



RCP2 (CR) (W) /RCS2 Actuator Gripper Type First Step Guide Sixth Edition

Thank you for purchasing our product.
Make sure to read the Safety Guide and detailed Instruction Manual as well as this First Step Guide to ensure correct use.
This Instruction Manual is original.

Warning: Read the instruction manual carefully and follow the instruction manual when handling this equipment. Please download the user's manual from our website. You can download it free of charge. User registration is required for first time users.
URL: www.iai-robot.co.jp/data_dl/CAD_MANUAL/
Keep a printout of the introduction manual near the equipment in which this product is installed so that it can be checked at all times, or display it on your computer, tablet terminal, etc. so that you can check it immediately.
If you need a bound copy of the instruction manual, order it from the nearest sales office listed in the First Step Guide or at the end of the instruction manual. It will be provided for a fee.

- 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

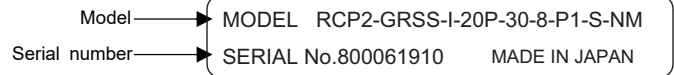
This product is comprised of the following parts if it is of standard configuration.
If you find any fault in the contained model or any missing parts, contact us or our distributor.

1. Parts (The option is excluded.)

No.	Part Name	Model	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*1		
3	Safety Guide	M0194	

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

2. How to read the model plate



3. How to read the model

3.1 RCP2 Type

RCP2-GRSS-I-20P-30-8-P1-S-NM

<p><Series> RCP2 : Standard Specification RCP2CR : Clean-Room Specification RCP2W : Dust-Proof Specification</p> <p><Type> GRSS : Thin and Small Two-finger Slide Type GRLS : Thin and Small Two-finger Lever Type GRS : Small Two-finger Slide Type GRM : Medium Two-finger Slide Type GRHM : Medium Two-finger High-grip-force Slide Type GRHB : Large Two-finger High-grip-force Slide Type GRST : Small Two-finger Long-stroke Type GR3SS : Three-finger Slide Type, Body Width 62mm GR3SM : Three-finger Slide Type, Body Width 80mm GR3LS : Three-finger Lever Type, Body Width 62mm GR3LM : Three-finger Lever Type, Body Width 80mm</p> <p><Encoder Type> I : Incremental</p> <p><Motor Type> 20P : Pulse Motor 20 □Size 35P : Pulse Motor 35 □Size 28P : Pulse Motor 28 □Size 42P : Pulse Motor 42 □Size</p> <p><Gear Ratio> 1 : 1/1(GRST) 30 : 1/30 2 : 1/2(GRST) 2 : Feed Screw Lead 2(GRHM, GRHB)</p> <p>Note1 It is an option applicable only for RCP2-GRSS.</p> <p>[Refer to the Catalog or Instruction Manual for specification details.]</p>	<p><Option> NM : Reversed Home Specification FB : Flange Bracket SB : Shaft Bracket A0 : Cable Oriented on Bottom A1 : Cable Oriented on Side CJT : Cable Exit direction changed (to top side) CJR : Cable Exit direction changed (to right side) CJL : Cable Exit direction changed (to left side) CJB : Cable Exit direction changed (to bottom side) VL : L-Shaped type vacuum joint AR : Anti-Rust Black Coating (Note 1)</p> <p><Cable Length> N : None P : 1m S : 3m M : 5m X□□ : Specified Length (Example: X07=7m) R□□ : Robot Cable (Example: R05=5m)</p> <p><Applicable Controller> P1 : PCON, RPCON, PSEL P3 : PCON-CA, PMEC PSEP, MSEP</p> <p><Stroke> 8 : 8mm (4mm per side) 10 : 10mm (5mm per side) 14 : 14mm (7mm per side) 32 : 32mm (16mm per side) 40 : 40mm (20mm per side) 60 : 60mm (30mm per side) 80 : 80mm (40mm per side) 100 : 100mm (50mm per side) 19 : 19 degrees 180 : 180 degrees (90 degrees per side)</p>
--	---

3.2 RCS2 Type

RCS2-GR8-I-60-5-20-T1-S-CE

<p><Series> GR8</p> <p><Type> GR8</p> <p><Encoder Type> I : Incremental</p> <p><Motor Type> 60 : Servo-Motor 60W</p> <p><Gear Ratio> 5 : 1/5</p> <p><Stroke> 20 : 20mm (10mm per side) 40 : 40mm (20mm per side) 60 : 60mm (30mm per side) 80 : 80mm (40mm per side)</p>	<p><Option> CE : CE Marking</p> <p><Cable Length> N : None P : 1m S : 3m M : 5m X□□ : Specified Length (Example: X07=7m) R□□ : Robot Cable (Example: R05=5m)</p> <p><Applicable Controller> T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q</p>
--	---

[Refer to the Catalog or Instruction Manual for specification details.]

Precautions in Handling

1. Handling of the Packed Product

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.
- 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.

2. Handling of Robot without Package

- Do not carry the actuator by holding the cable, or do not move it by pulling the cable.
- 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.

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. (Dust-proof Types are excluded)

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) (The except for dust the dust-proof specification)
- 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 with an altitude of 2,000m or more

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

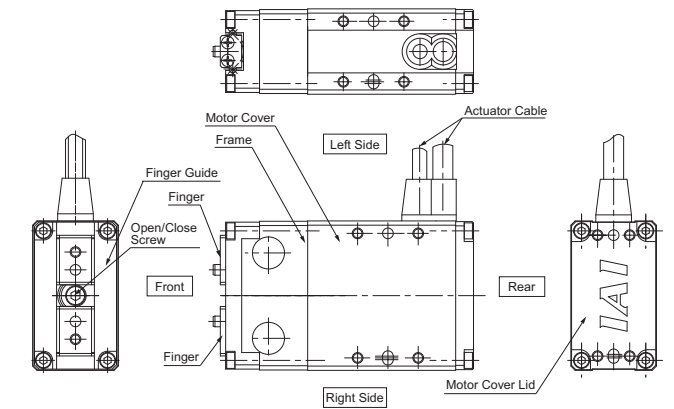
- Place where noise is generated by such facts as static electricity
- Place where exposed to the influence of strong electric or magnetic field
- Place where exposed to the influence of ultraviolet or radiant rays

2. Storage and Preservation Environment

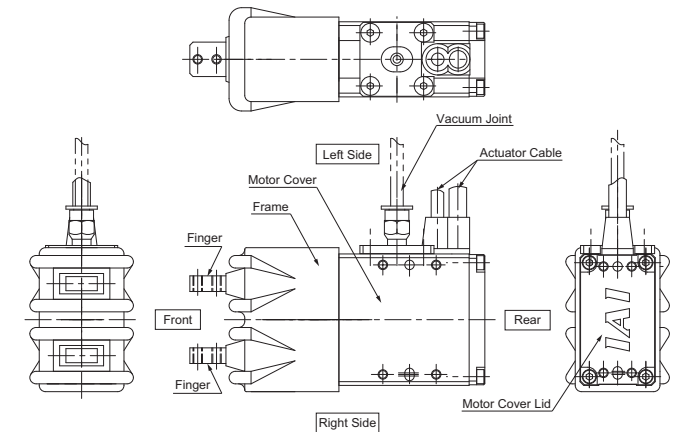
- The storage and preservation environment should comply with the same standards as those for the installation environment. In particular, when the machine is to be stored for a long time, pay close attention to environmental conditions so that no dew condensation forms.
- Unless specially specified, 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

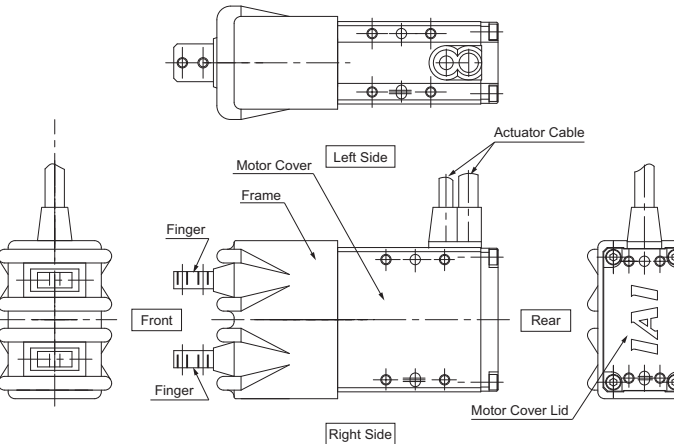
1. Thin and Small Two-finger Slide Type (Standard specification) RCP2-GRSS



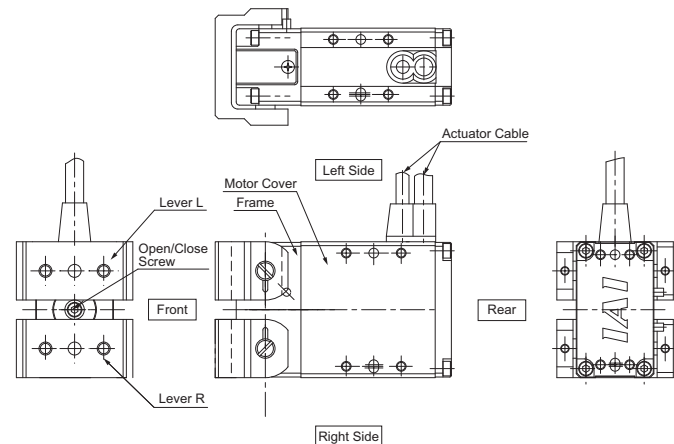
2. Thin and Small Two-finger Slide Type (Cleanroom specification) RCP2CR-GRSS



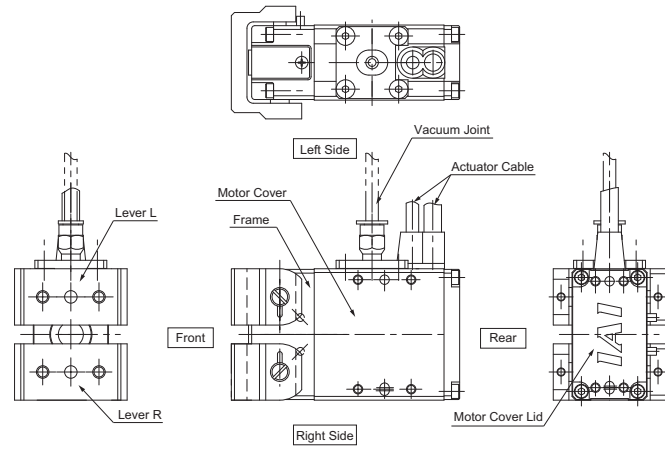
3. Thin and Small Two-finger Slide Type (Dust-proof specification) RCP2W-GRSS



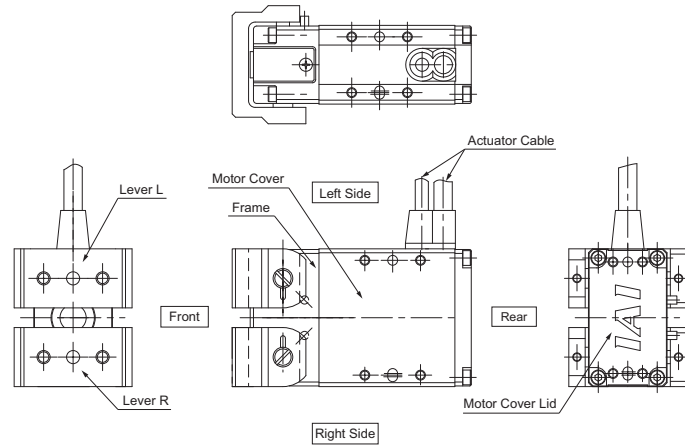
4. Thin and Small Two-finger Lever Type (Standard specification) RCP2-GRLS



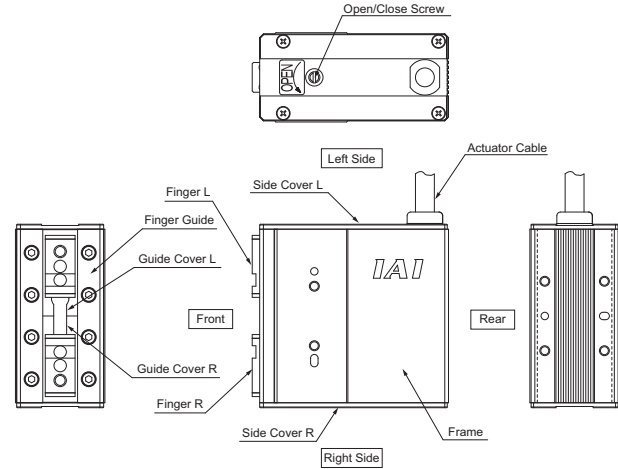
5. Thin and Small Two-finger Lever Type (Cleanroom specification) RCP2CR-GRLS



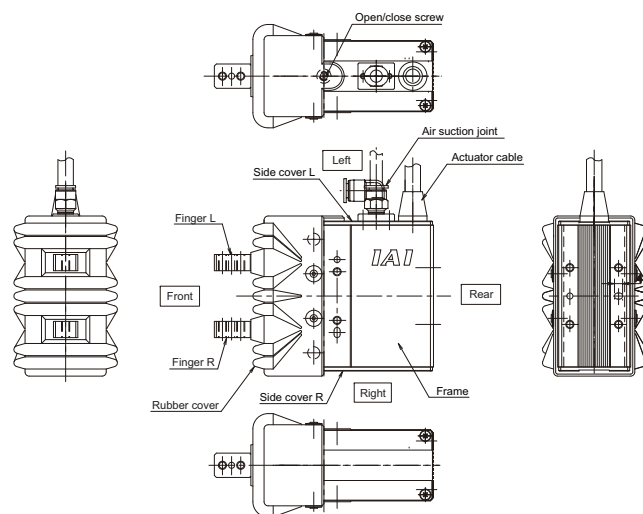
6. Thin and Small Two-finger Lever Type (Dust-proof specification) RCP2W-GRLS



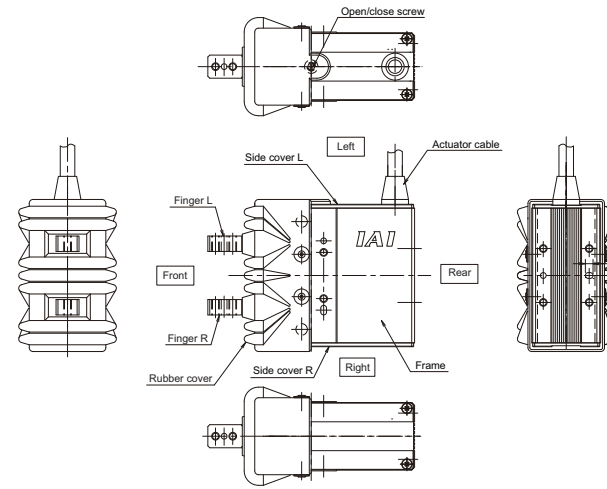
7. Small • Medium Two-finger Slide Type (Standard specification) RCP2-GRS/GRM



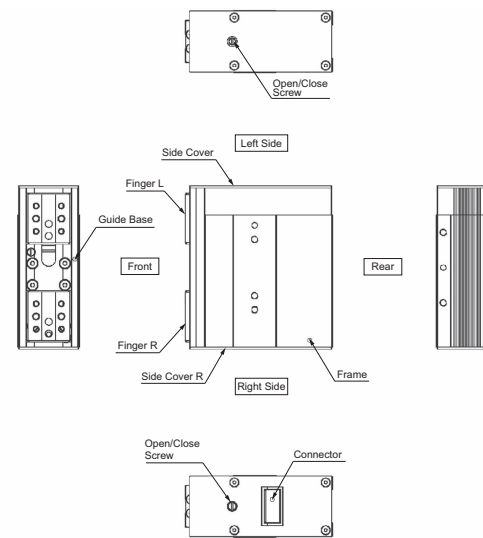
8. Small • Medium Two-finger Slide Type (Cleanroom specification) RCP2CR-GRS/GRM



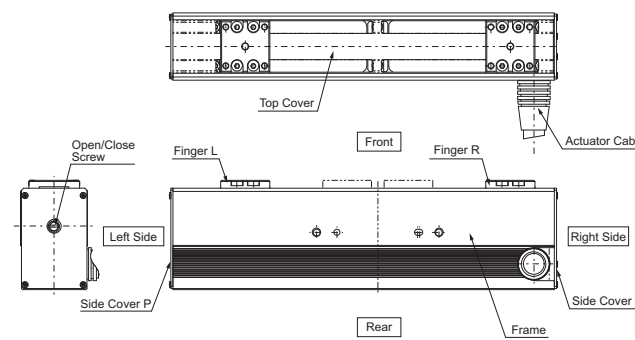
9. Small • Medium Two-finger Slide Type (Dust-proof specification) RCP2W-GRS/GRM



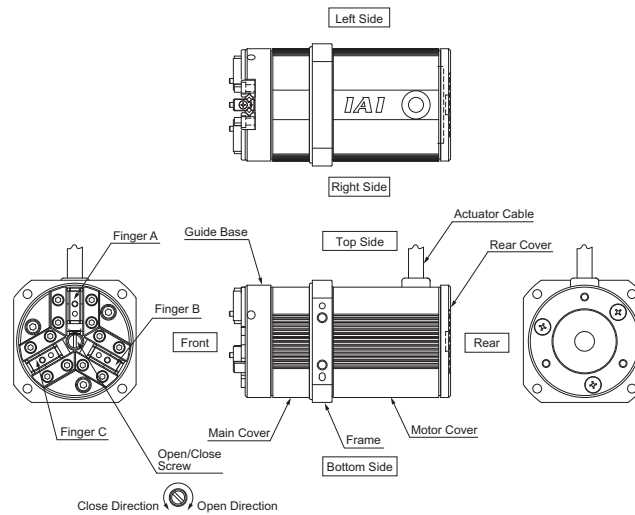
10. Two-finger High-grip-force Slide Type RCP2-GRHM/GRHB



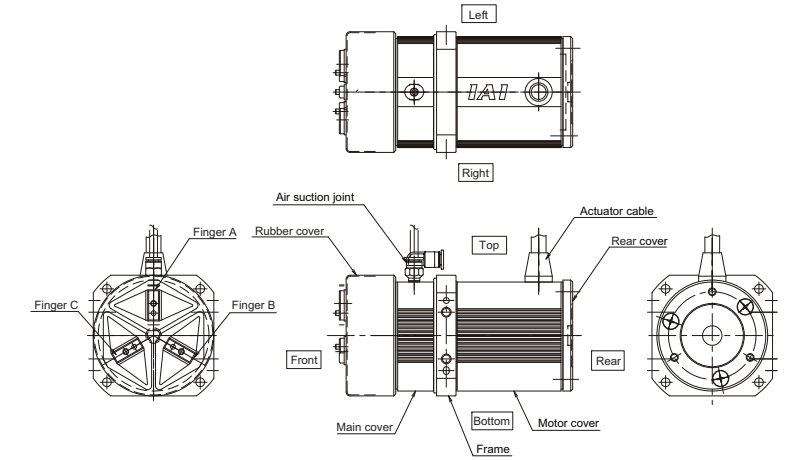
11. Small Two-finger Long-stroke Type RCP2-GRST



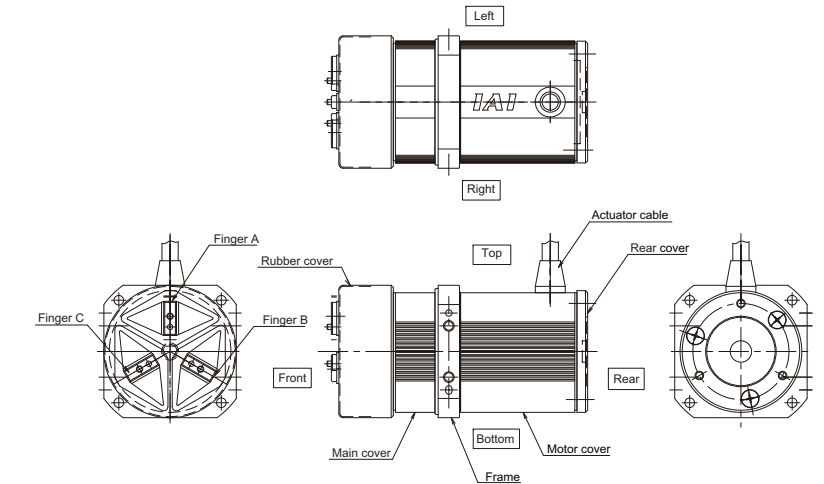
12. Three-finger Slide Type (Standard specification) RCP2-GR3SS/GR3SM



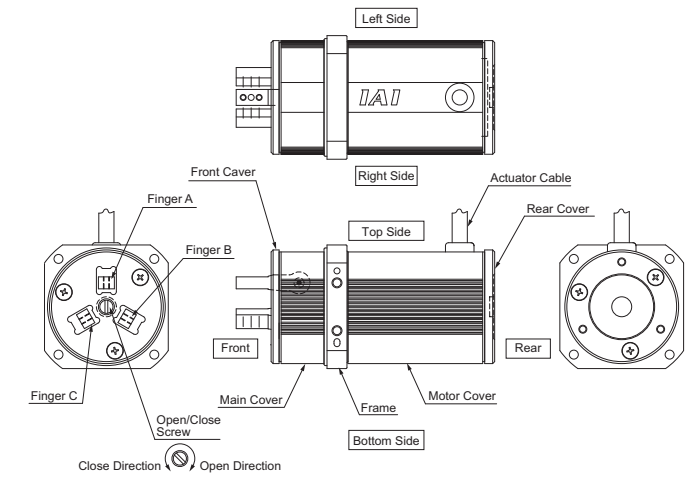
13. Three-finger Slide Type (Cleanroom specification) RCP2CR-GR3SS, GR3SM



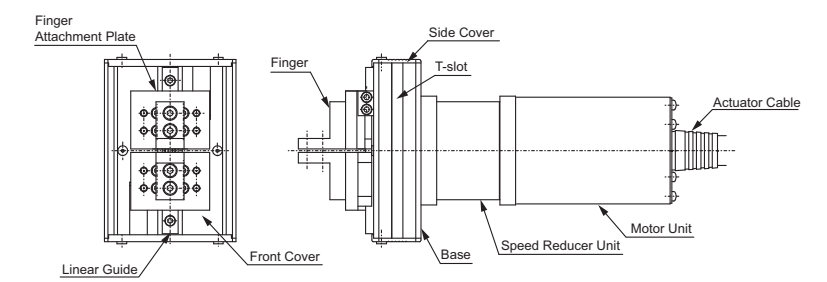
14. Three-finger Slide Type (Dust-proof specification) RCP2W-GR3SS, GR3SM



15. Three-finger Lever Type RCP2-GR3LS/GR3LM



16. Servo-Motor Type RCS2-GR8



Please refer to the Catalog or the Instruction Manual for the dimensions and profile.

Attachment

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

[Precautions for Attachments]

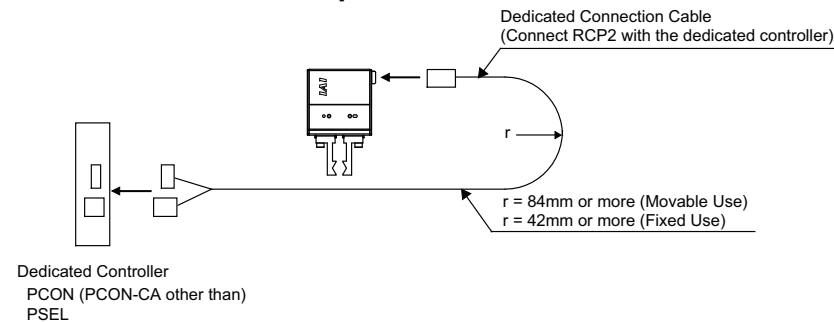
No.	Item	Precautions
1	Attachment Surface	<ul style="list-style-type: none"> The actuator mounting surface and other surfaces that are used as a datum should be flat enough with an accuracy of machining or equivalent treatment, and the flatness of the mounting surface needs to be 0.05mm/m or less. Secure the space where maintenance work can be performed.
2	Bolts to be used	<ul style="list-style-type: none"> For the bolts to be used, a high-tensile bolt complying with ISO-10.9 or more is recommended. If using the tapped holes, use screws with the thread length dimension being less than the effective depth of the holes. In case the tapped hole is a through hole, be careful so the screw tip does not exceed the surface of the tapped hole. For the actuator mounting, use a bolt with the dimension of its effective mating length to the tapped hole size as stated below. If tapped hole in steel → thread length same as nominal diameter If tapped hole in aluminum → thread length 2 times longer than nominal diameter
3	Tightening Torque	<ul style="list-style-type: none"> Please follow the specification values stated in the Instruction Manual for the tightening torque. Failure to do so may cause an operation problem.
4	Allowable Load Moment	<ul style="list-style-type: none"> Please follow the specified value stated in the Instruction Manual for the allowable load moment. If a load beyond the range is applied, it may shorten the product life. An extremely high load may cause flaking.

Wiring

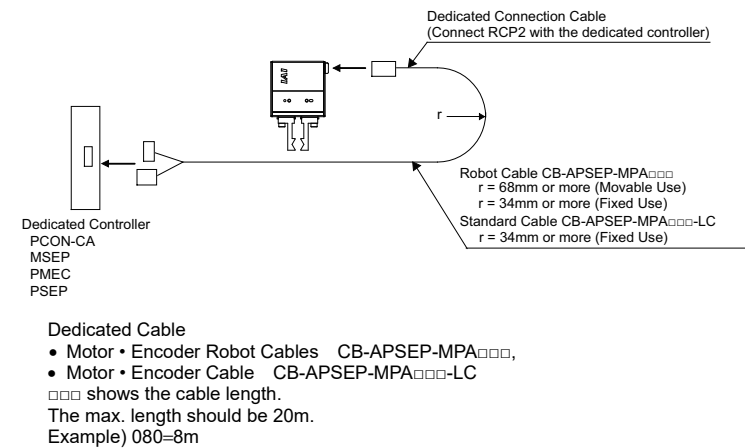
For the controller, only the dedicated controller manufactured by our company can be used. Use the dedicated cable enclosed in the package when connecting the actuator and the controller.

- | | |
|--|------------------------------------|
| 1. Thin and Small Two-finger Slide Type (RCP2-GRSS/RCP2CR-GRSS/RCP2W-GRSS) | (RCP2-GRSS/RCP2CR-GRSS/RCP2W-GRSS) |
| Thin and Small Two-finger Lever Type (RCP2-GRLS/RCP2CR-GRLS/RCP2W-GRLS) | (RCP2-GRLS/RCP2CR-GRLS/RCP2W-GRLS) |
| Two-finger High-grip-force Slide Type (RCP2-GRHM/GRHB) | (RCP2-GRHM/GRHB) |
| Two-finger Long-stroke Type (RCP2-GRST) | (RCP2-GRST) |

[Connection to the PCON, PSEL Controller]

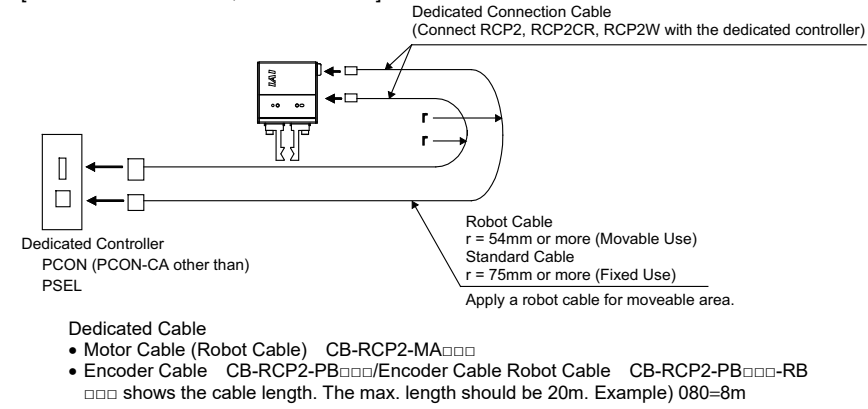


[Connection to the PCON-CA, MSEP, P MEC, PSEP Controller]

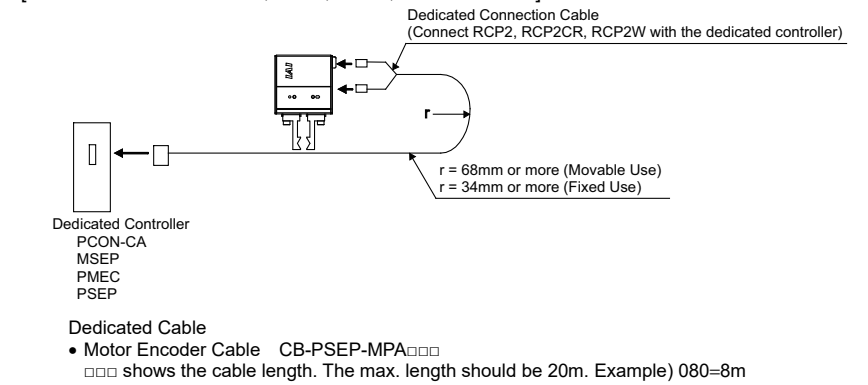


2. Small Two-finger Slide Type (RCP2-GRS), Medium Two-finger Slide Type (RCP2-GRM)
Three-finger Slide Type (RCP2-GR3SS/GR3SM), Three-finger Lever Type (RCP2-GR3LS/GR3LM)

[Connection to the PCON, PSEL Controller]

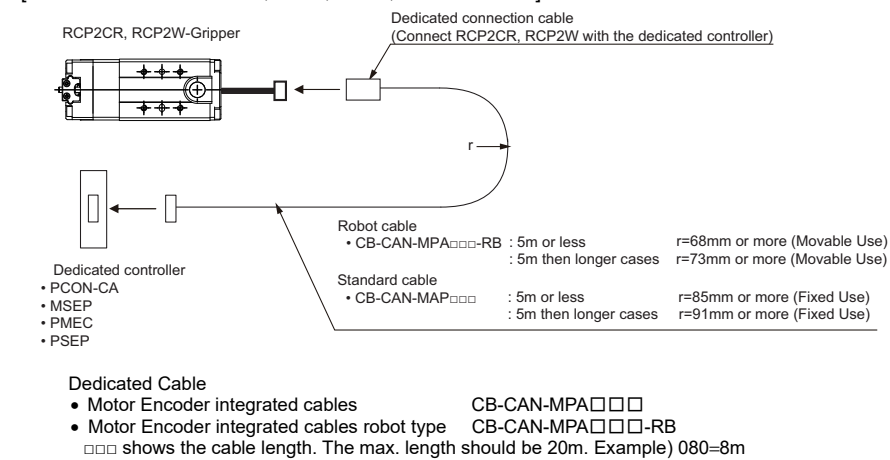


[Connection to the PCON-CA, MSEP, P MEC, PSEP Controller]

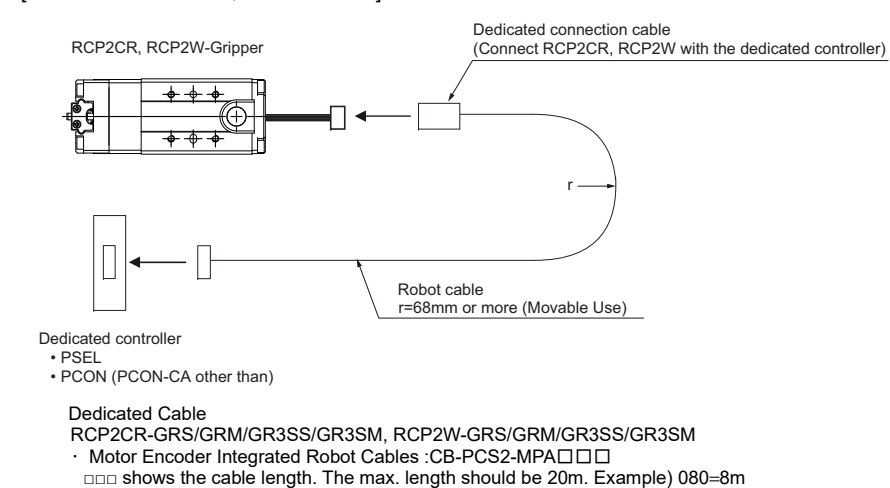


3. Small Two-finger Slide Type (RCP2CR-GRS, RCP2W-GRS), Medium Two-finger Slide Type (RCP2CR-GRM, RCP2W-GRM)
Three-finger Slide Type (RCP2CR-GR3SS/GR3SM, RCP2W-GR3SS/GR3SM)

[Connection to the PCON-CA, MSEP, P MEC, PSEP Controller]

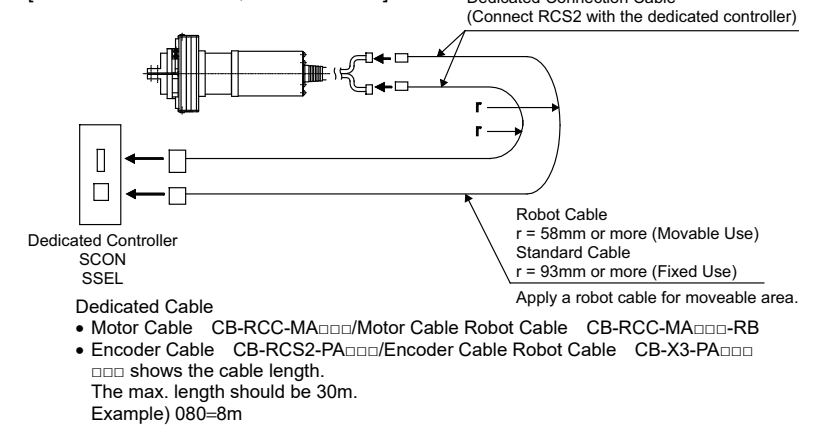


[Connection to the PCON, PSEL Controller]

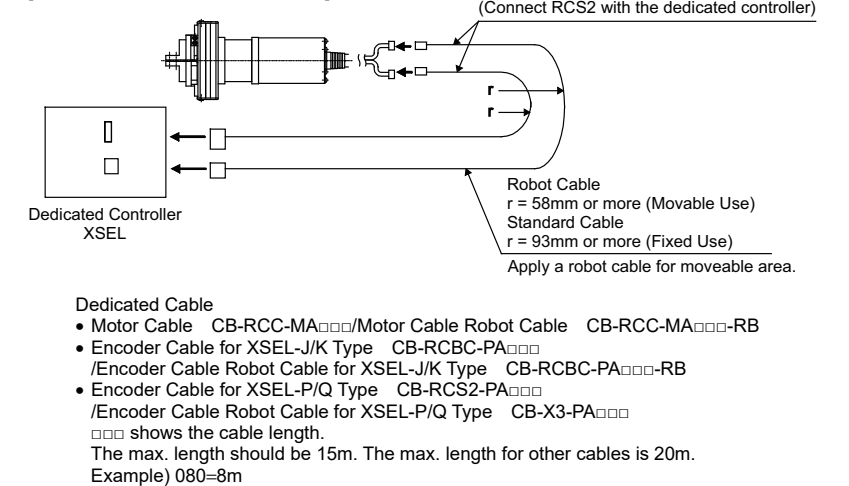


4. RCS2

[Connection to the SCON, SSEL Controller]

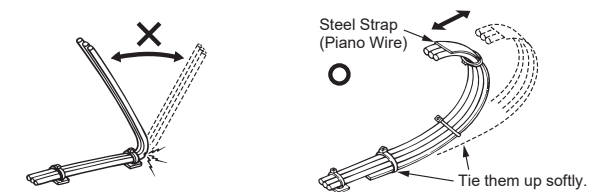


[Connection to the X-SEL Controller]

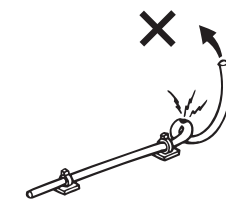


[Prohibited Items in the Cable Processing]

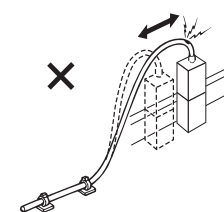
- Do not pull or bend forcibly the cable so as not to give any extra load or tension to the cable.
- Do not process the cable for extension or shortening by means of cutting out, combination or connecting with another cable.
- Do not let the cable flex at a single point.



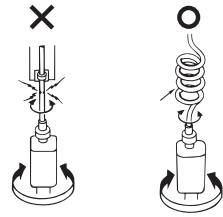
- Do not let the cable bend, kink or twist.



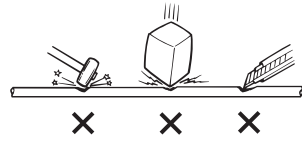
- Do not pull the cable with a strong force.



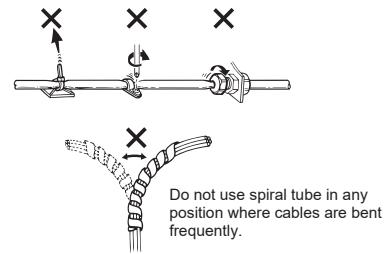
- Do not let the cable receive a turning force at a single point.



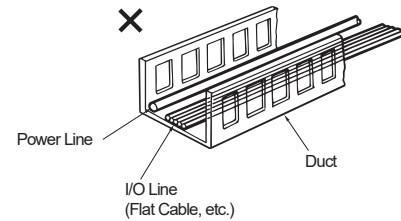
- Do not pinch, drop a heavy object onto or cut the cable.



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

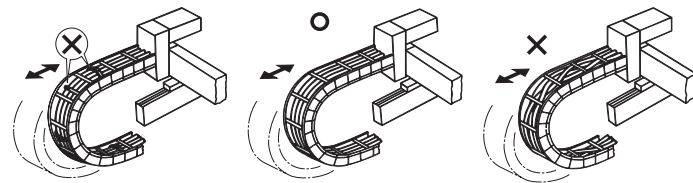


- Separate the I/O line, communication line and power line from each other. Arrange so that such lines are independently routed in the duct.



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.



IAI Corporation

Head Office: 1210 Iharacho Shimizu-KU Shizuoka City Shizuoka 424-0114, Japan
TEL +81-54-364-5105 FAX +81-54-364-2589
website: www.iai-robot.co.jp/

IAI America, Inc.

Head Office: 2690 W. 237th Street, Torrance, CA 90505
TEL +1-310-891-6015 FAX +1-310-891-0815
Chicago Office: 110 East State Parkway, Schaumburg, IL 60173
TEL +1-847-908-1400 FAX +1-847-908-1399
Atlanta Office: 1220 Kennestone Circle, Suite 108, Marietta, GA 30066
TEL +1-678-354-9470 FAX +1-678-354-9471
website: www.intelligentactuator.com

Technical Support available in Europe

IAI Industrieroboter GmbH

Ober der Röth 4, D-65824 Schwalbach am Taunus, Germany
TEL +49(0)6196-88950 FAX +49(0)6196-889524
website: www.iai-automation.com

Technical Support available in Great Britain



Duttons Way, Shadsworth Business Park, Blackburn, Lancashire, BB1 2QR, United Kingdom
TEL +44(0)1254-685900
website: www.lcautomation.com

IAI (Shanghai) Co., Ltd.

SHANGHAI JIAHUA BUSINESS CENTER A8-303, 808, Hongqiao Rd. Shanghai 200030, China
TEL +86-21-6448-4753 FAX +86-21-6448-3992
website: www.iai-robot.com

IAI Robot (Thailand) Co., Ltd.

825 PhairojKijja Tower 7th Floor, Debaratana RD., Bangna-Nuea, Bangna, Bangkok 10260, Thailand
TEL +66-2-361-4458 FAX +66-2-361-4456
website: www.iai-robot.co.th