

Cleanroom Rotary Type **RCP2CR-RT** Series

Dust-proof/Splash-proof Rotary Type **RCP2W-RT** Series

Cleanroom

Dust-proof/Splash-proof



# Cleanroom Type **Class 10** and Dust-proof Type **IP54** are now added to the lineup of the RCP2 ROBO Cylinder Rotary Type.

## Features of the Series

### 1 Cleanroom Type and Dust-proof/Splash-proof Type added

- Cleanroom Type and Dust-proof/Splash-proof Type are now added to the lineup of the rotary type actuators. Choose a suitable one for your working environment.

Supporting

**Clean Class 10**

Supporting

**IP54**

#### What is Cleanliness Class 10?

Class 100 and Class 10 are examples of the unit of the cleanliness.

Class 10 (0.1 μm) indicates an environment with 10 pieces of dust or less that are 0.1 μm or larger in a 1 ft<sup>3</sup> area.

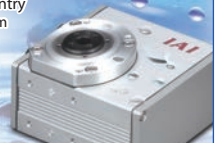


#### What is IP? I P 5 4

It is the class specified in IEC standards for splash proof and dust proof capabilities.

**2nd Number...** Protection against water entry  
There is no negative influence by splashes from any direction

**1st Number...** Protection against human contact and 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.



### 2 Features of the ROBO Cylinder Rotary Type

ROBO Cylinder Rotary Type possesses superior functions and features as shown below.

Speed and acceleration control is available

Smooth starting and stopping is available.

Positioning available on multiple points

512 points are available for positioning.

Pitch feeding available

Rotation in angle increments can be performed easily.

Zone output available

Signal output is available in any stroke area.

Speed change available during operation

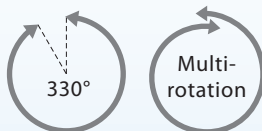
Speed increase and decrease can be performed while in operation.

Pause available

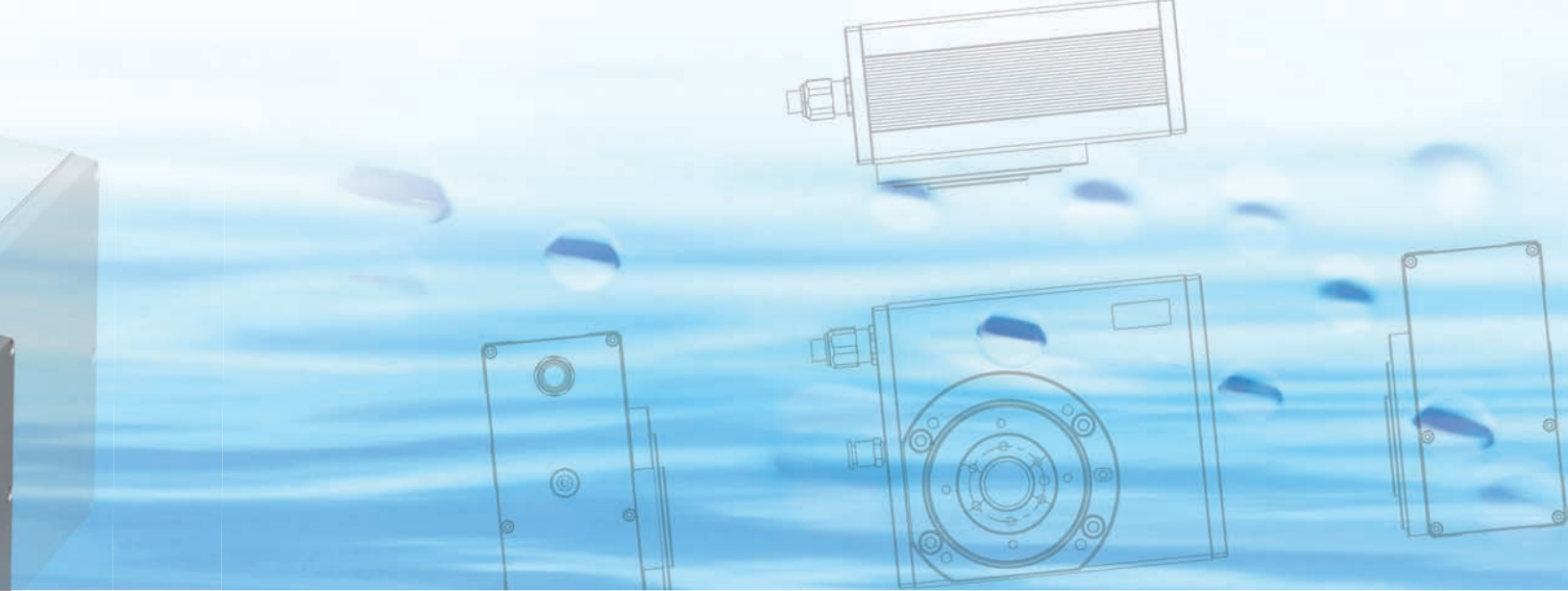
Motion can be paused and resumed by sending a pause signal.

### 3 Wide Variations





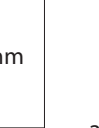

- Size: 3 sizes
- Shape: 2 types (Vertical type and flat type)
- Rotation: 2 types (330-degree rotation specification and multi-rotation specification)



Shape \ Size	Small Type	Medium Type	Large Type
Vertical Type			
Flat Type			



## Product Lineup

Series	Type	Type Code	External View	Operating Range	Body Width	Maximum Torque (N·m)			See Page					
						Deceleration Ratio 1/20	Deceleration Ratio 1/30	Deceleration Ratio 1/45						
Cleanroom RCP2CR Dust-proof/ Splash-proof RCP2W	Small Type	Vertical Type	RTBS		330	45 mm	-	0.24	0.36	P.3				
			RTBSL	360										
		Flat Type	RTCS		330	68 mm					1.1	1.7	-	P.5
			RTCSL	360										
	Medium Type	Vertical Type	RTB		330	50 mm	1.1	1.7	-	P.7				
			RTBL	360										
		Flat Type	RTC		330	81 mm					3	4.6	-	P.9
			RTCL	360										
	Large Type	Vertical Type	RTBB		330	76 mm	3	4.6	-	P.11				
			RTBBL	360										
		Flat Type	RTCB		330	114 mm					-	-	-	P.13
			RTCBL	360										

## Applicable Controller

Position Controller  
for Single Axis  
**PCON-CA**



Position Controller Multi-axis Type

**MSEP-C**

Position Controller  
Multi-axis Type  
with PLC Function  
**MSEP-LC**



Program Controller  
Multi-axis Type  
**MSEL-PC/PG**



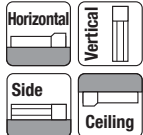
# RCP2CR-RTBS/RTBSL

Cleanroom ROBO Cylinder, Rotary, Small Vertical Type,  
45 mm Body Width, Pulse Motor

# RCP2W-RTBS/RTBSL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Small Vertical Type,  
45 mm Body Width, Pulse Motor

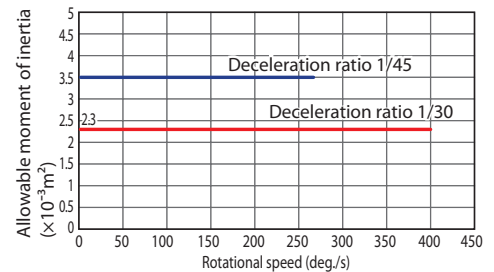
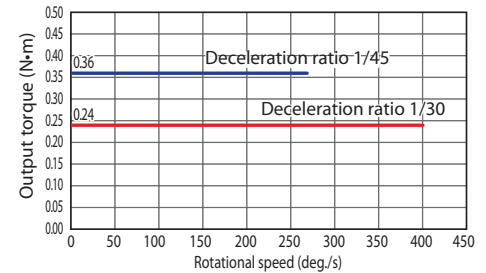
Model Specification Items	RCP2CR RCP2W	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
		RTBS: 330-degree rotation specification RTBSL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	20P: Pulse motor 20□ size	30: Deceleration ratio 1/30 45: Deceleration ratio 1/45	330: 330 degrees (RTBS only) 360: 360 degrees (RTBSL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter



\*Can be installed with above orientations.



## Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.2 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

### Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ① -RTBS-I-20P-30-330-②-③-④	1/30	0.24	0.0023	330
RCP2 ① -RTBS-I-20P-45-330-②-③-④	1/45	0.36	0.0035	
RCP2 ① -RTBSL-I-20P-30-360-②-③-④	1/30	0.24	0.0023	360
RCP2 ① -RTBSL-I-20P-45-360-②-③-④	1/45	0.36	0.0035	

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

### Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/30	400
1/45	266	

(Unit: deg./s)

### Type

Type	Operating Range (deg.)	Standard Price
RTBS	330	-
RTBSL	360	-

### ③ Cable Length

Type	Cable Code	Standard Price	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

### ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

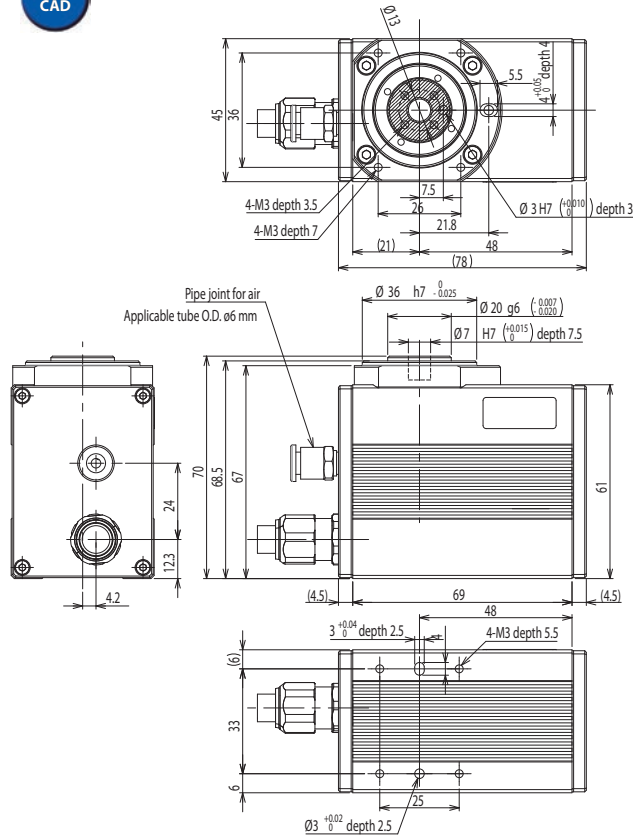
### Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.05 deg.	
Home-return Accuracy	±0.05 deg. or less (RTBS)/±0.05 deg. or less (RTBSL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	30 N	
Allowable Load Moment	3.6 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	10 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	15 NI/min
Weight	0.6 kg	

## Dimensions

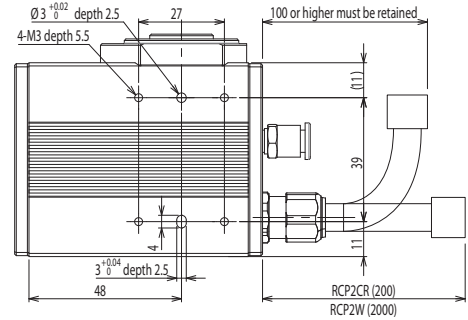
CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D  
CAD



Note

\*The shaded area in the top view shows the rotation area.



Note

The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

## ② Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{II}$ -2-0	C:8 LC:6	3 points	DC24V	-
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{III}$ -0-0		256 points		
Positioner Type High-output Specification		PCON-CA-20P $\text{V}$ - $\text{I}$ -2-0	1	512 points		-
Pulse Train Type High-output Specification		PCON-CA-20PWA $\text{I}$ -PL $\text{V}$ -2-0		-		
Network Type High-output Specification		PCON-CA-20P $\text{V}$ - $\text{III}$ -0-0		768 points		
Program Control Type		PSEL-CS-1-20PI- $\text{I}$ -2-0	2	1500 points		-
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-20P $\text{V}$ - $\text{I}$ -2-4	4	30000 points	Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-20P $\text{V}$ - $\text{III}$ -0-4				
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-20P $\text{V}$ - $\text{I}$ -2-4				
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-20P $\text{V}$ - $\text{III}$ -0-4				
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE					

\*For the single-axis PSEL and MSEL. \* $\text{I}$  I/O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code

\* $\text{V}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{C}$  (standard type) or LC (PLC function equipped type)

\* $\text{N}$  (NPN specification)/P (PNP specification) code

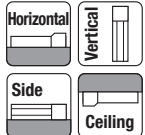
# RCP2CR-RTCS/RTCSL

Cleanroom ROBO Cylinder, Rotary, Small Flat Type,  
72 mm Body Width, Pulse Motor

# RCP2W-RTCS/RTCSL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Small Flat Type,  
72 mm Body Width, Pulse Motor

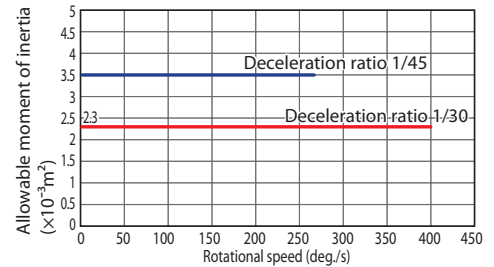
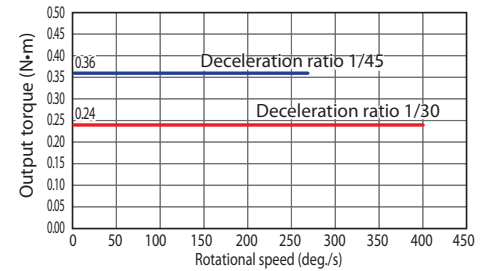
Model Specification Items	RCP2CR RCP2W	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
		RTCS: 330-degree rotation specification RTCSL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	20P: Pulse motor 20□ size	30: Deceleration ratio 1/30 45: Deceleration ratio 1/45	330: 330 degrees (RTCS only) 360: 360 degrees (RTCSL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter



\*Can be installed with above orientations.



## Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.2 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

### Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ① -RTCS-I-20P-30-330-②-③-④	1/30	0.24	0.0023	330
RCP2 ① -RTCS-I-20P-45-330-②-③-④	1/45	0.36	0.0035	
RCP2 ① -RTCSL-I-20P-30-360-②-③-④	1/30	0.24	0.0023	360
RCP2 ① -RTCSL-I-20P-45-360-②-③-④	1/45	0.36	0.0035	

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

### Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/30	400
1/45	266	

(Unit: deg./s)

### Type

Type	Operating Range (deg.)	Standard Price
RTCS	330	-
RTCSL	360	-

### ③ Cable Length

Type	Cable Code	Standard Price	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

### ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

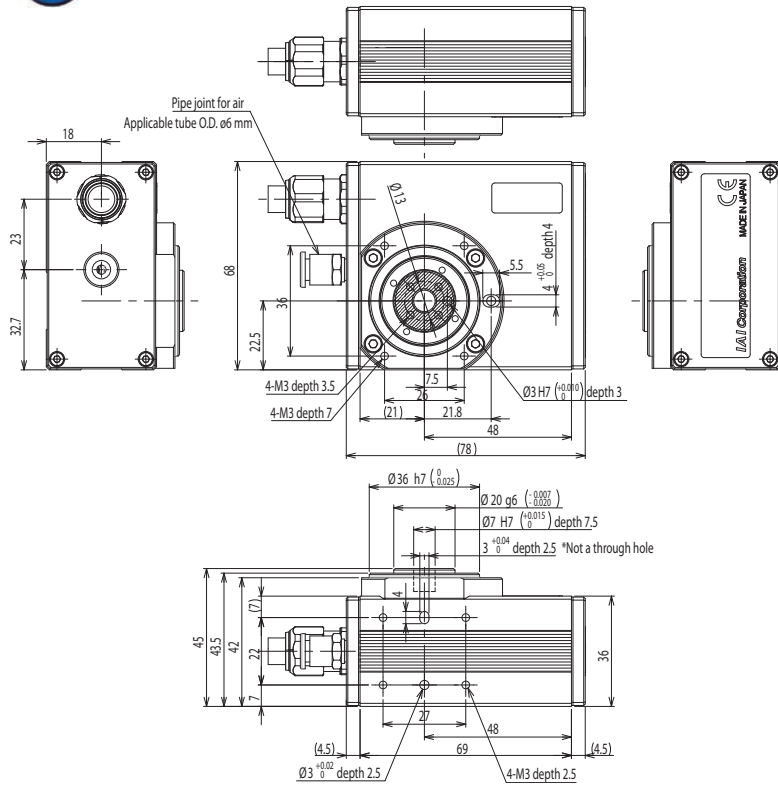
### Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.05 deg.	
Home-return Accuracy	±0.05 deg. or less (RTCS)/±0.05 deg. or less (RTCSL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	30 N	
Allowable Load Moment	3.6 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	10 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	15 NI/min
Weight	0.54 kg	

## Dimensions

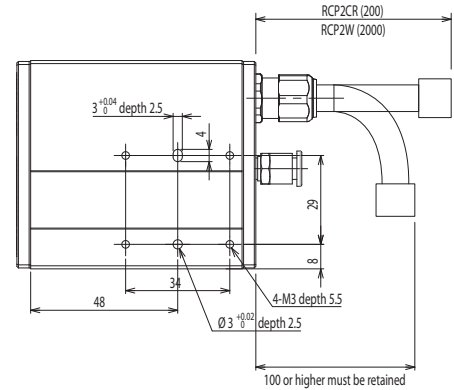
CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D  
CAD



### Note

\*The shaded area in the top view shows the rotation area.



### Note

The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

## ② Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{I}$ -2-0	C:8 LC:6	3 points	DC24V	-
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{III}$ -0-0		256 points		
Positioner Type High-output Specification		PCON-CA-20P $\text{VI}$ - $\text{I}$ -2-0	1	512 points		-
Pulse Train Type High-output Specification		PCON-CA-20PWA $\text{I}$ -PL $\text{VI}$ -2-0		-		-
Network Type High-output Specification		PCON-CA-20P $\text{VI}$ - $\text{III}$ -0-0		768 points		-
Program Control Type		PSEL-CS-1-20PI- $\text{I}$ -2-0	2	1500 points		-
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-20P $\text{VI}$ - $\text{I}$ -2-4	4	30000 points	Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-20P $\text{VI}$ - $\text{III}$ -0-4				
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-20P $\text{VI}$ - $\text{I}$ -2-4				
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-20P $\text{VI}$ - $\text{III}$ -0-4				
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE					

\*For the single-axis PSEL and MSEL. \* $\text{I}$  I/O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code

\* $\text{VI}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{V}$  C (standard type) or LC (PLC function equipped type)

\* $\text{N}$  N (NPN specification)/P (PNP specification) code

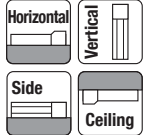
# RCP2CR-RTB/RTBL

Cleanroom ROBO Cylinder, Rotary, Medium Vertical Type,  
50 mm Body Width, Pulse Motor

# RCP2W-RTB/RTBL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Medium Vertical Type,  
50 mm Body Width, Pulse Motor

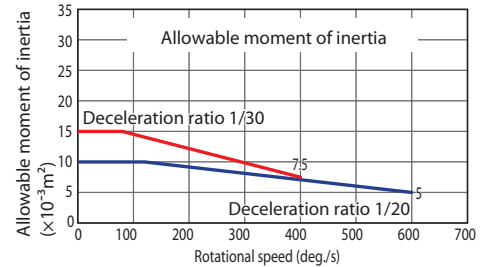
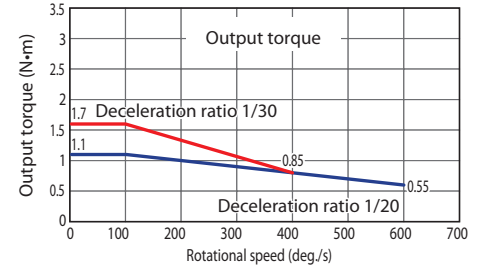
Model Specification Items	RCP2CR RCP2W	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
	RTB: 330-degree rotation specification RTBL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	28: Pulse motor 28□ size	20: Deceleration ratio 1/20 30: Deceleration ratio 1/30	330: 330 degrees (RTB only) 360: 360 degrees (RTBL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter	



\*Can be installed with above orientations.



### Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.3 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

### Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ①-RTB-I-28P-20-330-②-③-④	1/20	1.1	0.01	330
RCP2 ①-RTB-I-28P-30-330-②-③-④	1/30	1.7	0.015	
RCP2 ①-RTBL-I-28P-20-360-②-③-④	1/20	1.1	0.01	360
RCP2 ①-RTBL-I-28P-30-360-②-③-④	1/30	1.7	0.015	

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

### Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/20	600
1/30	400	

(Unit: deg./s)

### Type

Type	Operating Range (deg.)	Standard Price
RTB	330	-
RTBL	360	-

### ③ Cable Length

Type	Cable Code	Standard Price	
		Applicable Controller Code	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

### ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

### Actuator Specifications

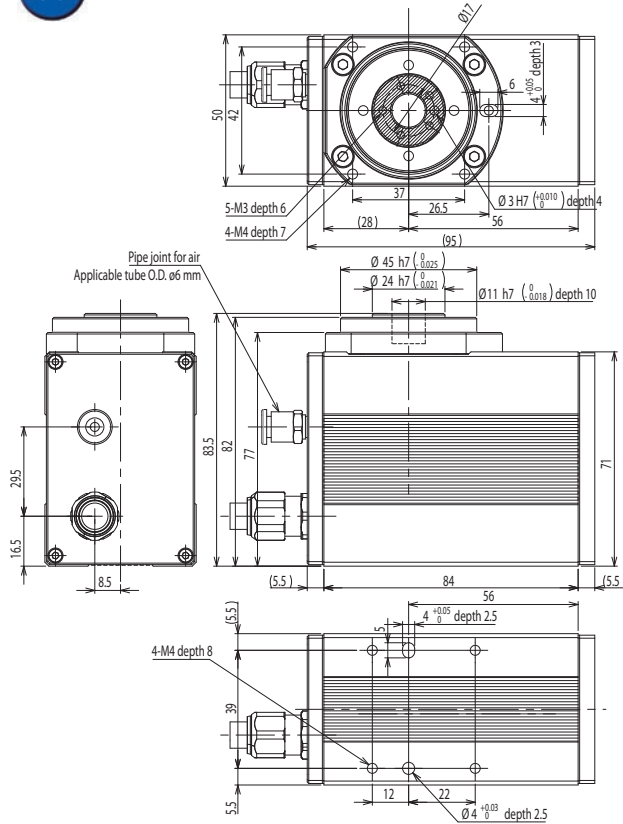
Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.01 deg.	
Home-return Accuracy	±0.01 deg. or less (RTB)/±0.05 deg. or less (RTBL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	50 N	
Allowable Load Moment	3.9 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	15 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	20 NI/min
Weight	0.96 kg	



## Dimensions

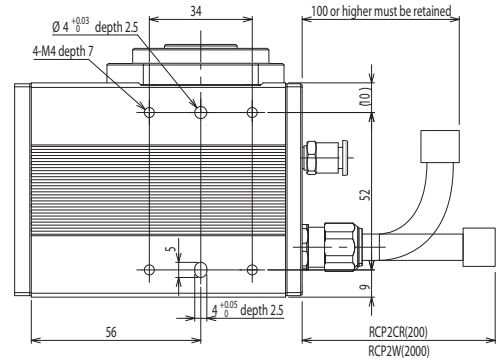
CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D  
CAD



Note

\*The shaded area in the top view shows the rotation area.



Note

The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

## ② Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{I}$ -2-0	C:8 LC:6	3 points	DC24V	-
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{III}$ -0-0		256 points		
Positioner Type High-output Specification		PCON-CA-28P $\text{V}$ - $\text{I}$ -2-0	1	512 points		-
Pulse Train Type High-output Specification		PCON-CA-28PWA $\text{I}$ -PL $\text{V}$ -2-0		-		-
Network Type High-output Specification		PCON-CA-28P $\text{V}$ - $\text{III}$ -0-0		768 points		-
Program Control Type		PSEL-CS-1-28PI- $\text{I}$ -2-0	2	1500 points		-
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-28P $\text{V}$ - $\text{I}$ -2-4	4	30000 points	Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-28P $\text{V}$ - $\text{III}$ -0-4				
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-28P $\text{V}$ - $\text{I}$ -2-4				
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-28P $\text{V}$ - $\text{III}$ -0-4				
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE					

\*For the single-axis PSEL and MSEL. \* $\text{I}$  I/O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code

\* $\text{V}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{C}$  (standard type) or LC (PLC function equipped type)

\* $\text{N}$  (NPN specification)/P (PNP specification) code

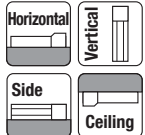
# RCP2CR-RTC/RTCL

Cleanroom ROBO Cylinder, Rotary, Medium Flat Type,  
88 mm Body Width, Pulse Motor

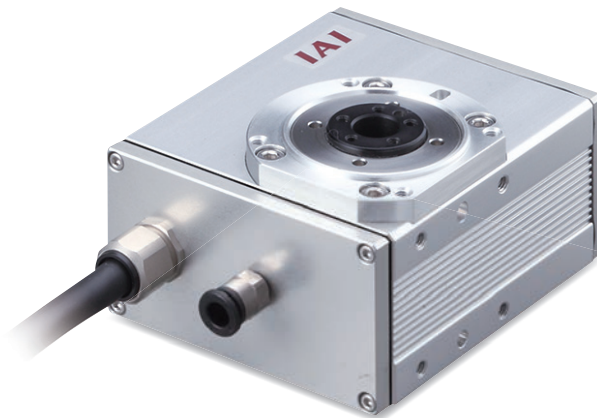
# RCP2W-RTC/RTCL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Medium Flat Type,  
88 mm Body Width, Pulse Motor

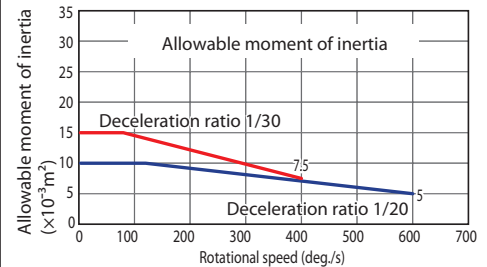
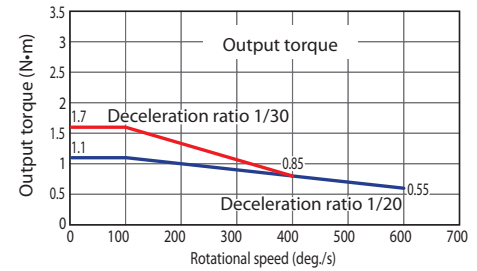
Model Specification Items	RCP2CR RCP2W	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
	RTC: 330-degree rotation specification RTCL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	28P: Pulse motor 28□ size	20: Deceleration ratio 1/20 30: Deceleration ratio 1/30	330: 330 degrees (RTC only) 360: 360 degrees (RTCL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter	



\*Can be installed with above orientations.



## Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.3 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

### Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ① -RTC-I-28P-20-330-②-③-④	1/20	1.1	0.01	330
RCP2 ① -RTC-I-28P-30-330-②-③-④	1/30	1.7	0.015	
RCP2 ① -RTCL-I-28P-20-360-②-③-④	1/20	1.1	0.01	360
RCP2 ① -RTCL-I-28P-30-360-②-③-④	1/30	1.7	0.015	

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

### Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/20	600
1/30	400	

(Unit: deg./s)

### Type

Type	Operating Range (deg.)	Standard Price
RTC	330	-
RTCL	360	-

### ③ Cable Length

Type	Cable Code	Standard Price	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

### ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

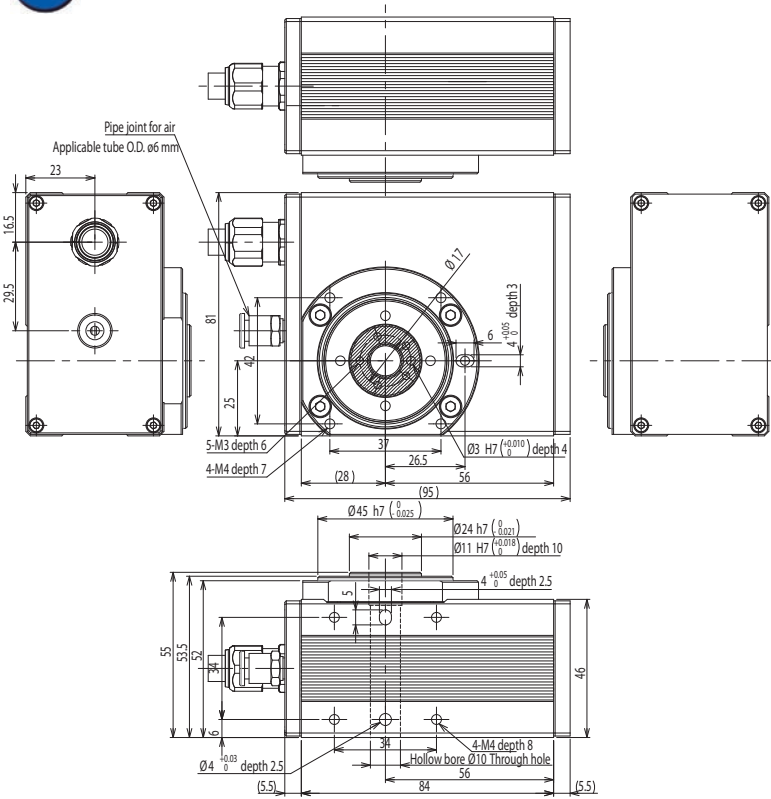
### Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.01 deg.	
Home-return Accuracy	±0.01 deg. or less (RTC)/±0.05 deg. or less (RTCL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	50 N	
Allowable Load Moment	3.9 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	15 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	20 NI/min
Weight	1.04 kg	

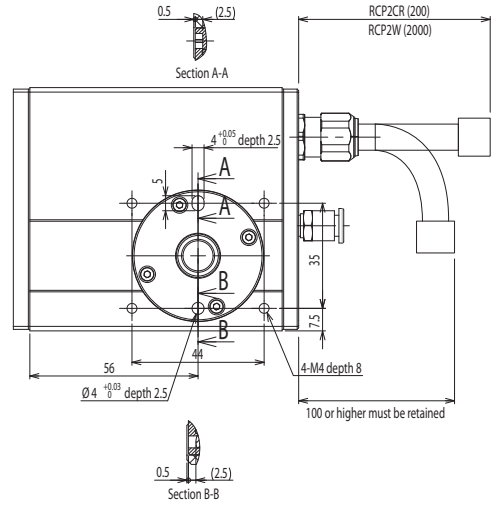
Dimensions

CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D CAD



Note  
\*The shaded area in the top view shows the rotation area.



Note  
The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

2 Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price	
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{I}$ -2-0	C:8 LC:6	3 points	DC24V	-	
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{III}$ -0-0		256 points			
Positioner Type High-output Specification		PCON-CA-28P $\text{VI}$ - $\text{I}$ -2-0	1	512 points		-	
Pulse Train Type High-output Specification		PCON-CA-28PWA $\text{I}$ -PL $\text{VI}$ -2-0		-		-	
Network Type High-output Specification		PCON-CA-28P $\text{VI}$ - $\text{III}$ -0-0		768 points		-	
Program Control Type		PSEL-CS-1-28PI- $\text{I}$ -2-0	2	1500 points		-	
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-28P $\text{VI}$ - $\text{I}$ -2-4	4	30000 points		Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-28P $\text{VI}$ - $\text{III}$ -0-4					
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-28P $\text{VI}$ - $\text{I}$ -2-4					
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-28P $\text{VI}$ - $\text{III}$ -0-4					
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE						

\*For the single-axis PSEL and MSEL. \* $\text{I}$ /O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code  
\* $\text{VI}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{V}$  C (standard type) or LC (PLC function equipped type)  
\* $\text{N}$  (NPN specification)/P (PNP specification) code

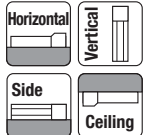
# RCP2CR-RTBB/RTBBL

Cleanroom ROBO Cylinder, Rotary, Large Vertical Type,  
76 mm Body Width, Pulse Motor

# RCP2W-RTBB/RTBBL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Large Vertical Type,  
76 mm Body Width, Pulse Motor

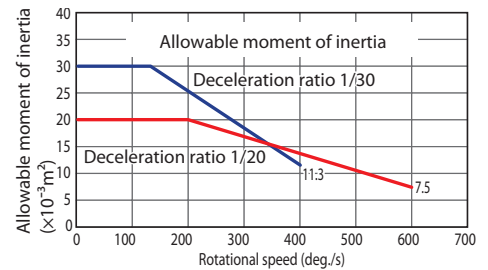
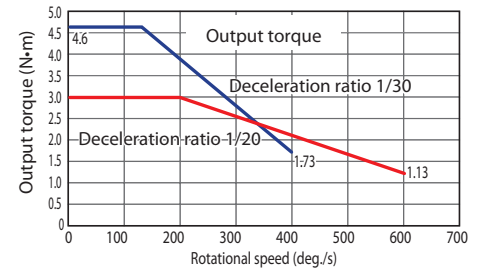
Model Specification Items	RCP2CR RCP2W Series	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
		RTBB: 330-degree rotation specification RTBBL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	35P: Pulse motor 35□ size	20: Deceleration ratio 1/20 30: Deceleration ratio 1/30	330: 330 degrees (RTBB only) 360: 360 degrees (RTBBL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter



\*Can be installed with above orientations.



## Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.3 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

### Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ① -RTBB-I-35P-20-330-②-③-④	1/20	3.0	0.02	330
RCP2 ① -RTBB-I-35P-30-330-②-③-④	1/30	4.6	0.03	
RCP2 ① -RTBBL-I-35P-20-360-②-③-④	1/20	3.0	0.02	360
RCP2 ① -RTBBL-I-35P-30-360-②-③-④	1/30	4.6	0.03	

### Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/20	600
1/30	400	

(Unit: deg./s)

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

### Type

Type	Operating Range (deg.)	Standard Price
RTBB	330	-
RTBBL	360	-

### ③ Cable Length

Type	Cable Code	Standard Price	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

### ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

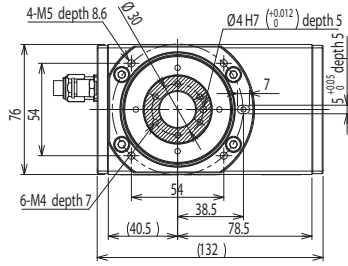
### Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.01 deg.	
Home-return Accuracy	±0.01 deg. or less (RTBB)/±0.03 deg. or less (RTBBL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	200 N	
Allowable Load Moment	17.7 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	20 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	40 NI/min
Weight	2.5 kg	

## Dimensions

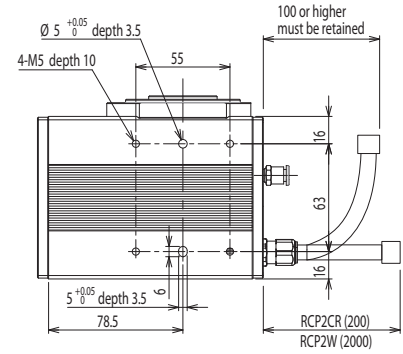
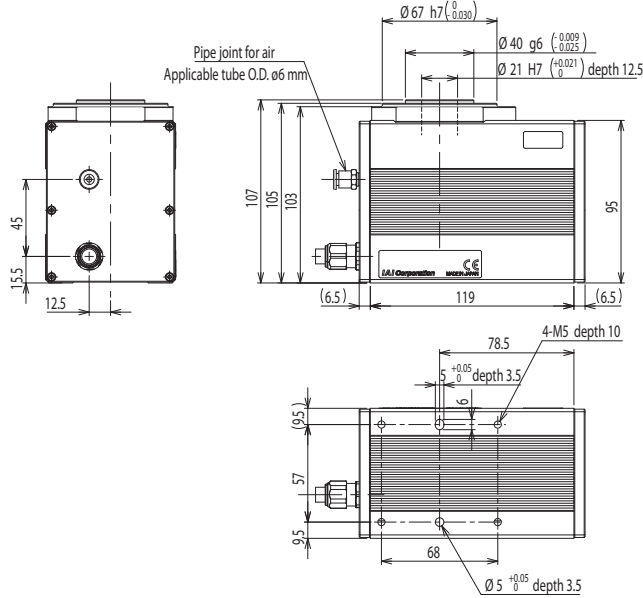
CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D  
CAD



Note

\*The shaded area in the top view shows the rotation area.



Note

The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

## ② Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim\sim$ - $\text{I}$ -2-0	C:8 LC:6	3 points	DC24V	-
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim\sim$ - $\text{III}$ -0-0		256 points		
Positioner Type High-output Specification		PCON-CA-35P $\text{V}$ - $\text{I}$ -2-0	1	512 points		-
Pulse Train Type High-output Specification		PCON-CA-35PWA $\text{I}$ -PL $\text{V}$ -2-0		-		-
Network Type High-output Specification		PCON-CA-35P $\text{V}$ - $\text{III}$ -0-0		768 points		-
Program Control Type		PSEL-CS-1-35PI- $\text{I}$ -2-0	2	1500 points	-	
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-35P $\text{V}$ - $\text{I}$ -2-4	4	30000 points	Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-35P $\text{V}$ - $\text{III}$ -0-4				
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-35P $\text{V}$ - $\text{I}$ -2-4				
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-35P $\text{V}$ - $\text{III}$ -0-4				
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE					

\*For the single-axis PSEL and MSEL. \* $\text{I}$  I/O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code

\* $\text{V}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{C}$  (standard type) or LC (PLC function equipped type)

\* $\text{N}$  (NPN specification)/P (PNP specification) code

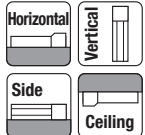
# RCP2CR-RTCB/RTCBL

Cleanroom ROBO Cylinder, Rotary, Large Flat Type,  
124 mm Body Width, Pulse Motor

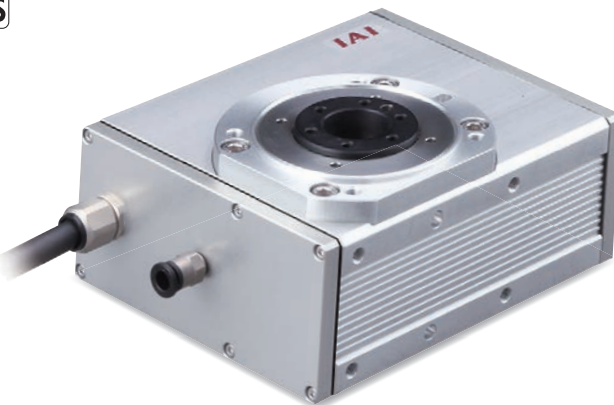
# RCP2W-RTCB/RTCBL

Dust-proof/Splash-proof ROBO Cylinder, Rotary, Large Flat Type,  
124 mm Body Width, Pulse Motor

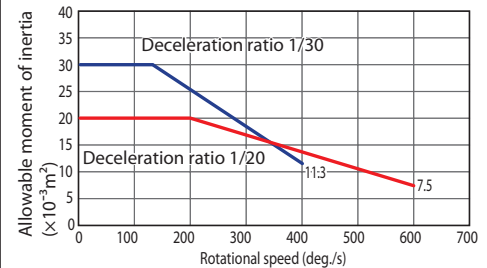
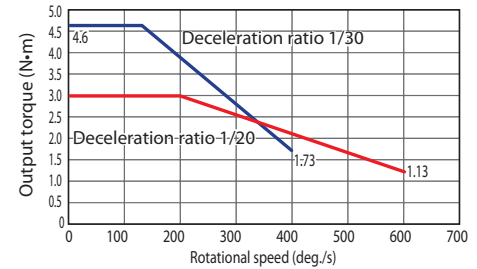
Model Specification Items	RCP2CR RCP2W Series	Type	Encoder	Motor	Deceleration Ratio	Operating Range	Applicable Controllers	Cable Length	Options
		RTCB: 330-degree rotation specification RTCBL: Multi-rotation specification	I: Incremental * The Simple absolute encoder is also considered type "I"	35P: Pulse motor 35□ size	20: Deceleration ratio 1/20 30: Deceleration ratio 1/30	330: 330 degrees (RTCB only) 360: 360 degrees (RTCBL only)	P1: PCON-CY/PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP/MSEL	N: None P: 1m S: 3m M: 5m X□: Custom R□: Robot cable	NM: Reverse rotation specification SA: Shaft adapter TA: Table adapter



\*Can be installed with above orientations.



## Correlation Graph of Speed, Output Torque and Allowable Moment of Inertia



- POINT**  
Note on selection
- The output torque gets lower as the rotation speed gets faster. Check the output torque graph on the right to see if the necessary speed for the application is possible.
  - The allowable moment of inertia on the rotated work piece will differ depending on the rotation speed. Check the allowable moment of inertia graph on the right to see if the necessary moment of inertia for the application is in the allowable range.
  - The rated acceleration while moving is 0.3 G.
  - Note that PMEC/PSEP Controllers are not capable of infinite rotation operation when used with multi-rotation actuators.

## Actuator Specifications

Model	Deceleration Ratio	Maximum Torque (N·m)	Allowable Moment of Inertia (kg·m <sup>2</sup> )	Operating Range (deg.)
RCP2 ① -RTCB-I-35P-20-330-②-③-④	1/20	3.0	0.02	330
RCP2 ① -RTCB-I-35P-30-330-②-③-④	1/30	4.6	0.03	
RCP2 ① -RTCBL-I-35P-20-360-②-③-④	1/20	3.0	0.02	360
RCP2 ① -RTCBL-I-35P-30-360-②-③-④	1/30	4.6	0.03	

Legend: ① Series ② Applicable controllers ③ Cable length ④ Options

## Deceleration Ratio and Max. Speed

Deceleration Ratio	Operating Range	330/360 (deg.)
	1/20	600
1/30	400	

(Unit: deg./s)

## Type

Type	Operating Range (deg.)	Standard Price
RTCB	330	-
RTCBL	360	-

## ③ Cable Length

Type	Cable Code	Standard Price	
		P3	P1
Standard Type	P (1 m)	-	-
	S (3 m)	-	-
	M (5 m)	-	-
Special Length	X06 (6 m) ~ X10 (10 m)	-	-
	X11 (11 m) ~ X15 (15 m)	-	-
	X16 (16 m) ~ X20 (20 m)	-	-
Robot Cable	R01 (1 m) ~ R03 (3 m)	-	Robot cable is standard for P1
	R04 (4 m) ~ R05 (5 m)	-	
	R06 (6 m) ~ R10 (10 m)	-	
	R11 (11 m) ~ R15 (15 m)	-	
	R16 (16 m) ~ R20 (20 m)	-	

## ④ Options

\* Please check the Options reference pages to confirm each option.

Name	Option Code	Reference	Standard Price
Reverse Rotation Specification	NM	See ROBO Cylinder	-
Shaft Adapter	SA	General Catalog	-
Table Adapter	TA	General Catalog	-

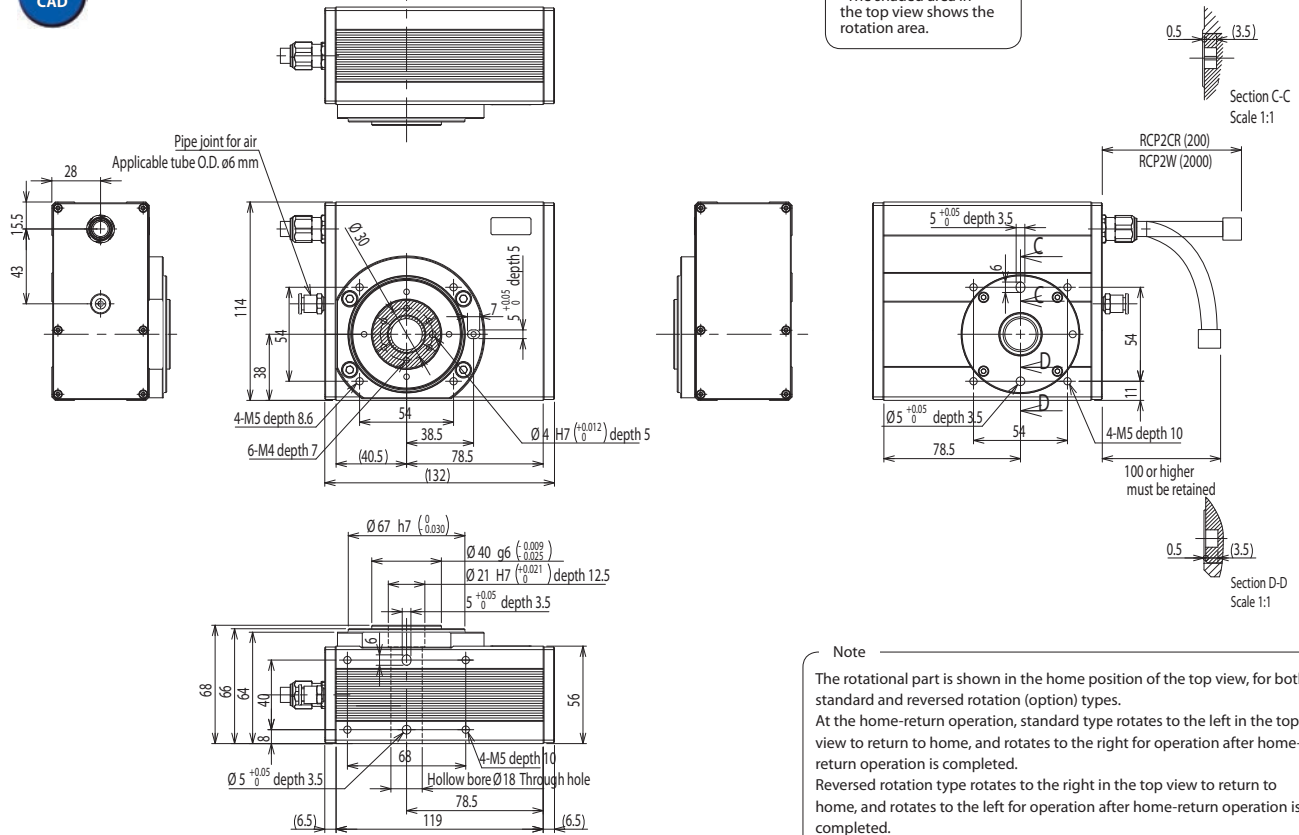
## Actuator Specifications

Item	Description	
	Cleanroom	Dust-proof/Splash-proof
Drive System	Hypoid gear	
Positioning Repeatability	±0.01 deg.	
Home-return Accuracy	±0.01 deg. or less (RTCB)/±0.03 deg. or less (RTCBL)	
Lost Motion	±0.1 deg.	
Allowable Thrust Load	200 N	
Allowable Load Moment	17.7 N·m	
Ambient Operating Temperature/Humidity	0~40°C, 85% RH or less (non-condensing)	
Cleanliness	Class 10 (0.1 μm)	-
Pipe Joint for Vacuuming	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Vacuum Volume	20 NI/min	-
IP Code	-	IP54 or equivalent
Pipe Joint for Air Purge	Quick connect joint, applicable tube outer diameter ø6 mm	-
Air Purge Flow Volume	-	40 NI/min
Weight	2.4 kg	

## Dimensions

CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

2D  
CAD



Note  
\*The shaded area in the top view shows the rotation area.

Section C-C  
Scale 1:1

Section D-D  
Scale 1:1

Note  
The rotational part is shown in the home position of the top view, for both standard and reversed rotation (option) types.  
At the home-return operation, standard type rotates to the left in the top view to return to home, and rotates to the right for operation after home-return operation is completed.  
Reversed rotation type rotates to the right in the top view to return to home, and rotates to the left for operation after home-return operation is completed.  
It is not possible to change the rotational direction after delivery due to structural reason.

## ② Applicable Controllers

The RCP2CR/RCP2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model Number	Max. Number of Controlled Axes	Max. Pos. Points	Input Voltage	Standard Price
Solenoid Valve Multi-axis Type PIO Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{I}$ -2-0	C:8 LC:6	3 points	DC24V	-
Solenoid Valve Multi-axis Type Network Specification		MSEP- $\text{V}$ - $\text{II}$ - $\sim$ - $\text{III}$ -0-0		256 points		
Positioner Type High-output Specification		PCON-CA-35P $\text{V}$ - $\text{I}$ -2-0	1	512 points		-
Pulse Train Type High-output Specification		PCON-CA-35PWA $\text{I}$ -PL $\text{V}$ -2-0		768 points		
Network Type High-output Specification		PCON-CA-35P $\text{V}$ - $\text{III}$ -0-0		768 points		
Program Control Type		PSEL-CS-1-35PI- $\text{I}$ -2-0	2	1500 points	-	
Program Control Multi-axis Type PIO Specification		MSEL-PC-1-35P $\text{V}$ - $\text{I}$ -2-4	4	30000 points	Single-phase AC 100V ~ 230V	-
Program Control Multi-axis Type Network Specification		MSEL-PC-1-35P $\text{V}$ - $\text{III}$ -0-4				
Program Control Multi-axis Type Safety Category Compliant Specification		MSEL-PG-1-35P $\text{V}$ - $\text{I}$ -2-4				
Program Control Multi-axis Type Safety Category Compliant Spec. w/ Network Board		MSEL-PG-1-35P $\text{V}$ - $\text{III}$ -0-4				
Other Connectable Devices	PSEP, PMEC, PCON-CY/PL/PO/SE					

\*For the single-axis PSEL and MSEL. \* $\text{I}$  I/O type (NP/PN) \* $\text{II}$  Number of axes \* $\text{III}$  Field network specification code  
\* $\text{V}$  Encoder type WAI: Incremental/SA: Simple absolute. However, WAI and SA cannot be used together for MSEL. \* $\text{C}$  (standard type) or LC (PLC function equipped type)  
\* $\text{N}$  (NPN specification)/P (PNP specification) code

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The information contained in this product brochure may change without prior notice due to product improvements.

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