



# RCP4 Actuator Slider Type/Rod Type First Step Guide Fourth Edition

Thank you for purchasing our product.

Make sure to read the Safety Guide and detailed Instruction Manual (CD/DVD) included with the product in addition to this First Step Guide to ensure correct use.

This Instruction Manual is original.

**Warning :** Operation of this equipment requires detailed installation and operation instructions which are provided on the CD/DVD Manual included in the box this device was packaged in. It should be retained with this device at all times.  
A hard copy of Manual can be requested by contacting your nearest IAI Sales Office listed at the back cover of the Instruction Manual or on the First Step Guide.

- Using or copying all or part of this Instruction Manual without permission is prohibited.
- The company names, names of products and trademarks of each company shown in the sentences are registered trademarks.

## Product Check

This product is comprised of the following parts if it is of standard configuration.

If you find any fault in the contained model or any missing parts, contact us or our distributor.

### 1. Parts (The option is excluded.)

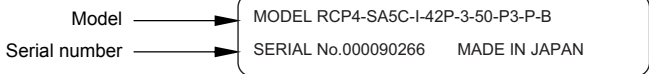
| No.         | Part Name                     | Model                              | Quantity | Remarks                 |
|-------------|-------------------------------|------------------------------------|----------|-------------------------|
| 1           | Actuator Main Body            | Refer to How to read the model No. | 1        |                         |
| Accessories |                               |                                    |          |                         |
| 2           | Motor • Encoder Cable*1       |                                    | 1        |                         |
| 3           | Home Position Marking Sticker |                                    |          | Packaged in slider type |
| 4           | Nut                           |                                    |          | Refer to list below     |
| 5           | First Step Guide              |                                    | 1        |                         |
| 6           | Instruction Manual (DVD)      |                                    | 1        |                         |
| 7           | Safety Guide                  |                                    | 1        |                         |

\*1 Please refer to the wiring layout for the enclosed motor cable and encoder cable.

### (List of Included Nut Type)

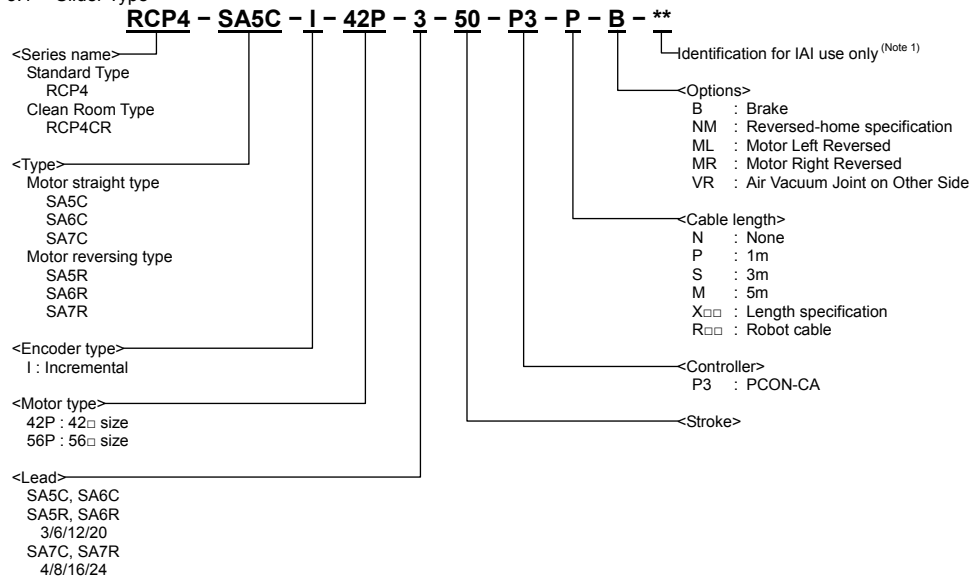
| Model No.       | Nut<br>M10×1.25 | Nut<br>M14×1.5 |
|-----------------|-----------------|----------------|
| RCP4-RA5C, RA5R | 1               |                |
| RCP4-RA6C, RA6R |                 | 1              |

### 2. How to read the model plate



### 3. How to read the Model No.

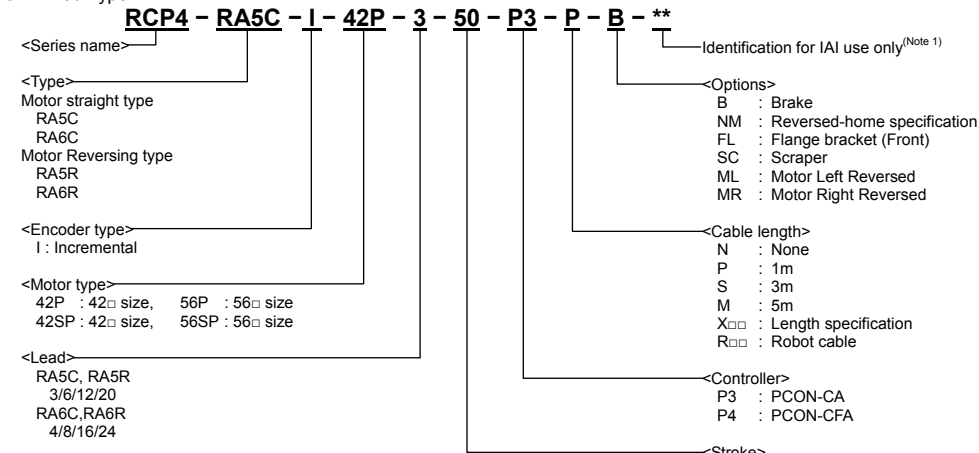
#### 3.1 Slider Type



[Refer to the catalog or Instruction Manual (DVD) for specification details.]

Note 1 Identification for IAI use only : It may be displayed for IAI use. It is not a code to show the model type.

#### 3.2 Rod Type



[Refer to the catalog or Instruction Manual (DVD) for specification details.]

Note 1 Identification for IAI use only : It may be displayed for IAI use. It is not a code to show the model type.

(Note) The motor types 42SP and 56SP are equipped with a brake in standard. There is no option without brake.

## Precautions in Handling

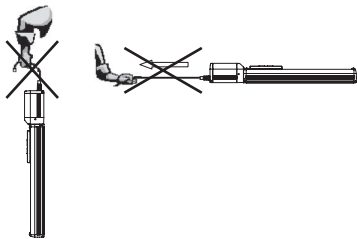
### 1. Handling of the Packed Product

Take the greatest care in transporting the product, not to bump or drop it.

- An operator should never attempt to carry a heavy package on his own.
- When setting down the package temporarily, keep it horizontal.
- Do not step on the package.
- Do not place on the package a heavy object that may cause the box deformation or apply stress on it.

### 2. Handling of the Unpacked Product

Do not transport the actuator by holding the cable or move it by pulling the cable.



- When the actuator is taken out from the package and handled, hold the base section.
- When the stainless sheet is attached, never hold the stainless sheet section.
- When transporting the actuator, be careful not to hit it against other objects. In particular, pay attention to the side cover.
- Do not give any unnatural force to any of the sections in the actuator. In particular, pay attention not to apply any force on the stainless steel sheet if the actuator is equipped with the stainless steel sheet.

## Environments for Installation, Storage and Preservation

### 1. Installation Environment

Please attempt to avoid installing the product to such places as listed below.

It is generally the environment where a worker can work without any protection gear.

Also, make sure to keep enough space necessary for maintenance work.

- Place where exposed to radiant heat from a huge heat source such as heat treatment
- Place where the ambient temperature goes out of the applicable range from 0 to 40°C
- Place where condensation would occur due to sudden temperature change
- Place where the relative humidity exceeds 85% RH
- Place where exposed to the direct sunlight
- Place where corrosive gas or flammable gas exist
- Place where it contains a lot of dust, salt or iron (Outside of an ordinary assembly plant)
- Place where water, oil (includes oil mist and cutting fluid) or chemical is splashed
- Place where the product main body receives vibration or hit impact

Make sure to have a treatment for blocking when using in the following conditions:

- Place where noise is generated by such facts as static electricity
- Place where exposed to the influence of strong electric or magnetic field
- Place where exposed to the influence of ultraviolet or radiant rays

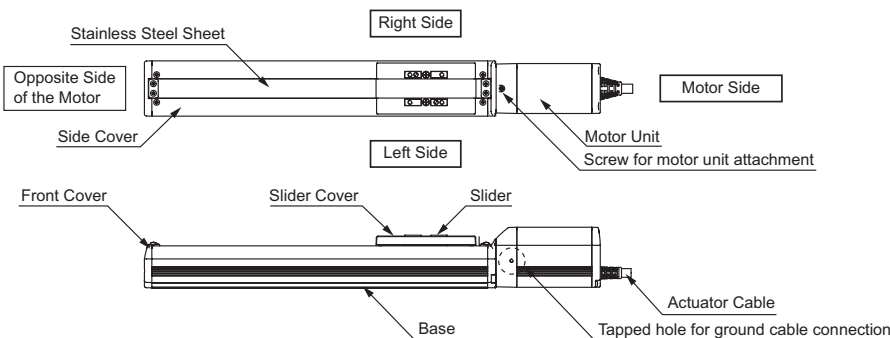
### 2. Storage and Preservation Environment

- The storage and preservation environment should comply with the same standards as those for the installation environment. In particular, when the machine is to be stored for a long time, pay close attention to environmental conditions so that no dew condensation forms.
- Unless specially specified, moisture absorbency protection is not included in the package when the machine is delivered. In the case that the machine is to be stored and preserved in an environment where dew condensation is anticipated, take the condensation preventive measures from outside of the entire package, or directly after opening the package.
- For storage and preservation temperature, the machine withstands temperatures up to 60°C for a short time, but in the case of the storage and preservation period of 1 month or more, control the temperature to 50°C or less.
- The product should be settled in the horizontal orientation while in storage and reservation. In the case it is stored in the packaged condition, follow the posture instruction if any displayed on the package.

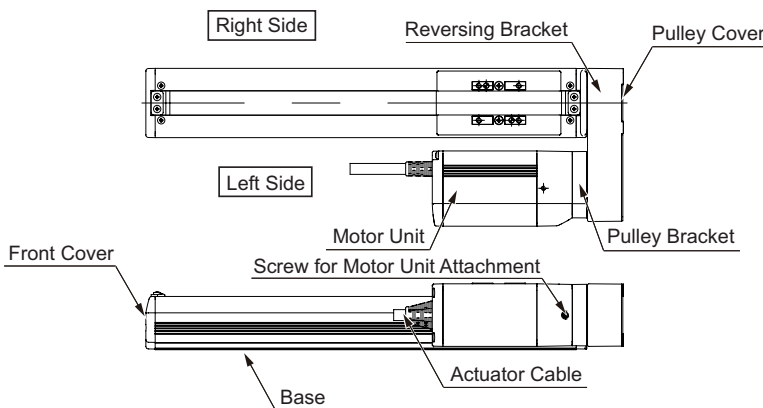
## Names of the Parts

### 1. Slider Type

#### 1.1 Motor Straight Type

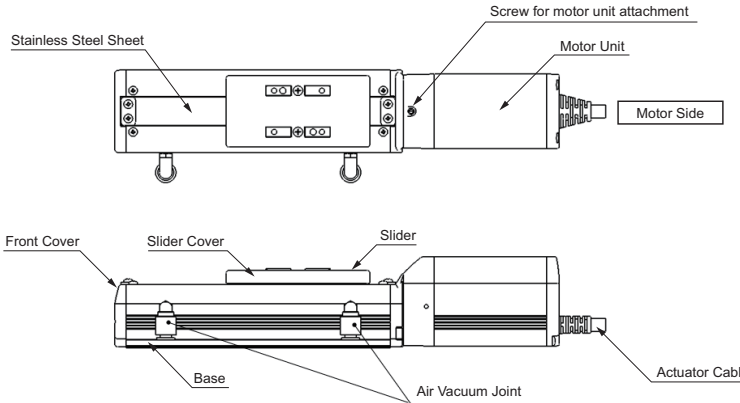


#### 1.2 Motor Reversing Type



The direction of the motor is either left reversed: ML (shown in figure above) or right reversed: MR.

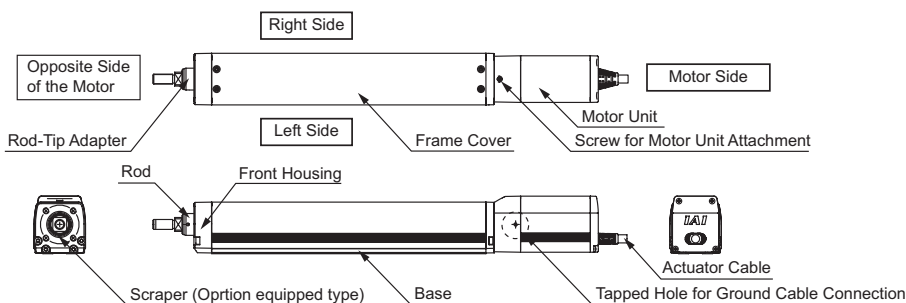
#### 1.3 Clean Room Type



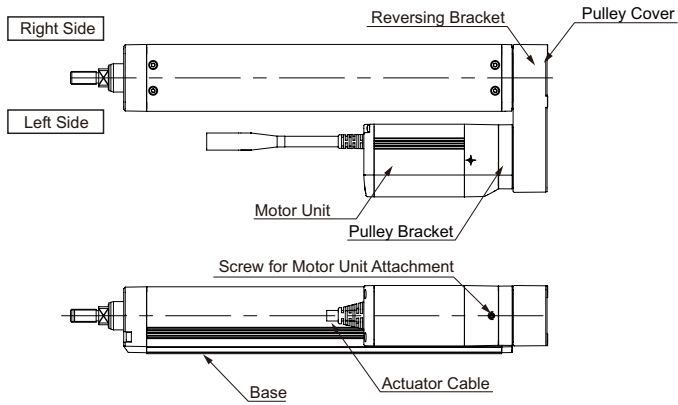
Dimensions and outlines for the actuator, refer to the catalog or Instruction Manual (DVD).

### 2. Rod Type

#### 2.1 Motor Straight Type



2.2 Motor Reversing Type



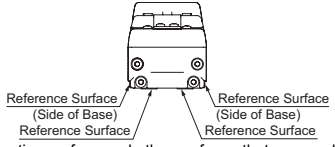
The direction of the motor is either left reversed: ML (shown in figure above) or right reversed: MR.

For the details of dimensions and outlines, refer to the catalog or Instruction Manual (DVD).

## Attachment

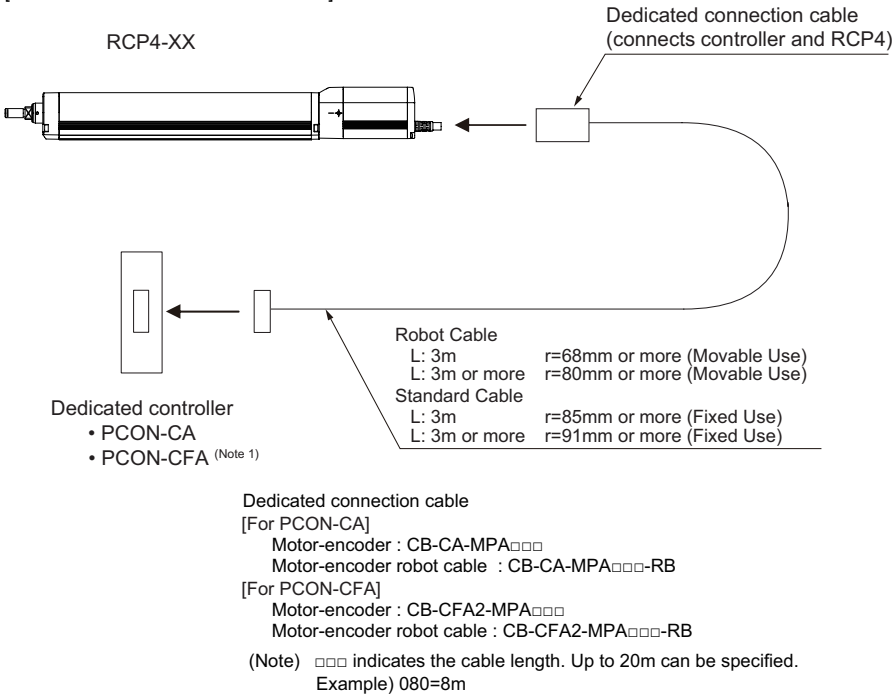
Refer to the Instruction Manual (DVD) for the attachments of the actuator and loads.

[Precautions for Attachments]

| No. | Item                            | Precautions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Installation                    | <ul style="list-style-type: none"><li>Installing the slider type in the horizontally oriented wall mount or ceiling mount may cause the stainless steel sheet to be loosened or be off the right position. Continued use of the actuator with this condition may result in the breakage of the stainless steel sheet. Adjust the sheet tension accordingly in the regular inspection. (Refer to the maintenance section on the Instruction Manual for the procedure of stainless steel sheet tension adjustment.)</li><li>Avoid using the actuator with no brake in the vertical orientation.</li></ul>                                                                                                                                                               |
| 2   | Attachment Surface              | <ul style="list-style-type: none"><li>The base has to have a structure with sufficient rigidity to prevent oscillation.</li><li>The side and the bottom surfaces of the base of the actuator are the datum for the slider drive. If accuracy for its run is required, use these surfaces as a datum of the installation.</li></ul>  <ul style="list-style-type: none"><li>The actuator mounting surface and other surfaces that are used as a datum should be flat enough with an accuracy of machining or equivalent treatment, and the flatness of the mounting surface needs to be 0.05mm/m or less.</li><li>Secure the space where maintenance work can be performed.</li></ul> |
| 3   | Bolt to be used                 | <ul style="list-style-type: none"><li>For the bolts to be used, a high-tensile bolt complying with ISO-10.9 or more is recommended.</li><li>If using the tapped holes, use screws with the thread length dimension being less than the effective depth of the holes.</li><li>In case the tapped hole is a through hole, be careful so the screw tip does not exceed the surface of the tapped hole.</li><li>For the actuator mounting, use a bolt with the dimension of its effective mating length to the tapped hole is as stated below.<br/>If tapped hole on steel → thread length same as nominal diameter<br/>If tapped hole on aluminum → thread length 1.8 times longer than nominal diameter</li></ul>                                                       |
| 4   | Tightening Torque               | <ul style="list-style-type: none"><li>Please follow the specification values stated in the Instruction Manual (DVD) for the tightening torque. Failure to do so may cause an operation problem.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5   | Load Moment and Overhung length | <ul style="list-style-type: none"><li>Please follow the specification values stated in the Instruction Manual (DVD) for the load moment and the overhung length. Failure to do so may cause abnormal vibration or noise, and also may remarkably shorten the product life.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6   | Stainless sheet                 | <ul style="list-style-type: none"><li>Please do not hold the stainless steel sheet directly with hands. Please, also, be careful not to make a dent on the stainless steel sheet. Stainless sheet is easy to get dented because it is thin. Using it with a dent on may cause a breakage.</li><li>If there is dust or metal contamination attached on the stainless steel sheet, please wipe it off the sheet surface. Operation with the stainless sheet that has foreign matters on its surface may cause problems such as sheet damage, waviness, etc. inside the slider.</li><li>Please do not operate the unit in the ambient with dust or metal contamination.</li></ul>                                                                                        |

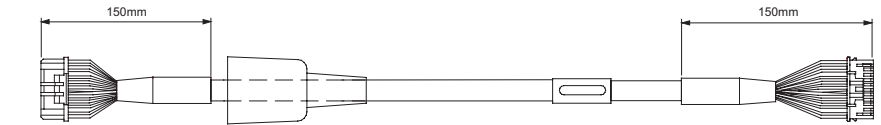
## Wiring

For the controller, only the dedicated controller manufactured by our company can be used.  
For the connection between the actuator and controller, use the attached dedicated connection cable.  
[Connection to the PCON-CA controller]

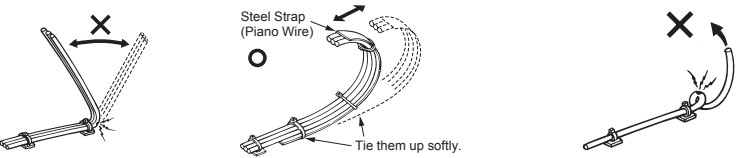


[Prohibited Items in the Cable Processing]

- Do not pull or bend forcibly the cable so as not to give any extra load or tension to the cable.
- Do not process the cable for extension or shortening by means of cutting out, combination or connecting with another cable.
- Do not bend the cable in the area from the connector tip to 150mm on the both ends.  
Standard cable : CB-CA-MPA□□□, CB-CFA2-MPA□□□  
Robot cable : CB-CA-MPA□□□-RB, CB-CFA2-MPA□□□-RB



- Do not let the cable flex at a single point.
- Do not let the cable bend, kink or twist.



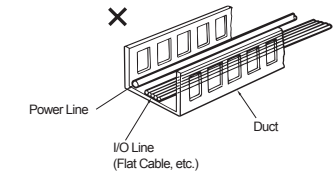
- Do not pull the cable with a strong force.
- Do not let the cable receive a turning force at a single point.



- Do not pinch, drop a heavy object onto or cut the cable.
- When fixing the cable, provide a moderate slack and do not tension it too tight.

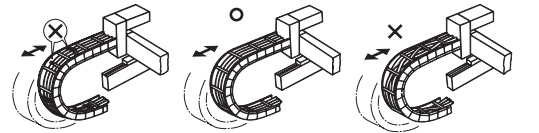


- Separate the I/O line, communication line and power line from each other. Do not store in the same duct.



Follow the instructions below when using a cable track.

- If there is an indication to the cable for the space factor in a cable track, refer to the wiring instruction given by the supplier when storing the cable in the cable track.
- Avoid the cables to get twined or twisted in the cable track, and also to have the cables move freely and do not tie them up. (Avoid tension being applied when the cables are bent.)  
Do not pile up cables. It may cause faster abrasion of the sheaths or cable breakage..



- ⚠ Note:
- When the cable is connected or disconnected, make sure to turn off the power to the controller. When the cable is connected or disconnected with the controller power turned ON, it might cause a malfunction of the actuator and result in a serious injury or damage to the machinery.
  - When the connector connection is not correct, it would be dangerous because of a malfunction of the actuator. Make sure to confirm that the connector is connected correctly.

**IAI**  
Quality and Innovation

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