Oriental motor

Product Guide

αSTEP Hybrid Control System

Linear & Rotary Actuators

Network – Controllers

Servo Motors

Stepper Motors

Brushless Motors

Standard AC Motors

Cooling Fans

2020
2021

AVAILABLE WORLDWIDE, STARTING FROM A SINGLE UNIT.

GLOBAL SALES NETWORK

16 countries

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.

Medical

Packaging

Semiconductor

Factory Automation (FA)

Material Handling

Food Processing

Security

Environmental

Products of Oriental Motor

Oriental Motor offers approximately 50,000 items as standard products.
Your optimal motion system can be found among our extensive product line-up. From our industry leading αSTEP Hybrid family of positioning products, high torque stepper motors to our speed control or constant speed motors designed for value and long life. For thermal management we offer a wide range of cooling fans, alarms and accessories.

αSTEP Hybrid Control System

- Closed Loop
- Positioning, Speed, Torque Control
- Absolute Type
- Electromagnetic Brake Types
- Geared Types

Linear & Rotary Actuators

- Transport
- Push/Pull
- Lifting
- Gripping
- Rotating
- Electromagnetic Brake Types

Network – Controllers

- EtherNet/IP
- EtherCAT
- Modbus (RTU)
- CC-Link
- MECHATROLINK
- Single Axis Controller

Servo Motors

- Standard
- Electromagnetic Brake Types
- Geared Types

Stepper Motors

- 2 Phase 1.8°, 0.9°
- 5 Phase 0.72°, 0.36°
- Drivers
- Encoder Motors
- Electromagnetic Brake Types
- Geared Types

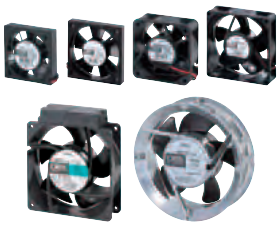
Brushless Motors

- AC Input
- DC Input
- Electromagnetic Brake Types
- Geared Types
- RS-485 Communications

Standard AC Motors

- 1 W (1/750 HP)~3 HP
- Single & 3 Phase
- Fixed Speed
- Speed Control
- Electromagnetic Brake Types
- Geared Types

Cooling Fans



- AC or DC Input
- Alarms
- Axial Flow
- Blowers
- Cross Flow
- Thermostats
- Enclosure Types

Short Lead Times

Delivering What is Needed, When it is Needed.
Our manufacturing system allows the manufacturing of an order with little notice, in any quantity requested. Additionally, our one-by-one process allows us to manufacture one product as easily as one hundred.

Oriental Motor Corporate Overview

Company	ORIENTAL MOTOR CO., LTD.
Founded	1885
Established	1950
Representative	President Eiji Kawahito
Capital	4.1 billion yen
Sales	Consolidated 58.2 billion yen (At the end of March 2019)
Number of Employees	Consolidated 3,200 (At the end of March 2019)
Company Activity	Development, manufacture and sale of small precision motors and electronic circuits for motion control
Head Office	4-8-1, Higashiueno, Taito-ku, Tokyo, 110-8536, Japan

R&D Center	Tsuruoka-Chuo Plant
Factories	Tsuruoka-Nishi Plant
	Soma Plant
	Tsukuba Plant
	Tsuchiura Plant
	Kashiwa Plant
	Kofu Plant
	Takamatsu-Kozai Plant
	Takamatsu-Kokubunji Plant
	Manufacturing Technology R&D Center (Joso, Ibaraki)

Tsuruoka-Chuo Plant

Development of standard AC motors and brushless motors. Development and manufacturing of control circuits and cooling fans.

Tsuruoka-Nishi Plant

Manufacturing of standard AC motors, brushless motors and gearheads.

Soma Plant

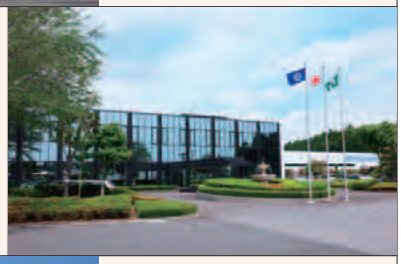
Development and manufacturing of stepper motors and control circuits.

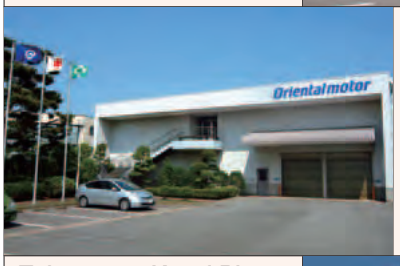
Tsukuba Plant

Development of various motor and control circuits. Manufacturing of control motors.
Evaluating, analyzing, and measuring various products.

Tsuchiura Plant

Development and manufacturing of gearheads and motorized actuators.





Kashiwa Plant

Research and development on the ideal accessories and peripheral equipment for every product.

Kofu Plant

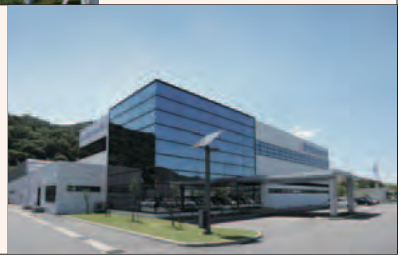
Manufacturing and production technology development of control circuits. Evaluating, analyzing and measuring various products.

Takamatsu-Kozai Plant

Development and manufacturing of stepper motors.

Takamatsu-Kokubunji Plant

Manufacturing of stepper motors.



Oriental Motor Supports Global Manufacturing

Since its founding in Japan in 1885, Oriental Motor globally has been providing the optimal motion systems as part of our total service, to meet the widest market demands. For over a century we have concentrated on technological advancement and product design improvement. This emphasis is evident in the sophisticated devices that we market today. Oriental Motor's sales and service network is international, with offices throughout North America, Europe and Asia. Domestically, ORIENTAL MOTOR U.S.A. CORP. was established in 1978. We produce a wide variety of fractional horsepower products to meet all your motion control needs.

Quality

In order to meet all motion control needs, we expanded our product line. Our accumulated technological excellence reflects our long years of dedication to quality.
With our strengths, such as high torque, high precision, long life, low noise and ease of selection, our established systems aim to produce products that our customers can rely on.

Speed

You can order the products listed in our catalog or website anytime, anywhere and in any quantity you need. We deliver orders of any size, from one piece or more, with the shortest lead-times.
With our stable production, quality control and logistics systems, we relentlessly pursue improvements and excellence in order to continue providing our products and services to our customers all over the world.

Product & Technology Training

On-Site Technical Seminars

Oriental Motor offers in-person training and product demonstrations at your location. Contact your local sales office or our Technical Support Team for more information or to schedule an on-site training seminar.

Lunch & Learn Seminars

You can schedule an on-site lunch & learn seminar with our Sales and Application Engineer staff. For this one-hour session, Oriental Motor will discuss our latest technology for solving simple to challenging motion requirements.

Oriental Motor
Provides Customer Support for Products and Services

Find the Right Solution from Approximately 50,000
Standard Products

Always Available,
Before & After Sales Support
Services

At Oriental Motor, we carry nearly 50,000 standard products, including motors, actuators and fans.

With our solid production, quality control and logistics systems, Oriental Motor products can be delivered to customers when they need it, in as little as 1 day, starting from an order of just 1 piece.

Oriental Motor also offers an extensive support system to help customers select the optimal product. From selection, design and equipment setup, to after-sales services, Oriental Motor provides support for all of our customers' needs.

Interested in Learning How the Products **Work**? Contact Us to Find Out More.

By Phone

In a hurry or need to talk with a member of our full-time staff? Give us a call!

Customer Support Center

- Toll-free
  - USA/Canada: TEL: 800-468-3982
  - Mexico: TEL: 01-800-681-5309
- Hours: Monday to Friday 8:30am EST to 5:00pm PST

Website

For online inquiries, product name and technical information searches, please use our website.

Oriental Motor Search

www.orientalmotor.com

See Full Product Details

Visit our website for expanded product information, specifications, CAD, accessories and more.

www.orientalmotor.com

oriental motor search

Find the Right Solution from Approximately **50,000 Products**

White Papers
Learn more about the technology used in our products.

Engineering Resources
Refer to videos, blog, and forum for motion control tips.

Motor Sizing
Easily calculate motor requirements for specific applications.

Order Online
Convenient online ordering is available.

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Search by part number, keyword, or specification.

My Account
Register for My Account to view order history and receive special content.

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Live chat is available during regular office hours.

For technical information searches, please use our website.

Q & A Forum **Online Inquiries** **On Demand Technical Videos**

Contact Us

● Estimates ● Product Inquiries ● Orders ● General Information

By Live Chat

www.orientalmotor.com

"Need Help?" popup
Available - Monday to Friday,
8:30am EST to 5:00pm PST

By Email

www.orientalmotor.com/contact

Technical Support
Customer Service / Sales

By Phone

Hours - Monday to Friday,
8:30am EST to 5:00pm PST

Toll-free Customer Support Center

USA/Canada: 800-468-3982
Mexico: 01-800-681-5309

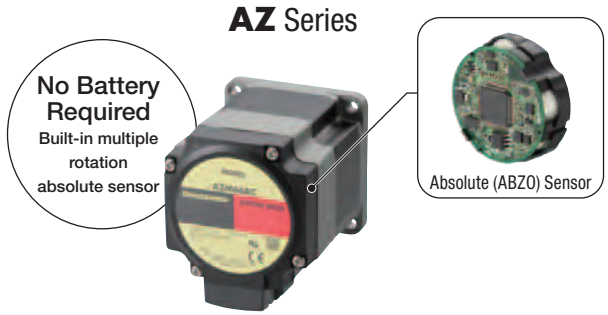
Oriental Motor Offers:

Fast Delivery | **No Minimum Order Quantity** | **Dedicated Support**

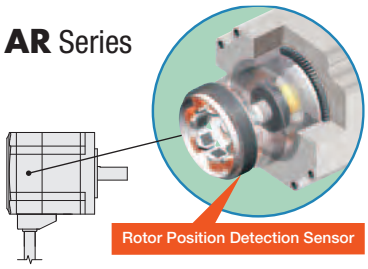
αSTEP Hybrid Control System

Position, Speed and Torque Control

αSTEP is a “hybrid” stepper motor-based motor & driver that together, performs independent control which, combines the advantages of “**open loop**” set up programing with “**closed loop**” performance. In addition to high-accuracy positioning and speed control, it can perform control that restricts the motor's generated torque to a set value for push-motion operation.



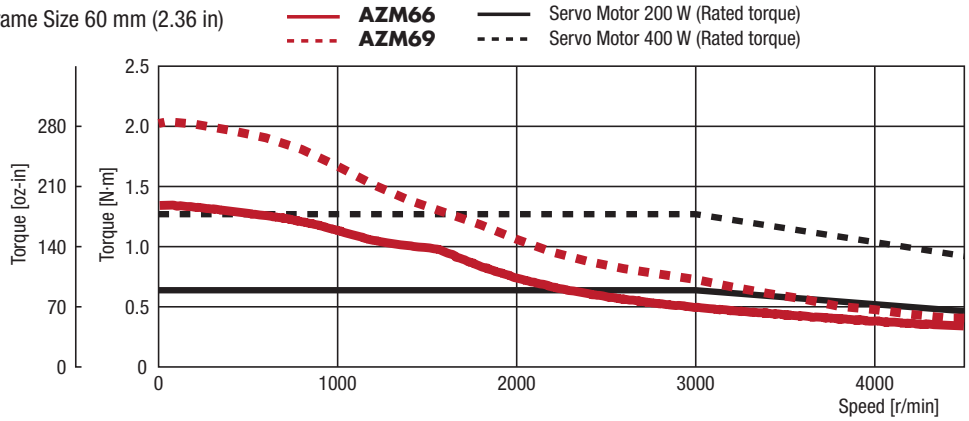
There are two base motor / driver types within the αSTEP family of products. The **AZ** Series features an absolute Sensor and the **AR** Series features a resolver based sensor.



Performance

Highest starting and running torque allowing for quick motion. No tuning required. Continuous duty.

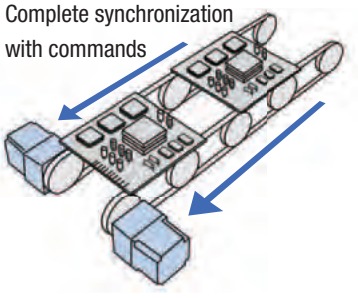
“Rated output” is not listed because the αSTEP has no “rated speed.” Refer to the graph to compare rated torque of **AZ** Series to watts of servo motor's rated output torque.



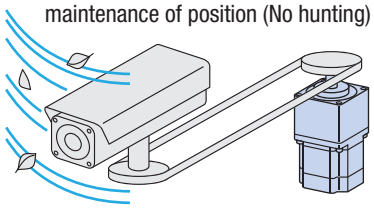
Data for the speed–torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

Ideal Applications for αSTEP

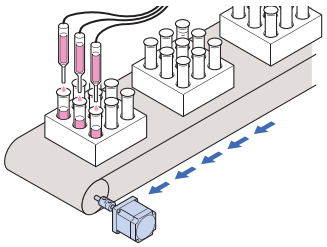
Complete synchronization with commands



Complete stop during standby and maintenance of position (No hunting)



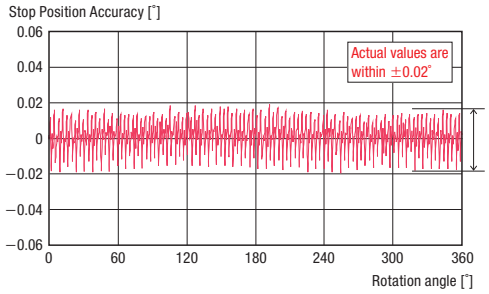
Frequent repetitive starting and stopping



αSTEP Stopping Accuracy

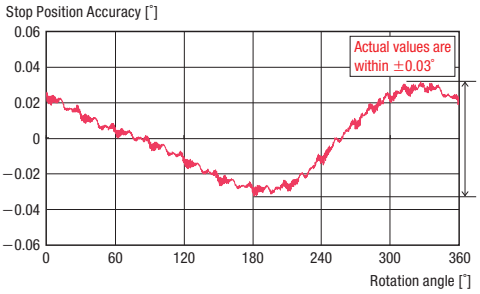
The stopping accuracy of a typical αSTEP is ±0.05° (under no load), which is equivalent to that of servo motors. These graphs show the actual measured stopping accuracies when an αSTEP and an AC servo motor were rotated once.

●Stopping accuracy of αSTEP (Actual measurements)



[Example] When the ball screw lead is 10 mm, the αSTEP stopping accuracy is ±1.4μm and the repetitive positioning accuracy of a common ground ball screw is ±10μm.

●Stopping accuracy of AC servo motor with a common 20-bit encoder (Actual measurements)

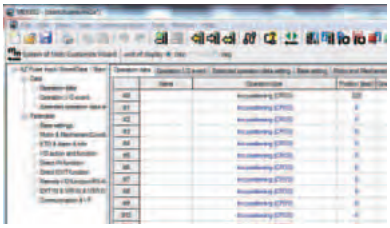


The stopping accuracy of an AC servo motor is the encoder resolution ±1 pulse*. The above shows the actual values that result from differences in the encoder's assembly.
*1,048,576 p/rev at 20 bits

Support Software MEXE02

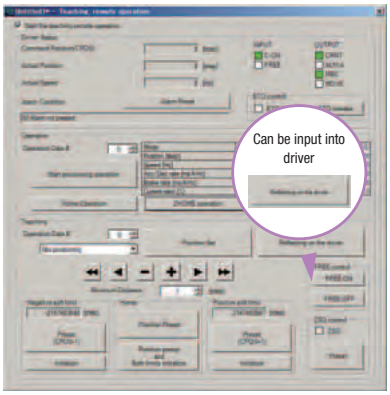
Operating Data & Parameter Settings
Setting of operation data and parameters easily via computer.

The same settings can be transferred and saved.



Teaching & Remote Operation
The operation command information can be input directly into the driver.

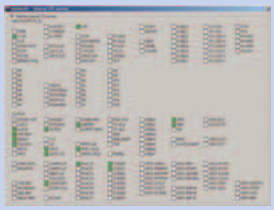
Multi-monitoring enables remote operation and teaching while monitoring.



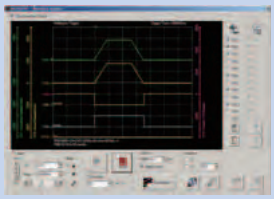
Available for free download on the website.

Various Monitoring Functions

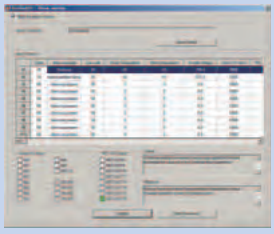
I/O Monitoring
Used for post-wiring I/O checks or I/O checks during operation.

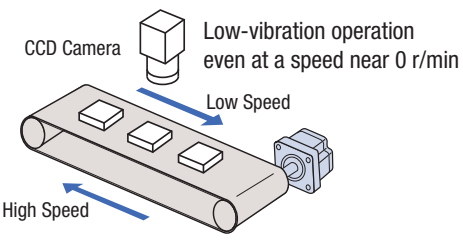


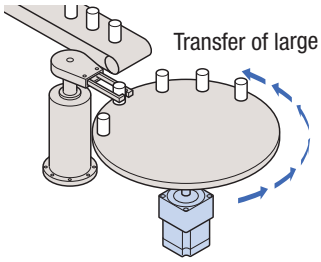
Waveform Monitoring
Helpful at start-up or adjustments, the operational state can be checked by an oscilloscope-like image.

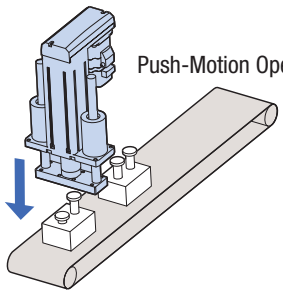


Alarm Monitoring
When an abnormality occurs, the details of the abnormality and the solution can be checked.









Advantages of the **AZ** Series

The **AZ** Series α_{STEP} hybrid control system features absolute sensing using a multiple-rotation mechanical sensor. The system constantly monitors the motors position even during a sudden power off situation.

- **Mechanical-Type Sensor / Multiple-Rotation Absolute System**
  1800 rotations the driver knows where the motor position is.
  No return to home is necessary.

- **Home Setting Method Improves Return-to-Home Accuracy**
  Home operation does not depend on a sensor sensitivity.

- **No External Sensors or Batteries Required**
  The driver uses the motor sensor to determine rotor position

- **No Hunting / No Gain Tuning**
  Utilizes the high response and mechanical advantage of a Stepper Motor

- **Continues Operation Even with Sudden Load Fluctuations and Sudden Acceleration**
  Runs in normally open loop control. If overloaded, switches to closed loop control.

- **Monitoring Functions**
  Speed, motor, driver temperature, load factor, odometer and much more can easily be monitored.

No External Sensors Required with the **AZ** Series

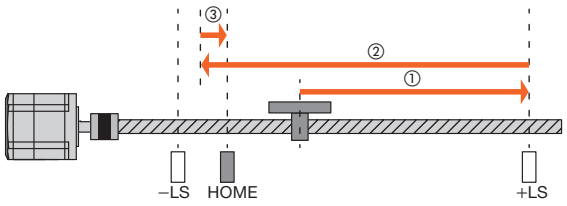
The **AZ** Series driver uses the positioning information managed by the mechanical absolute sensor. The position information can be preserved, even if the power turns off or if the cable between the motor and the drive is disconnected. No battery required.

Shortened Reset Time ① High Speed Return-to-Home

Because return-to-home is possible without using an external sensor, return-to-home can be performed at high speed without taking the sensor sensitivity into account, allowing for a shortened machine cycle.

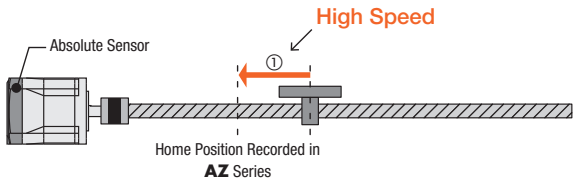
Previous Home Detection for Control Motor

The home position is detected at low speed by detecting the limit sensor (±LS) and home sensor (HOME).



Return-to-Home Operation of AZ Series

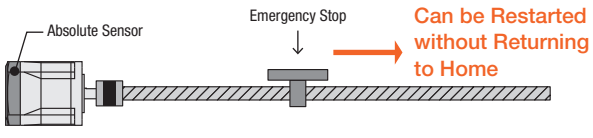
There is no need to detect the limit sensor, and it can travel directly at high speed to the home position recorded by the Absolute Sensor.



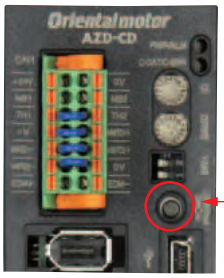
Shortened Reset Time ② Return-to-Home is not Necessary

If the power shuts down during a positioning operation, the positioning information is retained. For built-in controller types, positioning operations can restart without performing a return-to-home operation when recovering from an emergency stop of the production line or a blackout.

Built-in Controller Type



AZ Series Driver Types



- AC or DC Input
- Stored Data, Pulse Input Type
- Network / RS-485 / Monitoring
- No Additional Sensors Required

Home Setting Method

The home position can be easily set by pressing a switch on the drivers surface, which is saved by the Mechanical Absolute Encoder. In addition, home setting is possible with the **MEXE02** data setting software or external input signal.

Home position is easy to adjust by moving the motor to a desired position manually.

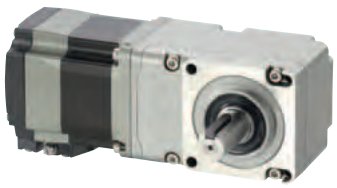
EtherNet/IP EtherCAT Modbus (RTU) SSCNETIII/H SERVO SYSTEM CONTROLLER NETWORK MECHATROLINK

Motor / Geared Types

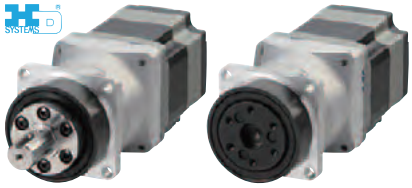

Standard

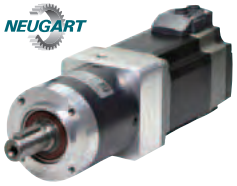

Tapered Hob


Harmonic (no backlash)


Right Angle (face gear)


Planetary


Planetary (attach load)

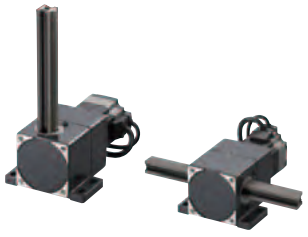

Planetary (high torque)

Actuator Types

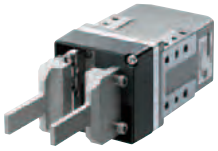

Linear Slides


Linear Cylinders


Rotary Actuators

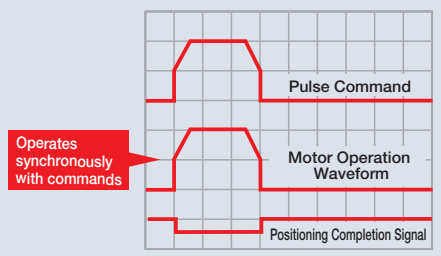

Rack & Pinion


Compact Electric Cylinder


Gripper

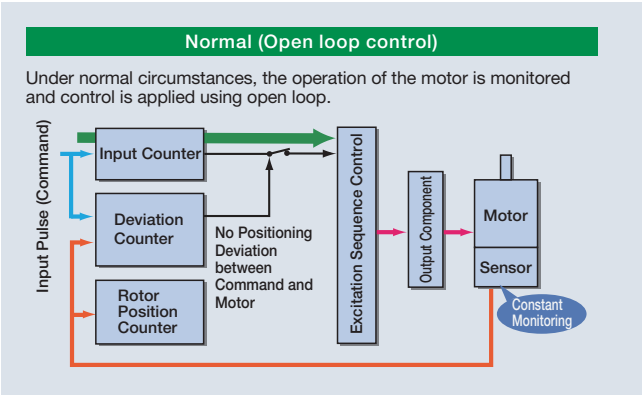
AZ Series

- High Response, operates without any delay.

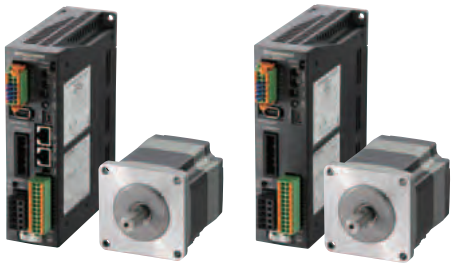


- **Frequent Starting and Stopping is Possible**
  AZ Series operates synchronously with pulse commands. Excellent acceleration performance and response.
- **No Tuning Required**

- Operates in Open Loop switching to Closed Loop when needed for more reliable operation.



AC Input – Single Axis

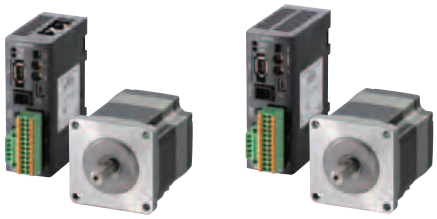


AC Input

AZ Series

Frame Sizes		1.65 in (42 mm), 2.36 in (60 mm), 3.35 / 3.54 in (85 / 90 mm)
Holding Torque		43 oz-in~974 lb-in (0.3~110 N·m)
Resolution (P/R)		1000
Options		Electromagnetic Brake
Gear Types		Tapper Hob / Planetary / Right Angle / Harmonic
Driver Types		Pulse / RS-485 / EtherNet/IP / EtherCAT
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$873.00

DC Input – Single Axis



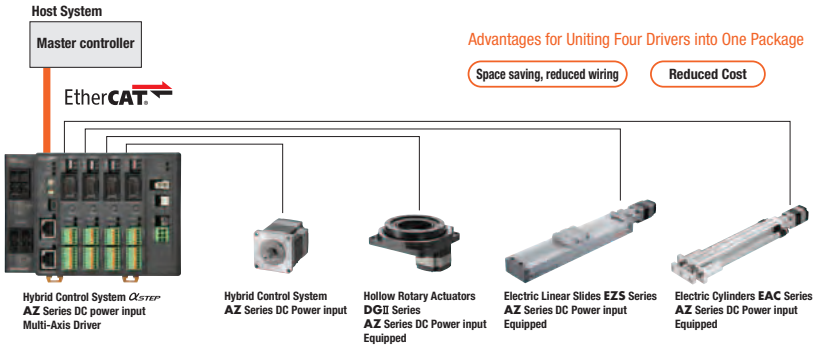
DC Input

AZ Series

Frame Sizes		0.79 in (20 mm), 1.10 in (28 mm), 1.65 in (42 mm), 2.36 in (60 mm)
Holding Torque		2.8 oz-in~354 lb-in (0.3~40 N·m)
Resolution (P/R)		1000
Options		Electromagnetic Brake
Gear Types		Tapper Hob / Planetary / Right Angle / Harmonic
Driver Types		Pulse / RS-485 / EtherNet/IP / EtherCAT
Power Supply	VDC	24/48
Starting From (Motor+Driver+Cable)		$702.00

Multi- Axis (DC Input)

2, 3 or 4 axis type



- The connected motors and linear & rotary actuators are representative examples.

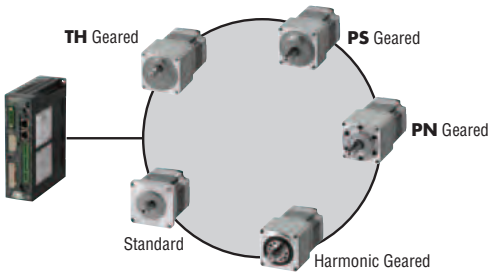
AR Series

- αSTEP Family
- No Hunting, No Tuning
- Battery Back Up
- Stored Data, Pulse Input Type
- RS-485 / Monitoring
- Continuous Operation

Build an absolute system that detects absolute positions by connecting the accessory battery (sold separately).

*For use with Stored Data (Network) type

Single driver to support a variety of motors



Common products equipped with αSTEP AR Series

AC Input

AC Input

AR Series

Frame Sizes		1.65 in (42 mm), 2.36 in (60 mm), 3.35 / 3.54 in (85 / 90 mm)
Holding Torque		42 oz-in～327 lb-in (0.055～37 N·m)
Resolution (P/R)		1000
Options		Electromagnetic Brake
Gear Types		Tapper Hob / Planetary / Right Angle / Harmonic
Driver Types		Pulse / RS-485
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$788.00

DC Input

DC Input

AR Series

Frame Sizes		1.10 in (28 mm), 1.65 in (42 mm), 2.36 in (60 mm), 3.35 / 3.54 in. (85 / 90 mm)
Holding Torque		7.8 oz-in～442 lb-in (0.055～50 N·m)
Resolution (P/R)		1000
Options		Electromagnetic Brake
Gear Types		Tapper Hob / Planetary / Right Angle / Harmonic
Driver Types		Pulse / RS-485
Power Supply	VDC	24/48
Starting From (Motor+Driver+Cable)		$546.00

Electric Actuators

α_{STEP} Hybrid Control System

A broad selection of linear & rotary electric actuators using the **AZ** Series α_{STEP} hybrid control system as the driver source are available for a wide range of motion requirements.

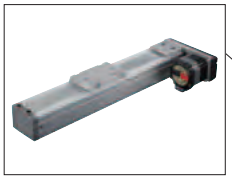
●Electric Cylinder

●Electric Cylinder

Y-Axis **Electric Linear Slides EAS Series**

Reversed Motor Type

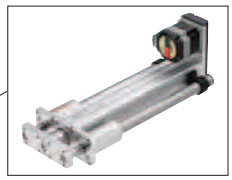
Space saving due to the reversed motor.

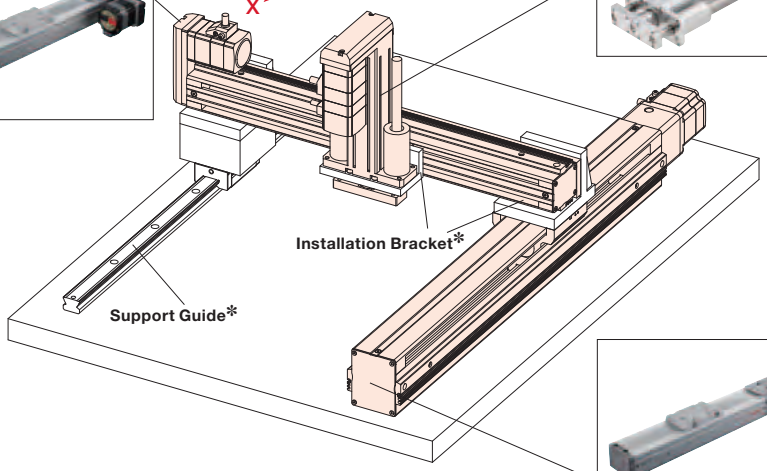


Z-Axis **Electric Cylinders EAC Series**

Reversed Motor Type with Shaft Guide Cover

Space-saving due to the reversed motor.



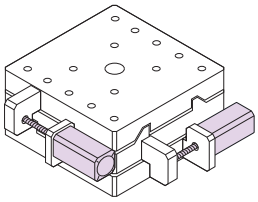


*Support guide and installation brackets supplied by the customer.

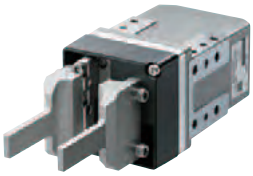
X-Axis **Electric Linear Slides EAS Series**

Straight Type

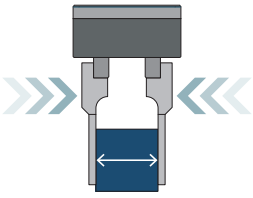
●Compact Electric Cylinder



●Gripper

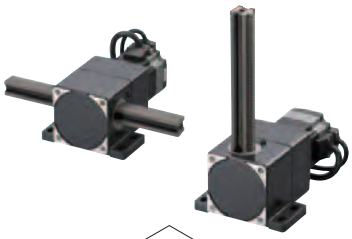


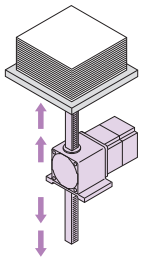
*Gripper Arms not included



Large load

●Rack & Pinion





●Hollow Electric Rotary Actuator

Vertical Mount Type

Horizontal Mount Type

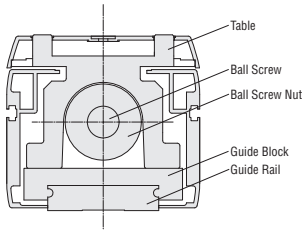
Large-Diameter Hollow Output Table
Makes Simple Wiring and Piping Possible

Transportation

EZS Series

●High Rigidity / High Accuracy Guide

✻LM Guide and Ball Retainer are registered trademarks of THK.

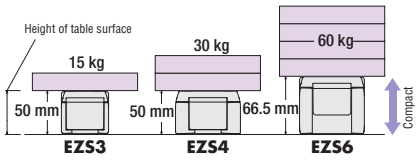


Traveling Parallelism of 0.03 mm or Less

EZS Series: with **AZ** Series

Max. Speed (mm/s)		800
Max. Transportable Mass - Vertical (kg)		30
Max. Transportable Mass - Horizontal (kg)		60
Repetitive Positioning Accuracy (mm)		±0.02
Stroke Length (mm)		50 - 850
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Actuator+Driver+Cable)		$1,284.00

●Slim with High Transportable Mass

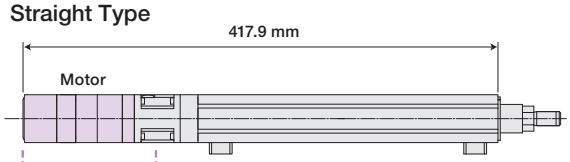


Push / Pull

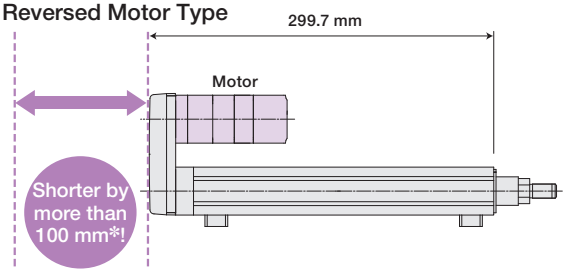
EAC Series

●High Strength, Space Savings

Straight Type



Reversed Motor Type

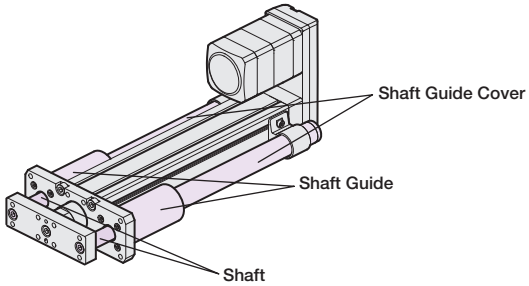


✻When electromagnetic brake is installed

EAC Series: with **AZ** Series

Max. Speed (mm/s)		600
Max. Transportable Mass - Vertical (kg)		30
Max. Transportable Mass - Horizontal (kg)		60
Repetitive Positioning Accuracy (mm)		±0.02
Stroke Length (mm)		50 - 300
Thrust Force (N)		400
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Actuator+Driver+Cable)		$1,058.00

●With or Without Guide Cover



Reversed Motor Type
with Shaft Guide Cover

Push / Pull / Transportation

DR Series

- Micromovement and High Positioning Accuracy
- 28 mm (**PKP** or **AZ** based motor)
- Compact, Space Saving

Wide Table Type
(**AZ** Series only)

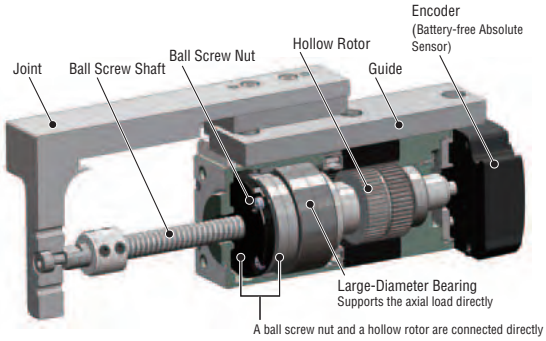
Table Type
(**AZ** or **PKP**)

Rod Type with Guide
(**AZ** or **PKP**)

Rod Type
(**AZ** or **PKP**)

28 mm: PKP or AZ Series - 42 / 60 mm: AZ Series

Frame Size (mm)		28 / 42 / 60
Max. Speed (mm/s)		200
Max. Transportable Mass - Vertical (kg)		50
Max. Transportable Mass - Horizontal (kg)		50
Max. Thrust Force (N)		500
Repetitive Positioning Accuracy (mm)		±0.003/±0.01
Stroke Length (mm)		30/40/50
Options		Brake / Guide / Knob
Power Supply	VDC	24/48
Starting From (Actuator+Driver+Cable)		$1,052.00

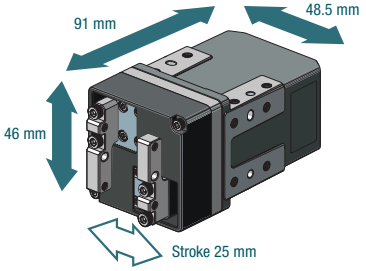


Gripping

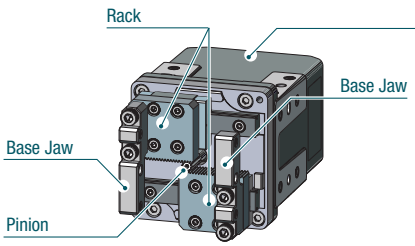
EH Gripper: with **AZ** Series

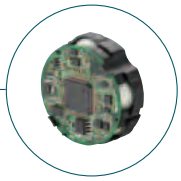
Maximum Grip Force (N)		25
Repetitive Positioning Accuracy (mm)	each side	±0.02
Backlash (mm)	each side	0.1
Stroke (mm)		25 (12.5 each side)
Maximum Speed (mm/s)		156 (78 each side)
Push Speed (mm/s)		20 (10 each side)
Minimum Travel Amount (mm)		0.02 (0.01 each side)
Permissble Load (N)		5
Static Permissble Moment (N·m)		MP:1.2 MY:0.12 MR: 0.4
Power Supply	VDC	24/48
Starting From (Actuator+Driver+Cable)		$1,178.00

- Small and Light Weight



- High Reliability, Closed Loop Control

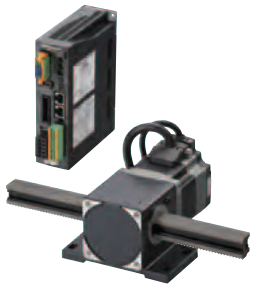




Battery-Free Absolute Sensor
(ABZO Sensor)

Up-Down / Side to Side

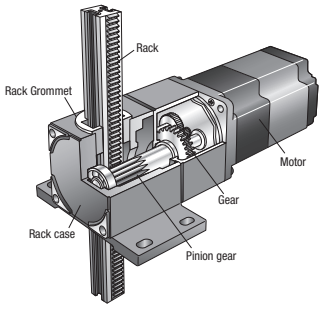
L Series



L Series: with **AZ** Series

Frame Size (mm)		60/80
Max. Speed (mm/s)		500
Max. Transportable Mass (kg)		100 (20 mm/s)
		70 (40 mm/s)
Max. Thrust Force (N)		1008 (20 mm/s)
		705 (40 mm/s)
Max. Stroke Length (mm)		1000
Type		Horizontal / Vertical
Option		Brake
Power Supply	Single-Phase (VAC)	100-120, 200-240
	Three-Phase (VAC)	200-240
Starting From (Actuator+Driver+Cable)		$1,354.00

- Compact and High Strength

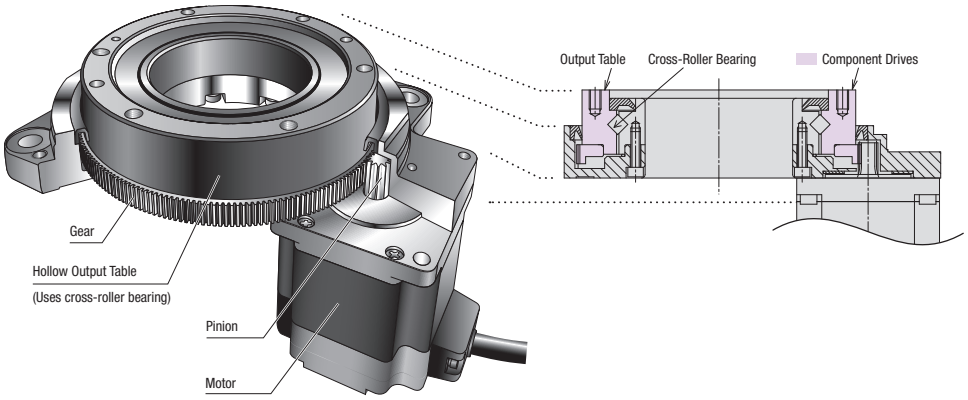


Rotate

DGII Series

Vertical Mount Type

●Large-Diameter, Hollow Output Table

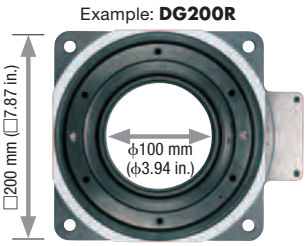


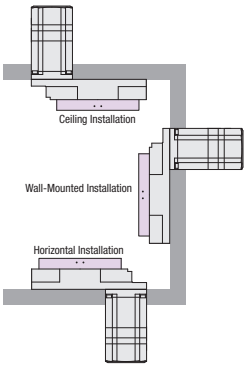
●High Positioning Accuracy, Non-Backlash

Vertical Mount: with **AZ** Series

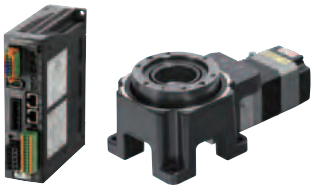
Frame Size (mm)		60/85/130/200
Diameter of Hollow Section (mm)		28/33/62/100
Permissible Torque (N·m)		50
Permissible Axial Load (N)		4000
Lost Motion		2 arcmin
Option		Electromagnetic Brake
Repetitive Positioning Accuracy		±15 sec / ±0.004°
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 /200-240
	Three-Phase (VAC)	200-240
Starting From (Actuator+Driver+Cable)		$1,396

Example: **DG200R**

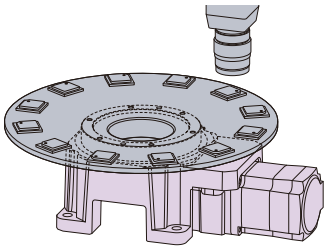


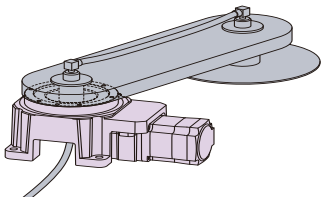


●Save Space



Horizontal Mount Type





Horizontal Mount: with **AZ** Series

Frame Size (mm)		85/130
Diameter of Hollow Section (mm)		33/62
Permissible Torque (N·m)		50
Permissible Axial Load (N)		2000
Lost Motion		6 arcmin
Option		Electromagnetic Brake
Repetitive Positioning Accuracy		±30 sec / ±0.008°
Power Supply	VDC	24/48
	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Actuator+Driver+Cable)		$2,374.00

●Gear Ratio: 12:1, 18:1 or 36:1

Frame Size 85 mm

Frame Size 130 mm

Network / Controller Products

Overview

Motor control via network communication can detect the status of the motor directly by data. This results in a shorter development period, increased reliability and maintainability of the equipment.
By expanding the network supported product line, Oriental Motor meets diversifying network environments of factory automation (FA).

EtherNet/IP or EtherCAT

Oriental Motor offers single axis EtherNet/IP or EtherCAT communications in our **AZ** Series family of stored data drivers.
✻Different part numbers required

αSTEP
AZ Series
EtherNet/IP Compatible Driver
✻Photo shows AC input driver.

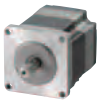
EtherNet/IP
EtherCAT

Host Controller

Motor Control from the Network	・Set and run operating data ・Set various parameters ・Check alarm details
Simple Wiring	・Wiring to the master device is consolidated into a single EtherNet/IP communication cable ・Reduce wiring errors and labor time

AZ Series Motors and Linear & Rotary Actuators
●The Products shown below are representative examples.

AC Input / DC Input



AZ Series

Hollow Rotary Actuators
DGII Series
Equipped with **AZ** Series

Electric Linear Slides
EAS Series
Equipped with **AZ** Series

Electric Cylinders
EAC Series
Equipped with **AZ** Series

AC Input Only

Rack and Pinion Systems
L Series
Equipped with **AZ** Series

DC Input Only

Compact Electric Cylinders
DR Series

Compact Electric Cylinders
DRS2 Series

Electric Gripper
EH Series

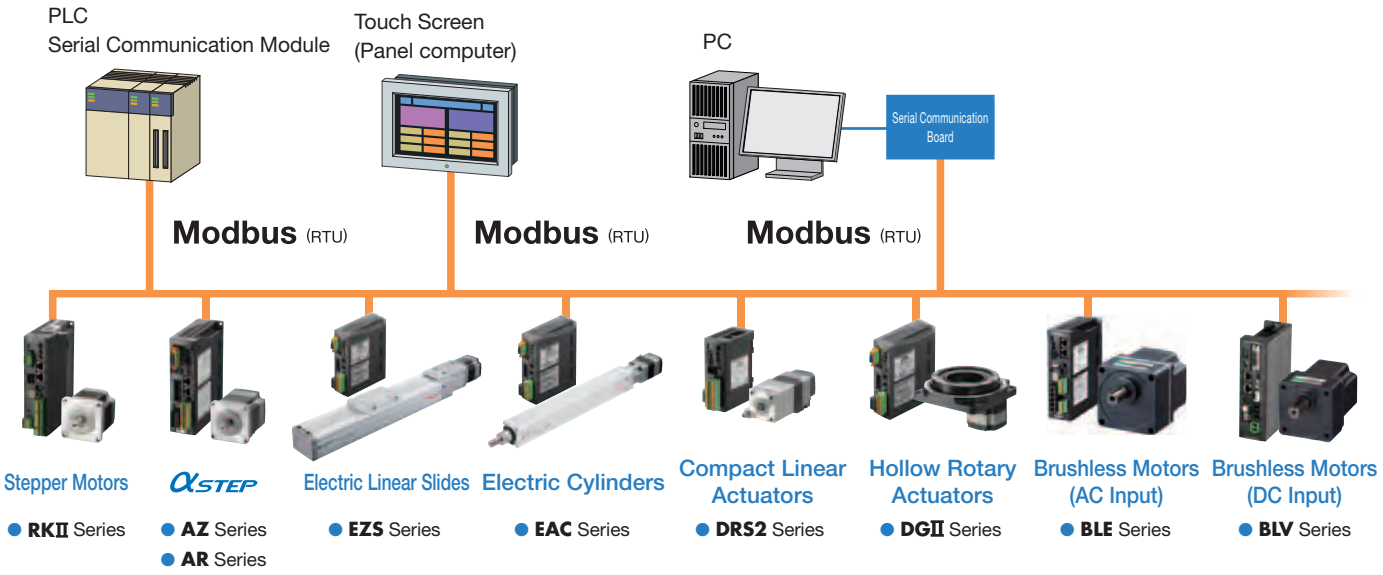
●EDS File for EtherNet/IP
An EDS file has been prepared to allow EtherNet/IP-compatible products to be used more easily.
The EDS file can be downloaded from the Oriental Motor website.

●ESI File for EtherCAT
An ESI file has been prepared to allow EtherCAT compatible products to be used more easily.
The ESI file can be downloaded from the Oriental Motor website.

Modbus (RTU)

Oriental Motor offers single axis Modbus (RTU) communication in our **AZ**, **AR**, **RKII**, **BLE**, **BLV** Series and linear based products.

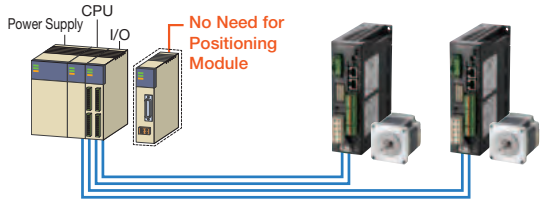
*Modbus is a registered trademark of Schneider Automation Inc.



Built-In Controller (Stored Data Type)

For I/O or Network control, stored data drivers with built-in controller ability (stored data type) using our **MEXE02** Support Software (Free Download) is available in our **AZ**, **AR**, **RKII**, **BLE** and **BLV** Series of products.

Easy Control | Low-Cost Design | Space Saving



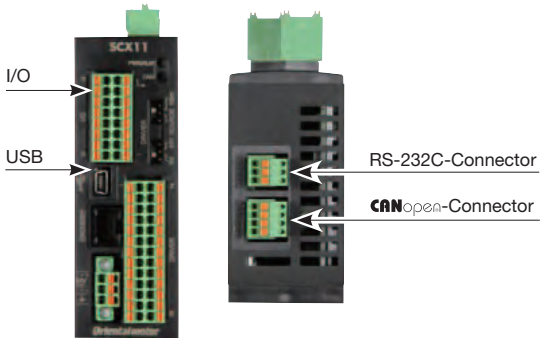
The operating data is set in the driver, and is then selected and executed from the host system.

- Simple Wiring
- No Additional Pulse Module Required
- I/O Control
- Driver / Motor Monitoring
- Daisy Chain up to 16 Drivers
- Use with **MEXE02** Support Software

Single Axis Programmable Controller

The **SCX11** universal controller is a highly functional and sophisticated controller, equipped with program editing and execution functions and able to control the motor via various serial ports such as USB, RS-232C and CANopen.

- Stand Alone - Pulse Generator
- Stord Program Type
- Store up to 100 Sequence Programs
- External Encoder Input
- USB Port Standard
- Direct Command Operation via CANopen
- 24 VDC
- List Price: $349.00



Gateways

Oriental Motor offers additional Gateway Network Converters.

*EtherCAT is a registered trademark licensed by Beckhoff Automation Gmbh, Germany
*MECHATROLINK is a registered trademark of MECHATROLINK Members Association
*SSCNETIII/H is a registered trademark of Mitsubishi Electric Corporation

EtherCAT | SSCNETIII/H SERVO SYSTEM CONTROLLER NETWORK | CC-Link | MECHATROLINK

Servo Motors

AC Input

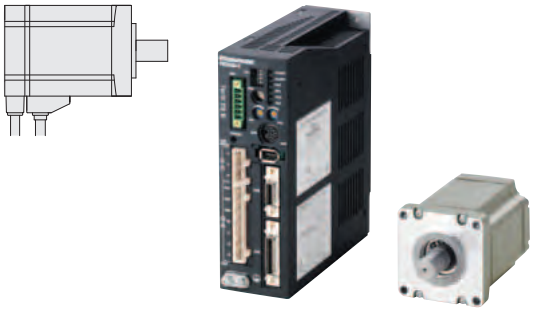
Servo motors are specialized for high response, high precision positioning. From these high level of features, Servo motors can be used in a variety of equipment.

A rotation detector (encoder) is mounted on the motor and feeds the rotation position/speed of the motor shaft back to the driver.
The driver calculates the error of the pulse signal or analog voltage (position command/ speed command) from the controller and the feedback signal (current position/speed) and controls the motor rotation so the error becomes zero. The closed loop control method is achieved with a driver, motor and encoder, so the motor can carry out highly accurate positioning operations.

Servo Motor Types

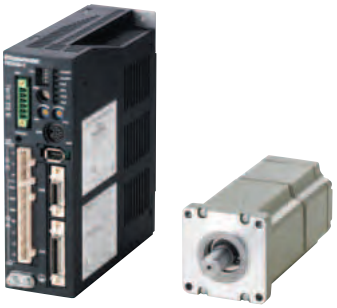
●Standard

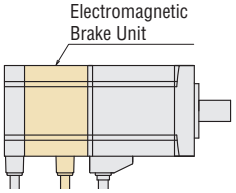
This is the basic round shaft type motor.
Motors are available in a variety of Sizes.



●Electromagnetic Brake Type

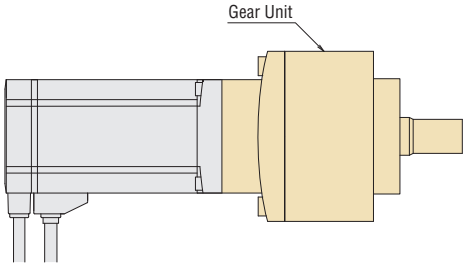
These motors incorporate a non-excitation type electromagnetic brake. When the power is accidentally cut off due to a power outage or another unexpected event, the electromagnetic brake holds the load in position to prevent it from dropping or moving. Electromagnetic brake motors are available in a round shaft type or geared type.





●Geared Type

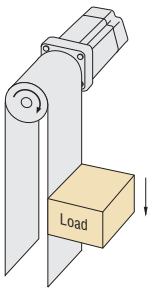
These motors incorporate a gearhead with reduced backlash to make the most of the high controllability of the motors. The gearhead ensures highly accurate, smooth operation even in applications where a large load torque is received. The inertia of the load converted to the motor shaft is reduced by the square of the gear ratio, improving the start and stop responsiveness.



●Regeneration Operation

When suddenly starting or stopping a vertical drive (gravitational operation) or big inertia, the motor goes into regeneration operation, working as a generator. For regeneration operation with the **NX** Series, use the regeneration unit, sold separately.

NX Series Regeneration Unit

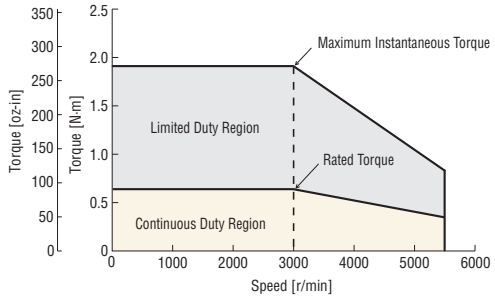


Gravitational Operation

NX Series (AC Input)

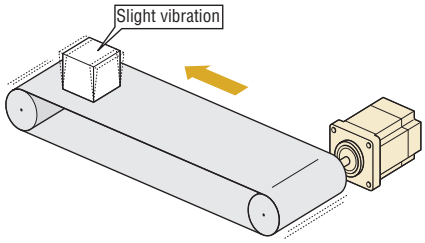
- Tuning Free
- Easy Operation / Easy Handling
- 4 Control Modes (Position, Speed, Torque, Tension)
- High Strength Planetary Gear Option

Max Speed 5500

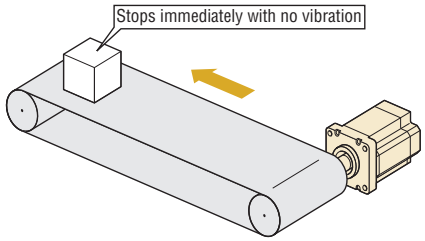


- High Inertia Drive
- Smooth Operation with Belt Mechanisms

- Conventional Products



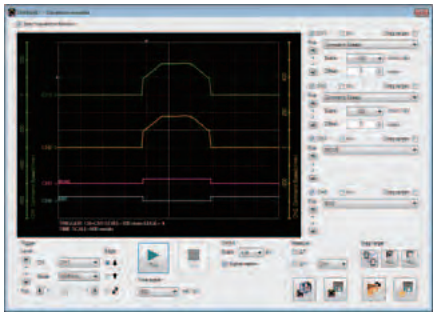
- **NX** Series



Basic settings and adjustments are made with switches and potentiometers on the front panel. This design allows for easy control without a computer, and even saves the hassle of complicated UP and DOWN key operations.

By using the support software (**MEXE02**), parameters can be changed, functions set, and monitoring performed to better suit your system.

- **Operating Status Waveform Monitoring***



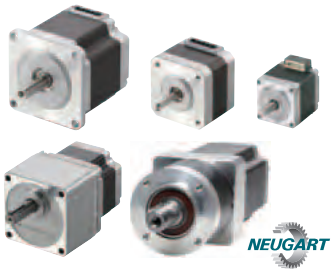
*Monitoring the operating status waveform requires the support software (**MEXE02**). The support software can be downloaded from the website. Please contact us for details.

AC Input

NX Series

Output Power		50 W / 100 W / 200 W / 400 W / 750 W
Rated Torque		22 oz-in~220 lb-in (0.159~25.7 N·m)
Max. Instantaneous Torque		67 oz-in~680 lb-in (0.478~77.2 N·m)
Resolution (P/R)		100 to 100,000 (Factory 1000)
Options		Electromagnetic Brake
Gear Types		Planetary
Driver Types		Pulse Input
Power Supply	Single-Phase (VAC)	100-115 / 200-230
	Three-Phase (VAC)	200-230
Starting From (Motor+Driver+Cable)		$1,493.00

Stepper Motors

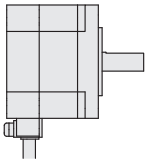


Oriental Motor offers a wide range of high torque stepper motors in frame sizes from 0.79 in. (20 mm) up to 3.54 in. (90 mm). Geared types, encoders and brake options and various motor windings are offered.

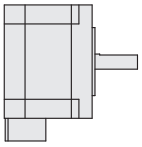
For increased performance, full time Microstepping drivers with Smooth Drive are available, reducing noise and vibration and controlling heat output.

Stepper Motor Types

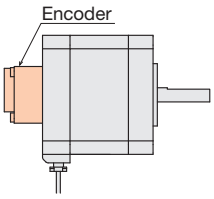
Standard



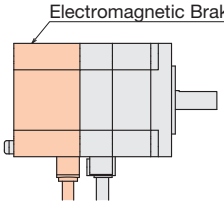
High-Resolution Type



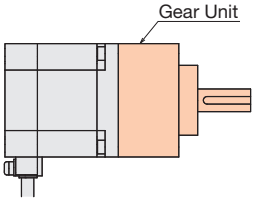
Encoder Type



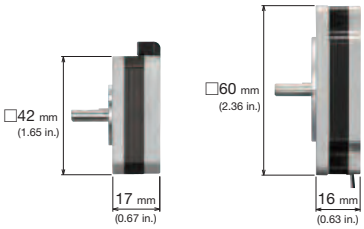
Electromagnetic Brake Type



Geared Type

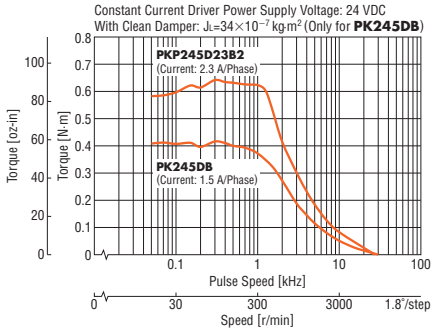


Flat Type

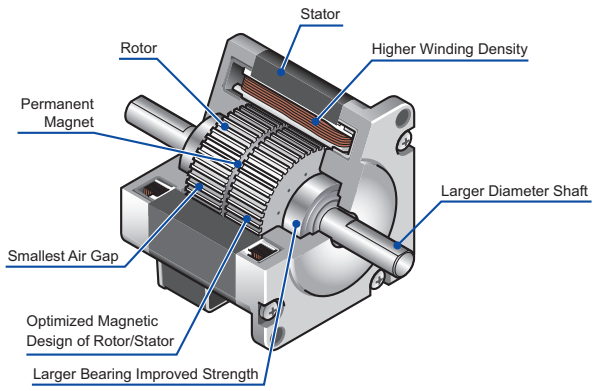


PKP Stepper Motor Features

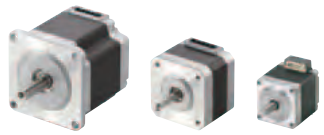
Increased Torque: New PKP to PK

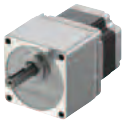


New Design: Run Cooler or Downsize

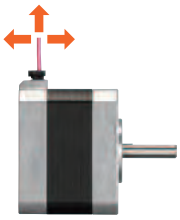


PKP Series





Flat Connector



∗ Cable sold separately

●High Torque, Low Vibration, Ridged Construction, Downsizing

1.8°/0.9°/0.72°/0.36°

PKP Series

Frame Sizes	0.79 in (20 mm), 1.10 in (28 mm), 1.38 in (35 mm) 1.65 in (42 mm), 2.22/2.36 in (56.4/60 mm), 3.35 / 3.54 in (85 / 90 mm)
Holding Torque	2.8 oz-in～1062 lb-in (0.02～120 N·m)
Resolution (P/R)	2 Phase (1.8°/0.9°)
	5 Phase (0.72°/0.36°)
Options	Flat Motor / Electromagnetic Brake / Encoder
Gear Types	Spur / Tapper Hob / Planetary / Harmonic
Starting From (Motor)	$45.00

CVD Driver

Board Mounting Type
CVD-S type

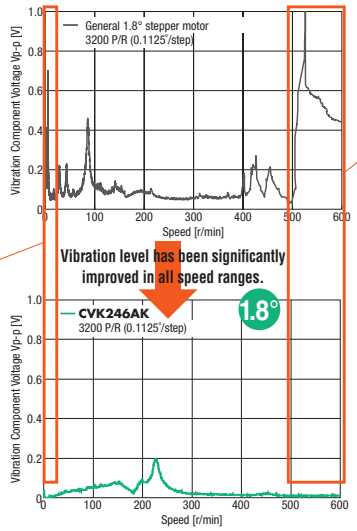
DC Input

CVD Series

Motor Types (Bi-polar)		2 Phase (1.8°/0.9°)
		5 Phase (0.72°/0.36°)
Current (Amps)		0.5～4.5✻
Smooth Drive		2048 per step
Power Supply	VDC	24
Input Current (Amps)		0.5～4.8✻
Starting From (Driver)		$130.00

✻See individual driver for ratings

●Low Vibration with Full-Time Microstepping



Vibration Suppression Control

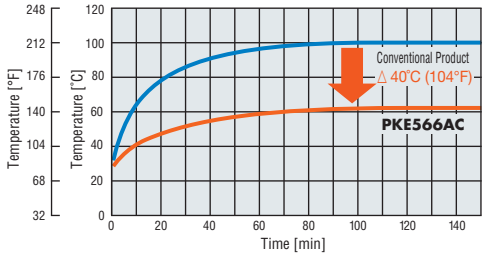
Smooth Drive Control Reduces Step Vibration

2 Phase, 1.8°

RKII Series

AC Input – 5 phase

●High-Efficiency at a Low Price



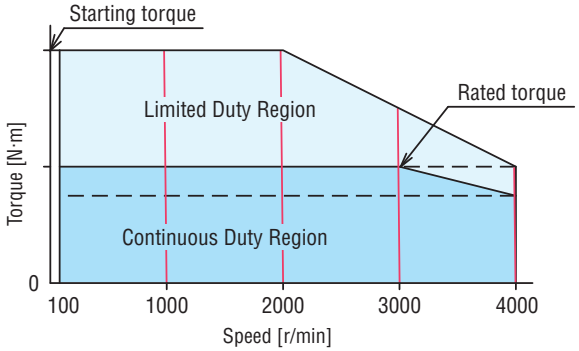
Reduced motor running temperatures are possible

AC Input

RKII Series

Frame Sizes		1.65 in (42 mm), 2.36 in (60 mm), 3.35 / 3.54 in (85 / 90 mm)
Holding Torque		19.8 oz-in～460 lb-in (0.14～52 N·m)
Resolution (P/R)		500 (0.72°)
Options		Electromagnetic Brake / Encoder
Gear Types		Tapper Hob / Planetary / Right Angle / Harmonic
Driver Types		Pulse / Stored Data+RS-485
Power Supply	Single-Phase (VAC)	100-120, 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$473.00

Brushless Motors



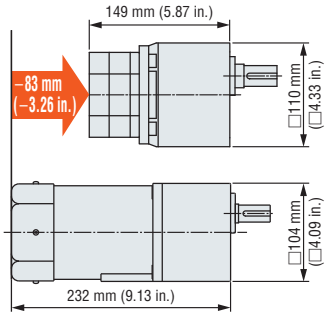
Brushless motors offer excellent energy efficiency and savings equivalent to IE4, excellent speed stability, as well as a wide speed control range. Brushless motors use permanent magnets in the rotor of three-phase motors. With Brushless motors there is no brush and commutator resulting in a maintenance free motor.

On the inside of the stator, there is a built-in hall effect IC (magnetic sensor) that detects magnetic field changes with the permanent magnets. The feedback signals from the hall effect IC of the motor are compared with the setting speed by the driver and the motor speed is adjusted continuously.

Constant Torque:
Speed is maintained even with changing loads

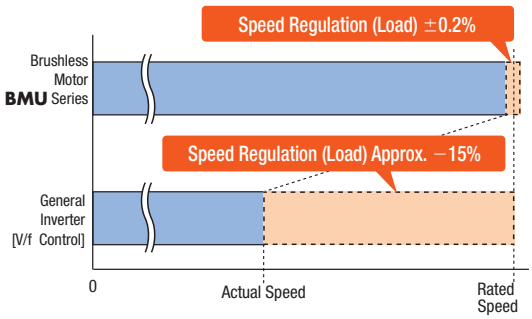
●Wide Speed Range: 80~4000 r/min

●Smaller than AC Motors

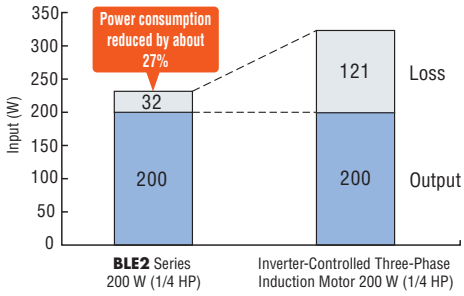


●±0.2% Speed Stability

● Comparison of Speed Variation (Reference value)

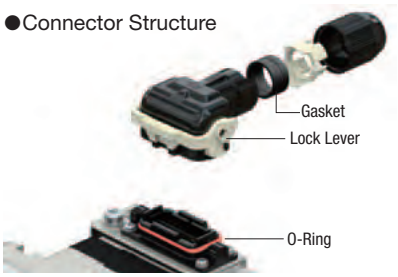


●Energy Savings



●Degree of Protection – IP66

●Connector Structure

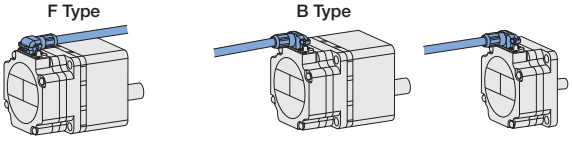


Quick lock connector style is now available on our AC Input Brushless Motor Series (BMU/BLE2)

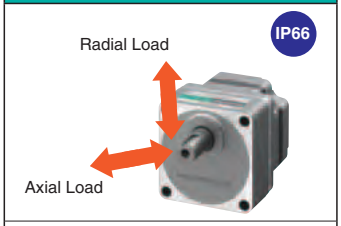
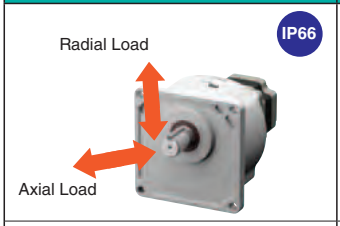
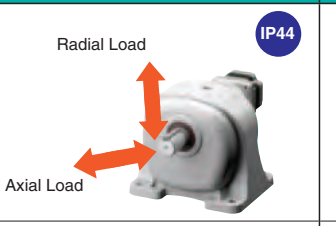
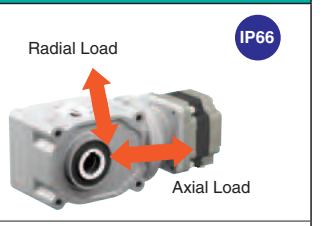
●Installation Method

Insert the connector | Turn down the lock lever | Connection complete

●Selectable Cable Direction

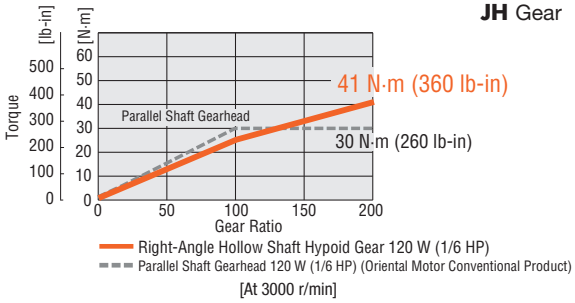


Geared Options

Parallel Shaft GFV Gear	Parallel Shaft JV Gear	Foot Mounted Parallel Shaft JB Gear	Right Angle Hollow Shaft JH Gear
			
50:1 Gear Reduction; 3000 RPM at Motor	450:1 Gear Reduction; 3000 RPM at Motor	600:1 Gear Reduction; 3000 RPM at Motor	200:1 Gear Reduction; 3000 RPM at Motor
Radial (Overhung) Load **280 lb**	Radial (Overhung) Load **1163 lb**	Radial (Overhung) Load **1331 lb**	Radial (Overhung) Load **772 lb**
Axial (Thrust) Load **67 lb**	Axial (Thrust) Load **154 lb**	Axial (Thrust) Load **185 lb**	Axial (Thrust) Load **176 lb**
Rated Torque **483 lb-in**	Rated Torque **3814 lb-in**	Rated Torque **5159 lb-in**	Rated Torque **1575 lb-in**

Hypoid Gear

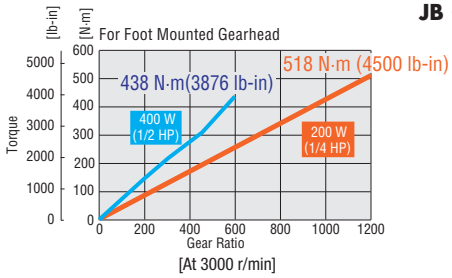
JH Gear



- Hypoid gears allow for high permissible torque without saturation even at higher gear ratios

Helical Gear

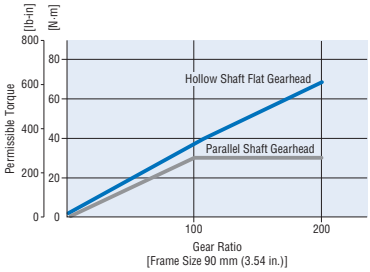
JB Gear



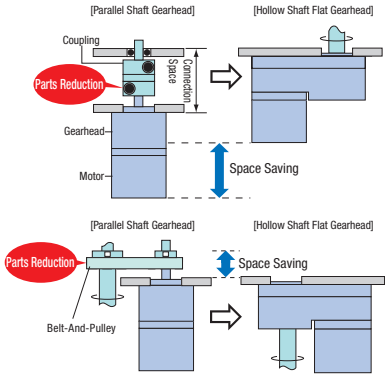
- Helical gears allow for the motor torque to be fully utilized even at the highest gear ratio.

Hollow Shaft Flat Gear (FR Type)

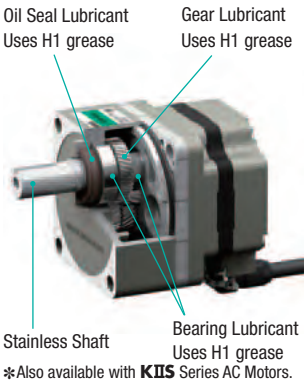
- High Permissible Torque
- Space Saving
- Long Life
- Suitable for AGV Designs



- Space Saving



H1 Food-Grade Grease (IP66)



✻Also available with **KⅡS** Series AC Motors.

H1 Food-Grade Grease is a grease registered by the NSF as part of a category where the "lubricants used in food-processing environments where there is the possibility of incidental food contact."

AC Input Motor / Driver

BMU Series

Max. of 10 m (32.8 ft.)
without an Extension Cable

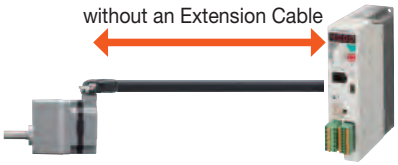
- Simple Driver Controls
- Easy Wiring & Set Up
- 4 Speeds - Data Setting
- Digital Display Built into the Driver
- IP66 Motors

BMU Series

Output Power - Watts (HP)		30 W (1/25 HP)~400 W (1/2 HP)
Frame Size - mm (in.)		60 mm (2.36 in.)~110 mm (4.33 in.)
Speed Range (r/min)		80~4000
Option		IP67 Type
Gear Option		Parallel, Foot, Right Angle
Power Supply	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$335.00

BLE2 Series

Max. of 20 m (65.6 ft.)
without an Extension Cable



- Easy Set up via Front Control Panel
- Side By Side Mounting
- Up to 16 Preset Speeds
- External DC Voltage Control
- **MEXE02** Support Software
- IP66 Motors

● The control panel cannot be removed from the driver.

BLE2 Series

Output Power - Watts (HP)		30 W (1/25 HP)~400 W (1/2 HP)
Frame Size - mm (in.)		60 mm (2.36 in.)~110 mm (4.33 in.)
Speed Range (r/min)		80~4000
Option		Electromagnetic Brake / IP67 Type
Gear Option		Parallel, Foot, Right Angle
Power Supply	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$428.00

BLE Series

- Internal or External Potentiometer
- External DC Voltage
- RS-485 / Modus (RTU)
- **MEXE02** Support Software

BLE Series

Output Power - Watts (HP)		30 W (1/25 HP)~120 W (1/6 HP)
Frame Size - mm (in.)		42 mm (1.65 in.)~90 mm (3.54 in.)
Speed Range (r/min)		80~4000
Option		Electromagnetic Brake
Gear Option		Parallel / FR Hollow Shaft
Power Supply	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$458.00

BXII Series

- Speed Control
- Position Control
- Torque Limiting
- **MEXE02** Support Software

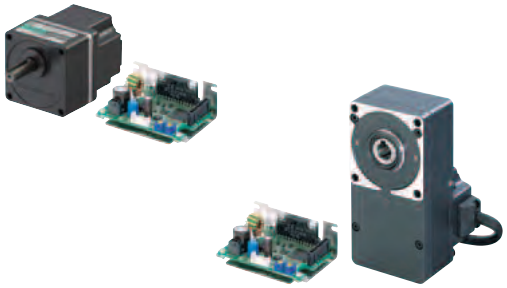
The Display when the Load Factor is 50%

BXII Series

Output Power - Watts (HP)		30 W (1/25 HP)~400 W (1/2 HP)
Frame Size - mm (in.)		60 mm (2.36 in.)~110 mm (4.33 in.)
Speed Range (r/min)		80~4000
Option		Electromagnetic Brake
Gear Option		Parallel / FR Hollow Shaft
Power Supply	Single-Phase (VAC)	100-120 / 200-240
	Three-Phase (VAC)	200-240
Starting From (Motor+Driver+Cable)		$760.00

DC Input Motor and Driver

BLH Series



- 3 Driver types (Analog, Digital or RS-485 Communications)
- 80 to 3000 r/min
- Torque Limiting & Deceleration Stop
- **MEXE02** Support Software

BLH Series

Output Power - Watts (HP)		15 W (1/50 HP)~100 W (1/8 HP)
Frame Size - mm (in.)		42 mm (1.65 in.)~90 mm (3.54 in.)
Speed Range (r/min)		80~3000
Option		Electromagnetic Brake
Gear Types		Parallel / FR Hollow Shaft
Power Supply	VDC	24
Starting From (Motor+Driver+Cable)		$264.00

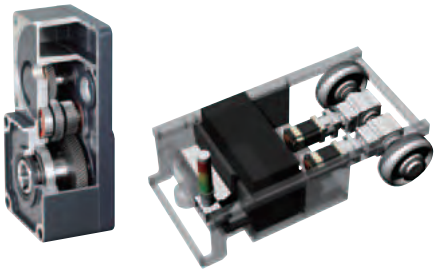
BLV Series

- Communications Control Through I/O or RS-485
- 80 to 4000 r/min
- Torque Limiting & Deceleration Stop
- **MEXE02** Support Software

BLV Series

Output Power - Watts (HP)		200 W (1/4 HP)~400 W (1/2 HP)
Frame Size - mm (in.)		90 mm (3.54 in.)
Speed Range (r/min)		80~4000
Option		Electromagnetic Brake
Gear Types		Parallel / FR Hollow Shaft
Power Supply	VDC	24 / 48
Starting From (Motor+Driver+Cable)		$632.00

●Hollow Shaft Flat Gear (FR Type) for **AGV / AMR**



When considering AGV/AMR's drivetrain design, Brushless DC motors' offer a compact size and a wide speed range. Flat torque performance can be matched with the FR gearhead.

DC Brushless motors offer constant torque, accurate stopping (load holding with brake) and are highly efficient for longer battery life.

●Stop and Hold Using Electromagnetic Brake

Holding with brake

The stop position can be maintained when stopping the equipment to load and unlock or process work pieces or hold the loads during unexpected occurrences such as power outages.

✻Cannot be used for vertical drive applications such as gravitational operation.
✻Customer must provide the electromagnetic brake control.

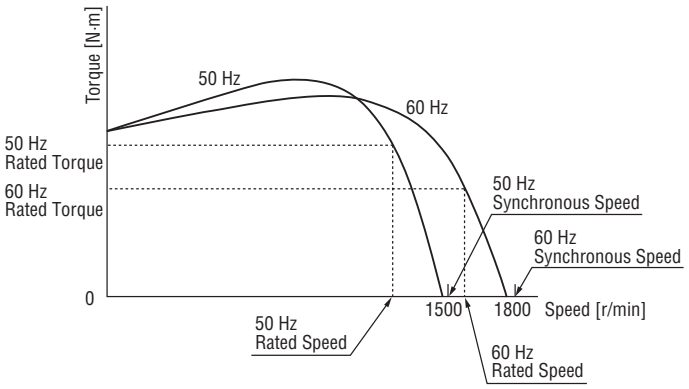
Standard AC Motors

Standard AC motors are used generally as a power source for automated equipment because they can be operated easily by connecting directly to an AC power supply. A standard AC motor supports various applications including high torque output, stopping or variable speeds. By using with a gear head, brake pack or speed controller, Standard AC Motors offer simple to use convenience and flexibility.

●The Power Supply Frequency Determines the Speed

The basic speed (synchronous speed) of a standard AC motor is determined by the power supply frequency and the number of poles. Many of our standard AC motors have four poles, so their synchronous speed is as follows:
50 Hz: 1500 r/min
60 Hz: 1800 r/min

The actual speed varies according to the load torque.
With our motors, the speed roughly falls within the following ranges at a load torque equivalent to the rated torque:
50 Hz: 1200 to 1300 r/min
60 Hz: 1450 to 1600 r/min



Speed – Torque Characteristics

Constant Speed AC Motors

Induction / Reversible Motors

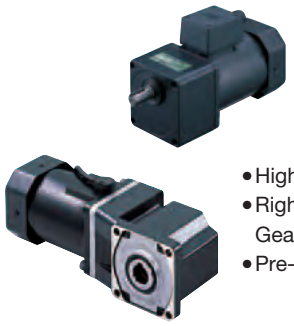
World K Series

- Standard AC Motors
- Overheat Protection Built-in
- Long Life – 10,000 hrs
- Right Angle Gearheads Available

World K Series

Type		Induction, Reversible
Output Power		1 W (1/750 HP)~90 W (1/8 HP)
Frame Size		42 mm (1.65 in.~90 mm (3.54 in.)
Options		Terminal Box / Conduit Box / Electromagnetic Brake
		150 W (1/5 HP) 2-Pole (no Gear type)
Gear Types		Parallel, Right Angle Hollow or Solid
Power Supply	Single-Phase (VAC)	100-120 / 220-230
	Three-Phase (VAC)	220-230
Starting Pricing (Motor+Gear)		$143.00

BH Series



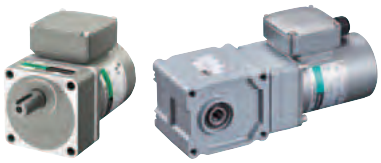
- High Power 200 W
- Right Angle Hypoid Gears
- Pre-assembled

Single-Phase / Three-Phase

BH Series

Type		Induction
Output Power		200 W (1/4 HP)
Frame Size		104 mm (4.09 in.) (3.54 in.)
Options		Terminal Box / Electromagnetic Brake
Gear Types		Parallel, Right Angle Hollow or Solid
Power Supply	Single-Phase (VAC)	110-115 / 220-230
	Three-Phase (VAC)	220-230
Starting Pricing (Motor+Gear)		$334.00

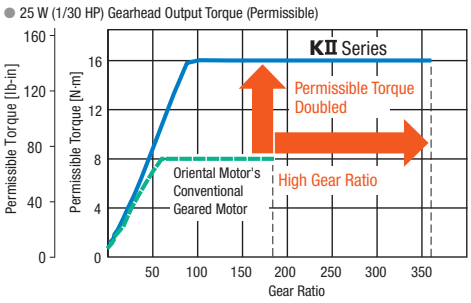
KII / KIIS Series



- Uni-Direction, Continuous Operation
- Pre-assembled, Motor & Gear
- High Strength Gears, High Permissible Torque
- Long Life – 10,000 hrs
- Low Noise

Single or Three-Phase

KII Series



Type		Induction, Reversible
Output Power		6 W (1/125 HP) ~ 90 W (1/8 HP)
Frame Size		60 mm (2.36 in. ~ 90 mm (3.54 in.)
Options		Terminal Box / Electromagnetic Brake
		Stainless Steel Shafts
Gear Types		Parallel, Right Angle Hollow or Solid, H1 Food Grade Grease (Parallel Shaft type)
Power Supply	Single-Phase (VAC)	100-120 / 220-230
	Three-Phase (VAC)	220-230
Starting Pricing (Motor+Gear)		$130.00

Brother ie3 Mid Series

Features Electrocoat Paint

- Helical (parallel) and Hypoid (right angle) gear type motors
- Pre-assembled, motor & gear
- Slip fit "O" ring design for mounting in any direction

Single or Three-Phase

Brother ie3 Mid Series Helical / Hypoid Gear Type

Type	Induction
Output Power	400 W (1/2 HP)~3 HP
Speed Range (r/min)	90~3600 (3~120 Hz)
Options	Terminal Box / Electromagnetic Brake
	Stainless Steel Shafts
Gear Types	Parallel, Right Angle Hollow or Solid
Starting Pricing (Motor+Gear)	$675.00

FPW Series
IP67 Rated

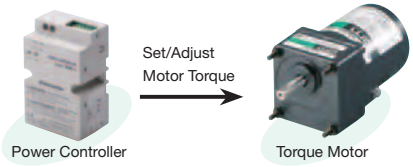
- Conforms to IEC Standard IP67
- Pre-assembled, Motor & Gear
- Water Tight and Dust Resistant

Single-Phase / Three-Phase

FPW Series

Type	Induction
Output Power	25 W (1/30 HP)~90 W (1/8 HP)
Frame Size	80 mm (3.15 in.)~104 mm (4.09 in.)
Gear Types	Parallel
Single-Phase (VAC)	110-115 / 220-230
Three-Phase (VAC)	220-230
Starting Pricing (Motor+Gear)	$291.00

Torque Motors
Torque Control



TMP-1 Power Controller (sold separately)
List Price: $123.00

Single-Phase

WK Series

Type	Torque Motor
Output Power	3 W (1/250 HP)~23 W (1/38 HP)
Frame Size	60 mm (2.36 in.)~90 mm (3.54 in.)
Gear Types	Parallel
Single-Phase	110-115 / 220-230
Starting Pricing (Motor+Gear)	$195.00

SMK Series

Low Speed Synchronous

- Excellent Starting / Stopping
- Quick, Bi-directional Operation
- Holding Torque
- 60 Hz: 72 r/min

Single-Phase

SMK Series

Type		Low Speed Synchronous
Frame Size		42 mm (1.65 in.)~90 mm (3.54 in.)
Gear Types		Parallel
Options		High Resolution (36 r/min) 42 mm (1.65 in.)
Power Supply	Single-Phase (VAC)	115
Starting Pricing (Motor)		$87.00

SB50W

Brake Packs

- Instantaneous stop, Bi-directional Motor Control.
- Ideal to Control Electromagnetic Brakes
- Supports 1 W up to 90 W
- Single-Phase 100-230 VAC

List Price: $121.00

Speed Control

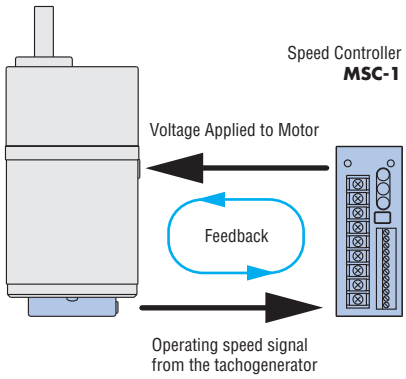
Oriental Motor offers 4 types of Speed Control Solutions. AC Motors with closed loop feedback, Three-Phase AC Motors using an Inverter, Stepper Motors with Controller and our Brushless line of Closed Loop DC Motors.

●Closed Loop Type (DSC or US2 Series)

DSC Series

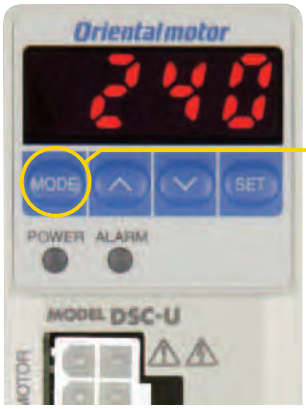
US2 Series

- Speed Regulation ±1%
- Digital Circuits
- Lower Electrical Noise (Phase Control)



DSC Series

Simple User Interface



Monitoring Mode
Real-time monitor for speed
(Motor, gear shaft, conveyor speed), alarms, warnings, I/O status monitor

Data Mode
Speed setting

Parameter Mode
Set I/O assignments and parameters

Test Mode
Test operation without data setting is possible.

●An operation lock can prevent accidental operation.

US2 Series

Easy Operation

Spin and Push

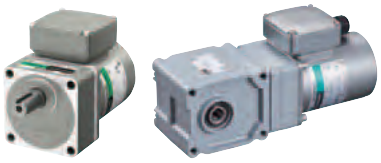
Start / Stop
FWD / Reverse

Functions:
Speed Controllers

		DSC Series	US2 Series
Speed Setting Method		- External Potentiometer - Digital Setting - External DC Voltage	Dial Setting
Function	Speed Display	●	●
	Instantaneous Stop	●	–
	Acceleration/Deceleration Operation	●	●
	Multiple-Speed Operation	4 Speed	–
	Load Holding	●	–
	Gravitational Operation	Electromagnetic Brake	
	Parallel Motor Operation	●	–
	Protection Function	●	●
Starting Pricing (Controller)		$125.00	$125.00

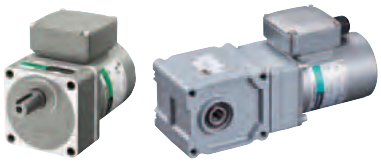
DSC or **US2** Series
SCM Speed Control Motors

Output Power	6 W (1/125 HP)~90 W (1/8 HP)
Speed Range (r/min)	90~1600 (60 Hz)
Options	Terminal Box / Electromagnetic Brake
	External Speed Control
Gear Types	Parallel (inch / metric), Right Angle Hollow or Solid
Starting Pricing (Motor)	$81.00



●Three-Phase AC Motors with Inverter

KⅡS Series



Three-Phase

KⅡS / BH Series

Type	Induction, Reversable, Electromagnetic Brake
Output Power	30 W (1/25 HP)～200 W (1/4 HP)
Speed Range (r/min)	90～3600 (3～120 Hz)
Options	Terminal Box / Electromagnetic Brake
	Stainless Steel Shafts
Gear Types	Parallel (inch / metric), Right Angle Hollow or Solid H1 Grease (metric only)
Starting Pricing (Motor＋Gear)	$228.00

FPW – IP67

Three-Phase

FPW Series

Type	Induction
Output Power	25 W (1/30 HP)～90 W (1/8 HP)
Speed Range (r/min)	90～2400 (3～80 Hz)
Features	Watertight / Stainless Steel Shaft
	Anti-Corrosive Expoxy Coating
Gear Types	Parallel, Right Angle Hollow or Solid
Starting Pricing (Motor＋Gear)	$295.00

Brother ie3 Mid Series

Three-Phase

Brother ie3 Mid Series Helical / Hypoid Gear Type

Type	Induction
Output Power	400 W (1/2 HP)～3 HP
Speed Range (r/min)	90～3600 (3～120 Hz)
Options	Terminal Box / Electromagnetic Brake
	Stainless Steel Shafts
Gear Types	Parallel, Right Angle Hollow or Solid
Starting Pricing (Motor＋Gear)	$565.00

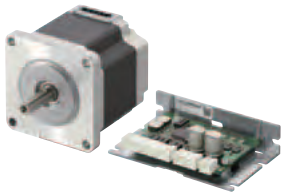
Fuji Electric Inverter

FRENIC-Mini (C2) Inverter — UL508C, EN 61800-5-1:2007

Capacity	115 VAC Single-Phase: 1/8 HP～1 HP
	230 VAC Single-Phase: 1/8 HP～3 HP
	230 VAC Three-Phase: 1/8 HP～3 HP
Overload Capabilty	150% 1 min: 200% 0.05 sec
Input Power	115 VAC / 230 VAC Single / Three-Phase
	Voltage: ＋10% to －15% (unbalance 2% or less)
Control	V/F control (Induction Motor)
	Dynamic Torque Vector control (Induction Motor)
	Permanent Magnet/Synchronous motor V/F control
Output Frequency	Analog Setting: ±2% of max. frequency
	Digital Setting: ±0.01% of max. frequency (keypad)
Starting Torque	150% running at 1 Hz with Slip compensation & Auto Boost
Braking Transistor	Built-in except 1/4 HP and less
Starting Pricing	$172.00

Stepper Motor

CVK–SC Speed Control
DC Input - 5 phase

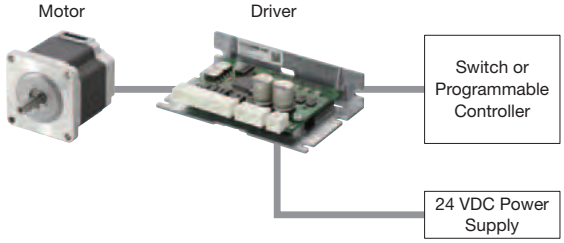


●2 Speed Setting, No Pulse Generator Required

DC Input

CVK-SC

Motor Types (Bi-polar)		5 Phase (0.72°)
Speed Settings		2
Hold Load at Standstill		Yes
Power Supply	VDC	24 VDC
Starting From (Motor＋Driver＋Cable)		$263.00



Cooling Fans

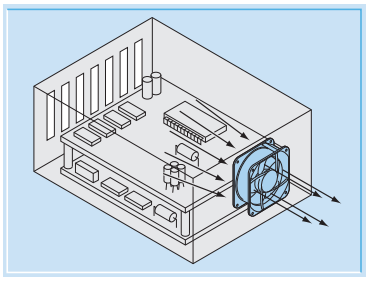
Fans and Thermal Management

Today's fans are designed to move air allowing for cooling, controlling an area of space or for protecting electronics. Many of our fans come with alarm features designed for warning or for preventative maintenance. Oriental Motor helps make selecting the appropriate type of fan for today's applications simple.

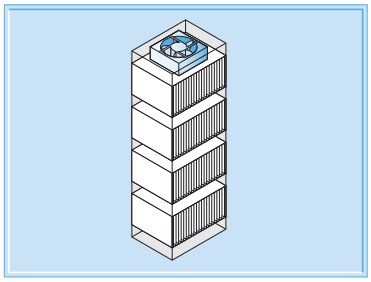
Axial Flow Fans

●AC or DC Input

Device Ventilation and Cooling



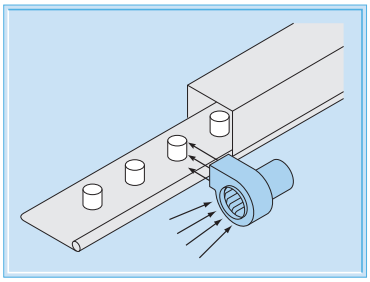
Cooling Densely Mounted Devices



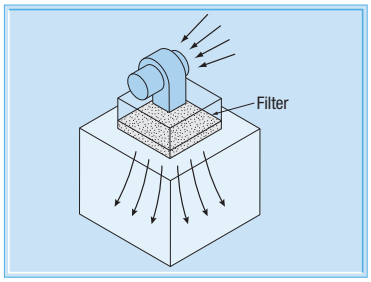
Centrifugal Blowers

●AC or DC Input

Air-Blow Cooling or Drying



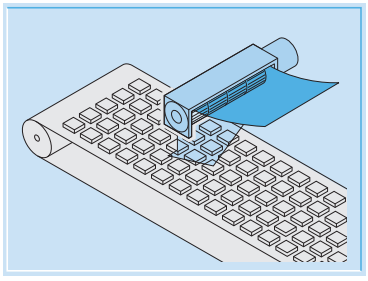
Cooling with High Static Pressure



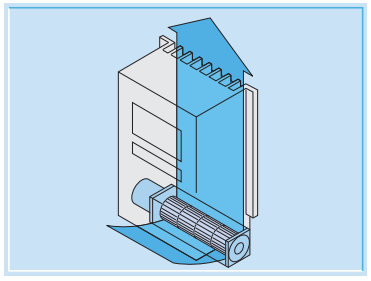
Cross Flow Fans

●AC or DC Input

Uniform Cooling or Drying



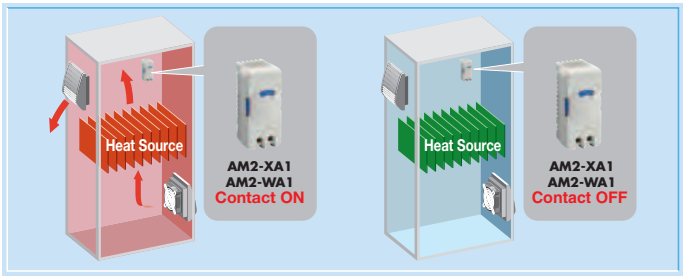
Cooling for Long or Thin Spaces



Thermostat

●Fahrenheit (°F) or Centigrade (°C)

Automatically turning it ON/Off with a Set Timer

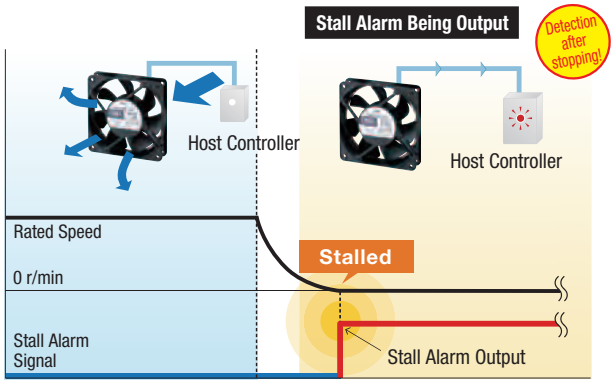


Alarm Types

Cooling fans with alarms allow for prevention of unexpected problems or malfunctions.

●Locked Rotor Alarm

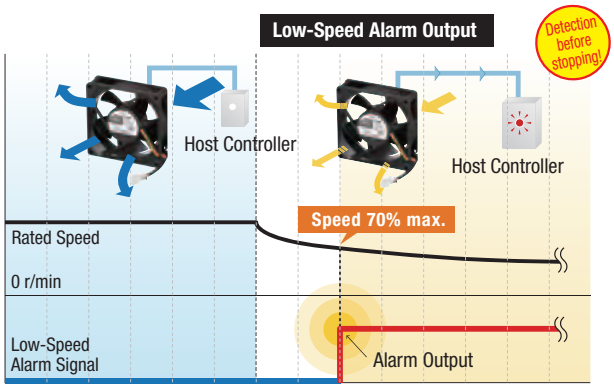
The fan will emit an alarm when the fan rotation has stopped. This will alert you to interruptions immediately, so that action / replacement can be made.



●Low-Speed Alarm

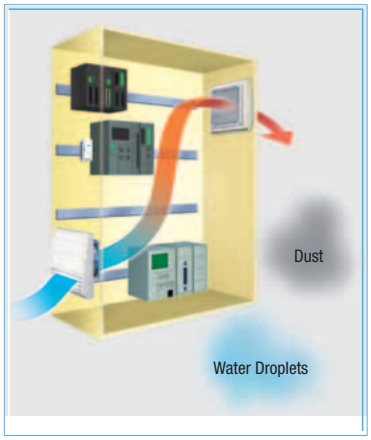
The fan will emit an alarm when the fan slows down possibly due to the introduction of foreign particles or other problems. This helps with predictive maintenance.

If multiple fans are running, it will also allow for replacement of only the fans experiencing a reduced cooling capacity.



Enclosure Types

- AC or DC Input
- Complete Assembly
- IP2X, IP4X or IP55 Models
- Suction or Exhaust Type



Accessories

- Finger Guards
- Filters
- Screens
- Plug Cords

Environmental Efforts

ECO MOTION

Oriental Motor supports our customers' MOTION with consideration for the environment.

Oriental Motor has proactively supported activities that give consideration to global environmental conservation. Energy savings, conservation of natural resources and reduction of waste and carbon dioxide are implemented at various stages of the product lifecycle. By providing beneficial products that feature high efficiency, compact size, high power and long life, Oriental Motor hopes to be involved with various "motion" that our customers require, while contributing to environmental conservation activities.

①Energy Savings (High Efficiency)

A motor converts electric energy into mechanical energy. Energy savings require higher efficiency by reducing the energy loss from the motor. Going forward, Oriental Motor will surpass the international standards with compact, precision motors aimed at higher efficiency.

②Conservation of Natural Resources and Longer Life

We have saved on natural resources by producing compact, more efficient products, thereby making more effective use of the natural resources in the product lifecycle. In the future we will promote longer product life and less wiring to match product features.

③Controlling Chemical Substances in Products

Oriental Motor uses green procurement standards that take into consideration the global electrical and electronic industry standard IEC 62474 and customer requirements to curb the chemical substances in products.

✻IEC 62474: Material declaration for products of and for the electrotechnical industry

(a) Green Procurement

Products, parts, materials, packaging, etc. with a low environmental impact are given priority in procurement. The basic requirements are established as "Green Procurement Standards", which are promoted during business transactions.

● For details, refer to "Green Procurement" on the Oriental Motor website.

(b) Measures and Responses to Chemical Substances in Products

- RoHS Directive Compliance Initiatives for the EU
- REACH Regulation Compliance
- Initiatives Concerning the Measures for Administration of the Pollution Control of Electronic Information Products Act (People's Republic of China)
- Other Regulations Concerning Handling of Chemical Substances in Products

● Global Regulations & Standards/Management of Chemical Substances in Products WEB

Hybrid Control System

αSTEP AZ Series

Energy savings of 47% compared to the conventional Oriental Motor product have been achieved, contributing to reduced CO_2 emissions.

Brushless Motor and Driver

BMU Series

Compact size, high power and high efficiency contribute to a reduction in raw materials and energy conservation.

High-Efficiency Three-Phase Induction Motors

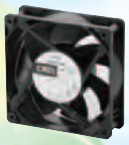
KⅡS Series

A high-efficiency three-phase induction motor with a maximum efficiency of 73% and an optimized magnet design that minimizes loss.

Low-Power Consumption Axial Flow Fans

EMU Series

By using a brushless motor, energy savings of approximately 68% (compared to other Oriental Motors products) have been achieved.



Environmental Policy

Oriental Motor's Basic Environmental Philosophy and Environmental Policy

● ISO 9001 and ISO 14001 WEB

Before Selecting a Product

Scope of Intended Applications

Our products are designed and manufactured for use in general industrial applications. They are not intended for use in nuclear power generation, aerospace, railway, vehicle, entertainment machinery, safety equipment, medical equipment or any other application having a significant effect on human life or property.

Safety Precautions

Before using any product, carefully read the “operating manual” to ensure correct operation.

Return, Replacement and Repair After Delivery

- ORIENTAL MOTOR U.S.A. CORP. is confident that you will be completely satisfied with your purchase. In the unlikely event that a delivered product has been damaged during shipping or if you receive an incorrect order, ORIENTAL MOTOR U.S.A. CORP. will correct the problem. Please contact your local sales office or distributor where the product was purchased.
- If you need to return a product because of a technical issue, please contact ORIENTAL MOTOR U.S.A. CORP. technical support at 1-800-468-3982 (847-871-5931 or 310-715-3303 if outside the USA & Canada) to try to determine the cause of the problem. If your problem cannot be resolved, you will receive instructions on how to obtain an RMA number and how to return the product.

Warranty and Limitation of Liability

Warranty

Oriental Motor U.S.A. Corporation (the “Company”) warrants to the first end user Buyer that the products and parts thereof, when shipped will be free from defects in materials comprising the same and in the Company’s workmanship. If any such defects exist or later appear, the Company shall undertake, at its sole expense, prompt remedial action as stated herein to correct the same; provided however, that the Company shall have no obligation or liability under this warranty unless it shall have received written notice specifying such defects no later than two (2) years from the date of shipment.

Lead Time

Oriental Motor's lead time is characterized by best in class, with many of our catalog products available to ship in 3 to 9 business days (for orders placed before 12pm PST). Your order is shipped using only reputable carriers or any carrier of your choice to ensure on-time and damage free-delivery. Our manufacturing processes support our fast delivery and short lead time to allow us to support your needs. Our Just-In-Time production system allows the manufacturing of an order with little notice, in any quantity requested. Additionally, our one-by-one process allows us to manufacture one product as easily as one thousand.
In addition, Oriental Motor will quote “Available to Ship” shipping dates for guaranteed quantities on our website for most products. For larger quantities please contact your local sales office.

LIMITATION OF LIABILITY

THE COMPANY SHALL HAVE NO LIABILITY WHATSOEVER IN ANY EVENT FOR PAYMENT OF ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, DAMAGES FOR INJURY TO ANY PERSON OR PROPERTY. BY ACCEPTING THE PRODUCTS AND/OR PARTS THEREOF, THE FIRST END USER BUYER OR SUBSEQUENT USER AGREES THAT THE COMPANY SHALL NOT BE LIABLE FOR INDEMIFICATION OR CONTRIBUTION (IN WHOLE OR IN PART) EITHER EXPRESSLY OR BY IMPLICATION. IF FOR ANY REASON OF THE FOREGOING PROVISIONS SHALL BE INEFFECTIVE, THE COMPANY’S LIABILITY FOR DAMAGES ARISING OUT OF ITS MANUFACTURE OR SALE OF ITS PRODUCTS OR PARTS, OR USE THEREOF, WHETHER SUCH LIABILITY IS BASED ON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL NOT IN ANY EVENT EXCEED THE FULL PURCHASE PRICE OF SUCH PRODUCTS AND PARTS THEREOF.

Any action against the Company based upon any liability or obligation arising hereunder any law applicable to the sale or its products or parts thereof, or the use thereof, must be commenced within two (2) years after the cause of such actions arises.

www.orientalmotor.com

ORIENTAL MOTOR U.S.A. CORP.

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Fax: (310) 225-2594

Los Angeles
Tel: (310) 715-3301

San Jose
Tel: (408) 392-9735

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