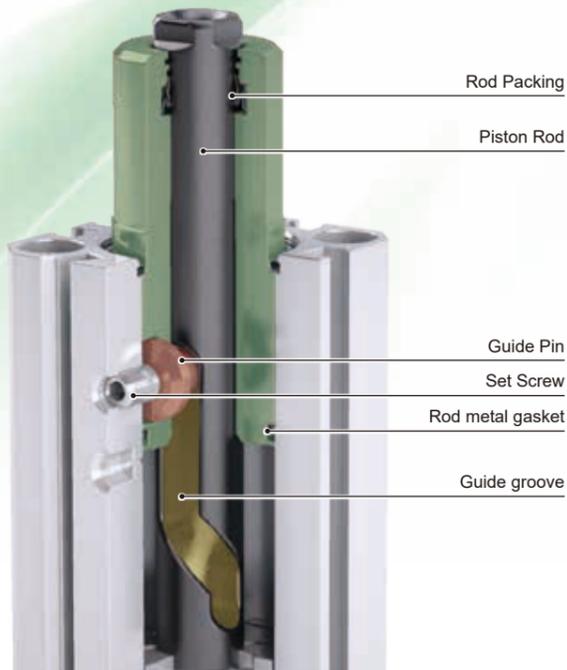
Clamp Cylinder



CONTENTS

Product Introduction	812
Series variation	814
● Double Acting, Single Rod Type (RCS2)	816
● Double Acting/packing material Fluoro Rubber (RCS2-T2)	826
● Double Acting/anti-spatter adherence (RCS2-G4)	832
External Dimensions Diagram with Switch	838
Technical Data	840
⚠ Precautions for Use	842

Simple design for compact clamping



Simple structure contributing to space saving

Single guide structure

By providing one guide groove on the Piston Rod and making it slide on the guide pin, linear and rotational motion is performed.

High maintainability

Consumable parts can be replaced

Guide pins and packings can be replaced.

Easy orientation of clamp lever

Rod End processed to 4-flat width

Orientation of the clamp lever can be easily performed based on the four-flat width of the Rod End.



High installation repeatability

Reduced centering time during cylinder replacement

Centering during cylinder replacement can be easily performed using the spigot joint.

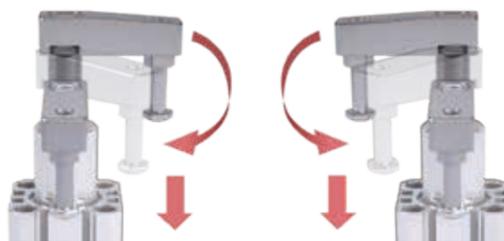


Rod side spigot joint (Standard specification) Head side spigot joint (Option)

Combination of rotational and linear motion

Clamp lever rotates 90°

Since the clamp lever rotates 90° during unclamping, setting and removing the workpiece can be done easily.



Clockwise 90° (R: Right rotation) Counter-clockwise 90° (L: Left rotation)

Cylinder switch according to application

Abundant lineup

T-type and ultra-compact F-type switches can be installed.

2-color indicator type AC magnetic field proof cylinder switch (T2YD, T2YDT) can be installed



Achieves high visibility

Multi-surface mounting emphasizing visibility is possible.



4-surface mounting (RCS2-20 to 63)

3-surface mounting (RCS2-12/16)

Structure considering environmental resistance

Coil scraper equipped as standard

Coil scraper is standardly equipped for tube inner diameter ø20 or more. Removes sputter from the rod surface and prevents entry into the cylinder.



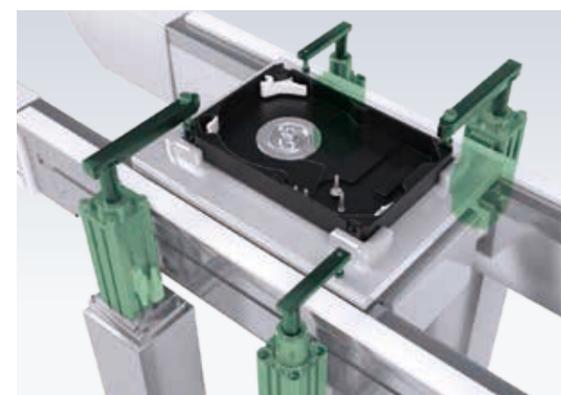
Sputter adhesion prevention type (G4) selectable

G4, a sputter adhesion prevention specification equipped with a lubekeeper using a fiber aggregate impregnated with sputter adhesion inhibitor and a coil scraper, is selectable (tube inner diameter ø32 or more). More strongly prevents sputter adhesion to the Piston Rod during arc welding.

Seal material fluoroelastomer (Variation code: T2) can be selected

Case Studies

Clamping of jigs (pallets) and workpieces on conveyors



*short lever: RCS2 Long lever: RCC2

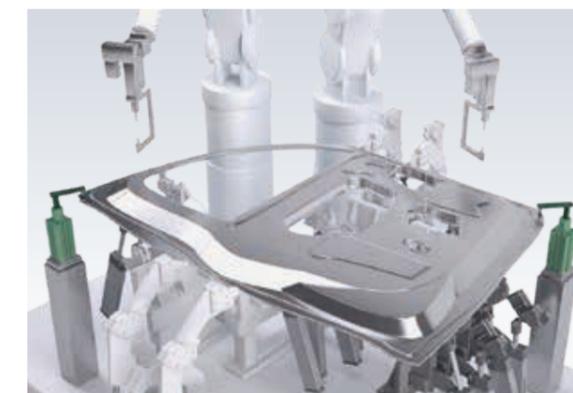
Workpiece clamping in dry deburring and finishing processes



Workpiece auxiliary holding for transfer robots



Workpiece clamping with welding jigs



Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

RCC2

PCC

Cylinder Switch

Ending

Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

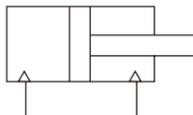
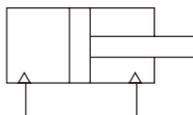
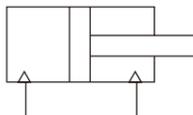
RCC2

PCC

Cylinder Switch

Ending

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

Clamping	Variation	Model Number Circuit Diagram Code	Bore Size (mm)	Stroke (mm)							Stroke (mm)							Rotation stroke (mm)	Clamp stroke (mm)	Mounting Style			Option	Accessories	Switch	Page	Clamping
				17.5	19.5	25	29	27.5	29.5	35	39	37.5	39.5	45	49	65	69			Basic type	Rod side flange type	Head Side Flange Type	Head side spigot joint	Clamp lever			
				●	■	■	■	●	■	■	■	■	●	■	■	■	■			○	○	○	○	○			
CAC4	Double Acting, Single Rod Type 	RCS2	ø12, ø16	●	■	■	■	●	■	■	■	■	■	■	■	■	■	7.5	10, 20, 30	○	○	○	○	○	○	816	CAC4
UCAC2		ø20, ø25	■	●	■	■	■	●	■	■	■	■	■	■	■	■	■	9.5		○	○	○	○	○	○		UCAC2
CAC-N		ø32, ø40	■	■	●	■	■	■	■	●	■	■	■	■	■	■	■	15		○	○	○	○	○	○		CAC-N
UCAC-N		ø50, ø63	■	■	■	●	■	■	■	■	●	■	■	■	■	■	■	19		○	○	○	○	○	○		UCAC-N
RCS2	Double Acting Seal material: Fluoro Rubber 	RCS2-T2	ø12, ø16	●	■	■	■	●	■	■	■	■	■	■	■	■	■	7.5	10, 20, 30	○	○	○	○	○	○	826	PCC
RCC2		ø20, ø25	■	●	■	■	■	●	■	■	■	■	■	■	■	■	■	9.5		○	○	○	○	○	○		RCC2
PCC		ø32, ø40	■	■	●	■	■	■	■	●	■	■	■	■	■	■	■	15		○	○	○	○	○	○		PCC
		ø50, ø63	■	■	■	●	■	■	■	■	●	■	■	■	■	■	■	19		○	○	○	○	○	○		
	Double Acting Sputter adhesion prevention type 	RCS2-G4	ø32, ø40	■	■	●	■	■	■	●	■	■	■	■	■	■	■	15	10, 20, 30	○	○	○	○	○	○	832	
		ø50, ø63	■	■	■	●	■	■	■	■	●	■	■	■	■	■	■	19		○	○	○	○	○	○		



Rotary Clamp Cylinder, Single Guide Type, Double Acting, Single Rod Type

RCS2 Series

● Bore Size: $\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

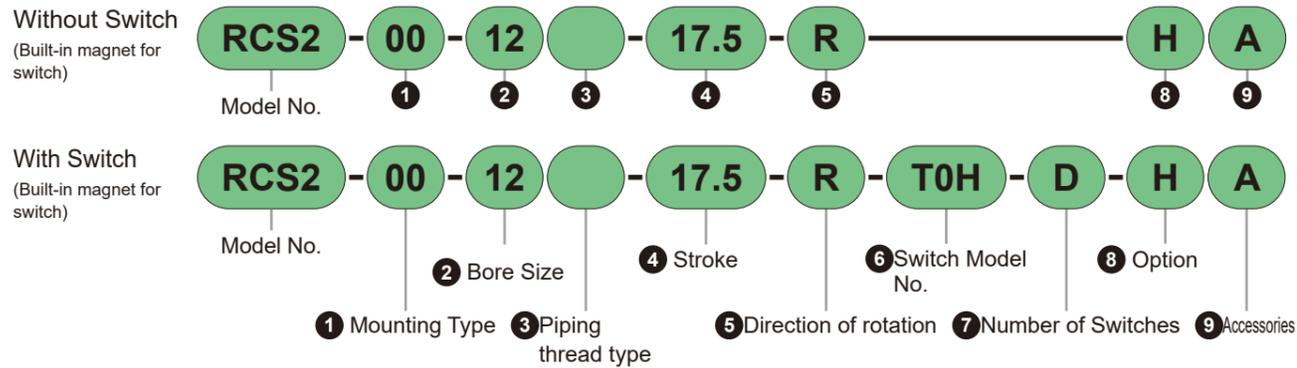
● Double Acting Type
Circuit Diagram Code



RCS2 Series

Model No. Notation

Model No. Notation



1 Mounting Type

Code	Content
00	Basic type
FA	Rod Side Flange Type
FB	Head Side Flange Type

2 Bore Size (mm)

Code	Content
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

3 Piping thread type

Code	Content
Blank	M5 ($\phi 12$ to $\phi 25$) Rc thread ($\phi 32$ to $\phi 63$)
N	NPT thread ($\phi 32$ or more)
G	G thread ($\phi 32$ or more)

4 Stroke (mm)

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

5 Direction of rotation

Code	Content
R	90° clockwise rotation during retraction
L	90° counterclockwise rotation during retraction

6 Switch Model No.

For switch details, please see P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		Image
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	Image
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	Image
		3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□	
		3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□	Image
		2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	
Solid State	2-Color	3-wire (NPN)	-	30 or less	-	50 or less	F3YH□	F3YV□	Image
		2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
		3-wire (NPN)	-	10 to 30	-	5 to 20 *2	T2H□	T2V□	Image
		3-wire (PNP)	-	30 or less	-	100 or less	T3H□	T3V□	
		2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	Image
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
Reed	1-Color	2-Color Improved Water Resistance	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	Image
		2-Color for AC Magnetic Field	-	-	-	-	T2YD□	-	
		1-Color Off-Delay Type	-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	Image
		1-Color Flexible Lead Wire Type	-	10 to 30	-	-	T2HR3	T2VR3	
		Without Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	T0V□	Image
		1-color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5H□	T5V□	
1-color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	Image		
1-color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□			

*1: For "□" in the switch model number, enter the code selected from the "Lead wire length, connector specification" table.

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: Switches other than the model numbers listed above are also available. (Custom product) For details, see P. 1457 Please refer to the weight listed in the switch specifications.

*5: For $\phi 12$, $\phi 16$, T1□, T8□, T2YD□, T2YDT□, T2J□ switches cannot be selected.

*6: F type switch can be selected only for $\phi 20$ and $\phi 25$.

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	Both sides included

8 Option

Code	Content
Blank	No option
H	Head side spigot joint

*1: If (1) Mounting Type is "FA" "FB", option "H" cannot be selected.

9 Accessories

Code	Content
Blank	No accessories
A	Clamp lever

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*7: Only T2WLH, T2WLV can be selected.
*8: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
1 m T0H
3 m T0H³
5 m T0H⁵

Switch Single Unit Model No.

SW-T0H3

6 Switch Model No.

Clamp Lever Kit Model No.

RCS2-A-12

Code	Bore Size
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$, $\phi 25$
32	$\phi 32$, $\phi 40$
50	$\phi 50$, $\phi 63$

Flange Kit Model No.

RCS2-FA-12

2 Bore Size

Specifications

Item	RCS2									
	Bore Size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting Type									
Operating Fluid	Compressed Air									
Max Operating Pressure	MPa	1.0						0.6		
Min Operating Pressure	MPa	0.1 *1								
Proof Pressure	MPa	1.6								
Ambient Temperature	°C	-10 to 60 (however, no freezing)								
Connection Port	Rc, NPT, G	M5			1/8		1/4			
Stroke tolerance	mm	+1.0 0			+1.2 0					
Operating piston speed	mm/s	50 to 200								
Cushion	With rod side rubber cushion, without head side cushion									
Lubrication	Not required (Use Turbine Oil Class 1 ISO VG32 if lubricated)									
Rotation Angle	90° ±10°									
Direction of rotation	Right/Left									
Non-rotation accuracy (during clamping, initial value)		±1.4°	±1.2°			±0.9°		±0.7°		
Pressure Receiving Area	mm ²	Retraction side	84	150	201	377	603	1056	1649	2803
		Push side	113	201	314	490	804	1256	1963	3117

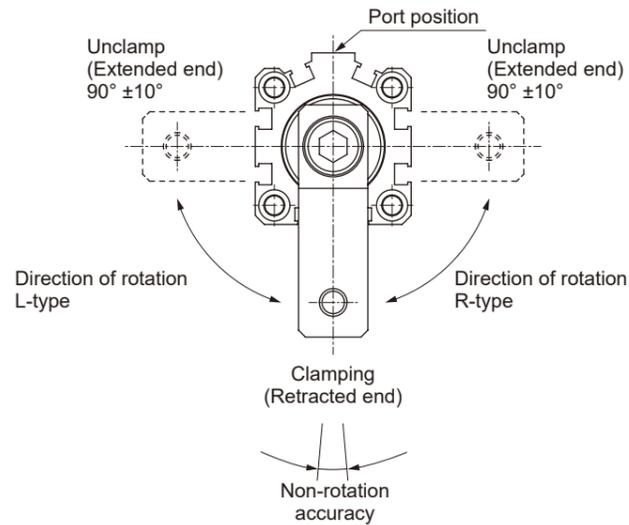
*1: At constant pressure pressurization

Stroke

Bore Size (mm)	Stroke (mm)	Rotation stroke *1 (mm)	Clamp stroke *2 (mm)
ø12, ø16	17.5, 27.5, 37.5	7.5	10, 20, 30
ø20, ø25	19.5, 29.5, 39.5	9.5	10, 20, 30
ø32, ø40	25, 35, 45, 65	15	10, 20, 30, 50
ø50, ø63	29, 39, 49, 69	19	10, 20, 30, 50

*1: Rotary stroke is the dimension of linear operation in the clamping direction while rotating from the unclamp end.
 *2: Clamp stroke is the dimension of linear operation in the clamping direction after rotation.

Rotation Angle, Rotation Direction, Non-rotation Accuracy



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 listed in the Switch Specifications on P. 1457.
ø16	100				123				146						59	59	
ø20		212								292					114	114	
ø25		267								361					125	125	
ø32			333							372					145	145	
ø40			554							629					193	193	
ø50				997						1118					335	335	
ø63				1373						1526					464	464	

Theoretical Thrust Table

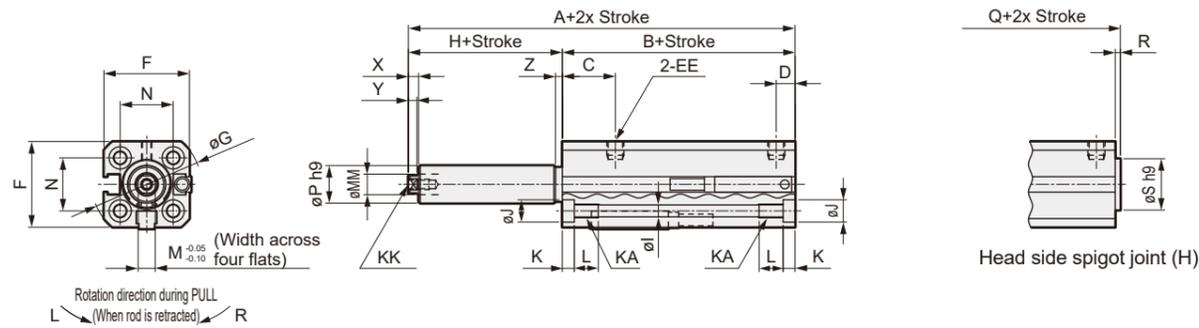
(Unit: N)

Bore Size (mm)	Operating Direction	Operating 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	1.02×10 ²	1.13×10 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	1.01×10 ²	1.21×10 ²	1.41×10 ²	1.61×10 ²	1.81×10 ²	2.01×10 ²
	Pull	15.1	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
ø20	Push	31.4	62.8	94.2	1.26×10 ²	1.57×10 ²	1.88×10 ²	2.20×10 ²	2.51×10 ²	2.83×10 ²	3.14×10 ²
	Pull	20.1	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
ø25	Push	49.1k	98.2	1.47×10 ²	1.96×10 ²	2.45×10 ²	2.95×10 ²	3.44×10 ²	3.93×10 ²	4.42×10 ²	4.91×10 ²
	Pull	37.8	75.6	1.13×10 ²	1.51×10 ²	1.89×10 ²	2.27×10 ²	2.64×10 ²	3.02×10 ²	3.40×10 ²	3.78×10 ²
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	-	-	-	-

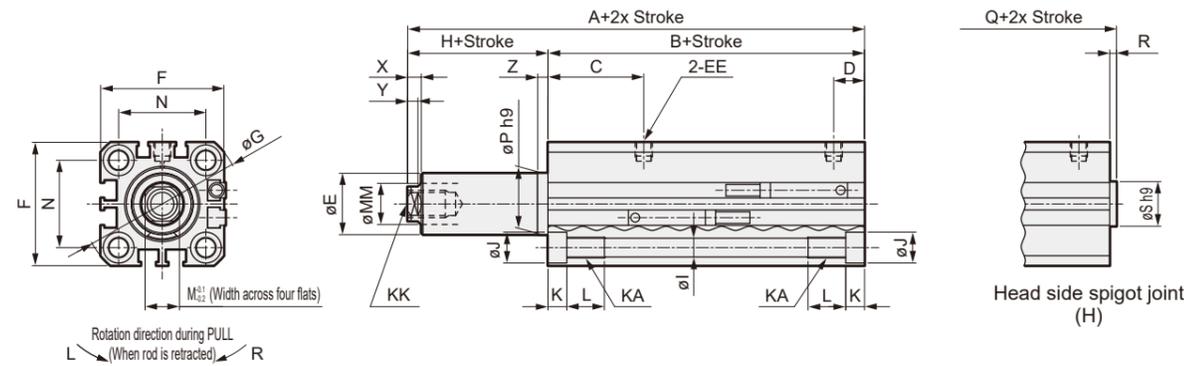
Dimensional Drawings

● Basic type (00)

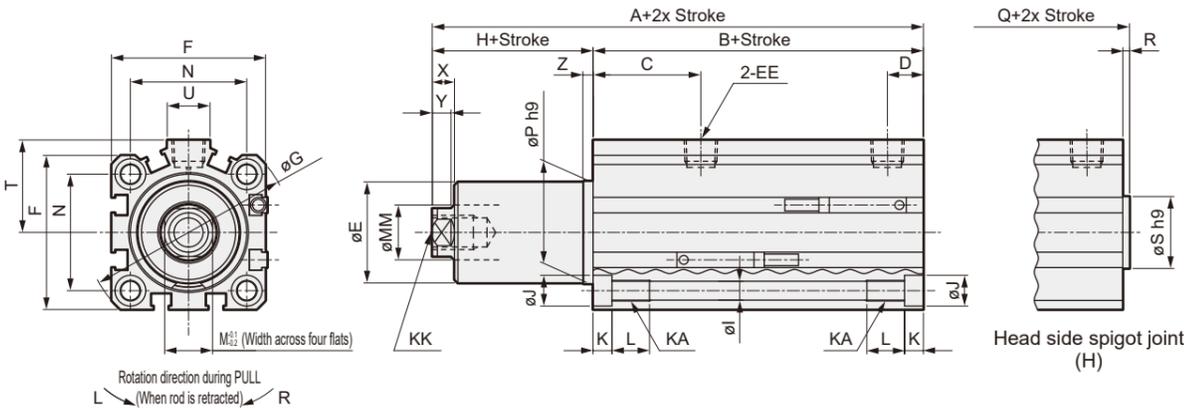
RCS2-00-12/16



RCS2-00-20/25



RCS2-00-32, 40, 50, 63



Code	Basic Type (00) Basic Dimensions																										
Bore Size (mm)	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

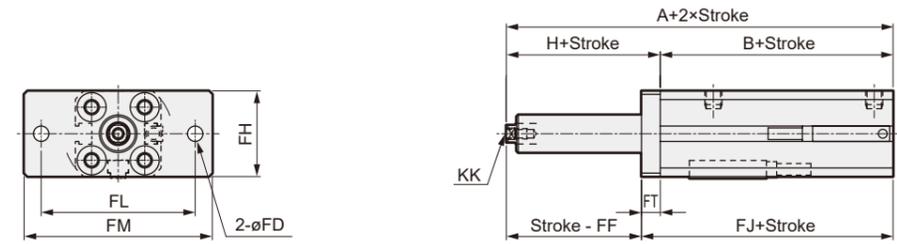
*1: Only F type switch can be mounted on the port surface of Bore Sizes ø20 and ø25.

*2: For dimensions with each switch, please refer to P. 838, 839.

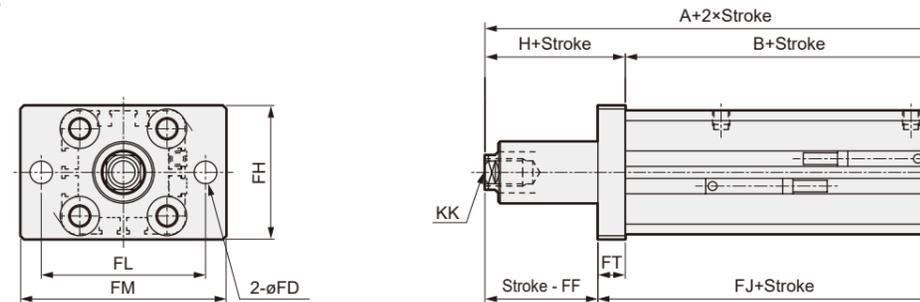
Dimensional Drawings

● Rod Side Flange Type (FA)

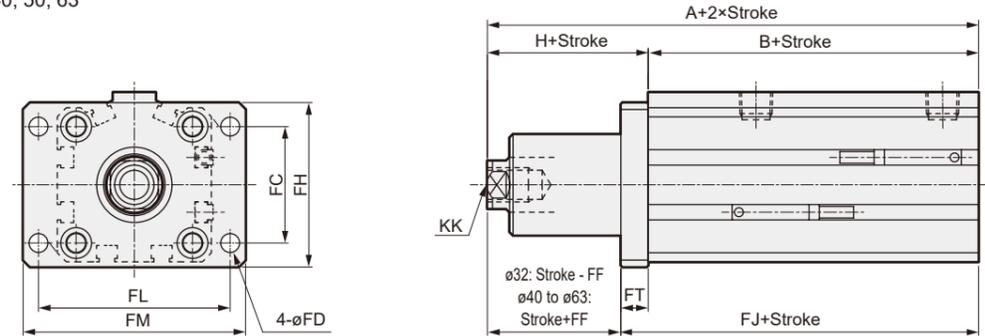
RCS2-FA-12/16



RCS2-FA-20/25



RCS2-FA-32, 40, 50, 63



Code	Rod Side Flange Type (FA) Mounting Dimensions											
Bore Size (mm)	A	B	H	KK	FC	FD	FF	FJ	FH	FL	FM	FT
ø12	33	28	5	M3 Depth 5.5	-	4.5	0.5	33.5	25	45	55	5.5
ø16	33.5	28.5	5	M5 Depth 6.5	-	4.5	0.6	34	30	45	55	5.5
ø20	53.5	52.5	1	M8 Depth 11	-	6.6	7	60.5	39	48	60	8
ø25	54.5	53.5	1	M8 Depth 11	-	6.6	7	61.5	42	52	64	8
ø32	63.5	56.5	7	M10 Depth 12	34	5.5	1	64.5	48	56	65	8
ø40	64.5	50	14.5	M10 Depth 12	40	5.5	6.5	58	54	62	72	8
ø50	74	57.5	16.5	M12 Depth 16	50	6.6	7.5	66.5	67	76	89	9
ø63	77	61	16	M12 Depth 16	60	9	7	70	80	92	108	9

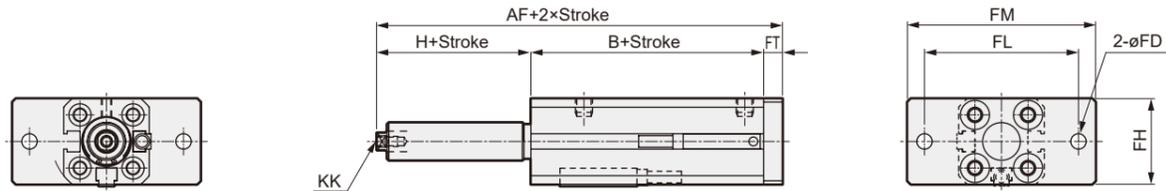
*1: Only F type switch can be mounted on the port surface of Bore Sizes ø20 and ø25.

*2: For dimensions with each switch, please refer to P. 838, 839.

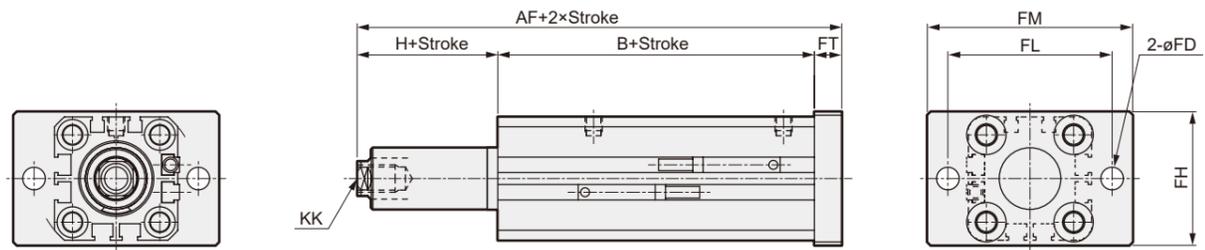
Dimensional Drawings

● Head Side Flange Type (FB)

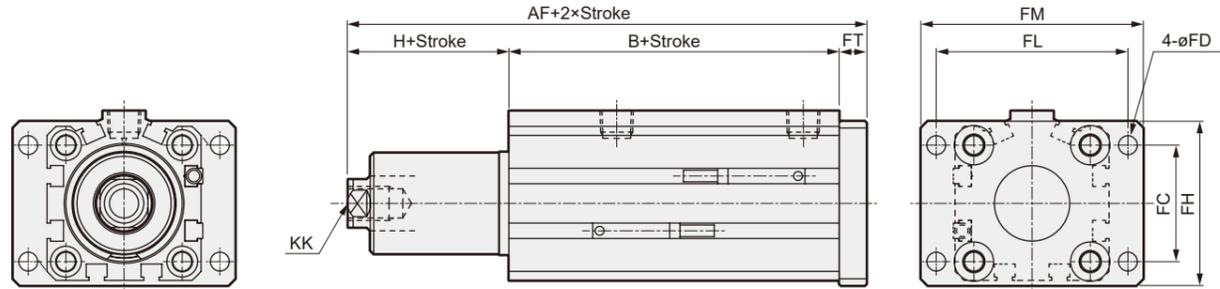
RCS2-FB-12/16



RCS2-FB-20/25



RCS2-FB-32, 40, 50, 63



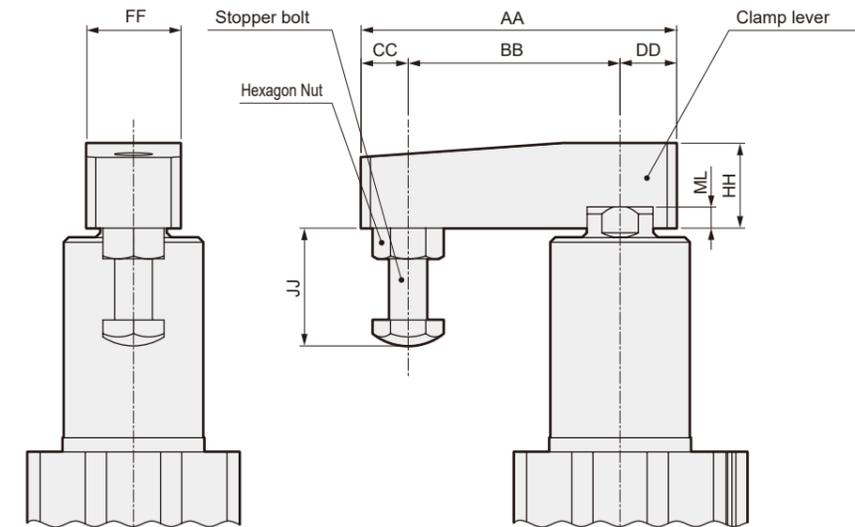
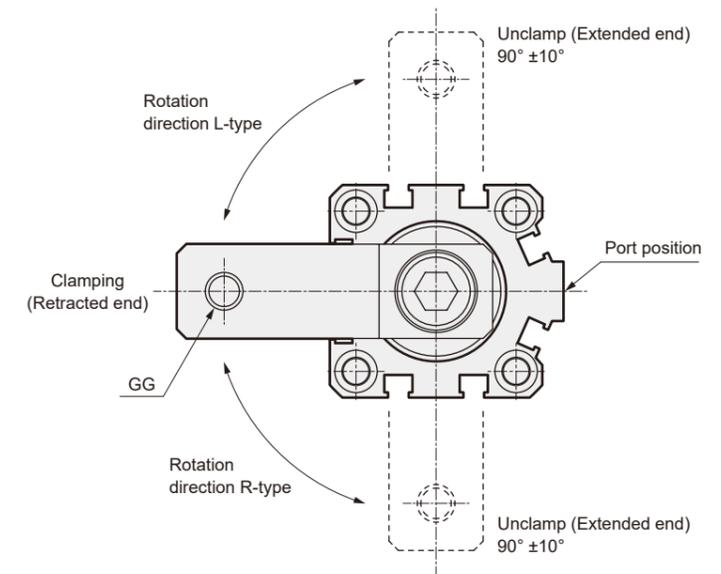
Code	Head Side Flange Type (FB) Mounting Dimensions									
Bore Size (mm)	AF	B	H	KK	FC	FD	FH	FL	FM	FT
ø12	38.5	28	5	M3 Depth 5.5	-	4.5	25	45	55	5.5
ø16	39	28.5	5	M5 Depth 6.5	-	4.5	30	45	55	5.5
ø20	61.5	52.5	1	M8 Depth 11	-	6.6	39	48	60	8
ø25	62.5	53.5	1	M8 Depth 11	-	6.6	42	52	64	8
ø32	71.5	56.5	7	M10 Depth 12	34	5.5	48	56	65	8
ø40	72.5	50	14.5	M10 Depth 12	40	5.5	54	62	72	8
ø50	83	57.5	16.5	M12 Depth 16	50	6.6	67	76	89	9
ø63	86	61	16	M12 Depth 16	60	9	80	92	108	9

*1: Only F type switch can be mounted on the port surface of Bore Sizes ø20 and ø25.
 *2: For dimensions with each switch, please refer to P. 838, 839.

Accessory External Dimensions

Accessory External Dimensions

● Clamp lever (A)

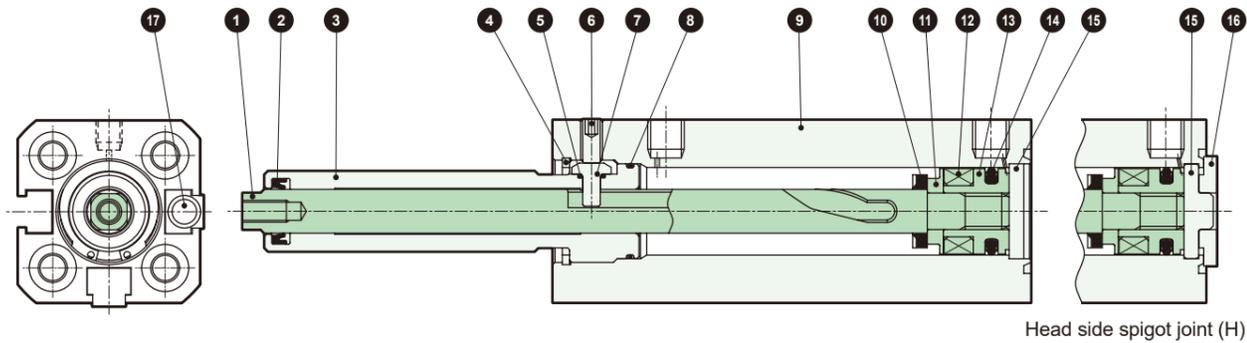


Code	With clamp lever									Moment of Inertia (kg·m ²)	
	AA	BB	CC	DD	FF	GG	HH	JJ	ML	Clamp lever single unit	With stopper bolt
ø12	29	20	4	5	8	M3×0.5	8	8 to 18	2	1.9×10 ⁻⁶	2.7×10 ⁻⁶
ø16	36	25	5	6	11	M4×0.7	11	8 to 18	2	7.3×10 ⁻⁶	9.8×10 ⁻⁶
ø20, 25	51	35	7	9	16	M6×1.0	14	12 to 22	2.5	3.6×10 ⁻⁵	5×10 ⁻⁵
ø32, 40	67	45	10	12	20	M8×1.25	18	15 to 25	4.5	1.3×10 ⁻⁴	1.8×10 ⁻⁴
ø50, 63	88	65	10	13	22	M10×1.5	22	30 to 40	4.5	4×10 ⁻⁴	6.2×10 ⁻⁴

Note: The material of the clamp lever, stopper bolt, and Hexagon Nut is steel.

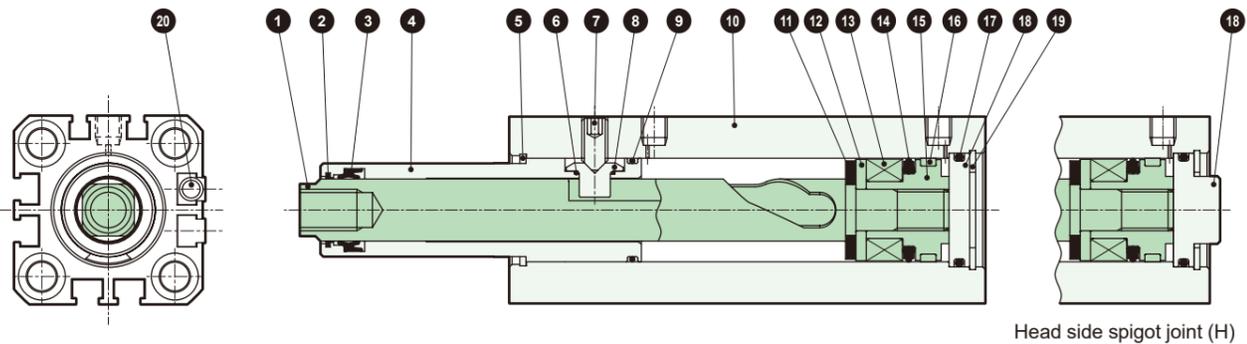
Internal structure / Material (Bore Size: $\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$)

● $\phi 12$, $\phi 16$



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	11	Spacer	$\phi 12$: Aluminum Alloy $\phi 16$: Special plastic	$\phi 12$: Zinc Chromate
2	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
3	Rod Metal	Aluminum Alloy	Hard Anodized	13	Piston	Aluminum Alloy	Zinc Chromate
4	Round R Type Retaining Ring	Steel	Zinc Phosphate	14	Piston Packing	Nitrile Rubber	
5	Guide pin gasket	Nitrile Rubber		15	Cover	Stainless Steel	
6	Hexagon Socket Set Screw	Stainless Steel		16	Spigot joint ring	Aluminum Alloy	Zinc Chromate
7	Guide Pin	Steel	Special treatment	17	Switch		
8	Rod metal gasket	Nitrile Rubber		With Switch			
9	Cylinder Body	Aluminum Alloy	Hard Anodized				
10	Cushion rubber (R)	Urethane Rubber					

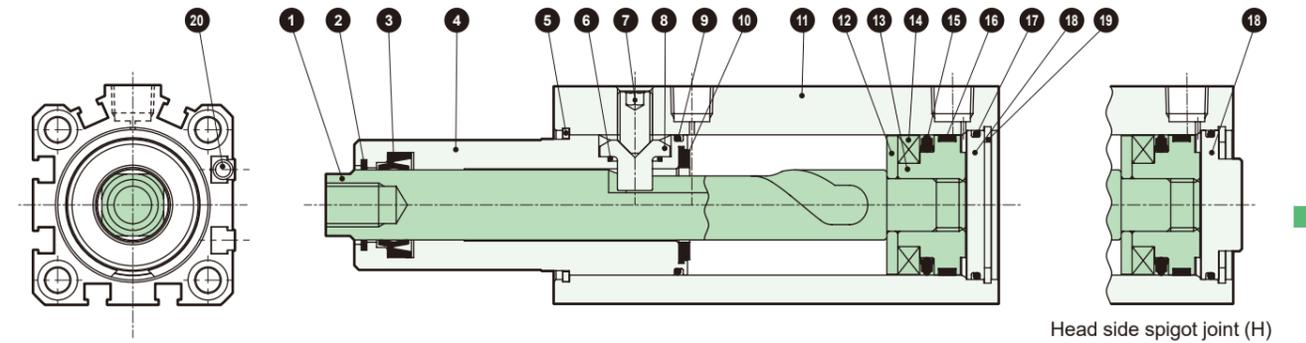
● $\phi 20$, $\phi 25$



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	12	Spacer	Aluminum Alloy	Zinc Chromate
2	Coil Scraper	Copper Alloy		13	Magnet	Plastic	
3	Rod Packing	Nitrile Rubber		14	Piston Packing	Nitrile Rubber	
4	Rod metal	Aluminum Alloy	Hard Anodized	15	Piston	Aluminum Alloy	Zinc Chromate
5	Circlip	Steel		16	Wear Ring	Polyacetal	
6	Guide pin gasket	Nitrile Rubber		17	Cover gasket	Nitrile Rubber	
7	Hexagon Socket Set Screw	Stainless Steel		18	Bottom plate	Aluminum Alloy	Zinc Chromate
8	Guide Pin	Steel	Special treatment	19	C-type Retaining Ring	Steel	Zinc Phosphate
9	Rod metal gasket	Nitrile Rubber		With Switch			
10	Cylinder Body	Aluminum Alloy	Hard Anodized	20	Switch		
11	Cushion rubber (R)	Urethane Rubber					

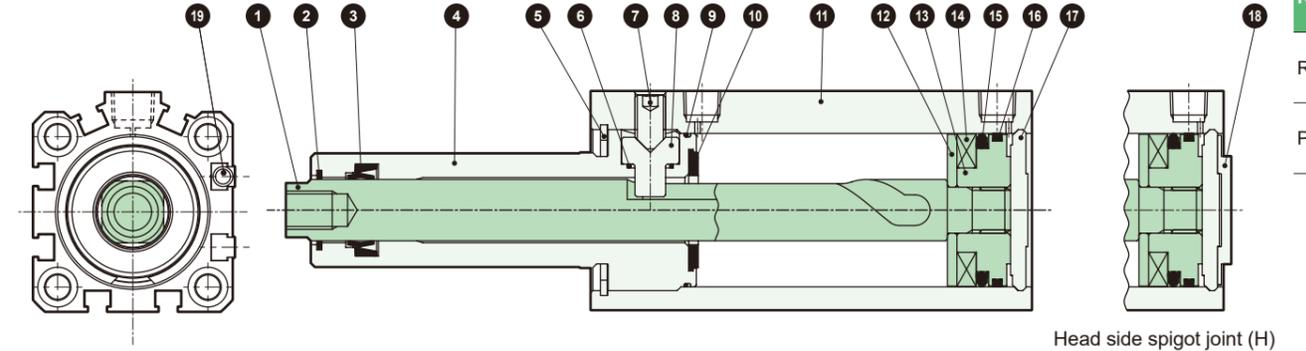
Internal structure / Material (Bore Size: $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$)

● $\phi 32$



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	12	Spacer	Aluminum Alloy	
2	Coil Scraper	Copper Alloy		13	Piston	Aluminum Alloy	Zinc Chromate
3	Rod Packing	Nitrile Rubber		14	Magnet	Plastic	
4	Rod metal	Aluminum Alloy	Hard Anodized	15	Piston Packing	Nitrile Rubber	
5	Circlip	Steel		16	Wear Ring	Polyacetal	
6	Guide pin gasket	Nitrile Rubber		17	Cover gasket	Nitrile Rubber	
7	Hexagon Socket Set Screw	Stainless Steel		18	Bottom plate	Aluminum Alloy	Zinc Chromate
8	Guide Pin	Steel	Special treatment	19	C-type Retaining Ring	Steel	Zinc Phosphate
9	Rod metal gasket	Nitrile Rubber		With Switch			
10	Cushion rubber (R)	Urethane Rubber		20	Switch		
11	Cylinder Body	Aluminum Alloy	Hard Anodized				

● $\phi 40$ to $\phi 63$



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	11	Cylinder Body	Aluminum Alloy	Hard Anodized
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 Anodized	14	Magnet	Plastic	
5	C-type Retaining Ring	Steel	Zinc Phosphate	15	Piston Packing	Nitrile Rubber	
6	Guide pin gasket	Nitrile Rubber		16	Wear Ring	Polyacetal	
7	Hexagon Socket Set Screw	Stainless Steel		17	Cover	Aluminum Alloy	
8	Guide Pin	Steel	Special treatment	18	Spigot joint ring	Aluminum Alloy	Zinc Chromate
9	Rod metal gasket	Nitrile Rubber		With Switch			
10	Cushion rubber (R)	Urethane Rubber		19	Switch		

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.



Rotary Clamp Cylinder, Single Guide Type, Double Acting, Packing Material Fluororubber

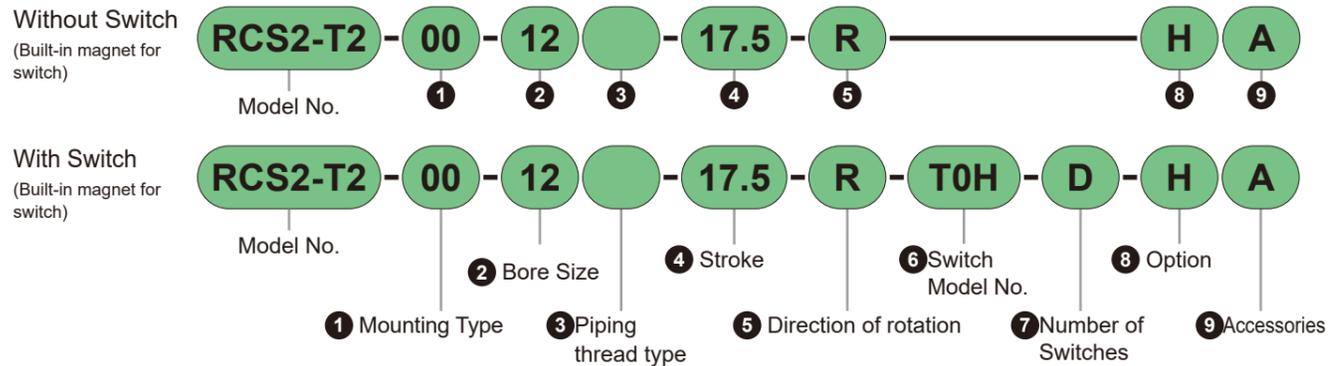
RCS2-T2 Series

● Tube inner diameter : $\phi 12, \phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63$

● Double Acting type
Circuit Diagram Code



Model No. Notation



1 Mounting Type

Code	Content
00	Basic type
FA	Rod side flange type
FB	Head Side Flange Type

2 Bore Size (mm)

Code	Content
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

3 Piping thread type

Code	Content
Blank	M5 ($\phi 12$ to $\phi 25$) Rc thread ($\phi 32$ to $\phi 63$)
N	NPT thread ($\phi 32$ or more)
G	G thread ($\phi 32$ or more)

4 Stroke (mm)

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

5 Direction of rotation

Code	Content
R	90° clockwise rotation during retraction
L	90° counterclockwise rotation during retraction

6 Switch Model No.

For switch details, please see P. 1457. Switches are shipped with the product.

Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		Image	
		AC	DC	AC	DC	Straight	L-shape		
Contact	1-Color	2-wire	-	10 to 30	-	5 to 20	-	F2S□	Image
		3-wire (NPN)	-	30 or less	-	50 or less	-	F3S□	
		2-wire	-	10 to 30	-	5 to 20 *2	F2H□	F2V□	
	3-wire (NPN)	-	30 or less	-	50 or less	F3H□	F3V□		
	3-wire (PNP)	-	30 or less	-	50 or less	F3PH□	F3PV□		
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	F2YH□	F2YV□	
Solid State	1-color	2-wire	-	24 ± 10%	-	5 to 20	F3YH□	F3YV□	Image
		2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
		3-wire (NPN)	-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
	2-Color	3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-	30 or less	-	100 or less	T3PH□	T3PV□	
		2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
	2-Color Improved Water Resistance	3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
		2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
		2-Color for AC Magnetic Field	-	24 ± 10%	-	5 to 20	T2YD□	-	
	1-Color Off-Delay Type	2-wire	-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
		1-Color Flexible Lead Wire Type	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3	
		Reed	1-Color Without Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	
2-wire	110		5/12/24	20 or less	50 or less	T5H□	T5V□		
1-Color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□			

*1: For "□" in the switch model number, enter the code selected from the "Lead wire length, connector specification" table.
 *2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
 *3: This does not guarantee the water resistance of the cylinder.
 *4: Switches other than the model numbers listed above are also available. (Custom Product) For details, refer to P. 1457.
 *5: For $\phi 12, \phi 16, T1□, T8□, T2YD□, T2YDT□, T2J□$ switches cannot be selected.
 *6: F type switch can be selected only for $\phi 20$ and $\phi 25$.

RCS2-T2 Series

Model No. Notation

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.
 *6: F-type switch with 5 m lead wire length cannot be selected.

Example) Lead wire length
 1 m T0H
 3 m T0H³
 5 m T0H⁵

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	Both sides included

8 Option

Code	Content
Blank	No option
H	Head side spigot joint

*1: If (1) Mounting Type is "FA" "FB", option "H" cannot be selected.

9 Accessories

Code	Content
Blank	No accessories
A	Clamp lever

Switch Single Unit Model No.

SW - T0H3

6 Switch Model No.

Clamp Lever Kit Model No.

RCS2 - A - 12

Code	Bore Size
12	$\phi 12$
16	$\phi 16$
20	$\phi 20, \phi 25$
32	$\phi 32, \phi 40$
50	$\phi 50, \phi 63$

Flange Kit Model No.

RCS2 - FA - 12

2 Bore Size

Specifications

Item	RCS2-T2								
	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Bore Size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Max Operating Pressure	MPa	1.0						0.6	
Min Operating Pressure	MPa	0.2 *1				0.1			
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	5 to 60							
Connection Port	Rc, NPT, G	M5			1/8		1/4		
Stroke tolerance	mm	+1.0 0			+1.2 0				
Operating piston speed	mm/s	50 to 200							
Cushion		With rod side rubber cushion, without head side cushion							
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)							
Rotation Angle		90° ±10°							
Direction of rotation		Right/Left							
Non-rotation accuracy (during clamping, initial value)		±1.4°	±1.2°			±0.9°		±0.7°	
Pressure Receiving Area	Retraction side	84	150	201	377	603	1056	1649	2803
	Push side	113	201	314	490	804	1256	1963	3117

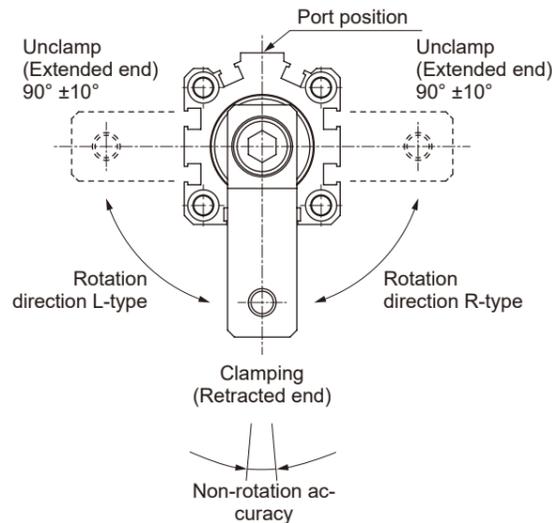
*1: At constant pressure pressurization

Stroke

Bore Size (mm)	Stroke (mm)	Rotation stroke *1 (mm)	Clamp stroke *2 (mm)
ø12, ø16	17.5, 27.5, 37.5	7.5	10, 20, 30
ø20, ø25	19.5, 29.5, 39.5	9.5	10, 20, 30
ø32, ø40	25, 35, 45, 65	15	10, 20, 30, 50
ø50, ø63	29, 39, 49, 69	19	10, 20, 30, 50

*1: Rotary stroke is the dimension of linear operation in the clamping direction while rotating from the unclamp end.
*2: Clamp stroke is the dimension of linear operation in the clamping direction after rotation.

Rotation Angle, Rotation Direction, Non-rotation Accuracy



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 listed in the Switch Specifications on P. 1457.
ø16	100				123				146						59	59	
ø20		212								292					114	114	
ø25		267								361					125	125	
ø32			333							372					145	145	
ø40			554							629					193	193	
ø50				997						1118					1239	1481	
ø63				1373						1526					1679	1985	

Theoretical Thrust Table

(Unit: N)

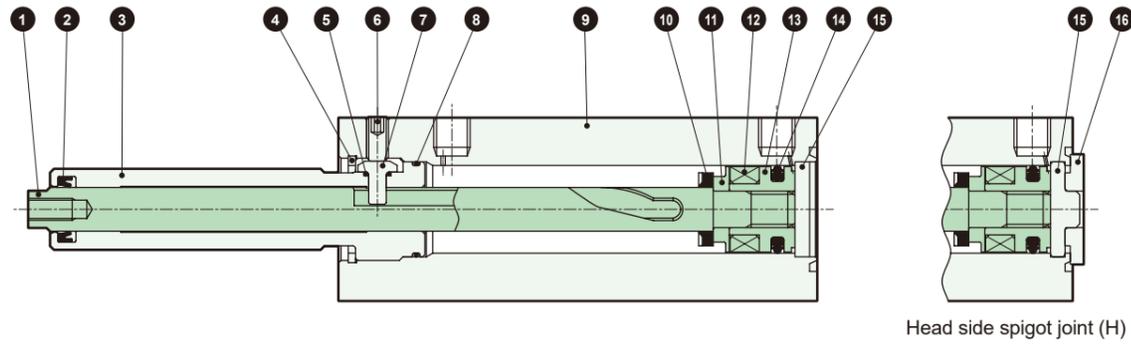
Bore Size (mm)	Operating Direction	Operating Pressure MPa									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10 ²	1.13×10 ²
	Pull	-	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	40.2	60.3	80.4	1.01×10 ²	1.21×10 ²	1.41×10 ²	1.61×10 ²	1.81×10 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
ø20	Push	-	62.8	94.2	1.26×10 ²	1.57×10 ²	1.88×10 ²	2.20×10 ²	2.51×10 ²	2.83×10 ²	3.14×10 ²
	Pull	-	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
ø25	Push	-	98.2	1.47×10 ²	1.96×10 ²	2.45×10 ²	2.95×10 ²	3.44×10 ²	3.93×10 ²	4.42×10 ²	4.91×10 ²
	Pull	-	75.6	1.13×10 ²	1.51×10 ²	1.89×10 ²	2.27×10 ²	2.64×10 ²	3.02×10 ²	3.40×10 ²	3.78×10 ²
ø32	Push	-	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	-	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	-	-	-	-

External Form Dimension Diagram

Same as RCS2 series basic type. Please refer to P. 820 to P. 823.

Internal structure / Material (Bore Size: $\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$)

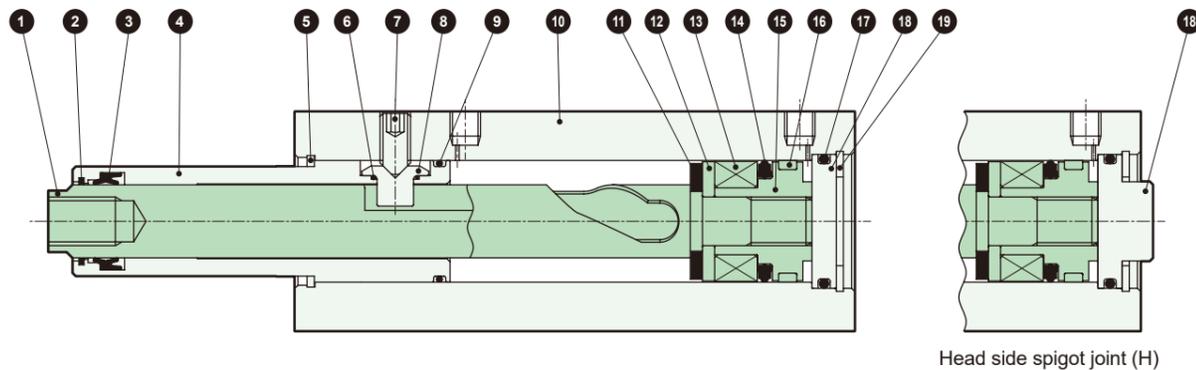
● $\phi 12$, $\phi 16$



Head side spigot joint (H)

Part No.	Part Name	Material	Remarks	Part 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	$\phi 12$: Aluminum Alloy $\phi 16$: Special plastic	Zinc Chromate
3	Rod Metal	Aluminum Alloy	Hard Anodized	12	Magnet	Plastic	
4	Round R Type Retaining 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 joint ring	Aluminum Alloy	Zinc Chromate
8	Rod metal gasket	Fluoro Rubber					
9	Cylinder Body	Aluminum Alloy	Hard Anodized				

● $\phi 20$, $\phi 25$

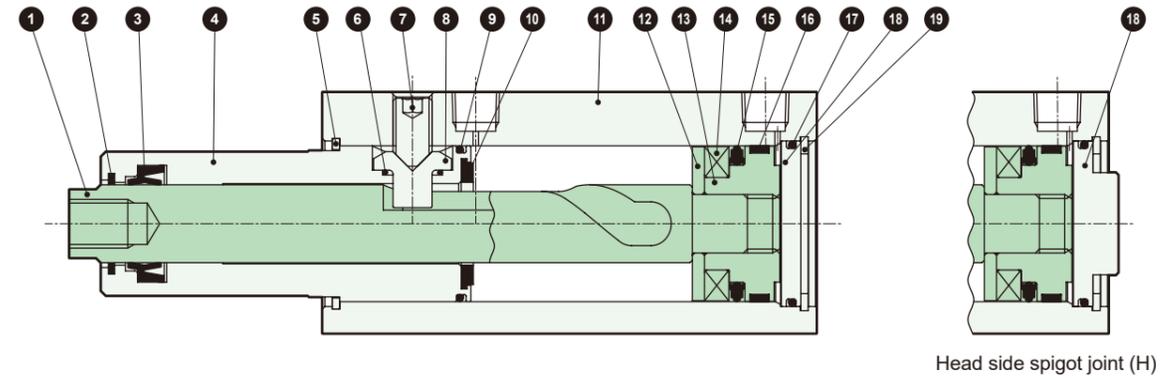


Head side spigot joint (H)

Part No.	Part Name	Material	Remarks	Part 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 Anodized	14	Piston Packing	Fluoro Rubber	
5	Circlip	Steel		15	Piston	Aluminum Alloy	Zinc Chromate
6	Guide pin gasket	Fluoro Rubber		16	Wear Ring	Polyacetal	
7	Hexagon Socket Set Screw	Stainless Steel		17	Cover gasket	Fluoro Rubber	
8	Guide Pin	Steel	Special treatment	18	Bottom plate	Aluminum Alloy	Zinc Chromate
9	Rod metal gasket	Fluoro Rubber		19	C-type Retaining Ring	Steel	Zinc Phosphate
10	Cylinder Body	Aluminum Alloy	Hard Anodized				

Internal structure / Material (Bore Size: $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$)

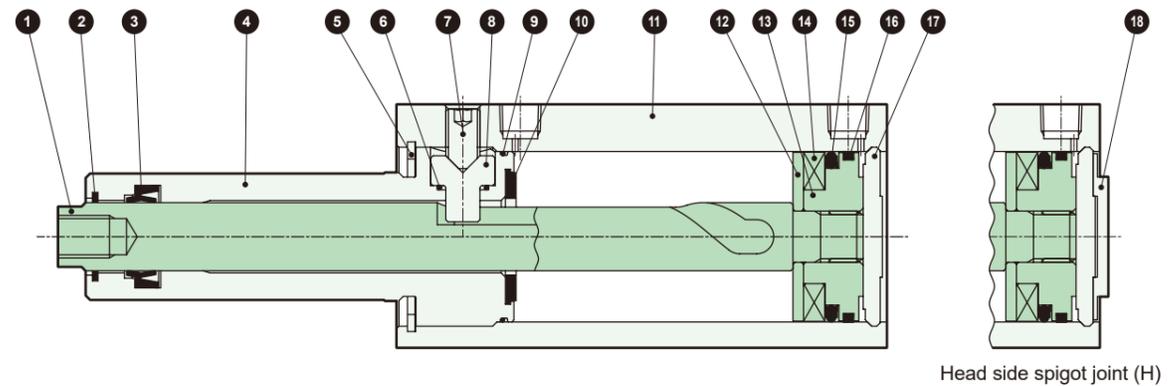
● $\phi 32$



Head side spigot joint (H)

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	11	Cylinder Body	Aluminum Alloy	Hard Anodized
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 Anodized	14	Magnet	Plastic	
5	Circlip	Steel		15	Piston Packing	Fluoro Rubber	
6	Guide pin gasket	Fluoro Rubber		16	Wear Ring	Polyacetal	
7	Hexagon Socket Set Screw	Stainless Steel		17	Cover gasket	Fluoro Rubber	
8	Guide Pin	Steel	Special treatment	18	Bottom plate	Aluminum Alloy	Zinc Chromate
9	Rod metal gasket	Fluoro Rubber		19	C-type Retaining Ring	Steel	Zinc Phosphate
10	Cushion rubber (R)	Urethane Rubber					

● $\phi 40$ to $\phi 63$



Head side spigot joint (H)

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	10	Cushion rubber (R)	Urethane Rubber	
2	Coil Scraper	Copper Alloy		11	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Rod Packing	Fluoro Rubber		12	Spacer	Aluminum Alloy	
4	Rod metal	Aluminum Alloy	Hard Anodized	13	Piston	Aluminum Alloy	Zinc Chromate
5	C-type Retaining 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	
8	Guide Pin	Steel	Special treatment	17	Cover	Aluminum Alloy	
9	Rod metal gasket	Fluoro Rubber		18	Spigot joint ring	Aluminum Alloy	Zinc Chromate

For maintenance parts, refer to the CKD component product site
(<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> See "Maintenance Parts"

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) -> "model No." -> [Maintenance Parts].



Rotary Clamp Cylinder, Single Guide Type, Double Acting, Sputter Adhesion Prevention Type

RCS2-G4 Series

● Bore Size: $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

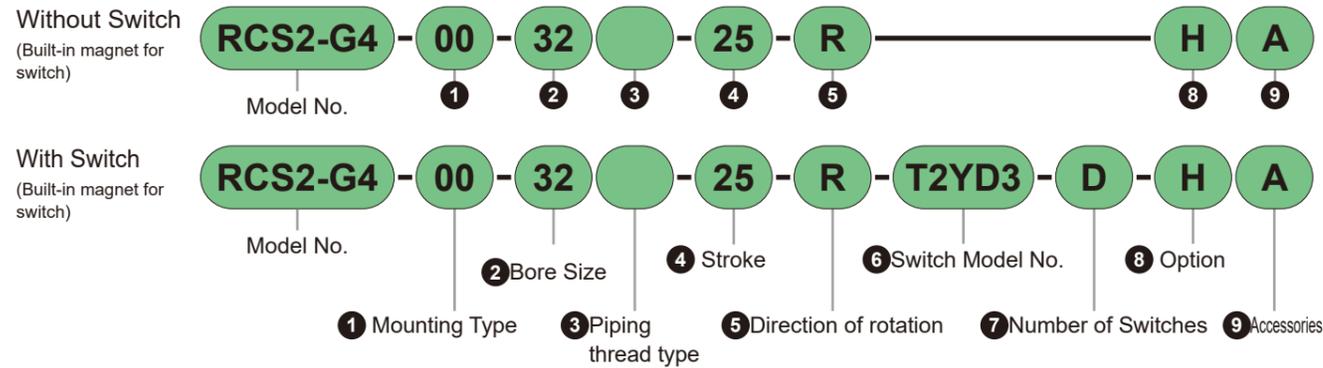
Circuit Diagram Double Acting type Code



RCS2-G4 Series

Model No. Notation

Model No. Notation



1 Mounting Type

Code	Content
00	Basic type
FA	Rod Side Flange Type
FB	Head Side Flange Type

2 Bore Size (mm)

Code	Content
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT thread
G	G thread

4 Stroke (mm)

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

5 Direction of rotation

Code	Content
R	90° clockwise rotation during retraction
L	90° counterclockwise rotation during retraction

6 Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
		AC	DC	AC	DC	Straight	L-shape
2-Color AC For Magnetic Field	2-wire	-	24 ± 10%	-	5 to 20	T2YD□	-
		-		-		T2YDT□	-

*1: Insert the code selected in the "Lead wire length" table into "□" of the switch model number.

*2: Switches other than the above switch model numbers are also available. (Custom Product) For details, refer to P. 1457.

* Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD[3]
5 m T2YD[5]

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	Both sides included

8 Option

Code	Content
Blank	No option
H	Head side spigot joint

*1: If (1) Mounting Type is "FA" "FB", option "H" cannot be selected.

9 Accessories

Code	Content
Blank	No accessories
A	Clamp lever

Switch Single Unit Model No.

SW - T2YD3

6 Switch Model No.

Clamp Lever Kit Model No.

RCS2 -A- 32

Code	Bore Size
32	$\phi 32$, $\phi 40$
50	$\phi 50$, $\phi 63$

Flange Kit Model No.

RCS2 -FA- 32

2 Bore Size

Specifications

Item	RCS2-G4				
	mm	ø32	ø40	ø50	ø63
Bore Size	mm	ø32	ø40	ø50	ø63
Actuation method		Double Acting Type			
Operating Fluid		Compressed Air			
Max Operating Pressure	MPa	1.0		0.6	
Min Operating Pressure	MPa	0.1 *1			
Proof Pressure	MPa	1.6			
Ambient Temperature	°C	-10 to 60 (however, no freezing)			
Connection Port	Rc, NPT, G	1/8		1/4	
Stroke tolerance	mm	+1.2 0			
Operating piston speed	mm/s	50 to 200			
Cushion		With rod side rubber cushion, without head side cushion			
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)			
Rotation Angle		90° ±10°			
Direction of rotation		Right/Left			
Non-rotation accuracy (during clamping, initial value)		±0.9°		±0.7°	
Pressure Receiving Area	Retraction side	603	1056	1649	2803
	Push side	804	1256	1963	3117

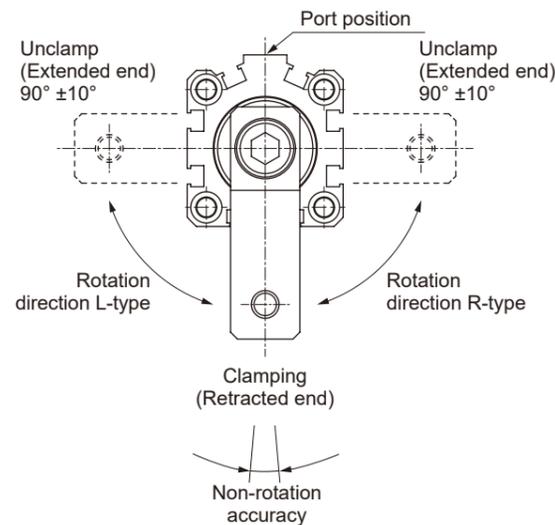
*1: At constant pressure pressurization

Stroke

Bore Size (mm)	Stroke (mm)	Rotation stroke *1 (mm)	Clamp stroke *2 (mm)
ø32, ø40	25, 35, 45, 65	15	10, 20, 30, 50
ø50, ø63	29, 39, 49, 69	19	10, 20, 30, 50

*1: Rotary stroke is the dimension of linear operation in the clamping direction while rotating from the unclamp end.
*2: Clamp stroke is the dimension of linear operation in the clamping direction after rotation.

Rotation Angle, Rotation Direction, Non-rotation Accuracy



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	Please refer to the mass described in the switch specifications on page 1457.
ø40	554		629		704		854		193	193	
ø50		997		1118		1239		1481	335	335	
ø63		1373		1526		1679		1985	464	464	

Theoretical Thrust Table

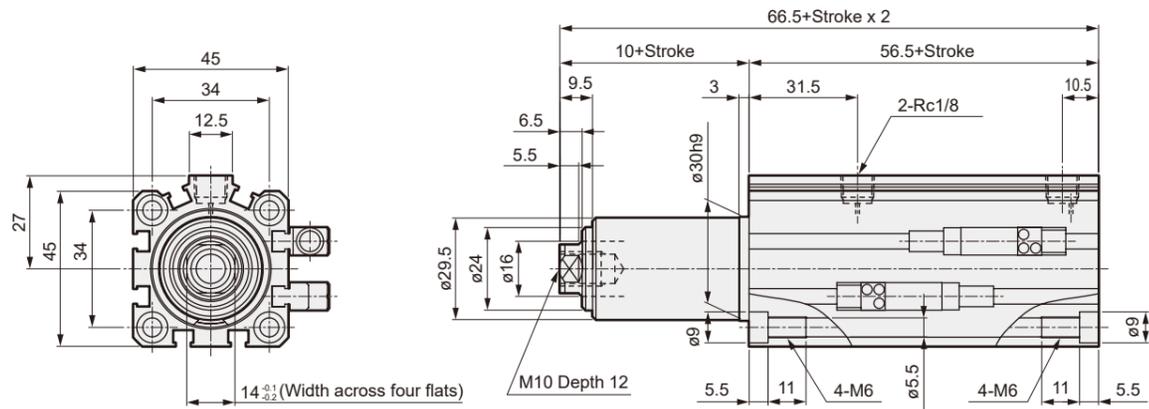
(Unit: N)

Bore Size (mm)	Operating Direction	Operating 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	-	-	-	-

Dimensional Drawings

● Basic type (00)

RCS2-G4-00-32

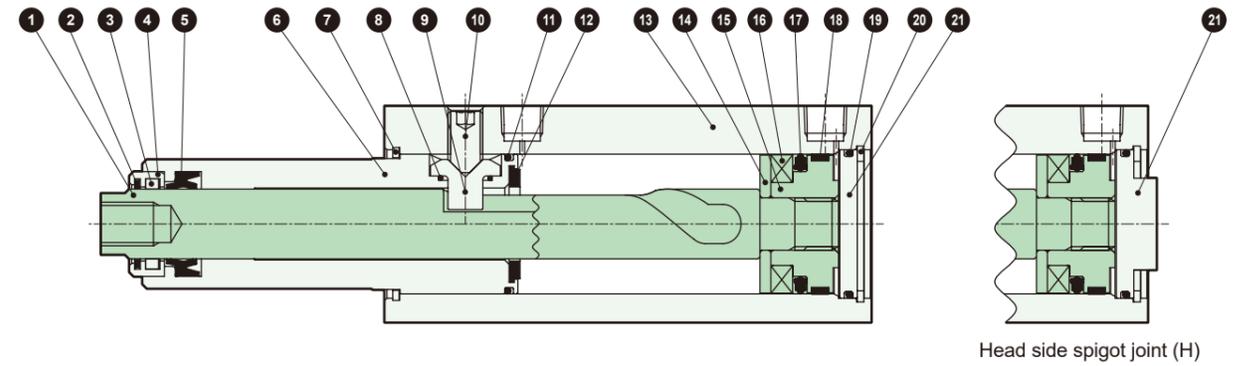


* The external dimensions diagram for RCS2-G4-40, 50, 63 is the same as the RCS2 series basic type. Please refer to P. 820.

* The external dimensions diagram for mounting types FA and FB is the same as the RCS2 series basic type. Please refer to P. 821, 822.

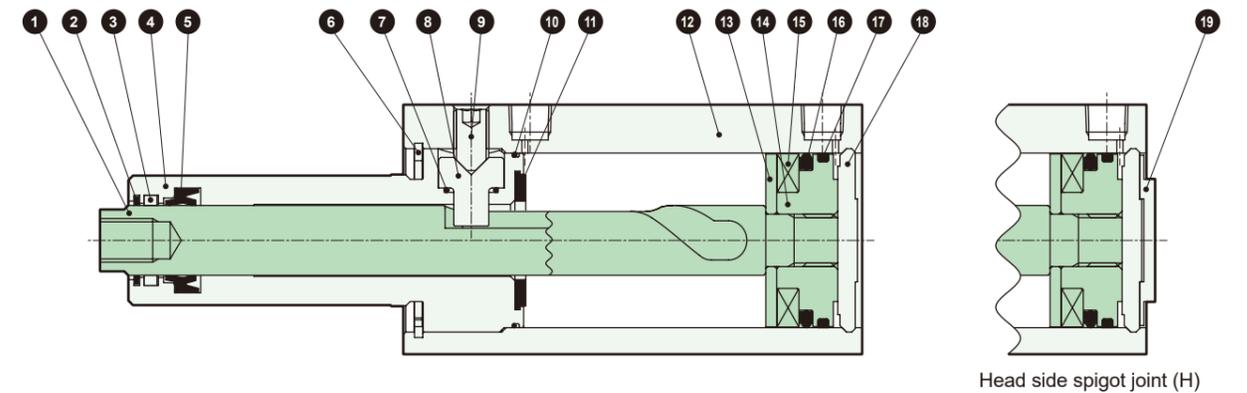
Internal Structure / Materials

● $\phi 32$



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	12	Cushion Rubber	Urethane Rubber	
2	Coil Scraper	Copper Alloy		13	Cylinder Body	Aluminum Alloy	Hard Anodized
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 Anodized	17	Piston Packing	Nitrile Rubber	
7	Circlip	Steel	Zinc Phosphate	18	Wear Ring	Polyacetal	
8	Guide pin gasket	Nitrile Rubber		19	Cover gasket	Nitrile Rubber	
9	Guide Pin	Steel	Special treatment	20	C-type Retaining Ring	Steel	Zinc Phosphate
10	Hexagon Socket Set Screw	Stainless Steel		21	Bottom plate	Aluminum Alloy	Zinc Chromate
11	Rod metal gasket	Nitrile Rubber					

● $\phi 40$ to $\phi 63$



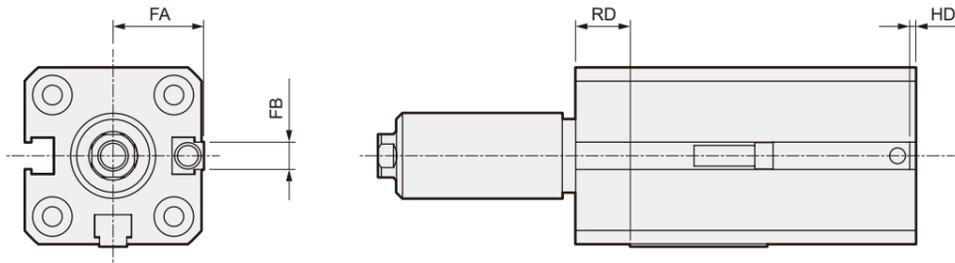
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Piston Rod	Stainless Steel	Special treatment	11	Cushion Rubber	Urethane Rubber	
2	Coil Scraper	Copper Alloy		12	Cylinder Body	Aluminum Alloy	Hard Anodized
3	Lube keeper			13	Spacer	Aluminum Alloy	Zinc Chromate
4	Rod metal	Aluminum Alloy	Hard Anodized	14	Piston	Aluminum Alloy	Zinc Chromate
5	Rod Packing	Nitrile Rubber		15	Piston magnet	Plastic	
6	C-type Retaining Ring	Steel	Zinc Phosphate	16	Piston Packing	Nitrile Rubber	
7	Guide pin gasket	Nitrile Rubber		17	Wear Ring	Polyacetal	
8	Guide Pin	Steel	Special treatment	18	Cover	Aluminum Alloy	Zinc Chromate
9	Hexagon Socket Set Screw	Stainless Steel		19	Spigot joint ring	Aluminum Alloy	Zinc Chromate
10	Rod metal gasket	Nitrile Rubber					

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts .

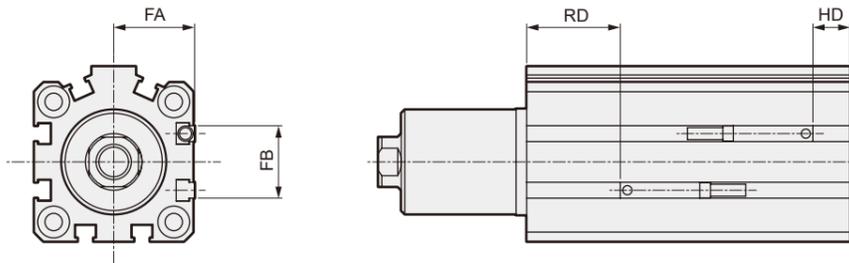
RCS2 Series External Dimensions Diagram with Switch

- T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V
- RCS2, RCS2-T2

ø12, ø16



ø20 to ø63

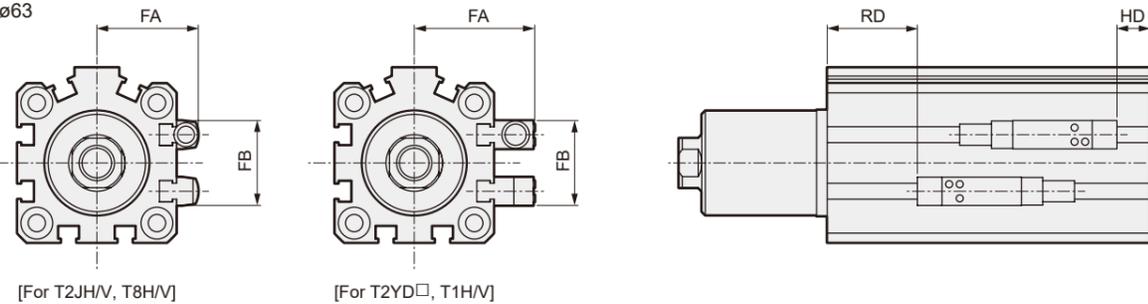


Code	FA	FB	T0, T5, T2, T3, T3P, T2□R3		T2W, T3W, T2WL	
			RD	HD	RD	HD
ø12	13.0	4.5	8.5	0.5	10.5	2.5
ø16	15.0	4.5	9	0.5	11	2.5
ø20	18.5	12.5	23.5	10	25.5	12
ø25	20.5	13.5	24.5	9.5	26.5	11.5
ø32	23.0	20.5	26.5	10.5	28.5	12.5
ø40	26.5	27.5	23.5	7.5	25.5	9.5
ø50	32.5	28.5	28.5	10	30.5	12
ø63	39.0	28.5	27.5	14.5	29.5	16.5

*1: FA dimension is for the straight lead wire type.
*2: For switch mountability, refer to the model number notation of each variation.

- T8H/V, T2JH/V, T1H/V, T2YD, T2YDT
- RCS2, RCS2-T2, RCS2-G4

ø20 to ø63



Code	T8				T2J				T1, T2YD, T2YDT			
	FA	FB	RD	HD	FA	FB	RD	HD	FA	FB	RD	HD
ø20	24.3	16	17.5	4	24.3	16	22.5	9	29.3	16	22.5	9
ø25	26.3	17	18.5	3.5	26.3	17	23.5	8.5	31.3	17	23.5	8.5
ø32	28.8	24	20.5	4.5	28.8	24	25.5	9.5	33.8	24	25.5	9.5
ø40	32.3	31	17.5	1.5	32.3	31	22.5	6.5	37.3	31	22.5	6.5
ø50	38.3	32	22.5	4	38.3	32	27.5	9	43.3	32	27.5	9
ø63	44.8	32	21.5	8.5	44.8	32	26.5	13.5	49.8	32	26.5	13.5

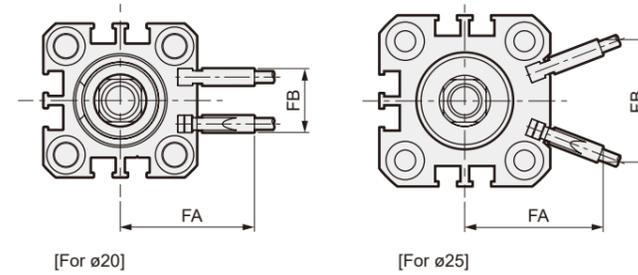
*1: FA dimension is for the straight lead wire type.
*2: For switch mountability, refer to the model number notation of each variation.

External Dimensions Diagram with Switch

RCS2 Series External Dimensions Diagram with Switch

- F2S, F3S
- RCS2, RCS2-T2

ø20, ø25

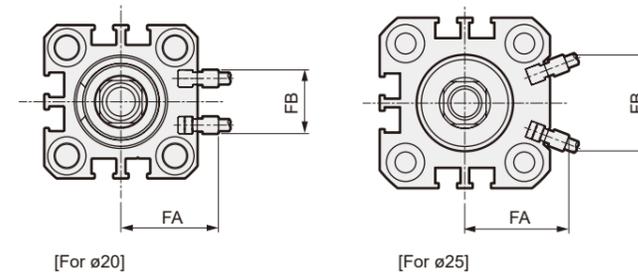


Code	F2S, F3S			
	FA	FB	RD	HD
ø20	31.5	15	27	13.5
ø25	32.5	28	28	13

Note: For switch mountability, refer to the model number display method for each variation.

- F2H/V, F3H/V, F3PH/V, F2YH/V, F3YH/V
- RCS2, RCS2-T2

ø20, ø25



Code	FA *1	FB *1	F2, F3, F3P, F2Y, F3Y	
			RD	HD
ø20	23	15	28	14.5
ø25	24.5	22	29	14

*1: FA dimension is for the L-shaped lead wire type.
*2: For switch mountability, refer to the model number notation of each variation.

Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

RCC2

PCC

Cylinder Switch

Ending

Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

RCC2

PCC

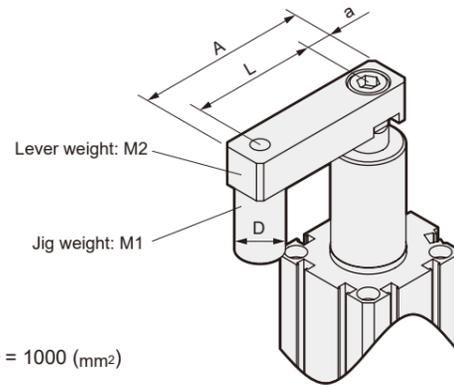
Cylinder Switch

Ending

Technical Data (Selection Example)

[Specifications]

- Required clamping force: 400 N
- Operating 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 pressure receiving area.

$$\text{Required pressurized area (mm}^2\text{)} = \frac{\text{Required clamping force (N)}}{\text{Operating Pressure (MPa)} \times \text{Efficiency}} = \frac{400}{0.5 \times 80\%} = 1000 \text{ (mm}^2\text{)}$$

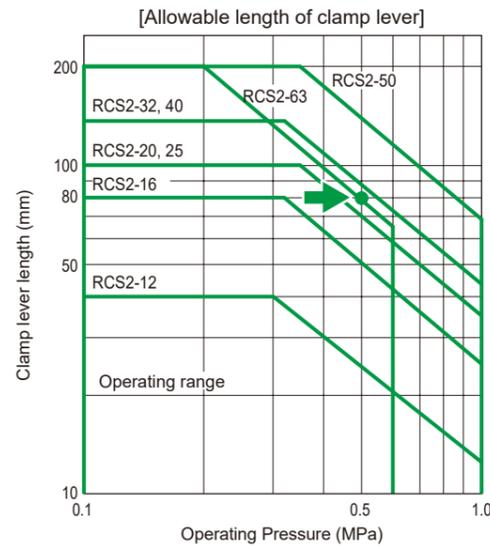
Note: Efficiency varies depending on the shape and material of the clamp lever.

2. Select the cylinder size from the pressure receiving area (retraction side) in the specification list.

$$\phi 40 \text{ pressurized area: } 1055 \text{ (mm}^2\text{)} > \text{Required pressurized area: } 1000 \text{ (mm}^2\text{)}$$

3. Confirm the allowable length of the clamp lever.

Operating Pressure 0.5 MPa, clamp lever length 80 mm → Working range



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

Calculation of moment of inertia

(Use the formula for concentrated load on P. 841)

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

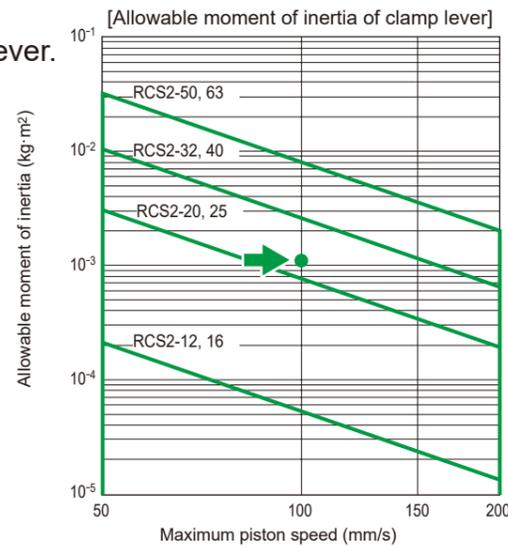
$$\text{Because } R_1 = L, R_2 = A - a, K_1^2 = \frac{D^2}{8}$$

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

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

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

Maximum piston speed 100 mm/s
→ Within operating range



From the above, select size $\phi 40$.

Diagram for calculating moment of inertia

Shape	Diagram	Required Items	Moment of Inertia I kg·m ²	Radius of gyration K ₁ ²	Remarks
Disk		● Diameter d (m) ● Weight M (kg)	$I = \frac{Md^2}{8}$	$\frac{d^2}{8}$	● No mounting direction
Stepped disk		● Diameter d ₁ (m) d ₂ (m) ● Weight d ₁ section M ₁ (kg) d ₂ part M ₂ (kg)	$I = \frac{1}{8} (M_1 d_1^2 + M_2 d_2^2)$	$\frac{d_1^2 + d_2^2}{8}$	● If d ₂ part is very small compared to d ₁ part, it can be ignored
Rod (center of rotation is at the 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 R ₁ R ₂ ● Weight M ₁ M ₂	$I = \frac{M_1 \cdot R_1^2}{3} + \frac{M_2 \cdot R_2^2}{3}$	$\frac{R_1^2 + R_2^2}{3}$	● Mounting direction is horizontal
Rod (center of rotation is at the center of gravity)		● Bar length R (m) ● Weight M (kg)	$I = \frac{MR^2}{12}$	$\frac{R^2}{12}$	● No mounting direction
Thin rectangular plate (center)		● Plate Length a ₁ a ₂ ● Side Length b ● Weight M ₁ M ₂	$I = \frac{M_1}{12} (4a_1^2 + b^2) + \frac{M_2}{12} (4a_2^2 + b^2)$	$\frac{(4a_1^2 + b^2) + (4a_2^2 + b^2)}{12}$	● Mounting direction is horizontal
Cuboid		● Side length a (m) 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 R ₁ ● Arm Length R ₂ (m) ● Weight of Concentrated Load M ₁ (kg) ● Weight of Arm M ₂ (kg)	$I = M_1 (R_1^2 + k_1^2) + \frac{M_2 R_2^2}{3}$	k ₁ ² is calculated based on the shape of the concentrated load	● Mounting direction is horizontal ● If M ₂ is very small compared to M ₁ , you can calculate with M ₂ =0.

Clamping

Clamping

CAC4

CAC4

UCAC2

UCAC2

CAC-N

CAC-N

UCAC-N

UCAC-N

RCS2

RCS2

RCC2

RCC2

PCC

PCC

Cylinder Switch

Cylinder Switch

Ending

Ending



To Use This Product Safely

Be sure to read this before use. For general information on cylinders, please check Intro 41, and for cylinder switches, please check P. 1512.

Individual Precautions: Rotary clamp cylinder, single guide type RCS2 Series

Design / Selection

1. Common

Warning

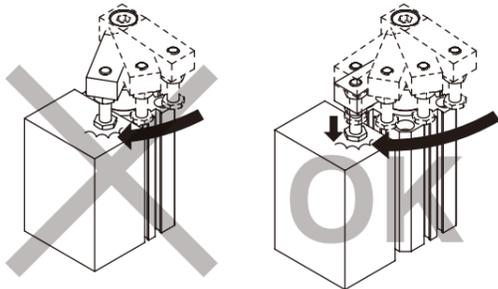
Precautions for operation

This cylinder's Piston Rod rotates 90° during operation. When rotating, ensure that the clamp lever included with the Piston Rod tip does not interfere with external peripheral equipment. Also, if the rotation of the clamp lever may pose a danger to humans, take safety measures such as installing a protective cover around the clamp lever.

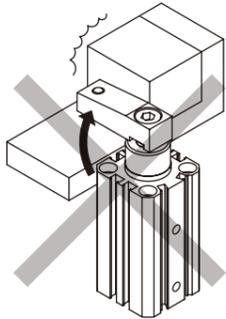
CAUTION

Using this product so as to apply rotation to the Piston Rod may lead to damage, faulty operation, or a reduction in non-rotating accuracy. Be sure to observe the following precautions.

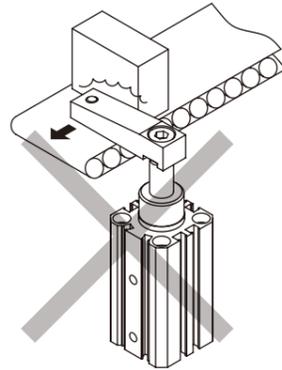
1. Do not clamp during the rotary stroke. Clamp at a position 3 mm or more before the stroke end within the clamp stroke range.



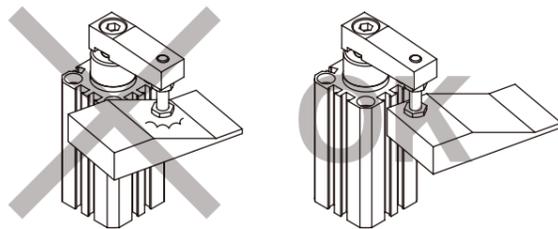
2. Do not clamp in the rotation direction.



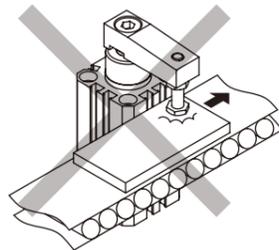
3. Do not use as a stopper.



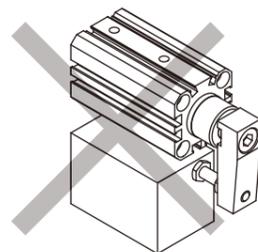
4. Do not clamp on inclined parts.



5. Ensure that the workpiece does not move due to external force during clamping.

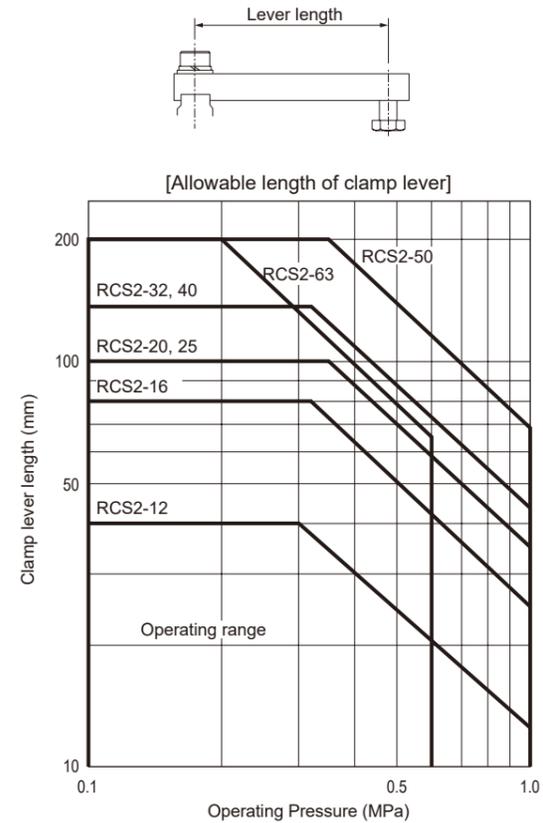


6. Do not use in horizontal installation.



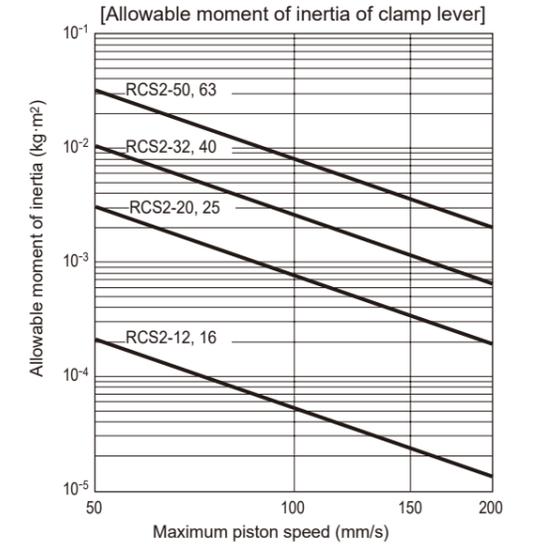
Clamp lever allowable length and Operating Pressure

The upper limit of the allowable length of the clamp lever varies depending on the Operating Pressure. Please set within the range shown in the diagram below.



Clamp lever allowable moment of inertia and piston speed

The upper limit of the allowable moment of inertia of the clamp lever varies depending on the piston speed. Please set within the range shown in the diagram below.



2. Weld spatter resistant type RCS2-G4

The durability of this cylinder is improved in comparison to standard cylinders when used in an atmosphere exposed to spatter. If used in an atmosphere other than sputter scattering, durability may be inferior to general type cylinders. Do not use in atmospheres other than sputter scattering.

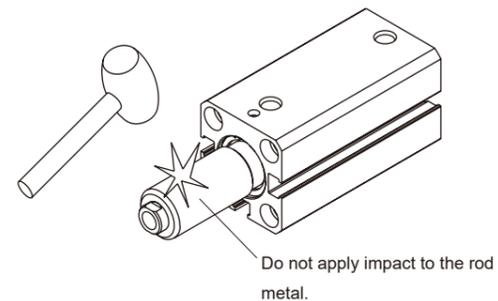
Anti-spatter adherence agent is volatile. If the adhesion inhibitor on the rod surface begins to dry, apply sputter adhesion inhibitor to the rod surface to replenish it.

During Use

CAUTION

Impact

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



Do not apply impact to the rod metal.

For precautions during mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components product site (<https://www.ckd.co.jp/kiki/en/>) → "Model No." → "Instruction Manual".

Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

RCC2

PCC

Clamping

CAC4

UCAC2

CAC-N

UCAC-N

RCS2

RCC2

PCC

Cylinder Switch

Ending

Cylinder Switch

Ending