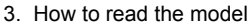


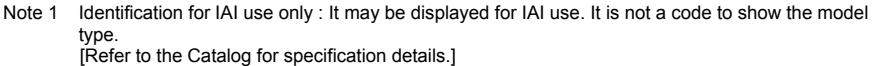
This product is comprised of the following parts if it is of standard configuration.  
If you find any fault in the contained model or any missing parts, contact us or our distributor.

No.	Part Name	Model	Remarks
1	Actuator Main Body	[Refer to "2.How to read the model plate", "3.How to read the model."]	
Accessories			
2	Motor • Encoder Cable <sup>*1</sup>		
3	Home Position Marking Sticker		
4	First Step Guide		
5	Instruction Manual (DVD)		
6	Safety Guide		

## 2. How to read the model plate



RCP2-BA6-I-42P-54-500-P1-S-NM-\*



**RCP5-BA4-WA-35P-48-1200-P3-P-B- \*\***

The diagram illustrates the structure of the model name **RCP5-BA4-WA-35P-48-1200-P3-P-B- \*\*** by connecting each segment to its corresponding description:

- <Series>**: RCP5
- <Type>**: BA4
  - BA4 : Body width 40mm, Belt Type Motor Upper Mount
  - BA4U : Body width 40mm, Belt Type Motor Lower Mount
  - BA6 : Body width 58mm, Belt Type Motor Upper Mount
  - BA6U : Body width 58mm, Belt Type Motor Lower Mount
  - BA7 : Body width 70mm, Belt Type Motor Upper Mount
  - BA7U : Body width 70mm, Belt Type Motor Lower Mount
- <Encoder type>**: WA
  - WA : Battery-less Absolute
- <Motor type>**: 35P
  - 35P : 35□ size
  - 42P : 42□ size
  - 56P : 56□ size
- <Lead>**: 48
  - 48 : Approximately 48mm
- <Stroke>**: 1200
- <Cable Length>**: P3
  - N : None
  - P : 1m
  - S : 3m
  - M : 5m
  - X□□ : Specified Length
  - R□□ : Robot Cable
- <Options>**: P-B-
  - B : Brake
  - NM : Reversed-home specification
  - CJT : Cable exit direction changed (Top)
  - CJR : Cable exit direction changed (Right)
  - CJL : Cable exit direction changed (Left)
  - CJB : Cable exit direction changed (Bottom)
  - CIM : Ceiling mount type
  - SIL : Left horizontally oriented wall mount type
  - SIR : Right horizontally oriented wall mount type
- <Controller>**: \*\*
  - P3 : PCON-CA
  - MSEP
  - MSEL

Identification for IAI use only (Note 1)

## 1. Handling of Robot

Unless otherwise specified, the actuator is shipped with each axis packaged separately.

- Do not damage or drop. The package is not supplied with any special treatment that enables it to resist an impact caused by a drop or crash.
- Transport a heavy package with at least more than two operators. Consider an appropriate method for transportation.
- If the shipping box is to be left standing, it should be in a horizontal position. Follow the instruction if there is any for the packaging condition.
- Do not step or sit on the package.
- Do not put any load that may cause a deformation or breakage of the package.

- Do not carry the actuator by holding the cable, or do not move it by pulling the cable.
- Hold the body base when transporting the actuator.
- When carrying the actuator, exercise caution not to bump it against nearby objects or structures.
- Do not give any excessive force to any of the sections in the actuator.

## 2.1 Handling of the Packed Product

Multi-axes type will be delivered in a package with an outer case fixed to a wooden base. Sliders are fixed so they would not accidentally move while in transportation. The end of the actuator is also fixed to avoid it swinging by external vibration.

- Do not damage or drop. The package is not supplied with any special treatment that enables it to resist an impact caused by a drop or crash.
- Transport a heavy package with at least more than two operators. Consider an appropriate method for transportation.
- When suspending the package using ropes, pass the ropes from underneath the reinforcement frames at the bottom of the base. When lifting with a forklift, also place the forks underneath the base.
- Do not apply an impact on the package or let it bounce when putting it down.
- Do not step or sit on the package.
- Do not put any load that may cause a deformation or breakage of the package.

- Secure the sliders to prevent sudden movement during transport.
- If any end of the actuator is overhanging, secure it properly to avoid significant movement due to external vibration.
- If the actuator assembly is transported without the ends being secured, do not apply an impact of 0.3G or more.
- In the case that the actuator needs to be carried up with ropes or another method, be sure to use an appropriate cushioning to avoid the robot being deformed or put on an excessive pressure. And also, be sure to keep the robot in a stable and horizontal posture. Utilize the tapped holes on the bottom of the base to attach a tool to suspend the package if necessary.
- Be careful not to apply a load on any of the actuator brackets or covers or on the connector box. Also, avoid the cables being pinched or caused an excessive deformation.

Note the following when the whole mechanical equipment (system) that the actuator is mounted on needs to be transported.

- ## 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
- Place where the altitude is more than 2000m

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

- 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.

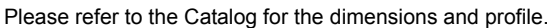
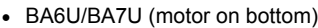
- Unless specially specified, moisture absorbency protection is not included in the package when the machine is delivered. In the case that the machine is to be stored and preserved in an environment where dew condensation is anticipated, take the condensation preventive measures from outside of the 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.

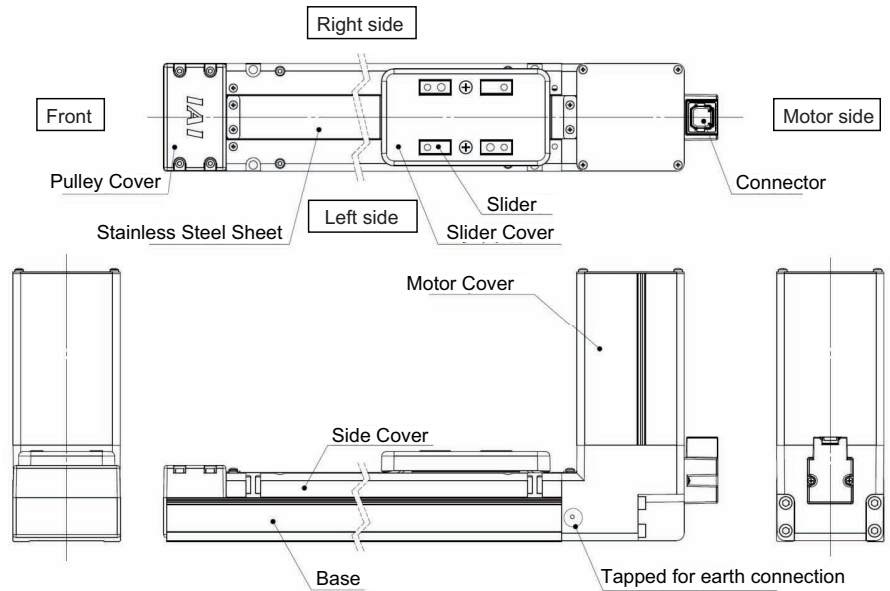
## 1. RCP2

- BA6/BA7 (motor on top)



2. RCP5

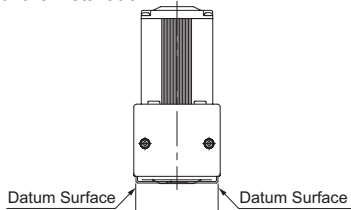
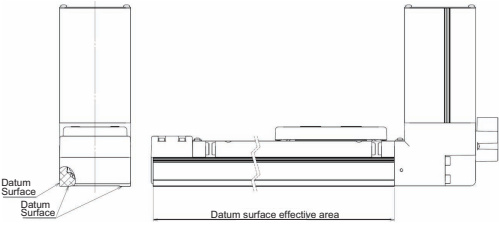
See figure below for BA4/BA6/BA7 (motor upper mount). For BA4U/BA6U/BA7U, the motor unit is mounted facing the lower side.



Attachment

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

[Precautions for Attachments]

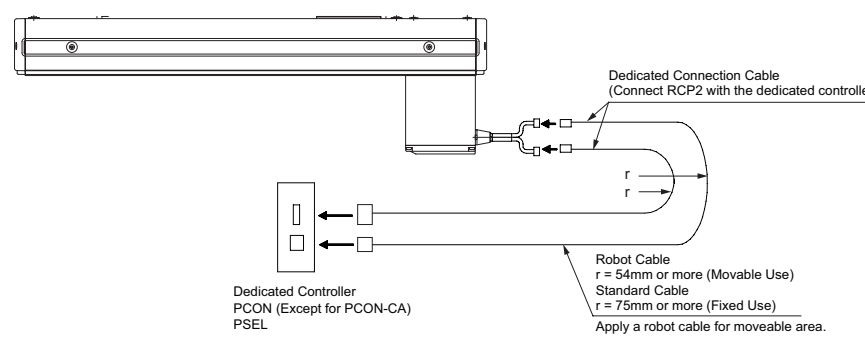
No.	Item	Precautions
1	Attachment Surface	<ul style="list-style-type: none"><li>RCP2 is not available for vertical orientation and horizontally oriented wall mount.</li><li>RCP5 is not available for vertical orientation.</li><li>The side surfaces of the base of the RCP2 are the datums for the slider actuator. If accuracy for its run is required, use these surfaces as a datums of the installation.</li></ul>  <ul style="list-style-type: none"><li>The side and bottom surfaces on the base of RCP5 are the datums for the slider operation. In case operation accuracy is required, utilize these surfaces for 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>
2	Bolts 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>For the RCP2 mounting, the effective mating length of the used bolt to the hole on the attachment surface should ensure more than the following values. M4 x 10 when tapped hole on steel M4 x 15 when tapped hole on aluminum</li><li>Make sure to have 1.8 times of the nominal diameter for the effective length of thread engagement for the attachment screw and the hole on the attachment surface to be used for installation of RCP5.</li></ul>
3	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>
4	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>

Wiring

For the controller, only the dedicated controller manufactured by our company can be used. Use the dedicated cable enclosed in the package when connecting the actuator and the controller.

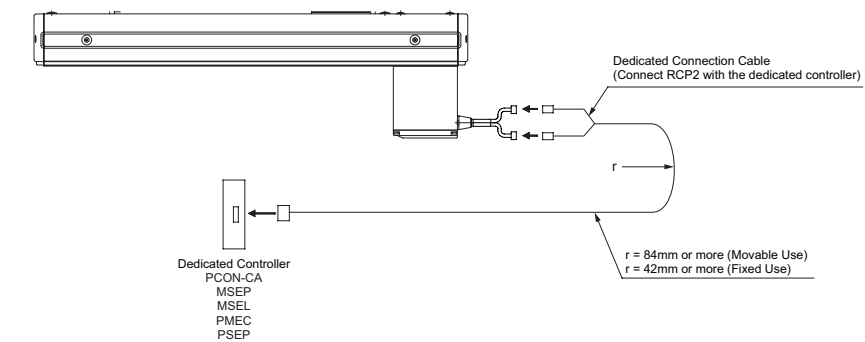
1. RCP2

[Connection to the PCON (Except for PCON-CA), PSEL controller]



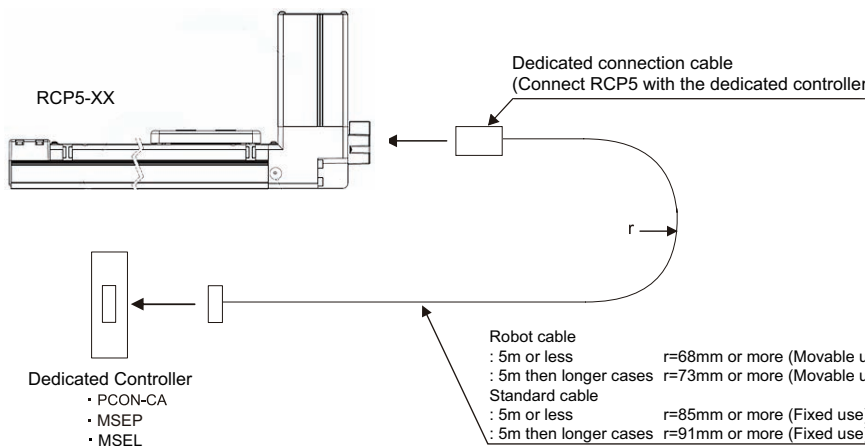
Dedicated Connection Cable  
• Motor Cable (Robot Cable) CB-RCP2-MA □□□  
• Encoder Cable CB-RCP2-PB□□□/Encoder Cable Robot Cable CB-RCP2-PB□□□-RB  
□□□ shows the cable length.  
The max. length should be 20m.  
Example) 080=8m

[Connection to the PCON-CA, MSEP, MSEL, PMEC, PSEP controller]



Dedicated Connection Cable  
• Motor Encoder Cable CB-PSEP-MPA □□□  
□□□ shows the cable length.  
The max. length should be 20m.  
Example) 080=8m

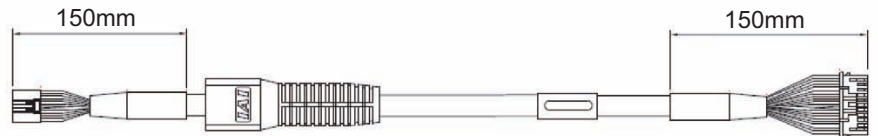
2. RCP5



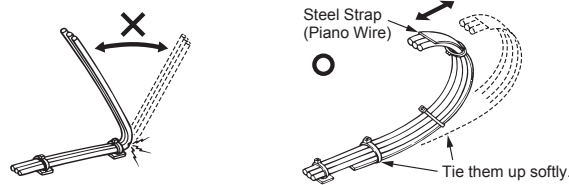
Dedicated connection cable  
• Motor • encoder cables: CB-CAN-MPA□□□  
• Motor • encoder cables robot type: CB-CAN-MPA□□□-RB  
□□□ indicates the cable length. Up to 20m can be specified.  
Example) 080=8m

[Prohibited Items in the Cable Processing]

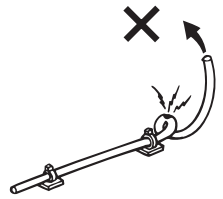
- Do not pull or bend forcibly the cable so as not to give any extra load or tension to the cable.
- Do not process the cable for extension or shortening by means of cutting out, combination or connecting with another cable.
- Do not bend the cable in the area from the connector tip inward to 150mm on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



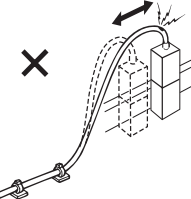
- Do not let the cable flex at a single point.



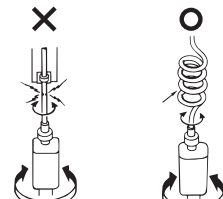
- Do not let the cable bend, kink or twist.



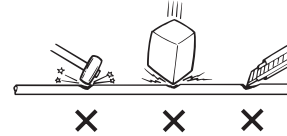
- Do not pull the cable with a strong force.



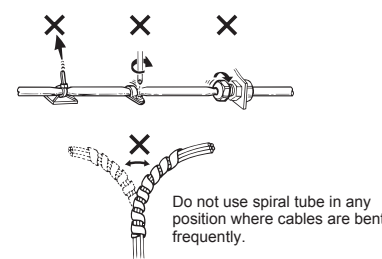
- Do not let the cable receive a turning force at a single point.



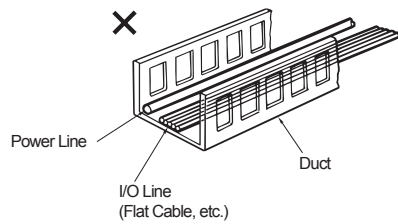
- Do not pinch, drop a heavy object onto or cut the cable.



- When fixing the cable, provide a moderate slack and do not tension it too tight.

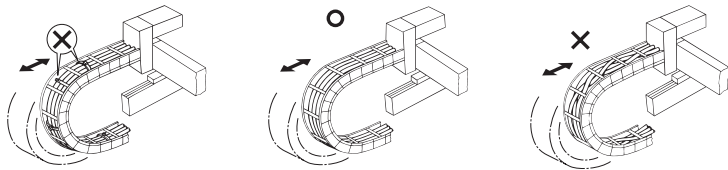



- Separate the I/O line, communication line and power line from each other.  
Arrange so that such lines are independently routed in the duct.



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.



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