

A

Stepper Motors

- Motor and Driver
AC Input
- Driver
- Motor



B

α STEP Hybrid Control System, Alpha Step

- α STEP Battery-Free, Absolute
AC Input/DC Input
- α STEP
AC Input/DC Input



C

Servo Motors

- Tuning-Free Servo Motors
AC Input



D

Brushless Motors

AC Input/DC Input



E

Standard AC Motors

- High Efficiency Three-Phase Induction Motors
- Induction Motors
- Reversible Motors
- Electromagnetic Brake Motors
- Clutch & Brake Motors
- Low Speed Synchronous Motors
- Torque Motors
- IP67 Watertight, Dust-Resistant Motors
- Brake Pack
- AC Speed Control Motors



F

Linear & Rotary Actuators

- Electric Linear Slides
- Electric Cylinders
- Hollow Rotary Actuators



G

Network-Compatible Products, Controller

- Network-Compatible Products
Modbus (RTU) - Compatible Products
EtherCAT-Compatible Products
Network Converters
- Controller



H

Cooling Fans

- Axial Flow Fans
AC Input/DC Input
- Centrifugal Blowers
AC Input/DC Input
- Cross Flow Fans
AC Input/DC Input
- Enclosure Fan Modules
- Thermostat



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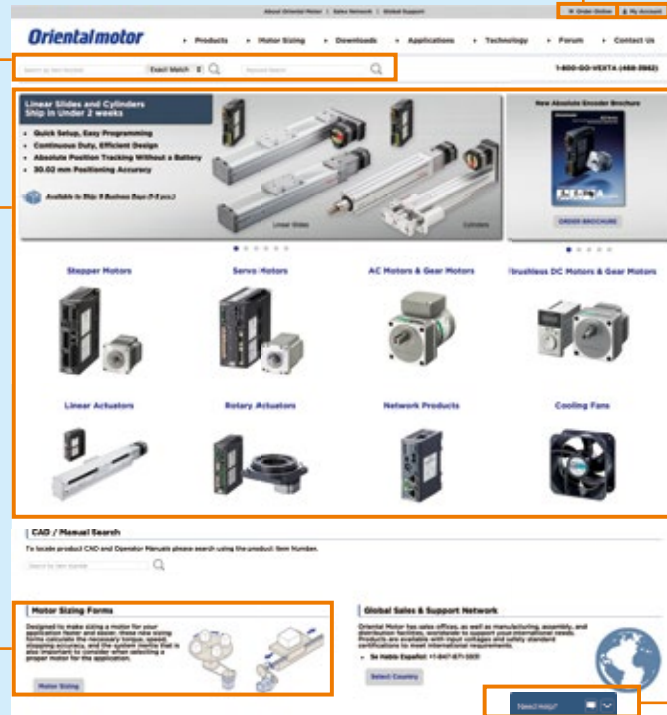
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ORIENTAL MOTOR U.S.A. CORP.



Los Angeles office



Chicago office



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North America, Central and South America

U.S.A., Canada, Mexico, Central and South America Area



■ Headquarters ● Sales Office

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	+1-847-871-5931	(Chicago: Outside the U.S.A.)
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E-mail: techsupport@orientalmotor.com
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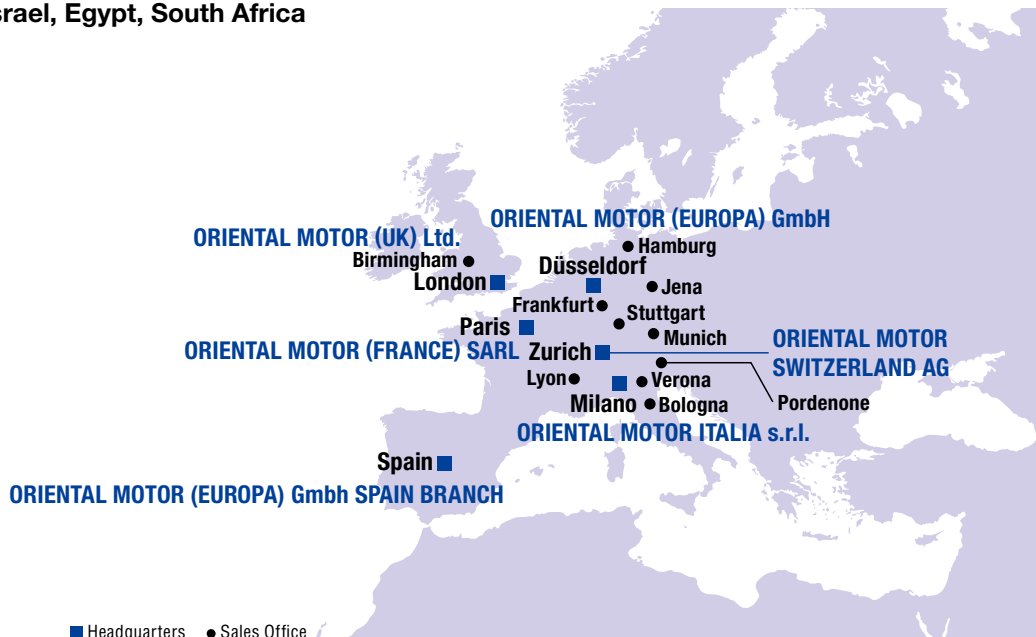
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TEL	+1-310-715-3304	(Outside the U.S.A.)

E-mail: j-support@orientalmotor.com
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Global Sales Network

Europe

Germany, France, United Kingdom, Ireland, Italy, Switzerland
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Israel, Egypt, South Africa



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*In addition, there are Oriental Motor distributors throughout Europe.
Contact our Düsseldorf office for inquiries.



Customer Service Center
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South East Asia, India, Oceania

Singapore, Malaysia, Thailand, Philippines, Vietnam,
Indonesia, India, Australia, New Zealand



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TEL 1800-806161 (For Malaysia)
TEL 1800-888-881 (For Thailand)
E-mail sales@orientalmotor.com.sg
Business Hours 9:00 to 17:30 (M-F)
(Singapore Time)

Global Sales Network

China, Taiwan, Korea, Japan



Sales Offices

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FAX: +81-3-5826-2576
www.orientalmotor.co.jp

Oriental Motor Corporate Overview



Company	ORIENTAL MOTOR CO., LTD.
Founded	1885
Established	1950
Representative	President Eiji Kawahito
Capital	4.1 billion yen
Sales	Consolidated 50.1 billion yen (At the end of March 2017)
Number of Employees	Consolidated 3,010 (At the end of March 2017)
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.



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. If you intend to use our products in any of the above non-intended applications, please consult us regarding the specific application and operating environment before doing so. We must remind you, however, that our warranty only covers the items specified under “warranty and limitation of liability.”

■ 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.

■ Specification Change

The product names, specifications, appearances and other details of products featured in this catalog are subject to change without notice for purposes of improvement. Before you examine or order any product featured in the catalog, we recommend that you check with our sales office to confirm that the stated information is valid.

■ 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.

■ Placing an order

There are several ways to place an order with Oriental Motor:

- Call our Customer Service Centers
 - ◇ USA & Canada: 1-800-418-7903
 - ◇ Mexico: 01-800-681-5309
- E-mail our Customer Service Centers by using the following e-mail addresses:
 - ◇ Westcoastorders@orientalmotor.com (Los Angeles Sales Office)
 - ◇ Midwestorders@orientalmotor.com (Chicago Sales Office)
 - ◇ Eastcoastorders@orientalmotor.com (Boston Sales Office)
- Visit our Website (www.orientalmotor.com) for product specifications, to download CAD or PDF files and to purchase products. Please note that not all Oriental Motor products are available to order through the web.

● Oriental Motor accepts Visa, MasterCard and American Express. After your first order, you can apply to set up a terms account on future orders by contacting your local Customer Service Center.

*For Website orders only, PayPal is also available.

■ 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. Remedial action under this warranty shall require only that the Company, at its option, repair or modify the products or parts thereof, replace the same F.O.B. Torrance, California, or accept the return of the products or parts thereof by the Buyer and refund the purchase price.

Products or parts thereof, manufactured by others are warranted hereunder only to the extent of such manufacturer's warranty to the Company.

Since after the shipment, the products and parts thereof are under the sole control of the Buyer, this warranty is subject to, and shall be applicable only if the following conditions are met;

- ① The Company's instructions as to installation, operation and maintenance have been followed; and
- ② The products and parts thereof have been used under normal operating conditions or under such conditions as herein before specified by the Company, or specified by the Buyer and agreed to in writing by the Company.
- ③ The products and parts thereof have been erected, installed, operated and maintained and have not been affected by misuse, neglect or accident; and
- ④ The Buyer has not attempted or performed corrective work or modification on the products and/or parts thereof without the Companies prior written consent as to the nature and expense thereof.
- ⑤ The Company shall have received notice of any defect no later than thirty (30) days after the Buyer first had knowledge of the same;.
- ⑥ Within the warranty period and after prior authorization from the Company, the products and/or parts are shipped freight prepaid to the Company at 570 Alaska, Ave., Torrance CA. 90503.
- ⑦ If you have a need to return any product purchased directly from Oriental Motor USA Corporation, please email your request to RMA_ARsupport@orientalmotor.com and you will receive RMA # within 24 to 48 hours of your request.

THE FOREGOING WARRANTY IS IN SUBSTITUTION FOR, AND IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

● 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 INDEMNIFICATION 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.

How to Use this Catalog

When You Know the Product Line or Product Name You Want to Use

Select from Overall Contents

Contents	Page	Contents	Page
Global Sales Network	1	The Products and Services Delivered by Oriental Motor	1-1
Before Selecting a Product	1-1	How to Use This Catalog and the Website	1-1
Contents	1-1	By Operating Function	1-1
How to Use This Catalog and the Website	1-1	By Basic Characteristics	1-1
A) Stepper Motors			
Overview	A-2	Overview	A-2
Product Series	A-3	Family Product Series Motor and Other NIE Series	A-3
Characteristics	A-4		
How to Read Specifications	A-10		
Check to Read Speed-Torque Characteristics	A-11		
Common Specifications	A-12		
Stepper Motor and Driver	A-13		
Stepper Motor Selection	A-14		
Other	A-15		
C) Servo Motors			
Overview	C-2		
Product Series	C-3		
Characteristics	C-4		
How to Read Specifications	C-10		
Check to Read Speed-Torque Characteristics	C-11		
Common Specifications	C-12		
Other	C-13		
D) Brushless Motors			
Overview	D-2		
Product Series	D-3		
Characteristics	D-4		
How to Read Specifications	D-10		
Check to Read Speed-Torque Characteristics	D-11		
Common Specifications	D-12		
Other	D-13		

Select from a List of Products

Brushless Motors		D-1
Overview		D-2
Product Series		D-3
Characteristics		D-4
How to Read Specifications		D-10
Check to Read Speed-Torque Characteristics		D-11
Common Specifications		D-12
Other		D-13

When You are not Sure Which Product to Use

Select from Selection Guide

Selection Guide **By Operating Function** **By Basic Characteristics**

Constant Speed Operation

- Uni-directional Continuous Operation **Pages E-3, 5**
 - For Vector Speed Control, Vector Control, and a Motor Control Unit
- Instant Switching of Rotational Direction **Pages E-5, 7**
 - Reversible Motors
 - Motor Control Units
- Synchronous and Instant Switching of Rotation Direction, Instantaneous Stopping **Pages E-7, 9**
 - Vector Control Motors
 - Motor Control Units

Peripheral Products

- Motor Control Units
- Motor Control Units
- Motor Control Units

Select from Product Series

D-2 Overview

Brushless Motor Product Series

These speed control motors combine compact yet powerful brushless motors and high performance drives. They offer excellent energy savings and speed stability, as well as a wide speed control range.

Brushless Motor Product Line

- Wide Speed Ratio
- Reduced Size and Energy for Equipment

AC Input Brushless Motors

- Output Power: 30 W (125 RPM) - 400 W (177 RPM)
- Speed Control Range: 40 - 4000 rpm
- Speed Regulation: ±0.2% max. (1:0.02 BXX)

BMU Series (BMU100, BMU150, BMU200)

- Speed Settings: 4
- Control Method: OI
- Easy to control, just turn ON/OFF

BLE2 Series (BLE200, BLE250, BLE300)

- Speed Settings: 16
- Control Method: OI
- Simple wiring, external speed control, external speed control

BXII Series (BXII100, BXII150, BXII200)

- Speed Settings: 16
- Control Method: OI
- Simple wiring, external speed control, external speed control

Select from Functions and Specifications

D-4 Overview

Product Line of Brushless Motors

The specifications and functions of each series are introduced with a list. Use these for your model selection.

Series	BMU Series	BLE2 Series	BXII Series
Characteristics	High Performance and Easy Control	Full Range of Functions	Excellent with Encoder for Position Control / High Precision Speed and Position Control
Motor	<ul style="list-style-type: none"> High torque and low ripple Wide speed range High torque density 	<ul style="list-style-type: none"> Wide speed range High torque density Wide speed range 	<ul style="list-style-type: none"> Wide speed range High torque density Wide speed range
Motor Supply Type	<ul style="list-style-type: none"> Single Phase 100-240 VAC Three Phase 200-240 VAC 	<ul style="list-style-type: none"> Single Phase 100-240 VAC Three Phase 200-240 VAC 	<ul style="list-style-type: none"> Single Phase 100-240 VAC Three Phase 200-240 VAC
Speed Ratio	40 - 4000 rpm	40 - 4000 rpm	40 - 4000 rpm
Output Power	30 W (125 RPM) - 400 W (177 RPM)	30 W (125 RPM) - 400 W (177 RPM)	30 W (125 RPM) - 400 W (177 RPM)
Speed Regulation	±0.2% max. (1:0.02 BXX)	±0.2% max. (1:0.02 BXX)	±0.2% max. (1:0.02 BXX)
Speed Control	4	16	16

When You Want to Use 2D or 3D CAD, Operating Manual, Data Setting Software or Selection Software

The Following Data Can be Downloaded from the Oriental Motor Website.

● User registration required for downloads.

- 2D CAD and 3D CAD Data
- Operating Manual
- Data Setting Software
- Selection Software
- Catalog in PDF Format

Support for When You Want to Place an Order, Request a Quote or Confirm Delivery

- Want to get advice → Customer Support Center
- Want to get information → Technical Seminars (Live, teleconference, online)
- Want to see the products → Showrooms
- Want to have a selection made → Selection Service and Selection Software
- Want to arrange testing → Request for Testing
- Want an on-site visit → Field Service

How to Read Product Pages

Header Information


● Left Header Index

List the names of currently available series.
(Sample of left side of page)

D-22		Brushless Motors/BMU Series	
Parallel Shaft Gearhead GFV Gear 3			
Specifications			
Product Name	Motor	BLM230HP	
	Driver	BMUD30-A2	
Rated Output Power (Continuous)	W (HP)	30 (1/2)	Si
Rated Voltage	VAC	Single-Phase 100-120	1
Permissible Voltage Range		-15~+	
Frequency	Hz	50 / 60	
Permissible Frequency Range		±5%	
Rated Input Current	A	1.2	3
Maximum Input Current	A	2.0	1
Rated Speed	r/min		
Speed Control Range			
Speed Regulation	Load	Max. ±0.2%, Condition	
	Voltage	Max. ±0.2%, Condition	
	Temperature	Max. ±0.2%, Condition	
*The values correspond to each specification and characteristics of a stand-alone motor.			
Gear Ratio			
Rotation Direction			

● Right Header Index

Shows the product type.
(Sample of right side of page)

Brushless Motors		D-23																										
300 W (1/4 HP), 400 W (1/2 HP)																												
																												
<table border="1"> <thead> <tr> <th>62005HP-A5</th> <th>BLM6400SHP-A5</th> </tr> </thead> <tbody> <tr> <td>200 (1/4)</td> <td>400 (1/2)</td> </tr> <tr> <td>Single-Phase 200-240 / Three-Phase 200-240</td> <td>Three-Phase 200-240</td> </tr> <tr> <td>-15~+10%</td> <td>-15~+10%</td> </tr> <tr> <td>50 / 60</td> <td>50 / 60</td> </tr> <tr> <td>±5%</td> <td>±5%</td> </tr> <tr> <td>Single-Phase: 2.7/Three-Phase: 1.5</td> <td>2.8</td> </tr> <tr> <td>Single-Phase: 4.9/Three-Phase: 3.4</td> <td>5.1</td> </tr> <tr> <td>3000</td> <td></td> </tr> <tr> <td>80~4000 r/min (Speed ratio 50:1)</td> <td></td> </tr> <tr> <td colspan="2">*torque, rated speed, rated voltage, normal temperature</td> </tr> <tr> <td colspan="2">*voltage -15~+10%, rated speed, no load, normal temperature</td> </tr> <tr> <td colspan="2">*by ambient temperature 0~+40°C (+32~+104°F), rated speed, no load, rated voltage</td> </tr> </tbody> </table>		62005HP-A5	BLM6400SHP-A5	200 (1/4)	400 (1/2)	Single-Phase 200-240 / Three-Phase 200-240	Three-Phase 200-240	-15~+10%	-15~+10%	50 / 60	50 / 60	±5%	±5%	Single-Phase: 2.7/Three-Phase: 1.5	2.8	Single-Phase: 4.9/Three-Phase: 3.4	5.1	3000		80~4000 r/min (Speed ratio 50:1)		*torque, rated speed, rated voltage, normal temperature		*voltage -15~+10%, rated speed, no load, normal temperature		*by ambient temperature 0~+40°C (+32~+104°F), rated speed, no load, rated voltage		Overview
62005HP-A5	BLM6400SHP-A5																											
200 (1/4)	400 (1/2)																											
Single-Phase 200-240 / Three-Phase 200-240	Three-Phase 200-240																											
-15~+10%	-15~+10%																											
50 / 60	50 / 60																											
±5%	±5%																											
Single-Phase: 2.7/Three-Phase: 1.5	2.8																											
Single-Phase: 4.9/Three-Phase: 3.4	5.1																											
3000																												
80~4000 r/min (Speed ratio 50:1)																												
*torque, rated speed, rated voltage, normal temperature																												
*voltage -15~+10%, rated speed, no load, normal temperature																												
*by ambient temperature 0~+40°C (+32~+104°F), rated speed, no load, rated voltage																												
<table border="1"> <thead> <tr> <th>15</th> <th>20</th> <th>30</th> <th>50</th> <th>100#1</th> <th>200#1</th> </tr> </thead> <tbody> <tr> <td colspan="6">Opposite direction to the motor</td> </tr> <tr> <td colspan="6">Same direction to the motor</td> </tr> <tr> <td>5.4</td> <td>4</td> <td>2.7</td> <td>1.6</td> <td>0.8</td> <td>0.4</td> </tr> </tbody> </table>		15	20	30	50	100#1	200#1	Opposite direction to the motor						Same direction to the motor						5.4	4	2.7	1.6	0.8	0.4	AC Input BMU AC Input BLE2 AC Input BXII DC Input BLH DC Input BLV		
15	20	30	50	100#1	200#1																							
Opposite direction to the motor																												
Same direction to the motor																												
5.4	4	2.7	1.6	0.8	0.4																							

● Index

- Color coded based on products.
- Stepper Motors
 - **αSTEP** Hybrid Control System, Alpha Step
 - Servo Motors
 - Brushless Motors
 - Standard AC Motors
 - Linear & Rotary Actuators
 - Network-Compatible Products, Controller
 - Cooling Fans

(Sample page)

Information on Safety Standards

Explanation of all standards
Applicable standards and certification bodies
→ Oriental Motor website

D-14
Brushless Motor and Driver
BMU Series



regulations and standards, please see to the Oriental Motor website.



- "Rotate and push" the configuration dial for easy speed control
- Easy wiring - just connect the motor and driver and flip the switch
- Utilizes a new brushless motor that is compact, high power, and highly efficient
- Connector types meet IP66 rating for high watertight and dust-resistant performance
- Providing the highest standard in speed control at an affordable price

See Full Product Details Online
www.orientalmotor.com

Manual Specifications Dimensions
CAD Characteristics Connection and Operation

Product Name

In this catalog, product names are listed in bold.

Product Line			
Motors, drivers, and connection cables are sold separately.			
● Motor			
◇ Parallel Shaft Gearhead GFV Gear			
Output Power	Product Name	Gear Ratio	List Price
30 W (1/25 HP)	BLM230HP-A5	5, 10, 15, 20	\$241.00
		30, 50, 100	\$249.00
		200	\$260.00
60 W (1/12 HP)	BLM460SHP-A5	5, 10, 15, 20	\$276.00
		30, 50, 100	\$288.00
		200	\$337.00
120 W (1/6 HP)	BLM5120HP-A5	5, 10, 15, 20	\$346.00
		30, 50, 100	\$358.00
		200	\$417.00
200 W (1/4 HP)	BLM6200SHP-A5	5, 10, 15, 20	\$431.00
		30, 50	\$449.00
		100, 200	\$449.00
◇ Round Shaft Type			
Output Power	Product Name	List Price	
30 W (1/25 HP)	BLM230HP-A5	\$140.00	
60 W (1/12 HP)	BLM460HP-A5	\$154.00	
120 W (1/6 HP)	BLM5120HP-A5	\$184.00	
200 W (1/4 HP)	BLM5200HP-A5	\$224.00	
400 W (1/2 HP)	BLM5400HP-A5	\$280.00	
● Driver			
Output Power	Power Supply Voltage	Product Name	List Price
30 W (1/25 HP)	Single-Phase 100-120 VAC	BMU30-A2	\$160.00
	Single-Phase, Three-Phase 200-240 VAC	BMU30-C2	\$160.00

Prices

Prices are current as of March, 2018. Prices do not include any taxes. When purchasing, sales taxes, etc will be charged separately.

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.

www.orientalmotor.com

Contact Oriental Motor in the Following Situations

How to Use a Product, Choosing a Product, or Retrieving Information Right Away

By Phone

Customer Support Center
Call for any questions or inquiries.



- 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

Online Inquires

- ▶ Technical Support Email
- ▶ Live Chat
- ▶ Q & A Forum
- ▶ On Demand Technical Videos



Selecting a Product by Specification or Calculating Torque Values

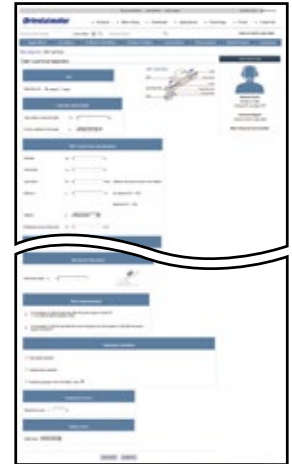
Website

Motor Sizing Tool

Designed to make sizing a motor for your application faster and easier, use our sizing tool to calculate the necessary torque, speed, stopping accuracy and system inertia when selecting a proper motor for the application.

Sizing and Selection Service

Contact our Technical Support team and we will size the appropriate motor for your application based on your specifications and requirements at techsupport@orientalmotor.com.



Get an Estimate or Purchase Today for as Little as One Piece

At Oriental Motor, customers can request an estimate or place an order for as little as 1 piece by phone or on our Website.

Fast Delivery

No Minimum Order Quantity

Find Your Lead-Time with Part Number Search

By Phone

Customer Support Center

- Orders can be placed by phone.
- Confirmation of the delivery date and arrangements for handling are also available.

- Toll-free
USA/Canada: TEL: 800-418-7903
Mexico: TEL: 01-800-681-5309
- Hours: Monday to Friday 8:30am EST to 5:00pm PST

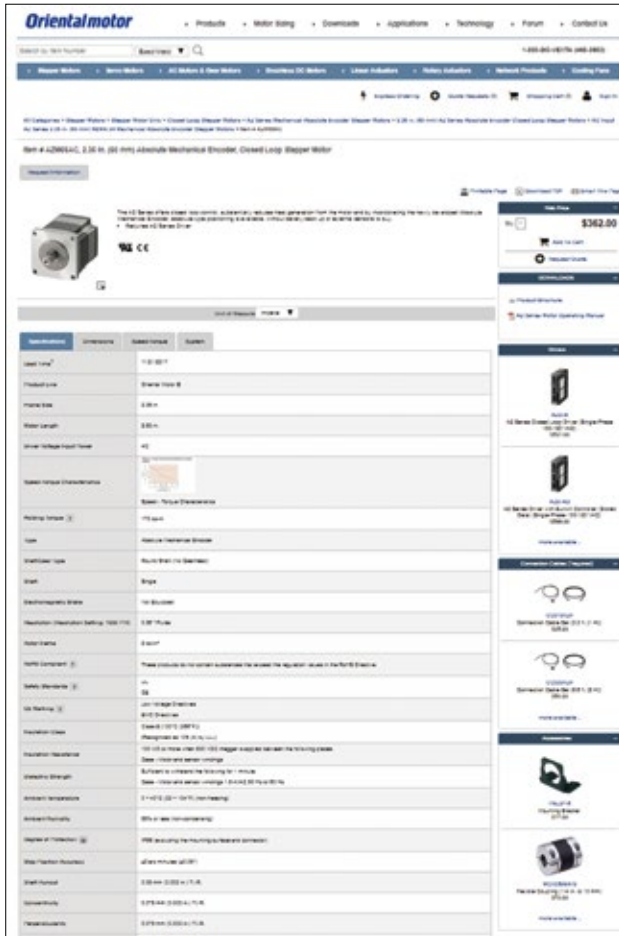
Website

Oriental Motor Online Ordering

- Find prices and accessories
- Order via Credit Card or PayPal Account
- Request a quote
- Find your product lead-time through the part number search



Online Product Catalog



Order Online

- Convenient online ordering is available through the website.
- Pay by credit card or through PayPal.
- Register for MyPage to save your shopping cart, view order history and re-order.

Product Lead Time

- Quickly and easily find the Lead Time for our standard products.

Full Product Specifications

- View pricing, specifications, features, dimensions, performance characteristics, connection, wiring diagrams and more.

Downloads

- Download Operator Manuals, Brochures and CAD files.

Accessories

- Easily select product accessories, cables, drivers and controllers to build a complete system.

Product & Technology Training

As the world leader in motion control systems, Oriental Motor has experience and knowledge in a wide range of areas related to motion control. Oriental Motor's team of application specialists, engineers and technical support staff have a wealth of knowledge to share. As part of our commitment to provide the latest technology and service, Oriental Motor is now offering in-depth product and technology training for all; online or on site.
orientalmotor.com/support/training.html

Live/On-Demand Seminars

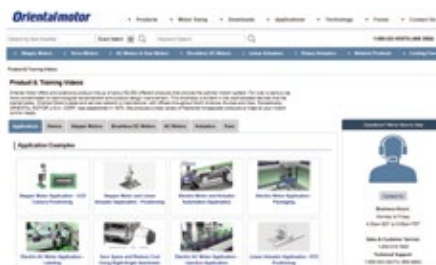
Join Oriental Motor's online seminars for product demonstrations and training. Ask questions and get personalized product recommendations, or learn about products and technology on your schedule.

On-Site Technical Seminars

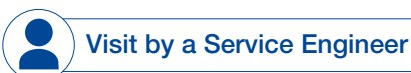
Oriental Motor offers in-person training and product demonstrations at your location. Contact your local sales office for more information or to schedule an on-site training seminar.

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 in solving simple to challenging motion requirements.



Need Onsite Support?



Visit by a Service Engineer

Field Service

If an issue cannot be resolved over the phone, a service engineer may visit the site.

- The service is free.
- The service engineer will check for malfunctions, problems, and check the settings.

Call us first.



- 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

Need a Product Inspected or Repaired?



Inspection and Repair Request

After-Sales Service Center

- Requests can be made directly, regardless of where the purchase was made.
- Inspections are free, and an inspection report will be provided.

● Request method

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

● E-mail Requests

- techsupport@orientalmotor.com

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.



① Energy 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.

② Conservation 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.

③ Controlling 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

Hybrid Control System

αSTEP AZ Series

Page B-16

Energy savings of 47% compared to the conventional Oriental Motor product have been achieved, contributing to reduced CO₂ emissions.



Brushless Motor and Driver

BMU Series Page D-13

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 Page E-22

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 Page H-18

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



(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](#)

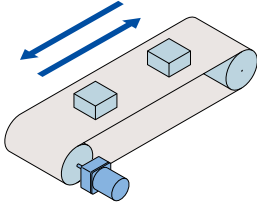
Environmental Policy

Oriental Motor's Basic Environmental Philosophy and Environmental Policy

ISO 9001 and ISO 14001 [WEB](#)

Selection Guide By Operating Function By Basic Characteristics

Constant Speed Operation



The motor is operated continuously and at a constant speed or operated bi-directionally, such as moving the load backward after moving forward.

Uni-directional Continuous Operation



Induction Motors
Page E-33

● Three-phase high efficiency induction motors → Page E-22

Instant Switching of Rotational Direction



Reversible Motors
Page E-53

Synchronous and Instant Switching of Rotation Direction, Instantaneous Stopping.

(Rotation speed is synchronized to the power supply frequency.)



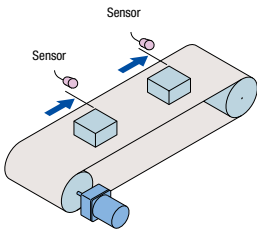
Low-Speed Synchronous Motors
Page E-71

Peripheral Products

For Greater Speed Stability, Higher Speeds, and a Wider Speed Range:

- Brushless Motors
- AC Speed Control Motors
- Servo Motors

Constant Speed Operation + Easy Positioning



This is an operation to stop the load at the target position. To detect the load, it is necessary to install a sensor at each stop position and control it by a programmable controller, etc.

Vertical Operation and Load Holding



Electromagnetic Brake Motors
Page E-59

● Three-phase high efficiency induction motors with electromagnetic brake → Page E-28

High-Frequency Start, Stop, Positioning, Indexing and Intermittent Inching Feeding



Clutch & Brake Motors
Page E-67

Instantaneous Stopping Motor with Specialized Circuit



Brake Pack
Page E-85

Peripheral Products

A Brushless Motor that Makes Speed and Position Control Easy

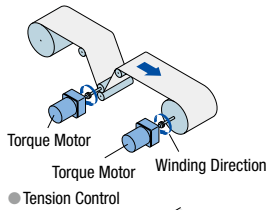


● BXII Series ▶ Page D-49

For High Accuracy Positioning

- Stepper Motors
- Servo Motors
- Linear & Rotary Actuators

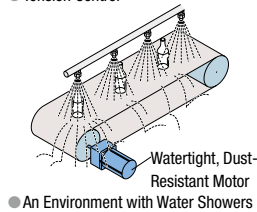
Operation under Specific Applications or Environments



Tension, Torque Control



Torque Motors
Page E-75



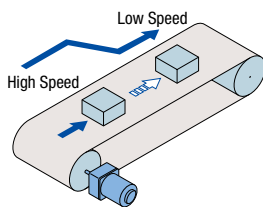
Watertight, Dust-Resistant



IP67 Watertight, Dust-Resistant Motors
Page E-81

This is a winding operation that must maintain constant tension or for use in an environment with splashing water, dust or a powdery substance.

Variable Speed Operation



This is an operation to set the desired operating speed of automatic equipment.

Highly Accurate Speed Stability and a Wide Speed Control Range



Brushless Motors
Page D-1

Easy and Affordable Speed Control of AC Motors



AC Speed Control Motors
Page E-89
● Inverter controllable three-phase high efficiency induction motors
→ Page E-21

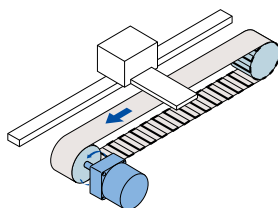
Peripheral Products

For Further High-Speed Performance



● Servo Motors ▶ Page C-1

High Positioning Accuracy and Fine Feed Operation



This is an operation to perform precise and accurate positioning. In this positioning operation, a toothed belt is used to configure the mechanism instead of a friction belt that may slip.

Compact High Torque Motor for High Response Positioning



Stepper Motor and Driver
AC Input Type Page A-16



Hybrid Control System
αSTEP
AC Input Type Page B-16
DC Input Type Page B-44

Constant (Flat) Torque Characteristic from Low Speed to High Speed



Servo Motors
Page C-1

Peripheral Products

A Ball Screw, Hollow Table and Other Mechanisms are Incorporated in the Stepper Motor.



● Linear & Rotary Actuators
▶ Page F-1

Time-Saving Ready-Made Combination of Motor and Linear Motion/Rotation Components

Transferring Loads

Ball Screw



Electric Linear Slides
Page F-12

Pushing and Pulling Small Loads or Fine-Tuning

Ball Screw



Compact Linear Actuators
Page F-32

Pushing and Pulling Loads

Ball Screw



Electric Cylinders
Page F-24

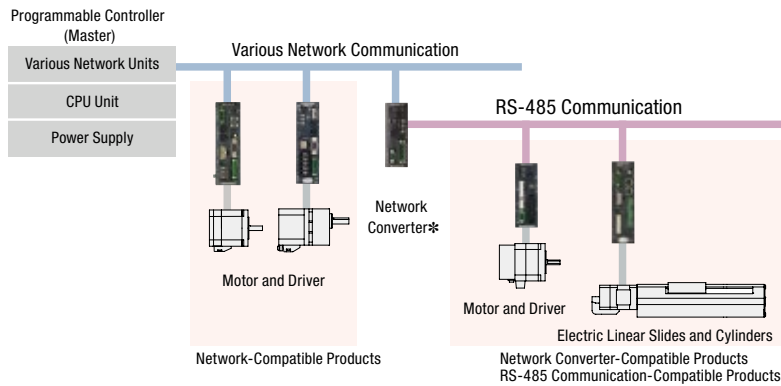
Index Drive

Hollow Rotary Table



Hollow Rotary Actuators
Page F-42

Motor Control via Network



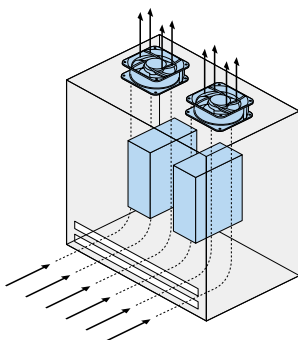
*The network converter is a transducer for FA network protocol and RS-485 communication protocol used for Oriental Motor products. Network Converters → Page G-9

Compatible Network

EtherCAT[®]
Modbus (RTU)

Page G-2

Cooling Measures



This is an operation in which cooling heat sources, drying loads or ventilation is required.

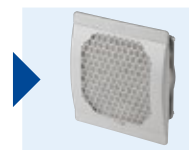
Cooling, Drying and Ventilation

Optimized Cooling for Control Boxes

Energy Saving: Only Operates when Needed



Cooling Fans
Page H-2



Enclosure Fan Modules
Page H-53



Thermostat
Page H-61

Selection Guide By Operating Function By Basic Characteristics

Motors are classified according to their differences in basic principles of operation and their structures.

Classification Based on Motor Characteristics

Motors Suitable for Constant Speed

The induction motor is operated merely by connection to an AC power supply and has a rated speed of approximately 1450 r/min (60 Hz), which is constant. It is ordinarily used with a gearhead connected directly for a lower speed.

Reversible motors (30 minutes rating) are capable of instantaneous bi-directional operation. Products with electromagnetic brake on the back of the motor are also available. These motors can be equipped with a brake pack for instantaneous stopping and switching the rotation direction.

Standard AC Motors

→ Page E-1

- Induction Motors (6 W~200 W)
- Reversible Motors (1 W~90 W)
- Electromagnetic Brake Motors (6 W~200 W)
- Clutch & Brake Motors (40 W~90 W)
- Low-Speed Synchronous Motors

● Motors with Other Functions

Torque Motors (3~20 W)

→ Page E-75

IP67 Watertight, Dust-Resistant Motors (25~90 W)

→ Page E-81

Brake Pack

→ Page E-85

Speed Control Motors

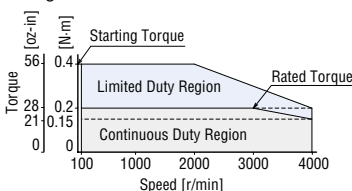
For motors intended for speed control, there are high-efficiency brushless motors and AC speed control motors with dedicated speed controllers.

Brushless Motors

→ Page D-1

Brushless Motor and Driver (15 W~400 W)

- BMU Series**
- BLE2 Series**
- etc.

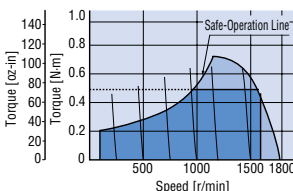


AC Speed Control Motors

→ Page E-89

AC Speed Control Motor and Driver (6 W~90 W)

- DSC Series**



There are differences in torque characteristics, speed control range, speed stability and motor size.

Position Control Motors

Position control motors are compact, have a wide speed range with high torque and provide superior control.

The pulse signal from the controller (pulse generator) specifies the rotation angle and speed for accurate positioning operation. Stepper motors do not require tuning, have superior synchronization and position holding and can be used in simple system configurations. Servo motors follow up on commands, providing high speed and superior responsiveness.

Stepper Motors, α STEP

→ Page A-1, B-1

5-Phase Stepper Motor and Driver

- RKII Series**

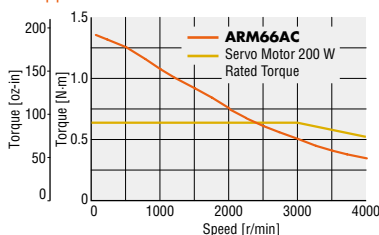
Servo Motors

→ Page C-1

Stepper Motors (2-Phase and 5-Phase)

- PKP Series**

● Stepper Motor vs. Servo Motor



Hybrid Control System

- α STEP
- AZ Series**
- AR Series**

Servo Motor and Driver

- NX Series**

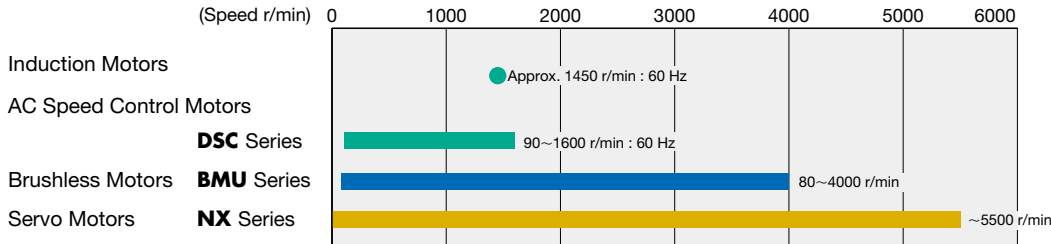
The stepper motor generates a high torque at low-speed range and the servo motor differs in having a flat characteristic at high-speed range. Therefore, in a positioning operation, the positioning time becomes shorter for stepper motors at short distances and shorter for servo motors at long distances (characteristics vary depending on a product).

Speed, speed control range, positioning function and resolution are important points in making a selection. The following explains how to select a suitable motor based on the performance using representative motors as examples.

Motor Performance Comparison

Speed and Speed Control Range

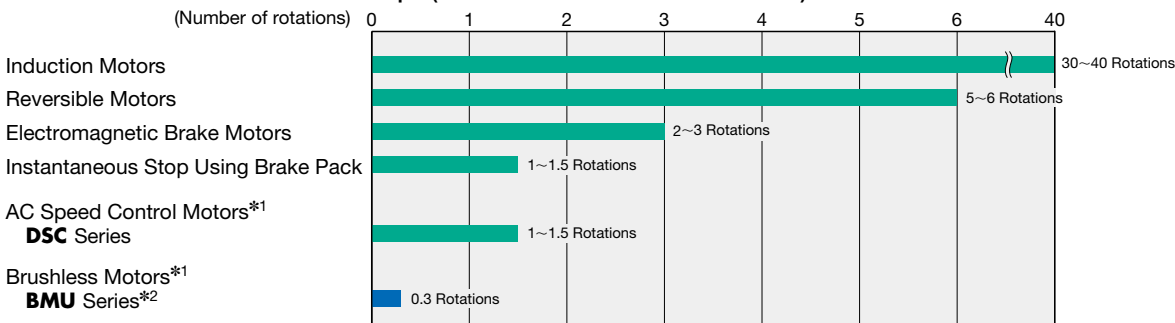
Standard AC motors (constant speed motors), such as induction motors, vary their speed according to the power supply frequency, and the rated speed is approximately 1450 r/min at 60 Hz. If the required speed exceeds 1200 r/min, select a brushless motor. If the required speed is 5000 r/min, select a servo motor.



Stopping and Positioning Performance

An electromagnetic brake type motor, brake pack, AC speed control motor or brushless motor uses sensors to stop the load with the instantaneous stop function, and they are therefore subject to overrun (overshoot). If the equipment must perform high accuracy positioning operations, a stepper motor or servo motor offering excellent stopping accuracy is required. The stopping accuracy of stepper motors is $\pm 0.05^\circ$ (RKII Series, No-load state). The stopping accuracy of servo motors is $\pm 0.05^\circ$ (NX Series).

Number of Rotations until Motor Stops (Reference value for no-load state)



*1 The overrun amount varies depending on the product or whether a speed reduction mechanism is equipped.

*2 Data is for BMU Series when operated at 1500 r/min. For details, please contact the nearest Oriental Motor sales office.

Stopping Accuracy

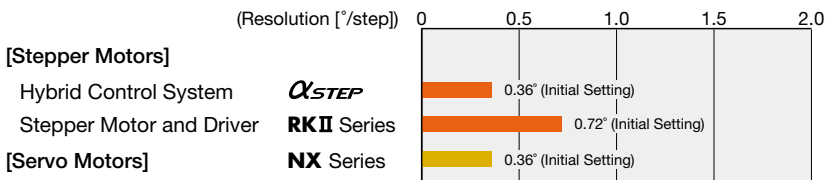
- Stepper Motors **RKII** Series: $\pm 0.05^\circ$
- Servo Motors **NX** Series: $\pm 0.05^\circ$

Note

● The above values are measured at the motor shaft under no load. Use this data only as a reference since the actual values will vary depending on the specific load condition.

Resolution

For high precision positioning, select a stepper motor or a servo motor. For stepper motors, Oriental Motor offers 2-Phase and 5-Phase stepper motors and drivers. Compared to the 2-Phase, the 5-Phase stepper motor and driver offer higher resolution and are capable of finer positioning operation. The resolution of a 5-Phase stepper motor and driver is nearly equivalent to a servo motor (with their initial settings), but stepper motors generally have the basic characteristic of generating high torque in the low-speed range, and servo motors generally have the basic characteristic of generating high torque in the high-speed range. This is a factor that should be assessed when selecting a motor.



● The resolution can be changed freely. The available values and range vary depending on the product.