IAI
Quality and Innovation

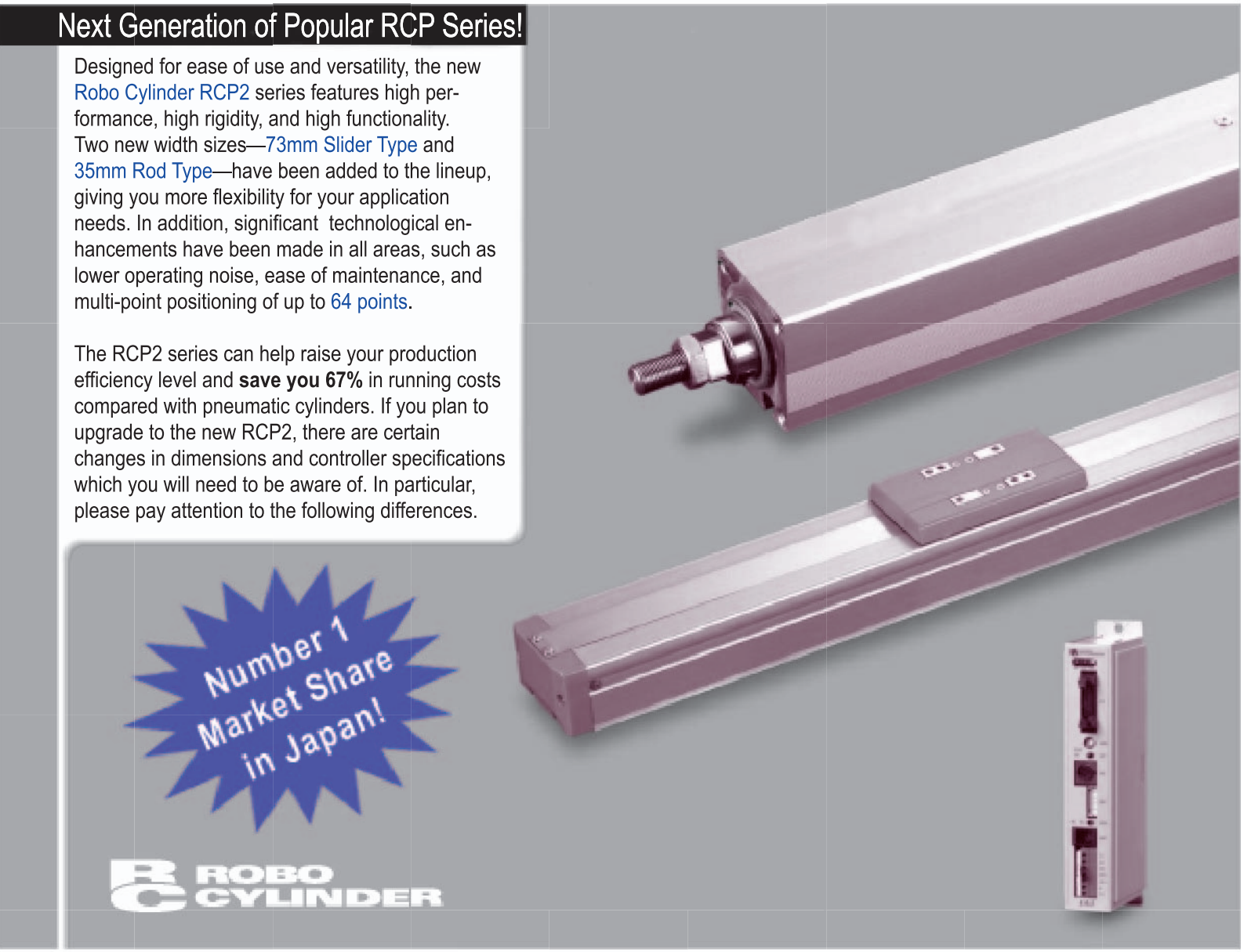
New Robo Cylinder

Introducing the New RCP2 Series

Next Generation of Popular RCP Series!

Designed for ease of use and versatility, the new Robo Cylinder RCP2 series features high performance, high rigidity, and high functionality. Two new width sizes—73mm Slider Type and 35mm Rod Type—have been added to the lineup, giving you more flexibility for your application needs. In addition, significant technological enhancements have been made in all areas, such as lower operating noise, ease of maintenance, and multi-point positioning of up to 64 points.

The RCP2 series can help raise your production efficiency level and **save you 67%** in running costs compared with pneumatic cylinders. If you plan to upgrade to the new RCP2, there are certain changes in dimensions and controller specifications which you will need to be aware of. In particular, please pay attention to the following differences.



RCP · RCP2 Differences

1 Actuator
- Slider Type Dimensions
- Rod Type Dimensions

2 Controller
- General Specifications
- Power Supply Terminal & Emergency Stop Specifications
- PIO Interface
- Dimensions

3 Other
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- CE Mark
- Controller Links
- PC Software, Teaching Pendant
- User Parameters

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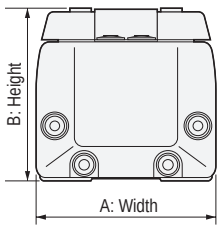
Slider Type

1. Height & Width

No change in height & width dimensions.



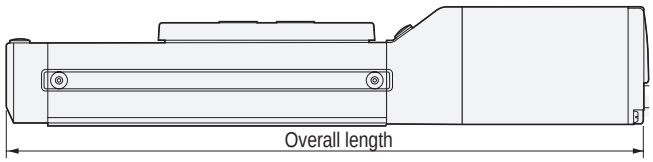
(mm)

	RCP A x B	RCP2 A x B
SA5	52 x 50	⇦
SA6	58 x 53	⇦
SA7	---	73 x 64

Note: (⇦) indicates same figure as to the left.
(---) indicates that dimensions are not available.

2. Overall Length

Overall length has decreased by 28mm or 33mm.



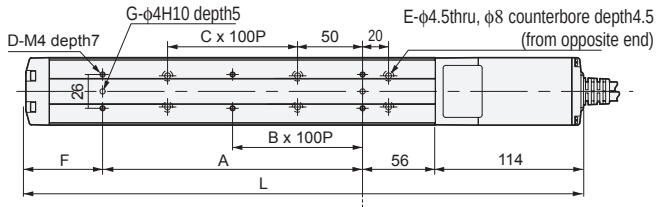
(mm)

	RCP	RCP2	Difference
SA5	ST + 257	ST + 229	- 28mm
SA6	ST + 283	ST + 250	- 33mm
SA7	---	ST + 303	

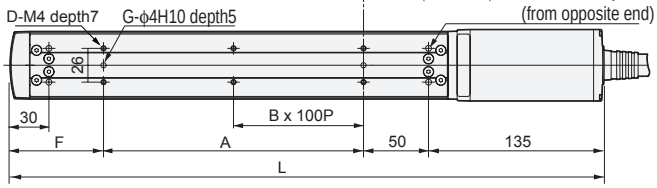
Note: (---) indicates that dimensions are not available.

3. Specifications for Mounting the Base

RCP2-SA5



RCP-SA5

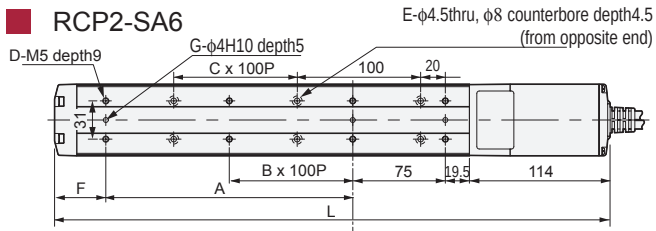


Upper: RCP2-SA5
Lower: RCP-SA5

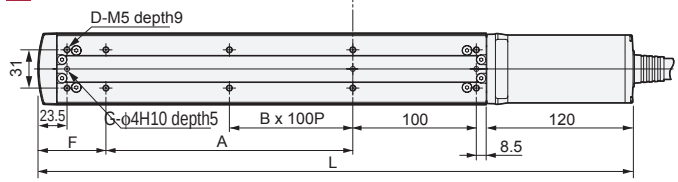
(mm)

Stroke	50	100	150	200	250	300	350	400	450	500
L	279	329	379	429	479	529	579	629	679	729
	307	357	407	457	507	557	607	657	707	757
A	73	100	100	200	200	300	300	400	400	500
	0	100	100	200	200	300	300	400	400	500
B	0	0	0	1	1	2	2	3	3	4
	0	0	0	1	1	2	2	3	3	4
C	0	0	1	1	2	2	3	3	4	4
	---	---	---	---	---	---	---	---	---	---
D	4	4	4	6	6	8	8	10	10	12
	2	4	4	6	6	8	8	10	10	12
E	4	4	6	6	8	8	10	10	12	12
	---	---	---	---	---	---	---	---	---	---
F	36	59	109	59	109	59	109	59	109	59
	122	72	122	72	122	72	122	72	122	72
G	2	2	2	2	2	2	2	2	2	2
	1	2	2	2	2	2	2	2	2	2

RCP2-SA6



RCP-SA6



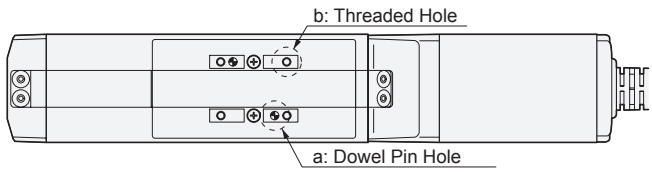
Upper: RCP2-SA6
Lower: RCP-SA6

(mm)

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	300	350	400	450	500	550	600	650	700	750	800	850
	333	383	433	483	533	583	633	683	733	783	833	883
A	0	100	100	200	200	300	300	400	400	500	500	600
	0	100	100	200	200	300	300	400	400	500	500	600
B	0	0	0	1	1	2	2	3	3	4	4	5
	0	0	0	1	1	2	2	3	3	4	4	5
C	0	0	1	1	2	2	3	3	4	4	5	5
	---	---	---	---	---	---	---	---	---	---	---	---
D	4	6	6	8	8	10	10	12	12	14	14	16
	6	8	8	10	10	12	12	14	14	16	16	18
E	4	4	6	6	8	8	10	10	12	12	14	14
	---	---	---	---	---	---	---	---	---	---	---	---
F	91.5	41.5	91.5	41.5	91.5	41.5	91.5	41.5	91.5	41.5	91.5	41.5
	104.5	54.5	104.5	54.5	104.5	54.5	104.5	54.5	104.5	54.5	104.5	54.5
G	2	3	3	3	3	3	3	3	3	3	3	3
	3	3	3	3	3	3	3	3	3	3	3	3

3. Specifications for Mounting to the Slider

No change in specifications for mounting to the slider.



(mm)

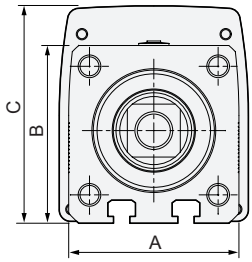
	a		b	
	RCP	RCP2	RCP	RCP2
SA5	ϕ4H10 depth6	⇦	M4 depth9	⇦
SA6	ϕ4H10 depth6	⇦	M5 depth9	⇦
SA7	---	ϕ5H10 depth10	---	M5 depth10

Note: (⇦) indicates same figure as to the left.
(---) indicates that dimensions are not available.

Rod Type

1. Height & Width

B and C heights have increased by 2mm and 1.5mm, respectively.



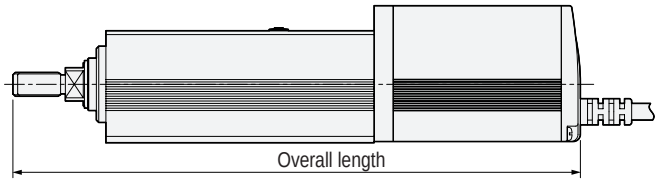
(mm)

	RCP		RCP2	
	A x B	C	A x B	C
RXA	---	---	35 x 35	43
RSA	45 x 45	56	45 x *47*	*57.5*
RMA	64 x 64	75	⇦	⇦

Note: *Italics* indicate changes for latest version.
(⇦) indicates same figure as to the left.
(---) indicates that dimensions are not available.

2. Overall Length

Overall length has decreased by 6mm or 8mm.

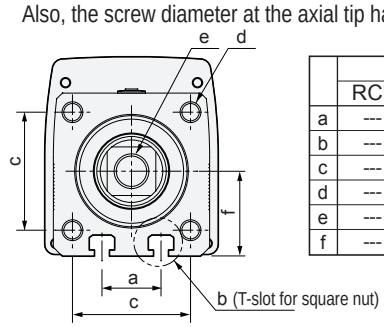


(mm)

	RCP	RCP2	Difference
RXA	---	ST+192	
RSA	ST+196	ST+188	- 8mm
RMA	ST+258	ST+252	- 6mm

3. Mounting Specifications

Square nut for T-slot at the bottom of the RSA base has been changed from M3 to M4.
Also, the screw diameter at the axial tip has been changed.



(mm)

	RXA	
	RCP	RCP2
a	---	---
b	---	---
c	---	28
d	---	M4 depth10
e	---	M10 x 1.25
f	---	17.5

	RSA	
	RCP	RCP2
a	17	⇦
b	M3	*M4*
c	34	⇦
d	M6 depth12	⇦
e	M14 x 1.5	*M10 x 1.25*
f	22.5	24.5

	RMA	
	RCP	RCP2
a	25	⇦
b	M6	⇦
c	50	⇦
d	M8 depth15	⇦
e	M18 x 1.25	*M14 x 1.5*
f	32	⇦

Note: *Italics* indicate changes for latest version.
(⇦) indicates same figure as to the left.
(---) indicates that dimensions are not available.

2. Controller

ROBO CYLINDER

1. General Specifications

	RCA-S	RCP2-C/CG
Power Voltage	DC24V ±10%	DC24V ±10%
Power Supply Current	Maximum 2.5A	Maximum 2A
Environment		
Operating Temperature	0~50°C	0~40°C
Operating Humidity	95%RH or less	85%RH or less (without condensation)
Operating Enviroment	Free from corrosive gases	Free from corrosive gases
Storage Temperature	---	-10~65°C
Storage Humidity	---	90%RH or less (without condensation)
Vibration Resistance	---	10~57 Hz, each XYZ direction Movement range: 0.035mm (continuous) 0.075mm (momentary)
IP Rating	IP20	IP20
Unit Weight	1260 g	less than 300 g
Number of Positions	16	Up to 64
Memory System	EEPROM	EEPROM

2. Power Supply Terminal & Emergency Stop Specifications

RCA-S

Name	Description
(#)	Field Ground
0V	Ground for 24V Power Source
24V	DC24V Power Source
EMG	Terminals for Emergency Stop Connections
RDY	Ready Contact (Relay, 0.5 A)

RCP2-C/CG

Name	Description
S1	Teaching Pendant emergency stop connection becomes active when the Port Switch is
S2	ON. When the Port Switch is OFF the connection is shorted internally.
MPI	Motor Power Shutdown Terminals (for EMG)
MPO	
24V	24V Power Supply
N	0V Power Supply
F.G	Field Ground (EMG for RCP2-C type controller)

RCP2-C Note: During Emergency Stop, the "C" type controller will cut motor power through an internal relay. Please do not remove the jumper wire between the MPI and MPO terminals.
F.G becomes the EMG which is the input terminal for the emergency stop signal (see manual for details).
RCP2-CG Note: The "CG" type controller requires an external relay at the "MPI" and "MPO" terminals for EMG.
S1,S2 Note: The "S1, S2" connection corresponds to the emergency stop of the Teaching Pendant.

3. PIO Interface

RCA-S

Pin #	Select'n	Signal Name		
1	P24	+24V	Connect to 24V Power Supply	
2	N	0V	Connect to 0V Power Supply	
3	Input	Start	Start Signal Input	
4		Command Position 1	Select Position Number Inputs	
5		Command Position 2		
6		Command Position 4		
		Command Position 8		
8		Hold *	Immediately Stops a Moving Actuator	
9	Output	Complete Position 1	Positioning Complete Outputs. During Alarm State, Alarm Number will be Displayed.	
10		Complete Position 2		
11		Complete Position 4		
12		Complete Position 8		
13		Positioning Complete	Positioning Complete Output	
14		Homing Complete	Homing Complete Output	
15		Zone	Zone Output (Parameter defined)	
16		Alarm *	Alarm Output (Normally on)	
17		Emergency Stop *	Emergency Stop Output (Normally on)	

RCP2-C/CG

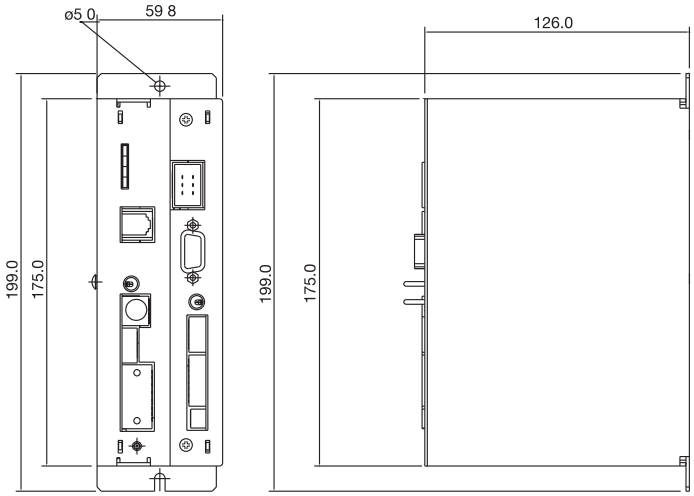
Same as Original RCA (settings when shipped)

			Parameters (functions differ according to parameter settings)				
Pin #	Select'n	Signal	0	1	2	3	4
1A	P24	+24V					
2A	N	0V					
3A	Input	IN00	CSTR	PC1	PC1	PC1	PC1
4A		IN01	PC1	PC2	PC2	PC2	PC2
5A		IN02	PC2	PC4	PC4	PC4	PC4
6A		IN03	PC4	PC8	PC8	PC8	PC8
7A		IN04	PC8	---	PC16	---	MODE
8A		IN05	---	STP *	PC32	STP *	STP */JOG+
9A		IN06	---	CSTR	CSTR	CSTR	CSTR/PWRT
10A		IN07	STP *	HOME	HOME	HOME	HOME
11A		IN08	---	SON	STP *	SON	SON
12A		IN09	---	RES	RES	RES	RES/JOG+
13A			(Reserved)				
1B			(Reserved)				
2B			(Reserved)				
3B	Output	OUT00	PM1	PM1	PM1	PM1	PM1
4B		OUT01	PM2	PM2	PM2	PM2	PM2
5B		OUT02	PM4	PM4	PM4	PM4	PM4
6B		OUT03	PM8	PM8	PM8	PM8	PM8
7B		OUT04	PEND	ZONE	PM16	ZONE1	MODES
8B		OUT05	HEND	MOVE	PM32	ZONE2	MOVE
9B		OUT06	ZONE	PEND	PEND	PEND	PEND/WEND
10B		OUT07	ALM *	HEND	HEND	HEND	HEND
11B		EMGS *	(Reserved: Emergency Stop Status)				
12B	Output	OUT08	---	SRDY	RUN	SRDY	SRDY
13B		OUT09	---	ALM *	ALM *	ALM *	ALM *

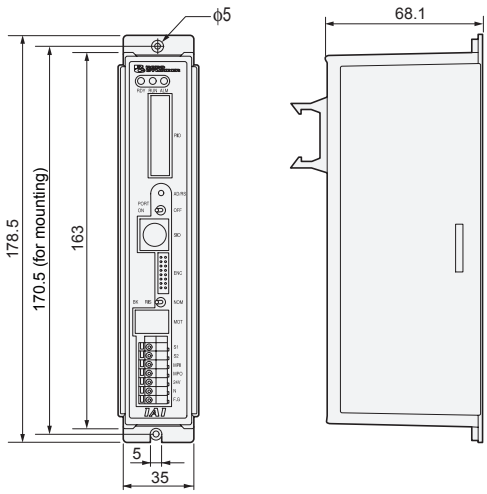
Note: There are 5 patterns available for use depending on the settings of the RCP2 PIO parameters. Version "0" of the PIO interface described above is completely the same as that for the RCA PIO interface. Since the connectors are the same, it is possible to do a controller swap if the "0" settings are used. (It will not be necessary to rewire the PIO).

4. Controller Dimensions

RCA-S



RCP2-C/CG



3. Other

1. Absolute Specifications
- Absolute specifications are available for RCP and RCP2.

2. Emergency Stop Specifications
- There is an emergency stop relay inside the RCP controller.
- With the RCP2, there is a version with the emergency stop relay inside the controller and another one without (Global specifications). The version without an internal relay requires the customer to install an external safety circuit (Safety Category 2), which shuts down power to the motor.

3. Controller Links
- The controller link method has been changed. Please refer to the operating manual for details.

4. Compatability of PC Software & Teaching Pendant
- The software for RCP has been upgraded. Please use the RCP2 software.
- The same is true for the RCP teaching pendant.

5. User Parameters
- The user parameters have been changed. Please refer to the operating manual for details.

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