

Cleanroom Gripper Type

RCP2CR-GR

Dust-proof Gripper Type

RCP2W-GR

Cleanroom



Dust-proof

Cleanroom Type **ISO Class 4** (US FED STD Class 10) and Dust-proof Type **IP50** are now added to the lineup of the Two-fingered gripper RCP2-GRS/GRM and Three-fingered gripper RCP2-GR3SS/GR3SM series

Features

1 Cleanroom Type and Dust-proof Type Available

Cleanroom Type and Dust-proof Type are added to the gripper slider type. They are optimized for gripper use in cleanrooms and dusty environments.

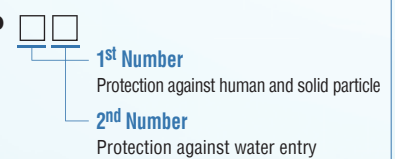


What Cleanliness is ...

ISO Class 5 and ISO Class 4 are examples of the unit of the cleanliness. ISO Class 4 (0.1 μ m) indicates an environment with 10000 pieces of dust or less that are 0.1 μ m or larger in a 1m³ area.

What IP is ... Degree of Protection IP

It is the class specified in IEC standards for water-proof and dust-proof.

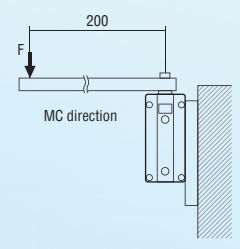
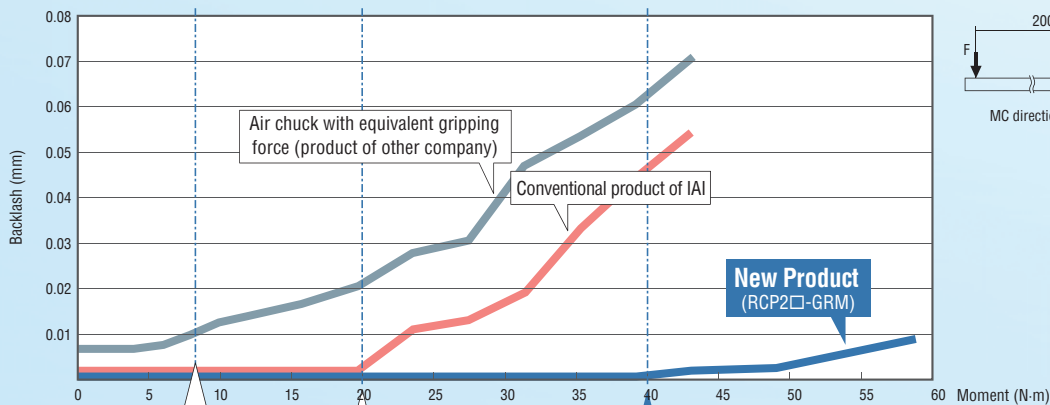


IP50	Solid Particle	Ingress of dust is not entirely prevented, but does not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.
	Water	No protection provided against liquid

2 Upgraded Rigidity

By improving the structure of the base guide, fingers of RCP2□-GRS/RCP2□-GRM series have double backlash resistance against the load moment than the resistance of previous series. Situation assumes that a transient load exceeding the allowable load moment is being applied.

Measurement of backlash versus the moment load applied to the gripper fingers.



Allowable 8.3N·m (For RCP2□-GRM)
It is the allowable value of moment applied by gripping operation.

Backlash generated with three times the allowable moment on conventional product

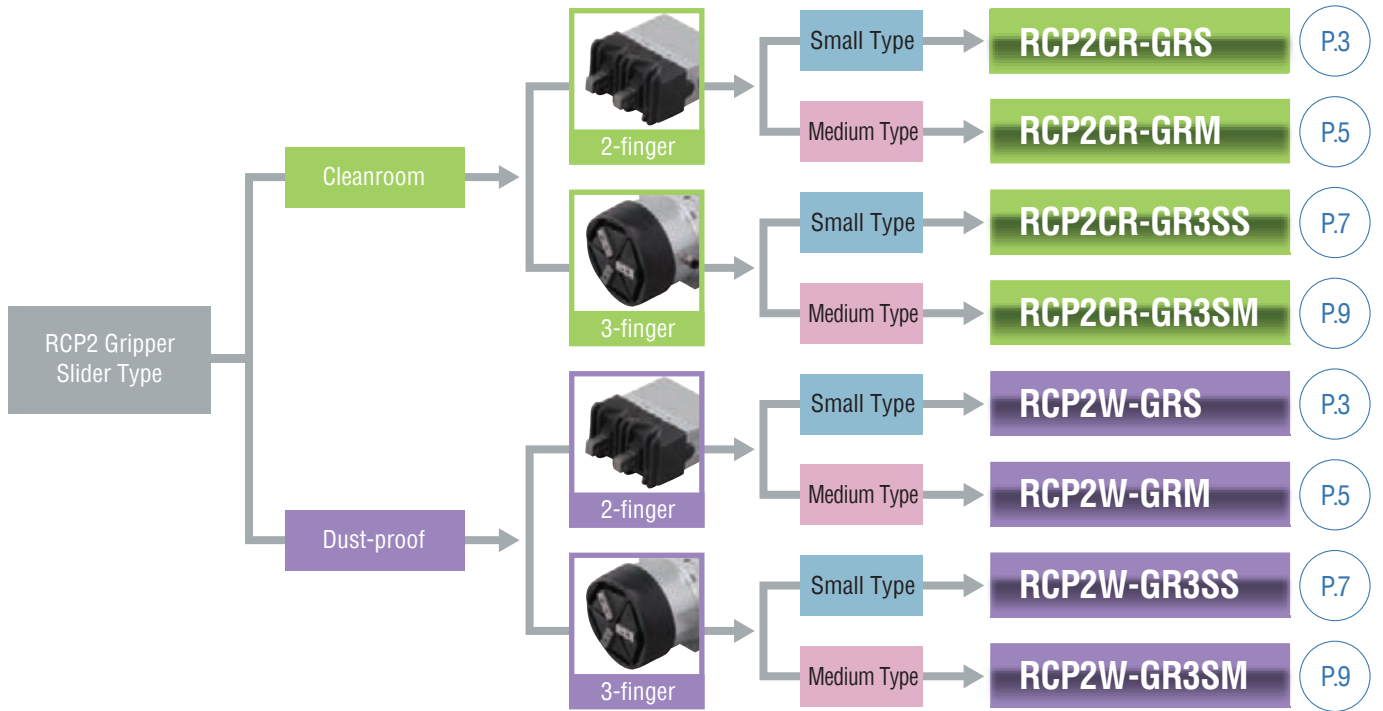
No backlash generated until five times the allowable moment of the new product is applied

<Note> Loads shown in the graph are not the allowable load. Applying a load exceeding the allowable moment might fault out the actuator which may significantly reduce product life or cause malfunction.

3 Supporting Multi-point Positioning, Adjustable Gripping Force

Up to 512 positioning points are supported via servo control, and the gripping force is adjustable. This makes it easy to adjust the finger opening/closing width at setup change and to grip easy-to-deform work parts.

Product Lineup



Product Specification

Specification	Series	Number of Fingers	Type	External View	Gripper Width (mm)	Opening/Closing Stroke (mm)	Max. Gripping Force (N)	See Page
Cleanroom	RCP2CR	2-finger	GRS		74	10 (5 per finger)	21 (10.5 per finger)	P.3
			GRM		79	14 (7 per finger)	80 (40 per finger)	P.5
		3-finger	GR3SS		62	10 (5 per finger)	22 (7.3 per finger)	P.7
			GR3SM		80	14 (7 per finger)	102 (34 per finger)	P.9
Dust-proof	RCP2W	2-finger	GRS		74	10 (5 per finger)	21 (10.5 per finger)	P.3
			GRM		79	14 (7 per finger)	80 (40 per finger)	P.5
		3-finger	GR3SS		62	10 (5 per finger)	22 (7.3 per finger)	P.7
			GR3SM		80	14 (7 per finger)	102 (34 per finger)	P.9

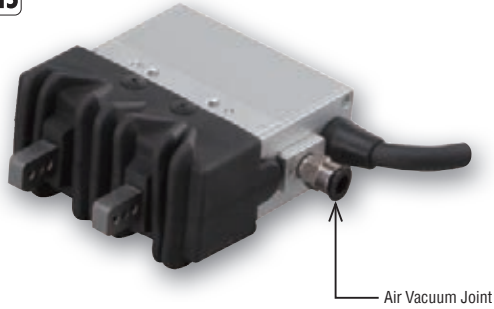
RCP2CR-GRS

Cleanroom RoboCylinder, 2-finger Gripper, Small Slider Type, 74mm Width, Pulse Motor

RCP2W-GRS

Dust-proof RoboCylinder, 2-finger Gripper, Small Slider Type, 74mm Width, Pulse Motor

■ Model Specification Items	RCP2CR	GRS	I	20P	1	10			
	RCP2W Series	Type	Encoder	Motor	Deceleration Ratio	Opening/Closing Stroke	Applicable Controllers	Cable Length	Options
	RCP2CR: Cleanroom RCP2W: Dust-proof		I: Incremental	20P: Pulse motor 20□Size	1: Deceleration ratio 1/1	10: 10mm (5mm per finger)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom R□□: Robot cable	FB: Flange bracket SB: Shaft bracket VL: L-shaped vacuum joint specification



Air Vacuum Joint

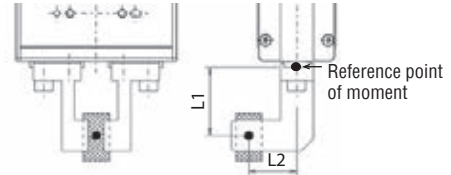
* The figure above shows the Cleanroom Type.
There is no air vacuum joint equipped on the Dust-proof Type.



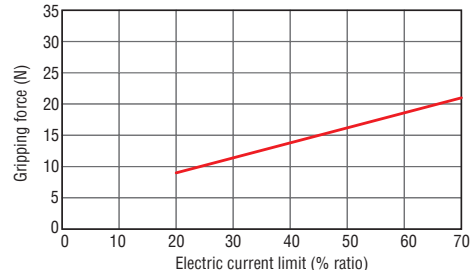
- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work part weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work part, as well as on the shape of the work part. As a rough guide, a work part's weight should not exceed 1/10 to 1/20 of the gripping force.
* The gripping point 0 should be the reference point of moment in the drawing.
- (3) Refer to "How to Select Gripper" at the end of the RoboCylinder General Catalog for how to select a gripper.
- (4) The rated acceleration while moving is 0.3G.

■ Correlation Diagram of Gripping Force and Electric Current Limit

By pressing motion, the gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.



- * Keep L1 within 50mm from the reference point of moment.
- * The gripping force in the graph below assumes that L1 and L2 in the figure above are zero. Also note that the gripping force is a sum of gripping forces of both fingers.



* The gripping force graph above shows reference numbers. Please allow margins up to ±15%.

* Please note that, when gripping (pushing), the speed is fixed at 5mm/s.

Actuator Specifications

■ Max. Gripping Force and Stroke

Model Number	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2CR-GRS-I-20P-1-10-①-②-③	1	21 (10.5 per finger)	10 (5 per finger)
RCP2W-GRS-I-20P-1-10-①-②-③			

Legend: ① Applicable controllers ② Cable length ③ Options

■ Stroke and Max. Opening/Closing Speed / Suction Amount

Deceleration Ratio	Stroke	10 (mm)	Suction Amount (*)
	1	33.3 mm/s (Per finger)	10 Nl/min

* For Cleanroom Type

Cable Length

Type	Cable Code
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable (*)	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Robot cable is standard for applicable P1 controller.

Options

Name	Option Code
Flange Bracket	FB
Shaft Bracket	SB
L-shaped Vacuum Joint Specification (Cleanroom Only)	VL

<Option Code>

FB...Bracket only: RCP2-FB-GRS

SB...Bracket only: RCP2-SB-GRS

* Check the size of the bracket in the option explanation at the end of the RoboCylinder General Catalog.

Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof
Drive System	Timing belt + trapezoidal screw (1.5 lead)	
Positioning Repeatability	±0.01mm	
Backlash	0.15mm or less per finger (constantly pressed out by a spring)	
Lost Motion	0.1mm or less per finger	
Allowable Static Load Moment	Ma: 6.3N·m Mb: 6.3N·m Mc: 7.0N·m	
Guide	Cross roller guide	
Cleanliness	ISO class 4 (US STD FED class 10)	
IP Code	—	
Weight	0.42kg	
Operating Environment	Temperature 0~40°C Humidity 20~85% RH or less (non-condensing)	

Dimensions

CAD drawings can be downloaded from the website.

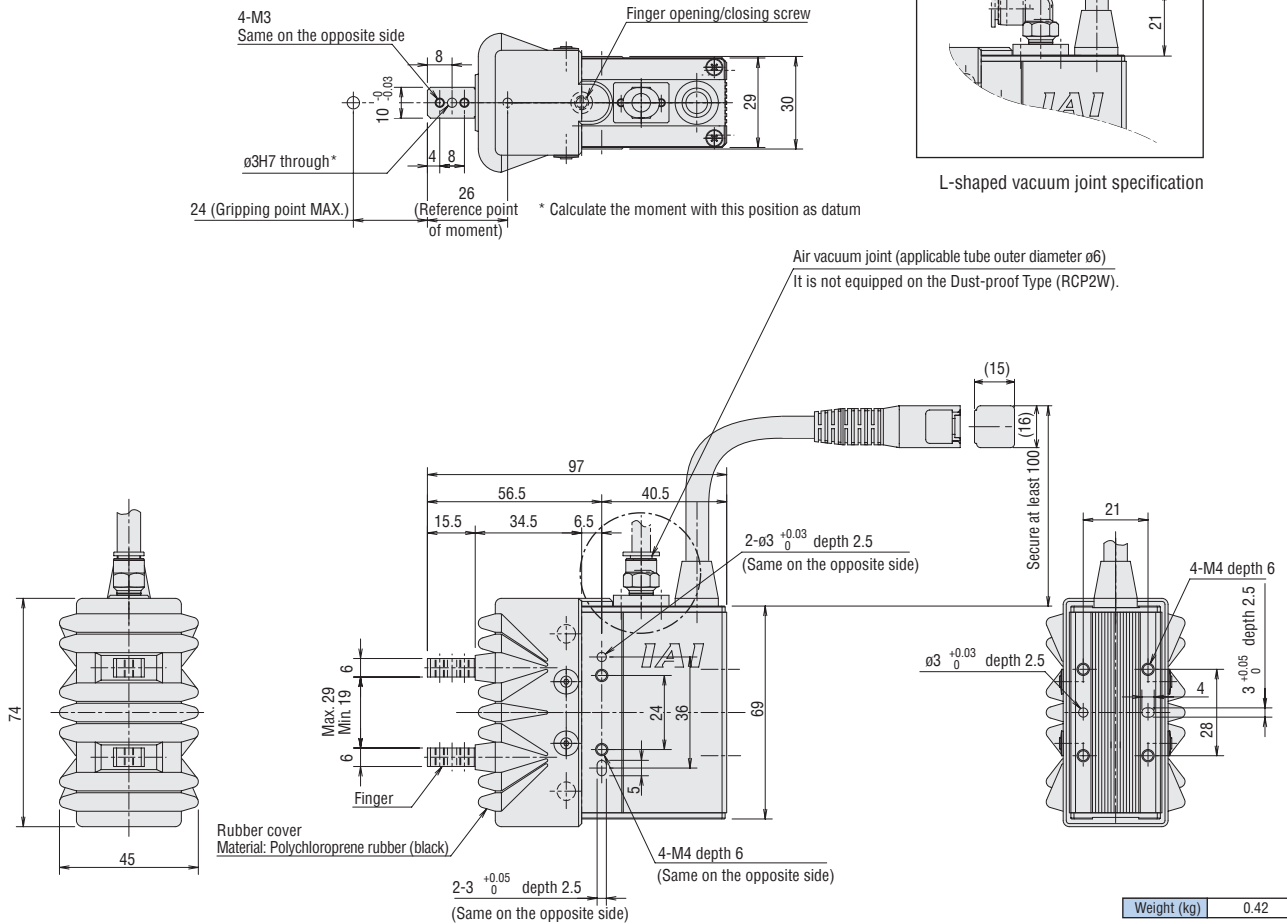
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2/3D
CAD

- * The opening side of the slider is the home position.
- * Shown below is a drawing for the Cleanroom Type. There is no air vacuum joint equipped on the Dust-proof Type.
- * The actuator pigtail is not a robot cable.

Note

- * Utilize $\phi 3H7$ through hole for positioning of fingers.



Applicable Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Features	Max. Pos. Points	Input Voltage	Power Supply Capacity
Solenoid Valve Multi-axis Type (PIO Specification)		MSEP-②-③---①-2-0 (Note)	Positioner type based on PIO control, allowing up to 8 axes to be connected	3 points	DC24V	See RoboCylinder General Catalog
Positioner Multi-axis Type (Network Specification)		MSEP-②-③---④-0-0 (Note)	Field network ready positioner type, allowing up to 8 axes to be connected	256 points		
Positioner Type High-output Specification		PCON-CA-20P⑤-①-2-0	Equipped with high-output driver Positioner type based on PIO control	512 points		
Pulse Train Type High-output Specification		PCON-CA-20PWAI-PL-□-2-0	Equipped with high-output driver Pulse train input type	-		
Network Type High-output Specification		PCON-CA-20P⑤-④-0-0	Equipped with high-output driver Supports 8 major field networks	768 points		
Pulse Train Type (Differential Line Driver Specification)		PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	-		
Pulse Train Type (Open Collector Specification)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support			
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated serial communication	64 points		
Program Control Type		PSEL-CS-1-20PI-①-2-0	Program operation is possible for up to 2 axes	1500 points		

* This is for the single-axis PSEL.

* ① indicates I/O type (NP/PN).

* ② indicates C/LC type. Up to 6 axes can be connected if LC is selected.

* □ indicates N (NPN specification) or P (PNP specification) code.

* ③ indicates number of axes (1-8).

* ④ indicates field network specification code.

* ⑤ indicates encoder type. Enter WAI for incremental specification and SA for simple absolute specification.

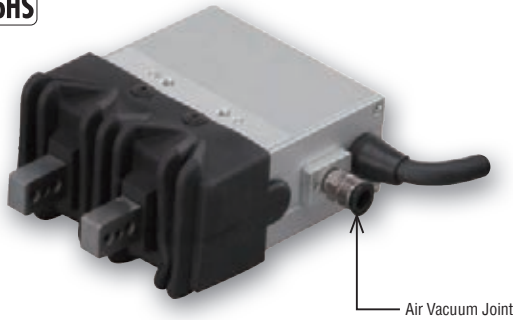
RCP2CR-GRM

Cleanroom RoboCylinder, 2-finger Gripper, Medium Slider Type, 79mm Width, Pulse Motor

RCP2W-GRM

Dust-proof RoboCylinder, 2-finger Gripper, Medium Slider Type, 79mm Width, Pulse Motor

Model Specification Items	RCP2CR Series	GRM Type	I Encoder	28P Motor	1 Deceleration Ratio	14 Opening/Closing Stroke	Applicable Controllers	Cable Length	Options
	RCP2CR: Cleanroom RCP2W: Dust-proof		I: Incremental	28P: Pulse motor 28□size	1: Deceleration ratio 1/1	14: 14mm (7mm per finger)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom R□□: Robot cable	FB: Flange bracket SB: Shaft bracket VL: L-shaped vacuum joint specification



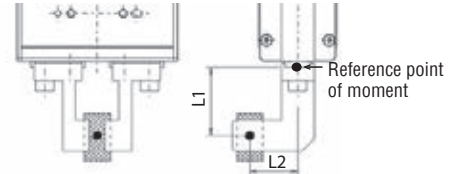
* The figure above shows the Cleanroom Type.
There is no air vacuum joint equipped on the Dust-proof Type.



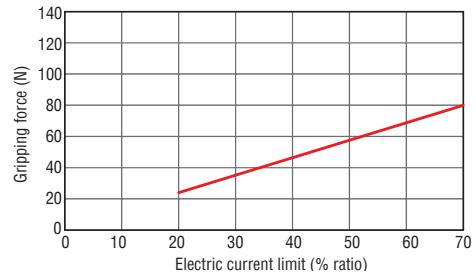
- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work part weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work part, as well as on the shape of the work part. As a rough guide, a work part's weight should not exceed 1/10 to 1/20 of the gripping force.
* The gripping point O should be the reference point of moment in the drawing.
- (3) Refer to "How to Select Gripper" at the end of the RoboCylinder General Catalog for how to select a gripper.
- (4) The rated acceleration while moving is 0.3G.

Correlation Diagram of Gripping Force and Electric Current Limit

By pressing motion, the gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.



- * Keep L1 within 80mm from the reference point of moment.
- * The gripping force in the graph below assumes that L1 and L2 in the figure above are zero. Also note that the gripping force is a sum of gripping forces of both fingers.



* The gripping force graph above shows reference numbers. Please allow margins up to ±15%.

* Please note that, when gripping (pushing), the speed is fixed at 5mm/s.

Actuator Specifications

Max. Gripping Force and Stroke

Model Number	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2CR-GRM-I-28P-1-14-①-②-③	1	80 (40 per finger)	14 (7 per finger)
RCP2W-GRM-I-28P-1-14-①-②-③			

Legend: ① Applicable controllers ② Cable length ③ Options

Stroke and Max. Opening/Closing Speed / Suction Amount

Deceleration Ratio	Stroke	10 (mm)	Suction Amount (*)
	1	36.7 mm/s (Per finger)	10 NI/min

* For Cleanroom Type

Cable Length

Type	Cable Code
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable (*)	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Robot cable is standard for applicable P1 controller.

Options

Name	Option Code
Flange Bracket	FB
Shaft Bracket	SB
L-shaped Vacuum Joint Specification (Cleanroom Only)	VL

<Option Code>

FB...Bracket only: RCP2-FB-GRM
SB...Bracket only: RCP2-SB-GRM

* Check the size of the bracket in the option explanation at the end of the RoboCylinder General Catalog.

Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof
Drive System	Timing belt + trapezoidal screw (1.5 lead)	
Positioning Repeatability	±0.01mm	
Backlash	0.15mm or less per finger (constantly pressed out by a spring)	
Lost Motion	0.1mm or less per finger	
Allowable Static Load Moment	Ma: 6.3N-m Mb: 6.3N-m Mc: 8.3N-m	
Guide	Cross roller guide	
Cleanliness	ISO class 4 (US STD FED class 10)	
IP Code	— IP50	
Weight	0.62kg	
Operating Environment	Temperature 0~40°C Humidity 20~85% RH or less (non-condensing)	

Dimensions

CAD drawings can be downloaded from the website.

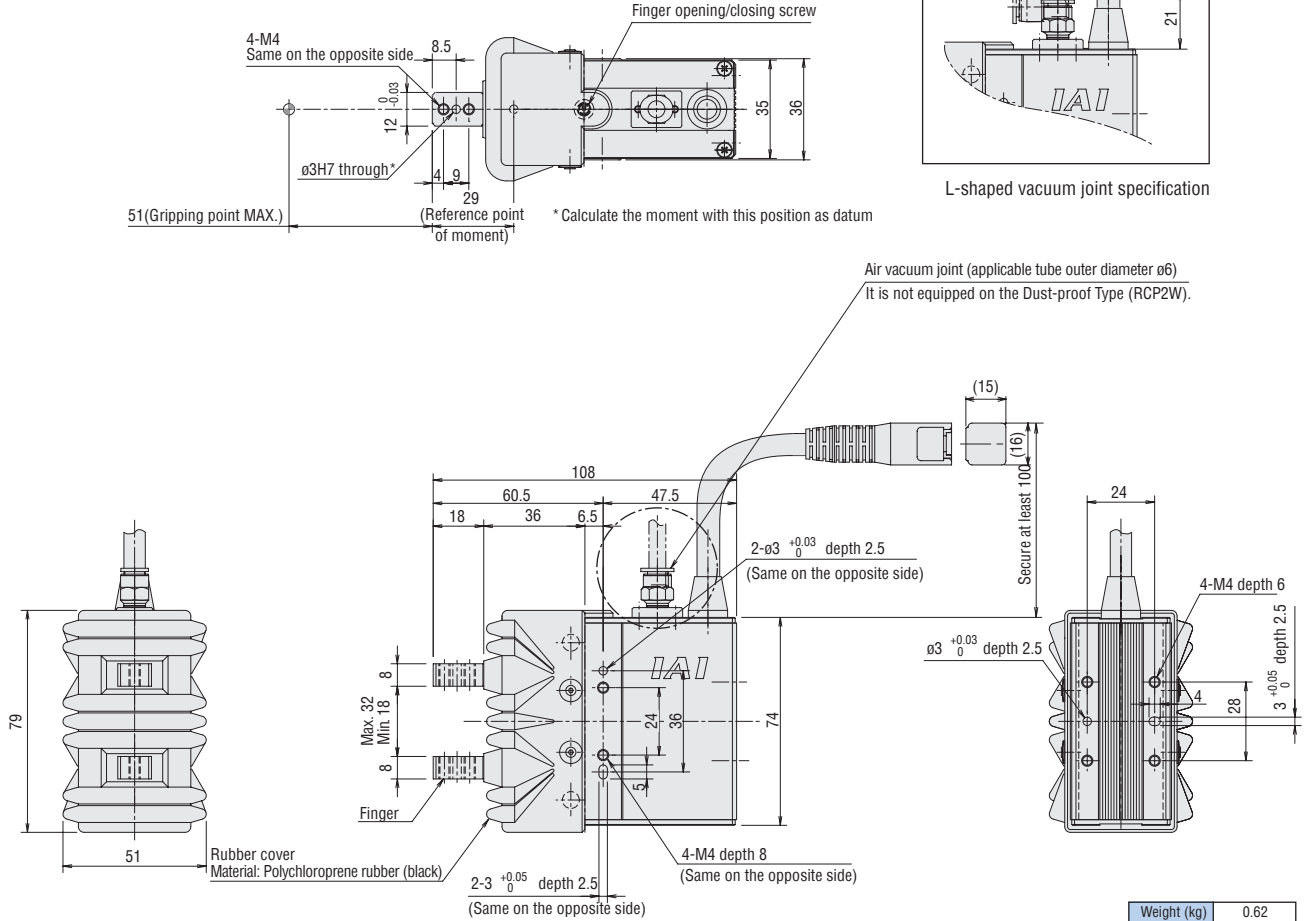
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2/3D
CAD

- * The opening side of the slider is the home position.
- * Shown below is a drawing for the Cleanroom Type. There is no air vacuum joint equipped on the Dust-proof Type.
- * The actuator pigtail is not a robot cable.

Note

- * Utilize $\phi 3H7$ through hole for positioning of fingers.



Applicable Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Features	Max. Pos. Points	Input Voltage	Power Supply Capacity
Solenoid Valve Multi-axis Type (PIO Specification)		MSEP-②-③---①-2-0 (Note)	Positioner type based on PIO control, allowing up to 8 axes to be connected	3 points	DC24V	See RoboCylinder General Catalog
Positioner Multi-axis Type (Network Specification)		MSEP-②-③---④-0-0 (Note)	Field network ready positioner type, allowing up to 8 axes to be connected	256 points		
Positioner Type High-output Specification		PCON-CA-28P⑤-①-2-0	Equipped with high-output driver Positioner type based on PIO control	512 points		
Pulse Train Type High-output Specification		PCON-CA-28PWAI-PL-□-2-0	Equipped with high-output driver Pulse train input type	-		
Network Type High-output Specification		PCON-CA-28P⑤-④-0-0	Equipped with high-output driver Supports 8 major field networks	768 points		
Pulse Train Type (Differential Line Driver Specification)		PCON-PL-28PI-①-2-0	Pulse train input type with differential line driver support	-		
Pulse Train Type (Open Collector Specification)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support			
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated serial communication	64 points		
Program Control Type		PSEL-CS-1-28PI-①-2-0	Program operation is possible for up to 2 axes	1500 points		

* This is for the single-axis PSEL.

* ① indicates I/O type (NP/PN).

* ② indicates C/LC type. Up to 6 axes can be connected if LC is selected.

* □ indicates N (NPN specification) or P (PNP specification) code.

* ③ indicates number of axes (1-8).

* ④ indicates field network specification code.

* ⑤ indicates encoder type. Enter WAI for incremental specification and SA for simple absolute specification.

RCP2CR-GR3SS

Cleanroom RoboCylinder, 3-finger Gripper, Small Slider Type, 62mm Width, Pulse Motor

RCP2W-GR3SS

Dust-proof RoboCylinder, 3-finger Gripper, Small Slider Type, 62mm Width, Pulse Motor

Model Specification Items RCP2CR: Cleanroom RCP2W: Dust-proof	RCP2CR Series	GR3SS Type	I Encoder	28P Motor	30 Deceleration Ratio	10 Opening/Closing Stroke	Applicable Controllers P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	Cable Length N: None P: 1m S: 3m M: 5m X□□: Custom R□□: Robot cable	Options FB: Flange bracket SB: Shaft bracket VL: L-shaped vacuum joint specification
				I: Incremental	28P: Pulse motor 28□size	30: Deceleration ratio 1/30	10: 10mm (5mm per finger)		



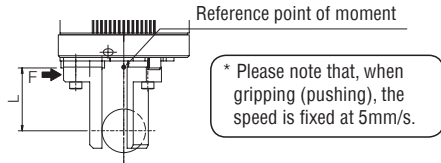
* The figure above shows the Cleanroom Type.
There is no air vacuum joint equipped on the Dust-proof Type.



- The maximum gripping force is the sum of gripping forces of all fingers at gripping point 0 and with overhang distance 0. For the actual transportable work part weight, refer to the explanation to the right.
* The gripping point 0 should be the reference point of moment in the drawing.
- Refer to "How to Select Gripper" at the end of the RoboCylinder General Catalog for how to select a gripper.
- The rated acceleration while moving is 0.3G.

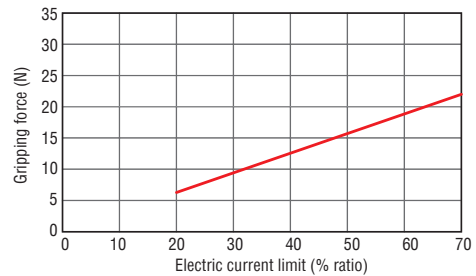
Correlation Diagram of Gripping Force and Electric Current Limit

By pressing motion, the gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.



* Please note that, when gripping (pushing), the speed is fixed at 5mm/s.

* Keep L within 50mm from the reference point of moment.
* The gripping force in the graph below assumes that L in the figure above is zero.
Also note that the gripping force is a sum of gripping forces of all fingers.



* The gripping force graph above shows reference numbers. Please allow margins up to ±15%.

Actuator Specifications

Max. Gripping Force and Stroke

Model Number	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2CR-GR3SS-I-28P-30-10-①-②-③	30	22 (7.3 per finger)	10 (5 per finger)
RCP2W-GR3SS-I-28P-30-10-①-②-③			

Legend: ① Applicable controllers ② Cable length ③ Options

Stroke and Max. Opening/Closing Speed / Suction Amount

Deceleration Ratio	Stroke	10 (mm)	Suction Amount (*)
	30	40 mm/s	10 NI/min

* For Cleanroom Type

Cable Length

Type	Cable Code
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable (*)	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Robot cable is standard for applicable P1 controller.

Options

Name	Option Code
Flange Bracket	FB
Shaft Bracket	SB
L-shaped Vacuum Joint Specification (Cleanroom Only)	VL

<Option Code>

FB...Bracket only: RCP2-FB-GR3S

SB...Bracket only: RCP2-SB-GR3S

* Check the size of the bracket in the option explanation at the end of the RoboCylinder General Catalog.

Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof
Drive System	Worm gear + worm wheel gear	
Positioning Repeatability	±0.01mm	
Backlash	0.3mm or less per finger (constantly pressed out by a spring)	
Lost Motion	0.1mm or less per finger	
Allowable Static Load Moment	Ma: 3.8N·m	Mb: 3.8N·m Mc: 3.0N·m
Guide	Cross roller guide	
Cleanliness	ISO class 4 (US STD FED class 10)	
IP Code	— IP50	
Weight	0.7kg	
Operating Environment	Temperature 0~40°C Humidity 20~85% RH or less (non-condensing)	

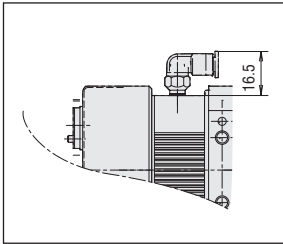
Dimensions

CAD drawings can be downloaded from the website.

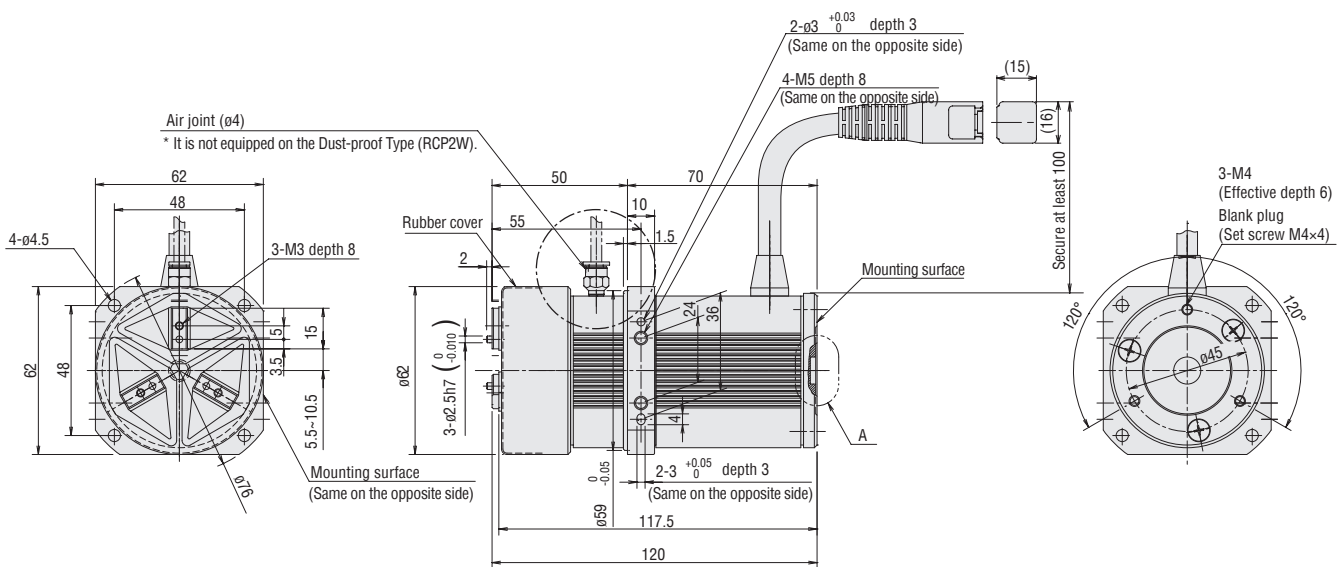
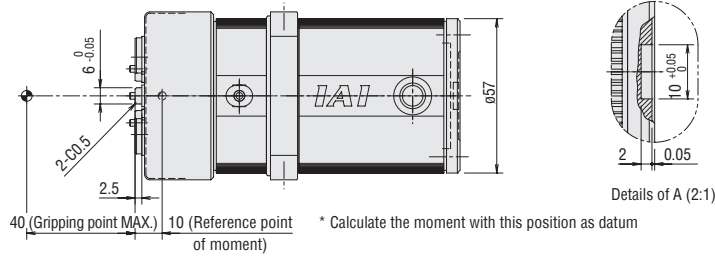
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2/3D
CAD

- * The opening side of the slider is the home position.
- * Shown below is a drawing for the Cleanroom Type. There is no air vacuum joint equipped on the Dust-proof Type.
- * The actuator pigtail is not a robot cable.



L-shaped vacuum joint specification



Weight (kg) 0.7

Applicable Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Features	Max. Pos. Points	Input Voltage	Power Supply Capacity	
Solenoid Valve Multi-axis Type (PIO Specification)		MSEP-②-③---①-2-0 (Note)	Positioner type based on PIO control, allowing up to 8 axes to be connected	3 points	DC24V	See RoboCylinder General Catalog	(Note) MSEP-LC is coming soon with CE conformity.
Positioner Multi-axis Type (Network Specification)		MSEP-②-③---④-0-0 (Note)	Field network ready positioner type, allowing up to 8 axes to be connected	256 points			
Positioner Type High-output Specification		PCON-CA-28P⑤-①-2-0	Equipped with high-output driver Positioner type based on PIO control	512 points			
Pulse Train Type High-output Specification		PCON-CA-28PWAI-PL-□-2-0	Equipped with high-output driver Pulse train input type	-			
Network Type High-output Specification		PCON-CA-28P⑤-④-0-0	Equipped with high-output driver Supports 8 major field networks	768 points			
Pulse Train Type (Differential Line Driver Specification)		PCON-PL-28PI-①-2-0	Pulse train input type with differential line driver support	-			
Pulse Train Type (Open Collector Specification)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support				
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated serial communication	64 points			
Program Control Type		PSEL-CS-1-28PI-①-2-0	Program operation is possible for up to 2 axes	1500 points			

* This is for the single-axis PSEL.

* ① indicates I/O type (NP/PN).

* ② indicates C/LC type. Up to 6 axes can be connected if LC is selected.

* □ indicates N (NPN specification) or P (PNP specification) code.

* ③ indicates number of axes (1-8).

* ④ indicates field network specification code.

* ⑤ indicates encoder type. Enter WAI for incremental specification and SA for simple absolute specification.

RCP2CR-GR3SM

Cleanroom RoboCylinder, 3-finger Gripper, Medium Slider Type, 80mm Width, Pulse Motor

RCP2W-GR3SM

Dust-proof RoboCylinder, 3-finger Gripper, Medium Slider Type, 80mm Width, Pulse Motor

Model Specification Items	RCP2CR RCP2W	GR3SM	I	42P	30	14			
	Series	Type	Encoder	Motor	Deceleration Ratio	Opening/Closing Stroke	Applicable Controllers	Cable Length	Options
	RCP2CR: Cleanroom RCP2W: Dust-proof		I: Incremental	42P: Pulse motor 42□size	30: Deceleration ratio 1/30	14: 14mm (7mm per finger)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom R□□: Robot cable	FB: Flange bracket SB: Shaft bracket VL: L-shaped vacuum joint specification



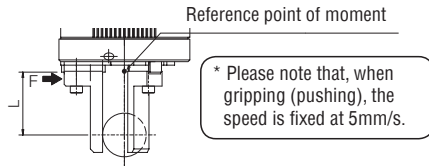
* The figure above shows the Cleanroom Type.
There is no air vacuum joint equipped on the Dust-proof Type.



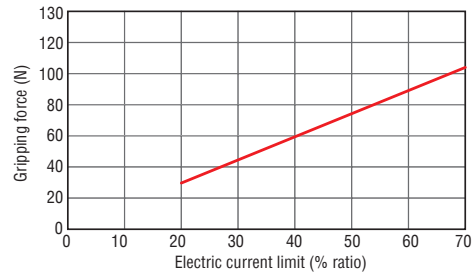
- (1) The maximum gripping force is the sum of gripping forces of all fingers at gripping point 0 and with overhang distance 0. For the actual transportable work part weight, refer to the explanation to the right.
* The gripping point 0 should be the reference point of moment in the drawing.
- (2) Refer to "How to Select Gripper" at the end of the RoboCylinder General Catalog for how to select a gripper.
- (3) The rated acceleration while moving is 0.3G.

Correlation Diagram of Gripping Force and Electric Current Limit

By pressing motion, the gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.



- * Keep L within 80mm from the reference point of moment.
- * The gripping force in the graph below assumes that L in the figure above is zero. Also note that the gripping force is a sum of gripping forces of all fingers.



* The gripping force graph above shows reference numbers. Please allow margins up to ±15%.

Actuator Specifications

Max. Gripping Force and Stroke

Model Number	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2CR-GR3SM-I-42P-30-14-①-②-③	30	102 (34 per finger)	14 (7 per finger)
RCP2W-GR3SM-I-42P-30-14-①-②-③			

Legend: ① Applicable controllers ② Cable length ③ Options

Stroke and Max. Opening/Closing Speed / Suction Amount

Deceleration Ratio	Stroke	10 (mm)	Suction Amount (*)
	30	50 mm/s	10 Nl/min

* For Cleanroom Type

Cable Length

Type	Cable Code
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable (*)	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Robot cable is standard for applicable P1 controller.

Options

Name	Option Code
Flange Bracket	FB
Shaft Bracket	SB
L-shaped Vacuum Joint Specification (Cleanroom Only)	VL

<Option Code>

FB...Bracket only: RCP2-FB-GR3M

SB...Bracket only: RCP2-SB-GR3M

* Check the size of the bracket in the option explanation at the end of the RoboCylinder General Catalog.

Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof
Drive System	Worm gear + worm wheel gear	
Positioning Repeatability	±0.01mm	
Backlash	0.3mm or less per finger (constantly pressed out by a spring)	
Lost Motion	0.1mm or less per finger	
Allowable Static Load Moment	Ma: 6.3N·m Mb: 6.3N·m Mc: 5.7N·m	
Guide	Cross roller guide	
Cleanliness	ISO class 4 (US STD FED class 10)	
IP Code	— IP50	
Weight	1.3kg	
Operating Environment	Temperature 0~40°C Humidity 20~85% RH or less (non-condensing)	

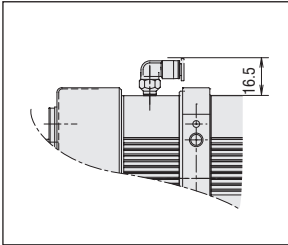
Dimensions

CAD drawings can be downloaded from the website.

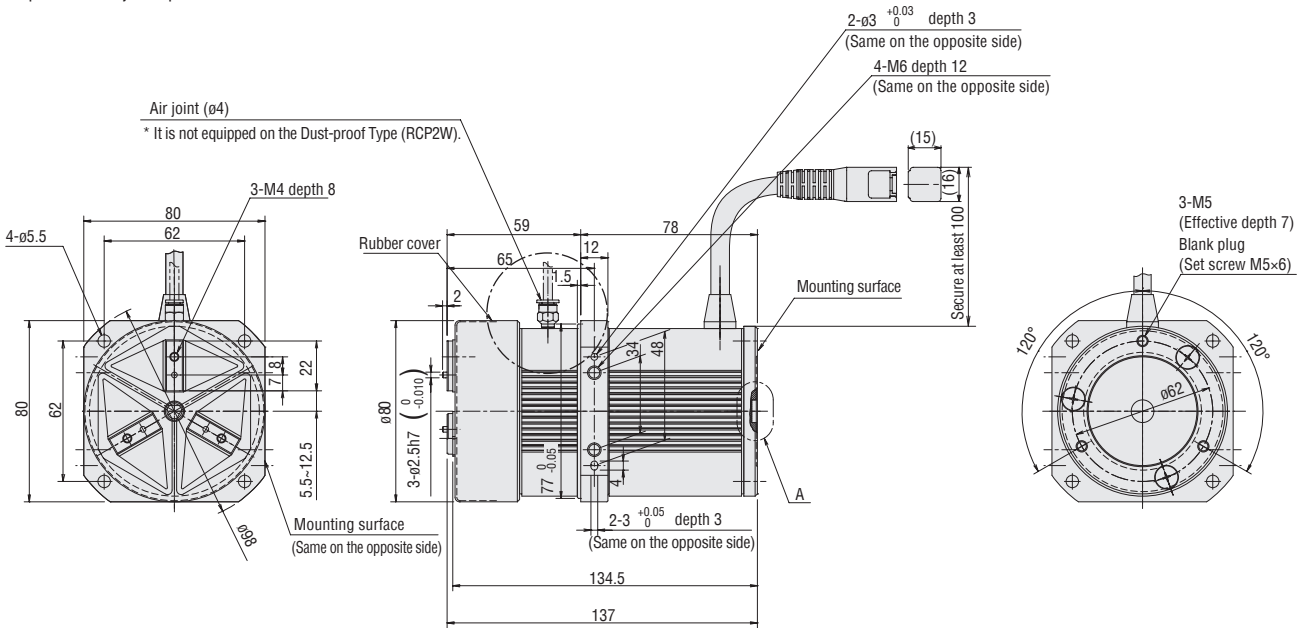
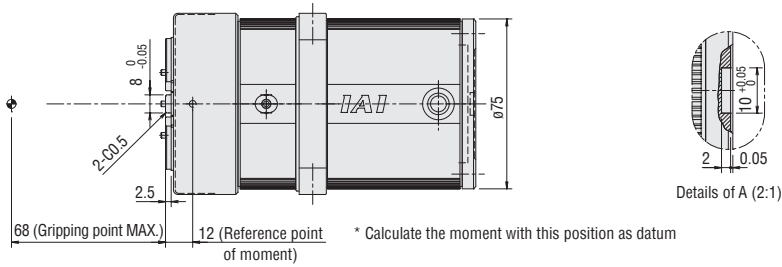
www.robocylinder.de

2/3D
CAD

- * The opening side of the slider is the home position.
- * Shown below is a drawing for the Cleanroom Type. There is no air vacuum joint equipped on the Dust-proof Type.
- * The actuator pigtail is not a robot cable.



L-shaped vacuum joint specification



Weight (kg) 1.3

Applicable Controllers

The RCP2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Features	Max. Pos. Points	Input Voltage	Power Supply Capacity
Solenoid Valve Multi-axis Type (PIO Specification)		MSEP-②-③---①-2-0 (Note)	Positioner type based on PIO control, allowing up to 8 axes to be connected	3 points	DC24V	See RoboCylinder General Catalog
Positioner Multi-axis Type (Network Specification)		MSEP-②-③---④-0-0 (Note)	Field network ready positioner type, allowing up to 8 axes to be connected	256 points		
Positioner Type High-output Specification		PCON-CA-42P⑤-①-2-0	Equipped with high-output driver Positioner type based on PIO control	512 points		
Pulse Train Type High-output Specification		PCON-CA-42PWAI-PL-□-2-0	Equipped with high-output driver Pulse train input type	-		
Network Type High-output Specification		PCON-CA-42P⑤-④-0-0	Equipped with high-output driver Supports 8 major field networks	768 points		
Pulse Train Type (Differential Line Driver Specification)		PCON-PL-42PI-①-2-0	Pulse train input type with differential line driver support	-		
Pulse Train Type (Open Collector Specification)		PCON-PO-42PI-①-2-0	Pulse train input type with open collector support			
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated serial communication	64 points		
Program Control Type		PSEL-CS-1-42PI-①-2-0	Program operation is possible for up to 2 axes	1500 points		

* This is for the single-axis PSEL.

* ① indicates I/O type (NP/PN).

* ② indicates C/LC type. Up to 6 axes can be connected if LC is selected.

* □ indicates N (NPN specification) or P (PNP specification) code.

* ③ indicates number of axes (1-8).

* ④ indicates field network specification code.

* ⑤ indicates encoder type. Enter WAI for incremental specification and SA for simple absolute specification.

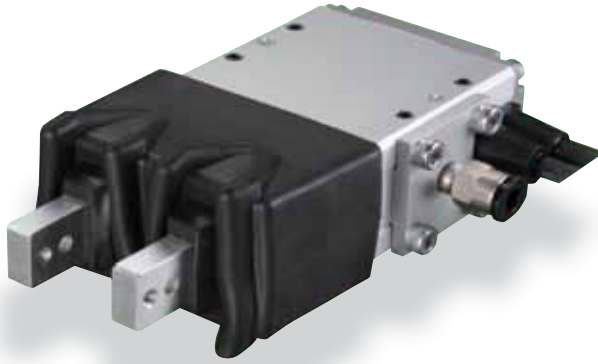
RCP2CR-GRSS

Cleanroom ROBO Cylinder 2-Finger Gripper Mini Slider Type 42mm Width
Pulse motor

■ Configuration: **RCP2CR-GRSS-I-20P-30-8**

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
I: Incremental * The simple absolute encoder is also considered type "I".	20P: Pulse motor 20 □ size	30 : 1/30 deceleration ratio	8: 8mm (4mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □ □ : Custom	NM: Reversed-home FB: Flange bracket SB: Shaft bracket		

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

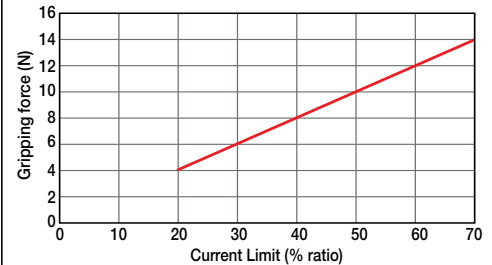


- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point distance of 0mm and no overhang distance. The workpiece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the workpiece, as well as on the shape of the workpiece. As a rough guide, a workpiece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-74 for details.)
- (3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.

* The gripping forces in the following diagrams indicate the sum of the gripping forces of both fingers.



* Please note that, when gripping (pushing), the speed is fixed at 5mm/s.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2CR-GRSS-I-20P-30-8-①-②-③	30	14	8 (4 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke, Max. Opening/Closing Speed, and Suction Volume

Deceleration Ratio	Stroke	8 (mm)	Suction Volume (NI/min)
	30	78	

(Unit: mm/s)

Stroke List

Stroke (mm)	Standard Price
8	-

② Cable List

Type	Cable Symbol	Standard Price
Standard Type (Robot Cables)	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	X06 (6m) ~ X10 (10m)	-
	X11 (11m) ~ X15 (15m)	-
	X16 (16m) ~ X20 (20m)	-
		-

* The standard cable is the motor-encoder integrated robot cable.

* See page A-39 for cables for maintenance.

③ Option List

Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	-
Flange bracket	FB	→ A-26	-
Shaft bracket	SB	→ A-36	-

Actuator Specifications

Item	Description
Drive System	Worm gear + helical gear + helical rack
Positioning Repeatability	±0.01 mm
Backlash	0.2mm or less per side (constantly pressed out by a spring)
Lost Motion	0.05mm or less per side
Guide	Linear guide
Allowable Static Load Moment	Ma: 0.5N·m Mb: 0.5N·m Mc: 1.5N·m
Weight	0.2kg
Cleanliness	Class 10 (0.1µm)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

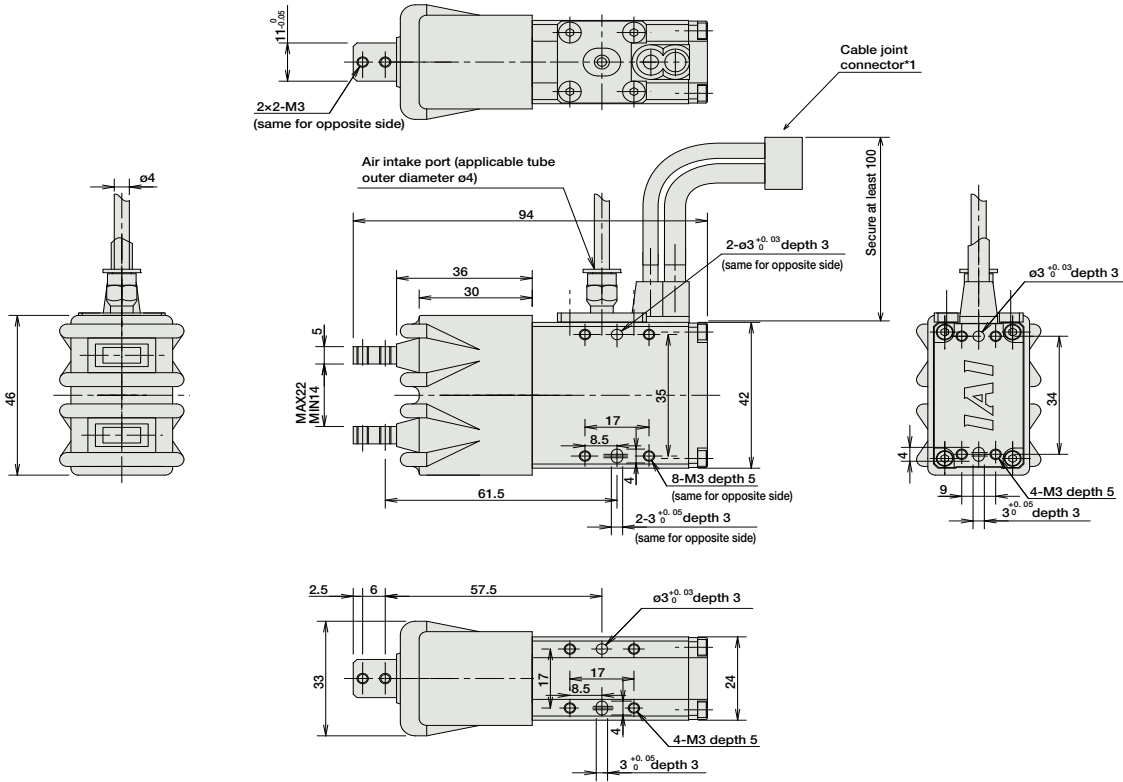
Dimensions

CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

For Special Orders P. A-9



- * The opening side of the slider is the home position.
- * 1 The motor-encoder cable is connected here. See page A-39 for details on cables.



Weight (kg) 0.2

① Compatible Controllers

The RCP2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-①	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	See P481	-	→ P477
Splash-Proof Solenoid Valve Type		PSEP-C-20PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.				-	→ P487
		PSEP-CW-20PI-NP-2-0					-	
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	2A max.	-	
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	2A max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support				-	
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points			-	
Field Network Type		RPCON-20P	Dedicated to field network	768 points			-	→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Operation is possible on up to 2 axes	1500 points			-	→ P557

* This is for the single-axis PSEL.
* ① is a placeholder for the power supply voltage (1: 100V, 2: 100~240V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

RCP2CR-GRLS

Cleanroom ROBO Cylinder 2-Finger Gripper Mini Lever Type 42mm Width
Pulse motor

■ Configuration: **RCP2CR** — **GRLS** — **I** — **20P** — **30** — **180** — — —

Series — Type — Encoder — Motor — Deceleration Ratio — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental
* The simple absolute encoder is also considered type "I".

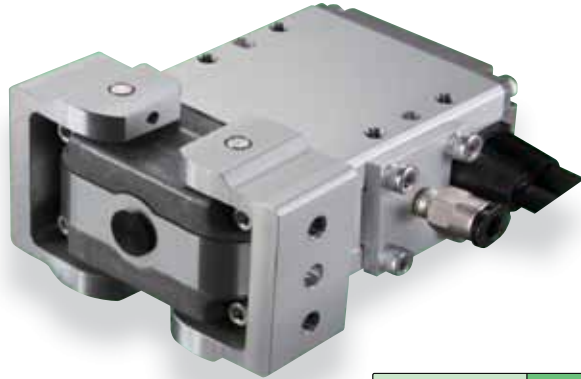
20P: Pulse motor 20 size
30: 1/30 deceleration ratio
180: 180 degrees (90 degrees per side)

P1: PCON
RCON
PSEL
P3: PMEC
PSEP

N: None
P: 1m
S: 3m
M: 5m
X : Custom

NM: Reversed-home
FB: Flange bracket
SB: Shaft bracket

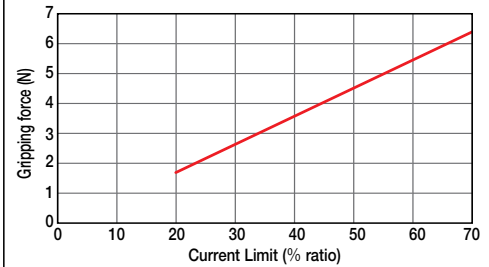
* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

■ Gripping Force Adjustment
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.

* The gripping forces in the following diagrams indicate the sum of the gripping forces of both fingers.



* Please note that, when gripping (pushing), the speed is fixed at 5 degrees/s.



- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point distance of 0mm and no overhang distance. The workpiece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the workpiece, as well as on the shape of the workpiece. As a rough guide, a workpiece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-77 for details.)
- (3) The rated acceleration while moving is 0.3G.

Actuator Specifications

Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (deg)
RCP2CR-GRLS-I-20P-30-180-①-②-③	30	6.4	180 (90 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio	Stroke	180 (deg)
	30	600

(Unit: degrees/s)

Stroke List

Stroke (deg)	Standard Price
180	—

② Cable List

Type	Cable Symbol	Standard Price
Standard Type (Robot Cables)	P (1m)	—
	S (3m)	—
	M (5m)	—
Special Lengths	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
	—	—

* The standard cable is the motor-encoder integrated robot cable.

* See page A-39 for cables for maintenance.

③ Option List

Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	—
Flange bracket	FB	→ A-26	—
Shaft bracket	SB	→ A-36	—

Actuator Specifications

Item	Description
Drive System	Worm gear + helical gear
Positioning Repeatability	±0.01 mm
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost Motion	0.1 degree or less per side
Guide	—
Allowable Static Load Moment	—
Weight	0.2kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

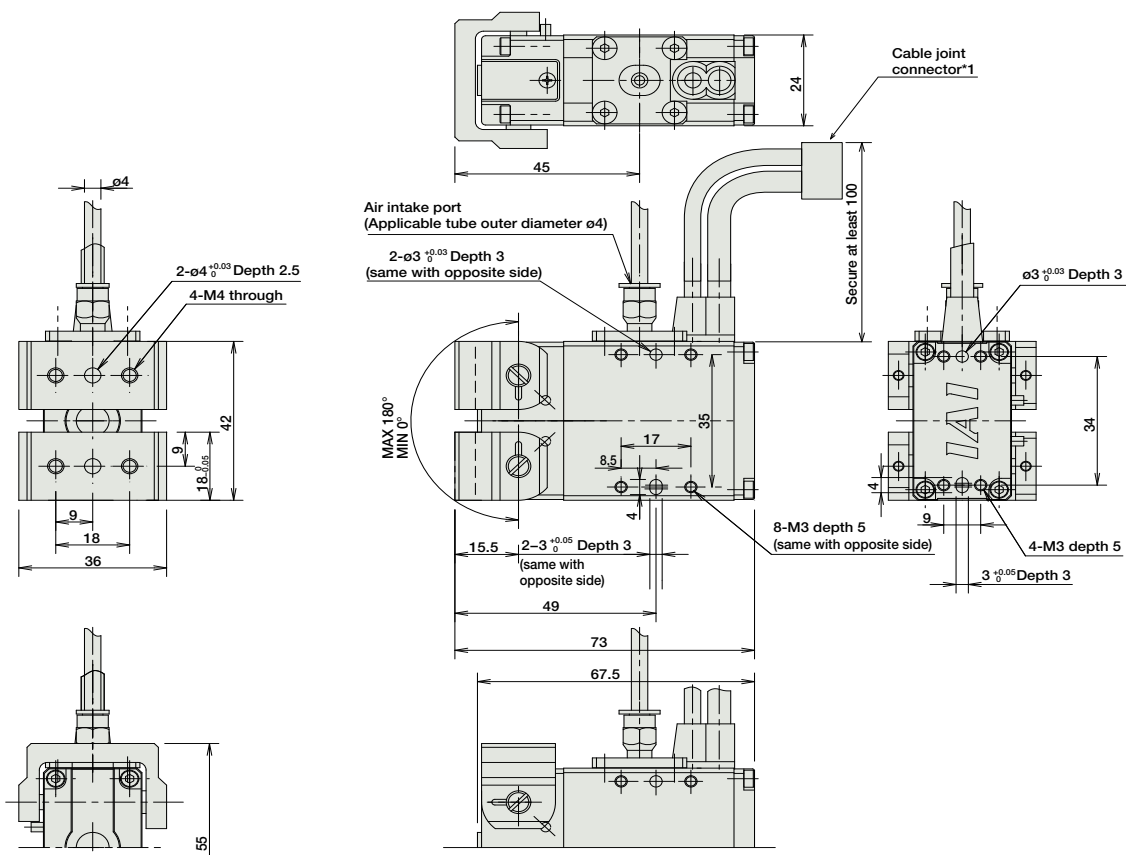
Dimensions

CAD drawings can be downloaded from IAI website. www.intelligentactuator.com

For Special Orders P. A-9



- * The opening side of the slider is the home position.
- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.



Weight (kg) 0.2

① Compatible Controllers

The RCP2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-①	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	See P481	-	→ P477
	Splash-Proof Solenoid Valve Type		PSEP-C-20PI-NP-2-0				Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.	-
Positioner Type			PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	2A max.	-
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0	-					
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	2A max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support				-	
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points	-	-	-	-
Field Network Type		RPCON-20P	Dedicated to field network	768 points	-	-	-	→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Operation is possible on up to 2 axes	1500 points	-	-	-	→ P557

* This is for the single-axis PSEL.
* ① is a placeholder for the power supply voltage (1: 100V, 2: 100~240V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

**RCP2CR/RCP2W Series
2-/3-Finger Gripper Type
Catalogue No. 0515-E**

The information contained in this catalog
is subject to change without notice for the
purpose of product improvement



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