

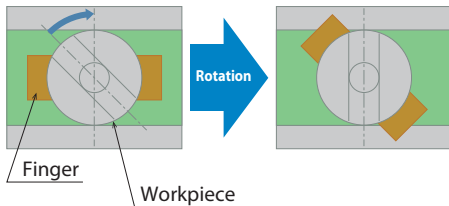
Rotary Chuck Unit **RCP6-RTCK**



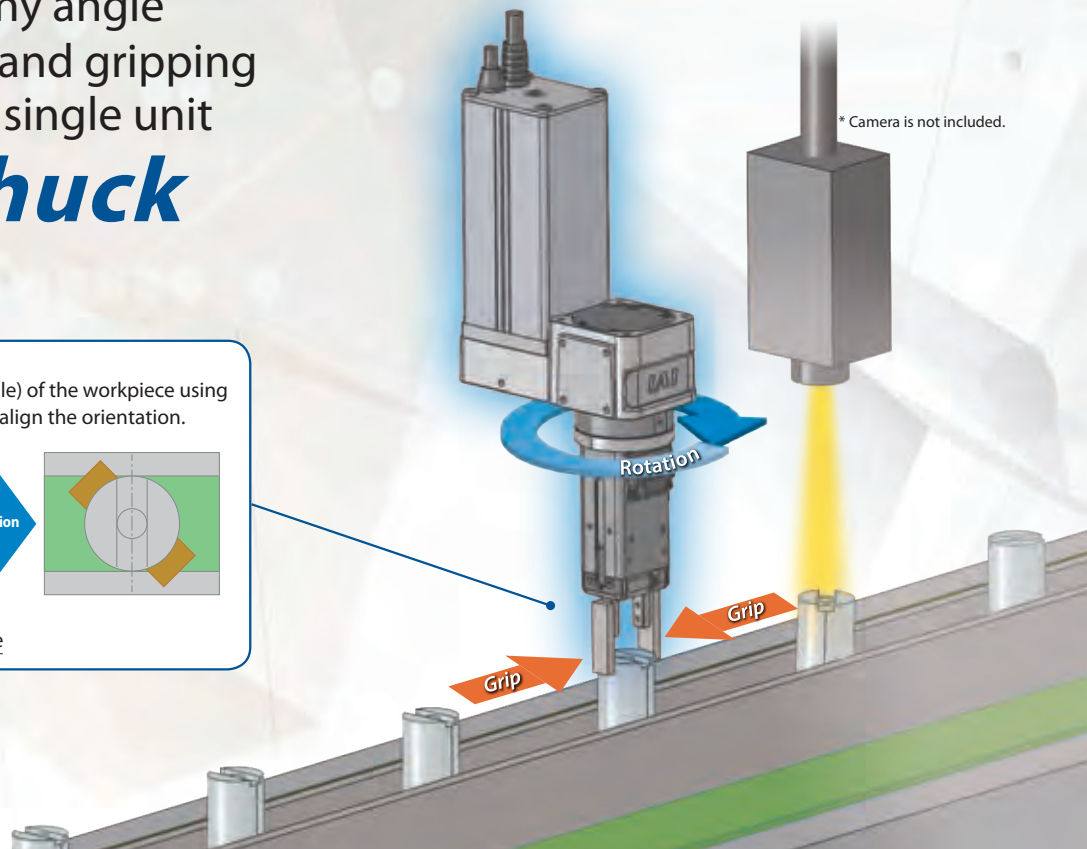
Can be rotated to any angle  
 Motorized rotation and gripping  
 consolidated into a single unit

# Rotary Chuck

Check the orientation (angle) of the workpiece using a camera, then rotate it to align the orientation.



\* Camera is not included.

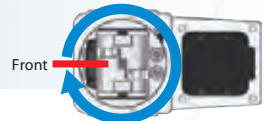


360° rotation in +CW (clockwise) direction

1

## Multipoint positioning of the rotating part

The rotating axis can perform multipoint positioning between 0 and 360° (one rotation). The rotational speed and acceleration/deceleration can also be set to any value. Furthermore, the Battery-less Absolute Encoder equipped means that home return is not required.



**Battery-less Absolute Encoder**  
 No Battery,  
 No Maintenance, No Homing,  
 No Going Back to Incremental.

2

## Compact size

The chuck module is small and lightweight, as a solenoid gripper is used.

3

## Highly flexible installation

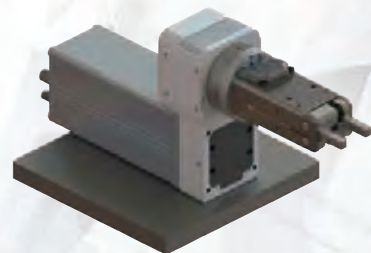
Motor placement can be selected from parallel type and side-mounted type. The parallel type can be mounted from 5 sides and the side-mounted type from 4 sides, to suit the equipment.



Parallel type mounted on bottom







Side-mounted type mounted on top



Parallel type mounted on back

## Product Lineup

Size	S		M	
	Parallel type	Side-mounted type	Parallel type	Side-mounted type
Type				
Model	RCP6-RTCKSPE/RTCKSPI	RCP6-RTCKSRE/RTCKSRI	RCP6-RTCKMPE/RTCKMPI	RCP6-RTCKMRE/RTCKMRI
External view				
Rotation operation range [deg.]	0 to 360 (within one rotation)	0 to 360 (within one rotation)	0 to 360 (within one rotation)	0 to 360 (within one rotation)
Maximum rotation speed [deg./s]	1800	1800	1800	1800
Maximum torque [N·m]	0.29	0.29	0.36	0.36
Allowable inertia moment [kg·m <sup>2</sup> ]	0.00023	0.00023	0.00036	0.00036
Opening/closing stroke [mm]	4 (2 per side)	4 (2 per side)	4 (2 per side)	4 (2 per side)
Max grip force [N]	10 (5 per side)	10 (5 per side)	20 (10 per side)	20 (10 per side)
Grip operation time [s]	0.03 or less	0.03 or less	0.03 or less	0.03 or less
Grip operation frequency [CPM*]	120	120	120	120
Reference page	P. 3	P. 7	P. 11	P.15

\*Cycle per minute

## Explanation of Model Specification Items

**RCP6** -  - **360** - **4** -  -  -  -  -

Series      Type      Rotation Operation range      Grip Opening/Closing Operation range      Applicable Controller      Driver Box Type      Cable Length      Options

<b>360</b>	360 degrees	<b>4</b>	4mm
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<b>RTCKSPE</b>	Size S, parallel type, outer diameter grip
<b>RTCKSPI</b>	Size S, parallel type, inner diameter grip
<b>RTCKSRE</b>	Size S, side-mounted type, outer diameter grip
<b>RTCKSRI</b>	Size S, side-mounted type, inner diameter grip
<b>RTCKMPE</b>	Size M, parallel type, outer diameter grip
<b>RTCKMPI</b>	Size M, parallel type, inner diameter grip
<b>RTCKMRE</b>	Size M, side-mounted type, outer diameter grip
<b>RTCKMRI</b>	Size M, side-mounted type, inner diameter grip

<b>DBN</b>	NPN specification
<b>DBP</b>	PNP specification
<b>N</b>	No driver box

<b>N</b>	None
<b>P</b>	1m
<b>S</b>	3m
<b>M</b>	5m
<b>X</b> <input type="checkbox"/>	Specified length
<b>R</b> <input type="checkbox"/>	Robot cable

<b>P3</b>	PCON MCON MSEL
<b>P5</b>	RCM-P6PC (*) RCON (*)

(\*) Coming soon

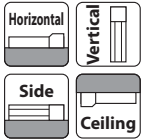
<b>AC2</b>	Actuator cable (pigtail cable) length: 2 m
<b>AC5</b>	Actuator cable (pigtail cable) length: 5 m
<b>B</b>	Brake
<b>CJL</b>	Cable exit direction (Left)
<b>CJR</b>	Cable exit direction (Right)
<b>CJT</b>	Cable exit direction (Top)
<b>RCH</b>	Rubber cover attached (chloroprene rubber)
<b>RSL</b>	Rubber cover attached (silicone rubber)
<b>S1N</b>	Sensor attached x 1 (NPN specification)
<b>S2N</b>	Sensor attached x 2 (NPN specification)
<b>S1P</b>	Sensor attached x 1 (PNP specification)
<b>S2P</b>	Sensor attached x 2 (PNP specification)

\*Please refer to the pages of each type for details.

# RCP6-RTCKSPE/I

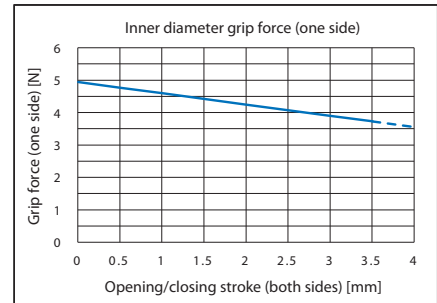
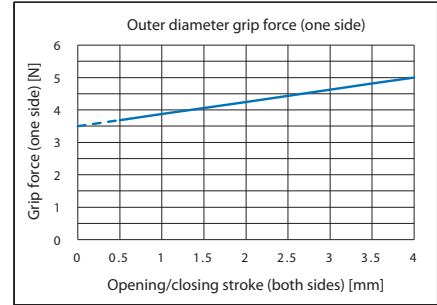
Outer/Inner Diam. Grip	Battery-less Absolute	Small 2-Finger Gripper	Finger Slide Guide	Straight Motor	Body Width 40 mm	24V Pulse Motor
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Model Specification Items	<b>RCP6</b>	<b>360</b>	<b>4</b>				
Series	Type	Rotation Operation Range	Grip Opening/Clos. Operation Range	Applicable Controllers	Driver Box	Cable Length	Options
RTCKSPE: Parallel Type / Outer Diameter Grip	RTCKSPI: Parallel Type / Inner Diameter Grip	360: 360deg	4: 4mm (2mm per side)	P3: PCON MCON MSEL P5: RCM-P6PC (Coming soon) RCON (Coming soon)	DBN: Driver Box (NPN specification) DBP: Driver Box (PNP specification) N: No Driver Box	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable	Please refer to the options table below.



- POINT Selection Notes**
- The outer diameter grip opens when conducting an electricity current, and closes when not conducting (normally closed). The inner diameter grip closes when conducting an electricity current, and opens when not conducting (normally opened).
  - Since a spring is used for the grip mechanism, the grip force changes depending on the open/closing stroke of the fingers. Refer to "Correlation Diagram of Grip Force and Opening/Closing Stroke".
  - To operate the grip part, a driver box is essential. Please refer to P.21 for more information on specifications.
  - When the rotational speed is low (120 deg./s or less), the vibration and operating noise increase due to the rotation characteristics of the motor.
  - For the selection method, refer to P.15.

### Correlation Diagram of Grip Force and Opening/Closing Stroke



(Note) The grip force changes depending on the open/closing stroke of the fingers.

### Actuator Specifications

Item	Description
Maximum torque	0.29N-m
Deceleration ratio	1/4
Maximum rotation speed	1800 deg/s
Max. acceleration/deceleration	29400 deg/s <sup>2</sup>
Max. acceleration/deceleration (controller set value)	3G
Allowable inertia moment	0.00023 kg-m <sup>2</sup>
Rotation operation range	0 to 360° (within one rotation)
Brake retaining torque of the rotating part	0.1N-m
Opening/closing stroke	4mm, 2mm per side
Max grip force	10N, 5N per side
Grip operation time	0.03s or less
Grip operation frequency	120CPM* *CPM: Cycle per minute

### Cable Length

Cable Type	Cable Code	Cable Type	Cable Code
Standard	P (1m)	Robot Cable	R01 (1m) ~R03 (3m)
	S (3m)		R04 (4m) ~R05 (5m)
	M (5m)		R06 (6m) ~R10 (10m)
Specified Length	X06 (6m) ~X10 (10m)		R11 (11m) ~R15 (15m)
	X11 (11m) ~X15 (15m)		—

(Note) Even when a robot cable is specified, the grip cable will be a non-robot cable. Please refer to P. 20 for maintenance cables.

### Options

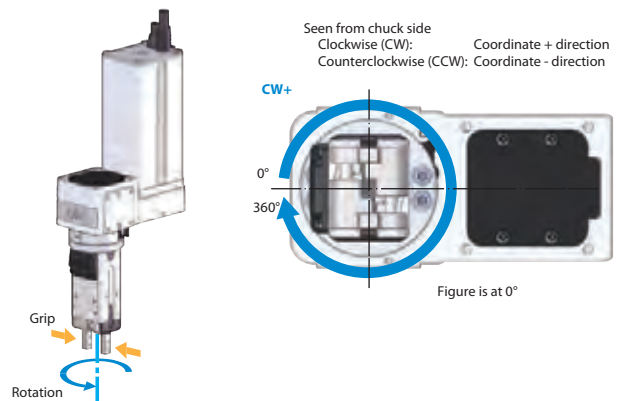
Name	Option code	Reference page
Actuator cable (pigtail cable) length: 2 m	AC2	See P.19
Actuator cable (pigtail cable) length: 5 m	AC5	
Brake	B	
Cable exit direction (Left) (Note 1)	CJL	
Cable exit direction (Right) (Note 1)	CJR	
Cable exit direction (Top) (Note 1)	CJT	
Rubber cover attached (chloroprene rubber)	RCH	
Rubber cover attached (silicone rubber)	RSL	
Sensor attached x 1 (NPN specification) (Note 2)	S1N	
Sensor attached x 2 (NPN specification) (Note 2)	S2N	
Sensor attached x 1 (PNP specification) (Note 2)	S1P	
Sensor attached x 2 (PNP specification) (Note 2)	S2P	

(Note 1) Be sure to fill in one of the codes in the Model Specification Items option column.  
(Note 2) Driver box: for DBN, only S1N/S2N can be selected; for DBP, only S1P/S2P can be selected.

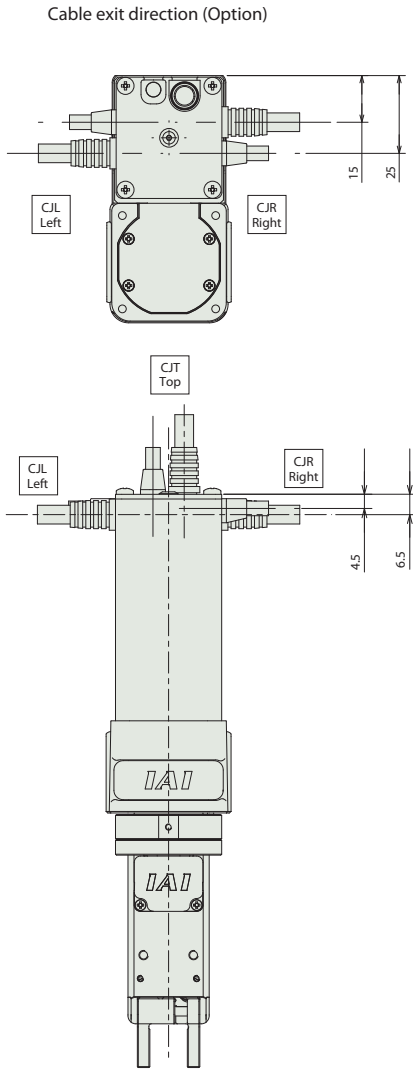
### Actuator Specifications

Item	Description	
Rotation drive system	Pulse motor + timing belt	
Rotation angle positioning repeatability	±0.02 degrees	
Rotation angle lost motion	0.05 degrees	
Rotation motor type	Pulse motor (28□ size)	
Rotation encoder type	Battery-less Absolute	
Rotation encoder pulse count	8192 pulse/rev	
Grip drive system	Grip mechanism (chuck): Compression spring + cam mechanism	
	Release mechanism (unchuck): Solenoid electromagnetism + cam mechanism	
	Grip repeatability	±0.1mm
	Grip backlash	0.5mm or less per side
Mass	W/o Brake	0.67kg
	With Brake	0.73kg
Finger guide	Slide guide	
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)	
Degree of protection	IP20	
Vibration resistance / shock resistance	4.9m/s <sup>2</sup> 100Hz or less	
Compliant international standards	CE marking, RoHS Directive	

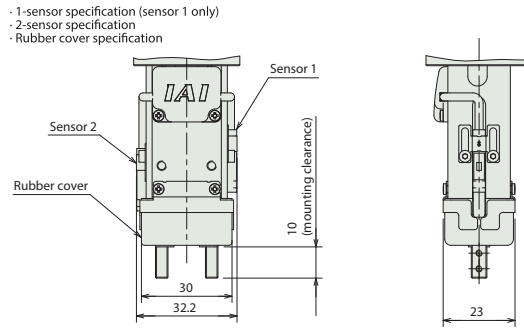
### Rotation and Grip







Sensor and rubber cover attached (option)



**Applicable Controllers**

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

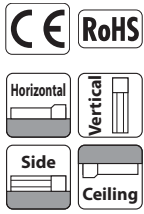
Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page					
				Positioner	Pulse-train	Program	Network option *																
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM								
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	●	-	○	**	●	●	●	○	**	○	**	256	Please see the dedicated catalog or manual.
MCON-LC/LCG (Coming soon)		6		-	-	●	●	●	-	●	●	-	-	●	●	●	-	-	-	-	-	256	
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	●	-	●	-	-	-	●	●	●	-	-	-	-	30000		
PCON-CB/CGB		1	24VDC	●	●	-	●	●	-	●	○	○	●	●	●	-	-	-	-	-	512 (768 for network spec.)		
PCON-CYB/PLB/POB (Coming soon)		1		●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.						
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	**	●	-	-	-	●	●	●	-	-	-	128	Please see the RCON brochure or manual.	

\* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion  
 \*\* Not yet available in Europe. For additional information, please ask IAI.

# RCP6-RTCKSRE/I

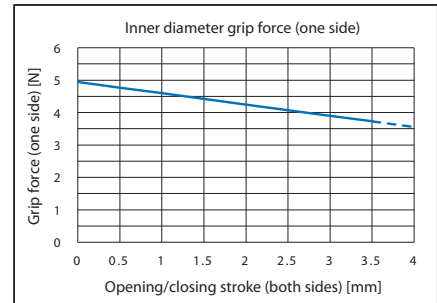
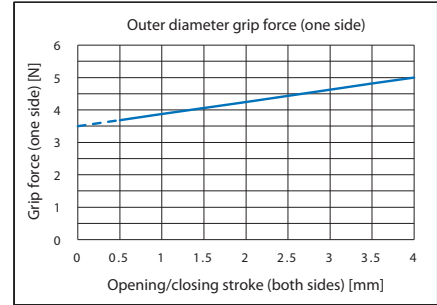
Outer/Inner Diam. Grip	Battery-less Absolute	Small 2-Finger Gripper	Finger Slide Guide	Side-mounted Motor	Body Width 40 mm	24V Pulse Motor
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**Model Specification Items**  
**RCP6** — **360** — **4** — — — — —  
 Series — Type — Rotation Operation Range — Grip Opening/Clos. Operation Range — Applicable Controllers — Driver Box — Cable Length — Options  
 RTCKSRE: Side-mounted Type / Outer Diameter Grip 360: 360deg 4: 4mm (2mm per side) P3: PCON MCON MSEL DBN: Driver Box (NPN specification) DBP: Driver Box (PNP specification) N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable  
 RTCKSRI: Side-mounted Type / Inner Diameter Grip P5: RCM-P6PC (Coming soon) RCON (Coming soon)



- POINT Selection Notes**
- (1) The outer diameter grip opens when conducting an electricity current, and closes when not conducting (normally closed). The inner diameter grip closes when conducting an electricity current, and opens when not conducting (normally opened).
  - (2) Since a spring is used for the grip mechanism, the grip force changes depending on the open/closing stroke of the fingers. Refer to "Correlation Diagram of Grip Force and Opening/Closing Stroke".
  - (3) To operate the grip part, a driver box is essential. Please refer to P.21 for more information on specifications.
  - (4) When the rotational speed is low (120 deg./s or less), the vibration and operating noise increase due to the rotation characteristics of the motor.
  - (5) For the selection method, refer to P.15.

**Correlation Diagram of Grip Force and Opening/Closing Stroke**



(Note) The grip force changes depending on the open/closing stroke of the fingers.

**Actuator Specifications**

Item	Description
Maximum torque	0.29N-m
Deceleration ratio	1/4
Maximum rotation speed	1800 deg/s
Max. acceleration/deceleration	29400 deg/s <sup>2</sup>
Max. acceleration/deceleration (controller set value)	3G
Allowable inertia moment	0.00023 kg-m <sup>2</sup>
Rotation operation range	0 to 360° (within one rotation)
Brake retaining torque of the rotating part	0.1N-m
Opening/closing stroke	4mm, 2mm per side
Max grip force	10N, 5N per side
Grip operation time	0.03s or less
Grip operation frequency	120CPM* *CPM: Cycle per minute

**Actuator Specifications**

Item	Description
Rotation drive system	Pulse motor + timing belt
Rotation angle positioning repeatability	±0.02 degrees
Rotation angle lost motion	0.05 degrees
Rotation motor type	Pulse motor (28□ size)
Rotation encoder type	Battery-less Absolute
Rotation encoder pulse count	8192 pulse/rev
Grip drive system	Grip mechanism (chuck): Compression spring + cam mechanism Release mechanism (unchuck): Solenoid electromagnetism + cam mechanism
Grip repeatability	±0.1mm
Grip backlash	0.5mm or less per side
Mass	W/o Brake 0.68kg With Brake 0.74kg
Finger guide	Slide guide
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration resistance / shock resistance	4.9m/s <sup>2</sup> 100Hz or less
Compliant international standards	CE marking, RoHS Directive

**Cable Length**

Cable Type	Cable Code	Cable Type	Cable Code
Standard	P (1m)	Robot Cable	R01 (1m) ~R03 (3m)
	S (3m)		R04 (4m) ~R05 (5m)
	M (5m)		R06 (6m) ~R10 (10m)
Specified Length	X06 (6m) ~X10 (10m)		R11 (11m) ~R15 (15m)
	X11 (11m) ~X15 (15m)		—

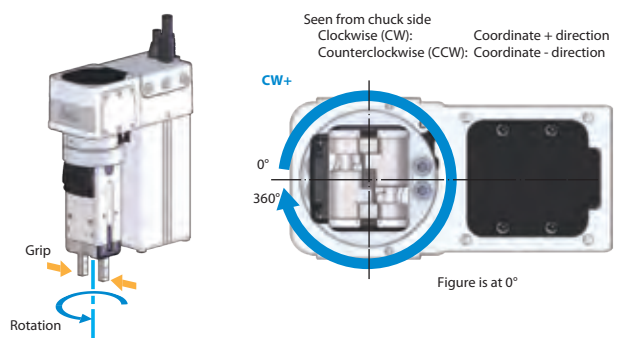
(Note) Even when a robot cable is specified, the grip cable will be a non-robot cable. Please refer to P. 20 for maintenance cables.

**Options**

Name	Option code	Reference page
Actuator cable (pigtail cable) length: 2 m	AC2	See P.19
Actuator cable (pigtail cable) length: 5 m	AC5	
Brake	B	
Cable exit direction (Left) (Note 1)	CJL	
Cable exit direction (Right) (Note 1)	CJR	
Cable exit direction (Top) (Note 1)	CJT	
Rubber cover attached (chloroprene rubber)	RCH	
Rubber cover attached (silicone rubber)	RSL	
Sensor attached x 1 (NPN specification) (Note 2)	S1N	
Sensor attached x 2 (NPN specification) (Note 2)	S2N	
Sensor attached x 1 (PNP specification) (Note 2)	S1P	
Sensor attached x 2 (PNP specification) (Note 2)	S2P	

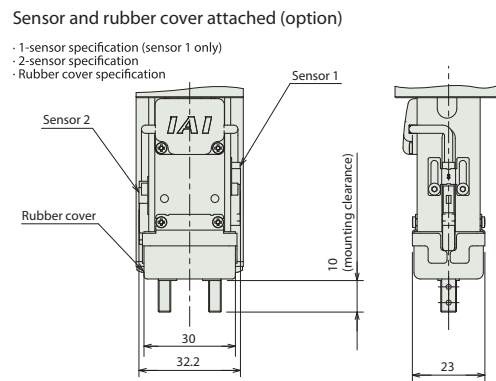
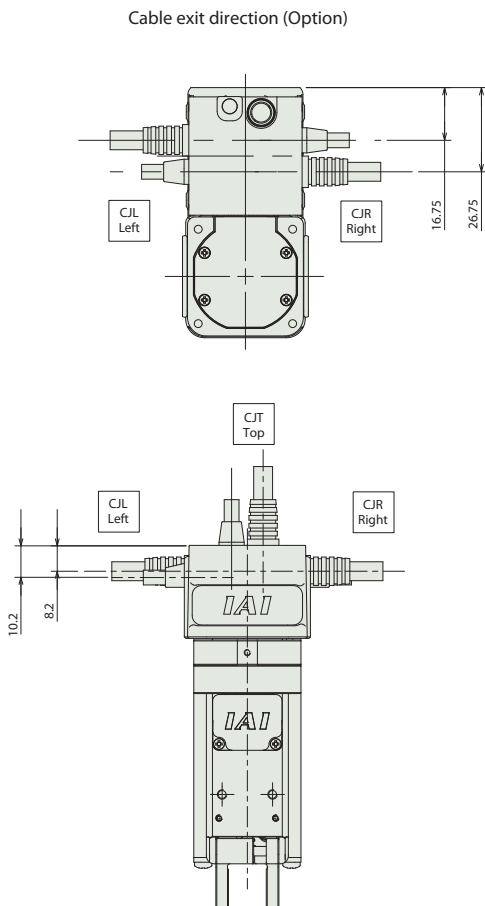
(Note 1) Be sure to fill in one of the codes in the Model Specification Items option column.  
 (Note 2) Driver box: for DBN, only S1N/S2N can be selected; for DBP, only S1P/S2P can be selected.

**Rotation and Grip**









### Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

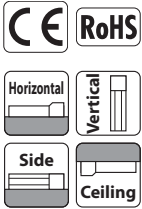
Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page			
				Positioner	Pulse-train	Program	Network option *														
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM						
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	○	●	●	●	○	○	256	Please see the dedicated catalog or manual.	
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	●	-	-	-	-			256
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	●	-	●	-	-	-	●	●	●	-	-	30000		
PCON-CB/CGB		1	24VDC	● Option	● Option	-	●	●	-	●	○	○	●	●	●	-	-	512 (768 for network spec.)			
PCON-CYB/PLB/POB (Coming soon)		1		● Option	● Option	-	-	-	-	-	-	-	-	-	-	-	-	-	64		
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.				
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	○	●	-	-	-	●	●	●	-	-	128	Please see the RCON brochure or manual.

\* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion  
 \*\* Not yet available in Europe. For additional information, please ask IAI.

# RCP6-RTCKMPE/I

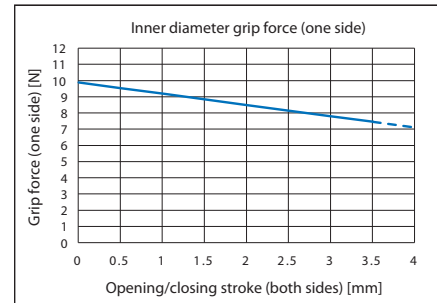
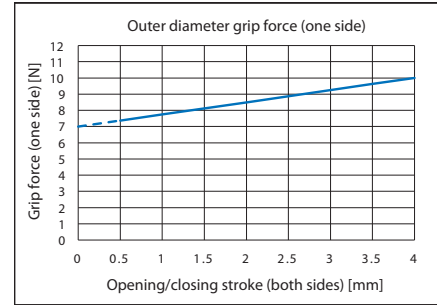
Outer/Inner Diam. Grip	Battery-less Absolute	Medium 2-Finger Gripper	Finger Slide Guide	Straight Motor	Body Width 50 mm	24V Pulse Motor
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**Model Specification Items**  
**RCP6** — **360** — **4** — — — — —  
 Series — Type — Rotation Operation Range — Grip Opening/Clos. Operation Range — Applicable Controllers — Driver Box — Cable Length — Options  
 RTCKMPE: Parallel Type / Outer Diameter Grip 360: 360deg 4: 4mm (2mm per side) P3: PCON MCON MSEL DBN: Driver Box (NPN specification) N: None P: 1m S: 3m M: 5m X□□: Specified Length R□□: Robot Cable  
 RTCKMPI: Parallel Type / Inner Diameter Grip P5: RCM-P6PC (Coming soon) RCON (Coming soon) DBP: Driver Box (PNP specification) N: No Driver Box



- POINT Selection Notes**
- (1) The outer diameter grip opens when conducting an electricity current, and closes when not conducting (normally closed). The inner diameter grip closes when conducting an electricity current, and opens when not conducting (normally opened).
  - (2) Since a spring is used for the grip mechanism, the grip force changes depending on the open/closing stroke of the fingers. Refer to "Correlation Diagram of Grip Force and Opening/Closing Stroke".
  - (3) To operate the grip part, a driver box is essential. Please refer to P.21 for more information on specifications.
  - (4) When the rotational speed is low (90 deg./s or less), the vibration and operating noise increase due to the rotation characteristics of the motor.
  - (5) For the selection method, refer to P.15.

**Correlation Diagram of Grip Force and Opening/Closing Stroke**



(Note) The grip force changes depending on the open/closing stroke of the fingers.

**Actuator Specifications**

Item	Description
Maximum torque	0.36N-m
Deceleration ratio	1/5
Maximum rotation speed	1800 deg/s
Max. acceleration/deceleration	29400 deg/s <sup>2</sup>
Max. acceleration/deceleration (controller set value)	3G
Allowable inertia moment	0.00036 kg-m <sup>2</sup>
Rotation operation range	0 to 360° (within one rotation)
Brake retaining torque of the rotating part	0.125N-m
Opening/closing stroke	4mm, 2mm per side
Max grip force	20N, 10N per side
Grip operation time	0.03s or less
Grip operation frequency	120CPM* *CPM: Cycle per minute

**Cable Length**

Cable Type	Cable Code	Cable Type	Cable Code
Standard	P (1m)	Robot Cable	R01 (1m) ~R03 (3m)
	S (3m)		R04 (4m) ~R05 (5m)
	M (5m)		R06 (6m) ~R10 (10m)
Specified Length	X06 (6m) ~X10 (10m)		R11 (11m) ~R15 (15m)
	X11 (11m) ~X15 (15m)		—

(Note) Even when a robot cable is specified, the grip cable will be a non-robot cable. Please refer to P. 20 for maintenance cables.

**Options**

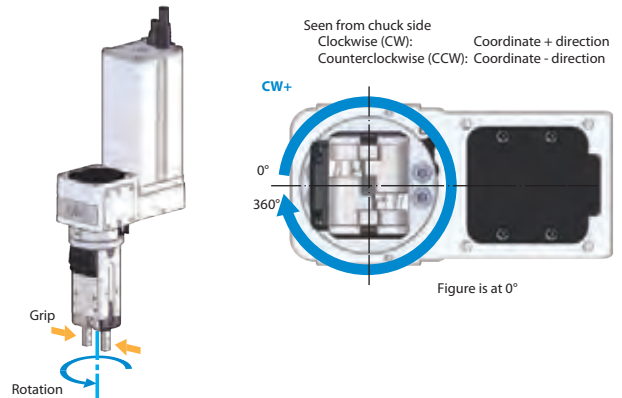
Name	Option code	Reference page
Actuator cable (pigtail cable) length: 2 m	AC2	See P.19
Actuator cable (pigtail cable) length: 5 m	AC5	
Brake	B	
Cable exit direction (Left) (Note 1)	CJL	
Cable exit direction (Right) (Note 1)	CJR	
Cable exit direction (Top) (Note 1)	CJT	
Rubber cover attached (chloroprene rubber)	RCH	
Rubber cover attached (silicone rubber)	RSL	
Sensor attached x 1 (NPN specification) (Note 2)	S1N	
Sensor attached x 2 (NPN specification) (Note 2)	S2N	
Sensor attached x 1 (PNP specification) (Note 2)	S1P	
Sensor attached x 2 (PNP specification) (Note 2)	S2P	

(Note 1) Be sure to fill in one of the codes in the Model Specification Items option column.  
 (Note 2) Driver box: for DBN, only S1N/S2N can be selected; for DBP, only S1P/S2P can be selected.

**Actuator Specifications**

Item	Description	
Rotation drive system	Pulse motor + timing belt	
Rotation angle positioning repeatability	±0.02 degrees	
Rotation angle lost motion	0.05 degrees	
Rotation motor type	Pulse motor (28□ size)	
Rotation encoder type	Battery-less Absolute	
Rotation encoder pulse count	8192 pulse/rev	
Grip drive system	Grip mechanism (chuck): Compression spring + cam mechanism	
	Release mechanism (unchuck): Solenoid electromagnetism + cam mechanism	
	Grip repeatability	±0.1mm
	Grip backlash	0.5mm or less per side
Mass	W/o Brake	0.88kg
	With Brake	0.94kg
Finger guide	Slide guide	
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)	
Degree of protection	IP20	
Vibration resistance / shock resistance	4.9m/s <sup>2</sup> 100Hz or less	
Compliant international standards	CE marking, RoHS Directive	

**Rotation and Grip**



Dimensions

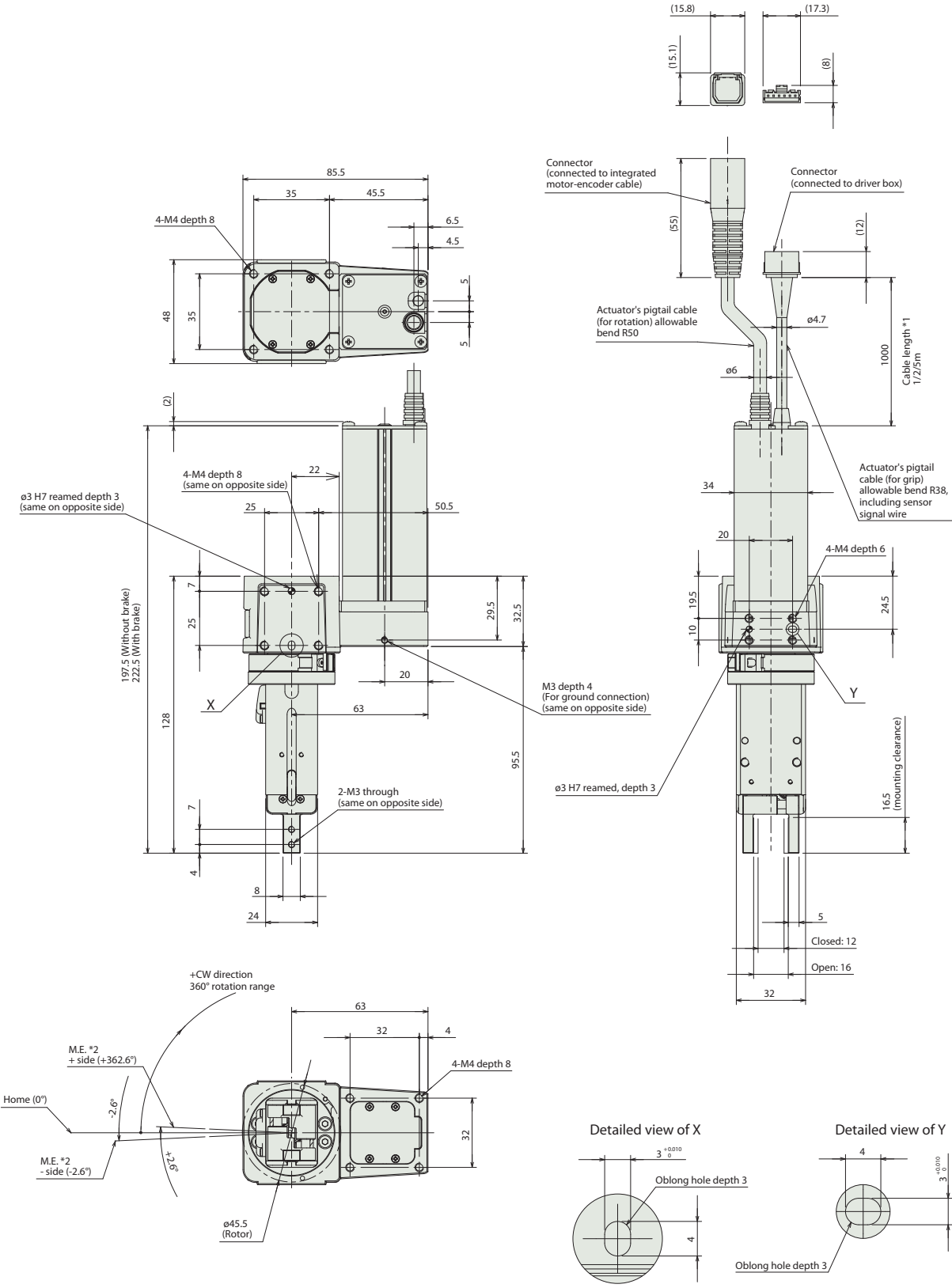
CAD drawings can be downloaded from our website. [www.robocylinder.de](http://www.robocylinder.de) **2D CAD** **3D CAD**

(Note) For the mounting method, refer to P.18.

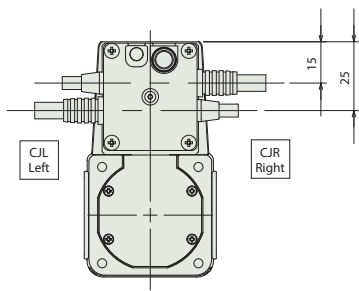
\*1 The actuator cable (pigtail cable) is a robot cable. The actuator cable (pigtail cable) standard length is 1m. The cable can be changed to 2m or 5m when an option (model: AC2/AC5) is selected.

\*2 When home return is performed, the rotary part rotates to the left as seen from the chuck side and move to the M.E. - side. After home return completes, it rotates to the right.

M.E: Mechanical end

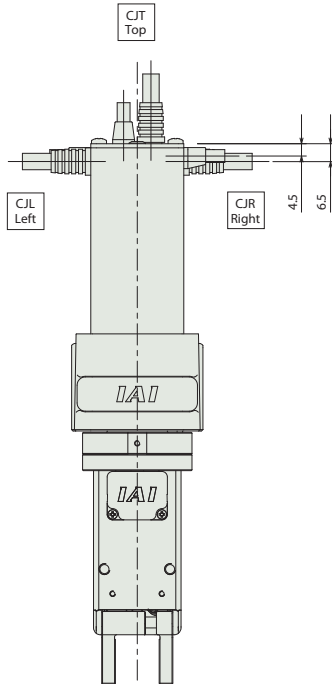
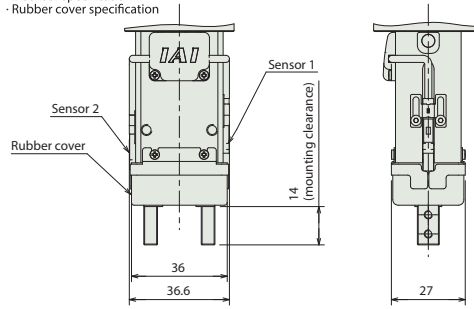


Cable exit direction (Option)



Sensor and rubber cover attached (option)

- 1-sensor specification (sensor 1 only)
- 2-sensor specification
- Rubber cover specification



Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

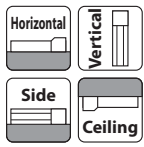
Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page			
				Positioner	Pulse-train	Program	Network option *														
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM						
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	○	●	●	●	○	○	256	Please see the dedicated catalog or manual.	
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	●	-	-	-	-			256
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	●	-	-	-	●	●	●	-	-	30000	768 for network spec.)		
PCON-CB/CGB		1	24VDC	● Option	● Option	-	●	●	-	●	○	○	●	●	●	-	-	512			
PCON-CYB/PLB/POB (Coming soon)		1		● Option	● Option	-	-	-	-	-	-	-	-	-	-	-	-	-			64
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.				
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	○	●	-	-	-	●	●	●	-	-	128	Please see the RCON brochure or manual.

\* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion  
 \*\* Not yet available in Europe. For additional information, please ask IAI.

# RCP6-RTCKMRE/I

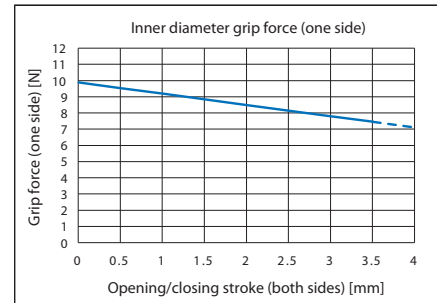
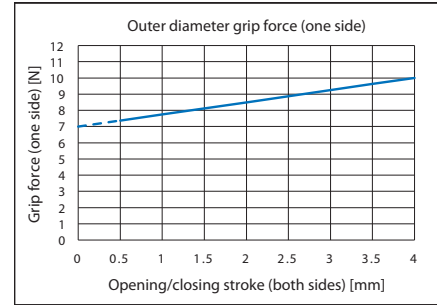
Outer/Inner Diam. Grip	Battery-less Absolute	Medium 2-Finger Gripper	Finger Slide Guide	Side-mounted Motor	Body Width 50 mm	24v Pulse Motor
------------------------	-----------------------	-------------------------	--------------------	--------------------	------------------	-----------------

<b>Model Specification Items</b>	<b>RCP6</b>	<b>360</b>	<b>4</b>				
Series	Type	Rotation Operation Range	Grip Opening/Clos. Operation Range	Applicable Controllers	Driver Box	Cable Length	Options
RTCKMRE: Side-mounted Type / Outer Diameter Grip	360: 360deg	4: 4mm (2mm per side)	P3: PCON MCON MSEL P5: RCM-P6PC (Coming soon) RCON (Coming soon)	DBN: Driver Box (NPN specification) DBP: Driver Box (PNP specification) N: No Driver Box	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable		Please refer to the options table below.



- POINT Selection Notes**
- (1) The outer diameter grip opens when conducting an electricity current, and closes when not conducting (normally closed). The inner diameter grip closes when conducting an electricity current, and opens when not conducting (normally opened).
  - (2) Since a spring is used for the grip mechanism, the grip force changes depending on the open/closing stroke of the fingers. Refer to "Correlation Diagram of Grip Force and Opening/Closing Stroke".
  - (3) To operate the grip part, a driver box is essential. Please refer to P.21 for more information on specifications.
  - (4) When the rotational speed is low (90 deg./s or less), the vibration and operating noise increase due to the rotation characteristics of the motor.
  - (5) For the selection method, refer to P.15.

**Correlation Diagram of Grip Force and Opening/Closing Stroke**



(Note) The grip force changes depending on the open/closing stroke of the fingers.

**Actuator Specifications**

Item	Description
Maximum torque	0.36N-m
Deceleration ratio	1/5
Maximum rotation speed	1800 deg/s
Max. acceleration/deceleration	29400 deg/s <sup>2</sup>
Max. acceleration/deceleration (controller set value)	3G
Allowable inertia moment	0.00036 kg-m <sup>2</sup>
Rotation operation range	0 to 360° (within one rotation)
Brake retaining torque of the rotating part	0.125N-m
Opening/closing stroke	4mm, 2mm per side
Max grip force	20N, 10N per side
Grip operation time	0.03s or less
Grip operation frequency	120CPM* *CPM: Cycle per minute

**Cable Length**

Cable Type	Cable Code	Cable Type	Cable Code
Standard	P (1m)	Robot Cable	R01 (1m) ~R03 (3m)
	S (3m)		R04 (4m) ~R05 (5m)
	M (5m)		R06 (6m) ~R10 (10m)
Specified Length	X06 (6m) ~X10 (10m)		R11 (11m) ~R15 (15m)
	X11 (11m) ~X15 (15m)		—

(Note) Even when a robot cable is specified, the grip cable will be a non-robot cable. Please refer to P. 20 for maintenance cables.

**Options**

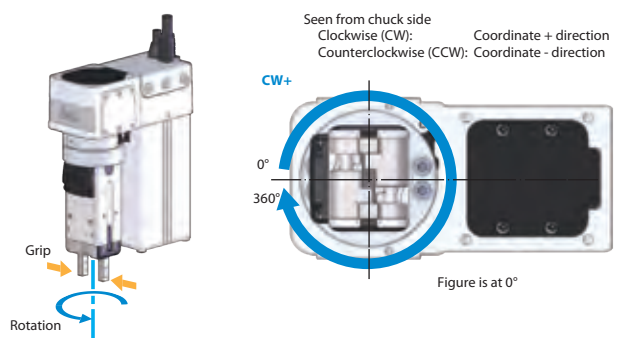
Name	Option code	Reference page
Actuator cable (pigtail cable) length: 2 m	AC2	See P.19
Actuator cable (pigtail cable) length: 5 m	AC5	
Brake	B	
Cable exit direction (Left) (Note 1)	CJL	
Cable exit direction (Right) (Note 1)	CJR	
Cable exit direction (Top) (Note 1)	CJT	
Rubber cover attached (chloroprene rubber)	RCH	
Rubber cover attached (silicone rubber)	RSL	
Sensor attached x 1 (NPN specification) (Note 2)	S1N	
Sensor attached x 2 (NPN specification) (Note 2)	S2N	
Sensor attached x 1 (PNP specification) (Note 2)	S1P	
Sensor attached x 2 (PNP specification) (Note 2)	S2P	

(Note 1) Be sure to fill in one of the codes in the Model Specification Items option column.  
 (Note 2) Driver box: for DBN, only S1N/S2N can be selected; for DBP, only S1P/S2P can be selected.

**Actuator Specifications**

Item	Description	
Rotation drive system	Pulse motor + timing belt	
Rotation angle positioning repeatability	±0.02 degrees	
Rotation angle lost motion	0.05 degrees	
Rotation motor type	Pulse motor (28□ size)	
Rotation encoder type	Battery-less Absolute	
Rotation encoder pulse count	8192 pulse/rev	
Grip drive system	Grip mechanism (chuck): Compression spring + cam mechanism	
	Release mechanism (unchuck): Solenoid electromagnetism + cam mechanism	
	Grip repeatability	±0.1mm
	Grip backlash	0.5mm or less per side
Mass	W/o Brake	0.88kg
	With Brake	0.94kg
Finger guide	Slide guide	
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)	
Degree of protection	IP20	
Vibration resistance / shock resistance	4.9m/s <sup>2</sup> 100Hz or less	
Compliant international standards	CE marking, RoHS Directive	

**Rotation and Grip**



## Dimensions

CAD drawings can be downloaded from our website.  
[www.robocylinder.de](http://www.robocylinder.de)

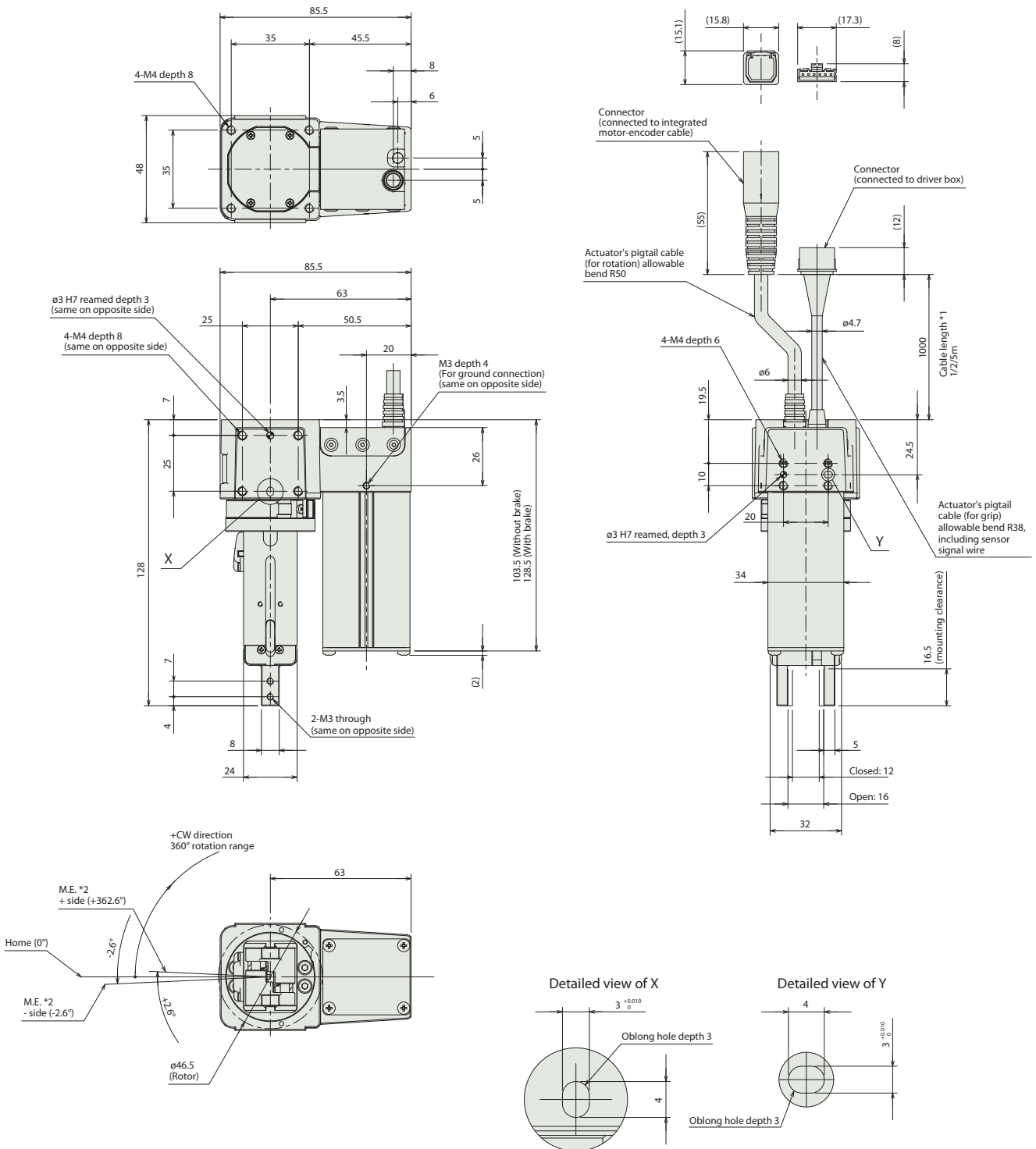


(Note) For the mounting method, refer to P.18.

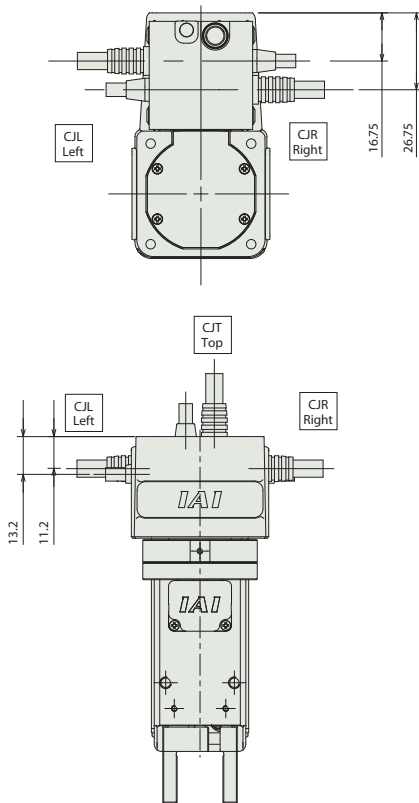
\*1 The actuator cable (pigtail cable) is a robot cable. The actuator cable (pigtail cable) standard length is 1m. The cable can be changed to 2m or 5m when an option (model: AC2/AC5) is selected.

\*2 When home return is performed, the rotary part rotates to the left as seen from the chuck side and move to the M.E. - side. After home return completes, it rotates to the right.

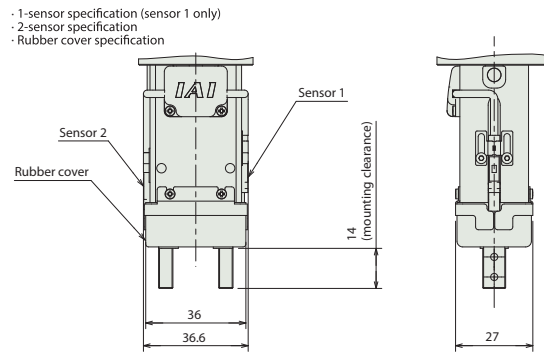
M.E: Mechanical end



Cable exit direction (Option)



Sensor and rubber cover attached (option)



### Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page			
				Positioner	Pulse-train	Program	Network option *														
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM						
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	○	●	●	●	○	○	256	Please see the dedicated catalog or manual.	
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	●	-	-	-	-			256
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	●	-	-	●	●	●	-	-	-	-	30000		
PCON-CB/CGB		1	24VDC	● Option	● Option	-	●	●	-	●	○	○	●	●	●	-	-	-	512 (768 for network spec.)		
PCON-CYB/PLB/POB (Coming soon)		1		● Option	● Option	-	-	-	-	-	-	-	-	-	-	-	-	-	64		
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.				
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	○	●	-	-	-	●	●	●	-	-	128	Please see the RCON brochure or manual.

\* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion  
 \*\* Not yet available in Europe. For additional information, please ask IAI.

# Selection method

**Step 1**

Check the required grip force and allowable workpiece mass



**Step 2**

Check the distance to the gripping point



**Step 3**

Check external force applied to fingers



**Step 4**

Check the allowable moment of inertia

**Step 1** Check the required grip force and allowable workpiece mass

When gripping the workpiece with frictional grip force, calculate the required grip force as follows.

**(1) For normal transfer**

**F:** Grip force (N) ... Total sum of push forces of both fingers  
**μ:** Static friction coefficient between the finger attachment and the workpiece  
**m:** Workpiece mass (kg)  
**g:** Gravitational acceleration (= 9.8m/s<sup>2</sup>)

- The conditions under which the workpiece remains statically gripped without dropping are as follows:

$$F \mu > W \quad F > \frac{mg}{\mu}$$

- Assuming a recommended safety factor of 2 for normal transfer, the required gripping force is calculated as follows:

$$F > \frac{mg}{\mu} \times 2 \text{ (safety factor)}$$

- When the friction coefficient is  $\mu 0.1 \sim 0.2$

$$F > \frac{mg}{0.1 \sim 0.2} \times 2 = (10 \sim 20) \times mg$$

**For ordinary workpiece transferring**

Required grip force ▶ **10~20 times or more** the workpiece mass  
 Max. allowable mass ▶ **Not more than 1/10th to 1/20th** the gripping force

**(2) When considerable acceleration, deceleration, or impact force is applied during transfer of the workpiece**

In addition to gravity, a greater inertial force is applied to the workpiece. In this case, select a model with an even higher safety factor.

**When large acceleration, deceleration, or shock is applied**

Required grip force ▶ **30~50 times or more** the workpiece mass  
 Max. allowable mass ▶ **Not more than 1/30th to 1/50th** the gripping force



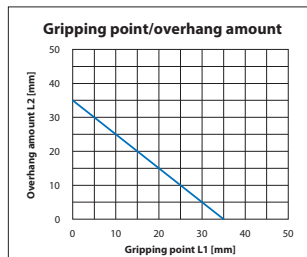
\* The greater the coefficient of static friction, the greater the maximum allowable workpiece mass. However, select a model that can generate a gripping force of at least 10 to 20 times this workpiece mass to ensure safety.

**Step 2** Check the distance to the gripping point

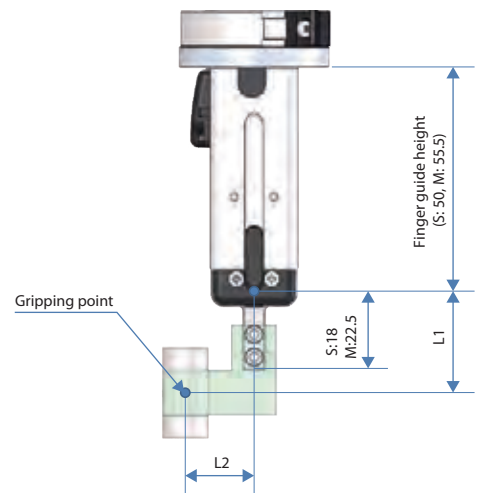
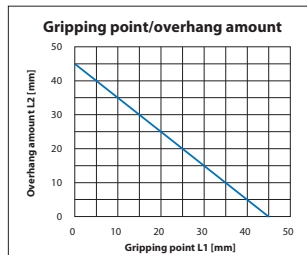
The distances (L1, L2) from the finger mounting surface to the gripping point have to fall in the ranges specified in the graph below.

If the limits are exceeded, excessive moments may act upon the sliding part of the finger and internal mechanism and it could shorten the service life.

RCP6-  
RTCKSPE/  
RTCKSPI/  
RTCKSRE/  
RTCKSRI



RCP6-  
RTCKMPE/  
RTCKMPI/  
RTCKMRE/  
RTCKMRI



Even if the gripping point distance is within the limit range, keep the finger attachment as small and lightweight as possible.

If the fingers are long and large, or if the mass is large, inertial force and bending moment during opening and closing may worsen the performance and adversely affect the guide section.



**Step 3** Check external force applied to fingers

**(1) Allowable vertical load**

Make sure that the vertical load applied to each finger is less than the allowable load.

**(2) Allowable load moment**

Calculate Ma and Mc using the value of L1, and Mb using L2. Make sure the moment applied to each finger is less than the maximum allowable load moment.

● The allowable external force when applying moment load to each claw is

$$\text{Allowable load } F(N) > \frac{M \text{ (Maximum allowable moment (N-m))}}{L(\text{mm}) \times 10^{-3}}$$

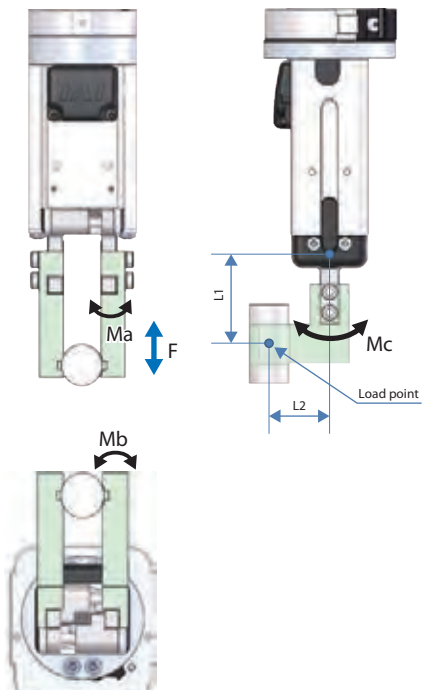
Calculate F (N) using L1 and L2.

Check that the external force applied to the finger is less than the calculated allowable load F (N) (the smaller value of L1 and L2).

Model	Allowable vertical load F (N)	Maximum allowable load moment (N-m)		
		Ma	Mb	Mc
RCP6-RTKSPE/RTCKSPI RTCKSRE/RTCKSRI	150	0.62	0.62	0.99
RCP6-RTCKMPE/RTCKMPI RTCKMRE/RTCKMRI	240	1.08	1.08	2.64

(Note) The allowable value above indicates a static value.  
(Note) Indicates the allowable value per finger.

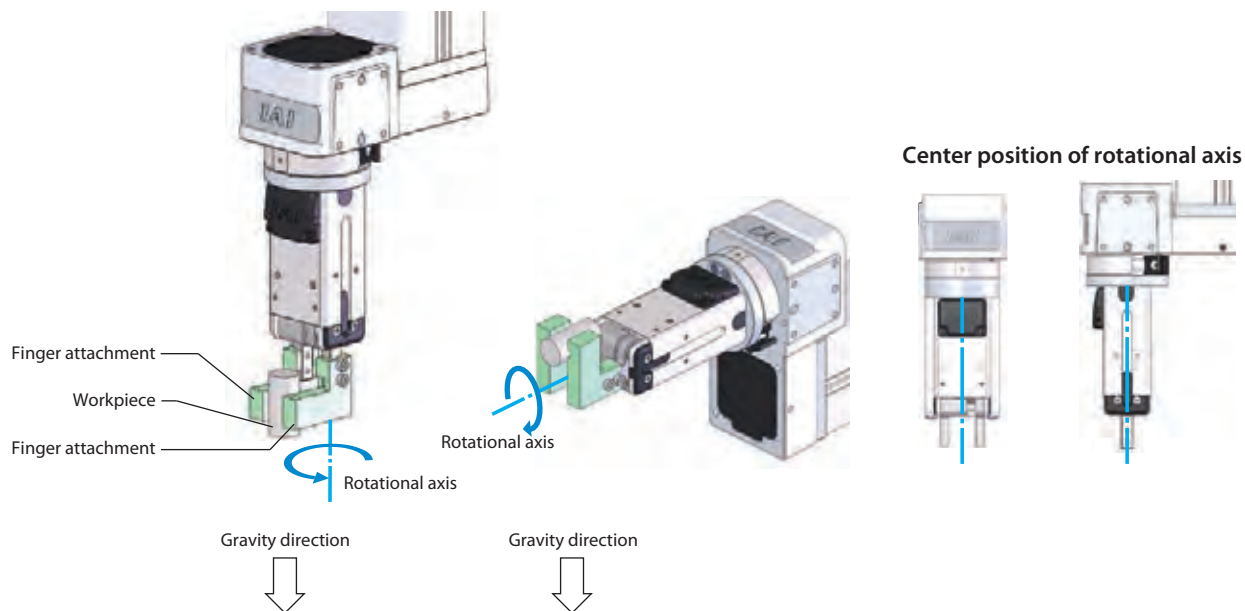
\* The mass of the finger and the workpiece mass are also part of the external force.  
Other external forces applied to the fingers are the centrifugal force when swiveling the gripper with the workpiece attachment gripped and the inertia force due to acceleration/deceleration during travel.



\* The load point above indicates the load position on the fingers. The position varies depending on the type of load.  
 · Load due to grip force: Gripping point  
 · Load due to gravity: Center mass location  
 · Inertial force during travel, centrifugal force during swivel: Center mass location  
 The load moment is the total value calculated for each type of load.

**Step 4** Check the allowable moment of inertia

Calculate the moment of inertia of the workpiece, etc., and make sure that it does not exceed the allowable moment of inertia. For the calculation method, refer to "Formulae for calculating moment of inertia of typical shapes" on the next page.



**Allowable moment of inertia**

Model	Allowable moment of inertia (kg-m <sup>2</sup> )
RCP6-RTKSPE/RTCKSPI/RTCKSRE/RTCKSRI	2.30×10 <sup>-4</sup>
RCP6-RTCKMPE/RTCKMPI/RTCKMRE/RTCKMRI	3.60×10 <sup>-4</sup>

# Formulae for calculating moment of inertia of typical shapes

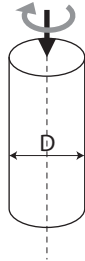
**Step 1** When the rotational axis passes through the center of the object

**(1) Moment of inertia of cylinder 1**

\* The same formula can be applied irrespective of the height of the cylinder (also for circular plate)

**<Formula>  $I = M \times D^2 / 8$**

Moment of inertia of cylinder: I (kg·m<sup>2</sup>)  
Cylinder weight: M (unit: kg)  
Cylinder diameter: D (m)



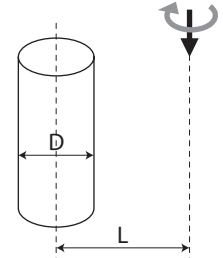
**Step 2** When the center of the object is offset from the rotational axis

**(4) Moment of inertia of cylinder 3**

\* The same formula can be applied irrespective of the height of the cylinder (also for circular plate)

**<Formula>  $I = M \times D^2 / 8 + M \times L^2$**

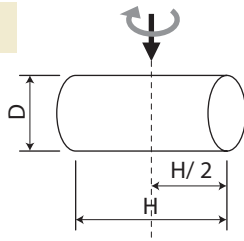
Moment of inertia of cylinder: I (kg·m<sup>2</sup>)  
Cylinder weight: M (kg)  
Cylinder diameter: D (m)  
Distance from rotational axis to center: L (m)



**(2) Moment of inertia of cylinder 2**

**<Formula>  $I = M \times (D^2 / 4 + H^2 / 3) / 4$**

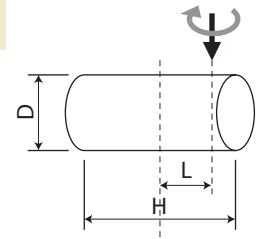
Moment of inertia of cylinder: I (kg·m<sup>2</sup>)  
Cylinder weight: M (kg)  
Cylinder diameter: D (m)  
Cylinder length: H (m)



**(5) Moment of inertia of cylinder 4**

**<Formula>  $I = M \times (D^2 / 4 + H^2 / 3) / 4 + M \times L^2$**

Moment of inertia of cylinder: I (kg·m<sup>2</sup>)  
Cylinder weight: M (kg)  
Cylinder diameter: D (m)  
Cylinder length: H (m)  
Distance from rotational axis to center: L (m)

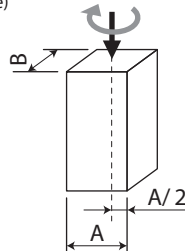


**(3) Moment of inertia of cuboid 1**

\* The same formula can be applied irrespective of the height of the cuboid (also for rectangular plate)

**<Formula>  $I = M \times (A^2 + B^2) / 12$**

Moment of inertia of cuboid: I (kg·m<sup>2</sup>)  
Cuboid weight: M (kg)  
First side of cuboid: A (m)  
Second side of cuboid: B (m)

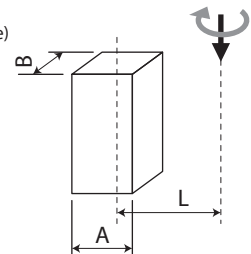


**(6) Moment of inertia of cuboid 2**

\* The same formula can be applied irrespective of the height of the cuboid (also for rectangular plate)

**<Formula>  $I = M \times (A^2 + B^2) / 12 + M \times L^2$**

Moment of inertia of cuboid: I (kg·m<sup>2</sup>)  
Cuboid weight: M (kg)  
First side of cuboid: A (m)  
Second side of cuboid: B (m)  
Distance from rotational axis to center: L (m)



# Mounting method

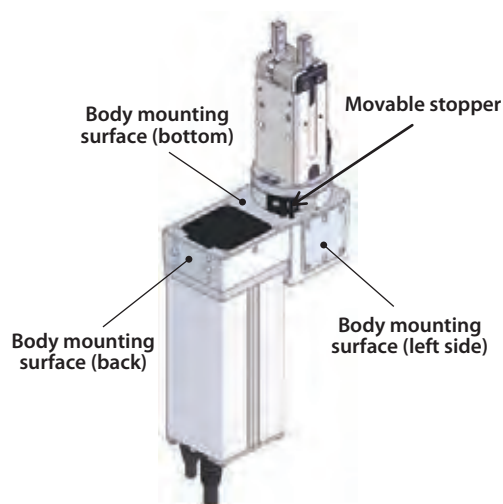
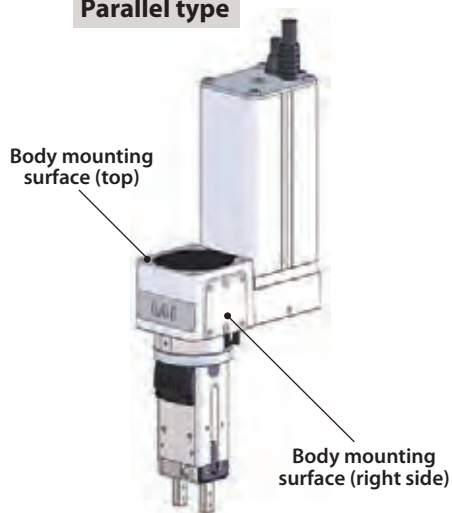
The parallel type can be mounted and fixed from 5 sides and the side-mounted type from 4 sides.

The body includes tapped mounting holes for mounting. The mounting surface should be a machined surface or a plane with similar accuracy.

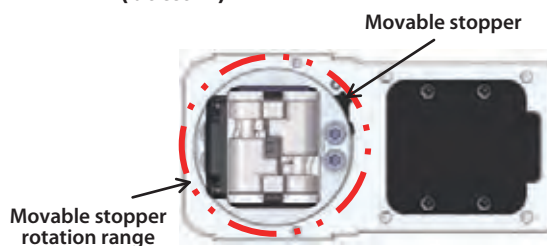
For fixation, use all the screw holes (4 holes) on the surface to be used for mounting. If not all the screw holes are used, depending on the load applied to the body, the bolts or screw holes may be damaged.

When fixing the parallel type to the bottom surface, be careful not to cause interference with the movable range of the rotating movable stopper.

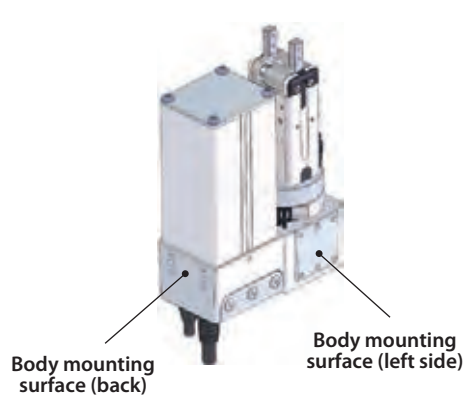
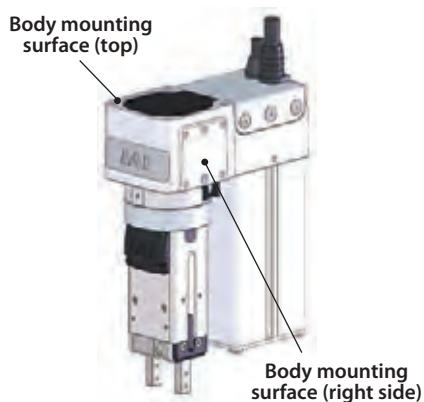
## Parallel type



## (bottom)



## Side-mounted type

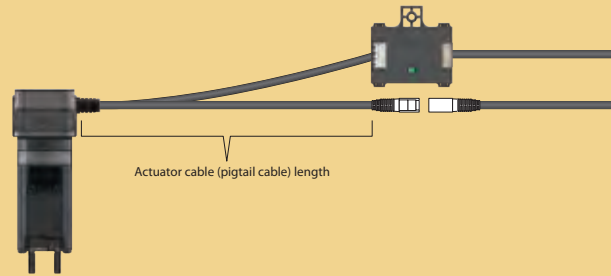


# Options

## Actuator cable (pigtail cable) length

**Model** AC2 / AC5

**Description** Although the standard length of the actuator's pigtail cables for rotation and grip is 1m, they can be changed to 2m/5m as an option.



## Brake

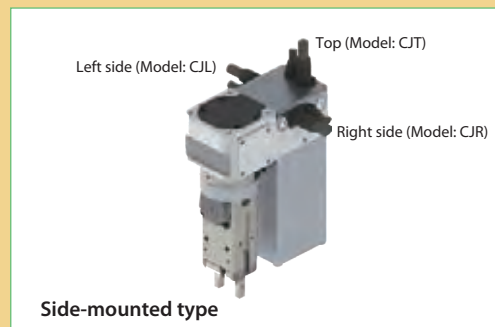
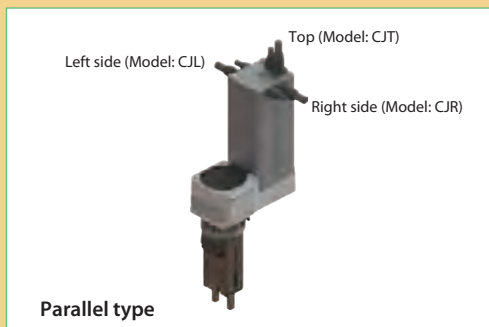
**Model** B

**Description** This works as a holding mechanism that prevents rotation and damage to any attachments when the power or servo is turned off.

## Cable exit direction

**Model** CJT / CJR / CJL

**Description** The mounting direction of the actuator's pigtail cable can be changed to top, left, or right.



## Rubber cover attached

**Model** RCH / RSL

**Description** A rubber cover can be added to the chuck part.

Applicable models	Rubber cover material	Single product model number
RCP6-RTCKSPE/RTCKSPI RTCKSRE/RTCKSRI	RCH (chloroprene rubber)	GRS-RCH-S
RCP6-RTCKMPE/RTCKMPI RTCKMRE/RTCKMRI		GRS-RCH-M
RCP6-RTCKSPE/RTCKSPI RTCKSRE/RTCKSRI	RSL (silicone rubber)	GRS-RSL-S
RCP6-RTCKMPE/RTCKMPI RTCKMRE/RTCKMRI		GRS-RSL-M

(When ordering by single product model number, a mounting bracket and screws will also be included)



## Sensor

**Model** S1N / S2N / S1P / S2P

**Description** One or two sensors can be attached to the chuck part.

Applicable models	Sensor specification	Number of sensors	Single product model number
RCP6-RTCKSPE/RTCKSPI RTCKSRE/RTCKSRI	NPN	1	GRS-S1N-S
		2	GRS-S2N-S
	PNP	1	GRS-S1P-S
		2	GRS-S2P-S
RCP6-RTCKMPE/RTCKMPI RTCKMRE/RTCKMRI	NPN	1	GRS-S1N-M
		2	GRS-S2N-M
	PNP	1	GRS-S1P-M
		2	GRS-S2P-M

(When ordering by single product model number, a mounting bracket and bolts will also be included)



# Maintenance parts

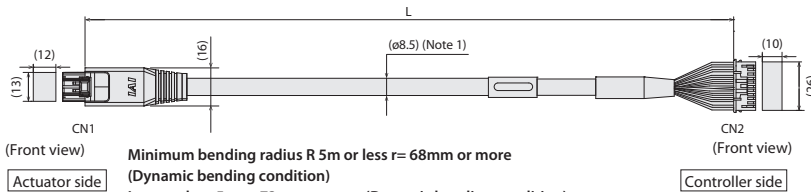
When placing an order for a replacement cable, please use the model name shown below.

■ Table of compatible cables

	Connected controller	Integrated motor-encoder cable	Integrated motor-encoder robot cable
Rotation cable	PCON	CB-CAN-MPA□□□□	CB-CAN-MPA□□□□-RB
	MCON		
	MSEL		
	RCON	CB-ADPC-MPA□□□□	CB-ADPC-MPA□□□□-RB
	RCM-P6PC		
Grip cable		Solenoid driver cable CB-GRS-PCS□□□□	*Non-robot cable

Model: **CB-CAN-MPA□□□□/CB-CAN-MPA□□□□-RB**

\* Please indicate the cable length (L) in □□□, e.g.) 080 = 8m, maximum 15m



Minimum bending radius R 5m or less  $r=68\text{mm}$  or more  
(Dynamic bending condition)  
Longer than 5m  $r=73\text{mm}$  or more (Dynamic bending condition)

\* The robot cable is designed for flex-resistance:  
Please use the robot cable if the cable needs to be installed through the cable track.

(Note 1) If the cable length is 5m or more, ø9.1 cable diameter applies for both robot and non-robot cables.

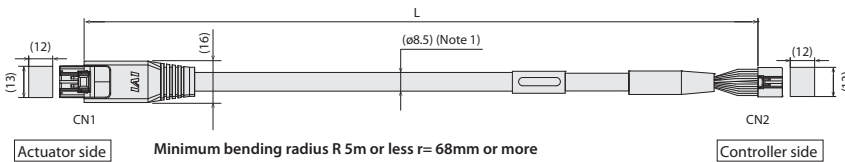
Actuator side  
DF62DL-24S-2.2C  
(HIROSE ELECTRIC CO., LTD.)

Controller side  
PADP-24V-1-5  
(J.S.T.MFG.CO.,LTD.)

Color (wiring)	Signal name	Pin No.	Pin No.	Signal name	Color (wiring)
Blue(AWG22/19)	eA	3	1	eA	Blue(AWG22/19)
Orange(AWG22/19)	VMM	5	2	VMM	Orange(AWG22/19)
Brown(AWG22/19)	eB	10	3	eB	Brown(AWG22/19)
Gray(AWG22/19)	VMM	9	4	VMM	Gray(AWG22/19)
Green(AWG22/19)	e.A	4	5	e.A	Green(AWG22/19)
Red(AWG22/19)	e.B	15	6	e.B	Red(AWG22/19)
Light blue (AWG26)	SA (mABS)	12	11	SA (mABS)	Light blue (AWG26)
Orange(AWG26)	SB (mABS)	17	12	SB (mABS)	Orange(AWG26)
Green(AWG26)	A+	1	13	A+	Green(AWG26)
Brown(AWG26)	A-	6	14	A-	Brown(AWG26)
Gray(AWG26)	B+	11	15	B+	Gray(AWG26)
Red(AWG26)	B-	16	16	B-	Red(AWG26)
Black(AWG26)	VPS	18	18	VPS	Black(AWG26)
Yellow(AWG26)	LS+	8	7	LS+	Yellow(AWG26)
Light blue (AWG26)	BK+	20	9	BK+	Light blue (AWG26)
Orange(AWG26)	BK-	2	10	BK-	Orange(AWG26)
Gray(AWG26)	VCC	21	17	VCC	Gray(AWG26)
Red(AWG26)	GND	7	19	GND	Red(AWG26)
Brown(AWG26)	LS-	14	8	LS-	Brown(AWG26)
Green(AWG26)	LS_GND	13	20	LS_GND	Green(AWG26)
—	—	19	22	—	—
Pink(AWG26)	CF_VCC	22	21	CF_VCC	Pink(AWG26)
—	—	23	23	—	—
Black(AWG26)	FG	24	24	FG	Black(AWG26)

Model: **CB-ADPC-MPA□□□□/CB-ADPC-MPA□□□□-RB**

\* Please indicate the cable length (L) in □□□, e.g.) 030 = 3m, maximum 15m



Minimum bending radius R 5m or less  $r=68\text{mm}$  or more  
(Dynamic bending condition)  
Longer than 5m  $r=73\text{mm}$  or more (Dynamic bending condition)

\* The robot cable is designed for flex-resistance:  
Please use the robot cable if the cable needs to be installed through the cable track.

(Note 1) If the cable length is over 5m, ø9.1 cable diameter applies.

Actuator side  
DF62DL-24S-2.2C  
(HIROSE ELECTRIC CO., LTD.)

Controller side  
DF62DL-24S-2.2C  
(HIROSE ELECTRIC CO., LTD.)

Color (wiring)	Signal name	Pin No.	Pin No.	Signal name	Color (wiring)
Blue(AWG22/19)	eA	3	3	eA	Blue(AWG22/19)
Orange(AWG22/19)	VMM	5	5	VMM	Orange(AWG22/19)
Brown(AWG22/19)	eB	10	10	eB	Brown(AWG22/19)
Gray(AWG22/19)	VMM	9	9	VMM	Gray(AWG22/19)
Green(AWG22/19)	e.A	4	4	e.A	Green(AWG22/19)
Red(AWG22/19)	e.B	15	15	e.B	Red(AWG22/19)
Light blue (AWG26)	SA (mABS)	12	17	SA (mABS)	Light blue (AWG26)
Orange(AWG26)	SB (mABS)	17	12	SB (mABS)	Orange(AWG26)
Green(AWG26)	A+	1	1	A+	Green(AWG26)
Brown(AWG26)	A-	6	6	A-	Brown(AWG26)
Gray(AWG26)	B+	11	11	B+	Gray(AWG26)
Red(AWG26)	B-	16	16	B-	Red(AWG26)
Black(AWG26)	VPS	18	18	VPS	Black(AWG26)
Yellow(AWG26)	LS+	8	8	LS+	Yellow(AWG26)
Light blue (AWG26)	BK+	20	20	BK+	Light blue (AWG26)
Orange(AWG26)	BK-	2	2	BK-	Orange(AWG26)
Gray(AWG26)	VCC	21	21	VCC	Gray(AWG26)
Red(AWG26)	GND	7	7	GND	Red(AWG26)
Brown(AWG26)	LS-	14	14	LS-	Brown(AWG26)
Green(AWG26)	LS_GND	13	13	LS_GND	Green(AWG26)
—	—	19	19	—	—
Pink(AWG26)	CF_VCC	22	22	CF_VCC	Pink(AWG26)
—	—	23	23	—	—
Black(AWG26)	FG	24	24	FG	Black(AWG26)

Model: **CB-GRS-PCS□□□□**

\* Please indicate the cable length (L) in □□□, e.g.) 050 = 5m, maximum 15m

