



# Dust- proof/Splash-proof Type

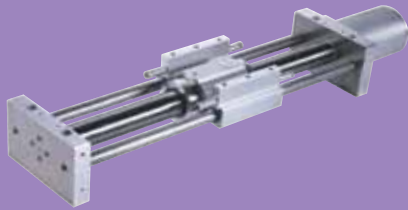
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**RCP2W**

**RCAW**

**RCS2W**

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RCP2W-SA16C

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RCP2W-RA4C



RCP2W-RA6C



RCP2W-RA10C

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RCAW-RA3C



RCAW/RCS2W-RA4C

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<b>RCP2W</b> <i>series</i> Pulse Motor Type	Slider Type	Coupled	158mm width	RCP2W-SA16C	<b>443</b>
	Rod Type	Coupled	45mm width	RCP2W-RA4C	<b>445</b>
			64mm width	RCP2W-RA6C	<b>447</b>
		High-thrust Type	100mm width	RCP2W-RA10C	<b>449</b>
	Gripper Type	Mini Slider Type	42mm width	RCP2W-GRSS	<b>451</b>
Mini Lever type		42mm width	RCP2W-GRLS	<b>453</b>	
<b>RCAW</b> <i>series</i> 24V Servo Motor Type	Rod Type	Coupled	ø32mm	RCAW-RA3C	<b>455</b>
		Built-in	ø32mm	RCAW-RA3D	
		Motor Side-mounted	ø32mm	RCAW-RA3R	
	Rod Type	Coupled	ø37mm	RCAW-RA4C	<b>457</b>
		Built-in	ø37mm	RCAW-RA4D	
		Motor Side-mounted	ø37mm	RCAW-RA4R	
<b>RCS2W</b> <i>series</i> 200V Servo Motor Type	Rod Type	Coupled	ø37mm	RCS2W-RA4C	<b>459</b>
		Built-in	ø37mm	RCS2W-RA4D	
		Motor Side-mounted	ø37mm	RCS2W-RA4R	

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

## RCP2W-SA16C

ROBO Cylinder Water-proof Slider Type 158mm Width Pulse Motor Coupled

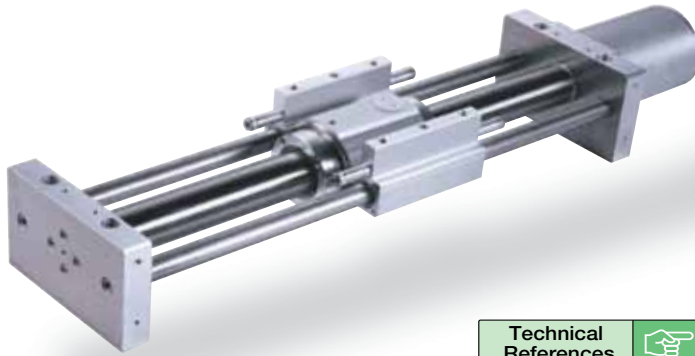
■ Configuration: **RCP2W** — **SA16C** — **I** — **86P** —  —  — **P2** —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental Type      86P: Pulse motor  
56  High Output      8 : 8mm  
4 : 4mm      50 : 50mm  
600 : 600mm  
(50mm pitch increments)

P2: PCON-CF      N : None  
P : 1m      S : 3m  
M : 5m  
X  Custom Length  
R  Robot Cable      CO : With Cover  
NM : Reversed-home

\* See page Pre-35 for explanation of each code that makes up the configuration name.

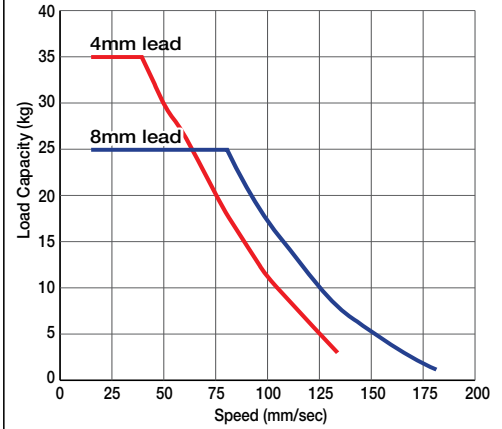


Technical References P. A-5

- POINT** Notes on Selection
- (1) The actuator is limited to being installed horizontally. Please note that it can't be used when installed in a wrong direction (transverse, vertical or reverse). (The same goes for storage.)
  - (2) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
  - (3) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
  - (4) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
  - (5) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

### Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



### Actuator Specifications

Model	Lead (mm)	Max. Load Capacity (Note 1)		Stroke (mm)	Stroke and Maximum Speed	
		Horizontal (kg)	Vertical (kg)		Stroke Lead	50-600 (50mm increments)
RCP2W-SA16C-I-86P-8-①-P2-②-③	8	-25	Not Allowed	50-600 (50mm increments)	8	180
RCP2W-SA16C-I-86P-4-①-P2-②-③	4	-35			4	133

Legend ① Stroke ② Cable length ③ Options (Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price	
	Without cover	With cover
50	-	-
100	-	-
150	-	-
200	-	-
250	-	-
300	-	-
350	-	-
400	-	-
450	-	-
500	-	-
550	-	-
600	-	-

#### ② Cable List

Type	Cable Symbol	Standard Price
Standard	P(1m)	-
	S(3m)	-
	M(5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

#### ③ Option List

Name	Option Code	See Page	Standard Price
With cover	CO	→ 444	-
Reversed-home	NM	→ A-33	-

### Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.08mm
Lost Motion	0.1 mm or less
Guide	ø20 Non-lubricated Linear Sliding Guide
Allowable Static Load Moment	20.0N·m
Overhang Load Length	Ma direction 200mm or less
Protection Structure	IP67
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

#### Note

A dynamic moment isn't applicable for the SA16C for structural reasons. When an object is to be mounted on the slider, please fix it in a manner so that no moment load is applied in the direction Mb or Mc, and so that the load is distributed evenly.

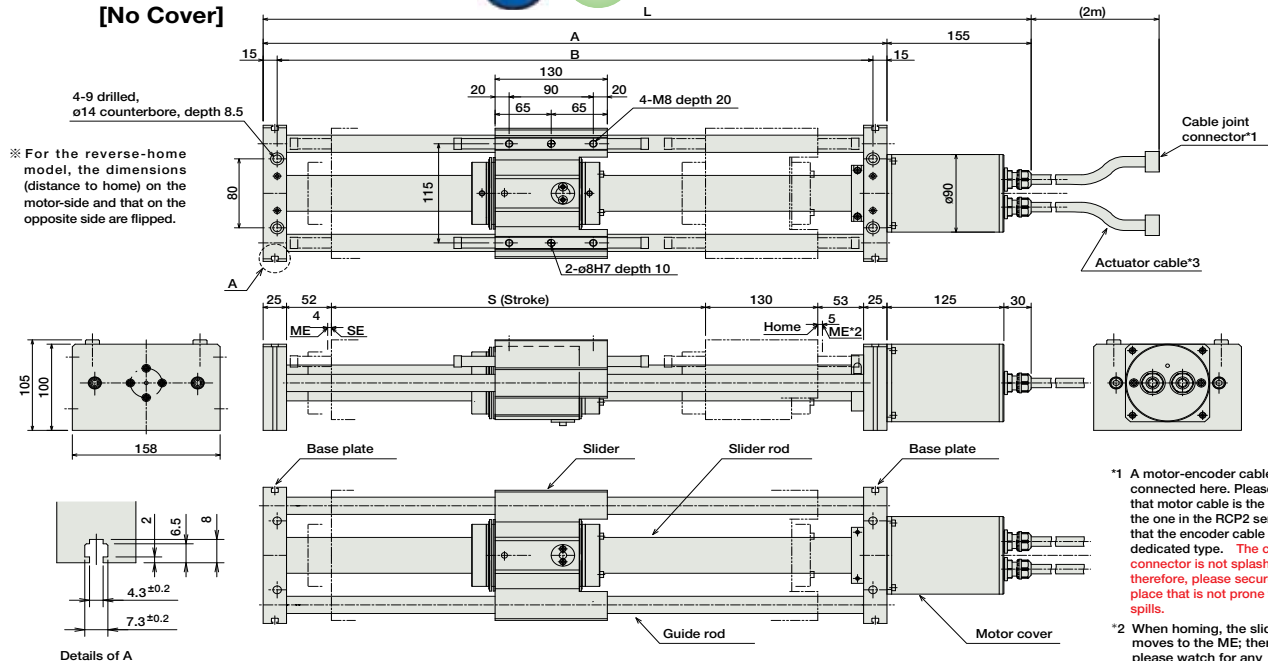
Dimensions

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

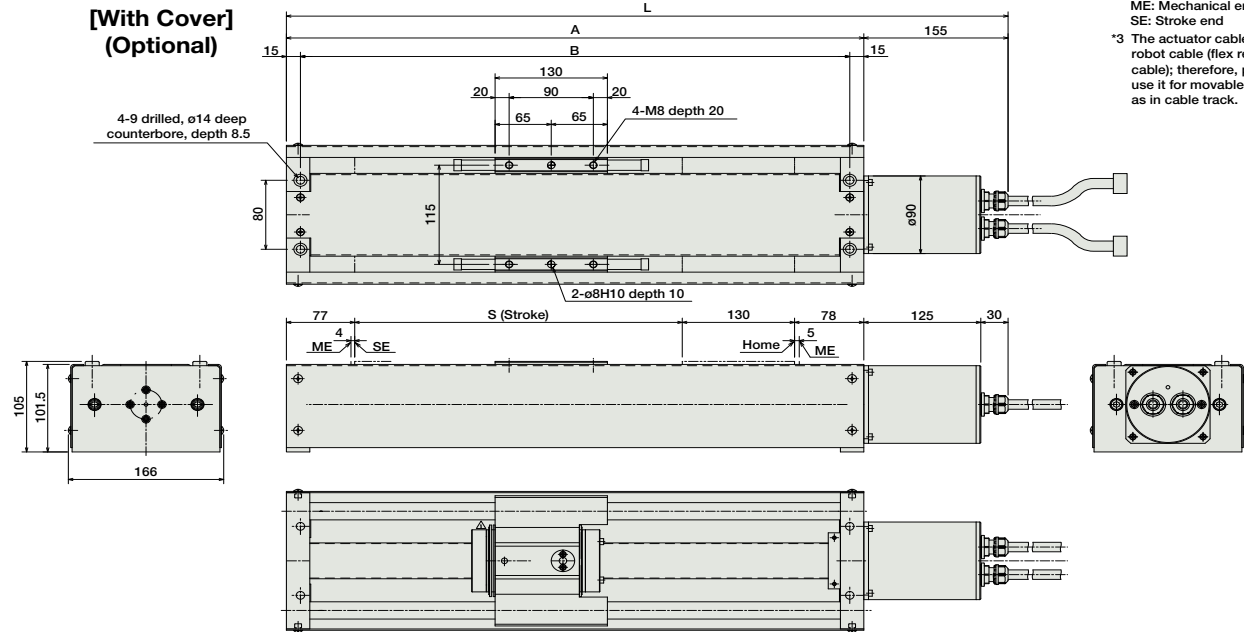


For Special Orders

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- \*1 A motor-encoder cable is connected here. Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- \*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.  
ME: Mechanical end  
SE: Stroke end
- \*3 The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as in cable track.



■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	490	540	590	640	690	740	790	840	890	940	990	1040
A	335	385	435	485	535	585	635	685	735	785	835	885
B	305	355	405	455	505	555	605	655	705	755	805	855
S	50	100	150	200	250	300	350	400	450	500	550	600
Weight without cover (kg)	9	9.4	9.9	10.4	10.9	11.3	11.8	12.3	12.7	13.2	13.7	15.1
Weight with cover (kg)	10.5	11.1	11.8	12.5	13.2	13.8	14.6	15.3	15.9	16.6	17.3	18.9

Compatible Controllers

The controller for the RCP2W-SA16C type is a dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Positioner Type		PCON-CF-86PI-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	6A max.	-	→ P525

Note: Please note that the encoder cable is a dedicated CF-type cable that is different from the PCON-C/CG/CV/PL/PO/SE controllers.

- 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

## RCP2W-RA4C ROBO Cylinder Splash-proof Rod Type 45mm Width Pulse Motor Coupled

**Configuration:** **RCP2W** — **RA4C** — **I** — **42P** —  —  —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

**I:** Incremental Type    **42P:** Pulse motor  
 \* The simple absolute encoder is also considered type "I".    **42**  size

**Lead:** 10 : 10mm  
 5 : 5mm  
 2.5 : 2.5mm

**Stroke:** 50: 50mm  
 ↓  
 300: 300mm (50mm pitch increments)

**Compatible Controllers:** P1 : PCON    RPCON    PSEL    P3 : PMEC    PSEP  
 N : None    P : 1m    S : 3m    M : 5m    X  : Custom    R  : Robot Cable

**Option:** B : Brake-Equipped    FL : With Flange    FT : With Foot bracket    NM : Reversed-home

\* See page Pre-35 for explanation of each code that makes up the configuration name.

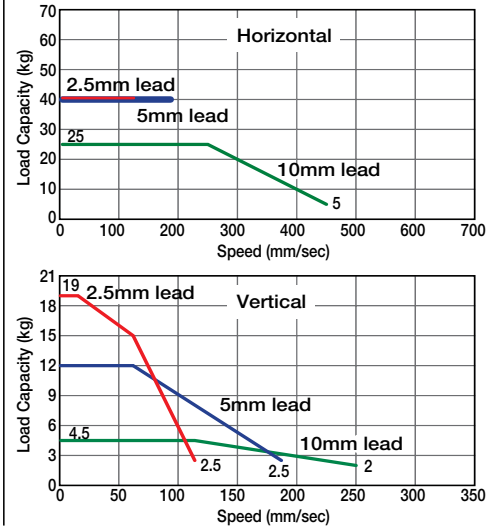


### Technical References

- POINT** Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
  - (2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph on the above right to see if your desired speed and load capacity are supported.
  - (3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
  - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

### Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications					
Lead and Load Capacity			Stroke and Maximum Speed		
Model	Lead (mm)	Max. Load Capacity (Note 1)		Stroke (mm)	Maximum Push Force (N) (Note 2)
		Horizontal (kg)	Vertical (kg)		
RCP2W-RA4C-I-42P-10-①-②-③-④	10	~25	~4.5	150	50-300 (50mm increments)
RCP2W-RA4C-I-42P-5-①-②-③-④	5	40	~12	284	
RCP2W-RA4C-I-42P-2.5-①-②-③-④	2.5	40	~19	358	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 1) Please note that the maximum load capacity decreases as the speed increases. (Note 2) See page A-69 for push force graph. \* The value inside < > applies to vertical setting. (Unit: mm/s)

### ① Stroke List

Stroke (mm)	Standard Price
50	-
100	-
150	-
200	-
250	-
300	-

### ③ Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

### ④ Option List

Name	Option Code	See Page	Standard Price
Brake-Equipped	B	→ A-25	-
With Flange	FL	→ A-27	-
With Foot bracket	FT	→ A-29	-
Reversed-home	NM	→ A-33	-

### Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Rod diameter	ø22mm
Rod non-rotational accuracy	±1.5 degrees
Protection Structure	IP65
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

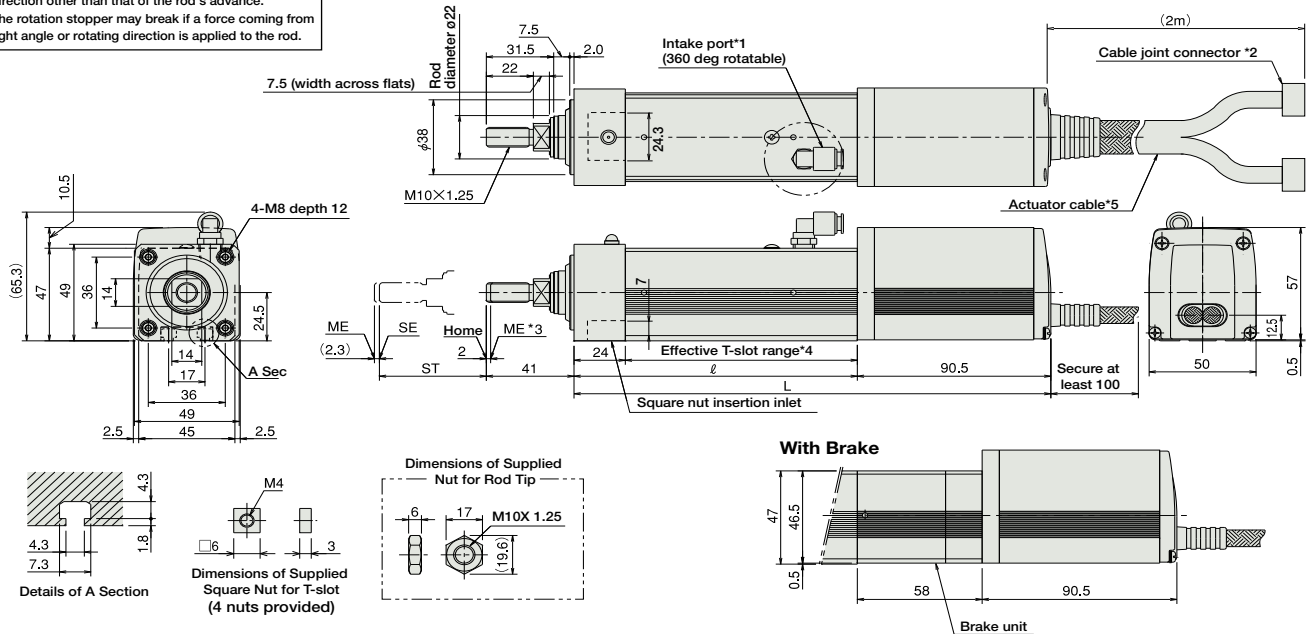
Dimensions

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



For Special Orders P. A-9

**Note:**  
Please don't apply an external force coming from a direction other than that of the rod's advance.  
The rotation stopper may break if a force coming from right angle or rotating direction is applied to the rod.



- \* 1. Intake/exhaust port is the air exhaust tube in the main body. Insert OD  $\phi 6$  mm tube and use it extended to a place that is not prone to water spills or intake.
- \* 2. Connect motor encoder cable. See page A-39 for details on cables.  
The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- \* 3. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.  
ME : Mechanical End  
SE : Stroke end  
The dimensions enclosed in "( )" are reference dimensions.
- \* 4. Please note that there is no T-slot in the bottom of brake unit.
- \* 5. The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.

\* Adding a brake increases overall length by 58mm and its weight by 0.4kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
$\ell$	132.5	182.5	232.5	282.5	332.5	382.5
L	223	273	323	373	423	473
Weight (kg)	1.9	2.1	2.2	2.5	2.9	3.1

② Compatible Controllers

The RCP2W 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-42PI-NP-2-①	Easy-to-use controller, even for beginners.	3 points	AC100V AC200V	See P481	-	→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types.					→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0	No homing necessary with simple absolute type.					
Positioner Type		PCON-C-42PI-NP-2-0	Positioning possible for up to 512 points	512 points				
Safety Category Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	2A max.		→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Open Collector Pulse Train Input Type					
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0	Programmed operation is possible Can operate 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

# RCP2W-RA6C ROBO Cylinder Splash-proof Rod Type 64mm Width Pulse Motor Coupled

■ Configuration: **RCP2W** — **RA6C** — **I** — **56P** —  —  —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental Type 56P: Pulse motor  
 \* The simple absolute encoder is also considered type "I".  
 56 □ size

16 : 16mm  
 8 : 8mm  
 4 : 4mm

50: 50mm  
 300: 300mm (50mm pitch increments)

P1 : PCON  
 RPCON  
 PSEL  
 P3 : PMEC  
 PSEP

N : None  
 P : 1m  
 S : 3m  
 M : 5m  
 X □ □ : Custom Length  
 R □ □ : Robot Cable

B : Brake-Equipped  
 FL : With Flange  
 FT : With Foot bracket  
 NM : Reversed-home

\* See page Pre-35 for explanation of each code that makes up the configuration name.

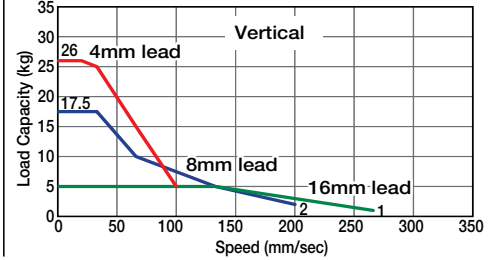
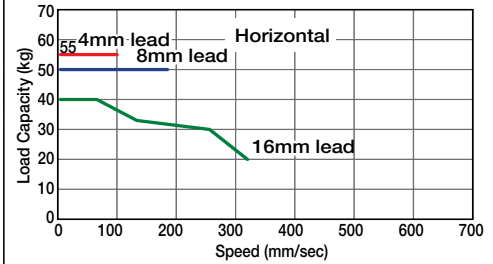


Technical References P. A-5

- POINT**  
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
  - (2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph on the above right to see if your desired speed and load capacity are supported.
  - (3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
  - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

### Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications					Stroke and Maximum Speed	
■ Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases.					■ Stroke and Maximum Speed	
Model	Lead (mm)	Max. Load Capacity (Note 1)	Maximum Push Force (N) (Note 2)	Stroke (mm)	Stroke / Lead	50-300 (50mm increments)
RCP2W-RA6C-I-56P-16-①-②-③-④	16	~40	~5	240	16	320 (265)
RCP2W-RA6C-I-56P-8-①-②-③-④	8	50	~17.5	470	8	200
RCP2W-RA6C-I-56P-4-①-②-③-④	4	55	~26	800	4	100

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options (Note 2) See page A-69 for push force graph. \* The value inside < > applies to vertical setting. (Unit: mm/s)

### ① Stroke List

Stroke (mm)	Standard Price
50	-
100	-
150	-
200	-
250	-
300	-

### ③ Cable List

Type	Cable Symbol	Standard Price
Standard	P(1m)	-
	S(3m)	-
	M(5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

### ④ Option List

Name	Option Code	See Page	Standard Price
Brake-Equipped	B	→ A-25	-
With Flange	FL	→ A-27	-
With Foot bracket	FT	→ A-29	-
Reversed-home	NM	→ A-33	-

### Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Rod diameter	ø30mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP65
Ambient Operating Temp./Humidity	0-40°C, 85%RH or less (Non-condensing)



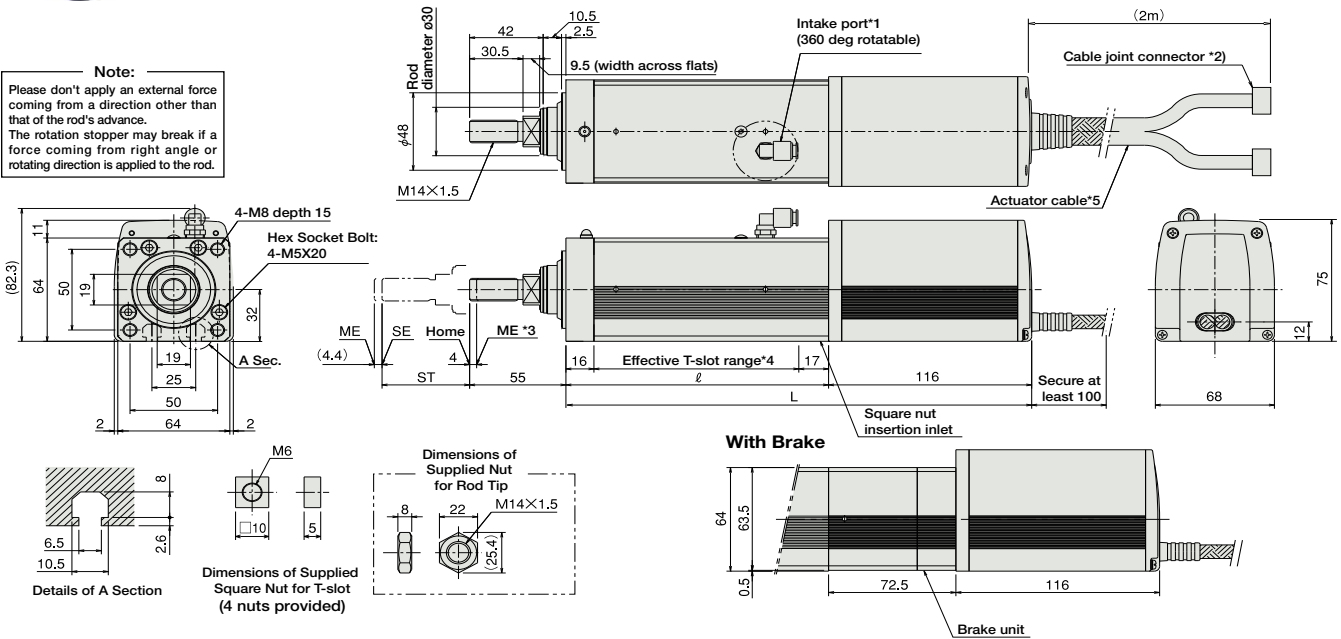
Dimensions

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

For Special Orders P. A-9



**Note:**  
Please don't apply an external force coming from a direction other than that of the rod's advance.  
The rotation stopper may break if a force coming from right angle or rotating direction is applied to the rod.



- \*1. Intake/exhaust port is the air exhaust tube in the main body. Insert OD ø6 mm tube and use it extended to a place that is not prone to water spills or intake.
- \*2. Connect motor encoder cable. See page A-39 for details on cables.  
**The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.**
- \*3. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.  
ME: Mechanical End  
SE: Stroke end  
The dimensions enclosed in "( )" are reference dimensions.
- \*4. Please note that there is no T-slot in the bottom of brake unit.
- \*5. The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.

\* Adding a brake increases overall length by 72.5mm and its weight by 0.9kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	150	200	250	300	350	400
L	266	316	366	416	466	516
Weight (kg)	3.5	4.0	4.5	5.0	5.5	6.0

② Compatible Controllers

The RCP2W 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-56PI-NP-2-①	Easy-to-use controller, even for beginners.	3 points	AC100V AC200V	See P481	-	→ P477
		PSEP-C-56PI-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
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0					-	
Positioner Type		PCON-C-56PI-NP-2-0	Positioning possible for up to 512 points	512 points			-	
Safety Category Compliant Positioner Type		PCON-CG-56PI-NP-2-0					-	
Pulse Train Input type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	2A max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0					Open Collector Pulse Train Input Type	-
Serial Communication Type		PCON-SE-56PI-N-0-0	Dedicated to serial communication	64 points			-	
Field Network Type		RPCON-56P	Dedicated to field network	768 points			-	→ P503
Program Control Type		PSEL-C-1-56PI-NP-2-0	Programmed operation is possible Can operate 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



# RCP2W-RA10C

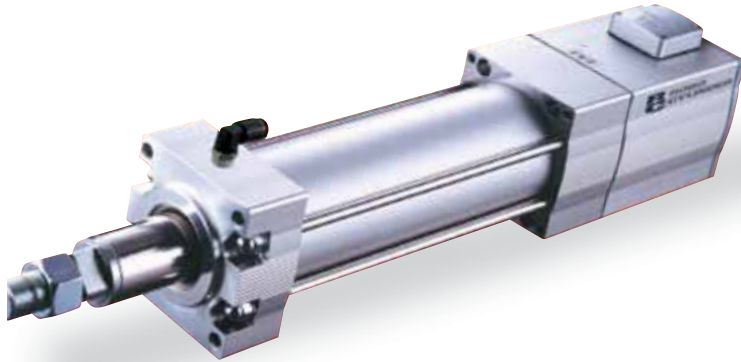
ROBO Cylinder High-thrust Dust-proof Rod Type 100mm Width Pulse Motor Coupled

■ Configuration: **RCP2W** — **RA10C** — **I** — **86P** —  —  — **P2** —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental Type    86P: Pulse motor 86 □ size    10 : 10mm    5 : 5mm    2.5 : 2.5mm    50: 50mm    300: 300mm (50mm pitch increments)    P2 : PCON-CF    N : None    P : 1m    S : 3m    M : 5m    X □ : Custom Length    R □ : Robot Cable    A1~A3 : Connector cable Cable outlet direction changed    B : Brake-Equipped    FL : With Flange    FT : With Foot bracket

\* See page Pre-35 for explanation of each code that makes up the configuration name.

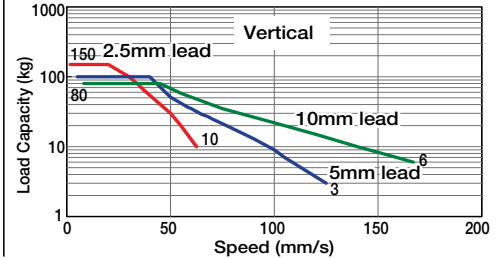
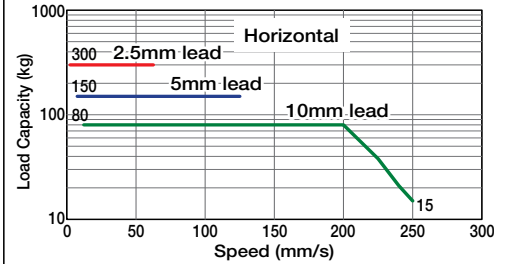


Technical References P. A-5

- POINT** Notes on Selection
- (1) Minimum speed is set for each lead. (Lead 10: 10mm/s, Lead 5: 5mm/s, Lead 2.5: 1mm/s) Please note that vibration etc. may occur when operated at minimum speed.
  - (2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check the Speed vs. Load Capacity on the right hand graph to see if your desired speed and load capacity are supported.
  - (3) The load capacity is based on operation at lead 10: 0.04G, lead 5: 0.02G and lead 2.5: 0.01G. These values are the upper limits for the acceleration. Also, this is when the load capacity is attached to the external guide. The rotation stopper may break if an external force coming from a direction other than that of rod's advance is applied.
  - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

### Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



### Actuator Specifications

#### Lead and Load Capacity

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

Model	Lead (mm)	Max. Load Capacity (Note 1)		Maximum Push Force (N) (Note 2)	Stroke (mm)
		Horizontal(kg)	Vertical(kg)		
RCP2W-RA10C-I-86P-10-①-P2-②-③	10	~80	~80	1500	50-300 (50mm increments)
RCP2W-RA10C-I-86P-5-①-P2-②-③	5	150	~100	3000	
RCP2W-RA10C-I-86P-2.5-①-P2-②-③	2.5	300	~150	6000	

Legend ① Stroke ② Cable length ③ Options

#### Stroke and Maximum Speed

Stroke / Lead	50-300 (50mm increments)	
	Stroke (mm)	50-300 (50mm increments)
10	250	<167>
5	125	
2.5	63	

\* The value inside < > applies to vertical setting. (Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price
50	-
100	-
150	-
200	-
250	-
300	-

#### ② Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

#### ③ Option List

Name	Option Code	See Page	Standard Price
Connector cable outlet direction changed	A1 ~ A3	→ A-25	-
Brake	B	→ A-25	-
Flange	FL	→ A-27	-
Foot bracket	FT	→ A-29	-

#### Actuator Specifications

Item	Description
Drive System	Ball screw C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Rod diameter	φ40mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
Ambient Operating Temp./Humidity	0-40°C, 85%RH or less (Non-condensing)

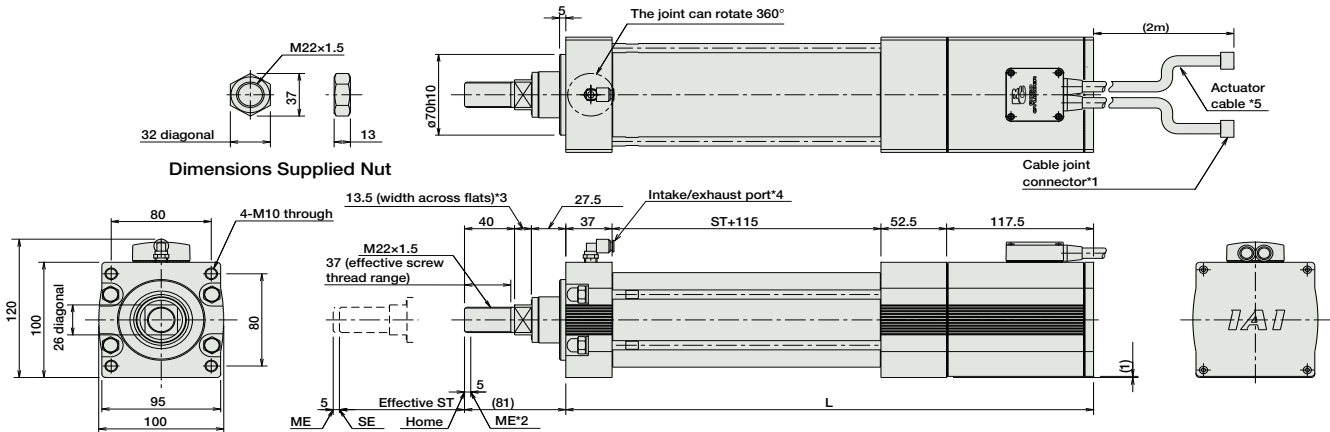
Dimensions

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

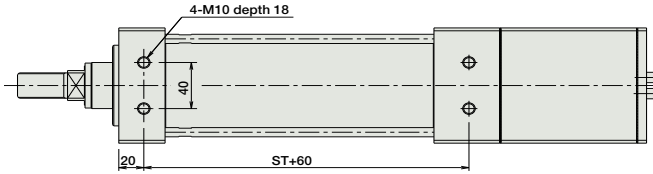
For Special Orders P. A-9



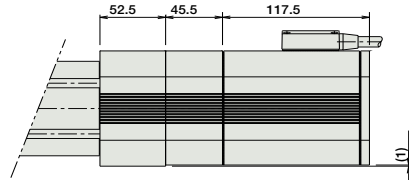
\* Please note that reversed home position is unavailable for the RA10C type for structural reasons.



- \*1. A motor-encoder cable is connected here. Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. See page A-39 for details on cables. **The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.**
- \*2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end The dimensions enclosed in "( )" are reference dimensions.
- \*3. The direction of across-flats will vary depending on the product.
- \*4. Intake/exhaust port is the air exhaust tube in the main body.
- \*5. The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.



Dimensions of the Brake Section



\* Adding a brake increases overall length by 45.5mm and its weight by 1.5kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
L	372	422	472	522	572	622
Weight (kg)	9	9.5	10	10.5	11	11.5

Compatible Controllers

The controller for the RCP2W-RA10C type is a dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
Positioner Type		PCON-CF-86PI-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	6A max.	-	→ P525

Note: Please note that the encoder cable is a dedicated CF-type cable that is different from the PCON-C/CG/CY/PL/PO/SE controllers.

- 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

## RCP2W-GRSS ROBO Cylinder 2-Finger Gripper Mini Slider Type 42mm Width Pulse Motor

**Configuration:** **RCP2W** — **GRSS** — **I** — **20P** — **30** — **8** —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

**I:** Incremental Type **20P:** Pulse motor **30:** Deceleration ratio 1/30 **8:** 8mm (One side 4mm)

**P1:** PCON **N:** None **NM:** Reversed-home  
**RPCON** **P:** 1m **FB:** Flange Bracket  
**PSEL** **S:** 3m **SB:** Shaft Bracket  
**P3:** PMEC **M:** 5m  
**PSEP** **X**   : Custom Length

\* See page Pre-35 for explanation of each code that makes up the configuration name.

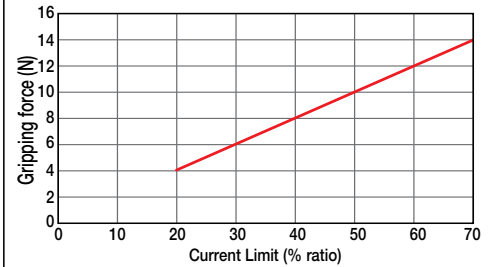


Technical References P. A-5

### Grip Force Arrangement

Through push operation the grip force (push force) can be arranged freely within the range of 20%-70% of current limit value of the controller.

\* Grip force noted in the figure below is the sum of the grip force of two fingers.



\* Please note when gripping (pushing) is performed the speed will be fixed at 5 mm/s.

**POINT** Notes on Selection

- (1) The max. open/close speed represents one side operating speed.
- (2) The max. grip force will be the sum of the two fingers grip force when the distance for grip point and over hang is 0. The actual work part weight which can be transported depends on the friction constant between finger and work material, and the form; typically it is 1/10-1/20 or less than gripping force. (See page A-74 for details.)
- (3) The rated acceleration at transportation is 0.3G.
- (4) Please note that the product has no splash-proof function.

### Actuator Specifications

#### Lead and Load Capacity

Model	Deceleration ratio	Max. Grip Force (N)	Stroke (mm)
RCP2W-GRSS-I-20P-30-8-①-②-③	30	14	8 (One side 4)

Legend ① Compatible controller ② Cable length ③ Options

#### Stroke and Maximum Open/Close Speed

Deceleration ratio	Stroke	8 (mm)
	30	78

(Unit: mm/s)

#### Stroke List

Stroke (mm)	Standard Price
8	-

#### ② Cable List

Type	Cable Symbol	Standard Price
Standard (Robot Cables)	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	X06 (6m) ~ X10 (10m)	-
	X11 (11m) ~ X15 (15m)	-
	X16 (16m) ~ X20 (20m)	-
	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	→ 26	-
Shaft Bracket	SB	→ 36	-

#### Actuator Specifications

Item	Description
Drive System	Worm gear + Helical gear + Helical rack
Positioning Repeatability	±0.01mm
Backlash	0.2 mm or less for one side (stressed by spring on the side which is opened always)
Lost Motion	0.05mm or less one side
Guide	Linear Guide
Statically Allowable Load Moment	Ma:0.5N·m Mb:0.5N·m Mc:1.5N·m
Weight	0.2kg
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

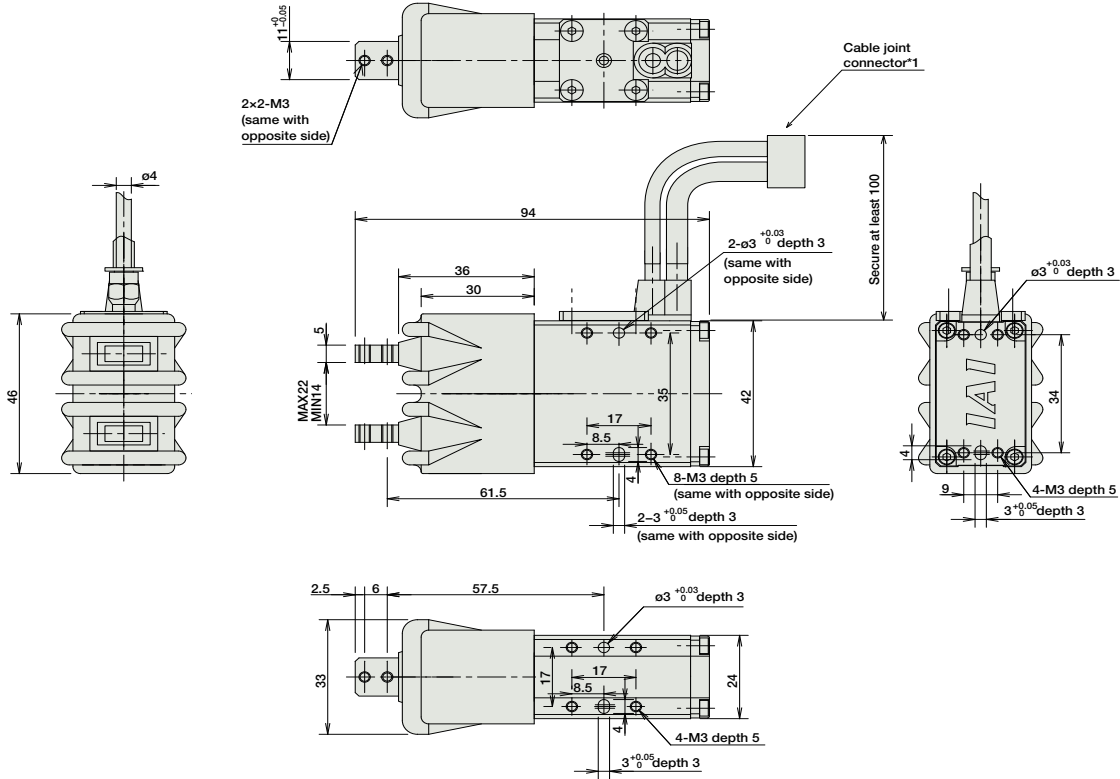
Dimensions

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

For Special Order P. A-9



- \* Open side of slider will be home position.
- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.



Weight (kg) 0.2

① Compatible Controllers

The RCP2W 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 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
Positioner Type		PCON-C-20PI-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	2A max.	-	
Safety Category Compliant Positioner Type		PCON-CG-20PI-NP-2-0					-	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	2A max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Open Collector Pulse Train Input Type				-	
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 Can operate 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

## RCP2W-GRLS ROBO Cylinder 2-Finger Gripper Mini Lever Type 42mm Width Pulse Motor

**Configuration:** **RCP2W** — **GRLS** — **I** — **20P** — **30** — **180** —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

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

**20P:** Pulse motor  
 20  size

**30:** Deceleration ratio 1/30  
 (One side 90 degrees)

**180:** 180 Degree Stroke

**P1:** PCON  
 RPCON  
 PSEL  
**P3:** PMEC  
 PSEP

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

**NM:** Reversed-home  
**FB:** Flange Bracket  
**SB:** Shaft Bracket

\* See page Pre-35 for explanation of each code that makes up the configuration name.

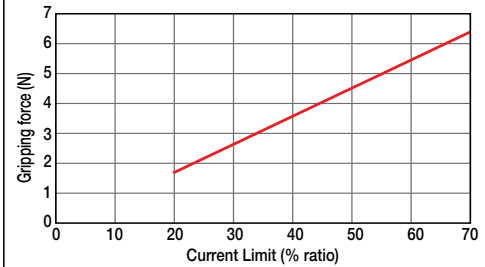


Technical References P. A-5

### Grip Force Arrangement

Through push operation the grip force (push force) can be arranged freely within the range of 20%~70% of current limit value of the controller.

\* Grip force noted in the figure below is the sum of the grip force of two fingers.



\* Please note when gripping (pushing) is performed the speed will be fixed at 5 degrees/sec.

- POINT** Notes on Selection
- (1) The max. open/close speed represents one side operating speed.
  - (2) The max. grip force will be the sum of the two fingers grip force when the distance for grip point and over hang is 0. The actual work part weight which can be transported depends on the friction constant between finger and work part material, and the form; typically it is 1/10 ~ 1/20 or less than gripping force. (See page A-77 for details.)
  - (3) The rated acceleration at transportation is 0.3G.
  - (4) Please note that the product has no splash-proof function.

### Actuator Specifications

#### Lead and Load Capacity

Model	Deceleration ratio	Max. Grip Force (N)	Stroke (degrees)
RCP2W-GRLS-I-20P-30-180-①-②-③	30	6.4	180 (One side 90)

Legend ① Compatible controller ② Cable length ③ Options

#### Stroke and Maximum Open/Close Speed

Deceleration ratio	Stroke	180 (degrees)
	30	600

(Unit: degrees/s)

#### Stroke List

Stroke (degrees)	Standard Price
180	—

#### ② Cable List

Type	Cable Symbol	Standard Price
Standard (Robot Cables)	P (1m)	—
	S (3m)	—
	M (5m)	—
Special Lengths	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
	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	26	—
Shaft Bracket	SB	36	—

#### Actuator Specifications

Item	Description
Drive System	Worm gear + Helical gear
Positioning Repeatability	±0.01mm
Backlash	1 degree or less for one side (stressed by spring on the side which is opened always)
Lost Motion	0.1 mm or less one side
Guide	—
Statically Allowable Load Moment	—
Weight	0.2kg
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

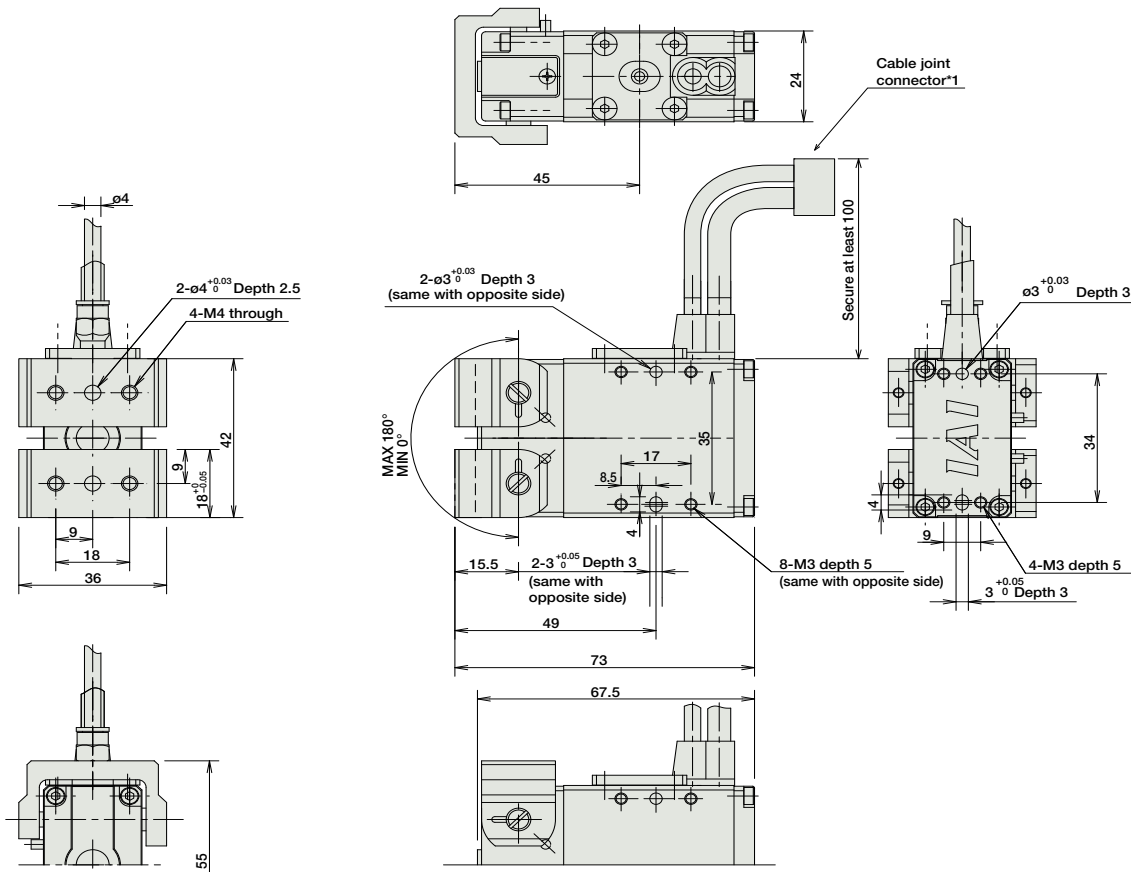
Dimensions

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

For Special Order P. A-9



- \* Open side of slider will be home position.
- \*1 A motor-encoder cable is connected here. See page A-39 for details on cables.



Weight (kg) 0.2

① Compatible Controllers

The RCP2W 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
Positioner Type		PCON-C-20PI-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	2A max.	-	
Safety Category Compliant Positioner Type		PCON-CG-20PI-NP-2-0					-	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	2A max.	-	→ P525
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Open Collector Pulse Train Input Type				-	
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. Can operate 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



# RCAW-RA3C/RA3D/RA3R

ROBO Cylinder Splash-proof Rod Type  
 ø32mm Diameter 24V Servo Motor  
 Coupled/Built-in/Side-Mounted Motor Specification

■ Configuration: **RCAW** —  — **I** — **20** —  —  —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

RA3C: Coupled type  
 RA3D: Built-in Side-Mounted Motor  
 RA3R: Side-Mounted Motor

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

20: 20W servo motor

10: 10mm  
 5: 5mm  
 2.5: 2.5mm

50: 50mm  
 200: 200mm (50mm pitch increments)

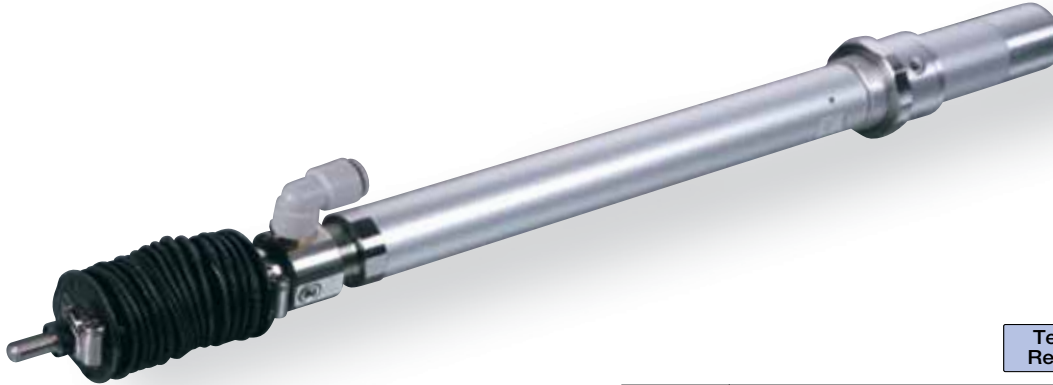
A1: ACON  
 RACON  
 ASEL  
 A3: AMEC  
 ASEP

N: None  
 P: 1m  
 S: 3m  
 M: 5m  
 X  : Custom Length  
 R  : Robot Cable

See Options below

\* See page Pre-35 for explanation of each code that makes up the configuration name.

Power-saving



Technical References P. A-5

**POINT**  
Notes on Selection

- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model). These values are the upper limits for the acceleration.
- Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of rod's advance is applied.
- The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor Output (w)	Lead (mm)	Max. load capacity		Rated thrust (N)	Stroke (mm)
			Horizontal(kg)	Vertical(kg)		
RCAW-①-I-20-10-②-③-④-⑤	20	10	4	1.5	36.2	50-200 (50mm increments)
RCAW-①-I-20-5-②-③-④-⑤		5	9	3	72.4	
RCAW-①-I-20-2.5-②-③-④-⑤		2.5	18	6.5	144.8	

■ Stroke and Maximum Speed

Stroke Lead	50-200 (50mm increments)	
	Stroke	50-200 (50mm increments)
10	500	500
5	250	250
2.5	125	125

Legend ① Type ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

(Unit: mm/s)

Encoder & Stroke List

② Stroke (mm)	Standard Price		
	RA3C	RA3D	RA3R
50	-	-	-
100	-	-	-
150	-	-	-
200	-	-	-

④ Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

⑤ Option List

Name	Option Code	See Page	Standard Price
Brake (*1)	B	→ A-25	-
Flange bracket	FL	→ A-27	-
Foot bracket	FT	→ A-29	-
Home confirmation sensor (*2)	HS	→ A-32	-
Power-saving	LA	→ A-32	-
Knuckle Joint	NJ	→ A-34	-
Reversed-home (*2)	NM	→ A-33	-
Clevis Bracket (*3)	QR	→ A-34	-
Rear mounting plate (*3)	RP	→ A-33	-
Trunnion Bracket (Front) (*4)	TRF	→ A-38	-
Trunnion Bracket (Back) (*4)	TRR	→ A-38	-

(\*1) No brake option for RA3D.  
 (\*2) Home sensor (HS) can't be used with reversed-home (NM).  
 (\*3) Clevis bracket and rear mounting plate only available for RA3R.  
 (\*4) Trunnion bracket (rear) only available for RA3C/RA3D.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Rod diameter	ø16mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
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](http://www.intelligentactuator.com)

For Special Orders P. A-9

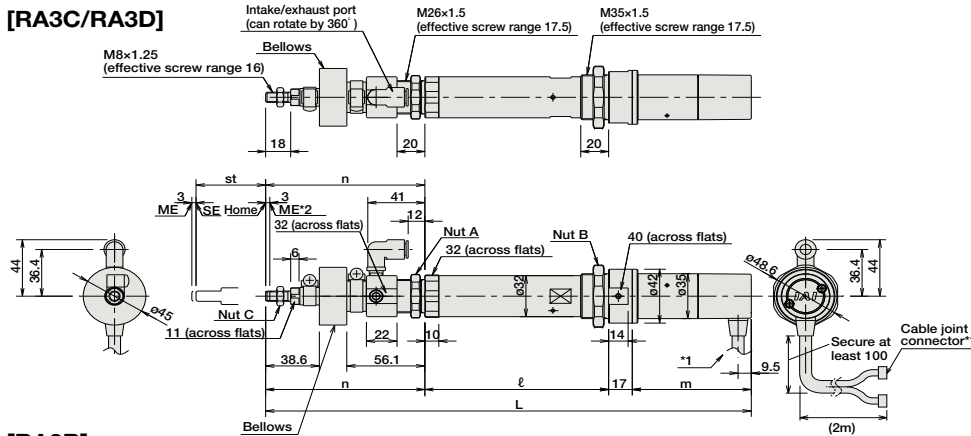


Note: No 3D CAD data for RA3D type.

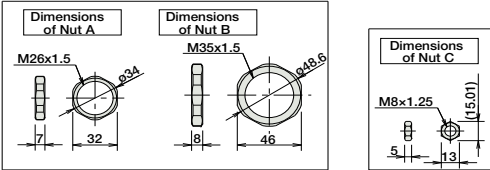
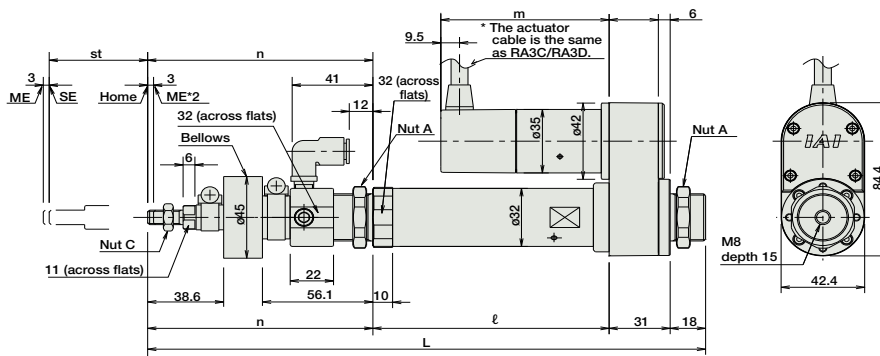
\*1 A motor-encoder cable is connected here. See page A-39 for details on cables.

\*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.  
ME: Mechanical end SE: Stroke end

[RA3C/RA3D]



[RA3R]



■ Dimensions/Weight by Stroke

RCAW-RA3C/RA3D/RA3R (without brake)

Stroke	50	100	150	200	
L	RA3C	348.9	408.9	468.9	528.9
	RA3D	329.9	389.9	449.9	509.9
	RA3R	283.4	343.4	403.4	463.4
ℓ	RA3C	132	182	232	282
	RA3D	132	182	232	282
	RA3R	120	170	220	270
m	RA3C	85.5			
	RA3D	66.5			
	RA3R	85.5			
n	RA3C	114.4	124.4	134.4	144.4
	RA3D	114.4	124.4	134.4	144.4
	RA3R	114.4	124.4	134.4	144.4
Weight (kg)	RA3C	1.0	1.1	1.2	1.3
	RA3D	1.0	1.1	1.2	1.3
	RA3R	1.1	1.2	1.3	1.4

RCAW-RA3C/RA3D/RA3R (with brake)

Stroke	50	100	150	200	
L	RA3C	387.9	447.9	507.9	567.9
	RA3D	No brake-equipped model.			
	RA3R	283.4	343.4	403.4	463.4
ℓ	RA3C	132	182	232	282
	RA3D	No brake-equipped model.			
	RA3R	120	170	220	270
m	RA3C	124.5			
	RA3D	No brake-equipped model.			
	RA3R	124.5			
n	RA3C	114.4	124.4	134.4	144.4
	RA3D	No brake-equipped model.			
	RA3R	114.4	124.4	134.4	144.4
Weight (kg)	RA3C	1.2	1.3	1.4	1.5
	RA3D	1.2	1.3	1.4	1.5
	RA3R	1.3	1.4	1.5	1.6

③ Compatible Controllers

The RCAW 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 ValveType		AMEC-C-20SI ①-NP-2-1	Easy-to-use controller, even for beginners.	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-20SI ①-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.					
Splash-Proof Solenoid ValveType		ASEP-CW-20SI ①-NP-2-0						→ P487
Positioner Type		ACON-C-20SI ①-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	1.7A rated 5.1A peak	-	→ P535
Safety Category Compliant Positioner Type		ACON-CG-20SI ①-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20SI ①-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	1.7A rated 5.1A peak	-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-20SI ①-NP-2-0	Open Collector Pulse Train Input Type					
Serial Communication Type		ACON-SE-20SI ①-N-0-0	Dedicated to serial communication	64 points				
Field NetworkType		RACON-20S ①	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-20SI ①-NP-2-0	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P567

\* This is for the single-axis ASEL.

\* ① is a placeholder for the code "LA", when the the energy-saving option is selected.

# RCAW-RA4C/RA4D/RA4R

ROBO Cylinder Splash-proof Rod Type  
 ø37mm Diameter 24V Servo Motor  
 Coupled/Built-in/Side-Mounted Motor Specification

■ Configuration: **RCAW** — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ]

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

RA4C: Coupled type  
 RA4D: Built-in Side-Mounted Motor  
 RA4R: Side-Mounted Motor

I : Incremental Type  
 A : Absolute Type

20 : 20W servo motor  
 30 : 30W servo motor

12 : 12mm  
 6 : 6mm  
 3 : 3mm

50:50mm  
 300:300mm (50mm pitch increments)

A1 : ACON  
 RACON  
 ASEL  
 A3 : AMEC  
 ASEP

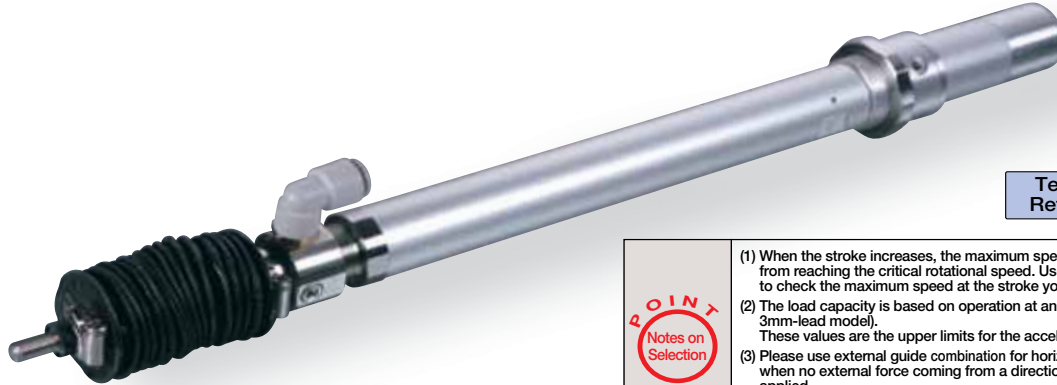
N : None  
 P : 1m  
 S : 3m  
 M : 5m  
 X [ ] : Custom Length  
 R [ ] : Robot Cable

See Options below

\* See page Pre-35 for explanation of each code that makes up the configuration name.

\* The absolute model can only use ASEL.  
 The simple absolute type is considered an incremental model.

Power-saving



Technical References P. A-5

- POINT**  
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
  - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). These values are the upper limits for the acceleration.
  - (3) Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of rod's advance is applied.
  - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

## Actuator Specifications

### ■ Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. load capacity Horizontal (kg) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCAW-①-②-20-12-③-④-⑤-⑥	20	12	3.0 / 1.0	18.9	50-300 (50mm increments)
RCAW-①-②-20-6-③-④-⑤-⑥		6	6.0 / 2.0	37.7	
RCAW-①-②-20-3-③-④-⑤-⑥		3	12.0 / 4.0	75.4	
RCAW-①-②-30-12-③-④-⑤-⑥	30	12	4.0 / 1.5	28.3	
RCAW-①-②-30-6-③-④-⑤-⑥		6	9.0 / 3.0	56.6	
RCAW-①-②-30-3-③-④-⑤-⑥		3	18.0 / 6.5	113.1	

### ■ Stroke and Maximum Speed

Stroke / Lead	50- 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Legend ① Type ② Encoder ③ Stroke ④ Compatible controller ⑤ Cable length ⑥ Options

## Encoder & Stroke List

③ Stroke (mm)	Standard Price							
	RA4C/RA4D				RA4R			
	② Encoder Type		② Encoder Type		② Encoder Type		② Encoder Type	
	Incremental		Absolute		Incremental		Absolute	
	Motor power output	Motor power output	Motor power output	Motor power output	Motor power output	Motor power output	Motor power output	
	20W	30W	20W	30W	20W	30W	20W	30W
50	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-

## ⑤ Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

## ⑥ Option List

Name	Option Code	See Page	Standard Price
Brake (*1)	B	→ A-25	-
Flange bracket	FL	→ A-27	-
Foot bracket	FT	→ A-29	-
Home confirmation sensor (*2)	HS	→ A-32	-
Power-saving	LA	→ A-32	-
Knuckle Joint	NJ	→ A-34	-
Reversed-home (*2)	NM	→ A-33	-
Clevis Bracket (*3)	QR	→ A-34	-
Rear mounting plate (*3)	RP	→ A-33	-
Trunnion Bracket (Front) (*4)	TRF	→ A-38	-
Trunnion Bracket (Back) (*4)	TRR	→ A-38	-

(\*1) No brake setting for RA4D.  
 (\*2) Home sensor (HS) can't be used under reversed-home (NM).  
 (\*3) Clevis bracket and rear mounting plate only available for RA4R.  
 (\*4) Trunnion bracket only available for RA4C/RA4D.

## Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Rod diameter	ø20mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
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](http://www.intelligentactuator.com)

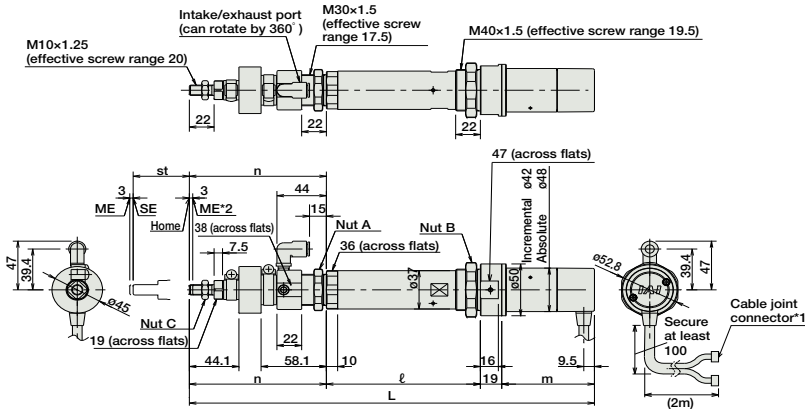


Note: No 3D CAD data for RA4D type.

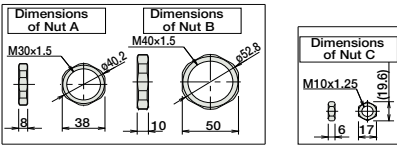
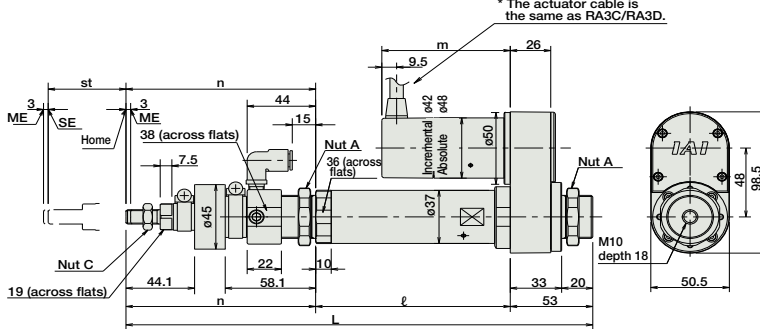
- \* 1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- \* 2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.

For Special Orders P. A-9

[RA4C/RA4D]



[RA4R]



■ Dimensions/Weight by Stroke

RCAW-RA4C/RA4D/RA4R (without brake)

Stroke	Stroke										
		50	100	150	200	250	300				
L	RA4C	20W	Incremental	345.4	405.4	465.4	525.4	586.4	647.4		
			Absolute	358.4	418.4	478.4	538.4	599.4	660.4		
		30W	Incremental	360.4	420.4	480.4	540.4	601.4	662.4		
			Absolute	373.4	433.4	493.4	553.4	614.4	675.4		
		RA4D	20W	Incremental	323.4	383.4	443.4	503.4	564.4	625.4	
				Absolute	336.4	396.4	456.4	516.4	577.4	638.4	
	30W		Incremental	338.4	398.4	458.4	518.4	579.4	640.4		
			Absolute	351.4	411.4	471.4	531.4	592.4	653.4		
	RA4R		20W	Incremental	299.9	359.9	419.9	479.9	540.9	601.9	
				Absolute	299.9	359.9	419.9	479.9	540.9	601.9	
	l	RA4C	20W	Incremental	137	187	237	287	337	387	
				Absolute	137	187	237	287	337	387	
30W			Incremental	137	187	237	287	337	387		
			Common	125	175	225	275	325	375		
RA4R			30W	Incremental	125	175	225	275	325	375	
				Absolute	125	175	225	275	325	375	
m		RA4C	20W	Incremental	67.5						
				Absolute	80.5						
			30W	Incremental	82.5						
				Absolute	95.5						
			RA4D	20W	Incremental	45.5					
					Absolute	58.5					
	30W	Incremental	60.5								
		Absolute	73.5								
	RA4R	20W	Incremental	67.5							
			Absolute	80.5							
	30W	Incremental	82.5								
		Absolute	95.5								
n	RA4C	20W	Incremental	121.9	131.9	141.9	151.9	162.9	173.9		
			Absolute	121.9	131.9	141.9	151.9	162.9	173.9		
		30W	Incremental	121.9	131.9	141.9	151.9	162.9	173.9		
			Absolute	121.9	131.9	141.9	151.9	162.9	173.9		
		RA4R	30W	Incremental	121.9	131.9	141.9	151.9	162.9	173.9	
				Absolute	121.9	131.9	141.9	151.9	162.9	173.9	
	RA4D	20W/30W	Incremental	1.4	1.5	1.7	1.8	2.0	2.1		
			Absolute	1.3	1.5	1.6	1.8	1.9	2.1		
	RA4R	20W/30W	Incremental	1.5	1.7	1.8	2.0	2.1	2.3		
			Absolute	1.5	1.7	1.8	2.0	2.1	2.3		

\* Adding a brake increases the RA4C type's overall length by 43mm. Adding a brake also increases the RA4R type's motor portion length by 43mm. However, the overall length does not change because the type is a Side-Mounted type. No brake setting for the RA4D type. Also the weight increases by 0.2kg for all types.

④ Compatible Controllers

The RCAW 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 ValveType		AMEC-C-201 ②-NP-2-1 AMEC-C-301 ②-NP-2-1	Easy-to-use controller, even for beginners.	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-201 ②-NP-2-0 ASEP-C-301 ②-NP-2-0						
Splash-Proof Solenoid ValveType		ASEP-CW-201 ②-NP-2-0 ASEP-CW-301 ②-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
Positioner Type		ACON-C-201 ②-NP-2-0 ACON-C-301 ②-NP-2-0	Positioning possible for up to 612 points	512 points	DC24V	20W 1.3A rated 5.1A peak	-	→ P535
Safety Category Compliant Positioner Type		ACON-CG-2001 ②-NP-2-0 ACON-CG-3001 ②-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-201 ②-NP-2-0 ACON-PL-301 ②-NP-2-0	Differential line driver support Pulse Train Input Type	(-)	DC24V	30W 1.3A rated 5.1A peak	-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-201 ②-NP-2-0 ACON-PO-301 ②-NP-2-0	Open Collector Pulse Train Input Type					
Serial Communication Type		ACON-SE-201 ②-N-0-0 ACON-SE-301 ②-N-0-0	Dedicated to serial communication	64 points				
Field NetworkType		RACON-20 ② RACON-30 ②	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-20 ① ②-NP-2-0 ASEL-C-1-30 ① ②-NP-2-0	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P567

\* This is for the single-axis ASEL.  
 \* ① is a placeholder for the encoder type (I : incremental, A : absolute).  
 \* ② is a placeholder for the code "LA", when the energy-saving option is selected.

# RCS2W-RA4C/RA4D/RA4R

ROBO Cylinder Splash-proof Rod Type  
 ø37mm Diameter 200V Servo Motor  
 Coupled/Built-in/Side-Mounted Motor Specification

■ Configuration: **RCS2W** — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ]

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

RA4C: Coupled type  
 RA4D: Built-in  
 RA4R: Side-Mounted Motor

I : Incremental Type  
 A : Absolute Type

20 : 20W servo motor  
 30 : 30W servo motor

12 : 12mm  
 6 : 6mm  
 3 : 3mm

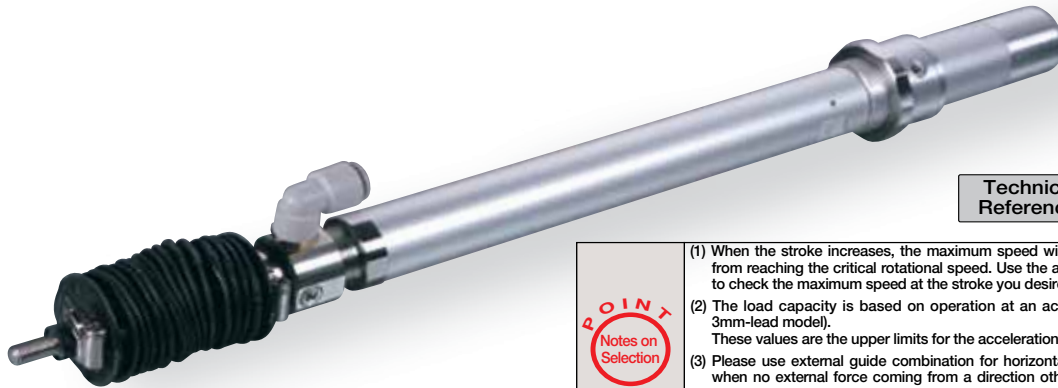
50:50mm  
 300:300mm (50mm pitch increments)

T1 : XSEL-J/K  
 T2 : SCON  
 SSEL  
 XEL-P/Q

N : None  
 P : 1m  
 S : 3m  
 M : 5m  
 X [ ] : Custom Length  
 R [ ] : Robot Cable

See Options below

\* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References P. A-5

- POINT**  
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
  - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). These values are the upper limits for the acceleration.
  - Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of rod's advance is applied.
  - The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

## Actuator Specifications

### Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. load capacity		Rated thrust (N)	Stroke (mm)
			Horizontal(kg)	Vertical(kg)		
RCS2W-①-②-20-12-③-④-⑤-⑥	20	12	3.0	1.0	18.9	50-300 (50mm increments)
RCS2W-①-②-20-6-③-④-⑤-⑥		6	6.0	2.0	37.7	
RCS2W-①-②-20-3-③-④-⑤-⑥		3	12.0	4.0	75.4	
RCS2W-①-②-30-12-③-④-⑤-⑥	30	12	4.0	1.5	28.3	
RCS2W-①-②-30-6-③-④-⑤-⑥		6	9.0	3.0	56.6	
RCS2W-①-②-30-3-③-④-⑤-⑥		3	18.0	6.5	113.1	

Legend ① Type ② Encoder ③ Stroke ④ Compatible controller ⑤ Cable length ⑥ Options

### Stroke and Maximum Speed

Stroke / Lead	50-300 (50mm increments)	
	12	600
6	300	
3	150	

(Unit: mm/s)

## Encoder & Stroke List

③ Stroke (mm)	Standard Price					
	RA4C/RA4D			RA4R		
	② Encoder Type			② Encoder Type		
	Incremental		Absolute	Incremental		Absolute
	Motor power output		Motor power output	Motor power output		Motor power output
	20W	30W	20W	30W	20W	30W
50	-	-	-	-	-	-
100	-	-	-	-	-	-
150	-	-	-	-	-	-
200	-	-	-	-	-	-
250	-	-	-	-	-	-
300	-	-	-	-	-	-

## ⑥ Option List

Name	Option Code	See Page	Standard Price
Brake (*1)	B	→ A-25	-
Flange bracket	FL	→ A-27	-
Foot bracket	FT	→ A-29	-
Home confirmation sensor (*2)	HS	→ A-32	-
Knuckle Joint	NJ	→ A-34	-
Reversed-home (*2)	NM	→ A-33	-
Clevis Bracket (*3)	QR	→ A-34	-
Rear mounting plate (*3)	RP	→ A-33	-
Trunnion Bracket (Front) (*4)	TRF	→ A-38	-
Trunnion Bracket (Back) (*4)	TBR	→ A-38	-

(\*1) No brake setting for RA4D.  
 (\*2) Home sensor (HS) can't be used under reversed-home (NM).  
 (\*3) Clevis bracket and rear mounting plate only available for RA4R.  
 (\*4) Trunnion bracket only available for RA4C/RA4D.

## ⑤ Cable List

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	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)	-

\* See page A-39 for cables for maintenance.

## Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Rod diameter	ø20mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
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](http://www.intelligentactuator.com)

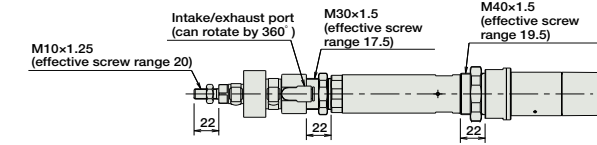


Note: No 3D CAD data for RA4D type.

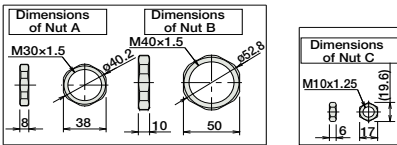
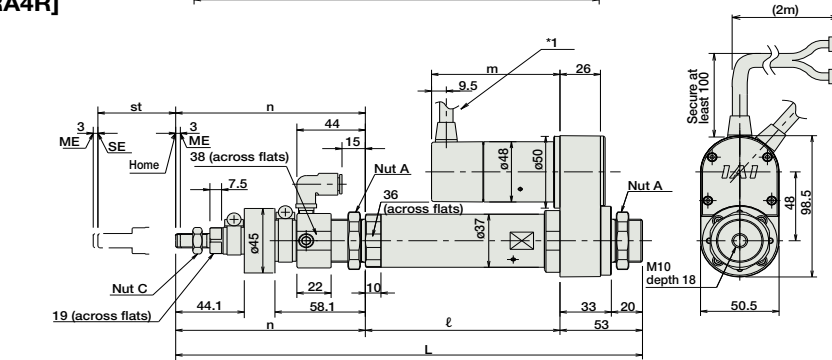
For Special Orders P. A-9

- \* 1 Cable joint connector and cable bending space are the same as for RCS2-RA4C. (See P236)
- \* 2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end

[RA4C/RA4D]



[RA4R]



Dimensions/Weight by Stroke

RCS2W-RA4C/RA4D/RA4R (without brake)

Stroke	50						100						150						200						250						300																	
		20W						30W						20W						30W						20W						30W						20W						30W				
L	RA4C		358.4						418.4						478.4						538.4						598.4						660.4															
			373.4						433.4						493.4						553.4						614.4						675.4															
	RA4D		336.4						396.4						456.4						516.4						577.4						638.4															
351.4						411.4						471.4						531.4						592.4						653.4																		
r	RA4R		299.9						359.9						419.9						479.9						540.9						601.9															
			299.9						359.9						419.9						479.9						540.9						601.9															
	RA4C		137						187						237						287						337						387															
RA4D			137						187						237						287						337						387															
		RA4R		125						175						225						275						325						375														
RA4C				125						175						225						275						325						375														
		RA4D		125						175						225						275						325						375														
RA4R				125						175						225						275						325						375														
		RA4C		80.5						95.5						110.5						125.5						140.5						155.5														
RA4D				80.5						95.5						110.5						125.5						140.5						155.5														
		RA4R		80.5						95.5						110.5						125.5						140.5						155.5														
RA4C				121.9						131.9						141.9						151.9						162.9						173.9														
		RA4D		121.9						131.9						141.9						151.9						162.9						173.9														
RA4R				121.9						131.9						141.9						151.9						162.9						173.9														
		RA4C		1.4						1.5						1.7						1.8						2.0						2.1														
RA4D				1.3						1.5						1.6						1.8						1.9						2.1														
		RA4R		1.5						1.7						1.8						2.0						2.1						2.3														

RCS2W-RA4C/RA4D/RA4R (with brake)

Stroke	50						100						150						200						250						300																	
		20W						30W						20W						30W						20W						30W						20W						30W				
L	RA4C		401.4						461.4						521.4						581.4						642.4						703.4															
			416.4						476.4						536.4						596.4						657.4						718.4															
	RA4D		No brake-equipped model.																																													
RA4R			299.9						359.9						419.9						479.9						540.9						601.9															
		RA4C		137						187						237						287						337						387														
RA4D				No brake-equipped model.																																												
		RA4R		125						175						225						275						325						375														
RA4C				125						175						225						275						325						375														
		RA4D		125						175						225						275						325						375														
RA4R				125						175						225						275						325						375														
		RA4C		123.5						138.5						153.5						168.5						183.5						198.5														
RA4D				No brake-equipped model.																																												
		RA4R		123.5						138.5						153.5						168.5						183.5						198.5														
RA4C				121.9						131.9						141.9						151.9						162.9						173.9														
		RA4D		No brake-equipped model.																																												
RA4R				121.9						131.9						141.9						151.9						162.9						173.9														
		RA4C		1.6						1.7						1.9						2.0						2.2						2.3														
RA4D				-																																												
		RA4R		1.7						1.9						2.0						2.2						2.3						2.5														

Compatible Controllers

The RCS2W 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
Positioner Mode		SCON-C-20 ①-NP-2-② SCON-C-30D ①-NP-2-②	Positioning possible for up to 512 points	512 points	Single-Phase AC 100V Single-Phase AC 200V 3-Phase AC 200V (XSEL-P/Q only)	Maximum 360VA *1 axis type When operating 150W	-	→ P547
Solenoid Valve Mode			Operation possible with the same controls as solenoid valve.	7 points				
Serial Communication Type			Dedicated to serial communication	64 points				
Pulse Train Input Control Type			Open Collector Pulse Train Input Type	(-)				
Program control 1-2 Axes type		SSEL-C-1-20 ①-NP-2-② SSEL-C-1-30D ①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			-	→ P577
Program control 1-6 Axes type			Programmed operation is possible Can operate up to 6 axes	20000 points				

- \* For SSEL and XSEL, only applicable to the single-axis model.
- \* ① is a placeholder for the encoder type (I: incremental, A: absolute.)
- \* ② is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V)
- \* ③ is a placeholder for the XSEL type name (J, K, P, or Q)
- \* ④ is a placeholder for the power supply voltage (1: 100V, 2: single-phase 200V, 3: 3-phase 200V).