RoboCylinder Series RCP6(S)

Slider / Rod / Radial / Table Type with Battery-less Absolute Encoder and External or Built-in Controller

Slider Type: SA

(*) Model specifications of standard and cleanroom straight motor slider type are the same.

Series	Model (*)	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Payload (kg)	
									Horizontal	Vertical
RCP6 RCP6S RCP6CR RCP6SCR	Straight Motor Spec. Cleanroom Spec.	SA4C		40mm	16	±0.01	50~500 (50mm increments)	1260	7	1.5
					10	±0.01 [±0.005]		785	12	3
					5			390	14	5.5
					2.5			195	18	12
		SA6C		58mm	20	±0.01	50~800 (50mm increments)	1440 <1280>	15	1
					12	±0.01 [±0.005]		900	28	2.5
					6			450	32	6
					3			225	40	16
		SA7C		70mm	24	±0.01		1200	37	3
					16			980 <840>	46	8
					8	±0.01 [±0.005]		490	51	16
					4			245 <210>	55	25
		SA8C		85mm	30	±0.01	50~1100 (50mm increments)	1200 <850>	28	3
					20			1000 <800>	60	4
					10	±0.01 [±0.005]		500	70	25
					5			250	80	55
RCP6 RCP6S	Side-mounted Motor Spec.	SA4R		40mm	16	±0.01	50~500 (50mm increments)	1260 <1120>	7	1.5
					10			785	12	3
					5			390	14	5.5
					2.5			195	18	12
		SA6R		58mm	20	±0.01	50~800 (50mm increments)	1280 <1120>	15	1
					12			900 <800>	28	2.5
					6			450	32	6
					3			225	40	14
		SA7R		70mm	24	±0.01		1080	37	3
					16			840 <700>	46	8
					8			420	51	16
					4			210	55	25
		SA8R		85mm	30	±0.01	50~1100 (50mm increments)	1200 <850>	26	3
					20			1000 <800>	55	4
					10			500 <450>	70	25
					5			250	80	55

Values in brackets < > are for vertical use. Values in brackets [ ] are for high-precision specification.

Wide Slider Type: WSA

(*) Model specifications of standard and cleanroom straight motor wide slider type are the same.

Series	Model (*)	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Payload (kg)	
									Horizontal	Vertical
RCP6 RCP6S RCP6CR RCP6SCR	Straight Motor Spec. Cleanroom Spec.	WSA10C		100mm	16	±0.01	50~500 (50mm increments)	840	4	-
					10	±0.01 [±0.005]		610	15	-
					5			390 <350>	28	3
					2.5			195 <175>	40	10
		WSA12C		120mm	20	±0.01	50~800 (50mm increments)	800	12	-
					12	±0.01 [±0.005]		600	25	-
					6			450 <400>	40	9
					3			225	60	18
		WSA14C		140mm	24	±0.01		700	25	-
					16			560	50	-
					8	±0.01 [±0.005]		420 <350>	65	14
					4			210 <175>	80	26
		WSA16C		160mm	20	±0.01	50~1100 (50mm increments)	720	50	-
					10	±0.01 [±0.005]		450 <240>	70	15
					5			195 <170>	100	50
RCP6 RCP6S	Side-mounted Motor Spec.	WSA10R		100mm	16	±0.01	50~500 (50mm increments)	840	4	-
					10			610	15	-
					5			390 <305>	28	3
					2.5			195 <175>	40	10
		WSA12R		120mm	20	±0.01	50~800 (50mm increments)	800	12	-
					12			600	25	-
					6			450 <400>	40	9
					3			225	60	16
		WSA14R		140mm	24	±0.01		700	25	-
					16			560	50	-
					8			420 <350>	65	14
					4			175	80	26
		WSA16R		160mm	20	±0.01	50~1100 (50mm increments)	600	30	-
					10			365 <210>	70	15
					5			170 <145>	100	45

Values in brackets < > are for vertical use. Values in brackets [ ] are for high-precision specification.

Product Lineup

Rod Type: RA

Series	Model	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Push Force (N)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical
RCP6 RCP6S	Straight Motor Spec.	RA4C		40mm	16	±0.01	50~200 (50mm increments)	840	48	6	1.5
					10			700	77	15	2.5
					5			350	155	28	5
					2.5			175	310	40	10
		RA6C		58mm	20	±0.01	50~300 (50mm increments)	800	56	6	1.5
					12			700	93	25	4
					6			450	185	40	10
					3			225	370	60	20
		RA7C		70mm	24	±0.01	50~300 (50mm increments)	860 <640>	182	20	3
					16			700 <560>	273	50	8
					8			420 <350>	547	60	18
					4			210 <175>	1094	80	28
		RA8C		85mm	20	±0.01	50~300 (50mm increments)	600 <450>	500	30	5
					10			300 <250>	1000	60	40
					5			150	2000	100	70
	Side-mounted Motor Spec.	RA4R		40mm	16	±0.01	50~200 (50mm increments)	840	48	5	1
					10			610	77	12	2.5
					5			350	155	25	5
					2.5			175	310	40	10
		RA6R		58mm	20	±0.01	50~300 (50mm increments)	800	56	6	1.5
					12			700	93	25	4
					6			450	185	40	10
					3			225	370	60	20
		RA7R		70mm	24	±0.01	50~300 (50mm increments)	800 <640>	182	20	3
					16			560	273	50	8
					8			420 <350>	547	60	18
					4			175	1094	80	28
		RA8R		85mm	20	±0.01	50~300 (50mm increments)	400	500	30	5
					10			200	1000	60	40
					5			100	2000	100	70

Values in brackets < > are for vertical use.

Radial Cylinder: RRA

Series	Model	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Push Force (N)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical
RCP6 RCP6S	Straight Motor Spec.	RRA4C		40mm	16	±0.01	60~410 (50mm increments)	1120	48	7	1.5
					10			700	77	18	3
					5			350	155	28	6
					2.5			175	310	40	10
		RRA6C		58mm	20	±0.01	65~415 (50mm increments)	800	56	6	1.5
					12			700	93	25	4
					6			450	185	40	10
					3			225	370	60	20
		RRA7C		70mm	24	±0.01	70~520 (50mm increments)	860 <640>	182	20	3
					16			700 <560>	273	50	8
					8			420	547	60	18
					4			210	1094	80	28
		RRA8C		85mm	20	±0.01	50~700 (50mm increments)	600 <450>	500	30	5
					10			300 <250>	1000	60	40
					5			150	2000	100	70
	Side-mounted Motor Spec.	RRA4R		40mm	16	±0.01	60~410 (50mm increments)	840	48	5	1
					10			610	77	13	2.5
					5			350	155	28	5
					2.5			175	310	40	10
		RRA6R		58mm	20	±0.01	65~415 (50mm increments)	800	56	6	1.5
					12			700	93	25	4
					6			450	185	40	10
					3			225	370	60	20
		RRA7R		70mm	24	±0.01	70~520 (50mm increments)	860 <640>	182	20	3
					16			560	273	50	8
					8			420 <350>	547	60	18
					4			175	1094	80	28
		RRA8R		85mm	20	±0.01	50~700 (50mm increments)	400	500	30	5
					10			200	1000	60	40
					5			100	2000	100	70

Values in brackets < > are for vertical use.

Product Lineup

Wide Radial Cylinder: WRA

Series	Model	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Push Force (N)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical
RCP6 RCP6S	Straight Motor Spec.	WRA10C		100mm	16	±0.01	50~500 (50mm increments)	700	48	4	-
					10			525	77	14.5	-
					5			350 <260>	155	28	5
					2.5			175	310	40	10
		WRA12C		120mm	20	±0.01	50~500 (50mm increments)	800	56	7.5	-
					12			560	93	30	-
					6			400 <340>	185	55	7.5
					3			225 <200>	370	70	17.5
		WRA14C		140mm	24	±0.01	50~600 (50mm increments)	630	182	25	-
					16			560	273	50	-
					8			420 <210>	547	65	15
					4			210 <130>	1094	85	25
		WRA16C		160mm	20	±0.01	50~800 (50mm increments)	450	500	30	-
					10			240 <200>	1000	60	36.5
					5			130 <100>	2000	100	70
	Side-mounted Motor Spec.	WRA10R		100mm	16	±0.01	50~500 (50mm increments)	700	48	4	-
					10			525	77	11.5	-
					5			350 <260>	155	28	5
					2.5			175 <150>	310	40	10
		WRA12R		120mm	20	±0.01	50~500 (50mm increments)	800	56	7.5	-
					12			560	93	30	-
					6			400 <280>	185	55	7.5
					3			225 <200>	370	70	17.5
		WRA14R		140mm	24	±0.01	50~600 (50mm increments)	630	182	25	-
					16			560	273	50	-
					8			350 <210>	547	65	15
					4			175 <130>	1094	85	25
		WRA16R		160mm	20	±0.01	50~800 (50mm increments)	420	500	30	-
					10			240 <180>	1000	60	34.5
					5			120 <100>	2000	100	63

Values in brackets < > are for vertical use.

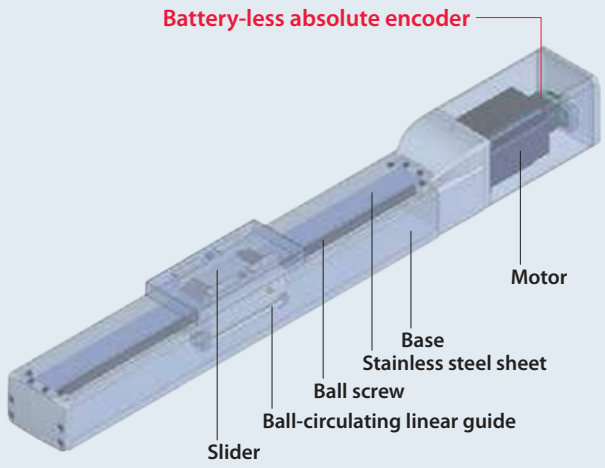
Table Type: TA

Series	Model	Type	External View	Body Width (mm)	Lead (mm)	Positioning Repeatability (mm)	Stroke (mm)	Max. Speed (mm/s)	Max. Payload (kg) Horizontal	Max. Payload (kg) Vertical
RCP6 RCP6S	Straight Motor Spec.	TA4C		40mm	16 (*)	±0.01	SB Spec: 25~150 (25mm increments) DB Spec: 40, 65, 90, 140, 190, 240	980 <700>	3[-]	1[-]
					10			785 <700>	4[8]	2.5[2.5]
					5			390	5[10]	5[5]
					2.5			195	5[10]	10[10]
		TA6C		58mm	20 (*)	±0.01	SB Spec: 25~200 (25mm increments) DB Spec: 45, 70, 95, 120~320 (50mm increments)	1120 <800>	5[-]	1[-]
					12			800[800<680>]	8[15]	3[3]
					6			400	10[20]	6[6]
					3			200	10[20]	12[12]
		TA7C		70mm	24 (*)	±0.01	SB Spec: 25~300 DB Spec: 40, 65, 90~390 (50mm increments)	1080 <860>	10[-]	3[-]
					16			700 <560>	12[25]	7[7]
					8			420 <350>	15[30]	16[16]
					4			210	15[30]	20[24]
	Side-mounted Motor Spec.	TA4R		40mm	16 (*)	±0.01	SB Spec: 25~150 (25mm increments) DB Spec: 40, 65, 90, 140, 190, 240	980 <700>	3[-]	1[-]
					10			785<700>[700<525>]	4[8]	2.5[2.5]
					5			390	5[10]	5[5]
					2.5			195	5[10]	10[10]
		TA6R		58mm	20 (*)	±0.01	SB Spec: 25~200 (25mm increments) DB Spec: 45, 70, 95, 120~320 (50mm increments)	1120 <800>	5[-]	1[-]
					12			800 <680>	8[15]	3[3]
					6			400	10[20]	6[6]
					3			200	10[20]	12[12]
		TA7R		70mm	24 (*)	±0.01	SB Spec: 25~300 (25mm increments) DB Spec: 40, 65, 90~390 (50mm increments)	1080 <860>	10[-]	3[-]
					16			700 <560>	12[25]	7[7]
					8			420 <350>	15[30]	16[16]
					4			210	15[30]	20[24]

(*) Only single-block (SB) specification. Values in brackets < > are for vertical use. Values in brackets [ ] are for the double-block (DB) specification.

Shape Types and Features

Slider Type: SA



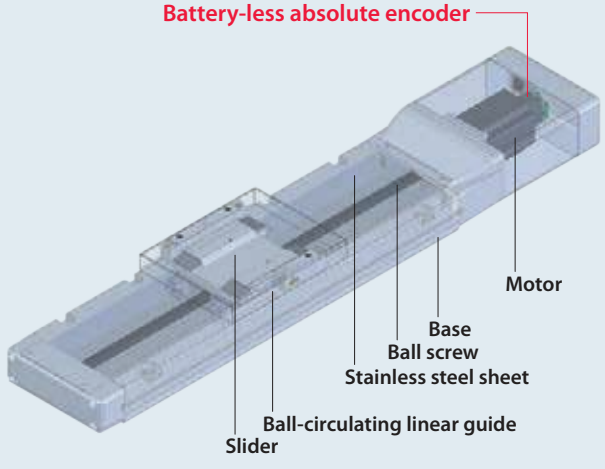
Features

- With a base integrated ball circulating linear guide, it will be able to deal with moments in the pitching (Ma), yawing (Mb), and rolling (Mc) directions.
- By combining multiple axes, two-dimensional and three-dimensional operations are possible.

Usage examples

- Switching from rod-less air cylinder
- Switching from self-made equipment with ballscrew, guide, and motor.
- Using as base and movable axes of the cartesian system.
- Work such as assembly, inspection, and measuring length that require high accuracy.

Wide Slider Type: WSA



Features

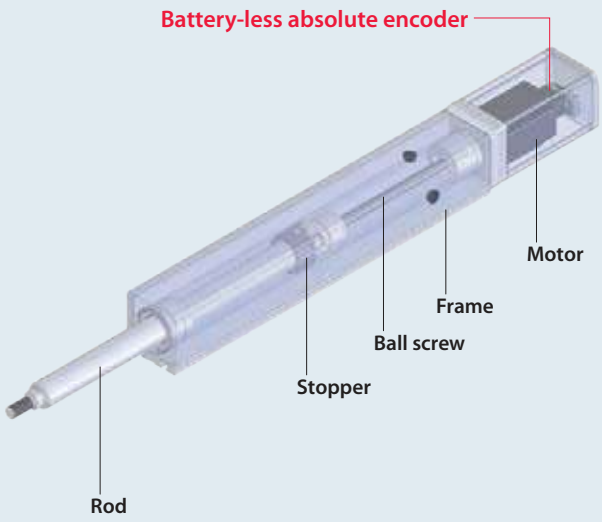
- Perfect for the base axis of the cartesian system. With a built-in ball circulating linear guide inside its wide body, it will be able to deal with moments in the pitching (Ma), yawing (Mb), and rolling (Mc) directions.
- 2nd axis can be installed onto the wide slider type without removing its stainless steel sheet.
- By combining multiple axes, two-dimensional and three-dimensional operations are possible.

Usage examples

- Switching from rod-less air cylinder
- Switching from self-made equipment with ballscrew, guide, and motor.
- Work such as assembly, inspection, and measuring length that require high accuracy.

Shape Types and Features

Rod Type: RA



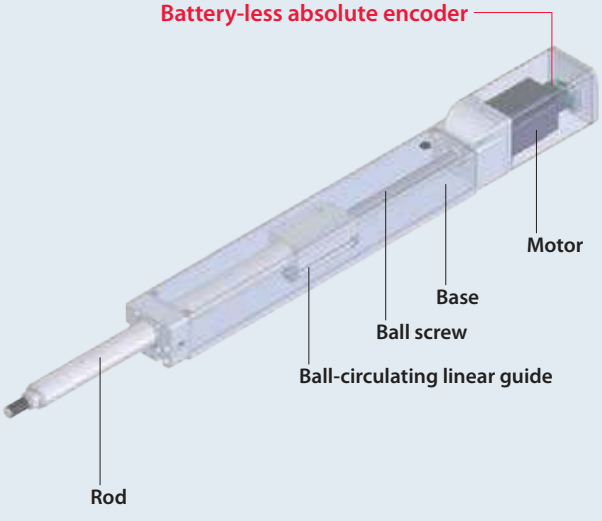
Features

▶ This is a type that does not build in a linear guide inside of the actuator. Of the RCP6 rod-types that resemble air cylinders, this is the least expensive model.

Usage examples

- Switching from rod type air cylinder
- Push force combined with a guide
- Inserting, press-fitting, or riveting a work
- Using as a lifter or a work piece unloader

Radial Cylinder: RRA



Features

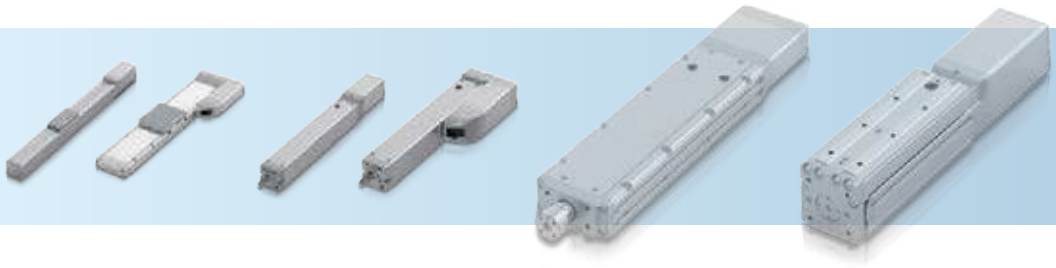
▶ Since ball circulating linear guides are built in, it can take radial loads and moment loads. The vibration upon stopping can be suppressed and a long stroke of up to 700mm has become possible. In addition, product quality has significantly increased with a non-rotating rod precision of "0 degree" with a no load condition.

▶ The equipment will be compact since an external guide is unnecessary.

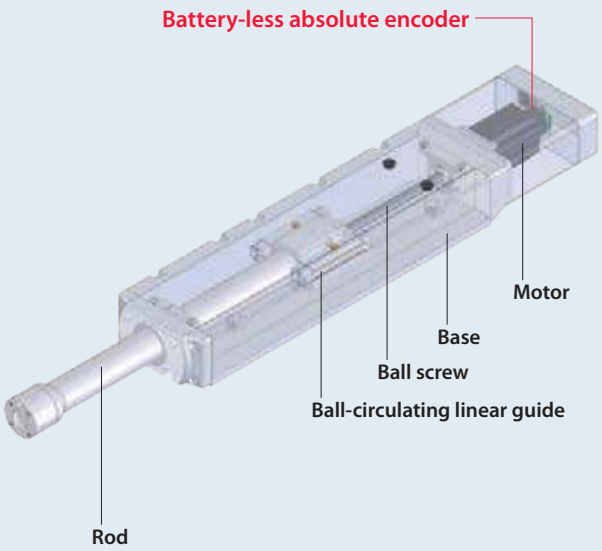
Usage examples

- Inserting, press-fitting, or riveting a work
- Using as a lifter or a work piece unloader
- Using as a movable vertical axis of the cartesian system
- Transferring or positioning a lightweight object

Shape Types and Features



Wide Radial Cylinder: WRA



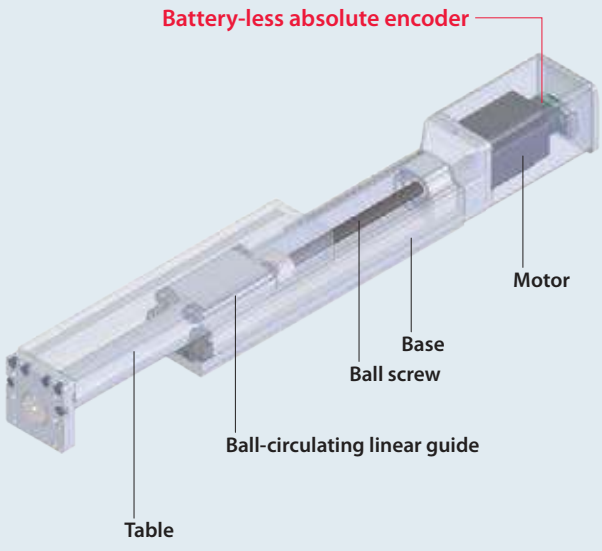
Features

- Due to a wide body and high-rigidity rod, it can deal with up to four times the allowable torque on rod tip compared to a standard radial cylinder. Due to a high dynamic allowable moment, it can be utilized for uses such as tightening screws and stirring that have large load torque.
- The equipment will be compact since an external guide is unnecessary.

Usage examples

- Inserting, press-fitting, or riveting a work
- Tightening a screw or stirring
- Using as a lifter or a work piece unloader
- Using as a movable vertical axis of the cartesian system
- Transferring or positioning a lightweight object
- Using as a base axis of the pick-and-place unit

Table Type: TA



Features

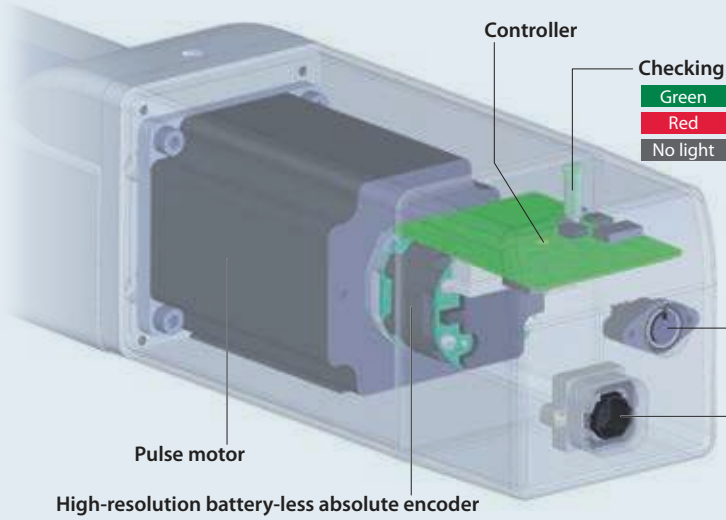
- Work piece can be installed using the tapped mounting holes on the top surface of the table and the tip plate.
- With a built-in ball circulating linear guide in the table section, it will be able to deal with moments in the pitching (Ma), yawing (Mb), and rolling (Mc) directions.
- High-rigidity specification (double-block) can be selected as an option. With two guide blocks, the dynamic allowable moment increases by up to 4.3 times in the pitching (Ma) and yawing (Mb) directions.

Usage examples

- Switching from table type air cylinder
- Clamping tasks that pinch work from both sides
- Positioning tasks that hold work with the front side of the table
- A function for pushing works on a conveyor to the side
- Using as a movable vertical axis of the cartesian system

Built-in Controller Type

RCP6S



RCP6S Peripheral Equipment

*Gateway unit or PLC connection unit is required to operate the RCP6S.

1 Gateway Unit

▶Compatible field networks

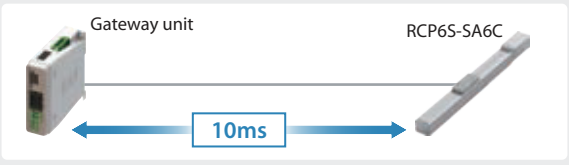
The gate unit can be used with the following 6 types of field networks.

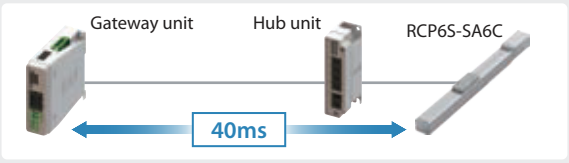
CC-Link / DeviceNet / PROFIBUS / PROFINET / EtherNet/IP / EtherCAT

▶4 RCP6S' or 4 hub units can be connected to a gateway unit.

▶Brake can be forcibly released by supplying power to the brake release input terminal of external power input for each channel. (In the case that the actuator is directly connected)

▶The communication time when RCP6S is connected directly is 10ms, while it is 40ms when using the RCP6S with a hub unit. There will be no change in communication time when the number of connected actuators is increased.





2 Hub Unit

▶A hub unit is a signal distribution unit used by combining with a gateway unit.

▶A gateway unit and a hub unit, or a hub unit and a RCP6 are each connected with a serial communication.

▶A maximum of 4 RCP6S' can be connected.

▶By operating the brake release switch, ON/OFF actions of the brake can be performed.

3 PLC Connection Unit

▶A PLC connection unit is a unit to be moved with serial communication from a master controller or a PLC by combining it with RCP6S.

▶A RCP6S and a PLC connection unit can be connected with a cable with connectors.

Selectable Built-in or Separate Controller Type for all Models

The advantages of a built-in controller type.

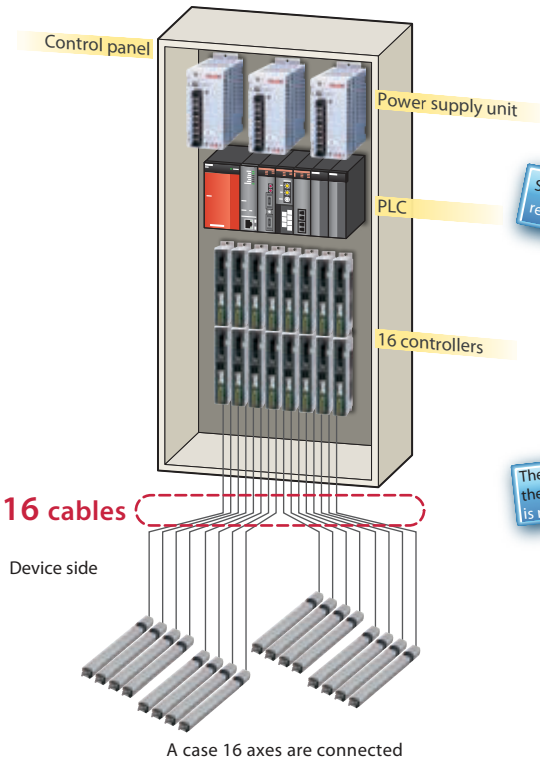
▶ Smaller control panel.

▶ Simple wiring.

▶ Less maintenance parts necessary because wires are being shared.

By using the gateway unit and the hub unit(s), it is possible to reduce the size of the control panel and a number of cables.

Control Panel for Standard Controller

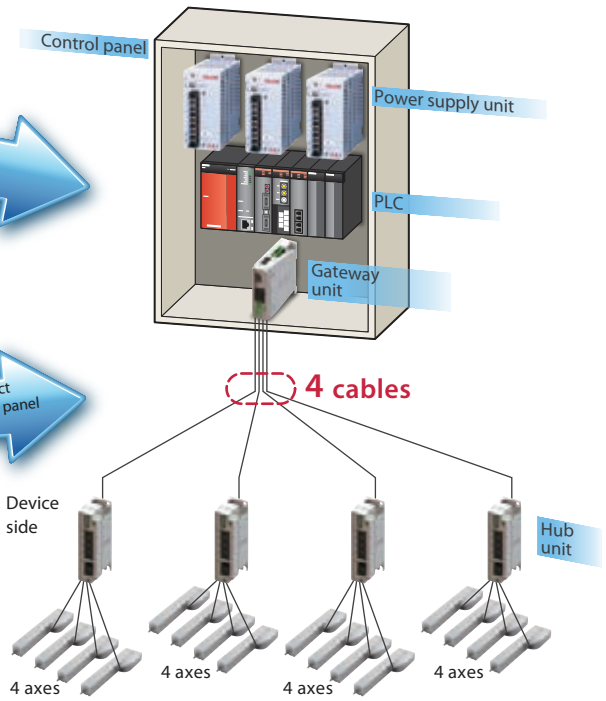


A case 16 axes are connected

Size of the control panel reduced to one third

The number of cables to connect the equipment and the control panel is reduced from 16 to 4.

Control Panel for the RCP6S Built-in Controller Actuator



* Maximum cable length between the gateway unit and RCP6S is 20m.
If there is a hub unit in between, the maximum length is still 20m.
The cable length from the gateway unit to the hub unit needs to be 10m or less.

Applicable External Controllers for RCP6 (Standard/Separate Controller Type)

PCON-CB/CFB

Single-axis Position Controller

Max. number of controlled axes: 1 axis

Max. positioning points: 512 points (for network spec, 768 points)

MCON-C

Multi-axis Position Controller

Max. number of controlled axes: 8 axes

Max. positioning points: 256 points

* Max. number of controlled axes is 4 axes when connected to RCP6.

MSEL

Multi-axis Program Controller

Max. number of controlled axes: 4 axes

Max. positioning points: 30000 points

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