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ROBO CYLINDER

24 VDC
Pulse Motor

RCP2 & RCP3

with dedicated controllers
PCON and PSEL

Catalogue Extract

4th revised Edition B

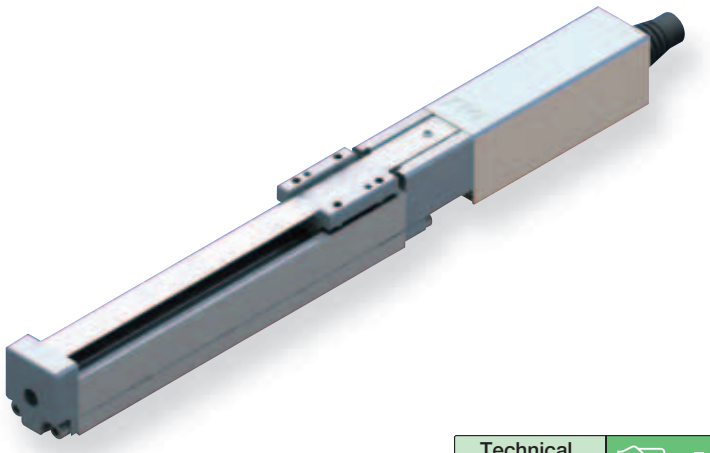
RCP3-SA2AC

RoboCylinder Mini Slider Type Coupled Motor 22mm Width Pulse Motor Lead Screw

■ Configuration: RCP3 — SA2AC — I — 20P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA2AC	I: Incremental * The Simple absolute encoder is also considered type "I".	20P: Pulse motor 20 □ size	4S : 4mm lead screw 2S : 2mm lead screw 1S : 1mm lead screw	25: 25mm 〜 100: 100mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	NM : Reversed-home

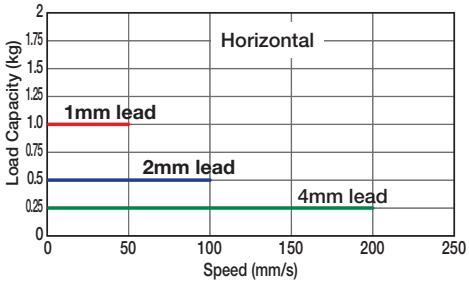
* See page Pre-35 for explanation of each code that make up the configuration name.



Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.2G. This the upper limit for the acceleration.
(2) The actuator cannot be used on its side or in a vertical orientation.
(3) If used in a dusty environment, the service life will decrease significantly.
(4) This model uses a lead screw, therefore please ensure that your usage is appropriate for its characteristics. (See page Pre-42.)

Actuator Specifications

■ Lead and Load Capacity

Model	Feed Screw	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-SA2AC-I-20P-4S-①-②-③-④	Lead screw	4	0.25	–	±0.05	25〜100 (25 increments)
RCP3-SA2AC-I-20P-2S-①-②-③-④		2	0.5	–		
RCP3-SA2AC-I-20P-1S-①-②-③-④		1	1	–		

Legend ① Stroke ② Compatible Controller ③ Cable Length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 〜 100 (mm)
Lead screw 4	180	200
Lead screw 2	100	
Lead screw 1	50	

(Unit: mm/s)

Cable List

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

* The standard cable for the RCP3 is the robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Lead screw (Ø4mm, C10 grade)
Lost Motion	0.3mm or less (initial value)
Base	Material: Aluminum (white alumite treated)
Guide	Slide guide
Ambient Operating Temp./Humidity	0〜40°C, 85% RH or less (non-condensing)
Service Life	10 million cycles

Option List

Name	Option Code	See Page	
Reversed-home	NM	→ A-33	

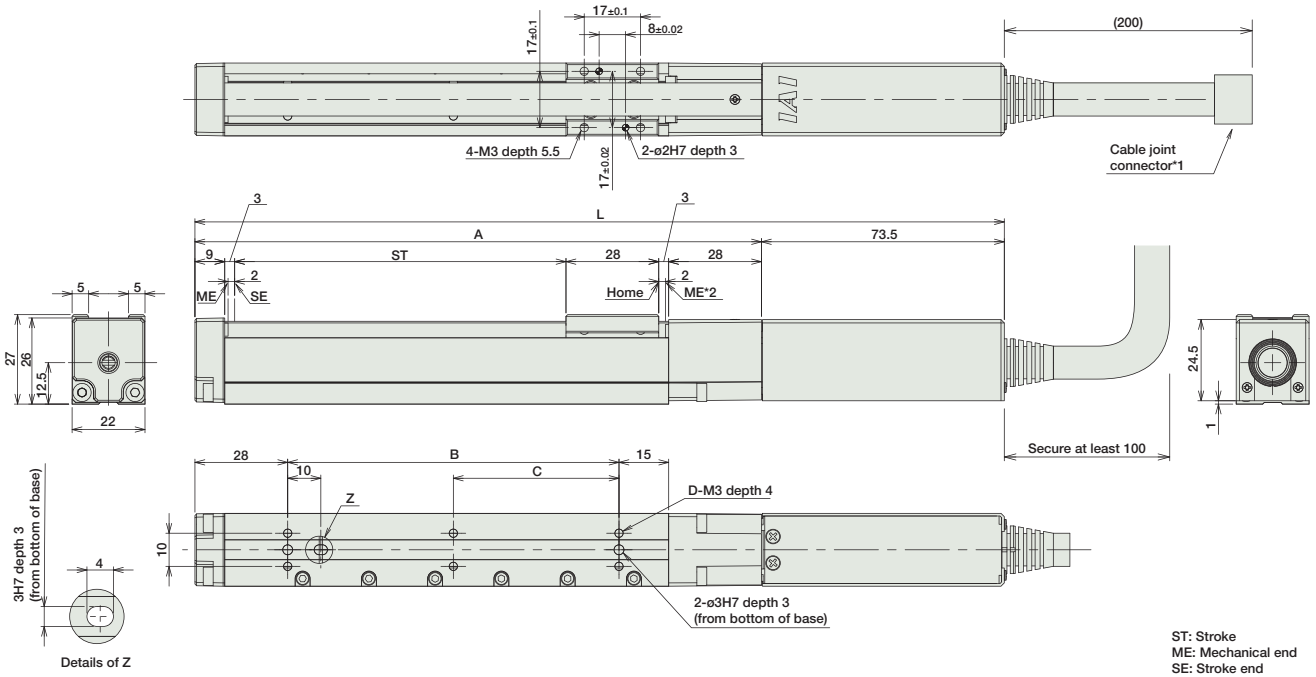
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

*1: A motor-encoder cable is connected here. See page A-39 for details on cables.
*2: During the homing operation, the slider moves to actuator's mechanical end, and then reverses. Therefore, watch for any interference with its surroundings.



Dimensions/Weight by Stroke

Stroke	25	50	75	100
L	169.5	194.5	219.5	244.5
A	96	121	146	171
B	25	50	75	100
C	0	0	0	50
D	4	4	4	6
Weight (kg)	0.25	0.27	0.29	0.3

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

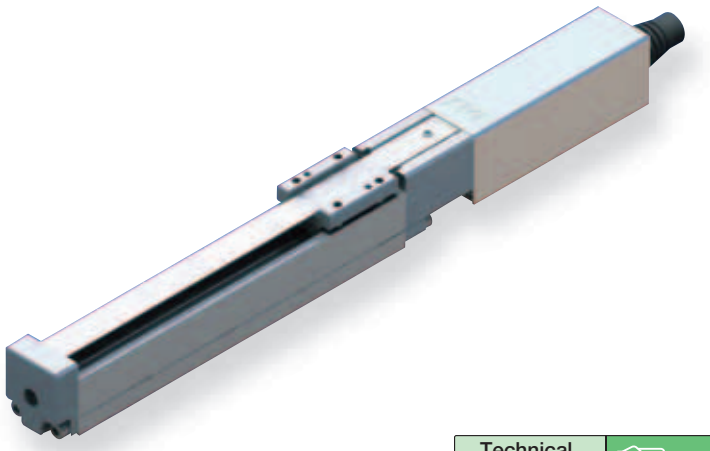
RCP3-SA2BC

RoboCylinder Mini Slider Type Coupled Motor 28mm Width Pulse Motor Lead Screw

■ Configuration: RCP3 — SA2BC — I — 20P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA2BC	I: Incremental * The Simple absolute encoder is also considered type "I".	20P: Pulse motor 20 □ size	6S : 6mm lead screw 4S : 4mm lead screw 2S : 2mm lead screw	25: 25mm \ 150: 150mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	NM : Reversed-home

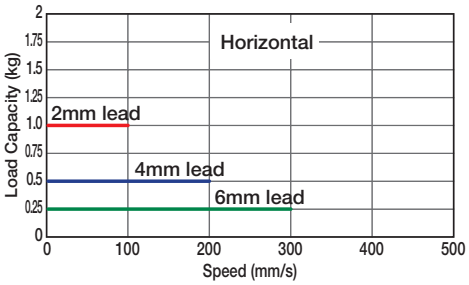
* See page Pre-35 for explanation of each code that make up the configuration name.



Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.2G. This the upper limit for the acceleration.
(2) The actuator cannot be used on its side or in a vertical orientation.
(3) If used in a dusty environment, the service life will decrease significantly.
(4) This model uses a lead screw, therefore please ensure that your usage is appropriate for its characteristics. (See page Pre-42.)

Actuator Specifications

■ Lead and Load Capacity

Model	Feed Screw	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-SA2BC-I-20P-6S-①-②-③-④	Lead screw	6	0.25	–	±0.05	25～150 (25 increments)
RCP3-SA2BC-I-20P-4S-①-②-③-④		4	0.5	–		
RCP3-SA2BC-I-20P-2S-①-②-③-④		2	1	–		

Legend ① Stroke ② Compatible Controller ③ Cable Length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 (mm)	75～150 (mm)
Lead screw 6	180	280	300
Lead screw 4	180	200	
Lead screw 2	100		

(Unit: mm/s)

Cable List

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

* The standard cable for the RCP3 is the robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Lead screw Ø6mm C10 grade
Lost Motion	0.3mm or less (initial value)
Base	Material: Aluminum (white alumite treated)
Guide	Slide guide
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)
Service Life	10 million cycles

Option List

Name	Option Code	See Page	
Reversed-home	NM	→ A-33	

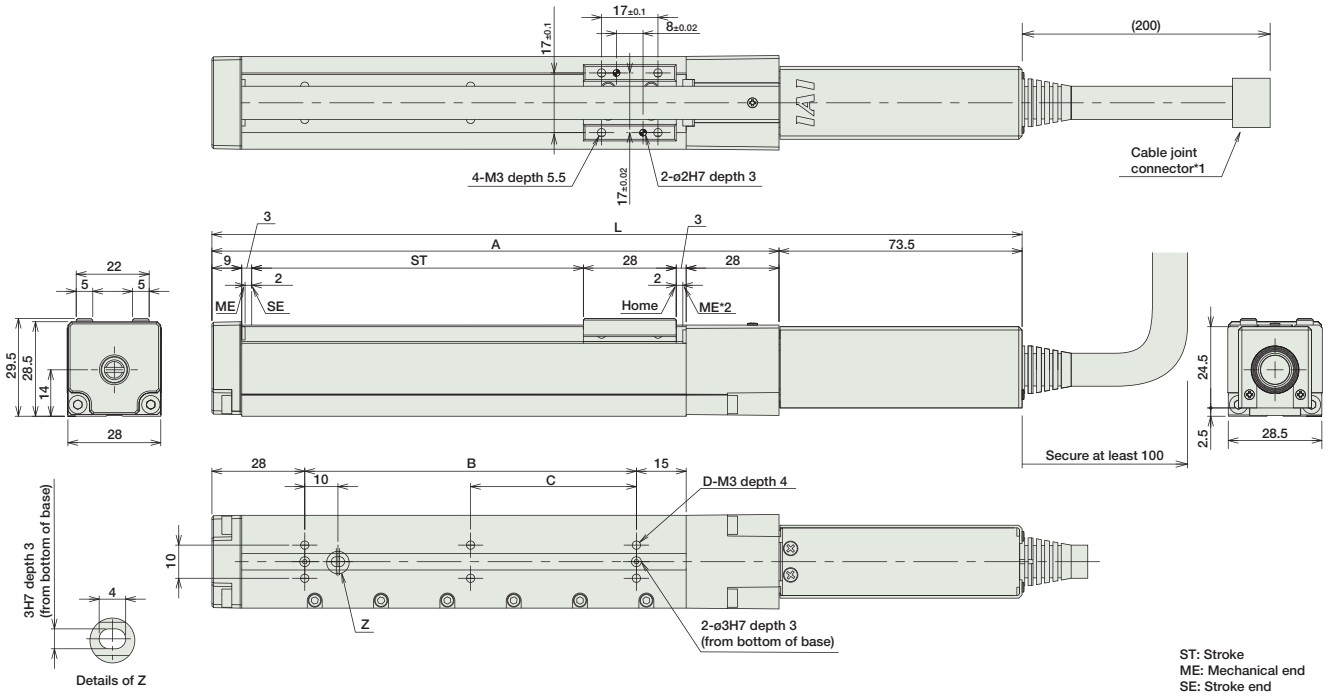
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

*1: A motor-encoder cable is connected here. See page A-39 for details on cables.
*2: During the homing operation, the slider moves to actuator's mechanical end, and then reverses. Therefore, watch for any interference with its surroundings.



Dimensions/Weight by Stroke

Stroke	25	50	75	100	125	150
L	169.5	194.5	219.5	244.5	269.5	294.5
A	96	121	146	171	196	221
B	25	50	75	100	125	150
C	0	0	0	50	62.5	75
D	4	4	4	6	6	6
Weight (kg)	0.3	0.32	0.35	0.37	0.4	0.42

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

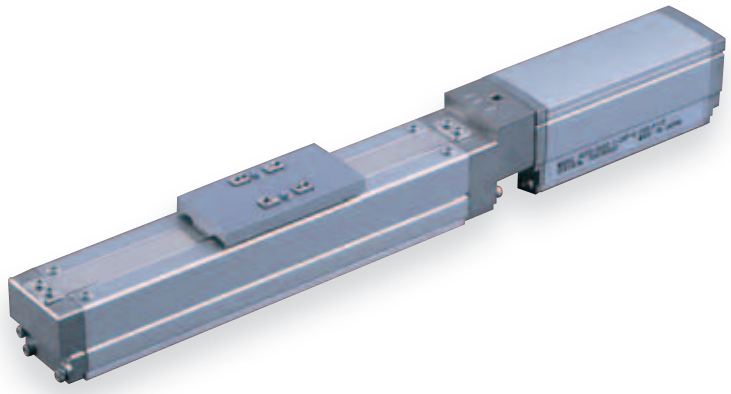
* This is for the single-axis PSEL.

RCP3-SA3C RoboCylinder Slider Type 32mm Width Pulse Motor Coupled

■ Configuration: RCP3 — SA3C — I — 28P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA3C	I: Incremental * The Simple absolute encoder models are labeled as "I".	28P: Pulse motor 28 □ size	6 : 6mm 4 : 4mm 2 : 2mm	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	See Options below

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



Technical References A-5

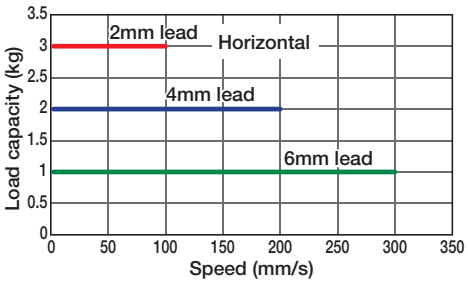
POINT Notes on Selection

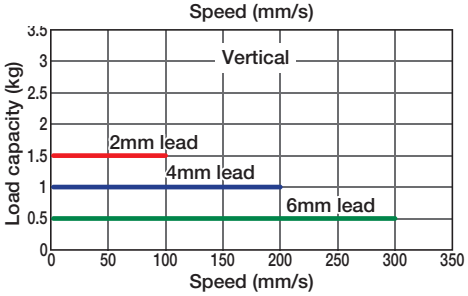
(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 2mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA3C-I-28P-6-①-②-③-④	6	1	0.5	15	50〜300 (50mm increments)
RCP3-SA3C-I-28P-4-①-②-③-④	4	2	1	22	
RCP3-SA3C-I-28P-2-①-②-③-④	2	3	1.5	44	

■ Stroke and Maximum Speed

Lead \ Stroke	50 〜 300 (50mm increments)
6	300
4	200
2	100

(Unit: mm/s)

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Option List

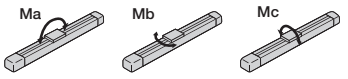
Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Right)	CJR	→ A-25	
Cable Exit Direction (Left)	CJL	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

Actuator Specifications

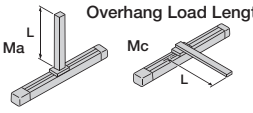
Item	Description
Drive System	Ball screw Ø6mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 5.0N·m Mb: 7.1N·m Mc: 7.9 N·m
Allowable Dynamic Moment(*)	Ma: 1.96N·m Mb: 2.84N·m Mc: 3.14N·m
Overhang Load Length	100mm or less
Ambient Operating Temp./Humidity	0〜40°C, 85% RH or less (non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moment



Overhang Load Length

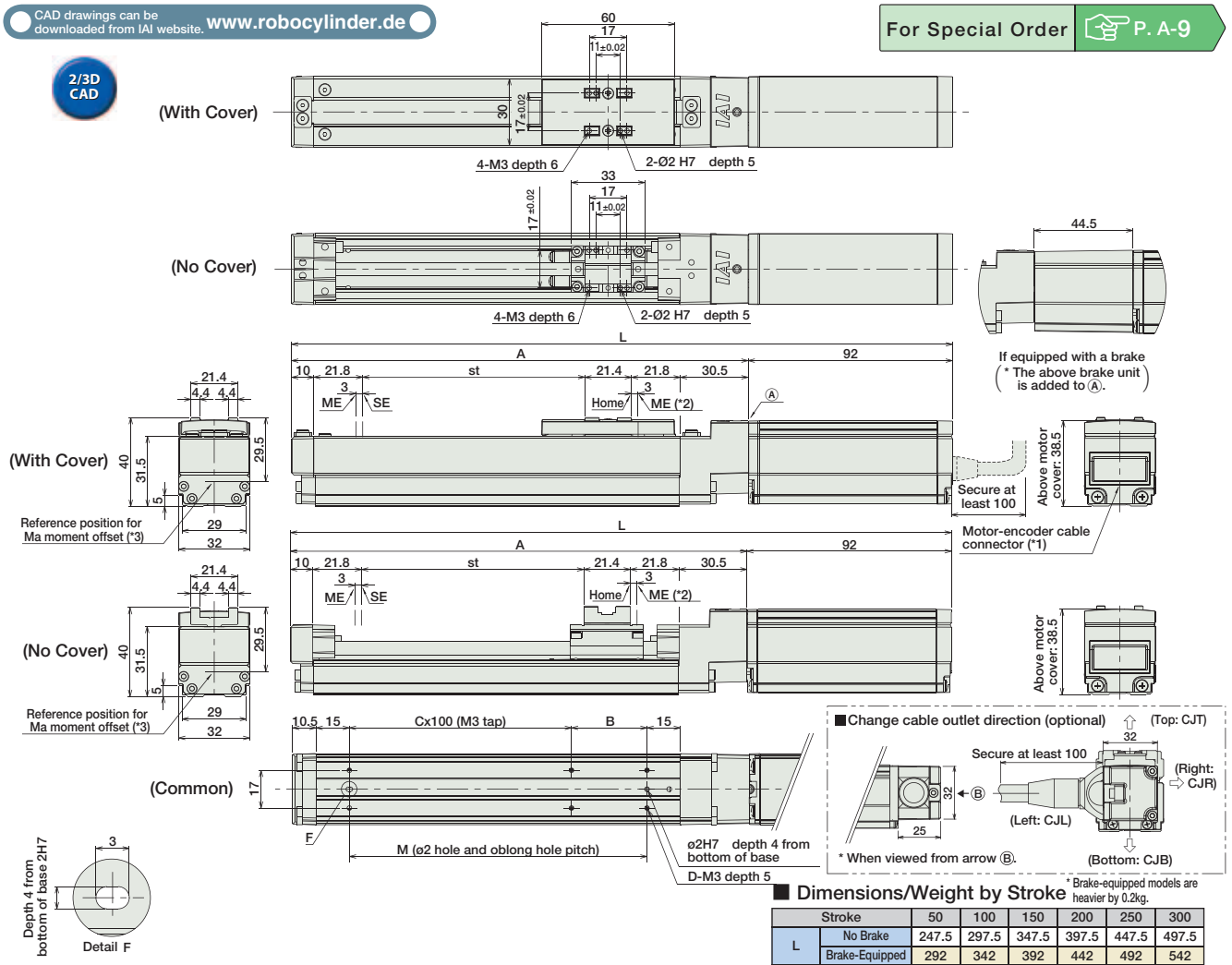


Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD



Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.2kg.

Stroke		50	100	150	200	250	300
L	No Brake	247.5	297.5	347.5	397.5	447.5	497.5
	Brake-Equipped	292	342	392	442	492	542
A		155.5	205.5	255.5	305.5	355.5	405.5
B		84	34	84	34	84	34
C		0	1	1	2	2	3
D		4	6	6	8	8	10
M		84	134	184	234	284	334
Weight (kg)	With Cover	0.7	0.7	0.8	0.9	0.9	1
	No Cover	0.6	0.7	0.7	0.8	0.8	0.9

(*1) A Motor-encoder cable (integrated) is connected here. (See page A-39 for details on cables.)
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

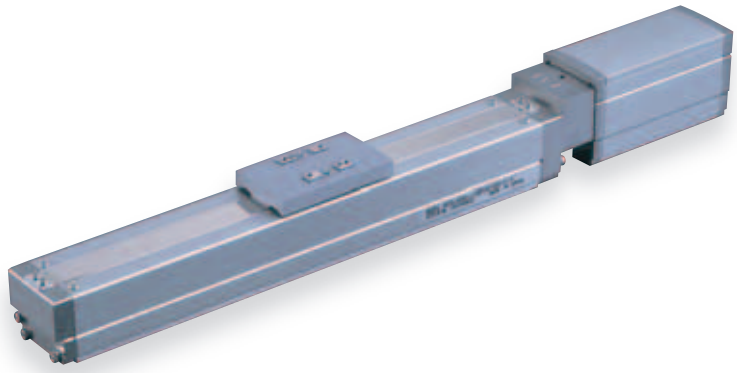
* This is for the single-axis PSEL.

RCP3-SA4C RoboCylinder Slider Type 40mm Width Pulse Motor Coupled

■ Configuration: **RCP3** — **SA4C** — **I** — **35P** — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA4C	I: Incremental * The Simple absolute encoder models are labeled as "I".	35P: Pulse motor 35 □ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm \ 500: 500mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom Length	See Options below

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



Technical References A-5

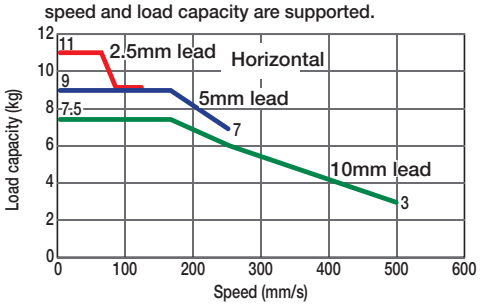
POINT Notes on Selection

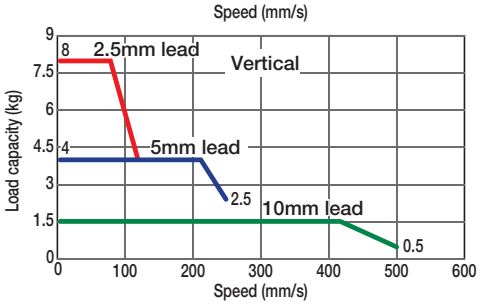
(1) Since the RCP3 series use a pulse motor, a load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 2.5 mm-lead model, or when used vertically).
The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-50.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA4C-I-35P-10-①-②-③-④	10	~ 7.5	~ 1.5	34	50~500 (50mm increments)
RCP3-SA4C-I-35P-5-①-②-③-④	5	~ 9	~ 4	68	
RCP3-SA4C-I-35P-2.5-①-②-③-④	2.5	~ 11	~ 8	136	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 500 (50mm increments)
10	500
5	250
2.5	125

(Unit: mm/s)

Cable List

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

* See page A-39 for cables for maintenance.

Option List

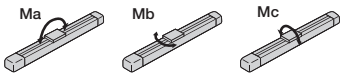
Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Right)	CJR	→ A-25	
Cable Exit Direction (Left)	CJL	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

Actuator Specifications

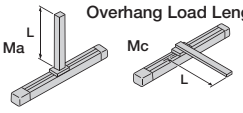
Item	Description
Drive System	Ball screw Ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 6.8N·m Mb: 9.7N·m Mc: 13.3 N·m
Allowable Dynamic Moment(*)	Ma: 3.04N·m Mb: 4.31N·m Mc: 5.00N·m
Overhang Load Length	120mm or less
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moment



Overhang Load Length

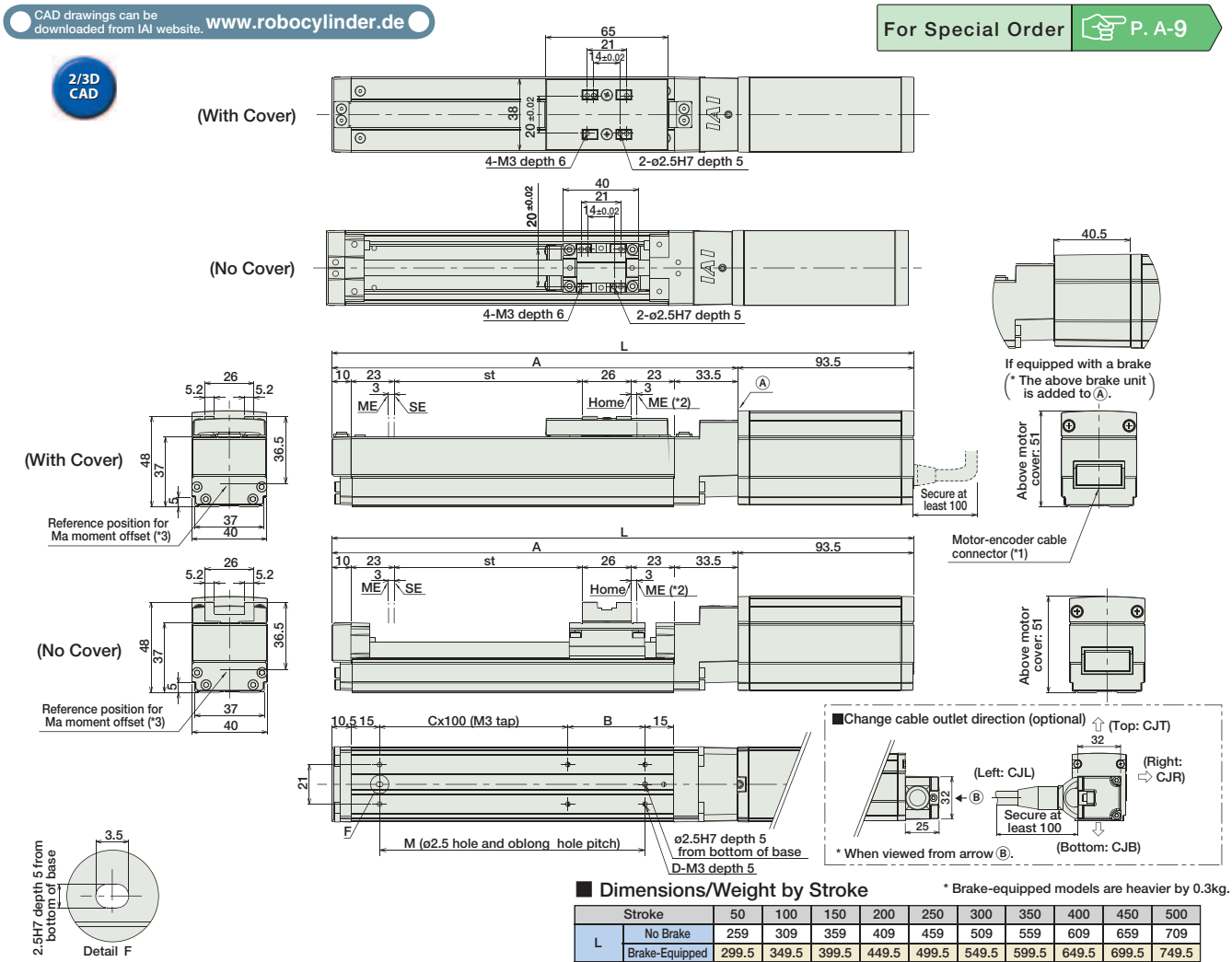


Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD



(*1) A Motor-encoder cable (integrated) is connected here.
(See page A-39 for details on cables.)
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma.

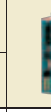
Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.3kg.

Stroke		50	100	150	200	250	300	350	400	450	500
L	No Brake	259	309	359	409	459	509	559	609	659	709
	Brake-Equipped	299.5	349.5	399.5	449.5	499.5	549.5	599.5	649.5	699.5	749.5
A		165.5	215.5	265.5	315.5	365.5	415.5	465.5	515.5	565.5	615.5
B		91	41	91	41	91	41	91	41	91	41
C		0	1	1	2	2	3	3	4	4	5
D		4	6	6	8	8	10	10	12	12	14
M		91	141	191	241	291	341	391	441	491	541
Weight (kg)	With Cover	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
	No Cover	0.9	0.9	1	1.1	1.2	1.2	1.3	1.4	1.5	1.5

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0-H						
Positioner Type		PCON-C-35PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0-H	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

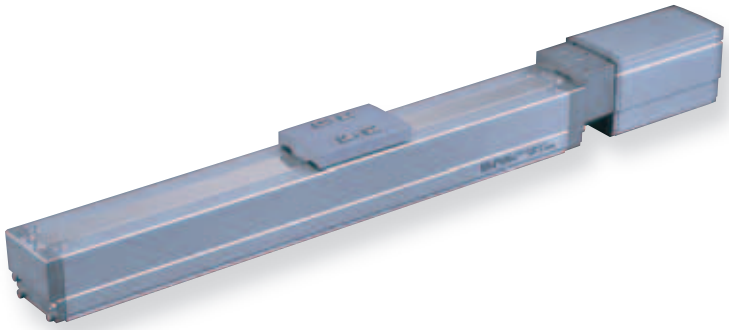
* This is for the single-axis PSEL.

RCP3-SA5C RoboCylinder Slider Type 50mm Width Pulse Motor Coupled

■ Configuration: **RCP3** – **SA5C** – **I** – **42P** – □ – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA5C	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 □ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	See Options below

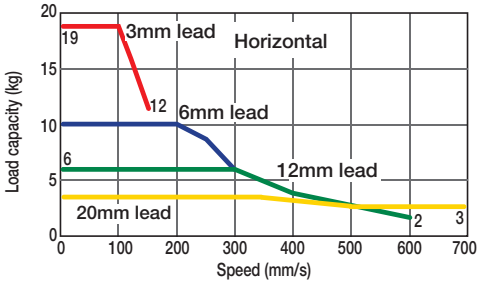
* See page Pre-35 for explanation of each code that make up the configuration name.

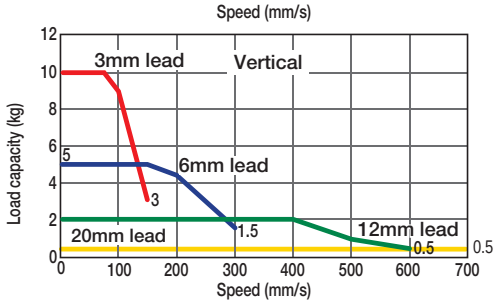


Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) Since the RCP3 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.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 3mm-lead model, or when used vertically).
The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-50.

Actuator Specifications

■ Lead and Load Capacity

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA5C-I-42P-20-①-②-③-④	20	~4	~0,5	28	50 ~ 800 (50-mm increments)
RCP3-SA5C-I-42P-12-①-②-③-④	12	~6	~2	47	
RCP3-SA5C-I-42P-6-①-②-③-④	6	~10	~5	95	
RCP3-SA5C-I-42P-3-①-②-③-④	3	~19	~10	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50 mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	1000	1000	910	790	690	610
12	600	570	490	425	370	330
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

Cable List

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

* See page A-39 for cables for maintenance.

Option List

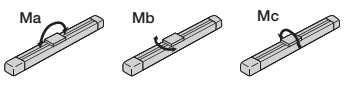
Name	Option Code	See Page	
Brake-Equipped	**B**	→ A-25	
Cable Exit Direction (Top)	**CJT**	→ A-25	
Cable Exit Direction (Right)	**CJR**	→ A-25	
Cable Exit Direction (Left)	**CJL**	→ A-25	
Cable Exit Direction (Bottom)	**CJB**	→ A-25	
No Cover	**NCO**	→ A-33	
Reversed-home	**NM**	→ A-33	

Actuator Specifications

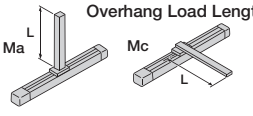
Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 10.2N·m Mb: 14.6N·m Mc: 22.4N·m
Allowable Dynamic Moment(*)	Ma: 3.92N·m Mb: 5.58N·m Mc: 8.53N·m
Overhang Load Length	130mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moment



Overhang Load Length



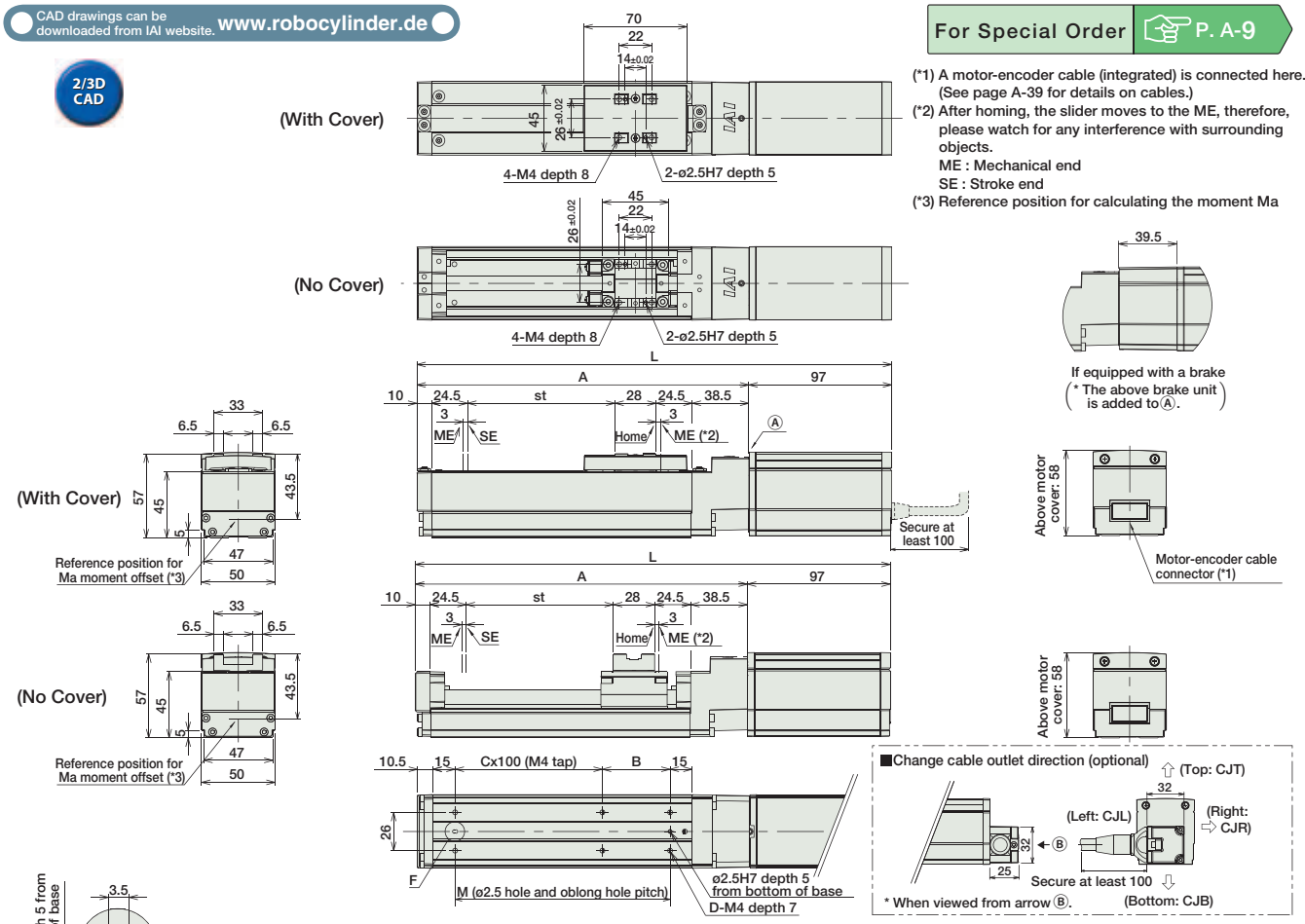
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Order P. A-9

(*1) A motor-encoder cable (integrated) is connected here. (See page A-39 for details on cables.)
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma



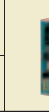
Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.4kg.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	No Brake	272.5	322.5	372.5	422.5	472.5	522.5	572.5	622.5	672.5	722.5	772.5	822.5	872.5	922.5	972.5	1022.5
	Brake-Equipped	312	362	412	462	512	562	612	662	712	762	812	862	912	962	1012	1062
A		175.5	225.5	275.5	325.5	375.5	425.5	475.5	525.5	575.5	625.5	675.5	725.5	775.5	825.5	875.5	925.5
B		96	46	96	46	96	46	96	46	96	46	96	46	96	46	96	46
C		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
M		96	146	196	246	296	346	396	446	496	546	596	646	696	746	796	846
Weight (kg)	With Cover	1.4	1.5	1.6	1.8	1.9	2	2.2	2.3	2.5	2.6	2.7	2.9	3.0	3.2	3.3	3.4
	No Cover	1.3	1.4	1.5	1.6	1.7	1.8	2	2.1	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

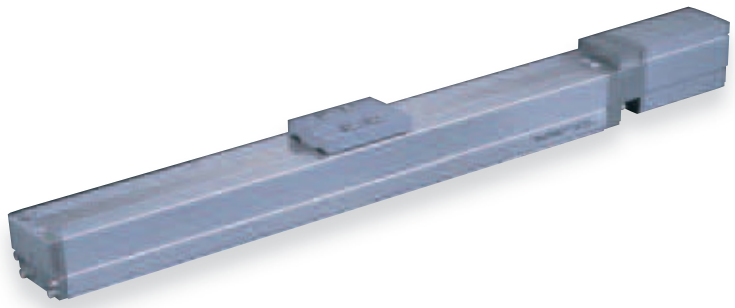
* This is for the single-axis PSEL.

RCP3-SA6C RoboCylinder Slider Type 60mm Width Pulse Motor Coupled

■ Configuration: **RCP3** – **SA6C** – **I** – **42P** – □ – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA6C	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 □ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	See Options below

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



Technical References A-5

POINT Notes on Selection

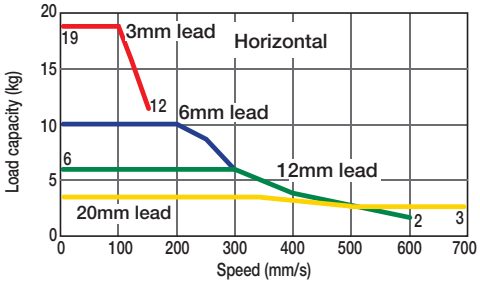
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

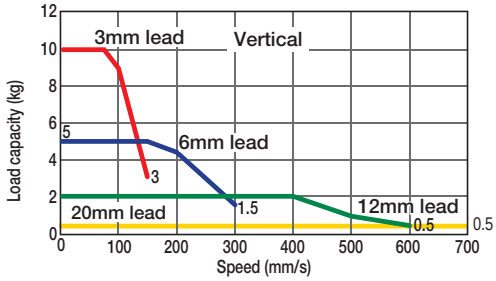
(2) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 3mm lead model and when using vertically). The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-50.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA6C-I-42P-20-①-②-③-④	20	~4	~0,5	28	50 ~ 800 (50-mm increments)
RCP3-SA6C-I-42P-12-①-②-③-④	12	~6	~2	47	
RCP3-SA6C-I-42P-6-①-②-③-④	6	~10	~5	95	
RCP3-SA6C-I-42P-3-①-②-③-④	3	~19	~10	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50 mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	1000	1000	910	790	690	610
12	600	570	490	425	370	330
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

Cable List

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

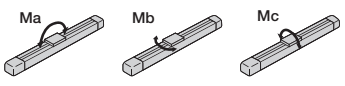
* See page A-39 for cables for maintenance.

Actuator Specifications

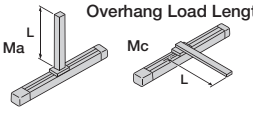
Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 17.6N·m Mb: 25.2N·m Mc: 44.5N·m
Allowable Dynamic Moment(*)	Ma: 4.31N·m Mb: 6.17N·m Mc: 10.98N·m
Overhang Load Length	150mm or less
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moment



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Right)	CJR	→ A-25	
Cable Exit Direction (Left)	CJL	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

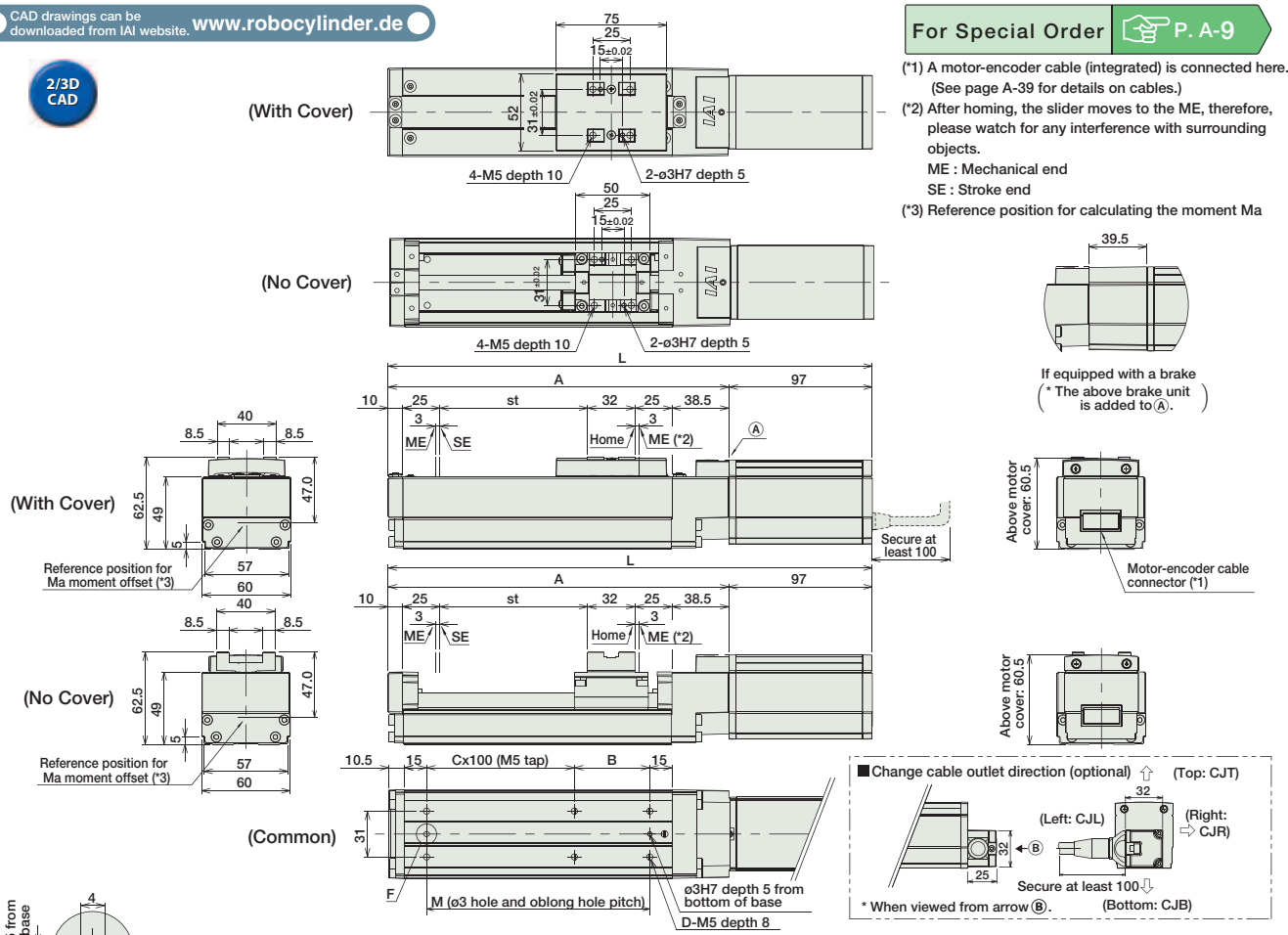
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Order P. A-9

(*1) A motor-encoder cable (integrated) is connected here. (See page A-39 for details on cables.)
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma



■ Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.4kg.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	No Brake	277.5	327.5	377.5	427.5	477.5	527.5	577.5	627.5	677.5	727.5	777.5	827.5	877.5	927.5	977.5	1027.5
	Brake-Equipped	317	367	417	467	517	567	617	667	717	767	817	867	917	967	1017	1067
A		180.5	230.5	280.5	330.5	380.5	430.5	480.5	530.5	580.5	630.5	680.5	730.5	780.5	830.5	880.5	930.5
B		101	51	101	51	101	51	101	51	101	51	101	51	101	51	101	51
C		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
M		101	151	201	251	301	351	401	451	501	551	601	651	701	751	801	851
Weight (kg)	With Cover	1.6	1.8	2	2.1	2.3	2.5	2.7	2.8	3	3.2	3.3	3.5	3.7	3.9	4.0	4.2
	No Cover	1.5	1.7	1.8	2	2.1	2.3	2.4	2.6	2.7	2.8	3	3.1	3.3	3.4	3.6	3.7

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

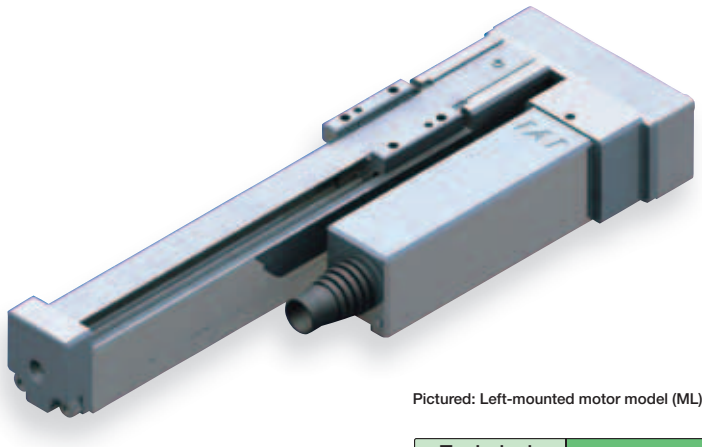
RCP3-SA2AR

RoboCylinder Mini Slider Type Side-Mounted Motor Unit 22mm Width
Pulse Motor Lead Screw

■ Configuration: RCP3 — SA2AR — I — 20P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA2AR	I: Incremental * The Simple absolute encoder models are labeled as "I".	20P: Pulse motor 20 □ size	4S : 4mm lead screw 2S : 2mm lead screw 1S : 1mm lead screw	25: 25mm \ 100: 100mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

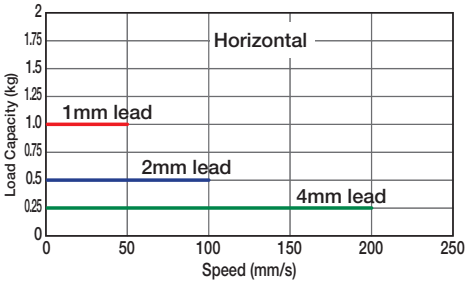


Pictured: Left-mounted motor model (ML).

Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.2G. This the upper limit for the acceleration.
(2) The actuator cannot be used on its side or in a vertical orientation.
(3) If used in a dusty environment, the service life will decrease significantly.
(4) This model uses a lead screw, therefore please ensure that your usage is appropriate for its characteristics. (See page Pre-42.)

Actuator Specifications

■ Lead and Load Capacity

Model	Feed Screw	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-SA2AR-I-20P-4S-①-②-③-④	Lead screw	4	0.25	–	±0.05	25～100 (25mm increments)
RCP3-SA2AR-I-20P-2S-①-②-③-④		2	0.5	–		
RCP3-SA2AR-I-20P-1S-①-②-③-④		1	1	–		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 ～ 100 (mm)
Lead screw 4	180	200
Lead screw 2	100	
Lead screw 1	50	

(Unit: mm/s)

Cable List

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

* The standard cable for the RCP3 is the robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Lead screw Ø4mm C10 grade
Lost Motion	0.3mm or less (initial value)
Base	Material: Aluminum (white alumite treated)
Guide	Slide guide
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)
Service Life	10 million cycles

Option List

Name	Option Code	See Page	
Left-mounted motor (Standard)	ML	→ A-33	
Right-mounted motor	MR	→ A-33	
Reversed-home	NM	→ A-33	

Dimensions

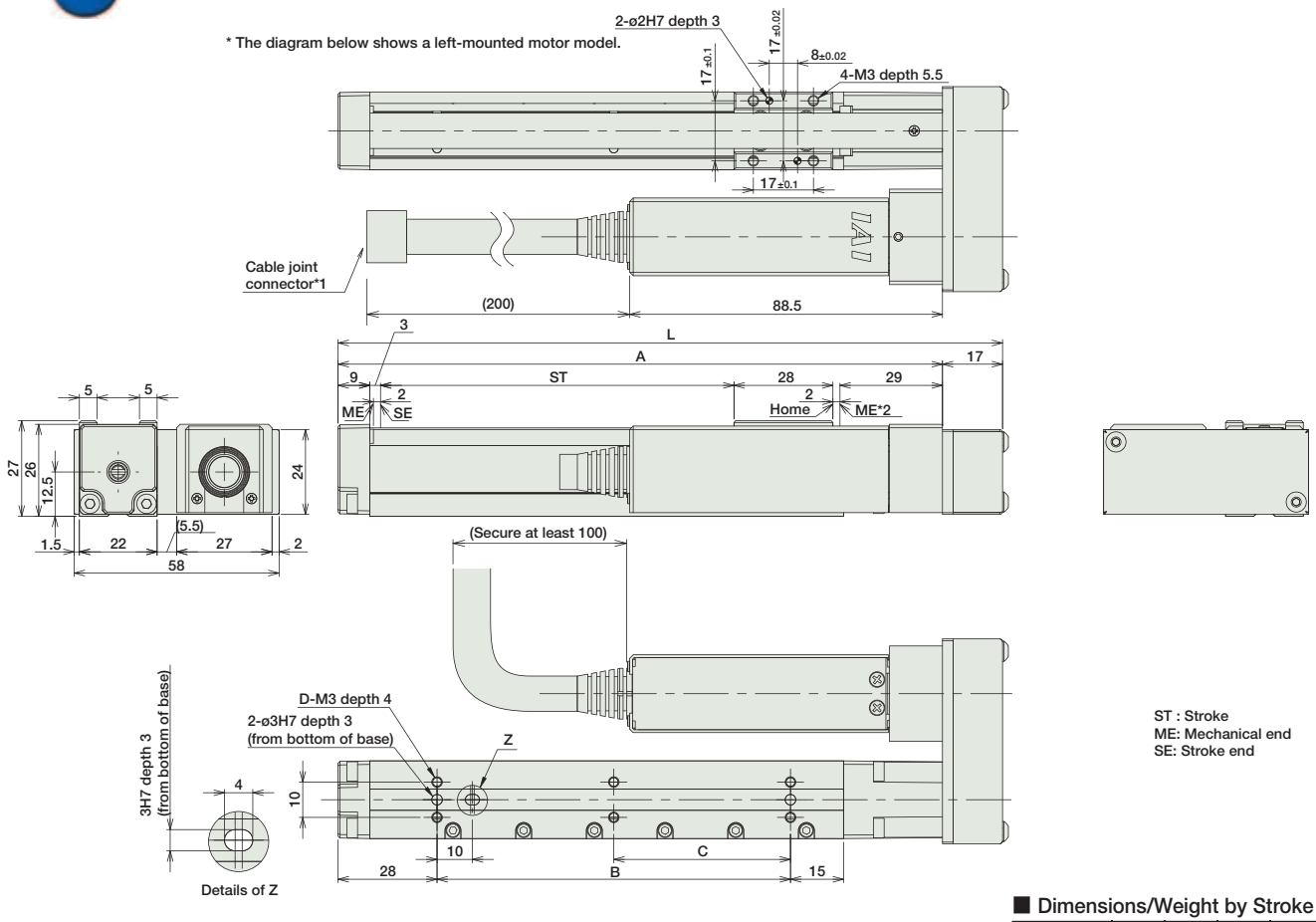
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
*2 During the homing operation, the slider moves to actuator's mechanical end; therefore, please watch for any interference with the surrounding objects.

* The diagram below shows a left-mounted motor model.



ST : Stroke
ME: Mechanical end
SE: Stroke end

Dimensions/Weight by Stroke

Stroke	25	50	75	100
L	113	138	163	188
A	96	121	146	171
B	25	50	75	100
C	0	0	0	50
D	4	4	4	6
Weight (kg)	0.28	0.3	0.32	0.33

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

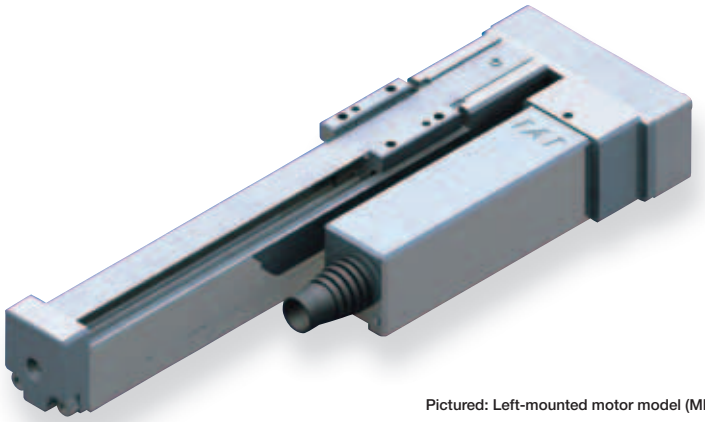
RCP3-SA2BR

RoboCylinder Mini Slider Type Side-Mounted Motor Unit 28mm Width
Pulse Motor Lead Screw

■ Configuration: RCP3 — SA2BR — I — 20P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA2BR	I: Incremental * The Simple absolute encoder models are labeled as "I".	20P: Pulse motor 20 □ size	6S : 4mm lead screw 4S : 4mm lead screw 2S : 2mm lead screw	25: 25mm \ 150: 150mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

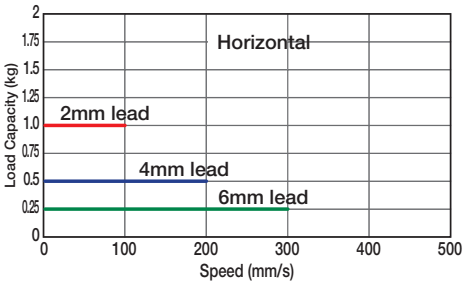


Pictured: Left-mounted motor model (ML).

Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.2G. This the upper limit for the acceleration.
(2) The actuator cannot be used on its side or in a vertical orientation.
(3) If used in a dusty environment, the service life will decrease significantly.
(4) This model uses a lead screw, therefore please ensure that your usage is appropriate for its characteristics. (See page Pre-42.)

Actuator Specifications

■ Lead and Load Capacity

Model	Feed Screw	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-SA2BR-I-20P-6S-①-②-③-④	Lead screw	6	0.25	–	±0.05	25～150 (25mm increments)
RCP3-SA2BR-I-20P-4S-①-②-③-④		4	0.5	–		
RCP3-SA2BR-I-20P-2S-①-②-③-④		2	1	–		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 (mm)	75～150 (mm)
Lead screw 6	180	280	300
Lead screw 4	180	200	
Lead screw 2	100		

(Unit: mm/s)

Cable List

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

* The standard cable for the RCP3 is the robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Lead screw ø6mm C10 grade
Lost Motion	0.3mm or less (initial value)
Base	Material: Aluminum (white alumite treated)
Guide	Slide guide
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)
Service Life	10 million cycles

Option List

Name	Option Code	See Page	
Left-Mounted Motor (Standard)	**ML**	→ A-33	
Right-Mounted Motor	**MR**	→ A-33	
Reversed-home	**NM**	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

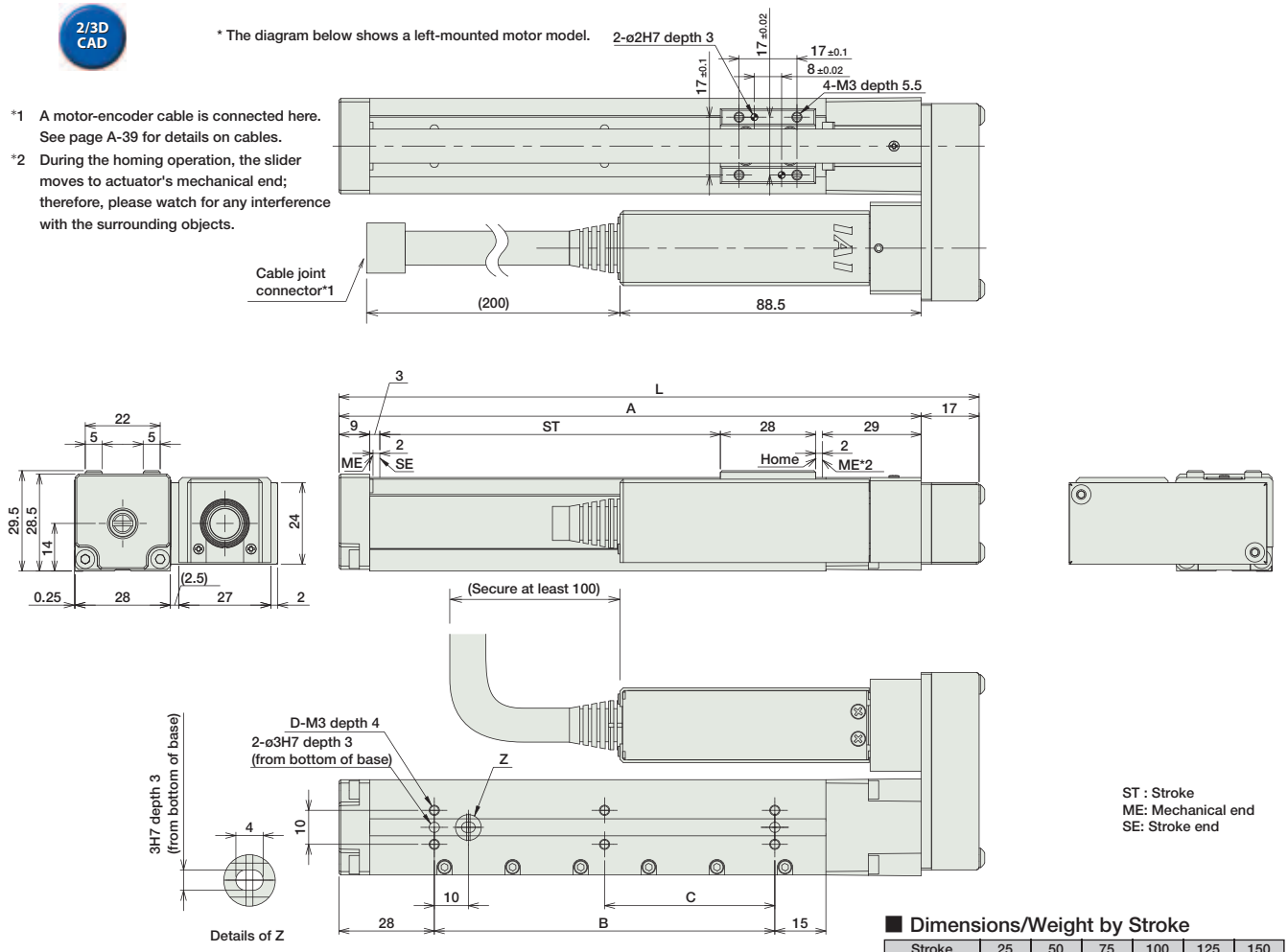
For Special Orders A-9

2/3D CAD

* The diagram below shows a left-mounted motor model.

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

*2 During the homing operation, the slider moves to actuator's mechanical end; therefore, please watch for any interference with the surrounding objects.



ST : Stroke
ME: Mechanical end
SE: Stroke end

Dimensions/Weight by Stroke

Stroke	25	50	75	100	125	150
L	113	138	163	188	213	238
A	96	121	146	171	196	221
B	25	50	75	100	125	150
C	0	0	0	50	62.5	75
D	4	4	4	6	6	6
Weight (kg)	0.32	0.34	0.37	0.39	0.42	0.46

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible. Can operate up to 2 axes	1500 points				→ P557

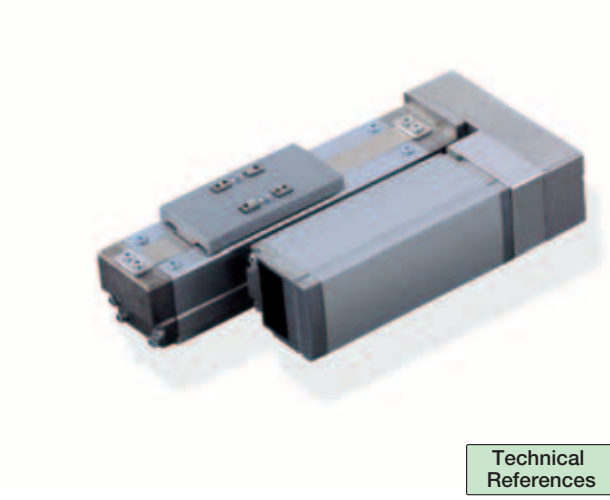
* This is for the single-axis PSEL.

RCP3-SA3R RoboCylinder Slider Type 32mm Width Pulse Motor Side-Mounted Motor

■ Configuration: **RCP3** — **SA3R** — **I** — **28P** — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA3R	I: Incremental * The Simple absolute encoder models are labeled as "I".	28P: Pulse motor 28 ☐ size	6 : 6mm 4 : 4mm 2 : 2mm	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	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Technical References A-5

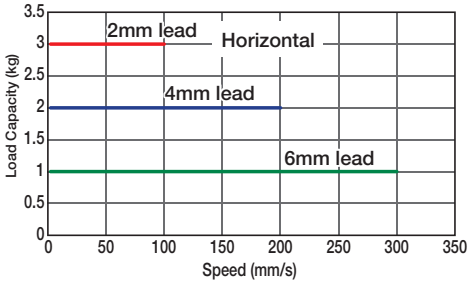
POINT Notes on Selection

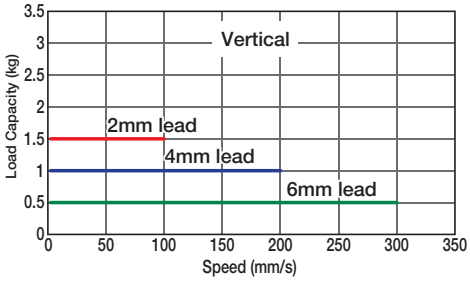
(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA3R-I-28P-6-①-②-③-④	6	1	0.5	15	50～300 (50mm increments)
RCP3-SA3R-I-28P-4-①-②-③-④	4	2	1	22	
RCP3-SA3R-I-28P-2-①-②-③-④	2	3	1.5	44	

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 300 (50mm increments)
6	300
4	200
2	100

(Unit: mm/s)

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

Cable List

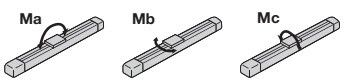
Type	Cable Symbol	
Standard (Robot Cables)	**P** (1m)	
	S (3m)	
	M (5m)	
Special Lengths	**X06** (6m) ～ **X10** (10m)	
	X11 (11m) ～ **X15** (15m)	
	X16 (16m) ～ **X20** (20m)	

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

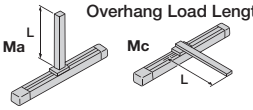
Actuator Specifications

Item	Description
Drive System	Ball screw Ø6mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 5.0N·m Mb: 7.1N·m Mc: 7.9N·m
Allowable Dynamic Load Moment	Ma: 1.96N·m Mb: 2.84N·m Mc: 3.14N·m
Overhang Load Length	100mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moment



Overhang Load Length



5,000 km service life

Option List

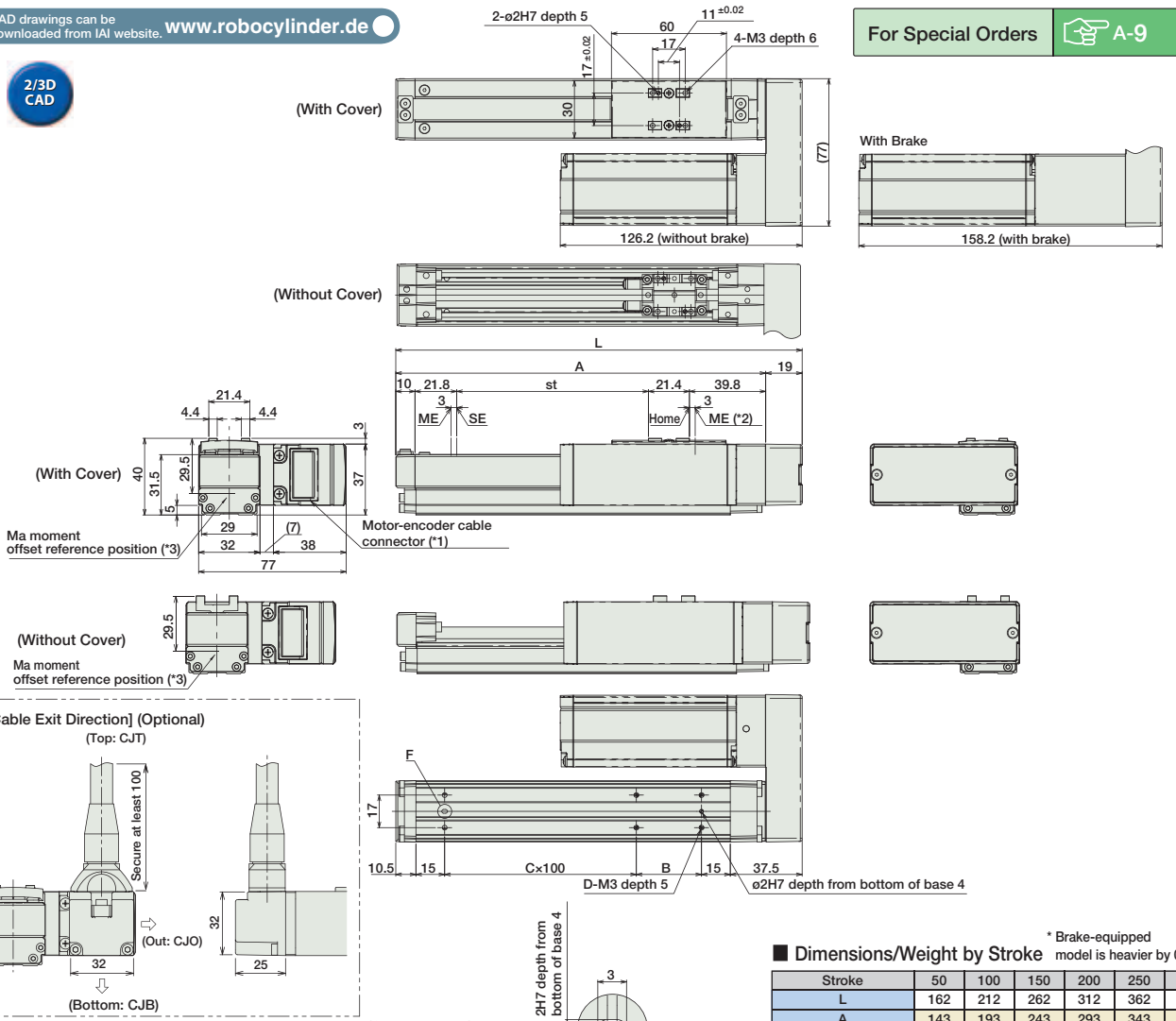
Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Outside)	CJO	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders A-9



(*1) The motor-encoder cable provided is an integrated cable. (See page A-39)

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

(*3) Reference position for calculating the moment Ma

Dimensions/Weight by Stroke

* Brake-equipped model is heavier by 0.2kg.

Stroke		50	100	150	200	250	300
L		162	212	262	312	362	412
A		143	193	243	293	343	393
B		84	34	84	34	84	34
C		0	1	1	2	2	3
D		4	6	6	8	8	10
Weight (kg)	With Cover	0.8	0.8	0.9	1.0	1.0	1.1
	No Cover	0.7	0.8	0.8	0.9	0.9	1.0

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P557

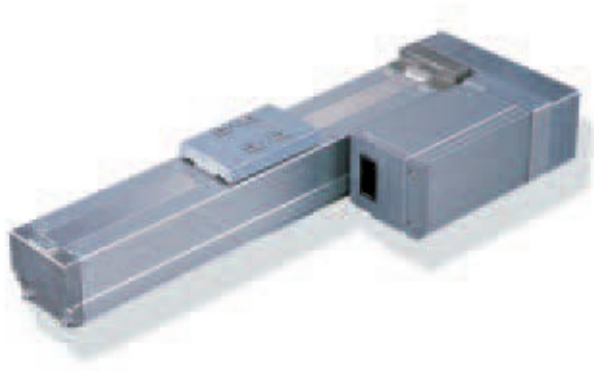
* This is for the single-axis PSEL.

RCP3-SA4R RoboCylinder Slider Type 40mm Width Pulse Motor Side-Mounted Motor

■ Configuration: **RCP3** — **SA4R** — **I** — **35P** — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA4R	I: Incremental * The Simple absolute encoder models are labeled as "I".	35P: Pulse motor 35 ☐ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm 〉 500: 500mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom Length	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Technical References A-5

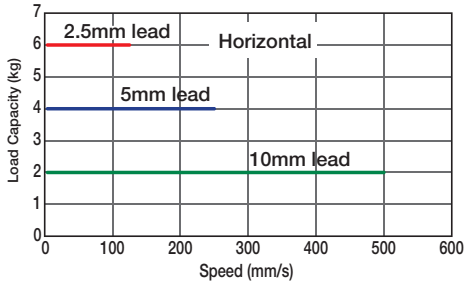
POINT Notes on Selection

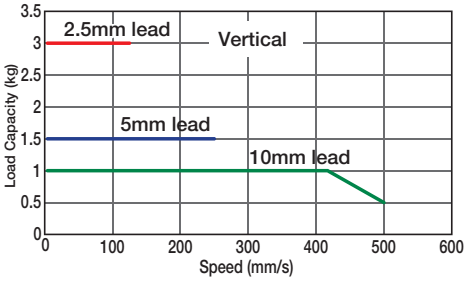
(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA4R-I-35P-10-①-②-③-④	10	2	～1	34	50～500 (50mm increments)
RCP3-SA4R-I-35P-5-①-②-③-④	5	4	1.5	68	
RCP3-SA4R-I-35P-2.5-①-②-③-④	2.5	6	3	136	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 500 (50mm increments)
10	500
5	250
2.5	125

(Unit: mm/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

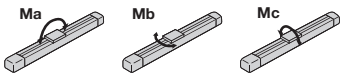
Option List

Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Outside)	CJO	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

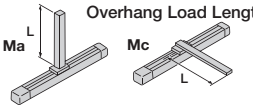
Actuator Specifications

Item	Description
Drive System	Ball screw Ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 6.8N·m Mb: 9.7N·m Mc: 13.3N·m
Allowable Dynamic Load Moment	Ma: 3.04N·m Mb: 4.31N·m Mc: 5.00N·m
Overhang Load Length	120mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moment



Overhang Load Length



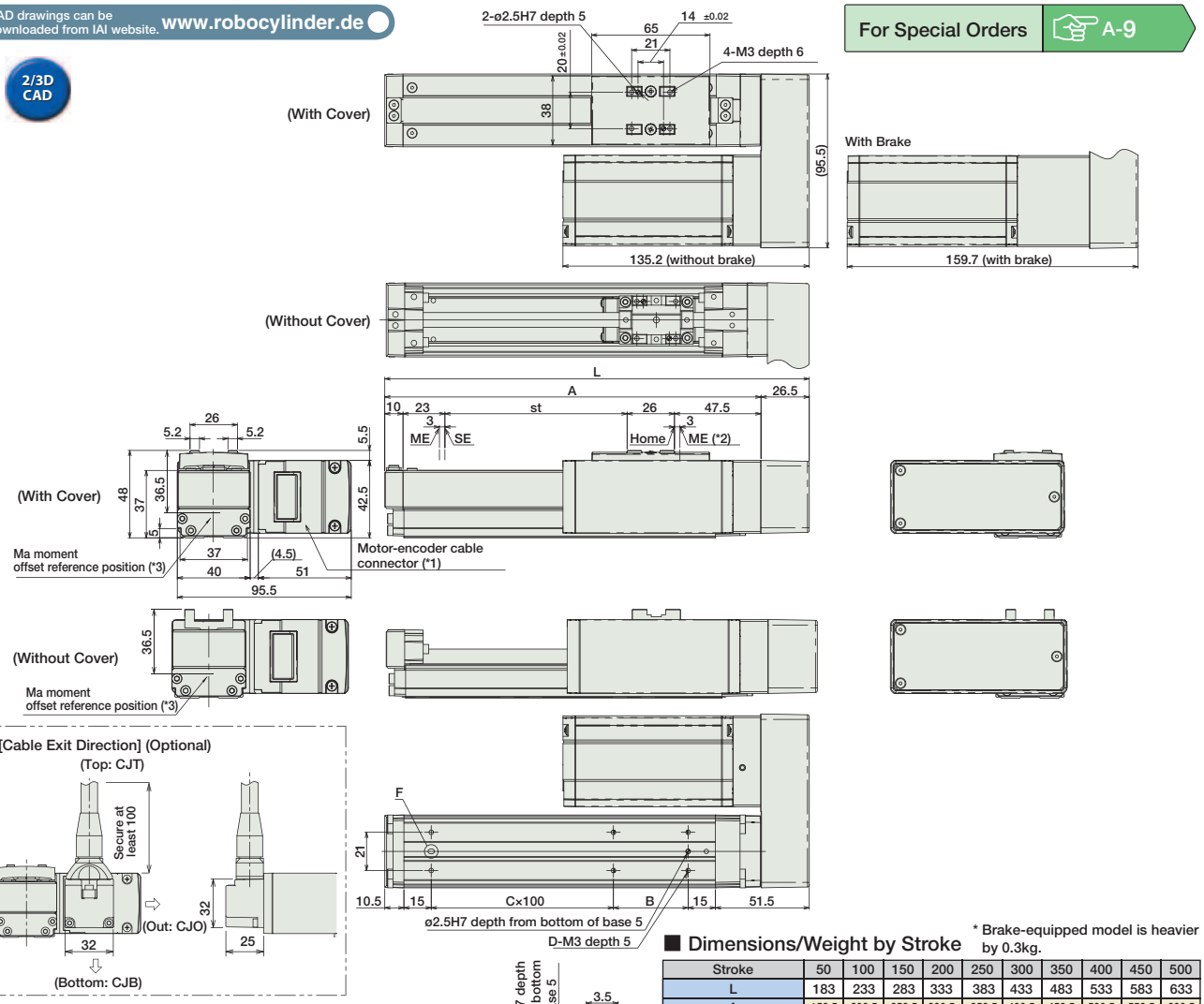
5,000 km service life

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders A-9



(*1) The motor-encoder cable provided is an integrated cable. (See page A-39)
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma

Dimensions/Weight by Stroke

* Brake-equipped model is heavier by 0.3kg.

Stroke		50	100	150	200	250	300	350	400	450	500
L		183	233	283	333	383	433	483	533	583	633
A		156.5	206.5	256.5	306.5	356.5	406.5	456.5	506.5	556.5	606.5
B		91	41	91	41	91	41	91	41	91	41
C		0	1	1	2	2	3	3	4	4	5
D		4	6	6	8	8	10	10	12	12	14
Weight (kg)	With Cover	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
	No Cover	1.1	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P557

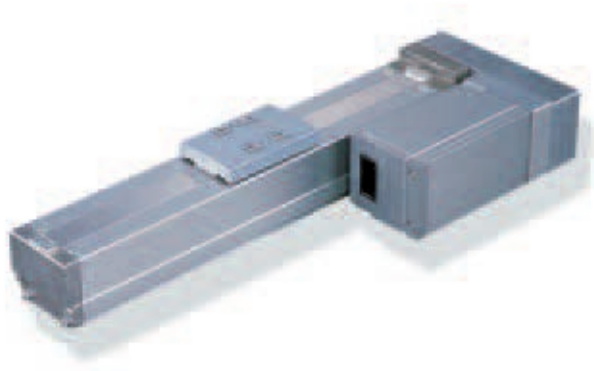
* This is for the single-axis PSEL.

RCP3-SA5R RoboCylinder Slider Type 50mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP3 — SA5R — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA5R	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	12 :12mm 6 : 6mm 3 : 3mm	50: 50mm 〉 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom Length	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

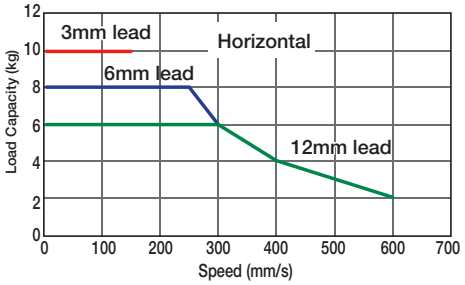
* See page Pre-35 for explanation of each code that make up the configuration name.

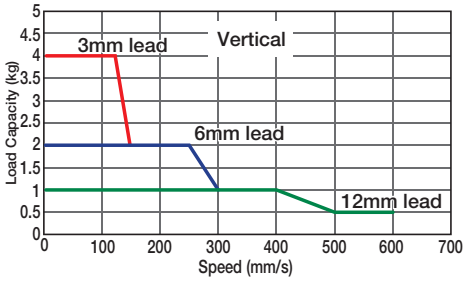


Technical References A-5

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) Since the RCP3 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.

(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA5R-I-42P-12-①-②-③-④	12	～6	～1	47	50～800 (50mm increments)
RCP3-SA5R-I-42P-6-①-②-③-④	6	～8	～2	95	
RCP3-SA5R-I-42P-3-①-②-③-④	3	10	～4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
12	600	570	490	425	370	330
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

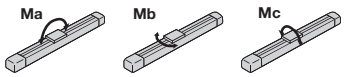
Option List

Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Outside)	CJO	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

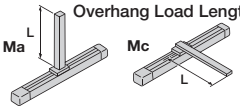
Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 10.2N·m Mb: 14.6N·m Mc: 8.53N·m
Allowable Dynamic Load Moment	Ma: 3.92N·m Mb: 5.58N·m Mc: 8.53N·m
Overhang Load Length	130mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moment



Overhang Load Length



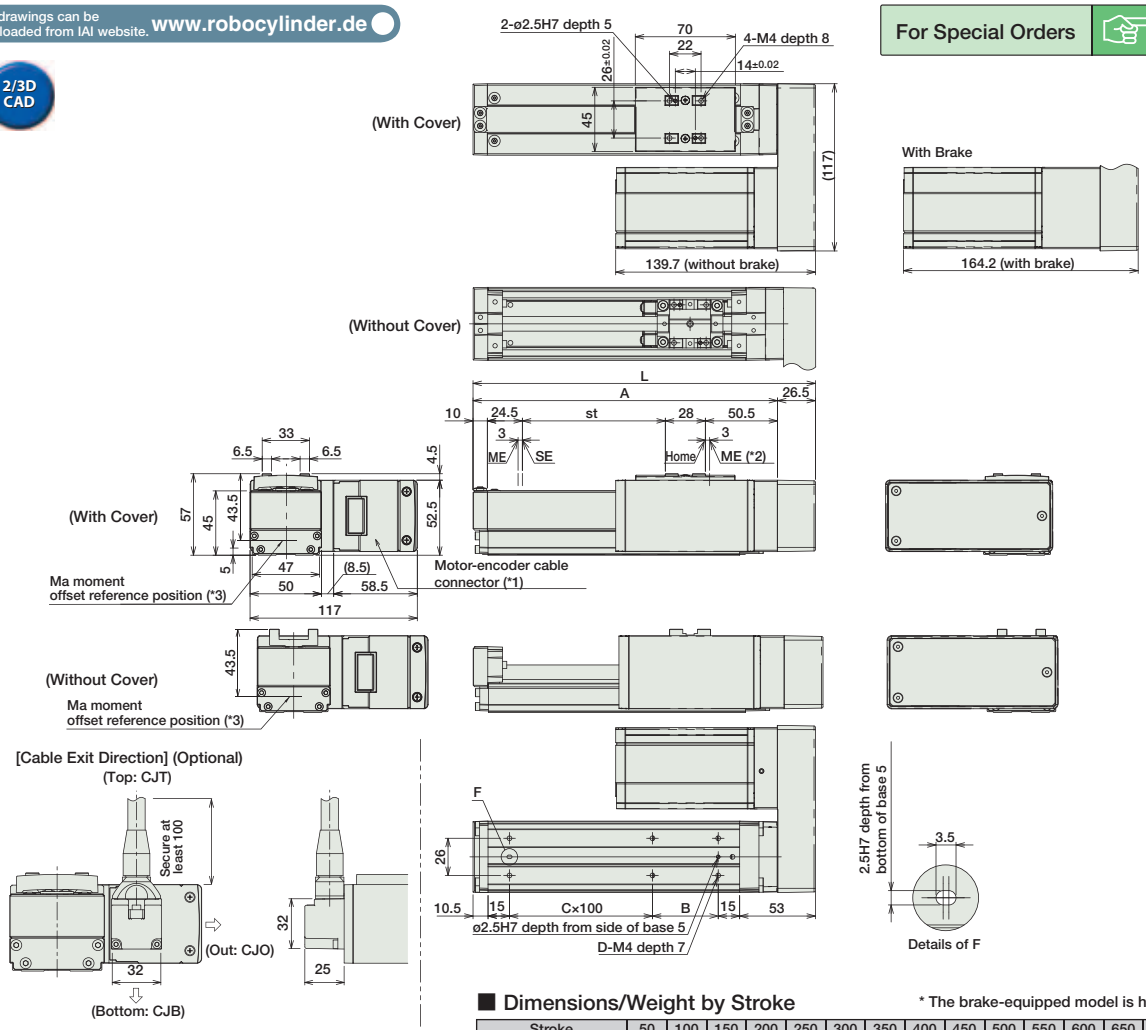
5,000 km service life

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders A-9



Dimensions/Weight by Stroke

* The brake-equipped model is heavier by 0.4kg.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		189.5	239.5	289.5	339.5	389.5	439.5	489.5	539.5	589.5	639.5	689.5	739.5	789.5	839.5	889.5	939.5
A		163	213	263	313	363	413	463	513	563	613	683	713	783	813	883	913
B		96	46	96	46	96	46	96	46	96	46	96	46	96	46	96	46
C		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
Weight (kg)	With Cover	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.7
	No Cover	1.6	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.3

(*1) The motor-encoder cable provided is an integrated cable. (See page A-39.)

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

(*3) Reference position for calculating the moment Ma

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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

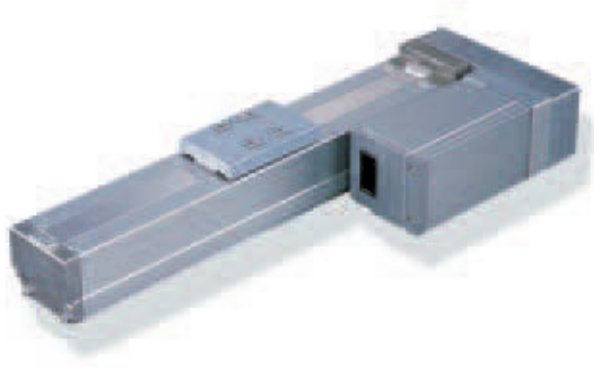
* This is for the single-axis PSEL.

RCP3-SA6R RoboCylinder Slider Type 60mm Width Pulse Motor Side-Mounted Motor

■ Configuration: **RCP3** — **SA6R** — **I** — **42P** — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	SA6R	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 □ size	12 :12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



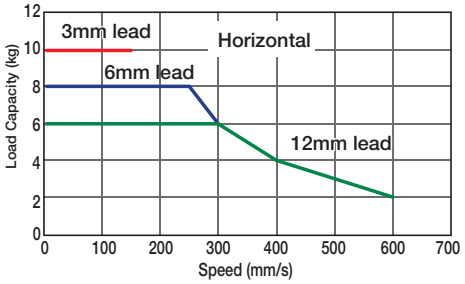
Technical References A-5

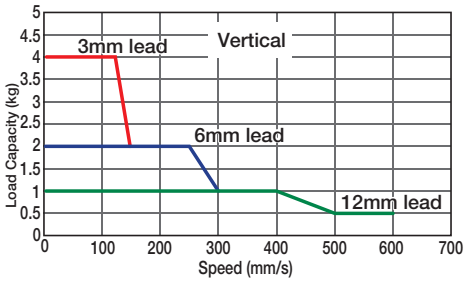
POINT Notes on Selection

(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 RCP3 series use the 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.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-SA6R-I-42P-12-①-②-③-④	12	~ 6	~ 1	47	50~800 (50mm increments)
RCP3-SA6R-I-42P-6-①-②-③-④	6	~ 8	~ 2	95	
RCP3-SA6R-I-42P-3-①-②-③-④	3	10	~ 4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
12	600	570	490	425	370	330
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

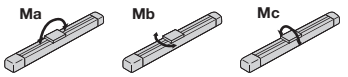
Option List

Name	Option Code	See Page	
Brake-Equipped	B	→ A-25	
Cable Exit Direction (Top)	CJT	→ A-25	
Cable Exit Direction (Outside)	CJO	→ A-25	
Cable Exit Direction (Bottom)	CJB	→ A-25	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
No Cover	NCO	→ A-33	
Reversed-home	NM	→ A-33	

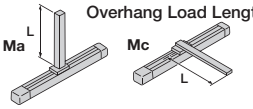
Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 17.6N·m Mb: 25.2N·m Mc: 44.5N·m
Allowable Dynamic Load Moment	Ma: 4.31N·m Mb: 6.17N·m Mc: 10.98N·m
Overhang Load Length	150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moment



Overhang Load Length



5,000 km service life

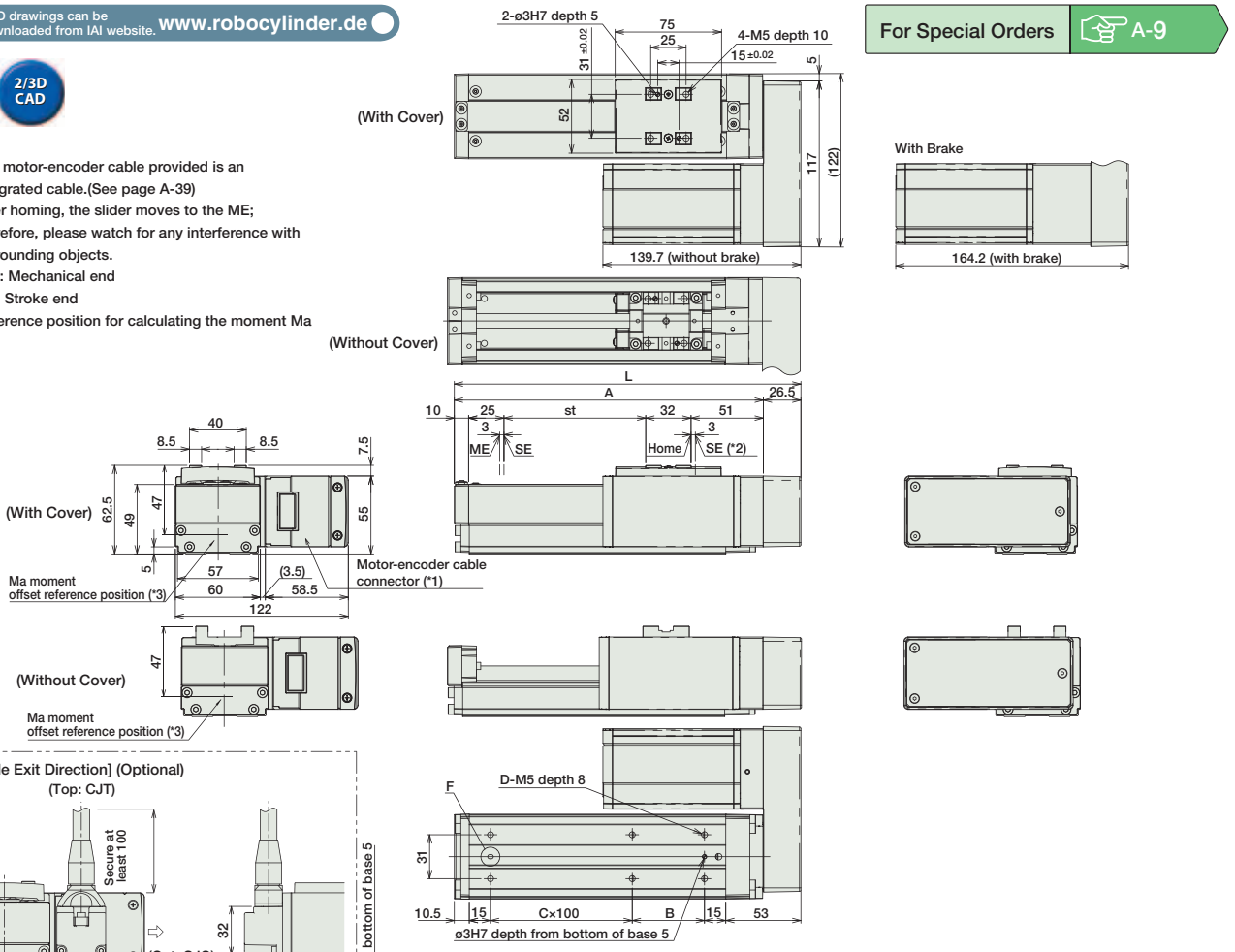
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders A-9

(*1) The motor-encoder cable provided is an integrated cable.(See page A-39)
(*2) After homing, the slider moves to the ME; therefore, please watch for any interference with surrounding objects.
ME : Mechanical end
SE : Stroke end
(*3) Reference position for calculating the moment Ma



Dimensions/Weight by Stroke

* The brake-equipped model is heavier by 0.4kg.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		194.5	244.5	294.5	344.5	394.5	444.5	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5
A		168	218	268	318	368	418	468	518	568	618	668	718	768	818	868	918
B		101	51	101	51	101	51	101	51	101	51	101	51	101	51	101	51
C		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
Weight (kg)	With Cover	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3	3.5	3.6	3.8	4.0	4.2	4.3	4.5
	No Cover	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.1	3.3	3.4	3.6	3.7	3.9	4.0

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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

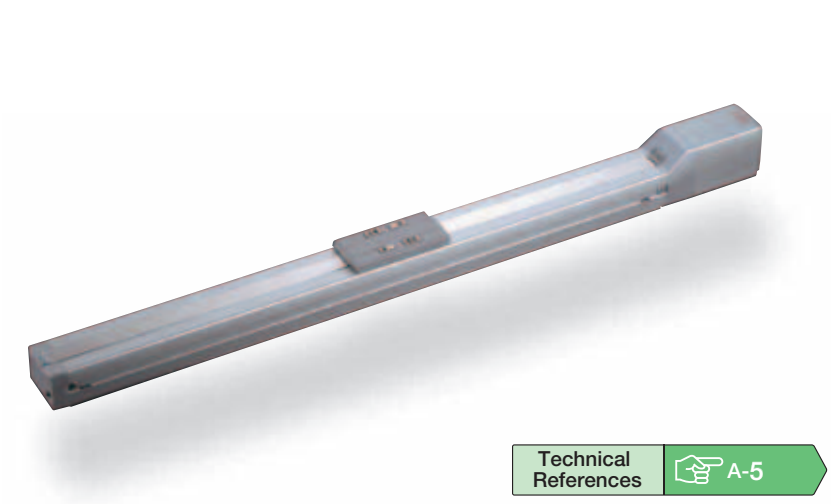
* This is for the single-axis PSEL.

RCP2-SA5C RoboCylinder Slider Type 52mm Width Pulse Motor Straight Type Coupled

■ Configuration: RCP2 — SA5C — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA5C	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom Length R ☐☐ : Robot cable	BE : Brake (Cable exiting end) BL : Brake (Cable exiting left) BR : Brake (Cable exiting right) NM: Reversed-home SR : Slider Roller

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



Technical References A-5

POINT Notes on Selection

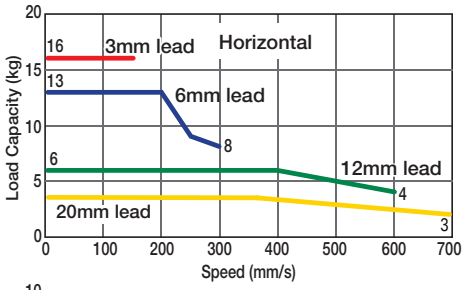
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

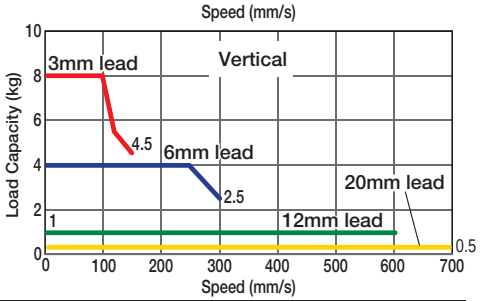
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3)The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-53.

■ 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

Model	Lead (mm)	Max. LoadCapacity (Note 1) Horizontal (kg)	Max. LoadCapacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA5C-I-42P-20- ①-②-③-④	20	~ 4	~ 0,5	50-800 (50mm increments)
RCP2-SA5C-I-42P-12- ①-②-③-④	12	~ 6	~ 1	
RCP2-SA5C-I-42P-6- ①-②-③-④	6	~ 13	~ 4	
RCP2-SA5C-I-42P-3- ①-②-③-④	3	~16	~ 8	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	1000	980	850	740	650	580
12	600	540	460	400	360	300
6	300	270	230	200	180	150
3	150	135	115	100	90	75

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

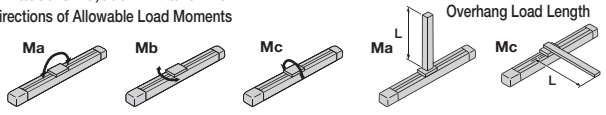
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 18.6 N·m Mb: 26.6 N·m Mc: 47.5 N·m
Allowable Dynamic Moment (*)	Ma: 4.9 N·m Mb: 6.8 N·m Mc: 11.7 N·m
Overhang Load Length	Ma direction: 150mm or less; Mb·Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Option List

Name	Option Code	See Page	
Brake (Cable-exit end)	BE	→ A-25	
Brake (Cable exiting left)	BL	→ A-25	
Brake (Cable exiting right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

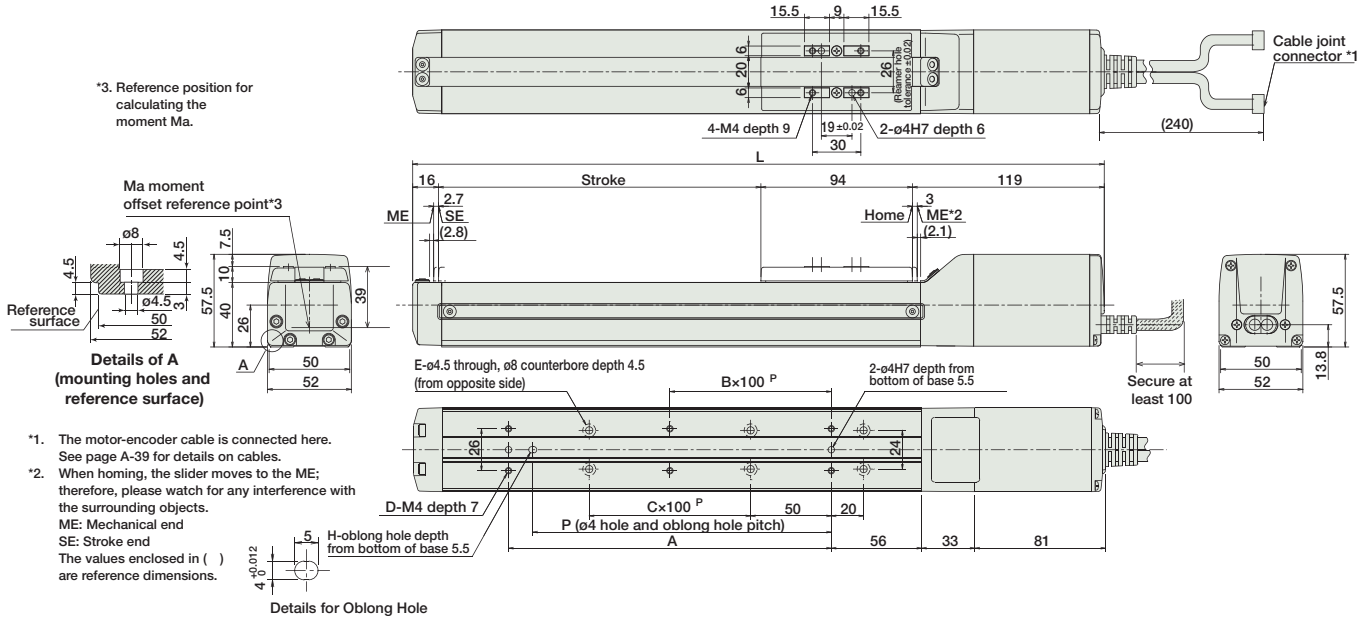
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

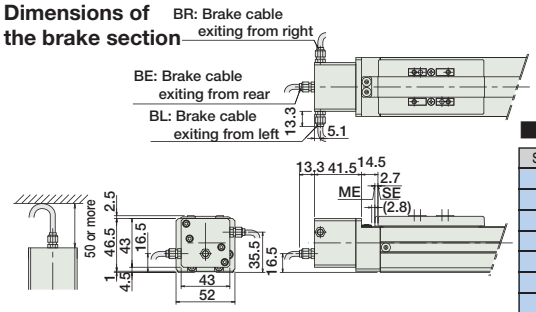
*For the Reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

For Special Orders A-9



*1. The 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
The values enclosed in ( ) are reference dimensions.

Dimensions of the brake section



* Adding a brake increases the actuator's overall length by 40mm (53.3mm with the cable coming out its end), and its weight by 0.4kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029
A	73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18
E	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P557

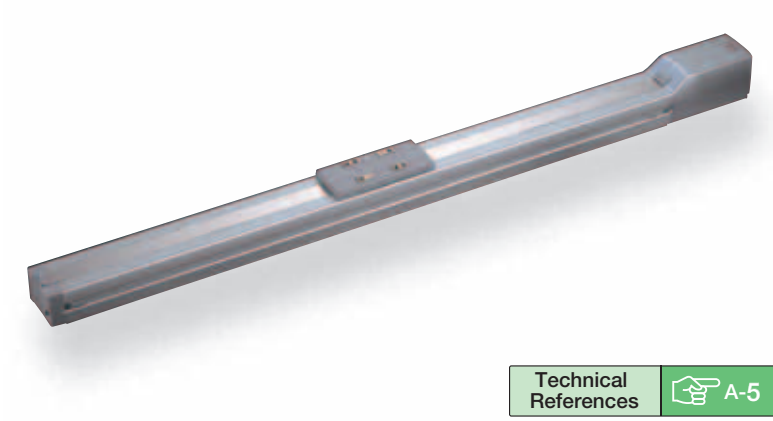
* This is for the single-axis PSEL.

RCP2-SA6C RoboCylinder Slider Type 58mm Width Pulse Motor Straight Type Coupled

■ Configuration: RCP2 — SA6C — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA6C	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom Length R ☐☐ : Robot cable	BE : Brake (Cable exiting end) BL : Brake (Cable exiting left) BR : Brake (Cable exiting right) NM : Reversed-home SR : Slider Roller

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



Technical References A-5

POINT Notes on Selection

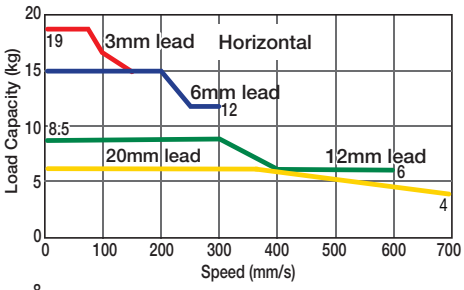
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

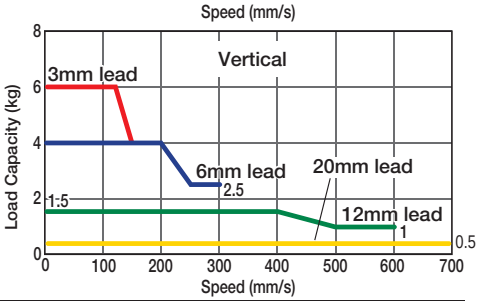
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-53.

■ 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

Model	Lead (mm)	Max. LoadCapacity (Note 1) Horizontal (kg)	Max. LoadCapacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA6C-I-42P-20- ①-②-③-④	20	~ 6	~ 0.5	50-800 (50mm increments)
RCP2-SA6C-I-42P-12- ①-②-③-④	12	~ 8.5	~ 1.5	
RCP2-SA6C-I-42P-6- ①-②-③-④	6	~ 15	~ 4	
RCP2-SA6C-I-42P-3- ①-②-③-④	3	~19	~ 6	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	1000	980	850	740	650	580
12	600	540	460	400	360	300
6	300	270	230	200	180	150
3	150	135	115	100	90	75

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

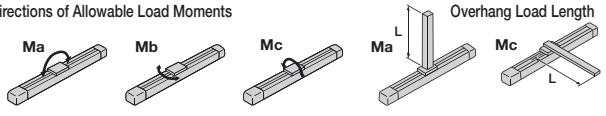
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 38.3 N·m Mb: 54.7 N·m Mc: 81.0 N·m
Allowable Dynamic Moment (*)	Ma: 8.9 N·m Mb: 12.7 N·m Mc: 18.6 N·m
Overhang Load Length	Ma direction: 220mm or less; Mb·Mc direction: 220mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Option List

Name	Option Code	See Page	
Brake (Cable-exit end)	BE	→ A-25	
Brake (Cable exiting left)	BL	→ A-25	
Brake (Cable exiting right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

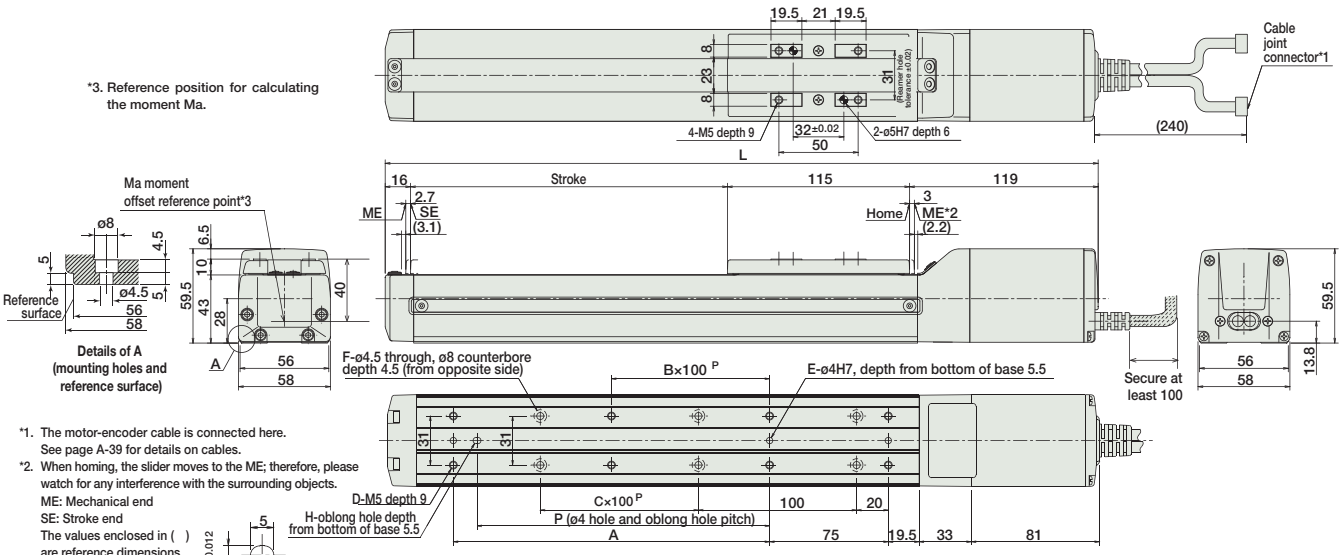
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

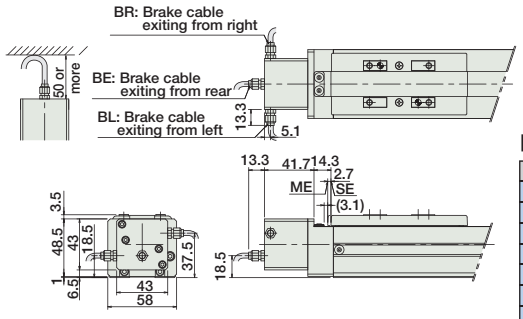
*For the Reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*3. Reference position for calculating the moment Ma.



*1. The 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
The values enclosed in ( ) are reference dimensions.

Dimensions of the brake section



* Adding a brake increases the actuator's overall length by 40mm (53.3mm with the cable coming out its end), and its weight by 0.4kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	1.8	2.0	2.1	2.2	2.4	2.5	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.6	3.8	3.9

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible Can operate up to 2 axes	1500 points				→ P557

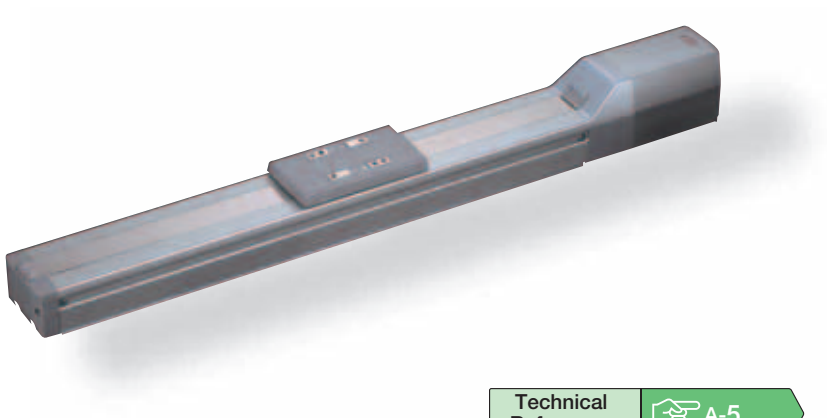
* This is for the single-axis PSEL.

RCP2-SA7C RoboCylinder Slider Type 73mm Width Pulse Motor Straight Type Coupled

■ Configuration: RCP2 — SA7C — I — 56P — [ ] — [ ] — [ ] — [ ] — [ ]

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA7C	I: Incremental * The Simple absolute encoder models are labeled as "I".	56P: Pulse motor 56 □ size	16:16mm 8: 8mm 4: 4mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom Length R□□ : Robot cable	BE : Brake (Cable exiting end) BL : Brake (Cable exiting left) BR : Brake (Cable exiting right) NM : Reversed-home SR : Slider Roller

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



Technical References A-5

POINT Notes on Selection

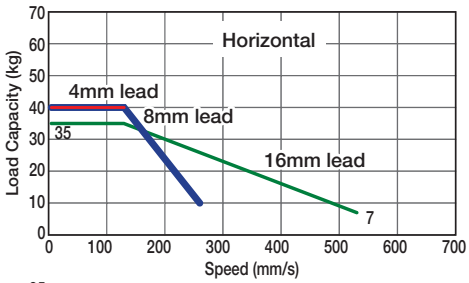
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

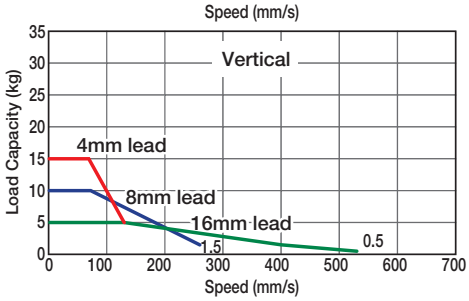
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA7C-I-56P-16-①-②-③-④	16	~ 35	~ 5	50 ~ 800 (50mm increments)
RCP2-SA7C-I-56P-8-①-②-③-④	8	~ 40	~ 10	
RCP2-SA7C-I-56P-4-①-②-③-④	4	40	~ 15	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 700 (50mm increments)	~ 800 (mm)
16	533	480
8	266	240
4	133	120

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

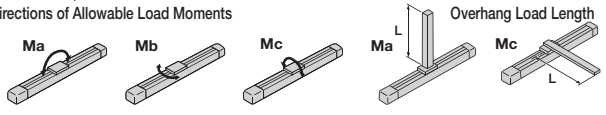
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 50.4 N·m Mb: 71.9 N·m Mc: 138.0 N·m
Allowable Dynamic Moment (*)	Ma: 13.9 N·m Mb: 19.9 N·m Mc: 38.3 N·m
Overhang Load Length	Ma direction: 230mm or less; Mb·Mc direction: 230mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length

Option List

Name	Option Code	See Page	
Brake (Cable-exit end)	BE	→ A-25	
Brake (Cable exiting left)	BL	→ A-25	
Brake (Cable exiting right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

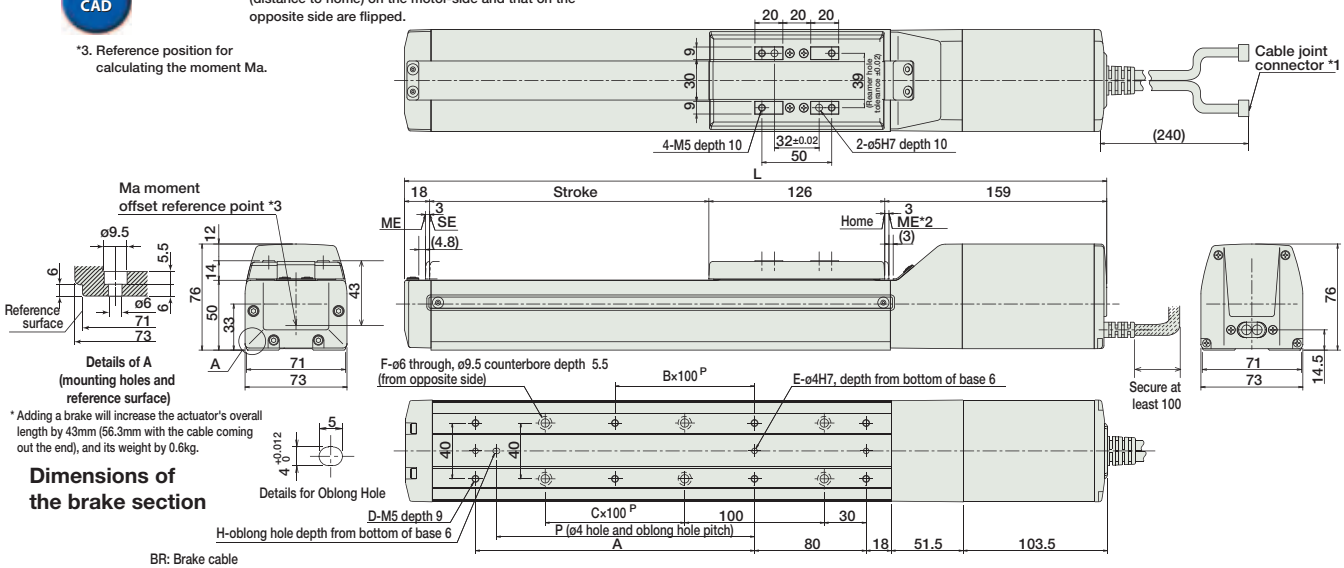
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

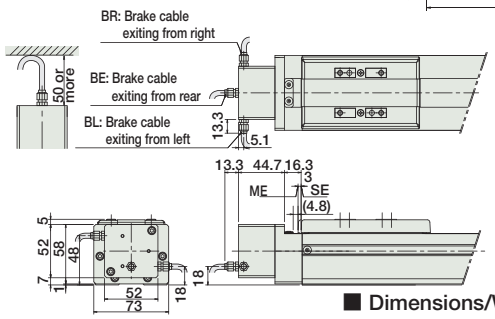
*For the Reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*3. Reference position for calculating the moment Ma.



* Adding a brake will increase the actuator's overall length by 43mm (56.3mm with the cable coming out the end), and its weight by 0.6kg.

Dimensions of the brake section



*1. The 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
The values enclosed in "( )" are reference dimensions.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	353	403	453	503	553	603	653	703	753	803	853	903	953	1003	1053	1103
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	3.1	3.3	3.6	3.8	4.0	4.2	4.5	4.7	4.9	5.1	5.4	5.6	5.8	6.0	6.3	6.5

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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

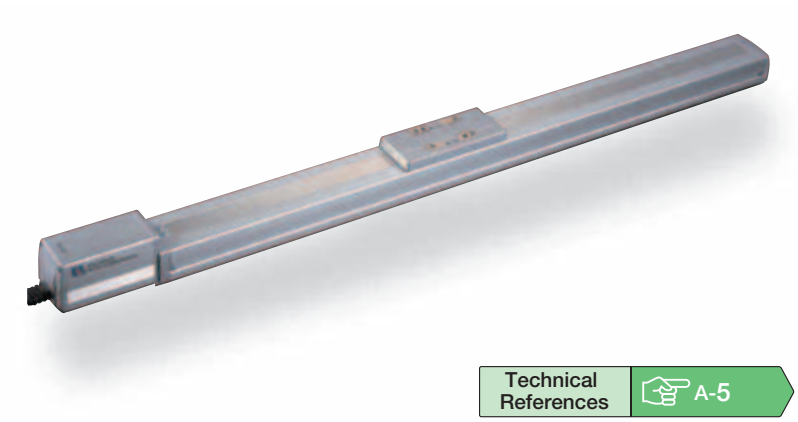
* This is for the single-axis PSEL.

RCP2-SS7C RoboCylinder Slider Type 60mm Width Pulse Motor Straight Type Coupled

■ Configuration: **RCP2** – **SS7C** – **I** – **42P** – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SS7C	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm \ 600:600mm (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 NM : Reversed-home SR : Slider Roller

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



Technical References A-5

POINT Notes on Selection

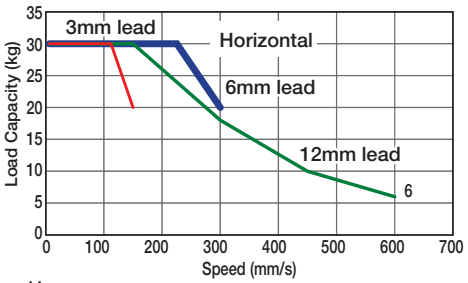
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

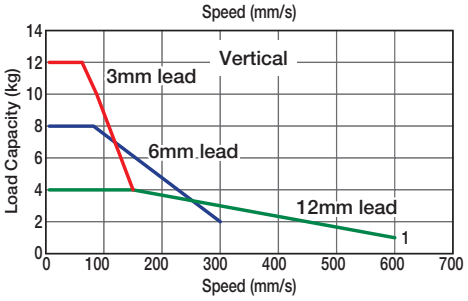
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SS7C-I-42P-12-①-②-③-④	12	~ 30	~ 4	50 ~ 600 (50mm increments)
RCP2-SS7C-I-42P-6-①-②-③-④	6	~ 30	~ 8	
RCP2-SS7C-I-42P-3-①-②-③-④	3	~ 30	~ 12	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 500 (50mm increments)	~ 600 (mm)
12	600	470
6	300	230
3	150	115

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

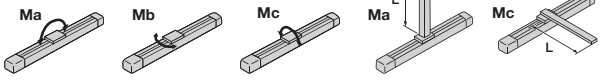
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 79.4 N·m Mb: 79.4 N·m Mc: 172.9 N·m
Allowable Dynamic Moment (*)	Ma: 14.7 N·m Mb: 14.7 N·m Mc: 33.3 N·m
Overhang Load Length	Ma direction: 300mm or less; Mb·Mc direction: 300mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

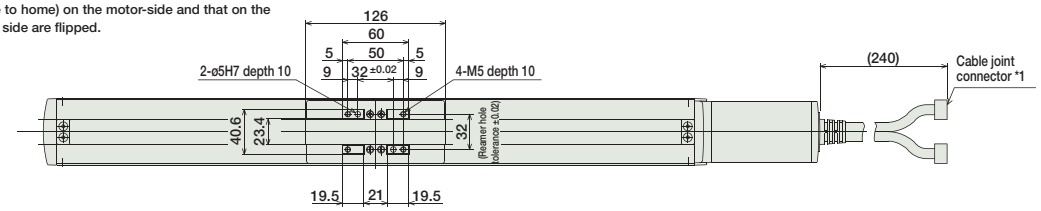
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

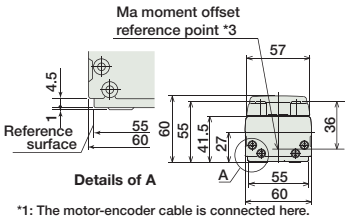
For Special Orders A-9

2/3D CAD

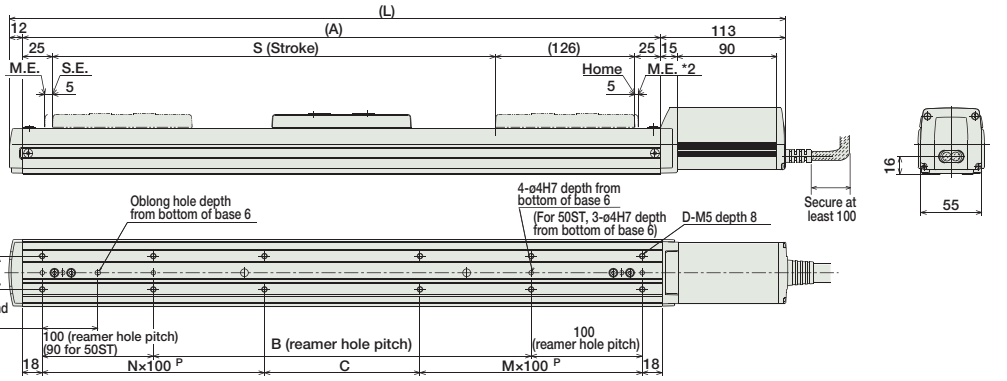
*For the Reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.



*3. Reference position for calculating the moment Ma.



Details of A

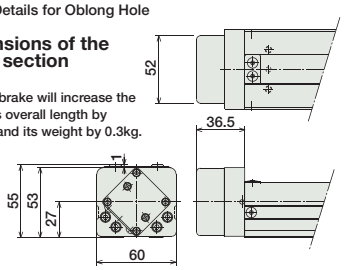


*1: The motor-encoder cable is connected here. See page A-39 for details on cables.
*2: When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The dimensions enclosed in "( )" are reference dimensions.

Details for Oblong Hole

Dimensions of the brake section

* Adding a brake will increase the actuator's overall length by 24.5mm, and its weight by 0.3kg.



* Brake cable is passed through the actuator body and connected to the motor cable.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	351	401	451	501	551	601	651	701	751	801	851	901
A	226	276	326	376	426	476	526	576	626	676	726	776
B	0	40	90	140	190	240	290	340	390	440	490	540
C	90	40	90	140	190	40	90	140	190	40	90	140
D	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	3.1	3.4	3.7	4.0	4.3	4.7	5.0	5.4	5.7	6.1	6.4	6.7

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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.

RCP2-SS8C

RoboCylinder Slider Type 80mm Width Pulse Motor Straight Type Steel Base Coupled

■ Configuration: RCP2 — SS8C — I — 56P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder models are labeled as "I".	56P: Pulse motor 56 ☐ size	20:20mm 10:10mm 5: 5mm	50: 50mm \ 1000:1000mm (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 NM : Reversed-home SR : Slider Roller

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

Technical References A-5

POINT Notes on Selection

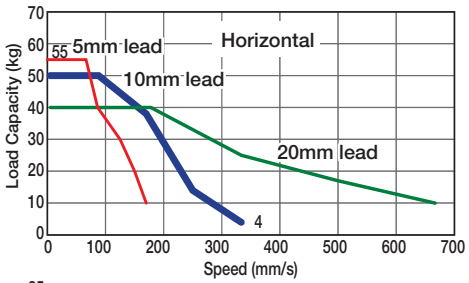
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

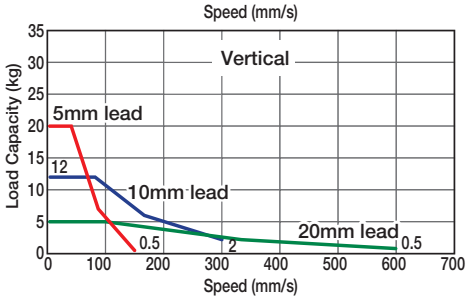
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 5mm-lead model, or when used vertically). These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SS8C-I-56P-20-①-②-③-④	20	~ 40	~ 5	50 ~ 1000 (50mm increments)
RCP2-SS8C-I-56P-10-①-②-③-④	10	~ 50	~ 12	
RCP2-SS8C-I-56P-5-①-②-③-④	5	~ 55	~ 20	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 800 (50mm increments)	~ 900 (mm)	~ 1000 (mm)
20	666 〈600〉	625 〈600〉	515
10	333 〈300〉	310 〈300〉	255
5	165 〈150〉	155 〈150〉	125

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

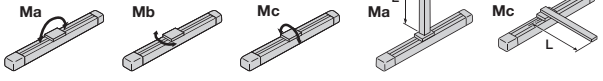
* See page A-39 for cables for maintenance.

Actuator Specifications

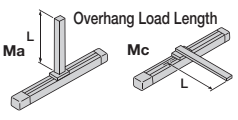
Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9 N·m Mb: 198.9 N·m Mc: 416.7 N·m
Allowable Dynamic Moment (*)	Ma: 36.3 N·m Mb: 36.3 N·m Mc: 77.4 N·m
Overhang Load Length	Ma direction: 450mm or less; Mb·Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

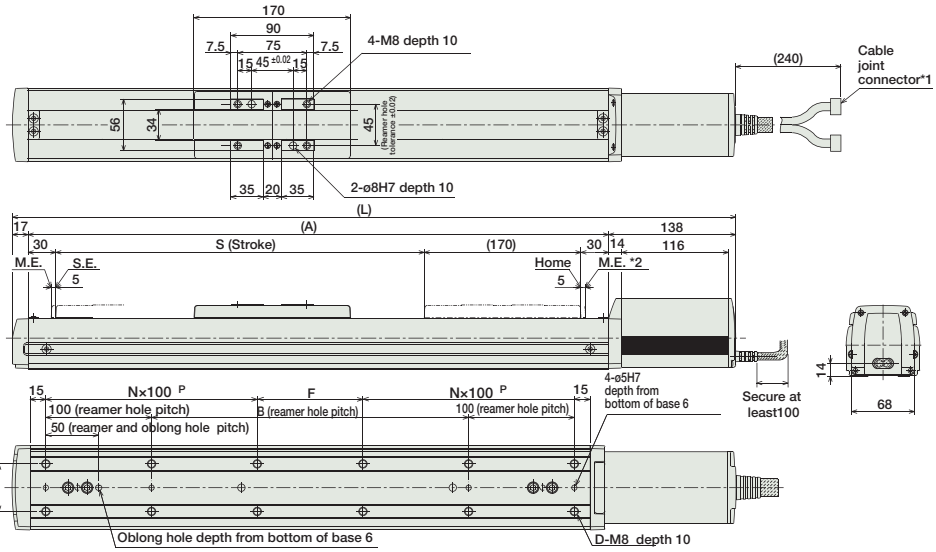
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

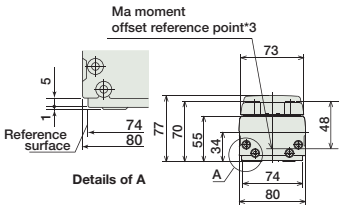
For Special Orders A-9

2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.



*3. Reference position for calculating the moment Ma.

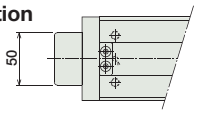


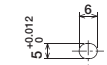
*1: The motor-encoder cable is connected here. See page A-39 for details on cables.

*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
The dimensions enclosed in "( )" are reference dimensions.

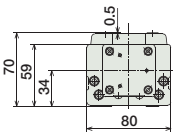
Dimensions of the brake section

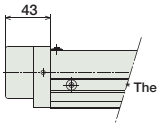
* Adding a brake will increase the actuator's overall length by 26mm, and its weight by 0.5kg.





Details for Oblong Hole





The brake cable is passed through the actuator body and connected to the motor cable.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	435	485	535	585	635	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	6.6	7.1	7.6	8.1	8.6	9.2	9.7	10.2	10.7	11.3	11.7	12.3	12.8	13.4	13.9	14.5	15.0	15.5	16.1	16.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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.

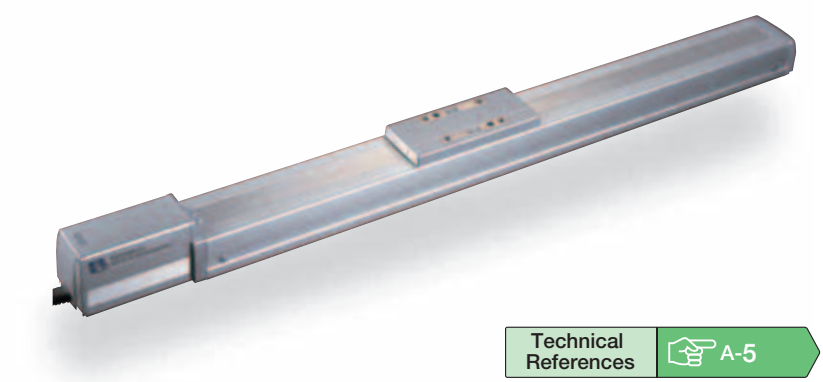
RCP2-HS8C

RoboCylinder High-Speed Slider Type 80mm Width Pulse Motor Straight Type
Steel Base Coupled

■ Configuration:

RCP2	HS8C	I	86P	☐	☐	P2	☐	☐
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental	86P: Pulse motor 56 ☐ high output	30:30mm	50: 50mm \ 1000:1000mm (50mm pitch increments)	P2:PCON-CF	N : None P : 1m S : 3m M : 5m X☐☐: Custom Length R☐☐: Robot cable	B : Brake NM: Reversed-home SR : Slider Roller

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



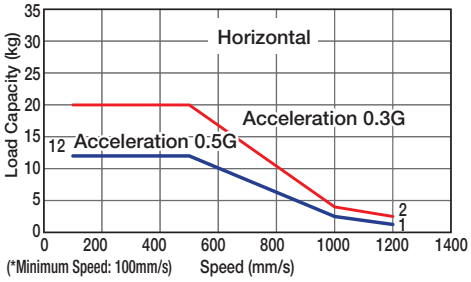
Technical References A-5

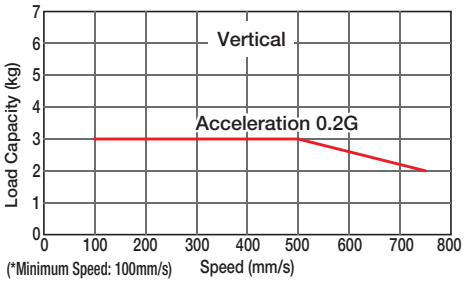
POINT Notes on Selection

(1) Due the large lead of the ball screw in high-speed actuators, operating at low speeds may cause vibration and/or noise. Therefore, use the actuator at speeds over 100mm/s.
(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 0.3G (0.2G when used vertically).
The upper limit for the acceleration is 0.5G for horizontal use and 0.2G for vertical use.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-HS8C-I-86P-30-①-P2-②-③	30	～20	～3	50～1000 (50mm increments)

Legend ① Stroke ② Cable length ③ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50～800 (50mm increments)	～900 (mm)	～1000 (mm)
30	1200 〈750〉	1000 〈750〉	800 〈750〉

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

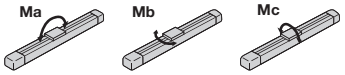
* See page A-39 for cables for maintenance.

Actuator Specifications

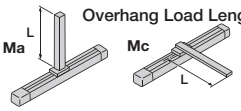
Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9 N·m Mb: 198.9 N·m Mc: 416.7 N·m
Allowable Dynamic Moment (*)	Ma: 36.3 N·m Mb: 36.3 N·m Mc: 77.4 N·m
Overhang Load Length	Ma direction: 450mm or less; Mb·Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Slider Roller	SR	→ A-36	

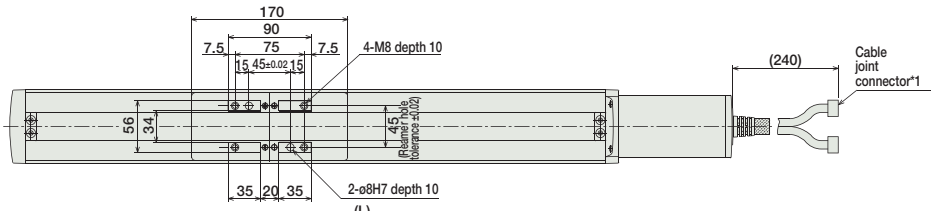
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

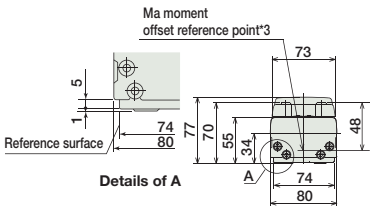
For Special Orders A-9

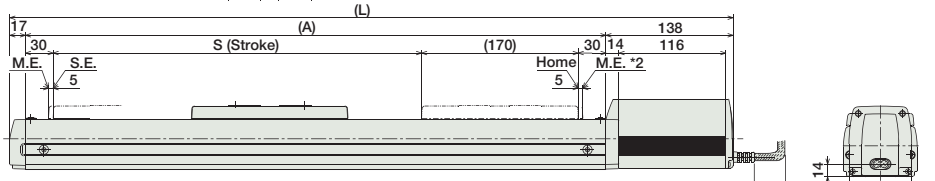
2/3D CAD

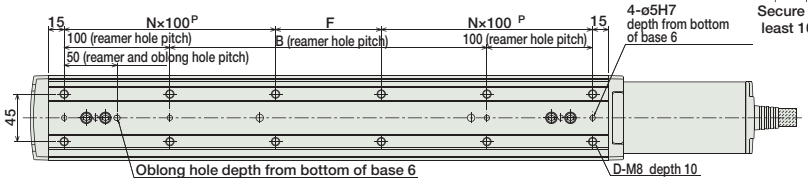
* For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.



*3. Reference position for calculating the moment Ma.





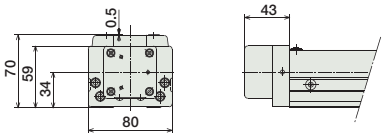


*1: The motor-encoder cable is connected here. See page A-39 for details on cables.

*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
The dimensions enclosed in "( )" are reference dimensions.

Dimensions of the brake section

* Adding a brake will increase the actuator's overall length by 26mm, and its weight by 0.5kg.



* The brake cable is passed through the actuator body and connected to the motor cable.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	435	485	535	585	635	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	6.6	7.1	7.6	8.1	8.6	9.2	9.7	10.2	10.7	11.3	11.7	12.3	12.8	13.4	13.9	14.5	15.0	15.5	16.1	16.6

Compatible Controllers

The controller for the RCP2-HS8C type is a dedicated controller.

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

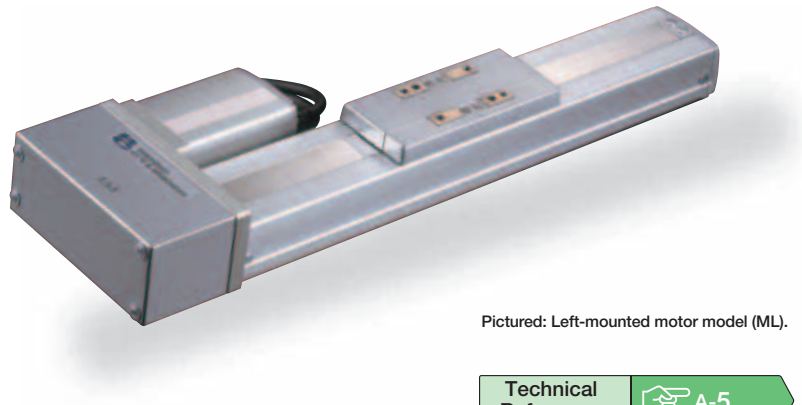
Note: • Please note that the encoder cable is a dedicated CF-type cable that is different from the PCON-C/CG/CY/PL/PO/SE controllers.
• Note that a simple absolute unit cannot be used.

RCP2-SA5R RoboCylinder Slider Type 52mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — SA5R — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA5R	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom Length R ☐☐ : Robot cable	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Pictured: Left-mounted motor model (ML).

Technical References A-5

POINT Notes on Selection

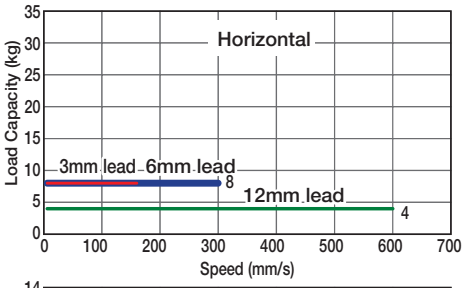
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

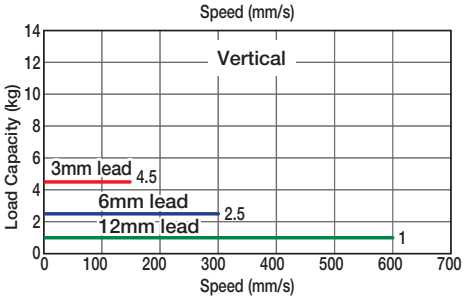
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA5R-I-42P-12-①-②-③-④	12	4	1	50 ~ 800 (50mm increments)
RCP2-SA5R-I-42P-6-①-②-③-④	6	8	2.5	
RCP2-SA5R-I-42P-3-①-②-③-④	3	8	4.5	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
12	600	540	460	400	360	300
6	300	270	230	200	180	150
3	150	135	115	100	90	75

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

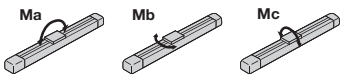
* See page A-39 for cables for maintenance.

Actuator Specifications

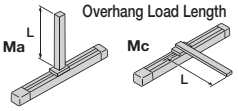
Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6 N·m Mb: 26.6 N·m Mc: 47.5 N·m
Allowable Dynamic Moment (*)	Ma: 4.9 N·m Mb: 6.8 N·m Mc: 11.7 N·m
Overhang Load Length	Ma direction: 150mm or less; Mb·Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

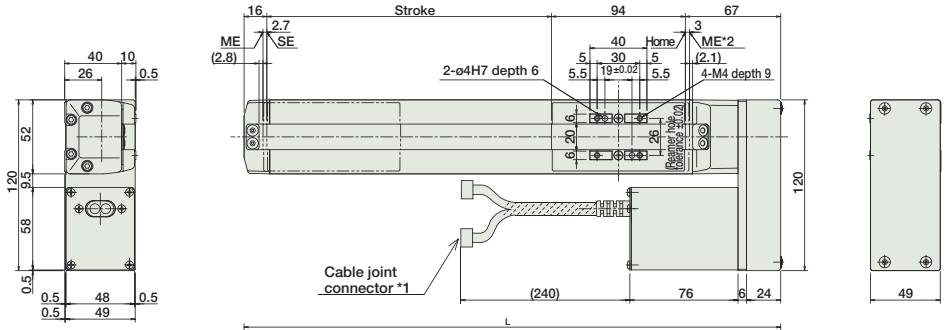
For Special Orders A-9

2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

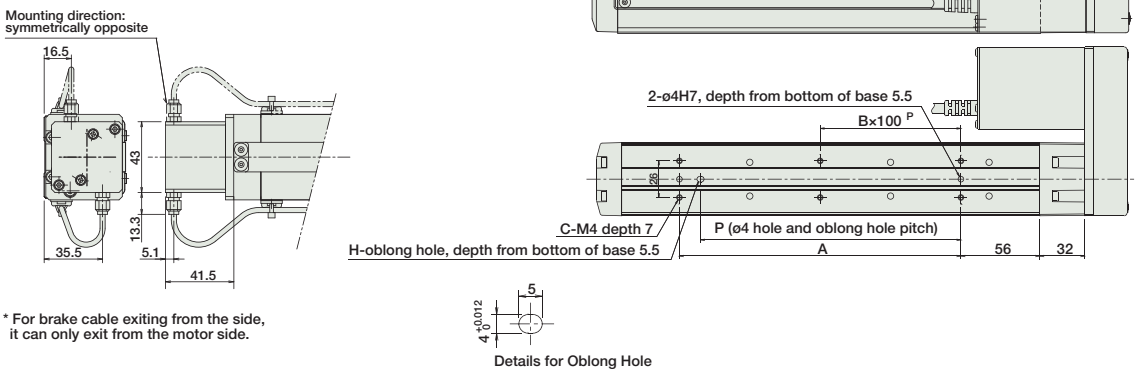
*1. The motor-encoder cable is connected here.
See page A-39 for details on cables.
*2. When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

* The offset reference position for the moment Ma is the same as the SA5 type. (See P28)



Dimensions of the brake section

* Adding a brake will increase the actuator's overall length by 40mm, and its weight by 0.4kg.



* For brake cable exiting from the side, it can only exit from the motor side.

Details for Oblong Hole

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	227	277	327	377	427	477	527	577	627	677	727	777	827	877	927	977
A	73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.8	2.9	3.0	3.1	3.3	3.4	3.5	3.6	3.7

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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

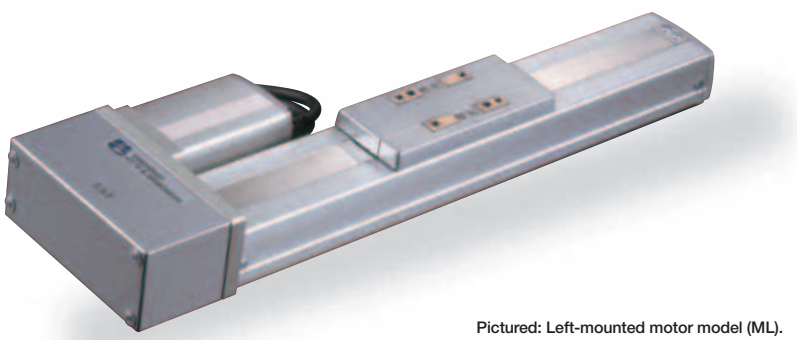
* This is for the single-axis PSEL.

RCP2-SA6R RoboCylinder Slider Type 58mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — SA6R — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA6R	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X☐☐: Custom Length R☐☐: Robot cable	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Pictured: Left-mounted motor model (ML).

Technical References A-5

POINT Notes on Selection

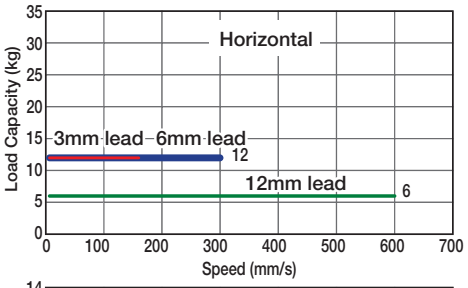
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

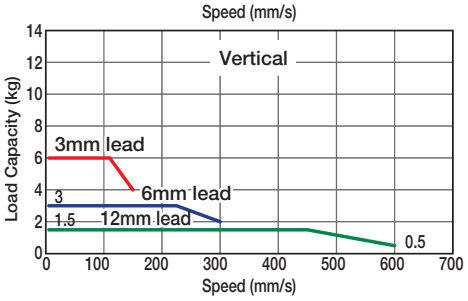
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA6R-I-42P-12-①-②-③-④	12	6	～1.5	50 ～ 800 (50mm increments)
RCP2-SA6R-I-42P-6-①-②-③-④	6	12	～3	
RCP2-SA6R-I-42P-3-①-②-③-④	3	12	～6	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 550 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
12	600	540	460	400	360	300
6	300	270	230	200	180	150
3	150	135	115	100	90	75

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

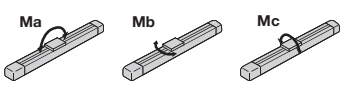
* See page A-39 for cables for maintenance.

Actuator Specifications

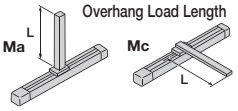
Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 38.3 N·m Mb: 54.7 N·m Mc: 81.0 N·m
Allowable Dynamic Moment (*)	Ma: 8.9 N·m Mb: 12.7 N·m Mc: 18.6 N·m
Overhang Load Length	Ma direction: 220mm or less; Mb·Mc direction: 220mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

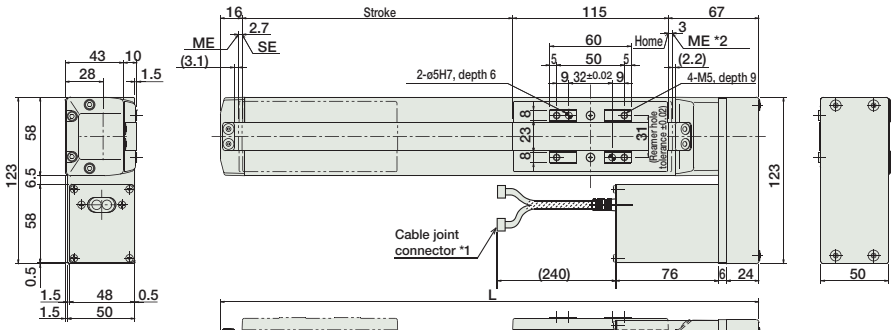
For Special Orders A-9

2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

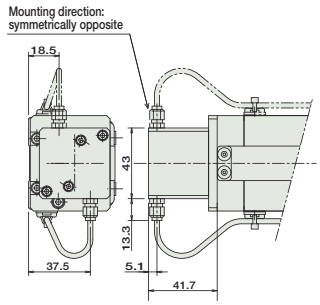
*1. The motor-encoder cable is connected here.
See page A-39 for details on cables.
*2. When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

*The offset reference position for the moment Ma is the same as the SA6 type. (See P30)

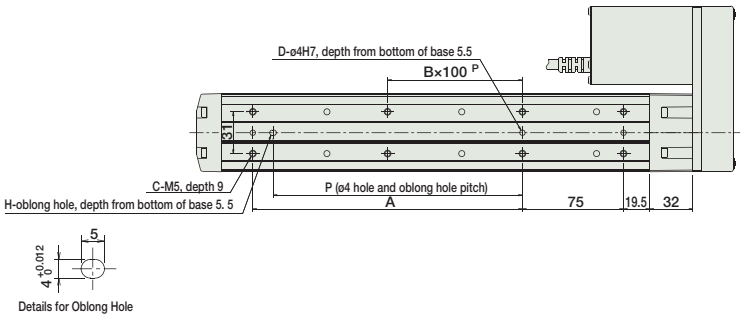


Dimensions of the brake section

* Adding a brake will increase the actuator's overall length by 40mm, and its weight by 0.4kg.



* For brake cable exiting from the side, it can only exit from the motor side.



Details for Oblong Hole

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	248	298	348	398	448	498	548	598	648	698	748	798	848	898	948	998
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
D	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	2.3	2.5	2.6	2.7	2.9	3.0	3.2	3.3	3.4	3.6	3.7	3.9	4.0	4.1	4.3	4.4

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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.

RCP2-SA7R RoboCylinder Slider Type 73mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — SA7R — I — 56P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SA7R	I: Incremental * The Simple absolute encoder models are labeled as "I".	56P: Pulse motor 56 ☐ size	16:16mm 8: 8mm 4: 4mm	50: 50mm \ 800:800mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X☐☐ : Custom Length R☐☐ : Robot cable	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

Pictured: Left-mounted motor model (ML).

Technical References A-5

POINT Notes on Selection

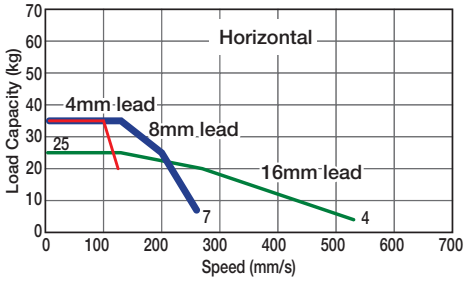
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

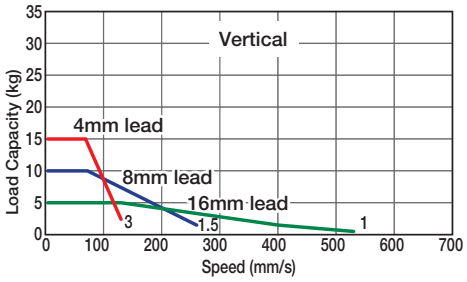
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SA7R-I-56P-16-①-②-③-④	16	~ 25	~ 5	50 ~ 800 (50mm increments)
RCP2-SA7R-I-56P-8-①-②-③-④	8	~ 35	~ 10	
RCP2-SA7R-I-56P-4-①-②-③-④	4	~ 35	~ 15	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 700 (50mm increments)	~ 800 (mm)
16	533 〈400〉	480 〈400〉
8	266	240
4	133	120

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

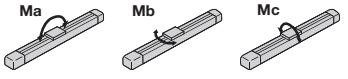
* See page A-39 for cables for maintenance.

Actuator Specifications

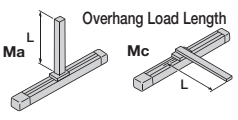
Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 50.4 N·m Mb: 71.9 N·m Mc: 138.0 N·m
Allowable Dynamic Moment (*)	Ma: 13.9 N·m Mb: 19.9 N·m Mc: 38.3 N·m
Overhang Load Length	Ma direction: 230mm or less; Mb·Mc direction: 230mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

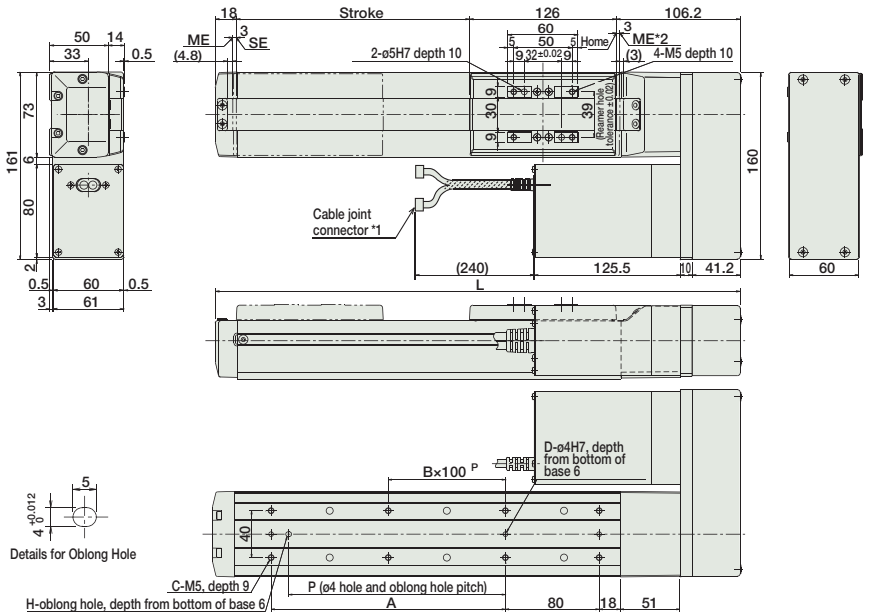
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

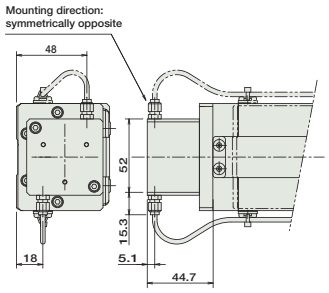
*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1. The 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
The values enclosed in "( )" are reference dimensions.
*The offset reference position for the moment Ma is the same as the SA7 type. (See P32)



Dimensions of the brake section

* Adding a brake will increase the actuator's overall length by 43mm, and its weight by 0.6kg.



* For brake cable exiting from the side, it can only exit from the motor side.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300.2	350.2	400.2	450.2	500.2	550.2	600.2	650.2	700.2	750.2	800.2	850.2	900.2	950.2	1000.2	1050.2
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
D	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	4.5	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.3	6.5	6.8	7.0	7.2	7.4	7.7	7.9

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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

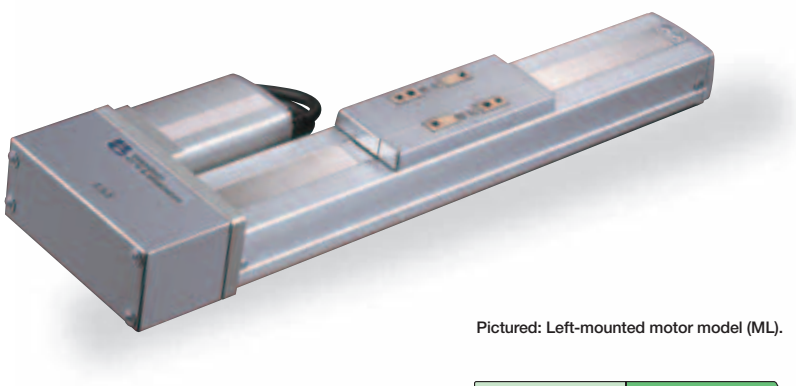
* This is for the single-axis PSEL.

RCP2-SS7R RoboCylinder Slider Type 60mm Width Pulse Motor Side-Mounted Motor Steel Base

■ Configuration: RCP2 — SS7R — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SS7R	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 ☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm \ 600:600mm (50mm pitch increments)	P1:PCON RPCON PSEL P3:PMEC PSEP	N : None P : 1m S : 3m M : 5m X☐☐ : Custom Length R☐☐ : Robot cable	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Pictured: Left-mounted motor model (ML).

Technical References A-5

POINT Notes on Selection

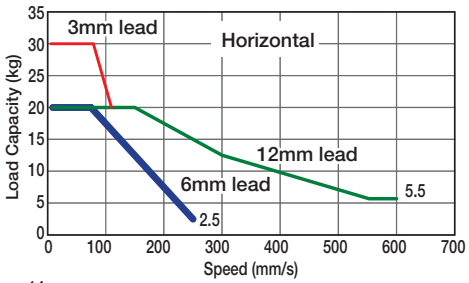
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

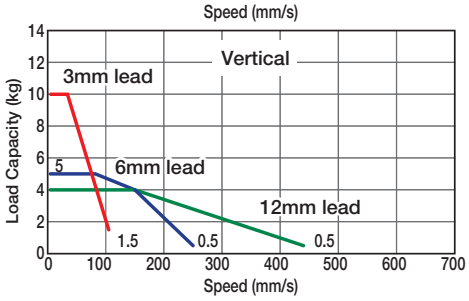
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SS7R-I-42P-12-①-②-③-④	12	~ 20	~ 4	50 ~ 600 (50mm increments)
RCP2-SS7R-I-42P-6-①-②-③-④	6	~ 20	~ 5	
RCP2-SS7R-I-42P-3-①-②-③-④	3	~ 30	~ 10	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 500 (50mm increments)	~ 600 (mm)
12	600 〈440〉	470 〈440〉
6	250	230
3	105	105

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

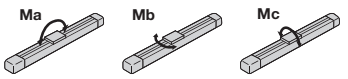
* See page A-39 for cables for maintenance.

Actuator Specifications

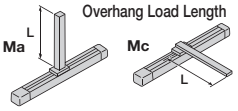
Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 79.4 N·m Mb: 79.4 N·m Mc: 172.9 N·m
Allowable Dynamic Moment (*)	Ma: 14.7 N·m Mb: 14.7 N·m Mc: 33.3 N·m
Overhang Load Length	Ma direction: 300mm or less; Mb·Mc direction: 300mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

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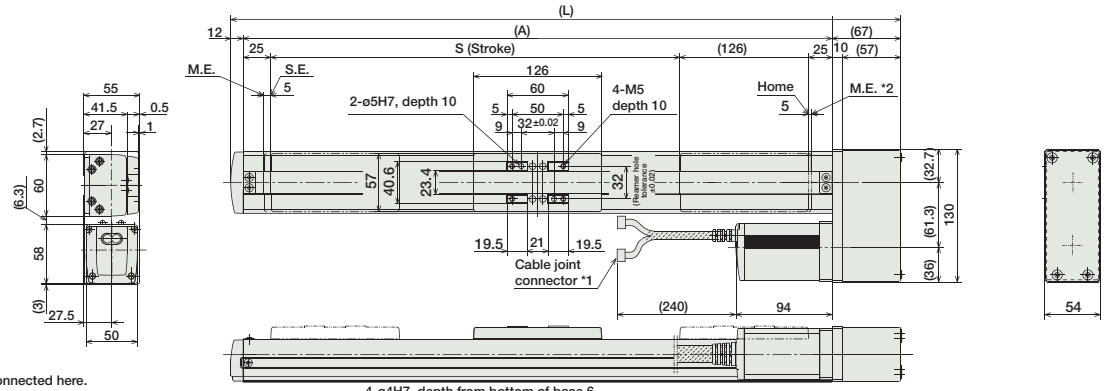
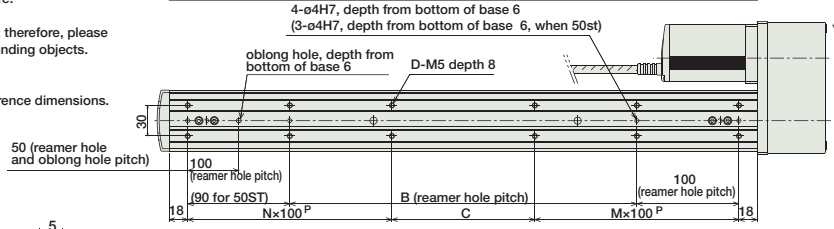
* The reference surface is the same as the SS7C type. (See P34)
* The offset reference position for the moment Ma is the same as the SS7C type. (See P34)



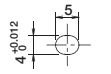
*1: The motor-encoder cable is connected here.
See page A-39 for details on cables.
*2: When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The dimensions enclosed in "( )" are reference dimensions.



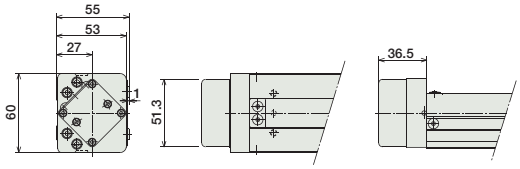
*The bend radius R of the cable is the same as other models.

Dimensions of the brake section

* Adding a brake increases the actuator's overall length by 24.5mm and its weight by 0.3kg.



Details for Oblong Hole



* The brake cable is passed through the actuator body and connected to the motor cable.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	305	355	405	455	505	555	605	655	705	755	805	855
A	226	276	326	376	426	476	526	576	626	676	726	776
B	0	40	90	140	190	240	290	340	390	440	490	540
C	90	40	90	140	190	40	90	140	190	40	90	140
D	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	3.8	4.1	4.4	4.7	5.1	5.4	5.8	6.1	6.4	6.7	7.1	7.4

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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

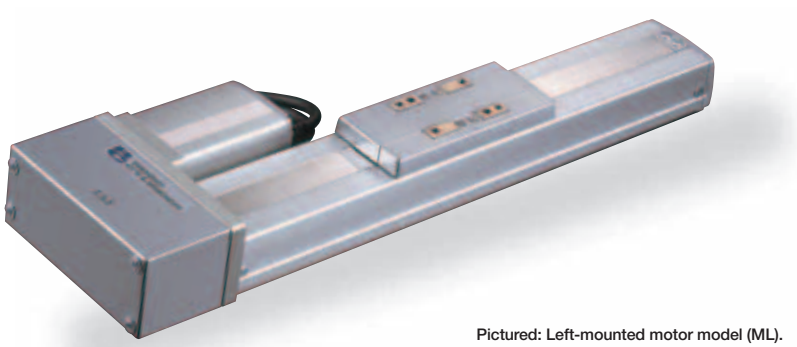
* This is for the single-axis PSEL.

RCP2-SS8R RoboCylinder Slider Type 80mm Width Pulse Motor Side-Mounted Motor Steel Base

■ Configuration: **RCP2** — **SS8R** — **I** — **56P** — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SS8R	I: Incremental * The Simple absolute encoder models are labeled as "I".	56P: Pulse motor 56 ☐ size	20: 20mm 10: 10mm 5: 5mm	50: 50mm \ 1000: 1000mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X☐☐: Custom Length R☐☐: Robot cable	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Pictured: Left-mounted motor model (ML).

Technical References A-5

POINT Notes on Selection

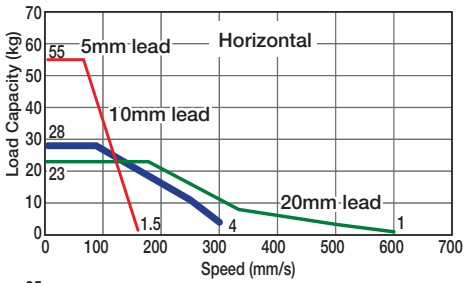
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
Use the actuator specification table below to check the maximum speed at the stroke you desire.

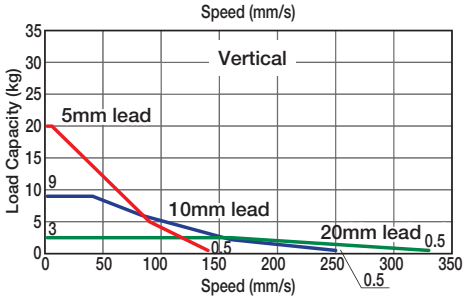
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 5mm-lead model, or when used vertically).
These values are the upper limits for the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-SS8R-I-56P-20-①-②-③-④	20	~ 23	~ 3	50 ~ 1000 (50mm increments)
RCP2-SS8R-I-56P-10-①-②-③-④	10	~ 28	~ 9	
RCP2-SS8R-I-56P-5-①-②-③-④	5	~ 55	~ 20	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 800 (50mm increments)	~ 900 (mm)	~ 1000 (mm)
20	600 〈333〉	600 〈333〉	515 〈333〉
10	300 〈250〉	300 〈250〉	255 〈250〉
5	160 〈140〉	155 〈140〉	125 〈140〉

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

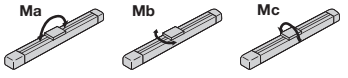
* See page A-39 for cables for maintenance.

Actuator Specifications

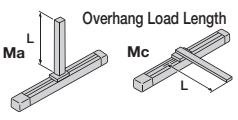
Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9 N·m Mb: 198.9 N·m Mc: 416.7 N·m
Allowable Dynamic Moment (*)	Ma: 36.3 N·m Mb: 36.3 N·m Mc: 77.4 N·m
Overhang Load Length	Ma direction: 450mm or less; Mb·Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

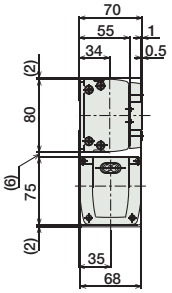
For Special Orders A-9

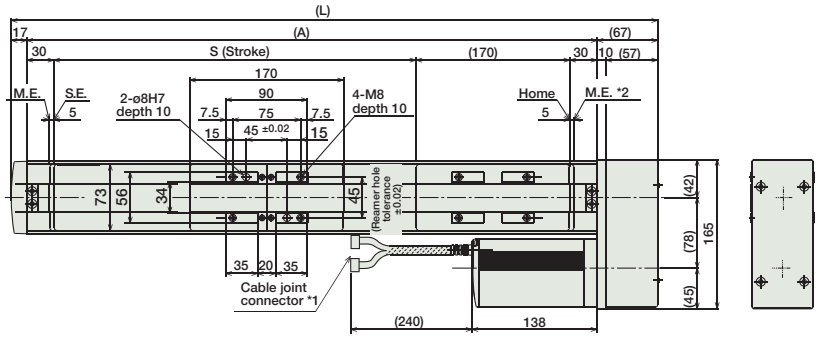
2/3D CAD

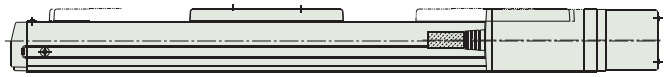
*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

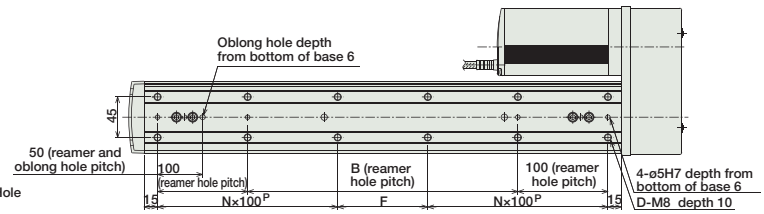
* The reference surface is the same as the SS8C type. (See P36)

* The offset reference position for the moment Ma is the same as the SS8C type. (See P36)







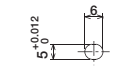


*1: The motor-encoder cable is connected here.
See page A-39 for details on cables.

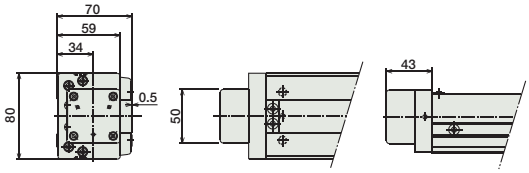
*2: When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The dimensions enclosed in "( )" are reference dimensions.

Dimensions of the brake section

* Adding a brake will increase the actuator's length by 26mm and its weight by 0.5kg.



Details for Oblong Hole



* The brake cable is passed through the actuator body and connected to the motor cable.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214	1264	1314
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	7.4	7.9	8.5	9.0	9.5	10	10.5	11.1	11.6	12.1	12.7	13.2	13.7	14.3	14.8	15.3	15.8	16.4	16.9	17.4

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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.

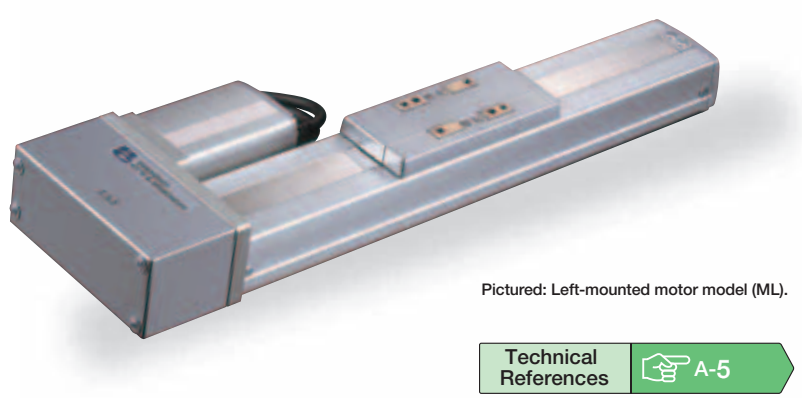
RCP2-HS8R

RoboCylinder High-Speed Slider Type 80mm Width Pulse Motor
Side-Mounted Motor Steel Base

■ Configuration:

RCP2	HS8R	I	86P	☐	☐	P2	☐	☐
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder models are labeled as "I".	86P: Pulse motor 56 ☐ high output	30:30mm	50: 50mm \ 1000:1000mm (50mm pitch increments)	P2:PCON-CF	N : None P : 1m S : 3m M : 5m X☐☐ : Custom Length R☐☐ : Robot cable	BE : Brake (Cable exiting end) BL : Brake (Cable exiting left) BR : Brake (Cable exiting right) NM : Reversed-home SR : Slider Roller

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



Pictured: Left-mounted motor model (ML).

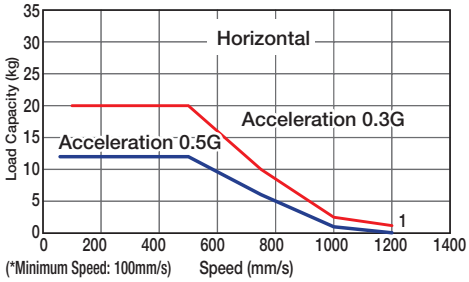
Technical References A-5

POINT
Notes on Selection

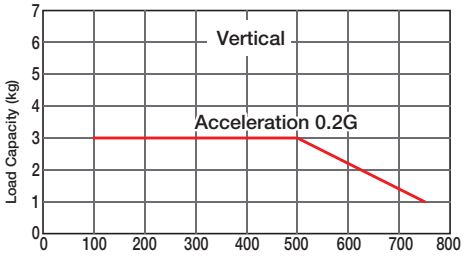
(1) Due the large lead of the ball screw in high-speed actuators, operating at low speeds may cause vibration and/or noise. Therefore, use the actuator at speeds over 100mm/s.
(2) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed.
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 0.3G (0.2G when used vertically).
The upper limit for the acceleration is 0.5G for horizontal use and 0.2G for vertical use.

■ 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.



(*Minimum Speed: 100mm/s) Speed (mm/s)



(*Minimum Speed: 100mm/s) Speed (mm/s)

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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-HS8R-I-86P-30-①-P2-②-③	30	～20	～3	50～1000 (50mm increments)

Legend ① Stroke ② Cable length ③ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50～800 (50mm increments)	～900 (mm)	～1000 (mm)
30	1200 〈750〉	1000 〈750〉	800 〈750〉

* The values enclosed in < > apply to vertical setting. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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.

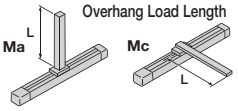
Actuator Specifications

Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9 N·m Mb: 198.9 N·m Mc: 416.7 N·m
Allowable Dynamic Moment (*)	Ma: 36.3 N·m Mb: 36.3 N·m Mc: 77.4 N·m
Overhang Load Length	Ma direction: 450mm or less; Mb·Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments

Overhang Load Length



Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Slider Roller	SR	→ A-36	

Dimensions

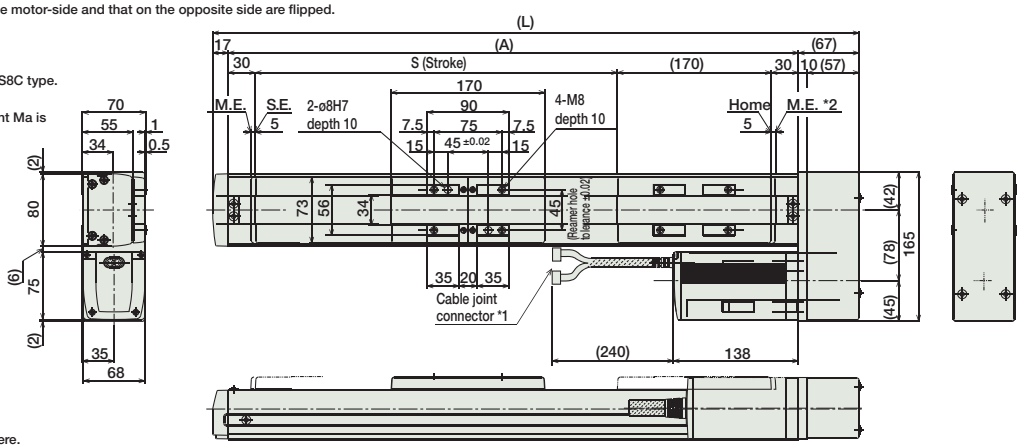
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

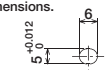
2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

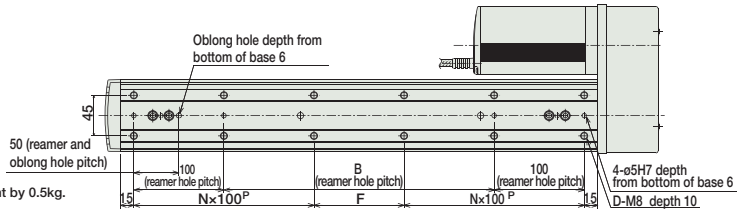
* The reference surface is the same as the HS8C type. (See P38)
* The offset reference position for the moment Ma is the same as the HS8C type. (See P38)



*1: The 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
The dimensions enclosed in ( ) are reference dimensions.

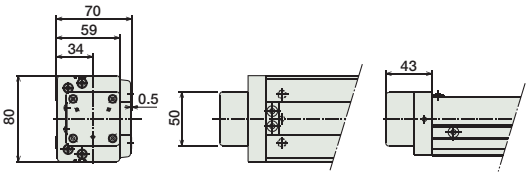


Details for Oblong Hole



Dimensions of the brake section

* Adding a brake will increase the actuator's length by 26mm and its weight by 0.5kg.



* The brake cable is passed through the actuator body and connected to the motor cable.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214	1264	1314
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	7.4	7.9	8.5	9.0	9.5	10	10.5	11.1	11.6	12.1	12.7	13.2	13.7	14.3	14.8	15.3	15.8	16.4	16.9	17.4

Compatible Controllers

The controller for the RCP2-HS8R type is a dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Positioner Type		PCON-CF-86PI-NP-2-0	Positioning is 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.
- Note that a simple absolute unit cannot be used.

RCP2-BA6/BA6U

RoboCylinder Belt Type 58mm Width Pulse Motor
Top-Mounted Motor / Bottom-Mounted Motor

■ Configuration: RCP2 — □ — I — 42P — 54 — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
	BA6 :Belt type Top-mounted motor BA6U:Belt type Botom-mounted motor	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 □ size	54:54mm equivalent	500: 500mm \ 1000:1000mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□: Custom Length R□□: Robot cable	NM : Reversed-home

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

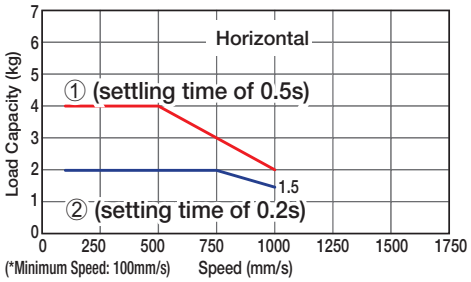
Technical References A-5

POINT Notes on Selection

(1) Operating the belt type actuator at low speeds may cause vibration and/or resonance. Therefore, please set the speed at 100mm/s or faster.
(2) 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.
(3) The load capacity is based on operation at an acceleration of 0.5G. 0.5G is the upper limit for the acceleration.

■ 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.



Note:
Graph ① is for standard specifications, with settling time of 0.5s for calculating the positioning time.
Graph ② reflects some changes in the controller settings. The load capacity is lower, however the settling time is decreased to 0.2s.
If the load capacity is lower than graph ②, and you want to shorten the positioning time, change the controller settings. (See the manual for details.)

(Vertical operation is not possible.)

Actuator Specifications

■ Lead and Load Capacity

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

Model	Motor Mounting Direction	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-BA6-I-42P-54-①-②-③-④	Top	54 equivalent	～4	Not Allowed	500～1000 (50mm increments)
RCP2-BA6U-I-42P-54-①-②-③-④	Bottom				

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	500～1000 (50mm increments)
54 equivalent	1000

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

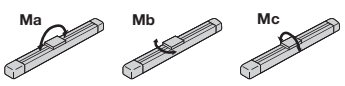
* See page A-39 for cables for maintenance.

Actuator Specifications

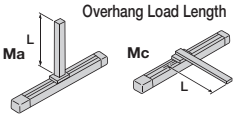
Item	Description
Drive System	Timing Belt
Positioning Repeatability	±0.1mm
Lost Motion	0.1mm or less
Allowable Dynamic Moment (*)	Ma: 8.9 N·m Mb: 12.7 N·m Mc: 18.6 N·m
Overhang Load Length	Ma direction: 150mm or less; Mb·Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Reversed-home	NM	→ A-33	

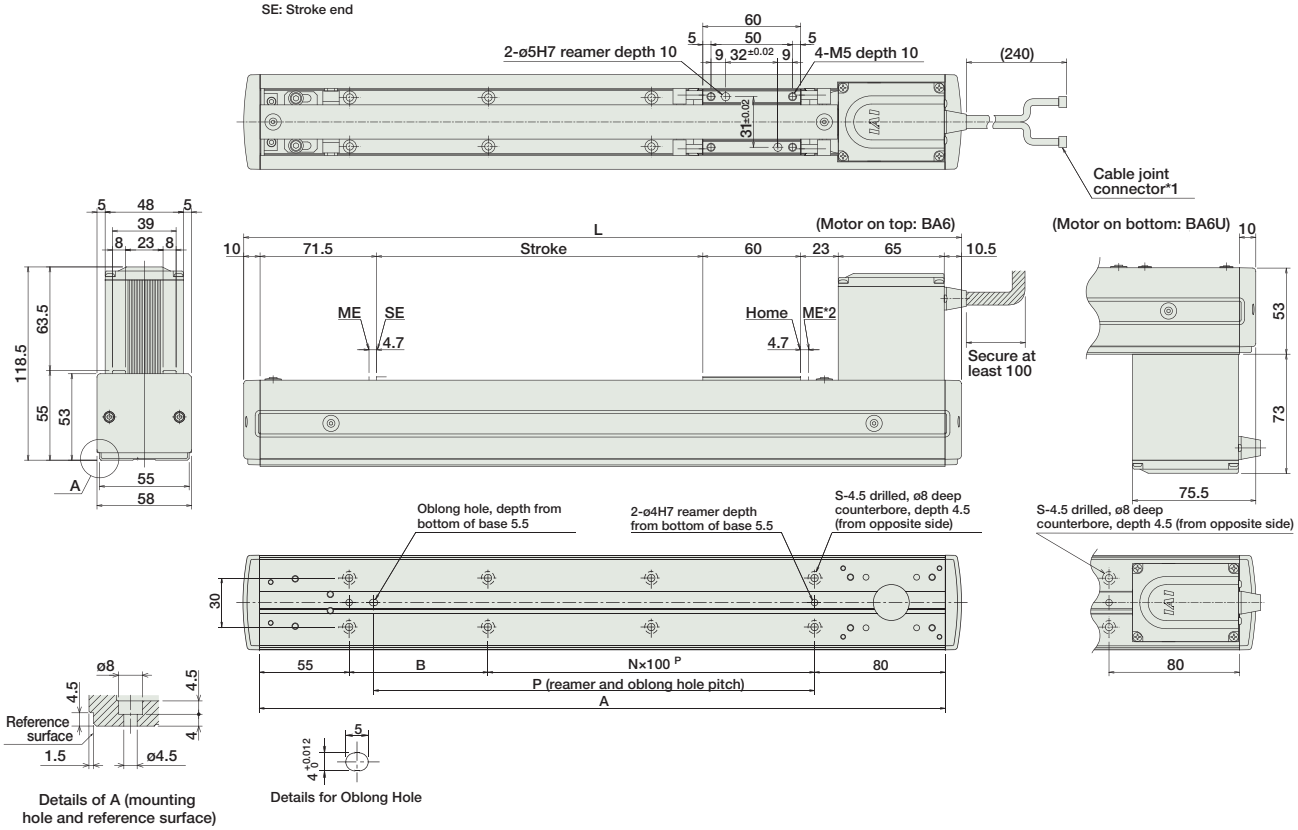
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders A-9

2/3D CAD

*1 The 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



Details of A (mounting hole and reference surface)

Details for Oblong Hole

■ Dimensions/Weight by Stroke

Stroke	500	550	600	650	700	750	800	850	900	950	1000
L	740	790	840	890	940	990	1040	1090	1140	1190	1240
A	720	770	820	870	920	970	1020	1070	1120	1170	1220
B	85	35	85	35	85	35	85	35	85	35	85
N	5	6	6	7	7	8	8	9	9	10	10
P	570	620	670	720	770	820	870	920	970	1020	1070
S	14	16	16	18	18	20	20	22	22	24	24
Weight (kg)	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.7	3.8	3.9	4.1

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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.

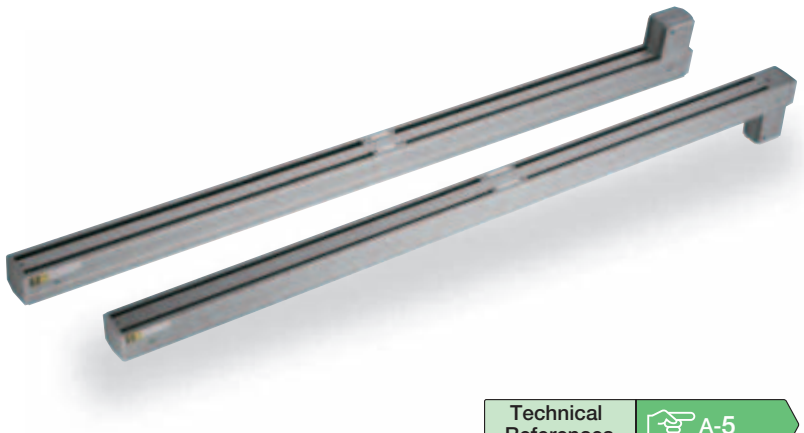
RCP2-BA7/BA7U

RoboCylinder Belt Type 68mm Width Pulse Motor
Top-Mounted Motor / Bottom-Mounted Motor

■ Configuration: RCP2 — □ — I — 42P — 54 — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	BA7: Belt type Top-mounted motor BA7U: Belt type Bottom-mounted motor	I: Incremental * The Simple absolute encoder models are labeled as "I".	42P: Pulse motor 42 □ size	54:54mm	600: 600mm \ 1200:1200mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom Length R□□ : Robot cable	NM: Reversed-home

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



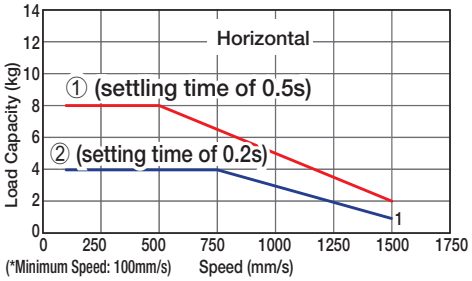
Technical References A-5

POINT Notes on Selection

(1) Operating the belt type actuator at low speeds may cause vibration and/or resonance. Therefore, please set the speed at 100mm/s or faster.
(2) 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.
(3) The load capacity is based on operation at an acceleration of 0.5G. 0.5G is the upper limit for the acceleration.

■ 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.



Note:
Graph ① is for standard specifications, with settling time of 0.5s for calculating the positioning time.
Graph ② reflects some changes in the controller settings. The load capacity is lower, however the settling time is decreased to 0.2s.
If the load capacity is lower than graph ②, and you want to shorten the positioning time, change the controller settings. (See the manual for details.)

(Vertical operation is not possible.)

Actuator Specifications

■ Lead and Load Capacity

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

Model	Motor Mounting Direction	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2-BA7-I-42P-54-①-②-③-④	Top	54 equivalent	～8	Not Allowed	600～1200 (50mm increments)
RCP2-BA7U-I-42P-54-①-②-③-④	Bottom				

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	600～1200 (50mm increments)
54 equivalent	1500

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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)	

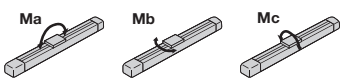
* See page A-39 for cables for maintenance.

Actuator Specifications

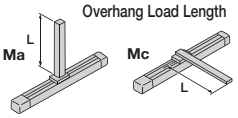
Item	Description
Drive System	Timing Belt
Positioning Repeatability	±0.1mm
Lost Motion	0.1mm or less
Allowable Dynamic Moment (*)	Ma: 13.8 N·m Mb: 19.7 N·m Mc: 29.0 N·m
Overhang Load Length	Ma direction: 150mm or less; Mb·Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Reversed-home	NM	→ A-33	

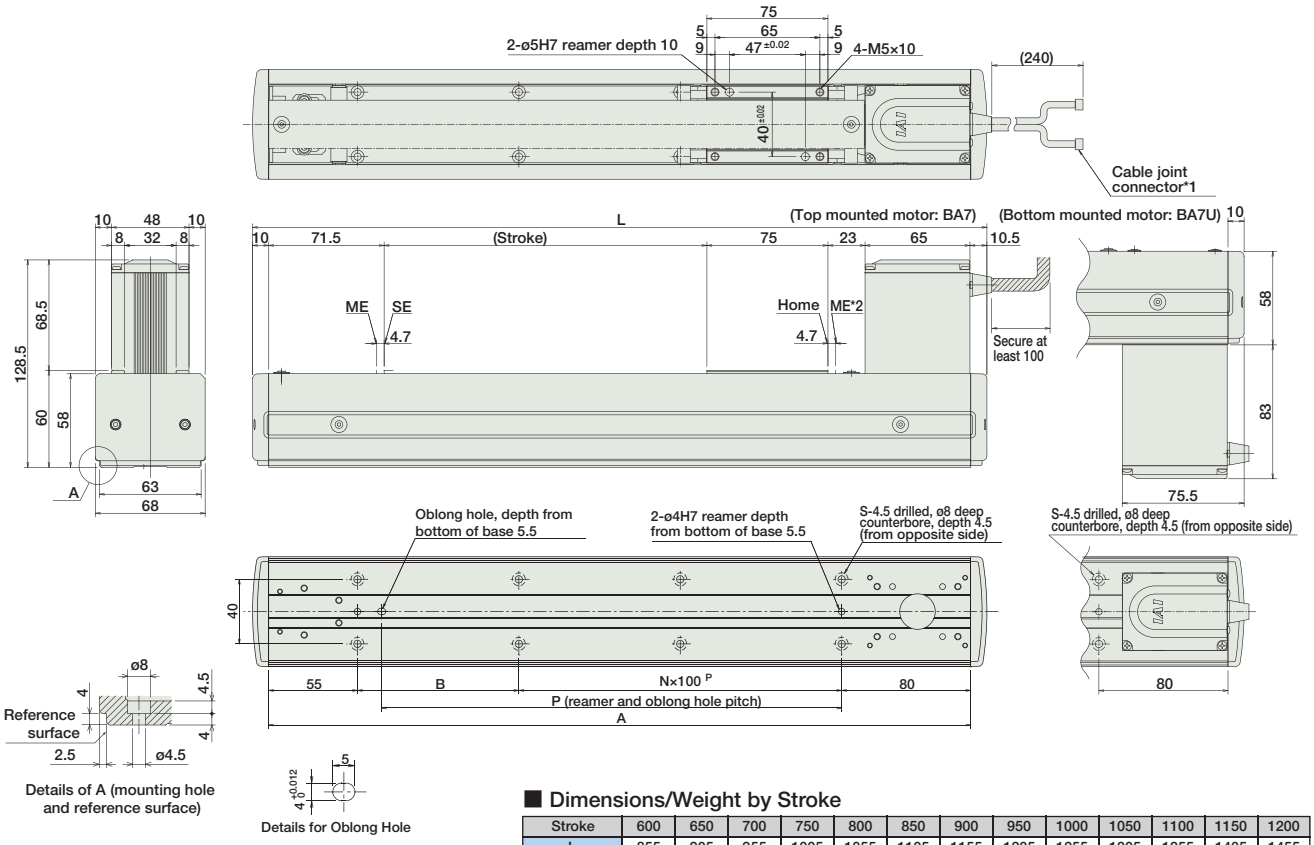
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders A-9

*1 The 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



Dimensions/Weight by Stroke

Stroke	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
L	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355	1405	1455
A	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385	1435
B	100	50	100	50	100	50	100	50	100	50	100	50	100
N	6	7	7	8	8	9	9	10	10	11	11	12	12
P	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285
S	16	18	18	20	20	22	22	24	24	26	26	28	28
Weight (kg)	3.6	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.2	5.3

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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.

RCP3-RA2AC

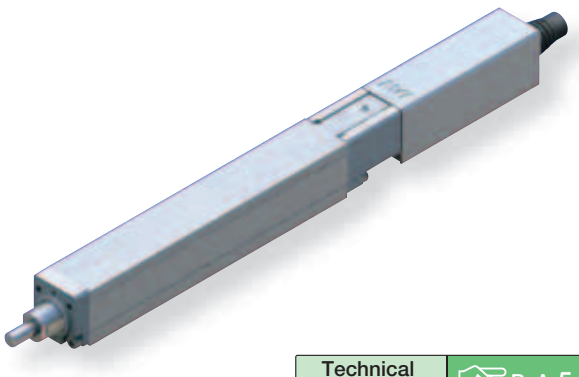
RoboCylinder Mini Rod Type Motor Unit Coupling Type 22mm Width
Pulse Motor Ball Screw/Lead Screw

Configuration

RCP3 – RA2AC – I – □ – □ – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental specification * Model number is "I" when used with simple absolute unit.	20P: Pulse Motor 20□ size Standard type 20SP: Pulse Motor 20□ size High-load type	4: Ball screw 4mm 2: Ball screw 2mm 1: Ball screw 1mm 4S: Lead screw 4mm 2S: Lead screw 2mm 1S: Lead screw 1mm	25: 25mm ~ 100: 100mm (every 25mm)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length	B: Brake NM: Reversed-home specification

* See page Pre-35 for details on the model descriptions.



Technical References P. A-5

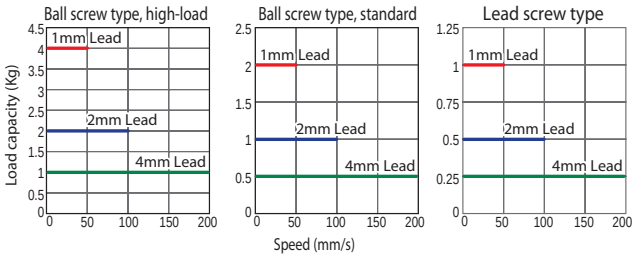
POINT
Notes on selection

(1) The payload is the value when the actuator is operated at an acceleration of 0.3 G (0.2 G for the lead screw specification, if used vertically). The acceleration limit is the value indicated above.
(2) The horizontal payload is the value when used in combination with an external guide. Please note that if an external force is applied to the rod in a direction other than the proper direction the rod travels, the detent may get damaged.
(3) The maximum pushing force is the value when the actuator is operated at a speed of 5 mm/s.
(4) Service life decreases significantly if used in a dusty environment.

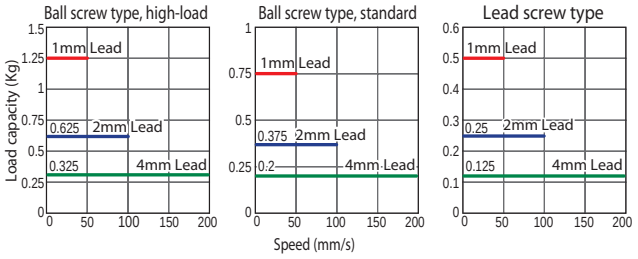
Correlation Diagrams of Speed and Load Capacity

With the RCP3 series, due to the characteristics of the pulse motor, load capacity decreases as the speed increases. Use the chart below to confirm that the desired speed and load capacity requirements are met.

Horizontal



Vertical



Actuator Specifications

Lead and Load Capacity

Model	Motor type	Feed screw	Lead (mm)	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum pushing force (N)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-RA2AC-I-20SP-4-①-②-③-④	High-load	Ball screw	4	1	0.325	See page A-68	±0.02	25 to 100 (every 25mm)
RCP3-RA2AC-I-20SP-2-①-②-③-④			2	2	0.625			
RCP3-RA2AC-I-20SP-1-①-②-③-④			1	4	1.25			
RCP3-RA2AC-I-20P-4-①-②-③-④	Standard		4	0.5	0.2			
RCP3-RA2AC-I-20P-2-①-②-③-④			2	1	0.375			
RCP3-RA2AC-I-20P-1-①-②-③-④			1	2	0.75			
RCP3-RA2AC-I-20P-4S-①-②-③-④	Standard	Lead screw	4	0.25	0.125		±0.05	
RCP3-RA2AC-I-20P-2S-①-②-③-④			2	0.5	0.25			
RCP3-RA2AC-I-20P-1S-①-②-③-④			1	1	0.5			

Legend ① Stroke ② Compatible Controllers ③ Cable length ④ Option

Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 to 100 (mm)
Ball screw 4	180	200
Ball screw 2	100	
Ball screw 1	50	
Lead screw 4	180	200
Lead screw 2	100	
Lead screw 1	50	

(Unit = mm/s)

Cable List

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

* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item		Description
Drive System		Ball screw/Lead screw, Ø4 mm, rolled C10
Lost motion		Ball screw: 0.1 mm or less/Lead screw: 0.3 mm or less (default value)
Base		Material: Aluminum, white alumite treated
Guide		Slide guide
Ambient operating temperature, humidity		0 to 40 °C, 85% RH or less (Non-condensing)
Service life	Lead screw specification	Horizontal: 10 million cycles Vertical: 5 million cycles
	Ball screw specification	5000 km

Option List

Name	Option Code	See Page	
Brake	**B**	→ A-25	
Reversed-home	**NM**	→ A-33	

Dimensions

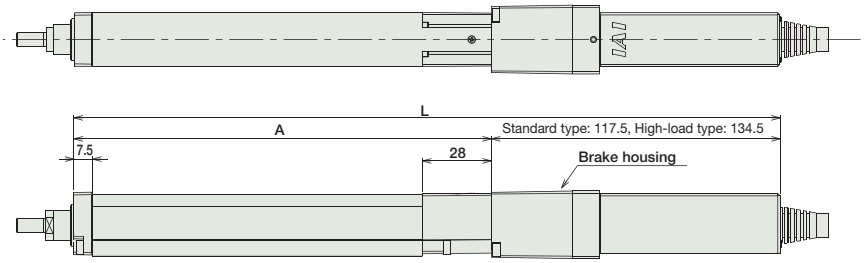
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

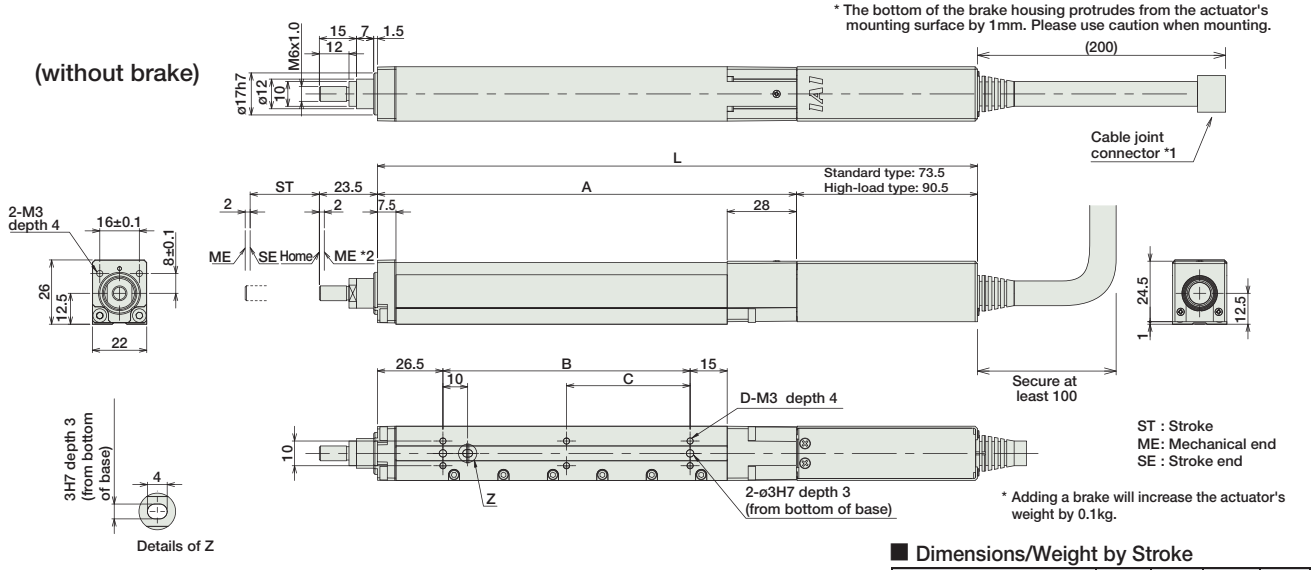
2/3D CAD

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

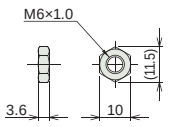
(with brake)



(without brake)



Dimensions of Nut



Dimensions/Weight by Stroke

Stroke		25	50	75	100
L	Standard type / No brake	168	193	218	243
	Standard type / Brake-equipped	212	237	262	287
	High-load type / No brake	185	210	235	260
	High-load type / Brake-equipped	229	254	279	304
A		94.5	119.5	144.5	169.5
B		25	50	75	100
C		0	0	0	50
D		4	4	4	6
Mass (kg)		0.31	0.33	0.36	0.37

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-RA2BC

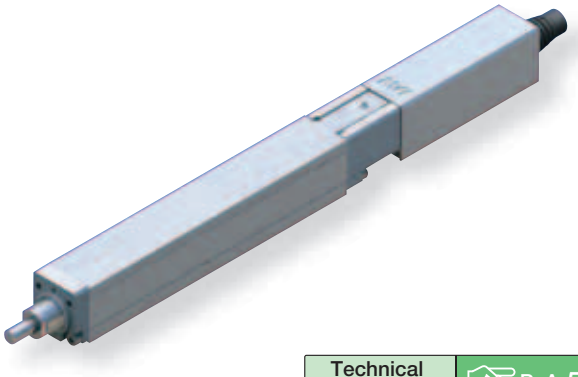
RoboCylinder Mini Rod type Motor Unit Coupling type 28mm Width Pulse Motor Ball Screw/Lead Screw

■Configuration

RCP3 – RA2BC – I – ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental specification * Model number is "I" when used with simple absolute unit.	20P: Pulse Motor 20☐ size Standard type 20SP: Pulse Motor 20☐ size High-load type	6: Ball screw 6mm 4: Ball screw 4mm 2: Ball screw 2mm 1: Ball screw 1mm 6S: Lead screw 6mm 4S: Lead screw 4mm 2S: Lead screw 2mm	25: 25 mm ~ 150:150 mm (every 25mm)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X☐☐: Custom Length	B: Brake NM: Reversed-home specification

*See page Pre-35 for details on the model descriptions.



Technical References P. A-5

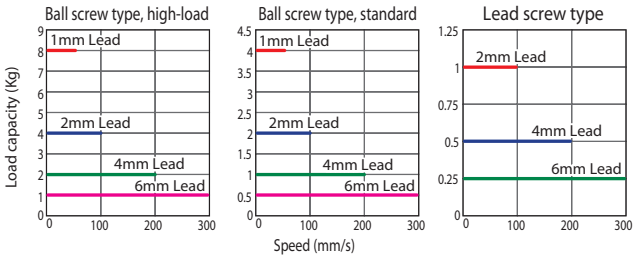
POINT Notes on selection

(1) The payload is the value when the actuator is operated at an acceleration of 0.3 G (0.2 G for the lead screw specification, if used vertically). The acceleration limit is the value indicated above.
(2) The horizontal payload is the value when used in combination with an external guide. Please note that if an external force is applied to the rod in a direction other than the proper direction the rod travels, the detent may get damaged.
(3) The maximum pushing force is the value when the actuator is operated at a speed of 5 mm/s.
(4) Service life decreases significantly if used in a dusty environment.

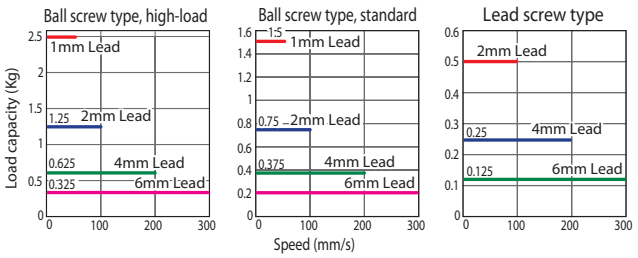
■Correlation Diagrams of Speed and Load Capacity

With the RCP3 series, due to the characteristics of the pulse motor, load capacity decreases as the speed increases. Use the chart below to confirm that the desired speed and load capacity requirements are met.

Horizontal



Vertical



Actuator Specifications

■Lead and Load Capacity

Model	Motor type	Feed screw	Lead (mm)	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum pushing force (N)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-RA2BC-I-20SP-6- ① - ② - ③ - ④	High-load	Ball screw	6	1	0.325	See page A-68	±0.02	25 to 150 (every 25mm)
RCP3-RA2BC-I-20SP-4- ① - ② - ③ - ④			4	2	0.625			
RCP3-RA2BC-I-20SP-2- ① - ② - ③ - ④			2	4	1.25			
RCP3-RA2BC-I-20SP-1- ① - ② - ③ - ④			1	8	2.5			
RCP3-RA2BC-I-20P- 6 - ① - ② - ③ - ④	Standard		6	0.5	0.2			
RCP3-RA2BC-I-20P- 4 - ① - ② - ③ - ④			4	1	0.375			
RCP3-RA2BC-I-20P- 2 - ① - ② - ③ - ④			2	2	0.75			
RCP3-RA2BC-I-20P- 1 - ① - ② - ③ - ④			1	4	1.5			
RCP3-RA2BC-I-20P-6S- ① - ② - ③ - ④	Standard	Lead screw	6	0.25	0.125		±0.05	
RCP3-RA2BC-I-20P-4S- ① - ② - ③ - ④			4	0.5	0.25			
RCP3-RA2BC-I-20P-2S- ① - ② - ③ - ④			2	1	0.5			

Legend ① Stroke ② Compatible Controllers ③ Cable length ④ Option

■Stroke and Maximum Speed

Lead \ Stroke	25 (mm)	50 (mm)	75 to 150 (mm)
Ball screw 6	180	280	300
Ball screw 4	180	200	
Ball screw 2	100		
Ball screw 1	50		
Lead screw 6	180	280	300
Lead screw 4	180	200	
Lead screw 2	100		

(Unit = mm/s)

Cable list

Type	Cable symbol	
Standard type (Robot cable)	**P** (1m)	
	S (3m)	
	M (5m)	
Special length	**X06** (6m) to **X10** (10m)	
	X11 (11m) to **X15** (15m)	
	X16 (16m) to **X20** (20m)	

* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item		Description
Drive System		Ball screw/Lead screw, Ø6 mm, rolled C10
Lost motion		Ball screw: 0.1 mm or less/Lead screw: 0.3 mm or less (default value)
Base		Material: Aluminum, white alumite treated
Guide		Slide guide
Ambient operating temperature, humidity		0 to 40 ˚C, 85% RH or less (Non-condensing)
Service life	Lead screw specification	Horizontal: 10 million cycles Vertical: 5 million cycles
	Ball screw specification	5000 km

Option List

Title	Option code	See page	
Brake	**B**	→ A-25	
Reversed - home specification	**NM**	→ A-33	

Dimensions

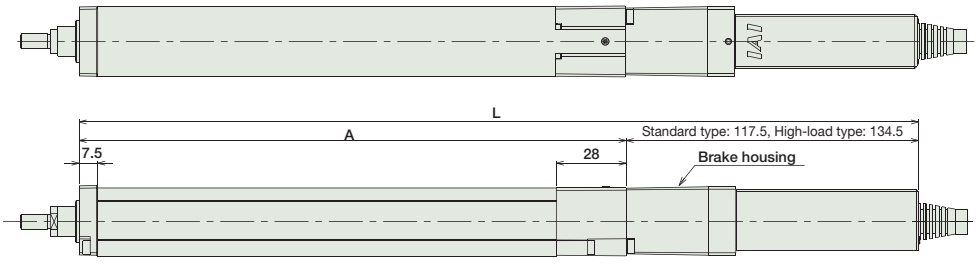
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

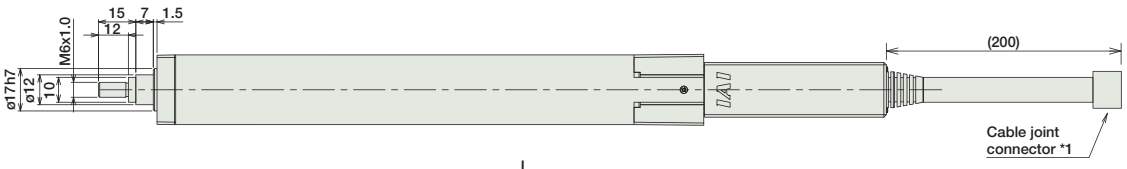
2/3D CAD

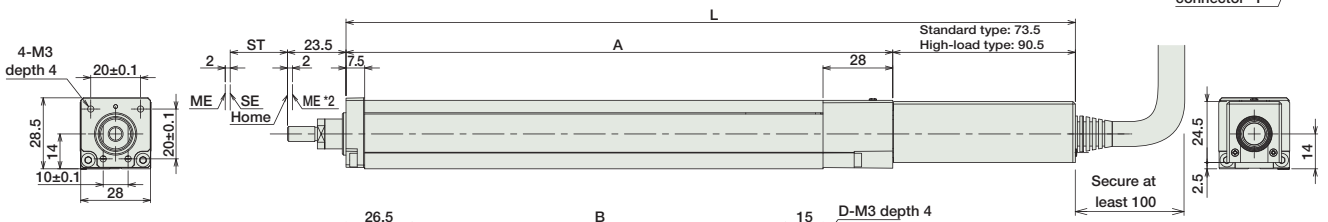
*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

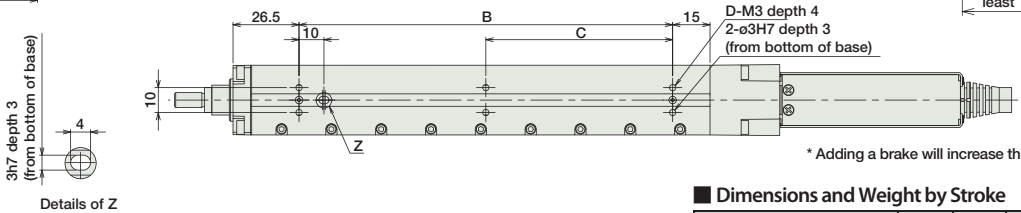
(with brake)



(without brake)





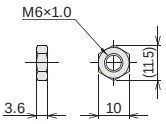


ST : Stroke
ME: Mechanical end
SE: Stroke end

Details of Z

* Adding a brake will increase the actuator's weight by 0.1kg.

Dimensions of Nut



Dimensions and Weight by Stroke

Stroke			25	50	75	100	125	150
L	Standard type	No brake	168	193	218	243	268	293
		Brake-equipped	212	237	262	287	312	337
	High-load type	No brake	185	210	235	260	285	310
		Brake-equipped	229	254	279	304	329	354
A			94.5	119.5	144.5	169.5	194.5	219.5
B			25	50	75	100	125	150
C			0	0	0	50	62.5	75
D			4	4	4	6	6	6
Mass (kg)			0.36	0.39	0.42	0.45	0.48	0.51

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-RA2AR

RoboCylinder Mini Rod type Side-Mounted Motor Type 22mm Width Pulse Motor
Ball Screw/Lead Screw

■Configuration

RCP3 – RA2AR – I – ☐ – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental specification * Model number is "I" when used with simple absolute unit.	20P: Pulse Motor 20☐ size Standard type 20SP: Pulse Motor 20☐ size High-load type	4: Ball screw 4mm 2: Ball screw 2mm 1: Ball screw 1mm 4S: Lead screw 4mm 2S: Lead screw 2mm 1S: Lead screw 1mm	25: 25 mm ~ 100:100 mm (every 25mm)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X☐☐: Custom Length	See options table below. * Be sure to specify which side the motor is to be mounted (ML/MR)

*See page Pre-35 for details on the model descriptions.

Technical References P. A-5

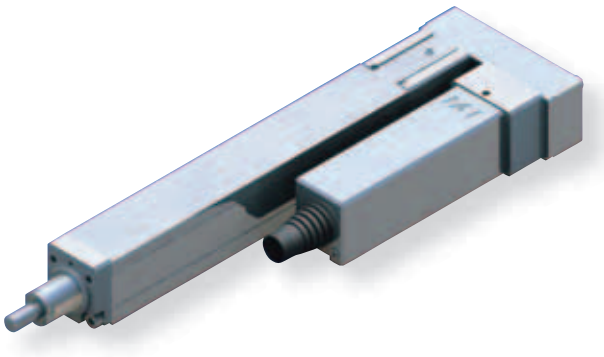


Photo above shows specification with motor reversing to the left (ML Option).

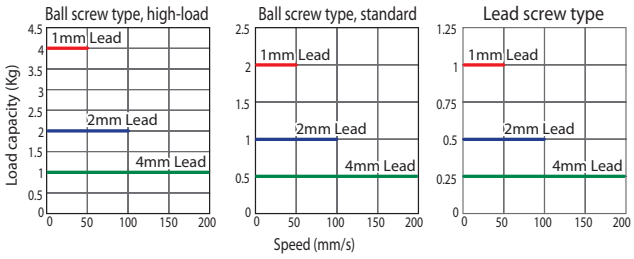
POINT Notes on selection

(1) The payload is the value when the actuator is operated at an acceleration of 0.3 G (0.2 G for the lead screw specification, if used vertically). The acceleration limit is the value indicated above.
(2) The horizontal payload is the value when used in combination with an external guide. Please note that if an external force is applied to the rod in a direction other than the proper direction the rod travels, the detent may get damaged.
(3) The maximum pushing force is the value when the actuator is operated at a speed of 5 mm/s.
(4) Service life decreases significantly if used in a dusty environment.

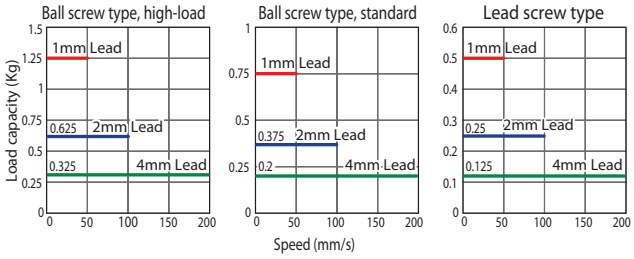
■Correlation Diagrams of Speed and Load Capacity

With the RCP3 series, due to the characteristics of the pulse motor, load capacity decreases as the speed increases. Use the chart below to confirm that the desired speed and load capacity requirements are met.

Horizontal



Vertical



Actuator Specifications

■Lead and Load Capacity

Model	Motor type	Feed screw	Lead (mm)	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum pushing force (N)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-RA2AR-I-20SP-4- ① - ② - ③ - ④	High-load	Ball screw	4	1	0.325	See page A-68	±0.02	25 to 100 (every 25mm)
RCP3-RA2AR-I-20SP-2- ① - ② - ③ - ④			2	2	0.625			
RCP3-RA2AR-I-20SP-1- ① - ② - ③ - ④			1	4	1.25			
RCP3-RA2AR-I-20P-4- ① - ② - ③ - ④	Standard		4	0.5	0.2			
RCP3-RA2AR-I-20P-2- ① - ② - ③ - ④			2	1	0.375			
RCP3-RA2AR-I-20P-1- ① - ② - ③ - ④			1	2	0.75			
RCP3-RA2AR-I-20P-4S- ① - ② - ③ - ④	Standard	Lead screw	4	0.25	0.125		±0.05	
RCP3-RA2AR-I-20P-2S- ① - ② - ③ - ④			2	0.5	0.25			
RCP3-RA2AR-I-20P-1S- ① - ② - ③ - ④			1	1	0.5			

Legend ① Stroke ② Compatible Controllers ③ Cable length ④ Option

■Stroke and Maximum Speed

Lead		Stroke 25 (mm)	Stroke 50 to 100 (mm)
Ball screw	4	180	200
	2	100	
	1	50	
Lead screw	4	180	200
	2	100	
	1	50	

(Unit = mm/s)

Cable List

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

* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Option List

Title	Option code	See page	
Brake	**B**	→ A-25	
Side-mounted motor to the left (standard)	**ML**	→ A-33	
Side-mounted motor to the right	**MR**	→ A-33	
Reversed-home specification	**NM**	→ A-33	

Actuator Specifications

Item		Description
Drive System		Ball screw/Lead screw, Ø4 mm, rolled C10
Lost motion		Ball screw: 0.1 mm or less/Lead screw: 0.3 mm or less (default value)
Base		Material: Aluminum, white alumite treated
Guide		Slide guide
Ambient operating temperature, humidity		0 to 40 ˚C, 85% RH or less (Non-condensing)
Service life	Lead screw specification	Horizontal: 10 million cycles Vertical: 5 million cycles
	Ball screw specification	5000 km

Dimensions

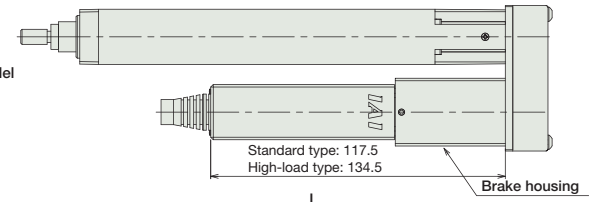
CAD drawings can be downloaded from IAI website. www.robocylinder.de

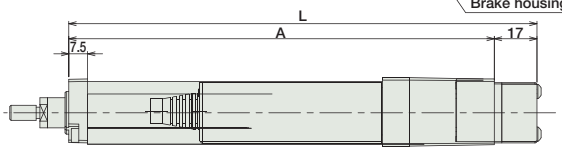
For Special Orders P. A-9

2/3D CAD

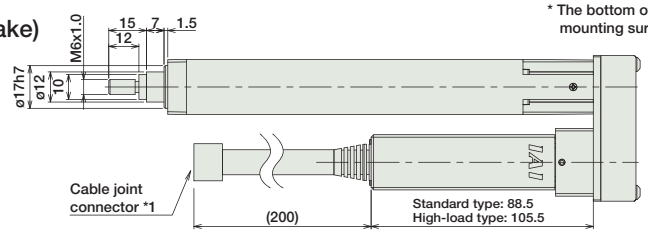
* The figure below shows the left-mounted motor model

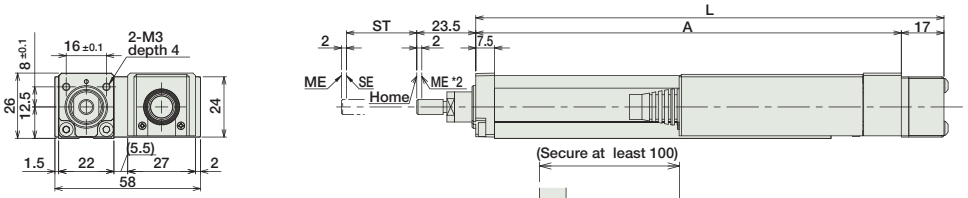
(with brake)



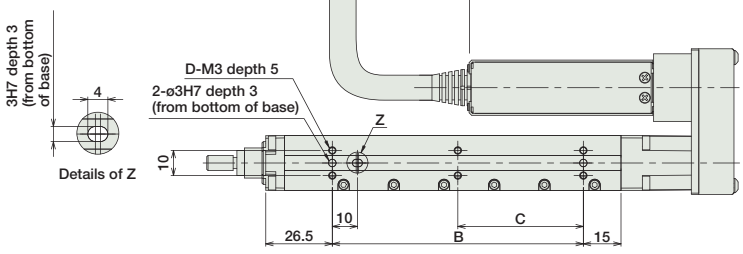


(without brake)



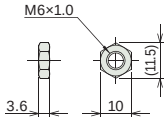


ST : Stroke
ME: Mechanical end
SE: Stroke end



* Adding a brake will increase the actuator's weight by 0.1kg.

Dimensions of Nut



Dimensions/Weight by Stroke

Stroke	25	50	75	100
L	111.5	136.5	161.5	186.5
A	94.5	119.5	144.5	169.5
B	25	50	75	100
C	0	0	0	50
D	4	4	4	6
Weight (kg)	0.34	0.36	0.39	0.4

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

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

* The bottom of the brake housing protrudes from the actuator's mounting surface by 1m. Please use caution when mounting.

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-RA2BR

RoboCylinder Mini Rod type Side-Mounted Motor Type 28mm Width Pulse Motor
Ball Screw/Lead Screw

■ Configuration

RCP3 – RA2BR – I – □ – □ – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	RA2BR	I: Incremental specification * Model number is "I" when used with simple absolute unit.	20P: Pulse Motor 20□ size Standard type 20SP: Pulse Motor 20□ size High-load type	6: Ball screw 6mm 4: Ball screw 4mm 2: Ball screw 2mm 1: Ball screw 1mm 6S: Lead screw 6mm 4S: Lead screw 4mm 2S: Lead screw 2mm	25: 25 mm ↓ 150:150 mm (every 25mm)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length	See options table below. * Be sure to specify which side the motor is to be mounted (ML/MR)

*See page Pre-35 for details on the model descriptions.

Technical References P. A-5

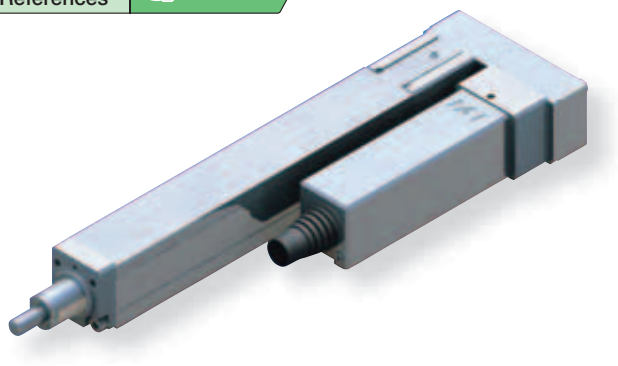


Photo above shows specification with motor reversing to the left (ML Option).

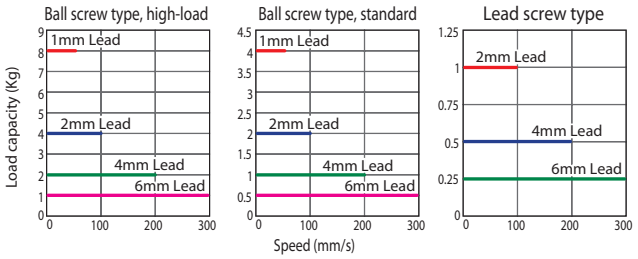
POINT Notes on selection

(1) The payload is the value when the actuator is operated at an acceleration of 0.3 G (0.2 G for the lead screw specification, if used vertically). The acceleration limit is the value indicated above.
(2) The horizontal payload is the value when used in combination with an external guide. Please note that if an external force is applied to the rod in a direction other than the proper direction the rod travels, the detent may get damaged.
(3) The maximum pushing force is the value when the actuator is operated at a speed of 5 mm/s.
(4) Service life decreases significantly if used in a dusty environment.

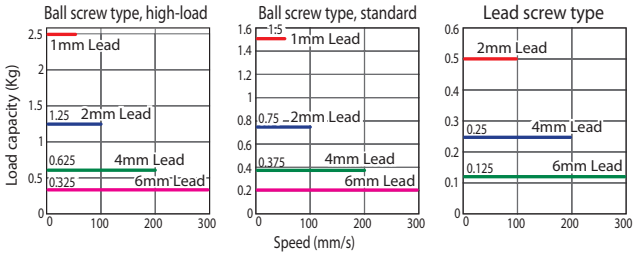
■ Correlation Diagrams of Speed and Load Capacity

With the RCP3 series, due to the characteristics of the pulse motor, load capacity decreases as the speed increases. Use the chart below to confirm that the desired speed and load capacity requirements are met.

Horizontal



Vertical



Actuator Specifications

■ Lead and Load Capacity

Model	Motor type	Feed screw	Lead (mm)	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum pushing force (N)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-RA2BR-I-20SP-6- ① - ② - ③ - ④	High-load	Ball screw	6	1	0.325	See page A-68	±0.02	25 to 150 (every 25mm)
RCP3-RA2BR-I-20SP-4- ① - ② - ③ - ④			4	2	0.625			
RCP3-RA2BR-I-20SP-2- ① - ② - ③ - ④			2	4	1.25			
RCP3-RA2BR-I-20SP-1- ① - ② - ③ - ④			1	8	2.5			
RCP3-RA2BR-I-20P- 6 - ① - ② - ③ - ④	Standard		6	0.5	0.2			
RCP3-RA2BR-I-20P- 4 - ① - ② - ③ - ④			4	1	0.375			
RCP3-RA2BR-I-20P- 2 - ① - ② - ③ - ④			2	2	0.75			
RCP3-RA2BR-I-20P- 1 - ① - ② - ③ - ④			1	4	1.5			
RCP3-RA2BR-I-20P-6S- ① - ② - ③ - ④	Standard	Lead screw	6	0.25	0.125		±0.05	
RCP3-RA2BR-I-20P-4S- ① - ② - ③ - ④			4	0.5	0.25			
RCP3-RA2BR-I-20P-2S- ① - ② - ③ - ④			2	1	0.5			

■ Stroke and Maximum Speed

Lead	Stroke 25 (mm)	50 (mm)	75 to 150 (mm)
Ball screw 6	180	280	300
Ball screw 4	180	200	
Ball screw 2	100		
Ball screw 1	50		
Lead screw 6	180	280	300
Lead screw 4	180	200	
Lead screw 2	100		

Legend ① Stroke ② Compatible Controllers ③ Cable length ④ Option

(Unit = mm/s)

Cable List

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

* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item		Description
Drive System		Ball screw/Lead screw, Ø6 mm, rolled C10
Lost motion		Ball screw: 0.1 mm or less/Lead screw: 0.3 mm or less (default value)
Base		Material: Aluminum, white alumite treated
Guide		Slide guide
Ambient operating temperature, humidity		0 to 40 ˚C, 85% RH or less (Non-condensing)
Service life	Lead screw specification	Horizontal: 10 million cycles Vertical: 5 million cycles
	Ball screw specification	5000 km

Option List

Name	Option Code	See Page	
Brake	**B**	→ A-25	
Left-Mounted Motor (Standard)	**ML**	→ A-33	
Right-Mounted Motor	**MR**	→ A-33	
Reversed-home	**NM**	→ A-33	

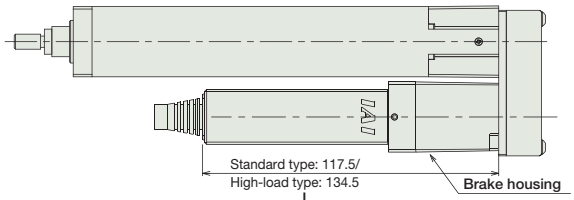
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

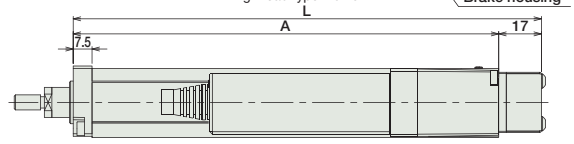
* The diagram below shows a left-mounted motor model.



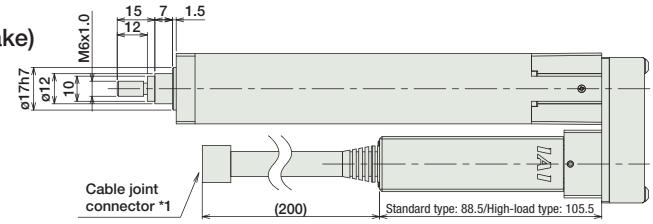
*1 A motor-encoder cable is connected here. See page A-39 for details on cables.

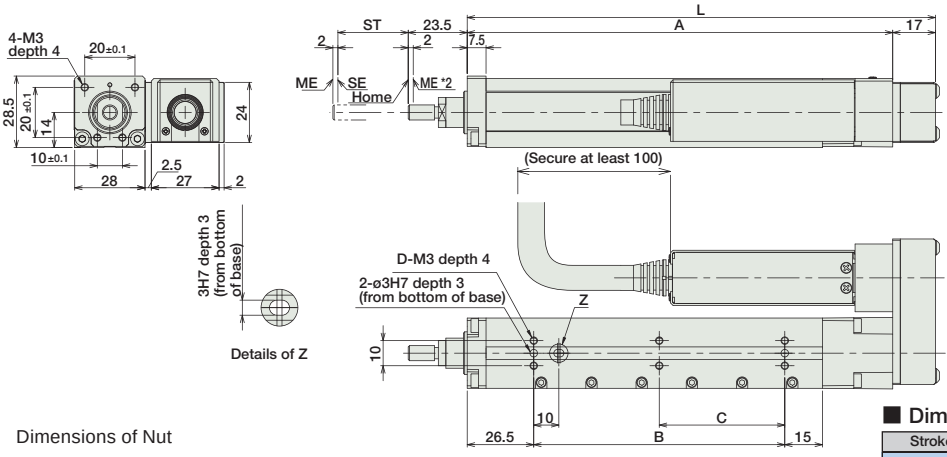
*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

(with brake)



(without brake)

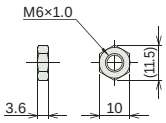




ST : Stroke
ME: Mechanical end
SE: Stroke end

* Adding a brake will increase the actuator's weight by 0.1kg.

Dimensions of Nut



Dimensions/Weight by Stroke

Stroke	25	50	75	100	125	150
L	111.5	136.5	161.5	186.5	211.5	236.5
A	94.5	119.5	144.5	169.5	194.5	219.5
B	25	50	75	100	125	150
C	0	0	0	50	62.5	75
D	4	4	4	6	6	6
Weight (kg)	0.38	0.41	0.44	0.47	0.50	0.53

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller,even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

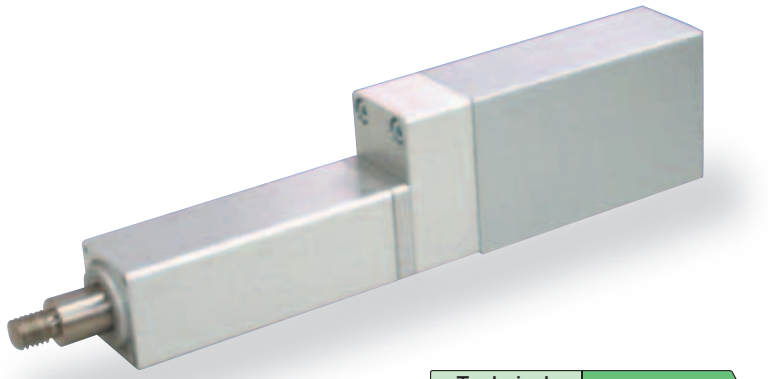
* This is for the single-axis PSEL.

RCP2-RA2C RoboCylinder Rod Type 25mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RA2C — I — 20P — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA2C	I: Incremental * The Simple absolute encoder is also considered type "I".	20P: Pulse motor 20 □ size	1 : 1mm	25: 25mm \ 100: 100mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom Length R □□ : Robot cable	FL : Flange FT : Foot bracket

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



Technical References P. A-5

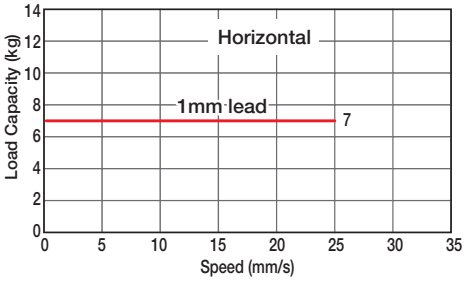
POINT Notes on Selection

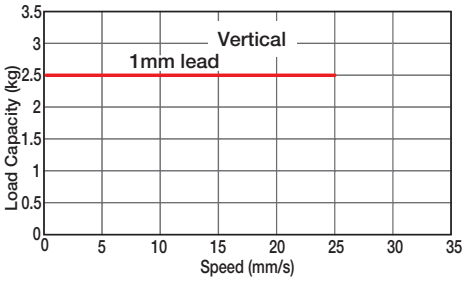
(1) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(2) The load capacity is based on operation at an acceleration of 0.05G. 0.05G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)(Note 1)	Stroke (mm)
RCP2-RA2C-I-20P-1-①-②-③-④	1	7	2.5	100	25 ~ 100 (25mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 1) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	25 ~ 100 (25mm increments)
1	25

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø6mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø12mm
Non-rotating accuracy of rod	±2.1 deg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange	FL	→ A-27	
Foot bracket	FT	→ A-29	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

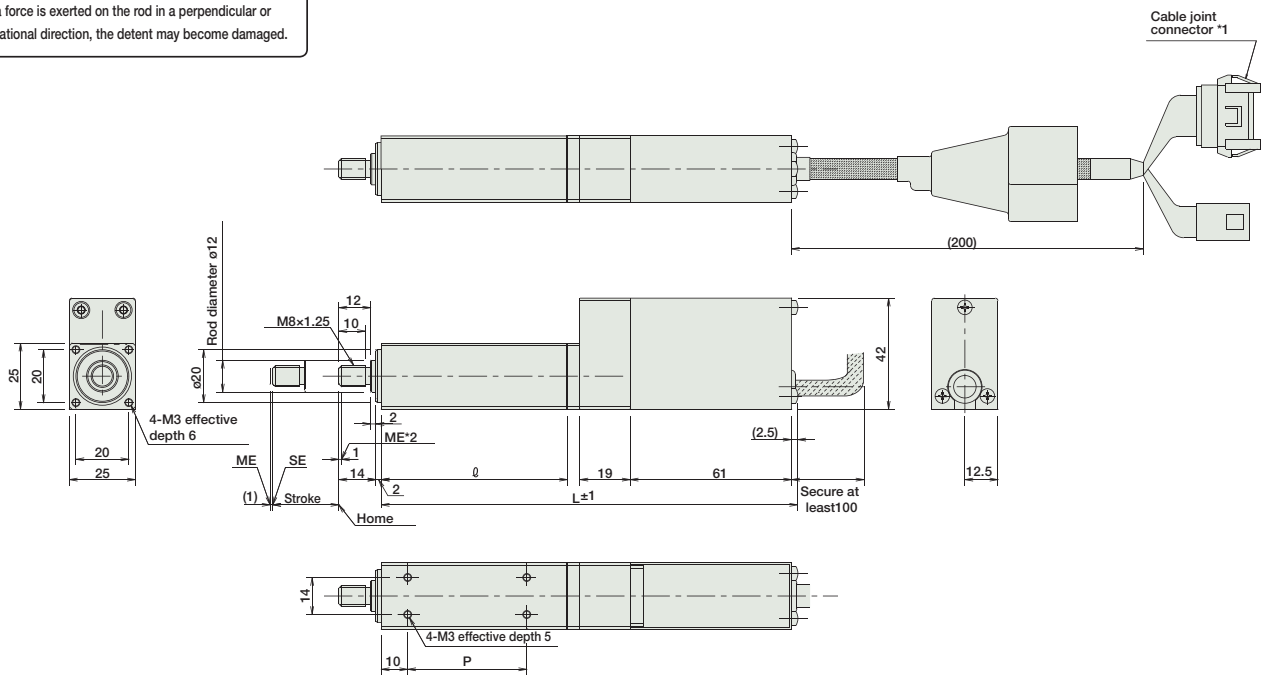
* The RA2C is not available in reversed-home configuration, due to its construction.

For Special Orders P. A-9

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

*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

Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



■ Dimensions/Weight by Stroke

Stroke	25	50	75	100
R	70	95	120	145
L	157.5	182.5	207.5	232.5
P	45	70	95	120
Weight (kg)	0.4	0.5	0.6	0.7

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

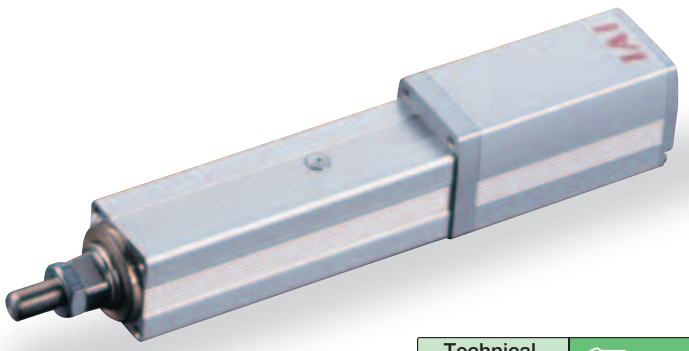
* This is for the single-axis PSEL.

RCP2-RA3C RoboCylinder Rod Type 35mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RA3C — I — 28P — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA3C	I: Incremental * The Simple absolute encoder is also considered type "I".	28P: Pulse motor 28 □ size	5 : 5mm 2.5 : 2.5mm	50: 50mm \ 200: 200mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom R □□: Robot cable	FL : Flange FT : Foot bracket NM: Reversed-home

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



Technical References P. A-5

POINT Notes on Selection

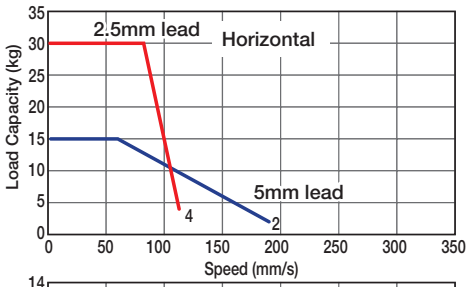
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

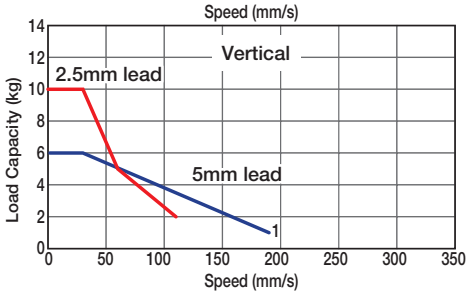
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA3C-I-28P-5-①-②-③-④	5	~ 15	~ 6	73.5	50 ~ 200 (50mm increments)
RCP2-RA3C-I-28P-2.5-①-②-③-④	2.5	~ 30	~ 10	156.8	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 200 (50mm increments)
5	187
2.5	114

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±1.5 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange	FL	→ A-27	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

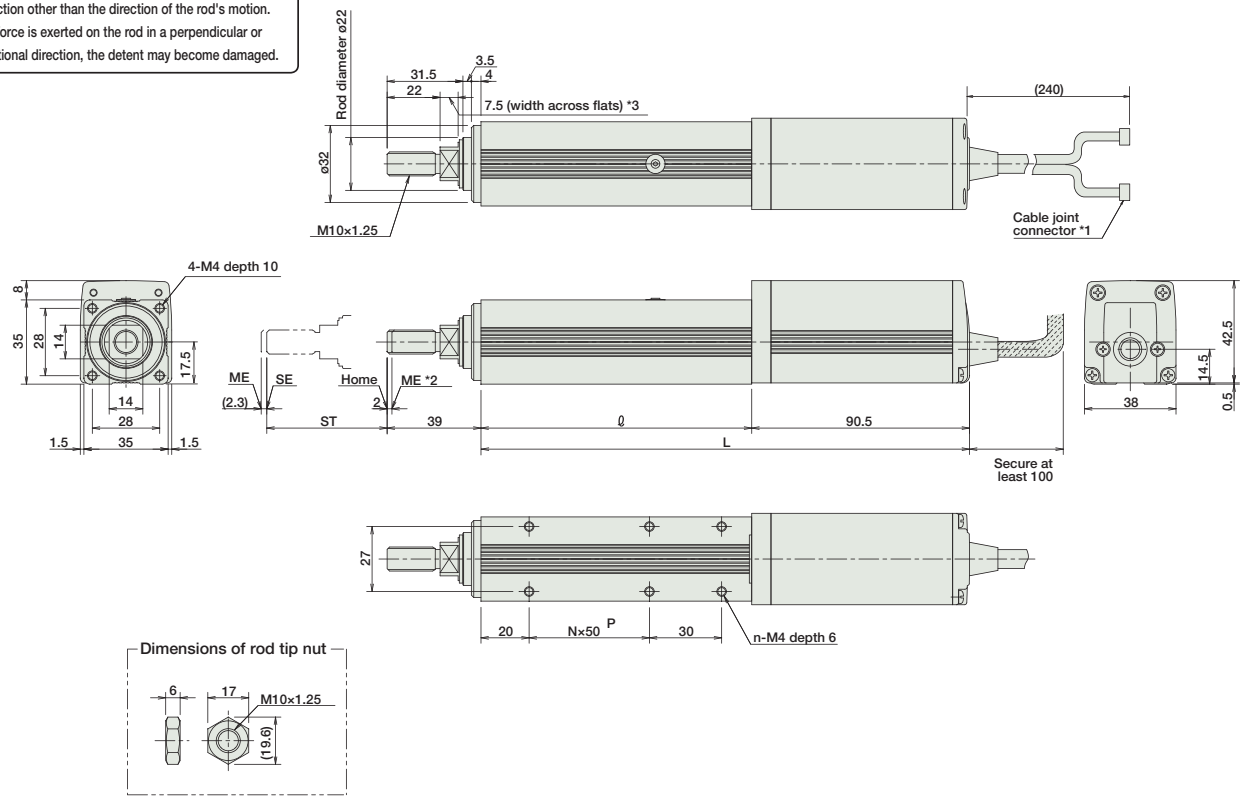
*1. The motor-encoder cable is connected here.
See page A-39 for details on cables.

*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

*3. The orientation of the bolt will vary depending on the product.

Note:

Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



Dimensions of rod tip nut

Dimensions/Weight by Stroke

Stroke	50	100	150	200
R	112.5	162.5	212.5	262.5
L	203	253	303	353
N	1	2	3	4
n	6	8	10	12
Weight (kg)	0.8	0.95	1.1	1.25

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28SPI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28SPI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28SPI-NP-2-0						
Positioner Type		PCON-C-28SPI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28SPI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28SPI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28SPI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28SPI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28SP	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28SPI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

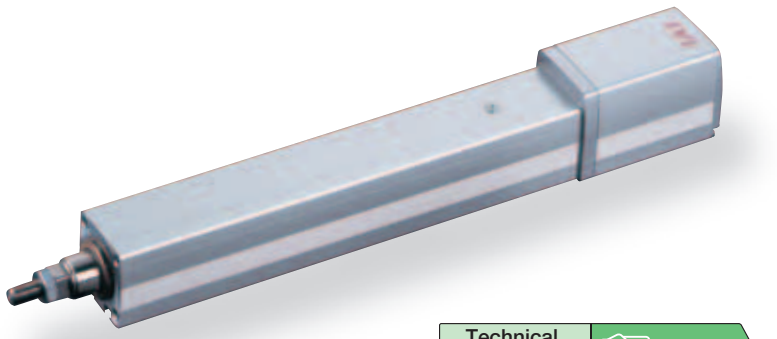
* This is for the single-axis PSEL.

RCP2-RA4C RoboCylinder Rod Type 45mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RA4C — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA4C	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm 〃 300: 300mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom R ☐☐: Robot cable	B : Brake FL : Flange FT : Foot bracket NM: Reversed-home

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



Technical References P. A-5

POINT Notes on Selection

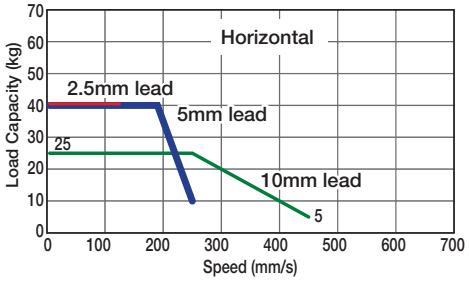
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

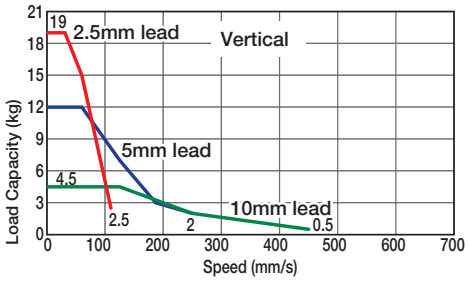
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA4C-I-42P-10-①-②-③-④	10	～25	～4.5	150	50～300 (50mm increments)
RCP2-RA4C-I-42P-5-①-②-③-④	5	～40	～12	284	
RCP2-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 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50～200 (50mm increments)	250 (mm)	300 (mm)
10	458	458	350
5	250	237	175
2.5	125 <114>	118 <114>	87

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±1.5 deg
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Option List

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

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

Note:

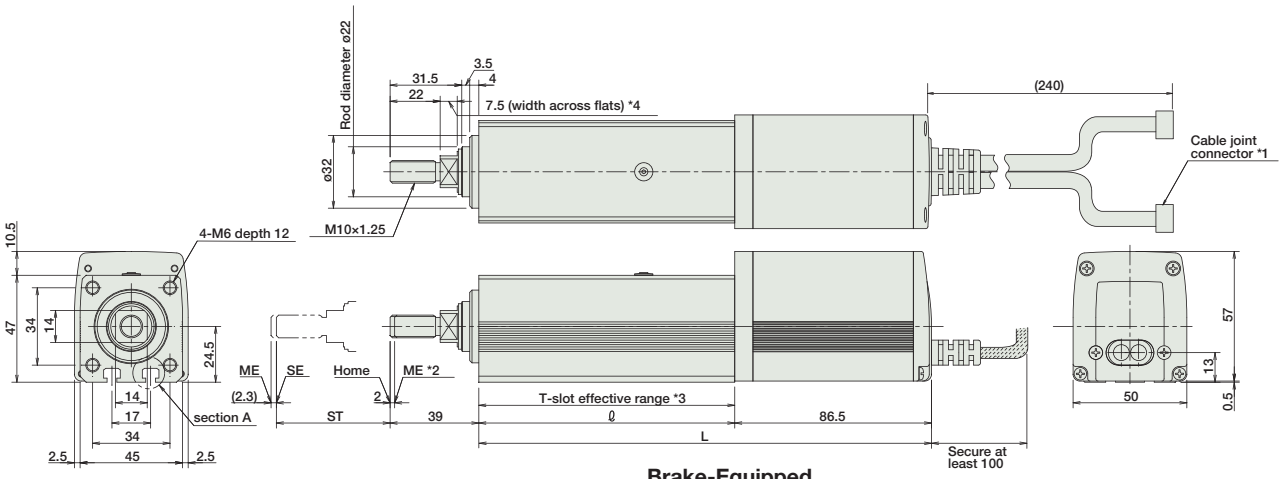
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

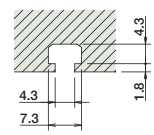
*1. The motor-encoder cable is connected here. See page A-39 for details on cables.

*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

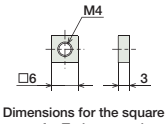
*3. Please note that there is no T-slot on the base of the brake unit.

*4. The orientation of the bolt will vary depending on the product.

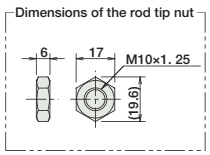




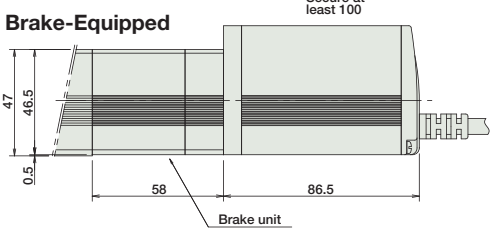
Details of section A



Dimensions for the square nuts for T-slot mounting (4 nuts provided)



Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
R	112.5	162.5	212.5	262.5	312.5	362.5
L	199	249	299	349	399	449
Weight (kg)	1.35	1.6	1.85	2.1	2.35	2.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

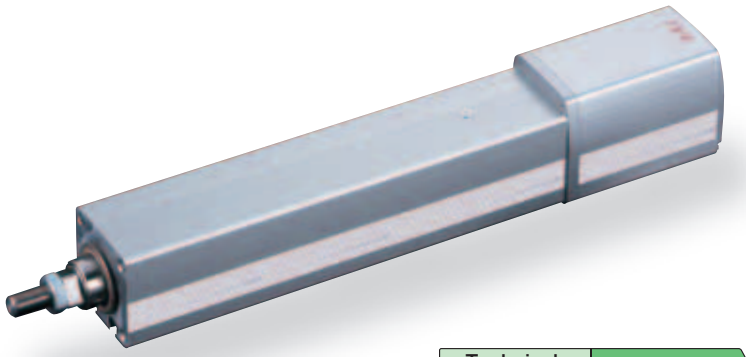
* This is for the single-axis PSEL.

RCP2-RA6C RoboCylinder Rod Type 64mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RA6C — I — 56P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA6C	I: Incremental * The Simple absolute encoder is also considered type "I".	56P: Pulse motor 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 R □□: Robot cable	B : Brake FL : Flange FT : Foot bracket NM: Reversed-home

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



Technical References P. A-5

POINT Notes on Selection

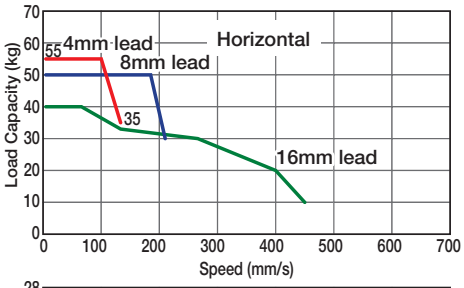
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

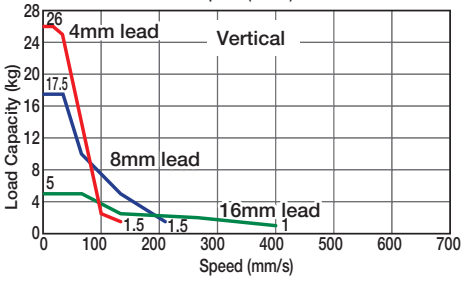
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA6C-I-56P-16-①-②-③-④	16	~ 40	~ 5	240	50 ~ 300 (50mm increments)
RCP2-RA6C-I-56P-8-①-②-③-④	8	~ 50	~ 17.5	470	
RCP2-RA6C-I-56P-4-①-②-③-④	4	~ 55	~ 26	800	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (50mm increments)
16	450 <400>
8	210
4	130

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

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

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

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

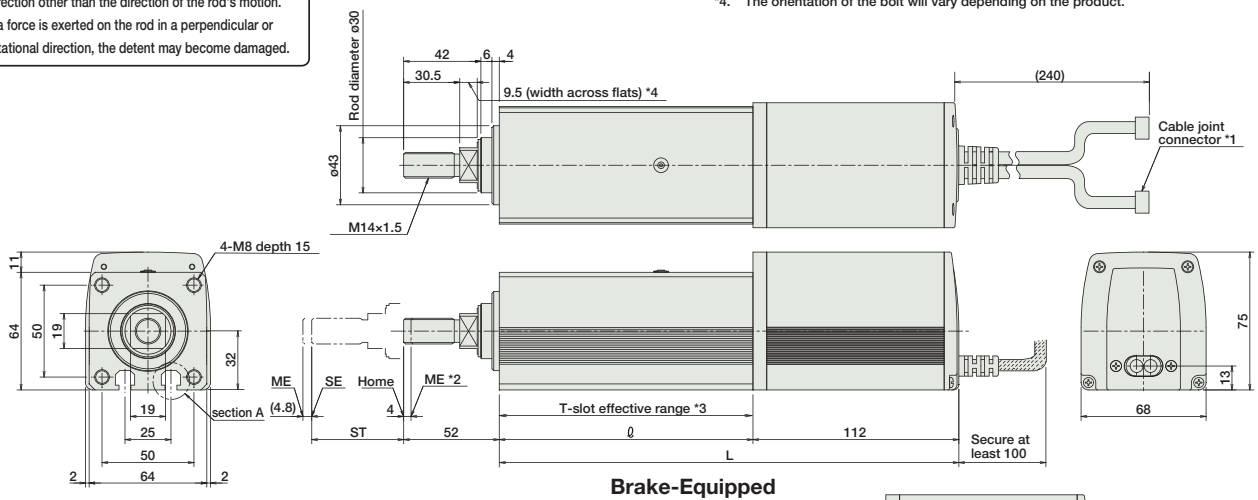
*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

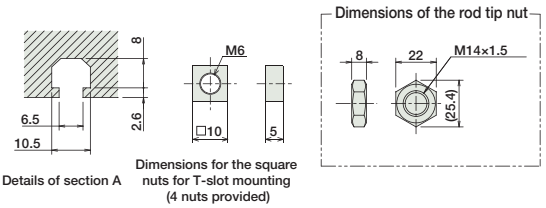
*3. Please note that there is no T-slot on the base of the brake unit.

*4. The orientation of the bolt will vary depending on the product.

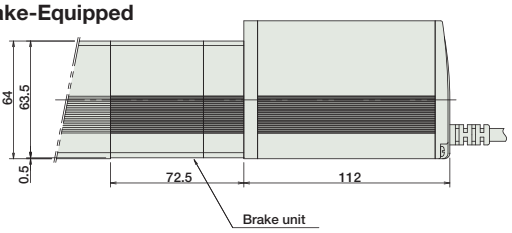
Note:

Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.





Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	138	188	238	288	338	388
L	250	300	350	400	450	500
Weight (kg)	3.1	3.6	4.1	4.6	5.1	5.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

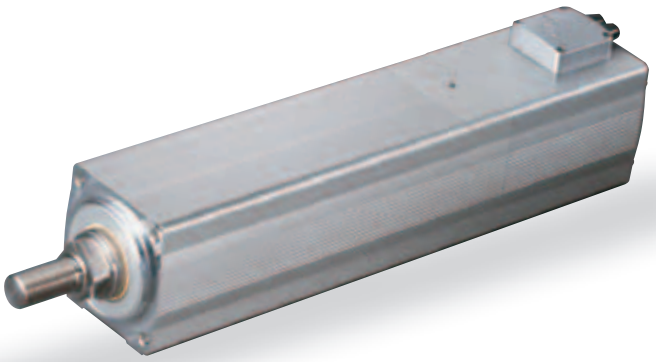
* This is for the single-axis PSEL.

RCP2-RA8C RoboCylinder Rod Type 85mm Width Pulse Motor Straight Type

■ Configuration: **RCP2** – **RA8C** – **I** – **60P** – □ – □ – **P2** – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA8C	I: Incremental * The Simple absolute encoder is also considered type "I".	60P: Pulse motor 60 □ size	10 : 10mm 5 : 5mm	50: 50mm \ 300: 300mm (50mm pitch increments)	P2: PCON-CF	N : None P : 1m S : 3m M : 5m X □□ : Custom R □□ : Robot cable	See Options below

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



Technical References P. A-5

POINT Notes on Selection

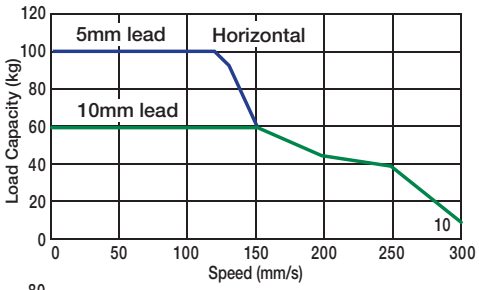
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

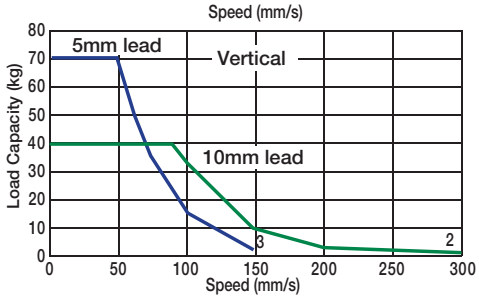
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G for 10mm-lead and 0.1G for 5mm-lead. This is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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





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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA8C-I-60P-10-①-P2-②-③	10	60	40	857	50 ~ 300 (50mm increments)
RCP2-RA8C-I-60P-5-①-P2-③-③	5	100	70	1714	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-70 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (50mm increments)
10	300
5	150

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø40mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)
Service Life	5000km (*1)

(*1) See page 146-2 for vertical payload graphs.

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Flange	FL	→ A-27	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	
Cable exit direction	A1 ~ A3	→ A-25	

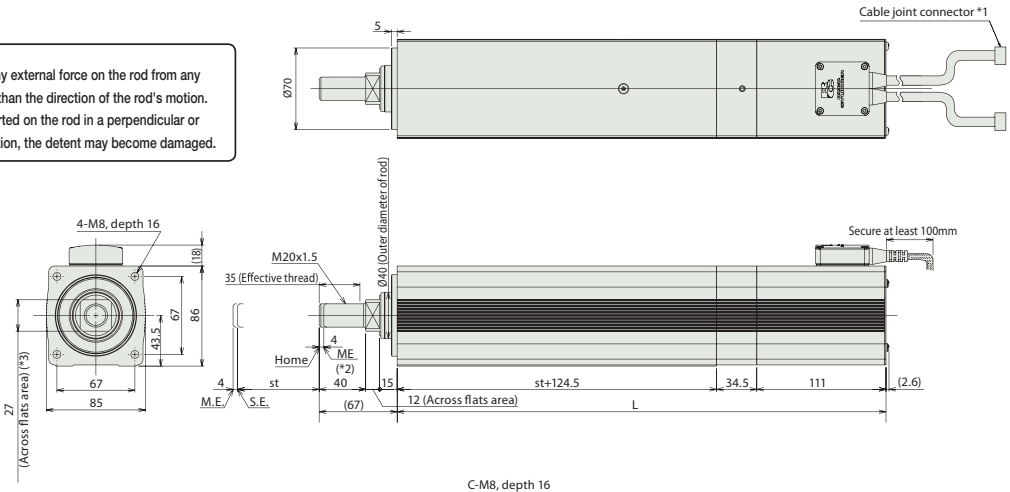
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

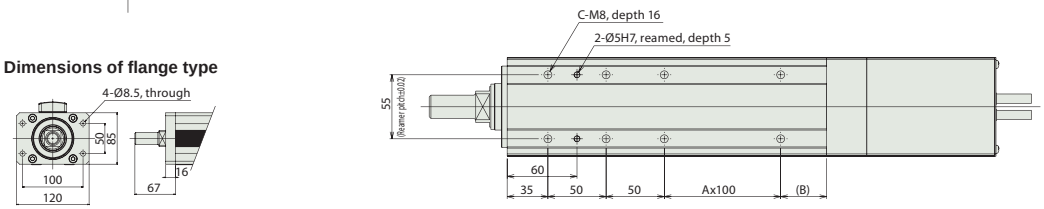
For Special Orders P. A-9

2/3D CAD

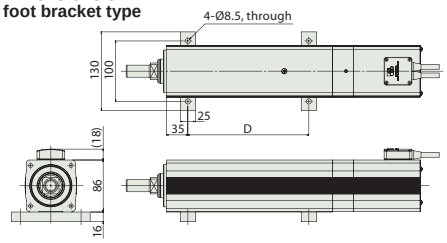
Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



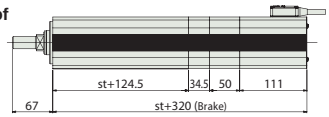
Dimensions of flange type



Dimensions of foot bracket type



Dimensions of brake type



*1. The motor-encoder cable is connected here. Please note that although the motor cable is the same as RCP2 series, the encoder cable is series-specific. See page A-39 for details on cables.

*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 values enclosed in "( )" are reference dimensions.

*3. The direction of two sides defining the across flat area varies depending on the product.

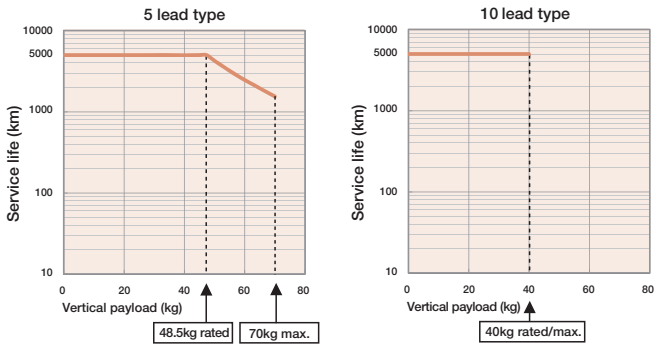
Dimensions/Weight by Stroke

Stroke		50	100	150	200	250	300
L		320	370	420	470	520	570
A		0	0	1	1	2	2
B		39.5	89.5	39.5	89.5	39.5	89.5
C		6	6	8	8	10	10
D		100	100	200	200	300	300
Weight (kg)	No brake	6.5	7.4	8.2	9.1	9.9	10.7
	Brake-equipped	7.5	8.4	9.2	10.1	10.9	11.7

Vertical Payload and Service Life

Rod-type RoboCylinder actuators have a service life of 5000km, but the RCP2-RA8C/RA8R types with a lead of 5 may have a shorter service life depending on the transferring mass because the applicable thrust is higher. Check the relationship of load capacity and service life for your actuator on the graph shown to the right.

Note:
The rated value is the maximum value that can meet a service life of 5000km. The maximum value is the value at which it is still operable. Please note that operation with values exceeding the rated value will result in a decrease in the service life, as shown in the graphs.



Compatible Controllers

The contoller for the RCP2-RA8C type is the following dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Positioner Type		PCON-CF-60PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.		→ P525

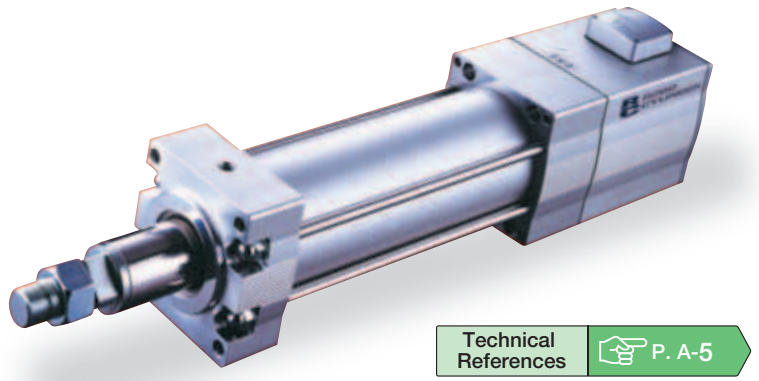
Note: • Please note that the encoder cable is a dedicated cable for the CF model, which is different from the PCON-C/CG/CY/PL/PO/SE controllers.
• The simple absolute unit cannot be used.

RCP2-RA10C RoboCylinder Rod Type 100mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RA10C — I — 86P — □ — □ — P2 — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA10C	I: Incremental	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 R □□: Robot cable	A1-A3 : Connector cable exit direction B : Brake FL : Flange FT : Foot bracket

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



Technical References P. A-5

POINT Notes on Selection

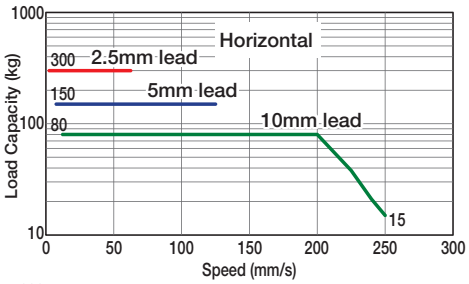
(1) Minimum speed is set per each lead. (10mm-lead: 10mm/s, 5mm-lead: 5mm/s, 2.5-lead: 1mm/s)
Please note that if the actuator is operated below the minimum speed, vibration may occur.

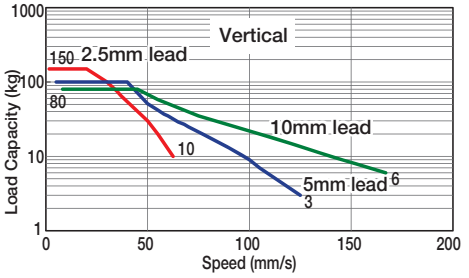
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.04G for 10mm-lead, 0.02G for 5mm-lead, and 0.01G for 2.5mm-lead.
This is the upper limit of the acceleration.
In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA10C-I-86P-10-①-P2-②-③	10	~ 80	~ 80	1500	50 ~ 300 (50mm increments)
RCP2-RA10C-I-86P-5-①-P2-②-③	5	150	~ 100	3000	
RCP2-RA10C-I-86P-2.5-①-P2-②-③	2.5	300	~ 150	6000	

Legend ① Stroke ② Cable length ③ Options

(Note 2) See page A-70 for the pushing force graphs.

■ Stroke and Maximum Speed

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

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø40mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

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

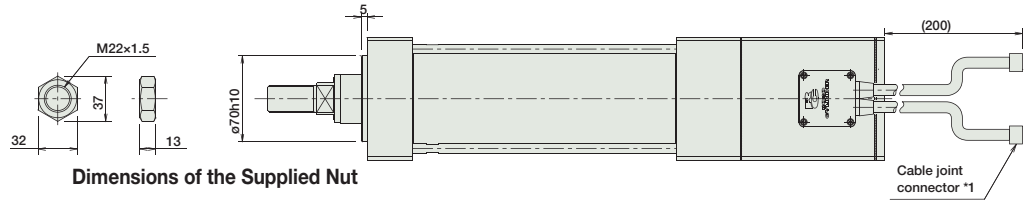
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

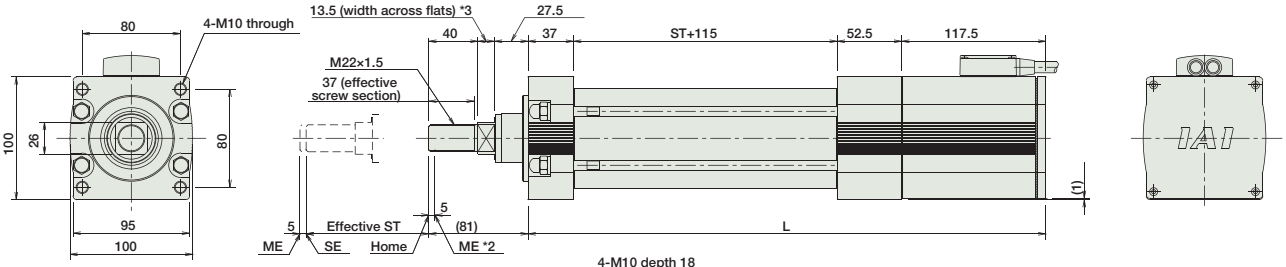
For Special Orders P. A-9

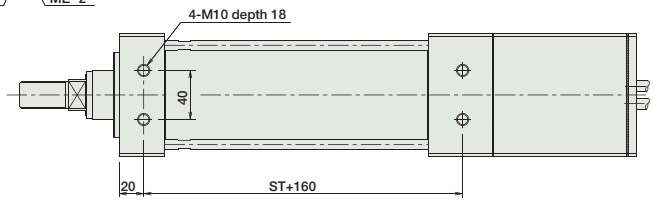
2/3D CAD

* The RA10C is not available in reversed-home configuration, due to its construction.

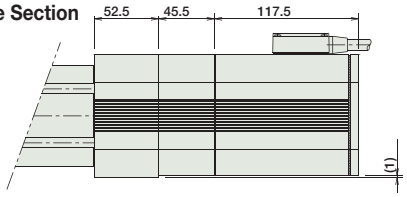


Dimensions of the Supplied Nut





Dimensions of the Brake Section



* Compared to the standard model, the brake-equipped model is longer by 45.5mm and heavier by 1.5kg.

*1. The motor-encoder cable is connected here. Please note that although the motor cable is the same as RCP2 series, the encoder cable is series-specific.
See page A-39 for details on cables.
*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 values enclosed in "( )" are reference dimensions.
*3. The orientation of the bolt will vary depending on the product.

Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

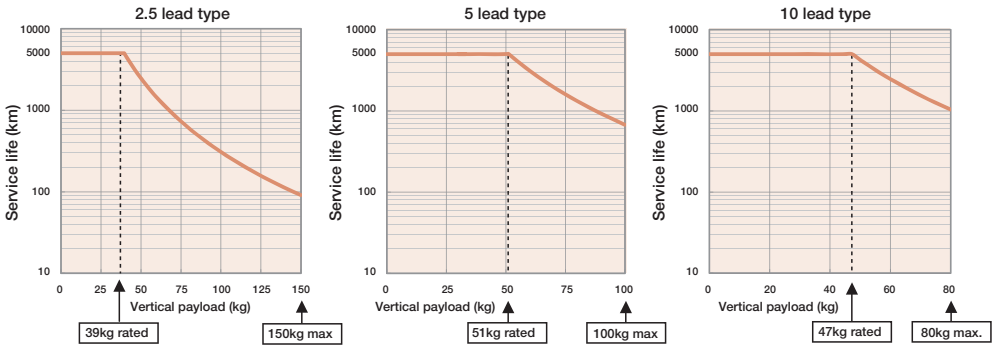
■ Dimensions/Weight by Stroke

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

Vertical Payload and Service Life

The service life of a rod-type RoboCylinder is 5000km. However, since the RCP2-RA10C has a larger maximum thrust compared to other types, its service life will largely depend on the load capacity and pushing force used. Therefore, when selecting your product using the Speed vs. Load Capacity and Pushing Force vs. Current Limit graphs, check the service life using the Load Capacity vs. Service Life graph and Pushing Force vs. Service Life table.

Note:
The rated value is the maximum value that can meet a service life of 5000km. The maximum value is the value at which it is still operable. Please note that operation with values exceeding the rated value will result in a decrease in the service life, as shown in the graphs.



Compatible Controllers

The controller for the RCP2-RA10C type is the following dedicated controller.

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

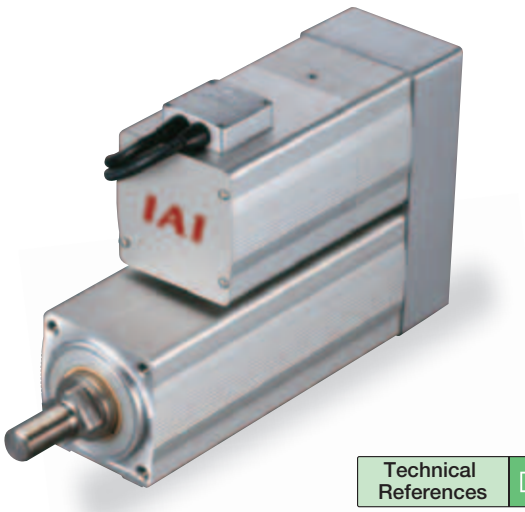
Note: • Please note that the encoder cable is a dedicated cable for the CF model, which is different from the PCON-C/CG/CY/PL/PO/SE controllers.
• The simple absolute unit cannot be used.

RCP2-RA8R RoboCylinder Rod Type 85mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — RA8R — I — 60P — ☐ — ☐ — P2 — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RA8R	I: Incremental * The Simple absolute encoder is also considered type "I".	60P: Pulse motor 60 ☐ size	10 : 10mm 5 : 5mm	50: 50mm \ 300: 300mm (50mm pitch increments)	P2: PCON-CF	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom R ☐☐ : Robot cable	See Options below

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



Technical References P. A-5

POINT Notes on Selection

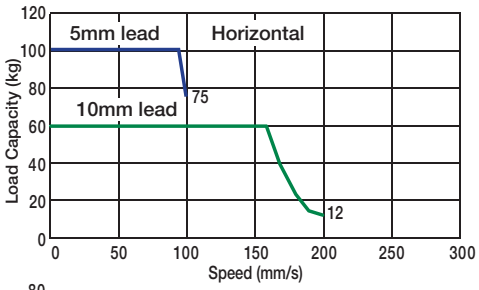
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

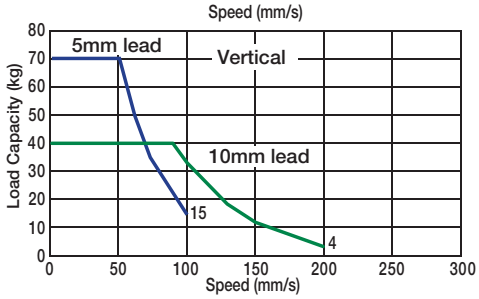
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G for 10mm-lead and 0.1G for 5mm-lead. This is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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





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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RA8R-I-60P-10-①-P2-②-③	10	60	40	857	50 ~ 300 (50mm increments)
RCP2-RA8R-I-60P-5-①-P2-③-③	5	100	70	1714	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-70 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (50mm increments)
10	200
5	100

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø40mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)
Service Life	5000km (*1)

(*1) See page 146-2 for vertical payload graphs.

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Top-mounted motor	MT1/MT2/MT3	→ 148-2	
Right-mounted motor	MR1/MR2	→ 148-2	
Left-mounted motor	ML1/ML3	→ 148-2	
Flange	FL	→ A-27	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	
Cable exit direction	A1 ~ A3	→ A-25	

Dimensions

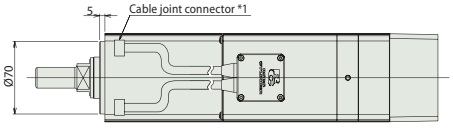
CAD drawings can be downloaded from IAI website. www.robocylinder.de

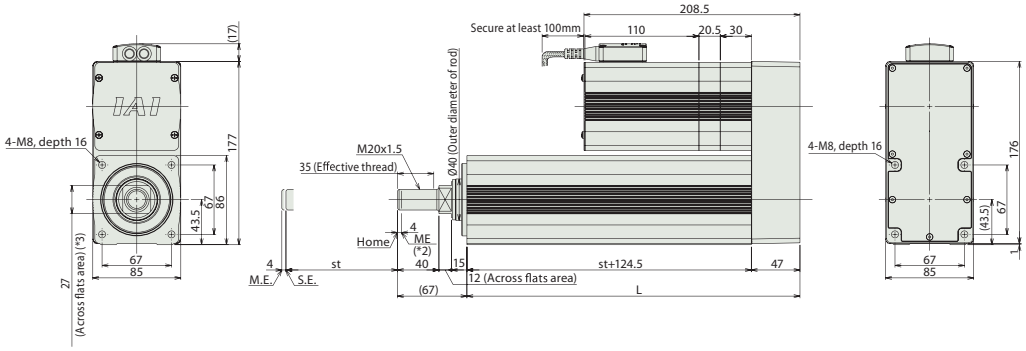
For Special Orders P. A-9

2/3D CAD

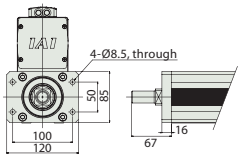
Note:

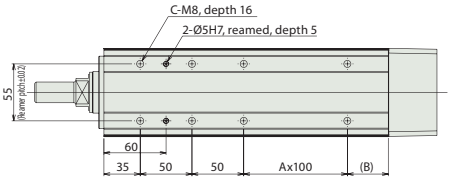
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



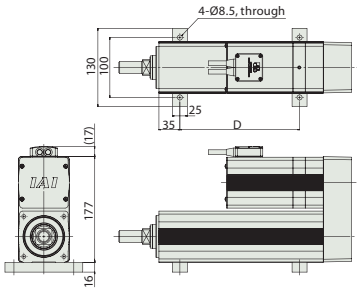


Dimensions of flange type

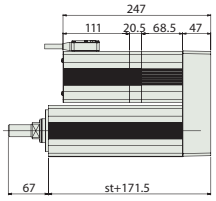




Dimensions of foot bracket type



Dimensions of brake type



*1. The motor-encoder cable is connected here. Please note that although the motor cable is the same as RCP2 series, the encoder cable is series-specific. See page A-39 for details on cables.

*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 values enclosed in "( )" are reference dimensions.

*3. The direction of two sides defining the across flat area varies depending on the product.

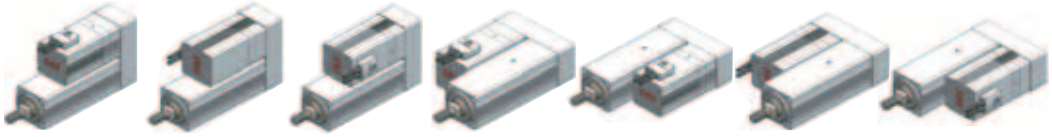
Dimensions/Weight by Stroke

Stroke		50	100	150	200	250	300
L		221.5	271.5	321.5	371.5	421.5	471.5
A		0	0	1	1	2	2
B		39.5	89.5	39.5	89.5	39.5	89.5
C		6	6	8	8	10	10
D		100	100	200	200	300	300
Weight (kg)	No brake	7.7	8.6	9.4	10.3	11.1	12
	Brake-equipped	8.6	9.5	10.3	11.2	12	12.9

Motor-mounting direction / Cable exit direction (Options)

Note:

Please be sure to specify one of the codes for the motor mounting direction and the cable exit direction.



Option Code	MT1	MT2	MT3	MR1	ML1	MR2	ML3
Motor-mounting direction	Top (standard)	Top	Top	Right	Left	Right	Left
Cable exit direction	Top (standard)	Right	Left	Top	Top	Right	Left

Compatible Controllers

The contoller for the RCP2-RA8R type is the following dedicated controller.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Positioner Type		PCON-CF-60PI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.		→ P525

Note: • Please note that the encoder cable is a dedicated cable for the CF model, which is different from the PCON-C/CG/CY/PL/PO/SE controllers.
• The simple absolute unit cannot be used.

RCP2-SRA4R

RoboCylinder Short-Length Rod Type 45mm Width Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 – SRA4R – I – 35P – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SRA4R	I: Incremental * The Simple absolute encoder is also considered type "I".	35P: Pulse motor 35 □ size	5 : 5mm 2.5 : 2.5mm	20: 20mm 〜 200: 200mm (10mm pitch increments) * 50mm increments over 100 mm	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom	See Options below

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

Technical References P. A-5

POINT Notes on Selection

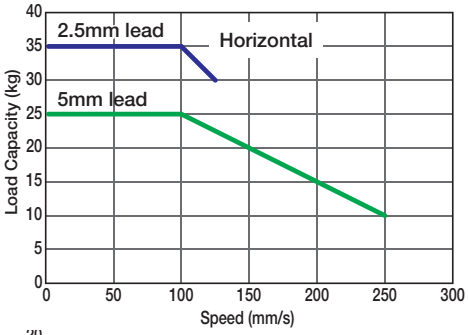
(1) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

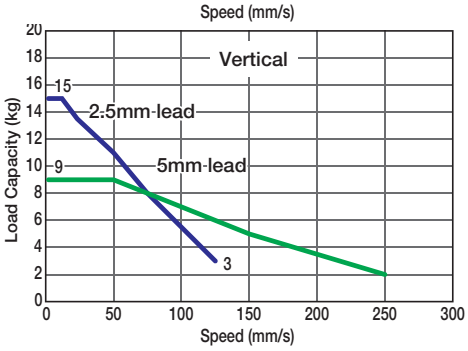
(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration.

(3) The horizontal load capacity is based on the use of an external guide. If an external force is exerted on the rod from a direction other than the motion of the rod, the detent may become damaged.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP2-SRA4R-I-35P-5-①-②-③-④	5	〜25	〜9	90	20〜200 (10mm increments) (Note 3)
RCP2-SRA4R-I-35P-2.5-①-②-③-④	2.5	〜35	〜15	170	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.
(Note 3) 50mm increments over 100mm.

■ Stroke and Maximum Speed

Lead \ Stroke	20〜200 (10mm increments)
5	250
2.5	125

(Unit: mm/s)

Cable List

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

* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø22mm
Non-rotating accuracy of rod	–
Ambient Operating Temp./Humidity	0〜40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Flange bracket (front)	FL	→ A-27	
Flange bracket (back)	FLR	→ A-28	
Foot bracket 1 (base mounting)	FT	→ A-29	
Foot bracket 2 (right/left side mounting)	FT2/FT4	→ A-31	
Reversed-home	NM	→ A-33	

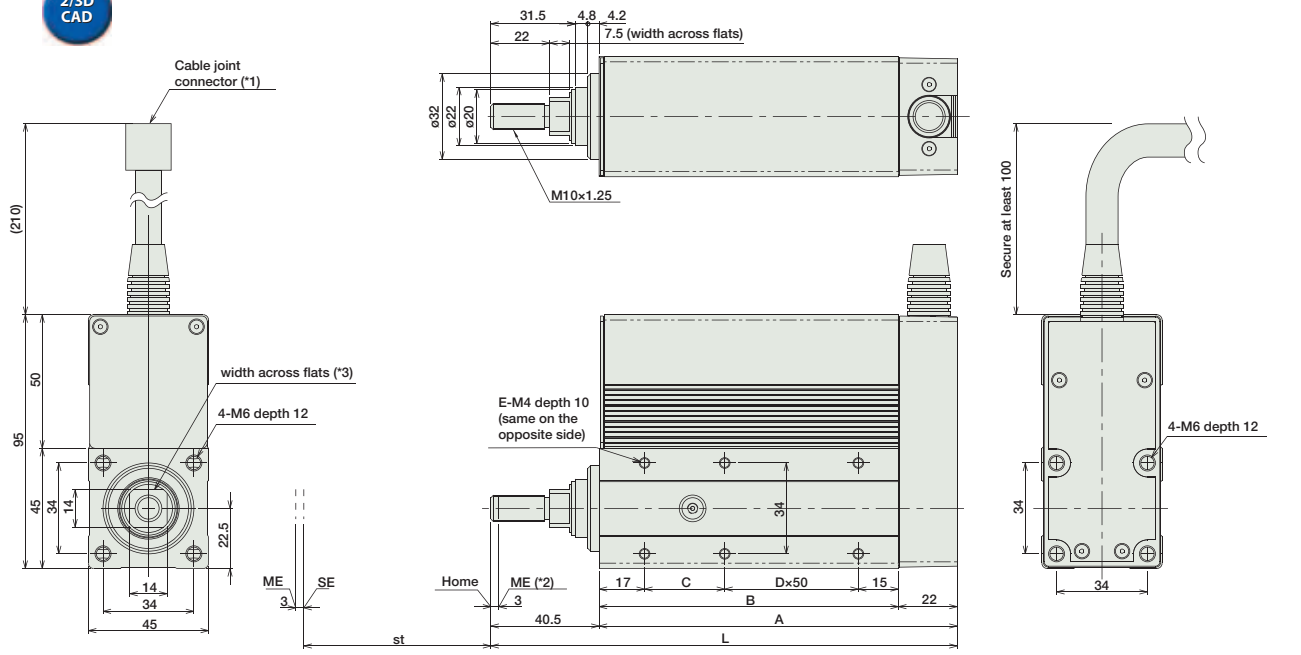
* The brake is available for strokes of 70mm or more.

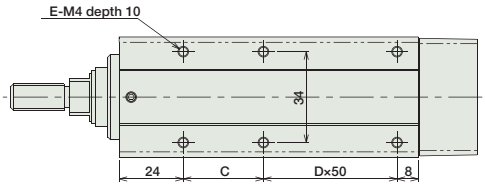
Dimensions

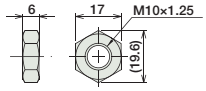
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD







Dimensions of the Supplied Nut

ST : Stroke
SE : Stroke end
ME: Mechanical end

* The exterior dimensions for the brake-equipped model is no different than the standard model.
However, 70mm is the minimum stroke of the brake-equipped models.
(i.e. The brake is not compatible at 60mm strokes and under.)

(*1) The motor-encoder cable is connected here. See page A-39 for details on cables.
(*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
(*3) The orientation of the bolt will vary depending on the product.

■ Dimensions/Weight by Stroke (Add 0.2kg for brake equipped)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	124.5	134.5	144.5	154.5	164.5	174.5	184.5	194.5	204.5	254.5	304.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	30	40	50	60	60	60
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	0.83	0.89	0.96	1.02	1.08	1.14	1.21	1.27	1.33	1.64	1.95

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-RGS4C RoboCylinder Rod Type with Single Guide 45mm Width Pulse Motor Straight Type

■ Configuration: RCP2 – RGS4C – I – 42P – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RGS4C	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor 42 □ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm \ 300: 300mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom R □□: Robot cable	B : Brake FT : Foot bracket NM: Reversed-home

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

Technical References P. A-5

POINT Notes on Selection

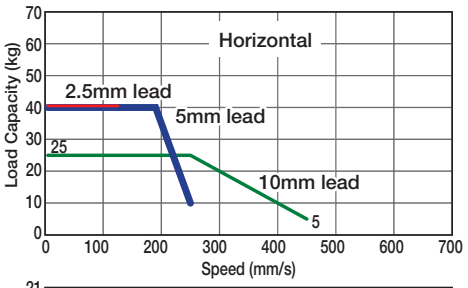
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

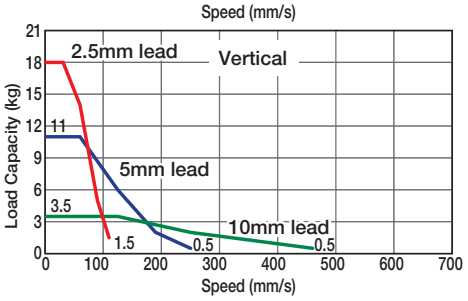
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RGS4C-I-42P-10-①-②-③-④	10	~ 25	~ 3.5	150	50 ~ 300 (50mm increments)
RCP2-RGS4C-I-42P-5-①-②-③-④	5	~ 40	~ 11	284	
RCP2-RGS4C-I-42P-2.5-①-②-③-④	2.5	40	~ 18	358	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 200 (50mm increments)	250 (mm)	300 (mm)
10	458	458	350
5	250	237	175
2.5	125 <114>	118 <114>	87

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide Guide rod diameter ø10mm Ball bush type
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

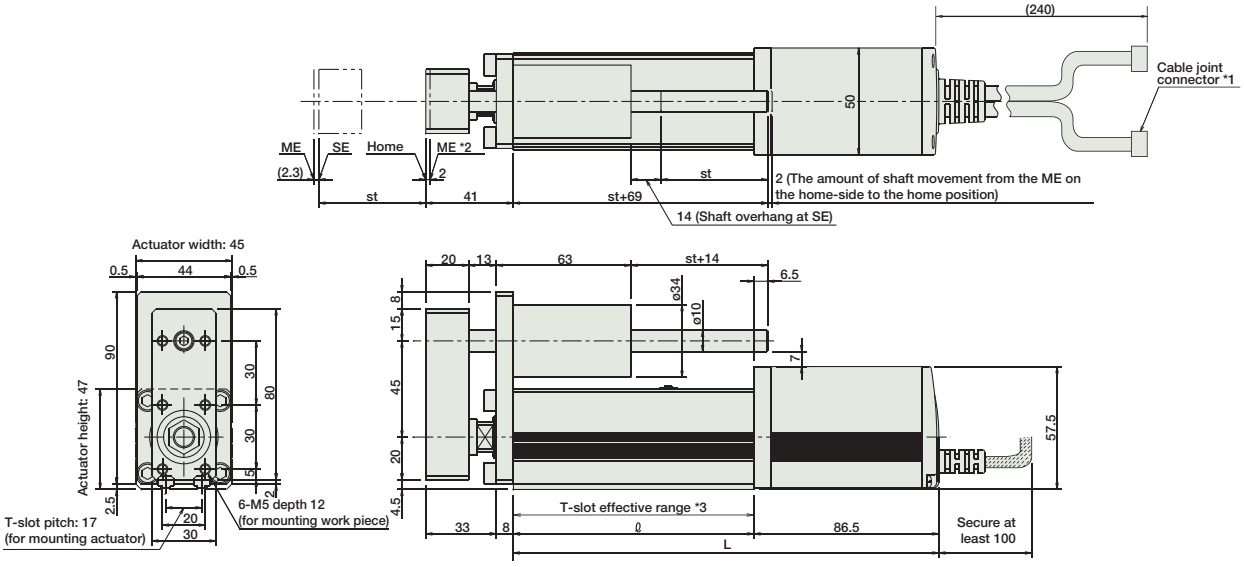
2/3D CAD

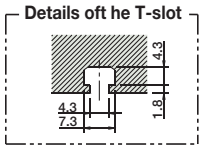
For Special Orders P. A-9

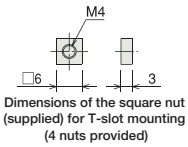
*1. The motor-encoder cable is connected here. See page A-39 for details on cables.

*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

*3. Please note that there is no T-slot on the bottom of the brake unit.

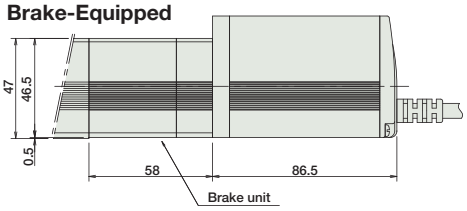






Dimensions of the square nut (supplied) for T-slot mounting (4 nuts provided)

Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	112.5	162.5	212.5	262.5	312.5	362.5
L	199	249	299	349	399	449
Weight (kg)	1.8	2.1	2.4	2.7	2.9	3.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→P557

* This is for the single-axis PSEL.

RCP2-RGS6C RoboCylinder Rod Type with Single Guide 64mm Width Pulse Motor Straight Type

■ Configuration: RCP2 – RGS6C – I – 56P – □ – □ – □ – □ – □ – □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RGS6C	I: Incremental * The Simple absolute encoder is also considered type "I".	56P: Pulse motor 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 R □□: Robot cable	B : Brake FT : Foot bracket NM: Reversed-home

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

Technical References P. A-5

POINT Notes on Selection

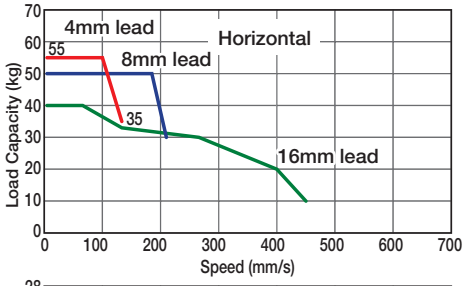
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

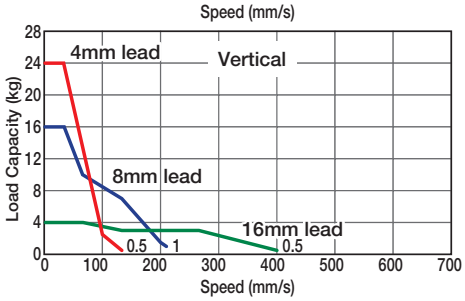
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RGS6C-I-56P-16-①-②-③-④	16	~ 40	~ 4	240	50 ~ 300 (50mm increments)
RCP2-RGS6C-I-56P-8-①-②-③-④	8	~ 50	~ 16	470	
RCP2-RGS6C-I-56P-4-①-②-③-④	4	~ 55	~ 24	800	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (50mm increments)
16	450 <400>
8	210
4	130

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide Guide rod diameter ø12mm Ball bush type
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

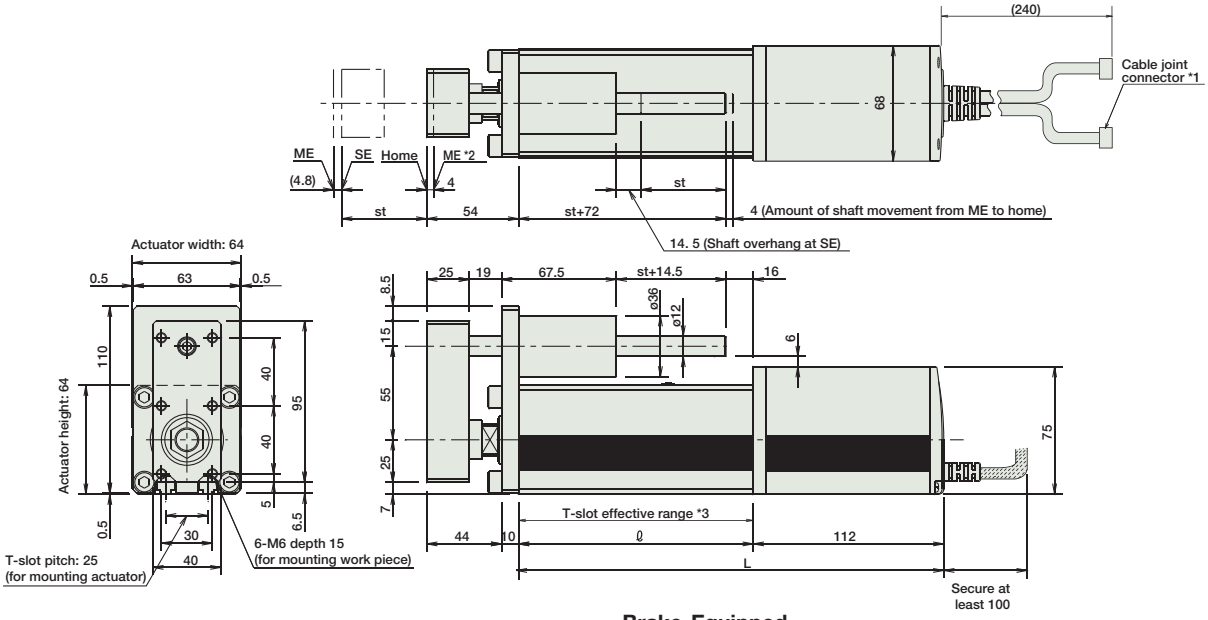
2/3D CAD

For Special Orders P. A-9

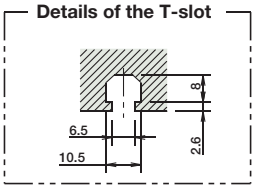
*1. The motor-encoder cable is connected here. See page A-39 for details on cables.

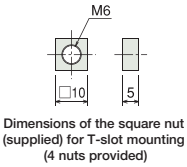
*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

*3. Please note that there is no T-slot on the bottom of the brake unit.



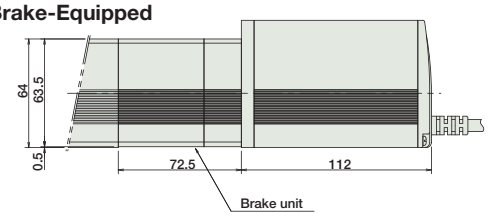
Details of the T-slot





Dimensions of the square nut (supplied) for T-slot mounting (4 nuts provided)

Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
R	138	188	238	288	338	388
L	250	300	350	400	450	500
Weight (kg)	3.6	4.4	5.0	5.5	6.1	6.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-SRGS4R

RoboCylinder Short Rod Type with Single Guide 45mm Width
Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 — SRGS4R — I — 35P — □ — □ — □ — □ — □ — □

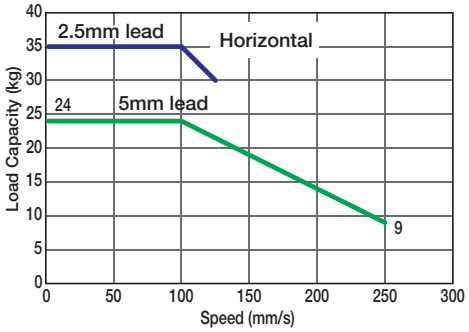
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	SRGS4R	I: Incremental * The Simple absolute encoder is also considered type "I".	35P: Pulse motor 35 □ size	5 : 5mm 2.5 : 2.5mm	20: 20mm 〜 200: 200mm (10mm pitch increments) * Set in 50mm increments over 100mm	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom	See options below

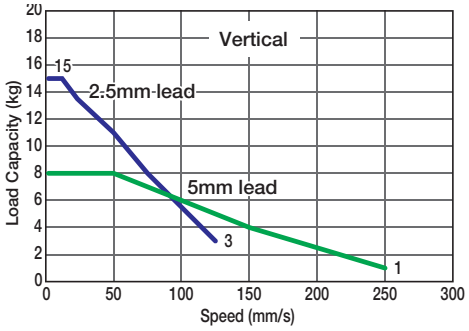
* See page Pre-35 for an explanation of the naming convention.

Technical References P. A-5

■ 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.





POINT Notes on Selection

(1) 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.
(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration.
(3) The horizontal load capacity is based on the use of an external guide. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP2-SRGS4R-I-35P-5-①-②-③-④	5	〜24	〜8	90	20〜200 (10mm increments) (Note 3)
RCP2-SRGS4R-I-35P-2.5-①-②-③-④	2.5	〜35	〜15	170	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.
(Note 3) 50mm increments over 100mm.

■ Stroke and Maximum Speed

Lead \ Stroke	20〜200 (10mm increments)
5	250
2.5	125

(Unit: mm/s)

Cable List

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

* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0〜40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Flange bracket (back)	FLR	→ A-28	
Foot bracket 1 (base mounting)	FT	→ A-29	
Foot bracket 2 (right/left side mounting)	FT2/FT4	→ A-31	
Guide mounting direction	GS2 〜 GS4	→ A-156	
Reversed-home	NM	→ A-33	

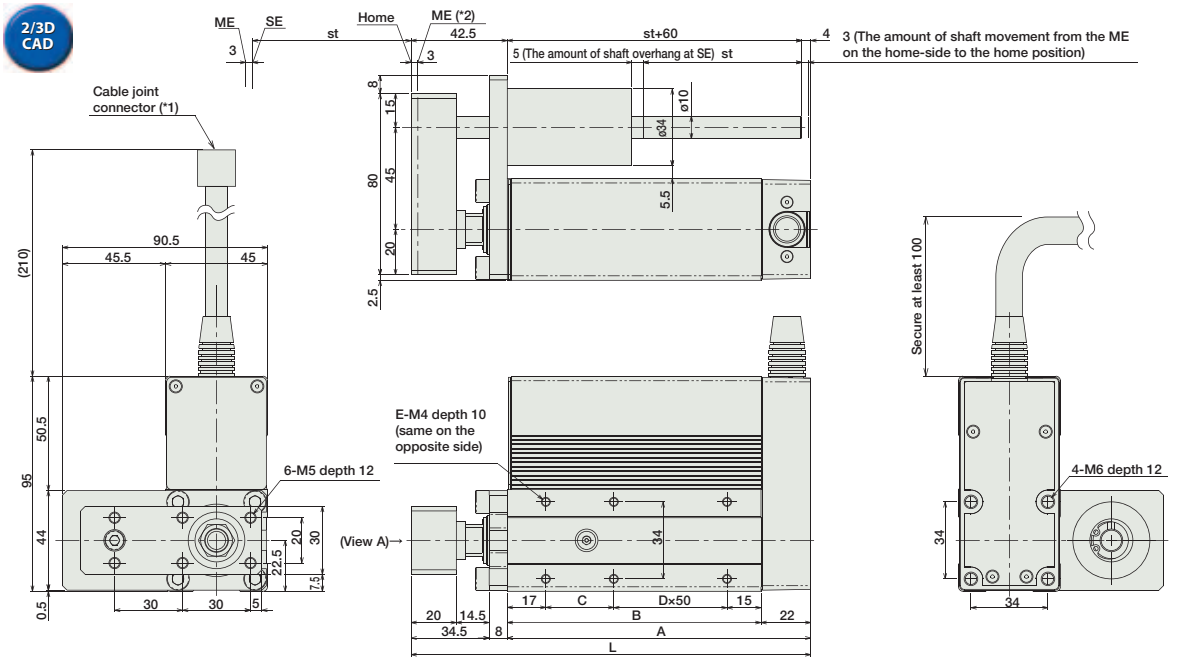
* The brake is available for strokes of 70mm or more.
* Please be sure that the mounting direction of the guide is specified in the product name.
* The guide and the foot bracket cannot be mounted in the same direction.

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



GS4 Left-mounted | Actuator | GS2 Right-mounted

GS3 Bottom-mounted

Guide mounting direction (as viewed from view A)

* The exterior dimensions for the brake-equipped model is no different than the standard model. However, 70mm is the minimum stroke of the brake-equipped models. (i.e. The brake is not compatible at 60mm strokes and under.)

ST : Stroke
SE : Stroke end
ME: Mechanical end

(*1) The motor-encoder cable is connected here. See page A-39 for details on cables.
(*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

Dimensions/Weight by Stroke (Add 0.2kg for brake equipped)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5	256.5	306.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	30	40	50	60	60	60
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	1.2	1.27	1.34	1.41	1.48	1.54	1.61	1.68	1.75	2.09	2.43

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-RGD3C RoboCylinder Rod Type with Double Guide 35mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RGD3C — I — 28P — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RGD3C	I: Incremental * The Simple absolute encoder is also considered type "I".	28P: Pulse motor 28 ☐ size	5 : 5mm 2.5 : 2.5mm	50: 50mm \ 200: 200mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom R ☐☐: Robot cable	FT : Foot bracket NM: Reversed-home

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

* Pictured: RGD4C

Technical References P. A-5

POINT Notes on Selection

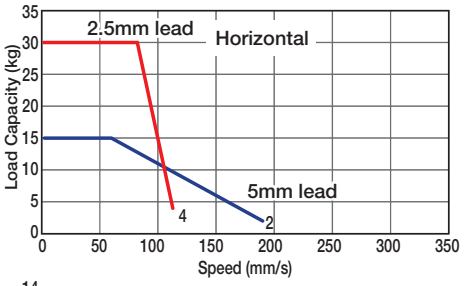
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

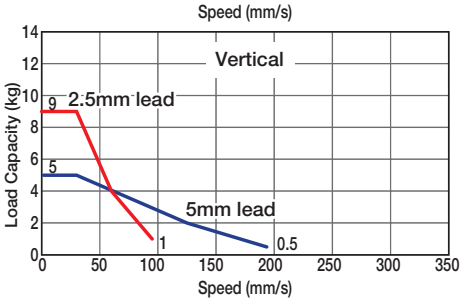
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RGD3C-I-28P-5-①-②-③-④	5	～15	～5	73.5	50 ～ 200 (50mm increments)
RCP2-RGD3C-I-28P-2.5-①-②-③-④	2.5	～30	～9	156.8	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 200 (50mm increments)
5	187
2.5	114 <93>

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide Guide rod diameter ø10mm Ball bush type
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

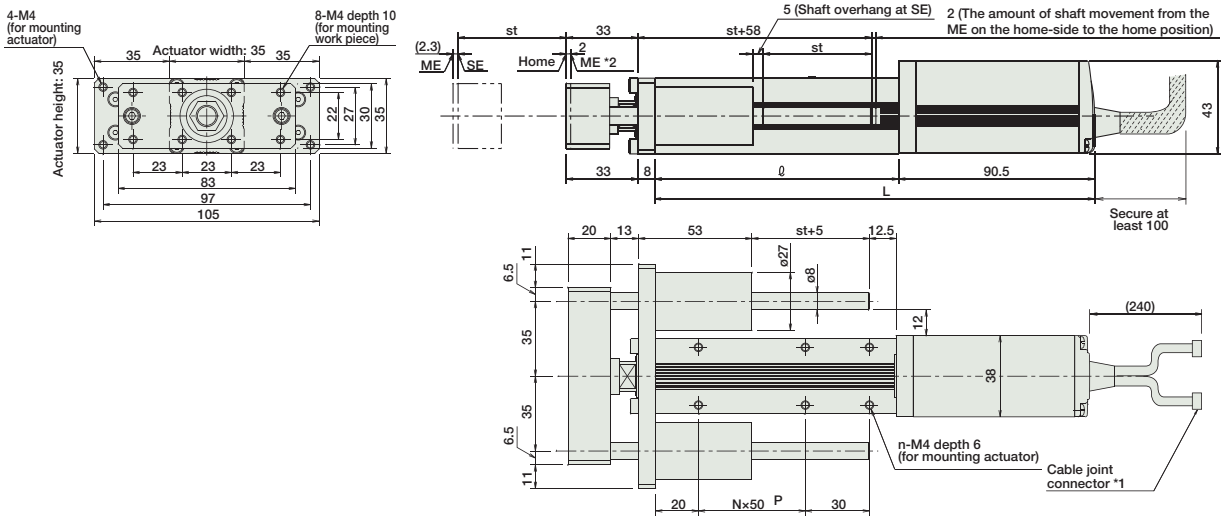
CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

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

*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.



Dimensions/Weight by Stroke

Stroke	50	100	150	200
ℓ	112.5	162.5	212.5	262.5
L	203	253	303	353
N	1	2	3	4
n	6	8	10	12
Weight (kg)	1.1	1.3	1.4	1.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28SPI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28SPI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28SPI-NP-2-0						
Positioner Type		PCON-C-28SPI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28SPI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28SPI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28SPI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28SPI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28SP	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28SPI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-RGD4C RoboCylinder Rod Type with Double Guide 45mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RGD4C — I — 42P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RGD4C	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor 42 □ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm 〃 300: 300mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom R □□: Robot cable	B : Brake FT : Foot bracket NM: Reversed-home

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

Technical References P. A-5

POINT Notes on Selection

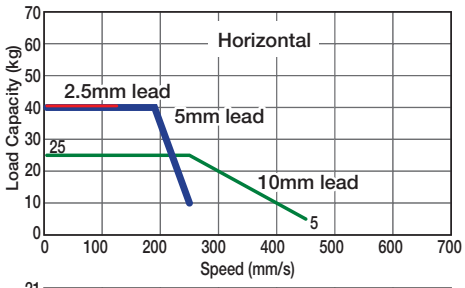
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

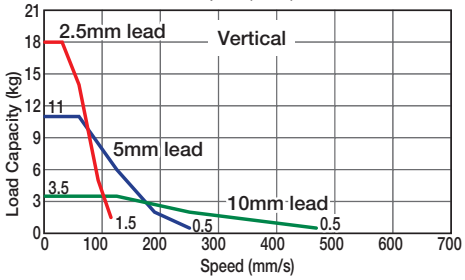
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RGD4C-I-42P-10-①-②-③-④	10	～25	～3.5	150	50 ～ 300 (50mm increments)
RCP2-RGD4C-I-42P-5-①-②-③-④	5	～40	～11	284	
RCP2-RGD4C-I-42P-2.5-①-②-③-④	2.5	40	～18	358	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ～ 200 (50mm increments)	250 (mm)	300 (mm)
10	458	458	350
5	250	237	175
2.5	125 <114>	118 <114>	87

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide Guide rod diameter ø10mm Ball bush type
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

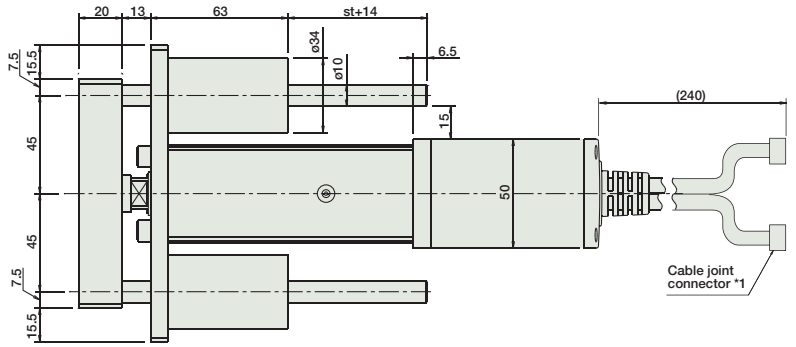
2/3D CAD

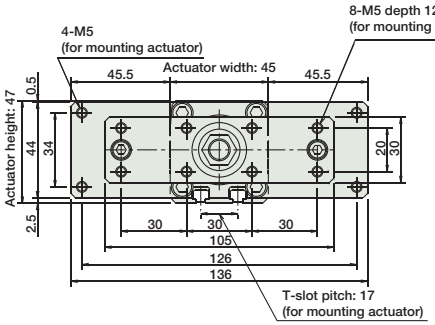
For Special Orders P. A-9

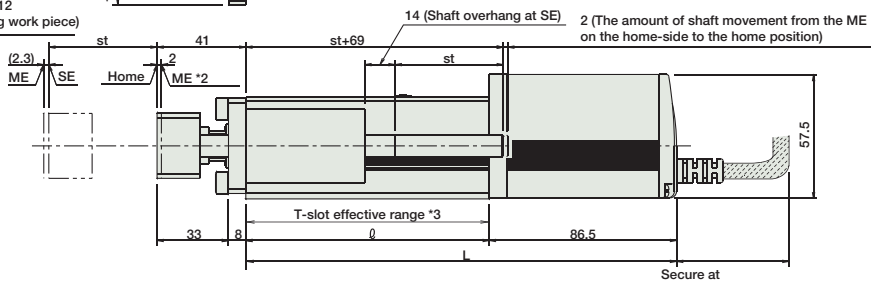
*1. The motor-encoder cable is connected here.
See page A-39 for details on cables.

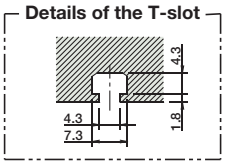
*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

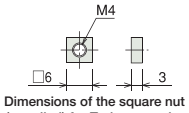
*3. Please note that there is no T-slot on the bottom of the brake unit.





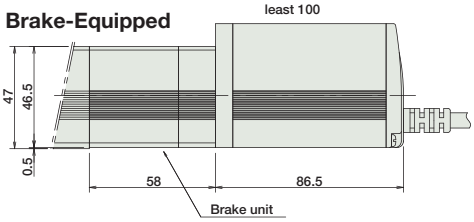






Dimensions of the square nut (supplied) for T-slot mounting (4 nuts provided)

Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 58mm and heavier by 0.4kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	112.5	162.5	212.5	262.5	312.5	362.5
L	199	249	299	349	399	449
Weight (kg)	2.2	2.5	2.8	3.1	3.4	3.7

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

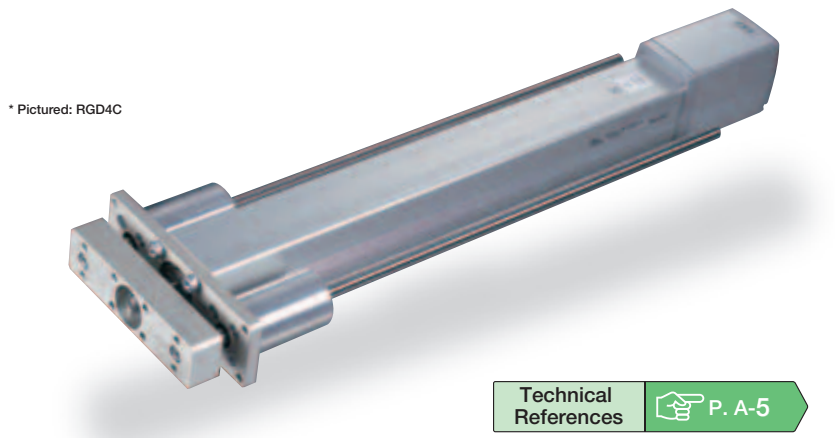
* This is for the single-axis PSEL.

RCP2-RGD6C RoboCylinder Rod Type with Double Guide 64mm Width Pulse Motor Straight Type

■ Configuration: RCP2 — RGD6C — I — 56P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2	RGD6C	I: Incremental * The Simple absolute encoder is also considered type "I".	56P: Pulse motor 56 ☐ size	16 : 16mm 8 : 8mm 4 : 4 mm	50: 50mm 〃 300: 300mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom R ☐☐: Robot cable	B : Brake FT : Foot bracket NM: Reversed-home

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



* Pictured: RGD4C

Technical References P. A-5

POINT Notes on Selection

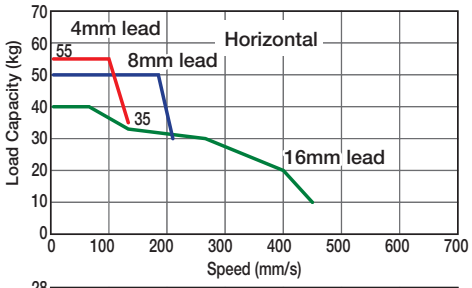
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

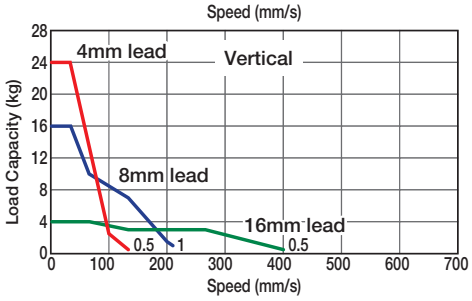
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit of the acceleration. In addition, the horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-RGD6C-I-56P-16-①-②-③-④	16	~ 40	~ 4	240	50 ~ 300 (50mm increments)
RCP2-RGD6C-I-56P-8-①-②-③-④	8	~ 50	~ 16	470	
RCP2-RGD6C-I-56P-4-①-②-③-④	4	~ 55	~ 24	800	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (50mm increments)
16	450 <400>
8	210
4	130

* The values enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide Guide rod diameter ø12mm Ball bush type
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Foot bracket	FT	→ A-29	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

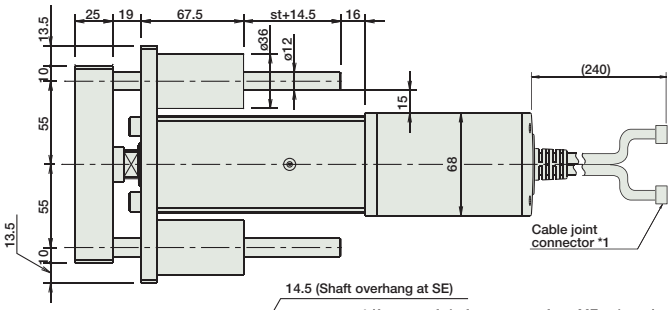
2/3D CAD

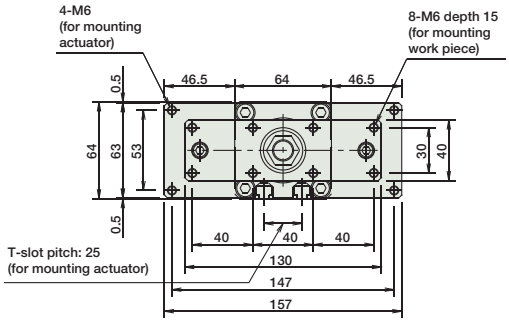
For Special Orders P. A-9

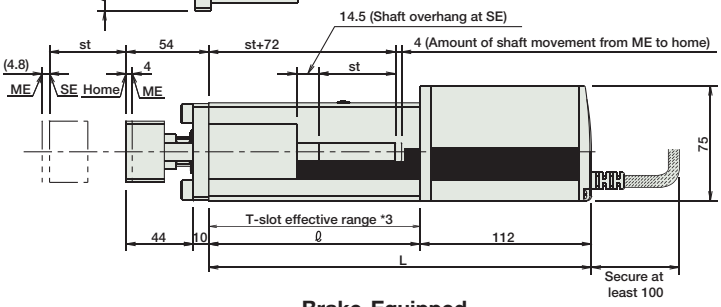
*1. The motor-encoder cable is connected here.
See page A-39 for details on cables.

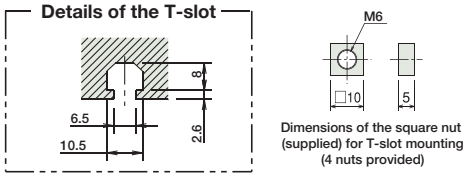
*2 When homing, the rod moves to the M.E.; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "( )" are reference dimensions.

*3. Please note that there is no T-slot on the bottom of the brake unit.

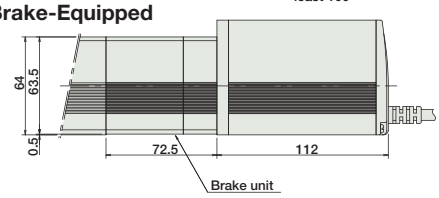








Brake-Equipped



* Compared to the standard model, the brake-equipped model is longer by 72.5mm and heavier by 0.9kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	138	188	238	288	338	388
L	250	300	350	400	450	500
Weight (kg)	4.4	5.0	5.5	6.1	6.7	7.3

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-SRGD4R

RoboCylinder Short-Length Rod Type with Double Guide 45mm Width
Pulse Motor Side-Mounted Motor

■ Configuration: RCP2 – SRGD4R – I – 35P – [ ] – [ ] – [ ] – [ ] – [ ]

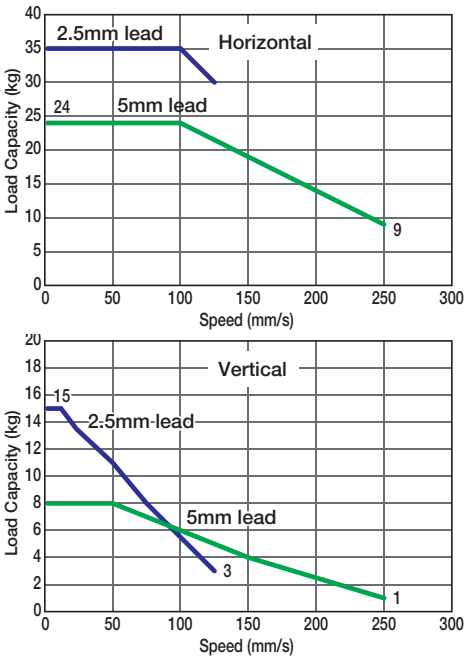
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	35P: Pulse motor 35 □ size	5 : 5mm 2.5 : 2.5mm	20: 20mm 〜 200: 200mm (10mm pitch increments) * Set in 50mm increments over 100mm	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom	See Options below

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

Technical References P. A-5

■ 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.



POINT Notes on Selection

(1) 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.
(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration.
(3) The horizontal load capacity is based on the use of an external guide. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP2-SRGD4R-I-35P-5-①-②-③-④	5	〜24	〜8	90	20〜200 (10mm increments) (Note 3)
RCP2-SRGD4R-I-35P-2.5-①-②-③-④	2.5	〜35	〜15	170	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for the pushing force graphs.
(Note 3) 50mm increments over 100mm.

■ Stroke and Maximum Speed

Lead \ Stroke	20 〜 200 (10mm increments)
5	250
2.5	125

(Unit: mm/s)

Cable List

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

* The cable is a motor-encoder integrated cable, and is provided as a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø22mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 〜 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Foot bracket 1 (base mounting)	FT	→ A-29	
Reversed-home	NM	→ A-33	

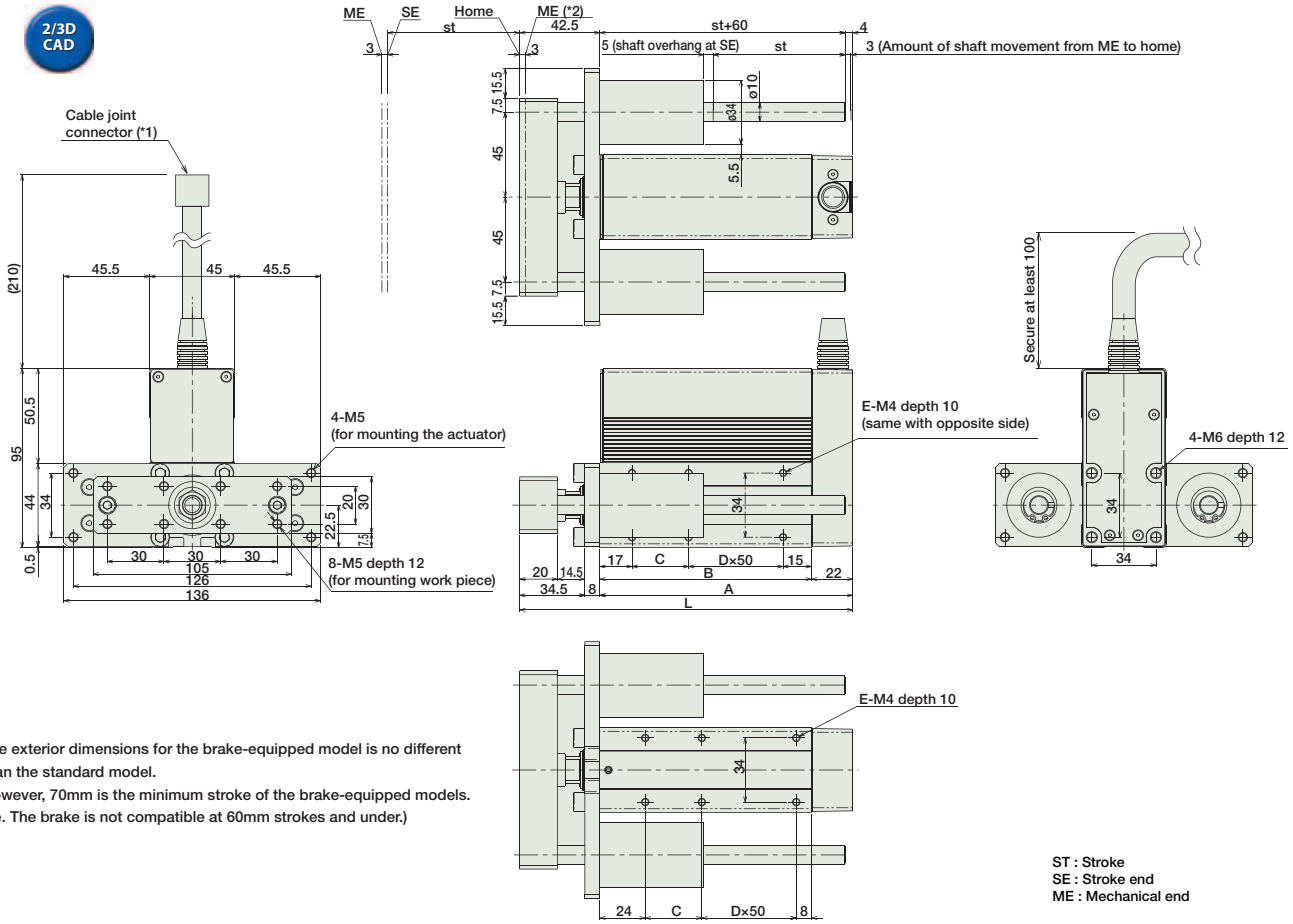
* The brake can be used for strokes of 70mm or more.
* The foot bracket cannot be mounted on the side.

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



ST : Stroke
SE : Stroke end
ME : Mechanical end

* The exterior dimensions for the brake-equipped model is no different than the standard model.
However, 70mm is the minimum stroke of the brake-equipped models.
(i.e. The brake is not compatible at 60mm strokes and under.)

(*1) The motor-encoder cable is connected here. See page A-39 for details on cables.
(*2) When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

■ Dimensions/Weight by Stroke

(+0.2kg with brake)

Stroke	20	30	40	50	60	70	80	90	100	150	200
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5	256.5	306.5
A	84	94	104	114	124	134	144	154	164	214	264
B	62	72	82	92	102	112	122	132	142	192	242
C	30	40	50	60	70	30	40	50	60	60	60
D	0	0	0	0	0	1	1	1	1	2	3
E	4	4	4	4	4	6	6	6	6	8	10
Weight (kg)	1.47	1.55	1.62	1.7	1.77	1.84	1.92	1.99	2.07	2.44	2.81

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→P557

* This is for the single-axis PSEL.

RCP3-TA3C RoboCylinder Mini Table Type Motor Unit Coupled 36mm Width Pulse Motor Ball Screw

■ Configuration: RCP3 — TA3C — I — 20P — □ — □ — □ — □ — □

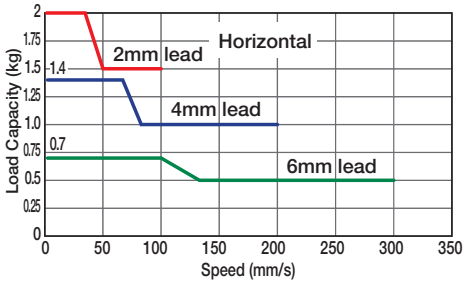
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA3C	I: Incremental * The simple absolute encoder is also considered type "I".	20P: Pulse motor 20 □ size	6: 6mm 4: 4mm 2: 2mm	20: 20mm \ 100: 100mm (10mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom	See Options below

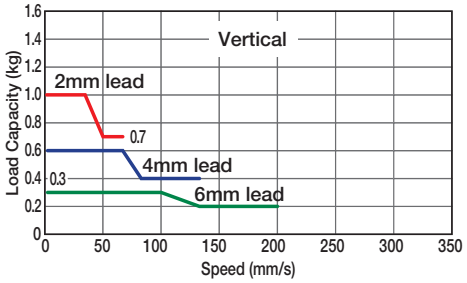
* See page Pre-35 for an explanation of the naming convention.

Technical References P. A-5

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, or when used vertically).
0.3G (0.2G for 2mm lead) is the upper limit of the acceleration.

Actuator Specifications

■ Lead and Load Capacity

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

Model	Feed Screw	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-TA3C-I-20P-6-①-②-③-④	Ball Screw	6	~ 0.7	~ 0.3	9	±0.02	20~100 (10mm increments)
RCP3-TA3C-I-20P-4-①-②-③-④		4	~ 1.4	~ 0.6	14		
RCP3-TA3C-I-20P-2-①-②-③-④		2	~ 2	~ 1	28		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	20 ~ 100 (mm)
Ball Screw 6	300 <200>
Ball Screw 4	200 <133>
Ball Screw 2	100 <67>

* The values enclosed in "< >" apply to vertical usage. (Unit: mm/s)

Cable List

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

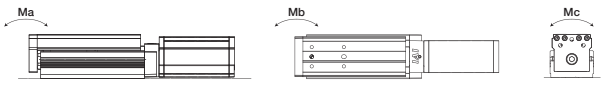
* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø6mm C10 grade
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note 3)	Ma: 3.2 N·m Mb: 4.6 N·m Mc: 5.1 N·m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(Note 3) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

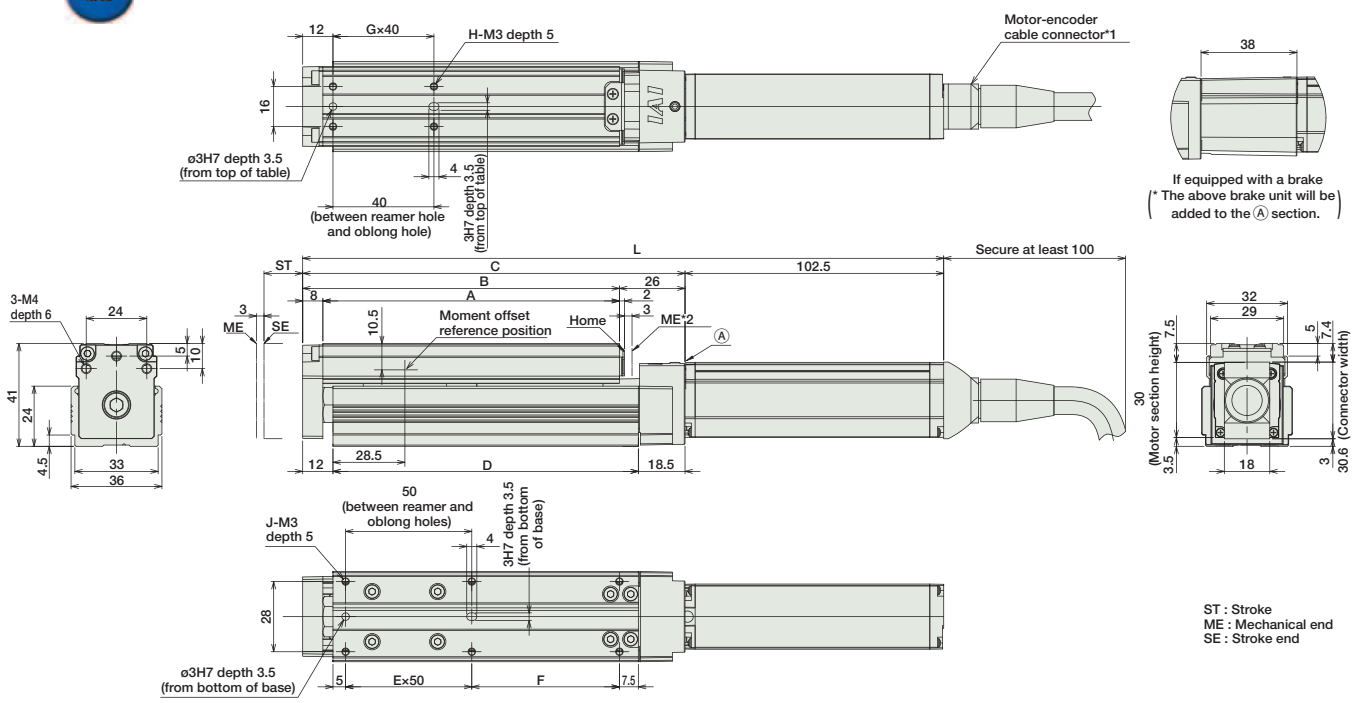
Name	Option Code	See Page	
Brake	**B**	→ A-25	
Reversed-home	**NM**	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



ST : Stroke
ME : Mechanical end
SE : Stroke end

*1 The motor-encoder cable is connected directly to the motor cover of the actuator. See page A-39 for details on cables.

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.1kg.

Stroke		20	30	40	50	60	70	80	90	100
L	No Brake	224	234	244	254	264	274	284	294	304
	Brake-equipped	262	272	282	292	302	312	322	332	342
A		87.5	97.5	107.5	117.5	127.5	137.5	147.5	157.5	167.5
B		95.5	105.5	115.5	125.5	135.5	145.5	155.5	165.5	175.5
C		121.5	131.5	141.5	151.5	161.5	171.5	181.5	191.5	201.5
D		91	101	111	121	131	141	151	161	171
E		1	1	1	1	2	2	2	2	2
F		28.5	38.5	48.5	58.5	18.5	28.5	38.5	48.5	58.5
G		1	1	1	1	2	2	2	2	2
H		4	4	4	4	6	6	6	6	6
J		6	6	6	6	8	8	8	8	8
Weight (kg)		0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-TA4C RoboCylinder Mini Table Type Motor Unit Coupled 40mm Width Pulse Motor Ball Screw

■ Configuration: RCP3 — TA4C — I — 28P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA4C	I: Incremental * The simple absolute encoder is also considered type "I".	28P: Pulse motor 28 ☐ size	6: 6mm 4: 4mm 2: 2mm	20: 20mm \ 100: 100mm (10mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below

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

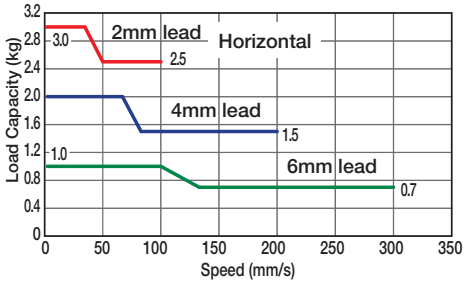
Technical References P. A-5

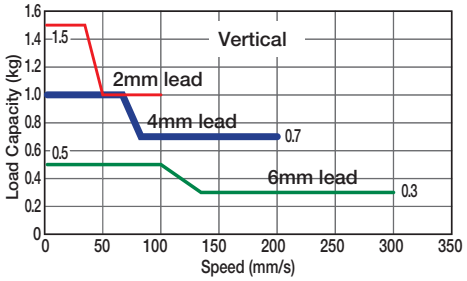
POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, or when used vertically).
0.3G (0.2G for 2mm lead) is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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	Feed Screw	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-TA4C-I-28P-6-①-②-③-④	Ball Screw	6	~1	~0.5	15	±0.02	20~100 (10mm increments)
RCP3-TA4C-I-28P-4-①-②-③-④		4	~2	~1	22		
RCP3-TA4C-I-28P-2-①-②-③-④		2	~3	~1.5	44		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	20 ~ 100 (mm)
Ball Screw 6	300
Ball Screw 4	200
Ball Screw 2	100

(Unit: mm/s)

Cable List

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

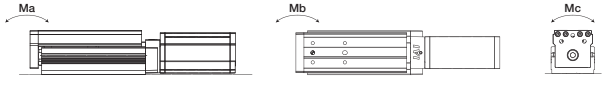
* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø6mm C10 grade
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note 3)	Ma: 4.2 N·m Mb: 6 N·m Mc: 8.2 N·m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(Note 3) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

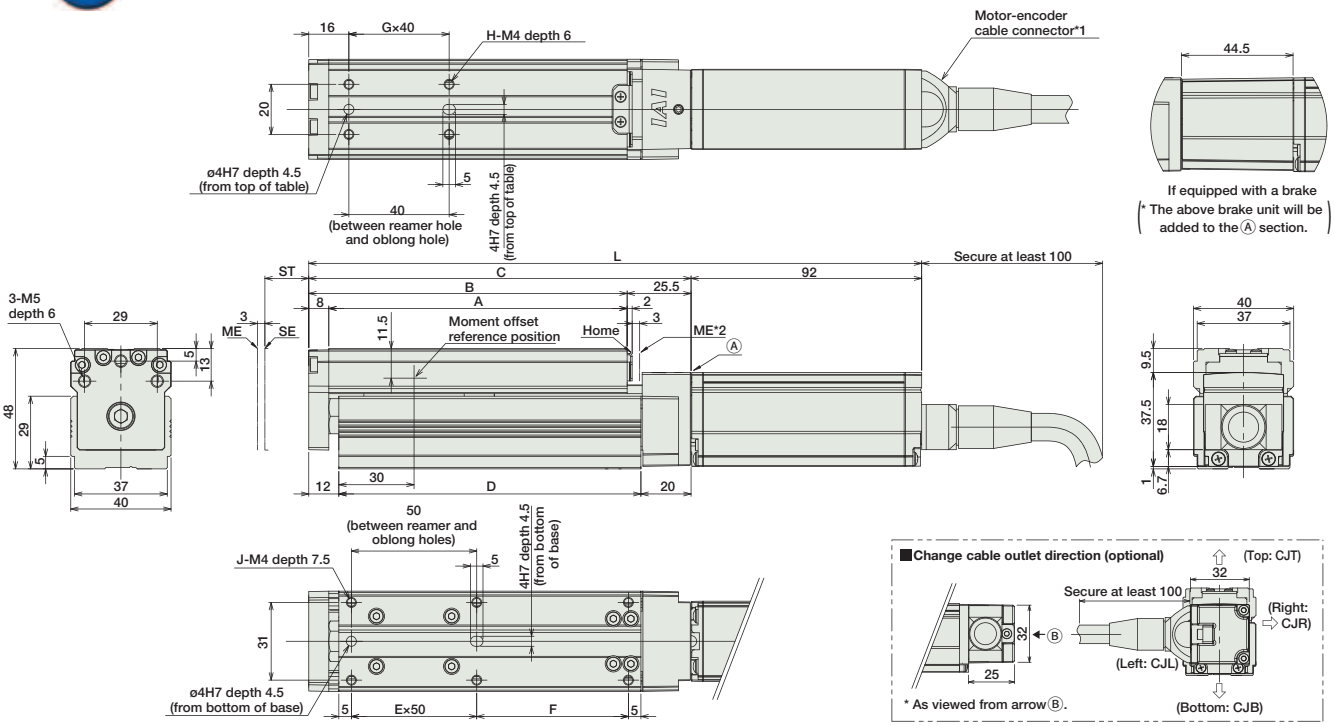
Name	Option Code	See Page	
Brake	**B**	→ A-25	
Cable exit direction (Top)	**CJT**	→ A-25	
Cable exit direction (Right)	**CJR**		
Cable exit direction (Left)	**CJL**		
Cable exit direction (Bottom)	**CJB**		
Reversed-home	**NM**	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



*1 The motor-encoder cable is connected directly to the motor cover of the actuator. See page A-39 for details on cables.

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

ST : Stroke
ME : Mechanical end
SE : Stroke end

■ Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.2kg.

Stroke		20	30	40	50	60	70	80	90	100
L	No Brake	214.5	224.5	234.5	244.5	254.5	264.5	274.5	284.5	294.5
	Brake-equipped	259	269	279	289	299	309	319	329	339
A		89	99	109	119	129	139	149	159	169
B		97	107	117	127	137	147	157	167	177
C		122.5	132.5	142.5	152.5	162.5	172.5	182.5	192.5	202.5
D		90.5	100.5	110.5	120.5	130.5	140.5	150.5	160.5	170.5
E		1	1	1	1	2	2	2	2	2
F		30.5	40.5	50.5	60.5	20.5	30.5	40.5	50.5	60.5
G		1	1	1	1	2	2	2	2	2
H		4	4	4	4	6	6	6	6	6
J		6	6	6	6	8	8	8	8	8
Weight (kg)		0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

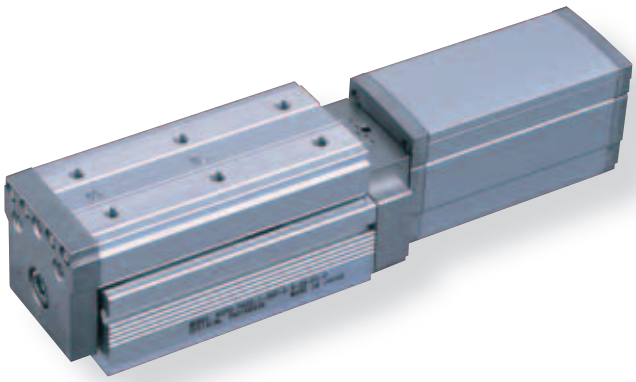
* This is for the single-axis PSEL.

RCP3-TA5C RoboCylinder Table Type Motor Unit Coupled 55mm Width Pulse Motor Ball Screw

■ Configuration: **RCP3** — **TA5C** — **I** — **35P** — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA5C	I: Incremental * The simple absolute encoder is also considered type "I".	35P: Pulse motor 35 □ size	10: 10mm 5: 5mm 2.5: 2.5mm	25: 25mm 〉 100: 100mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom	See Options below

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



Technical References P. A-5

POINT Notes on Selection

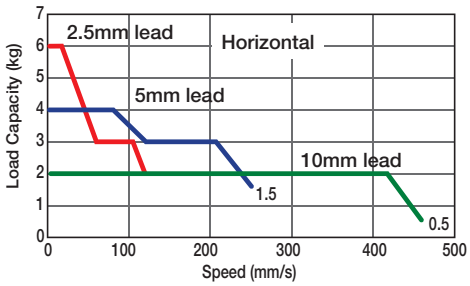
(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

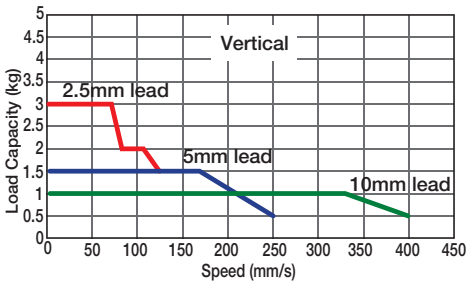
(2) Please note that the maximum speed is different when used horizontally versus vertically.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically).
This is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP3-TA5C-I-35P-10-①-②-③-④	10	～2	～1	34	25～100 (25mm increments)
RCP3-TA5C-I-35P-5-①-②-③-④	5	～4	～1.5	68	
RCP3-TA5C-I-35P-2.5-①-②-③-④	2.5	～6	～3	136	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	25 ～ 100 (25mm increments)
10	465 <400>
5	250
2.5	125

(Unit: mm/s)

Cable List

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

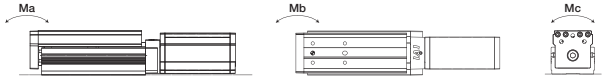
* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 25.5 N·m Mb: 36.5 N·m Mc: 56.1 N·m
Allowable Dynamic Moment (*)	Ma: 6.57 N·m Mb: 9.32 N·m Mc: 14.32 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

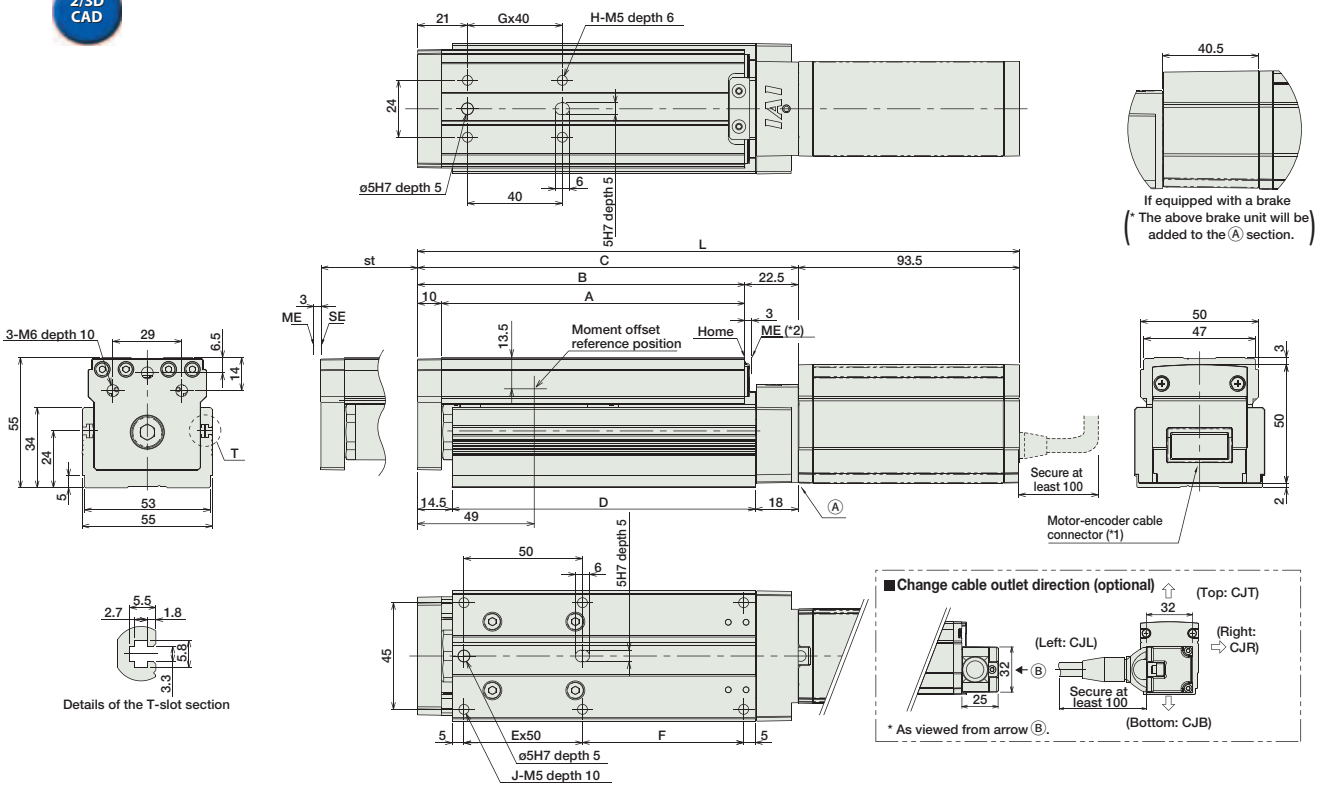
Name	Option Code	Standard Price	
Brake	B	→ A-25	
Cable exit direction (Top)	CJT	→ A-25	
Cable exit direction (Right)	CJR	→ A-25	
Cable exit direction (Left)	CJL	→ A-25	
Cable exit direction (Bottom)	CJB	→ A-25	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



■ Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.3kg.

Stroke		25	50	75	100
L	No Brake	229	254	279	304
	Brake-Equipped	269.5	294.5	319.5	344.5
A		103	128	153	178
B		113	138	163	188
C		135.5	160.5	185.5	210.5
D		103	128	153	178
E		1	1	2	2
F		43	68	43	68
G		1	1	2	2
H		4	4	6	6
J		6	6	8	8
Weight (kg)		1.2	1.4	1.5	1.7

(*1) The motor-encoder cable (integrated) is connected. (See page A-39 for details on cables.)
(*2) After homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

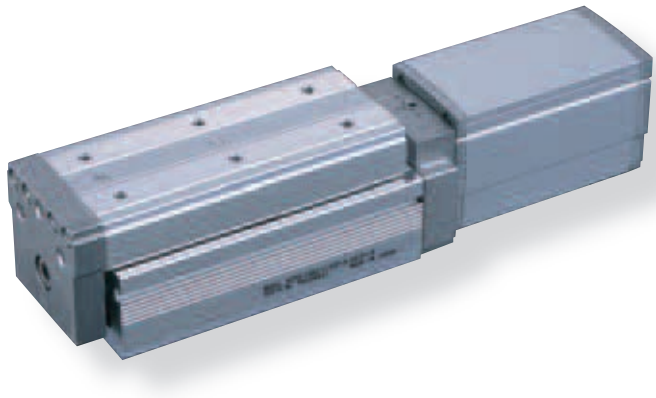
* This is for the single-axis PSEL.

RCP3-TA6C RoboCylinder Table Type Motor Unit Coupled 65mm Width Pulse Motor Ball Screw

■ Configuration:

RCP3	—	TA6C	—	I	—	42P	—	☐	—	☐	—	☐	—	☐	—	☐
Series		Type		Encoder		Motor		Lead		Stroke		Compatible Controllers		Cable Length		Option
				I: Incremental * The simple absolute encoder is also considered type "I".		42P: Pulse motor 42 ☐ size		12 : 12mm 6 : 6mm 3 : 3mm		25: 25mm 〉 150: 150mm (25mm pitch increments)		P1: PCON RPCON PSEL P3: PMEC PSEP		N : None P : 1m S : 3m M : 5m X ☐☐ : Custom		See Options below

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



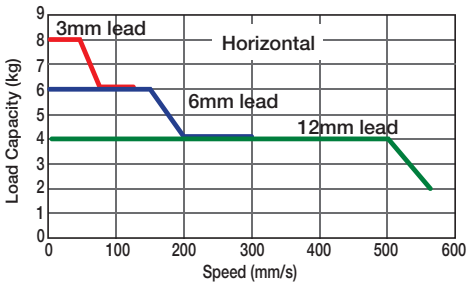
Technical References P. A-5

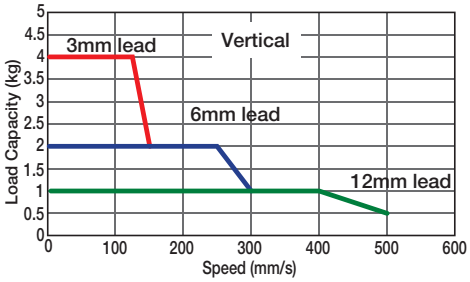
POINT Notes on Selection

(1) Since the RCP3 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.
(2) Please note that the maximum speed is different when used horizontally versus vertically.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
This is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N)(Note 2)	Stroke (mm)
RCP3-TA6C-I-42P-12-①-②-③-④	12	~ 4	~ 1	47	25~150 (25mm increments)
RCP3-TA6C-I-42P-6-①-②-③-④	6	~ 6	~ 2	95	
RCP3-TA6C-I-42P-3-①-②-③-④	3	~ 8	~ 4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	25 ~ 150 (25mm increments)
12	560 <500>
6	300
3	150

(Unit: mm/s)

Cable List

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

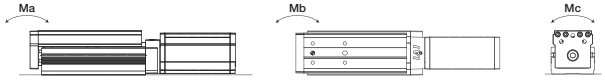
* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 29.4 N·m Mb: 42.0 N·m Mc: 74.1 N·m
Allowable Dynamic Moment (*)	Ma: 7.26 N·m Mb: 10.3 N·m Mc: 18.25 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

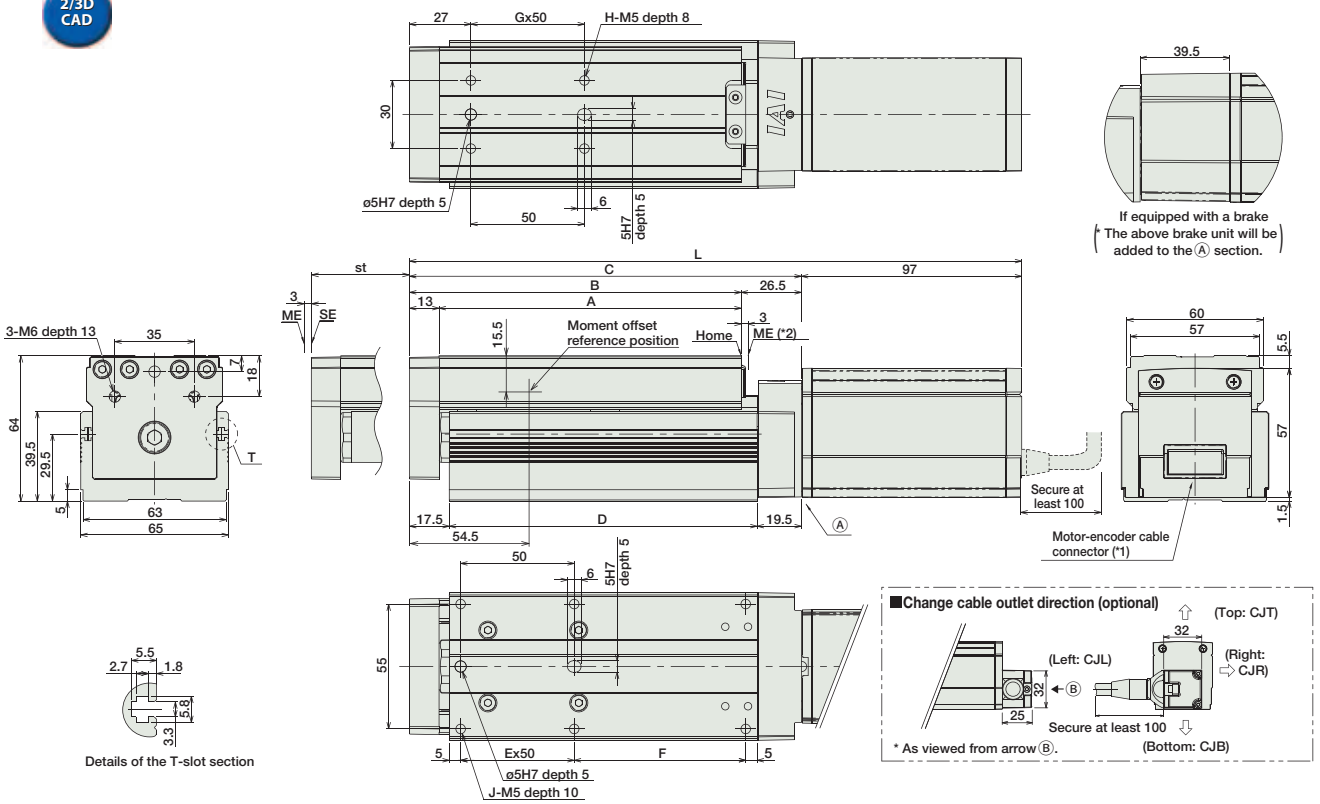
Name	Option Code	Standard Price	
Brake	B	→ A-25	
Cable exit direction (Top)	CJT	→ A-25	
Cable exit direction (Right)	CJR	→ A-25	
Cable exit direction (Left)	CJL	→ A-25	
Cable exit direction (Bottom)	CJB	→ A-25	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



■ Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.4kg.

Stroke		25	50	75	100	125	150
L	No Brake	244.5	269.5	294.5	319.5	344.5	369.5
	Brake-Equipped	284	309	334	359	384	409
A		108	133	158	183	208	233
B		121	146	171	196	221	246
C		147.5	172.5	197.5	222.5	247.5	272.5
D		110.5	135.5	160.5	185.5	210.5	235.5
E		1	1	2	2	3	3
F		50.5	75.5	50.5	75.5	50.5	75.5
G		1	1	2	2	3	3
H		4	4	6	6	8	8
J		6	6	8	8	10	10
Weight (kg)		1.8	2	2.2	2.4	2.6	2.8

(*1) The motor-encoder cable (integrated) is connected. (See page A-39 for details on cables.)

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

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

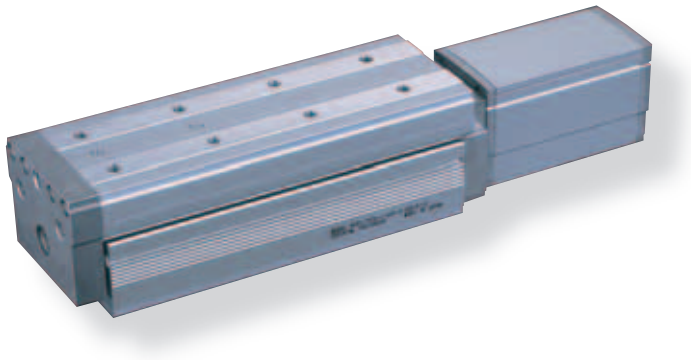
* This is for the single-axis PSEL.

RCP3-TA7C RoboCylinder Table Type Motor Unit Coupled 75mm Width Pulse Motor Ball Screw

■ Configuration:

RCP3	— TA7C	— I	— 42P	— ☐	— ☐	— ☐	— ☐	— ☐
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	12: 12mm 6: 6mm 3: 3mm	25: 25mm 〉 200: 200mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below

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



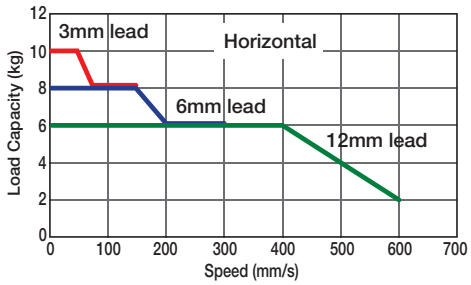
Technical References P. A-5

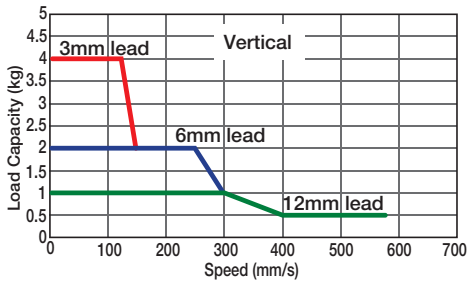
POINT Notes on Selection

(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph below to see if your desired speed and load capacity are supported.
(2) Please note that the maximum speed is different when used horizontally versus vertically.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically).
This is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP3-TA7C-I-42P-12-①-②-③-④	12	~ 6	~ 1	47	25~200 (25mm increments)
RCP3-TA7C-I-42P-6-①-②-③-④	6	~ 8	~ 2	95	
RCP3-TA7C-I-42P-3-①-②-③-④	3	~ 10	~ 4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	25 ~ 200 (25mm increments)
12	600 <580>
6	300
3	150

(Unit: mm/s)

Cable List

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

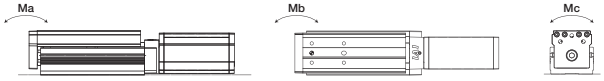
* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Moment	Ma: 42.6 N·m Mb: 60.8 N·m Mc: 123.2 N·m
Allowable Dynamic Moment (*)	Ma: 9.91 N·m Mb: 14.13 N·m Mc: 28.65 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

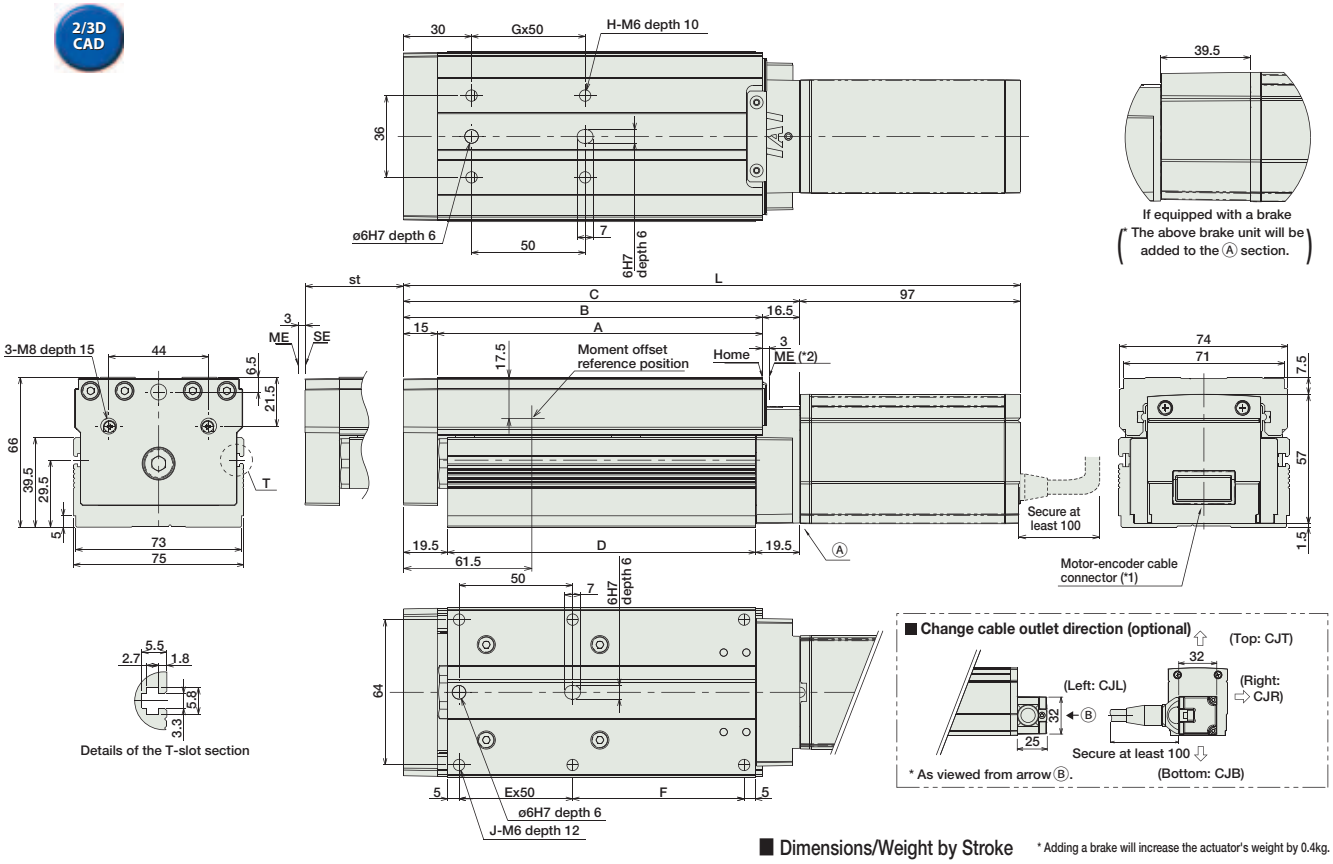
Name	Option Code	Standard Price	
Brake	B	→ A-25	
Cable exit direction (Top)	CJT	→ A-25	
Cable exit direction (Right)	CJR	→ A-25	
Cable exit direction (Left)	CJL	→ A-25	
Cable exit direction (Bottom)	CJB	→ A-25	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.4kg.

Stroke		25	50	75	100	125	150	175	200
L	No Brake	246.5	271.5	296.5	321.5	346.5	371.5	396.5	421.5
	Brake-Equipped	286	311	336	361	386	411	436	461
A		118	143	168	193	218	243	268	293
B		133	158	183	208	233	258	283	308
C		149.5	174.5	199.5	224.5	249.5	274.5	299.5	324.5
D		110.5	135.5	160.5	185.5	210.5	235.5	260.5	285.5
E		1	1	2	2	3	3	4	4
F		50.5	75.5	50.5	75.5	50.5	75.5	50.5	75.5
G		1	1	2	2	3	3	4	4
H		4	4	6	6	8	8	10	10
J		6	6	8	8	10	10	12	12
Weight (kg)		2.1	2.3	2.5	2.8	3	3.2	3.4	3.6

(*1) The motor-encoder cable (integrated) is connected. (See page A-39 for details on cables.)

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

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

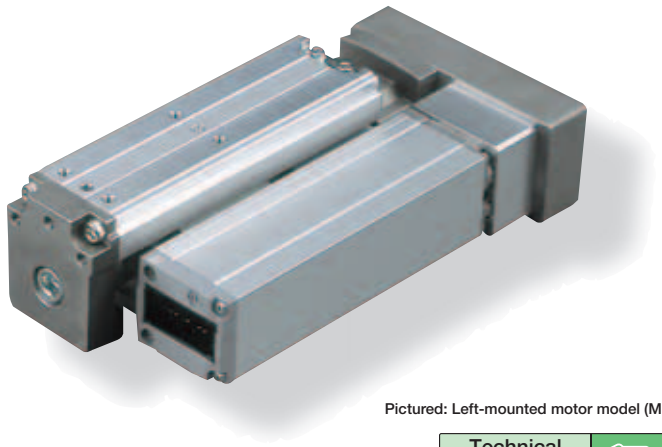
* This is for the single-axis PSEL.

RCP3-TA3R RoboCylinder Mini Table Type Side-Mounted Motor 36mm Width Pulse Motor Ball Screw

■ Configuration: **RCP3** — **TA3R** — **I** — **20P** — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA3R	I: Incremental * The simple absolute encoder is also considered type "I".	20P: Pulse motor 20 ☐ size	6: 6mm 4: 4mm 2: 2mm	20: 20mm \ 100: 100mm (10mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

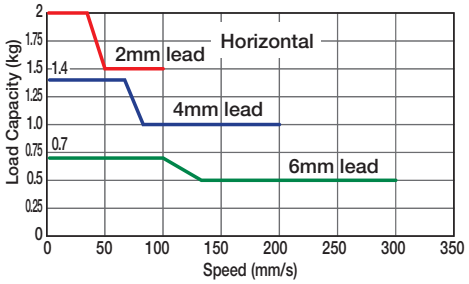


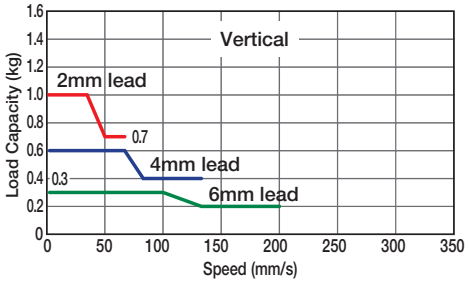
Pictured: Left-mounted motor model (ML).

Technical References P. A-5

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, or when used vertically).
0.3G (0.2G for 2mm lead) is the upper limit of the acceleration.

Actuator Specifications

■ Lead and Load Capacity

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

Model	Feed Screw	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-TA3R-I-20P-6-①-②-③-④	Ball Screw	6	~ 0.7	~ 0.3	9	±0.02	20~100 (10mm increments)
RCP3-TA3R-I-20P-4-①-②-③-④		4	~ 1.4	~ 0.6	14		
RCP3-TA3R-I-20P-2-①-②-③-④		2	~ 2	~ 1	28		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	20 ~ 100 (mm)
Ball Screw 6	300 <200>
Ball Screw 4	200 <133>
Ball Screw 2	100 <67>

* The values enclosed in "< >" apply to vertical usage. (Unit: mm/s)

Cable List

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

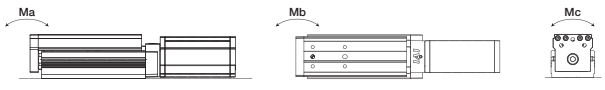
* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø6mm C10 grade
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note 3)	Ma: 3.2 N·m Mb: 4.6 N·m Mc: 5.1 N·m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(Note 3) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

Name	Option Code	See Page	
Brake	**B**	→ A-25	
Left-Mounted Motor (Standard)	**ML**	→ A-33	
Right-Mounted Motor	**MR**	→ A-33	
Reversed-home	**NM**	→ A-33	

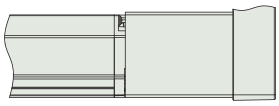
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

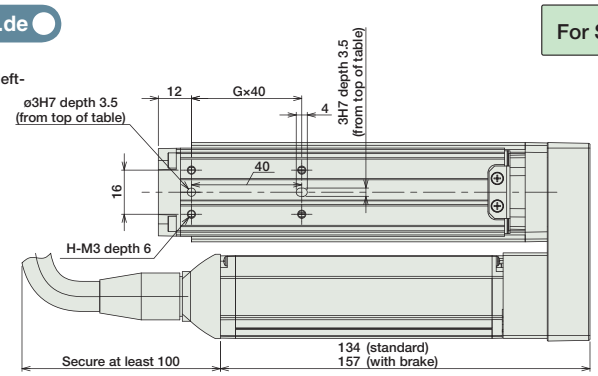
2/3D CAD

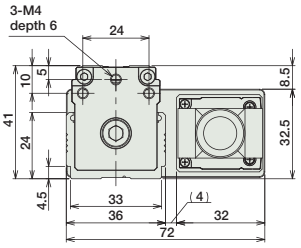
For Special Orders P. A-9

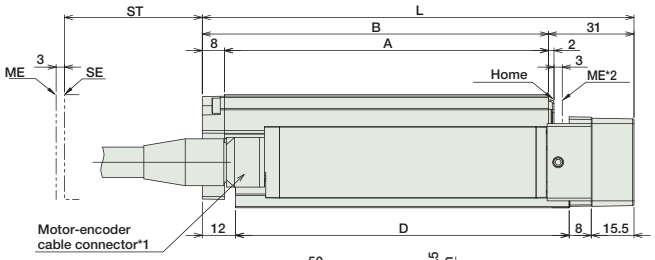
* Below is a drawing of the left-mounted motor model.

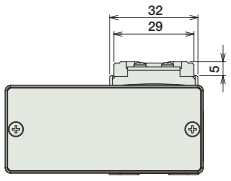


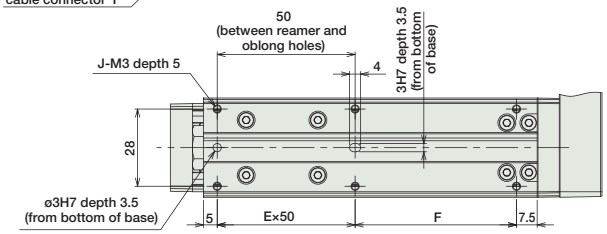
If brake-equipped:
(See right for dimensions)











The offset reference position of the moment is the same as TA3C (P270).

ST : Stroke
ME : Mechanical end
SE : Stroke end

*1 The motor-encoder cable is connected directly to the motor cover of the actuator. See page A-39 for details on cables.

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.1kg.

Stroke	20	30	40	50	60	70	80	90	100
L	126.5	136.5	146.5	156.5	166.5	176.5	186.5	196.5	206.5
A	87.5	97.5	107.5	117.5	127.5	137.5	147.5	157.5	167.5
B	95.5	105.5	115.5	125.5	135.5	145.5	155.5	165.5	175.5
D	91	101	111	121	131	141	151	161	171
E	1	1	1	1	2	2	2	2	2
F	28.5	38.5	48.5	58.5	18.5	28.5	38.5	48.5	58.5
G	1	1	1	1	2	2	2	2	2
H	4	4	4	4	6	6	6	6	6
J	6	6	6	6	8	8	8	8	8
Weight (kg)	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with different line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

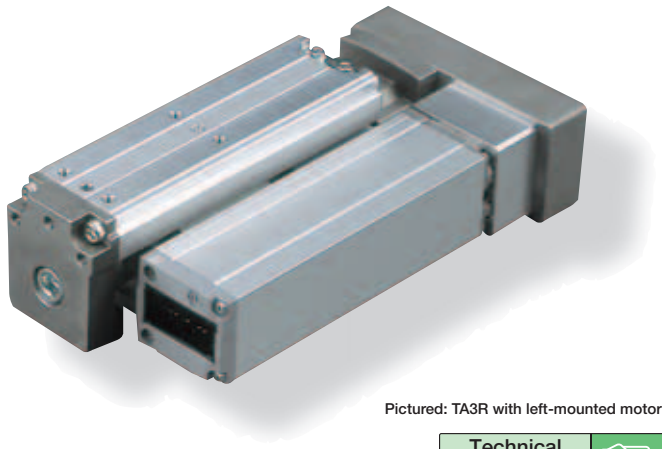
* This is for the single-axis PSEL.

RCP3-TA4R RoboCylinder Mini Table Type Side-Mounted Motor 40mm Width Pulse Motor Ball Screw

■ Configuration: RCP3 — TA4R — I — 28P — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA4R	I: Incremental * The simple absolute encoder is also considered type "I".	28P: Pulse motor 28 □ size	6 : 6mm 4 : 4mm 2 : 2mm	20: 20mm 〃 100: 100mm (10mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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



Pictured: TA3R with left-mounted motor (ML).

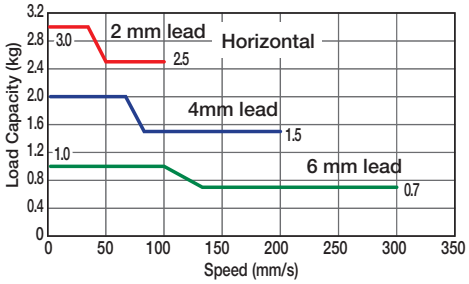
Technical References P. A-5

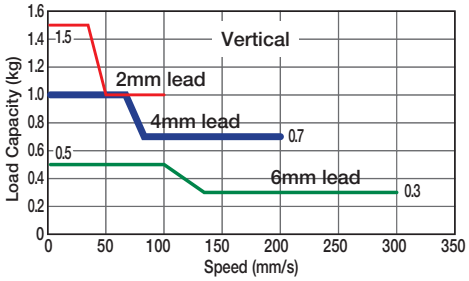
POINT Notes on Selection

(1) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2mm-lead model, or when used vertically).
0.3G (0.2G for 2mm lead) is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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	Feed Screw	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Positioning Repeatability (mm)	Stroke (mm)
RCP3-TA4R-I-28P-6-①-②-③-④	Ball Screw	6	~1	~0.5	15	±0.02	20~100 (10mm increments)
RCP3-TA4R-I-28P-4-①-②-③-④		4	~2	~1	22		
RCP3-TA4R-I-28P-2-①-②-③-④		2	~3	~1.5	44		

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-66 for pushing force graphs.

■ Stroke and Maximum Speed

Lead \ Stroke	20 ~ 100 (mm)
Ball Screw 6	300
Ball Screw 4	200
Ball Screw 2	100

(Unit: mm/s)

Cable List

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

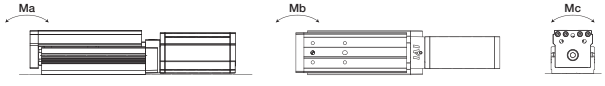
* The RCP3 comes standard with a robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø6mm C10 grade
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note 3)	Ma: 4.2 N·m Mb: 6 N·m Mc: 8.2 N·m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(Note 3) Based on a 5,000km service life.

Directions of Allowable Load Moments



Option List

Name	Option Code	See Page	
Brake	**B**	→ A-25	
Cable exit direction (Top)	**CJT**	→ A-25	
Cable exit direction (Outside)	**CJO**		
Cable exit direction (Bottom)	**CJB**		
Left-Mounted Motor (Standard)	**ML**	→ A-33	
Right-Mounted Motor	**MR**	→ A-33	
Reversed-home	**NM**	→ A-33	

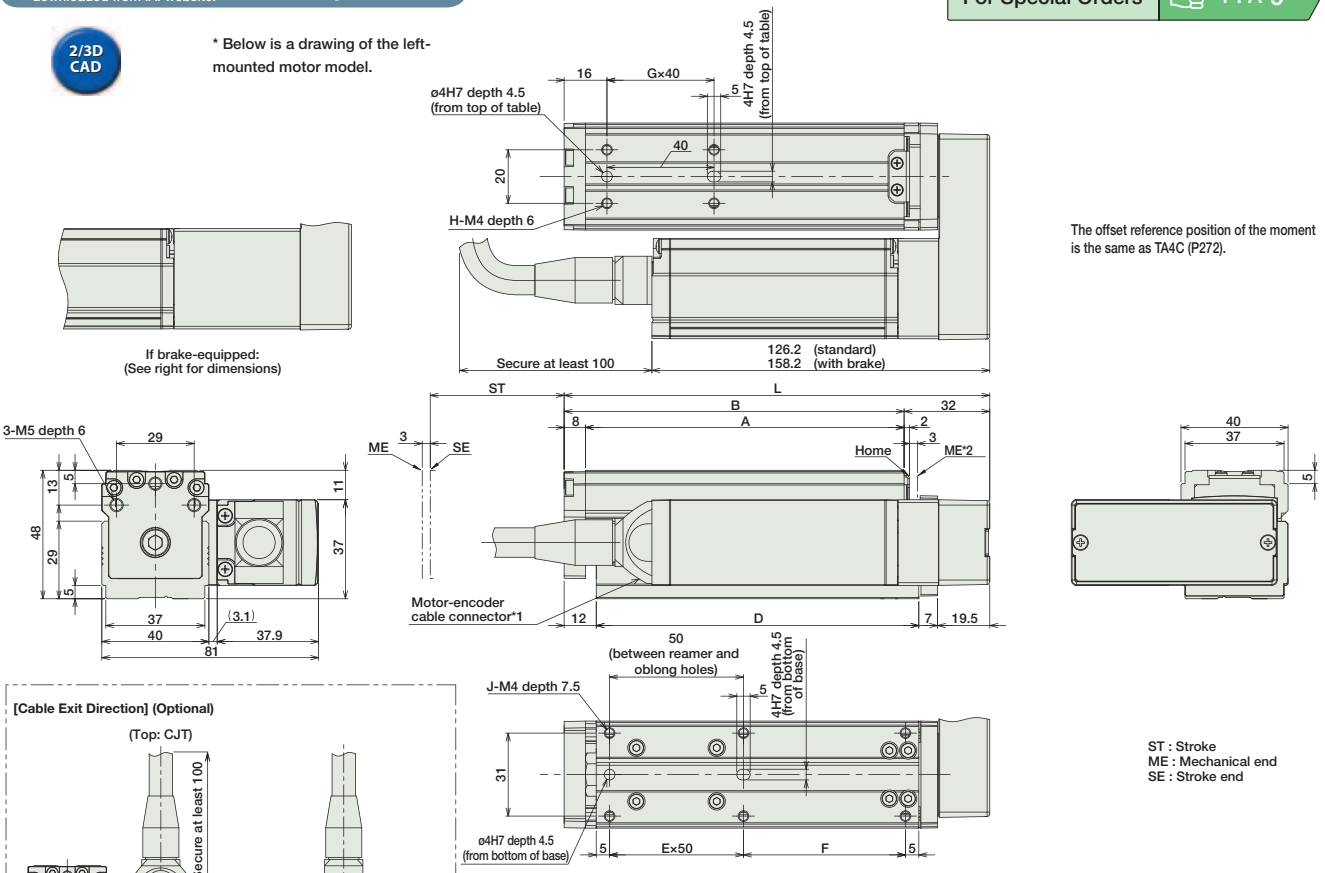
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* Below is a drawing of the left-mounted motor model.



The offset reference position of the moment is the same as TA4C (P272).

ST : Stroke
ME : Mechanical end
SE : Stroke end

*1 The motor-encoder cable is connected directly to the motor cover of the actuator. See page A-39 for details on cables.

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

Dimensions/Weight by Stroke

* Adding a brake will increase the actuator's weight by 0.2kg.

Stroke	20	30	40	50	60	70	80	90	100
L	129	139	149	159	169	179	189	199	209
A	89	99	109	119	129	139	149	159	169
B	97	107	117	127	137	147	157	167	177
D	90.5	100.5	110.5	120.5	130.5	140.5	150.5	160.5	170.5
E	1	1	1	1	2	2	2	2	2
F	30.5	40.5	50.5	60.5	20.5	30.5	40.5	50.5	60.5
G	1	1	1	1	2	2	2	2	2
H	4	4	4	4	6	6	6	6	6
J	6	6	6	6	8	8	8	8	8
Weight (kg)	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with different line driver support	(—)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-TA5R RoboCylinder Table Type Side-Mounted Motor 55mm Width Pulse Motor Ball Screw

■ Configuration:

RCP3	TA5R	I	35P	☐	☐	☐	☐	☐
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	35P: Pulse motor 35 ☐ size	10: 10mm 5: 5mm 2.5: 2.5mm	25: 25mm 〉 100: 100mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

Technical References P. A-5

POINT Notes on Selection

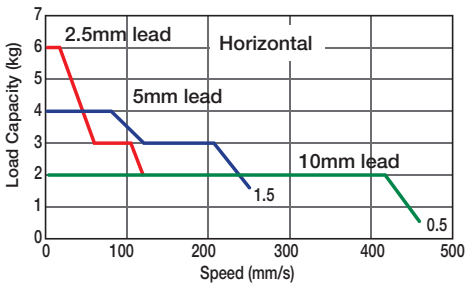
(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.

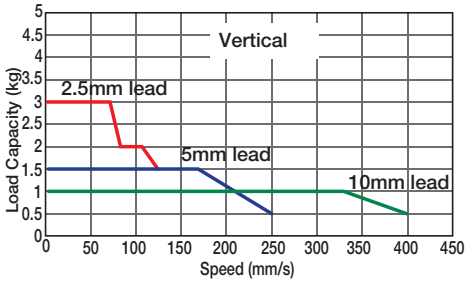
(2) Please note that the maximum speed is different when used horizontally versus vertically.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-TA5R-I-35P-10-①-②-③-④	10	～2	～1	34	25～100 (25mm increments)
RCP3-TA5R-I-35P-5-①-②-③-④	5	～4	～1.5	68	
RCP3-TA5R-I-35P-2.5-①-②-③-④	2.5	～6	～3	136	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 ～ 100 (25mm increments)
10	465 <400>
5	250
2.5	125

* The values enclosed in "< >" apply to vertical usage. (Unit: mm/s)

Cable List

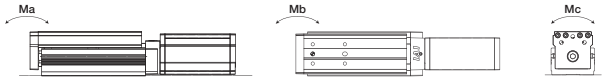
Type	Cable Symbol	
Standard (Robot Cables)	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ～ X10 (10m)	
	X11 (11m) ～ X15 (15m)	
	X16 (16m) ～ X20 (20m)	

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 25.5 N·m Mb: 36.5 N·m Mc: 56.1 N·m
Allowable Dynamic Load Moment	Ma: 6.57 N·m Mb: 9.32 N·m Mc: 14.32 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moments



5,000 km service life

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Cable exit direction (Top)	CJT	→ A-25	
Cable exit direction (Outside)	CJO		
Cable exit direction (Bottom)	CJB		
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Reversed-home	NM	→ A-33	

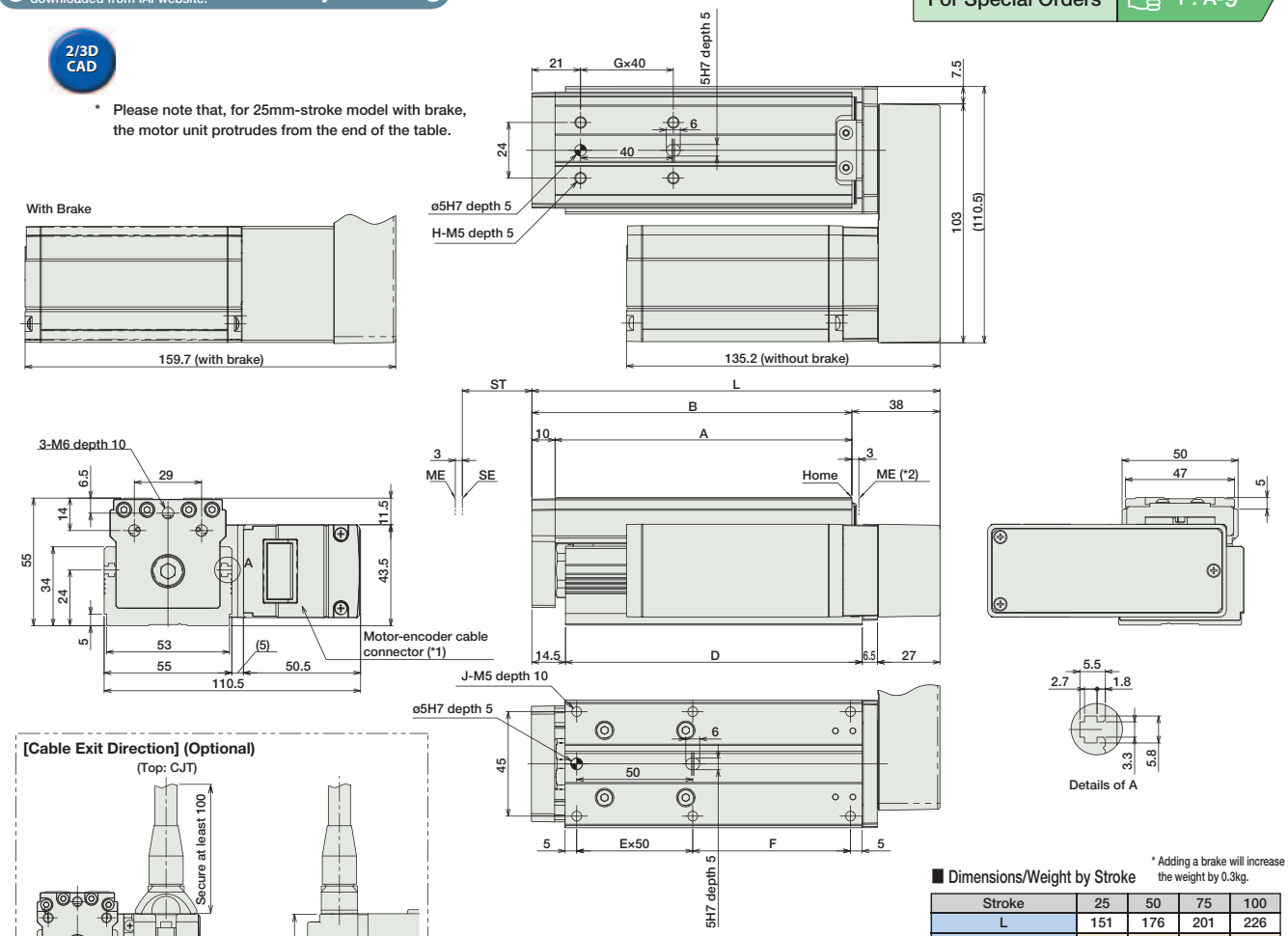
Dimensions

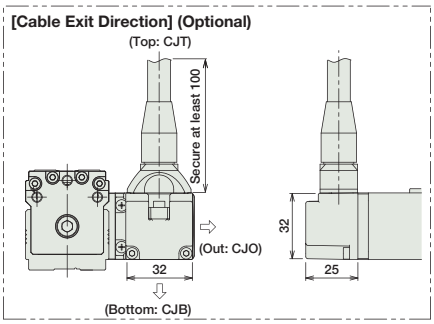
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* Please note that, for 25mm-stroke model with brake, the motor unit protrudes from the end of the table.





(*1) The motor-encoder cable is provided as an integrated cable. (see page A-39)

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

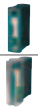
Dimensions/Weight by Stroke

* Adding a brake will increase the weight by 0.3kg.

Stroke	25	50	75	100
L	151	176	201	226
A	103	128	153	178
B	113	138	163	188
D	103	128	153	178
E	1	1	2	2
F	43	68	43	68
G	1	1	2	2
H	4	4	6	6
J	6	6	8	8
Weight (kg)	1.4	1.6	1.7	1.9

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP3-TA6R RoboCylinder Table Type Side-Mounted Motor 65mm Width Pulse Motor Ball Screw

■ Configuration: **RCP3** — **TA6R** — **I** — **42P** — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	12: 12mm 6: 6mm 3: 3mm	25: 25mm 〉 150: 150mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

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

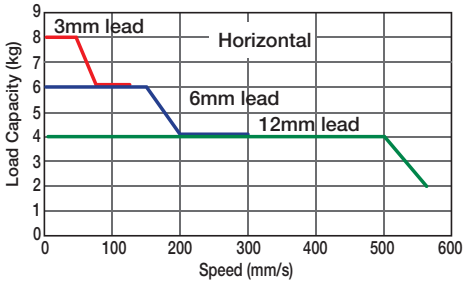
Technical References P. A-5

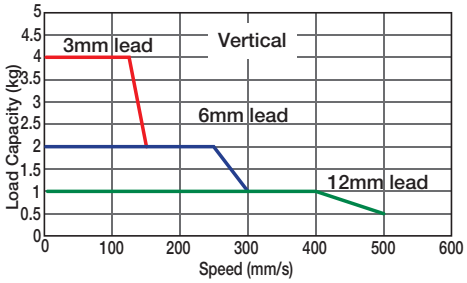
POINT
Notes on Selection

(1) Since the RCP3 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.
(2) Please note that the maximum speed is different when used horizontally versus vertically.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 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

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-TA6R-I-42P-12-①-②-③-④	12	～4	～1	47	25～150 (25mm increments)
RCP3-TA6R-I-42P-6-①-②-③-④	6	～6	～2	95	
RCP3-TA6R-I-42P-3-①-②-③-④	3	～8	～4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 ～ 150 (25mm increments)
12	560 <500>
6	300
3	150

* The values enclosed in "< >" apply to vertical usage. (Unit: mm/s)

Cable List

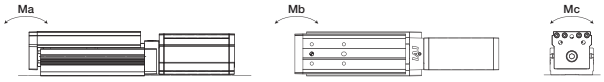
Type	Cable Symbol	
Standard (Robot Cables)	**P** (1m)	
	S (3m)	
	M (5m)	
Special Lengths	**X06** (6m) ～ **X10** (10m)	
	X11 (11m) ～ **X15** (15m)	
	X16 (16m) ～ **X20** (20m)	

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 29.4 N·m Mb: 42.0 N·m Mc: 74.1 N·m
Allowable Dynamic Load Moment	Ma: 7.26 N·m Mb: 10.3 N·m Mc: 18.25 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moments



5,000 km service life

Option List

Name	Option Code	See Page	
Brake	**B**	→ A-25	
Cable exit direction (Top)	**CJT**	→ A-25	
Cable exit direction (Outside)	**CJO**		
Cable exit direction (Bottom)	**CJB**		
Left-Mounted Motor (Standard)	**ML**	→ A-33	
Right-Mounted Motor	**MR**	→ A-33	
Reversed-home	**NM**	→ A-33	

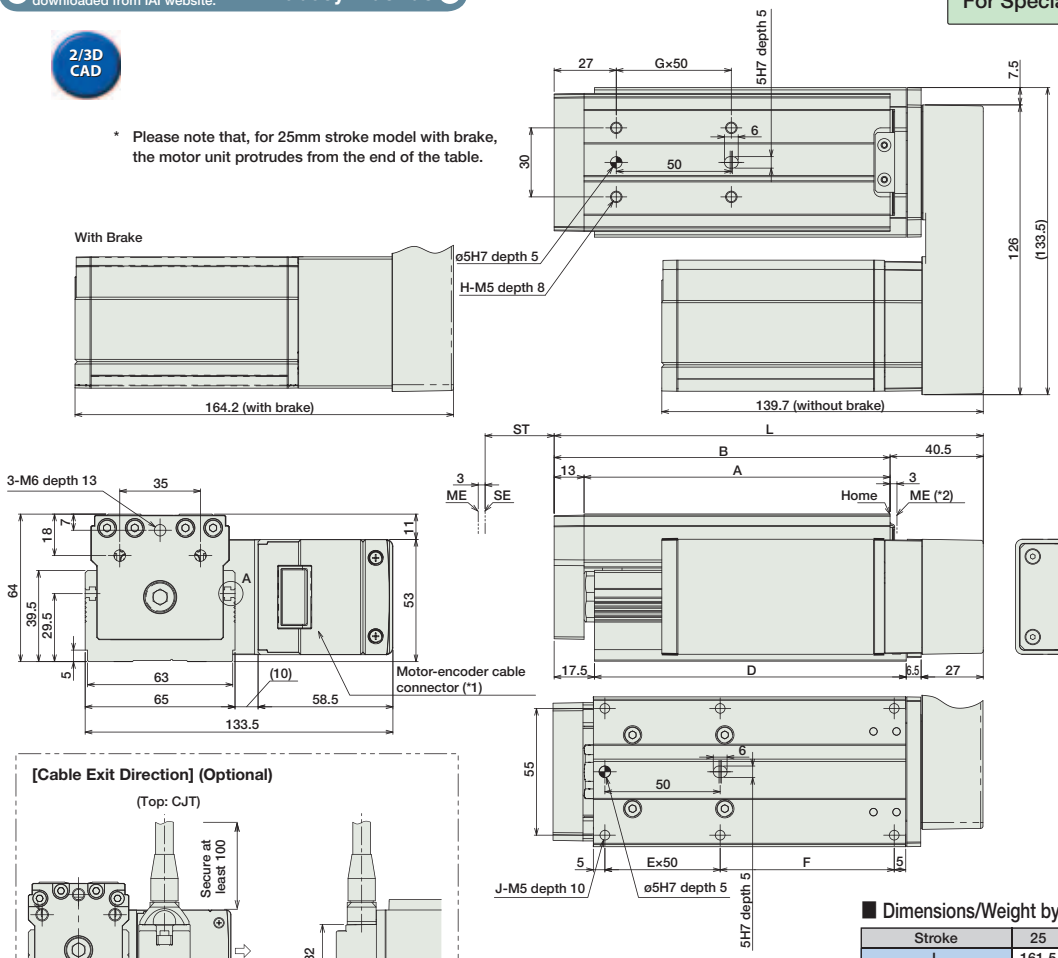
Dimensions

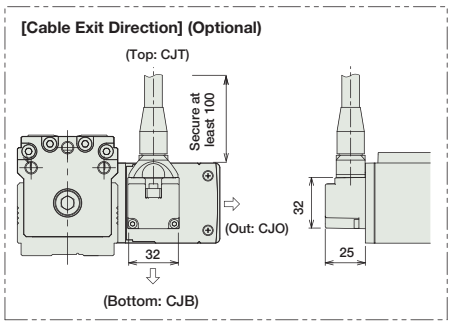
CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

* Please note that, for 25mm stroke model with brake, the motor unit protrudes from the end of the table.





(*1) The motor-encoder cable is provided as an integrated cable. (see page A-39)

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

Dimensions/Weight by Stroke

* Adding a brake will increase the weight by 0.4kg.

Stroke	25	50	75	100	125	150
L	161.5	186.5	211.5	236.5	261.5	286.5
A	108	133	158	183	208	233
B	121	146	171	196	221	246
D	110.5	135.5	160.5	185.5	210.5	235.5
E	1	1	2	2	3	3
F	50.5	75.5	50.5	75.5	50.5	75.5
G	1	1	2	2	3	3
H	4	4	6	6	8	8
J	6	6	8	8	10	10
Weight (kg)	2.1	2.3	2.5	2.7	2.9	3.1

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with different line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

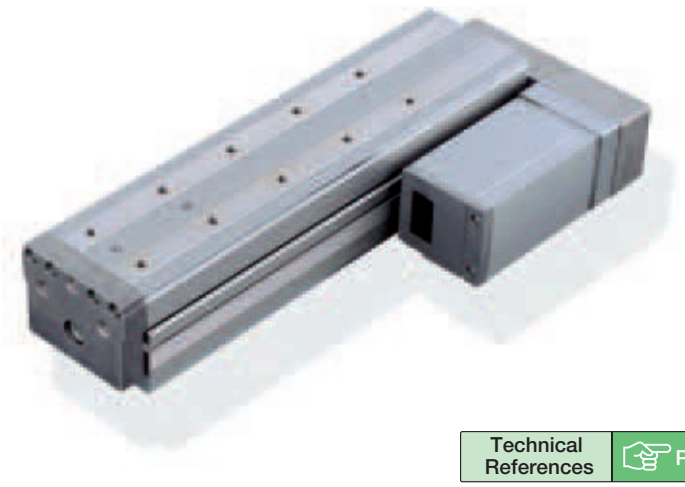
* This is for the single-axis PSEL.

RCP3-TA7R RoboCylinder Table Type Side-Mounted Motor 75mm Width Pulse Motor Ball Screw

■ Configuration: **RCP3 — TA7R — I — 42P — ☐ — ☐ — ☐ — ☐ — ☐ — ☐**

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP3	TA7R	I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	12 : 12mm 6 : 6mm 3 : 3mm	25: 25mm 〉 200: 200mm (25mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	See Options below * Be sure to specify which side the motor is to be mounted (ML/MR).

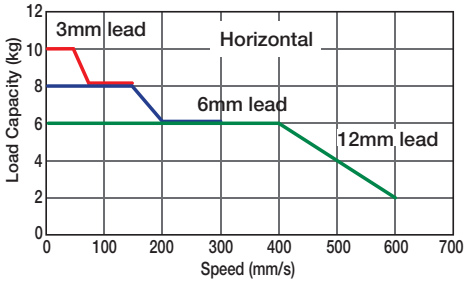
* See page Pre-35 for an explanation of the naming convention.

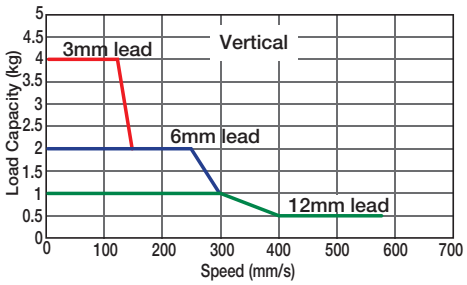


Technical References P. A-5

■ Speed vs. Load Capacity

Due to the characteristics of the Pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





POINT Notes on Selection

(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds.
Check in the Speed vs. Load Capacity graph below to see if your desired speed and load capacity are supported.

(2) Please note that the maximum speed is different when used horizontally versus vertically.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Maximum Push Force (N)	Stroke (mm)
RCP3-TA7R-I-42P-12-①-②-③-④	12	~ 6	~ 1	47	25~200 (25mm increments)
RCP3-TA7R-I-42P-6-①-②-③-④	6	~ 8	~ 2	95	
RCP3-TA7R-I-42P-3-①-②-③-④	3	~ 10	~ 4	189	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Lead \ Stroke	25 ~ 200 (25mm increments)
12	600 <580>
6	300
3	150

* The values enclosed in "< >" apply to vertical usage. (Unit: mm/s)

Cable List

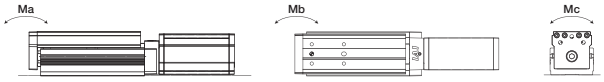
Type	Cable Symbol	
Standard (Robot Cables)	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Material: Aluminum (special alumite treated)
Allowable Static Load Moment	Ma: 42.6 N·m Mb: 60.8 N·m Mc: 123.2 N·m
Allowable Dynamic Load Moment	Ma: 9.91 N·m Mb: 14.13 N·m Mc: 28.65 N·m
Overhang Load Length	Within the load moment range
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moments



5,000 km service life

Option List

Name	Option Code	See Page	
Brake	B	→ A-25	
Cable exit direction (Top)	CJT	→ A-25	
Cable exit direction (Outside)	CJO		
Cable exit direction (Bottom)	CJB		
Left-Mounted Motor (Standard)	ML	→ A-33	
Right-Mounted Motor	MR	→ A-33	
Reversed-home	NM	→ A-33	

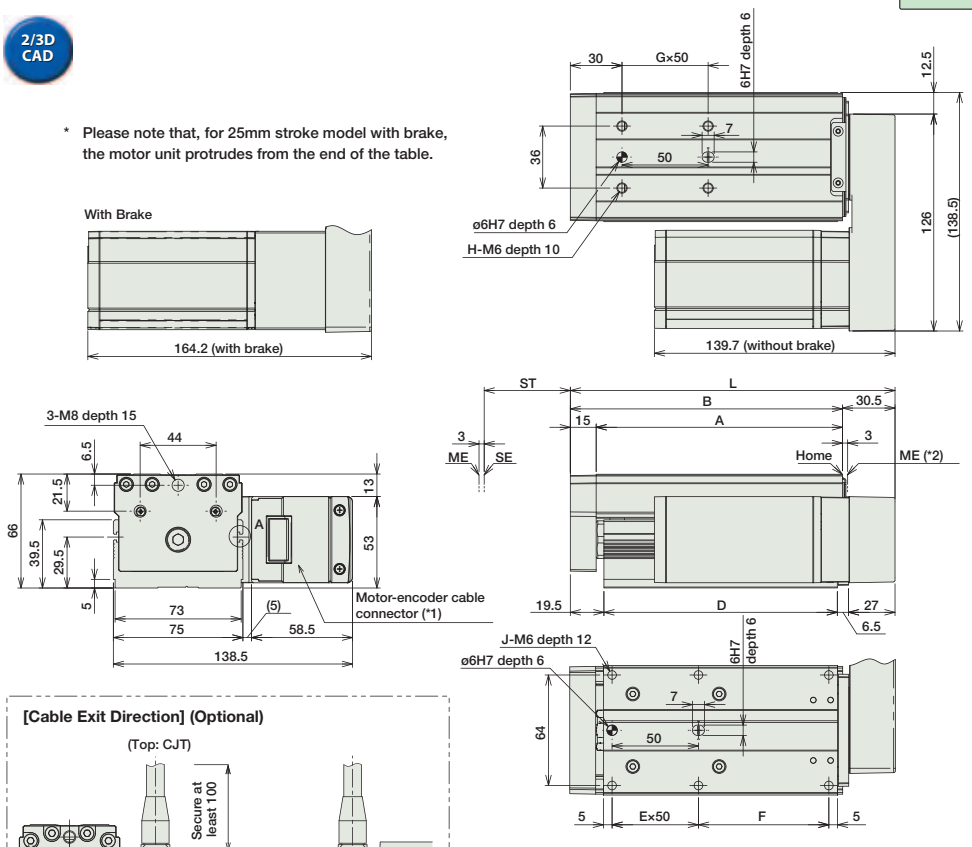
Dimensions

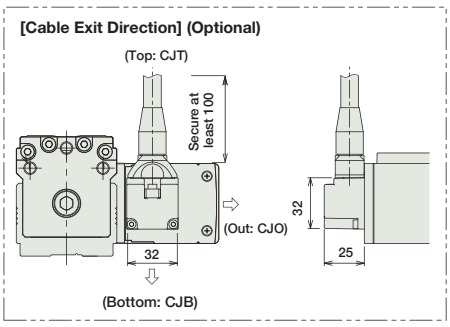
CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

* Please note that, for 25mm stroke model with brake, the motor unit protrudes from the end of the table.





(*1) The motor-encoder cable is provided as an integrated cable. (see page A-39)

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

Dimensions/Weight by Stroke

* Adding a brake will increase the weight by 0.4kg.

Stroke	25	50	75	100	125	150	175	200
L	163.5	188.5	213.5	238.5	263.5	288.5	313.5	338.5
A	118	143	168	193	218	243	268	293
B	133	158	183	208	233	258	283	308
D	110.5	135.5	160.5	185.5	210.5	235.5	260.5	285.5
E	1	1	2	2	3	3	4	4
F	50.5	75.5	50.5	75.5	50.5	75.5	50.5	75.5
G	1	1	2	2	3	3	4	4
H	4	4	6	6	8	8	10	10
J	6	6	8	8	10	10	12	12
Weight (kg)	2.4	2.6	2.8	3.1	3.3	3.5	3.7	3.9

Compatible Controllers

The RCP3 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GRSS

RoboCylinder 2-Finger Gripper Mini Slider Type 42mm Width Pulse Motor

■ Configuration:

RCP2	GRSS	I	20P	30	8	☐	☐	☐
Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	20P : 20 □ size Pulse motor	30: 1/30 deceleration ratio	8: 8mm (4mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom	NM: Reversed-home FB: Flange bracket SB: Shaft bracket

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

Technical References P. A-5

POINT Notes on Selection

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

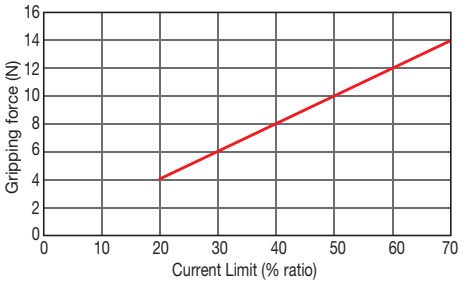
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force.
(See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRSS-I-20P-30-8-①-②-③	30	14	8 (4 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	8 (mm)
30	78 (per side)

(Unit: mm/s)

Cable List

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

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

* See page A-39 for cables for maintenance.

Actuator Specifications

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

Option List

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

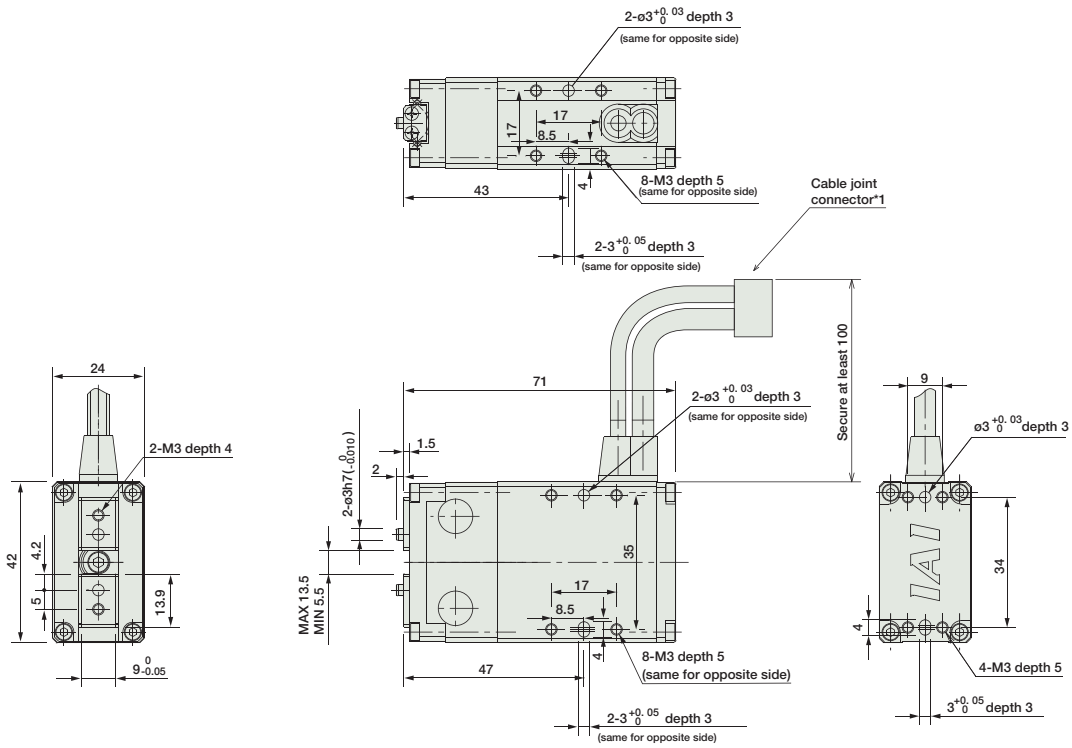
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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



Weight (kg)	0.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	P481 See		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

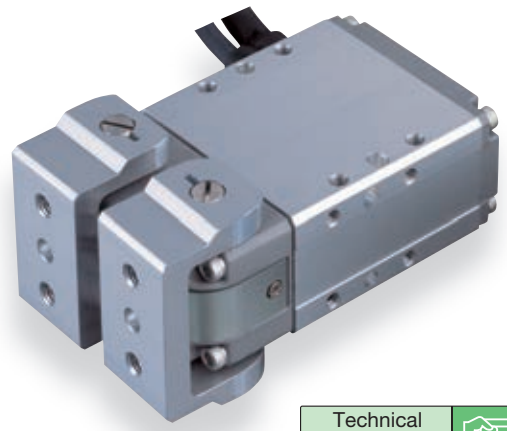
RCP2-GRLS

RoboCylinder 2-Finger Gripper Mini Lever Type 42mm Width Pulse Motor

■ Configuration: **RCP2** – **GRLS** – **I** – **20P** – **30** – **180** – □ – □ – □

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	20P : 20 □ size Pulse motor	30: 1/30 deceleration ratio	180: 180 degrees (90 degrees per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom	NM: Reversed-home FB: Flange bracket SB: Shaft bracket

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



Technical References P. A-5

POINT Notes on Selection

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

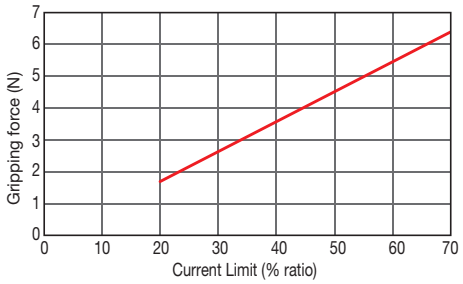
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force.
(See page A-77 for details.)

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (deg)
RCP2-GRLS-I-20P-30-180- ①-②-③	30	6.4	180 (90 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	180 (deg)
30	600 (per side)

(Unit: degrees/s)

Cable List

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

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

* See page A-39 for cables for maintenance.

Actuator Specifications

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

Option List

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

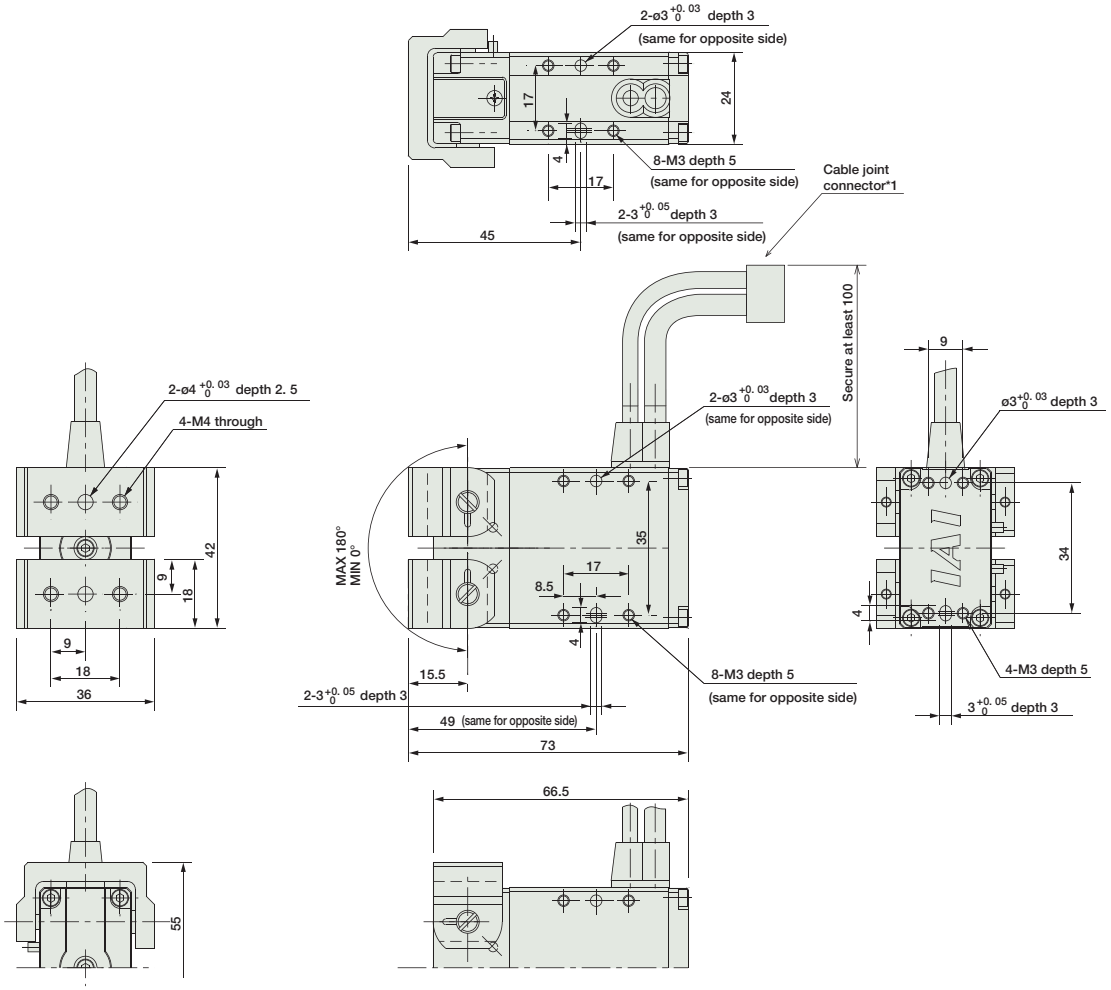
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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



Weight (kg)	0.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GRS

RoboCylinder 2-Finger Gripper Small Slider Type 69mm Width Pulse Motor

■ Configuration:

RCP2	GRS	I	20P	1	10			
Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	20P : 20 □ size Pulse motor	1: 1/1 deceleration ratio	10: 10mm (5mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□ : Custom R □□ : Robot cable	SB: Shaft bracket FB: Flange bracket

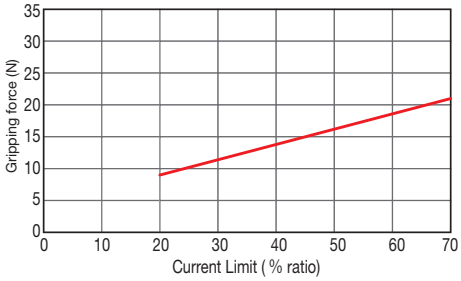
* See page Pre-35 for an explanation of the naming convention.

Technical References P. A-5

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

POINT Notes on Selection

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force.
(See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRS-I-20P-1-10-①-②-③	1	21	10 (5 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	10 (mm)
1	33.3 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Timing belt + trapezoidal screw (1.5 lead)
Positioning Repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost Motion	0.1mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 6.3 N·m Mb: 6.3 N·m Mc: 7.0 N·m
Weight	0.36kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

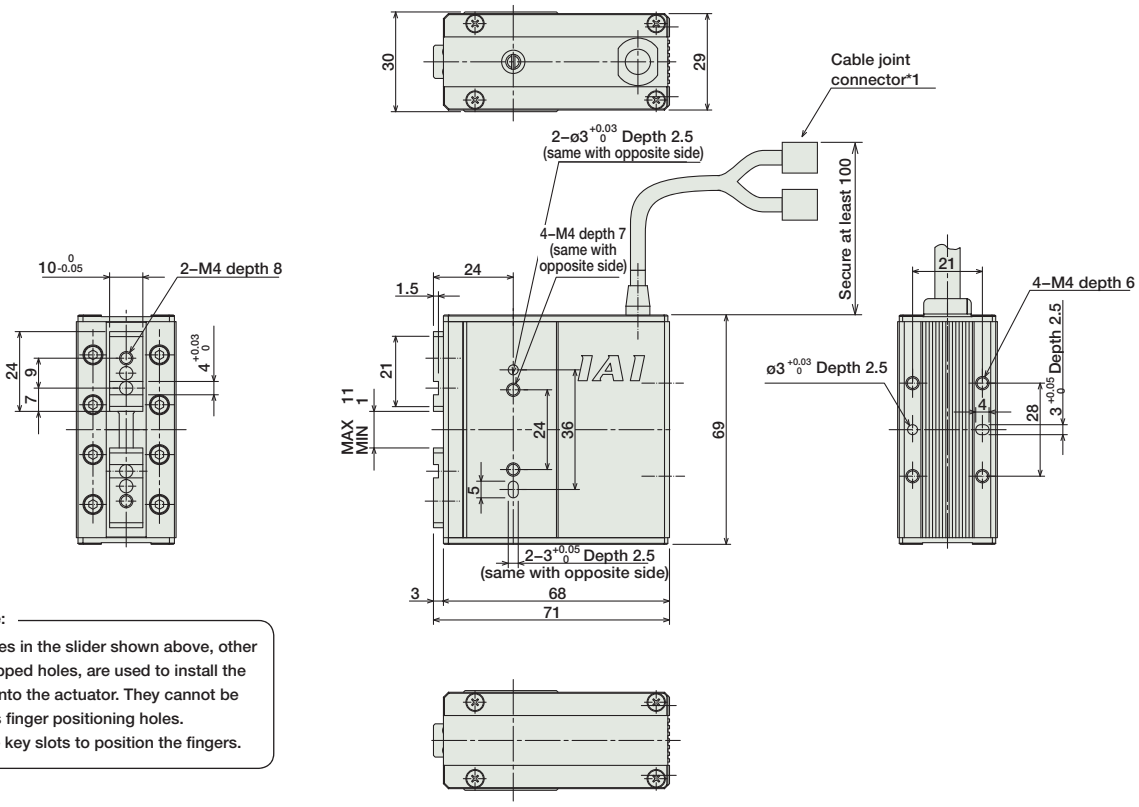
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD

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



Note:
The holes in the slider shown above, other than tapped holes, are used to install the slider onto the actuator. They cannot be used as finger positioning holes.
Use the key slots to position the fingers.

Weight (kg)	0.36

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GRM

RoboCylinder 2-Finger Gripper Medium Slider Type 74mm Width Pulse Motor

■ Configuration: **RCP2** — **GRM** — **I** — **28P** — **1** — **14** — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	28P: 28 □ size Pulse motor	1: 1/1 deceleration ratio	14: 14mm (7mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X □□: Custom R □□: Robot cable	SB : Shaft bracket FB : Flage 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) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

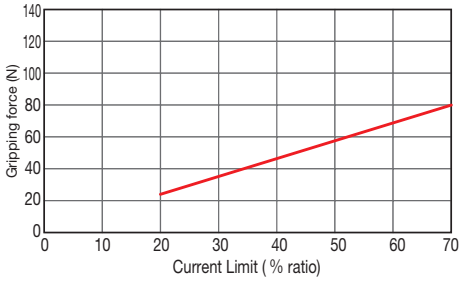
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work pieces. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force.
(See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRM-I-28P-1-14-①-②-③	1	80	14 (7 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	14 (mm)
1	36.7 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Timing belt + trapezoidal screw (1.5 lead)
Positioning Repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost Motion	0.1mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 6.3 N·m Mb: 6.3 N·m Mc: 8.3 N·m
Weight	0.5kg
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

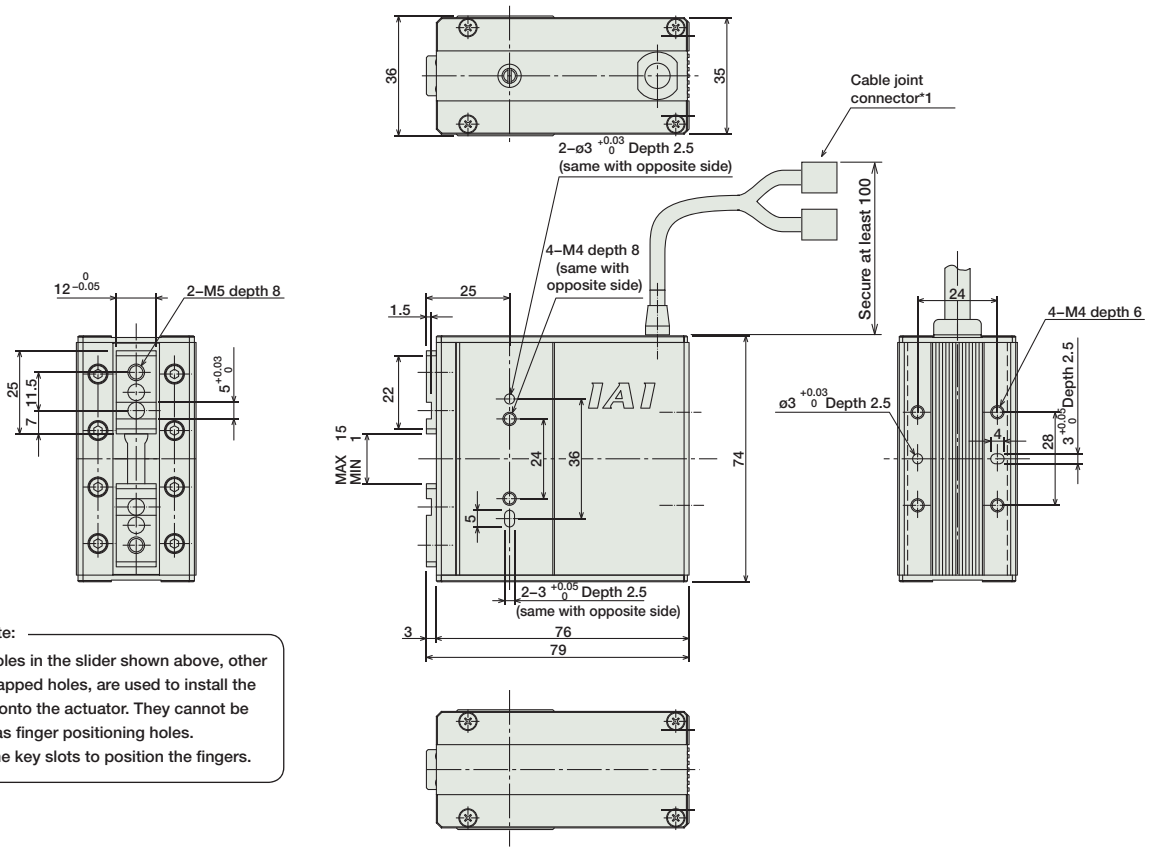
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD

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



Note:
The holes in the slider shown above, other than tapped holes, are used to install the slider onto the actuator. They cannot be used as finger positioning holes.
Use the key slots to position the fingers.

Weight (kg)	0.5

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GRHM

RoboCylinder 2-Finger Gripper Medium High-force Slider Type 116mm Width Pulse Motor

■ Configuration: **RCP2 — GRHM — I — 35P — 2 — 32 — ☐ — ☐ — ☐**

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	35P: 35 ☐ size Pulse motor	2: 1/2 deceleration ratio	32: 32mm (16mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom R ☐☐ : Robot cable	Refer to the options table 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

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

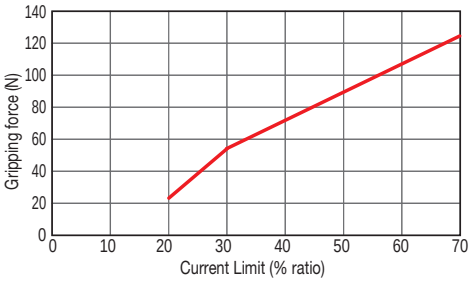
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work pieces. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRHM-I-35P-2-32-①-②-③	2	125	32 (16 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	32 (mm)
2	100 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Timing belt + trapezoidal screw (2 lead)
Positioning Repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost Motion	0.2mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 11.7 N·m Mb: 16.7 N·m Mc: 46.5 N·m
Weight	1.14kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Cable exit direction (Top)	**CJT**	→ A-25	
Cable exit direction (Right)	**CJR**	→ A-25	
Cable exit direction (Left)	**CJL**	→ A-25	
Cable exit direction (Bottom)	**CJB**	→ A-25	
Flange bracket	**FB**	→ A-26	
Shaft bracket	**SB**	→ A-36	

Dimensions

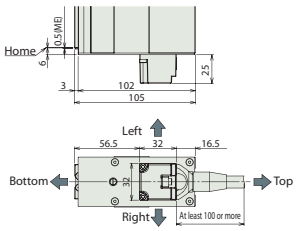
CAD drawings can be downloaded from IAI website. www.robocylinder.de

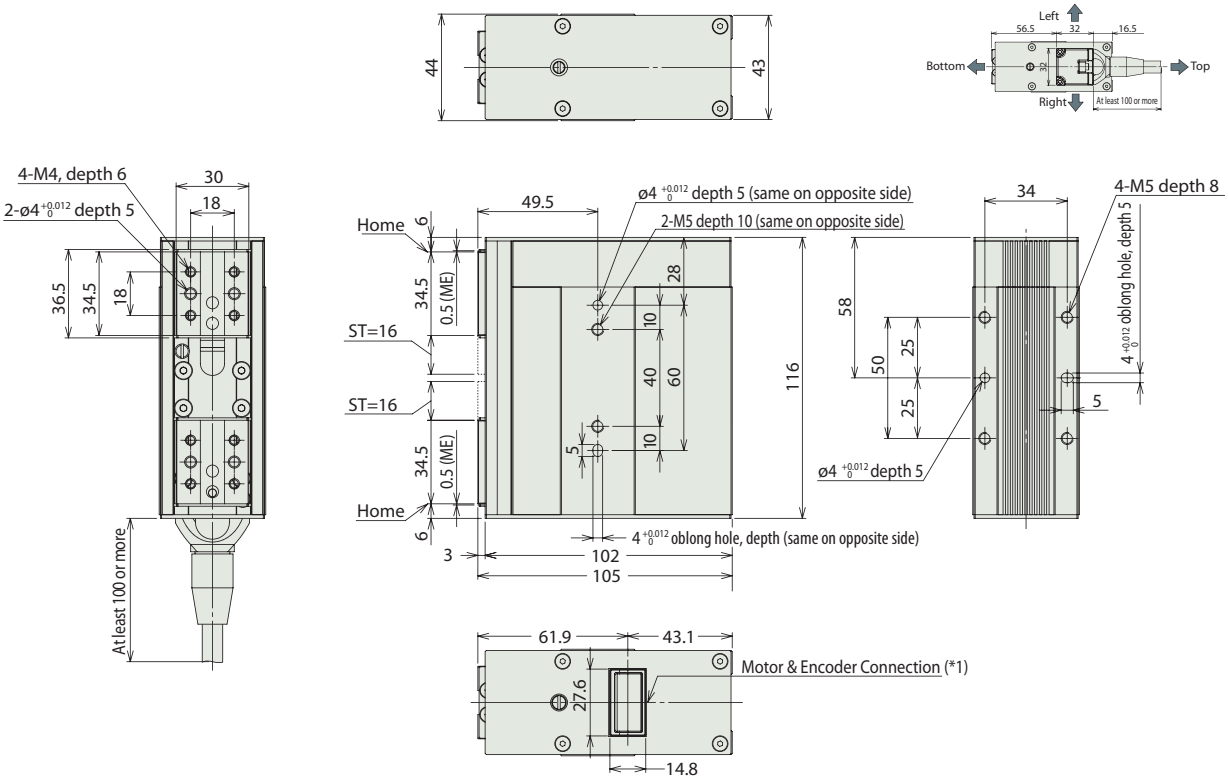
For Special Order P. A-9

2/3D CAD

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

Cable Exit Direction





Weight (kg)	1.14

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V/ AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GRHB

RoboCylinder 2-Finger Gripper Large High-force Slider Type 131mm Width Pulse Motor

■ Configuration: **RCP2 — GRHB — I — 42P — 2 — 40 — ☐ — ☐ — ☐**

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	42P: 42 ☐ size Pulse motor	2: 1/2 deceleration ratio	40: 40mm (20mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom R ☐☐ : Robot cable	Refer to the options table 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

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

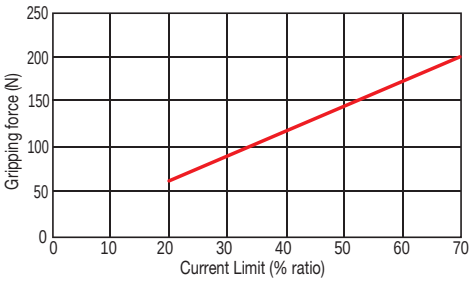
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work pieces. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force.
(See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRHB-I-42P-2-40- ①-②-③	2	200	40 (20 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	40 (mm)
2	100 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Timing belt + trapezoidal screw (2 lead)
Positioning Repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost Motion	0.2mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 15.7 N·m Mb: 26.4 N·m Mc: 59.8 N·m
Weight	1.5kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Cable exit direction (Top)	**CJT**	→ A-25	
Cable exit direction (Right)	**CJR**	→ A-25	
Cable exit direction (Left)	**CJL**	→ A-25	
Cable exit direction (Bottom)	**CJB**	→ A-25	
Flange bracket	**FB**	→ A-26	
Shaft bracket	**SB**	→ A-36	

Dimensions

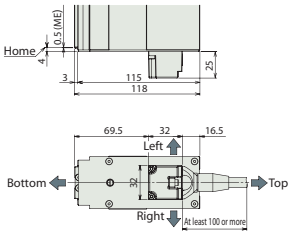
CAD drawings can be downloaded from IAI website. www.robocylinder.de

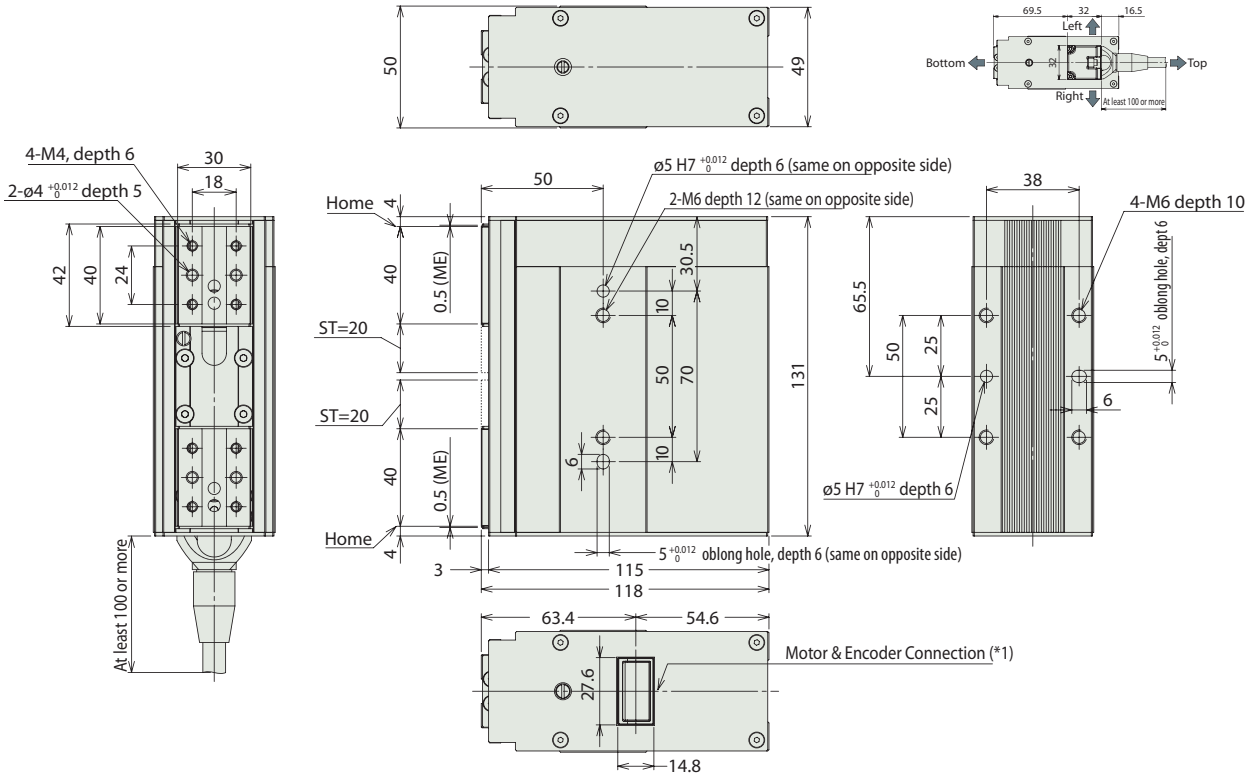
For Special Order P. A-9

2/3D CAD

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

Cable Exit Direction





Weight (kg)	1.5

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V/ AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

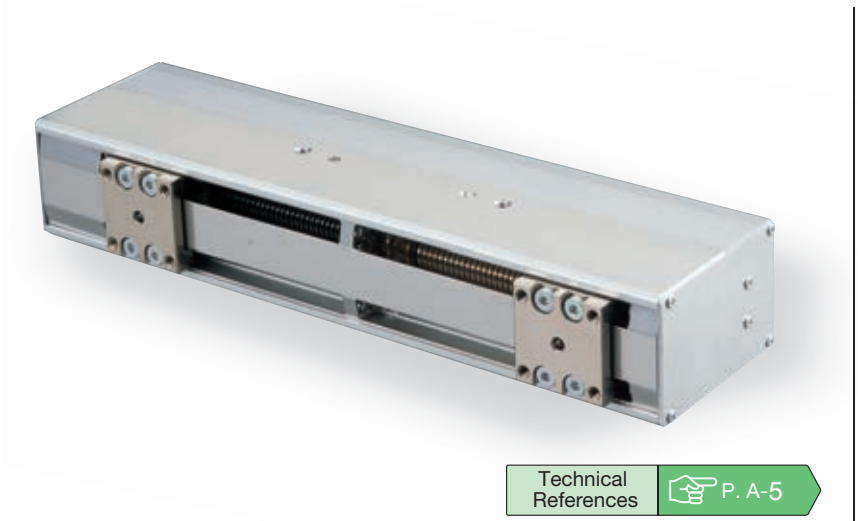
RCP2-GRST

RoboCylinder 2-Finger Gripper Long Stroke Slider Type 130 ~190mm Width
Pulse Motor

■ Configuration: **RCP2 – GRST – I – 20P – □ – □ – □ – □ – □ – □**

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	20P : 20 □ size Pulse motor	1: 1/1 deceleration ratio High-Speed Type 2: 1/2 deceleration ratio Standard Type	40: 40mm 60: 60mm 80: 80mm 100: 100mm	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom	See Options below * Be sure to specify the side from which you want the cable to exit (A0 or A1).

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



Technical References P. A-5

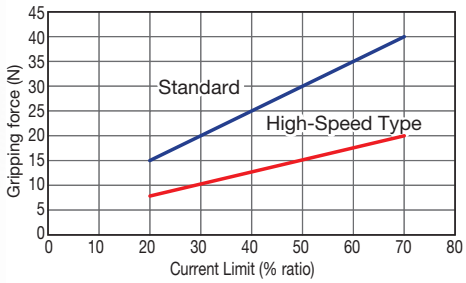
POINT Notes on Selection

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

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GRST-I-20P-1-①-②-③-④	1	20	40~100 (20~50 per side) (20mm increments)
RCP2-GRST-I-20P-2-①-②-③-④	2	40	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	40~100 (mm)
1	75 (per side)
2	34 (per side)

(Unit: mm/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Timing belt + worm/rack gear
Positioning Repeatability	±0.01mm
Backlash	0.2mm or less per side
Lost Motion	–
Guide	Linear guide
Allowable Static Load Moment	Ma: 2.93 N·m Mb: 2.93 N·m Mc: 5.0 N·m
Weight	0.51kg(40-stroke) ~ 0.66kg (100-stroke)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Reversed-home	NM	→ A-33	
Cable exiting from bottom	A0	→ A-25	
Cable exiting from the side	A1	→ A-25	

*Be sure to specify the side from which you want the cable to exit (A0 or A1).

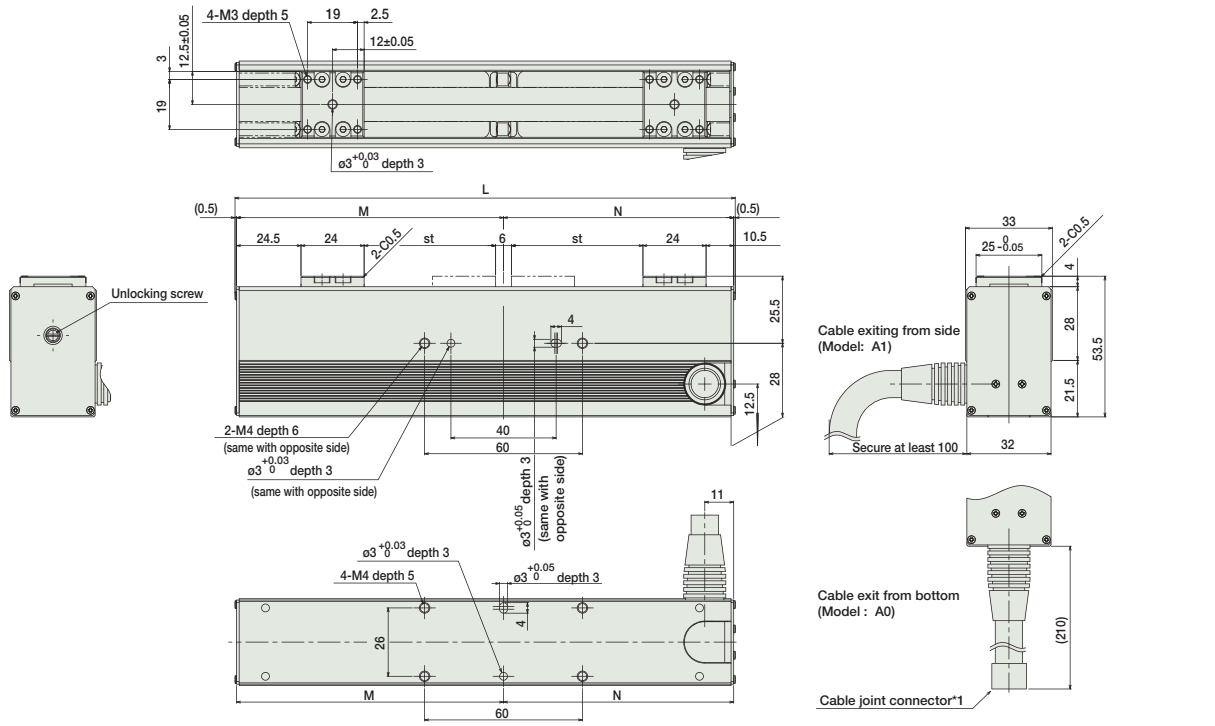
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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



■ Dimensions and Weight by Stroke

Stroke	40	60	80	100
L	130	150	170	190
M	71.5	81.5	91.5	101.5
N	57.5	67.5	77.5	87.5
Weight (kg)	0.51	0.56	0.61	0.66

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GR3LS

RoboCylinder 3-Finger Gripper Lever Type 62mm Width Pulse Motor

■ Configuration:

RCP2	GR3LS	I	28P	30	19	□	-	□	-	□
Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers		Cable Length		Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	28P : 28 □ size Pulse motor	30: 1/30 deceleration ratio	19: 19 degrees	P1: PCON RPCON PSEL P3: PMEC PSEP		N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable		FB: Flange bracket SB: Shaft bracket

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

Technical References P. A-5

POINT Notes on Selection

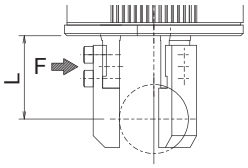
(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-77.

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force vs. Current Limit

Lever Type (GR3LS/GR3LM)



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

* The values in the graph below are gripping forces at 10mm gripping point. The actual gripping force decreases inversely proportional to the distance from the opening/closing point.

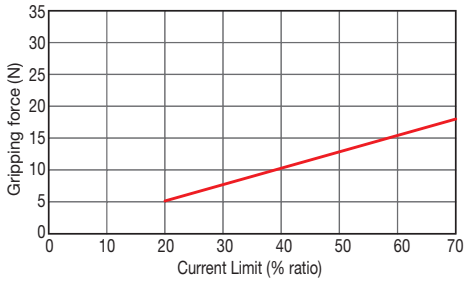
You can calculate the actual gripping force by the following equation.

Actual gripping force (type S)=P×24/(L+14)

Actual gripping force (type M)=P×28.5/(L+18.5)

P=Gripping force on graph

L=Distance from finger mounting surface to the gripping point.



Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (deg)
RCP2-GR3LS-I-28P-30-19-①-②-③	30	18	19

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	19 (deg)
30	200 (per side)

(Unit: degrees/s)

Legend: ① Compatible controllers ② Cable length ③ Options

Cable List

Type	Cable Symbol	
Standard Type	**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	Worm gear + worm wheel gear
Positioning Repeatability	±0.01 degrees
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost Motion	0.15 degrees or less per side
Weight	0.6kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

Dimensions

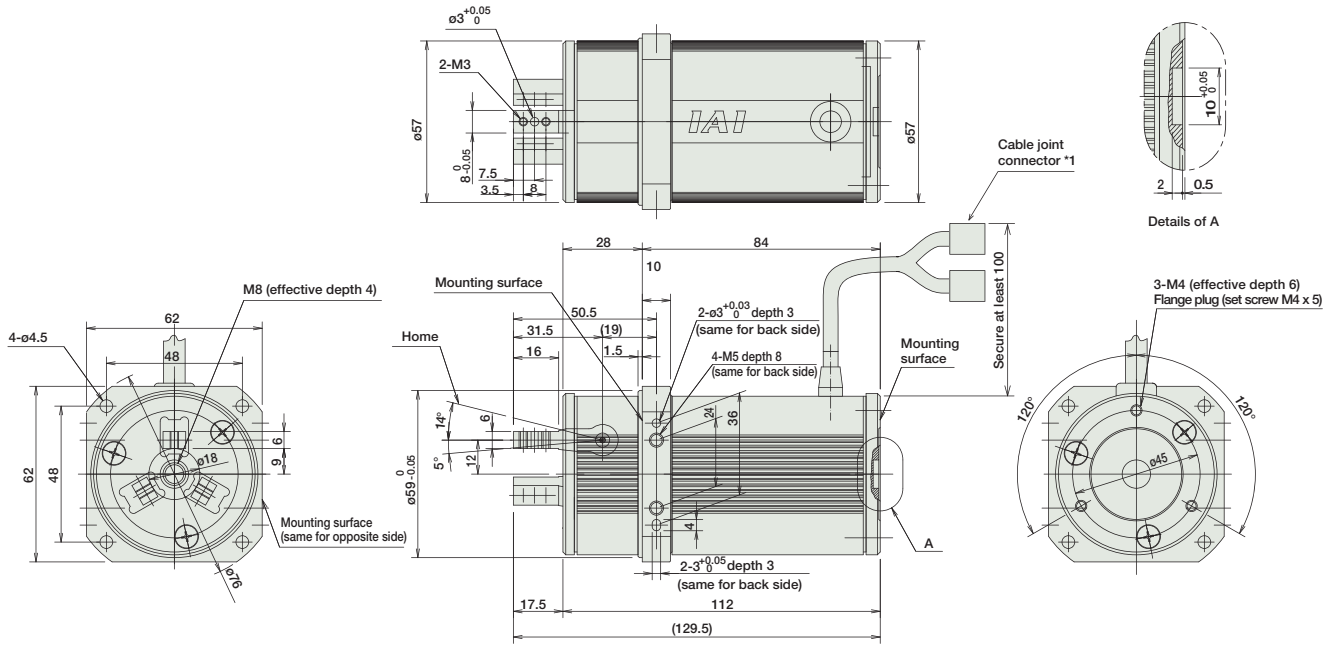
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* When homing, the actuator swings 1 degree past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

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



Weight (kg)	0.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GR3LM RoboCylinder 3-Finger Gripper Lever Type 80mm Width Pulse Motor

■ Configuration: **RCP2 – GR3LM – I – 42P – 30 – 19 – ☐ – ☐ – ☐**

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	42P : 42 □ size Pulse motor	30: 1/30 deceleration ratio	19: 19 degrees	P1: PCON, RPCON, PSEL P3: PMEC, PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R □□ : Robot cable	FB: Flange bracket SB: Shaft bracket

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

Technical References P. A-5

POINT Notes on Selection

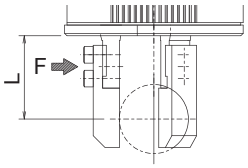
(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-77.

(3) The rated acceleration while moving is 0.3G.

■ Gripping Force vs. Current Limit

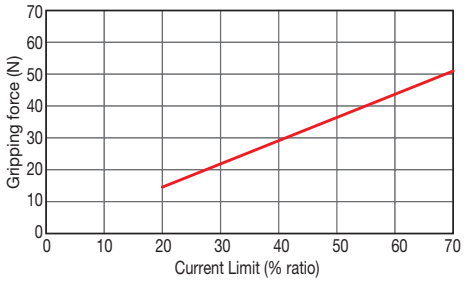
Lever Type (GR3LS/GR3LM)



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

* The values in the graph below are gripping forces at 10mm gripping point.
The actual gripping force decreases inversely proportional to the distance from the opening/closing point.
You can calculate the actual gripping force by the following equation.

Actual gripping force (type S)=P×24/(L+14)
Actual gripping force (type M)=P×28.5/(L+18.5)
P=Gripping force on graph
L=Distance from finger mounting surface to the gripping point.



Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (deg)
RCP2-GR3LM-I-42P-30-19-①-②-③	30	51	19

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	19 (deg)
30	200 (per side)

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Worm gear + worm wheel gear
Positioning Repeatability	±0.01 degrees
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost Motion	0.15 degrees or less per side
Weight	1.1kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

Dimensions

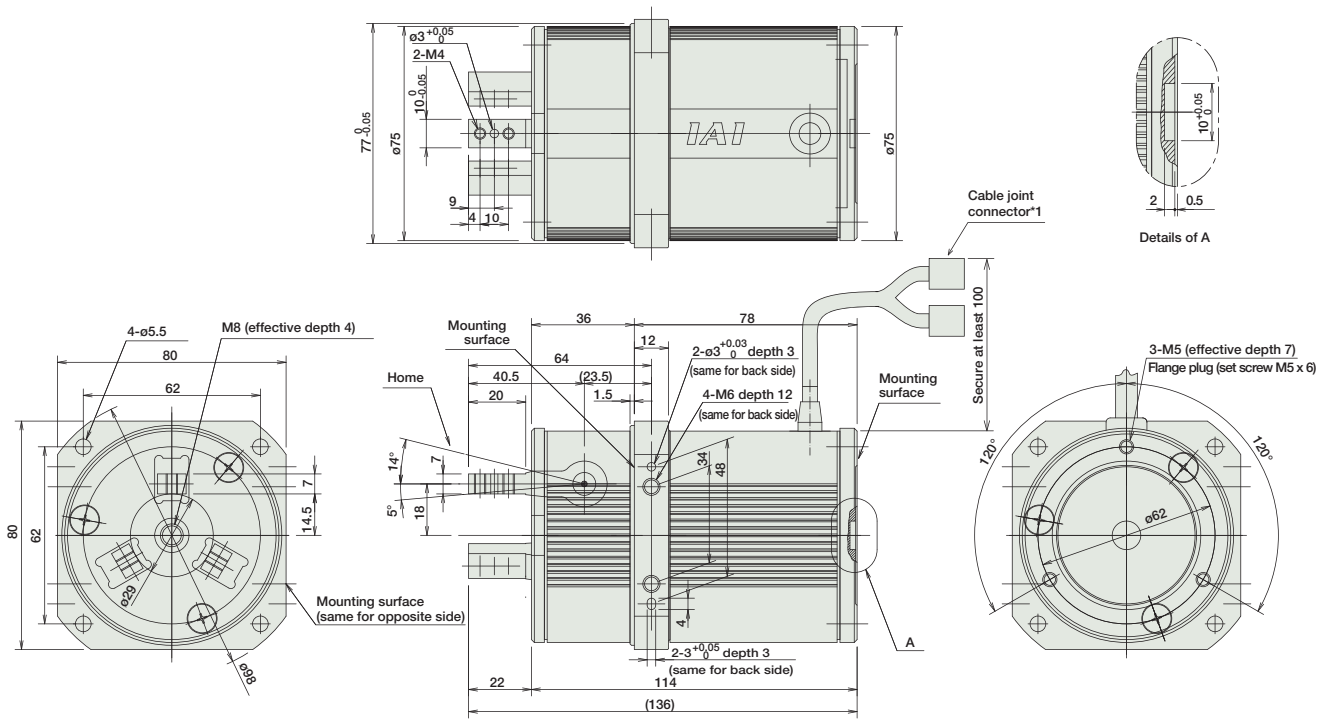
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* When homing, the actuator swings 1 degree past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

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



Weight (kg)	1.1

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GR3SS

RoboCylinder 3-Finger Gripper Slider Type 62mm Width Pulse Motor

■ Configuration:

RCP2	GR3SS	I	28P	30	10	□	□	□
Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	28P : 28 □ size Pulse motor	30: 1/30 deceleration ratio	10: 10mm (5mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	FB: Flange bracket SB: Shaft bracket

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

Technical References P. A-5

POINT Notes on Selection

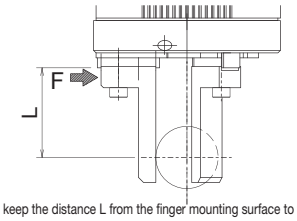
(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right or page A-74.

(3) The rated acceleration while moving is 0.3G.

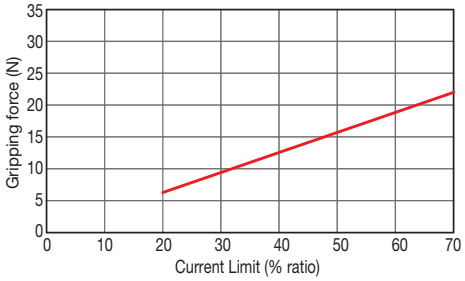
■ Gripping Force vs. Current Limit

Slider Type (GR3SS/GR3SM)



* Please keep the distance L from the finger mounting surface to the gripping point at less than the following dimensions.
GR3SS→50mm or less
GR3SM→80mm or less

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



Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GR3SS-I-28P-30-10-①-②-③	30	22	10 (5 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	10 (mm)
30	40 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Worm gear + worm wheel gear
Positioning Repeatability	±0.01mm
Backlash	0.3mm or less per side (constantly pressed out by a spring)
Lost Motion	0.1mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 3.8 N·m Mb: 3.8 N·m Mc: 3.0 N·m
Weight	0.6kg
Ambient Operating Temp./Humidity	0～40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

Dimensions

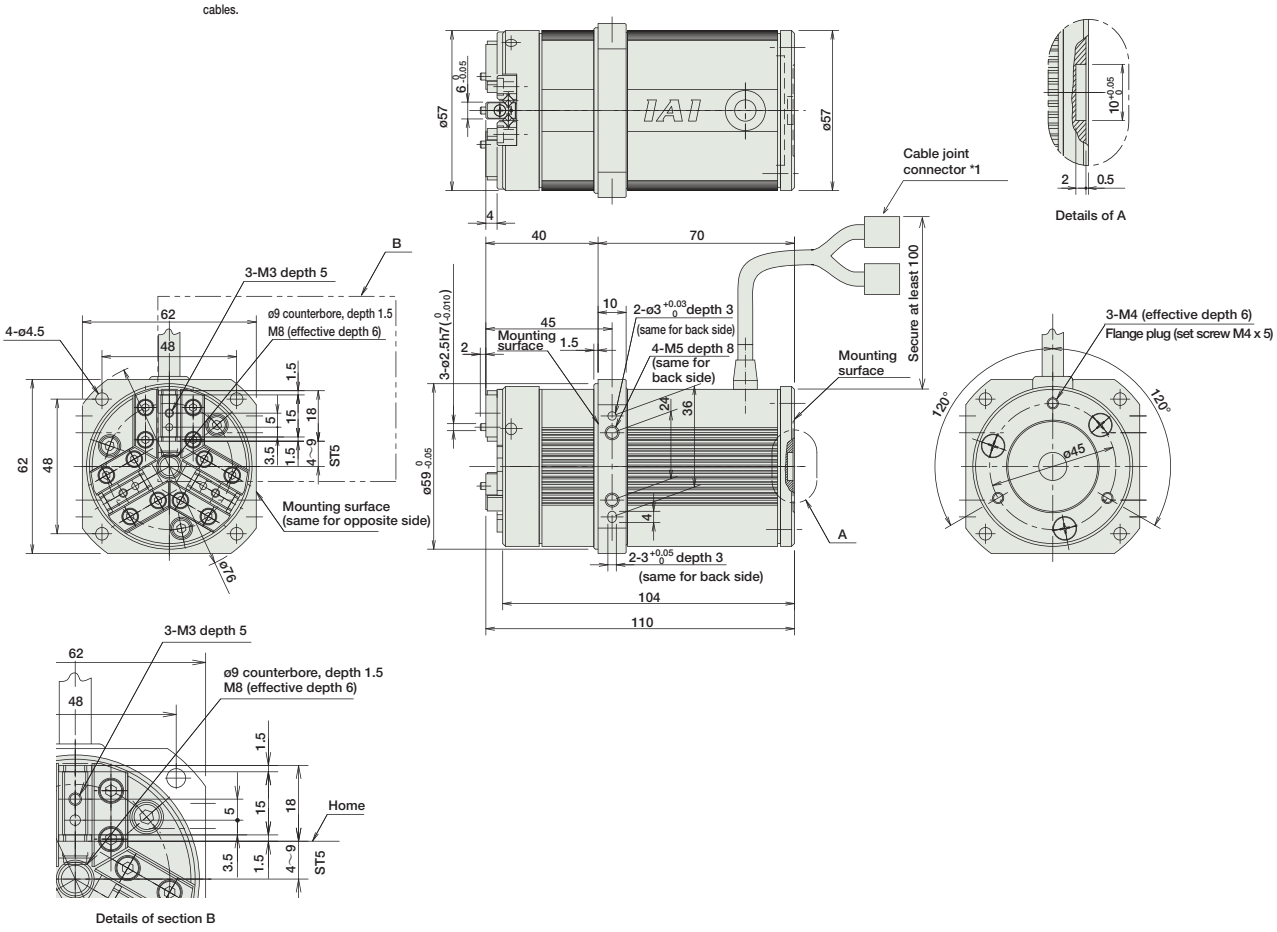
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* When homing, the actuator swings 0.5mm past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

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



Weight (kg)	0.6

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

RCP2-GR3SM

RoboCylinder 3-Finger Gripper Slider Type 80mm Width Pulse Motor

■ Configuration:

RCP2	GR3SM	I	42P	30	14	☐	☐	☐
Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The Simple absolute encoder is also considered type "I".	42P : 42 □ size Pulse motor	30: 1/30 deceleration ratio	14: 14mm (7mm per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R □□ : Robot cable	FB: Flange bracket SB: Shaft bracket

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

Technical References P. A-5

POINT Notes on Selection

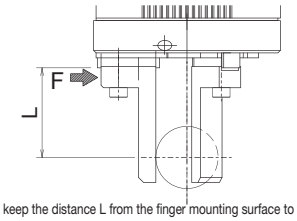
(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right or page A-74.

(3) The rated acceleration while moving is 0.3G.

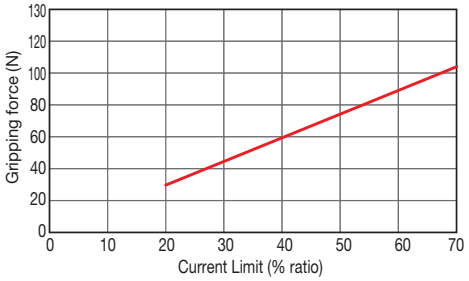
■ Gripping Force vs. Current Limit

Slider Type (GR3SS/GR3SM)



* Please keep the distance L from the finger mounting surface to the gripping point at less than the following dimensions.
GR3SS→50mm or less
GR3SM→80mm or less

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



Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Gripping Force (N)	Stroke (mm)
RCP2-GR3SM-I-42P-30-14-①-②-③	30	102	14 (7 per side)

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	14 (mm)
30	50 (per side)

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Worm gear + worm wheel gear
Positioning Repeatability	±0.01mm
Backlash	0.3mm or less per side (constantly pressed out by a spring)
Lost Motion	0.1mm or less per side
Guide	Cross roller guide
Allowable Static Load Moment	Ma: 6.3 N·m Mb: 6.3 N·m Mc: 5.7 N·m
Weight	1.2kg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Flange bracket	FB	→ A-26	
Shaft bracket	SB	→ A-36	

Dimensions

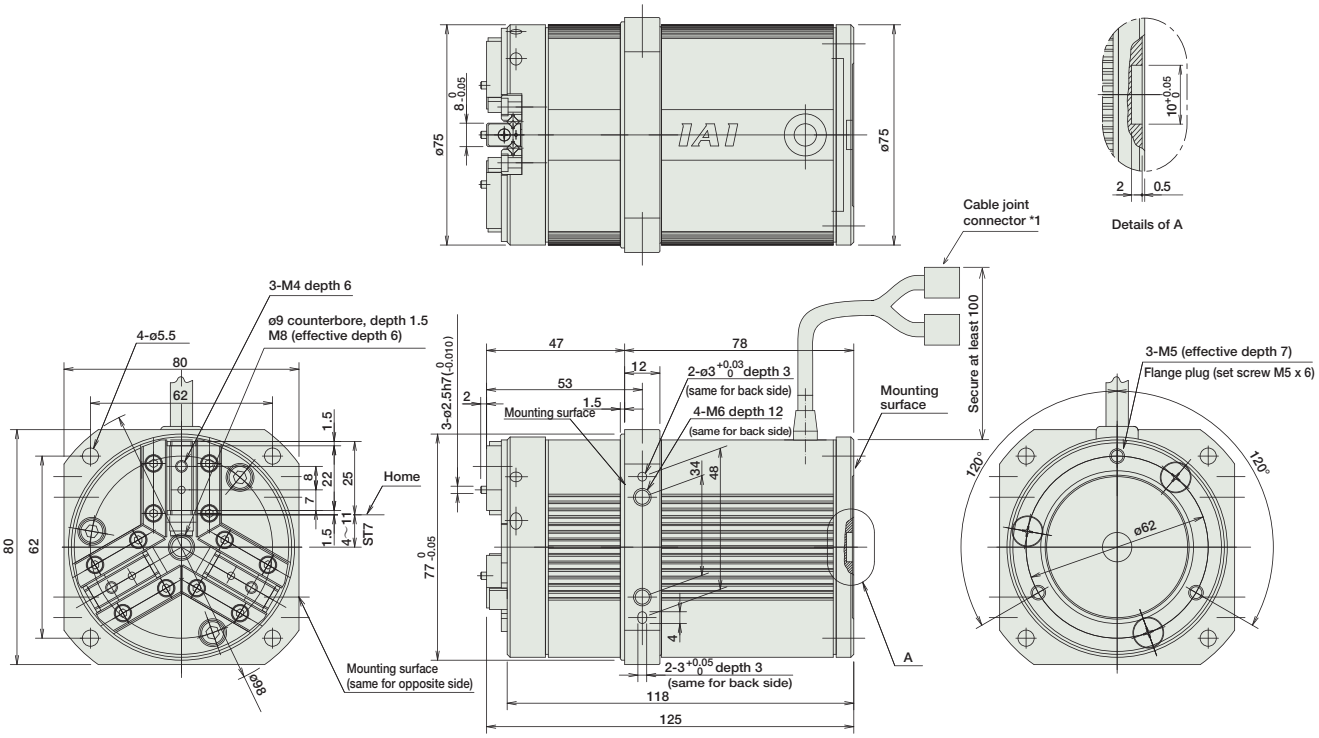
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* When homing, the actuator swings 0.5mm past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

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



Weight (kg)	1.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

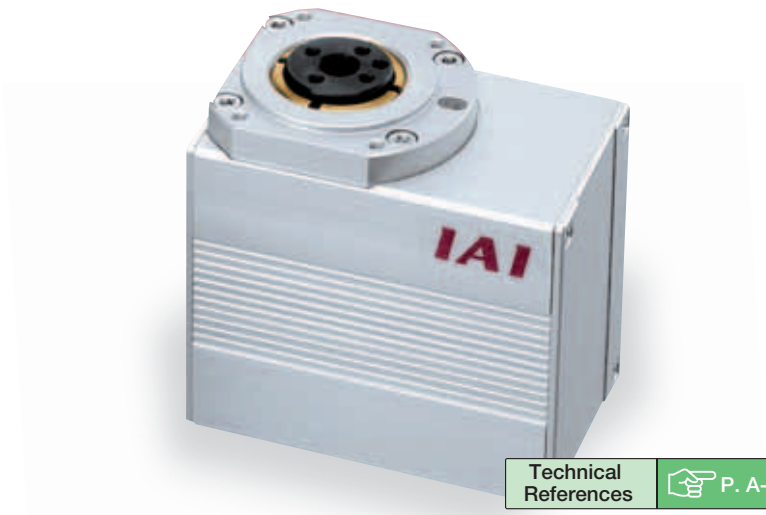
* This is for the single-axis PSEL.

RCP2-RTBS/RTBSL RoboCylinder Rotary Small Vertical Type 45mm Width Pulse Motor

■ Configuration: RCP2 — □ — I — 20P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTBS: 330-degree rotation RTBSL: Multiple rotation	I: Incremental * The Simple absolute encoder is also considered type "I".	20P : 20 □ size Pulse motor	30: 1/30 deceleration ratio 45: 1/45 deceleration ratio	330: 330degrees (RTBS only) 360: 360degrees (RTBSL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

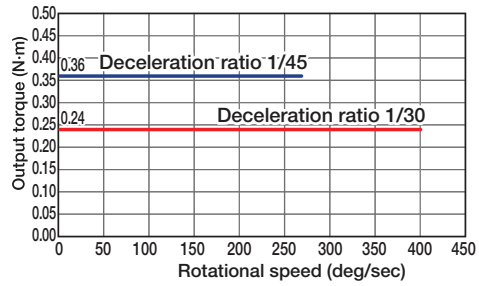
* See page Pre-35 for an explanation of the naming convention.

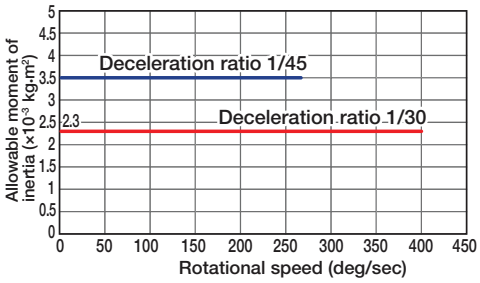


Technical References P. A-5

■ 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.





POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases. Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.2G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTBS-I-20P-30-330-①-②-③	1/30	0.24	0.0023	330
RCP2-RTBS-I-20P-45-330-①-②-③	1/45	0.36	0.0035	
RCP2-RTBSL-I-20P-30-360-①-②-③	1/30	0.24	0.0023	360
RCP2-RTBSL-I-20P-45-360-①-②-③	1/45	0.36	0.0035	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/30	400
1/45	266

(Unit: degrees/s)

Cable List

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

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

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Hypoid gear
Positioning Repeatability	±0.05 degrees
Homing Accuracy	±0.05 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	30N
Allowable Load Moment	3.6N·m
Weight	0.52kg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

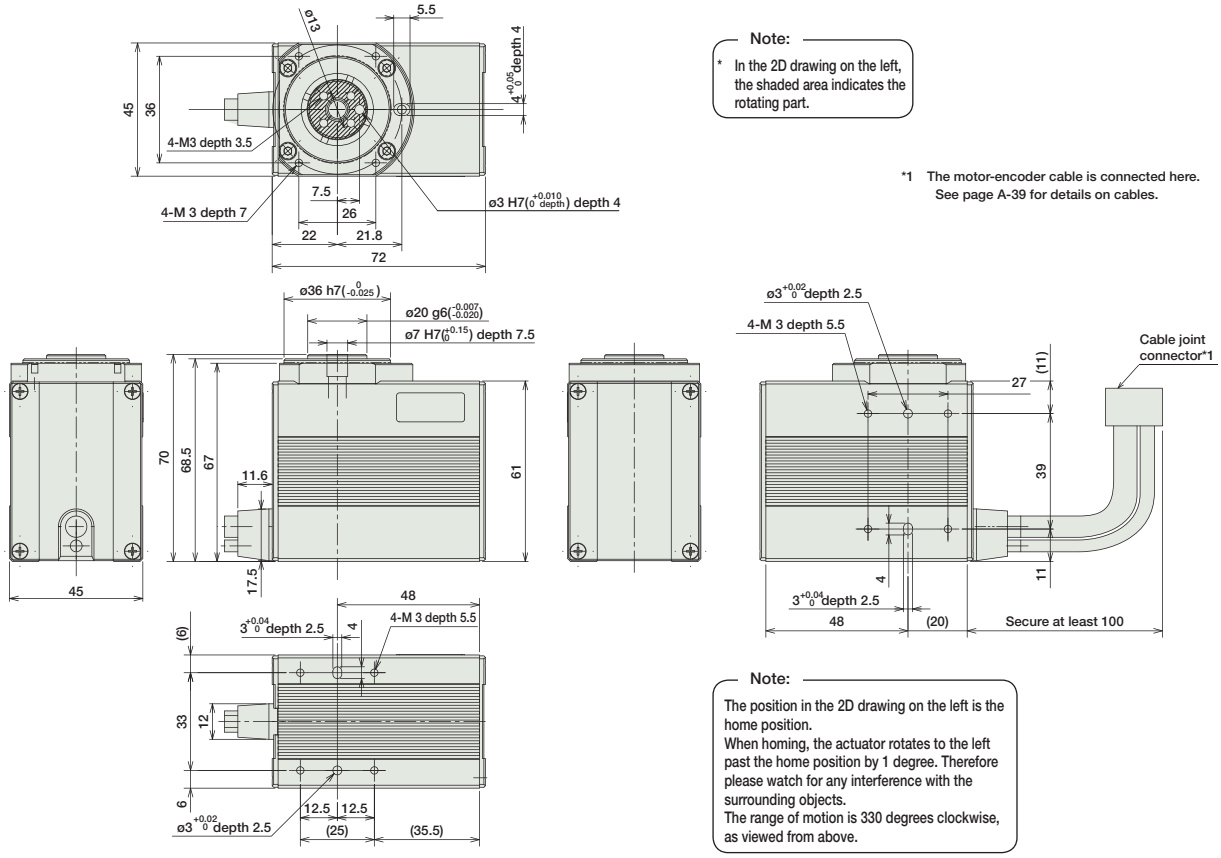
Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



Note:

* In the 2D drawing on the left, the shaded area indicates the rotating part.

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

Note:

The position in the 2D drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.

Weight (kg)	0.52

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note

* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

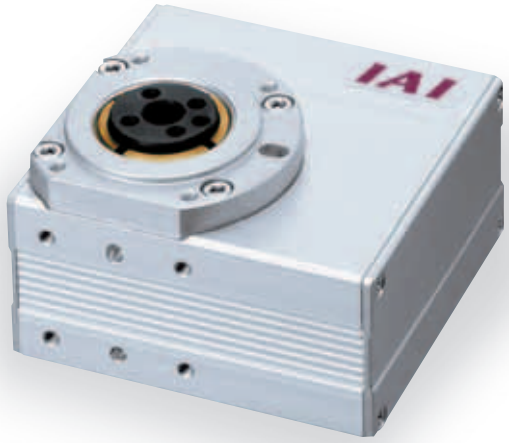
* This is for the single-axis PSEL.

RCP2-RTCS/RTCSL RoboCylinder Rotary Small Flat Type 72mm Width Pulse Motor

■ Configuration: **RCP2** — □ — **I** — **20P** — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTCS : 330 degree rotation RTCSL : Multi-rotational	I: Incremental * The Simple absolute encoder is also considered type "I".	28P : 28 □ size Pulse motor	30: 1/30 deceleration ratio 45: 1/45 deceleration ratio	330: 330degrees (RTCS only) 360: 360degrees (RTCSL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

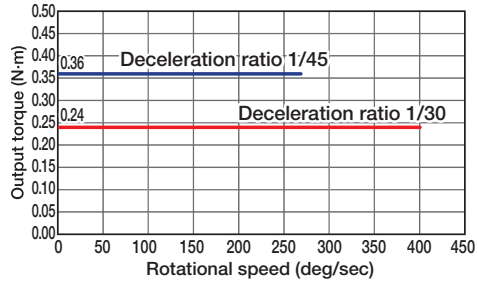
* See page Pre-35 for an explanation of the naming convention.

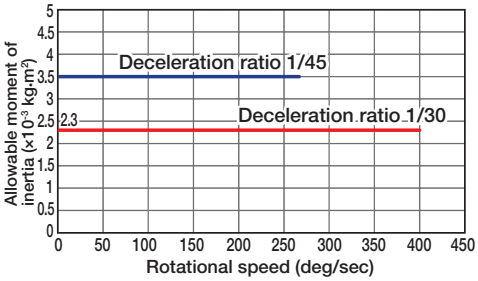


Technical References P. A-5

■ 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.





POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases. Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.2G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTCS-I-20P-30-330-①-②-③	1/30	0.24	0.0023	330
RCP2-RTCS-I-20P-45-330-①-②-③	1/45	0.36	0.0035	
RCP2-RTCSL-I-20P-30-360-①-②-③	1/30	0.24	0.0023	360
RCP2-RTCSL-I-20P-45-360-①-②-③	1/45	0.36	0.0035	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/30	400
1/45	266

(Unit: degrees/s)

Cable List

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

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

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Hypoid gear
Positioning Repeatability	±0.05 degrees
Homing Accuracy	±0.05 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	30N
Allowable Load Moment	3.6N·m
Weight	0.52kg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

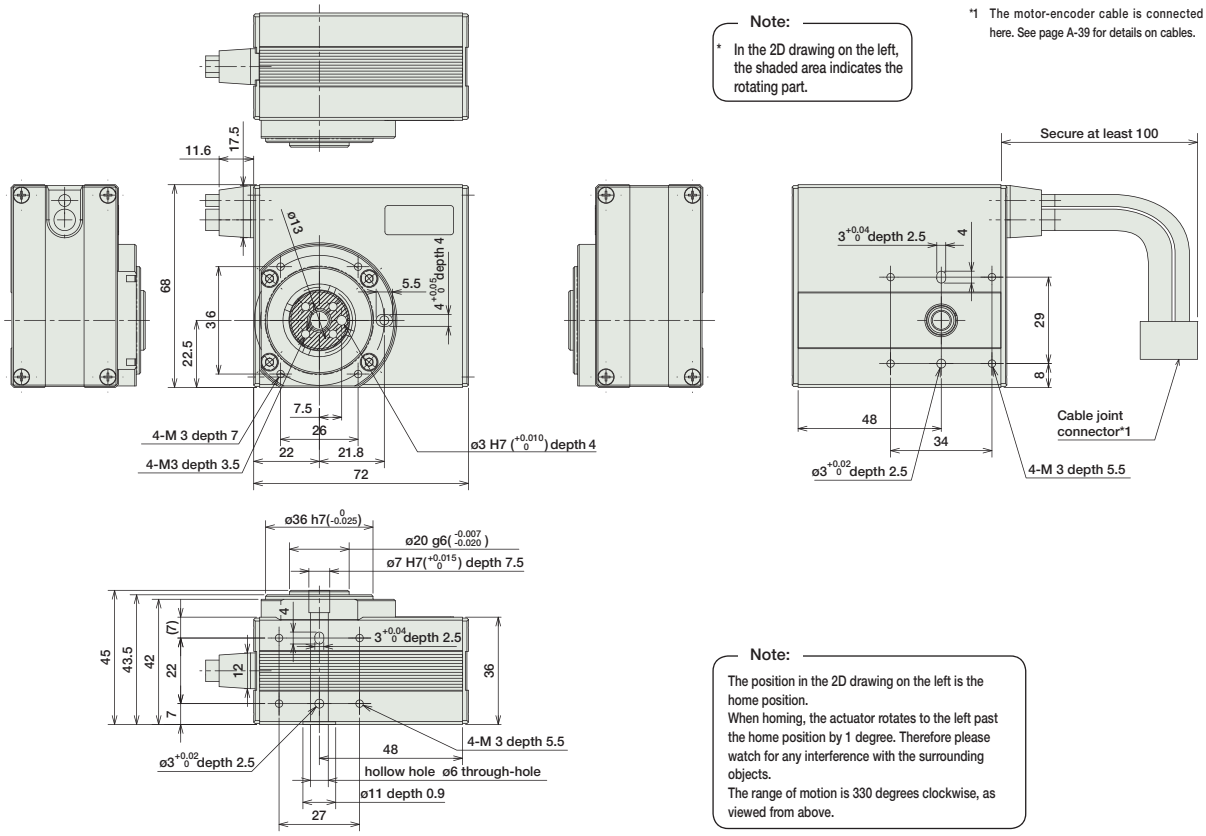
Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



Note:
* In the 2D drawing on the left, the shaded area indicates the rotating part.

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

Note:
The position in the 2D drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.

Weight (kg)	0.48

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note
* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

* This is for the single-axis PSEL.

RCP2-RTB/RTBL RoboCylinder Rotary Medium Vertical Type 50mm Width Pulse Motor

■ Configuration: **RCP2** — □ — **I** — **28P** — □ — □ — □ — □ — □ — □

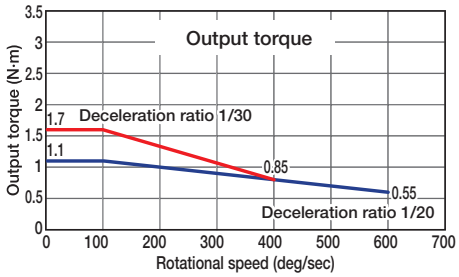
Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTB : 330-degree rotation RTBL: Multi-rotational	I: Incremental * The Simple absolute encoder is also considered type "I".	28P : 28 □ size Pulse motor	20: 1/20 deceleration ratio 30: 1/30 deceleration ratio	330: 330degrees (RTB only) 360: 360degrees (RTBL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

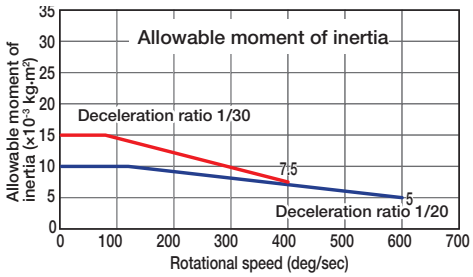
* See page Pre-35 for an explanation of the naming convention.

Technical References P. A-5

■ 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.





POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases.
Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed.
Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.3G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTB-I-28P-20-330-①-②-③	1/20	1.1	0.01	330
RCP2-RTB-I-28P-30-330-①-②-③	1/30	1.7	0.015	
RCP2-RTBL-I-28P-20-360-①-②-③	1/20	1.1	0.01	360
RCP2-RTBL-I-28P-30-360-①-②-③	1/30	1.7	0.015	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/20	600
1/30	400

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	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	Hypoid gear
Positioning Repeatability	±0.01 degrees
Homing Accuracy	±0.01 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	50N
Allowable Load Moment	3.9 N·m
Weight	0.86kg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

Dimensions

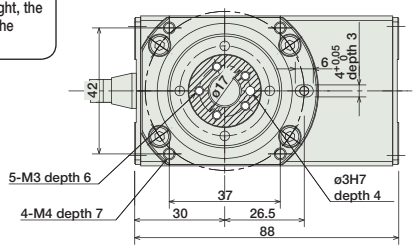
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

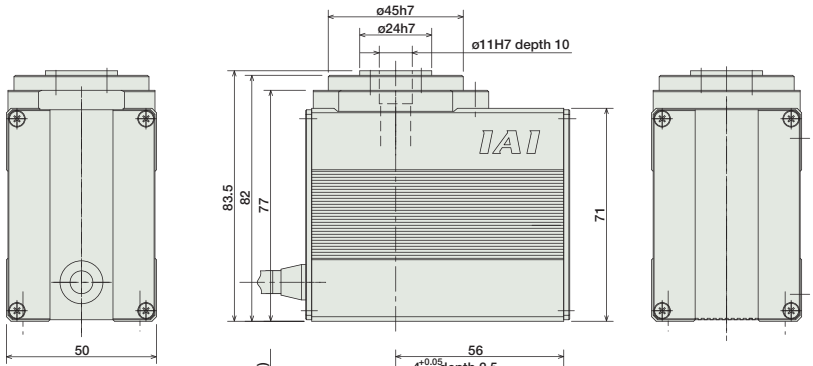
Note:

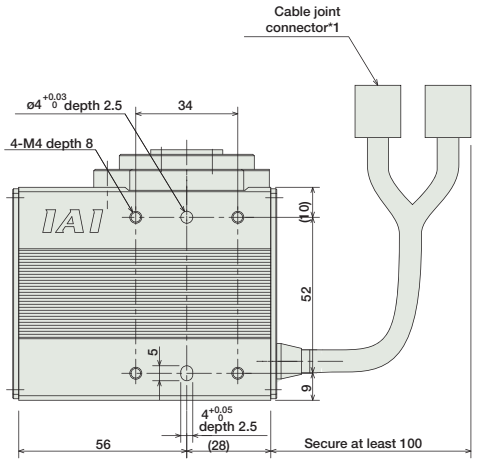
* In the drawing on the right, the shaded area indicates the rotating part.

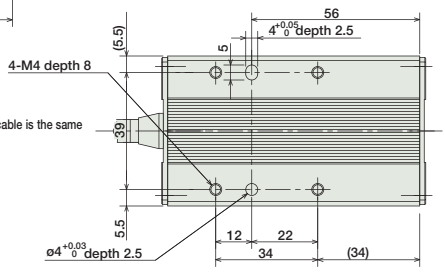


Note:

The position in the drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.







* The bend radius R of the cable is the same as other models.

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

Weight (kg)	0.86

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note
* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

* This is for the single-axis PSEL.

RCP2-RTC/RTCL RoboCylinder Rotary Medium Flat Type 88mm Width Pulse Motor

■ Configuration: **RCP2** — □ — **I** — **28P** — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTC: 330-degree rotation RTCL: Multi-rotational	I: Incremental * The Simple absolute encoder is also considered type "I".	28P : 28 □ size Pulse motor	20: 1/20 deceleration ratio 30: 1/30 deceleration ratio	330: 330degrees (RTC only) 360: 360degrees (RTCL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

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

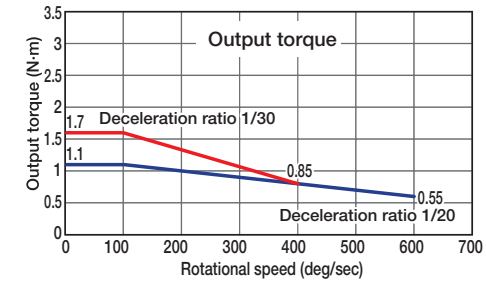
Technical References P. A-5

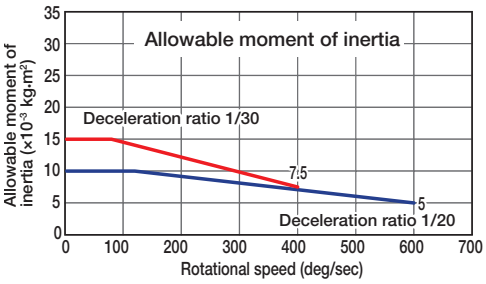
POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases.
Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed.
Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.3G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

■ 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

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTC-I-28P-20-330-①-②-③	1/20	1.1	0.01	330
RCP2-RTC-I-28P-30-330-①-②-③	1/30	1.7	0.015	
RCP2-RTCL-I-28P-20-360-①-②-③	1/20	1.1	0.01	360
RCP2-RTCL-I-28P-30-360-①-②-③	1/30	1.7	0.015	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/20	600
1/30	400

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	**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	Hypoid gear
Positioning Repeatability	±0.01 degrees
Homing Accuracy	±0.01 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	50N
Allowable Load Moment	3.9 N·m
Weight	0.92kg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

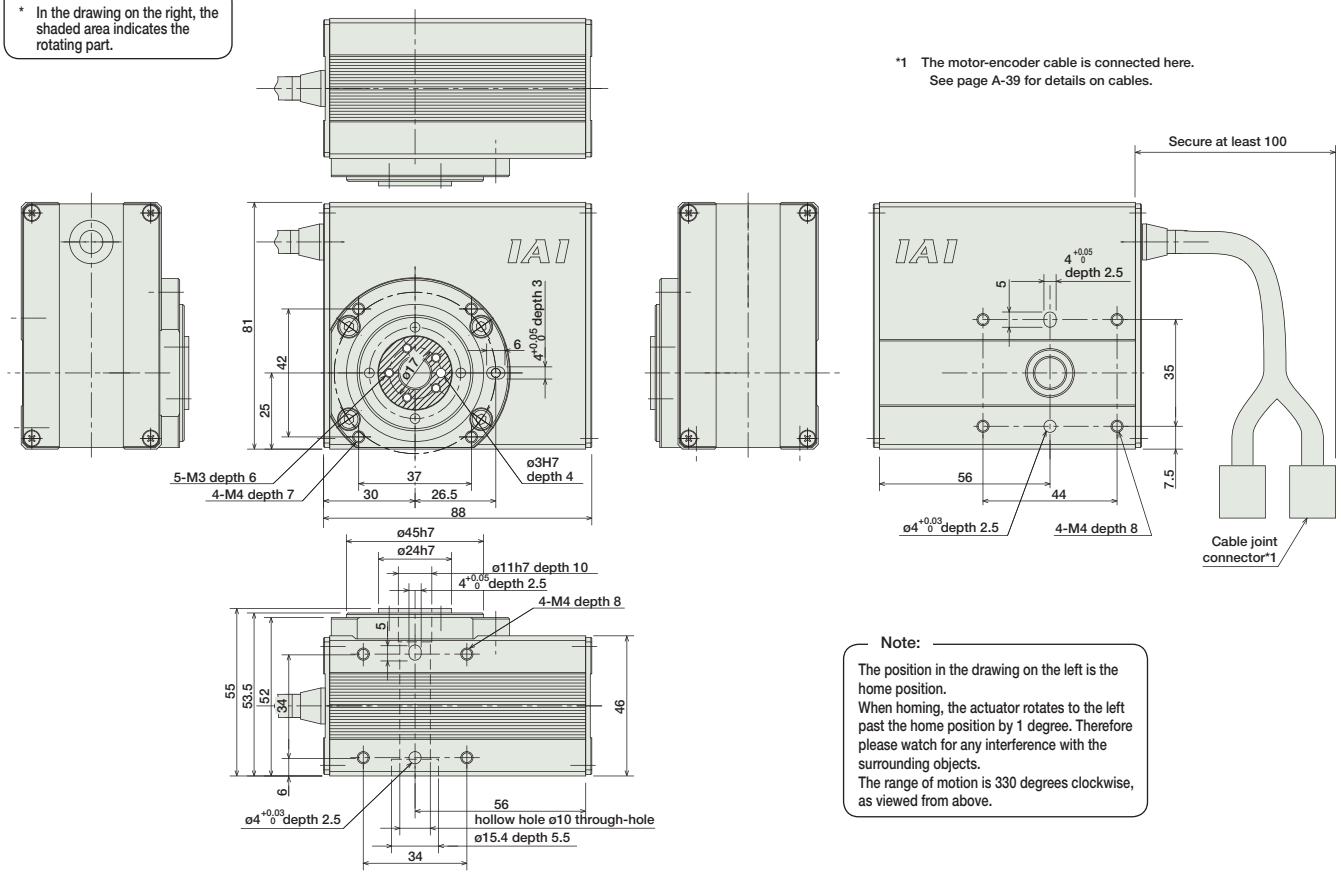
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

Note:
* In the drawing on the right, the shaded area indicates the rotating part.



Note:
The position in the drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.

* The bend radius R of the cable is the same as other models.

Weight (kg)	0.92

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-28PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-28PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-28PI-NP-2-0						
Positioner Type		PCON-C-28PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-28PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-28P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-28PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note
* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

* This is for the single-axis PSEL.

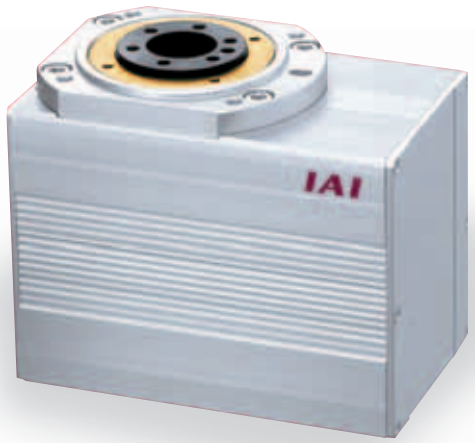
RCP2-RTBB/RTBBL

RoboCylinder Rotary Large Vertical Type 76mm Width
Pulse Motor

■ Configuration: RCP2 — □ — I — 35P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTBB : 330-degree rotation RTBBL : Multi-rotational	I: Incremental * The Simple absolute encoder is also considered type "I".	35P : 35 □ size Pulse motor	20: 1/20 deceleration ratio 30: 1/30 deceleration ratio	330: 330degrees (RTBB only) 360: 360degrees (RTBBL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

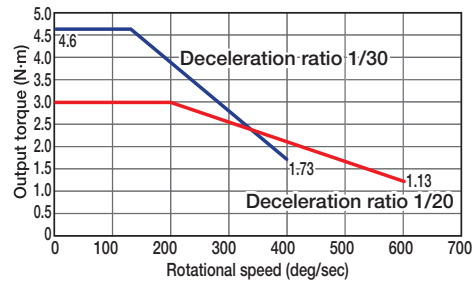
* See page Pre-35 for an explanation of the naming convention.

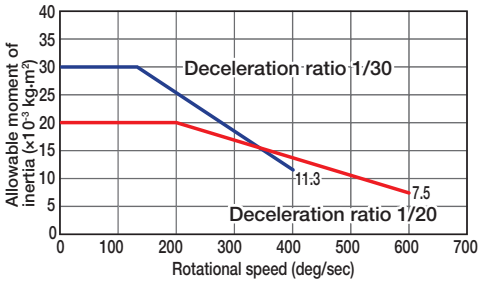


Technical References P. A-5

■ 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.





POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases.
Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed.
Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.3G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

Actuator Specifications

■ Lead and Load Capacity

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTBB-I-35P-20-330-①-②-③	1/20	3.0	0.02	330
RCP2-RTBB-I-35P-30-330-①-②-③	1/30	4.6	0.03	
RCP2-RTBBL-I-35P-20-360-①-②-③	1/20	3.0	0.02	360
RCP2-RTBBL-I-35P-30-360-①-②-③	1/30	4.6	0.03	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/20	600
1/30	400

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	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	Hypoid gear
Positioning Repeatability	±0.01 degrees
Homing Accuracy	±0.01 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	200N
Allowable Load Moment	17.7N·m
Weight	2.3kg
Ambient Operating Temp./Humidity	0 ～ 40°C, 85% RH or less (non-condensing)

Option List

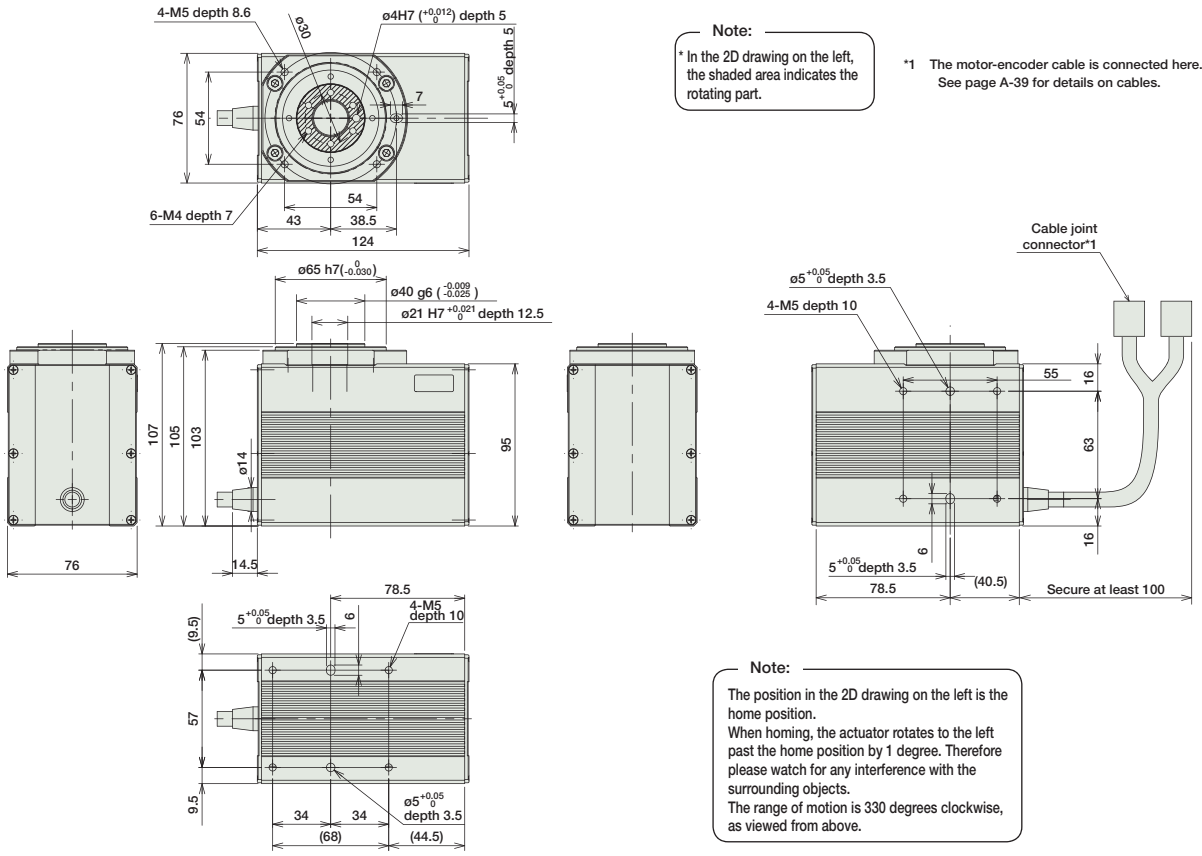
Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



Note:

* In the 2D drawing on the left, the shaded area indicates the rotating part.

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

Note:

The position in the 2D drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.

Weight (kg)	2.3

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note
* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

* This is for the single-axis PSEL.

RCP2-RTCB/RTCBL RoboCylinder Rotary Large Flat Type 124mm Width Pulse Motor

■ Configuration: RCP2 — □ — I — 35P — □ — □ — □ — □ — □ — □

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTCB : 330-degree rotation RTCBL : Multi-rotational	I: Incremental * The Simple absolute encoder is also considered type "I".	35P : 35 □ size Pulse motor	20: 1/20 deceleration ratio 30: 1/30 deceleration ratio	330: 330degrees (RTB only) 360: 360degrees (RTBL only)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot cable	NM :Reversed-rotation SA: Shaft adapter TA : Table adapter

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

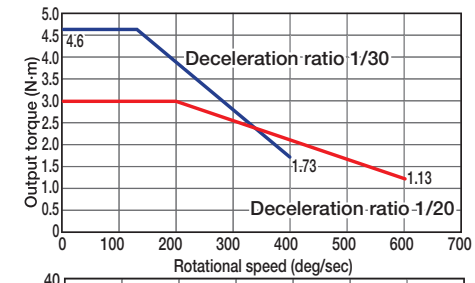
Technical References P. A-5

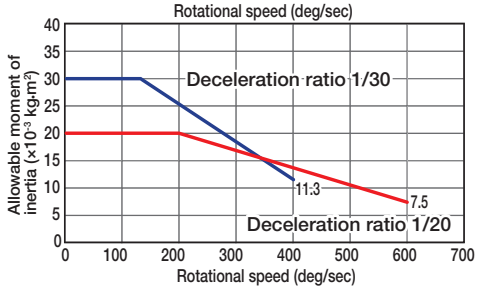
POINT Notes on Selection

(1) The output torque decreases as the rotational speed increases.
Check the output torque graph on the right to see whether the speed required for your desired motion is supported.
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed.
Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
(3) The rated acceleration while moving is 0.3G.
(4) When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

■ 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

Model	Deceleration Ratio	Max. Torque (N·m)	Allowable Moment of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTCB-I-35P-20-330-①-②-③	1/20	3.0	0.02	330
RCP2-RTCB-I-35P-30-330-①-②-③	1/30	4.6	0.03	
RCP2-RTCBL-I-35P-20-360-①-②-③	1/20	3.0	0.02	360
RCP2-RTCBL-I-35P-30-360-①-②-③	1/30	4.6	0.03	

Legend: ① Compatible controller ② Cable length ③ Options

■ Deceleration Ratio and Max. Speed

Deceleration Ratio \ Stroke	330/360 (deg)
1/20	600
1/30	400

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	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	Hypoid gear
Positioning Repeatability	±0.01 degrees
Homing Accuracy	±0.01 degrees
Lost Motion	±0.1 degrees
Allowable Thrust Load	200N
Allowable Load Moment	17.7N·m
Weight	2.2kg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

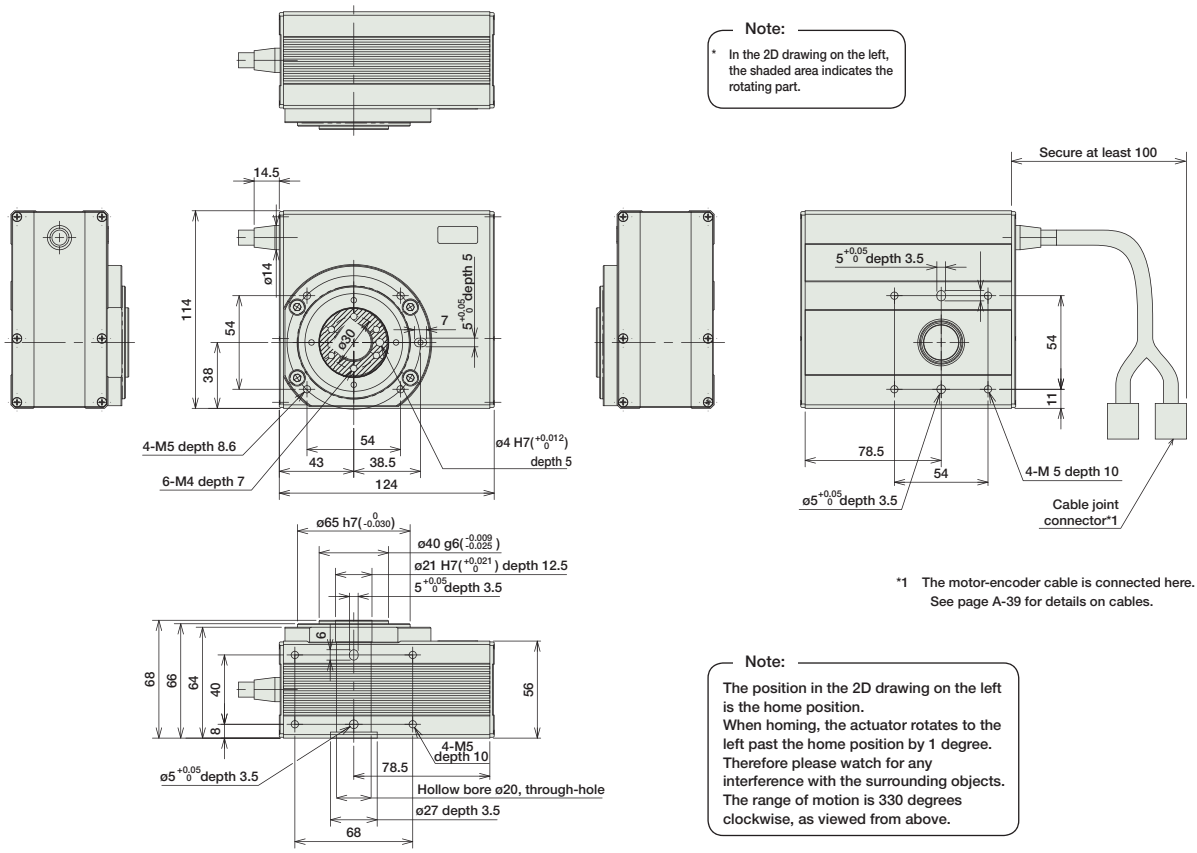
Name	Option Code	See Page	
Reversed-rotation	NM	→ A-33	
Shaft adapter	SA	→ A-35	
Table adapter	TA	→ A-37	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



Note:
* In the 2D drawing on the left, the shaded area indicates the rotating part.

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

Note:
The position in the 2D drawing on the left is the home position.
When homing, the actuator rotates to the left past the home position by 1 degree. Therefore please watch for any interference with the surrounding objects.
The range of motion is 330 degrees clockwise, as viewed from above.

Weight (kg)	2.2

Compatible Controllers

The RCP2 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		See Page
Solenoid Valve Type		PMEC-C-35PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-35PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-35PI-NP-2-0						
Positioner Type		PCON-C-35PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-35PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-35P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-35PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

Note
* When using index mode with multiple rotation type, PMEC/PSEP controller is not available to operate.

* This is for the single-axis PSEL.

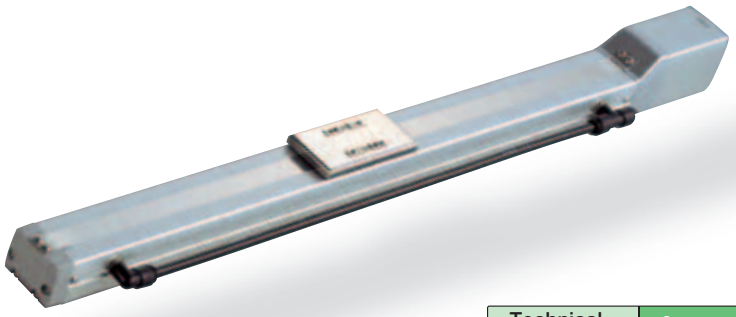
RCP2CR-SA5C

Cleanroom RoboCylinder Slider Coupling Type 52mm Width
Pulse motor Aluminum Base

■ Configuration: RCP2CR – SA5C – I – 42P – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom R ☐☐ : Robot cable	BE : Brake (Cable exiting from end) BL : Brake (Cable exiting from left) BR : Brake (Cable exiting from right) NM : Reversed-home VR : Intake port on opposite side

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



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.

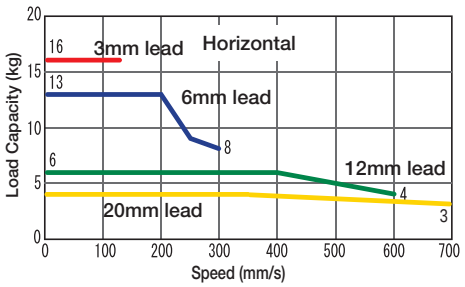
(2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

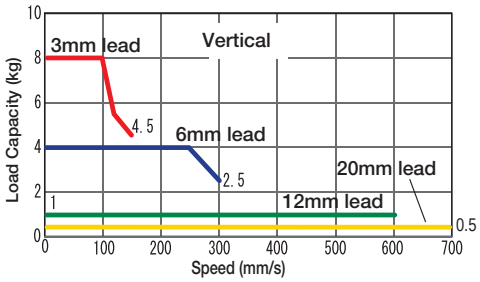
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-53.

(4) The ISO cleanliness class 4 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SA5C-I-42P-20-①-②-③-④	20	~ 4	0.5	50 ~ 800 (50mm increments)
RCP2CR-SA5C-I-42P-12-①-②-③-④	12	~ 6	1	
RCP2CR-SA5C-I-42P-6-①-②-③-④	6	~ 13	~ 4	
RCP2CR-SA5C-I-42P-3-①-②-③-④	3	16	~ 8	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50 ~ 500 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction Volume (N ℓ/min)
20	1000	980	850	740	650	580	80
12	600	540	460	400	360	300	50
6	300	270	230	200	180	150	30
3	150	135	115	100	90	75	15

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	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)	

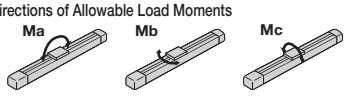
* See page A-39 for cables for maintenance.

Actuator Specifications

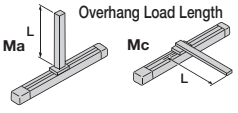
Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Load Length	Ma direction: 150mm or less Mb, Mc direction: 150mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



Option List

Name	Option Code	See Page	
Brake (Cable exiting from end)	BE	→ A-25	
Brake (Cable exiting from left)	BL	→ A-25	
Brake (Cable exiting from right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Dimensions

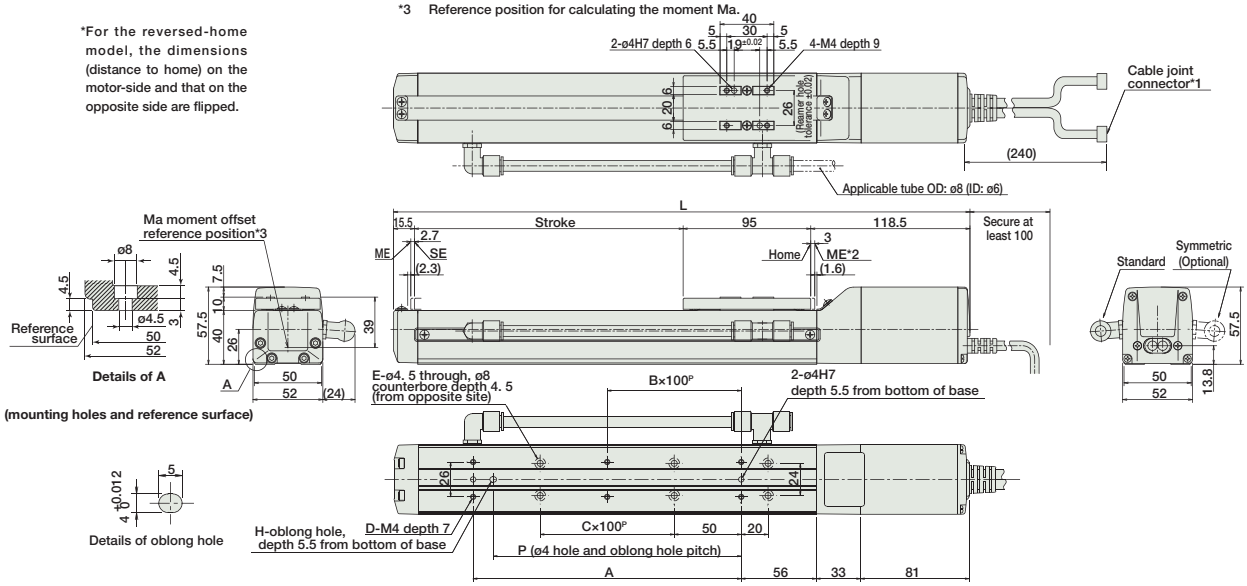
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

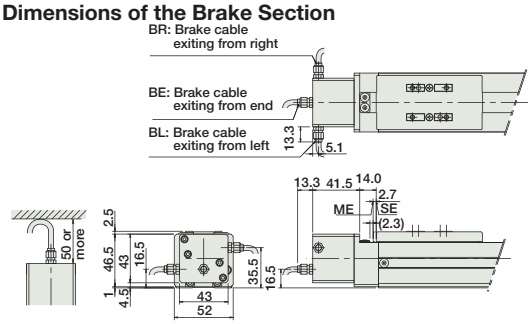
2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The 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
The values enclosed in "( )" are reference dimensions.
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section



* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 40mm (53.3mm with the cable exit out its end); add 0.4kg to weight.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	279	329	379	429	479	529	579	629	679	729	779	829	879	929	979	1029
A	73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18
E	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.4

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

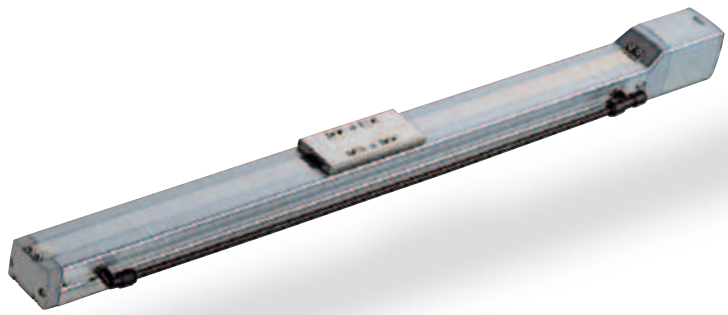
RCP2CR-SA6C

Cleanroom RoboCylinder Slider Coupling Type 58mm Width Pulse motor Aluminum Base

■ Configuration: RCP2CR – SA6C – I – 42P – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	20 : 20mm 12 : 12mm 6 : 6mm 3 : 3mm	50: 50mm \ 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X☐☐ : Custom R☐☐ : Robot cable	BE : Brake (Cable exiting from end) BL : Brake (Cable exiting from left) BR : Brake (Cable exiting from right) NM : Reversed-home VR : Intake port on opposite side

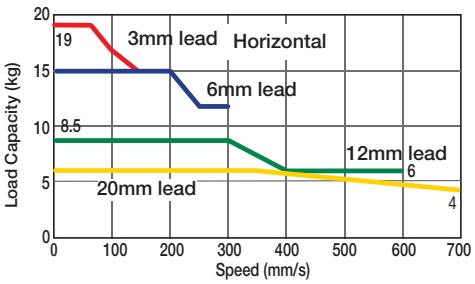
* See page Pre-35 for an explanation of the naming convention.

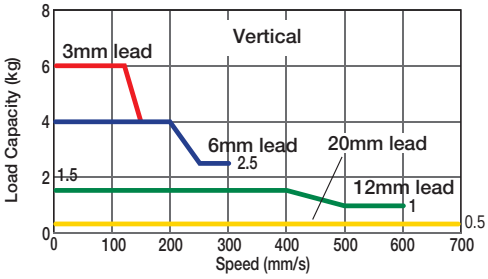


Technical References P. A-5

■ 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.





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. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). The maximum acceleration is 0.7G (0.3G when used vertically), however, note that the load capacity decreases at high accelerations. For more information, see the table of load capacity by acceleration, on page A-53.

(4) The ISO cleanliness class 4 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SA6C-I-42P-20-①-②-③-④	20	~ 6	0.5	50 ~ 800 (50mm increments)
RCP2CR-SA6C-I-42P-12-①-②-③-④	12	~ 8.5	1.5	
RCP2CR-SA6C-I-42P-6-①-②-③-④	6	~ 15	~ 4	
RCP2CR-SA6C-I-42P-3-①-②-③-④	3	~ 19	~ 6	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50 ~ 500 (50mm increments)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)	Suction Volume (N ℓ/min)
20	1000	980	850	740	650	580	80
12	600	540	460	400	360	300	50
6	300	270	230	200	180	150	30
3	150	135	115	100	90	75	15

(Unit: mm/s)

③ Cable List

Type	Cable Symbol	
Standard Type	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)	

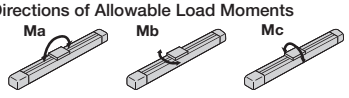
* See page A-39 for cables for maintenance.

Actuator Specifications

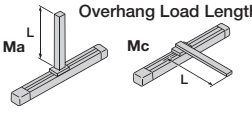
Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 38.3N·m Mb: 54.7N·m Mc: 81.0N·m
Allowable Dynamic Moment (*)	Ma: 8.9N·m Mb: 12.7N·m Mc: 18.6N·m
Overhang Load Length	Ma direction: 220mm or less Mb, Mc direction: 220mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



④ Option List

Name	Option Code	See Page	
Brake (Cable exiting from end)	BE	→ A-25	
Brake (Cable exiting from left)	BL	→ A-25	
Brake (Cable exiting from right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Dimensions

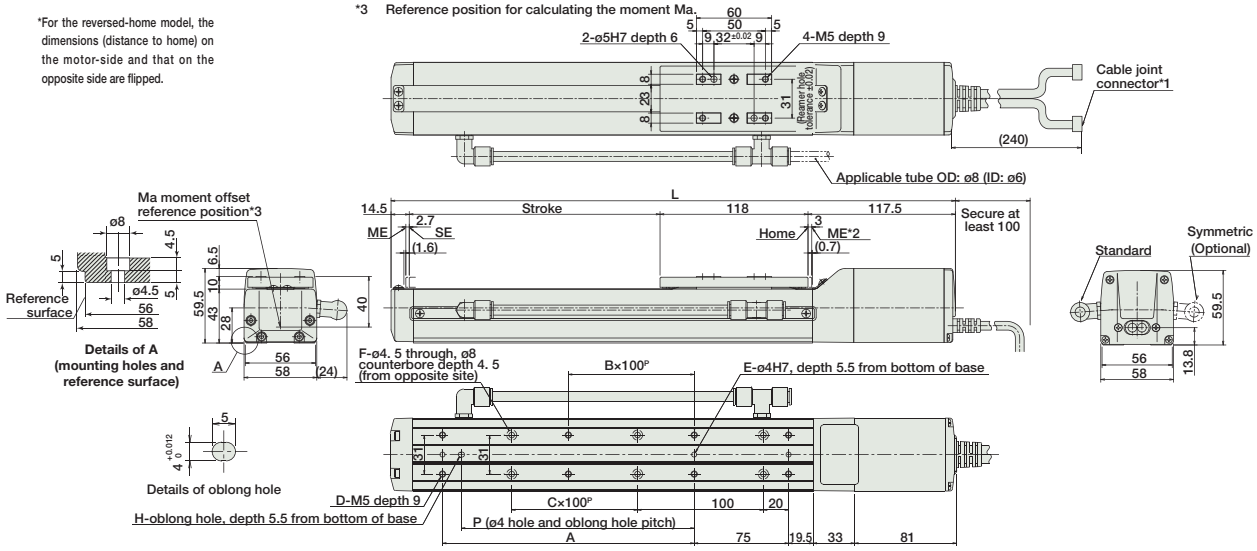
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

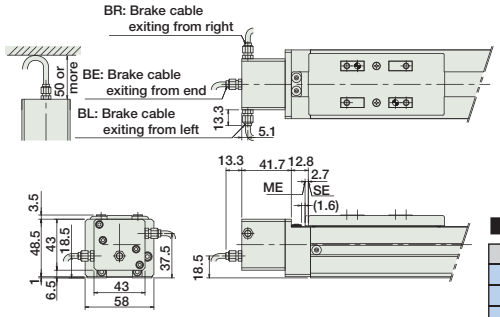
2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The 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
The values enclosed in "( )" are reference dimensions.
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section



* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 40mm (53.3mm with the cable exit out its end); add 0.4kg to weight.

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	2.0	2.2	2.3	2.4	2.6	2.7	2.9	3.0	3.1	3.3	3.4	3.6	3.7	3.8	4.0	4.1

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0-H	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0-H						
Positioner Type		PCON-C-42PI-NP-2-0-H	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0-H						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0-H	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0-H	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0-H	Dedicated to serial communication	64 points				
Field Network Type		RPCON-42P-H	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-42PI-NP-2-0-H	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

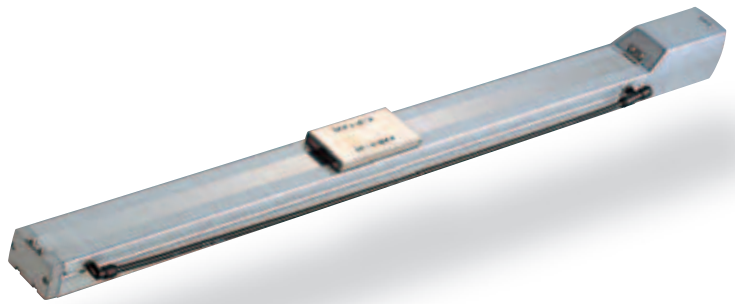
RCP2CR-SA7C

Cleanroom RoboCylinder Slider Coupling Type 73mm Width Pulse motor Aluminum Base

■ Configuration: RCP2CR – SA7C – I – 56P – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	56P: Pulse motor 56 ☐ size	16:16mm 8: 8mm 4: 4mm	50: 50mm 〉 800: 800mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X☐☐: Custom R☐☐: Robot cable	BE: Brake (Cable exiting from end) BL: Brake (Cable exiting from left) BR: Brake (Cable exiting from right) NM: Reversed-home

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



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.

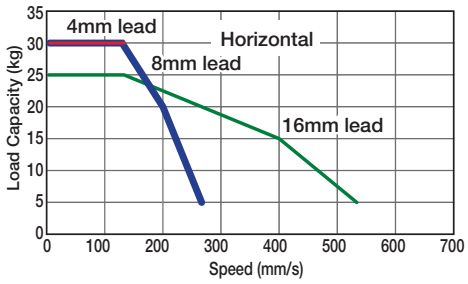
(2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

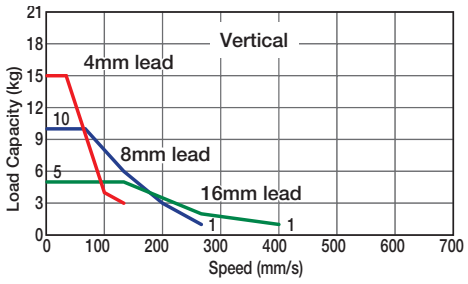
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically). This is the upper limit of the acceleration.

(4) The ISO cleanliness class 4 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SA7C-I-56P-16-①-②-③-④	16	~ 25	~ 5	50~800 (50mm increments)
RCP2CR-SA7C-I-56P-8-①-②-③-④	8	~ 30	~ 10	
RCP2CR-SA7C-I-56P-4-①-②-③-④	4	~ 30	~ 15	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50 ~ 700 (50mm increments)	~ 800 (mm)	Suction Volume (Nl/min)
16	533 <400>	480 <400>	70
8	266	240	40
4	133	120	30

* The values enclosed in "< >" apply to vertical usage (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	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.

Option List

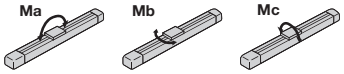
Name	Option Code	See Page	
Brake (Cable exiting from end)	BE	→ A-25	
Brake (Cable exiting from left)	BL	→ A-25	
Brake (Cable exiting from right)	BR	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Actuator Specifications

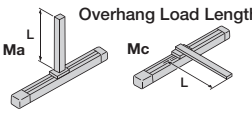
Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 50.4N·m Mb: 71.9N·m Mc: 138.0N·m
Allowable Dynamic Moment (*)	Ma: 13.9N·m Mb: 19.9N·m Mc: 38.3N·m
Overhang Load Length	Ma direction: 230mm or less Mb, Mc direction: 230mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



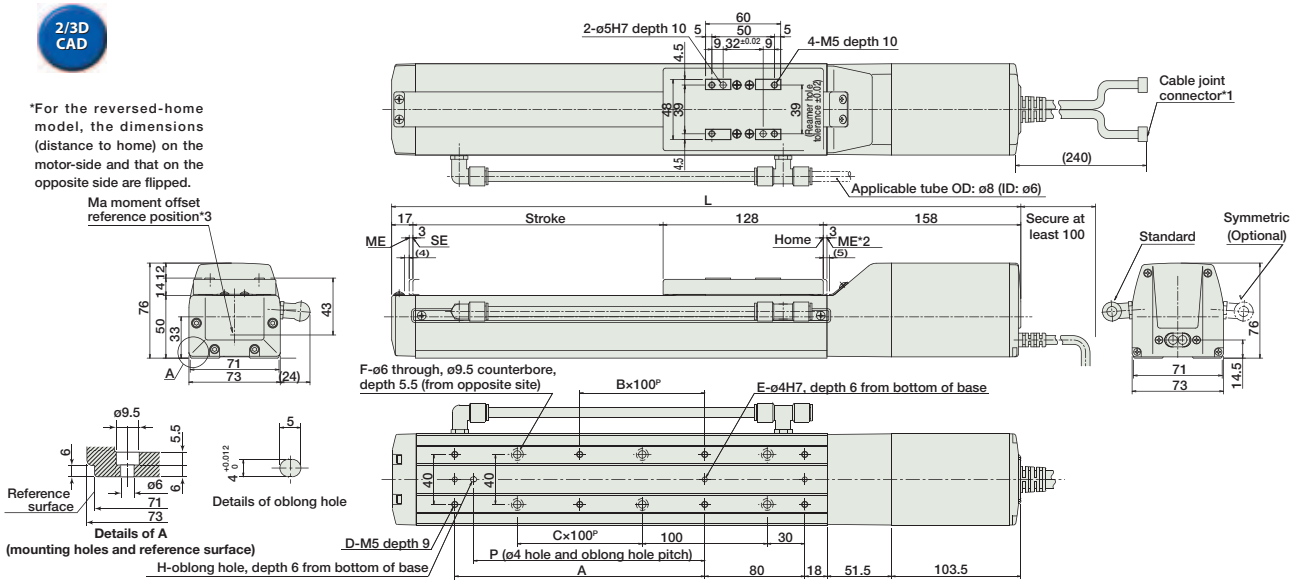
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

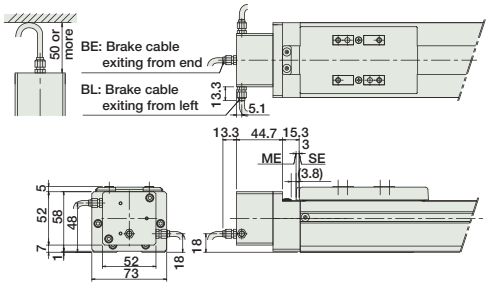
2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.



Dimensions of the Brake Section

* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 43mm (56.3mm with the cable exit out its end); add 0.6kg to weight.



*1 The 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
*3 Reference position for calculating the moment Ma.

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	353	403	453	503	553	603	653	703	753	803	853	903	953	1003	1053	1103
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	3.3	3.5	3.8	4.0	4.2	4.4	4.7	4.9	5.1	5.3	5.6	5.8	6.0	6.2	6.5	6.7

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

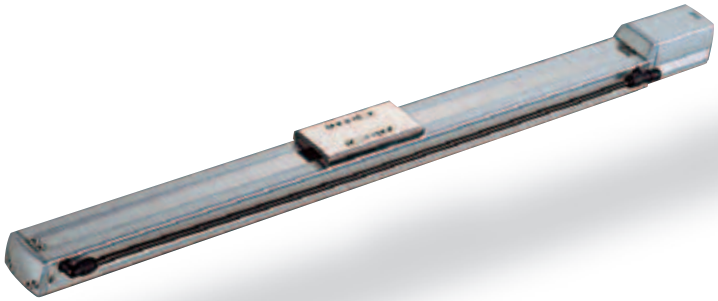
RCP2CR-SS7C

Cleanroom RoboCylinder Slider Coupling Type 60mm Width Pulse motor
Steel Base

■ Configuration: RCP2CR – SS7C – I – 42P – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42☐ size	12:12mm 6: 6mm 3: 3mm	50: 50mm 〉 600: 600mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X☐☐ : Custom R☐☐ : Robot cable	B : Brake NM : Reversed-home VR : Intake port on opposite side

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



Technical References P. A-5

POINT Notes on Selection

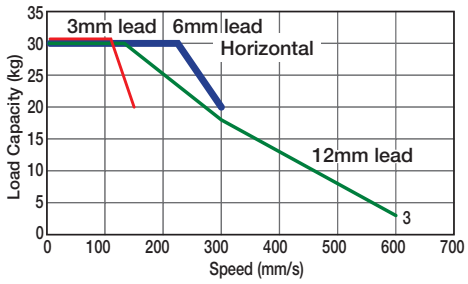
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

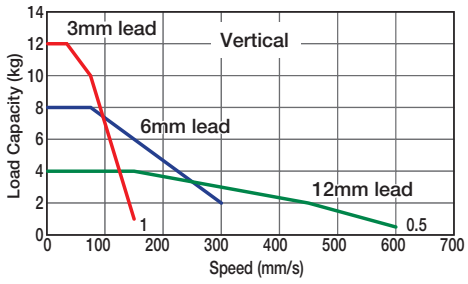
(2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model, or when used vertically). This is the upper limit of the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SS7C-I-42P-12-①-②-③-④	12	~ 30	~ 4	50~600 (50mm increments)
RCP2CR-SS7C-I-42P-6-①-②-③-④	6	~ 30	~ 8	
RCP2CR-SS7C-I-42P-3-①-②-③-④	3	~ 30	~ 12	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50 ~ 500 (50mm increments)	~ 600 (mm)	Suction Volume (Nl/min)
12	600	470	50
6	300	230	30
3	150	115	15

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	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.

Option List

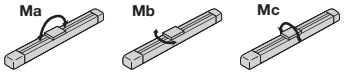
Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Actuator Specifications

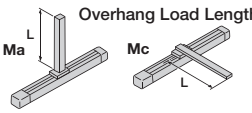
Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 79.4N·m Mb: 79.4N·m Mc: 172.9N·m
Allowable Dynamic Moment (*)	Ma: 14.7N·m Mb: 14.7N·m Mc: 33.3N·m
Overhang Load Length	Ma direction: 300mm or less Mb, Mc direction: 300mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 10,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



Dimensions

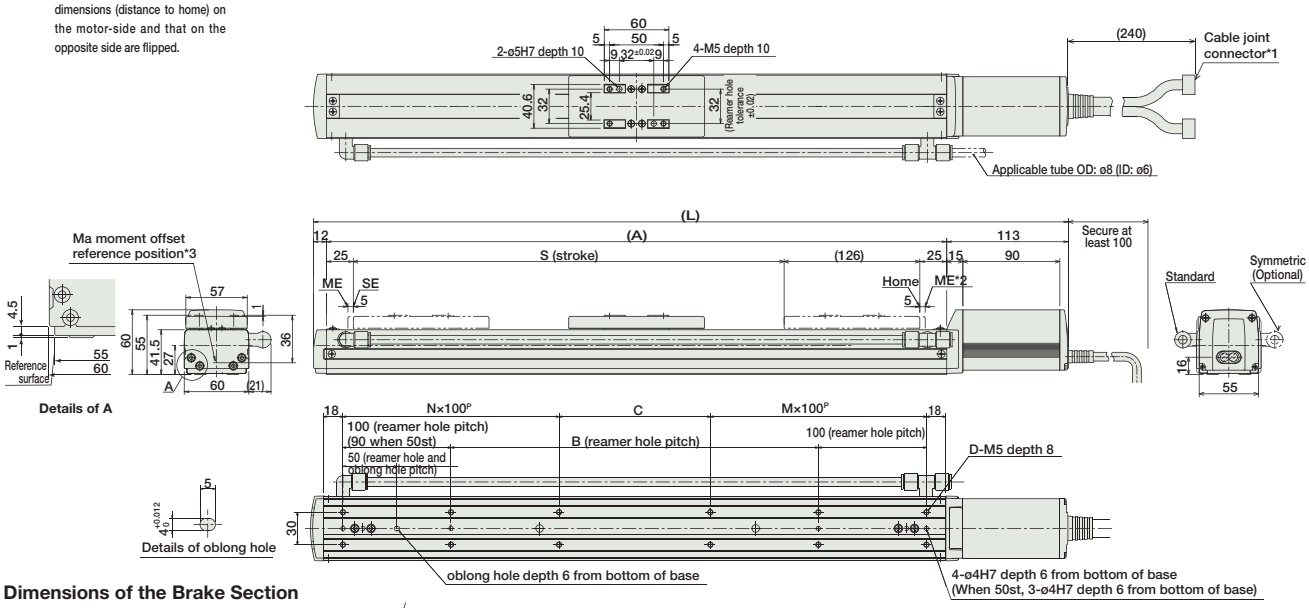
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

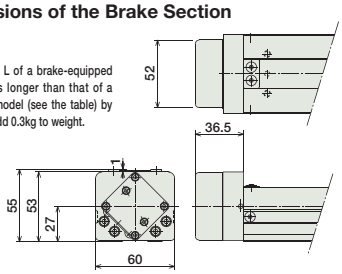
*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The 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
The dimensions enclosed in "( )" are reference dimensions.
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section

* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 24.5mm; add 0.3kg to weight.



■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	351	401	451	501	551	601	651	701	751	801	851	901
A	226	276	326	376	426	476	526	576	626	676	726	776
B	0	40	90	140	190	240	290	340	390	440	490	540
C	90	40	90	140	190	40	90	140	190	40	90	140
D	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	3.3	3.6	3.9	4.2	4.6	4.9	5.3	5.6	6.0	6.3	6.6	6.9

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-42PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

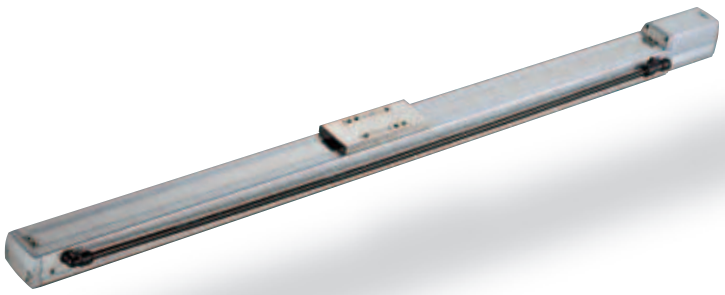
RCP2CR-SS8C

Cleanroom RoboCylinder Slider Coupling Type 80mm Width Pulse motor
Steel Base

■ Configuration: RCP2CR – SS8C – I – 56P – ☐ – ☐ – ☐ – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	56P: Pulse motor 56 ☐ size	20: 20mm 10: 10mm 5: 5mm	50: 50mm \ 1000: 1000mm (50mm pitch increments)	P1: PCON RPCON PSEL P3: PMEC PSEP	N: None P: 1m S: 3m M: 5m X☐☐: Custom R☐☐: Robot cable	B: Brake NM: Reversed-home VR: Intake port on opposite side

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



Technical References P. A-5

POINT Notes on Selection

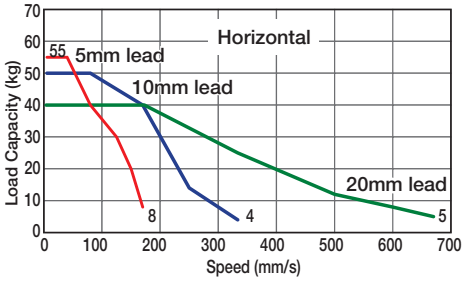
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

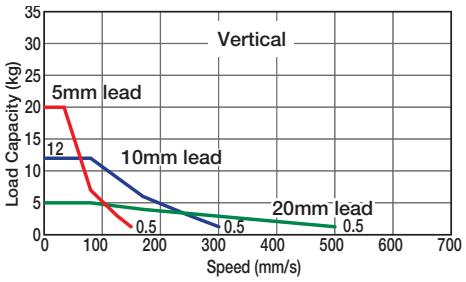
(2) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 5mm-lead model, or when used vertically). This is the upper limit of the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-SS8C-I-56P-20-①-②-③-④	20	~ 40	~ 5	50~1000 (50mm increments)
RCP2CR-SS8C-I-56P-10-①-②-③-④	10	~ 50	~ 12	
RCP2CR-SS8C-I-56P-5-①-②-③-④	5	~ 55	~ 20	

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke, Max. Speed, and Suction Volume

Lead \ Stroke	50 ~ 800 (50mm increments)	~ 900 (mm)	~ 1000 (mm)	Suction Volume (Ni/min)
20	666 <500>	625 <500>	515 <500>	80
10	333 <300>	310 <300>	255	40
5	165 <150>	155 <150>	125	20

* The values enclosed in "< >" apply to vertical usage (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	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.

Option List

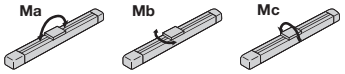
Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Actuator Specifications

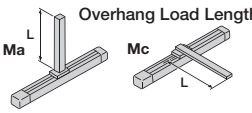
Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 198.9N·m Mb: 198.9N·m Mc: 416.7N·m
Allowable Dynamic Moment (*)	Ma: 36.3N·m Mb: 36.3N·m Mc: 77.4N·m
Overhang Load Length	Ma direction: 450mm or less Mb, Mc direction: 450mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 10,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



Dimensions

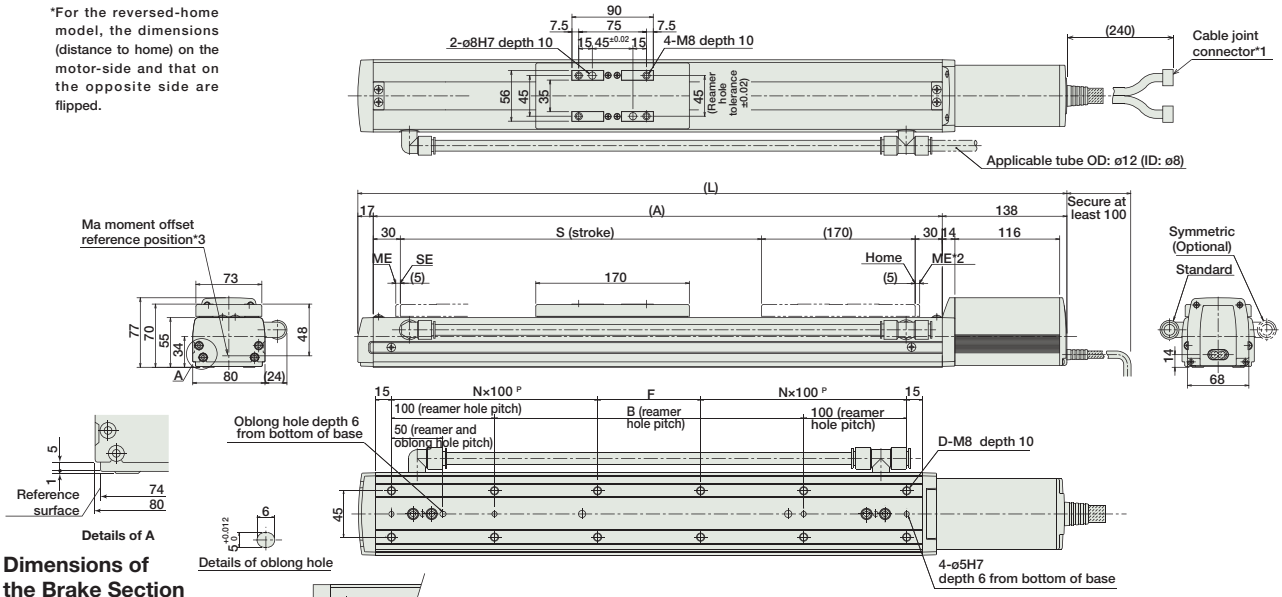
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

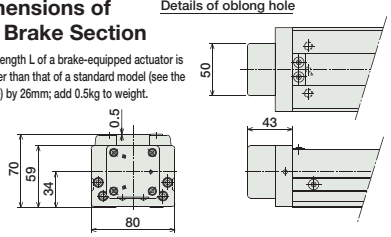
*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The 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
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section

* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 26mm; add 0.5kg to weight.



■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	435	485	535	585	635	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	7.0	7.5	8.0	8.5	9.0	9.6	10.1	10.6	11.2	11.7	12.3	12.7	13.3	13.8	14.4	14.9	15.4	15.9	16.5	17.0

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Pulse train input type with differential line driver support	(-)				
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-NP-2-0	Pulse train input type with open collector support					
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 Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

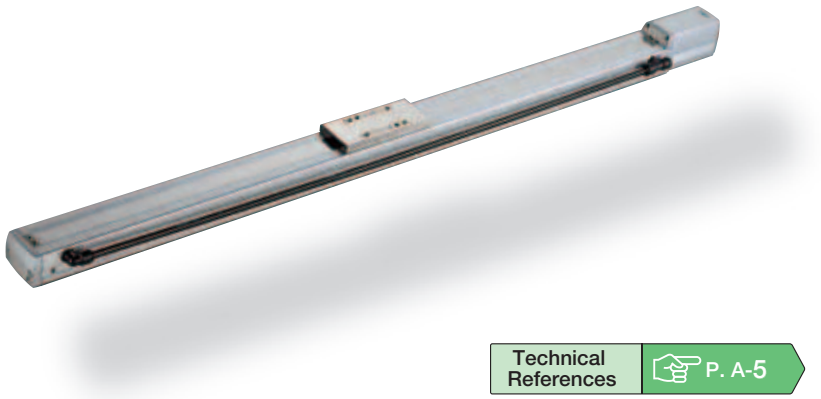
RCP2CR-HS8C

Cleanroom RoboCylinder High-Speed Slider Coupling Type 80mm Width Pulse motor Steel Base

■ Configuration: RCP2CR — HS8C — I — 86P — ☐ — ☐ — P2 — ☐ — ☐

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental	86P: Pulse motor 56 □ high output	30:30mm	50: 50mm ⟩ 1000: 1000mm (50mm pitch increments)	P2: PCON-CF	N : None P : 1m S : 3m M : 5m X □□ : Custom R □□ : Robot cable	B : Brake NM : Reversed-home VR : Intake port on opposite side

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



Technical References P. A-5

POINT Notes on Selection

(1) Due the large lead of the ball screw in high-speed actuators, operating at low speeds may cause vibration and/or noise. Therefore, use the actuator at speeds over 100mm/s.

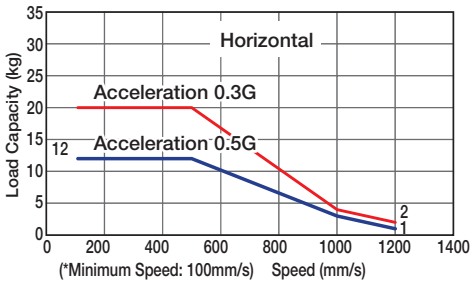
(2) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.

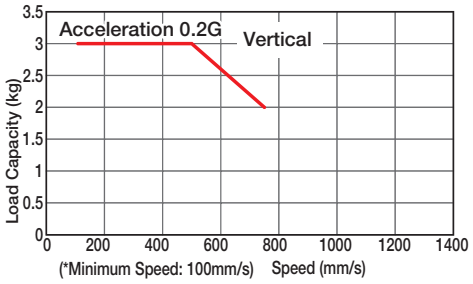
(3) Since the RCP2 series use the pulse motor, the load capacity decreases at high speeds. In the Speed vs. Load Capacity graph on the right, see if your desired speed and load capacity are supported.

(4) The load capacity is based on operation at an acceleration of 0.3G (0.2G when used vertically). 0.5G (horizontal) and 0.3G (vertical) are the upper limits of the acceleration.

■ 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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Stroke (mm)
RCP2CR-HS8C-I-86P-30-①-P2-②-③	30	~ 20	~ 3	50~1000 (50mm increments)

Legend ① Stroke ② Cable length ③ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 800 (50mm increments)	~ 900 (mm)	~ 1000 (mm)	Suction Volume (Nl/min)
30	1200 <750>	1000 <750>	800 <750>	180

* The values enclosed in "< >" apply to vertical usage (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	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.

Option List

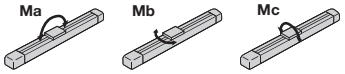
Name	Option Code	See Page	
Brake	B	→ A-25	
Reversed-home	NM	→ A-33	
Intake port on opposite side	VR	→ A-38	

Actuator Specifications

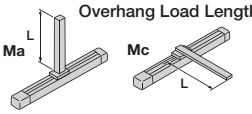
Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Allowable Static Moment	Ma: 198.9N·m Mb: 198.9N·m Mc: 416.7N·m
Allowable Dynamic Moment (*)	Ma: 36.3N·m Mb: 36.3N·m Mc: 77.4N·m
Overhang Load Length	Ma direction: 450mm or less Mb, Mc direction: 450mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 10,000km service life.

Directions of Allowable Load Moments



Overhang Load Length



Dimensions

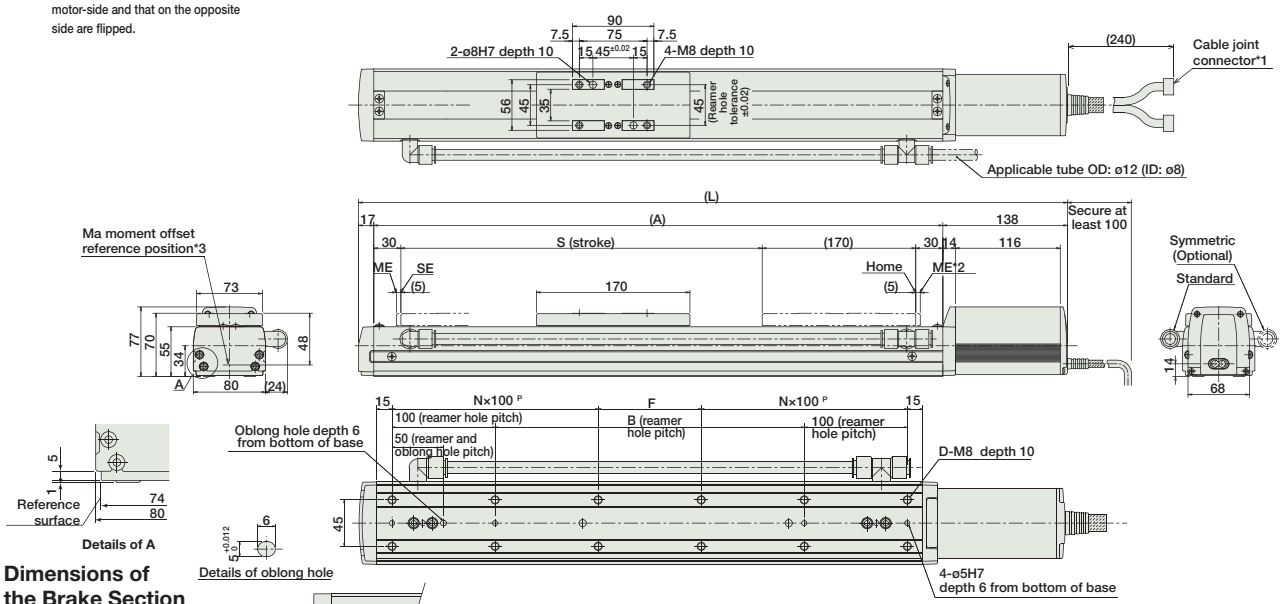
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

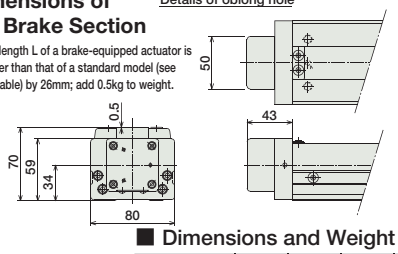
*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

*1 The 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
*3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section

* The length L of a brake-equipped actuator is longer than that of a standard model (see the table) by 26mm; add 0.5kg to weight.



■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L	435	485	535	585	635	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	7.0	7.5	8.0	8.5	9.0	9.6	10.1	10.6	11.2	11.7	12.3	12.7	13.3	13.8	14.4	14.9	15.4	15.9	16.5	17.0

Compatible Controllers

The RCP2CR-HS8C series actuators can operate with the controllers below.

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

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

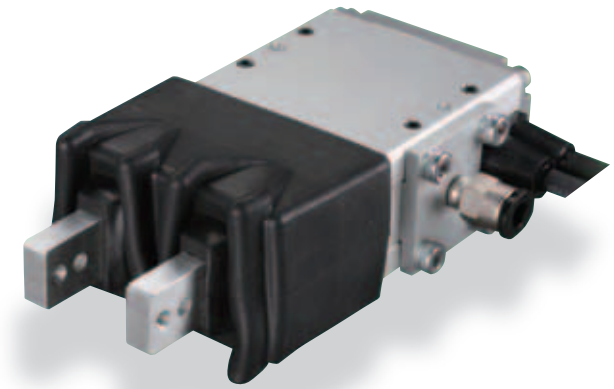
RCP2CR-GRSS

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

■ Configuration: RCP2CR – GRSS – I – 20P – 30 – 8 – ☐ – ☐ – ☐

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

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

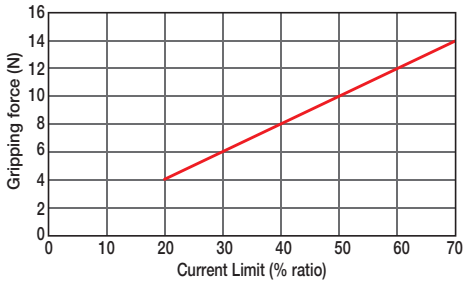


Technical References P. A-5

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

POINT Notes on Selection

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point distance of 0mm and no overhang distance. The workpiece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the workpiece, as well as on the shape of the workpiece. As a rough guide, a workpiece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-74 for details.)

(3) The rated acceleration while moving is 0.3G.

Actuator Specifications

■ Lead and Load Capacity

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

Legend: ① Compatible controllers ② Cable length ③ Options

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

Deceleration Ratio \ Stroke	8 (mm)	Suction Volume (Nl/min)
30	78	10

(Unit: mm/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Worm gear + helical gear + helical rack
Positioning Repeatability	±0.01mm
Backlash	0.2mm or less per side (constantly pressed out by a spring)
Lost Motion	0.05mm or less per side
Guide	Linear guide
Allowable Static Load Moment	Ma: 0.5N·m Mb: 0.5N·m Mc: 1.5N·m
Weight	0.2kg
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Option List

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

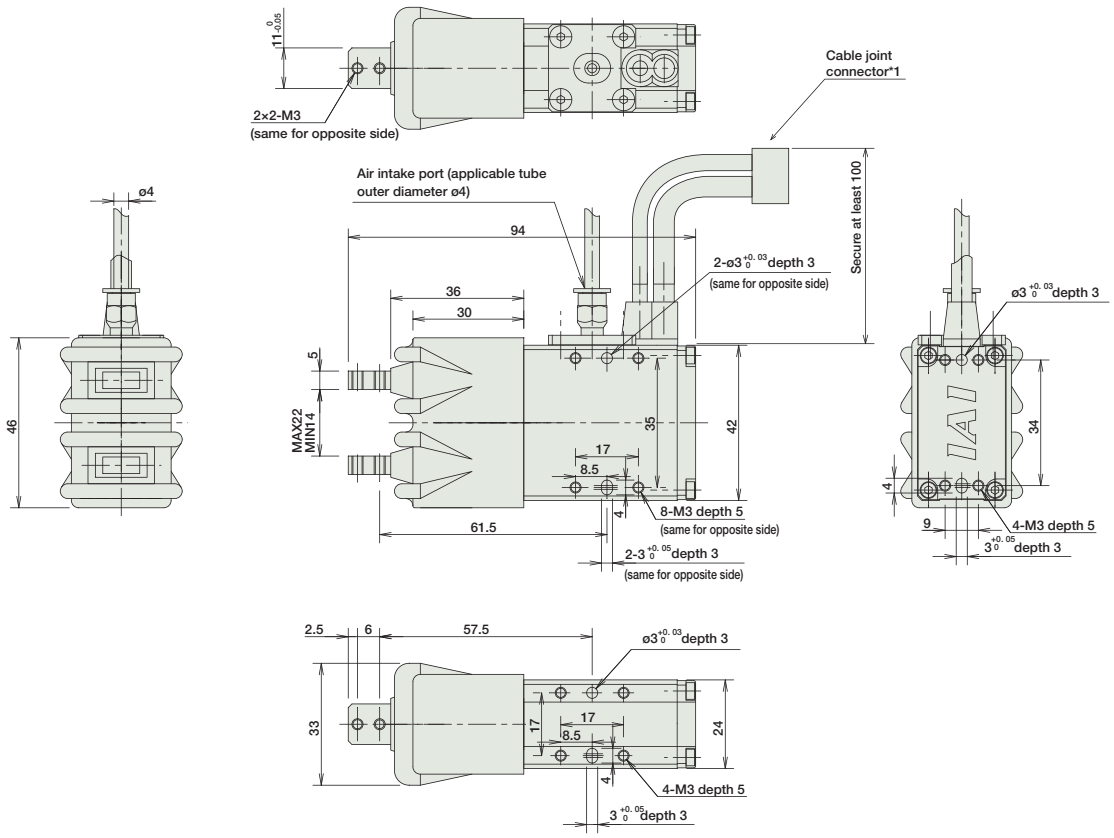
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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



Weight (kg)	0.2

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

* This is for the single-axis PSEL.

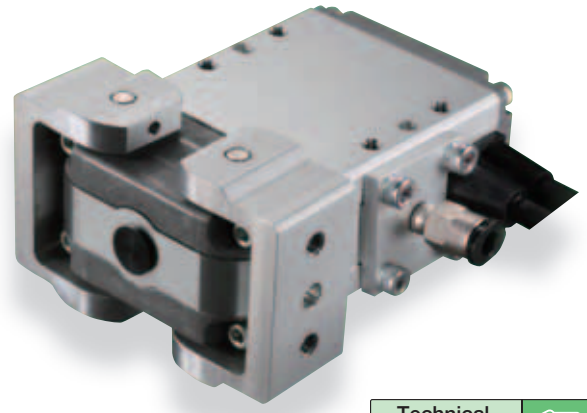
RCP2CR-GRLS

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

■ Configuration: RCP2CR – GRLS – I – 20P – 30 – 180 – ☐ – ☐ – ☐

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length	Option
		I: Incremental * The simple absolute encoder is also considered type "I".	20P: Pulse motor 20 ☐ size	30: 1/30 deceleration ratio	180 : 180 degrees (90 degrees per side)	P1: PCON RPCON PSEL P3: PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐ : Custom	NM: Reversed-home FB : Flange bracket SB : Shaft bracket

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



Technical References P. A-5

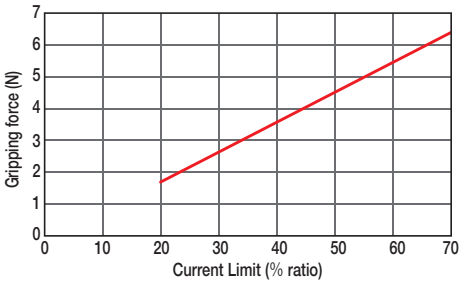
POINT Notes on Selection

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

■ Gripping Force Adjustment

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

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



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

Actuator Specifications

■ Lead and Load Capacity

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

Legend: ① Compatible controllers ② Cable length ③ Options

■ Stroke and Maxi. Opening/Closing Speed

Deceleration Ratio \ Stroke	180 (deg)
30	600

(Unit: degrees/s)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

Actuator Specifications

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

Option List

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

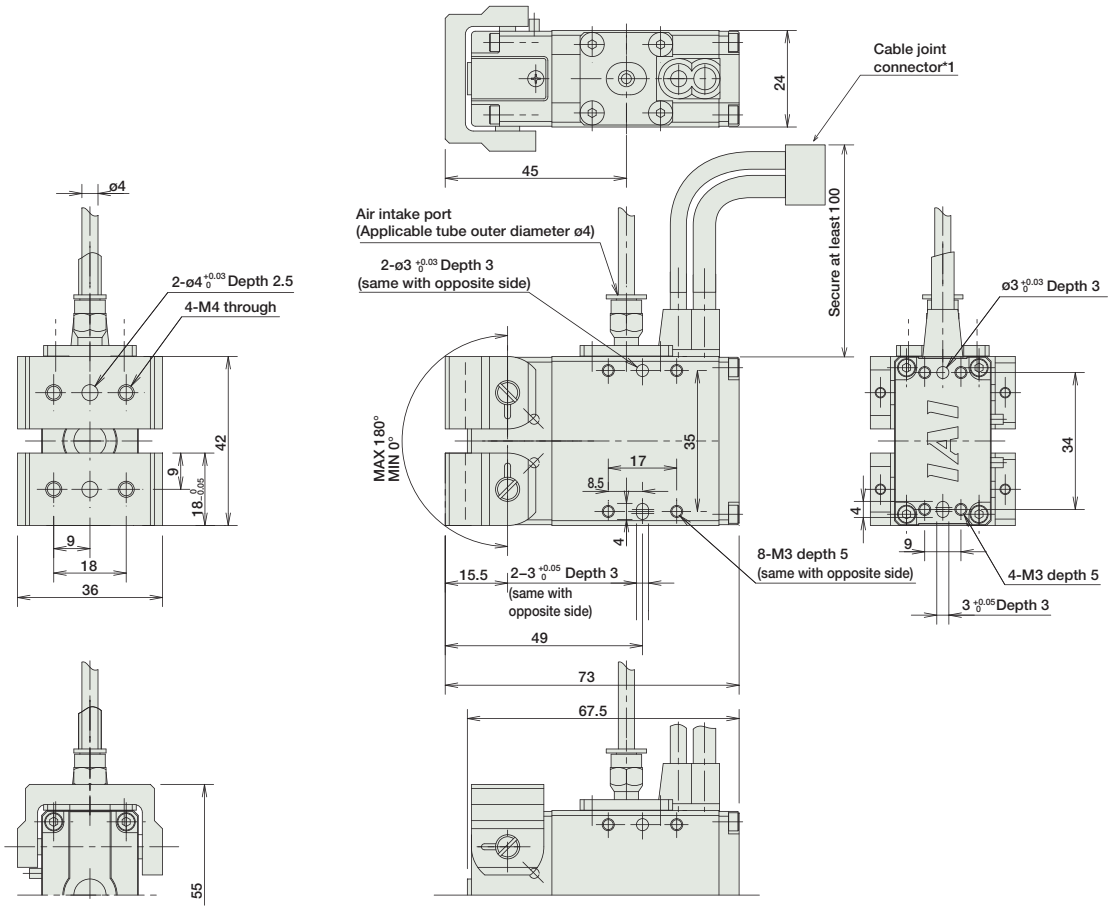
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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



Weight (kg)	0.2

Compatible Controllers

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

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid Valve Type		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning is possible for up to 512 points	512 points				→ P525
Safety-Compliant Positioner Type		PCON-CG-20PI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-NP-2-0	Pulse train input type with differential line driver support	(–)				
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RPCON-20P	Dedicated to field network	768 points				→ P503
Program Control Type		PSEL-C-1-20PI-NP-2-0	Programmed operation is possible Operation is possible on up to 2 axes	1500 points				→ P557

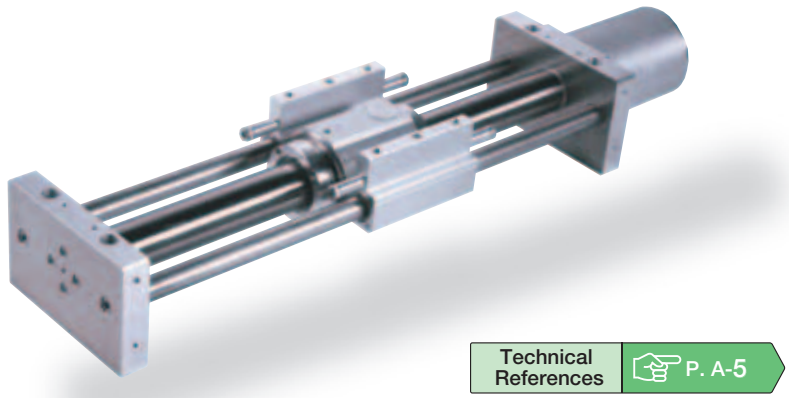
* This is for the single-axis PSEL.

RCP2W-SA16C RoboCylinder 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

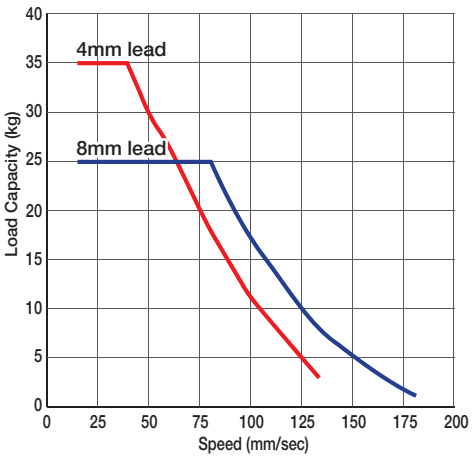
* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References P. A-5

■ 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.



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) This actuator is not available to use push function mode.
(6) 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

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

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

Legend ① Stroke ② Cable length ③ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50~600 (50mm increments)
8	180
4	133

(Unit: mm/s)

Cable List

Type	Cable Symbol	
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 ø12mm C10 grade
Positioning Repeatability	±0.08mm
Lost Motion	0.7 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.

Option List

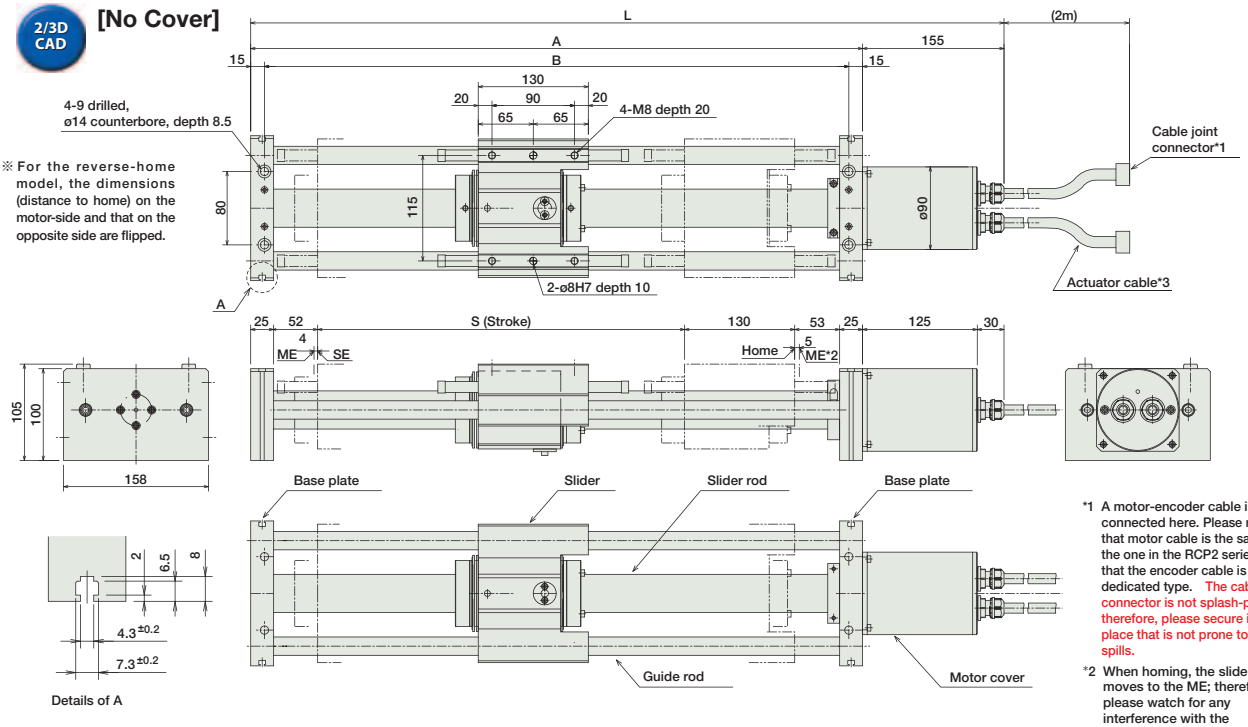
Name	Option Code	See Page	
With cover	CO	→ 444	
Reversed-home	NM	→ A-33	

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

[No Cover]

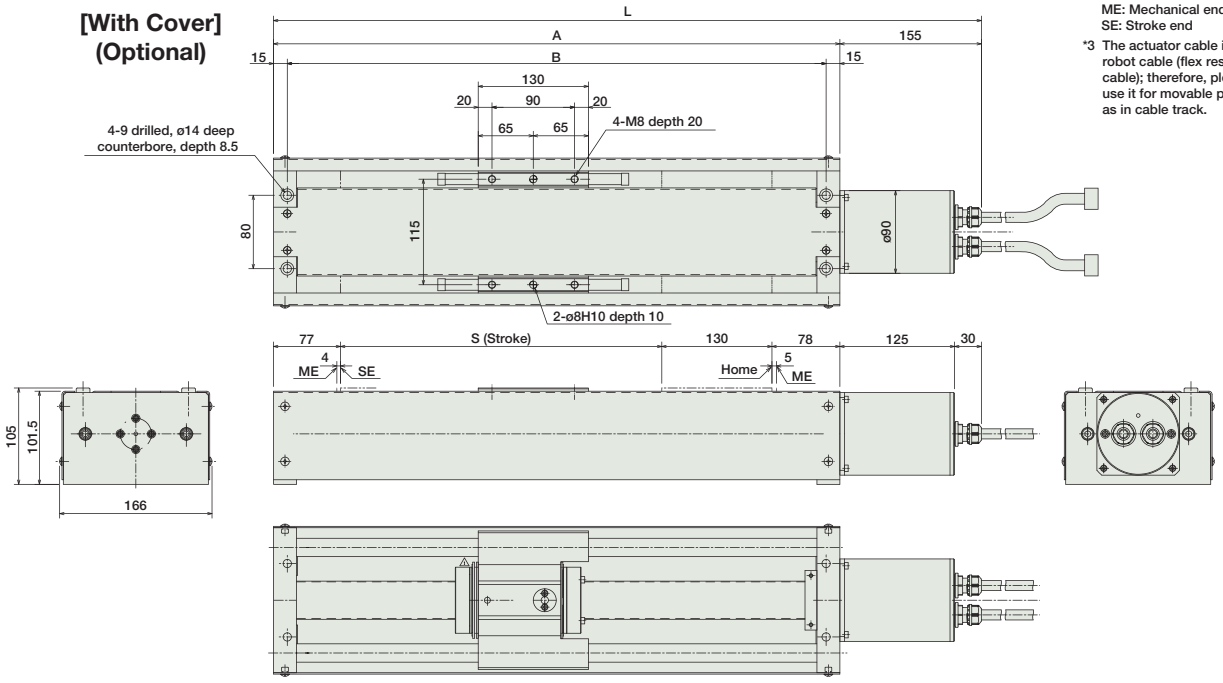


*1 A motor-encoder cable is connected here. Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.

*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.

[With Cover] (Optional)



■ 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		See Page
Positioner Type		PCON-CF-86PI-NP-2-0	Positioning possible for up to 512 points	512 points	DC24V	6A max.		→ P525

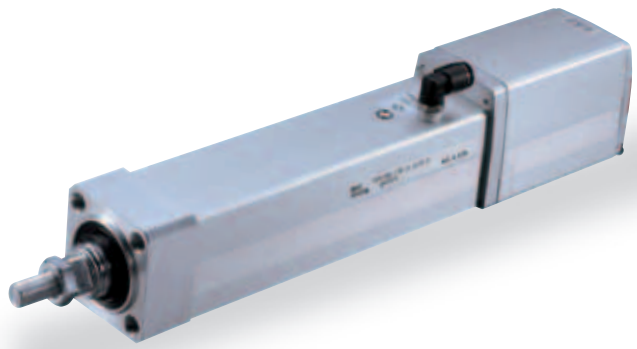
Note: Please note that the encoder cable is a dedicated CF-type cable that is different from the PCON-C/CG/CY/PL/PO/SE controllers.

RCP2W-RA4C RoboCylinder 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 * The simple absolute encoder is also considered type "I".	42P: Pulse motor 42 ☐ size	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50: 50mm \ 300: 300mm (50mm pitch increments)	P1 : PCON RPCON PSEL P3 : PMEC PSEP	N : None P : 1m S : 3m M : 5m X ☐☐: Custom 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.

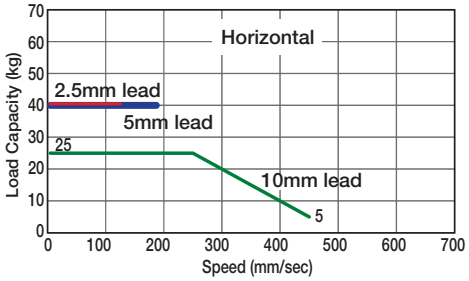
(2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph on the above right to see if your desired speed and load capacity are supported.

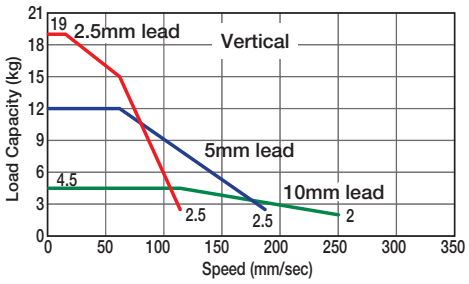
(3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.

(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

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

Model	Lead (mm)	Max. Load Capacity (Note 1) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
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 2) See page A-69 for push force graph.

■ Stroke and Maximum Speed

Lead \ Stroke	50~200 (50mm increments)	250	300
10	450 〈250〉	450 〈250〉	350 〈250〉
5	190	190	175
2.5	125 〈115〉	115	85

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

Cable List

Type	Cable Symbol	
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 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)

Option List

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

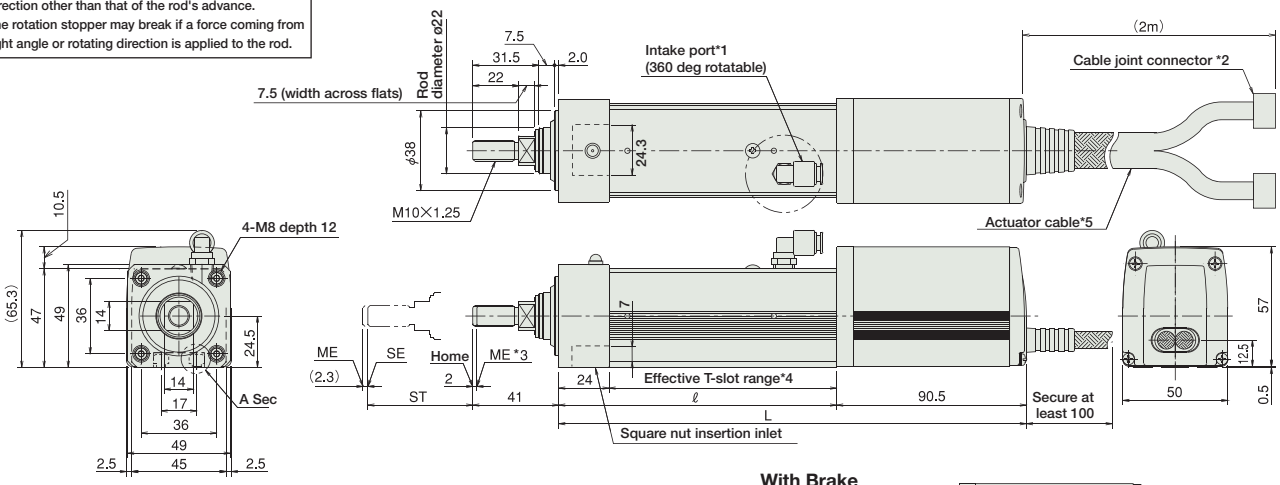
Dimensions

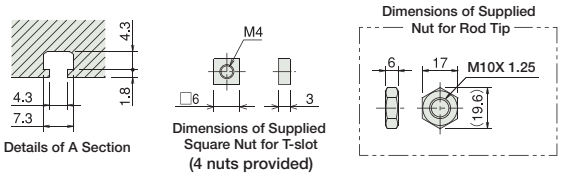
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

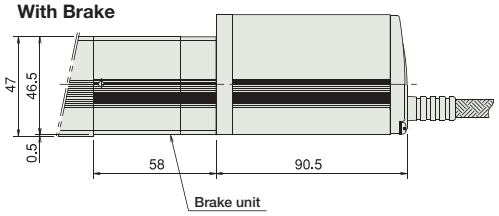
2/3D CAD

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.





With Brake



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

* 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.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	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

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		See Page
Solenoid Valve Type		PMEC-C-42PI-NP-2-2	Easy-to-use controller, even for beginners.	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-42PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-42PI-NP-2-0						
Positioner Type		PCON-C-42PI-NP-2-0	Positioning possible for up to 512 points	512 points				→ P525
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	(–)				
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.

RCP2W-RA6C

RoboCylinder Splash-proof Rod Type 64mm Width Pulse Motor Coupled

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

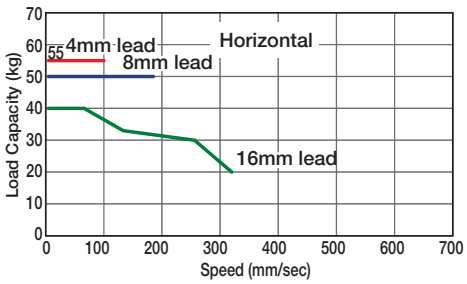
Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RCP2W	RA6C	I: Incremental Type * The simple absolute encoder is also considered type "I".	56P: Pulse motor 56 ☐ size	16 : 16mm 8 : 8mm 4 : 4mm	50: 50mm 〃 300: 300mm (50mm pitch increments)	P1 : PCON RPCON PSEL P3 : PMEC 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

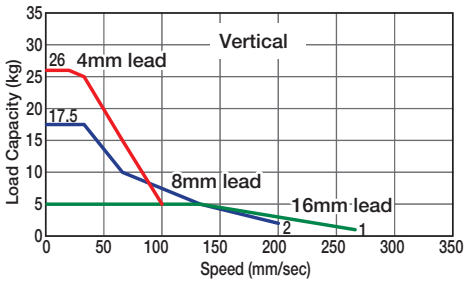
* See page Pre-35 for explanation of each code that makes up the configuration name.

Technical References P. A-5

■ 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.





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.

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) Horizontal (kg)	Max. Load Capacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP2W-RA6C-I-56P-16-①-②-③-④	16	~40	~5	240	50~300 (50mm increments)
RCP2W-RA6C-I-56P-8-①-②-③-④	8	50	~17.5	470	
RCP2W-RA6C-I-56P-4-①-②-③-④	4	55	~26	800	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

(Note 2) See page A-69 for push force graph.

■ Stroke and Maximum Speed

Lead \ Stroke	50~300 (50mm increments)
16	320 〈265〉
8	200
4	100

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

Cable List

Type	Cable Symbol	
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 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)

Option List

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

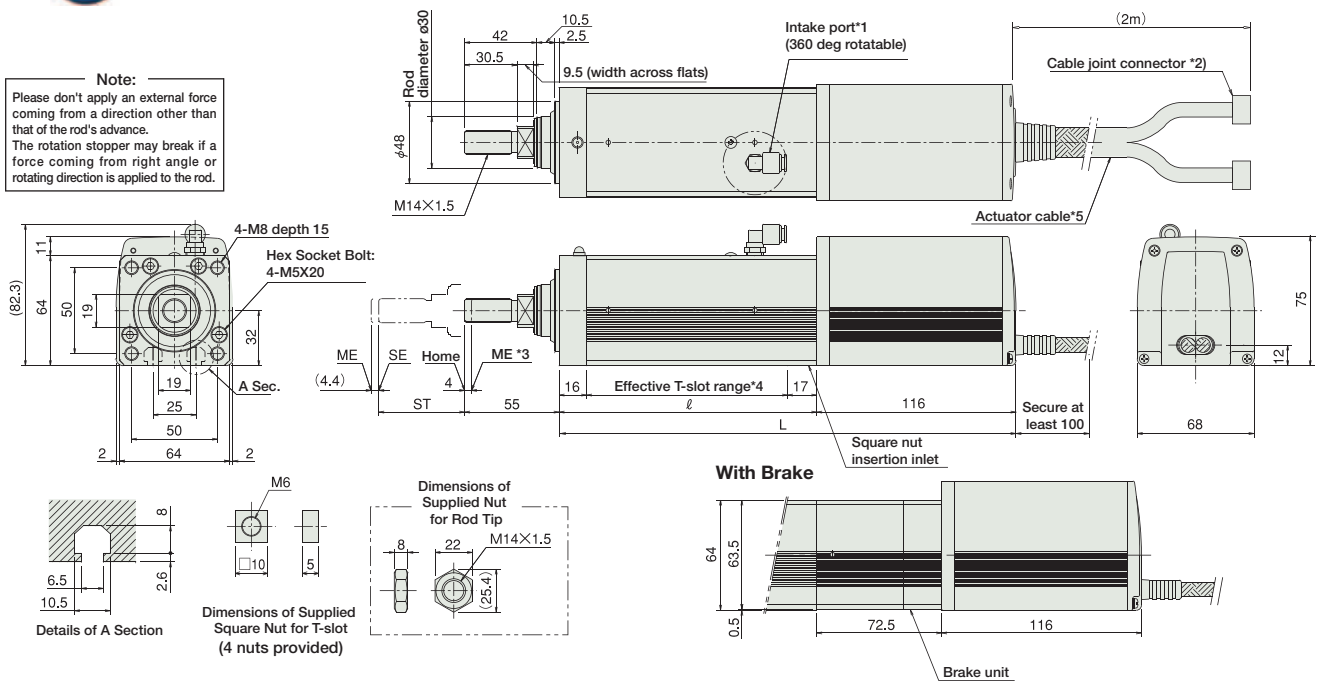
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

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

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		See Page
Solenoid Valve Type		PMEC-C-56PI-NP-2-2	Easy-to-use controller, even for beginners.	3 points	AC115V AC230V	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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid ValveType		PSEP-CW-56PI-NP-2-0						
Positioner Type		PCON-C-56PI-NP-2-0	Positioning possible for up to 512 points	512 points				→ P525
Safety Category Compliant Positioner Type		PCON-CG-56PI-NP-2-0						
Pulse Train Input ype (Differential Line Driver)		PCON-PL-56PI-NP-2-0	Differential line driver support Pulse Train Input Type	(–)				
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.

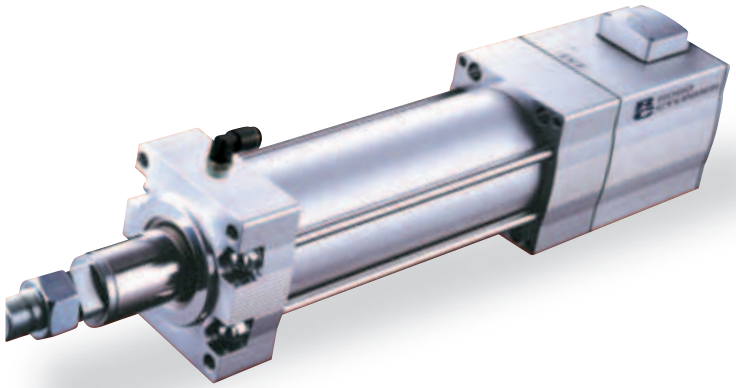
RCP2W-RA10C

RoboCylinder 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.



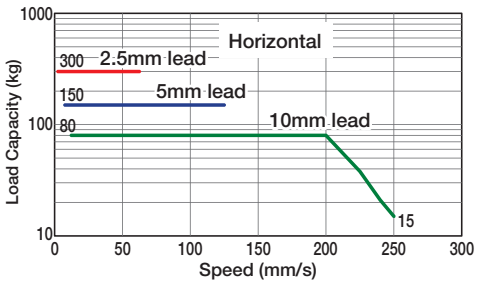
Technical References P. A-5

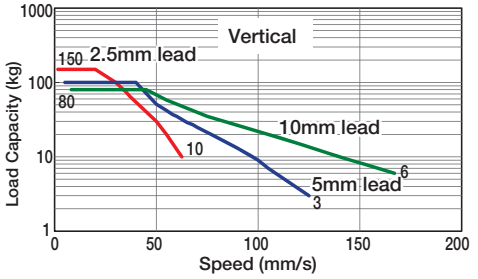
POINT Notes on Selection

(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) Horizontal(kg)	Max. Load Capacity (Note 1) Vertical(kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
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

(Note 2) See page A-70 for push force graph.

■ Stroke and Maximum Speed

Lead \ Stroke	50~300 (50mm increments)
10	250〈167〉
5	125
2.5	63

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

Cable List

Type	Cable Symbol	
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 C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Rod diameter	ø40mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

Option List

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

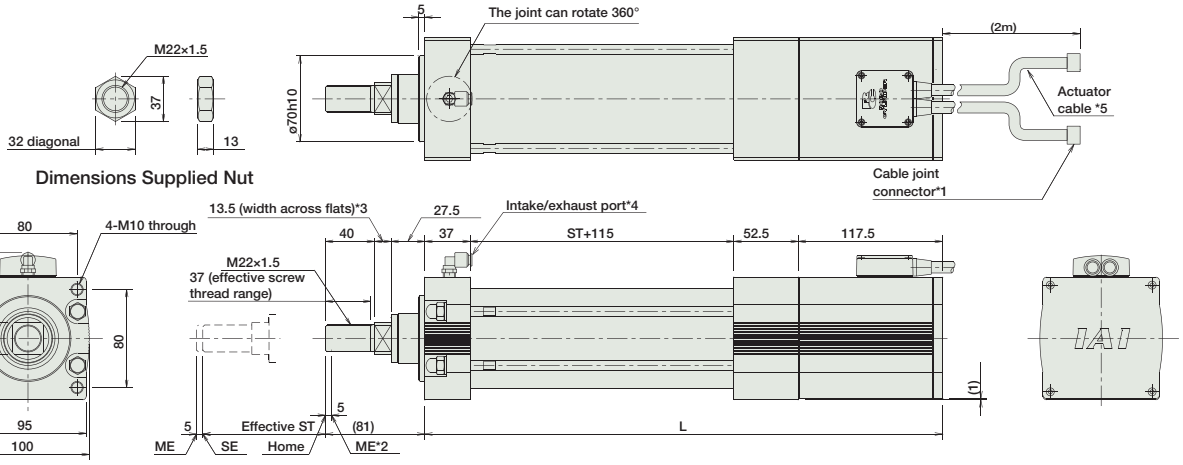
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9

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



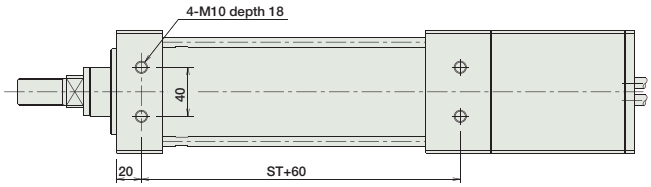
*1. A motor-encoder cable is connected here.
Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type.
See page A-39 for details on cables.
The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone 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.

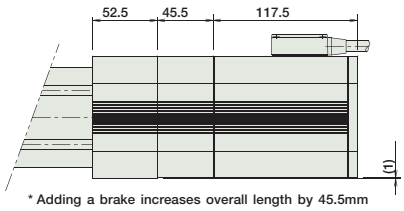
*3. The direction of across-flats will vary depending on the product.

*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		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.

RCP2W-GRSS

RoboCylinder 2-Finger Gripper Dust-proof 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
RCP2W	GRSS	I	20P	30	8			

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

20P: Pulse motor 20 ☐ size

30 : Deceleration ratio 1/30

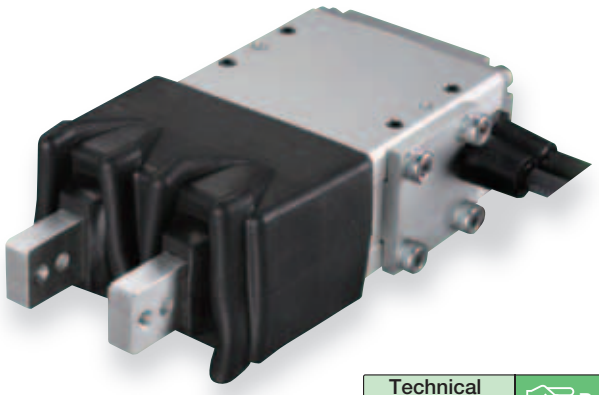
8 : 8mm (One side 4mm)

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

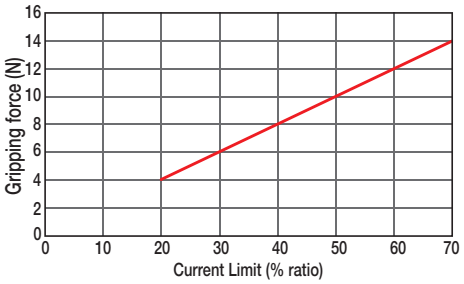
POINT Notes on Selection

(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.

■ 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.



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

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)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

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
Protection Structure	IP50
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

Option List

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

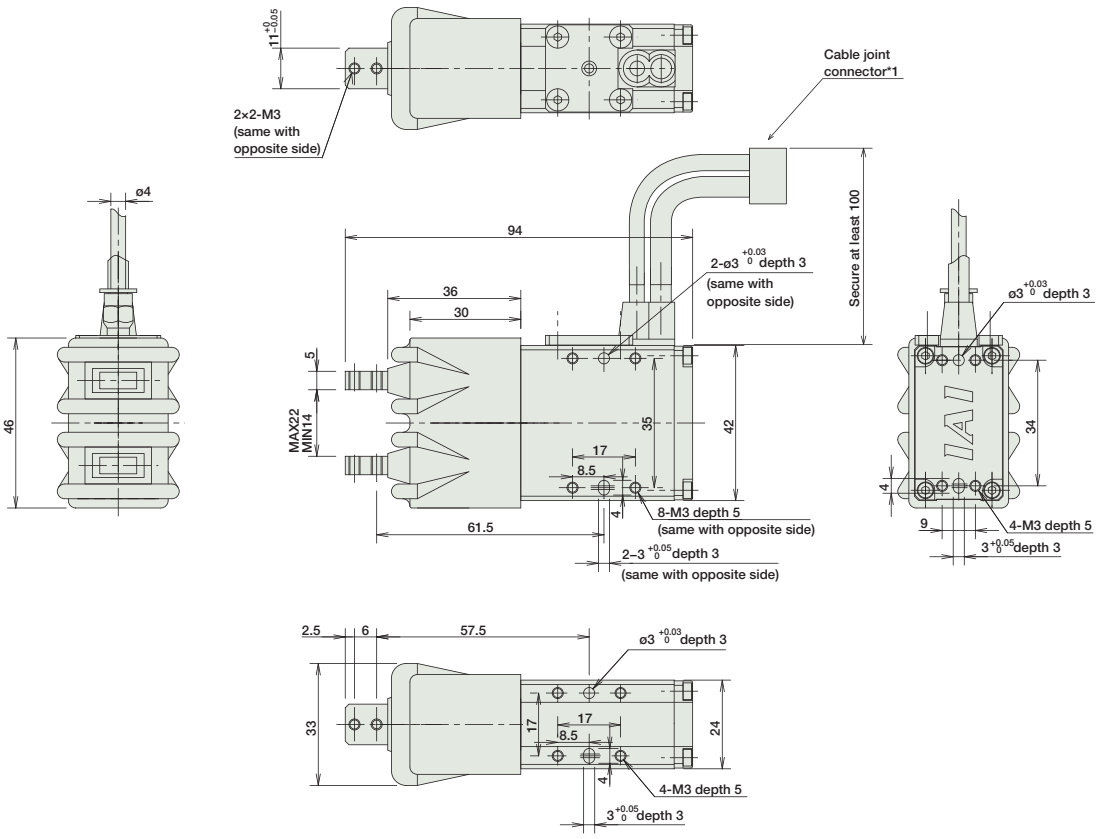
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD

* 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

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		See Page
Solenoid ValveType		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners.	3 points	AC115V AC230V	See P481		→ P477
		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.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning possible for up to 512 points	512 points				→ P525
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	(–)				
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 NetworkType		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.

RCP2W-GRLS

RoboCylinder 2-Finger Gripper Dust-proof 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	180 : 180 Degress (One side 90 dedress)	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

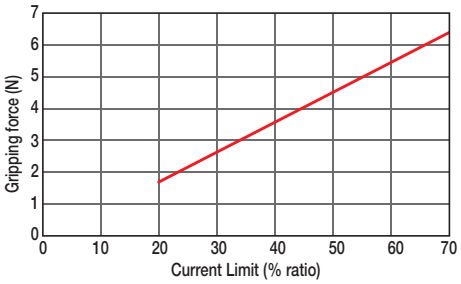
POINT Notes on Selection

(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.

■ 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.



* The value of the gripping (pushing) in the graph is only reference. Please note that there is a maximum variation of about 15%.

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

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)

Cable List

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

* The standard cable is the motor-encoder integrated robot cable.
* See page A-39 for cables for maintenance.

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
Protection Structure	IP50
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

Option List

Name	Option Code	See Page	
Reversed-home	**NM**	A-33	
Flange Bracket	**FB**	26	
Shaft Bracket	**SB**	36	

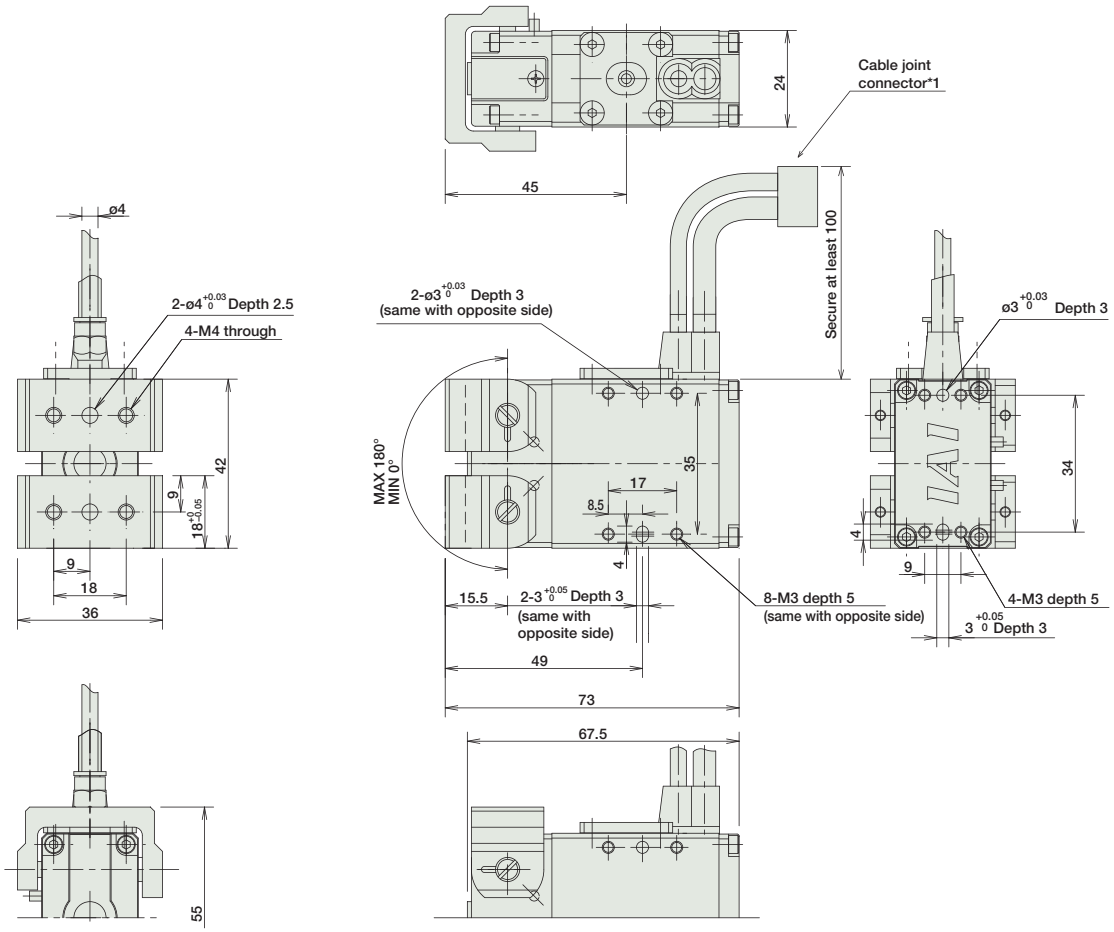
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9

2/3D CAD

* 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

Compatible Controllers

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

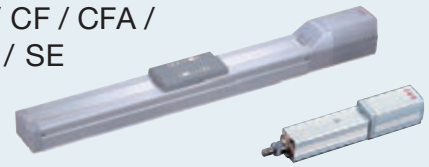
Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity		See Page
Solenoid ValveType		PMEC-C-20PI-NP-2-2	Easy-to-use controller, even for beginners.	3 points	AC115V AC230V	See P481		→ P477
		PSEP-C-20PI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.		DC24V	2A max.		→ P487
Splash-Proof Solenoid Valve Type		PSEP-CW-20PI-NP-2-0						
Positioner Type		PCON-C-20PI-NP-2-0	Positioning possible for up to 512 points	512 points				→ P525
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	(–)				
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 NetworkType		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.

PCON

■ Models C / CA / CG / CF / CFA / CY / PL / PO / SE

Position Controllers
For RCP3/RCP2 series



C(A)/ CG | CF(A) | CY | PL/PO | SE

List of models

These are the position controllers that can be used with the RCP3/RCP2 series actuators. Our line-up has 6 types, which are compatible with various control systems.

Type	C / CA	CG	CF / CFA	CY	PL / PO	SE
Name	Positioner type	Conforming to safety category compatible type	High-thrust motor compatible type	Solenoid valve type	Pulse train control type	Serial communication type
External View						
Description	Positioner capable of a maximum of 512 points positioning (*1)	Conforming to type C safety category specifications (*1)	Dedicated controller for RCP2 high-speed type / high-thrust type / waterproof type (*1)	Can be operated using the same control as the air cylinder type	For pulse train control	For Serial communication
Position points	512 points (*2)	512 points (*2)	512 points (*2)	3 points	–	64 points

(*1) Network connection specifications are designated by the I/O type symbols for the model.
(*2) Besides positioning mode PCON-C/CG/CF can be operated in teaching and solenoid valve mode, PCON-CA/CFA additionally in pulse-train mode.

Model

PCON – [Series] – [Type] – [Motor] I – [Encoder] – [I/O Type] – [I/O cable length] – 0 – [Power/ Voltage] – [Simple absolute unit] – [High accel. model/ DIN rail mounting]

Encoder	
I	Incremental

Type	
C	Positioner Type
CA	High-function Positioner Type
CG	Safety-compliant type
CF	High thrust motor compatible type
CFA	High-function High thrust motor compatible Type
CY	Solenoid Valve Type
SE	Serial Communi-cation Type
PL	Pulse Train Control Type (differential line driver model)
PO	Pulse Train Control Type (open collector model)

Motor	
20P	20 frame pulse motor
20SP	20 frame pulse motor motor-compatible (*)
28P	28 frame pulse motor-compatible
28SP	28 frame pulse motor motor-compatible (**)
35P	35 frame pulse motor-compatible
42P	42 frame pulse motor-compatible
56P	56 frame pulse motor-compatible
60P	60 frame pulse motor-compatible
86P	86 frame pulse motor-compatible

* If connecting to RCP2-RA2□ model with high-load motor, the motor type is 20SP.
** If connecting to RCP2-RA3C/RGD3C, the motor type is 28SP.

I/O Type	
NP	PIO NPN
PLN	Pulse-train input NPN (*)
PN	PIO PNP (standard)
PLP	Pulse-train input PNP (*)
DV	DeviceNet
CC	CC-Link
PR	ProfiBus
PT	ProfiNet
ML	MechatroLink
CN	CompoNet
EC	EtherCAT
EP	EtherNet/IP
SC	Sercos III (**)
N	No I/O (SE type only)

* Only available for PCON-CA/CFA
** Planned industrial ethernet interface

The network models (DV .. SC) support C/CA/CG/CF/CFA types only.
When selecting type SE (serial communication), the standard I/O is "N" (no I/O).

I/O cable length	
0	No cable (*)
2	2m (standard)
3	3m
5	5m

* If SE (serial communication type), and the network model (I/O type DV, CC, PR, PN, ML, CN, EC, EP or SC) is selected, specify "0" (no cable) for the I/O cable.

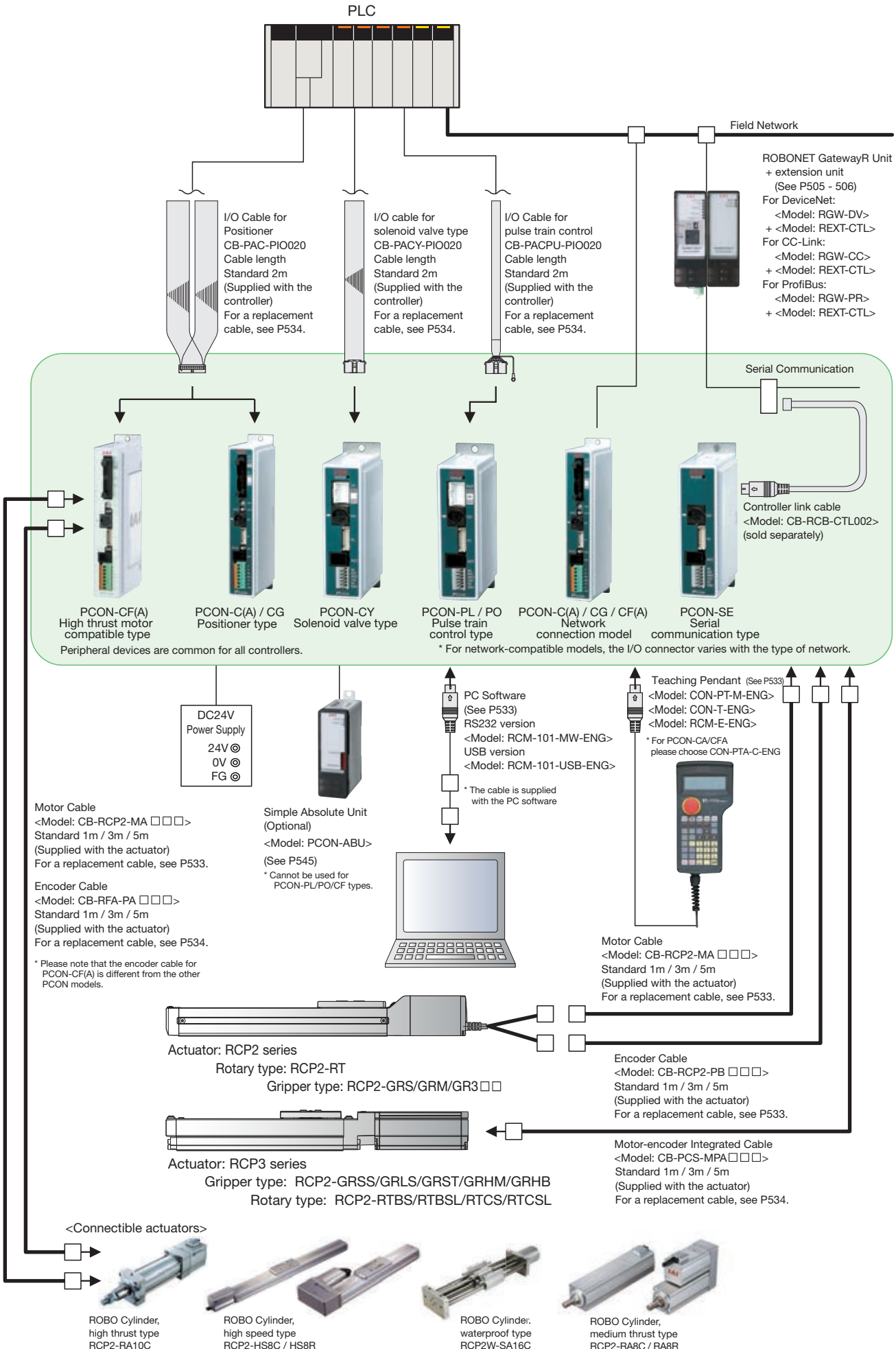
Power/ Voltage	
0	DC24V

Simple absolute unit	
Blank	Not used
AB	Used w/ absolute battery
ABU	Used w/ absolute battery unit
ABUN	Used w/o absolute battery unit

High accel. model/ DIN rail mounting	
Blank	Standard
H	High acceleration type model (*)
DIN	DIN rail mounting (**)

* Only for PCON-C/CG/CF/CY/PL/PO/SE: If connecting to RCP3-SA4/SA5/SA6, RCP2(RCP2CR)-SA5/SA6, specify "H", for high-acceleration type model.
** Only available for PCON-CA/CFA.

System configuration



I/O Specifications

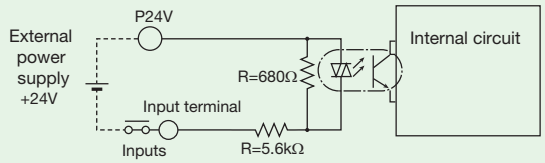
■ Input section External input specifications

Item	Specifications
Input voltage	DC24V +/-10%
Input current	5mA/circuit
Leak current	1mA max./point
Isolation method	Photocoupler

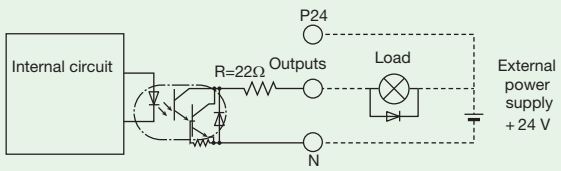
■ Output section External output specifications

Item	Specifications
Load Voltage	DC24V
Max. load current	50mA/point
Remaining voltage	2V or less
Isolation method	Photocoupler

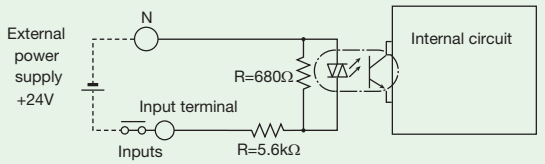
NPN Specifications



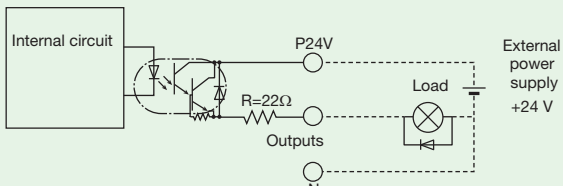
NPN Specifications



PNP Specifications



PNP Specifications



I/O Specifications

The 4 types of controllers (C(A)/CG/CF(A), CY, PL/PO, and SE) are classified by their respective I/O specifications. In addition, with the positioner type and solenoid valve type, the I/O signal details can be changed via the controller settings. As a result, a number of functions can be used.

■ Control Function by Type

Type	C(A)/CG/CF(A)	CY	PL/PO	SE	Features
Name	Positioner type	Solenoid valve type	Pulse in-line control type	Serial communication type	
Positioner mode	○	-	-	○ (*1)	This is the basic operating mode, in which the user designates position numbers and inputs start signals.
Teaching mode	○	-	-	○ (*1)	In this mode, the slider (rod) moves based on an external signal, and the stopped positions can be registered as position data.
Solenoid valve mode	○	○	-	○ (*1)	The actuator can be moved simply by ON/OFF of position signals. This mode supports the same control signals you are already familiar with on solenoid valves of air cylinders.
Pulse train mode	○ (*2)	-	○	-	In this mode, you can operate the actuator freely using pulse trains without inputting position data.
Network compatible	○ (*3)	-	-	○ (*4)	The controller can be connected to a DeviceNet or CC-Link network.

*1 Operates using network communications or serial communications.
*2 Only high-function types PCON-CA/CFA can be operated in pulse-train mode.
*3 Can make a direct connection to a field network with the network specifications.
*4 Can be connected to a field network using a gateway unit.

Explanation of I/O Signal Functions

The table below explains the functions allocated to the controller's I/O signal.
Since the signals that can be used vary depending on the controller type and settings, check the signal table for each controller to confirm the available functions.

■ Signal Function Description

Classification	Signal abbreviations	Signal	Function description
Input	CSTR	PTP strobe signal (start signal)	Input this signal to cause the actuator to start moving to the position set by the command position number signal.
	PC1 to PC256	Command position number signal	This signal is used to input a target position number (binary input).
	BKRL	Brake forced release signal	This signal forcibly releases the brake.
	RMOD	Running mode switching signal	This signal can switch the running mode when the MODE switch on the controller is set to AUTO. (AUTO when this signal is OFF, or MANU when the signal is ON)
	*STP	Pause signal	Turning this signal OFF causes the moving actuator to decelerate to a stop. The actuator will resume the remaining movement if the signal is turned ON during the pause.
	RES	Reset signal	Turning this signal ON resets the alarms that are present. If this signal is turned ON while the actuator is paused (*STP is OFF), the remaining movement can be cancelled.
	SON	Servo ON signal	The servo remains on while this signal is ON, or off while the signal is OFF.
	HOME	Home return signal	Turning this signal ON performs home-return operation.
	MODE	Teaching mode signal	Turning this signal ON switches the controller to the teaching mode. (provided that CSTR, JOG+ and JOG- are all OFF and the actuator is not moving).
	JISL	JOG/INCHING switching signal	When the main signal is off, the JOG operation will be conducted for JOG+ and JOG-. When the signal is on, the unit will do the inching operation for JOG+ and JOG-.
	JOG+, JOG–	JOG signal	When the JISL signal is off and the JOG +/- signal turns on, the unit will jog in the + (positive) direction when the JOG + turns on and the - (negative) direction when the JOG - turns on. During the JOG operation, the unit slows to a stop when the JOG +/- signal turns off.
	PWRT	Teaching signal	In the teaching mode, specify a desired position number and then turn this signal ON for at least 20ms to write the current position to the specified position number.
	ST0 to ST6	Start position command	Turning this signal ON in the solenoid valve mode causes the actuator to move to the specified position. (Start signal is not required)
	TL	Torque limit selection signal	While this signal is ON, torque is limited by the value set by a parameter. The TLR signal turns on if torque has reached the specified value.
	DCLR	Deviation counter clear signal	The position deviation counter is continuously cleared while this signal is ON.
Output	PEND/INP	In position signal	This signal turns ON when the actuator has entered the positioning band after movement. If the actuator has exceeded the positioning band, PEND does not turn OFF, but INP does. PEND and INP can be swapped within parameters.
	PM1 to PM256	Positioning complete signal	This signal is used to output the position number achieved at the completion of positioning (binary output)
	HEND	Home return completion signal	This signal turns ON upon completion of home return.
	ZONE1	Zone signal	This signal turns ON when the current actuator position has entered the range specified by the parameters.
	PZONE	Position zone signal	Turns ON when the actuator moves into a position within the range of the target position data that was set. PZONE can be used together with ZONE1, but PZONE is valid only during movement to a specified position.
	RMDS	Running mode status signal	This outputs the operation mode status.
	*ALM	Controller alarm status signal	This signal remains ON while the controller is not in the alarm condition, and turns OFF when an alarm has occurred.
	MOVE	Moving signal	Turns ON while the actuator is moving (home return), including when there is push force.
	SV	Servo ON status signal	This signal turns ON when servo is ON.
	*EMGS	Emergency stop status signal	This signal remains ON while the controller is not in the emergency stop mode, and turns OFF once an emergency stop has been actuated.
	MODES	Mode status signal	The mode signal input turns it ON when it goes into teaching mode. It turns OFF when it goes into normal mode.
	WEND	Writing complete signal	This signal remains OFF after the controller has switched to the teaching mode. It turns ON upon completion of data write using the PWRT signal. If the PWRT signal is turned Off, this signal also turns OFF.
	PE0 to PE6	Current position number signal	This signal turns ON after the controller has completed moving to the target position in the solenoid valve mode.
	TLR	Torque limiting signal	This signal turns ON once the motor torque has reached the specified value in a condition where torque is being limited by the TL signal.
	LSO to LS2	Limit switch output signal	Each signal turns ON when the current actuator position has entered the positioning band before or after the target position. If the actuator has already completed home return, these signals are output even before a movement command is issued or while the servo is OFF.
	LOAD	Load output determination status signal	This signal turns ON once the motor torque has reached the specified value. (*PCON-CF dedicated signal)
	TRQS	Torque level status signal	Turns ON when the motor current reaches the threshold. (*PCON-CF dedicated signal)

(Note) Signals with asterisks (*) are normally ON and OFF during operation.

I/O Signal table

■ Positioner types (PCON-C / CA / CG / CF / CFA)

Pin No.	Classification		Parameters (select PIO pattern)					
			0	1	2	3	4	5
			Positioning mode	Teaching mode	256-point mode	512-point mode	Solenoid Valve Mode 1	Solenoid Valve Mode 2
		Positioning Points	64 points	64 points	256 points	512 points	7 points	3 points
		Zone signal	○	–	–	–	○	○
		P-zone signal	○	○	○	–	○	○
1A	24V		P24					
2A	24V		P24					
3A	–		NC					
4A	–		NC					
5A	Input	IN0	PC1	PC1	PC1	PC1	ST0	ST0
6A		IN1	PC2	PC2	PC2	PC2	ST1	ST1 (JOG+)
7A		IN2	PC4	PC4	PC4	PC4	ST2	ST2 (–)
8A		IN3	PC8	PC8	PC8	PC8	ST3	–
9A		IN4	PC16	PC16	PC16	PC16	ST4	–
10A		IN5	PC32	PC32	PC32	PC32	ST5	–
11A		IN6	–	MODE	PC64	PC64	ST6	–
12A		IN7	–	JISL	PC128	PC128	–	–
13A		IN8	–	JOG+	–	PC256	–	–
14A		IN9	BKRL	JOG-	BKRL	BKRL	BKRL	BKRL
15A		IN10	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD
16A		IN11	HOME	HOME	HOME	HOME	HOME	–
17A		IN12	*STP	*STP	*STP	*STP	*STP	–
18A		IN13	CSTR	CSTR/PWRT	CSTR	CSTR	–	–
19A		IN14	RES	RES	RES	RES	RES	RES
20A		IN15	SON	SON	SON	SON	SON	SON
1B	Output	OUT0	PM1	PM1	PM1	PM1	PE0	LSO
2B		OUT1	PM2	PM2	PM2	PM2	PE1	LS1 (TRQS)
3B		OUT2	PM4	PM4	PM4	PM4	PE2	LS2 (–)
4B		OUT3	PM8	PM8	PM8	PM8	PE3	–
5B		OUT4	PM16	PM16	PM16	PM16	PE4	–
6B		OUT5	PM32	PM32	PM32	PM32	PE5	–
7B		OUT6	MOVE	MOVE	PM64	PM64	PE6	–
8B		OUT7	ZONE1	MODES	PM128	PM128	ZONE1	ZONE1
9B		OUT8	PZONE	PZONE	PZONE	PM256	PZONE	PZONE
10B		OUT9	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS
11B		OUT10	HEND	HEND	HEND	HEND	HEND	HEND
12B		OUT11	PEND	PEND/WEND	PEND	PEND	PEND	–
13B		OUT12	SV	SV	SV	SV	SV	SV
14B		OUT13	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS
15B		OUT14	* ALM	* ALM	* ALM	*ALM	* ALM	* ALM
16B		OUT15	LOAD/TRQS	–	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
17B	–		NC					
18B	–		NC					
19B	0V		N					
20B	0V		N					

(Note) The names of signals above inside ( ) are functions before the unit returns home.
(Note) Signals with asterisks (*) are normally ON, and OFF during operation.

■ Solenoid valve type (PCON-CY)

Pin No.	Classification		Parameters (select PIO pattern)	
			0	1
			Solenoid valve mode 0	Solenoid valve mode 1
		Positioning Points	3 points	3 points
		Zone signal	–	–
		P-zone signal	–	○
1	24V			
2	0V			
3	Input	IN0	ST0	ST0
4		IN1	ST1 (JOG+)	ST1 (JOG+)
5		IN2	ST2 (RES)	ST2 (RES)
6		IN3	SON	SON
7	Output	OUT0	LS0	PE0
8		OUT1	LS1 (TRQS)	PE1 (TRQS)
9		OUT2	LS2 (–)	PE2 (–)
10		OUT3	SV	PZONE
11		OUT4	HEND	HEND
12		OUT5	* ALM	* ALM

(Note) The names of signals above inside ( ) are functions before the unit returns home.
(Note) Signals with asterisks (*) are normally ON, and OFF during operation.

■ Pulse Train Type (PCON-PL/PO)

Pin No.	Classification		Parameters (select PIO pattern)	
			0	1
			Standard mode	Push mode
		Positioning Points	–	–
		Zone signal	–	–
		P-zone signal	–	–
1	24V			
2	0V			
3	Input	IN0	SON	SON
4		IN1	TL	TL
5		IN2	HOME	HOME
6		IN3	RES	RES ／ DCLR
7	Output	OUT0	SV	SV
8		OUT1	INP	INP ／ TLR
9		OUT2	HEND	HEND
10		OUT3	* ALM	* ALM
11	Input		* PP	* PP
12			PP	PP
13			* NP	* NP
14			NP	NP

(Note) Signals with asterisks (*) are normally ON, and OFF during operation.

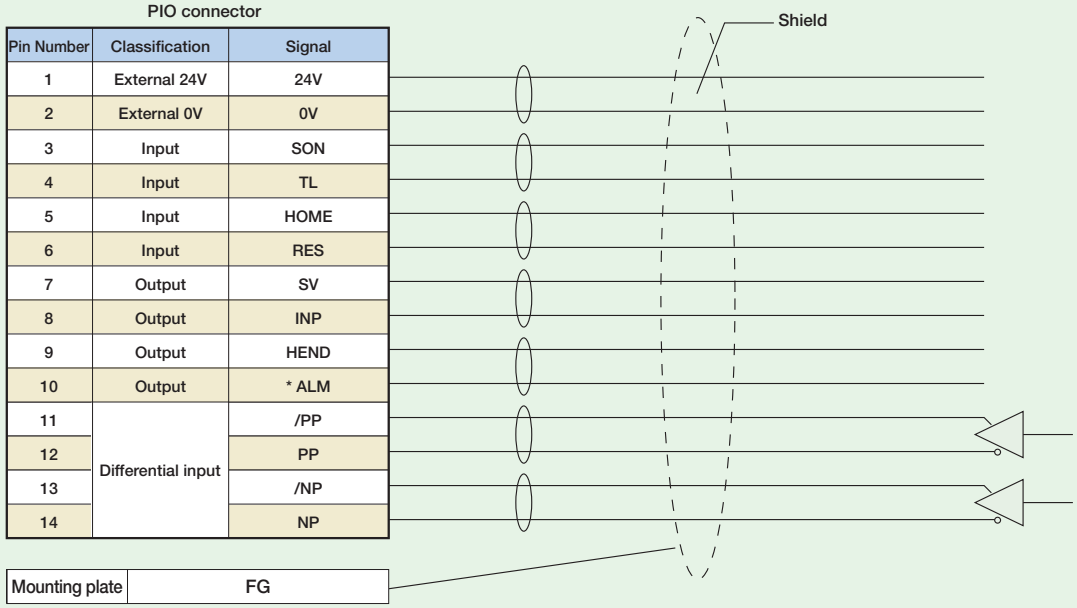
Pulse train input type wiring diagram

■ Differential Receiver Method (PCON-PL)

Max. input pulse frequency	:	Max. 200 kpps
Cable Length	:	Max. 10m

PIO connector

Pin Number	Classification	Signal
1	External 24V	24V
2	External 0V	0V
3	Input	SON
4	Input	TL
5	Input	HOME
6	Input	RES
7	Output	SV
8	Output	INP
9	Output	HEND
10	Output	* ALM
11	Differential input	/PP
12		PP
13		/NP
14		NP



Mounting plate	FG

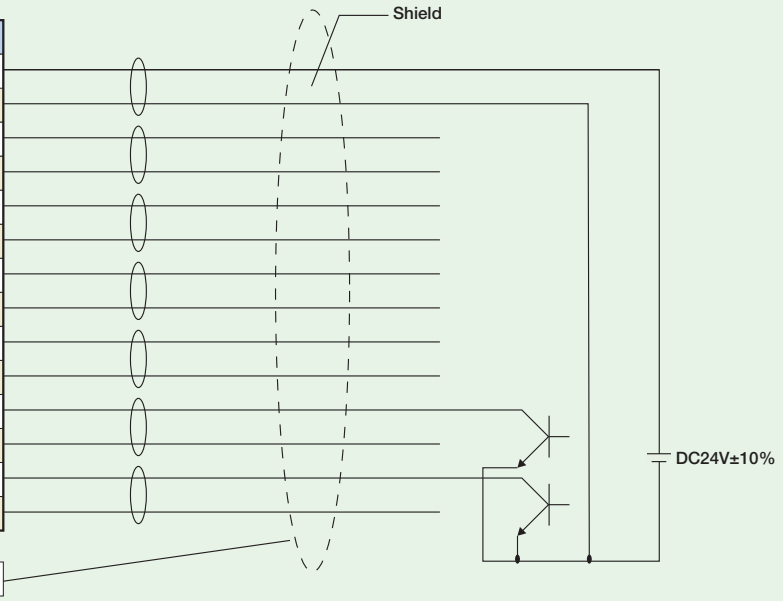
* The shield on the twisted pair cable connected to the pulse connector must be connected to the mounting plate.

■ Open Collector Method (PCON-PO)

Max. input pulse frequency	:	Max. 60 kpps
Cable Length	:	Max. 2m

PIO connector

Pin Number	Classification	Signal
1	External 24V	24V
2	External 0V	0V
3	Input	SON
4	Input	TL
5	Input	HOME
6	Input	RES
7	Output	SV
8	Output	INP
9	Output	HEND
10	Output	* ALM
11	Open collector input	/PP
12	N.C	PP
13	Open collector input	/NP
14	N.C	NP



Mounting plate	FG

* The shield on the twisted pair cable connected to the pulse connector must be connected to the mounting plate.
* Connect the external 0V to the COMMON of the command pulse.

Command Pulse Input State

	Command pulse train state	Input terminal	During forward operation	During reversed operation
Negative logic	Forward pulse train	PP・/PP		
	Reversed pulse train	NP・/NP		
	The forward pulse train causes the motor to rotate forward, and the reverse pulse train causes the motor to rotate in reverse.			
	Pulse train	PP・/PP		
	Symbols	NP・/NP	Low	High
	The command pulse is used for the amount of motor rotation, and the command symbol is used for rotational direction.			
	A/B phase pulse train	PP・/PP		
		NP・/NP		
	An A/B phase pulse with a 90° phase difference (multiplier is 4) is used to generate commands for the amount of rotation and rotational direction.			
Positive logic	Forward pulse train	PP・/PP		
	Reversed pulse train	NP・/NP		
	Pulse train	PP・/PP		
	Symbols	NP・/NP	High	Low
	A/B phase pulse train	PP・/PP		
		NP・/NP		

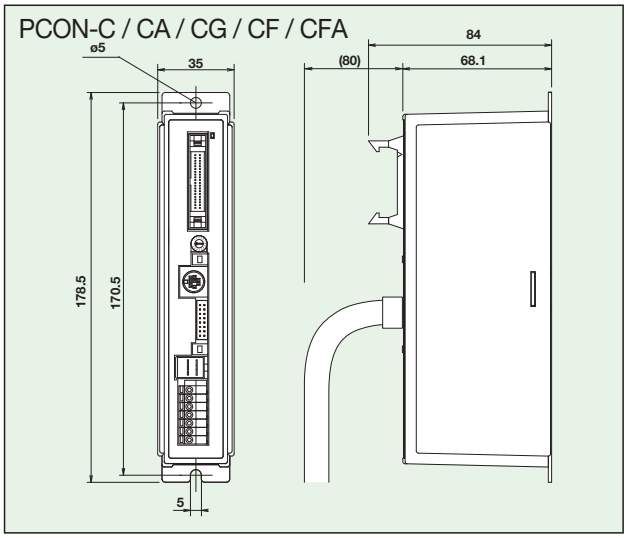
Table of specifications

Item	Specifications						
Controller type	CF / CFA	C / CA	CG	CY	PL	PO	SE
Connected actuator (*1)	RCP2-RA8C (R) RCP2-RA10C RCP2-HS8C (R) RCP2W-SA16C	RCP3 ／ RCP2 series actuator (Note 1)					
Number of control axes	1-axis						
Operating method	Positioner type			Solenoid valve type	Pulse train input type		Serial communication type
Positioning Points	512 points			3 points	—		64 points
Backup memory	EEPROM						
I/O connector	40-pin connector			12-pin connector	40-pin connector		None
Number of I/O	16 input points/16 output points			4 input points/6 output points	4 input points/4 output points		None
I/O power	External supply DC24V±10%						—
Serial Communication	RS485 1ch						
Peripheral device communication cable	CB-PAC-PIO □□□			CB-PACY-PIO □□□	CB-PACPU-PIO □□□		CB-RCB-CTL002
Command pulse train input method	—				Differential line driver	Open collector	—
Max. input pulse frequency (Note 2)	—				Max. 200 kpps	Max. 60 kpps	—
Position detection method	Incremental encoder						
Drive-source cutoff relay at emergency stop	Integrated		External				
Forced release of electromagnetic brake	Brake release switch ON/OFF			ON/OFF terminal signal inside the power terminal for brake release			
Input Supply Voltage	DC 24 V ± 10%						
Power Supply Capacity	Max. 6A (*2)	2.2A max.					
Dielectric strength voltage	DC500V 1MΩ						
Vibration resistance	XYZ directions	10 to 57Hz, One side amplitude: 0.035mm (continuous), 0.075mm (intermittent) 58 to 150Hz, 4.9m/s² (continuous), 9.8m/s² (intermittent)					
Ambient operating temperature	0 ～ 40℃						
Ambient operating humidity	10 - 95% (non-condensing)						
Ambient operating atmosphere	Without corrosion gases						
Protection class	IP20						
Weight	Approx. 320g	Approx. 300g		Approx. 130g			

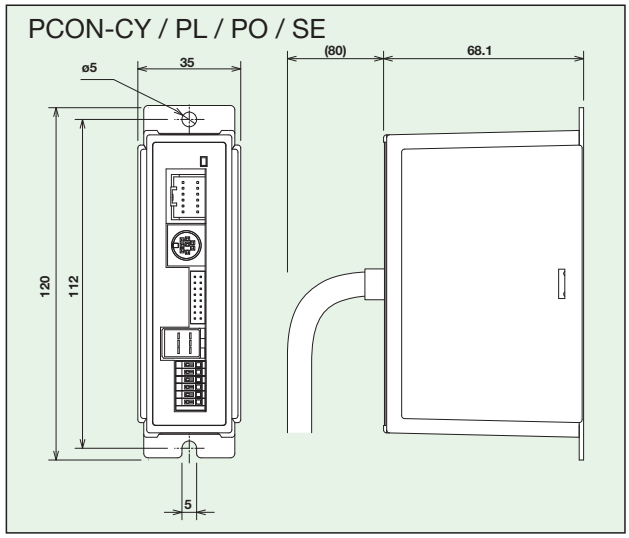
(Note 1) The medium-thrust type (RA8C/RA8R), high-thrust type (RA10C), high-speed type (HS8C/HS8R) and waterproof type (RCP2W-SA16) cannot be operated.
(Note 2) With the open collector specification, keep the maximum input frequency to 60 kpps or below to prevent malfunction. For applications exceeding 60kpps, use the differential line driver.
(*1) RCP2-RA8C/RA8R/RA10C/HS8C/HS8R and RCP2W-SA16C can only operate with PCON-CF(A).
Other RCP2 / RCP3 Series actuators can be operated with C(A) / CG / CY / PL / PO / SE.
(*2) Inrush current peak: 10A

External Dimensions

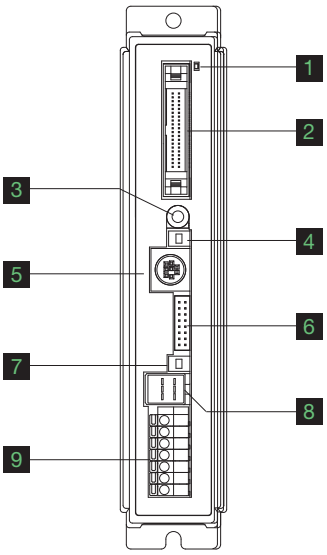
PCON-C / CA / CG / CF / CFA



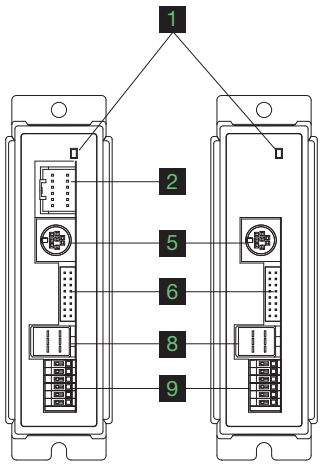
PCON-CY / PL / PO / SE



Name of Each Part



C / CA / CG / CF / CFA Type



CY / PL / PO Type　　SE Type

* PIO connectors are:
CY: 12 pin
PL/PO: 14 pin

1 LED display

These LED colors indicate the condition of the controller.

Lit (green) Servo ON　Lit (red) Alarm activated　Unlit Servo OFF　Blinking (green) Automatic servo-off
Emergency stop

2 PIO connector

Connects a cable for communicating with a PLC or other external equipment.

3 Address-setting rotary switch

This switch sets the addresses for controllers used when the unit is linked with other controllers.

4 Mode switch

Switches between manual teaching operations (MANU) and automatic operations (AUTO).

Operation details

MANU	I/O commands are not accepted. Data can be written from a teaching pendant or PC.
AUTO	I/O commands are valid, while operations from a teaching pendant or PC are not accepted. However, monitoring is possible.

5 SIO connector

Connects a teaching pendant, PC cable, controller, or gateway unit to a controller.

Operation details

Pin No.	Signal	Name	Remarks
1	SGA	Positive side, RS485 differential signal	
2	SGB	Negative side, RS485 differential signal	
3	5V	+5V output	For RS232/485 conversion
4	ENBL	Enable signal	
5	EMGA	EMG line connection to external equipment	
6	24V	24-V power for T/P	For T/P
7	0V	GND	
8	EMGB	EMG line connection to external equipment	
9	0V	EMG line connection to external equipment ground	

6 Encoder brake connector

Connects the encoder/brake cable for the actuator.

7 Brake release switch

This switch forces the brake to release.

8 Motor connector

Connects the motor cable for the actuator.

9 Power terminal block

Main power for controller(s), emergency stop

C / CA / CG / CF / CFA type

Terminal number	Signal	Name
7	S1	External drive-source cutoff for TP_
6	S2	EMG terminal
5	MPI	Motor drive-source cutoff terminal
4	MPO	Motor drive-source cutoff terminal
3	24V	Positive side of the 24-V power supply
2	0V	Negative side of the 24-V power supply
1	EMG	EMG signal (application of 24 V)

CY / PL / PO / SE type

Terminal number	Signal	Name
6	BK	BK release
5	MPI	Motor drive-source cutoff terminal
4	MPO	Motor drive-source cutoff terminal
3	24V	Positive side of the 24-V power supply
2	0V	Negative side of the 24-V power supply
1	EMG	EMG signal (application of 24 V)

Option

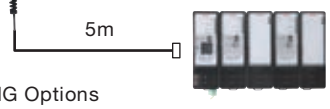
Teaching Pendant

Features This is a teaching device that provides information on functions such as the position input, test runs, and monitoring.

Model **CON-PT-M-ENG** (Touch panel teaching pendant)
CON-T-ENG (Standard type)
RCM-E (Simple teaching pendant)

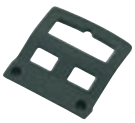
Configuration

Note:
The version of RCM-E that can be used with ROBONET is 2.08 or later.

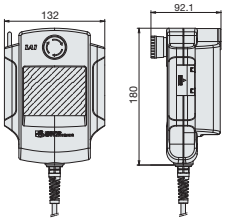


CON-T-ENG Options

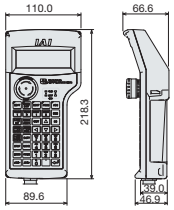
- Wall-mounting hook Model HK-1
- Strap Model STR-1



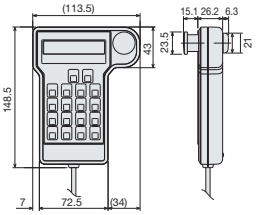
CON-PT-M-ENG



CON-T-ENG



RCM-E



Specifications

Item	CON-PT-M-ENG	CON-T-ENG	RCM-E
Data input	O	O	O
Actuator motion	O	O	O
Ambient Operating temp/humidity	Temp: 0~40°C; Humidity: 85% RH or below		
Ambient Operating atmosphere	No corrosive gases. Especially no dust.		
Protection class	IP40	IP54	–
Weight	Approx. 750g	Approx. 400g	Approx. 400g
Cable length	5m		
Display	3-color LED touch panel with backlight	20 char. × 4 lines LCD display	16 char. × 2 lines LCD display

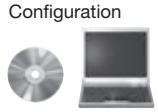
For PCON-CA/CFA please choose more functional and lighter teaching pendant CON-PTA-C-ENG with 16-bit color LED touch panel (IP40).

PC Software (Windows Only)

Features A startup support software for inputting positions, performing test runs, and monitoring. With enhancements for adjustment functions, the startup time is shortened.

Model **RCM-101-MW-ENG** (External device communications cable + RS232 conversion unit)

Configuration



PC Software (CD)

RS232 adapter
RCB-CV-MW

0.3m

5m

External device communications cable CB-RCA-SIO050

Model **RCM-101-USB-ENG** (External device communications cable + USB adapter + USB cable)

Configuration

PC Software (CD)

USB adapter
RCB-CV-USB

3m

USB cable
CB-SEL-USB030

5m

External device communications cable
CB-RCA-SIO050

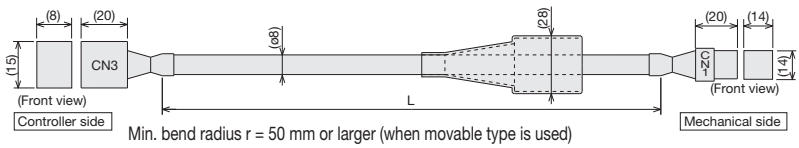
Spare Parts

When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.

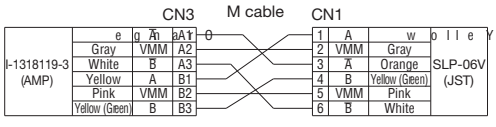
Motor Cable for RCP2

Model **CB-RCP2-MA** □□□ * The standard cable for the motor cable is the robot cable.

* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m



Min. bend radius r = 50 mm or larger (when movable type is used)

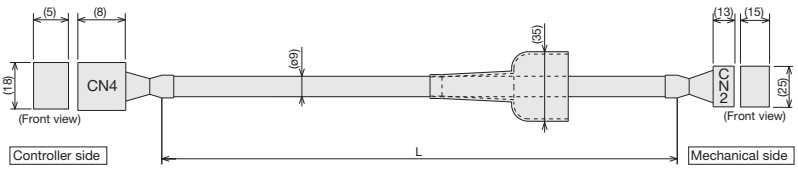


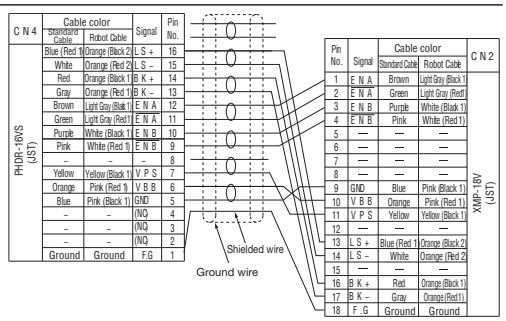
Encoder Cable / Encoder Robot Cable for RCP2

Model **CB-RCP2-PB□□□/CB-RCP2-PB□□□-RB** * The standard cable for the encoder cable is the normal cable. A robot cable can be specified as an option.

* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m

Min. bend radius r = 50 mm or larger (when movable type is used)
* Only robot cable is to be used in a cable track.



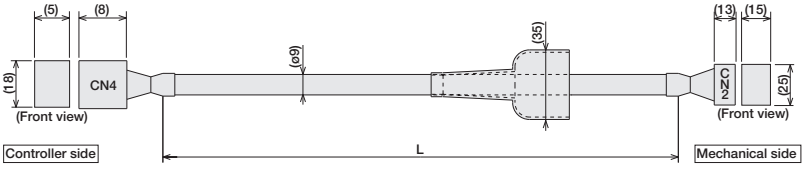


Encoder Cable / Encoder Robot Cable for RCP2-RA10C/HS8C/HS8R and RCP2W-RA10C/SA16C (PCON-CF)

Model **CB-RFA-PA□□□/CB-RFA-PA□□□-RB**

* The standard cable for the encoder cable is the normal cable. A robot cable can be specified as an option.
* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters. Ex.: 080 = 8 m

Min. bend radius r = 50 mm or larger (when movable type is used)
* Only robot cable is to be used in a cable track.



CN2

Cable color: Robot Cable	Cable color: Standard Cable	Signal	Pin No.
–	–	(Spare)	16
–	–	(Spare)	15
Orange (Black 1)	Red	BK+	14
Orange (Red 1)	Gray	BK–	13
Light Gray (Black 1)	Brown	ENA	12
Light Gray (Red 1)	Green	ENA	11
White (Black 1)	Purple	ENB	10
White (Red 1)	Pink	ENB	9
–	–	(Spare)	8
Yellow (Black 1)	Yellow	VPS	7
–	–	–	6
Pink (Black 1)	Blue	GND	5
Pink (Red 1)	Orange	5V	4
–	–	–	3
–	–	–	2
Ground	Ground	F.G	1

Housing: PHDR-16VS (JST)
Contact: SPHD-001T-P0.5

CN1

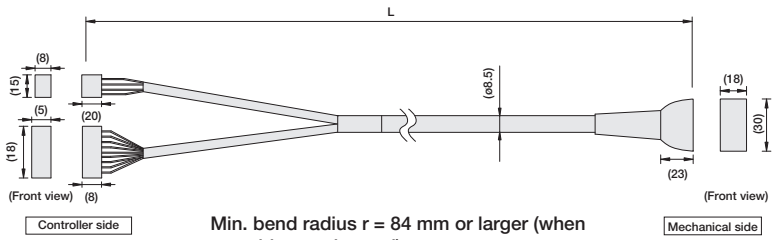
Pin No.	Signal	Cable color: Standard Cable	Cable color: Robot Cable
1	ENA	Brown	Light Gray (Black 1)
2	/ENA	Green	Light Gray (Red 1)
3	ENB	Purple	White (Black 1)
4	/ENB	Pink	White (Red 1)
5	–	–	–
6	–	–	–
7	–	–	–
8	–	–	–
9	GND	Blue	Pink (Red 1)
10	–	–	–
11	VPS	Yellow	Yellow (Black 1)
12	5V	Orange	Pink (Red 1)
13	–	–	–
14	–	–	–
15	–	–	–
16	BK+	Red	Orange (Black 1)
17	BK–	Gray	Orange (Red 1)
18	F.G	Ground	Ground

Housing: XMP-18V (JST)
Contact : BXA-001T-P0.6
Retainer : MS-09V

Motor-Encoder Integrated Type Cable for RCP3 and RCP2-GRSS/GRLS/GRST/GRHM/GRHB/SRA4R/SRGS4R/SRGD4R

Model **CB-PCS-MPA** □□□

* The standard cable is robot cable.
* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters. Ex.: 080 = 8 m



Min. bend radius r = 84 mm or larger (when movable type is used)

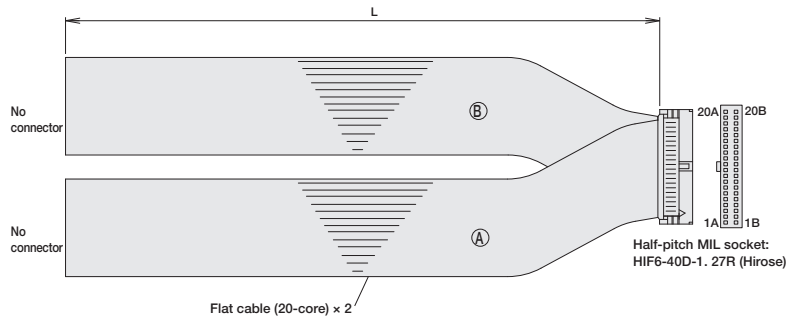
Signal	Pin No.	(Wire color)	Pin No.	Signal
A	B1	Black	A1	A
VMM	A2	White	B1	VMM
/A	A1	Red	A2	/A
B	B3	Green	B2	B
VMM	B2	Yellow	A3	VMM
/B	A3	Brown	B3	/B
			A4	NC
			B4	NC
			A5	BK+
			B5	BK–
			A6	LS+
			B6	LS–
			A7	A+
			B7	A–
			A8	B+
			B8	B–
			A9	NC
			B9	VPS
			A10	VCC
			B10	GND
			A11	NC
			B11	FG

BK+	14	Pink (Red ●)	
BK–	13	Pink (Blue ●)	
LS+	16	White (Red ●)	
LS–	15	White (Blue ●)	
A+	12	Orange (Red ●)	
A–	11	Orange (Blue ●)	
B+	10	Gray (Red ●)	
B–	9	Gray (Blue ●)	
NC	8		
VPS	7	Orange (Blue ● Continuous)	
VCC	6	Gray (Red ● Continuous)	
GND	5	Gray (Blue ● Continuous)	
NC	4		
FG	1	Shield	

Positioner I/O Cable (for PCON-C/CG)

Model **CB-PAC-PIO** □□□

* Enter the cable length (L) into □□□. Compatible to a maximum of 10 meters. Ex.: 080 = 8 m



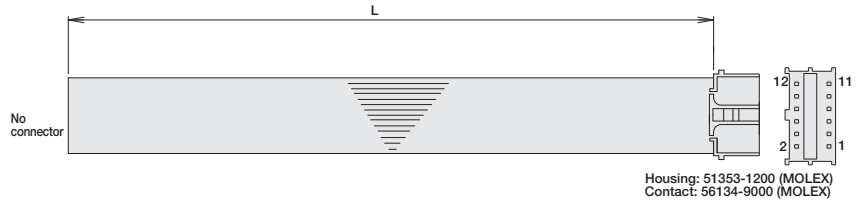
HIF6-40D-1. 27R

No.	Signal	Cable Color	Wire	No.	Signal	Cable Color	Wire
1A	24V	Brown-1	Flat cable A (crimped)	1B	OUT0	Brown-3	Flat cable B (crimped) AWG28
2A	24V	Red-1		2B	OUT1	Red-3	
3A	–	Orange-1		3B	OUT2	Orange-3	
4A	–	Yellow-1		4B	OUT3	Yellow-3	
5A	IN0	Green-1		5B	OUT4	Green-3	
6A	IN1	Blue-1		6B	OUT5	Blue-3	
7A	IN2	Purple-1		7B	OUT6	Purple-3	
8A	IN3	Gray-1		8B	OUT7	Gray-3	
9A	IN4	White-1		9B	OUT8	White-3	
10A	IN5	Black-1		10B	OUT9	Black-3	
11A	IN6	Brown-2		11B	OUT10	Brown-4	
12A	IN7	Red-2		12B	OUT11	Red-4	
13A	IN8	Orange-2		13B	OUT12	Orange-4	
14A	IN9	Yellow-2		14B	OUT13	Yellow-4	
15A	IN10	Green-2		15B	OUT14	Green-4	
16A	IN11	Blue-2		16B	OUT15	Blue-4	
17A	IN12	Purple-2		17B	–	Purple-4	
18A	IN13	Gray-2		18B	–	Gray-4	
19A	IN14	White-2		19B	0V	White-4	
20A	IN15	Black-2		20B	0V	Black-4	

Solenoid Valve Type I/O Cable (for PCON-CY)

Model **CB-PACY-PIO** □□□

* Enter the cable length (L) into □□□. Compatible to a maximum of 10 meters. Ex.: 080 = 8 m



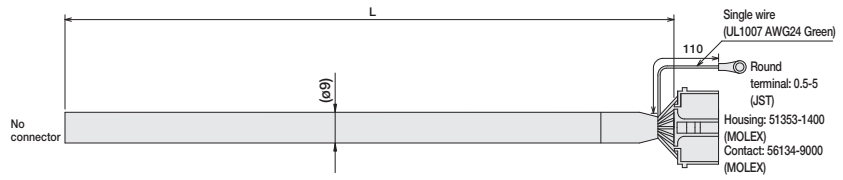
51353-1200 (MOLEX)

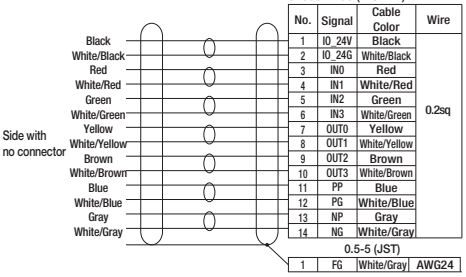
No.	Signal	Cable Color	Wire
1	24V	Brown-1	Flat cable (crimped) AWG28
2	0V	Red-1	
3	IN0	Orange-1	
4	IN1	Yellow-1	
5	IN2	Green-1	
6	IN3	Blue-1	
7	OUT0	Purple-1	
8	OUT1	Gray-1	
9	OUT2	White-1	
10	OUT3	Black-1	
11	OUT4	Brown-2	
12	OUT5	Red-2	

Pulse Train Control I/O Cable (for PCON-PL/PO)

Model **CB-PACPU-PIO** □□□

* Enter the cable length (L) into □□□. Compatible to a maximum of 10 meters. Ex.: 080 = 8 m





51353-1400 (MOLEX)

No.	Signal	Cable Color	Wire
1	IO_24V	Black	0.2sq
2	IO_24G	White/Black	
3	IN0	Red	
4	IN1	White/Red	
5	IN2	Green	
6	IN3	White/Green	
7	OUT0	Yellow	
8	OUT1	White/Yellow	
9	OUT2	Brown	
10	OUT3	White/Brown	
11	PP	Blue	
12	PG	White/Blue	
13	NP	Gray	
14	NG	White/Gray	

0.5-5 (JST)

1	FG	White/Gray	AWG24

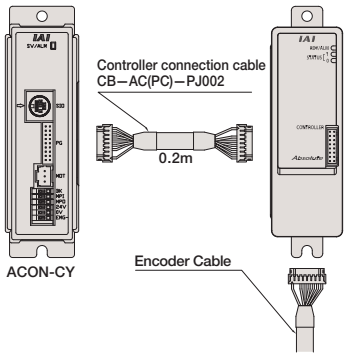
PCON-ABU
ACON-ABU

Simple absolute unit
For PCON/ACON/PSEL controller

Features

1 When attached to a ACON/PCON-C/-CG/-CY/-SE or PSEL-C (incremental) controller, the data from the encoder is retained even after the controller's main power has been turned OFF, allowing you to use it as an absolute model, which does not require homing at power-up.
* Cannot be used for ACON/PCON-PL or PO types.

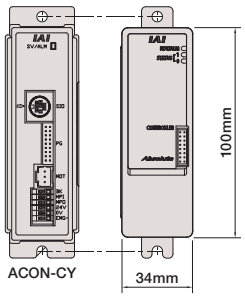
Caution: The encoder type for the actuators and controllers with a simple absolute unit is "I" (incremental) and not "A" (absolute).



2 Having the same size as the CY and SE compact controllers (W 34mm × H 100mm × D 75.3mm), it can be installed in a small space.

3 Encoder data can be retained up to 20 days.

Caution: An error will occur if the actuator's slider or rod is moved faster than the fixed speed, while the encoder data is retained. Check the specifications table on page 546 for the allowable speed (rotations).



Dedicated controllers and software

Controller	PCON-C/CG/CY/SE	ACON-C/CG/CY/SE	PSEL-C
Absolute unit	PCON-ABU	ACON-ABU	PCON-ABU
PC software	RCM-101-MW/USB-EU, V6.0 ot later		IA-101-X-MW/USB, V7.4 or later

Connectable actuator

The simple absolute unit is available for the following actuators. (Models other than following models are not available.)

Corresponding series	Reference
RCP3 series	Corresponding to all models
RCP2 series	Corresponding to all models other than HS8C/HS8R/RA10C.
RCP2 CR series	Corresponding to all models other than HS8C.
RCP2 W series	Corresponding to all models other than SA16C/RA10C.
RCA2 series	Corresponding to all models
RCA series	Corresponding to all models
RCA CR series	Corresponding to all models
RCA W series	Corresponding to all models

Specifications

Item	Details	
Model	ACON-ABU	PCON-ABU
Connecting controller	ACON - C / CG / CY / SE	PCON - C / CG / CY / SE ; PSEL - C
	Caution: When choosing a controller to connect with the simple absolute unit, add "-ABU" to the end of the controller model designation. Ex. ACON - C - 20I - NP - 2 - 0 - ABU	
Connecting actuator	RCA2 / RCA series	RCP3/RCP2 series (* 1)
Controller connection cable (included accessory)	Model CB - AC - PJ002 (0.2m)	Model CB - PC - PJ002 (0.2m)
Simple absolute unit	Model ABU	
Backup battery (included accessory)	Model AB - 7 (Ni - MH battery / Life: approx. 3 years)	
Power supply voltage	DC24V±10%	
Power supply current	Max. 300 mA	
Ambient operating temperature	0 to 40°C (approx. 20°C is preferred)	
Ambient operating humidity	95% RH or lower (non-condensing)	
Ambient operating atmosphere	Without corrosive gases, without dust	
Weight	330g	

Allowable encoder RPM during data retention (*2)	800 rpm	400 rpm	200 rpm	100 rpm
Position data retaining time (*2)	120h	240h	360h	480h

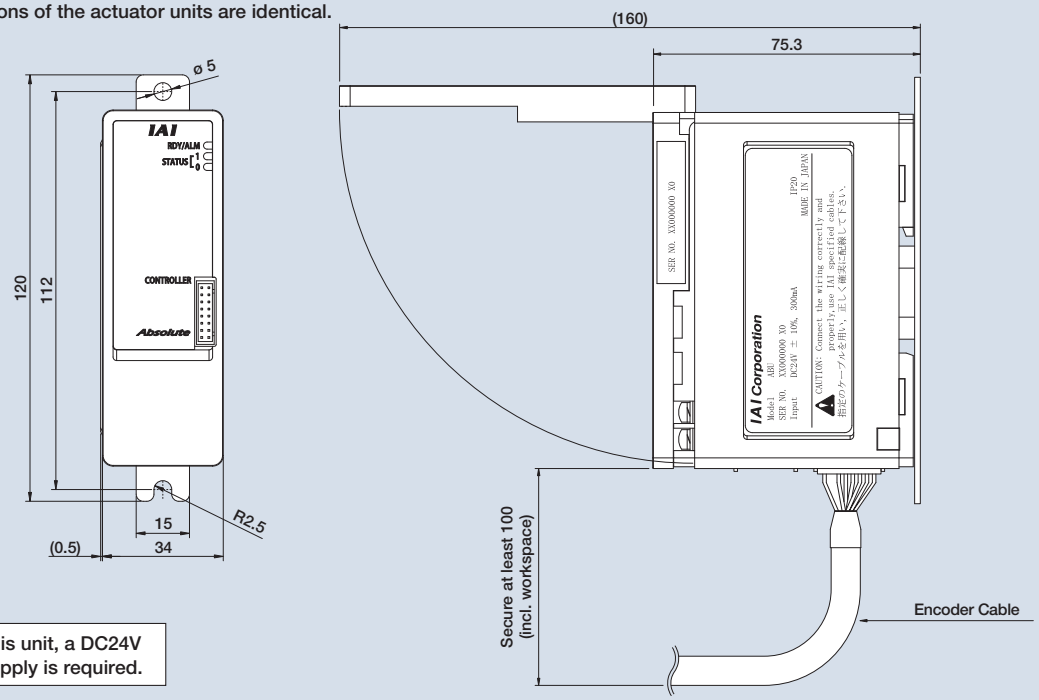
(*1) Cannot be used with RCP2-RA10C/HS8C/HS8R/RCP2W-RA10C/SA16C

(*2) Position data retention time changes with the allowable encoder RPMs during data retention.

(800rpm → 120h / 400rpm → 240h / 200rpm → 360h / 100rpm → 480h)

External dimensions

* The only difference between ACON-ABU and PCON-ABU is the controller cable;
The specifications of the actuator units are identical.



Note: To use this unit, a DC24V power supply is required.

PSEL

Program controller
For RCP3/RCP2 series

List of models

Program controller for operating RCP3/RCP2 series actuators. Various control functions are combined into a single unit.

Type	C	
Name	Program mode	Positioner Mode
External View		
Description	Both the actuator operation and communication with external equipment can be handled by a single controller. When two axes are connected, arc interpolation, path operations, and synchronization can be performed.	Up to 1500 positioning points are supported. Push-motion operation and teaching operation are also possible.
Position points	1500 points	
Maximum number of control axes	2	

Model

* 2nd axis specs not applicable to the single-axis model.

PSEL – C – [Number of Axes] – [Motor][Encoder][Option] (Specs for 1st axis) – [Motor][Encoder][Option] (Specs for 2nd axis) – [I/O Type] – [I/O Cable Length] – 0 – [Simple absolute unit] – [High acceleration type model]

Series: PSEL
Type: C
- C: Standard Type

Number of Axes:
- 1: Single-axis model
- 2: 2-axis model

Motor (Specs for 1st axis):
- 20P: 20 □ pulse motor-compatible
- 28P: 28 □ pulse motor-compatible
- 28SP: 28 □ pulse motor-compatible (*)
- 35P: 35 □ pulse motor-compatible
- 42P: 42 □ pulse motor-compatible
- 56P: 56 □ pulse motor-compatible

* If connecting to RCP2-RA3C/ RGD3C, the motor type is 28SP.

Encoder (Specs for 1st axis):
- I: Incremental

Option (Specs for 1st axis):
- B: Brake

Motor (Specs for 2nd axis):
- 20P: 20 □ pulse motor-compatible
- 28P: 28 □ pulse motor-compatible
- 28SP: 28 □ pulse motor-compatible (*)
- 35P: 35 □ pulse motor-compatible
- 42P: 42 □ pulse motor-compatible
- 56P: 56 □ pulse motor-compatible

* If connecting to RCP2-RA3C/ RGD3C, the motor type is 28SP.

Encoder (Specs for 2nd axis):
- I: Incremental

Option (Specs for 2nd axis):
- B: Brake

I/O Type:
- NP: PIO NPN
- PN: PIO PNP (standard)
- DV: DeviceNet
- CC: CC-Link
- PR: ProfiBus

I/O Cable Length:
- 0: No cable
- 2: 2m (standard)
- 3: 3m
- 5: 5m

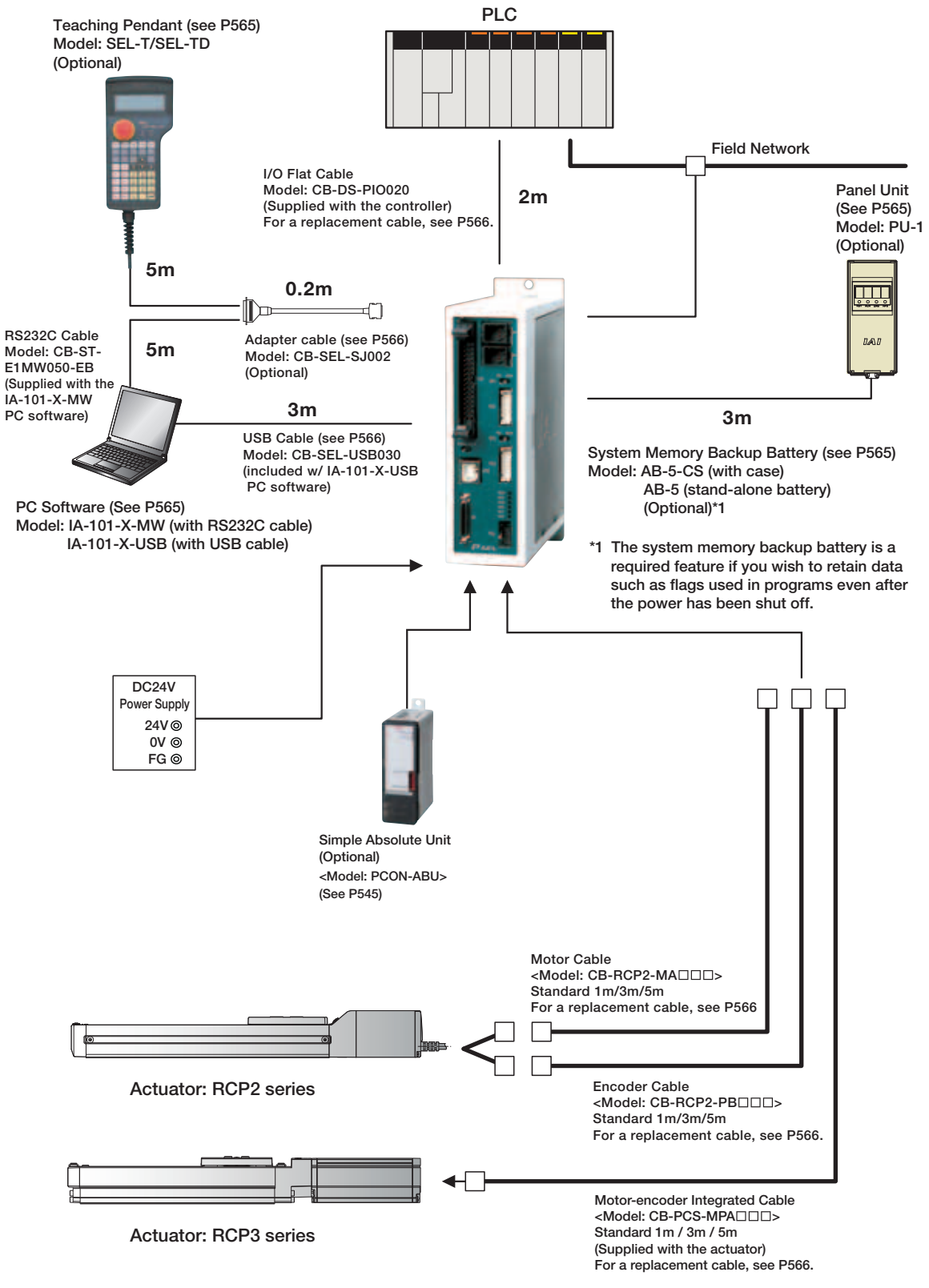
Power Voltage:
- 0: DC24V

Simple absolute unit:
- Blank: Not used
- ABU: Used

High acceleration type model:
- Blank: Standard
- H: High acceleration type model (*)

* If connecting to RCP3-SA4/ SA5/SA6 or RCP2-SA5/SA6, specify "H", for high-acceleration type model.

System configuration



I/O Specifications

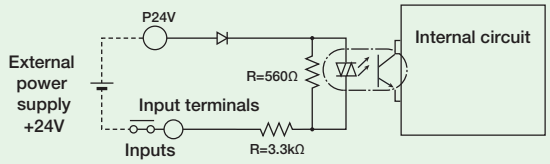
■ Input section External input specifications

Item	Specifications	
Input voltage	DC24V ±10%	
Input current	7mA / circuit	
ON/OFF voltage	ON voltage (min.)	NPN : DC16V / PNP : DC8V
	OFF voltage (max.)	NPN : DC5V / PNP : DC19V
Isolation method	Photocoupler	

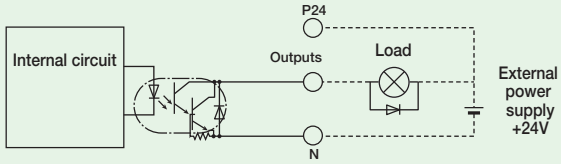
■ Output section External output specifications

Item	Specifications
Load Voltage	DC24V
Max. load current	100mA / 1 point 400mA / 8 points in total
Residual voltage (Max.)	Max 0.1mA / 1 point
Isolation method	Photocoupler

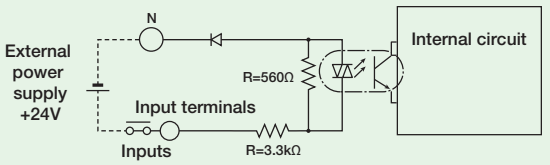
NPN Specifications



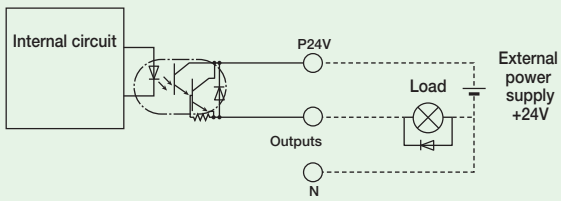
NPN Specifications



PNP Specifications



PNP Specifications



Explanation of I/O Signal Functions

Two modes can be selected for the SSEL controller: “Program Mode,” in which the actuator is operated by entering a program, and “Positioner Mode,” in which PLC signals are received and the actuator is moved to designated positions.
The Positioner Mode has the five input patterns listed below to enable various applications.

■ Control Function by Type

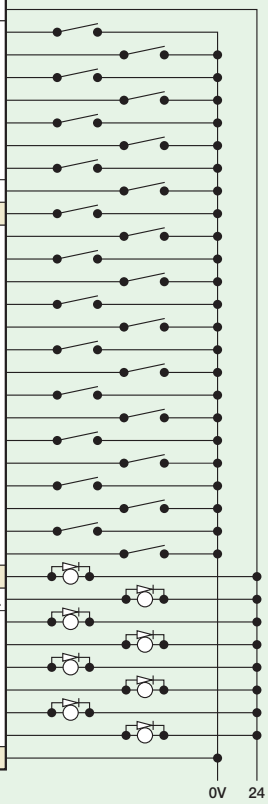
Operation mode		Features
Program mode		Various operations including linear/arc interpolation operation, path operation ideal for coating processes, etc., arch-motion operation and palletizing operation can be performed using the Super SEL language that lets you program complex control actions using simple commands.
Positioner mode	Standard mode	This is the basic mode from which operations can be conducted by designating position numbers and inputting the start signal. Push-motion operation and teaching operation are also possible.
	Product Change mode	Multiple work parts of the same shape with slightly different hole positions can be handled using movement commands to the same position numbers by simply changing the product type number.
	2-axis independent mode	With a 2-axis controller, each axis can be commanded and operated separately.
	Teaching mode	In this mode, the slider (rod) moves based on an external signal, when the actuator is stopped, the current location can be registered as position data.
	DS-S-C1 Compatible mode	If you were using a DS-S-C1 controller, you can replace it with a PSEL controller without having to change the host programs. *This mode does not ensure actuator compatibility.

Explanation of I/O Signal Functions

Program mode

Pin Number	Classification	Port No.	Program Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Select Program No. 1	Selects the program number to start. (Input as BCD values to ports 016 to 022)
2A		017	Select Program No. 2	
2B		018	Select Program No. 4	
3A		019	Select Program No. 8	
3B		020	Select Program No. 10	
4A		021	Select Program No. 20	
4B		022	Select Program No. 40	
5A		023	CPU reset	Resets the system to the same state as when the power is turned on.
5B		000	Start	Starts the program selected by ports 016 to 022.
6A		001	General-purpose input	Waits for external input via program instructions.
6B		002	General-purpose input	
7A		003	General-purpose input	
7B		004	General-purpose input	
8A		005	General-purpose input	
8B		006	General-purpose input	
9A		007	General-purpose input	
9B		008	General-purpose input	
10A		009	General-purpose input	
10B		010	General-purpose input	
11A		011	General-purpose input	
11B		012	General-purpose input	
12A		013	General-purpose input	
12B		014	General-purpose input	
13A		015	General-purpose input	
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	General-purpose output	These outputs can be turned ON/OFF as desired via program instructions.
15A		303	General-purpose output	
15B		304	General-purpose output	
16A		305	General-purpose output	
16B		306	General-purpose output	
17A		307	General-purpose output	
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram

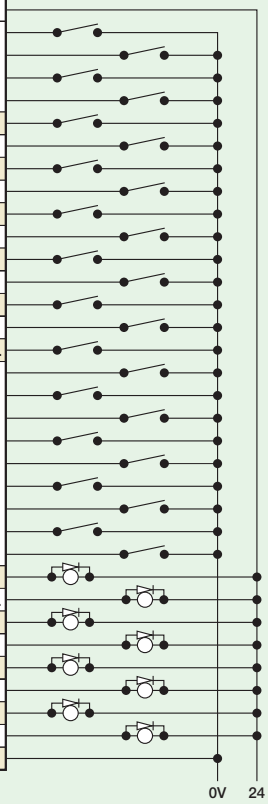


*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Positioner mode

Pin Number	Classification	Port No.	Positioner Standard Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position input 10	Specifies the position numbers to move to, using port number 007 to 019. The number can be specified either as BCD or binary.
2A		017	Position input 11	
2B		018	Position input 12	
3A		019	Position input 13	
3B		020	–	–
4A		021	–	–
4B		022	–	–
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start	Starts moving to selected position.
6A		001	Home return	Performs home return.
6B		002	Servo ON	Switches between Servo ON and OFF.
7A		003	Push	Performs a push motion.
7B		004	Pause	Pauses the motion when turned OFF, and resumes when turned ON.
8A		005	Cancel	Stops the motion when turned OFF. The remaining motion is canceled.
8B		006	Interpolation settings	When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.
9A		007	Position input 1	Specifies the position numbers to move to, using ports 007 to 019. The number can be specified either as BCD or binary.
9B		008	Position input 2	
10A		009	Position input 3	
10B		010	Position input 4	
11A		011	Position input 5	
11B		012	Position input 6	
12A		013	Position input 7	
12B		014	Position input 8	
13A		015	Position input 9	
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	Positioning complete	Turns on when the movement to the destination is complete.
15A		303	Home return complete	Turns on when the home return operation is complete.
15B		304	Servo ON output	Turns on when servo is ON.
16A		305	Pushing complete	Turns on when a push motion is complete.
16B		306	System battery error	Turns on when the system battery runs low (warning level).
17A		307	–	–
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram



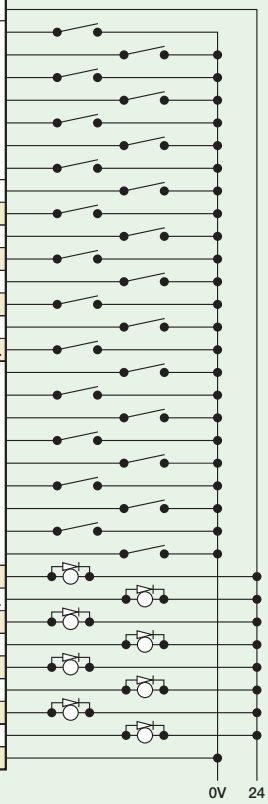
*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Explanation of I/O Signal Functions

Positioner, Product-Type Change Mode

Pin Number	Classification	Port No.	Positioner Product Type Change Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position/Product Type Input 10	Specifies the position numbers to move to, and the product type numbers, using ports 007 to 022. The position and product type numbers are assigned by parameter settings. The number can be specified either as BCD or binary.
2A		017	Position/Product Type Input 11	
2B		018	Position/Product Type Input 12	
3A		019	Position/Product Type Input 13	
3B		020	Position/Product Type Input 14	
4A		021	Position/Product Type Input 15	
4B		022	Position/Product Type Input 16	
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start	Starts moving to selected position.
6A		001	Home return	Performs home return.
6B		002	Servo ON	Switches between Servo ON and OFF.
7A		003	Push	Performs a push motion.
7B		004	Pause	Pauses the motion when turned OFF, and resumes when turned ON.
8A		005	Cancel	Stops the motion when turned OFF. The remaining motion is canceled.
8B		006	Interpolation settings	When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.
9A		007	Position/Product Type Input 1	Specifies the position numbers to move to, and the product type numbers, using ports 007 to 022. The position and product type numbers are assigned by parameter settings. The number can be specified either as BCD or binary.
9B		008	Position/Product Type Input 2	
10A		009	Position/Product Type Input 3	
10B		010	Position/Product Type Input 4	
11A		011	Position/Product Type Input 5	
11B		012	Position/Product Type Input 6	
12A		013	Position/Product Type Input 7	
12B		014	Position/Product Type Input 8	
13A		015	Position/Product Type Input 9	
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	Positioning complete	Turns on when the movement to the destination is complete.
15A		303	Home return complete	Turns on when the home return operation is complete.
15B		304	Servo ON output	Turns on when servo is ON.
16A		305	Pushing complete	Turns on when a push motion is complete.
16B		306	System battery error	Turns on when the system battery runs low (warning level).
17A		307	–	–
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram

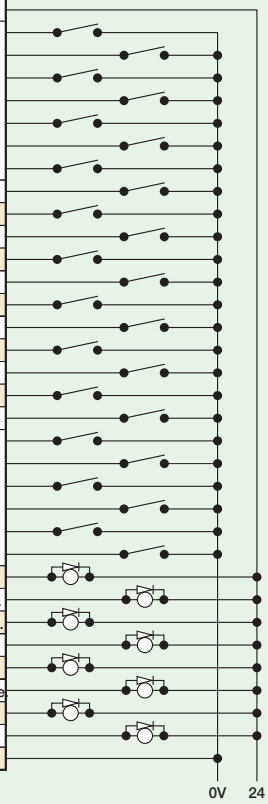


*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Positioner, 2-axis Independent Mode

Pin Number	Classification	Port No.	Positioner 2-axis Independent Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position input 7	Specifies the position numbers to move to, using ports 010 to 022. The position numbers on the 1st and 2nd axes are assigned by parameter settings. The number can be specified either as BCD or binary.
2A		017	Position input 8	
2B		018	Position input 9	
3A		019	Position input 10	
3B		020	Position input 11	
4A		021	Position input 12	
4B		022	Position input 13	
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start 1	Starts the movement to the selected position number on the 1st axis.
6A		001	Home return 1	Performs home return on the 1st axis.
6B		002	Servo ON 1	Switches between servo ON and OFF for the 1st axis.
7A		003	Pause 1	Pauses the motion on 1st axis when turned OFF, and resumes when turned ON.
7B		004	Cancel 1	Cancels the movement on the 1st axis.
8A		005	Start 2	Starts the movement to the selected position number on the 2nd axis.
8B		006	Home return 2	Performs home return on the 2nd axis.
9A		007	Servo ON 2	Switches between servo ON and OFF for the 2nd axis.
9B		008	Pause 2	Pauses the motion on 2nd axis when turned OFF, and resumes when turned ON.
10A		009	Cancel 2	Cancels the movement on the 2nd axis.
10B		010	Position input 1	Specifies the position numbers to move to, using ports 010 to 022. The position numbers on the 1st and 2nd axes are assigned by parameter settings. The number can be specified either as BCD or binary.
11A		011	Position input 2	
11B		012	Position input 3	
12A		013	Position input 4	
12B		014	Position input 5	
13A		015	Position input 6	
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	Positioning complete 1	Turns on when the movement to the specified position on the 1st axis is complete.
15A		303	Home return complete 1	Turns on when home return on the 1st axis is complete.
15B		304	Servo ON output 1	Turns on when the 1st axis is in a servo ON state.
16A		305	Positioning complete 2	Turns on when the movement to the specified position on the 2nd axis is complete.
16B		306	Home return complete 2	Turns on when home return on the 2nd axis is complete.
17A		307	Servo ON output 2	Turns on when the 2nd axis is in a servo ON state.
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram



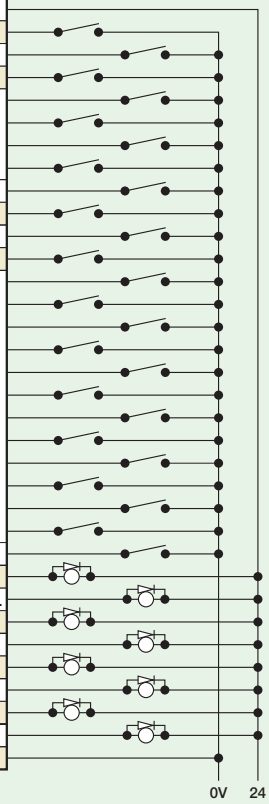
*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Explanation of I/O Signal Functions

Positioner, Teaching Mode

Pin Number	Classification	Port No.	Positioner Teaching Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	JOG– on 1st axis	While the signal is on, the 1st axis is moved in the - (negative) direction.
2A		017	JOG+ on 2nd axis	While the signal is on, the 2nd axis is moved in the + (positive) direction.
2B		018	JOG– on 2nd axis	While the signal is on, the 2nd axis is moved in the - (negative) direction.
3A		019	Specify inching (0.01mm)	Specifies how much to move during inching. (Total of the values specified for ports 019 to 022)
3B		020	Specify inching (0.1mm)	
4A		021	Specify inching (0.5mm)	
4B		022	Specify inching (1mm)	
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start	Starts moving to selected position.
6A		001	Servo ON	Switches between Servo ON and OFF.
6B		002	Pause	Pauses the motion when turned OFF, and resumes when turned ON.
7A		003	Position input 1	Ports 003 to 013 are used to specify the position number to move, and the position number for inputting the current position. - When the teaching mode setting on port 014 is in the ON state, the current value is written to the specified position number.
7B		004	Position input 2	
8A		005	Position input 3	
8B		006	Position input 4	
9A		007	Position input 5	
9B		008	Position input 6	
10A		009	Position input 7	
10B		010	Position input 8	
11A		011	Position input 9	
11B		012	Position input 10	
12A		013	Position input 11	
12B		014	Teaching mode setting	
13A		015	JOG+ on 1st axis	While the signal is on, the 1st axis is moved in the + (positive) direction.
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	Positioning complete	Turns on when the movement to the destination is complete.
15A		303	Home return complete	Turns on when the home return operation is complete.
15B		304	Servo ON output	Turns on when servo is ON.
16A		305	–	–
16B		306	System battery error	Turns on when the system battery runs low (warning level).
17A		307	–	–
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram

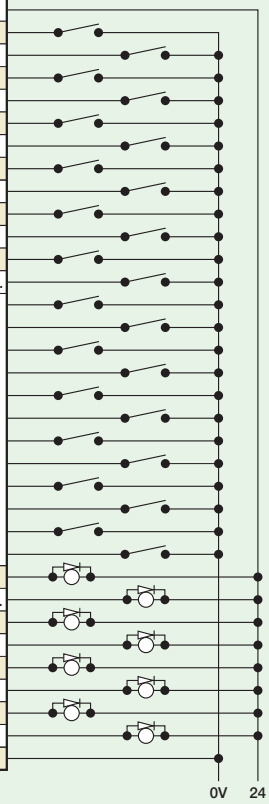


*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Positioner, DS-S-C1 Compatible Mode

Pin Number	Classification	Port No.	Positioner DS-S-C1 Compatible Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position No. 1000	(Same as ports 004 through 015)
2A		017	–	–
2B		018	–	–
3A		019	–	–
3B		020	–	–
4A		021	–	–
4B		022	–	–
5A		023	CPU reset	Resets the system to the same state as when the power is turned on.
5B		000	Start	Starts moving to selected position.
6A		001	Hold (Pause)	Pauses the motion when turned ON, and resumes when turned OFF.
6B		002	Cancel	Stops the motion when turned ON. The remaining motion is canceled.
7A		003	Interpolation settings	When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.
7B		004	Position No. 1	Ports 004 through 016 are used to specify the position number to move. The numbers are specified as BCD.
8A		005	Position No. 2	
8B		006	Position No. 4	
9A		007	Position No. 8	
9B		008	Position No. 10	
10A		009	Position No. 20	
10B		010	Position No. 40	
11A		011	Position No. 80	
11B		012	Position No. 100	
12A		013	Position No. 200	
12B		014	Position No. 400	
13A		015	Position No. 800	
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact A)
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.
14B		302	Positioning complete	Turns on when the movement to the destination is complete.
15A		303	–	–
15B		304	–	–
16A		305	–	–
16B		306	System battery error	Turns on when the system battery runs low (warning level).
17A		307	–	–
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram



*Note: With regard to PNP wiring diagram, please refer to PSEL manual.

Table of specifications

	Item	Specifications
Basic Specifications	Connected actuator	RCP2/RCP3 series actuator (Note 1)
	Input voltage	DC24V ±10%
	Power Supply Capacity	Control power (Max. 1.2A) + Motor power (See the table below)
	Dielectric strength voltage	DC500V 10MΩ or higher
	Withstand voltage	AC500V 1 min.
	Rush current	Max. 30A
	Vibration resistance	XYZ directions 10 to 57Hz, One side amplitude: 0.035mm (continuous), 0.075mm (intermittent) 58 to 150 Hz 4.9 m/s² (continuous), 9.8 m/s² (intermittent)
Control specification	Maximum total output of connected axis	–
	Position detection method	Incremental encoder
	Speed setting	From 1mm/s. The maximum limit varies depending on the actuator.
	Acceleration setting	From 0.01G. The maximum limit varies depending on the actuator.
	Operating method	Program operation / Positioner operation (switchable)
Program	Programming language	Super SEL language
	Number of programs	64 programs
	Number of program steps	2000 steps
	Number of multi-tasking programs	8 programs
	Positioning Points	1500 points
	Data memory device	FLASHROM (A system-memory backup battery can be added as an option)
	Data input method	Teaching pendant or PC software
Communication	Number of I/O	24 input points / 8 output points (NPN or PNP selectable)
	I/O power	Externally supplied 24VDC ± 10%
	PIO cable	CB-DS-PIO □□□ (supplied with the controller)
	Serial communications function	RS232C (Half-pitch connector) / USB connector
	Field Network	DeviceNet, CC-Link, ProfiBus
	Motor Cable	RCP2:CB-RCP2-MA □□□ (Max. 20m) / RCP3: CB-PCS-MPA □□□ (Max. 20m)
	Encoder cable	RCP2:CB-RCP2-PA□□□ (Max. 20m) / RCP3: see motor cable (dual motor-encoder cable)
General specifications	Protection function	Motor driver temperature check, Encoder open-circuit check Soft limit over, system error, battery error, etc.
	Ambient operating humidity and temperature	0 to 40ºC 10 to 95% (non-condensing)
	Ambient atmosphere	Free from corrosive gases. In particular, there shall be no significant powder dust.
	Protection class	IP20
	Weight	Approx. 450g
	External dimension	43 mm (W) x 159 mm (H) x 110 mm (D)

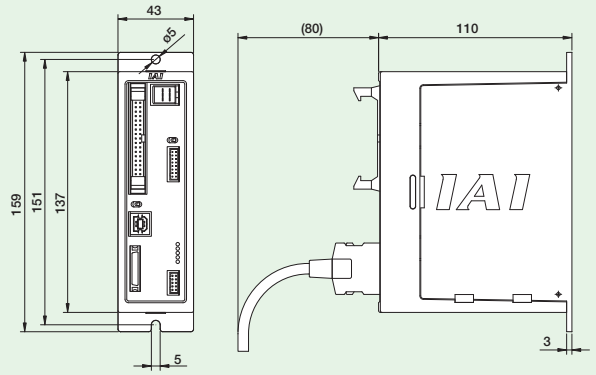
(Note 1) Cannot operate High-Thrust type (RA10C), High-Speed type (HS8C/HS8R), or Waterproof type (RCP2W-SA16).

		1-Axis specifications		2-Axis specifications	
Motorpower supply Capacity (Note2)	Motor type	Rated	Max.(Note 3)	Rated	Max.(Note 3)
	20P, 28P, 28SP motor	0.4A	2.0A	0.8A	4.0A
	35P, 42P, 56SP motor	1.2A		2.4A	

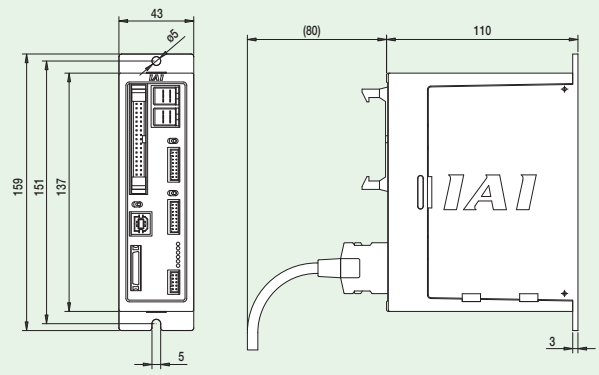
(Note 2) For both 1-axis and 2-axis specifications, approx. 30A inrush current flows for 5 ms when the control power supply is turned on.
(Note 3) After Servo ON, excitation detection is performed. In that case, the current is maximized. (Approx. 100 msec)
However, if motor drive power supply is turned on after a shut-down, approx. 6.0A and approx. 12.0A current flows to axis-1 and axis-2 respectively. (Approx. 1 to 2 msec)

Exterior dimensions

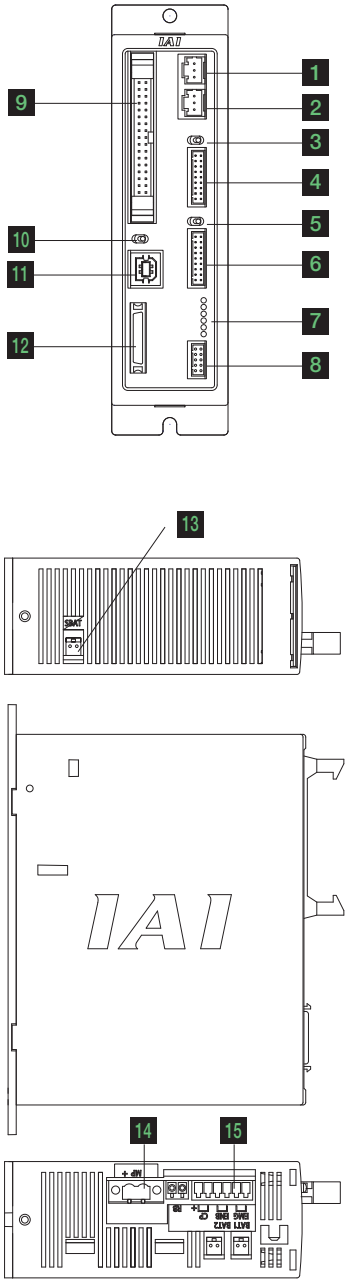
PSEL 1-axis controller



PSEL 2-axis controller



Name of Each Part



1 Motor connector for axis 1
Connects the motor cable of the axis 1 actuator.

2 Motor connector for axis 2
Connects the motor cable of the axis 2 actuator.

3 Brake switch for axis 1
This switch is used to release the axis brake. Setting it to the left position (RLS side) forcibly releases the brake, while setting it to the right position (NOM side) causes the controller to automatically control the brake.

4 Encoder connector for axis 1
Connect the encoder cable of the axis 1 actuator.

5 Brake switch for axis 2
This switch is used to release the axis brake. Setting it to the left position (RLS side) forcibly releases the brake, while setting it to the right position (NOM side) causes the controller to automatically control the brake.

6 Encoder connector for axis 2
Connect the encoder cable of the axis 2 actuator.

7 Status indicator LEDs
These LEDs are used to indicate the operating condition of the controller.

The LED status indicators are as follows:

PWR	:	Power is input to controller.
RDY	:	The controller is ready to perform program operation.
ALM	:	The controller is abnormal.
EMG	:	An emergency stop is actuated and the drive source is cut off.
SV1	:	The axis 1 actuator servo is on.
SV2	:	The axis 2 actuator servo is on.

8 Panel unit connector
A connector for the panel unit (optional) that displays the controller status and error codes.

9 I/O Connector
A connector for interface I/Os.

34-pin flat cable connector for DIO (24IN/8OUT) interface.

I/O power is also supplied to the controller via this connector (Pin No. 1 and No. 34).

10 Mode switch
This switch is used to specify the running mode of the controller. The left position indicates the MANU (manual operation) mode, while the right position indicates the AUTO (automatic operation) mode. Teaching can only be performed in manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

11 USB connector
A connector for PC connection via USB. If the USB connector is connected, the TP connector is disabled and all communication inputs to the TP connector are cut off.

12 Teaching pendant connector
A half-pitch I/O 26-pin connector that connects a teaching pendant when the running mode is MANU. A special conversion cable is needed to connect a conventional D-sub, 25-pin connector.

13 System-memory backup battery connector
If you wish to retain the various data recorded in the SRAM of the controller even after the power is cut off, connect the necessary battery to this connector. This battery is installed externally to the unit. The controller does not come standard with the battery (Option).

14 Motor power input connector
This connector is used to input the motor power. It consists of a 2-pin, 2-piece connector by Phoenix Contact.

15 Control power/System input connector
This connector is used to connect the control power input, emergency stop switch, and enable switch. It consists of a Phoenix Contact 6-pin 2-piece connector.

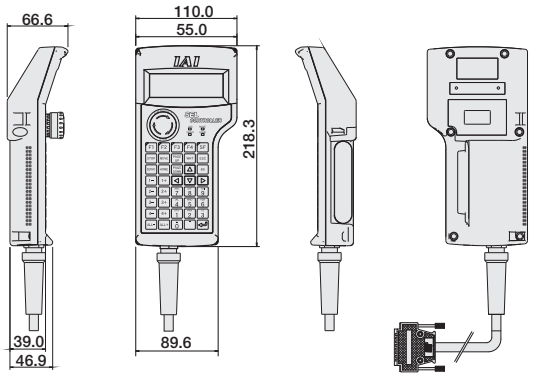
Option

Teaching Pendant

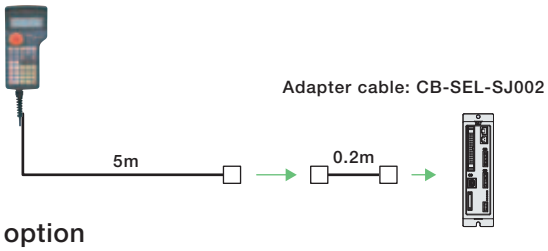
Features This is a teaching device that provides information on functions such as position input, test runs, and monitoring.

Model

Model	Description
SEL-T-J	Standard type with adapter cable
SEL-TD-J	Equipped with a deadman switch and adapter cable

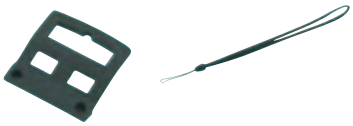


Configuration



SEL-T option

- Wall-mounting hook Model HK-1
- Strap Model STR-1

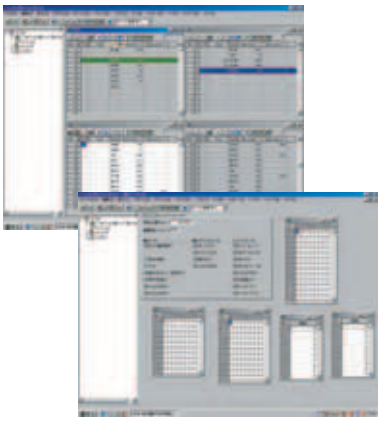


Specifications

Item	SEL-T-J	SEL-TD-J
3-position Enable Switch	No	Yes
ANSI/UL standards	Non-compliant	Compliant
CE mark	Compliant	
Display	20 char. × 4 lines	
Ambient Operating Temp./Humidity	0~40°C 10~90% RH (non-condensing)	
Protective structure	IP54	
Weight	Approx. 0.4kg (not incl. cable)	

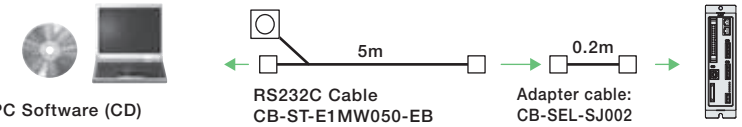
PC Software (Windows Only)

Features A startup support software for inputting programs/positions, performing test runs, and monitoring. More functions have been added for debugging, and improvements have been made to shorten the start-up time.



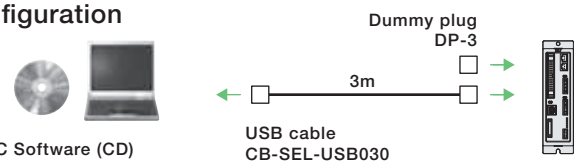
Model **IA-101-X-MW-J** (with RS232C cable + adapter cable)
IA-101-X-MW (with RS232C cable)

Configuration



Model **IA-101-X-USB** (with USB cable)

Configuration

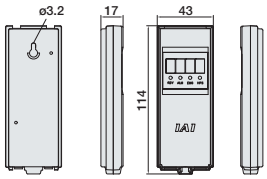


Note:
Only versions 7.0.0.0 and later can be used with the PSEL controller.

Panel Unit

Features Display device that shows the error code from the controller or the currently running program number.

Model **PU-1** (Cable length: 3m)



System Memory Backup Battery

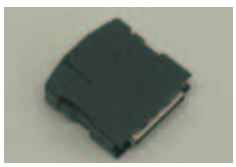
Features This battery is required when you are using global flags in the program and you want to retain your data even after the power has been turned OFF.

Model **AB–5–CS (with case)**
AB–5 (stand-alone battery)

Dummy Plug

Features When connecting the PSEL controller to a computer with a USB cable, this plug is inserted in the teaching port to shut off the enable circuit. (Supplied with the PC software IA-101-X-USB)

Model **DP-3**



Option

USB Cable

Features A cable for connecting the controller to the USB port to a computer.
A controller with no USB port (e.g. XSEL) can be connected to the USB port of a computer by connecting an RS232C cable to the USB cable via a USB adapter.
(See PC software IA-101-X-USBMW)

Model CB-SEL-USB030 (Cable length: 3m)

Adapter Cable

Features An adapter cable to connect the D-sub 25-pin connector from the teaching pendant or a PC to the teaching connector (half-pitch) of the PSEL controller.

Model CB-SEL-SJ002 (Cable length: 0.2m)

Spare Parts

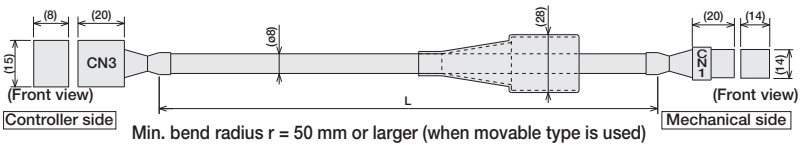
When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.

Motor cable

Model CB-RCP2-MA□□□

** The standard cable for the motor cable is the robot cable.

* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m



Min. bend radius r = 50 mm or larger (when movable type is used)

Wire	Color	Signal	Pin No.
I-1318119-3 (AMP)	Orange	A	A1
	Gray	VMM	A2
	White	Ā	A3
	Yellow	A	B1
	Pink	VMM	B2
	Orange (Black 1)	B	B3

Pin No.	Signal	Color	Wire
1	A	Yellow	SLP-06V (JST)
2	VMM	Gray	
3	Ā	Orange	
4	B	Orange (Black 1)	
5	VMM	Pink	
6	B̄	White	

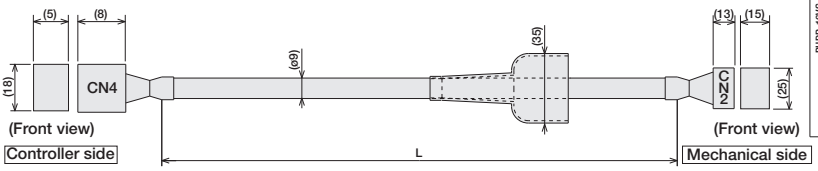
Encoder cable/Encoder robot cable

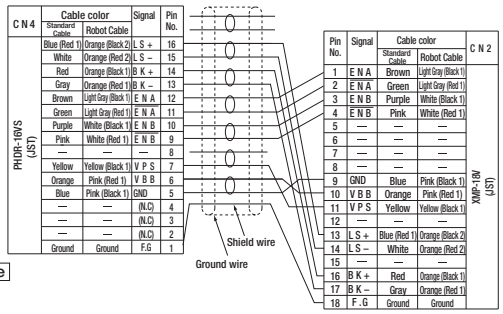
Model CB-RCP2-PB□□□/CB-RCP2-PB□□□-RB

* The standard cable for the encoder cable is a normal cable. A robot cable can be specified as an option.

* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m

Min. bend radius r = 50 mm or larger (when movable type is used)
* Only robot cable is to be used in a cable track.

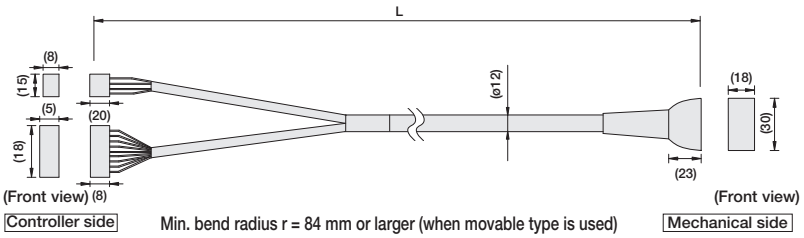




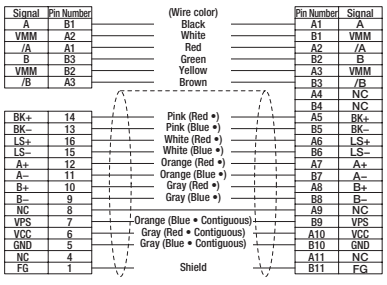
Motor-Encoder Integrated Cable for RCP3

Model CB-PCS-MPA□□□

* Enter the cable length (L) into □□□. Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m



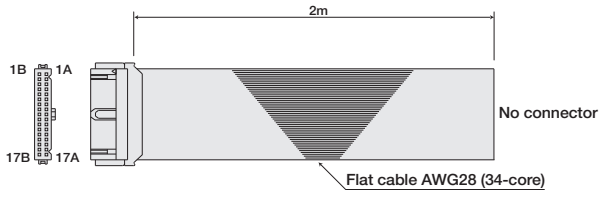
Min. bend radius r = 84 mm or larger (when movable type is used)



I/O Flat Cable

Model CB-DS-PIO □□□

* Enter the cable length (L) into □□□. Compatible to a maximum of 10 meters.
Ex.: 080 = 8 m



Pin No.	Color	Wire	Pin No.	Color	Wire
1A	Brown 1	Flat cable crimped	9B	Gray 2	Flat cable crimped
1B	Red 1		10A	White 2	
2A	Orange 1		10B	Black 2	
2B	Yellow 1		11A	Brown-3	
3A	Green 1		11B	Red 3	
3B	Blue1		12A	Orange 3	
4A	Purple 1		12B	Yellow 3	
4B	Gray 1		13A	Green 3	
5A	White 1		13B	Blue 3	
5B	Black 1		14A	Purple 3	
6A	Brown-2		14B	Gray 3	
6B	Red 2		15A	White 3	
7A	Orange 2		15B	Black 3	
7B	Yellow 2		16A	Brown-4	
8A	Green 2		16B	Red 4	
8B	Blue 2		17A	Orange 4	
9A	Purple 2		17B	Yellow 4	

RCP2&RCP3 Series
Extract Cat. No. 0513-E

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