

# IAI Product Lineup

29th revised Edition

**Electric Actuators & Small Robots for  
Smart Industrial Automation**



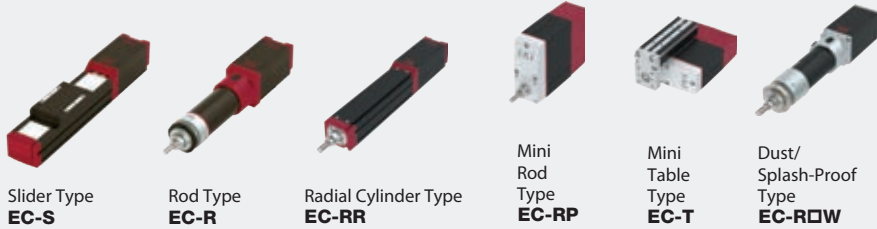
# Advancing into a new Era switching Air to EleCylinder

Coming Soon

Designed to move between two points just like Air Cylinder  
Speed / Acceleration / Deceleration can be set in just 5 minutes.

**EC**  
ELECYLINDER

## ELECYLINDER EC SERIES



- Simple model selection & operation
- Start and end points can be set at any value.
- **A** (Acceleration), **V** (Velocity), **D** (Deceleration), A.V.D. can be adjusted individually.
- Few maintenance parts
- Stable velocity. Cycle time can be reduced.
- Long service life.

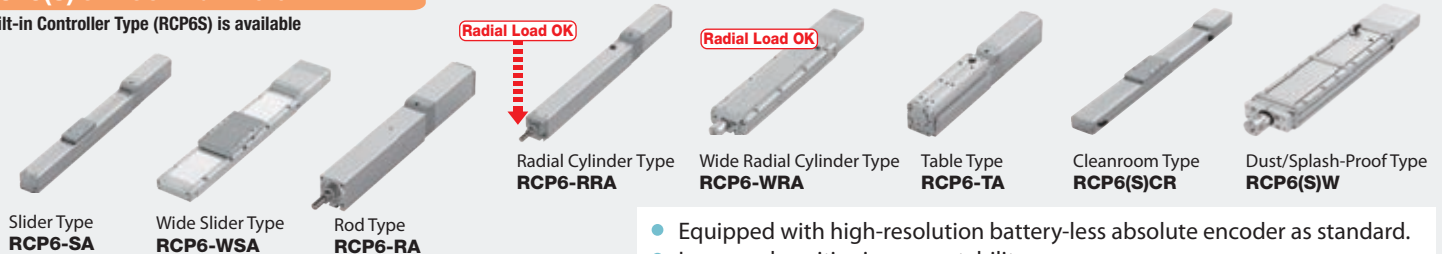
## Next Generation RoboCylinder RCP6

From an abundant lineup of 92 total models, you can find one that is most suitable for your needs.



### RCP6(S) SERIES STRAIGHT MOTOR TYPE

\*Built-in Controller Type (RCP6S) is available



- Equipped with high-resolution battery-less absolute encoder as standard.
- Improved positioning repeatability:  $\pm 10\mu\text{m}$  (Standard Type),  $\pm 5\mu\text{m}$  (High-Precision specification).
- PowerCon compatible.
- Built-in Controller (RCP6S) can be selected for every type.
- Cleanroom and Dust/Splash-Proof specification series available.

### RCP6(S) SERIES SIDE-MOUNTED MOTOR TYPE

\*Built-in Controller Type (RCP6S) is available



## Servo Press Compatible RoboCylinder with Load Cell

Coming Soon

Compact and low-thrust rod type actuator that can even be used for simple pressing. The high-precision position control enables easy adjustment of the push force and the position control, typically difficult for hydraulic equipment. 8 types from a range of 20N - 50000N are available.

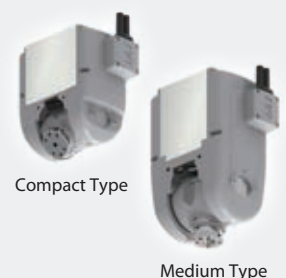


- Loading repeatability is  $\pm 0.5\%$ . Supports traceability.
- Variety of product groups: 8 models in the lineup.
- Setting is easy by using a dedicated software.
- Newly developed 3kW motor driver achieved max. Thrust of 5t and max. Speed of 220mm/sec.
- With Battery-less Absolute Encoder as Standard.
- High Payload Rod Types without Load Cell also available: max. Payload of 1/0.6t (horizontal/vertical).



## Wrist Unit

IAI's unique design makes the parts light and compact. Low cost compared to 6-axis articulated robots. Orthogonal axes and interpolation commands are possible.



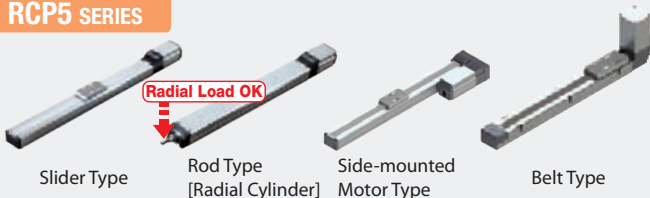
# RoboCylinder



These affordable, highly precise and highly rigid actuators have 1/5th the running cost of a pneumatic system

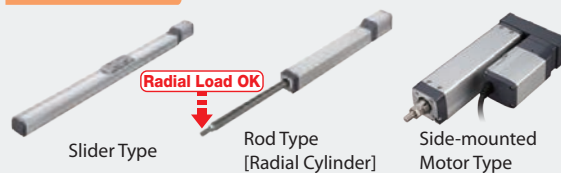
RoboCylinder is high-performance electric actuator equipped with a ball screw, linear guide, and servo motor. These next-generation actuators have multi-point positioning capability as well as the ability to change speed and acceleration, unlike anything seen with air cylinders.

## RCP5 SERIES



- Battery-less absolute encoder as standard equipment.
- By using a PowerCon, it has 1.5 times higher speeds and double the payload compared to traditional models.

## RCP4 SERIES



- By using a PowerCon, it has 1.5 times higher speeds and double the payload compared to traditional models.

## RCP3 SERIES



Table Type

## RCP2 SERIES PULSE MOTOR TYPE WITH HIGH PERFORMANCE



Slider Type

Rod Type

Belt Type

High Thrust Type

## RCP4/RCP2/RCD GRIPPER



Flat Type

Small Type

## RCP6-GRT HIGH FORCE GRIPPER



Slim Type



Slider Type

Rotary Type

High Force Gripper

3-finger-Gripper

Short Body Type

Short Body Type with Guide

Large Type

Mini Slider Type

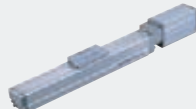
- A high push force is achieved utilizing the characteristics of pulse motors.
- An abundance of sizes and variations is available to meet a wide range of applications.

- Equipped with a Battery-less Absolute Encoder.
- Flat Shape with height of 39mm.
- High Rigidity.

## RCA2 SERIES



Table Type



Slider Type

## RCA SERIES 24V SERVO MOTOR TYPE



Rod Type

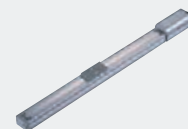


Side-mounted Motor Rod Type



Rod Type with Guide

- Shaped similar to a rod-type air cylinder, these actuators accept various mounting brackets that are used on air cylinders.
- Three motor installation methods are available to choose from.
- An optional home check sensor can be set.



Slider Type



Side-mounted Motor Slider Type

## RCS3 SERIES



Aluminum-base Type



Steel-base Type



High-speed Slider Type  
**RCS3-CT8C**



High-speed Table Type  
**RCS3-CTZ5C**

## RCS2 SERIES 230V SERVO MOTOR TYPE



Slider Type



Side-mounted Motor Slider Type



Slim Rod Type



Gripper Type



Ultra-high-thrust Rod Type



Rod Type with Guide



Large Diameter Hollow Rotary Type

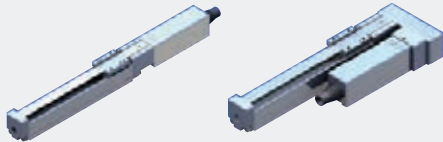
- Equipped with a servo motor, these actuators support high loads and long strokes.
- When an XSEL controller is used, you can combine three or more axes.
- Compatible with Profibus, DeviceNet, CC-Link, and other field networks.

# Mini RoboCylinder

Next-generation electric actuators, the solution for space constrained applications

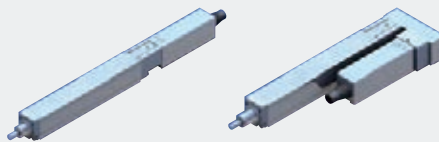


## RCP3 MINI SLIDER TYPE



Motor Coupled Type      Side-mounted Motor Type

## RCP3 MINI ROD TYPE



Motor Coupled Type      Side-mounted Motor Type

## RCA2 MINI SLIDER TYPE



Motor Coupled Type      Side-mounted Motor Type

- Replacement is simple with the coupled type motor.
- You can choose from the straight type (motor coupled type) and the side-mounted motor type.

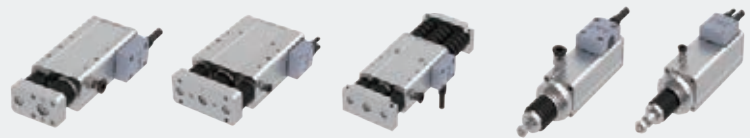
## RCA2/RCS2 MINI ROD TYPE



Short Nut-mounting Type      Short Tapped-hole Mounting Type

## RCA2/RCS2 MINI ROD TYPE

CLEANROOM DUST/SPLASH-PROOF



Cleanroom Type & Dust-/Splash-proof Type



Short Free Mounting Type with Single Guide      Short Free Mounting Type with Double Guides      Short Slide Unit Type with Double Guides

## RCA2 MINI ROD TYPE



Motor Coupled Type      Side-mounted Motor Type

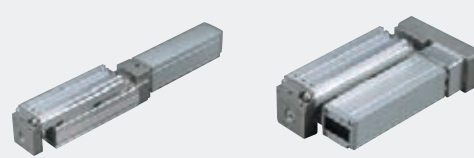
- You can choose between the slim motor coupled type and the short free mounting type, that has significantly reduced in length.
- You can choose between built-in guide type which allows for increased rigidity and straightness, or the external guide type which has significantly been reduced in size.

## RCA2/RCS2 MINI TABLE TYPE



Short Compact Type      Short Wide Type      Short Flat Type

## RCP3/RCA2 MINI TABLE TYPE



Motor Coupled Type      Side-mounted Motor Type

- The built-in guide allows the actuator to hold overhung loads.
- You can choose between the compact short type and the motor coupled type with longer stroke.

## RCD MICRO CYLINDER



Ultra-compact Type

- The smallest in the industry with a cross-section size of 12mm.
- The built-in encoder allows position control.

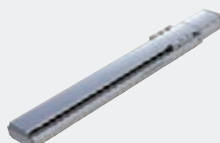


# Single-axis Robots

Intelligent actuators with high-speed and high-transfer capabilities



Standard Type: **ISB**  
High-precision Type: **ISPB**



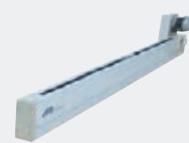
High-rigidity Type  
(Steel-base)  
**SSPA**



Simple Dust-proof Type  
**ISDB/ISPD**



High-rigidity  
Belt-drive Type  
**IF**



Slim Belt-drive Type  
**FS**



Rotary Type  
**RS**



Nut Rotational Type  
**NS**

- ISB/ISDB Series equipped with Battery-less Absolute Encoder as standard.
- ISB/ISDB High-speed Type equipped with 3x lead ball screws.
- Many variations are available to meet diverse applications.
- The guide is integrated with the base for the linear actuators.

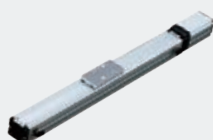
## Cleanroom Types

Dedicated cleanroom types conforming to ISO cleanliness class 2.5 \*

\* ISO Standard 14644-1:2015 (according to class 4 of previous ISO Standard 14644-1:1999)



Pulse Motor  
**RCP6(S)CR**



Pulse Motor  
**RCP5CR**



Pulse Motor  
**RCP4CR**



Servo Motor  
**RCACR**



Servo Motor  
**RCS2CR/RCS3CR**



High-performance Type  
**ISDBC/ISPDBC**



Anti-static Type  
**ISDBC-ESD**



Gripper Type  
**RCP2CR-GR**



Rotary Type  
**RCP2CR-RT**



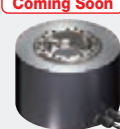
Coming Soon  
SCARA Robot  
**IXP-□C**



Coming Soon  
SCARA Robot  
**IX-NNC**



Ultra-compact  
SCARA Robot  
**IX-NNC**



Direct Drive  
Motor  
**DDACR**

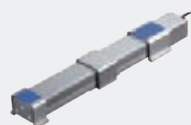
- A well sealed structure allows it to achieve ISO cleanliness class 2.5.
- A wide variety of products are available, from RoboCylinder all the way to single-axis actuators and SCARA robots.

## Splash-proof/Dust-proof Types

These actuators offer protection conforming to IP54~IP67, and are a desirable solution when operated in adverse environments.



Pulse Motor  
Rod / Radial Cylinder Type  
**RCP5W-RA6/7/8/10**  
**RCP6(S)W-R(R)A4/6/7/8**  
**RCP6(S)W-WRA10/12/14/16**



Pulse Motor Slider Type  
**RCP4W-SA5/6/7**



Pulse Motor Rod Type  
**RCP4W-RA6/7**



Pulse Motor Slider Type  
**RCP2W-SA16C**



Pulse Motor Rod Type  
**RCP2W-RA4C/RA6C**



Pulse Motor  
High-thrust Rod Type  
**RCP2W-RA10C**



Servo Motor Rod Type  
**RCS2W-RA4**  
**RCAW-RA3/4**



Gripper Type  
**RCP2W-GR**



Rotary Type  
**RCP2W-RT**



Slider Type  
**ISWA/ISPPWA**



Coming Soon  
SCARA Robot  
**IXP-□W**



Coming Soon  
SCARA Robot  
**IX-NNW**

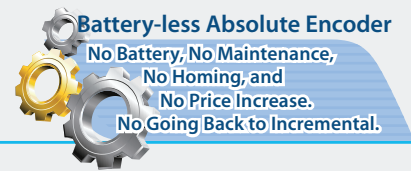


Coming Soon  
Direct Drive Motor  
**DDW**

- These actuators handle environments with extreme dust or water splashes.
- Many variations are available to meet diverse applications.

# IXP Series PowerCon SCARA Robots

All models come standard with battery-less absolute encoders



**POWERCON SCARA ROBOT** ARM LENGTH 180/250/350/450/550/650mm



Standard Type



Gripper Type



Coming Soon  
Splash-proof/  
Dust-proof Type



Coming Soon  
Cleanroom Type

- All models come standard with battery-less absolute encoders.
- The encoder resolution has increased to 10 times that of the existing IXP.
- The cost of IXP is around half of the traditional models.
- Lighter than conventional models.
- The regular cycle time is about 60% shorter than conventional cartesian robots.
- Added 3-axis specification, 4-axis with gripper specification.
- Equipped with optimal speed and acceleration/deceleration settings.

# IX Series SCARA Robots

The IX SCARA robots feature high performance and functionality



**SCARA ROBOT** ARM LENGTH 250/350/500/600/700/800mm



Standard Compact Type



Standard Medium Type



Standard Large Type



High-speed Type



Wall Type



Ceiling Type

- Achieves high speeds, payload and precision.
- Easy programming makes these actuators much more user-friendly.
- It supports a wide variety of arm lengths, ranging from 250mm to 800mm.

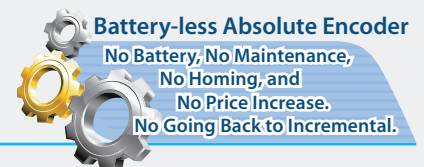
**ULTRA-COMPACT SCARA** ARM LENGTH 120/150/180mm



- The compact size of the robot allows you to reduce the size of your production equipment.
- The rated payload of 0.2kg can be increased up to a maximum of 1kg.
- High-speed performance with a cycle time of 0.35sec.

# TTA Series Tabletop Robots

Improved tabletop robots for cell productions, R&D applications, and more



**Gate Type**

**Cantilever Type**



2-axis Specification



3-axis Specification



4-axis Specification



2-axis Specification



3-axis Specification



4-axis Specification

- Every model equipped with battery-less absolute encoder as standard.
- AC Servo Motor specification added to the series.
- Max. payload: X-axis: 30kg Z-axis: 15kg (AC servo motor), Max. speed: XY-axis: 1200mm/s Z-axis: 40mm/s (AC servo motor)
- Improved positioning repeatability:  $\pm 0.005\text{mm}$  (AC servo motor) /  $\pm 0.01\text{mm}$  (Pulse motor spec)
- The SEL Program Generator eliminates the tedious work of program creation.

# DDA Direct Drive Motors

Coming Soon

High speed/payload/precision, easy control, and compact: A direct drive motor that achieved high cost-performance.



DDA/DDACR  
Slim Type

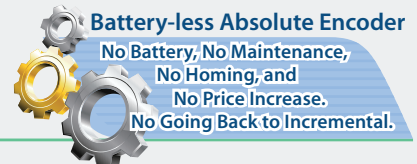


DDA/DDACR  
High Torque type

- Positioning repeatability  $\pm 0.00103$  degree ( $\pm 3.7s$ ), Index accuracy  $\pm 0.00833$  degree ( $\pm 30s$ ) with SCON-CB & High resolution type.
- Maximum speed of 1800°/s and acceleration/deceleration of 6.0G can make faster positioning time possible.
- Standard or Cleanroom specification (Hollow bore:  $\varnothing 52mm$ ), Slim or High-torque types in lineup. Flange option is available.

## Cartesian Robots

Pre-configured cartesian robots that reduce installation and setup times



### ICSB2/ICSPB2 2-AXIS CONFIGURATION



Y-axis Base Mount Type  
**XYB**



Y-axis Slider Mount Type  
**XYS**



Z-axis Base Mount Type  
**XZ**



Y-axis Base Mount Type  
**YZB**



Y-axis Slider Mount Type  
**YZS**

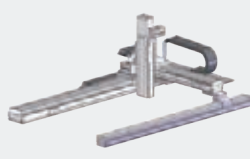


Gantry Type  
**XYG**

### ICSB3/ICSPB3 3-AXIS CONFIGURATION

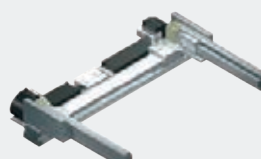


XYB + Z-axis Type  
B□□□□□

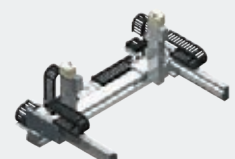


XYG + Z-axis Type  
G□□□□□

### ICSPA4 4-AXIS CONFIGURATION



### ICSPA6 6-AXIS CONFIGURATION



- Many variations are available to support 2 to 6-axis configurations.
- The multi-slider types (ICSPA4/ICSPA6) let you reduce space and cycle time.
- High resolution Battery-less Absolute Encoder is available.
- Any models can be customized to meet your specific needs.

## Cartesian RoboCylinder

Multi-axis RoboCylinder RCP2/RCP6/RCS2 kits at a reasonable price

### IK2-P/IK2-S 2-AXIS CONFIGURATION



Y-axis Base Mount Type  
**XYB**



Z-axis Upright Type  
**XZ**



Z-axis Base Mount Type  
**YZB**

### IK2-P6 2-AXIS CONFIGURATION

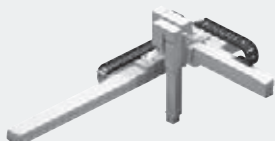


Y-axis Base Mount Type  
**XYB**



Z-axis Base Mount Type  
**YZB**

### IK3-P/IK3-S 3-AXIS CONFIGURATION



Y-axis + Z-axis Base Mount Type  
**XYB+Z**

### IK3-P6 3-AXIS CONFIGURATION



Y-axis + Z-axis Base Mount Type  
**XYB+Z**

### IK4-P6 4-AXIS CONFIGURATION



Y-axis Base Mount Type + ZR (Vertical/Rotation) Unit Type  
**XYB + ZR unit**

Coming Soon

- IK-P series: RCP2 combinations based on 24 VDC pulse motor.
- IK-S series: RCS2 combinations based on 230 VAC servo motor.
- IK-P6 series: RCP6 combinations based on 24 VDC pulse motor with battery-less absolute encoder and high-output driver specification (PowerCon).

# Controllers

A wide variety of operational patterns to fit your specific needs



**LC-LADDER**

Free Ladder Programming Software is available for our controller with PLC function

## POSITION CONTROLLER

**PSEP**



For RCP2/RCP3

**ASEP**



For RCA/RCA2

**DSEP**



For RCD

- 3-position controllers.
- Use the same signals as air-cylinder solenoid valves.
- Standard and dust-proof specifications are available.
- The dust-proof specification has a protective structure conforming to IP53, allowing it to be installed outside the control panel.

**PCON-CB**  
(PowerCon)



For RCP6/5/4/3/2

**ACON-CB**



For RCA/RCA2

**DCON-CB**



For RCD

**SCON-CB**



For RCS2/RCS3/Single-axis

**SCON-CAL**



For RCS2/RCS3/Single-axis/Cartesian

- PowerCon archives 150% more output compared to the traditional models. It supports RCP5 with a battery-less absolute encoder.
- Up to 512 positions can be set.
- DeviceNet, CC-Link and other field networks can be supported.
- SCON-CB comes with vibration control function.
- SCON-LC and MCON-LC with PLC function are coming soon.

**MCON**

For RoboCylinder, CON Series 8-axis Type



**MSEP-LC**

For RoboCylinder, 6-axis Type with PLC Function



**MSEP**

For RoboCylinder, 8-axis Type



**MSCON**

SCON Controller, 6-axis Type



- Supporting RCP6 with battery-less absolute encoder.
- Supporting PowerCon (High-output driver), and Mini Cylinder.

- Added PLC function (MSEP-LC).
- Supporting RCP5 with battery-less absolute encoder (MSEP-LC/C).
- Supporting PowerCon (High-output driver), and Mini Cylinder (MSEP-LC/C).

- For RCS2/3, combined 6 controllers into 1 controller.
- Supporting various field networks.

## PROGRAM CONTROLLER

**PSEL**



For RCP2/RCP3

**ASEL**



For RCA/RCA2

**SSEL**



1-2 axes  
For RCS2/RCS3/Single-axis

**X-SEL**



1-8 axes  
For RCS2/RCS3/Single-axis/SCARA

**MSEL**



For RCP6/RCP5/4/3/2/PowerCon SCARA

- PSEL/ASEL/SSEL controllers support interpolated operation and are used to set 1 or 2 axes.
- XSEL controllers can operate up to 8 axes.
- All controllers support DeviceNet, CC-Link and other field networks.

# Teaching Pendants

Programming points have never been easier  
Compatible with Safety Category



\*screen image

Touch Panel Teaching Pendant for Position Controllers and Program Controllers

**TB-02**

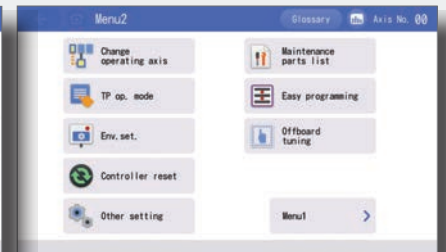


\*screen image

Touch Panel Data Setter (for EleCylinder also with Wireless Function)

**TB-03**

**Coming Soon**



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Quality and Innovation

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