Quality and Innovation

ELECYLINDER EC

EC
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www.intelligentactuator.com

Simple ELECYLINDER

Working just 5 minutes after setting speed and acceleration!!

EC
ELECYLINDER

EC
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Simple

ELECYLINDER

- Simple model selection.
- Easy to operate, even with no electrical expertise.
- Easily repaired by operators in the event of a breakdown.
- Few maintenance parts.

P.3

High Performance

ELECYLINDER

- Acceleration (A), Velocity (V), and Deceleration (D) can be adjusted individually.
- Start and end points can be set at any value.
- Faster cycle time.
- Slider type has built-in guide.

P.5

Profitable

ELECYLINDER

- Faster cycle time means increased productivity and reduced labor costs.
- Greatly reduces momentary stops on the production line.
- Long product life. Usable for up to 20 years with low loads.

P.9

Simple

ELECYLINDER

ELECYLINDER operation is **extremely simple**.

Easily repairable in the event of a breakdown.

Simple model selection

■ Select the ideal model easily with model selection software.

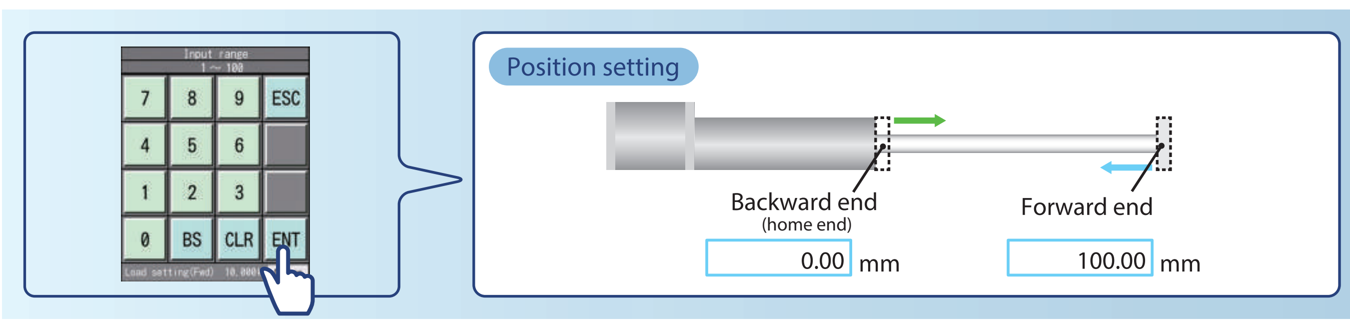
➡ **https://www.intelligentactuator.com/ec1**

Simple programming-free operation

Operation is possible with data entry alone. No need to perform complicated programming.
Operation is possible with ON/OFF signals alone, just like solenoid valves.

Start and end points can be set to any position

■ Enter stop position.

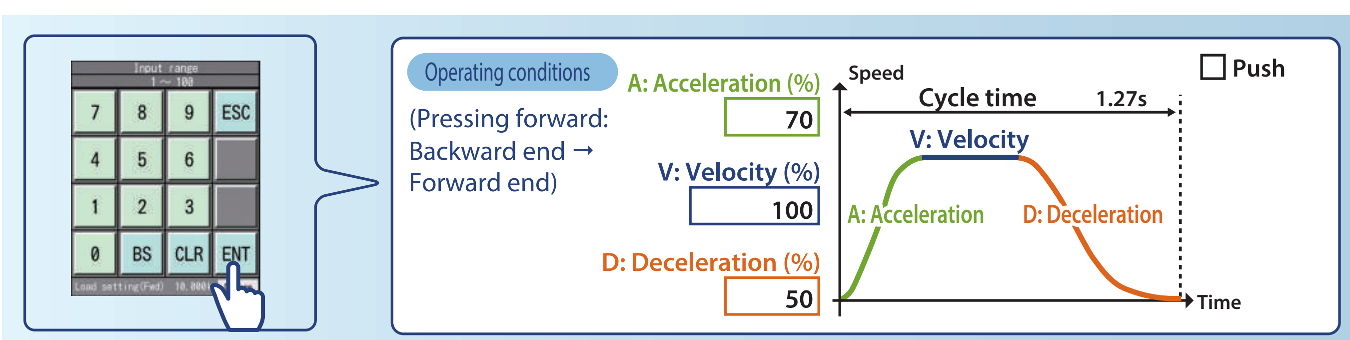


AVD values are easily set

■ Enter the operating conditions.

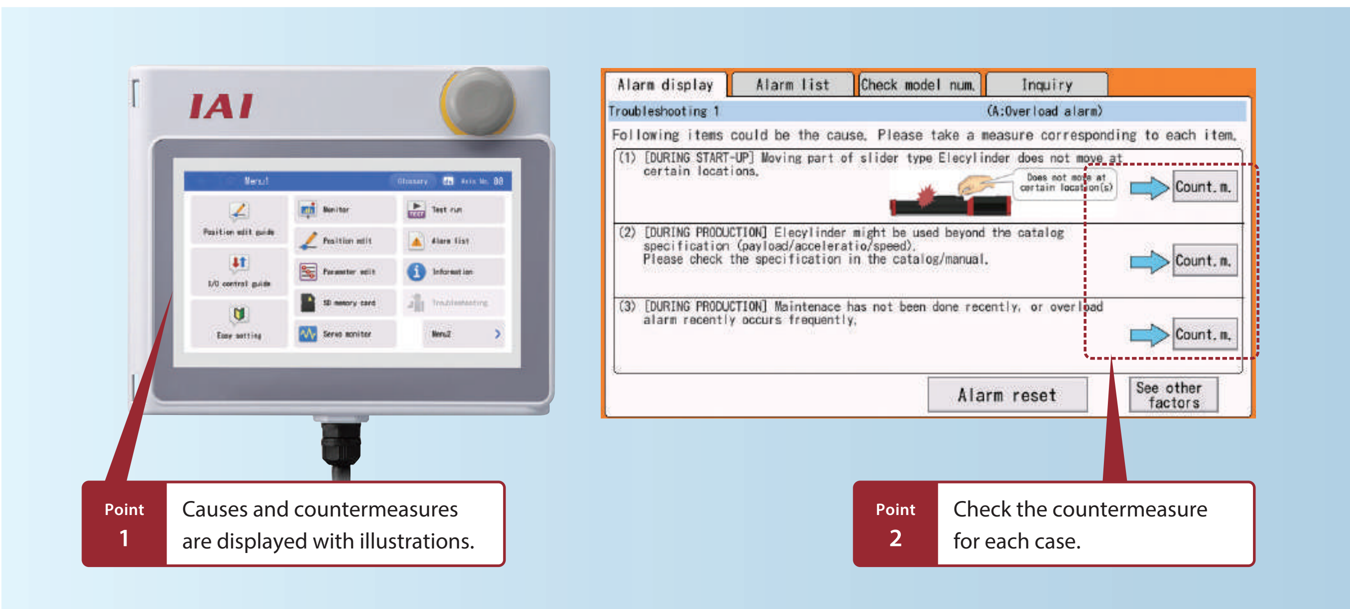
Operating conditions abbreviation: AVD

Acceleration
Velocity → **AVD**
Deceleration



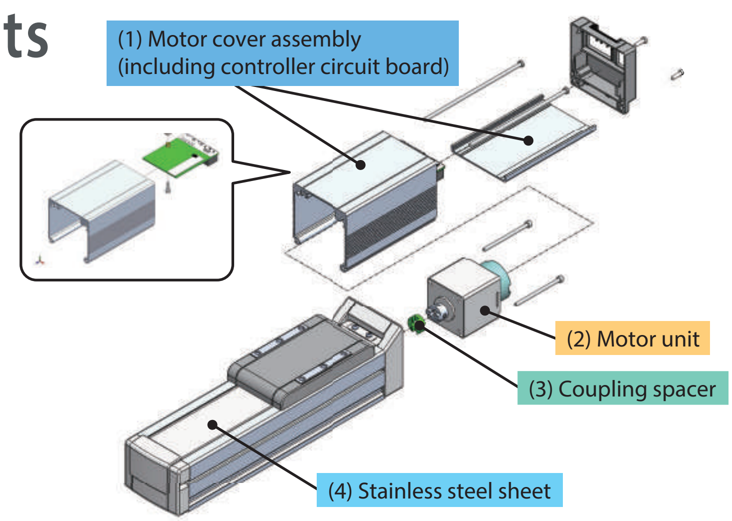
Easily repairable in the event of a breakdown.

Troubleshooting can be performed using the teaching pendant.
Device stoppage causes and countermeasures are displayed.
In nearly all cases, just replace the motor or controller circuit board yourself and the unit will recover.



Few maintenance parts

Since the ball screw and guide hardly ever break down, the only maintenance parts are
(1) Motor cover assembly (including controller circuit board)
(2) Motor unit



* Rear cover is not included in the motor cover assembly.
* Bolts are not included in the motor cover assembly and motor unit.

High Performance

ELECYLINDER

Easy operation
and **high performance** too.

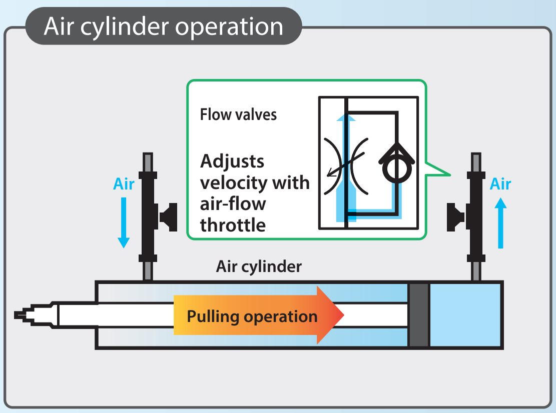
AVD can be adjusted individually

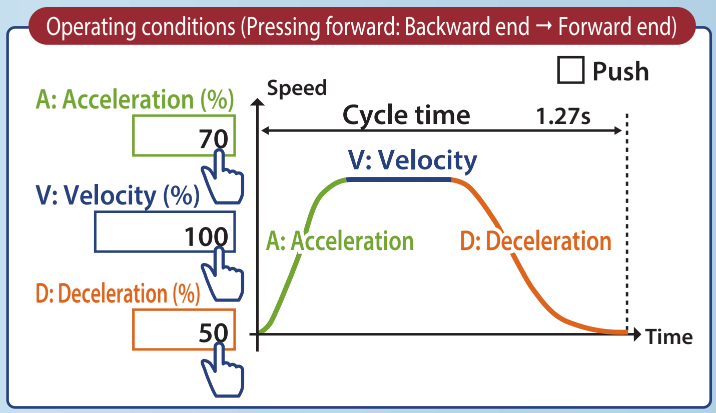
Air cylinders adjust velocity by adjusting the air flow rate using flow valves. Fine adjustment of velocity, acceleration and deceleration is not available. With the ELECYLINDER, AVD can be entered individually in percentages to apply adjustments.

Operating conditions abbreviation: AVD

- **A**cceleration
- **V**elocity
- **D**eceleration

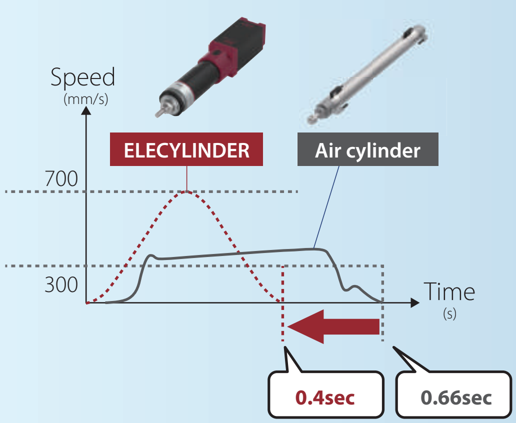
→ **AVD**





Cycle time can be reduced

Air cylinders cannot operate at high velocity due to the impact at stroke ends which occurs when excess velocity is applied. The ELECYLINDER can start and stop smoothly at high velocity, reducing cycle time.



<ELECYLINDER>

- Max. speed: **700 mm/s**
- Acceleration: **1G**
- Stroke: **200mm**

Cycle time
0.4 seconds

Air cylinder

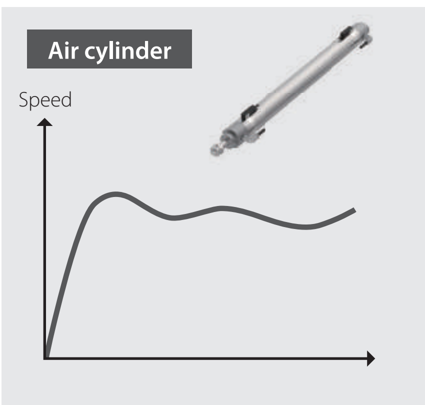
- Average speed: **300 mm/s**
- Stroke: **200mm**

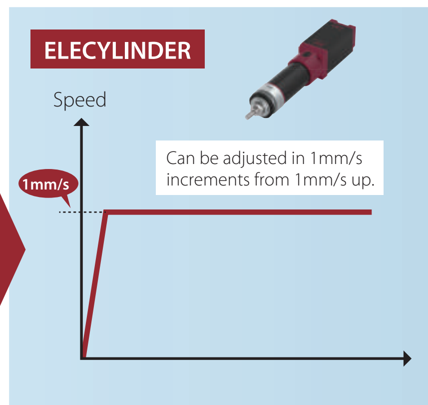
Cycle time
0.66 seconds

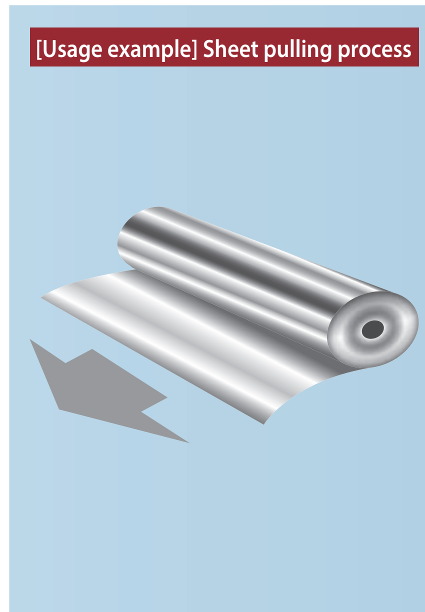
ELECYLINDER

Stable velocity

Has excellent velocity stability even in the low velocity range.
Maintains consistent quality without film slack, even in low-velocity film or sheet pulling operations.

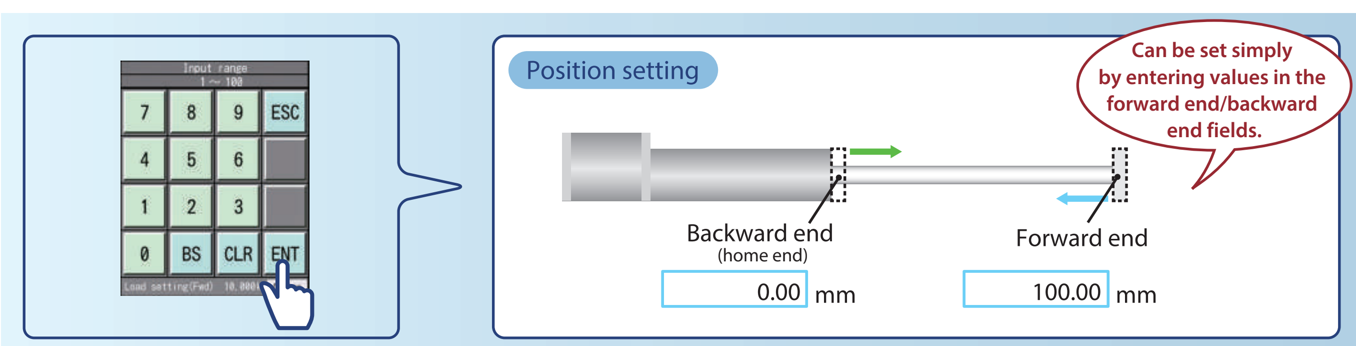






Start and end points can be set at any value

To set ELECYLINDER start/end points, just enter the desired value for the two points.
Air cylinders require position adjustment for mechanical end, auto switch, or shock absorber, as well as checking and fine tuning of each component's positioning.



High Performance

ELECYLINDER

Battery-less Absolute Encoder and predictive maintenance function eliminate **time-consuming maintenance work**.

Overload warning and maintenance period notifications

The predictive maintenance function issues an overload warning when the applied load exceeds that of normal operation.
It also issues maintenance period reminders.

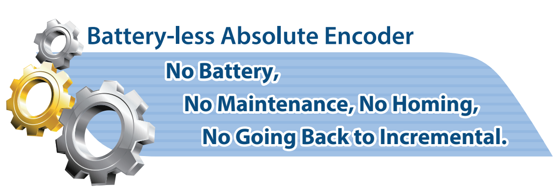
Overload level (%) can be set in advance.

Preventive maintenance	Predictive maintenance
Operation distance (km/m)	Overload warning
Movement count (times)	

If the criteria are set in advance, the LED built into the body will flash green/red to notify that the maintenance period is up

Battery-less Absolute Encoder can be selected

No battery means no maintenance required. Since home return operation is not required at startup or after emergency stop or malfunction, operation time and production costs can be reduced.



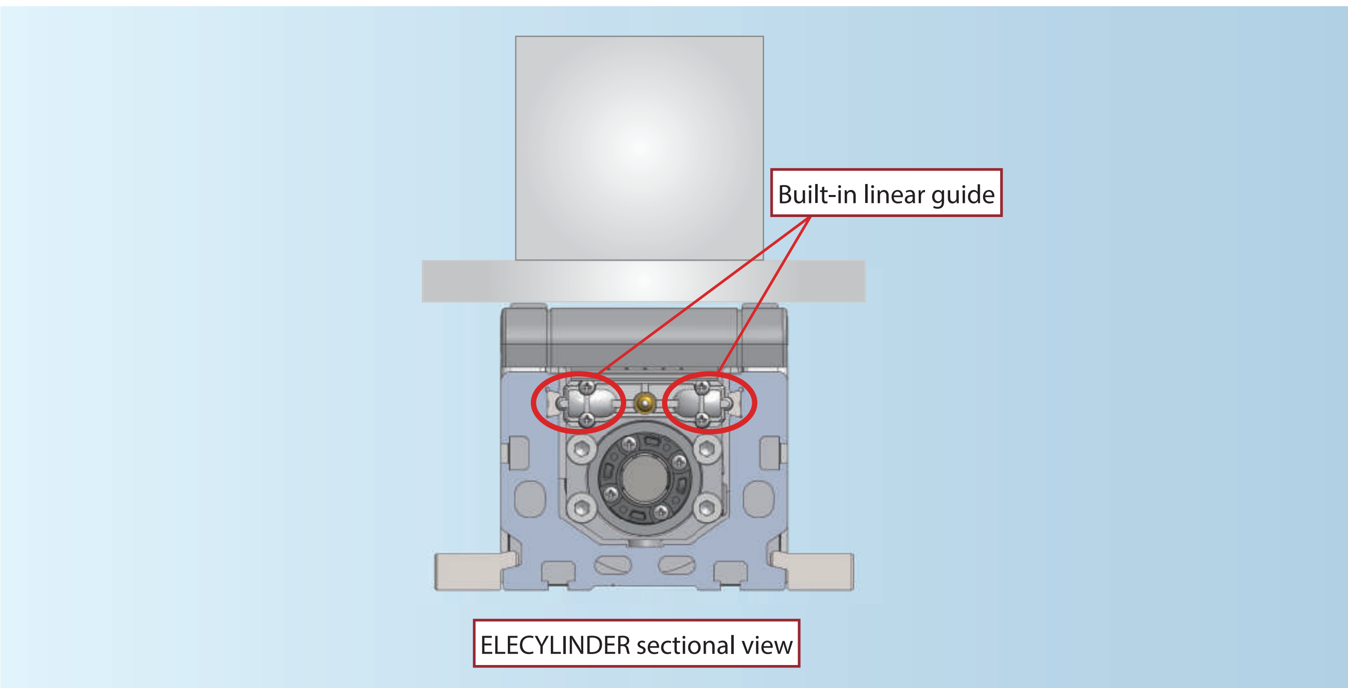
Battery-less means maintenance-free

- No battery purchase costs and reduced maintenance stock
- No battery replacement operation
- No battery installation space
- No battery-caused mechanical failure

Built-in position memory system

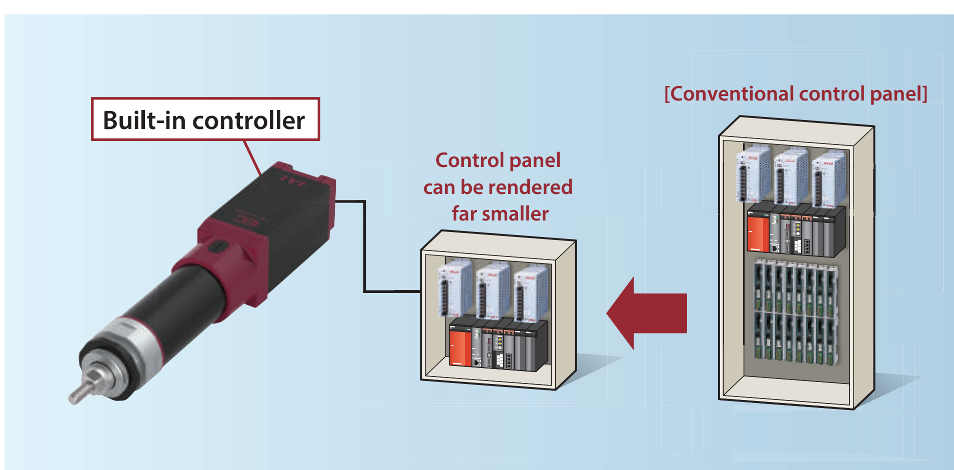
With built-in guide

The slider type ELECYLINDER has a built-in guide, so no external guide installation is needed.
This keeps the equipment profile compact.



With built-in controller

Built-in controller means no need to allocate controller space inside the control panel.
This keeps the control panel size compact.

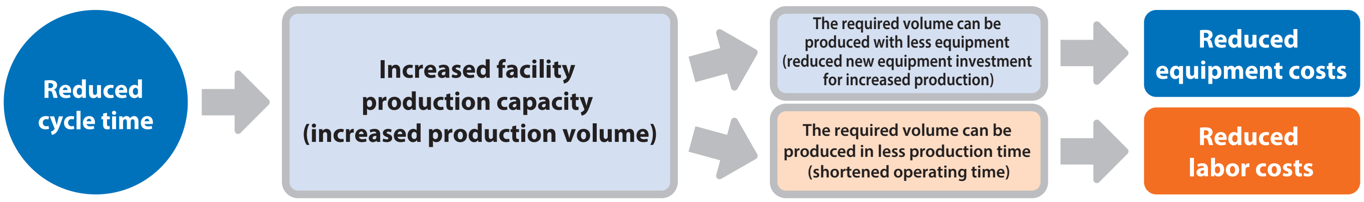


Profitable

ELECYLINDER

In fact, more ELECYLINDER operation means **more profit!**

Improves productivity and reduces labor costs

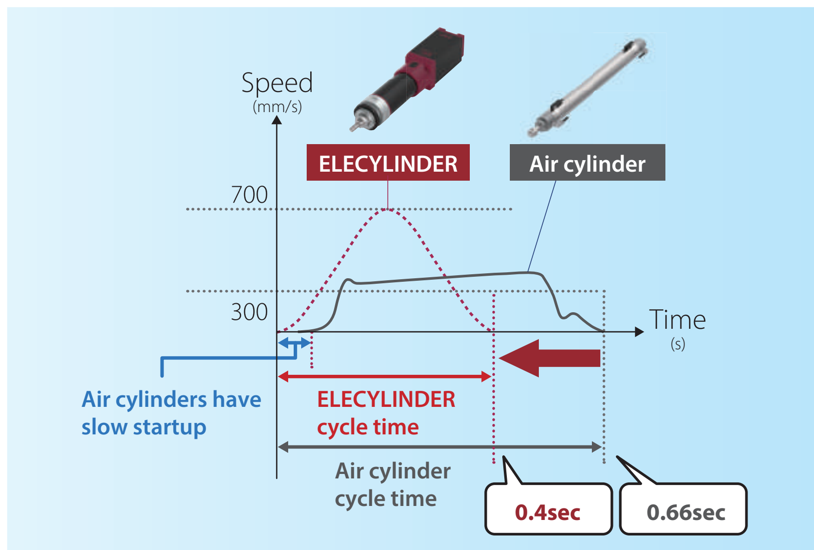


Air cylinders cannot operate at high velocity due to the impact at stroke ends which occurs when excess velocity is applied.
The ELECYLINDER allows individual adjustment of AVD with percentage input for smooth starting/stopping at high velocity. This enables reduced cycle time.

Operating conditions abbreviation: AVD

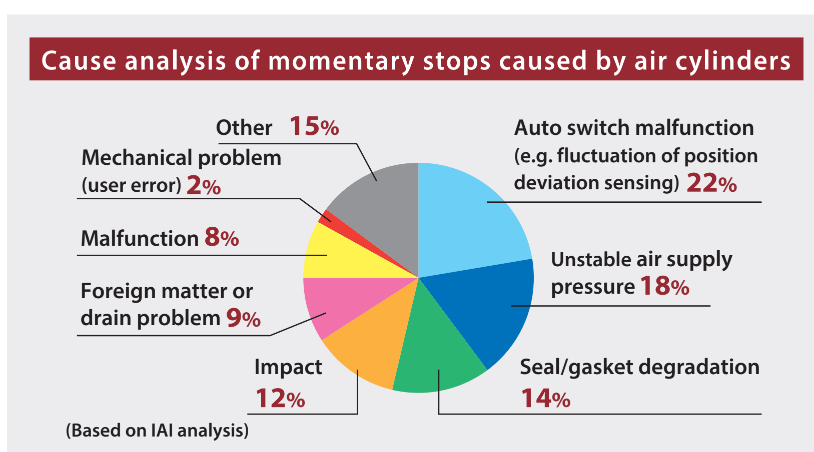
- Acceleration
- Velocity
- Deceleration

→ **AVD**



Reduces momentary stops on the production line and improves equipment operating rates

Depending on the state of equipment, various air cylinder issues can trigger momentary stops on the production line.
The ELECYLINDER can eliminate air cylinder-related momentary stops.



ELECYLINDER

Long service life

Instead of an impact mechanism, the ELECYLINDER incorporates a ball screw and ball circulating type built-in linear guide to achieve a long service life. Based on calculation using the conditions below, the lifespan of the ELECYLINDER is five times longer than that of air cylinders.

■ Operational conditions

Operating days per year	Operating hours	Movement stroke	Payload	Operation cycle
240 days	16 hours per day	300mm	Horizontal: 11kg	10 seconds per reciprocating motion

■ Lifespan

Product specifications	Life	Service life	Lifespan factors	Remarks
Air cylinder (rod type) ø32 	3 years	5 million times * Lifespan estimated by cylinder manufacturer	Gasket/ seal degradation	—
ELECYLINDER (rod type) EC-R7 	15 years	Approx. 12,000km	End of bearing life	Max. speed: 140 mm/s Acceleration/deceleration: 0.5G

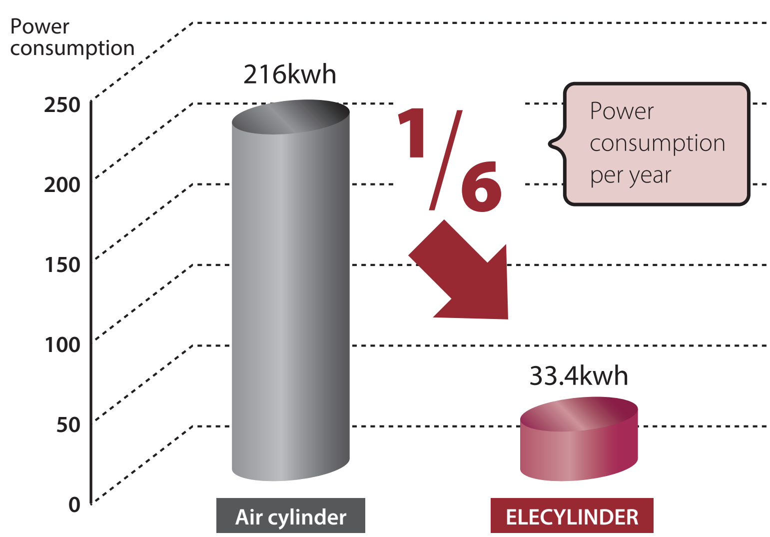
The ELECYLINDER lifespan is 5 times longer than that of air cylinders

Reduces electricity bills

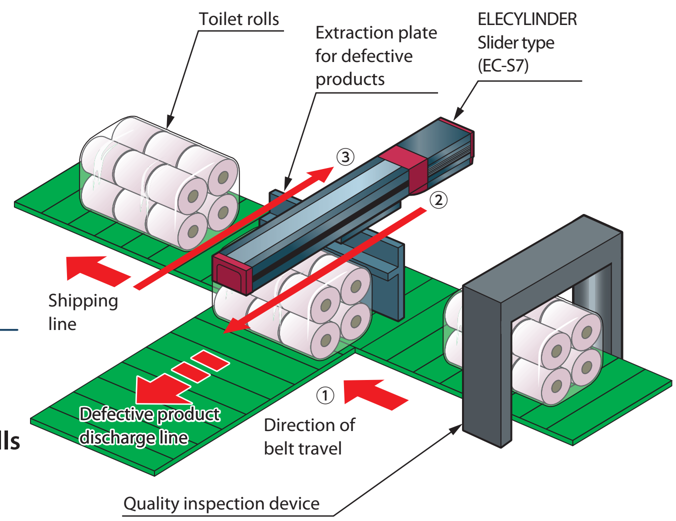
The difference in the rate of power consumption for the ELECYLINDER and air cylinders depends on the operational frequency. The higher the operational frequency, the more effective the energy-saving becomes.
Based on tests conducted by IAI, the ELECYLINDER's power consumption under the following conditions is 1/6 that of air cylinders.

<Operational conditions>

● ELECYLINDER: EC-R7	● Acceleration: 0.3G
● Air cylinder: ϕ32	● Load: 30kg
● Stroke: 300mm	● Installation orientation: Horizontal
● Speed: 280 mm/s	● Operational hours: 16 hours per day
● Operation cycle: 30 seconds per reciprocating motion	
● Operating days per year: 240 days	



Application Examples



1 Equipment overview

[Application]

A device that performs visual inspection of toilet rolls and extracts dirty or cracked defective products to the discharging conveyor. The device returns to the standby position after pushing defects onto the discharging conveyor.

2 Disadvantages of air cylinders

Disadvantage ① Velocity could not be set high enough due to the risk of workpieces being flung off the conveyor at high velocity.

Disadvantage ② Shipping line conveyor was operated at low speed to match the discharging speed.

3 Improvement with ELECYLINDER implementation

- **Smooth acceleration and deceleration even at high velocity means no more workpiece overshoot.**

Speed of discharge: Air cylinders 4.2 sec ⇒ ELECYLINDER 3.0 sec

- **Speed of shipping line conveyor was increased.**

Shipping line conveyor speed: Air cylinders 4.2m/min ⇒ ELECYLINDER 6m/min

4 Cost reductions achieved with improvement

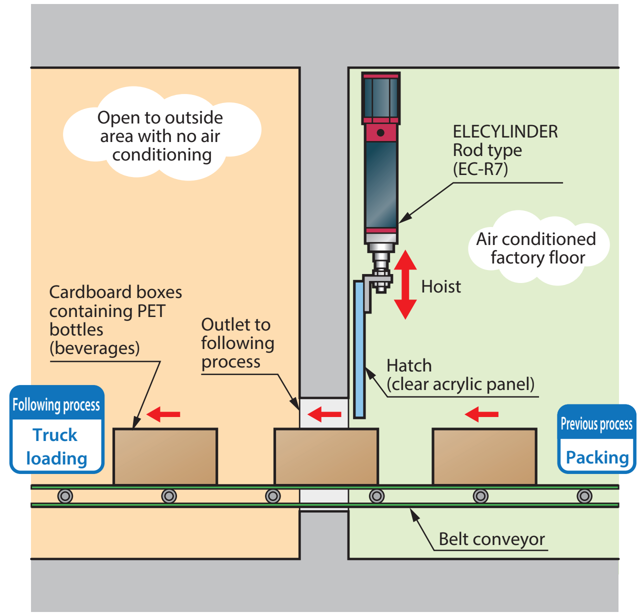
Production volume per hour increased by 40%
Production volume increased from 1,500 units to 2,100 units.

Production volume per day: 15,000
(Originally) 10 hours → (Improvement) 7.1 hours = Reduction of 2.9 hours per day.

Labor costs: $18 per hour per operator with 230 working days per year
2.9 hours x $18 x 230 days = $12,000

Cost reduction of $12,000 per year has been achieved.

*Research conducted at IAI Japan. Exchange Rate: 1(USD)=100(JPY)



1 Equipment overview

[Application]

A device for opening and closing the hatch located at the process where cardboard boxes are conveyed to the shipping platform.
There are five conveyor lines in this factory, using five hatches in total.

2 Disadvantages of air cylinders

Disadvantage 1 Impact at the upper and lower ends damaged the acrylic panels of the hatches, which required annual replacement.

Disadvantage 2 Due to production line HVAC and cycle time issues, the open/close time could not be reduced.

3 Improvement with ELECYLINDER implementation

- **Adjustment of velocity achieved fast and smooth open/close motion and eliminated impact damage to the hatches.**

4 Cost reductions achieved with improvement

Hatch panel replacement was no longer required, reducing costs as follows.

Hatch panel cost: $300 per piece
Replacement operation cost: $36 per replacement

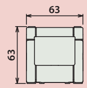
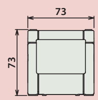
Total for five production lines: ($300 + $36) × 5 = $1,680

Cost reduction of $1,680 per year has been achieved.

*Research conducted at IAI Japan. Exchange Rate: 1(USD)=100(JPY)

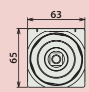
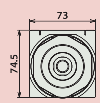
Product List

Slider Type

Spec	Type	External view	Body width (mm)	Lead (mm)	Positioning repeatability (mm)	Stroke (mm)	Max. speed (mm/s)	Max. pressing force (N)	Max. payload (kg)		Specifications/ drawings
									Horizontal	Vertical	
Motor straight specification	S6		 63mm	20	±0.05	50 to 400 (per 50st)	800	56	15	1	P.21
				12			700	93	26	2.5	
				6			450	185	32	6	
				3			225	370	40	12.5	
	S7		 73mm	24	±0.05	50 to 500 (per 50st)	860	112	37	3	P.23
				16			700	168	46	8	
				8			420	336	51	16	
				4			210 <175>	673	51	19	

<> represents vertical operation.

Rod Type

Spec	Type	External view	Body width (mm)	Lead (mm)	Positioning repeatability (mm)	Stroke (mm)	Max. speed (mm/s)	Max. pressing force (N)	Max. payload (kg)		Specifications/ drawings
									Horizontal	Vertical	
Motor straight specification	R6		 63mm	20	±0.05	50 to 300 (per 50st)	800	56	6	1.5	P.25
				12			700	93	25	4	
				6			450	185	40	10	
				3			225	370	60	12.5	
	R7		 73mm	24	±0.05	50 to 300 (per 50st)	860 <640>	182	20	3	P.27
				16			700 <560>	273	50	8	
				8			350	547	60	18	
				4			175	1094	80	19	

<> represents vertical operation.

Model Specification Items

ELECYLINDER

EC – [ ] [ ] – [ ] – [ ] – ([ ])

Series **Type** **Ball screw lead** **Stroke** **Power / I/O cable length** **Options**

Type

S6	Slider 63mm width
S7	Slider 73mm width
R6	Rod 63mm width
R7	Rod 73mm width

Ball screw lead

L	Lead 3mm (S6, R6)
L	Lead 4mm (S7, R7)
M	Lead 6mm (S6, R6)
M	Lead 8mm (S7, R7)
H	Lead 12mm (S6, R6)
H	Lead 16mm (S7, R7)
S	Lead 20mm (S6, R6)
S	Lead 24mm (S7, R7)

Stroke

50 to 400mm (S6)
50 to 500mm (S7)
50 to 300mm (R6)
50 to 300mm (R7)

(Every 50mm)

Power / I/O cable length

0	0m
~	~
10	10m

Cable length
·0: With terminal block type connector
·1 to 10: With relay cable with cover

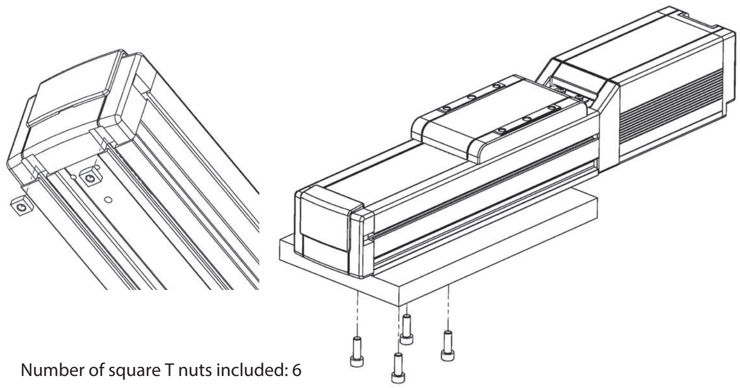
Options

Left blank	Incremental encoder specification, NPN specification, no option
B	Brake
FL	Flange (front)
FT	Foot bracket (bolting from top)
NFA	Tip adapter (internal thread)
NM	Non-motor end specification
PN	PNP specification
WA	Battery-less Absolute Encoder

Mounting method

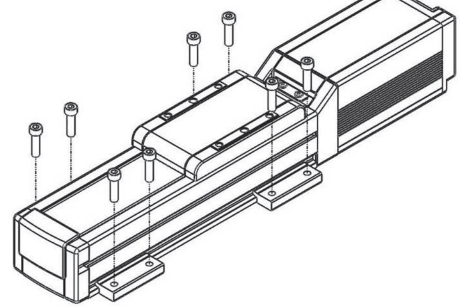
Slider Type

■ Using square T nuts



Number of square T nuts included: 6

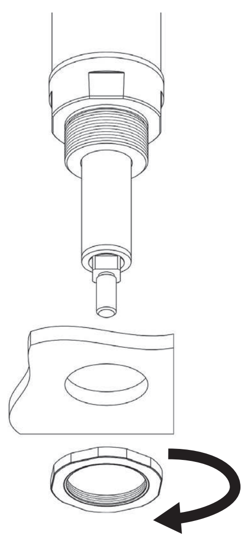
■ Using foot brackets



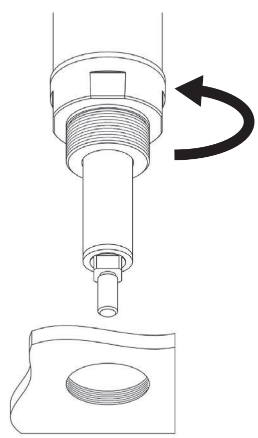
* Foot bracket is optional.

Rod Type

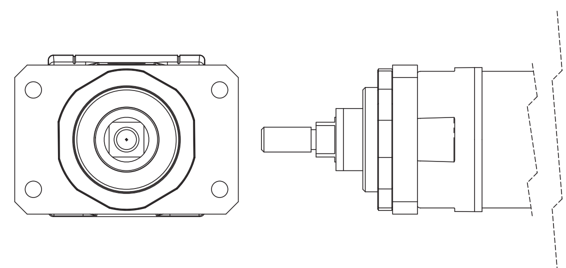
■ Using supplied fixing nuts



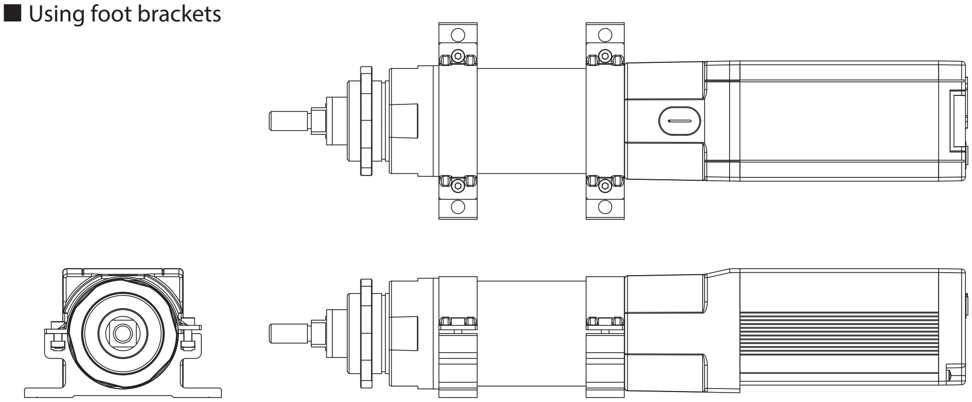
■ Using bracket screws



■ Using flange (front)



■ Using foot brackets



* Flange (front) and foot bracket are optional.

Precautions for Installation

(General)

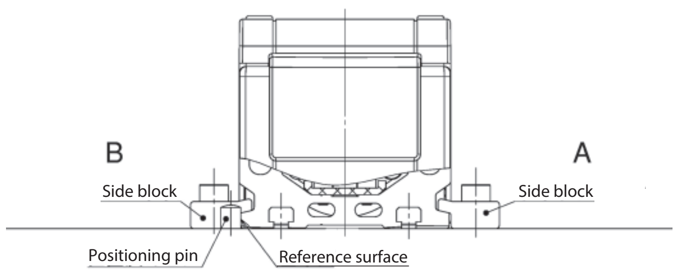
For vertical mounting, it is recommended to have the motor installed on top.
While installing the motor on the bottom will not cause problems during normal operation, long periods of inactivity may cause the grease to separate, flow into the motor unit, and cause problems on rare occasions.

(Slider)

Keep the body installation surface and workpiece mounting surface flatness at 0.05mm/m or lower.
Uneven flatness will increase the slider's sliding resistance and may cause malfunction.

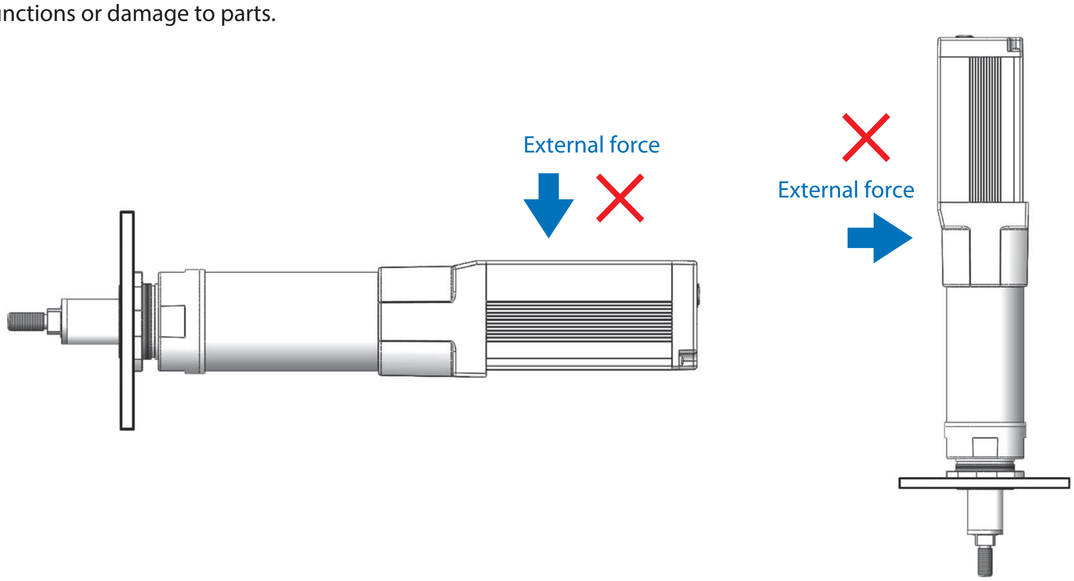
While installation in the side and ceiling mount positions are available, this may cause slack or misalignment in the stainless steel sheet.
Continuing to use it this way could cause the stainless steel sheet to break. Please inspect it daily and adjust the sheet if any slack or misalignment is found.

Since the position in the width direction cannot be settled when fixing with side blocks, use positioning pins, etc.
The mounting procedure is as follows.
(1) Press against the reference surface with a positioning pin, etc.
(2) Maintaining the pressure, fix side block A on the opposite side.
(3) Finally, fix side block B on the pin side.
* Note that there may be cases where sufficient fastening force cannot be obtained when mounting with methods other than the procedure above.



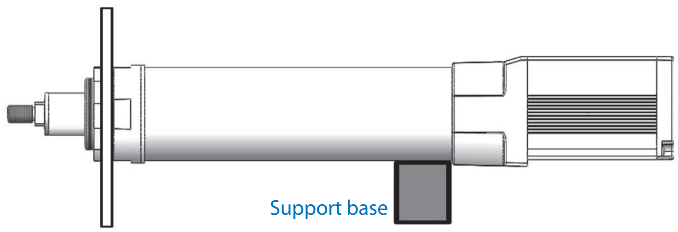
(Rod)

Do not attempt to apply any external force to the body during front bracket mounting or flange (front) mounting. External force may cause malfunctions or damage to parts.



(Rod)

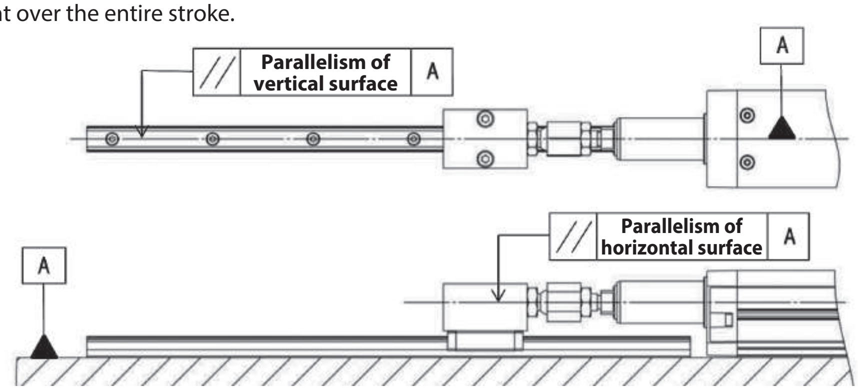
When using flange (front) mounting etc., if the device is mounted horizontally, fixed at a single point and has a stroke of 150mm or more, prepare a support block as shown in the figure below even if there is no external force applied on the body.
Even when the stroke is less than 150mm, a support block is strongly recommended in order to avoid vibration generated due to the operation conditions or installation environment, which may lead to abnormal operation or damage to parts.
For the support block, we recommend either using the optional foot bracket or keeping the support block (aluminum alloy, etc.) close against the frame. The installation position should be on the frame motor side.



[Notes for using external guide with rod type actuator]

● Parallelism of actuator and external guide

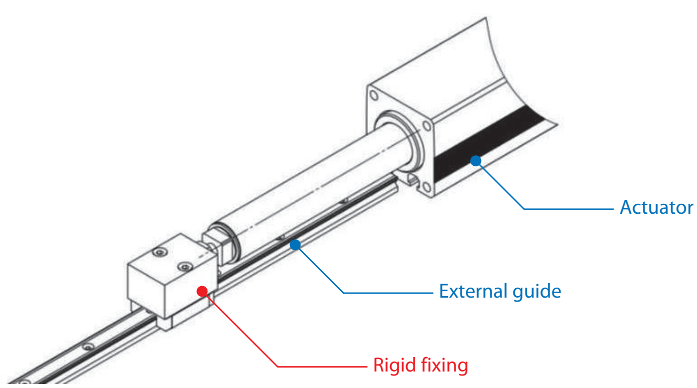
When using an external guide, misalignment of parallelism (horizontal plane, vertical plane) between the actuator and the external guide could result in malfunction or premature damage to the actuator.
When mounting a guide align the center of the actuator parallel to the guide. Following the adjustment, make sure that the sliding resistance is constant over the entire stroke.



External guide fixing method

Even when parallelism of the guide and the actuator has been adjusted, incorrect fixing risks premature damage to the actuator.
See below:

"Rigid fixing" is recommended for the external guide fixing method. Since the rotation stop rod type cannot accept the rotational force of the rod, the rotation direction of the rod must be restricted.
Since "Floating joint" does not restrict the rotation direction of the rod, application of rod rotational force to the rotation stop during actuator operation could result in premature wear on the rotation stop. (Floating joints with rotation direction restrictions are acceptable.)



ELECYLINDER model selection

ELECYLINDER model selection can be completed in just 5 minutes by accessing the IAI website to fill out the software form.

Access the website

https://www.intelligentactuator.com/ec1

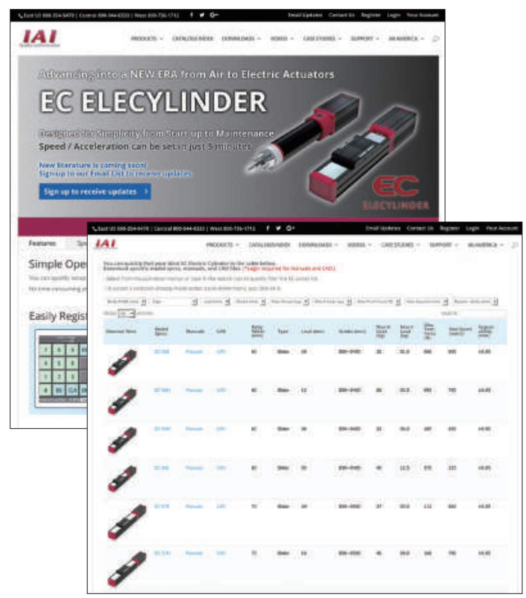
Enter required conditions

Mount orientation/Stroke/Load/Center mass location/ Cycle time/Operational hours

Finalize model

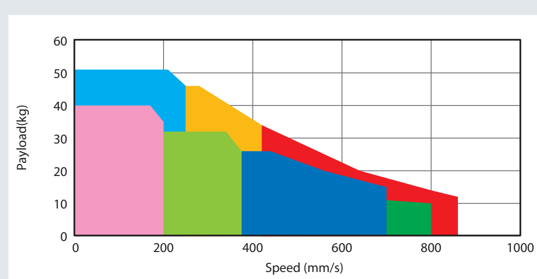
Specifications/Drawings

Selection complete



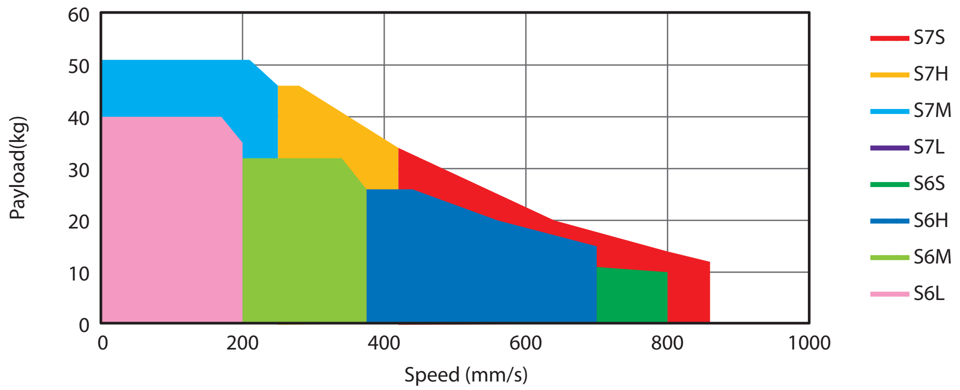
To select a model from the catalog using the summaries...

Select from [Speed and Payload Graph]

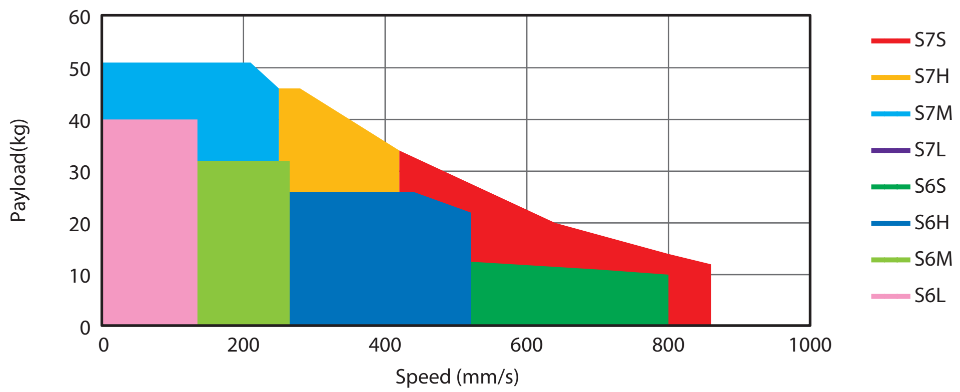


Speed and Payload Graph

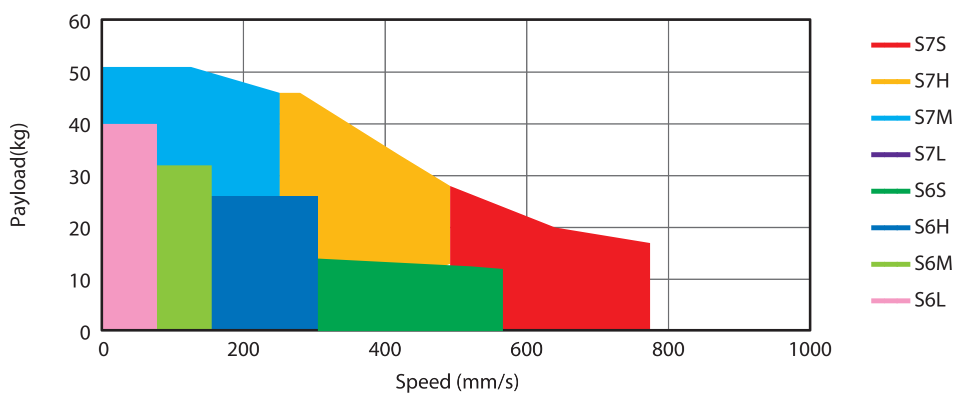
Slider Type, Horizontal Mounting, Stroke: ~ 200mm



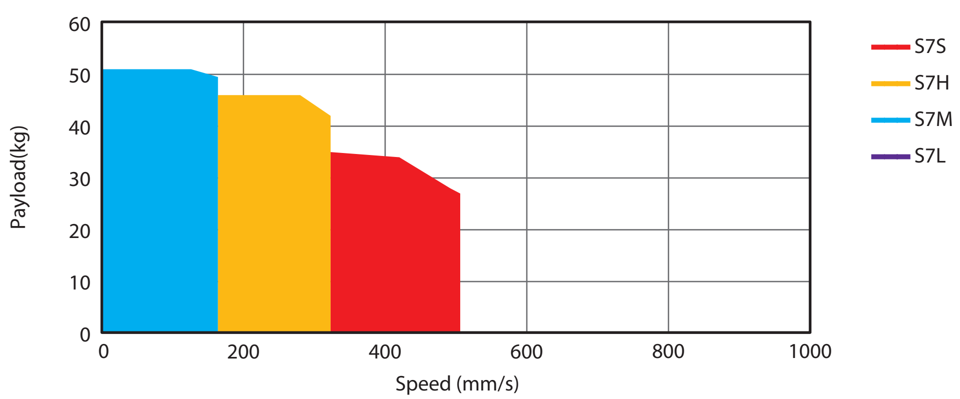
Slider Type, Horizontal Mounting, Stroke: ~ 300mm



Slider Type, Horizontal Mounting, Stroke: ~ 400mm

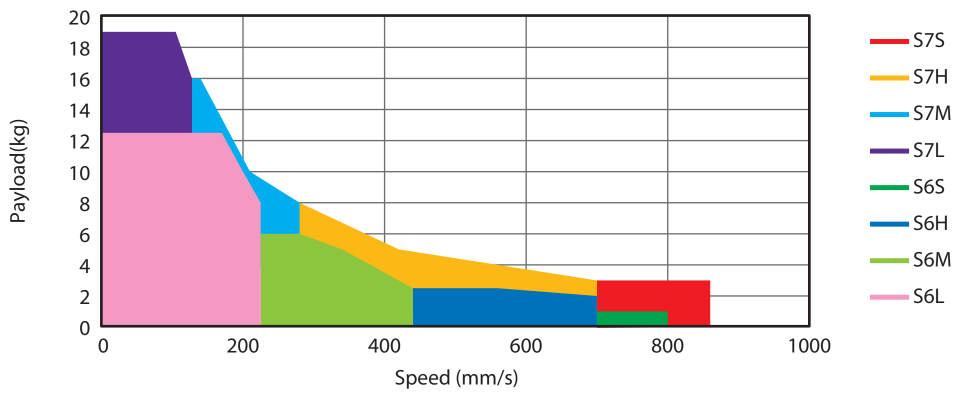


Slider Type, Horizontal Mounting, Stroke: ~ 500mm

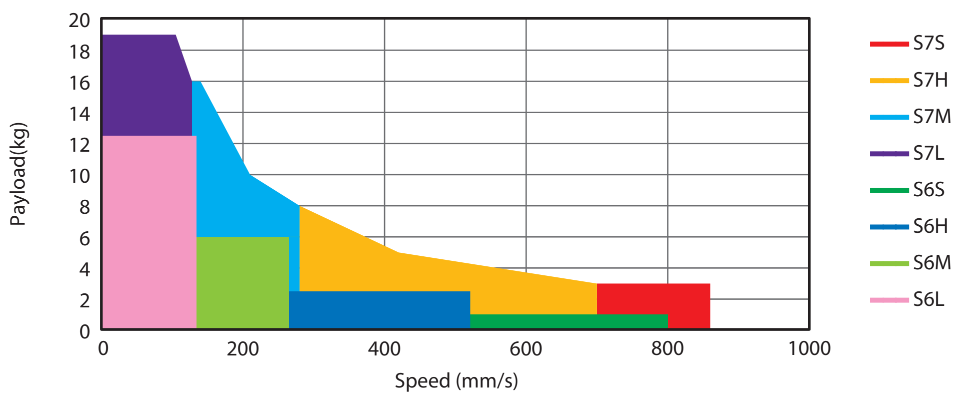


Speed and Payload Graph

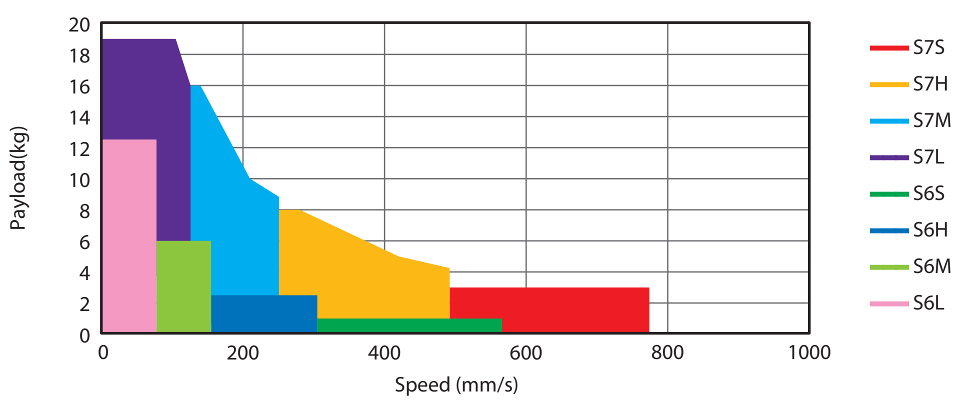
Slider Type, Vertical Mounting, Stroke: ~ 200mm



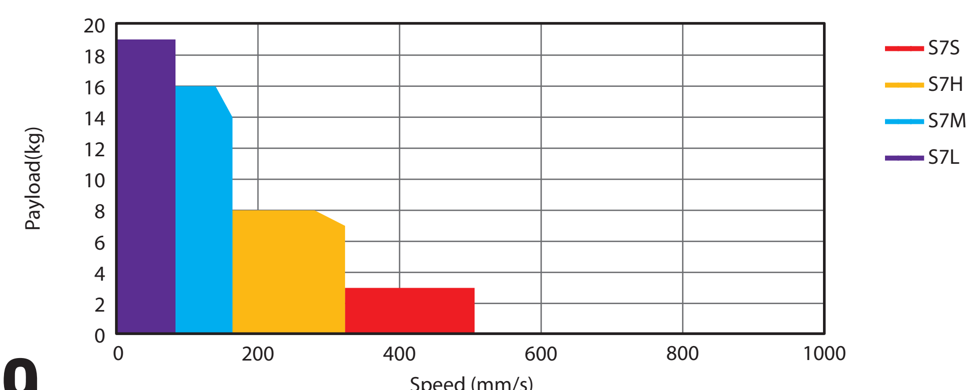
Slider Type, Vertical Mounting, Stroke: ~ 300mm



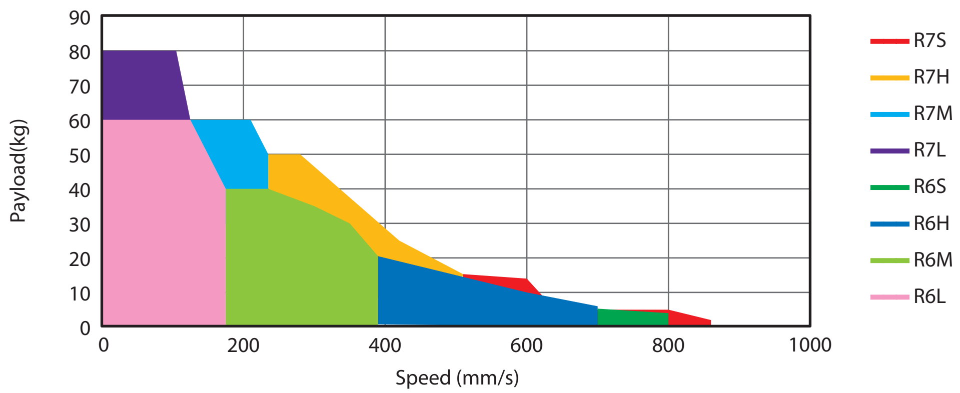
Slider Type, Vertical Mounting, Stroke: ~ 400mm



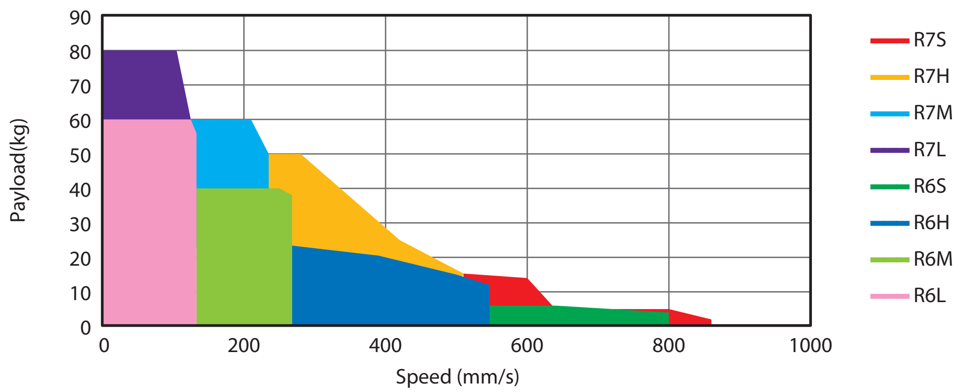
Slider Type, Vertical Mounting, Stroke: ~ 500mm



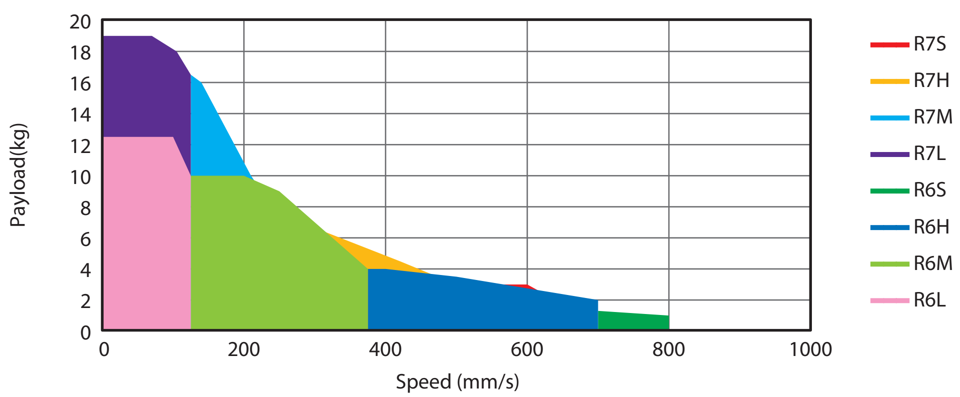
Rod Type, Horizontal Mounting, Stroke: ~ 200mm



Rod Type, Horizontal Mounting, Stroke: ~ 300mm



Rod Type, Vertical Mounting, Stroke: ~ 300mm



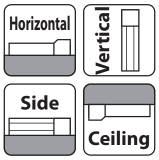
EC-S6

■ Model Specification Items

EC	—	S6		—		—		—	
Series	—	Type	Lead	—	Stroke	—	Cable Length	—	Options
			S : 20mm H : 12mm M : 6mm L : 3mm		50: 50mm ≀ 400: 400mm (Every 50mm)		0: With terminal block type connector 1: 1m ≀ 10: 10m		Refer to Options below.

* Please refer to P.13 for more information about the model specification items.

CE RoHS



* Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.

POINT Selection Notes

(1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
(2) The actuator specifications displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" at right for more details.
(3) When performing push operation, refer to P.31.
(4) Depending on the ambient operating temperature, duty control is necessary. Please refer to P.32 for more information.

Table of Payload by Speed/Acceleration

Lead 20

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	15	10	8	7	1	1
160	15	10	8	7	1	1
320	12	10	8	6	1	1
480	12	9	8	6	1	1
640	12	8	6	5	1	1
800	10	6.5	4.5	3	1	1

Lead 12

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	26	18	16	14	2.5	2.5
80	26	18	16	14	2.5	2.5
200	26	18	16	14	2.5	2.5
320	26	18	14	12	2.5	2.5
440	26	18	12	10	2.5	2.5
560	20	12	8	7	2.5	2.5
700	15	9	5	4	2	1

Lead 6

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	32	26	24	20	6	6
40	32	26	24	20	6	6
100	32	26	24	20	6	6
160	32	26	24	20	6	6
220	32	26	24	20	6	6
280	32	26	24	15	6	5.5
340	32	20	18	12	5	4.5
400	22	12	11	8	3.5	3.5
450	15	8	6	4	2	2

Lead 3

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	40	35	35	35	12.5	12.5
50	40	35	35	35	12.5	12.5
80	40	35	35	30	12.5	12.5
110	40	35	35	30	12.5	12.5
140	40	35	35	28	12.5	12.5
170	40	32	32	24	12.5	12
200	35	28	23	20	10	9
225	28	20	16	12	6	

Actuator Specifications

■ Lead and Payload

Model	Lead (mm)	Max. payload		Max. Push force (N)
		Horizontal (kg)	Vertical (kg)	
EC-S6S-①-②(-③)	20	15	1	56
EC-S6H-①-②(-③)	12	26	2.5	93
EC-S6M-①-②(-③)	6	32	6	185
EC-S6L-①-②(-③)	3	40	12.5	370

Legend: ① Stroke ② Cable Length ③ Option

w/20mm/s

■ Stroke and Max. Speed

(Unit: mm/s)

Lead (mm)	50~200 (Every 50mm)	250 (mm)	300 (mm)	350 (mm)	400 (mm)
20	800			727	566
12	700		521	392	305
6	450	371	265	199	155
3	225	188	134	100	78

① Stroke

① Stroke (mm)	EC-S6	① Stroke (mm)	EC-S6
50	○	**250**	○
100	○	**300**	○
150	○	**350**	○
200	○	**400**	○

② Cable Length

Cable code	Cable length
0	No cable (with connector)
1 to 3	1 to 3m
4 to 5	4 to 5m
6 to 10	6 to 10m

③ Options

Type	Option code	Reference page
Brake	**B**	See P.29
Foot bracket	**FT**	See P.29
Non-motor end specification	**NM**	See P.30
PNP specification	**PN**	See P.30
Battery-less Absolute Encoder specification	**WA**	See P.30

Actuator Specifications

Item	Description
Drive system	Ball screw ϕ10mm, rolled C10
Positioning repeatability	±0.05mm
Base	Material: Aluminum, alumite treatment
Static allowable moment	Ma direction: 48.5N·m, Mb direction: 69.3N·m, Mc direction: 97.1N·m
Dynamic allowable moment (*)	Ma direction: 11.6N·m, Mb direction: 16.6N·m, Mc direction: 23.3N·m
Ambient operating temperature/humidity	0 to 40°C, 85% RH or less (Non-condensing)

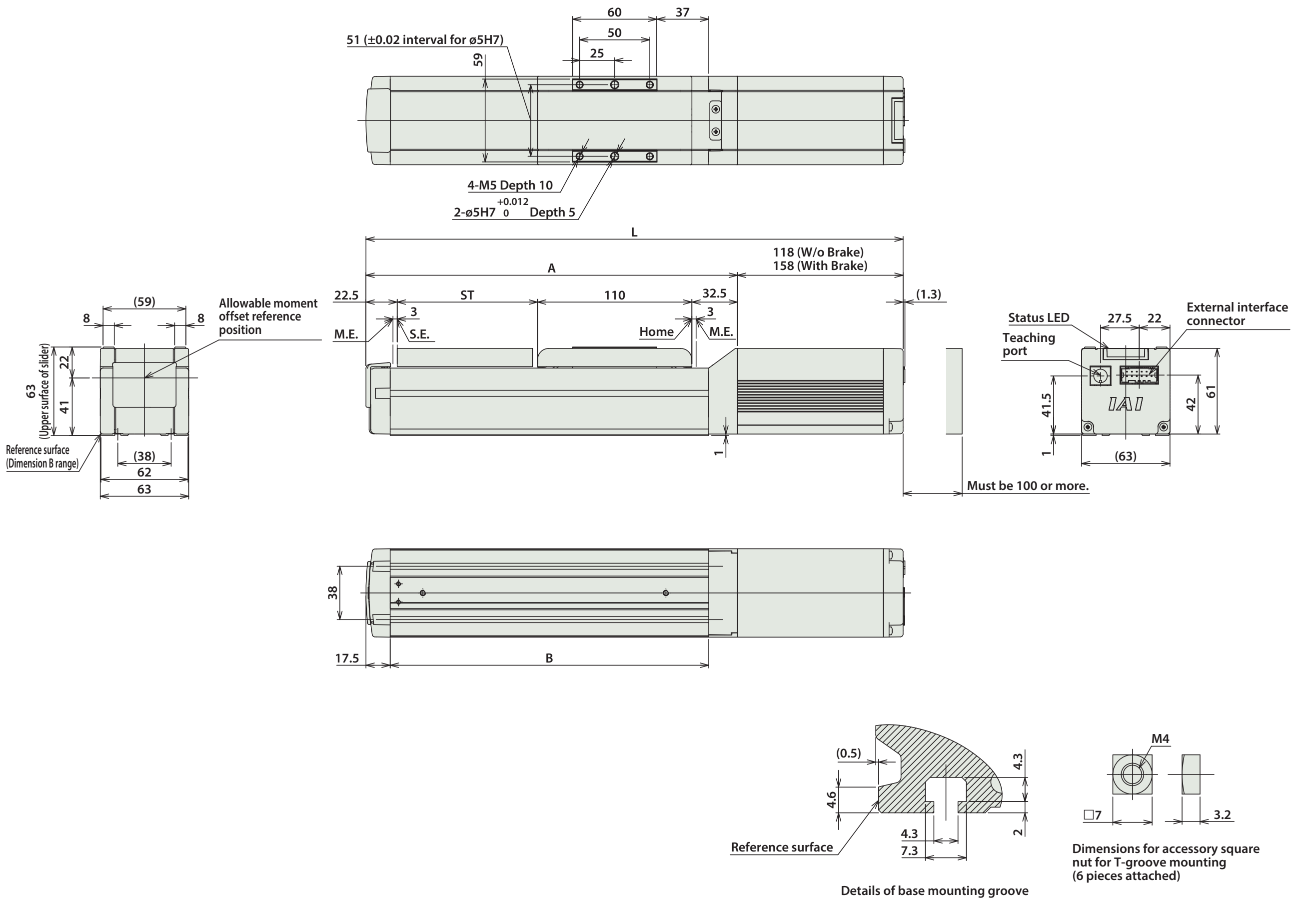
· Overhang load length guideline: 220mm or less

(*) For reference rated life of 5000km. The service life will vary depending on operation and installation conditions. Please contact IAI for more details.

Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com
2D CAD 3D CAD

*1 When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
M.E: Mechanical end S.E: Stroke end



■ Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300	350	400
L	W/o Brake	333	383	433	483	533	583	633	683
	With Brake	373	423	473	523	573	623	673	723
A		215	265	315	365	415	465	515	565
B		177	227	277	327	377	427	477	527
Weight (kg)	W/o Brake	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
	With Brake	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4

Controller Side Options

Name	Touch Panel Teaching Pendant	PC software	24VDC power supply
External view			
Model	TB-02-C	RCM-101-MW (RS232 connection version)	PS-241 (100V input)
		RCM-101-USB (USB connection version)	PS-242 (200V input)
Overview	A teaching device equipped with functions such as start point, end point, and AVD input, trial operation, and monitoring	Software for start point input, end point input, and AVD input, trial operation, and monitoring using a PC	Power supply with maximum instantaneous output of 17A

* For system configurations using the above tools, refer to P.33.

EC-S7

■ Model Specification Items

EC	—	S7	—		—		—		—	
Series	—	Type	—	Lead	—	Stroke	—	Cable Length	—	Options
				S : 24mm H : 16mm M : 8mm L : 4mm		50: 50mm ≀ 500: 500mm (Every 50mm)		0: With terminal block type connector 1: 1m ≀ 10: 10m		Refer to Options below.

* Please refer to P.13 for more information about the model specification items.

CE RoHS

Horizontal Vertical Side Ceiling

* Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.

POINT Selection Notes

(1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
(2) The actuator specifications displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" at right for more details.
(3) When performing push operation, refer to P.31.
(4) Depending on the ambient operating temperature, duty control is necessary. Please refer to P.32 for more information.

Table of Payload by Speed/Acceleration

Lead 24

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	37	22	16	14	3	3
200	37	22	16	14	3	3
420	34	20	16	14	3	3
640	20	15	10	9	3	3
860	12	10	7	4	3	2.5

Lead 16

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	46	35	28	27	8	8
140	46	35	28	27	8	8
280	46	35	25	24	8	8
420	34	25	15	10	5	4.5
560	20	15	10	6	4	3
700	15	10	5	3	3	2

Lead 8

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	51	45	40	40	16	16
70	51	45	40	40	16	16
140	51	40	38	35	16	16
210	51	35	30	24	10	9.5
280	40	28	20	15	8	7
350	30	9	4		5	4
420	7				2	

Lead 4

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	51	45	40	40	19	19
35	51	45	40	40	19	19
70	51	45	40	40	19	19
105	51	45	40	35	19	19
140	45	35	30	25	14	12
175	30	18			9	7.5
210	6					

Actuator Specifications

■ Lead and Payload

Model	Lead (mm)	Max. payload		Max. Push force (N)
		Horizontal (kg)	Vertical (kg)	
EC-S7S-①-②(-③)	24	37	3	112
EC-S7H-①-②(-③)	16	46	8	168
EC-S7M-①-②(-③)	8	51	16	336
EC-S7L-①-②(-③)	4	51	19	673

Legend: ① Stroke ② Cable Length ③ Option w/20mm/s

■ Stroke and Max. Speed

(Unit: mm/s)

Lead (mm)	50~300 (Every 50mm)	350 (mm)	400 (mm)	450 (mm)	500 (mm)
24	860		774	619	506
16	700	631	492	395	323
8	420	322	251	200	164
4	210 <175>	163	126	101	83

<> represents vertical operation.

① Stroke

① Stroke (mm)	EC-S7	① Stroke (mm)	EC-S7
50	○	**300**	○
100	○	**350**	○
150	○	**400**	○
200	○	**450**	○
250	○	**500**	○

② Cable Length

Cable code	Cable length
0	No cable (with connector)
1 to 3	1 to 3m
4 to 5	4 to 5m
6 to 10	6 to 10m

③ Options

Type	Option code	Reference page
Brake	**B**	See P.29
Foot bracket	**FT**	See P.29
Non-motor end specification	**NM**	See P.30
PNP specification	**PN**	See P.30
Battery-less Absolute Encoder specification	**WA**	See P.30

Actuator Specifications

Item	Description
Drive system	Ball screw ø12mm, rolled C10
Positioning repeatability	±0.05mm
Base	Material: Aluminum, alumite treatment
Static allowable moment	Ma direction: 79.7N·m, Mb direction: 114N·m, Mc direction: 157N·m
Dynamic allowable moment (*)	Ma direction: 17.7N·m, Mb direction: 25.3N·m, Mc direction: 34.9N·m
Ambient operating temperature/humidity	0 to 40°C, 85% RH or less (Non-condensing)

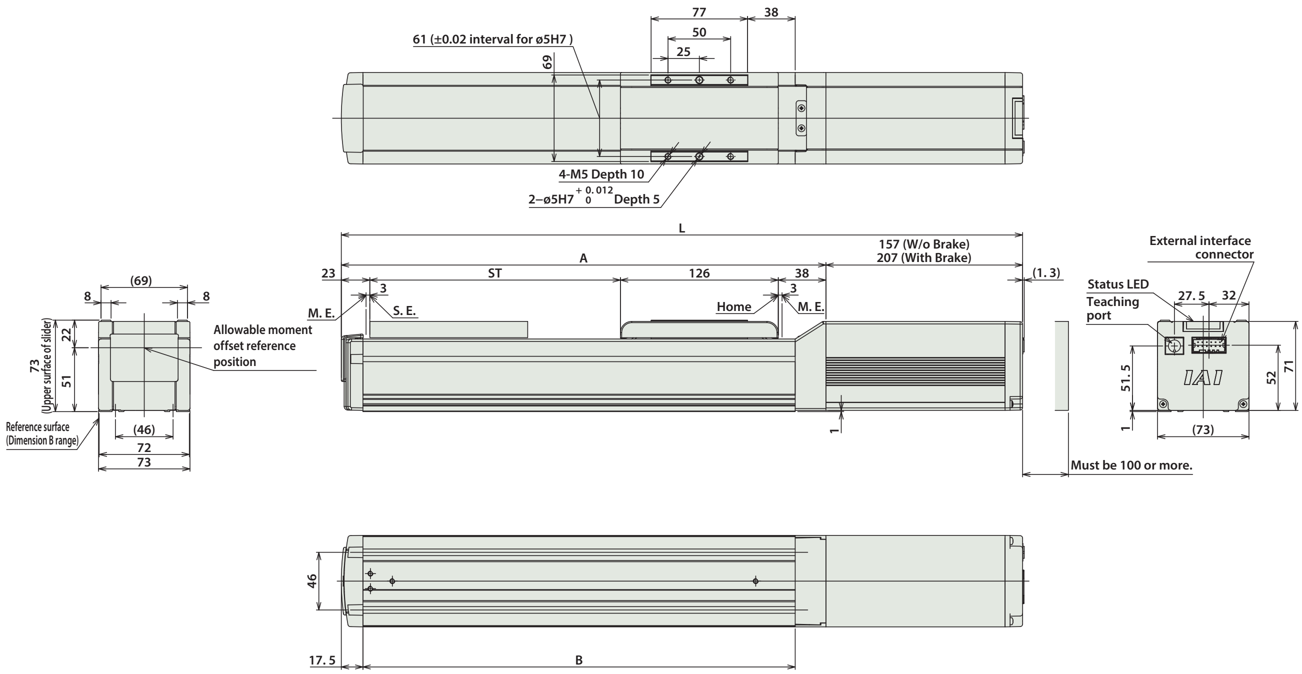
· Overhang load length guideline: 280mm or less

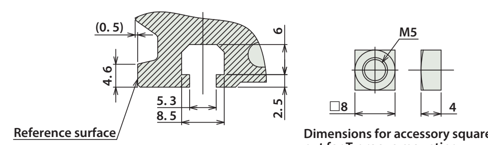
(*) For reference rated life of 5000km. The service life will vary depending on operation and installation conditions. Please contact IAI for more details.

Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com
2D CAD 3D CAD

*1 When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
M.E: Mechanical end S.E: Stroke end





Details of base mounting groove

Dimensions for accessory square nut for T-groove mounting (6 pieces attached)

■ Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300	350	400	450	500
L	W/o Brake	394	444	494	544	594	644	694	744	794	844
	With Brake	444	494	544	594	644	694	744	794	844	894
A		237	287	337	387	437	487	537	587	637	687
B		195	245	295	345	395	445	495	545	595	645
Weight (kg)	W/o Brake	3.4	3.6	3.9	4.2	4.4	4.7	5.0	5.2	5.5	5.8
	With Brake	3.8	4.1	4.4	4.6	4.9	5.2	5.4	5.7	6.0	6.2

Controller Side Options

Name	Touch Panel Teaching Pendant	PC software	24VDC power supply
External view			
Model	TB-02-C	RCM-101-MW (RS232 connection version)	PS-241 (100V input)
		RCM-101-USB (USB connection version)	PS-242 (200V input)
Overview	A teaching device equipped with functions such as start point, end point, and AVD input, trial operation, and monitoring	Software for start point input, end point input, and AVD input, trial operation, and monitoring using a PC	Power supply with maximum instantaneous output of 17A

* For system configurations using the above tools, refer to P.33.

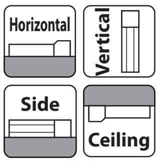
EC-R6

■ Model Specification Items

EC	—	R6		—		—		—	
Series	—	Type	Lead	—	Stroke	—	Cable Length	—	Options
			S : 20mm H : 12mm M : 6mm L : 3mm		50: 50mm ~ 300: 300mm (Every 50mm)		0: With terminal block type connector 1: 1m ~ 10: 10m		Refer to Options below.

* Please refer to P.13 for more information about the model specification items.

CE RoHS



* Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.

POINT Selection Notes

(1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
(2) The actuator specifications displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" at right for more details.
(3) The value of the horizontal payload assumes that there is an external guide. Please be aware that the anti-rotation stopper can be damaged when an external force is applied to the rod from any direction other than the moving direction.
(4) When performing push operation, refer to P.31.
(5) Depending on the ambient operating temperature, duty control is necessary. Please refer to P.32 for more information.

Table of Payload by Speed/Acceleration

Lead 20

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	6	6	5	5	1.5	1.5
160	6	6	5	5	1.5	1.5
320	6	6	5	3	1.5	1.5
480	6	6	5	3	1.5	1.5
640	6	4	3	2	1.5	1.5
800	4	3			1	1

Lead 12

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	25	18	16	12	4	4
100	25	18	16	12	4	4
200	25	18	16	10	4	4
400	20	14	10	6	4	4
500	15	8	6	4	3.5	3
700	6	2			2	1

Lead 6

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	40	35	30	25	10	10
50	40	35	30	25	10	10
100	40	35	30	25	10	10
200	40	30	25	20	10	10
250	40	27.5	22.5	18	9	8
350	30	14	12	10	5	5
400	18	10	6	5	3	3
450	8	3			2	1

Lead 3

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	60	50	45	40	12.5	12.5
50	60	50	45	40	12.5	12.5
100	60	50	45	40	12.5	12.5
125	60	50	40	30	10	10
175	40	35	25	20	6	5
200	35	30	20	14	5	4.5
225	16	16	10	6	5	4

Actuator Specifications

■ Lead and Payload

Model	Lead (mm)	Max. payload		Max. Push force (N)
		Horizontal (kg)	Vertical (kg)	
EC-R6S-①-②(-③)	20	6	1.5	56
EC-R6H-①-②(-③)	12	25	4	93
EC-R6M-①-②(-③)	6	40	10	185
EC-R6L-①-②(-③)	3	60	12.5	370

Legend: ① Stroke ② Cable Length ③ Option

w/20mm/s

■ Stroke and Max. Speed

(Unit: mm/s)

Lead (mm)	50~200 (Every 50mm)	250 (mm)	300 (mm)
20	800		
12	700		547
6	450	376	268
3	225	186	133

① Stroke

① Stroke (mm)	EC-R6	① Stroke (mm)	EC-R6
50	○	**200**	○
100	○	**250**	○
150	○	**300**	○

② Cable Length

Cable code	Cable length
0	No cable (with connector)
1 to 3	1 to 3m
4 to 5	4 to 5m
6 to 10	6 to 10m

③ Options

Type	Option code	Reference page
Brake	**B**	See P.29
Flange (front)	**FL**	See P.29
Foot bracket	**FT**	See P.29
Tip adapter (Internal thread)	**NFA**	See P.30
Non-motor end specification	**NM**	See P.30
PNP specification	**PN**	See P.30
Battery-less Absolute Encoder specification	**WA**	See P.30

Actuator Specifications

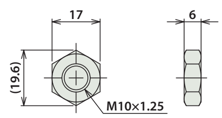
Item	Description
Drive system	Ball screw ø10mm, rolled C10
Positioning repeatability	±0.05mm
Rod	ø25 Material: Aluminum, hard alumite treatment
Static allowable torque on rod tip	0.5N·m
Rod tip maximum angular displacement (*)	±1.5 degrees
Ambient operating temperature/humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*) The rod tip angular displacement (initial value for reference) when the rod tip static allowable torque is applied with the rod fully retracted.

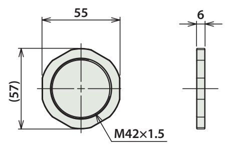
Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com
2D CAD 3D CAD

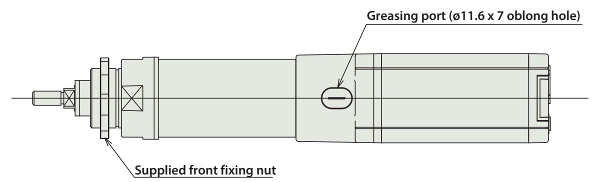
*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
M.E: Mechanical end S.E: Stroke end

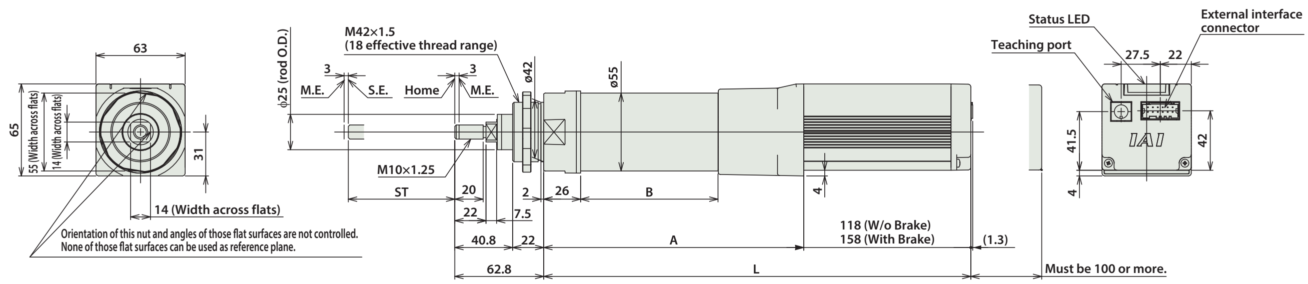


Rod tip supplied hex nut



Supplied front fixing nut





■ Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300
L	W/o Brake	301.5	351.5	401.5	451.5	501.5	551.5
	With Brake	341.5	391.5	441.5	491.5	541.5	591.5
A		183.5	233.5	283.5	333.5	383.5	433.5
B		97	147	197	247	297	347
Weight (kg)	W/o Brake	1.6	1.8	2.0	2.2	2.4	2.6
	With Brake	1.8	2.0	2.2	2.4	2.6	2.8

Controller Side Options

Name	Touch Panel Teaching Pendant	PC software	24VDC power supply
External view			
Model	TB-02-C	RCM-101-MW (RS232 connection version) RCM-101-USB (USB connection version)	PS-241 (100V input) PS-242 (200V input)
Overview	A teaching device equipped with functions such as start point, end point, and AVD input, trial operation, and monitoring	Software for start point input, end point input, and AVD input, trial operation, and monitoring using a PC	Power supply with maximum instantaneous output of 17A

* For system configurations using the above tools, refer to P.33.

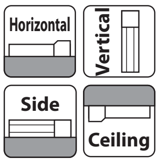
EC-R7

■ Model Specification Items

EC	—	R7		—		—		—	
Series	—	Type	Lead	—	Stroke	—	Cable Length	—	Options
			S : 24mm H : 16mm M : 8mm L : 4mm		50: 50mm ~ 300: 300mm (Every 50mm)		0: With terminal block type connector 1: 1m ~ 10: 10m		Refer to Options below.

* Please refer to P.13 for more information about the model specification items.

CE RoHS



* Depending on the model, there may be some limitations to using the vertical, side, and ceiling mount positions. Please contact IAI for more information regarding mounting positions.

POINT Selection Notes

(1) The maximum acceleration/deceleration is 1G for horizontal, and 0.5G for vertical use.
(2) The actuator specifications displays the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" at right for more details.
(3) The value of the horizontal payload assumes that there is an external guide. Please be aware that the anti-rotation stopper can be damaged when an external force is applied to the rod from any direction other than the moving direction.
(4) When performing push operation, refer to P.31.
(5) Depending on the ambient operating temperature, duty control is necessary. Please refer to P.32 for more information.

Table of Payload by Speed/Acceleration

Lead 24

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	20	18	15	12	3	3
200	20	18	15	12	3	3
400	20	14	12	8	3	3
420	17	12	10	6	3	3
600	14	6	5	4	3	2
640	5	3	2	1.5	2	1
800	5	1	1			
860	2	0.5				

Lead 16

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	50	40	35	30	8	8
140	50	40	35	30	8	8
280	50	35	25	20	7	7
420	25	18	14	10	4.5	4
560	10	5	3	2	2	1
700	2					

Lead 8

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	60	50	45	40	18	18
70	60	50	45	40	18	18
140	60	50	45	40	16	12
210	60	40	31	26	10	9
280	34	20	15	11	5	4
350	12	4	1		2	1

Lead 4

Orientation	Horizontal				Vertical	
Speed (mm/s)	Acceleration (G)					
	0.3	0.5	0.7	1	0.3	0.5
0	80	70	65	60	19	19
35	80	70	65	60	19	19
70	80	70	65	60	19	19
105	80	60	50	40	18	18
140	50	30	20	15	12	10
175	15				2	

Actuator Specifications

■ Lead and Payload

Model	Lead (mm)	Max. payload Horizontal (kg)	Max. payload Vertical (kg)	Max. Push force (N)
EC-R7S-①-②(-③)	24	20	3	182
EC-R7H-①-②(-③)	16	50	8	273
EC-R7M-①-②(-③)	8	60	18	547
EC-R7L-①-②(-③)	4	80	19	1094

Legend: ① Stroke ② Cable Length ③ Option   w/20mm/s

■ Stroke and Max. Speed

(Unit: mm/s)

Lead (mm)	50~300 (Every 50mm)
24	860 <640>
16	700 <560>
8	350
4	175

<> represents vertical operation.

① Stroke

① Stroke (mm)	EC-R7	① Stroke (mm)	EC-R7
50	○	**200**	○
100	○	**250**	○
150	○	**300**	○

② Cable Length

Cable code	Cable length
0	No cable (with connector)
1 to 3	1 to 3m
4 to 5	4 to 5m
6 to 10	6 to 10m

② Options

Type	Option code	Reference page
Brake	**B**	See P.29
Flange (front)	**FL**	See P.29
Foot bracket	**FT**	See P.29
Tip adapter (Internal thread)	**NFA**	See P.30
Non-motor end specification	**NM**	See P.30
PNP specification	**PN**	See P.30
Battery-less Absolute Encoder specification	**WA**	See P.30

Actuator Specifications

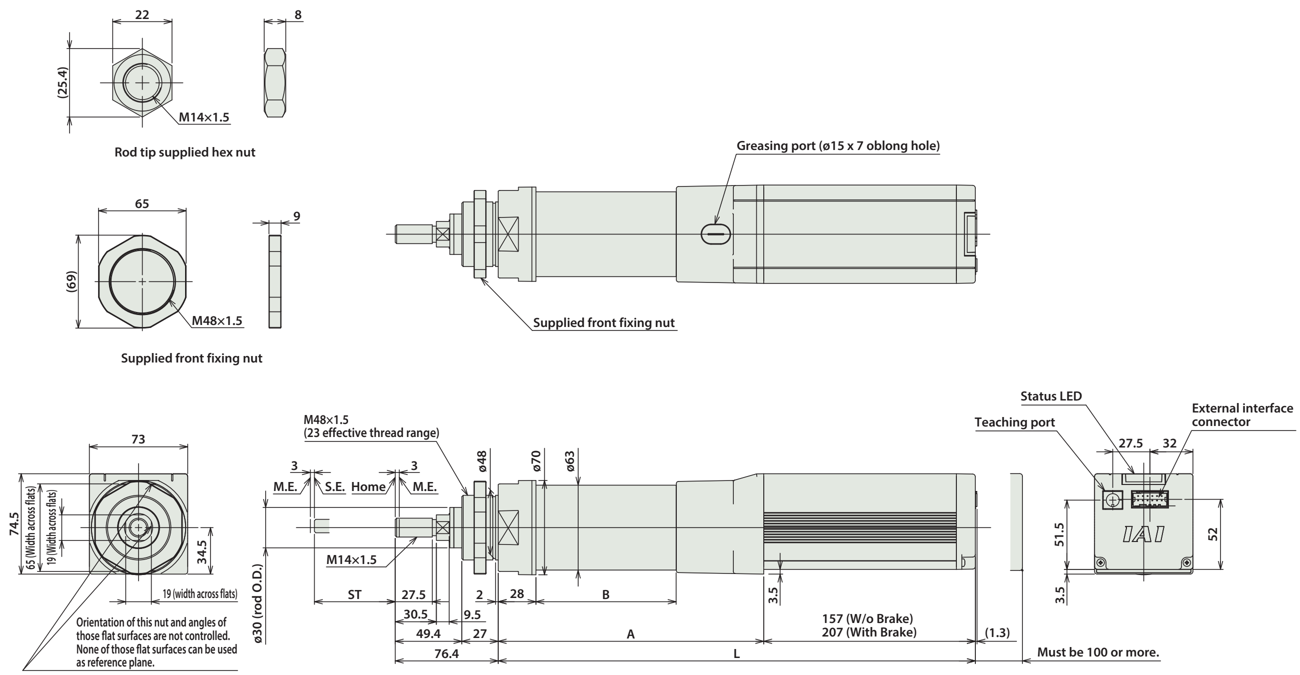
Item	Description
Drive system	Ball screw ø12mm, rolled C10
Positioning repeatability	±0.05mm
Rod	ø30 Material: Aluminum, hard alumite treatment
Static allowable torque on rod tip	0.5N·m
Rod tip maximum angular displacement (*)	±1.5 degrees
Ambient operating temperature/humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*) The rod tip angular displacement (initial value for reference) when the rod tip static allowable torque is applied with the rod fully retracted.

Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com
2D CAD 3D CAD

*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
M.E: Mechanical end S.E: Stroke end



■ Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300
L	W/o Brake	354	404	454	504	554	604
	With Brake	404	454	504	554	604	654
A		197	247	297	347	397	447
B		104	154	204	254	304	354
Weight (kg)	W/o Brake	3.3	3.5	3.7	3.9	4.1	4.3
	With Brake	3.5	3.7	3.9	4.1	4.3	4.5

Controller Side Options

Name	Touch Panel Teaching Pendant	PC software	24VDC power supply
External view			
Model	TB-02-C	RCM-101-MW (RS232 connection version)	PS-241 (100V input)
		RCM-101-USB (USB connection version)	PS-242 (200V input)
Overview	A teaching device equipped with functions such as start point, end point, and AVD input, trial operation, and monitoring	Software for start point input, end point input, and AVD input, trial operation, and monitoring using a PC	Power supply with maximum instantaneous output of 17A

* For system configurations using the above tools, refer to P.33.

ELECYLINDER Series Options

Brake

Model B **Applicable Models** All Models

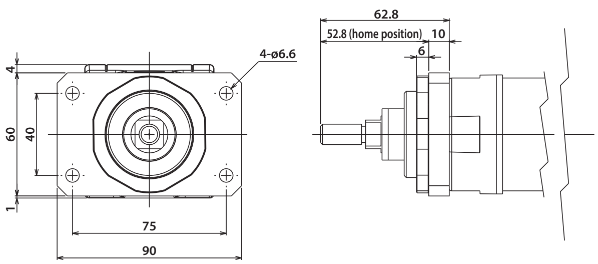
Description When used vertically, this works as a holding mechanism that prevents the slider or rod from falling and damaging any attached fittings when the power or servo is turned off.

Flange (front)

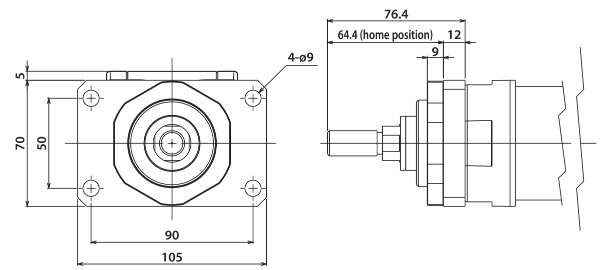
Model FL **Applicable Models** EC-R6/R7

Description A bracket that attaches to the actuator body with bolts.

EC-R6 Model number of single product: EC-FL-R6
* Not shipped assembled. Refer to the drawing to mount.



EC-R7 Model number of single product: EC-FL-R7
* Not shipped assembled. Refer to the drawing to mount.



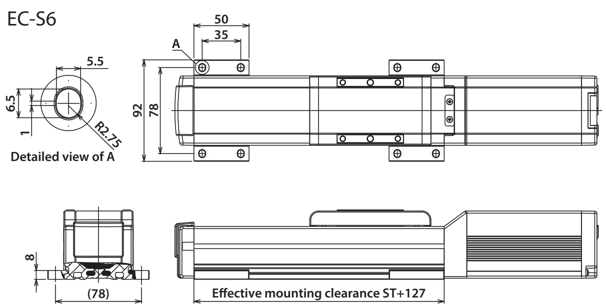
Foot bracket

Model FT **Applicable Models** EC-S6/S7/R6/R7

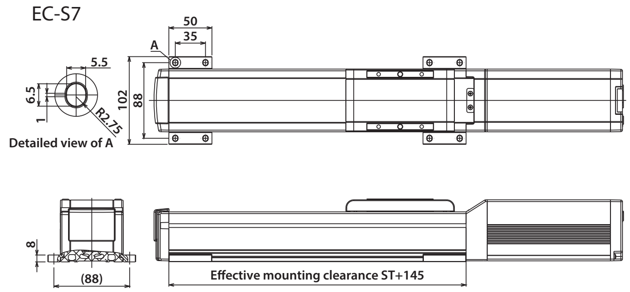
Description This is a bracket used to fix the actuator with bolts from the top side. (Bolts are tightened from the top, not from the bottom)

EC-S☐ Model number of single product: EC-FTSB
* Not shipped assembled. Refer to the drawing to mount.

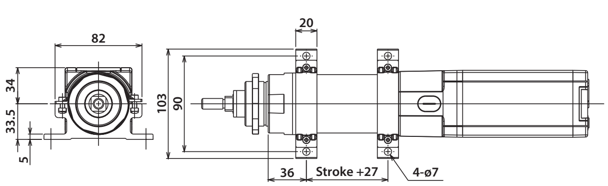
EC-S6



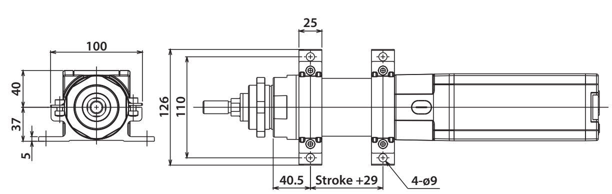
EC-S7



EC-R6 Model number of single product: EC-FT-R6
* Not shipped assembled. Refer to the drawing to mount.



EC-R7 Model number of single product: EC-FT-R7
* Not shipped assembled. Refer to the drawing to mount.

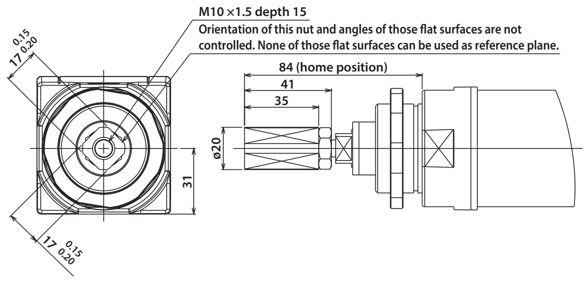


Tip adapter (Internal thread)

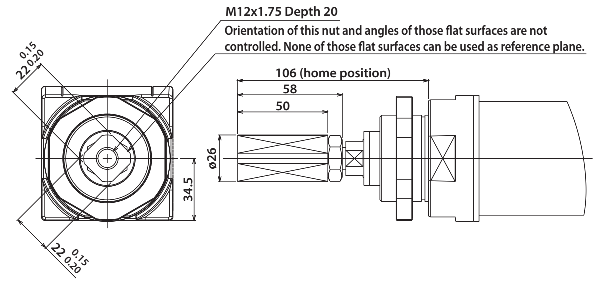
Model **NFA** **Applicable Models** **EC-R6/R7**

Description A rod tip tooling adapter with 1 threaded hole.

EC-R6 Model number of single product: EC-NFA-R6



EC-R7 Model number of single product: EC-NFA-R7



Non-motor end specification

Model **NM** **Applicable Models** **All Models**

Description The normal home position is set by the slider and rod on the motor side, but there is the option for the home position to be on the other side to accommodate variations in equipment layout, etc.

PNP specification

Model **PN** **Applicable Models** **All Models**

Description The EC series offers NPN specification input/output for connecting external devices as standard.
Specifying this option changes input/output to PNP specification.

Battery-less Absolute Encoder specification

Model **WA** **Applicable Models** **All Models**

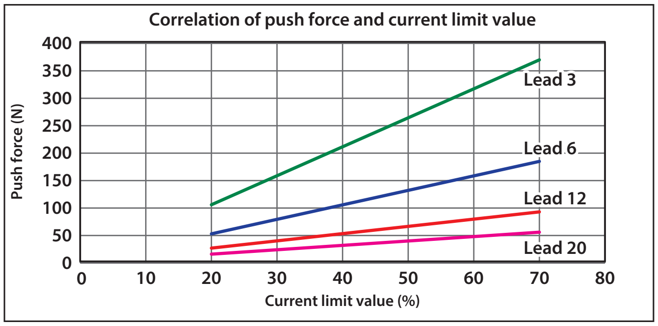
Description The EC series offers incremental encoder specification as standard.
Specifying this option installs a built-in battery-less absolute encoder.

Correlation of push force and current limit value

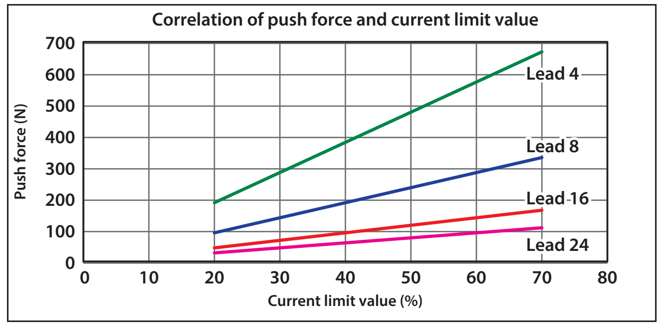
In pressing operation, the push force can be changed by setting the current limit value of the controller between 20% and 70%.
The maximum push force will vary depending on the model, so please refer to the graphs below and on the following page, and select a type based on the needed push force for your intended use.

Correlation of Push Force and Current Limit Value

EC-S6/R6

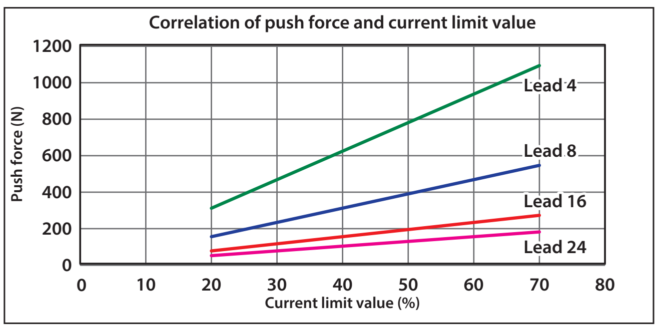


EC-S7



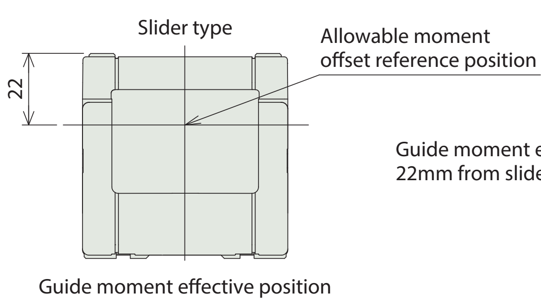
* During push motion, the speed is fixed to 20 mm/s. If the velocity setting value (V) is less than 20 mm/s, the speed setting of V is used for the push speed but the push force will be unstable.

EC-R7



■ Notes for Slider Type

When performing the push-motion operation with the slider type, please limit the push current in order that the reactive moment caused by the push force does not exceed the dynamic allowable moment (Ma, Mb) specified in the catalog (It should be 80% or less of the dynamic allowable moment for the slider type).
Please refer to the figures below, which show the working point of the guide moment, for help with calculating the moment. This can be done by considering the offset of the push force application position.
Please note that if excessive force which exceeds the dynamic allowable moment is applied, it may damage the guide and shorten its service life. Please keep this in mind and select a push current that is safely within its limits.

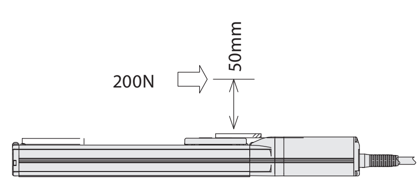


Guide moment effective position:
22mm from slider top surface (both S6/S7)

Calculation example)

When 200N push operation is performed with EC-S7 at the position shown in the figure at right, the moment applied to the guide is:

$$Ma = (22+50)\times 200 = 14400\ (N\cdot mm)$$
$$= 14.4\ (N\cdot m).$$



The dynamic allowable moment for EC-S7 is Ma = 17.7 (N•m), which means it is OK since 17.7 > 14.4.
Also, should an Mb moment occur due to the push operation, calculate the moment from the overhang and ensure that it is within range of the dynamic allowable moment.

Duty cycle

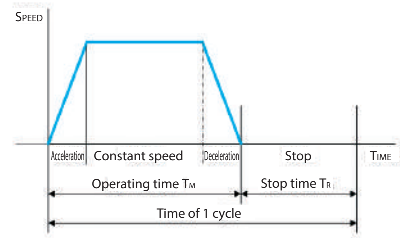
Duty cycle is the percentage of the actuator's active operation time in each cycle.

The duty ratio for each ELECYLINDER type is limited to the values below.
*** The data below is applicable even during operation at maximum velocity/acceleration/deceleration.**

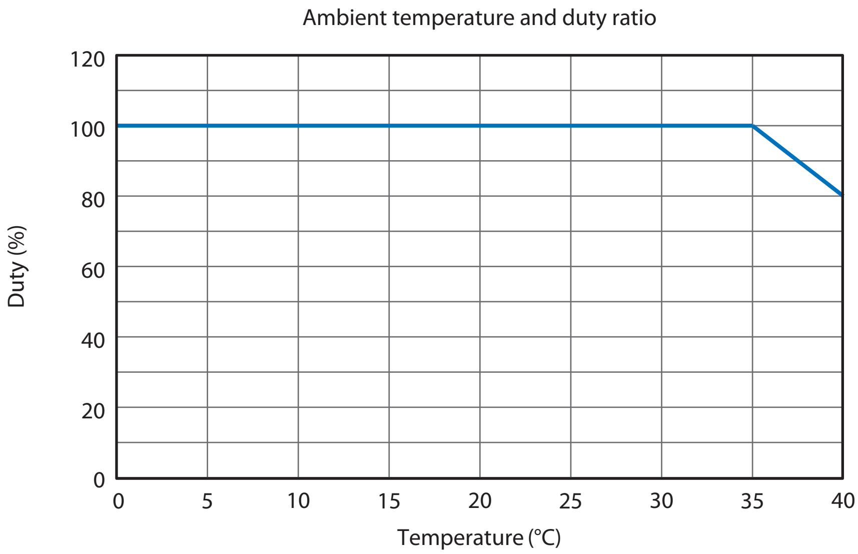
[Duty Cycle]
The duty ratio is the operating rate shown as the actuator's operating time during one cycle in %.

$$D = \frac{T_M}{T_M + T_R} \times 100\ (\%)$$

D: Duty
T_M: Operating time (including pressing operation)
T_R: Stop time

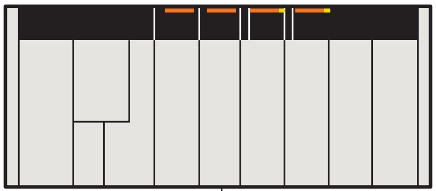


■ Ambient temperature and duty ratio



System Configuration

PLC



Sold separately

24VDC power supply

(Refer to page 6-239 of the General Catalog 2017)

<Model: PS-241 (100V input)>

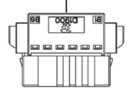
<Model: PS-242 (200V input)>

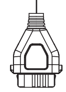
<Wires>
For "24V" and "0V", the thickness should be AWG18.
For others, it should be AWG26 or higher.
* All cables should be 10m or shorter.

Accessories

Power / I/O connector

Connector for connecting customer-side power wiring.





Accessories

Power / I/O cable

(See P. 35)

<Model: CB-EC-PWBIO□□□-RB>

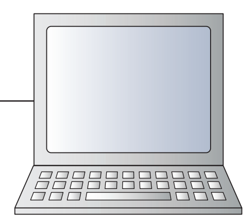
Cable for connecting power and PLC I/O signals.

Sold separately

Touch Panel Teaching Pendant

(See P. 35)

<Model: TB-02-□>



Sold separately

PC software

(5m cable included)

(See P. 35)

RS232 connection version
<Model: RCM-101-MW>

USB connection version
<Model: RCM-101-USB>

List of Accessories

Product category	Accessories
Without EC power / I/O cable	Power / I/O connector (1-1871940-6)
With EC power / I/O cable	Power / I/O cable (CB-EC-PWBIO□□□-RB)

Basic Controller Specifications

Specification item			Specification content
Number of controlled axes			1 axis
Power supply voltage			24VDC ±10%
Power capacity			Rated 3.5A, max. 4.2A
Brake release power supply			24VDC ±10%, 200mA (only for external brake release)
Generated heat			8W (at 100% duty)
Inrush current			8.3A (with inrush current limit circuit)
Momentary power failure resistance			max 500μs
Motor size			□42, □56
Motor rated current			1.2A
Motor control method			Weak field vector control
Supported encoders			Incremental (800pulse/rev), battery-less absolute encoder (800pulse/rev)
SIO			RS485 1ch (Modbus protocol compliant)
PIO	Input specification	Number of input	3 points (forward, backward, alarm clear)
		Input voltage	24VDC ±10%
		Input current	5mA/1 circuit
		Leakage current	max 1mA/1 point
		Isolation method	Non-isolated
	Output specification	No. of output	3 points (forward complete, backward complete, alarm)
		Output voltage	24VDC ±10%
		Output current	50mA/1 circuit
		Residual voltage	2V or less
		Isolation method	Non-isolated
Data setting and input methods			PC software, touch panel teaching pendant
Data retention memory			Position and parameters are saved in non-volatile memory. (No limit to rewrite)
LED display			Servo ON (green light ON) / Alarm (red light ON) / Initializing when power comes ON (orange light ON) Operation from teaching: Stop from teaching (red light ON) / Servo OFF (light OFF)
Predictive maintenance/Preventive maintenance			When the number of movements or operation distance has exceeded the set value and when the LED blinks alternately green and red at overload warning * Only when configured in advance
Ambient operating temperature			0 to 40°C
Ambient operating humidity			85% RH or less (no condensation or freezing)
Operating ambience			Avoid corrosive gas and excessive dust
Insulation resistance			500VDC 10MΩ
Electric shock protection mechanism			Class 1 basic insulation
Cooling method			Natural air cooling

I/O Signal Table

Power / I/O connector pin assignment		
24V		24V
0V		0V
Brake		Brake release
Input	0	Backward
	1	Forward
	2	Alarm cancel
Output	0	Backward complete/push complete 0 (LS0)
	1	Forward complete/push complete 1 (LS1)
	2	Alarm

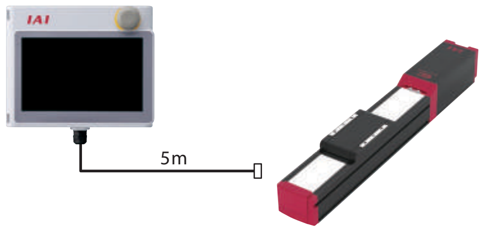
Options

Touch Panel Teaching Pendant

■ **Features** A teaching device equipped with functions such as position teaching, trial operation, and monitoring.

■ **Model** **TB-02-□** Please contact IAI for the current supported versions.

■ **Configuration**



■ **Specifications**

Rated voltage	24V DC
Power consumption	3.6W or less (150mA or less)
Ambient operating temperature	0 to 40°C
Ambient operating humidity	20~ 85% RH (Non-condensing)
Environmental resistance	IP20
Mass	470g (TB-02 unit only)

PC software (Windows only)

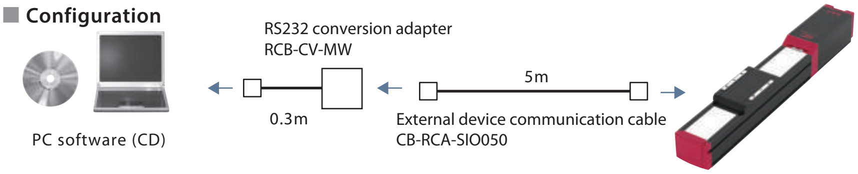
■ **Features** The start-up support software which comes equipped with functions such as position teaching, trial operation, and monitoring.
A complete range of functions needed for making adjustments contributes to shortened start-up time.

Supported Windows versions: 7/8/10

■ **Model** **RCM-101-MW (with an external device communication cable + RS232 conversion unit)**

Please contact IAI for the current supported versions.

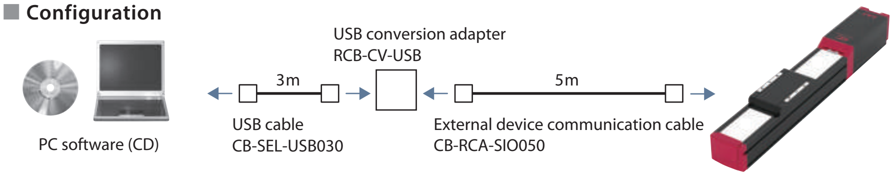
■ **Configuration**



■ **Model** **RCM-101-USB (with an external device communication cable +USB conversion adapter + USB cable)**

Please contact IAI for the current supported versions.

■ **Configuration**



Maintenance Parts

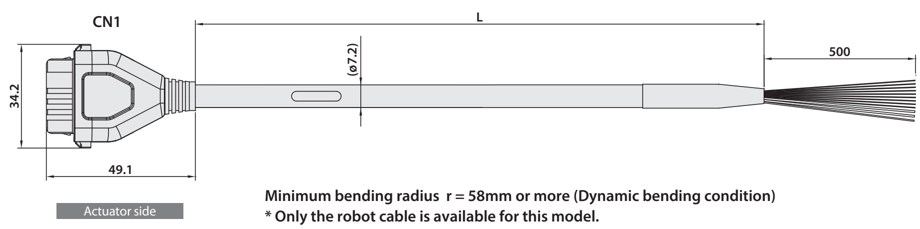
When placing an order for a replacement cable, please use the model name shown below.

■ **Table of compatible cables**

Model name	Power / I/O cable
EC	CB-EC-PWBIO□□□-RB

Model **CB-EC-PWBIO□□□-RB**

* Please indicate the cable length (L) in □□□,
E.g.) 030 = 3m

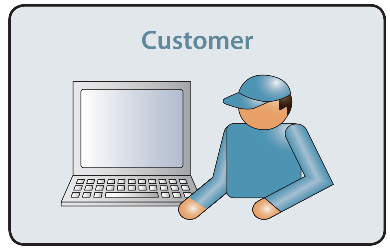


Color	Signal name	Pin No.
Black (AWG18)	0V	A1
Red (AWG18)	24V	B1
Light blue (AWG22)	(reserve)	A2
Orange (AWG26)	IN0	B3
Yellow (AWG26)	IN1	B4
Green (AWG26)	IN2	B5
Pink (AWG26)	(reserve)	B6
Blue (AWG26)	OUT0	A3
Purple (AWG26)	OUT1	A4
Gray (AWG26)	OUT2	A5
White (AWG26)	(reserve)	A6
Brown (AWG26)	BKRLS	B2

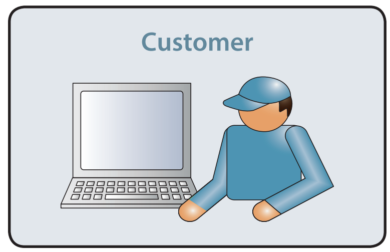
Minimum bending radius r = 58mm or more (Dynamic bending condition)
*** Only the robot cable is available for this model.**
(Standard non robot cable unavailable)

Select and Inquire from Website!

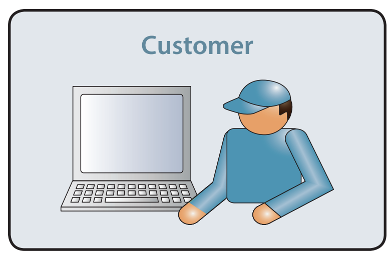
1 Access the IAI website https://www.intelligentactuator.com/ec2



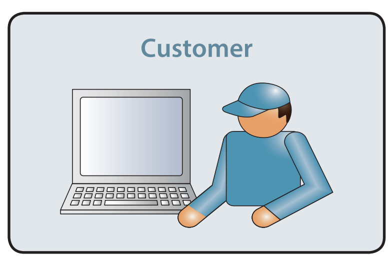
2 Select product



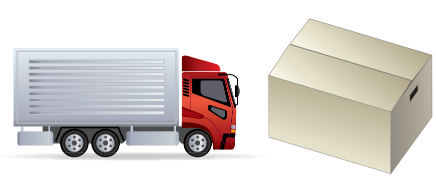
3 Check follow up email

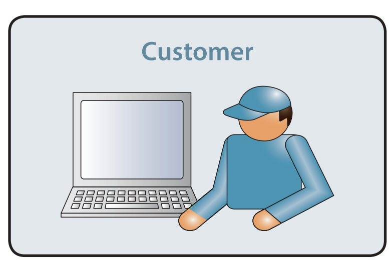


4 Order/Sales Call



5 Delivery





IAI offers a complete national and international support network

SUPPORT A network of authorized representatives in the US to serve you.

Support for phase of planning, product selection, quotation, problem solving, maintenance, training, etc.

http://www.intelligentactuator.com/inquiry/

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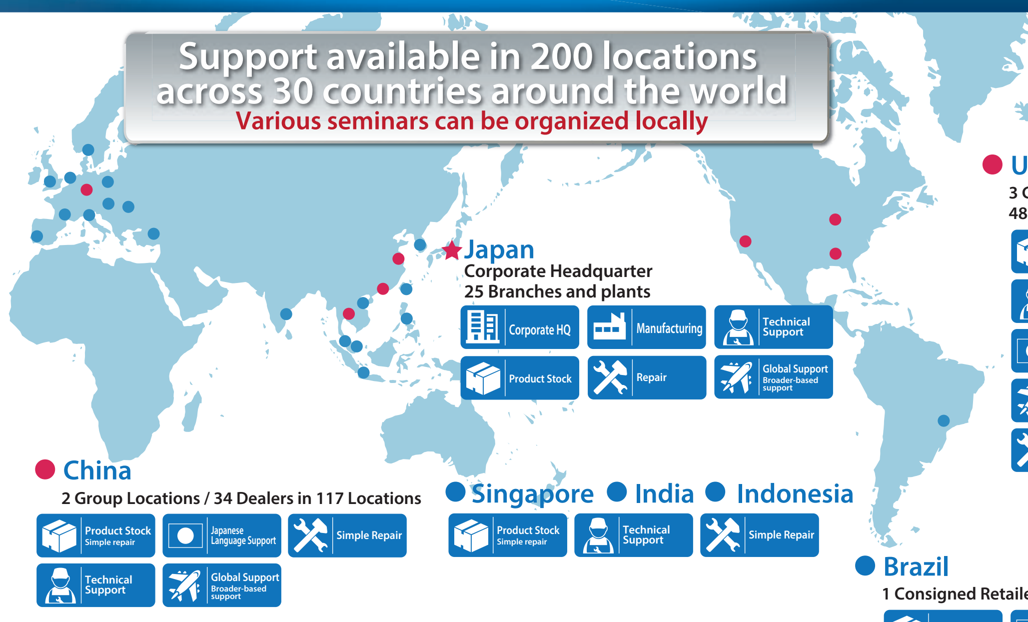
The information contained in this booklet may change without prior notice due to product improvement.

Contact us for your local distributor information.

International Network

Support available in 200 locations across 30 countries around the world

Various seminars can be organized locally



Europe
1 Group Location
22 Dealers
- Product Stock (Simple repair)
- Technical Support
- Japanese Language Support
- Global Support (Broader-based support)
- Simple Repair

Japan
Corporate Headquarter
25 Branches and plants
- Corporate HQ
- Manufacturing
- Technical Support
- Product Stock
- Repair
- Global Support (Broader-based support)

USA
3 Group Locations
48 Dealers
- Product Stock (Simple repair)
- Technical Support
- Japanese Language Support
- Global Support (Broader-based support)
- Simple Repair

Thailand / Philippines / Malaysia
3 Group Locations
- Product Stock (Simple repair)
- Technical Support
- Japanese Language Support
- Simple Repair

China
2 Group Locations / 34 Dealers in 117 Locations
- Product Stock (Simple repair)
- Japanese Language Support
- Simple Repair
- Technical Support
- Global Support (Broader-based support)

Singapore / India / Indonesia
- Product Stock (Simple repair)
- Technical Support
- Simple Repair

South Korea / Taiwan / Vietnam
- Product Stock (Simple repair)
- Technical Support
- Japanese Language Support
- Simple Repair

Brazil
1 Consigned Retailer
- Product Stock (Simple repair)
- Japanese Language Support
- Technical Support
- Simple Repair

MEMO

Catalog No. CE0250-2A (0617)

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