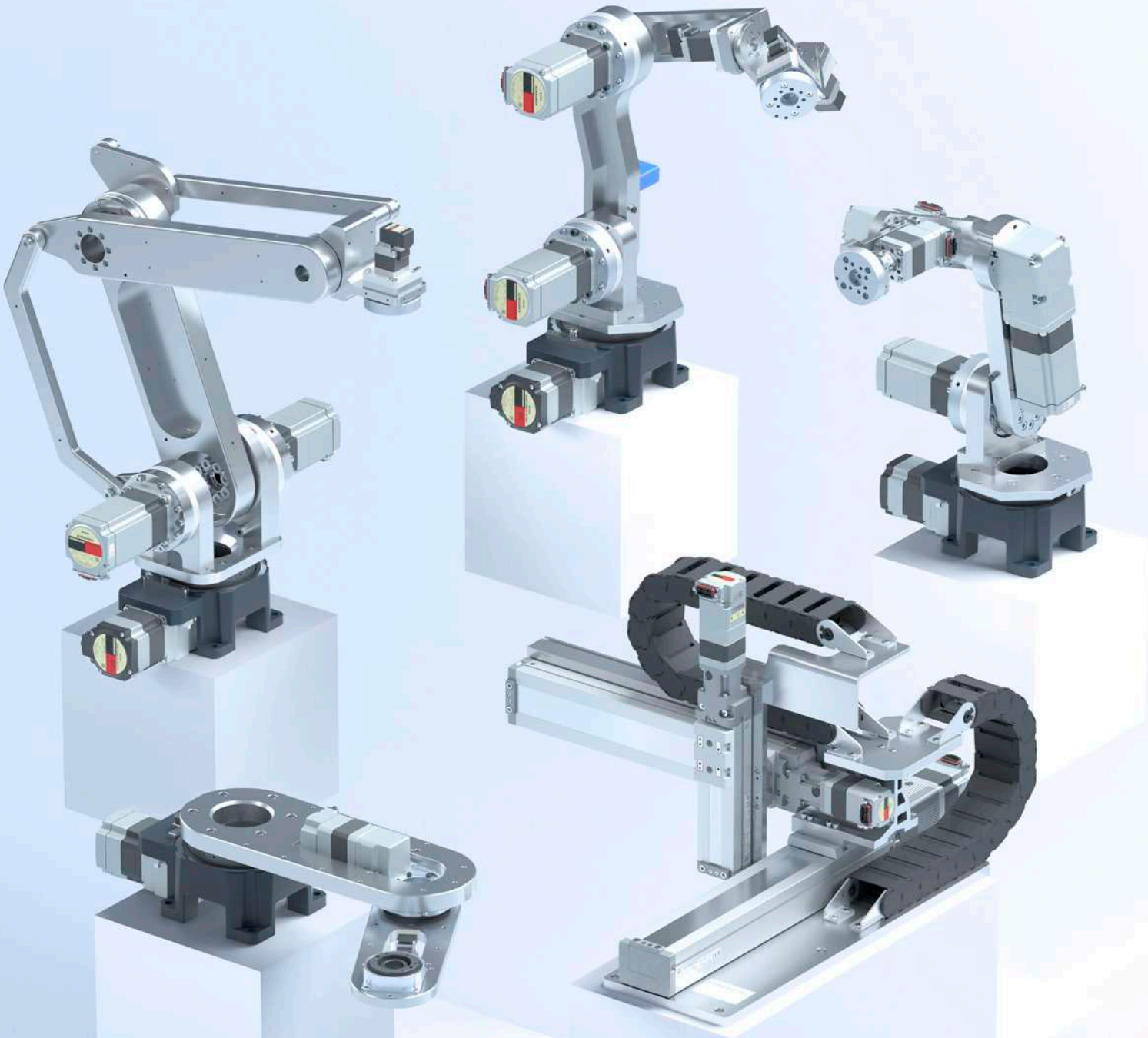
Oriental motor

Small Robots

OVR

Articulated/SCARA/Cartesian



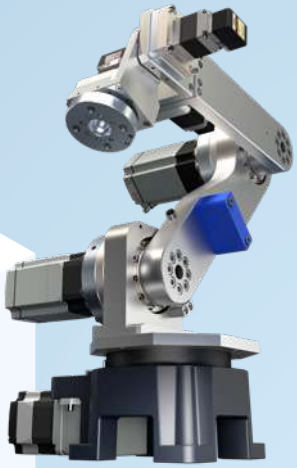
Small Robots for Simple Automation

OVR

Small Robots for Simple Automation

OVR

When a simple, small robot is the solution for automation.
When automation needs to be implemented quickly.
Oriental Motor is introducing the **OVR** Series of industrial robots to promote in-house production and advance automation.



Robot

The **OVR** Series is a small robot with a simple mechanism that can be easily controlled and constructed cost-effectively. We offer a range of compact shapes and operating mechanisms for modifying existing lines.

Controller

The controller makes operating the small robots **OVR** and **AZ** Series equipped mechanisms easy. Use commands for operation programming and simulations. Intuitive operation reduces the burden of robot deployment.



What are Oriental Motor's industrial robots and controllers?

Support

We work closely with you to ensure that using our OVR robots and controller becomes an outstanding experience. Our experts are ready to guide you step by step, helping you master the robot controller with ease whenever you need support.



Application Examples

▶Automating the Supply and Discharge of Workpieces

Fully automatic parts handling in confined spaces

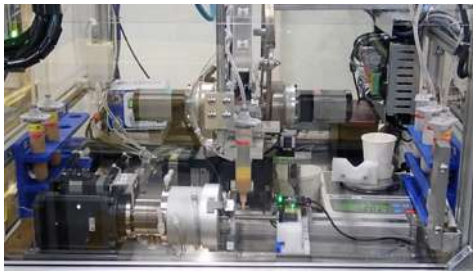
https://www.youtube.com/watch?v=0VsB-ETu8Ew



▶Coating equipment

Coat ball screws with grease using automation.

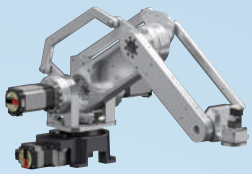
https://www.youtube.com/watch?v=8mydBKZ29Nc



Product Line of Industrial Robots and Controllers

Small Robots OVR

Articulated



4-Axis

Horizontal transport



5-Axis COMING SOON

Compact and Lightweight



6-Axis COMING SOON

Approach the load from various angles

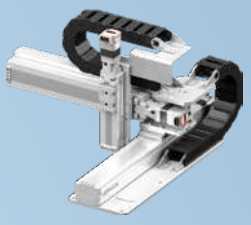
SCARA



3-Axis

Access narrow spaces

Cartesian



3-Axis COMING SOON

Reduced equipment startup time

Electric Lift



EL Series

Vertical Conveyor

Controller



Integrated Robot Controller & Drivers

MRCU Series

MRC01 and **AZ** Series driver in a single package



Robot Controller

MRC01

Simple control of a small robots **OVR**



Robot Controller

MRC01-C

Cartesian robot controller

Programming Software

MRC Studio

MRC Studio

(Free download)

Easy setup, from the initial configuration to the operation programming.

Various support for considering and utilising small robots OVR

We offer full customer support from the first step of considering robot use to product support and troubleshooting. Please contact your nearest Oriental Motor sales office for support.

- Startup and program creation support
- On-site demonstrations
- Simulation Software
- Inspection and Repair Services

▶Palletizing

The palletizing function of the robot controller **MRC01** + electric gripper.

https://www.youtube.com/watch?v=i8CW6OadBKg



▶Expanded moving range with linear slide

Takes advantage of the light weight to move on an electric linear slide.

https://www.youtube.com/watch?v=QW3TQaG1-p4

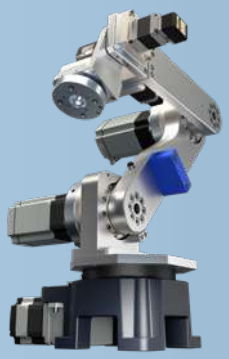


Small Robots **OVR**

αSTEP **AZ** Series
Simple Drive
Industrial Robot

Intuitive
Robot Controller
Operation Achieves
Automation

Motors and Arms
Can Be Replaced,
Reducing Maintenance
Costs

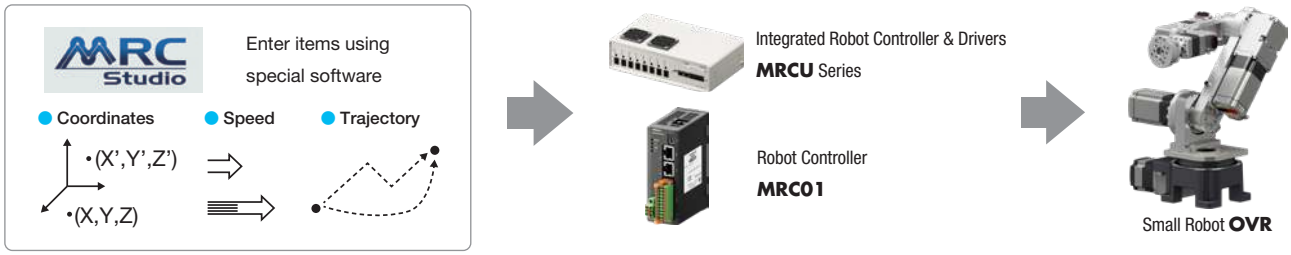


● Small robots **OVR** are not cobots. Please consider their safe use as industrial robots.

Easy to Retrofit to Equipment, Compact/Lightweight/Simple Control

Simple Control with a Robot Controller

Knowledge of “Networks”, “Ladder programs”, and “Kinematics operations” is needed to run robots.
OVR utilizes a robot controller, making it easy to start up and control the robot, even without robot control experience.



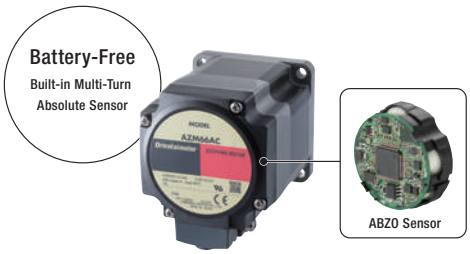
Compact and Lightweight Design

The installation area is 130 mm × 130 mm. The arm is also made of aluminum alloy to reduce the weight. Because it is compact and lightweight, it can be combined with an electric linear slide to expand the operating range in the horizontal direction.



Built-in Battery-Free Absolute Encoder

The αSTEP **AZ** Series (DC input) is used for all axes.
No external sensors are required, simpifying the wiring.
No battery is needed, so maintenance can be reduced.



Self-maintenance possible

Some motors can be replaced by the customer.
This reduces maintenance costs and time after installation.
● Please contact your nearest branch or sales office for more information.



Customisable

When purchasing a 4-axis vertical multi-joint, the arm length can be customised to suit your application.
(Reach length change: 580 mm, 780 mm)



Product Line

Products for a variety of different processes are available.

Articulated

4-Axis

OVR4048K5-V
OVR4068K5-V
OVR4088K5-V



Parallel Link Mechanism

- Installed below the arm's drive motor to reduce weight. Transportable mass 5 kg.
- The end of the arm is always mechanically level with the installation surface. This ensures stable horizontal transport.
- Three types with different maximum reach lengths: 480/680/880 mm.
- Also compatible with variable reach length (580 mm, 780 mm).

5-Axis

COMING SOON



Compact and Lightweight

- Chassis mass 12.5 kg, installation area 130 mm × 130 mm.
- Max. reach length (horizontal) 350 mm, transportable mass 1 kg.
- Because it is small and lightweight, it can be combined with an electric linear slide for horizontal travel.

6-Axis

COMING SOON



Approach the Load from Various Angles

- Add a motor for wrist axis rotation to achieve rotation and bending.
- Chassis mass 12.5 kg, installation area 130 mm × 130 mm.
- Max. reach length (horizontal) 480 mm, transportable mass 1 kg.
- Because it is compact and lightweight, it can be combined with an electric linear slide for horizontal travel.

SCARA

3-Axis

OVR3041K3-H
OVR3046K10-H
OVR3070K3-H



With cover

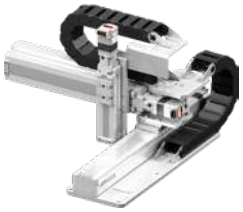
Lightweight and Flat

- Lightweight and compact, weighing 7.6 kg or more and measuring 137 mm or more in height.
- Can access narrow spaces (compared to typical SCARA robots).
- Three types with maximum reach lengths of 410 mm, 460 mm, and 700 mm, payload capacity of 3 to 10 kg, and repeatability of ±0.03 mm or more.
- By using the electric lifting device **EL** Series, the operating range can be expanded in the vertical direction.

Cartesian

3-Axis

COMING SOON



Cartesian Robots Delivered Assembled

- Combined with electric linear slides on three axes.
- Contributes to reduced equipment startup time and labor saving.
- Moving range 300 mm × 300 mm × 100 mm (X-Y-Z), transportable mass 2.5 kg.

Electric Lift

EL Series

EL12□□AZMK
EL6□□AZMK

●The number in □□ indicates the number of strokes.



Examples of combinations

Lifting device for expanding the range of motion of a robot

- Portable weight (vertical)
  30 kg (lead: 6 mm)/15 kg (lead: 12 mm)
- Stroke 50/100/200/300 mm
- High rigidity and high precision

Easily Control a Small Robots **OVR**

Controller

In addition to the small robots **OVR**, they are also capable of controlling the **AZ** Series and electric actuators equipped with the **AZ** Series.

Product Line

Controller

Integrated Robot Controller & Drivers

MRCU Series



- **MRC01** and **AZ** Series mini Driver (up to 8) in a single package
- Equivalent to A4 size (300 mm × 180 mm × 80 mm) for space saving
- Controlled via EtherNet/IP™ or I/O
- Easy wiring reduces the risk of mis-wiring
- Fewer parts to be purchased

Robot Controller

MRC01



MRC01-C



- Easy control in three steps: initial configuration, operation programming, and operation check
- Controlled via EtherNet/IP™ or I/O
- **MRC01-C** available for Cartesian robots

Programming Software

MRC Studio

MRC Studio
Introduction Video



▶https://www.youtube.com/watch?v=3v6kbRh_Ka8

- Dedicated software that supports everything from start-up to maintenance
- Creation of operation programmes and setting/editing of various parameters possible from a PC
- Teaching and monitoring functions for various statuses available

*1 **MRC Studio**, and EDS files can be downloaded from our website.
*2 **MRC Studio Simulator** (free) is also available for confirming robot operation prior to purchase.
*3 We also offer a teaching pendant for tablet-type robot controllers.

MRC Reality

This simulator allows you to place a small robot **OVR** in a real space and check its size and mechanism movements.
The app can be downloaded for free.



▶https://www.youtube.com/watch?v=0zvwOl4TN1M

For smartphones/tablets

App Store Google Play

For head-mounted displays (Meta Quest 3)

Meta Horizon Store

Quick and easy setup

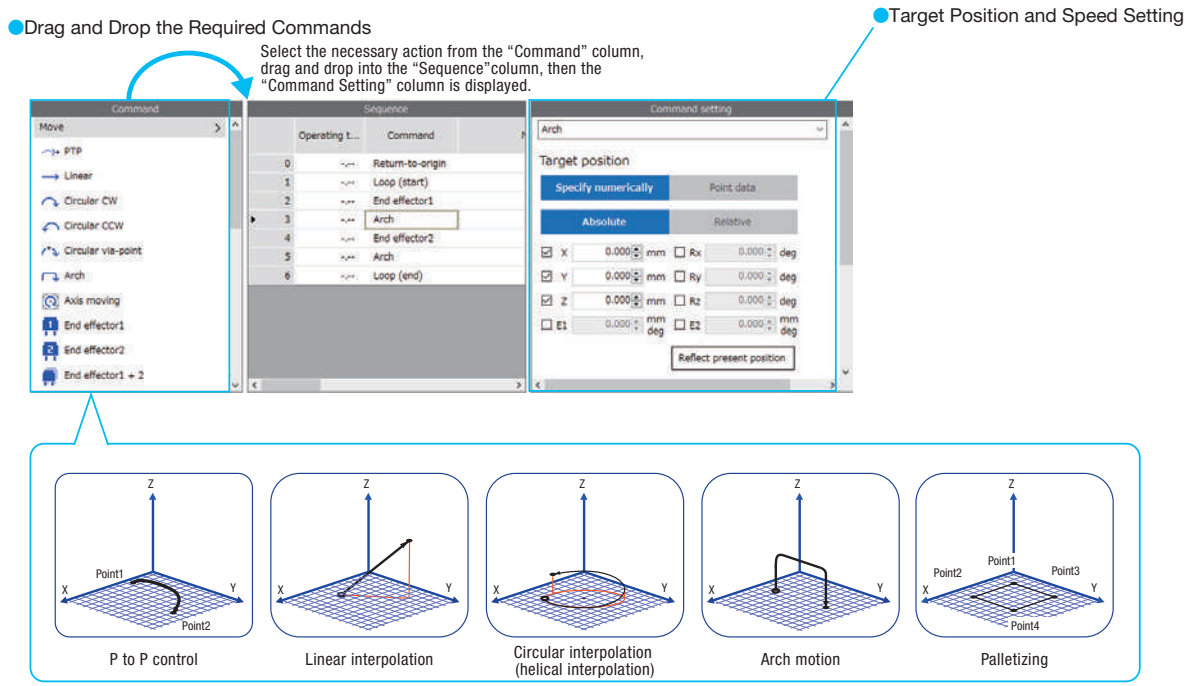
Easy setup even for beginners

The small robot **OVR** has its dimensions, such as arm length, already registered, so setup time is reduced.



Say Goodbye to Ladder Logic! Operation Programming with Item Selection

Program creation uses a simple command selection format. Programs can be created intuitively, without requiring specialized knowledge such as ladder diagrams. The system supports a range of advanced motion control operations, including P-to-P, linear interpolation, circular interpolation, and arc motion, among others. Operating data is executed directly from a host controller via EtherNet/IP.



Configuration of a Robot Vision System Using 2D Cameras

The robot controller is equipped with useful functions for operating the robot using load position and angle information acquired by the camera.
In order to integrate the 2D camera, **MRC Studio** is used to perform the calibration* in advance. The settings can be easily configured by simply following the on-screen instructions while looking at the illustrations, allowing for a reduction in the work hours necessary for correction.
*Up to two motors

Acquire Load Position and Angle Information Using the Camera



Image Processor
(Keyence CV-X Series)

EtherNet/IP
Load Position and Angle



PLC

EtherNet/IP
Load Position and Angle

Convert to Robot Coordinates and Operate



Integrated Robot Controller & Drivers **MRCU** Series

USB Connection



Programming Software **MRC Studio**





Small Robot **OVR**

Orientalmotor

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These products are manufactured at plants certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** for systems of environmental management).
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