

PRODUCT GUIDE 2025/2026

Hybrid Stepper Servo Motors *αSTEP*

Stepper Motors

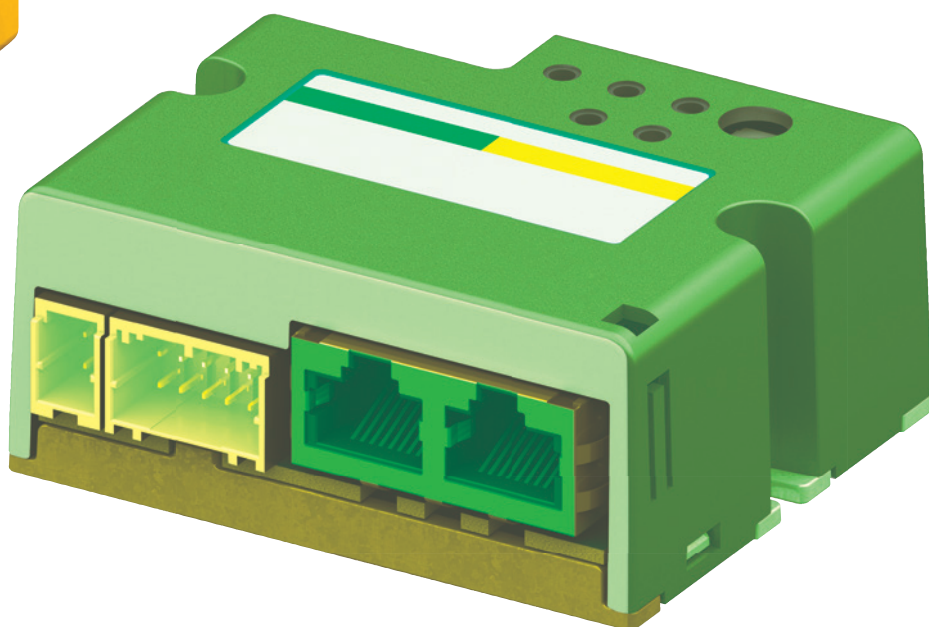
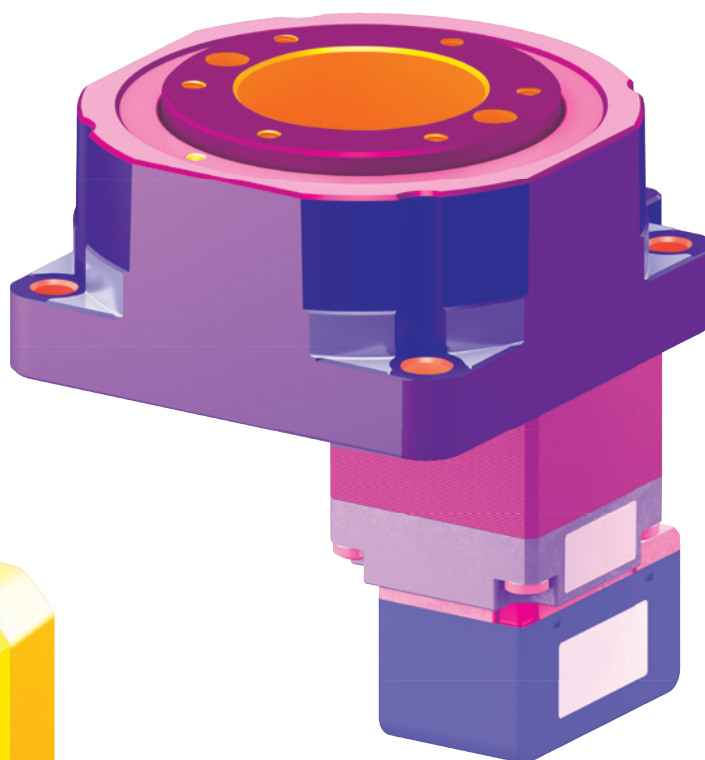
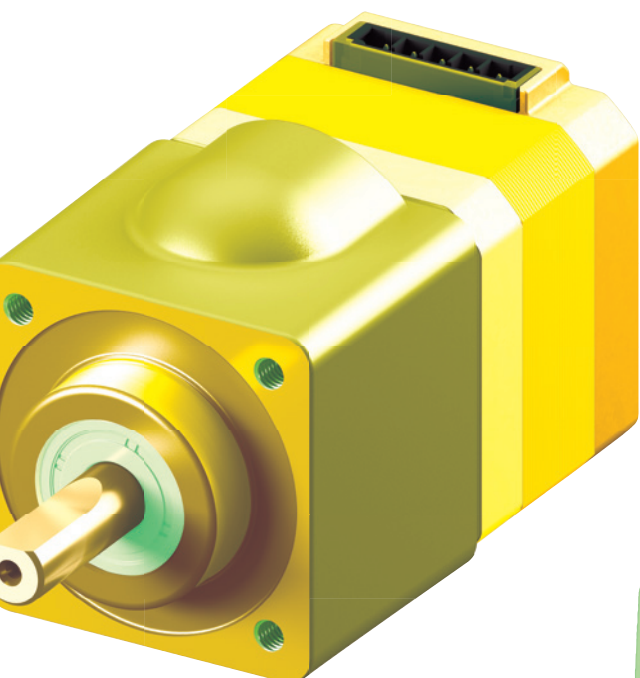
Electric Actuators

Servo Motors

Brushless Motors

Standard Motors

Cooling Fans



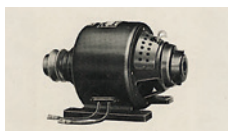
AVAILABLE WORLDWIDE, STARTING FROM A SINGLE UNIT

Company ORIENTAL MOTOR CO., LTD
Head office Taito-ku, Tokio
Founded 1885
Established 1950
Employees 3,021 (end of March 2025)
10 Factories and R&D Center in Japan

ISO 9001 • ISO 14001

Headquarters ORIENTAL MOTOR (EUROPA) GMBH - Dusseldorf - Germany

History of Oriental Motor - Constantly taking on new challenges and creating new values.



1885
Founded
in Nihonbashi, Tokyo/Japan



1950
Established
in Asakusa, Tokyo/Japan



1982
Established Oriental Motor
(Europa) GmbH Headquar-
ters in Germany



1996
Established Oriental Motor
UK Ltd. in United Kingdom



Established Oriental Motor
ITALIA s.r.l. in Italy



1951
Pioneer in the
standardisation of
AC motors



1998
New generation stepper
motor **αSTEP**
AS Series with closed-
loop control.



2001
EZ limo, an electric
actuator designed for
ease of use.



2013
αSTEP AZ Series
closed loop stepper
motor with built-in
absolute encoder



2025
Small robots
OVR Series



GLOBAL SALES NETWORK

Bringing Oriental Motor to the Global Market

**Industrial – Medical – Packaging –
Material Handling – and so much more.**

Worldwide, our refined product development enables daily operations across all fields of business. Honoring our corporate philosophy built on over 100 years of history.

We continually evolve to meet our customers needs wherever they are.

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with drivers

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Incorporating a motor and a linear-motion mechanism

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SERVO MOTORS

High torque in the high speed range

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BRUSHLESS MOTORS

High performance with compact design

12

STANDARD MOTORS

Simply connect a capacitor and supply power from a commercial power supply

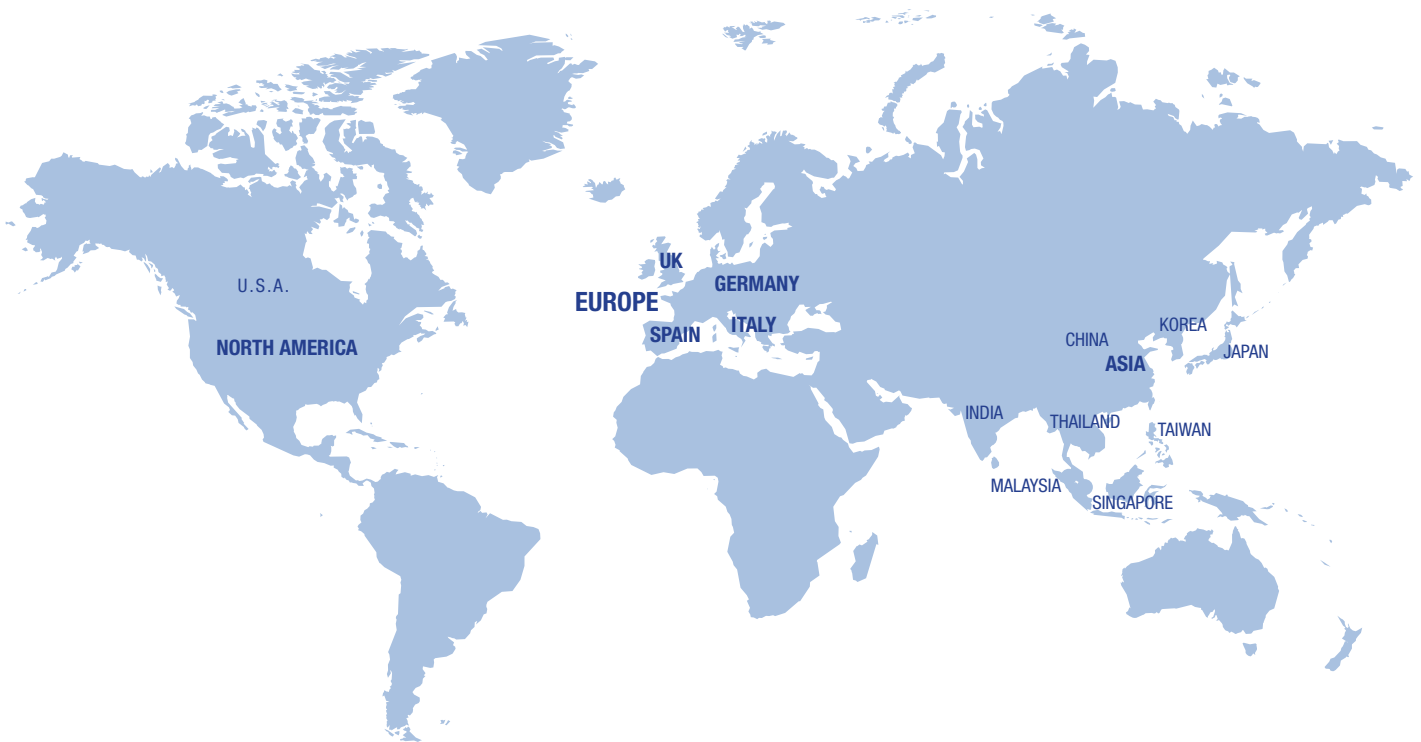
13

COOLING FANS

A wide range of cooling fans and axial flow fans, ideal for ventilation cooling

GLOBAL NETWORK

Our strong, global-scale network provides support to customers everywhere, offering motion-related solutions tailored to user needs.



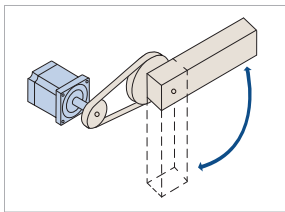
R&D/MANUFACTURING

With a flexible and integrated production system, we ensure speedy product deliveries, in the right quantities, exactly when needed.

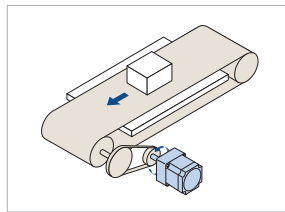


MOTOR SIZING

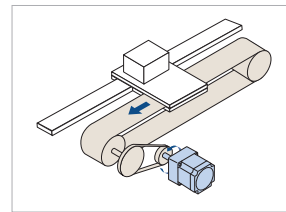
Motor sizing such as torque computation is performed on the customer's behalf by specialist staff members. (free of charge.) Not only will we recommend the product best suited to your mechanism, but also introduce accessories and show you the calculation process.



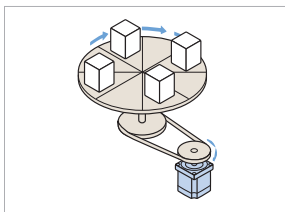
Arm Drive



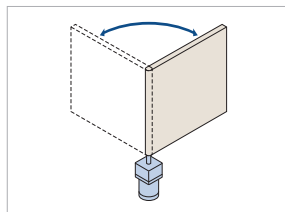
Belt Conveyor



Belt Linear Slide



Index Table



Opening and Shutting Doors



Motor sizing
(Free of charge)

START-UP SUPPORT

Technical Support Tools - You can easily perform unit conversions and calculations useful for design. (No user registration or login is required to use this service.)

- Unit Conversion Tool
- Tool to Aid Selection Calculations
- Support Tools for Individual Products



Start-Up Support

SEMINARS

These are lecture-style seminars given by an instructor. Basic knowledge about motors and how to choose a motor will be explained in detail.

- Technology & benefits of motion control
- How to select and size motion control solutions
- Product demonstration and new motion control ideas
- Opportunity to meet your sales engineer, application engineer and your support team

HYBRID STEPPER SERVO MOTORS α STEP

The **AZ** Series enables absolute positioning without the need for a battery. The total cost is reduced because no additional sensors are required. As a result, the **AZ** Series offers absolute positioning at an economical price.



Overview

CONNECTOR TYPE



AZ Series



Specification

- Connection with one cable (IP66)
- Absolute sensor, position control
- No external sensors necessary
- Low heat generation

Resolution

0.0036 - 0.36°/Pulse

Frame Size

42 - 90 mm

Max. Holding Torque

0.3 - 107 Nm

Gearheads

PS, PN, TS, Right-Angle,
Harmonic

CABLE TYPE



AZ Series



Specifications

- Connection with multiple cables
- Absolute sensor, position control
- No external sensors necessary
- Low heat generation

Resolution

0.0036 - 0.36°/Pulse

Frame Size

20 - 90 mm

Max. Holding Torque

0.02 - 107 Nm

Gearheads

PS, TS, Right-Angle, HPG,
Harmonic



AZD DRIVERS

				
	Single-Axis Drivers		mini Drivers	Multi-Axis Drivers
	AC	DC	DC	DC
	•	•	•	-
	•	•	•	•
	•	•	•	-
	•	-	-	•
	•	-	-	•
	-	-	•	-
	-	-	•	-
Pulse-Input with RS-485 Communication	•	•	•	-
Pulse-Input	•	•	-	-
With built-in Controller	•	•	-	-

STEPPER MOTORS

2-phase and 5-phase high-torque stepper motors are available with a wide variety of frame sizes and motor options. The **CVD** Series drivers are optimally matched to the **PKP** Series motors.



Overview

2-PHASE STEPPER MOTORS



PKP Series



Specifications

- High torque in the lower speed range
- Many motor options
- Low heat generation
- Energy saving

Max. Holding Torque
0.0075 - 12 Nm
Frame size
13 - 85 mm
Basic Step Angle
1.8°/0.9° (with gearhead
down to 0.018°)
Gearheads
SH, CS, Harmonic

5-PHASE STEPPER MOTORS



PKP Series



Specifications

- High torque in the upper speed range
- Many motor options
- Low vibration
- Low heat generation
- Energy saving

Max. Holding Torque
0.0231 - 8 Nm
Frame size
20 - 85 mm
Basic Step Angle
0.72°/0.36° (with gearhead
down to 0.0072°)
Gearheads
TH, TS, Harmonic



2-PHASE/5-PHASE STEPPER MOTOR DRIVERS

Single-Axis Drivers		Pulse Input	With RS-485 Interface	Fully Closed-Loop	S with SPI Communication	S with Pulse Input	SC (Speed Control)	Multi-Axis
Combinable Stepper Motors		2-Phase/ 5-Phase	2-Phase/ 5-Phase	5-Phase	2-Phase/ 5-Phase	2-Phase/ 5-Phase	5-Phase	2-Phase/ 5-Phase
Control Method	I/O	-	Return to the reference point Positioning mode Speed specification	Excitation OFF Correction reset HOME setting	Return to the reference point	-	Return to the reference point	Control Inputs: 4 Control Outputs: 1
	Pulse Input	•	-	•	-	•	-	-
	Modbus (RTU)	-	Return to the reference point Positioning mode Direct Data Operation* Speed specification	Operation data, parameter settings, input of operational commands, remote I/O detection position and other status monitors	-	-	-	-
	SPI Communication	-	-	-	Return to the reference point Direct Data Operation*	-	-	-
	EtherCAT	-	-	-	-	-	-	Status monitor

*Operation with direct data means that the parameters for position and speed are overwritten each time.

ELECTRIC ACTUATORS

Rotary actuators and linear actuators are a combination of a stepper motor with a hollow rotary table (rotary actuators) and a ball screw (linear actuators). Both actuator types are driven by an **AZ** Series motor with absolute sensor.



Overview

HOLLOW ROTARY ACTUATORS



DGII Series



Specification



- Battery-free absolute sensor
- No external sensors necessary
- High power, high stiffness
- Large hollow shaft diameter

Power Supply

200 - 240 VAC, 24/48 VDC

Frame Size

60, 85, 130, 200 mm

Max. Speed

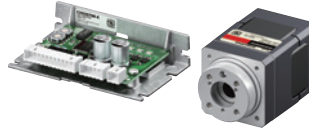
450 - 2000 deg/s

Max. Thrust Load

100 - 4000 N

Permissible Torque

0.9 - 50 Nm



DH Series



Specification



- Highly Accurate Positioning
- Hollow shaft for tubing/wiring
- Direct mounting of the load

Power Supply

24 VDC

Frame Size

28, 42 mm

Diameter of Hollow Section

Ø 5.2 mm, Ø 10 mm

Max. Holding Torque

0.029 Nm, 0.175 Nm

Stop Position Accuracy

±0.11°, ±0.33°

COMPACT ELECTRIC CYLINDERS



DR Series



Specification



- Battery-free absolute sensor
- No external sensors necessary
- Compact and lightweight
- Ultra-High Precision Positioning

Power Supply

24 VDC

Frame Size

20, 28 mm

Stroke

25, 30 mm

Max. Thrust Load

15 - 40 N



DRS2 Series



Specification



- Battery-free absolute sensor
- No external sensors necessary
- Compact and lightweight
- Ultra-High Precision Positioning

Power Supply

24 VDC/48 VDC

Frame Size

42, 60 mm

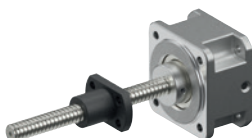
Stroke

40, 50 mm

Max. Thrust Force

50 - 500 N

MOUNTING ADAPTER-LINEAR ACTUATOR



LA Attachment



Specification

- Achieve linear motion by assembling with a stepper motor
- With lead screw or rolled ball screw

Frame Size

30, 42 mm

Stroke

50 - 300 mm

Permissible Speed

30 - 240 mm/s

Permissible Thrust

40 - 160 N

COMPACT ELECTRIC CYLINDERS



DRLII Series



Specification

- Integrated ball screw and stepper motor
- Ultra-High precision positioning

Power Supply

24 VDC

Frame Size

20, 28, 42, 60 mm

Stroke

25 - 100 mm

Max. Thrust Force

15 - 300 N

ELECTRIC ACTUATORS

Able to operate from low speed to high speed, or with light loads or heavy loads, these electric linear slides and cylinders are easy to use and offer high performance regardless of demanding operating conditions.



Overview

ELECTRIC CYLINDERS - ELECTRIC LINEAR SLIDES



EAC Series



Specification



- Ball screw drive
- Equipped with closed-loop stepper motor
- Ideal for pushing and carrying applications

Power Supply

200-240 VAC, 24/48 VDC

Stroke

50 - 300 mm

Max. Thrust Force

50 - 400 N

Max. Horizontal/Vertical Transportable Mass

60/30 kg



EZX Series



Specification



- Ball screw drive
- Equipped with closed-loop stepper motor
- Compact, highly rigid, simple dust-resistant structure

Power Supply

200-240 VAC, 24/48 VDC

Stroke

50 - 850 mm

Max. Thrust Force

43 - 400 N

Max. Horizontal/Vertical Transportable Mass

60/30 kg

RACK-AND-PINION SYSTEMS - ELECTRIC GRIPPERS



L Series



Specification



- Battery-free absolute sensor
- No external sensors necessary
- Compact with high strength

Power Supply

200-240 VAC, 24 VDC/48 VDC

Frame Size

60, 80 mm

Stroke

100 - 1000 mm

Transportable Mass

up to 100 kg



EH Series



Specification



- Achieve delicate grasp
- Equipped with closed-loop stepper motor
- 2- or 3-Finger type available
- Max. gripping force 50 N

Power Supply

24 VDC

Max. Gripping Force

7 - 50 N

Stroke

0 to 25 mm

Permissible Load

5 - 15 N



SERVO MOTORS

The **AZX** Series is equipped with a battery-free absolute sensor. The servo motors are suitable for positioning applications with a large amount of travel, since they achieve high torque in the high speed range. The basic operations are the same as the **AZ** Series, making combined use in equipment easy.



Overview

SERVO MOTORS



AZX Series



Specification

- Absolute sensor, position control
- Same operating method as the **AZ** Series
- High torque in the high speed range

Rated Output Power

400/600 W

Frame Size

60, 85, 90, 120 mm

Max. Speed

5500 r/min

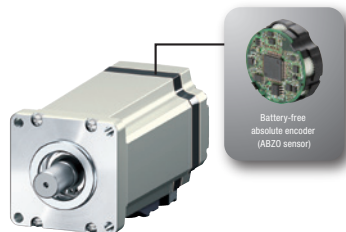
Gearheads

Planetary gearhead



BATTERY-FREE ABSOLUTE SENSOR EQUIPPED

The servo motor equipped with the ABZO Sensor. Thanks to the absolute system, a home sensor or external sensor is not required. No battery is necessary for a mechanical-type sensor. Positioning information is managed mechanically by the ABZO Sensor.

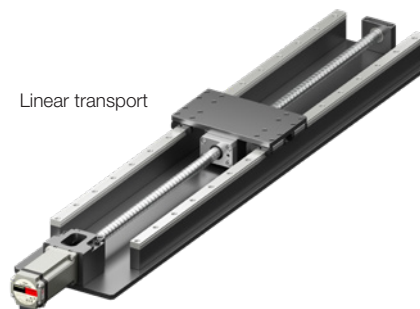


APPLICATIONS

Disc transport



Linear transport



BRUSHLESS MOTORS

High-efficiency brushless DC Motors achieve high output in a compact body while delivering high-speed operation, a wide speed control range and constant torque characteristics from low speed to high speed. AC input and DC input types are available.



Overview

MOTOR AND DRIVER - AC INPUT



BMU Series



Specification

- 4 programmable speeds
- Digital setting/display
- Easy handling
- Load factor display

Output Power

30 - 400 W

Frame Size

60, 80, 90, 110 mm

Speed Range

80 - 4000 r/min

Degree of Protection

Up to IP67



BLE2 Series



Specification

- 16 programmable speeds
- Vertical movement possible
- Torque limit function

Output Power

30 - 400 W

Frame Size

60, 80, 90, 110 mm

Speed Range

80 - 4000 r/min

Degree of Protection

Up to IP67

MOTOR AND DRIVER - DC INPUT



BLH Series



Specification

- 8 programmable speeds
- High torque at low speeds
- Torque limiting

Output Power

15 - 100 W

Frame Size

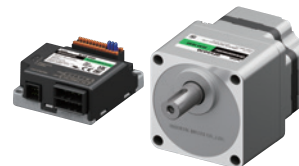
42, 60, 80, 90 mm

Speed Range

100 - 3000 r/min

Degree of Protection

Up to IP65



BLV-R Series



Specification

- Compact and lightweight
- Positioning operation
- Ideal for AGV

Output Power

60 - 400 W

Frame Size

60, 80, 90, 104, 110 mm

Speed Range

1 - 4000 r/min



TÜV SÜD Product
Service GmbH



BLS Series



Specification

- Version with RS-485 interface
- Simple operation with power ON/OFF
- Same gearheads as for AC motors can be used

Output Power

25 - 120 W

Frame Size

60, 80, 90 mm

Speed Range

100 - 2000 (4000) r/min

Degree of Protection

Up to IP65



AC MOTORS

Motors capable of constant speed, instantaneous bi-directional operation, load holding during vertical operation, and tension control are available. Our motors can accommodate the various movements required by the customer's equipment. We also offer motors that can be operated in harsh environments, such as watertight, dust-resistant motors.



Overview

INDUCTION/REVERSIBLE MOTORS



WORLD K Series



Specification

- For continuous operation
- Compact construction
- Simple connection & operation

Output Power

6 - 90 W

Frame Size

42, 60, 70, 80, 90 mm

Speed Range

1150 - 1650 r/min

Degree of Protection

Up to IP65

ELECTROMAGNETIC BRAKE MOTORS



WORLD K Series



Specification

- For vertical operation
- Equipped with electromagnetic brake
- Simple connection & operation

Output Power

6 - 90 W

Frame Size

60, 70, 80, 90 mm

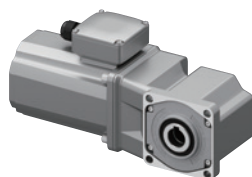
Speed Range

1150 - 1600 r/min

Degree of Protection

Up to IP65

THREE-PHASE HIGH EFFICIENCY MOTORS



KIIS Series



Specification

- High permissible torque
- Energy-saving
- Low noise
- IP66

Output Power

200 W

Frame Size

110 mm

Speed Range

1420 - 1700 r/min

Degree of Protection

IP66

TORQUE MOTORS



TM Series



Specification

- High starting torque
- Torque regulation
- Winding application
- Web tension regulator

Output Power

3 - 20 W

Frame Size

60, 70, 80, 90 mm

Speed at Max. Output Power

750 - 900 r/min

WATERTIGHT, DUST-RESISTANT MOTORS



FPW Series



Specification

- Watertight
- Dust-resistant
- Corrosion-resistant
- IP67

Output Power

25 - 90 W

Frame Size

80, 90, 104 mm

Permissible Torque

0.29 - 30 Nm

Degree of Protection

IP67

COOLING FANS

We provide heat solutions for our customers, from ventilation and cooling to condensation prevention. We offer products that are energy-saving, long-lasting, dust-proof, and waterproof, and contribute to adding value to our customers' equipment.



Overview

EC FANS (WITH BRUSHLESS MOTOR)



EMU Series



Specification

- Low power consumption
- Expected lifetime 60,000 hours
- Wide voltage range

Power Supply

Single-Phase 100 - 240 VAC

Max. Air Flow

1.5 - 3 m³/min

Noise Level

40 - 42 dB(A)

Frame Size

92x92x38 mm

120x120x25 mm

120x120x38 mm



EMR Series



Specification

- Low power consumption
- Expected lifetime 40,000 hours
- Speed control is possible

Power Supply

Single-Phase 200 - 240 VAC

Three-Phase 200 - 240 VAC

Single-Phase 100 - 120 VAC

Max. Air Flow

9 m³/min

Noise Level

28 - 64 dB(A)

Frame Size

180x180x65 mm

DC AXIAL FLOW FAN



MD Series



Specification

- Ideal for ventilation and cooling
- Versions with alarm function, variable speed, extended lifetime or IP68 protection available

Power Supply

24 VDC, 12 VDC

Max. Air Flow

0.21 - 9.9 m³/min

Noise Level

28 - 60 dB(A)

Frame Size

40x40x20 mm to Ø172 mm

AC AXIAL FLOW FAN



MRS Series



Specification

- Ideal for ventilation and cooling
- Versions with low-speed alarm or variable speed are available

Power Supply

Single-Phase 200 - 240 VAC

Three-Phase 200 - 240 VAC

Single-Phase 100 - 120 VAC

Max. Air Flow

2 - 50 m³/min

Noise Level

IP66

Frame Size

160 - 300 mm

AC CENTRIFUGAL BLOWERS



MB Series



Specification

- For spot cooling and duct air flow
- High static pressure
- Version with variable speed is available

Power Supply

Single-Phase 200/220/230 VAC

Three-Phase 200/220/230 VAC

Single-Phase 100/110/115 VAC

Max. Air Flow

0.5 - 10 m³/min

Impeller Diameter

Ø80 - 120 mm

AC CROSS FLOW FANS



MF Series



Specification

- Uniform and wide air flow
- Suitable for installation in narrow spaces
- Air flow of up to 600 mm with multiple units

Power Supply

Single-Phase 200/220/230 VAC

Single-Phase 100/110/115 VAC

Max. Air Flow

3.4 - 6.8 m³/min

Noise Level

58 - 64 dB(A)

Impeller Length

150 mm, 300 mm

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

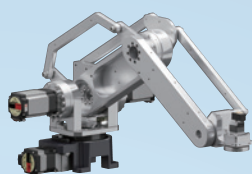
We work closely with you to ensure that using our **OVR** robots and controller becomes an outstanding experience. Our experts are ready to guide you step by step, helping you master the robot controller with ease whenever you need support.



Product Line of Industrial Robots and Controllers

Small Robots OVR

Articulated



4-Axis

Horizontal transport

COMING
SOON



5-Axis

Compact and
Lightweight

COMING
SOON



6-Axis

Approach
the load from
various angles

SCARA

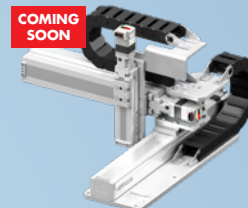


With cover

3-Axis

Access narrow spaces

Cartesian



COMING
SOON

3-Axis

Reduced equipment
startup time

Electric Lift

EL Series



Examples of
combinations

Lifting device for expanding the range of motion of a robot

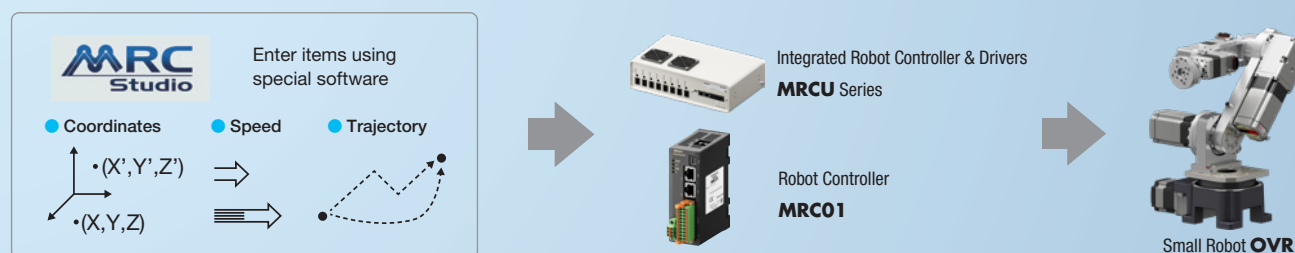
- Portable weight (vertical)
30 kg (lead: 6 mm)/15 kg (lead: 12 mm)
- Stroke 50/100/200/300 mm
- High rigidity and high precision

Simple Control - Self-maintenance

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.



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).



Programming Software

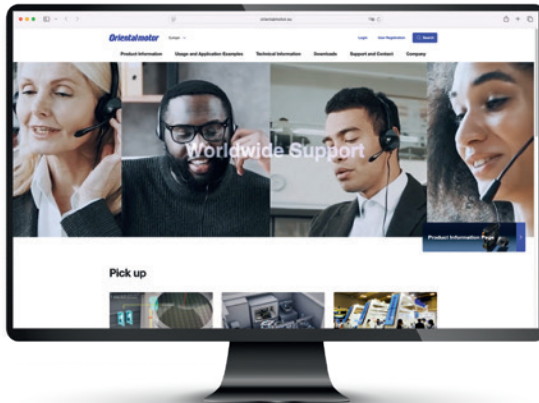
MRC Studio

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MRC Studio
(Free download)

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

Free Call Europe Customer Service Center:
00800 22 55 66 22



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www.orientalmotor.eu



German



NEWSLETTER

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English

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