Oriental motor

Stepper Motors

PKP Series

Additions to the Product Line

Standard Type Frame Size 13 mm



Stepper Motors
PKP Series

2-Phase

Stepper Motors **PKP** Series High Torque Low Vibration

●Bipolar (4 lead wires) and unipolar (5 or 6 lead wires) wiring types are available.
(For details on the wiring types, refer to page 10.)

A High Torque Type is also available.
Check the details on the website.

Features / Product Line / System Configuration / How to Read Product Numbers / Product Line / Included Items / Specifications Table Glossary	P. 4 to 18

Motor Type	Motor Frame Size	Additional Function: Standard	Additional Function: With Encoder	Additional Function: With Electromagnetic Brake	Reference Page
Standard Type (Basic Step Angle: 1.8°/step) Flat Connector, Reasonable, High Strength  Mini-Connector Type / Connector Type / With Encoder / With Electromagnetic Brake — Standard	□13 mm	NEW	–	–	P.19
	□20 mm	●	●	–	P. 20 to 23
	□28 mm	●	●	●	P. 24 to 29
	□35 mm	●	●	●	P. 30 to 35
	□42 mm	●	●	●	P. 36 to 49
	□50 mm	●	●	–	P. 50 to 53
	□56.4 mm	●	●	●	P. 54 to 65
	□60 mm*	●	–	–	P. 66 to 67
	□85 mm	●	–	–	P. 68 to 70
High-Resolution Type (Basic Step Angle: 0.9°/step) Flat Connector, Reasonable, High Strength  Mini-Connector Type / Connector Type / With Encoder / With Electromagnetic Brake — Standard	□28 mm	●	●	–	P. 72 to 75
	□42 mm	●	●	●	P. 76 to 83
	□56.4 mm	●	●	●	P. 84 to 91
Flat Type (Basic Step Angle: 0.018° to 1.8°/step)  Standard / With Harmonic Gears	□42 mm	●	–	–	P.92
	□60 mm	●	–	–	P.93
	□51 mm	With Harmonic Gears			P.94
	□61 mm	With Harmonic Gears			P.95
SH Geared Type (Basic Step Angle: 0.05° to 0.5°/step)  Standard / With Encoder	□28 mm	●	–	–	P. 96 to 97
	□42 mm	●	●	–	P. 98 to 103
	□60 mm	●	●	–	P. 104 to 109
	□90 mm*	●	–	–	P. 110 to 111
CS Geared Type (Basic Step Angle: 0.09 to 0.36°/step)  Standard	□28 mm	●	–	–	P. 112 to 113
	□42 mm	●	–	–	P. 114 to 115
	□60 mm	●	–	–	P. 116 to 117

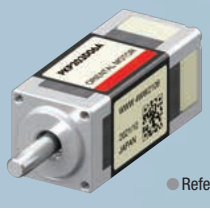
●: 2 types are available—the "Mini-Connector Type" and the "Connector Type" Refer to page 5 for details.
*This is the conventional **PK** Series.

General Specifications / Electromagnetic Brake Specifications / Encoder Part Specifications / Permissible Radial Load and Permissible Axial Load / Flat Type, Permissible Moment Load with Harmonic Gears / Flat Type, Accuracy with Harmonic Gears / Motor Inner Wiring Diagram and Rotation Direction	P. 118 to 121

NEW

2-Phase **PKP** Series Standard Type Frame Size 13 mm

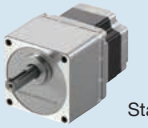
- Industry's smallest frame size of 13 mm (as of July 2022, according to a study by Oriental Motor)
- Mass of only 21 g
- Connector types that are easy to work with



Refer to page 19 for details.

5-Phase Stepper Motors **PKP** Series High Accuracy Low Vibration

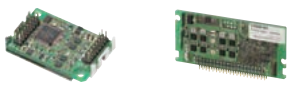
Features / Product Line / System Configuration / How to Read Product Numbers / Types and Pricing / Included Items / Specifications Table Glossary	P. 122 to 127

Motor Type	Motor Frame Size	Additional Function: Standard	Additional Function: With Encoder	Additional Function: With Electromagnetic Brake	Reference Page
Standard Type (Basic Step Angle: 0.72°/step) Flat Connector, High Strength, Reasonable  Mini-Connector Type, Connector Type, With Encoder — Standard	□20 mm*	●	●	–	P. 128 to 129
	□28 mm	●	–	–	P.130
	□42 mm	●	●	–	P. 131 to 133
	□56.4 mm	●	●	–	P. 134 to 135
	□60 mm	●	●	–	P. 136 to 137
	□85 mm*	●	–	–	P.138
High-Resolution Type (Basic Step Angle: 0.36°/step)  Standard	□42 mm	●	–	–	P.139
	□60 mm	●	–	–	P.140
TS Geared Type (Basic Step Angle: 0.024 to 0.2°/step)  Standard	□42 mm	●	–	–	P.141
	□60 mm	●	–	–	P.142

●: 2 types are available—the "Mini-Connector Type" and the "Connector Type" Refer to page 5 for details.

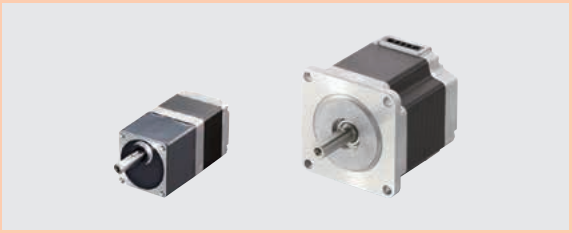
General Specifications / Encoder Part Specifications / Motor Pin Arrangement / Rotation Direction / Permissible Radial Load and Permissible Axial Load	P. 143 to 144

2-Phase 5-Phase Driver for Stepper Motors Compact Low Vibration

Driver Types and Features	P.146
Bipolar Driver for 2-Phase Stepper Motors Driver for 5-Phase Stepper Motors **CVD** Series–Pulse Input Type  Right Angle with Installation Plate, With Installation Plate, Without Installation Plate	P. 147 to 153
Bipolar Driver for 2-Phase Stepper Motors Driver for 5-Phase Stepper Motors **CVD** Series RS-485 Communication Type  Right Angle with Installation Plate, With Installation Plate	P. 154 to 159
Bipolar Driver for 2-Phase/5-Phase Stepper Motors **CVD** Series **S** Type Driver for 5-Phase Stepper Motors **CVD** Series **SC** Type Unipolar Driver for 2-Phase Stepper Motors ●**CVD** Series **S** Type  ・SPI Communication-Compatible ・Pulse Input-Compatible	P.146
Cables	P. 163 to 174
Peripheral Equipment	P. 175 to 177

2-Phase Stepper Motors
PKP Series

●For detailed information about regulations and standards, please see the Oriental Motor website.



Introducing our Video Library

Videos presenting the features, operations, and methods of use, etc. of the **PKP** Series are available on the Oriental Motor website.

These products are high-torque 2-phase stepper motors. A wide variety of products are available to meet your design specifications.

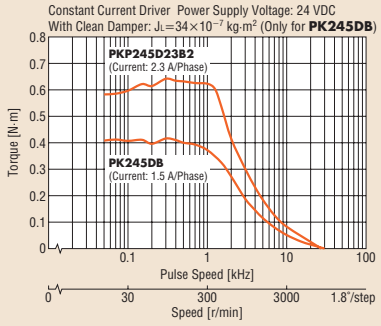
- Motor Frame Size 13 mm to 85 mm
- Standard Type with a Resolution of 200 Steps per Revolution (Basic step angle: 1.8°/step)
- High-Resolution Type with a Resolution of 400 Steps per Revolution (Basic step angle: 0.9°/step)
- Oriental Motor's Flattest Type of 2-phase Stepper Motor
- High-Torque and High-Resolution **SH** Geared Type
- Bipolar (4 lead wires) and Unipolar (5 or 6 lead wires) are Available
- Encoder Type and Electromagnetic Brake Type are Available
- Many Motor Current Specifications Available

Features

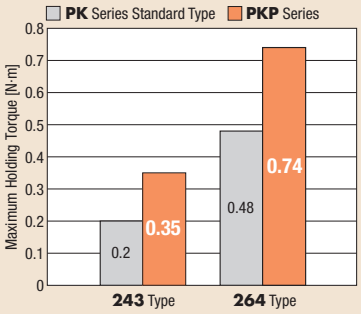
Increased Torque over the Entire Speed Range from Low to High

After revising the magnetic design and structure design of the **PKP** Series, it produces much more torque than standard **PK** Series motors of the same size. In addition, torque can be increased in the high-speed range by using high current motors.

Comparison of Speed – Torque Characteristics of the Same Size Motors



Comparison of Maximum Holding Torque

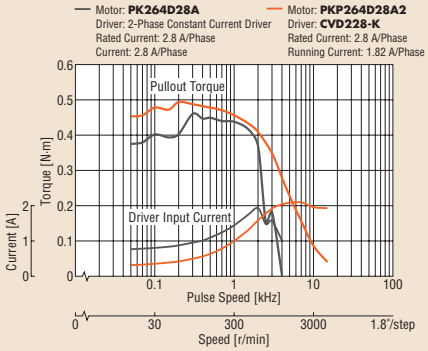


High current is possible due to the revised motor winding design and the highly efficient design of the drive circuit that can be combined. Increased torque over the entire speed range from low to high is achieved.

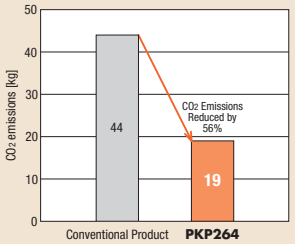
Conservation of Energy and Electrical Power

Reducing the running current supplied to **PKP** Motors achieves the same torque as conventional products while reducing power consumption and CO_2 emissions.

Reduced Running Current with the **PKP** Series



Power Consumption and CO_2 Emissions 56% Lower than Conventional Oriental Motor Products

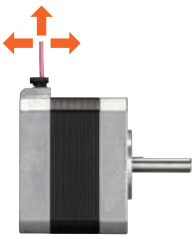


Speed	0.1 kHz (30 r/min)
Operating Time	24 hours, 365 days
Operating Conditions	50% operating, 50% stand-by
Power Supply Voltage	24 VDC
CO_2 Coefficient	0.519 kg-CO_2/kWh

Compact and Flat Connector

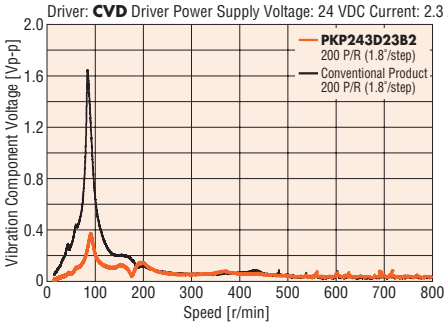
The **PKP** Series uses a compact flat connector, which shortens the length of the connector's overhang. In addition, the degree of freedom for the cable outlet direction has been increased, because the outlet direction points upward.

● Because the connector is provided for select products only, refer to the dimensions of each model for details.



Lower Vibration

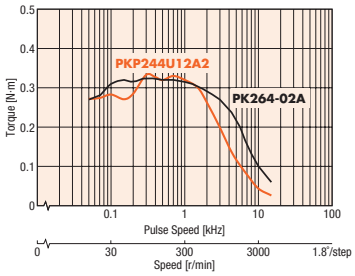
Revising the magnetic design has achieved lower vibration than with conventional products.



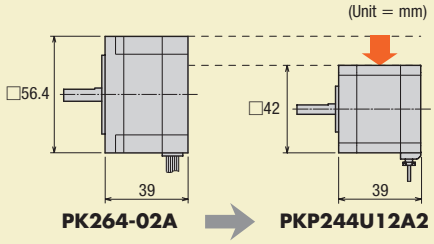
Saving Resources through Downsizing

Use a **PKP** Series motor in place of a standard motor from the **PK** Series with the equivalent torque in order to downsize motors. **Volume reduced by 44%**

Comparison of Torque Characteristics of **PKP244U12A2** and **PK264-02A**



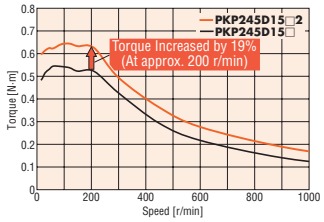
Downsizing is Possible with the Same Torque!



Select Motors by Price, Specifications and Characteristics

The Mini-Connector Type and Connector Type are available in some Standard Type and High-Resolution Type product lines.
You can choose according to price and your desired specifications and characteristics.

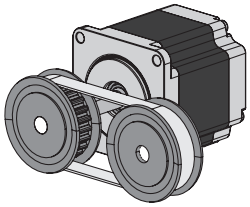
●Comparison of the Mini-Connector Type and the Connector Type For 2-Phase Stepper Motors

		Mini-Connector Type	Connector Type
Type			
Prices			
Features		・Using a compact flat connector shortens the length of the connector's overhang ・High permissible radial load/ permissible axial load ・High torque (excluding some types)	Reasonable prices
Permissible Radial Load (Max. value)	□42 mm	85 N (63% Increase)	52 N
	□56.4 mm	270 N (68% Increase)	160 N
Permissible Axial Load	□42 mm	15 N (50% Increase)	10 N
	□56.4 mm	30 N	20 N
Speed – Torque Characteristics (Reference values)		◆Example of comparison of Torque characteristics with the same size motor (□42 mm bipolar) 	

●Permissible Radial Load Increased

By increasing the permissible radial load, the Mini-Connector Type make assembling equipment easier.

◇**Applications**
Belt and Pulley Mechanism



◇**Advantages**

・The components for avoiding the concentration of the radial load on the shaft are no longer needed, making it easier to reduce the size of the equipment.

・It is easy to adjust belt tension to obtain a higher safety factor in the tension of the belt.

●Increased Torque

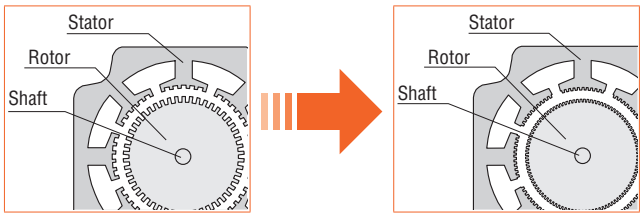
The torque characteristics of the Mini-Connector Type is equal to or higher than those of the Connector Type (excluding some types). Reduced positioning time is achieved by increasing torque.

High-Resolution Type

This is a high-resolution stepper motor with a basic step angle of 0.9°. Stopping accuracy is improved.

●Increased Resolution (Compared to standard type)

The number of rotor teeth has doubled to 100, compared to 50 with the standard type. As a result, the basic step angle is 0.9°/step, which is half than the standard type.



Standard Type (50 teeth) High-Resolution Type (100 teeth)

●Avoidance of Resonance Regions

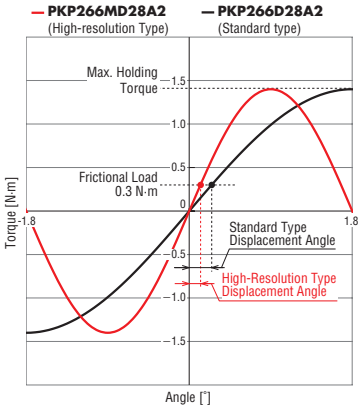
If the pulse speed is within a resonance region, vibration may increase. Resonance regions can be avoided by switching to a high-resolution type.

●Improved Stopping Accuracy

Compared with the standard type (basic step angle 1.8°), the displacement angle of the motor is smaller than the frictional load applied to the motor.

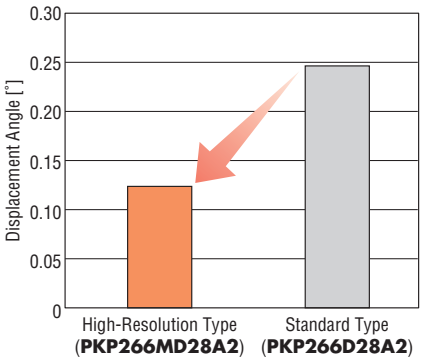
The stopping accuracy in applications that constantly apply a frictional load, such as a ball screw mechanism, is therefore improved.

◇Comparison of Angles and Torque Characteristics* (Reference value)



*For frictional load 0.3 N·m

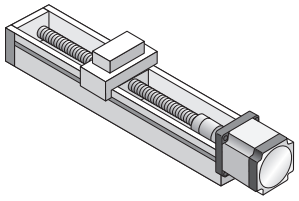
◇Comparison of Displacement Angles by Frictional Load* (Reference value)



*For frictional load 0.3 N·m

◇Example of Mechanism where a Constant Frictional Load is Applied

For example, in a ball screw mechanism, as the one shown in the figure, a frictional load is constantly applied to the motor by the guide block and guide rail, etc.

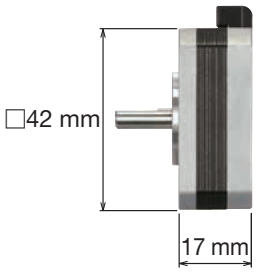


Flat Type

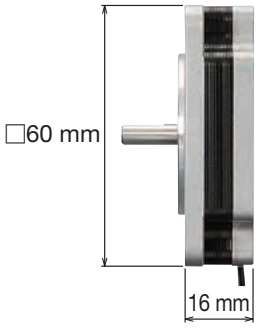
This is Oriental Motor's flattest type of 2-phase stepper motors.

●Flat and Lightweight Design

The motor can be installed in a narrow space.



Maximum Holding Torque: 0.1 N·m
Mass: 0.11 kg



Maximum Holding Torque: 0.18 N·m
Mass: 0.2 kg

●With Harmonic Gears

◇Attach the load to the surface of the flange to fix the load.

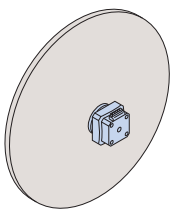
Example: Frame Size 51 mm



Gear Ratio 100
Maximum Holding Torque: 2.4 N·m
Mass: 0.32 kg

◇Makes drives with large inertia possible.

Example: Frame Size 51 mm



Inertia 0.12 kg·m²
(Approximately 7 times the rotor inertia)
Inertial Load: Diameter 0.35 m,
Thickness 0.01 m
Mass 7.6 kg, Material Iron
Motor: Length 17 mm
Gear Ratio 100

● is a registered trademark of Harmonic Drive Systems Inc.

Features of Geared Types

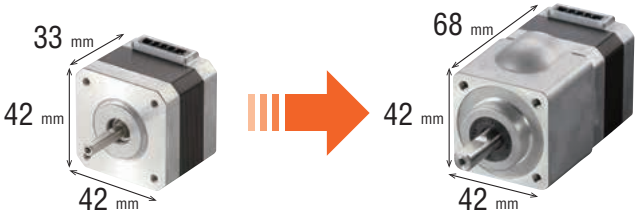
Using a geared type motor can provide advantages such as deceleration, high torque, and high resolution.

●Differentiating Features of the **CS** Geared Type and the **SH** Geared Type

Type				**CS** Geared Type 	**SH** Geared Type 
Features				●Center Shaft Configuration ●High Torque ●High Permissible Radial Load	●Wide Variety ・90 mm Frame Size and Unipolar Wiring ・Includes Encoder ・Many Gear Ratio Types
Frame Size	28 mm	Maximum Holding Torque	[N·m]	0.4～0.8	0.3, 0.4
		Speed Range (Max. value)	[r/min]	300～600	83～416
		Permissible Radial Load (Max. value)	[N]	73	23
	42 mm	Maximum Holding Torque	[N·m]	0.5～2	0.2～0.8
		Speed Range (Max. value)	[r/min]	150～600	83～833
		Permissible Radial Load (Max. value)	[N]	96	30
	60 mm	Maximum Holding Torque	[N·m]	1.3～4.5	1～4
		Speed Range (Max. value)	[r/min]	150～600	83～833
		Permissible Radial Load (Max. value)	[N]	260	160
	90 mm	Maximum Holding Torque	[N·m]	–	2.5～12
		Speed Range (Max. value)	[r/min]	–	50～500
		Permissible Radial Load (Max. value)	[N]	–	400

●Achieves Increased Torque with the Same Motor Frame Size

Switching to a geared type motor increases torque without changing the motor frame size.
This is effective when installation is not possible because the motor installation space is limited.



Standard Type	Motor Type	**CS** Geared Type
PKP243D15A2	Product Name	**PKP243D15A2-CS20**
0.35 N·m	Max. Holding Torque	2 N·m

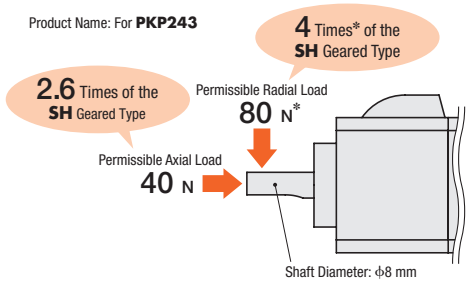
CS Geared Type

The geared type with center shaft addresses torque, shaft load capacity and installation demands.

●Increased shaft load capacity reduces assembly time

Increased permissible radial load and permissible axial load can reduce assembly time.

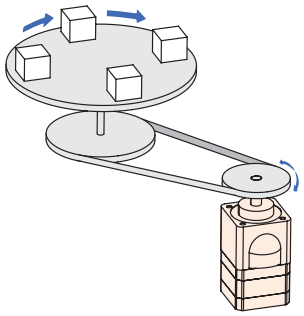
◇Permissible Radial Load and Permissible Axial Load



*When distance from shaft end is 10 mm

◇Applications

Belt and Pulley Mechanism



◇Advantages

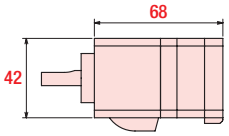
- Reduce adjustments during assembly because belt tension can be higher than with conventional products
- The components for avoiding the concentration of the radial load on the shaft are no longer needed
- The degree of freedom in pulley selection is increased

●Increase Torque Contributes to Reduced Size and Weight of the Motor

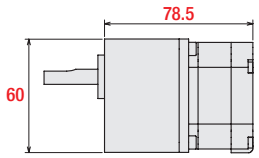
High torque, shorter motor length and a frame size that's one size smaller.

◇Dimensions: (Unit = mm)

CS Geared Type (**PKP243D15A2-CS20**)



SH Geared Type (**PKP264D14A2-SG7.2**)



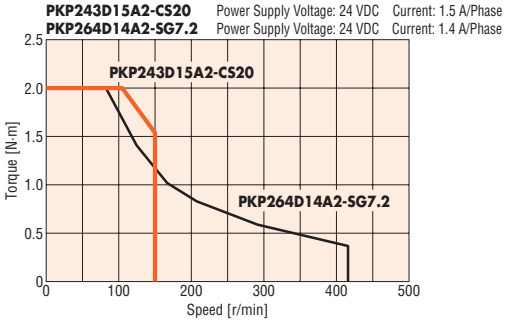
Maximum Holding Torque: Same

Frame Size: Reduced by **18** mm

Motor Length: Reduced by **10.5** mm

Mass: Reduced by **47** %

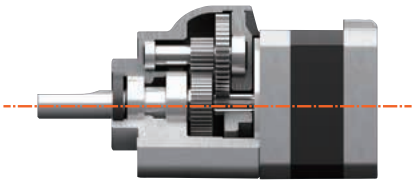
◇Torque Characteristics Comparison



●Center Shaft Makes Designing Easier

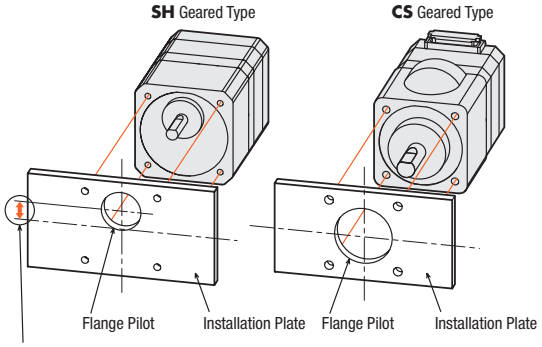
A review of the gear structure has led to the center shaft. It is easier to design the installation plate.
In addition, the degree of freedom for the cable outlet direction has been increased.

●Output Shaft now Placed in Center



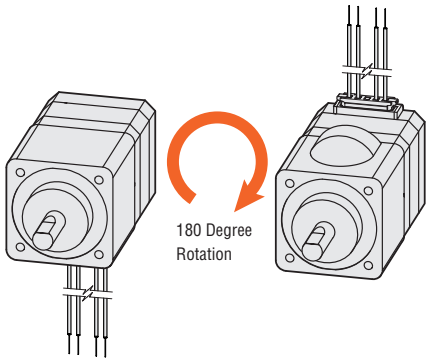
Internal Gearhead Structure Figure

●Installation Plate Designing Made Easier



Amount of deviation between the central axis of the 4 installation holes and the central axis of the flange pilot

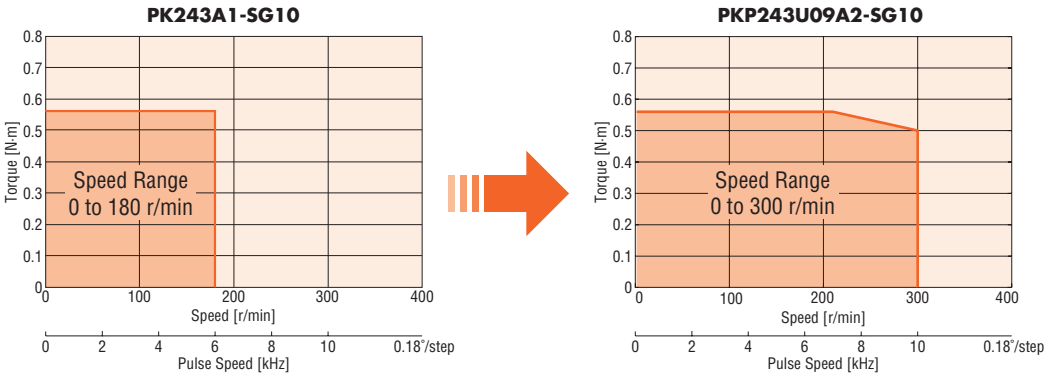
●Increased Degree of Freedom for Cable Outlet Direction



SH Geared Type

This type is well-suited for deceleration, increased torque, high resolution, and limited vibration.
It experiences less backlash than conventional products.

●Wider Speed Range makes it Easier to Use than Conventional Products



Product Line Equipped with Additional Functions to Broaden Applications

●With Encoder

(Available for standard type, high-resolution type, **SH** geared type)

Encoder Specifications ➜ Page 118

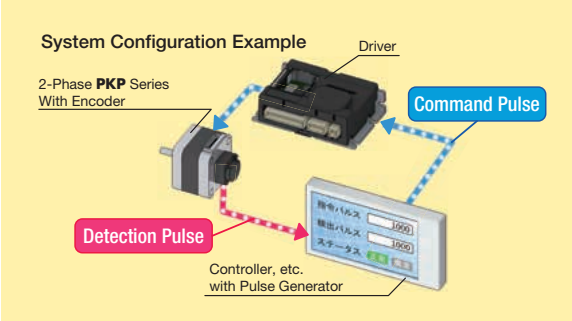
● Main Specifications

Type	Standard Type	High-Resolution Type, **SH** Geared Type
Resolution	200 P/R, 400 P/R	400 P/R
Output Signals	A phase, B phase, Z phase (3ch)	

✻A product line with resolution of 1000 P/R is available with standard type frame sizes of 42 mm and 56.4 mm. Check the details in the individual V-212 catalog.

◇Motor Position Detection is Possible.

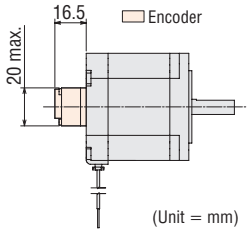
Monitoring the current position and detecting positional errors is possible. For example, comparing the command position and current position enables you to check the normal operation of the motor.



◇Equipped with a Compact Encoder

● When frame size is 56.4 mm





◇High Reliability with Line Driver Output Circuit Type

Noise resistance is improved by differential output, and the wiring distance can be longer than with the voltage output type.

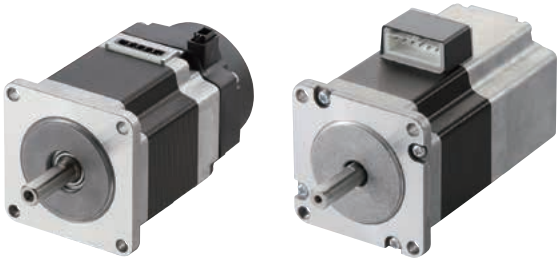
● The cables, which are convenient for wiring with an encoder, are available and sold separately.

Connection Cable for Encoder ➜ Page 169

●With Electromagnetic Brake

(Provided for standard type and high-resolution type)

Electromagnetic Brake Specifications ➜ Page 118



◇Position Can Be Held When the Power Is OFF or a Power Failure Occurs.

This type features an electromagnetic brake that activates when the power is off.

When the power is accidentally cut off due to a power failure or other unexpected event, the electromagnetic brake holds the load in position to prevent it from dropping or moving. Also, the load can be held by the electromagnetic brake when the motor is stopped, and the heat generated by the motor can be curtailed by switching the motor current off.

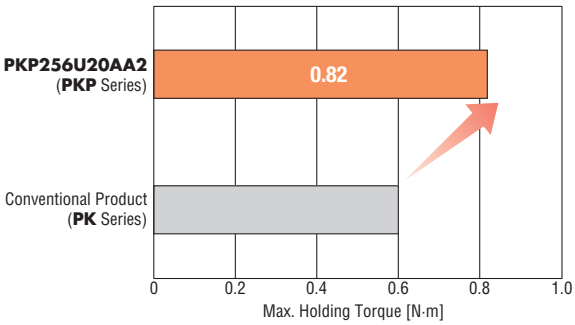
50 mm Frame Size Motor with Greatly Increased Torque

●50 mm Frame Size Motor

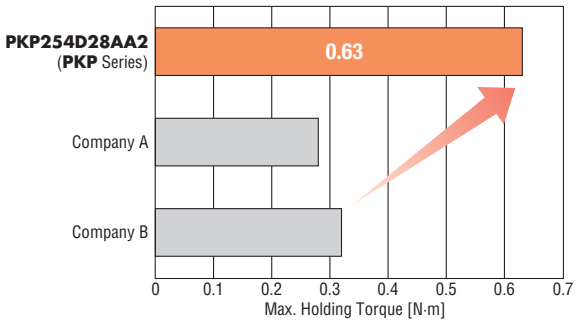
Review and improvement of the design has led to greatly increased torque.

Greatly increased torque has led to advantages, such as reduced positioning time and driving and holding larger loads.

Conventional **PK** Series – Comparison with the 50 mm Frame Size Motor



Compared with Same-Sized Motors from Other Companies✻



✻As of November 2018, according to a study by Oriental Motor.

Combined Drivers (Sold separately) → Page 146

These are compact and lightweight bipolar and unipolar drivers.

●Bipolar Driver **CVD** Series

The **CVD** Series offers the pulse input type and the RS-485 communication type drivers.

● Right Angle Type with Installation Plate
The connector points outward.



● With Installation Plate
The connector points upward.



● Without Installation Plate*
The connector points upward.



*Pulse input type only

●Bipolar Driver **CVD** Series **S** Type



・SPI Communication-Compatible



・Pulse Input-Compatible

●Unipolar Driver



■Product Line

Motor Product Line (Basic Step Angle)		Frame Size, Wiring Type																	
		13 mm		20 mm		28 mm		35 mm		42 mm		50 mm		56.4 mm		60 mm		85 mm	
		Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar	Bipolar	Unipolar
Standard Type (1.8°)		●	–	○	○	●	●	●	●	●	●	●	●	●	●	○*4	○*4	○	○
	With Encoder	–	–	○	○	●	●	●	●	●	●	●	●	●	●	–	–	–	–
	With Electromagnetic Brake	–	–	–	–	●	●	●	●	●	●	–	–	●	●	–	–	–	–
High-Resolution Type (0.9°)		–	–	–	–	●	●	–	–	●	●	–	–	●	●	–	–	–	–
	With Encoder	–	–	–	–	●	●	–	–	●	●	–	–	●	●	–	–	–	–
	With Electromagnetic Brake	–	–	–	–	–	–	–	–	●	●	–	–	●	●	–	–	–	–
Flat Type (0.018° to 1.8°)		–	–	–	–	–	–	–	–	●	–	–	–	–	–	○	–	–	–
	With Harmonic Gears	–	–	–	–	–	–	–	–	●*1	–	–	–	–	–	○*2	–	–	–
SH Geared Type (0.05° to 0.5°)		–	–	–	–	●	●	–	–	●	●	–	–	–	–	●	●	–	*3 ○ *4
	With Encoder	–	–	–	–	–	–	–	–	●	–	–	–	–	–	●	–	–	–
CS Geared Type (0.09° to 0.36°)		–	–	–	–	●	●	–	–	●	–	–	–	–	–	●	–	–	–
																			

●: Connector Connection Method ○: Lead Wire Type

*1 Flat Type - 51 mm with Harmonic Gears.

*2 Flat Type - 61 mm with Harmonic Gears.

*3 The **SH** geared type is 90 mm.

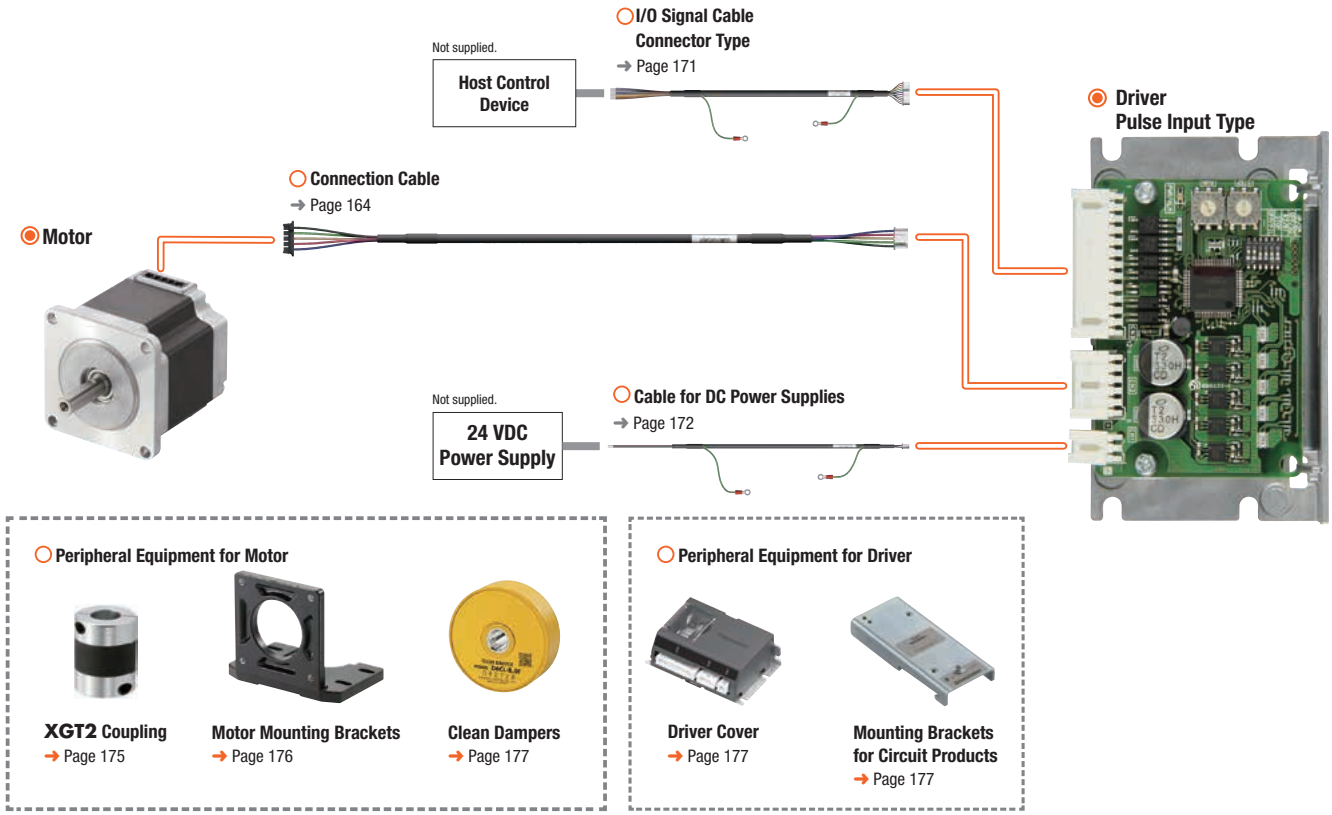
*4 This is the conventional **PK** Series.

System Configuration

Combination of the 2-Phase Stepper Motor **PKP** Series and the **CVD** Series Pulse Input Type Driver

An example of a system configuration using a host control device (with built-in pulse generator function) is shown below. Motors, drivers, and connection cables must be ordered individually.

◉ Required
○ Optional



●Example of System Configuration

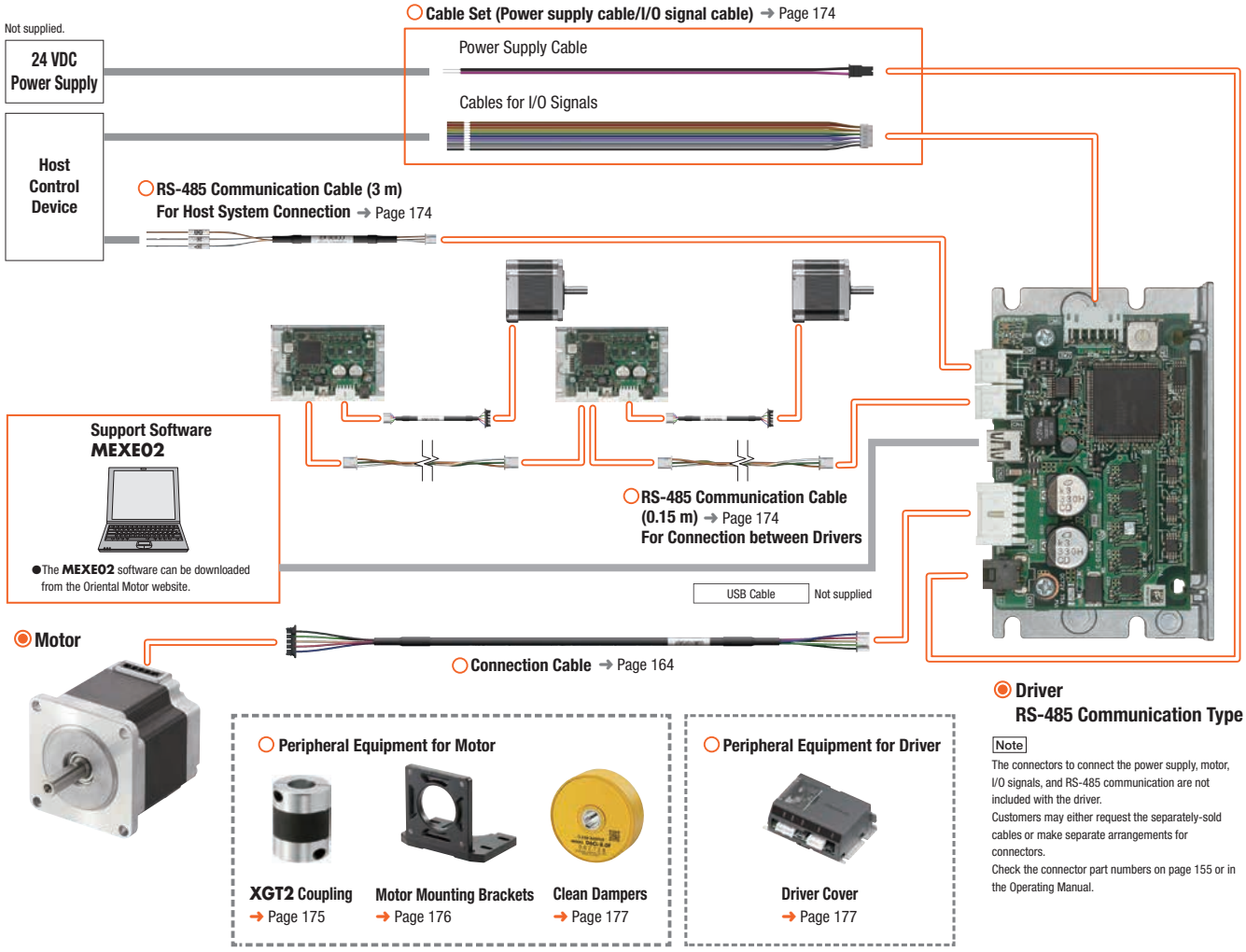
Motor		Driver		Cables				Peripheral Equipment			
	+		+	Connection Cable (1 m)	Cable for I/O Signal (1 m)	Cable for DC Power Supplies (1 m)	+	Motor Mounting Brackets	Flexible Couplings	Clean Damper	
PKP264D28B2		CVD228BR-K		CCM010V2AEF	CC12D010-2	CC02D010-2		PALW2P-2	XGT2-19C-8-8	D6CL-8.0F	
◉		◉		○	○	○		○	○	○	

● The system configuration shown above is an example. Other combinations are also available.

●Combination of the 2-Phase Stepper Motor **PKP** Series and the **CVD** Series RS-485 Communication Type Driver

An example of a three axis system configuration using RS-485 communication is shown below. Motors, drivers, and connection cables must be ordered individually.

◉ **Required**
○ **Optional**



◉ **Driver**
RS-485 Communication Type

Note

The connectors to connect the power supply, motor, I/O signals, and RS-485 communication are not included with the driver.
Customers may either request the separately-sold cables or make separate arrangements for connectors.
Check the connector part numbers on page 155 or in the Operating Manual.

●Example of System Configuration

Motor		Driver		Cables				Peripheral Equipment			
	+		+	Connection Cable (1 m)	RS-485 Communication Cable (3 m)	Cable Set (0.3 m)	+	Motor Mounting Brackets	Flexible Couplings	Clean Damper
PKP264D28B2		CVD2BR-KR		CCM010V2AEF	CC030-RS	LHS003CC		PALW2P-2	XGT2-19C-8-8	D6CL-8.0F
◉		◉		○	○	○		○	○	○

● The system configuration shown above is an example. Other combinations are also available.

Product Number

Motor

PKP Series

◇Standard Type/Standard Type with an Electromagnetic Brake
High-Resolution Type/High-Resolution Type with an Electromagnetic Brake

PKP 2 6 4 M D 28 A 2

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Series Name	**PKP**: **PKP** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**1**: 20 mm **2**: 28 mm **3**: 35 mm **4**: 42 mm **6**: 56.4 mm **9**: 85 mm
④	Motor Case Length	
⑤	Motor Type	Blank: Standard Type **M**: High-Resolution Type
⑥	Number of Lead Wires	**D**: 4 Leads **U**: 5 or 6 Leads
⑦	Motor Winding Specifications	
⑧	Configuration	**A**: Single Shaft **B**: Double Shaft **M**: With Electromagnetic Brake
⑨	Reference Number	

● Some products with a shaft diameter of ϕ6.35 mm are also available. For details, please contact your nearest Oriental Motor sales office.

◇Standard Type with Encoder/High-Resolution Type with Encoder

PKP 2 4 3 M D 15 A 2-R3F L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Series Name	**PKP**: **PKP** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**1**: 20 mm **2**: 28 mm **3**: 35 mm **4**: 42 mm **6**: 56.4 mm
④	Motor Case Length	
⑤	Motor Type	Blank: Standard Type **M**: High-Resolution Type
⑥	Number of Lead Wires	**D**: 4 Leads
⑦	Motor Winding Specifications	
⑧	Configuration	**A**: Single Shaft
⑨	Reference Number	
⑩	Encoder Resolution	**R3E**: 200 P/R **R3F**: 400 P/R **R3J**: 1000 P/R
⑪	Encoder Output Circuit Type	Blank: Voltage Output **L**: Line Driver Output

◇Flat Type

PKP 2 4 2 D 23 A 2

① ② ③ ④ ⑥ ⑦ ⑧ ⑩

PKP 2 6 2 F D 15 A W

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

◇Flat Type with Harmonic Gears

PKP 2 4 2 D 23 A 2 - H 100

① ② ③ ④ ⑥ ⑦ ⑧ ⑩ ⑪ ⑫

PKP 2 6 2 F D 15 A W - H 100 S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑪ ⑫ ⑬

①	Series Name	**PKP**: **PKP** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**4**: 42 mm (The type with harmonic gears is 51 mm) **6**: 60 mm (The type with harmonic gears is 61 mm)
④	Motor Case Length	
⑤	Motor Classification	**F**: Motor Frame Size 60 mm
⑥	Number of Lead Wires	**D**: 4 Leads
⑦	Motor Winding Specifications	
⑧	Configuration	**A**: Single Shaft
⑨	Cable Identification	Blank: Connector Coupled Type **W**: Lead Wire Type
⑩	Reference Number	
⑪	Geared Type	Blank: Flat Type **H**: Flat Type with Harmonic Gears
⑫	Gear Ratio	
⑬	Gear Type	

◇SH, CS Geared Type

PKP 2 4 3 U 09 B 2 - SG 18

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series Name	**PKP**: **PKP** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**2**: 28 mm **4**: 42 mm **6**: 60 mm
④	Motor Case Length	
⑤	Number of Lead Wires	**D**: 4 Leads **U**: 5 or 6 Leads
⑥	Motor Winding Specifications	
⑦	Configuration	**A**: Single Shaft **B**: Double Shaft
⑧	Reference Number	
⑨	Geared Type	**SG**: **SH** Geared Type **CS**: **CS** Geared Type
⑩	Gear Ratio	

◇SH Geared Type with Encoder

PKP 2 6 4 D 28 A 2 - SG 18 - R3F L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

①	Series Name	**PKP**: **PKP** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**2**: 28 mm **4**: 42 mm **6**: 60 mm
④	Motor Case Length	
⑤	Number of Lead Wires	**D**: 4 Leads
⑥	Motor Winding Specifications	
⑦	Configuration	**A**: Single Shaft
⑧	Reference Number	
⑨	Geared Type	**SG**: **SH** Geared Type
⑩	Gear Ratio	
⑪	Encoder Resolution	**R3F**: 400 P/R
⑫	Encoder Output Circuit Type	Blank: Voltage Output **L**: Line Driver Output

PK Series

◇Standard Type

PK 2 6 4 J D B

① ② ③ ④ ⑤ ⑥ ⑦

①	Series Name	**PK**: **PK** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**6**: 60 mm
④	Motor Case Length	
⑤	Motor Type	**J**: High-Torque Type
⑥	Number of Lead Wires	Blank: 6 Leads **D**: 4 Leads
⑦	Configuration	**A**: Single Shaft **B**: Double Shaft

◇SH Geared Type

PK 2 9 6 A 1 - SG 18

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series Name	**PK**: **PK** Series
②	**2**: 2-Phase	
③	Motor Frame Size	**9**: 90 mm
④	Motor Case Length	
⑤	Configuration	**A**: Single Shaft **B**: Double Shaft
⑥	Motor Winding Specifications	
⑦	Geared Type	**SG**: **SH** Geared Type
⑧	Gear Ratio	

●Driver

Refer to page D-1 for details on drivers.

●Connection Cable

◇Motor Connection Cable

LC 2 B 06 A

① ② ③ ④ ⑤

①	Cables	**LC**: Connector Leads
②	**2**: 2-Phase	
③	Cable Type	**B**: For Bipolar **U**: For Unipolar
④	Cable Length	**06**: 0.6 m **10**: 1 m
⑤	Reference Number	

◇Encoder Connection Cable

LC E 08 A - 006

① ② ③ ④ ⑤

①	Cables	**LC**: Connector Leads
②	Cable Type	**E**: For Encoder
③	Applicable Model	**05**: For Voltage Output **08**: For Line Driver Output
④	Reference Number	
⑤	Cable Length	**006**: 0.6 m

◇Electromagnetic Brake Connection Cable

LC M 02 A - 006

① ② ③ ④ ⑤

①	Cables	**LC**: Connector Leads
②	Cable Type	**M**: For Electromagnetic Brake
③	Number of Lead Wires	
④	Reference Number	
⑤	Cable Length	**006**: 0.6 m **010**: 1 m

Product Line

A connector-coupled motor requires a connection cable. Motors, drivers, and connection cables must be ordered individually.
Refer to page 146 for details on drivers, and refer to page 163 for details on connection cables.

Motor

◇Standard Type

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP203D06A	✻	**PKP203D06B**	✻
PKP213D05A		**PKP213D05B**	
PKP214D06A		**PKP214D06B**	
PKP223D15A2		**PKP223D15B2**	
PKP225D15A2		**PKP225D15B2**	
PKP233D15A		**PKP233D15B**	
PKP233D23A		**PKP233D23B**	
PKP235D15A		**PKP235D15B**	
PKP235D23A		**PKP235D23B**	
PKP243D08A2		**PKP243D08B2**	
PKP243D15A2		**PKP243D15B2**	
PKP243D15A		**PKP243D15B**	
PKP243D23A2		**PKP243D23B2**	
PKP243D23A		**PKP243D23B**	
PKP244D08A2		**PKP244D08B2**	
PKP244D15A2		**PKP244D15B2**	
PKP244D15A		**PKP244D15B**	
PKP244D23A2		**PKP244D23B2**	
PKP244D23A		**PKP244D23B**	
PKP245D08A2		**PKP245D08B2**	
PKP245D15A2		**PKP245D15B2**	
PKP245D15A		**PKP245D15B**	
PKP245D23A2		**PKP245D23B2**	
PKP245D23A		**PKP245D23B**	
PKP246D15A2		**PKP246D15B2**	
PKP246D15A		**PKP246D15B**	
PKP246D23A2		**PKP246D23B2**	
PKP246D23A		**PKP246D23B**	
PKP254D28AA2		**PKP254D28BA2**	
PKP256D28AA2		**PKP256D28BA2**	
PKP258D28AA2		**PKP258D28BA2**	
PKP264D14A2		**PKP264D14B2**	
PKP264D28A2		**PKP264D28B2**	
PKP264D28A		**PKP264D28B**	
PKP264D42A2		**PKP264D42B2**	
PKP266D14A2		**PKP266D14B2**	
PKP266D28A2		**PKP266D28B2**	
PKP266D28A		**PKP266D28B**	
PKP266D42A2		**PKP266D42B2**	
PKP268D14A2		**PKP268D14B2**	
PKP268D28A2		**PKP268D28B2**	
PKP268D28A		**PKP268D28B**	
PKP268D42A2		**PKP268D42B2**	
PK264JDA		**PK264JDB**	
PK266JDA		**PK266JDB**	
PK267JDA		**PK267JDB**	
PK269JDA		**PK269JDB**	
PKP296D45A		**PKP296D45B**	
PKP296D63A		**PKP296D63B**	
PKP299D45A		**PKP299D45B**	
PKP299D63A		**PKP299D63B**	
PKP2913D45A		**PKP2913D45B**	
PKP2913D56A		**PKP2913D56B**	

✻For details, please contact your nearest Oriental Motor sales office.

•Unipolar (5 or 6 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP213U05A		**PKP213U05B**	
PKP214U06A		**PKP214U06B**	
PKP223U09A2		**PKP223U09B2**	
PKP225U09A2		**PKP225U09B2**	
PKP233U12A		**PKP233U12B**	
PKP235U12A		**PKP235U12B**	
PKP243U04A		**PKP243U04B**	
PKP243U06A		**PKP243U06B**	
PKP243U08A2		**PKP243U08B2**	
PKP243U09A2		**PKP243U09B2**	
PKP243U09A		**PKP243U09B**	
PKP243U12A2		**PKP243U12B2**	
PKP244U04A		**PKP244U04B**	
PKP244U08A2		**PKP244U08B2**	
PKP244U08A		**PKP244U08B**	
PKP244U12A2		**PKP244U12B2**	
PKP244U12A		**PKP244U12B**	
PKP245U05A		**PKP245U05B**	
PKP245U08A2		**PKP245U08B2**	
PKP245U08A		**PKP245U08B**	
PKP245U12A2		**PKP245U12B2**	
PKP245U12A		**PKP245U12B**	
PKP246U12A2		**PKP246U12B2**	
PKP246U12A		**PKP246U12B**	
PKP246U16A2		**PKP246U16B2**	
PKP254U20AA2		**PKP254U20BA2**	
PKP256U20AA2		**PKP256U20BA2**	
PKP258U20AA2		**PKP258U20BA2**	
PKP264U10A2		**PKP264U10B2**	
PKP264U10A		**PKP264U10B**	
PKP264U20A2		**PKP264U20B2**	
PKP264U20A		**PKP264U20B**	
PKP264U30A		**PKP264U30B**	
PKP266U10A2		**PKP266U10B2**	
PKP266U10A		**PKP266U10B**	
PKP266U20A2		**PKP266U20B2**	
PKP266U20A		**PKP266U20B**	
PKP266U30A		**PKP266U30B**	
PKP268U10A2		**PKP268U10B2**	
PKP268U10A		**PKP268U10B**	
PKP268U20A2		**PKP268U20B2**	
PKP268U20A		**PKP268U20B**	
PKP268U30A		**PKP268U30B**	
PK264JA		**PK264JB**	
PK266JA		**PK266JB**	
PK267JA		**PK267JB**	
PK269JA		**PK269JB**	
PKP296U20A		**PKP296U20B**	
PKP296U30A		**PKP296U30B**	
PKP296U45A		**PKP296U45B**	
PKP299U20A		**PKP299U20B**	
PKP299U30A		**PKP299U30B**	
PKP299U45A		**PKP299U45B**	
PKP2913U20A		**PKP2913U20B**	
PKP2913U40A		**PKP2913U40B**	

Motor Frame Size

- □13 mm
- □20 mm
- □28 mm
- □35 mm
- □42 mm
- □50 mm □51 mm
- □56.4 mm
- □60 mm □61 mm
- □85 mm □90 mm

◇Standard Type with Encoder

•Bipolar (4 lead wires)

Product Name	List Price
PKP213D05A-R2EL	
PKP214D06A-R2EL	
PKP223D15A2-R2□L	
PKP225D15A2-R2□L	
PKP233D15A-R2□L	
PKP233D23A-R2□L	
PKP235D15A-R2□L	
PKP235D23A-R2□L	
PKP243D08A2-R2□L	
PKP243D15A2-R2□L	
PKP243D23A2-R2□L	
PKP244D08A2-R2□L	
PKP244D15A2-R2□L	
PKP244D23A2-R2□L	
PKP245D08A2-R2□L	
PKP245D15A2-R2□L	
PKP245D23A2-R2□L	
PKP246D15A2-R2□L	
PKP246D23A2-R2□L	
PKP254D28AA2-R2□L	
PKP256D28AA2-R2□L	
PKP258D28AA2-R2□L	
PKP264D14A2-R2□L	
PKP264D28A2-R2□L	
PKP264D42A2-R2□L	
PKP266D14A2-R2□L	
PKP266D28A2-R2□L	
PKP266D42A2-R2□L	
PKP268D14A2-R2□L	
PKP268D28A2-R2□L	
PKP268D42A2-R2□L	

● Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

•Unipolar (5 or 6 lead wires)

Product Name	List Price
PKP213U05A-R2EL	
PKP214U06A-R2EL	
PKP223U09A2-R2□L	
PKP225U09A2-R2□L	
PKP233U12A-R2□L	
PKP235U12A-R2□L	
PKP243U08A2-R2□L	
PKP243U09A2-R2□L	
PKP243U12A2-R2□L	
PKP244U08A2-R2□L	
PKP244U12A2-R2□L	
PKP245U08A2-R2□L	
PKP245U12A2-R2□L	
PKP246U12A2-R2□L	
PKP246U16A2-R2□L	
PKP254U20AA2-R2□L	
PKP256U20AA2-R2□L	
PKP258U20AA2-R2□L	
PKP264U10A2-R2□L	
PKP264U20A2-R2□L	
PKP266U10A2-R2□L	
PKP266U20A2-R2□L	
PKP268U10A2-R2□L	
PKP268U20A2-R2□L	

● Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

◇Standard Type with Electromagnetic Brake

•Bipolar (4 lead wires)

Product Name	List Price
PKP223D15M2	
PKP225D15M2	
PKP233D15M	
PKP235D15M	
PKP243D23M2	
PKP244D23M2	
PKP245D23M2	
PKP246D23M2	
PKP264D28M2	
PKP266D28M2	
PKP268D28M2	

•Unipolar (6 lead wires)

Product Name	List Price
PKP223U09M2	
PKP225U09M2	
PKP233U12M	
PKP235U12M	
PKP243U09M	
PKP244U12M	
PKP245U12M	
PKP246U12M	
PKP264U20M	
PKP266U20M	
PKP268U20M	

◇High-Resolution Type

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223MD15A		**PKP223MD15B**	
PKP225MD15A		**PKP225MD15B**	
PKP243MD15A2		**PKP243MD15B2**	
PKP243MD15A		**PKP243MD15B**	
PKP244MD15A2		**PKP244MD15B2**	
PKP244MD15A		**PKP244MD15B**	
PKP245MD15A2		**PKP245MD15B2**	
PKP246MD15A2		**PKP246MD15B2**	
PKP264MD28A2		**PKP264MD28B2**	
PKP264MD28A		**PKP264MD28B**	
PKP266MD28A2		**PKP266MD28B2**	
PKP266MD28A		**PKP266MD28B**	
PKP268MD28A2		**PKP268MD28B2**	
PKP268MD28A		**PKP268MD28B**	

•Unipolar (5 or 6 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223MU09A		**PKP223MU09B**	
PKP225MU09A		**PKP225MU09B**	
PKP243MU09A		**PKP243MU09B**	
PKP243MU12A2		**PKP243MU12B2**	
PKP244MU12A2		**PKP244MU12B2**	
PKP244MU12A		**PKP244MU12B**	
PKP245MU12A2		**PKP245MU12B2**	
PKP246MU12A2		**PKP246MU12B2**	
PKP264MU20A2		**PKP264MU20B2**	
PKP264MU20A		**PKP264MU20B**	
PKP266MU20A2		**PKP266MU20B2**	
PKP266MU20A		**PKP266MU20B**	
PKP268MU20A2		**PKP268MU20B2**	
PKP268MU20A		**PKP268MU20B**	

◇High-Resolution Type with Encoder

•Bipolar (4 lead wires)

Product Name	List Price
PKP223MD15A-R2FL	
PKP225MD15A-R2FL	
PKP243MD15A2-R2FL	
PKP244MD15A2-R2FL	
PKP245MD15A2-R2FL	
PKP246MD15A2-R2FL	
PKP264MD28A2-R2FL	
PKP266MD28A2-R2FL	
PKP268MD28A2-R2FL	

•Unipolar (5 or 6 lead wires)

Product Name	List Price
PKP223MU09A-R2FL	
PKP225MU09A-R2FL	
PKP243MU12A2-R2FL	
PKP244MU12A2-R2FL	
PKP245MU12A2-R2FL	
PKP246MU12A2-R2FL	
PKP264MU20A2-R2FL	
PKP266MU20A2-R2FL	
PKP268MU20A2-R2FL	

◇High-Resolution Type with Electromagnetic Brake

•Bipolar (4 lead wires)

Product Name	List Price
PKP243MD15M	
PKP244MD15M	
PKP264MD28M	
PKP266MD28M	
PKP268MD28M	

•Unipolar (6 lead wires)

Product Name	List Price
PKP243MU09M	
PKP244MU12M	
PKP264MU20M	
PKP266MU20M	
PKP268MU20M	

◇Flat Type

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price
PKP242D23A2	
PKP262FD15AW	

◇Flat Type with Harmonic Geared

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price
PKP242D23A2-H50	
PKP242D23A2-H100	
PKP262FD15AW-H50S	
PKP262FD15AW-H100S	

◇**SH** Geared Type

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223D15A-SG7.2		**PKP223D15B-SG7.2**	
PKP223D15A-SG9		**PKP223D15B-SG9**	
PKP223D15A-SG10		**PKP223D15B-SG10**	
PKP223D15A-SG18		**PKP223D15B-SG18**	
PKP223D15A-SG36		**PKP223D15B-SG36**	
PKP243D15A2-SG3.6		**PKP243D15B2-SG3.6**	
PKP243D23A2-SG3.6		**PKP243D23B2-SG3.6**	
PKP243D15A2-SG7.2		**PKP243D15B2-SG7.2**	
PKP243D23A2-SG7.2		**PKP243D23B2-SG7.2**	
PKP243D15A2-SG9		**PKP243D15B2-SG9**	
PKP243D23A2-SG9		**PKP243D23B2-SG9**	
PKP243D15A2-SG10		**PKP243D15B2-SG10**	
PKP243D23A2-SG10		**PKP243D23B2-SG10**	
PKP243D15A2-SG18		**PKP243D15B2-SG18**	
PKP243D23A2-SG18		**PKP243D23B2-SG18**	
PKP243D15A2-SG36		**PKP243D15B2-SG36**	
PKP243D23A2-SG36		**PKP243D23B2-SG36**	
PKP264D14A2-SG3.6		**PKP264D14B2-SG3.6**	
PKP264D28A2-SG3.6		**PKP264D28B2-SG3.6**	
PKP264D14A2-SG7.2		**PKP264D14B2-SG7.2**	
PKP264D28A2-SG7.2		**PKP264D28B2-SG7.2**	
PKP264D14A2-SG9		**PKP264D14B2-SG9**	
PKP264D28A2-SG9		**PKP264D28B2-SG9**	
PKP264D14A2-SG10		**PKP264D14B2-SG10**	
PKP264D28A2-SG10		**PKP264D28B2-SG10**	
PKP264D14A2-SG18		**PKP264D14B2-SG18**	
PKP264D28A2-SG18		**PKP264D28B2-SG18**	
PKP264D14A2-SG36		**PKP264D14B2-SG36**	
PKP264D28A2-SG36		**PKP264D28B2-SG36**	

•Unipolar (5 or 6 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223U09A-SG7.2		**PKP223U09B-SG7.2**	
PKP223U09A-SG9		**PKP223U09B-SG9**	
PKP223U09A-SG10		**PKP223U09B-SG10**	
PKP223U09A-SG18		**PKP223U09B-SG18**	
PKP223U09A-SG36		**PKP223U09B-SG36**	
PKP243U09A2-SG3.6		**PKP243U09B2-SG3.6**	
PKP243U09A2-SG7.2		**PKP243U09B2-SG7.2**	
PKP243U09A2-SG9		**PKP243U09B2-SG9**	
PKP243U09A2-SG10		**PKP243U09B2-SG10**	
PKP243U09A2-SG18		**PKP243U09B2-SG18**	
PKP243U09A2-SG36		**PKP243U09B2-SG36**	
PKP264U10A2-SG3.6		**PKP264U10B2-SG3.6**	
PKP264U20A2-SG3.6		**PKP264U20B2-SG3.6**	
PKP264U10A2-SG7.2		**PKP264U10B2-SG7.2**	
PKP264U20A2-SG7.2		**PKP264U20B2-SG7.2**	
PKP264U10A2-SG9		**PKP264U10B2-SG9**	
PKP264U20A2-SG9		**PKP264U20B2-SG9**	
PKP264U10A2-SG10		**PKP264U10B2-SG10**	
PKP264U20A2-SG10		**PKP264U20B2-SG10**	
PKP264U10A2-SG18		**PKP264U10B2-SG18**	
PKP264U20A2-SG18		**PKP264U20B2-SG18**	
PKP264U10A2-SG36		**PKP264U10B2-SG36**	
PKP264U20A2-SG36		**PKP264U20B2-SG36**	
PK296A1-SG3.6		**PK296B1-SG3.6**	
PK296A2-SG3.6		**PK296B2-SG3.6**	
PK296A1-SG7.2		**PK296B1-SG7.2**	
PK296A2-SG7.2		**PK296B2-SG7.2**	
PK296A1-SG9		**PK296B1-SG9**	
PK296A2-SG9		**PK296B2-SG9**	
PK296A1-SG10		**PK296B1-SG10**	
PK296A2-SG10		**PK296B2-SG10**	
PK296A1-SG18		**PK296B1-SG18**	
PK296A2-SG18		**PK296B2-SG18**	
PK296A1-SG36		**PK296B1-SG36**	
PK296A2-SG36		**PK296B2-SG36**	

◇**SH** Geared Type with Encoder

•Bipolar (4 lead wires)

Product Name	List Price
PKP243D15A2-SG3.6-R2FL	
PKP243D23A2-SG3.6-R2FL	
PKP243D15A2-SG7.2-R2FL	
PKP243D23A2-SG7.2-R2FL	
PKP243D15A2-SG9-R2FL	
PKP243D23A2-SG9-R2FL	
PKP243D15A2-SG10-R2FL	
PKP243D23A2-SG10-R2FL	
PKP243D15A2-SG18-R2FL	
PKP243D23A2-SG18-R2FL	
PKP243D15A2-SG36-R2FL	
PKP243D23A2-SG36-R2FL	
PKP264D28A2-SG3.6-R2FL	
PKP264D28A2-SG7.2-R2FL	
PKP264D28A2-SG9-R2FL	
PKP264D28A2-SG10-R2FL	
PKP264D28A2-SG18-R2FL	
PKP264D28A2-SG36-R2FL	

◇**CS** Geared Type

•Bipolar (4 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223D15A-CS10		**PKP223D15B-CS10**	
PKP223D15A-CS15		**PKP223D15B-CS15**	
PKP223D15A-CS20		**PKP223D15B-CS20**	
PKP243D15A2-CS5		**PKP243D15B2-CS5**	
PKP243D23A2-CS5		**PKP243D23B2-CS5**	
PKP243D15A2-CS10		**PKP243D15B2-CS10**	
PKP243D23A2-CS10		**PKP243D23B2-CS10**	
PKP243D15A2-CS15		**PKP243D15B2-CS15**	
PKP243D23A2-CS15		**PKP243D23B2-CS15**	
PKP243D15A2-CS20		**PKP243D15B2-CS20**	
PKP243D23A2-CS20		**PKP243D23B2-CS20**	
PKP264D14A2-CS5		**PKP264D14B2-CS5**	
PKP264D28A2-CS5		**PKP264D28B2-CS5**	
PKP264D14A2-CS10		**PKP264D14B2-CS10**	
PKP264D28A2-CS10		**PKP264D28B2-CS10**	
PKP264D14A2-CS15		**PKP264D14B2-CS15**	
PKP264D28A2-CS15		**PKP264D28B2-CS15**	
PKP264D14A2-CS20		**PKP264D14B2-CS20**	
PKP264D28A2-CS20		**PKP264D28B2-CS20**	

•Unipolar (6 lead wires)

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223U09A-CS10		**PKP223U09B-CS10**	
PKP223U09A-CS15		**PKP223U09B-CS15**	
PKP223U09A-CS20		**PKP223U09B-CS20**	

●Driver

Refer to page 146 for details on drivers.

●Connection Cable

Refer to the dimensions page for each product for information on connection cables and applicable motors.
Some cables are available that can be directly connected to the recommended driver. See page 163.

■Included

Type	Included	Surge Suppressor	Parallel Key	Motor Mounting Screw	Operating Manual
Standard Type High-Resolution Type		–	–	–	–
	With Encoder	–	–	–	1 Copy
	With Electromagnetic Brake	1 pc.	–	–	
Flat Type		–	–	–	
SH Geared Type	Frame Size 28 mm Frame Size 42 mm Frame Size 60 mm	–	–	–	– *
	Frame Size 90 mm	–	1 pc.	M6×18 P1.0 (4 Screws)	
CS Geared Type	Frame Size 28 mm Frame Size 42 mm	–	–	–	–
	Frame Size 60 mm	–	1 pc.	M4×60 P0.7 (4 Screws)	

*An operating manual is included with encoder types.

■How to Read Specifications

Maximum Holding Torque	: This is the maximum holding torque (holding force) the motor has when power is supplied (at rated current) but the motor is not rotating. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque	: The permissible torque represents the maximum value limited by the mechanical strength of the output gear shaft when operated at a constant speed. For the **SH** geared types and **CS** geared types, the total torque including acceleration and deceleration torque should not exceed the permissible torque.
Maximum Instantaneous Torque	: This is the maximum torque that can be applied to the gear output shaft during acceleration/deceleration such when an inertial load is started and stopped.

Standard Type Frame Size 13 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP203D06□	0.0075	0.41×10^{-7}	0.6	1.9	3.2	1.1	1.8°	**CVD206BR-K**

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

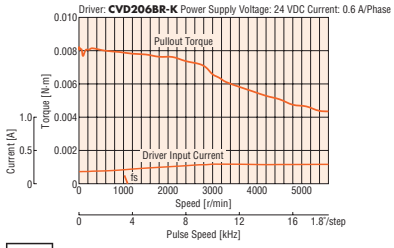
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP203D06A/PKP203D06B



Note

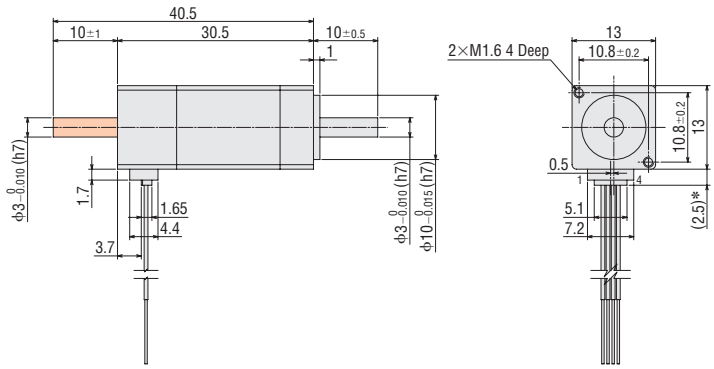
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit: mm)

Motor

Product Name	Mass kg	2D CAD
PKP203D06A	0.021	B1522
PKP203D06B		

- Applicable Connector
  Connector Housing: DF52-4P-0.8C
  (HIROSE ELECTRIC CO., LTD.)
  Contact: DF52-2832PCF
  (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: AP105-DF52-2832P
  (HIROSE ELECTRIC CO., LTD.)



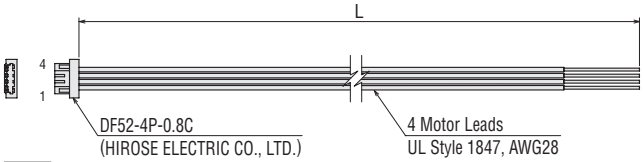
*With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B10G	1



Note

- The voltage applied to the cable should be 30 V or lower. If 30 V is exceeded, the cable will be damaged.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model D⑧

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Standard Type Frame Size 20 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP213D05□	0.02	1.6×10^{-7}	0.5	4.25	8.5	4.1	1.8°	**CVD205BR-K**
PKP214D06□	0.036	2.9×10^{-7}	0.6	3.9	6.5	3.5		**CVD206BR-K**

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

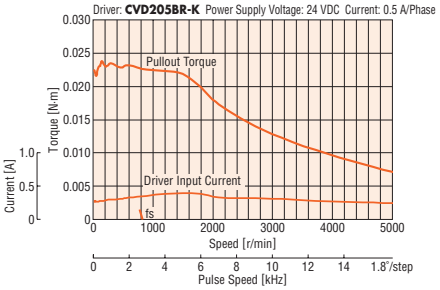
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

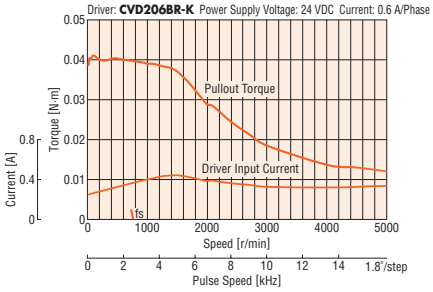
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP213D05A/PKP213D05B



PKP214D06A/PKP214D06B



Note

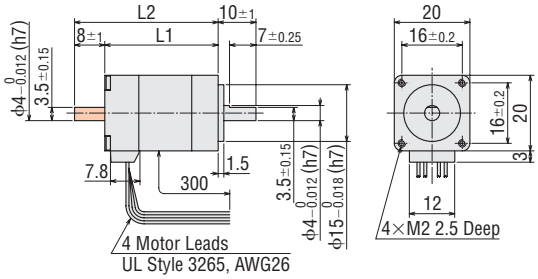
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP213D05A	30	–	0.05	B976
PKP213D05B		38		
PKP214D06A	40	–	0.07	B978
PKP214D06B		48		



- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.
- The back shaft side of the double shaft model is entirely shaft flat.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 20 mm (Unipolar 5 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP213U05□	0.014	1.6×10^{-7}	0.5	4.25	8.5	2.9	1.8°	**CMD2109P**
PKP214U06□	0.026	2.9×10^{-7}	0.6	4.2	7	2.4		

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

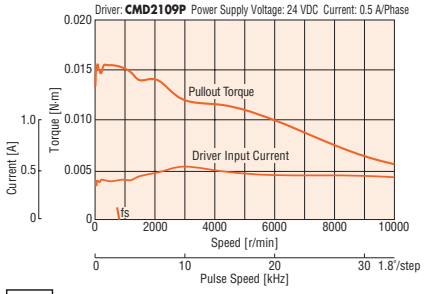
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

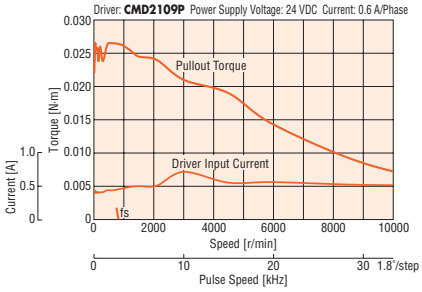
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP213U05A/PKP213U05B



PKP214U06A/PKP214U06B



Note

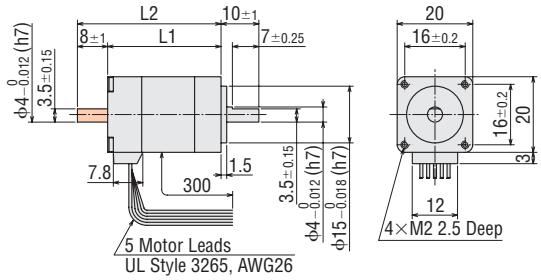
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP213U05A	30	–	0.05	B977
PKP213U05B		38		
PKP214U06A	40	–	0.07	B979
PKP214U06B		48		



- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded areas.
- The back shaft side of the double shaft model is entirely shaft flat.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑥

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 20 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP213D05A-R3□■	0.02	2.5×10^{-7}	0.5	4.25	8.5	4.1	1.8°	**CVD205BR-K**
PKP214D06A-R3□■	0.036	3.8×10^{-7}	0.6	3.9	6.5	3.5		**CVD206BR-K**

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

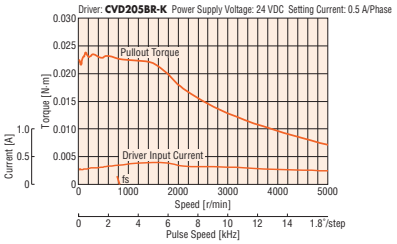
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

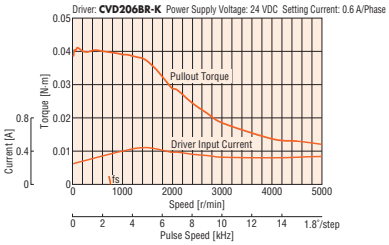
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP213D05A-R3□■



PKP214D06A-R3□■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

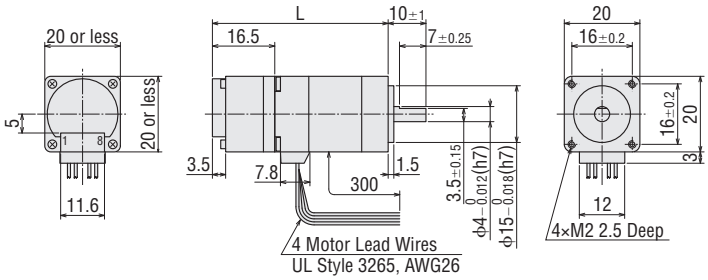
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP213D05A-R3□■	46.5	0.07	B1100
PKP214D06A-R3□■	56.5	0.09	B1101

- Applicable Connector (Molex)

	Encoder
Connector Housing	51021-0800
Contact	50079-8100
Crimp Tool	57177-5000



Connection Cable (Sold separately)

◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type with Encoder Frame Size 20 mm (Unipolar 5 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP213U05A-R2EL	0.014	1.66×10^{-7}	0.5	4.25	8.5	2.9	1.8°	**CMD2109P**
PKP214U06A-R2EL	0.026	2.96×10^{-7}	0.6	4.2	7	2.4		

● See "Common Specifications" page for encoder specifications.

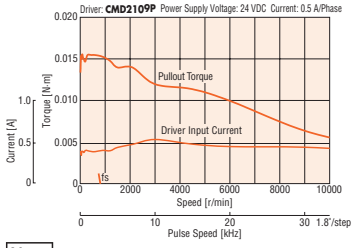
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

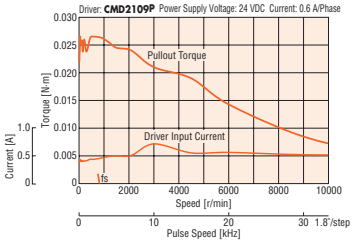
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP213U05A-R2EL



PKP214U06A-R2EL



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

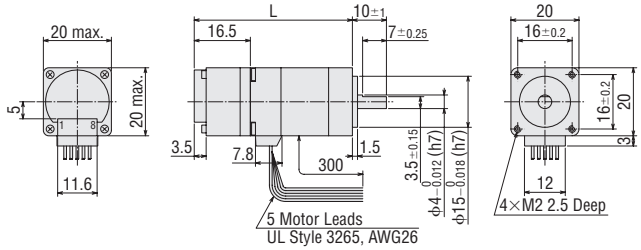
●Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP213U05A-R2EL	46.5	0.06	B1098
PKP214U06A-R2EL	56.5	0.08	B1099

● Applicable Connector (Molex)

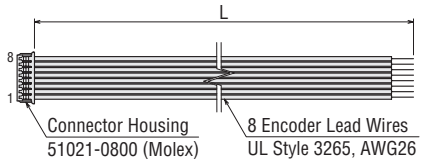
	Encoder
Connector Housing	51021-0800
Contact	50079-8100
Crimping Tool	57177-5000



●Connection Cable (Sold separately)

◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑥

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223D15□2	0.095	9×10^{-7}	1.5	1.77	1.18	0.96	1.8°	**CVD215BR-K**
PKP225D15□2	0.19	18×10^{-7}		3	2	1.6		

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

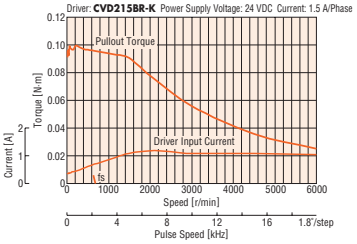
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

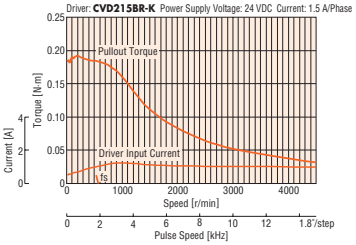
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223D15A2/PKP223D15B2



PKP225D15A2/PKP225D15B2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

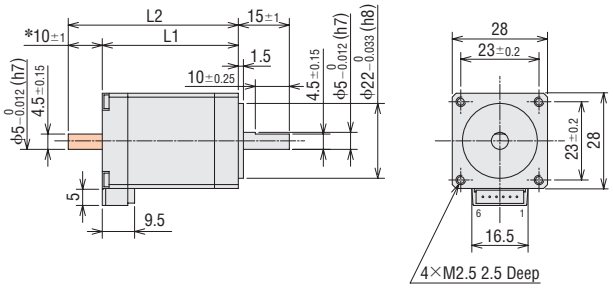
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP223D15A2	32	–	0.11	B980
PKP223D15B2		42		
PKP225D15A2	51.5	–	0.2	B982
PKP225D15B2		61.5		

- Applicable Connector
  Connector Housing: 51065-0600 (Molex)
  Contact: 50212-8100 (Molex)
  Crimp Tool: 57176-5000 (Molex)



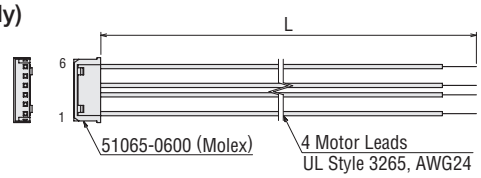
*The length of the shaft flat on the double shaft model is 10±0.25.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223U09□2	0.075	9×10^{-7}	0.95	2.95	3.11	1.44	1.8°	**CMD2109P**
PKP225U09□2	0.135	18×10^{-7}		4.4	4.6	2.11		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

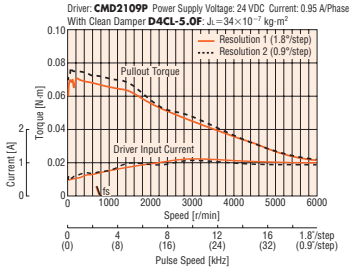
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

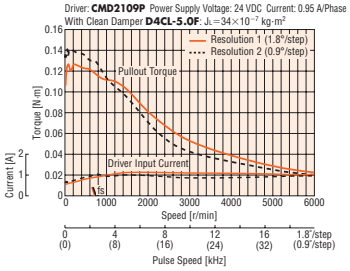
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223U09A2/PKP223U09B2



PKP225U09A2/PKP225U09B2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

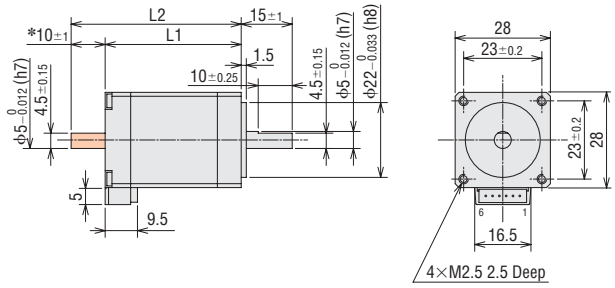
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP223U09A2	32	–	0.11	B980
PKP223U09B2		42		
PKP225U09A2	51.5	–	0.2	B982
PKP225U09B2		61.5		

● Applicable Connector
Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



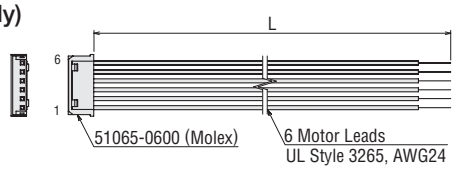
*The length of the shaft flat on the double shaft model is 10±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223D15A2-R3□■	0.095	9.9×10^{-7}	1.5	1.77	1.18	0.96	1.8°	**CVD215BR-K**
PKP225D15A2-R3□■	0.19	19×10^{-7}		3	2	1.6		

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

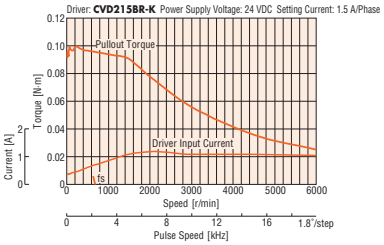
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

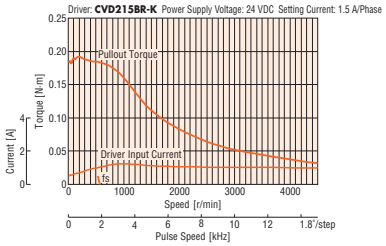
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223D15A2-R3□■



PKP225D15A2-R3□■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

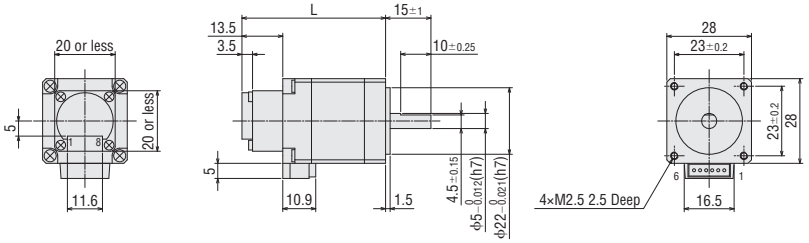
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223D15A2-R3□■	47.5	0.13	B1198
PKP225D15A2-R3□■	67	0.22	B1199

- Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51065-0600	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000



Inner Wiring Diagram of Motor

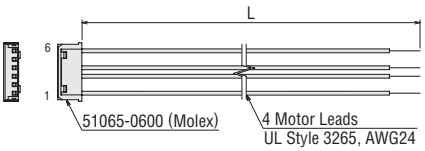
Wiring Diagram No.: Model B③

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type with Encoder Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223U09A2-R2□L	0.075	9.1×10^{-7}	0.95	2.95	3.11	1.44	1.8°	**CMD2109P**
PKP225U09A2-R2□L	0.135	18×10^{-7}		4.4	4.6	2.11		

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

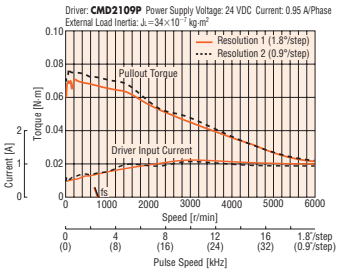
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

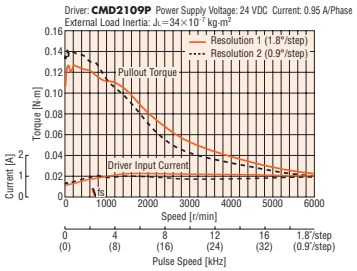
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223U09A2-R2EL/PKP223U09A2-R2FL



PKP225U09A2-R2EL/PKP225U09A2-R2FL



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

Motor

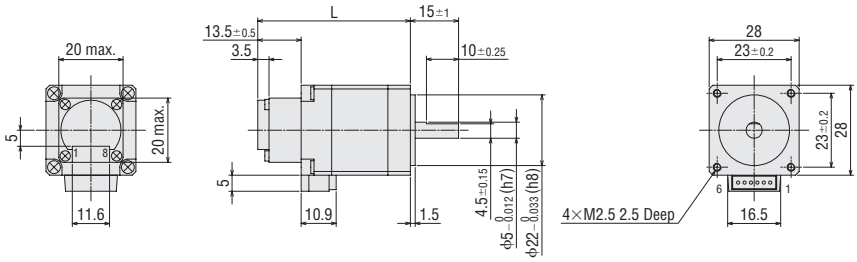
2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223U09A2-R2□L	47.5	0.12	B1198
PKP225U09A2-R2□L	67	0.21	B1199

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

- Applicable Connector (Molex)

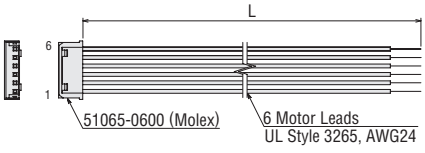
	Motor	Encoder
Connector Housing	51065-0600	51021-0800
Contact	50212-8100	50079-8100
Crimping Tool	57176-5000	57177-5000



Connection Cable (Sold separately)

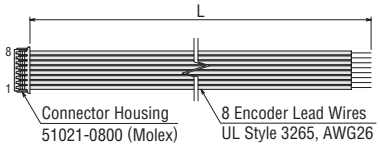
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

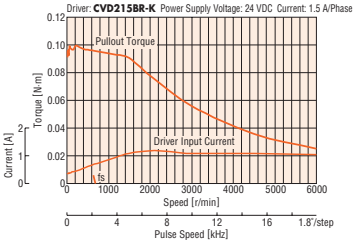
Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP223D15M2	0.095	14×10^{-7}*	1.5	1.77	1.18	0.96	1.8°	0.08
PKP225D15M2	0.19	23×10^{-7}*		3	2	1.6		

● Refer to the common specification page for electromagnetic brake specifications.
*This value is including the electromagnetic brake inertia.

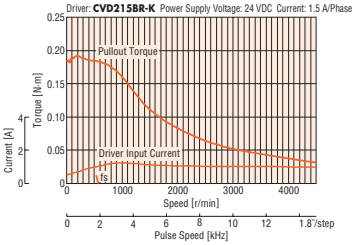
Note
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223D15M2



PKP225D15M2



Note
● 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.
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
● The characteristics are the same when RS-485 communication type driver is used in combination.

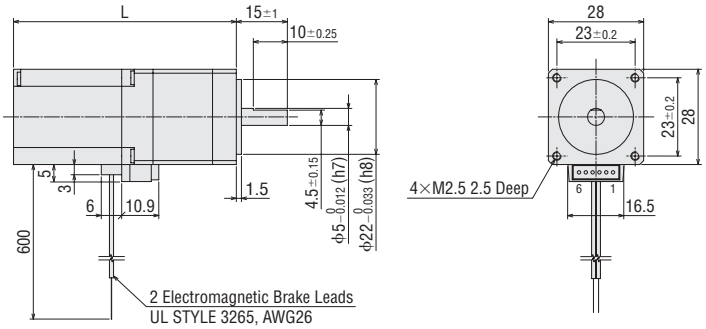
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223D15M2	65.5	0.17	B1196
PKP225D15M2	85	0.26	B1197

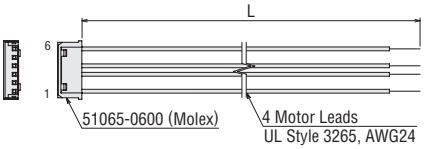
● Applicable Connector
Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP223U09M2	0.075	14×10^{-7}*	0.95	2.95	3.11	1.44	1.8°	0.08
PKP225U09M2	0.135	23×10^{-7}*		4.4	4.6	2.11		

- Refer to the common specification page for electromagnetic brake specifications.

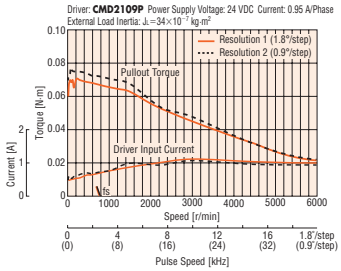
*This value is including the electromagnetic brake inertia.

Note

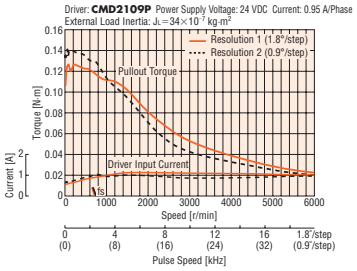
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223U09M2



PKP225U09M2



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

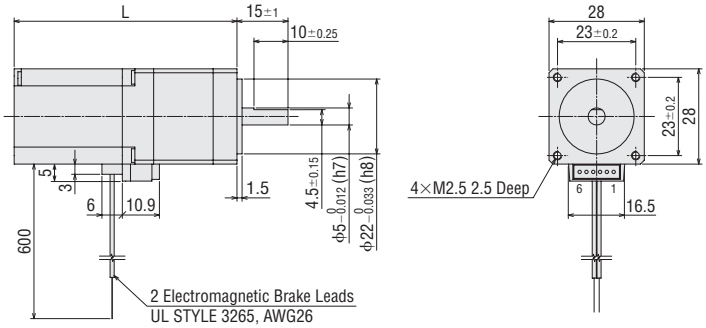
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223U09M2	65.5	0.17	B1196
PKP225U09M2	85	0.26	B1197

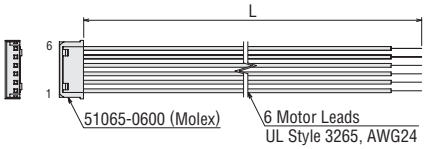
- Applicable Connector
  Connector Housing: 51065-0600 (Molex)
  Contact: 50212-8100 (Molex)
  Crimp Tool: 57176-5000 (Molex)



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 35 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP233D15□	0.2	24×10^{-7}	1.5	2.43	1.62	1.5	1.8°	**CVD215BR-K**
PKP233D23□			2.3	1.56	0.68	0.67		**CVD223BR-K**
PKP235D15□	0.37	50×10^{-7}	1.5	3.6	2.4	2.6		**CVD215BR-K**
PKP235D23□			2.3	2.23	0.97	1.2		**CVD223BR-K**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

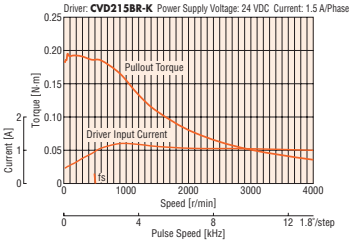
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

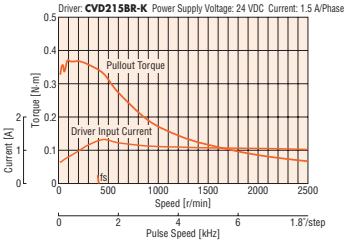
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

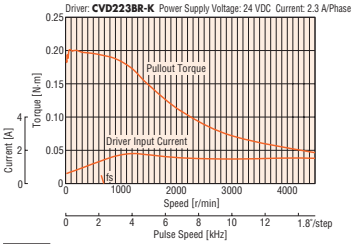
PKP233D15A/PKP233D15B



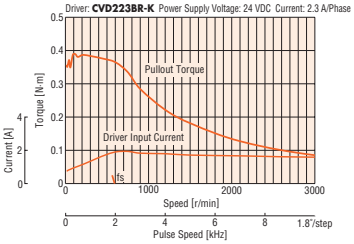
PKP235D15A/PKP235D15B



PKP233D23A/PKP233D23B



PKP235D23A/PKP235D23B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

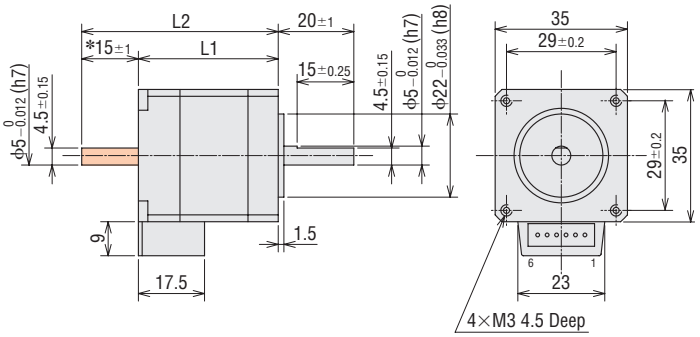
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP233D15A	37	–	0.18	B983
PKP233D15B		52		
PKP233D23A		–		B1111
PKP233D23B		52		
PKP235D15A	52	–	0.285	B984
PKP235D15B		67		
PKP235D23A		–		B1112
PKP235D23B		67		

● Applicable Connector
Connector Housing: 51103-0600 (Molex)
Contact: 50351-8100 (Molex)
Crimp Tool: 57295-5000 (Molex)



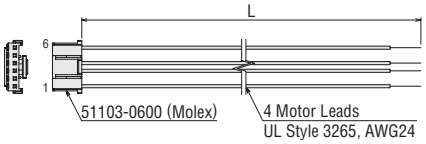
*The length of the shaft flat on the double shaft model is 15±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 35 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP233U12□	0.16	24×10^{-7}	1.2	3.24	2.7	1.4	1.8°	**CMD2112P**
PKP235U12□	0.3	50×10^{-7}		4.08	3.4	2		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

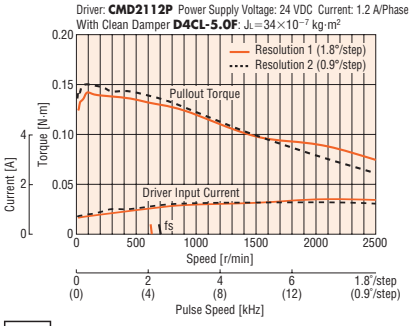
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

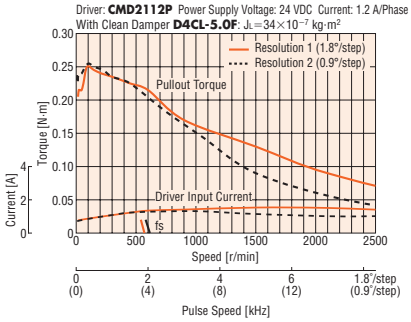
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP233U12A/PKP233U12B



PKP235U12A/PKP235U12B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

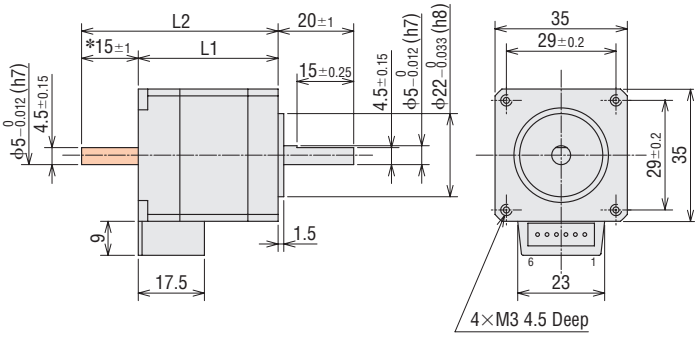
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP233U12A	37	–	0.18	B983
PKP233U12B		52		
PKP235U12A	52	–	0.285	B984
PKP235U12B		67		

● Applicable Connector
Connector Housing: 51103-0600 (Molex)
Contact: 50351-8100 (Molex)
Crimp Tool: 57295-5000 (Molex)



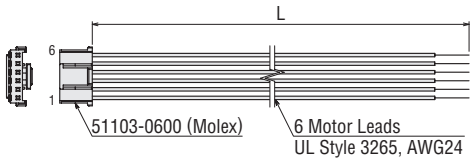
*The length of the shaft flat on the double shaft model is 15±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 35 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP233D15A-R3□■	0.2	25×10^{-7}	1.5	2.43	1.62	1.5	1.8°	**CVD215BR-K**
PKP233D23A-R3□■			2.3	1.56	0.68	0.67		**CVD223BR-K**
PKP235D15A-R3□■	0.37	51×10^{-7}	1.5	3.6	2.4	2.6		**CVD215BR-K**
PKP235D23A-R3□■			2.3	2.23	0.97	1.2		**CVD223BR-K**

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

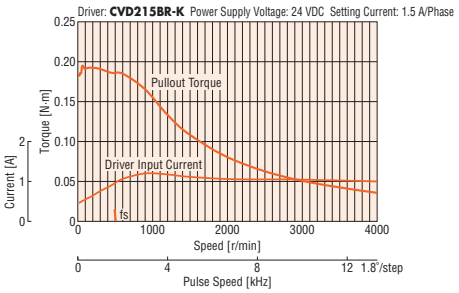
* See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

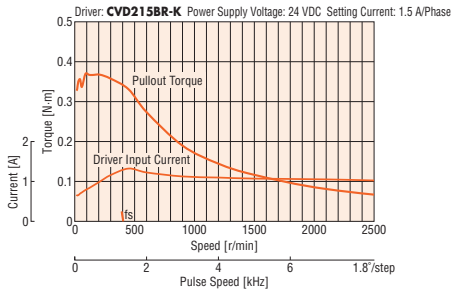
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

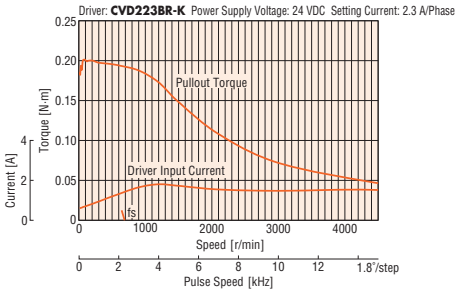
PKP233D15A-R3□■



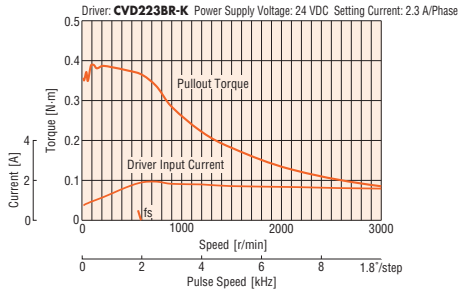
PKP235D15A-R3□■



PKP233D23A-R3□■



PKP235D23A-R3□■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

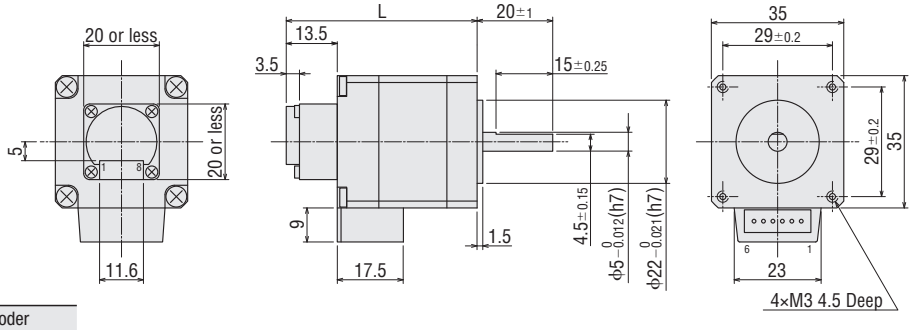
- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Dimensions (Unit = mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP233D15A-R3□■	50.5	0.2	B1102
PKP233D23A-R3□■			
PKP235D15A-R3□■	65.5	0.31	B1103
PKP235D23A-R3□■			



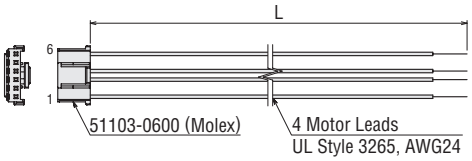
● Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51103-0600	51021-0800
Contact	50351-8100	50079-8100
Crimp Tool	57295-5000	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

● A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type with Encoder Frame Size 35 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP233U12A-R2□L	0.16	24×10^{-7}	1.2	3.24	2.7	1.4	1.8°	**CMD2112P**
PKP235U12A-R2□L	0.3	50×10^{-7}		4.08	3.4	2		

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

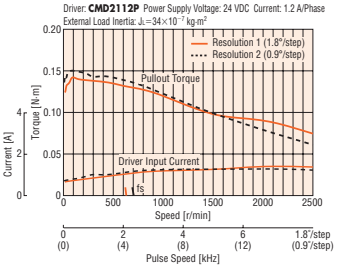
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

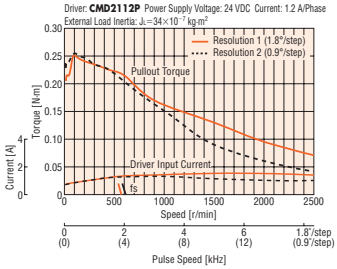
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP233U12A-R2EL/PKP233U12A-R2FL



PKP235U12A-R2EL/PKP235U12A-R2FL



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

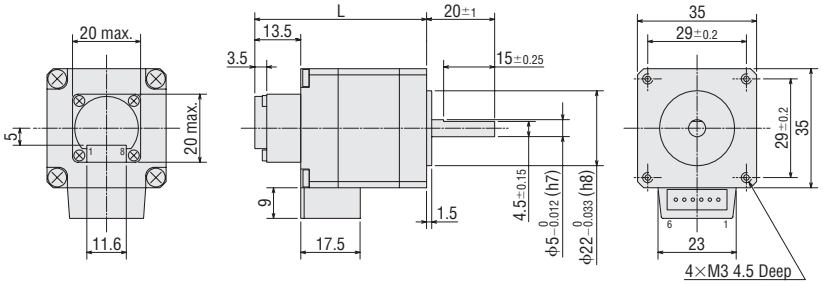
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP233U12A-R2□L	50.5	0.19	B1102
PKP235U12A-R2□L	65.5	0.295	B1103

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.



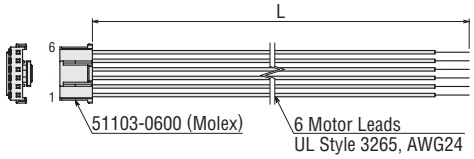
- Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51103-0600	51021-0800
Contact	50351-8100	50079-8100
Crimping Tool	57295-5000	57177-5000

Connection Cable (Sold separately)

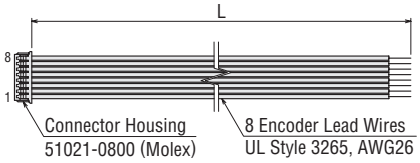
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 35 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP233D15M	0.2	36×10^{-7}✻	1.5	2.43	1.62	1.5	1.8°	0.3
PKP235D15M	0.37	62×10^{-7}✻		3.6	2.4	2.6		

● Refer to the common specification page for electromagnetic brake specifications.

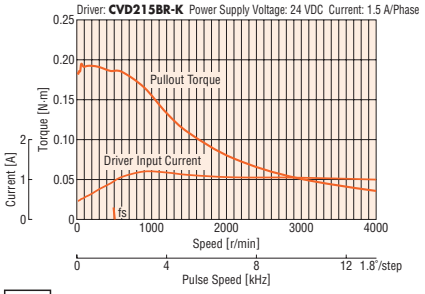
✻This value is including the electromagnetic brake inertia.

Note

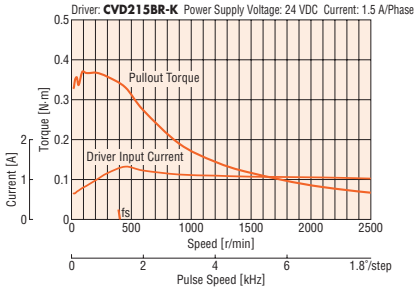
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP233D15M



PKP235D15M



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

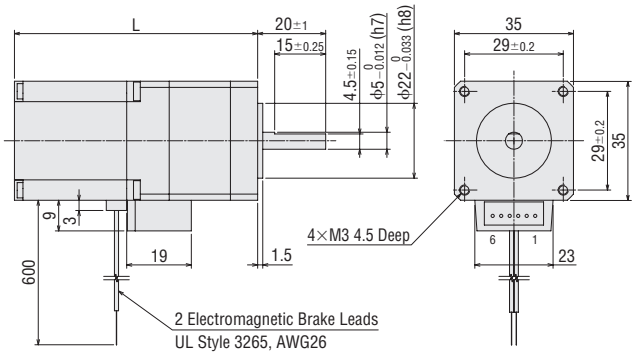
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP233D15M	71	0.285	B1134
PKP235D15M	86	0.39	B1135

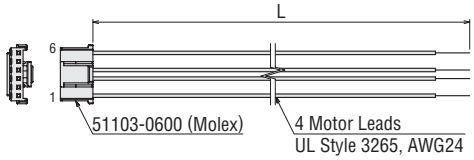
● Applicable Connector (Molex)
Connector Housing: 51103-0600
Contact: 50351-8100
Crimp Tool: 57295-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 35 mm (Unipolar 6 lead wires)

Connector Type

Specifications

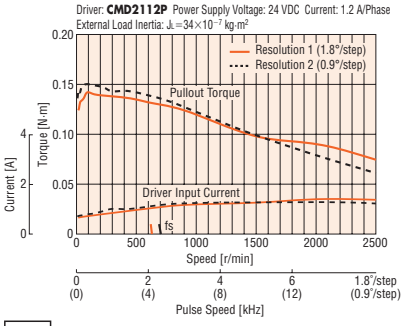
Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP233U12M	0.16	36×10^{-7}*	1.2	3.24	2.7	1.4	1.8°	0.3
PKP235U12M	0.3	62×10^{-7}*		4.08	3.4	2		

● Refer to the common specification page for electromagnetic brake specifications.
*This value is including the electromagnetic brake inertia.

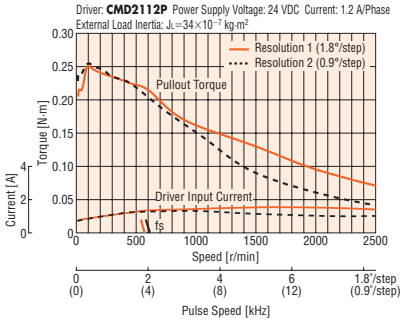
Note
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP233U12M



PKP235U12M



Note
● 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.
● The data in the speed – torque characteristics represents the use of an external load inertia.
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

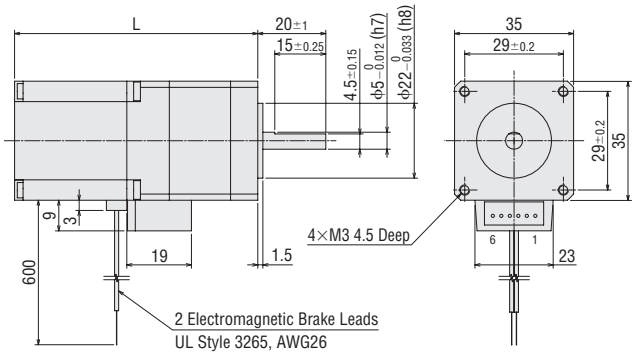
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP233U12M	71	0.285	B1134
PKP235U12M	86	0.39	B1135

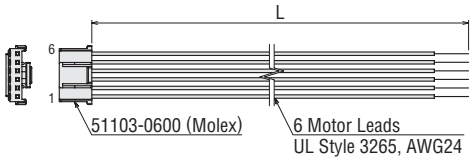
● Applicable Connector (Molex)
Connector Housing: 51103-0600
Contact: 50351-8100
Crimp Tool: 57295-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④
● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243D08□2	0.35	36×10^{-7}	0.85	4.6	5.4	10	1.8°	**CVD223FBR-K**
PKP243D15□2			1.5	2.7	1.8	3.3		
PKP243D23□2			2.3	1.8	0.78	1.4		
PKP244D08□2	0.48	54×10^{-7}	0.85	5.7	6.7	14		
PKP244D15□2			1.5	3.2	2.1	4.4		
PKP244D23□2			2.3	2.1	0.93	1.9		
PKP245D08□2	0.66	73×10^{-7}	0.85	6	7.1	16		
PKP245D15□2			1.5	3.3	2.2	5.3		
PKP245D23□2			2.3	2.3	1	2.2		
PKP246D15□2	0.99	110×10^{-7}	1.5	4.4	2.9	7.9		
PKP246D23□2			2.3	3.2	1.4	3.3		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

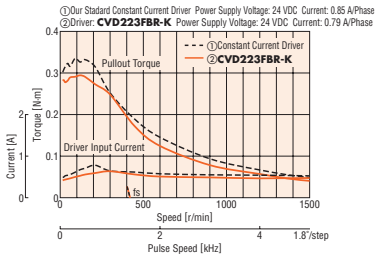
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

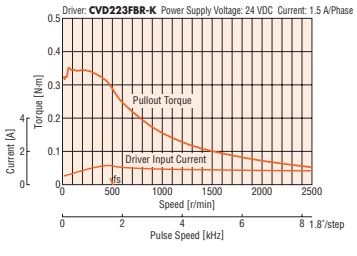
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

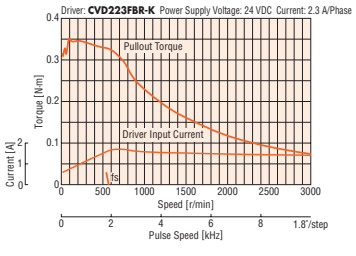
PKP243D08A2/PKP243D08B2



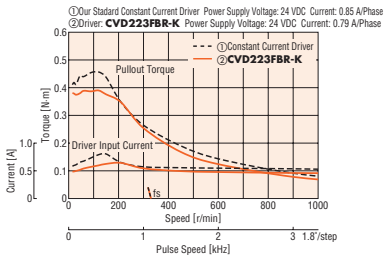
PKP243D15A2/PKP243D15B2



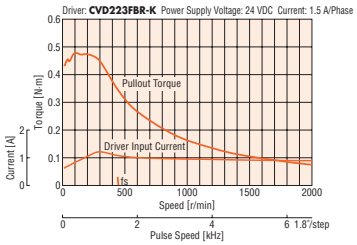
PKP243D23A2/PKP243D23B2



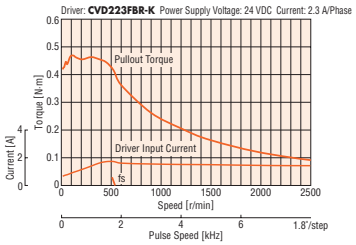
PKP244D08A2/PKP244D08B2



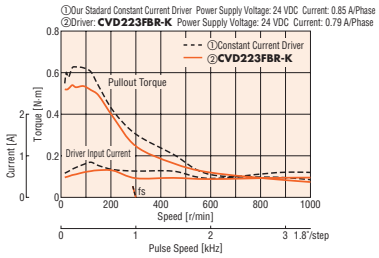
PKP244D15A2/PKP244D15B2



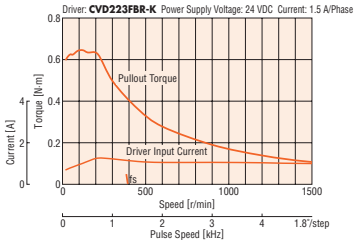
PKP244D23A2/PKP244D23B2



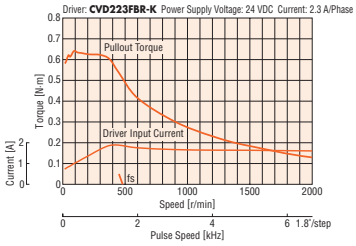
PKP245D08A2/PKP245D08B2



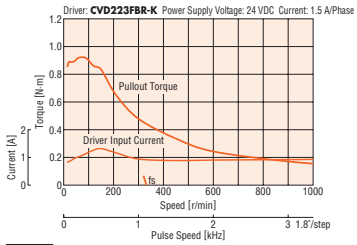
PKP245D15A2/PKP245D15B2



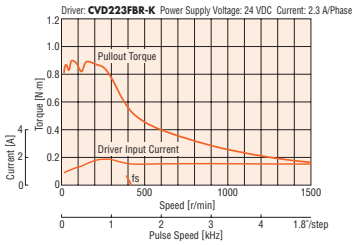
PKP245D23A2/PKP245D23B2



PKP246D15A2/PKP246D15B2



PKP246D23A2/PKP246D23B2



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

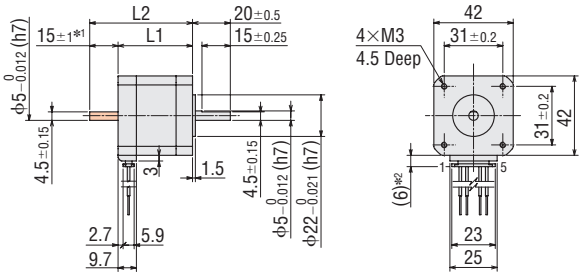
● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243D08A2	33	–	0.23	B1260
PKP243D08B2		48		
PKP243D15A2		–		
PKP243D15B2		48		
PKP243D23A2		–		
PKP243D23B2		48		
PKP244D08A2	39	–	0.3	B1261
PKP244D08B2		54		
PKP244D15A2		–		
PKP244D15B2		54		
PKP244D23A2		–		
PKP244D23B2		54		
PKP245D08A2	47	–	0.37	B1262
PKP245D08B2		62		
PKP245D15A2		–		
PKP245D15B2		62		
PKP245D23A2		–		
PKP245D23B2		62		
PKP246D15A2	59	–	0.5	B1263
PKP246D15B2		74		
PKP246D23A2		–		
PKP246D23B2		74		



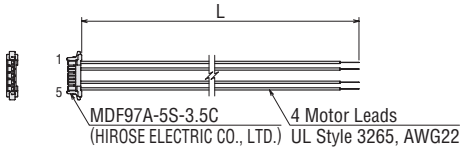
*1 The length of the shaft flat on the double shaft model is 15±0.25.
*2 With connection cable
● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

● Applicable Connector
Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 42 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243D15□	0.35	36×10^{-7}	1.5	2.85	1.9	5	1.8°	**CVD215BR-K**
PKP243D23□			2.3	1.93	0.84	2.1		**CVD223BR-K**
PKP244D15□	0.48	57×10^{-7}	1.5	3.9	2.6	4.9		**CVD215BR-K**
PKP244D23□			2.3	2.34	1.02	2.1		**CVD223BR-K**
PKP245D15□	0.58	83×10^{-7}	1.5	3.6	2.4	6.6		**CVD215BR-K**
PKP245D23□			2.3	2.57	1.12	2.9		**CVD223BR-K**
PKP246D15□	0.93	114×10^{-7}	1.5	5.8	3.87	8		**CVD215BR-K**
PKP246D23□			2.3	3.45	1.5	3.5		**CVD223BR-K**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

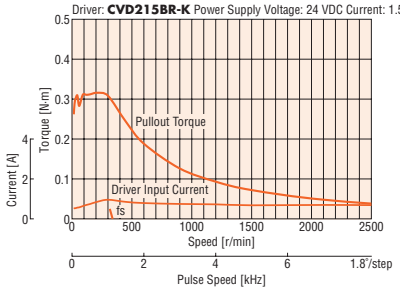
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

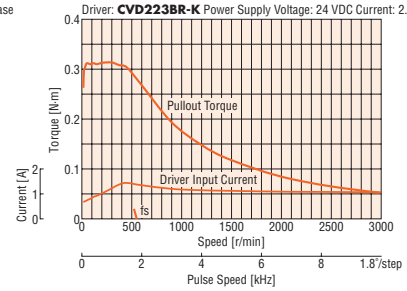
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

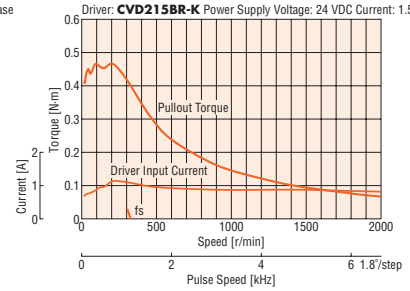
PKP243D15A/PKP243D15B



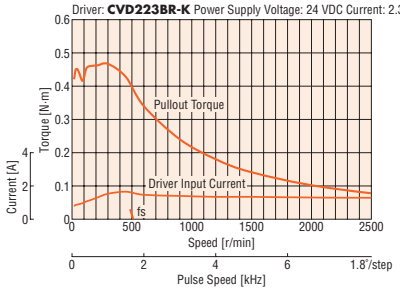
PKP243D23A/PKP243D23B



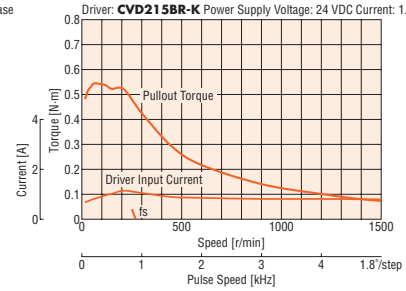
PKP244D15A/PKP244D15B



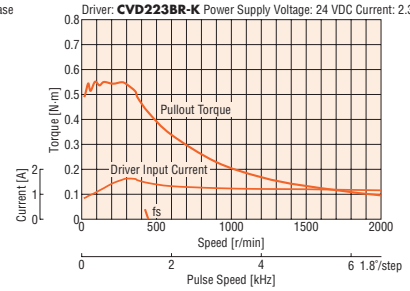
PKP244D23A/PKP244D23B



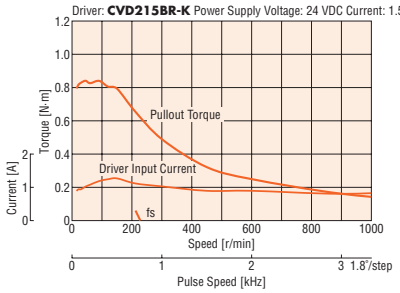
PKP245D15A/PKP245D15B



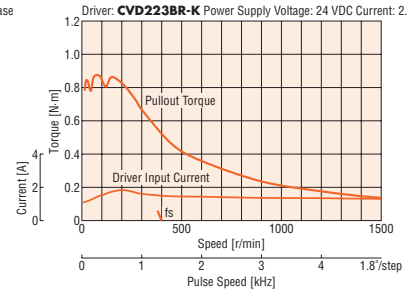
PKP245D23A/PKP245D23B



PKP246D15A/PKP246D15B



PKP246D23A/PKP246D23B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same if combined with an RS-485 communication type driver.

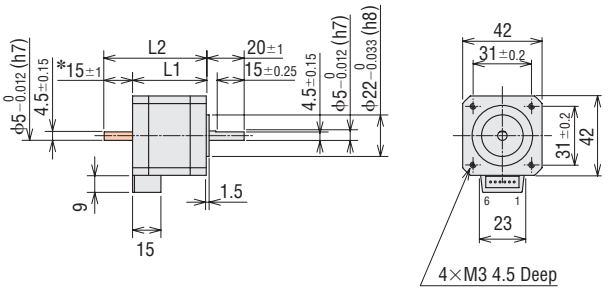
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243D15A	33	–	0.25	B968
PKP243D15B		48		
PKP243D23A		–		
PKP243D23B		48		
PKP244D15A	39	–	0.3	B969
PKP244D15B		54		
PKP244D23A		–		
PKP244D23B		54		
PKP245D15A	47	–	0.39	B970
PKP245D15B		62		
PKP245D23A		–		
PKP245D23B		62		
PKP246D15A	59	–	0.5	B971
PKP246D15B		74		
PKP246D23A		–		
PKP246D23B		74		

● Applicable Connector (Molex)
Connector Housing: 51103-0600 (Molex)
Contact: 50351-8100 (Molex)
Crimp Tool: 57295-5000 (Molex)

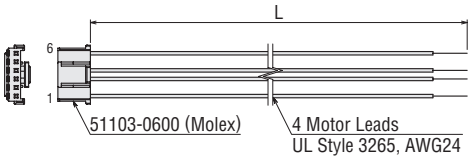


✻The length of the shaft flat on the double shaft model is 15±0.25.
● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Standard Type Frame Size 42 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243U08□2	0.26	36×10^{-7}	0.8	5.3	6.6	5.3	1.8°	**CMD2109P**
PKP243U09□2			0.95	4.5	4.7	3.7		**CMD2109P**
PKP243U12□2			1.2	3.2	2.7	2.4		**CMD2112P**
PKP244U08□2	0.39	54×10^{-7}	0.8	7.1	8.9	8.4		**CMD2109P**
PKP244U12□2			1.2	4.8	4	3.7		**CMD2112P**
PKP245U08□2	0.49	73×10^{-7}	0.8	6.4	8	8.3		**CMD2109P**
PKP245U12□2			1.2	3.8	3.2	3.7		**CMD2112P**
PKP246U12□2	0.75	110×10^{-7}	1.2	6.1	5.1	6		**CMD2112P**
PKP246U16□2			1.6	4.5	2.8	3.3		**CMD2120P**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

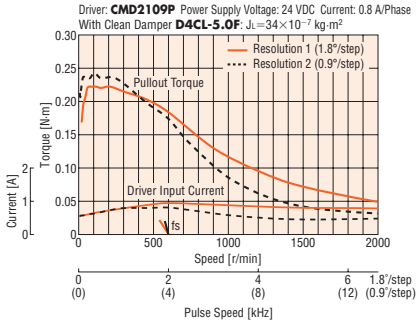
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

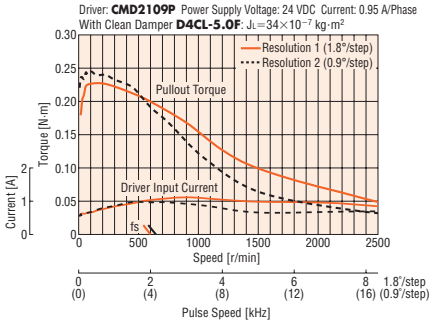
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

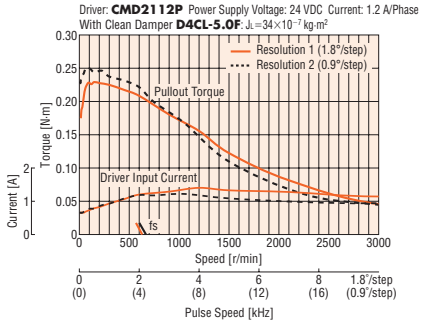
PKP243U08A2/PKP243U08B2



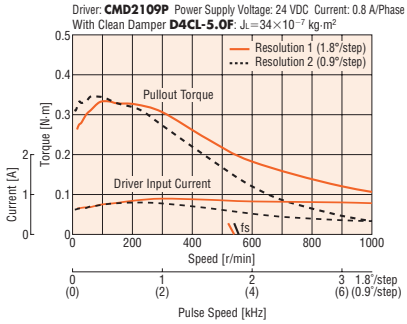
PKP243U09A2/PKP243U09B2



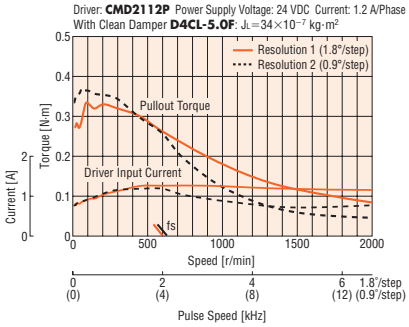
PKP243U12A2/PKP243U12B2



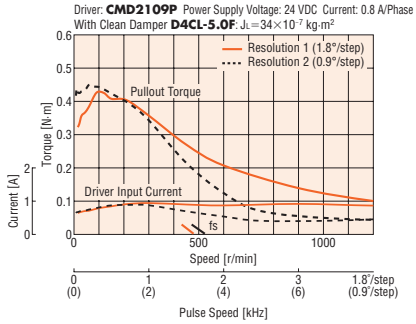
PKP244U08A2/PKP244U08B2



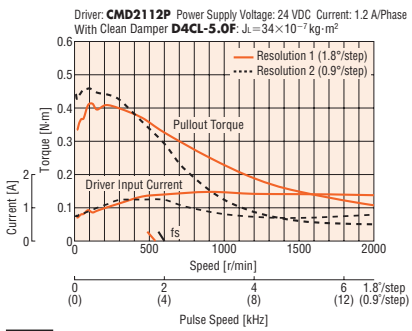
PKP244U12A2/PKP244U12B2



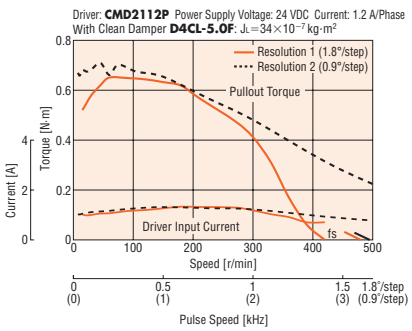
PKP245U08A2/PKP245U08B2



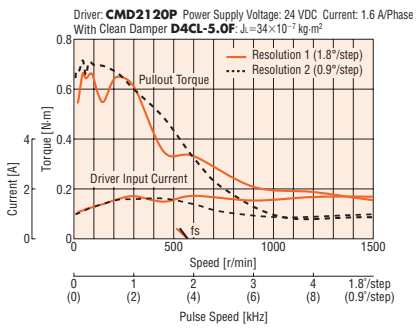
PKP245U12A2/PKP245U12B2



PKP246U12A2/PKP246U12B2



PKP246U16A2/PKP246U16B2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

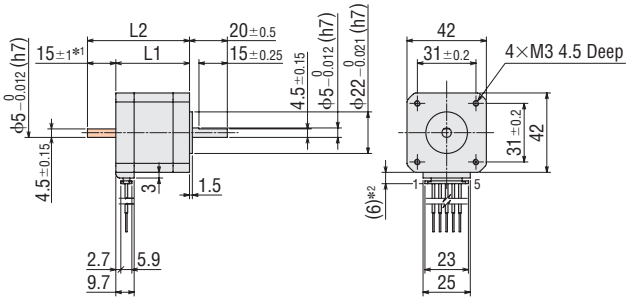
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243U08A2	33	–	0.23	B1335
PKP243U08B2		48		
PKP243U09A2		–		
PKP243U09B2		48		
PKP243U12A2		–		
PKP243U12B2		48		
PKP244U08A2	39	–	0.3	B1336
PKP244U08B2		54		
PKP244U12A2		–		
PKP244U12B2		54		
PKP245U08A2	47	–	0.37	B1337
PKP245U08B2		62		
PKP245U12A2		–		
PKP245U12B2		62		
PKP246U12A2	59	–	0.5	B1338
PKP246U12B2		74		
PKP246U16A2		–		
PKP246U16B2		74		



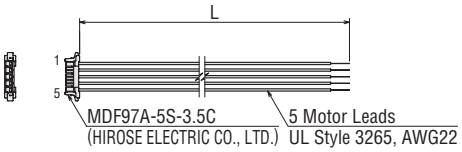
*1 The length of the shaft flat on the double shaft model is 15±0.25.
*2 With connection cable
● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

● Applicable Connector
Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 42 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243U04□	0.25	36×10^{-7}	0.4	12	30	33	1.8°	**CMD2109P**
PKP243U06□			0.6	6.6	11	12.4		
PKP243U09□			0.95	4.47	4.7	5		
PKP244U04□	0.36	57×10^{-7}	0.4	12	30	28.6		**CMD2109P**
PKP244U08□			0.8	5.76	7.2	7.6		
PKP244U12□	0.39		1.2	4.8	4	3.9		**CMD2112P**
PKP245U05□	0.45	83×10^{-7}	0.5	12	24	33		**CMD2109P**
PKP245U08□			0.8	6.4	8	11.3		
PKP245U12□			1.2	4.56	3.8	5		**CMD2112P**
PKP246U12□	0.75	114×10^{-7}	1.2	7.2	6	6.5		**CMD2112P**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

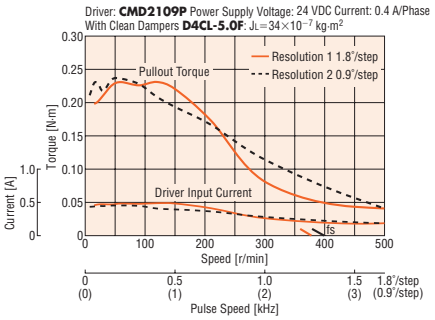
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

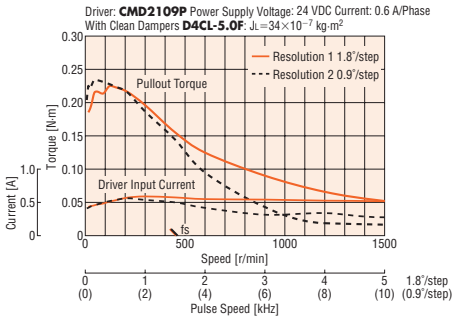
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

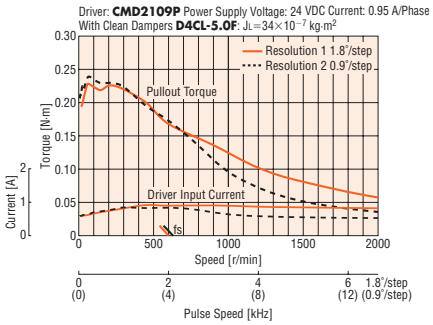
PKP243U04A/PKP243U04B



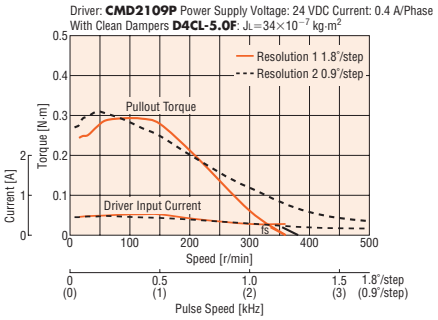
PKP243U06A/PKP243U06B



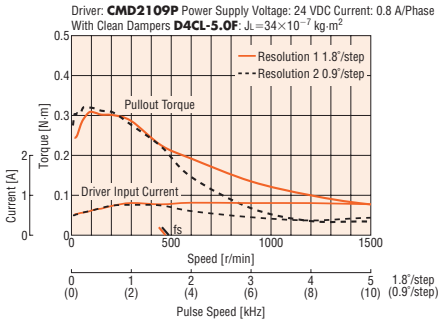
PKP243U09A/PKP243U09B



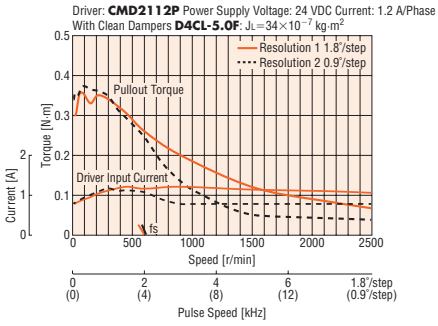
PKP244U04A/PKP244U04B



PKP244U08A/PKP244U08B



PKP244U12A/PKP244U12B



Note

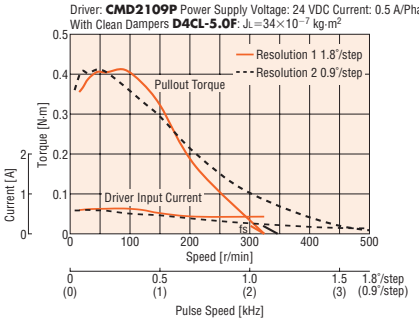
● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● If there is a "clean damper" entry in the speed - torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

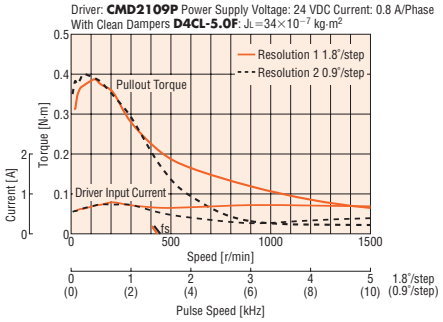
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

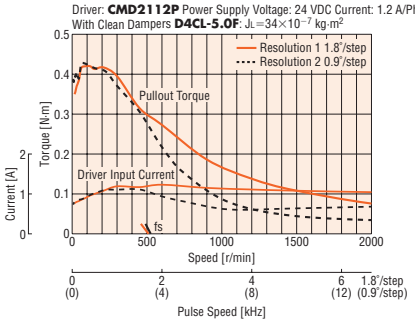
PKP245U05A/PKP245U05B



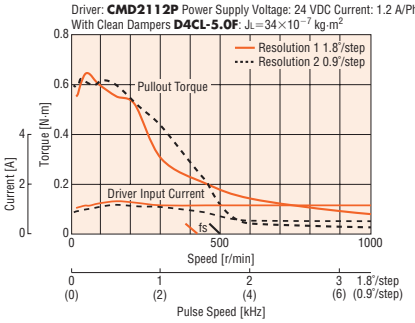
PKP245U08A/PKP245U08B



PKP245U12A/PKP245U12B



PKP246U12A/PKP246U12B



Note

- 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.
- If there is a "clean damper" entry in the speed - torque characteristics, the data is for a double shaft motor when a clean damper is equipped.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

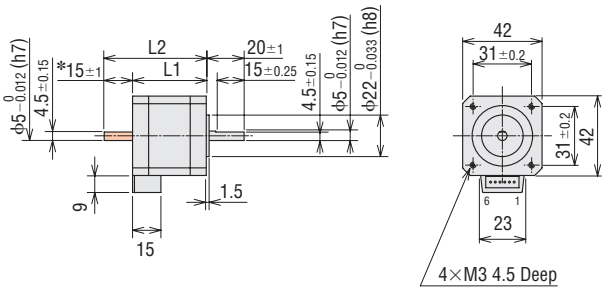
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243U04A	33	–	0.25	B968
PKP243U04B		48		
PKP243U06A		–		
PKP243U06B		48		
PKP243U09A		–		
PKP243U09B		48		
PKP244U04A	39	–	0.3	B969
PKP244U04B		54		
PKP244U08A		–		
PKP244U08B		54		
PKP244U12A		–		
PKP244U12B		54		
PKP245U05A	47	–	0.39	B970
PKP245U05B		62		
PKP245U08A		–		
PKP245U08B		62		
PKP245U12A		–		
PKP245U12B		62		
PKP246U12A	59	–	0.5	B971
PKP246U12B		74		

- Applicable Connector (Molex)
  Connector Housing: 51103-0600 (Molex)
  Contact: 50351-8100 (Molex)
  Crimp Tool: 57295-5000 (Molex)



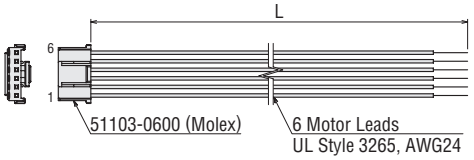
*The length of the shaft flat on the double shaft model is 15±0.25.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243D08A2-R3□■	0.35	37×10^{-7}	0.85	4.6	5.4	10	1.8°	**CVD223FBR-K**
PKP243D15A2-R3□■			1.5	2.7	1.8	3.3		
PKP243D23A2-R3□■			2.3	1.8	0.78	1.4		
PKP244D08A2-R3□■	0.48	55×10^{-7}	0.85	5.7	6.7	14		
PKP244D15A2-R3□■			1.5	3.2	2.1	4.4		
PKP244D23A2-R3□■			2.3	2.1	0.93	1.9		
PKP245D08A2-R3□■	0.66	74×10^{-7}	0.85	6	7.1	16		
PKP245D15A2-R3□■			1.5	3.3	2.2	5.3		
PKP245D23A2-R3□■			2.3	2.3	1	2.2		
PKP246D15A2-R3□■	0.99	111×10^{-7}	1.5	4.4	2.9	7.9		
PKP246D23A2-R3□■			2.3	3.2	1.4	3.3		

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**E**" (200 P/R), **F** (400 P/R) or or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

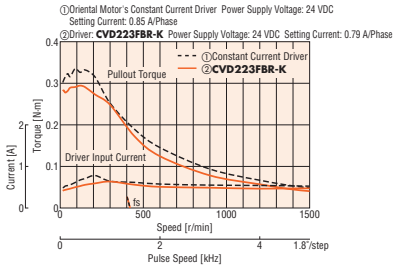
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

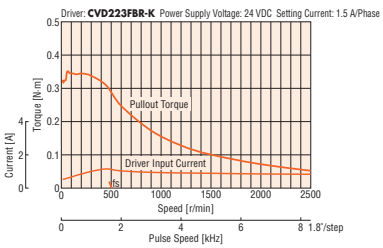
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

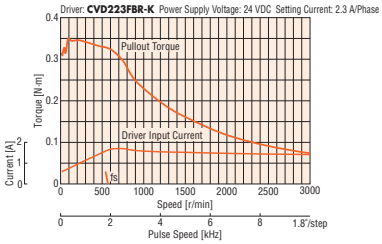
PKP243D08A2-R3□■



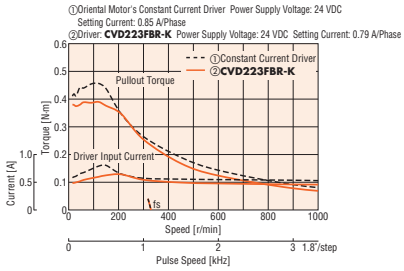
PKP243D15A2-R3□■



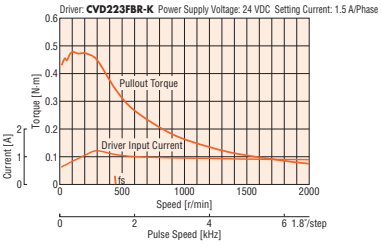
PKP243D23A2-R3□■



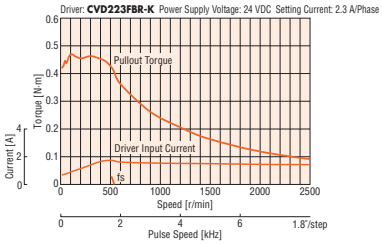
PKP244D08A2-R3□■



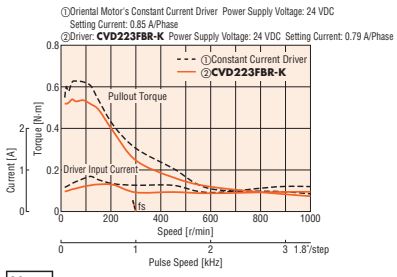
PKP244D15A2-R3□■



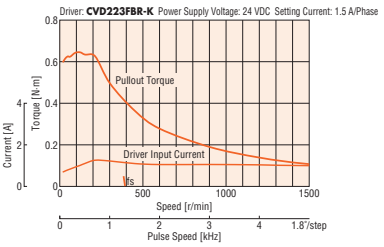
PKP244D23A2-R3□■



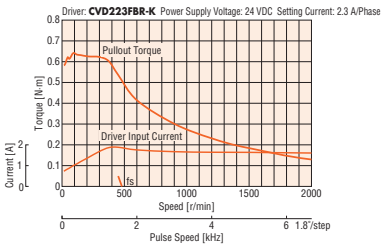
PKP245D08A2-R3□■



PKP245D15A2-R3□■



PKP245D23A2-R3□■



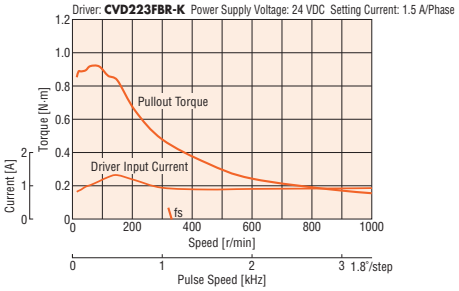
Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

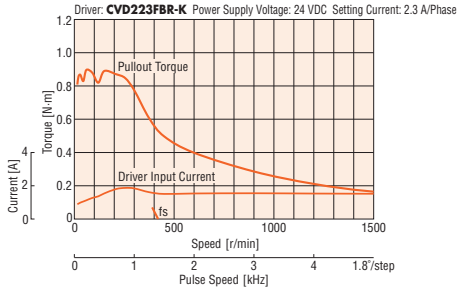
- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**E**" (200 P/R), **F** (400 P/R) or or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP246D15A2-R3□■



PKP246D23A2-R3□■



Note

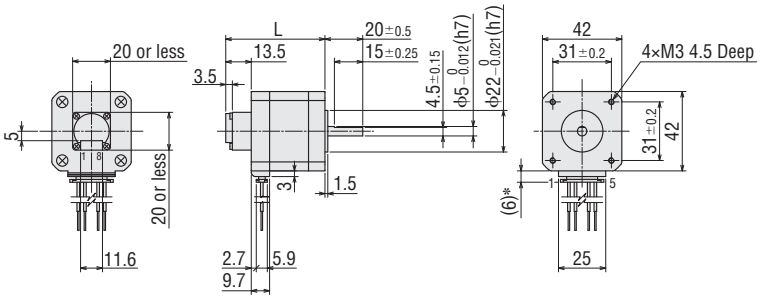
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243D08A2-R3□■	46.5	0.25	B1321
PKP243D15A2-R3□■			
PKP243D23A2-R3□■			
PKP244D08A2-R3□■	52.5	0.32	B1322
PKP244D15A2-R3□■			
PKP244D23A2-R3□■			
PKP245D08A2-R3□■	60.5	0.39	B1323
PKP245D15A2-R3□■			
PKP245D23A2-R3□■			
PKP246D15A2-R3□■	72.5	0.52	B1324
PKP246D23A2-R3□■			



✻With connection cable

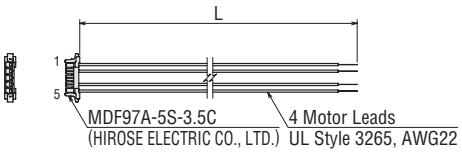
Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**E**" (200 P/R), **F** (400 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type with Encoder Frame Size 42 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243U08A2-R2□L	0.26	36×10^{-7}	0.8	5.3	6.6	5.3	1.8°	**CMD2109P**
PKP243U09A2-R2□L			0.95	4.5	4.7	3.7		**CMD2109P**
PKP243U12A2-R2□L			1.2	3.2	2.7	2.4		**CMD2112P**
PKP244U08A2-R2□L	0.39	54×10^{-7}	0.8	7.1	8.9	8.4		**CMD2109P**
PKP244U12A2-R2□L			1.2	4.8	4	3.7		**CMD2112P**
PKP245U08A2-R2□L	0.49	73×10^{-7}	0.8	6.4	8	8.3		**CMD2109P**
PKP245U12A2-R2□L			1.2	3.8	3.2	3.7		**CMD2112P**
PKP246U12A2-R2□L	0.75	110×10^{-7}	1.2	6.1	5.1	6		**CMD2112P**
PKP246U16A2-R2□L			1.6	4.5	2.8	3.3		**CMD2120P**

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

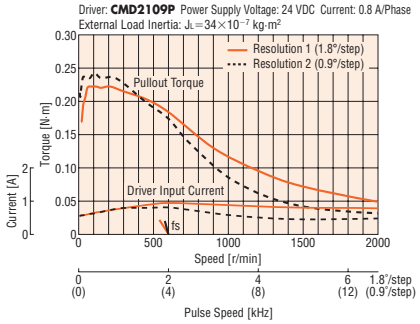
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

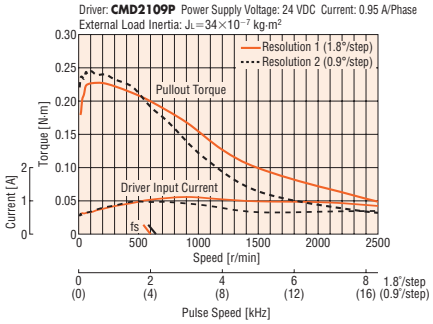
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

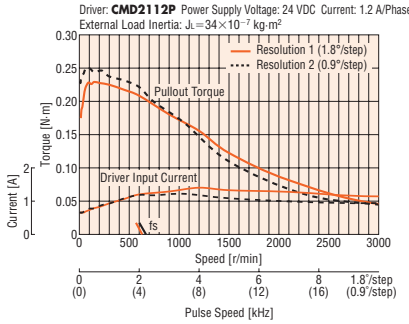
PKP243U08A2-R2EL/PKP243U08A2-R2FL



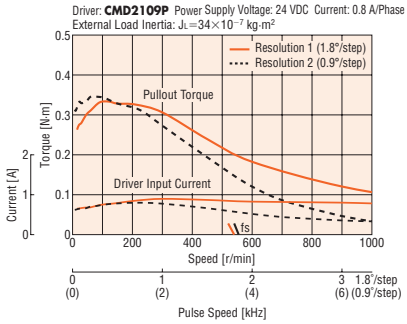
PKP243U09A2-R2EL/PKP243U09A2-R2FL



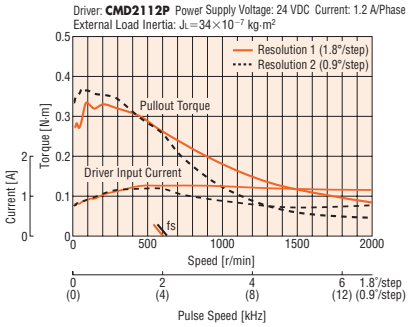
PKP243U12A2-R2EL/PKP243U12A2-R2FL



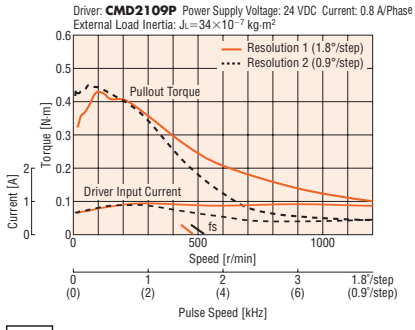
PKP244U08A2-R2EL/PKP244U08A2-R2FL



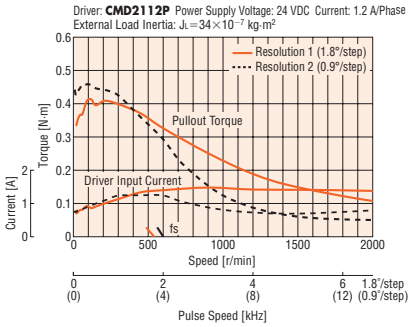
PKP244U12A2-R2EL/PKP244U12A2-R2FL



PKP245U08A2-R2EL/PKP245U08A2-R2FL



PKP245U12A2-R2EL/PKP245U12A2-R2FL

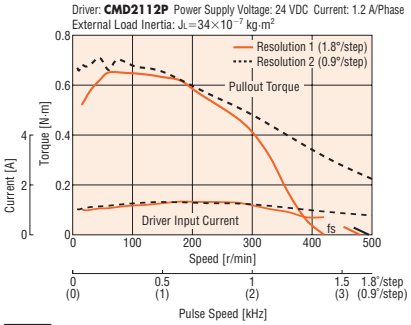


Note

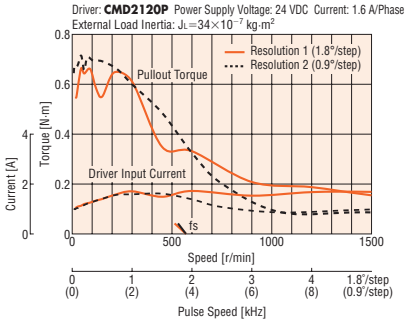
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP246U12A2-R2EL/PKP246U12A2-R2FL



PKP246U16A2-R2EL/PKP246U16A2-R2FL



Note

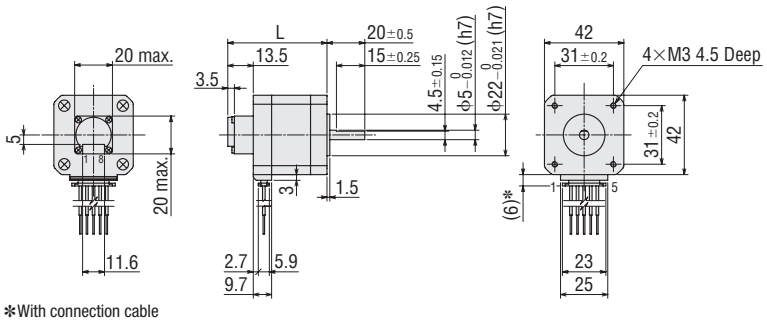
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243U08A2-R2□L	46.5	0.24	B1328
PKP243U09A2-R2□L			
PKP243U12A2-R2□L			
PKP244U08A2-R2□L	52.5	0.31	B1329
PKP244U12A2-R2□L			
PKP245U08A2-R2□L	60.5	0.38	B1330
PKP245U12A2-R2□L			
PKP246U12A2-R2□L	72.5	0.51	B1331
PKP246U16A2-R2□L			



*With connection cable

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

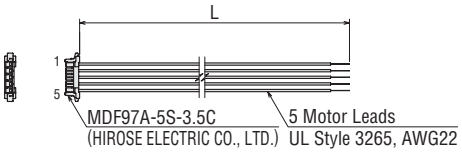
- Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimping Tool	HT801/MDF97-22S	57177-5000

Connection Cable (Sold separately)

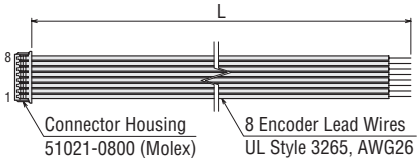
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP243D23M2	0.35	48×10^{-7}*	2.3	1.8	0.78	1.4	1.8°	0.3
PKP244D23M2	0.48	66×10^{-7}*		2.1	0.93	1.9		
PKP245D23M2	0.66	85×10^{-7}*		2.3	1	2.2		
PKP246D23M2	0.99	120×10^{-7}*		3.2	1.4	3.3		

● Refer to the common specification page for electromagnetic brake specifications.

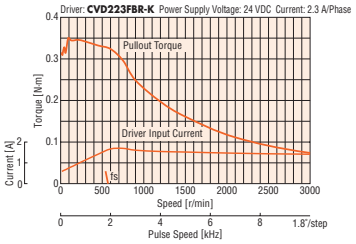
*The Inertia of the electromagnetic brake is included in the value.

Note

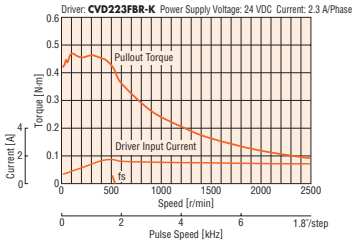
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

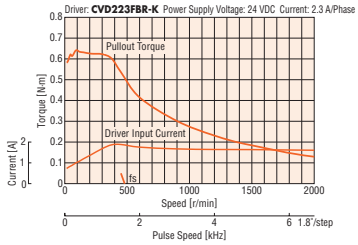
PKP243D23M2



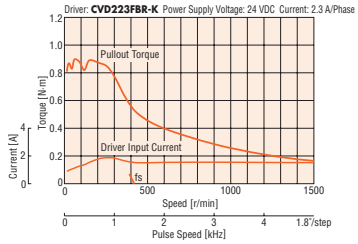
PKP244D23M2



PKP245D23M2



PKP246D23M2



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

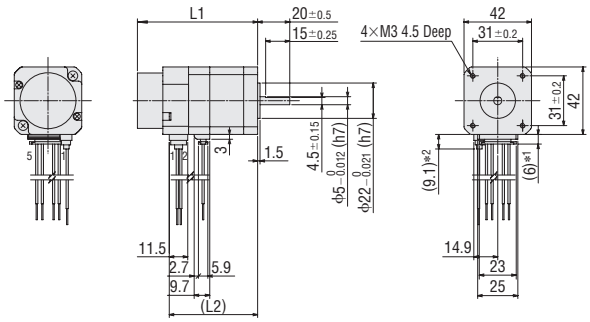
Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243D23M2	69	49	0.33	B1435
PKP244D23M2	75	55	0.40	B1436
PKP245D23M2	83	63	0.47	B1437
PKP246D23M2	95	75	0.60	B1438

● Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Electromagnetic Brake (HIROSE ELECTRIC CO., LTD.)
Connector Housing	MDF97A-5S-3.5C	DF62C-2S-2.2C
Contact	MDF97-22SC	DF62-22SCA
Crimping Tool	HT801/MDF97-22S	HT801/DF62-22(10)



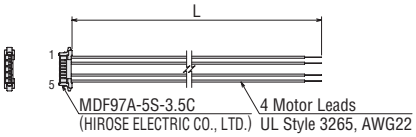
*1 With connection cable

*2 With electromagnetic brake connection cable

Connection Cable (Sold separately)

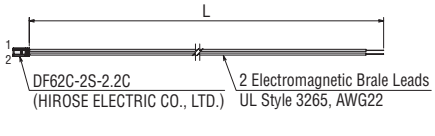
◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Electromagnetic Brake Connection Cable

Product Name	Length L (m)
LCM02A-006	0.6
LCM02A-010	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 42 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP243U09M	0.25	48×10^{-7}*	0.95	4.47	4.7	5	1.8°	0.3
PKP244U12M	0.39	69×10^{-7}*	1.2	4.8	4	3.9		
PKP245U12M	0.45	95×10^{-7}*		4.56	3.8	5		
PKP246U12M	0.75	126×10^{-7}*		7.2	6	6.5		

● Refer to the common specification page for electromagnetic brake specifications.

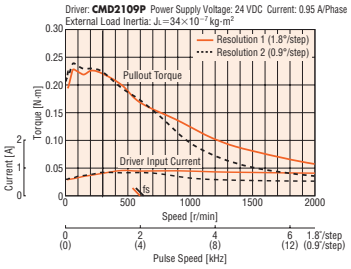
*This value is including the electromagnetic brake inertia.

Note

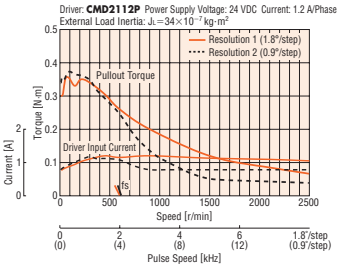
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

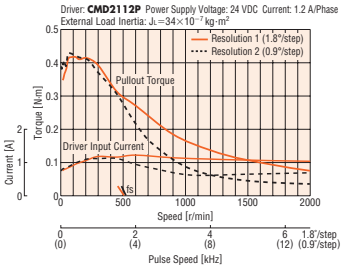
PKP243U09M



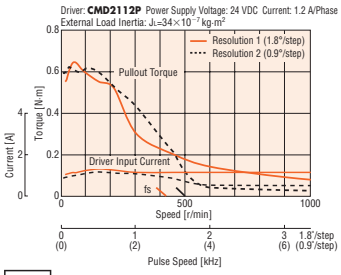
PKP244U12M



PKP245U12M



PKP246U12M



Note

● 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.

● The data in the speed – torque characteristics represents the use of an external load inertia.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

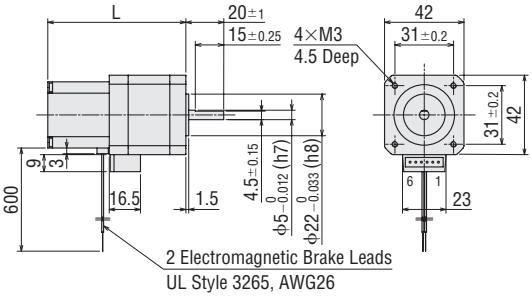
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243U09M	67	0.36	B1136
PKP244U12M	73	0.41	B1137
PKP245U12M	81	0.5	B1138
PKP246U12M	93	0.61	B1139

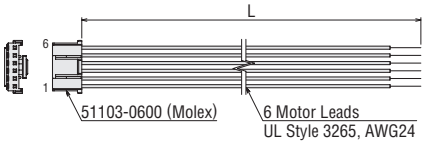
● Applicable Connector (Molex)
Connector Housing: 51103-0600
Contact: 50351-8100
Crimp Tool: 57295-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 50 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP254D28□A2	0.63	120×10^{-7}	2.8	1.5	0.55	1.1	1.8°	**CVD228BR-K**
PKP256D28□A2	1.08	220×10^{-7}		2	0.7	1.6		
PKP258D28□A2	1.99	450×10^{-7}		3.1	1.1	2.8		

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

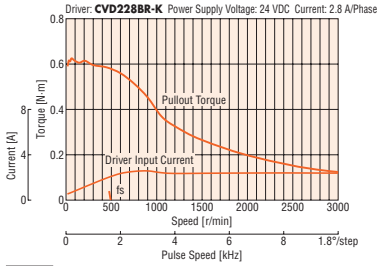
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

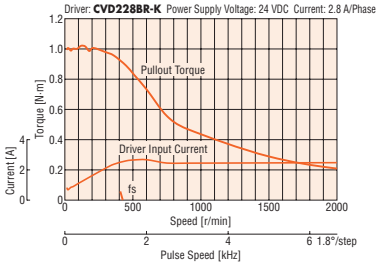
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

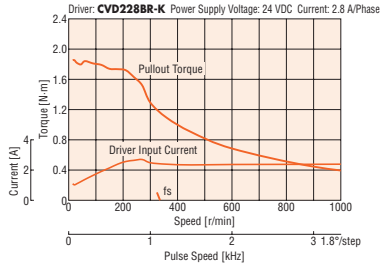
PKP254D28AA2/PKP254D28BA2



PKP256D28AA2/PKP256D28BA2



PKP258D28AA2/PKP258D28BA2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

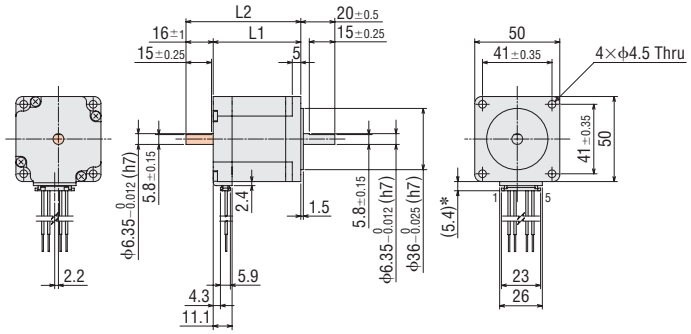
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP254D28AA2	39	–	0.37	B1452
PKP254D28BA2		55		
PKP256D28AA2	51.5	–	0.54	B1453
PKP256D28BA2		67.5		
PKP258D28AA2	81	–	0.93	B1454
PKP258D28BA2		97		

- Applicable Connector
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



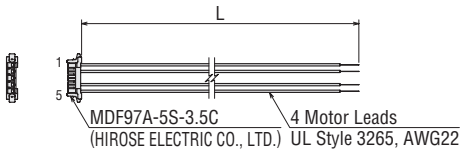
*With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 50 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP254U20□A2	0.48	120×10^{-7}	2	2.2	1.1	1.1	1.8°	**CMD2120P**
PKP256U20□A2	0.82	220×10^{-7}		2.8	1.4	1.6		
PKP258U20□A2	1.54	450×10^{-7}		4.2	2.1	2.8		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

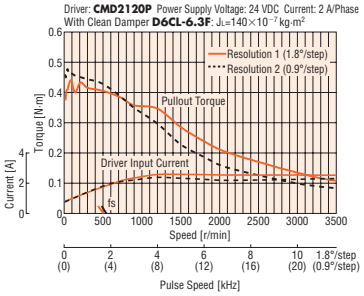
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

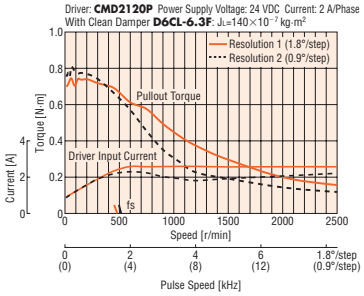
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

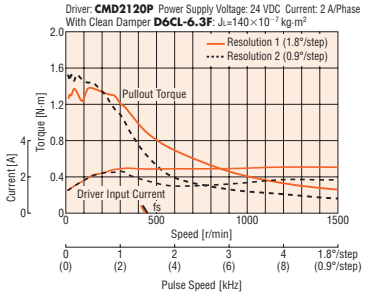
PKP254U20AA2/PKP254U20BA2



PKP256U20AA2/PKP256U20BA2



PKP258U20AA2/PKP258U20BA2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

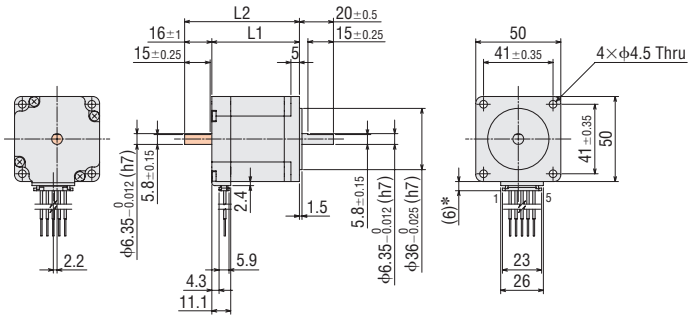
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP254U20AA2	39	–	0.37	B1455
PKP254U20BA2		55		
PKP256U20AA2	51.5	–	0.54	B1456
PKP256U20BA2		67.5		
PKP258U20AA2	81	–	0.93	B1457
PKP258U20BA2		97		

● Applicable Connector
Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



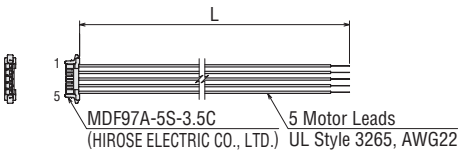
*With connection cable

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 50 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP254D28AA2-R2□L	0.63	120×10^{-7}	2.8	1.5	0.55	1.1	1.8°	**CVD228BR-K**
PKP256D28AA2-R2□L	1.08	220×10^{-7}		2	0.7	1.6		
PKP258D28AA2-R2□L	1.99	450×10^{-7}		3.1	1.1	2.8		

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

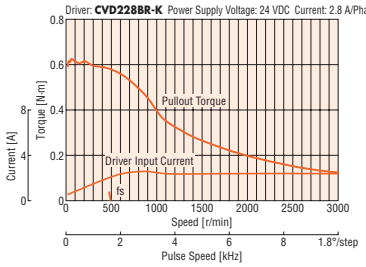
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

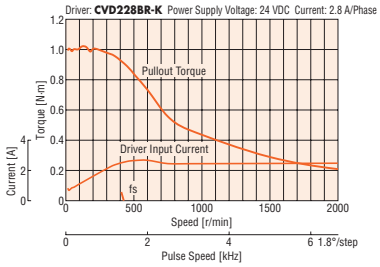
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

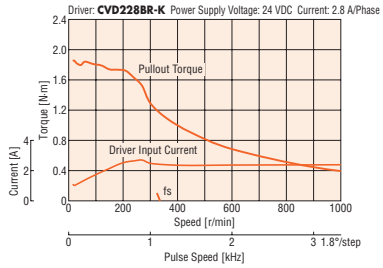
PKP254D28AA2-R2EL/PKP254D28AA2-R2FL



PKP256D28AA2-R2EL/PKP256D28AA2-R2FL



PKP258D28AA2-R2EL/PKP258D28AA2-R2FL



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

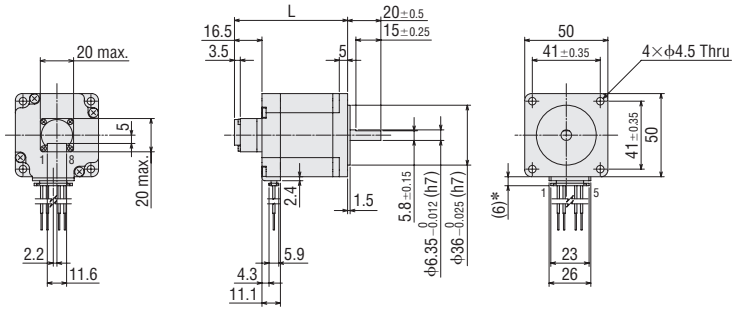
2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP254D28AA2-R2□L	55.5	0.37	B1458
PKP256D28AA2-R2□L	68	0.54	B1459
PKP258D28AA2-R2□L	97.5	0.93	B1460

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

- Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimping Tool	HT801/MDF97-22S	57177-5000

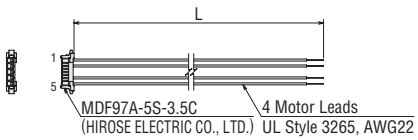


*With connection cable

Connection Cable (Sold separately)

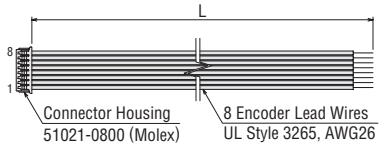
Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type With Encoder Frame Size 50 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP254U20AA2-R2□L	0.48	120×10^{-7}	2	2.2	1.1	1.1	1.8°	**CMD2120P**
PKP256U20AA2-R2□L	0.82	220×10^{-7}		2.8	1.4	1.6		
PKP258U20AA2-R2□L	1.54	450×10^{-7}		4.2	2.1	2.8		

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

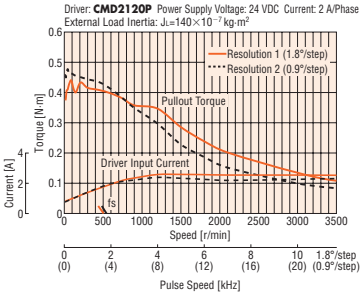
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

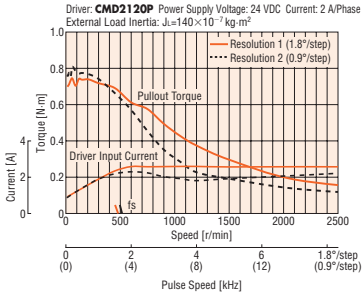
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

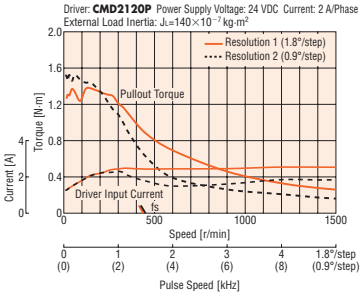
PKP254U20AA2-R2EL/PKP254U20AA2-R2FL



PKP256U20AA2-R2EL/PKP256U20AA2-R2FL



PKP258U20AA2-R2EL/PKP258U20AA2-R2FL



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

Motor

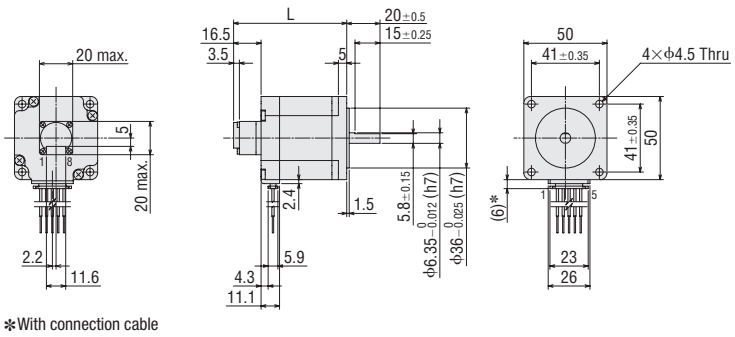
2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP254U20AA2-R2□L	55.5	0.37	B1461
PKP256U20AA2-R2□L	68	0.54	B1462
PKP258U20AA2-R2□L	97.5	0.93	B1463

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

- Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimping Tool	HT801/MDF97-22S	57177-5000

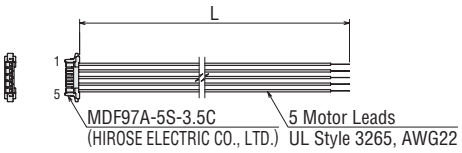


*With connection cable

Connection Cable (Sold separately)

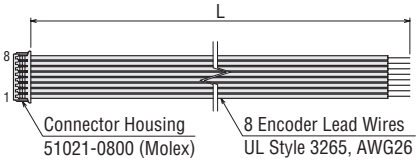
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 56.4 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264D14□2	0.74	140×10^{-7}	1.4	2.9	2.1	6	1.8°	**CVD228BR-K**
PKP264D28□2			2.8	1.6	0.57	1.5		
PKP264D42□2			4.2	1	0.24	0.65		**CVD242BR-K**
PKP266D14□2	1.4	270×10^{-7}	1.4	4.6	3.3	12		**CVD228BR-K**
PKP266D28□2			2.8	2.4	0.86	2.9		
PKP266D42□2			4.2	1.6	0.38	1.3		**CVD242BR-K**
PKP268D14□2	2.5	500×10^{-7}	1.4	6.6	4.7	18		**CVD228BR-K**
PKP268D28□2			2.8	3.4	1.2	4.6		
PKP268D42□2			4.2	2.2	0.53	2		**CVD242BR-K**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

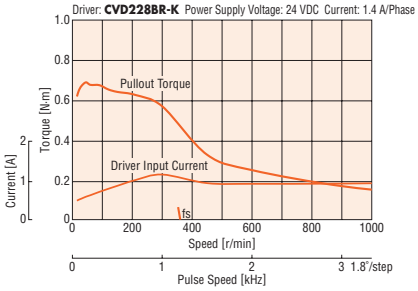
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

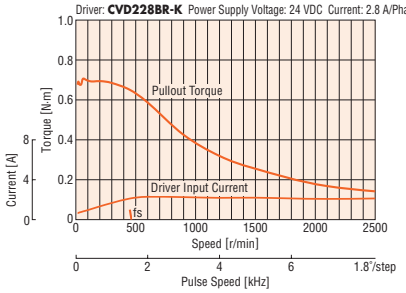
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

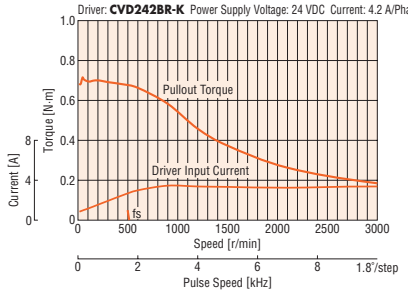
PKP264D14A2/PKP264D14B2



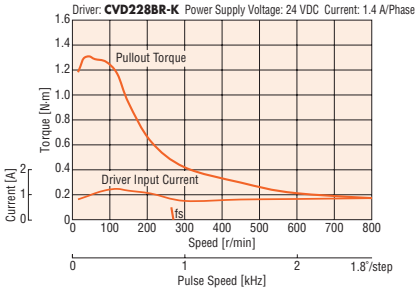
PKP264D28A2/PKP264D28B2



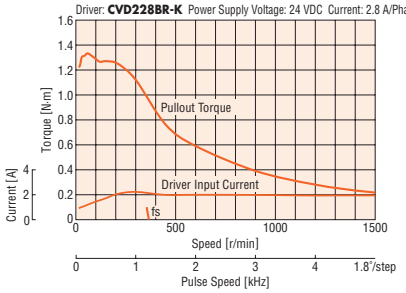
PKP264D42A2/PKP264D42B2



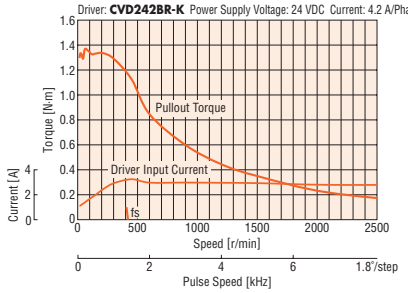
PKP266D14A2/PKP266D14B2



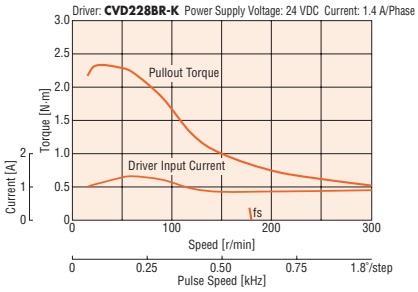
PKP266D28A2/PKP266D28B2



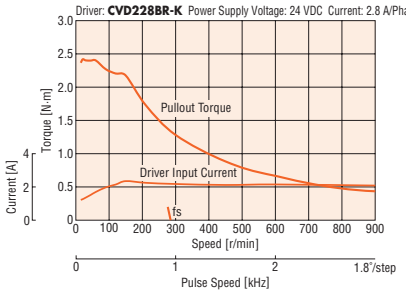
PKP266D42A2/PKP266D42B2



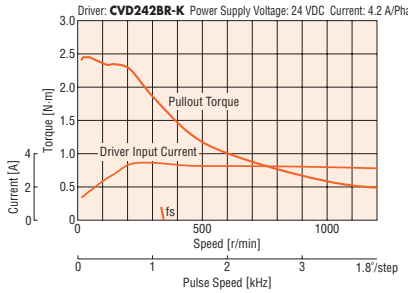
PKP268D14A2/PKP268D14B2



PKP268D28A2/PKP268D28B2



PKP268D42A2/PKP268D42B2



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

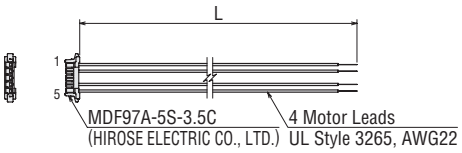
Product Name	L1	L2	Mass kg	2D CAD
PKP264D14A2	39	–	0.45	B1249
PKP264D14B2		62		
PKP264D28A2		–		
PKP264D28B2		62		
PKP264D42A2		–		
PKP264D42B2		62		
PKP266D14A2	54	–	0.7	B1250
PKP266D14B2		77		
PKP266D28A2		–		
PKP266D28B2		77		
PKP266D42A2		–		
PKP266D42B2		77		
PKP268D14A2	76	–	1.1	B1251
PKP268D14B2		99		
PKP268D28A2		–		
PKP268D28B2		99		
PKP268D42A2		–		
PKP268D42B2		99		

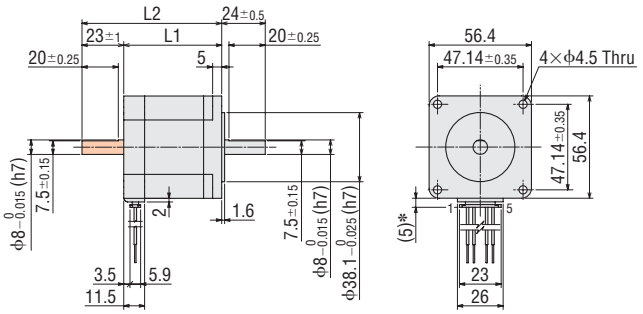
● Applicable Connector
Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1





✻With connection cable
● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 56.4 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264D28□	0.6	120×10^{-7}	2.8	2	0.73	1.8	1.8°	**CVD228BR-K**
PKP266D28□	1.4	290×10^{-7}		2.8	1	2.9		
PKP268D28□	2.3	490×10^{-7}		3.4	1.23	4.4		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

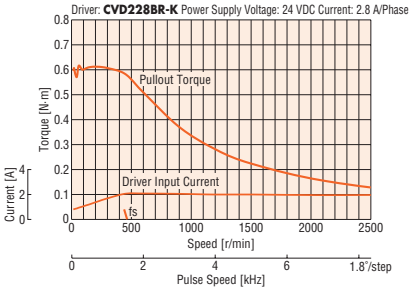
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

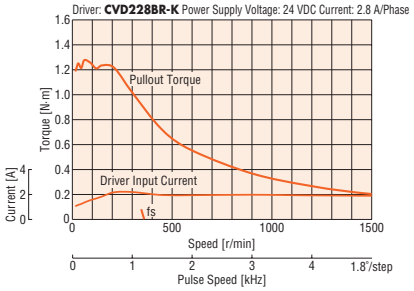
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

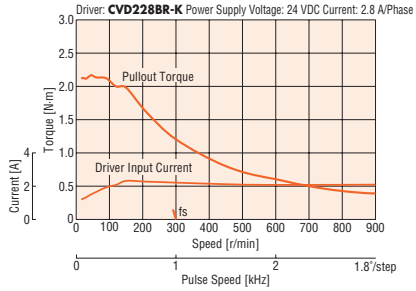
PKP264D28A/PKP264D28B



PKP266D28A/PKP266D28B



PKP268D28A/PKP268D28B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same if combined with an RS-485 communication type driver.

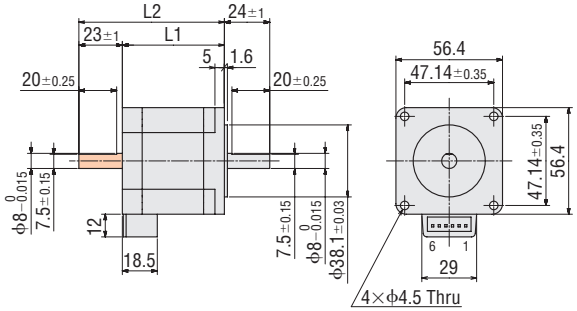
Dimensions (Unit: mm)

●Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264D28A	39	–	0.46	B972
PKP264D28B		62		
PKP266D28A	54	–	0.73	B973
PKP266D28B		77		
PKP268D28A	76	–	1.1	B974
PKP268D28B		99		

● Applicable Connector (Molex)
Connector Housing: 51067-0600 (Molex)
Contact: 50217-9101 (Molex)
Crimp Tool: 57189-5000 (Molex)
57190-5000 (Molex)

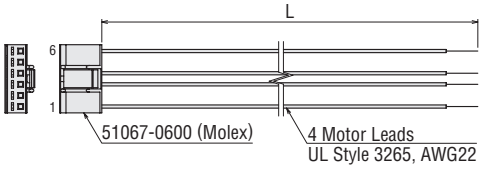


● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

●Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06C	0.6
LC2B10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Standard Type Frame Size 56.4 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264U10□2	0.58	140×10^{-7}	1	4.4	4.4	6	1.8°	**CMD2120P**
PKP264U20□2			2	2.2	1.1	1.5		
PKP266U10□2	1.1	270×10^{-7}	1	6.9	6.9	11.6		
PKP266U20□2			2	3.4	1.7	2.9		
PKP268U10□2	2	500×10^{-7}	1	9.9	9.9	18.4		
PKP268U20□2			2	4.8	2.4	4.6		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

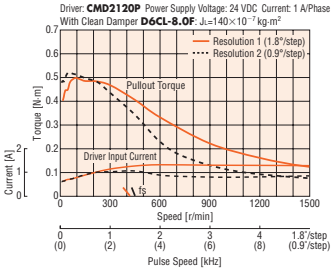
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

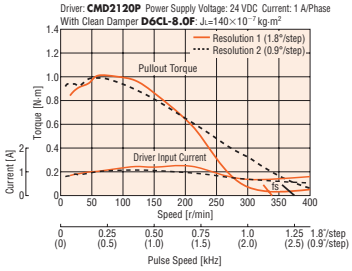
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

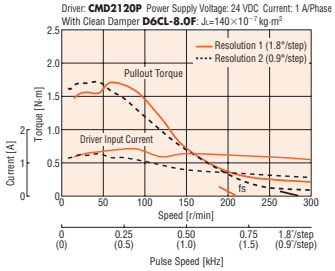
PKP264U10A2/PKP264U10B2



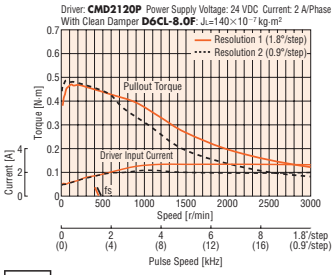
PKP266U10A2/PKP266U10B2



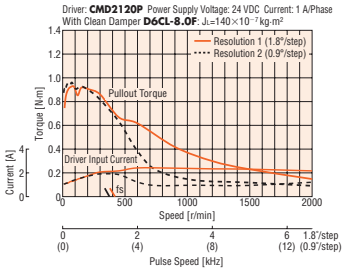
PKP268U10A2/PKP268U10B2



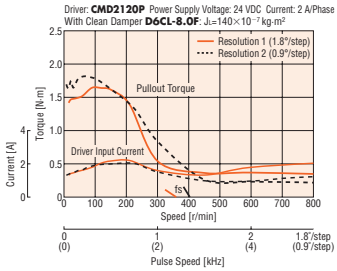
PKP264U20A2/PKP264U20B2



PKP266U20A2/PKP266U20B2



PKP268U20A2/PKP268U20B2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

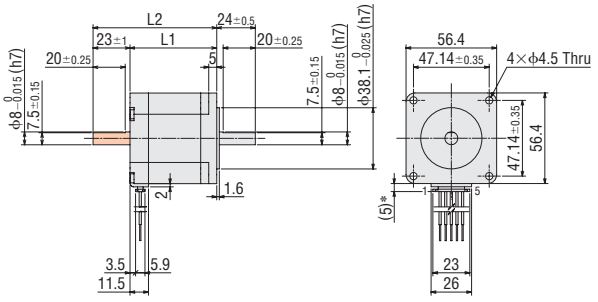
Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264U10A2	39	–	0.45	B1257
PKP264U10B2		62		
PKP264U20A2		–		
PKP264U20B2		62		
PKP266U10A2	54	–	0.7	B1258
PKP266U10B2		77		
PKP266U20A2		–		
PKP266U20B2		77		
PKP268U10A2	76	–	1.1	B1259
PKP268U10B2		99		
PKP268U20A2		–		
PKP268U20B2		99		

● Applicable Connector

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



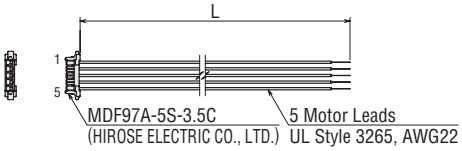
*With connection cable

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 56.4 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264U10□	0.51	120×10^{-7}	1	5.87	5.87	7.2	1.8°	**CMD2120P**
PKP264U20□			2	2.9	1.45	1.8		
PKP264U30□			3	1.95	0.65	0.8		–
PKP266U10□	1.1	290×10^{-7}	1	8.1	8.1	11.6		**CMD2120P**
PKP266U20□			2	4	2	2.9		
PKP266U30□			3	2.76	0.92	1.33		–
PKP268U10□	1.75	490×10^{-7}	1	9.32	9.32	17.6		**CMD2120P**
PKP268U20□			2	4.9	2.45	4.4		
PKP268U30□			3	3.15	1.05	1.96		–

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

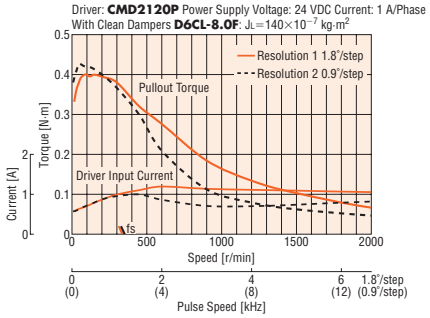
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

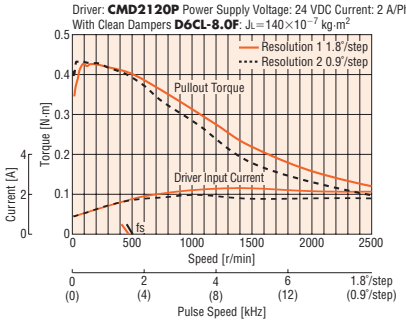
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

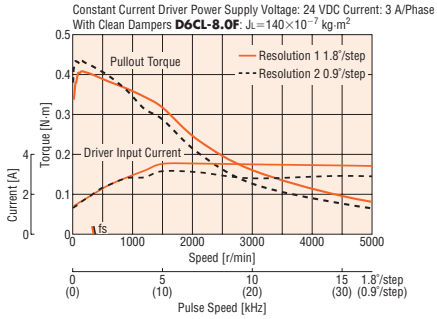
PKP264U10A/PKP264U10B



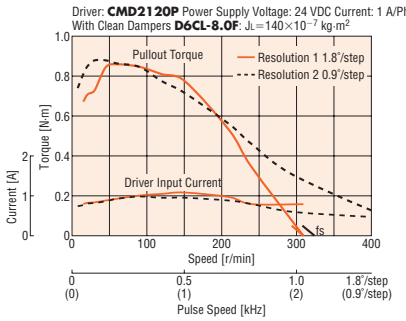
PKP264U20A/PKP264U20B



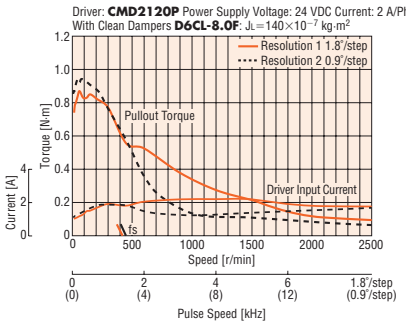
PKP264U30A/PKP264U30B



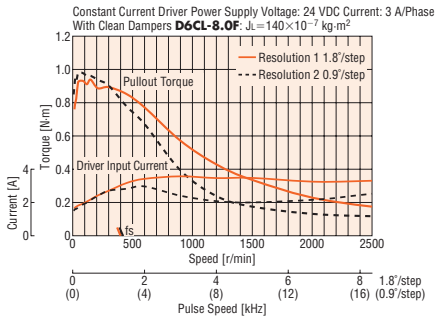
PKP266U10A/PKP266U10B



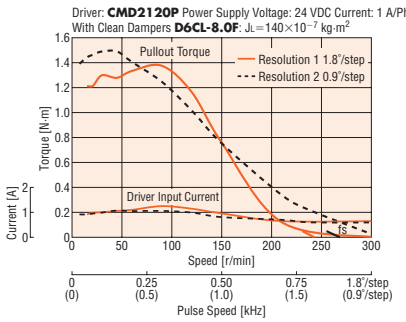
PKP266U20A/PKP266U20B



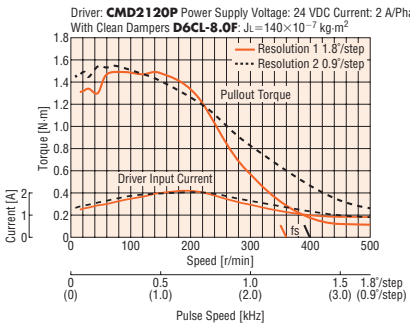
PKP266U30A/PKP266U30B



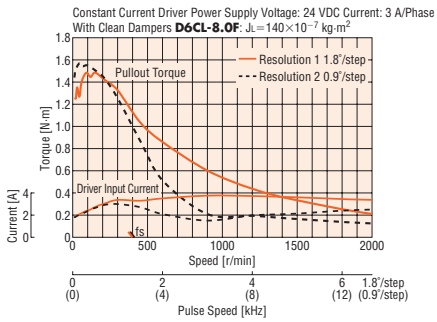
PKP268U10A/PKP268U10B



PKP268U20A/PKP268U20B



PKP268U30A/PKP268U30B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

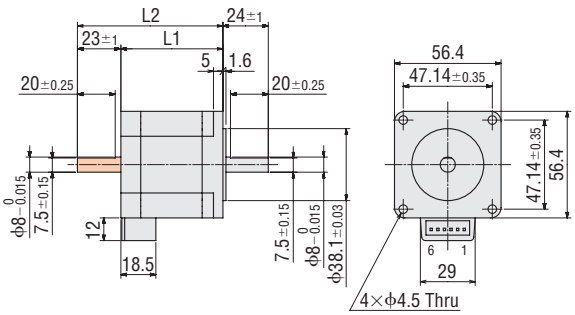
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264U10A	39	–	0.46	B972
PKP264U10B		62		
PKP264U20A		–		
PKP264U20B		62		
PKP264U30A		–		
PKP264U30B		62		
PKP266U10A	54	–	0.73	B973
PKP266U10B		77		
PKP266U20A		–		
PKP266U20B		77		
PKP266U30A		–		
PKP266U30B		77		
PKP268U10A	76	–	1.1	B974
PKP268U10B		99		
PKP268U20A		–		
PKP268U20B		99		
PKP268U30A		–		
PKP268U30B		99		



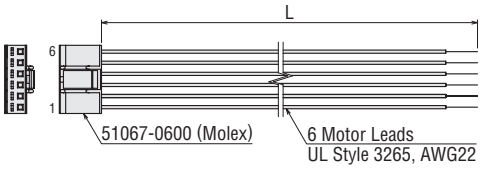
- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

- Applicable Connector (Molex)
  Connector Housing: 51067-0600 (Molex)
  Contact: 50217-9101 (Molex)
  Crimp Tool: 57189-5000 (Molex)
  57190-5000 (Molex)

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06C	0.6
LC2U10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

Standard Type with Encoder Frame Size 56.4 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264D14A2-R3□■	0.74	140×10^{-7}	1.4	2.9	2.1	6	1.8°	**CVD228BR-K**
PKP264D28A2-R3□■			2.8	1.6	0.57	1.5		
PKP264D42A2-R3□■			4.2	1	0.24	0.65		**CVD242BR-K**
PKP266D14A2-R3□■	1.4	270×10^{-7}	1.4	4.6	3.3	12		**CVD228BR-K**
PKP266D28A2-R3□■			2.8	2.4	0.86	2.9		
PKP266D42A2-R3□■			4.2	1.6	0.38	1.3		**CVD242BR-K**
PKP268D14A2-R3□■	2.5	500×10^{-7}	1.4	6.6	4.7	18		**CVD228BR-K**
PKP268D28A2-R3□■			2.8	3.4	1.2	4.6		
PKP268D42A2-R3□■			4.2	2.2	0.53	2		**CVD242BR-K**

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**E**" (200 P/R), **F** (400 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

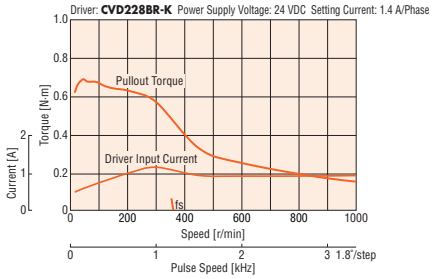
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

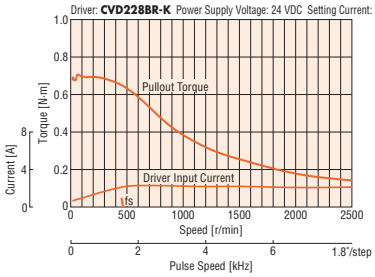
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

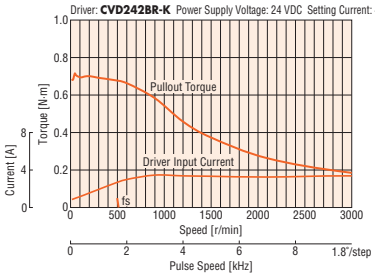
PKP264D14A2-R3□■



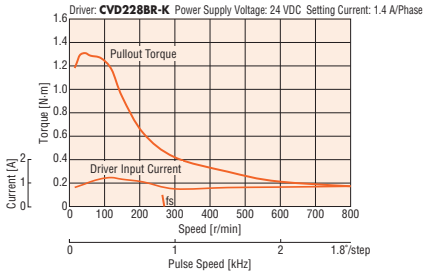
PKP264D28A2-R3□■



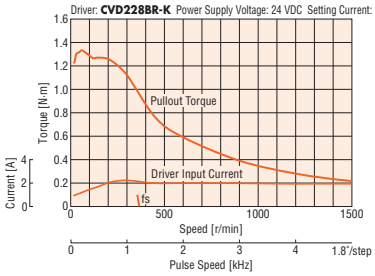
PKP264D42A2-R3□■



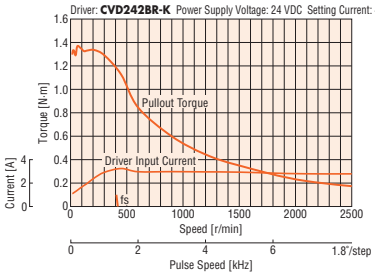
PKP266D14A2-R3□■



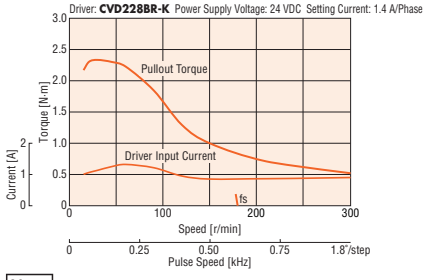
PKP266D28A2-R3□■



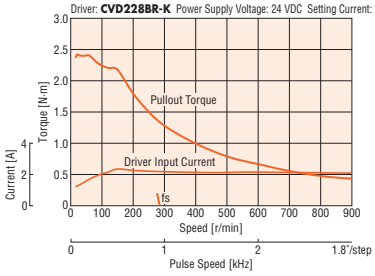
PKP266D42A2-R3□■



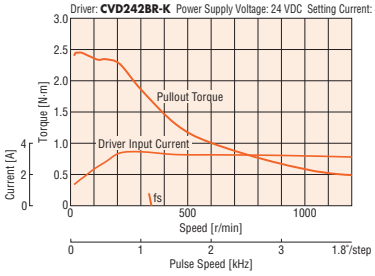
PKP268D14A2-R3□■



PKP268D28A2-R3□■



PKP268D42A2-R3□■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

- A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**E**" (200 P/R), **F** (400 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Dimensions (Unit = mm)

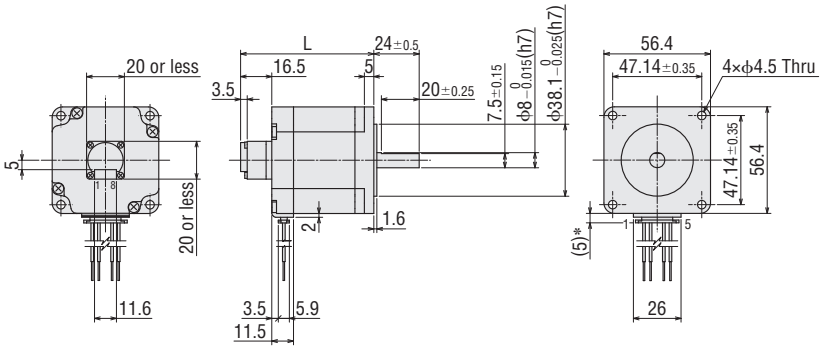
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264D14A2-R3□■	55.5	0.47	B1325
PKP264D28A2-R3□■			
PKP264D42A2-R3□■			
PKP266D14A2-R3□■	70.5	0.72	B1326
PKP266D28A2-R3□■			
PKP266D42A2-R3□■			
PKP268D14A2-R3□■	92.5	1.12	B1327
PKP268D28A2-R3□■			
PKP268D42A2-R3□■			

● Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

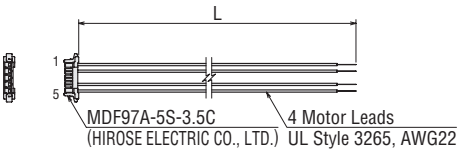


✻With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

● A letter "**E**" (200 P/R) or "**F**" (400 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
A letter "**E**" (200 P/R), **F** (400 P/R) or or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type with Encoder Frame Size 56.4 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264U10A2-R2□L	0.58	140×10^{-7}	1	4.4	4.4	6	1.8°	**CMD2120P**
PKP264U20A2-R2□L			2	2.2	1.1	1.5		
PKP266U10A2-R2□L	1.1	270×10^{-7}	1	6.9	6.9	11.6		
PKP266U20A2-R2□L			2	3.4	1.7	2.9		
PKP268U10A2-R2□L	2	500×10^{-7}	1	9.9	9.9	18.4		
PKP268U20A2-R2□L			2	4.8	2.4	4.6		

- Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.
- See "Common Specifications" page for encoder specifications.

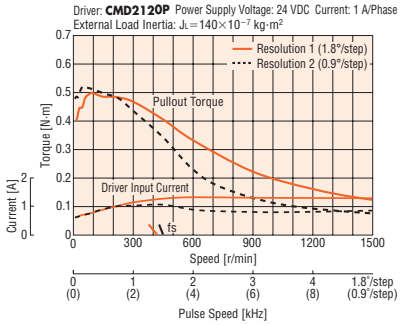
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

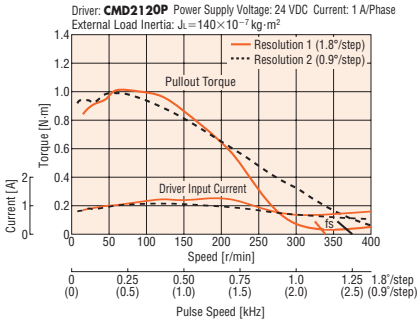
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

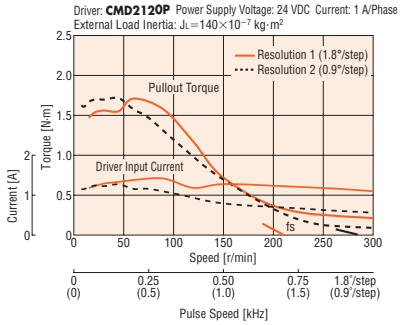
PKP264U10A2-R2EL/PKP264U10A2-R2FL



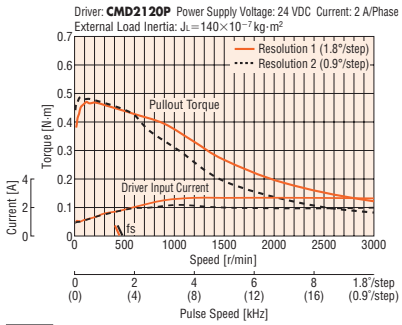
PKP266U10A2-R2EL/PKP266U10A2-R2FL



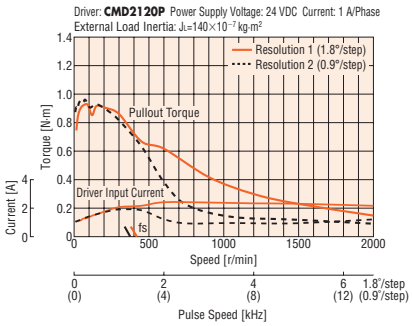
PKP268U10A2-R2EL/PKP268U10A2-R2FL



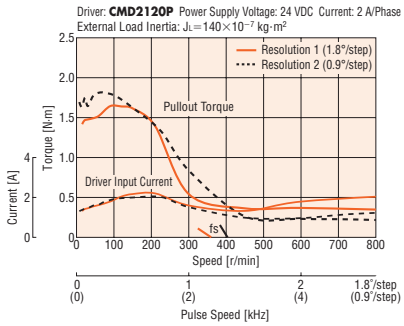
PKP264U20A2-R2EL/PKP264U20A2-R2FL



PKP266U20A2-R2EL/PKP266U20A2-R2FL



PKP268U20A2-R2EL/PKP268U20A2-R2FL



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

Motor

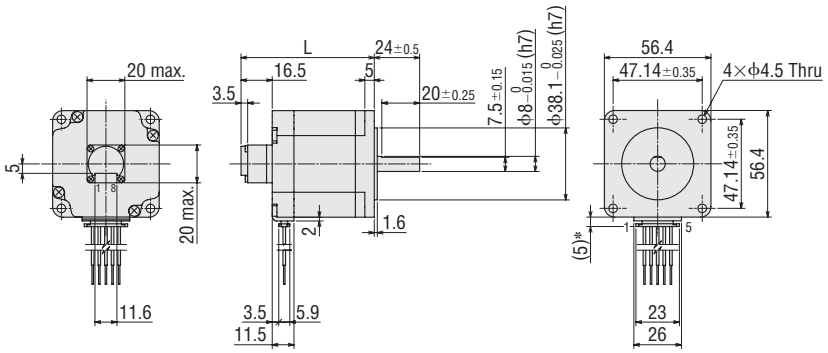
2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264U10A2-R2□L	55.5	0.45	B1332
PKP264U20A2-R2□L			
PKP266U10A2-R2□L	70.5	0.7	B1333
PKP266U20A2-R2□L			
PKP268U10A2-R2□L	92.5	1.1	B1334
PKP268U20A2-R2□L			

●Either **E** (200 P/R) or **F** (400 P/R) indicating the encoder resolution is entered where the box □ is located within the product name.

●Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimping Tool	HT801/MDF97-22S	57177-5000

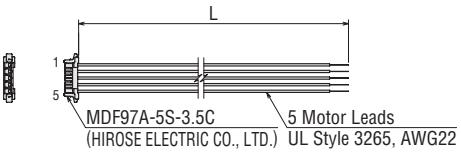


*With connection cable

Connection Cable (Sold separately)

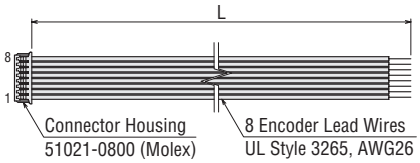
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

●See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 56.4 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP264D28M2	0.74	270×10^{-7}*	2.8	1.6	0.57	1.5	1.8°	0.8
PKP266D28M2	1.4	400×10^{-7}*		2.4	0.86	2.9		
PKP268D28M2	2.5	630×10^{-7}*		3.4	1.2	4.6		

- Refer to the common specification page for electromagnetic brake specifications.

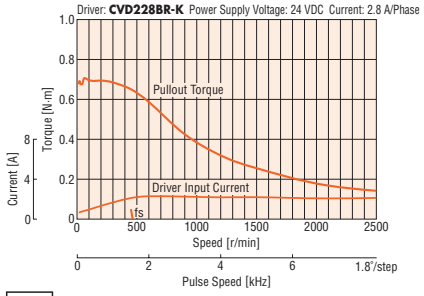
*This value is including the electromagnetic brake inertia.

Note

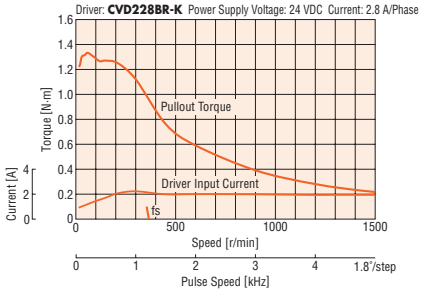
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

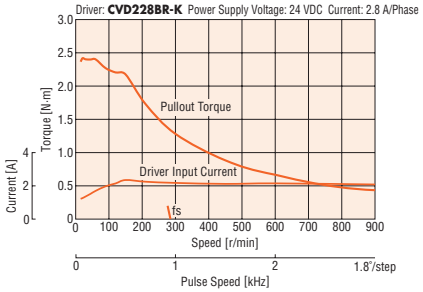
PKP264D28M2



PKP266D28M2



PKP268D28M2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

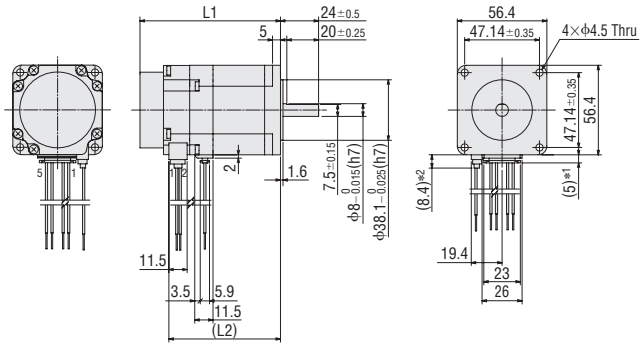
Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264D28M2	73.5	55.3	0.65	B1439
PKP266D28M2	88.5	70.3	0.9	B1440
PKP268D28M2	110.5	92.3	1.3	B1441

- Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Electromagnetic Brake (HIROSE ELECTRIC CO., LTD.)
Connector Housing	MDF97A-5S-3.5C	DF62C-2S-2.2C
Contact	MDF97-22SC	DF62-22SCA
Crimping Tool	HT801/MDF97-22S	HT801/DF62-22(10)



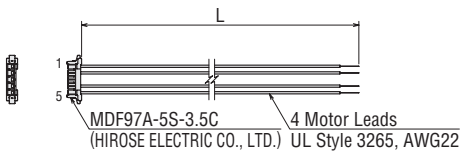
*1 With connection cable

*2 With electromagnetic brake connection cable

Connection Cable (Sold separately)

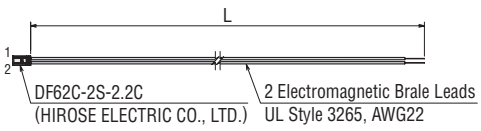
◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Electromagnetic Brake Connection Cable

Product Name	Length L (m)
LCM02A-006	0.6
LCM02A-010	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type with Electromagnetic Brake Frame Size 56.4 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP264U20M	0.51	270×10^{-7}✻	2	2.9	1.45	1.8	1.8°	1.5
PKP266U20M	1.1	440×10^{-7}✻		4	2	2.9		
PKP268U20M	1.75	640×10^{-7}✻		4.9	2.45	4.4		

- Refer to the common specification page for electromagnetic brake specifications.

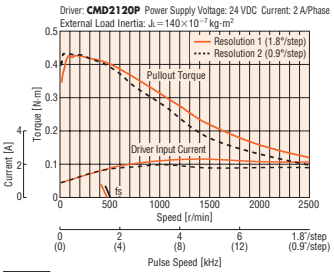
✻This value is including the electromagnetic brake inertia.

Note

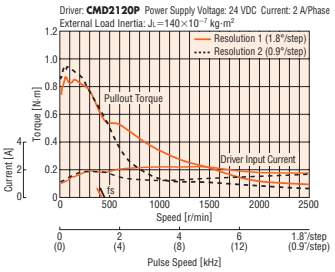
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

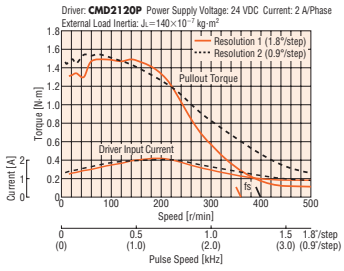
PKP264U20M



PKP266U20M



PKP268U20M



Note

- 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.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

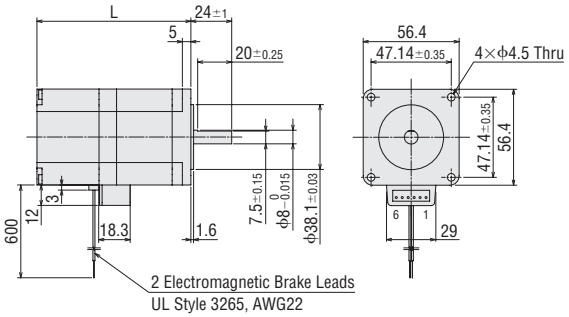
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264U20M	75.5	0.76	B1140
PKP266U20M	90.5	1.03	B1141
PKP268U20M	112.5	1.4	B1142

- Applicable Connector (Molex)

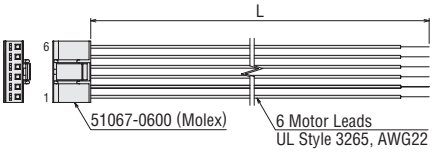
Connector Housing: 51067-0600
Contact: 50217-9101
Crimp Tool: 57189-5000
57190-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06C	0.6
LC2U10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 60 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle
PK264JD□	1.06	280×10^{-7}	2.8	2.1	0.73	1.8	1.8°
PK266JD□	1.75	450×10^{-7}		2.8	1	3.05	
PK267JD□	2.2	570×10^{-7}		3.4	1.2	3.54	
PK269JD□	3.1	900×10^{-7}		4.2	1.49	5.7	

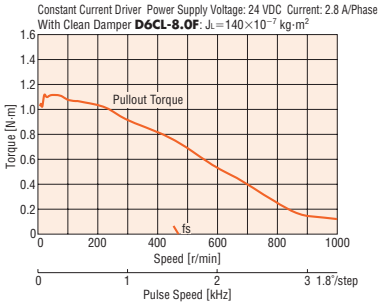
● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

Note

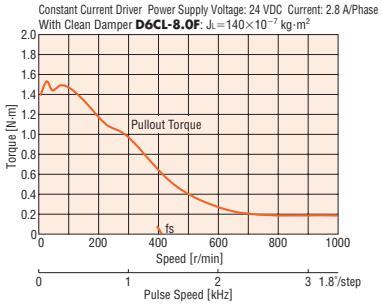
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

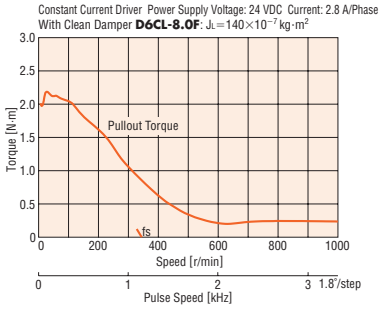
PK264JDA/PK264JDB



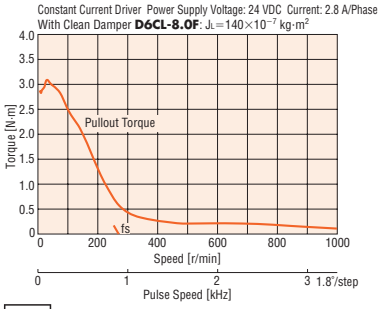
PK266JDA/PK266JDB



PK267JDA/PK267JDB



PK269JDA/PK269JDB



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

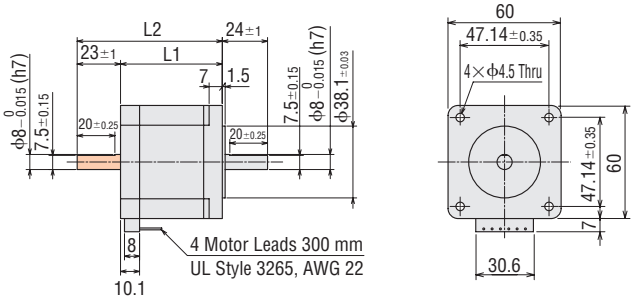
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PK264JDA	43.5	–	0.6	B279
PK264JDB		66.5		
PK266JDA	54	–	0.83	B232
PK266JDB		77		
PK267JDA	65	–	1.02	B233
PK267JDB		88		
PK269JDA	85	–	1.43	B280
PK269JDB		108		



● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 60 mm (Unipolar 6 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle
PK264J□	0.75	280×10^{-7}	2	2.9	1.46	1.8	1.8°
PK266J□	1.35	450×10^{-7}		4	2	3.05	
PK267J□	1.7	570×10^{-7}		4.8	2.4	3.54	
PK269J□	2.2	900×10^{-7}		6	2.98	5.7	

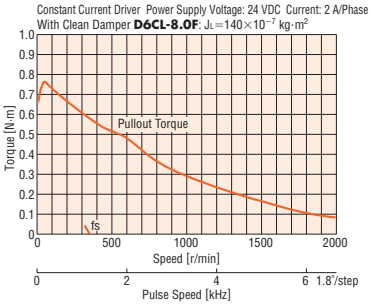
● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

Note

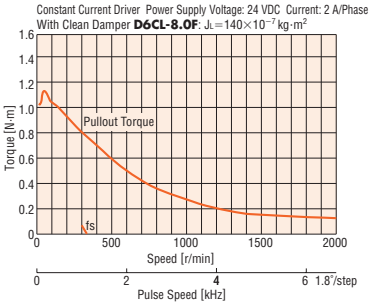
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

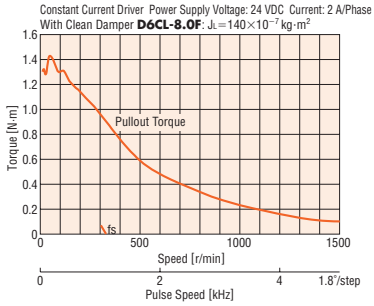
PK264JA/PK264JB



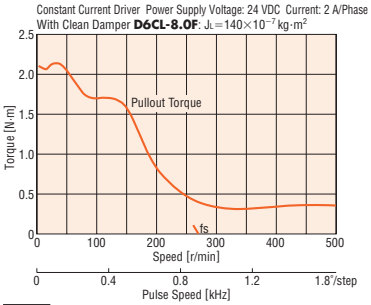
PK266JA/PK266JB



PK267JA/PK267JB



PK269JA/PK269JB



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

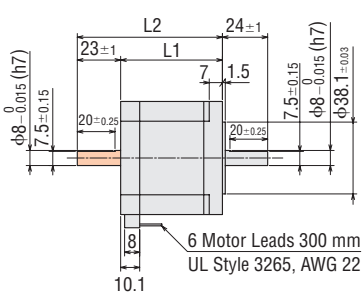
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

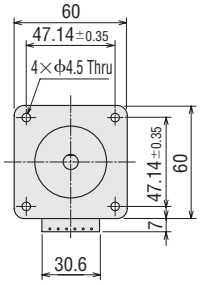
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PK264JA	43.5	–	0.6	B279
PK264JB		66.5		
PK266JA	54	–	0.83	B232
PK266JB		77		
PK267JA	65	–	1.02	B233
PK267JB		88		
PK269JA	85	–	1.43	B280
PK269JB		108		





● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑦

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 85 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP296D45□	3.3	1100×10^{-7}	4.5	1.9	0.42	3.1	1.8°	**CVD245BR-K**
PKP296D63□			6.3	1.4	0.23	1.6		–
PKP299D45□	6.4	2200×10^{-7}	4.5	2.7	0.6	5.4		**CVD245BR-K**
PKP299D63□			6.3	2	0.32	2.6		–
PKP2913D45□	9.5	3400×10^{-7}	4.5	3.5	0.78	6.9		**CVD245BR-K**
PKP2913D56□			5.6	2.6	0.47	4.4		–

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

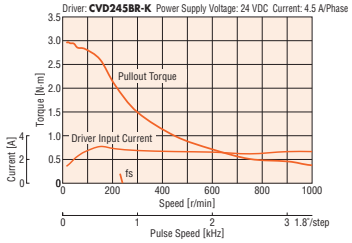
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

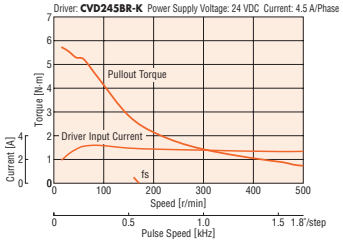
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

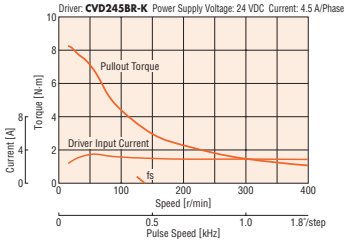
PKP296D45A/PKP296D45B



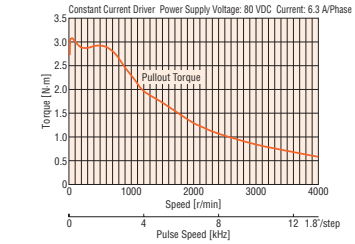
PKP299D45A/PKP299D45B



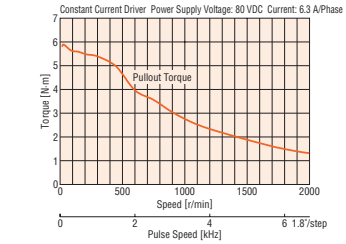
PKP2913D45A/PKP2913D45B



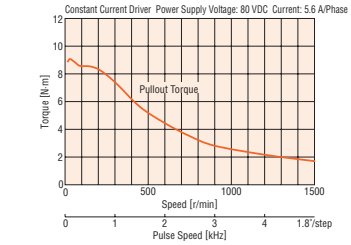
PKP296D63A/PKP296D63B



PKP299D63A/PKP299D63B



PKP2913D56A/PKP2913D56B



Note

● 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.

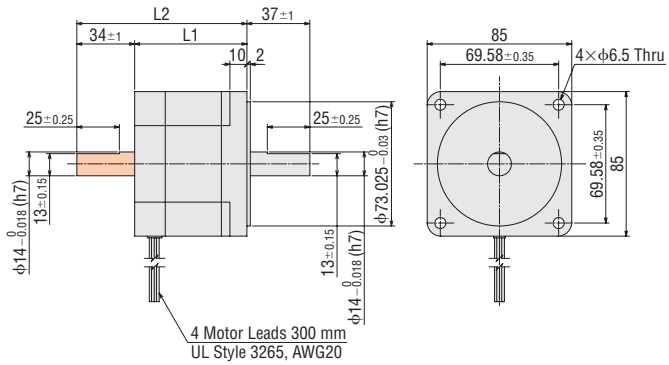
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

● Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP296D45A	66	–	1.8	B1237
PKP296D45B		100		
PKP296D63A		–		
PKP296D63B		100		
PKP299D45A	96	–	2.9	B1238
PKP299D45B		130		
PKP299D63A		–		
PKP299D63B		130		
PKP2913D45A	126	–	4	B1239
PKP2913D45B		160		
PKP2913D56A		–		
PKP2913D56B		160		



● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Standard Type Frame Size 85 mm (Unipolar 6 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle
PKP296U20□	2.6	1100×10^{-7}	2	4.4	2.2	7.8	1.8°
PKP296U30□			3	3	1.0	3.5	
PKP296U45□			4.5	2	0.45	1.6	
PKP299U20□	5.0	2200×10^{-7}	2	6.4	3.2	13.2	
PKP299U30□			3	4.5	1.5	6	
PKP299U45□			4.5	2.8	0.63	2.6	
PKP2913U20□	7.3	3400×10^{-7}	2	7.6	3.8	18	
PKP2913U40□			4	3.8	0.94	4.4	

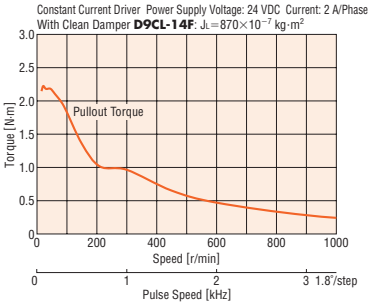
● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

Note

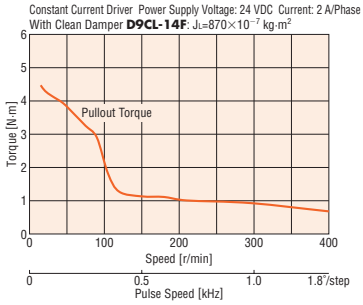
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

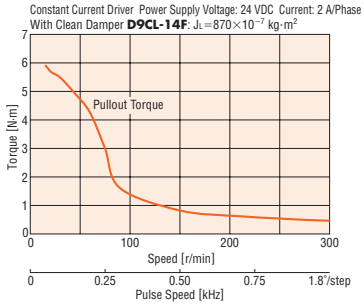
PKP296U20A/PKP296U20B



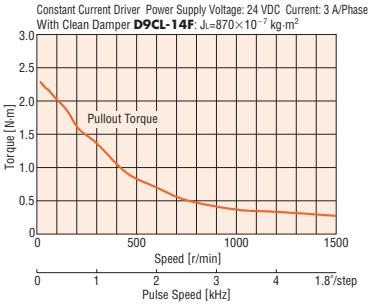
PKP299U20A/PKP299U20B



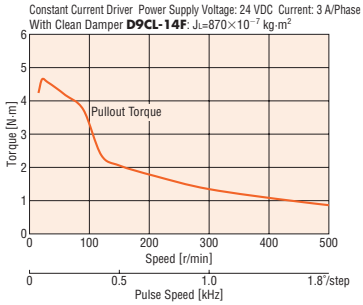
PKP2913U20A/PKP2913U20B



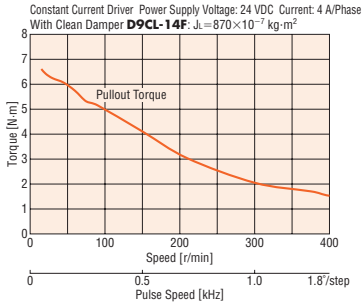
PKP296U30A/PKP296U30B



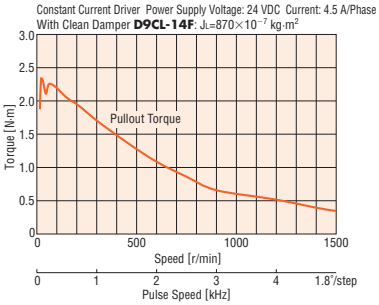
PKP299U30A/PKP299U30B



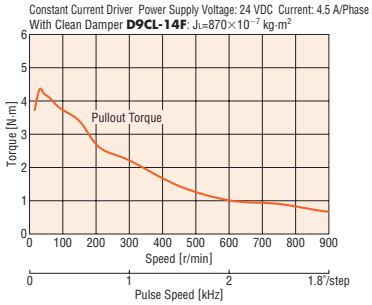
PKP2913U40A/PKP2913U40B



PKP296U45A/PKP296U45B



PKP299U45A/PKP299U45B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

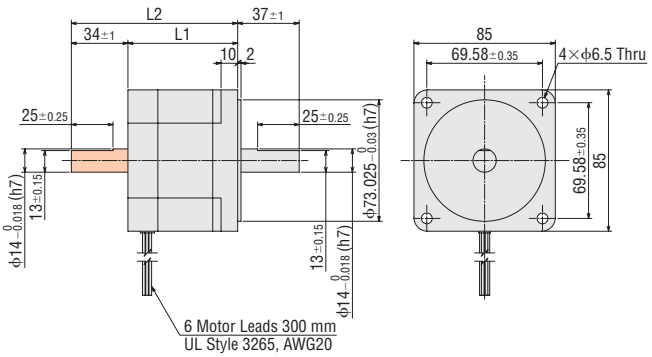
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP296U20A	66	–	1.8	B1246
PKP296U20B		100		
PKP296U30A		–		
PKP296U30B		100		
PKP296U45A		–		
PKP296U45B		100		
PKP299U20A	96	–	2.9	B1247
PKP299U20B		130		
PKP299U30A		–		
PKP299U30B		130		
PKP299U45A		–		
PKP299U45B		130		
PKP2913U20A	126	–	4	B1248
PKP2913U20B		160		
PKP2913U40A		–		
PKP2913U40B		160		



● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑦

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223MD15□	0.086	8.6×10^{-7}	1.5	1.77	1.18	1.3	0.9°	**CVD215BR-K**
PKP225MD15□	0.165	17×10^{-7}		3	2	2.7		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

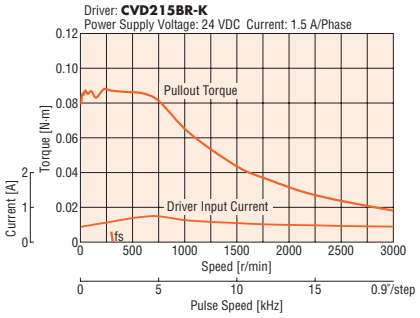
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

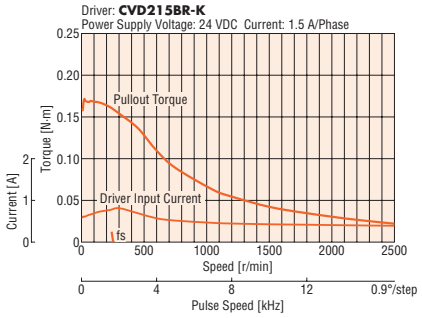
● Set the current of the driver so that it does not exceed the rated current of the motor. If the current of the driver exceeds the rated current of the motor, it may cause damage to the product.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223MD15A/PKP223MD15B



PKP225MD15A/PKP225MD15B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

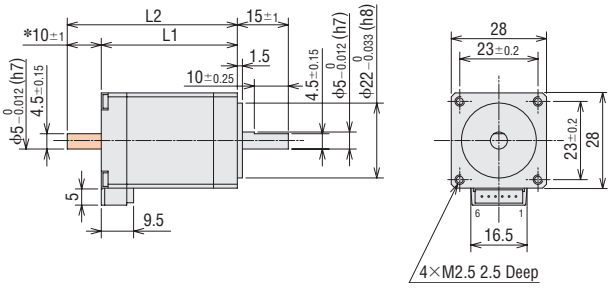
Product Name	L1	L2	Mass kg	2D CAD
PKP223MD15A	32	–	0.11	B980
PKP223MD15B		42		
PKP225MD15A	51.5	–	0.2	B982
PKP225MD15B		61.5		

● Applicable Connectors

Connector Housing: 51065-0600 (Molex)

Contact: 50212-8100 (Molex)

Crimp Tool: 57176-5000 (Molex)



*The length of the shaft flat on the double shaft model is 10±0.25.

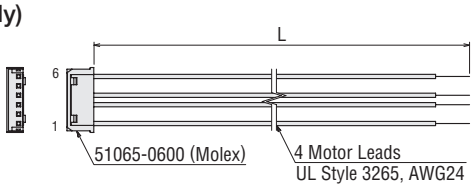
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223MU09□	0.07	8.6×10^{-7}	0.95	2.95	3.11	1.9	0.9°	**CMD2109P**
PKP225MU09□	0.124	17×10^{-7}		4.4	4.6	3.2		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

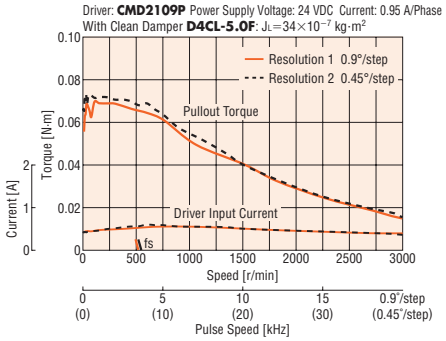
✻See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

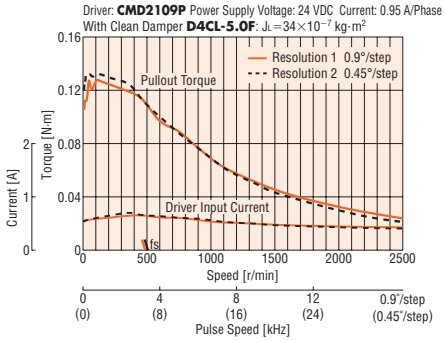
● Set the current of the driver so that it does not exceed the rated current of the motor. If the current of the driver exceeds the rated current of the motor, it may cause damage to the product.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223MU09A/PKP223MU09B



PKP225MU09A/PKP225MU09B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

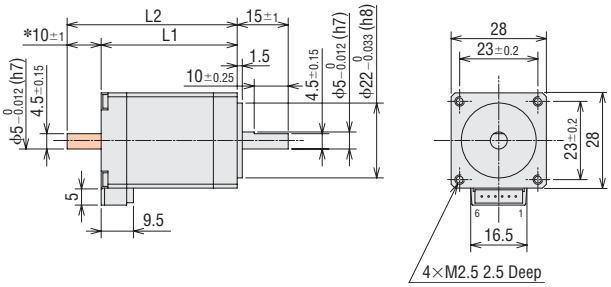
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP223MU09A	32	–	0.11	B980
PKP223MU09B		42		
PKP225MU09A	51.5	–	0.2	B982
PKP225MU09B		61.5		

● Applicable Connectors
Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



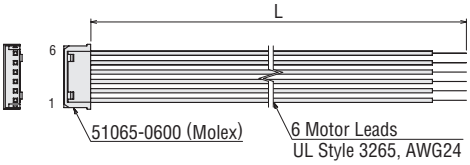
✻The length of the shaft flat on the double shaft model is 10±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type with Encoder Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223MD15A-R3F□	0.086	9.5×10^{-7}	1.5	1.77	1.18	1.3	0.9°	**CVD215BR-K**
PKP225MD15A-R3F□	0.165	18×10^{-7}		3	2	2.7		

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

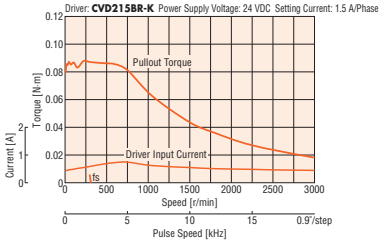
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

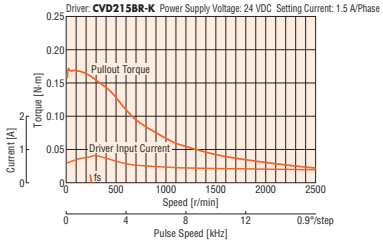
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223MD15A-R3F□



PKP225MD15A-R3F□



Note

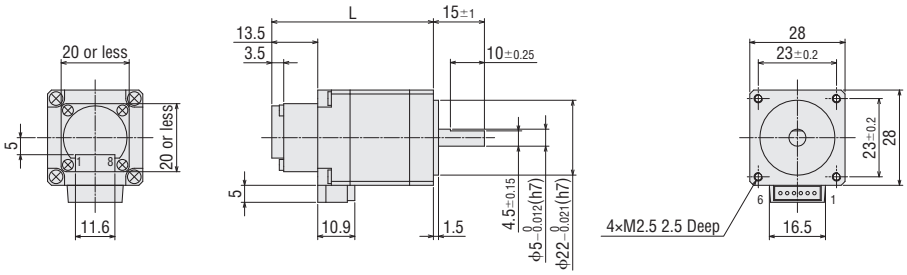
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223MD15A-R3F□	47.5	0.13	B1198
PKP225MD15A-R3F□	67	0.22	B1199



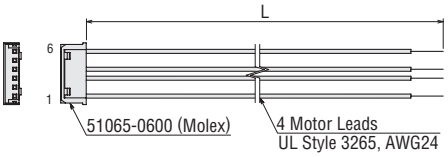
- Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51065-0600	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

High-Resolution Type with Encoder Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP223MU09A-R2FL	0.07	9.2×10^{-7}	0.95	2.95	3.11	1.9	0.9°	**CMD2109P**
PKP225MU09A-R2FL	0.124	18×10^{-7}		4.4	4.6	3.2		

- See "Common Specifications" page for encoder specifications.

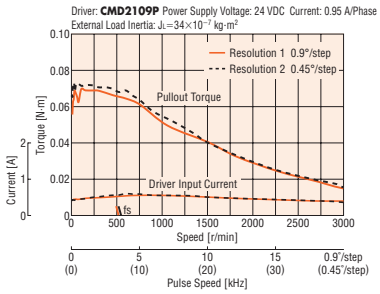
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

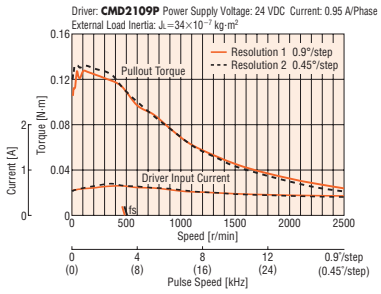
- Set the current of the driver so that it does not exceed the rated current of the motor. If the current of the driver exceeds the rated current of the motor, it may cause damage to the product.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP223MU09A-R2FL



PKP225MU09A-R2FL



Note

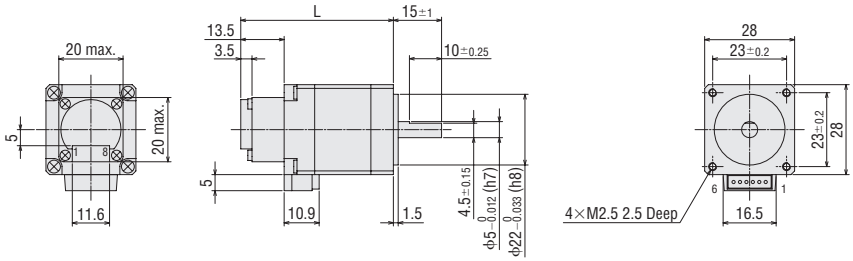
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- The data in the speed – torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP223MU09A-R2FL	47.5	0.12	B1198
PKP225MU09A-R2FL	67	0.21	B1199



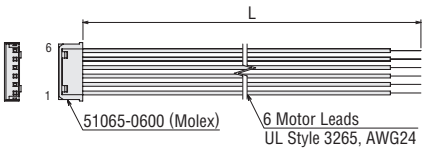
- Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51065-0600	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000

Connection Cables (Sold separately)

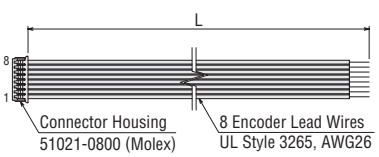
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MD15□2	0.32	39×10^{-7}	1.5	2.7	1.8	5.1	0.9°	**CVD223FBR-K**
PKP244MD15□2	0.42	58×10^{-7}		3.2	2.1	6		
PKP245MD15□2	0.61	78×10^{-7}		3	2	6.6		
PKP246MD15□2	0.82	116×10^{-7}		3.9	2.6	9		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

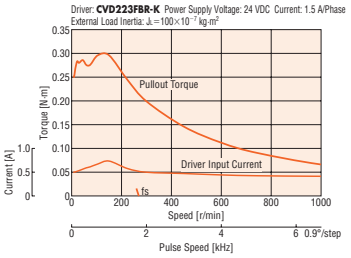
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

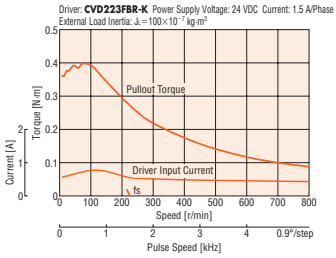
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

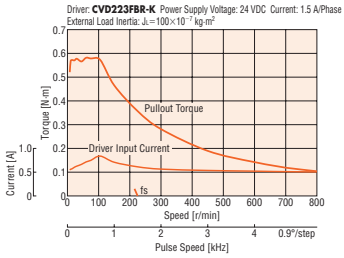
PKP243MD15A2/PKP243MD15B2



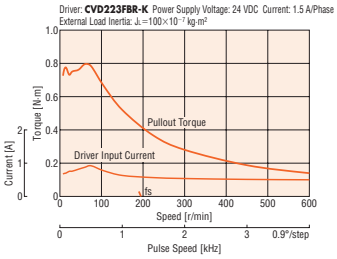
PKP244MD15A2/PKP244MD15B2



PKP245MD15A2/PKP245MD15B2



PKP246MD15A2/PKP246MD15B2



Note

● 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.

● The data in the speed – torque characteristics represents the use of an external load inertia.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

●Motors

2D & 3D CAD

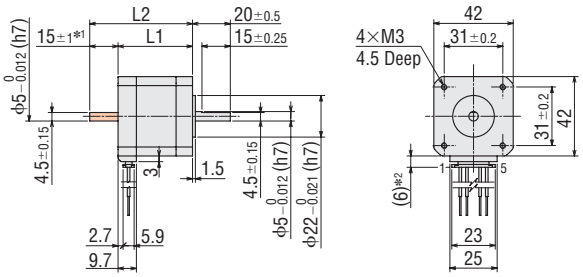
Product Name	L1	L2	Mass kg	2D CAD
PKP243MD15A2	33	–	0.23	B1260
PKP243MD15B2		48		
PKP244MD15A2	39	–	0.3	B1261
PKP244MD15B2		54		
PKP245MD15A2	47	–	0.37	B1262
PKP245MD15B2		62		
PKP246MD15A2	59	–	0.5	B1263
PKP246MD15B2		74		

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)

Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)

Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



*1 The length of the shaft flat on the double shaft model is 15±0.25.

*2 With connection cable

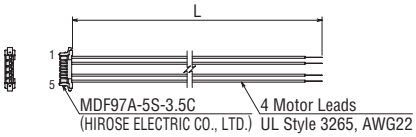
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded ▭ areas.

●Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 42 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MD15□	0.30	36×10^{-7}	1.5	2.85	1.9	6.6	0.9°	**CVD215BR-K**
PKP244MD15□	0.42	57×10^{-7}		3.9	2.6	7.6		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

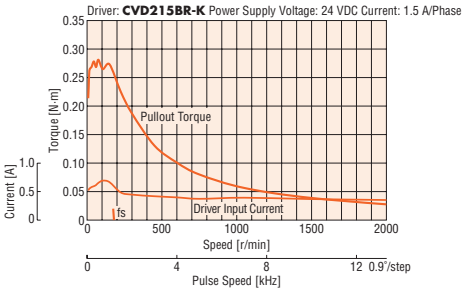
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

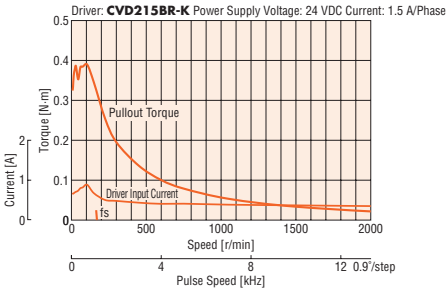
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP243MD15A/PKP243MD15B



PKP244MD15A/PKP244MD15B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same if combined with an RS-485 communication type driver.

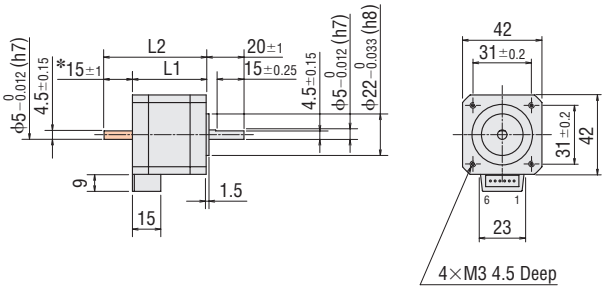
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243MD15A	33	–	0.25	B968
PKP243MD15B		48		
PKP244MD15A	39	–	0.3	B969
PKP244MD15B		54		

● Applicable Connectors
Connector Housing: 51103-0600 (Molex)
Contact: 50351-8100 (Molex)
Crimp Tool: 57295-5000 (Molex)



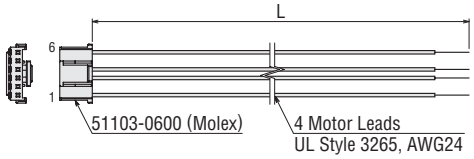
*The length of the shaft flat on the double shaft model is 15±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

High-Resolution Type Frame Size 42 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MU12□2	0.26	39×10^{-7}	1.2	3.2	2.7	3.5	0.9°	**CMD2112P**
PKP244MU12□2	0.35	58×10^{-7}		4.9	4.1	5		
PKP245MU12□2	0.5	78×10^{-7}		3.8	3.2	5.3		
PKP246MU12□2	0.65	116×10^{-7}		4.9	4.1	6.7		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

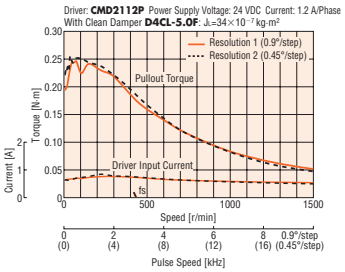
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

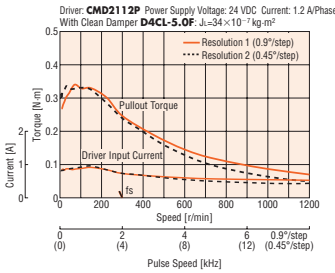
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

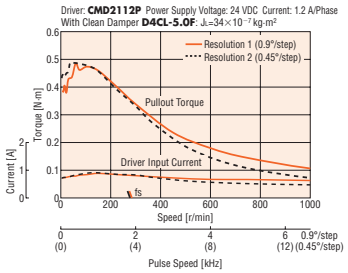
PKP243MU12A2/PKP243MU12B2



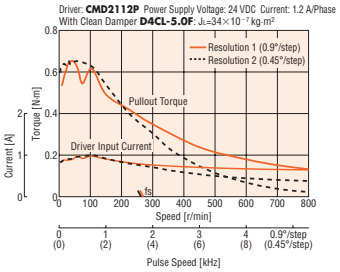
PKP244MU12A2/PKP244MU12B2



PKP245MU12A2/PKP245MU12B2



PKP246MU12A2/PKP246MU12B2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

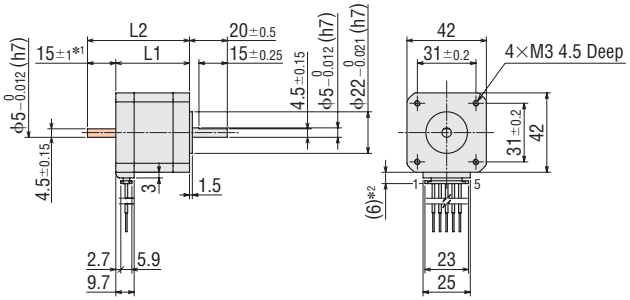
Product Name	L1	L2	Mass kg	2D CAD
PKP243MU12A2	33	–	0.23	B1335
PKP243MU12B2		48		
PKP244MU12A2	39	–	0.3	B1336
PKP244MU12B2		54		
PKP245MU12A2	47	–	0.37	B1337
PKP245MU12B2		62		
PKP246MU12A2	59	–	0.5	B1338
PKP246MU12B2		74		

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)

Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)

Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



*1 The length of the shaft flat on the double shaft model is 15±0.25.

*2 With connection cable

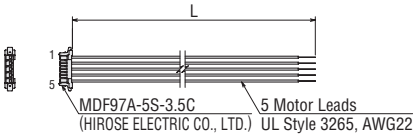
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 42 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MU09□	0.25	36×10^{-7}	0.95	4.47	4.7	6.6	0.9°	**CMD2109P**
PKP244MU12□	0.35	57×10^{-7}	1.2	4.8	4	6		**CMD2112P**

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

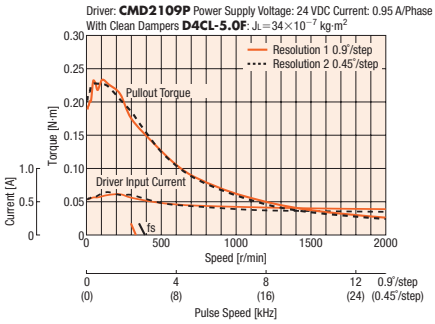
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

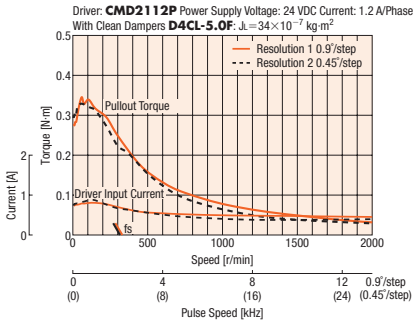
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP243MU09A/PKP243MU09B



PKP244MU12A/PKP244MU12B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

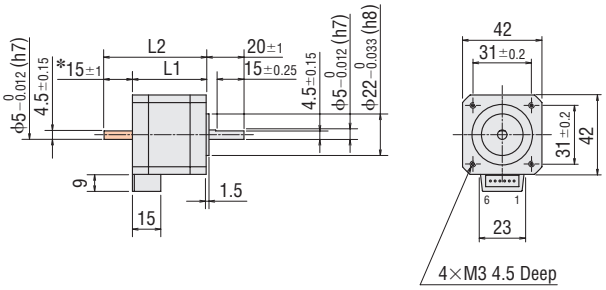
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP243MU09A	33	–	0.25	B968
PKP243MU09B		48		
PKP244MU12A	39	–	0.3	B969
PKP244MU12B		54		

● Applicable Connectors
Connector Housing: 51103-0600 (Molex)
Contact: 50351-8100 (Molex)
Crimp Tool: 57295-5000 (Molex)



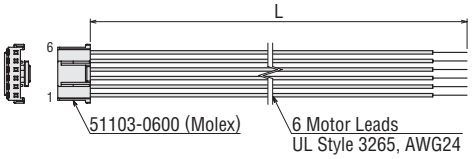
*The length of the shaft flat on the double shaft model is 15±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

High-Resolution Type with Encoder Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MD15A2-R3F■	0.32	40×10^{-7}	1.5	2.7	1.8	5.1	0.9°	**CVD223FBR-K**
PKP244MD15A2-R3F■	0.42	59×10^{-7}		3.2	2.1	6		
PKP245MD15A2-R3F■	0.61	79×10^{-7}		3	2	6.6		
PKP246MD15A2-R3F■	0.82	117×10^{-7}		3.9	2.6	9		

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

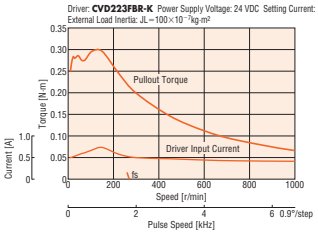
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

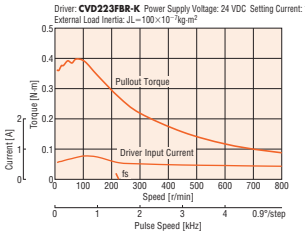
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

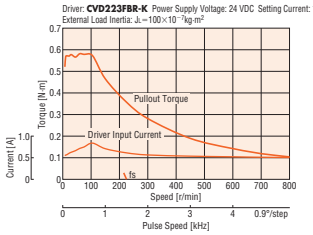
PKP243MD15A2-R3F■



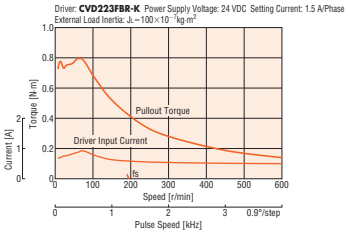
PKP244MD15A2-R3F■



PKP245MD15A2-R3F■



PKP246MD15A2-R3F■



Note

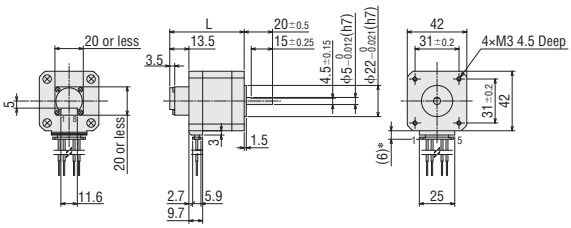
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- The data in the speed - torque characteristics represents the use of an external load inertia.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243MD15A2-R3F■	46.5	0.25	B1321
PKP244MD15A2-R3F■	52.5	0.32	B1322
PKP245MD15A2-R3F■	60.5	0.39	B1323
PKP246MD15A2-R3F■	72.5	0.52	B1324



*With connection cable

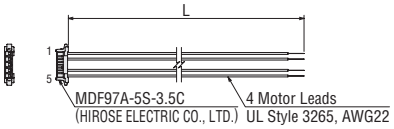
- Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

High-Resolution Type with Encoder Frame Size 42 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP243MU12A2-R2FL	0.26	39×10^{-7}	1.2	3.2	2.7	3.5	0.9°	**CMD2112P**
PKP244MU12A2-R2FL	0.35	58×10^{-7}		4.9	4.1	5		
PKP245MU12A2-R2FL	0.5	78×10^{-7}		3.8	3.2	5.3		
PKP246MU12A2-R2FL	0.65	116×10^{-7}		4.9	4.1	6.7		

● See "Common Specifications" page for encoder specifications.

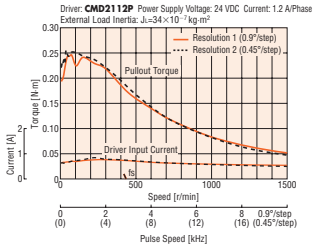
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

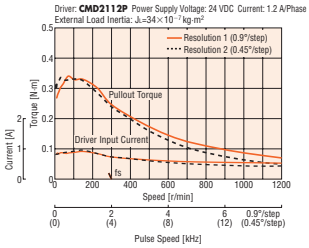
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

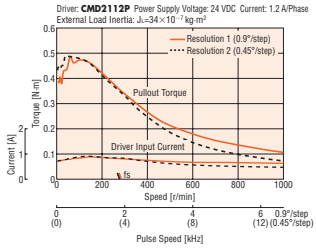
PKP243MU12A2-R2FL



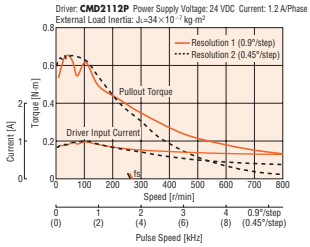
PKP244MU12A2-R2FL



PKP245MU12A2-R2FL



PKP246MU12A2-R2FL



Note

● 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.

● The data in the speed – torque characteristics represents the use of an external load inertia.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

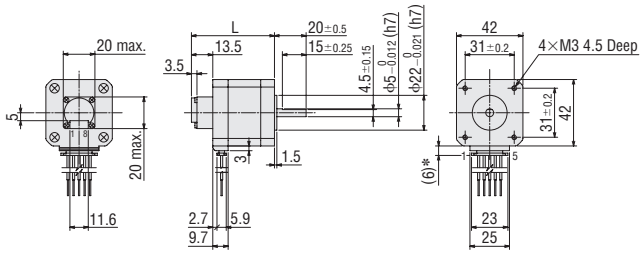
●Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243MU12A2-R2FL	46.5	0.23	B1328
PKP244MU12A2-R2FL	52.5	0.3	B1329
PKP245MU12A2-R2FL	60.5	0.37	B1330
PKP246MU12A2-R2FL	72.5	0.5	B1331

● Applicable Connectors

	Motor (HIROSE ELECTRIC CO.,LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

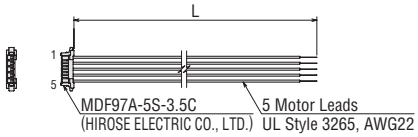


*With connection cable

●Connection Cables (Sold separately)

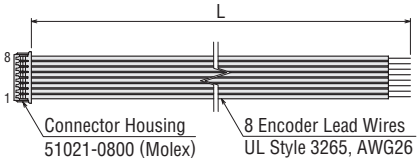
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type with Electromagnetic Brake Frame Size 42 mm (Bipolar 4 lead wires)

Connector Type

Specifications

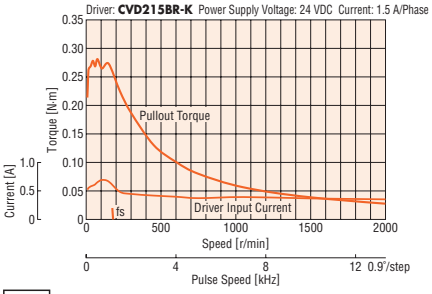
Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP243MD15M	0.30	48×10^{-7}*	1.5	2.85	1.9	6.6	0.9°	0.3
PKP244MD15M	0.42	69×10^{-7}*		3.9	2.6	7.6		

● Refer to the common specification page for electromagnetic brake specifications.
*This value is including the electromagnetic brake inertia.

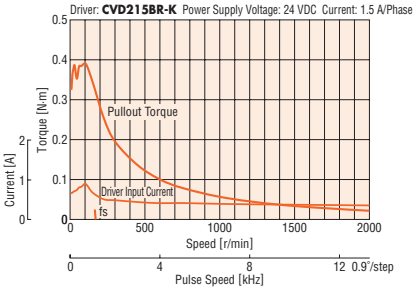
Note
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP243MD15M



PKP244MD15M



Note
● 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.
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
● The characteristics are the same when RS-485 communication type driver is used in combination.

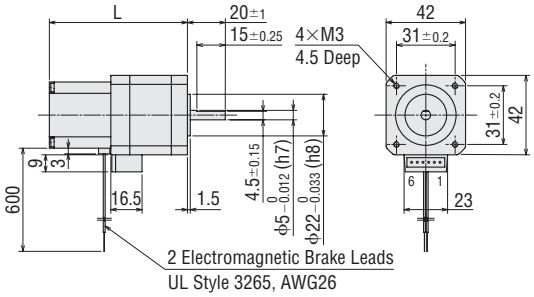
Dimensions (Unit: mm)

●Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243MD15M	67	0.36	B1136
PKP244MD15M	73	0.41	B1137

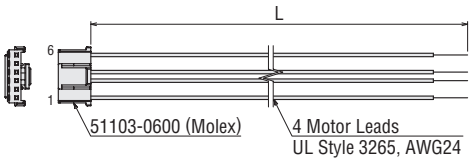
● Applicable Connector (Molex)
Connector Housing: 51103-0600
Contact: 50351-8100
Crimp Tool: 57295-5000



●Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06B	0.6
LC2B10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type with Electromagnetic Brake Frame Size 42 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP243MU09M	0.25	48×10^{-7}*	0.95	4.47	4.7	6.6	0.9°	0.3
PKP244MU12M	0.35	69×10^{-7}*	1.2	4.8	4	6		

● Refer to the common specification page for electromagnetic brake specifications.

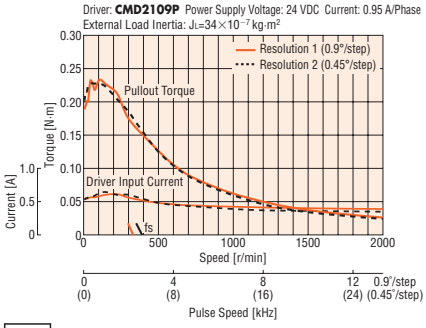
*The Inertia of the electromagnetic brake is included in the value.

Note

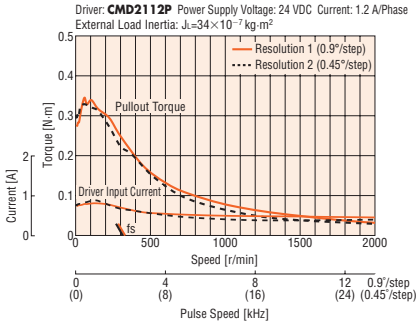
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP243MU09M



PKP244MU12M



Note

● 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.

● The data in the speed – torque characteristics represents the use of an external load inertia.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

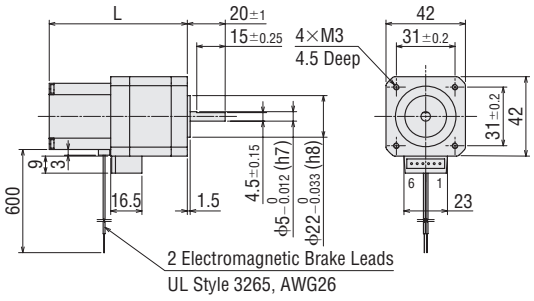
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP243MU09M	67	0.36	B1136
PKP244MU12M	73	0.41	B1137

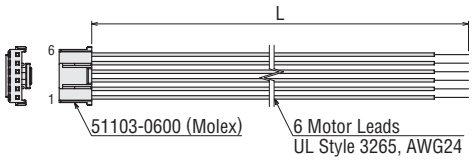
● Applicable Connector (Molex)
Connector Housing: 51103-0600
Contact: 50351-8100
Crimp Tool: 57295-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06B	0.6
LC2U10B	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

High-Resolution Type Frame Size 56.4 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MD28□2	0.7	150×10^{-7}	2.8	2	0.73	2.1	0.9°	**CVD228BR-K**
PKP266MD28□2	1.4	310×10^{-7}		1.8	0.65	3		
PKP268MD28□2	2.3	520×10^{-7}		2.7	0.97	4.7		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

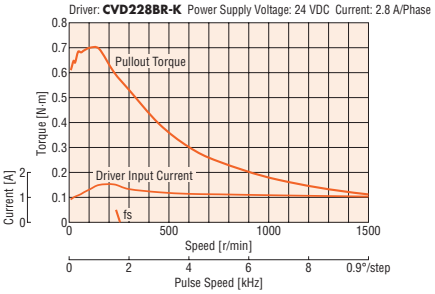
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

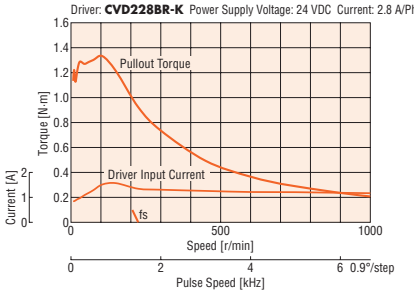
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

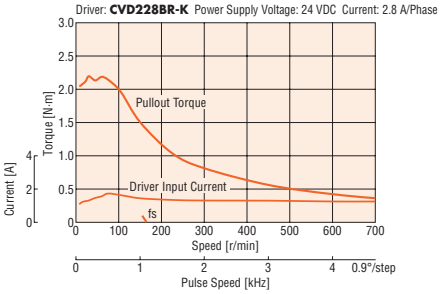
PKP264MD28A2/PKP264MD28B2



PKP266MD28A2/PKP266MD28B2



PKP268MD28A2/PKP268MD28B2



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

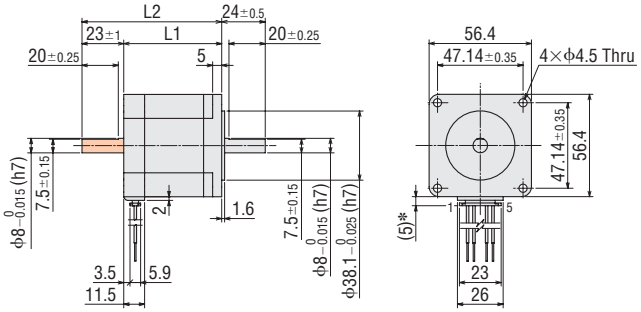
Product Name	L1	L2	Mass kg	2D CAD
PKP264MD28A2	39	–	0.45	B1249
PKP264MD28B2		62		
PKP266MD28A2	54	–	0.7	B1250
PKP266MD28B2		77		
PKP268MD28A2	76	–	1.1	B1251
PKP268MD28B2		99		

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)

Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)

Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



*With connection cable

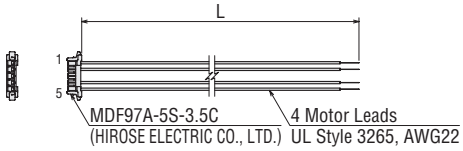
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 56.4 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MD28□	0.6	120×10^{-7}	2.8	2	0.73	2.1	0.9°	**CVD228BR-K**
PKP266MD28□	1.32	290×10^{-7}		2.8	1	3.9		
PKP268MD28□	2.23	490×10^{-7}		3.4	1.23	5.6		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

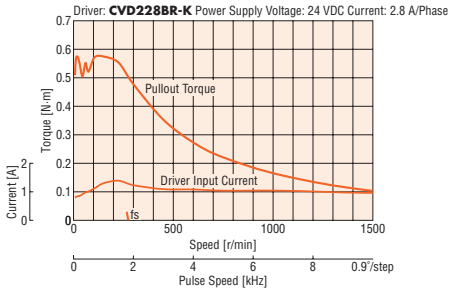
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

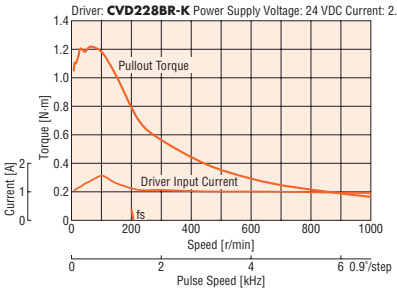
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

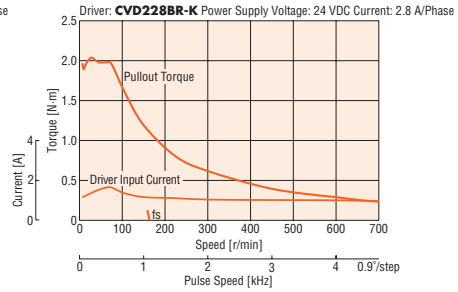
PKP264MD28A/PKP264MD28B



PKP266MD28A/PKP266MD28B



PKP268MD28A/PKP268MD28B



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264MD28A	39	–	0.46	B972
PKP264MD28B		62		
PKP266MD28A	54	–	0.73	B973
PKP266MD28B		77		
PKP268MD28A	76	–	1.1	B974
PKP268MD28B		99		

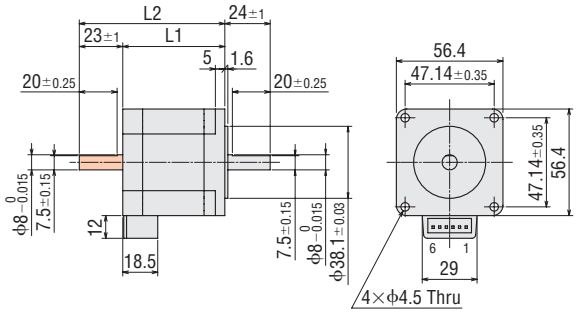
● Applicable Connectors

Connector Housing: 51067-0600 (Molex)

Contact: 50217-9101 (Molex)

Crimp Tool: 57189-5000 (Molex)

57190-5000 (Molex)



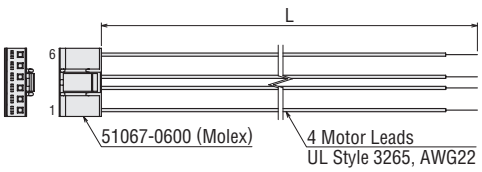
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06C	0.6
LC2B10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

High-Resolution Type Frame Size 56.4 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MU20□2	0.55	150×10^{-7}	2	2.9	1.45	2.1	0.9°	**CMD2120P**
PKP266MU20□2	1.2	310×10^{-7}		2.8	1.39	3.5		
PKP268MU20□2	1.8	520×10^{-7}		3.6	1.81	4.3		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

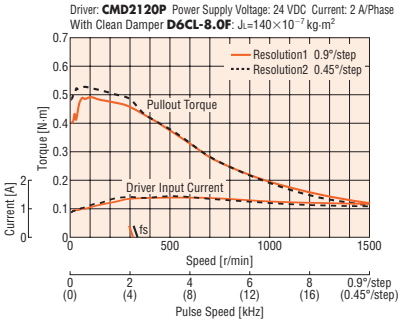
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

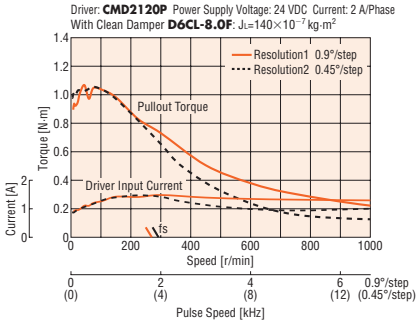
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

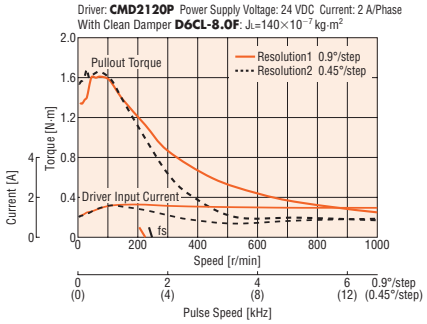
PKP264MU20A2/PKP264MU20B2



PKP266MU20A2/PKP266MU20B2



PKP268MU20A2/PKP268MU20B2



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

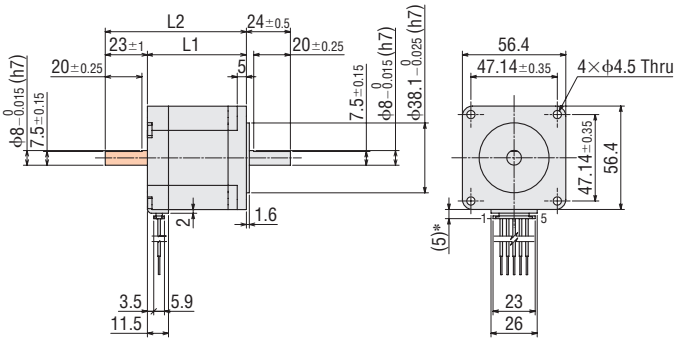
Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264MU20A2	39	–	0.45	B1257
PKP264MU20B2		62		
PKP266MU20A2	54	–	0.7	B1258
PKP266MU20B2		77		
PKP268MU20A2	76	–	1.1	B1259
PKP268MU20B2		99		

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD,)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



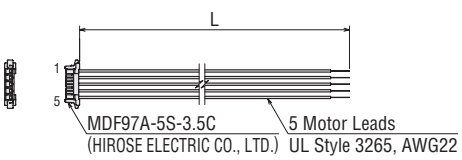
*With connection cable

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type Frame Size 56.4 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MU20□	0.51	120×10^{-7}	2	2.9	1.45	2.1	0.9°	**CMD2120P**
PKP266MU20□	1.1	290×10^{-7}		4	2	3.9		
PKP268MU20□	1.75	490×10^{-7}		4.9	2.45	5.6		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

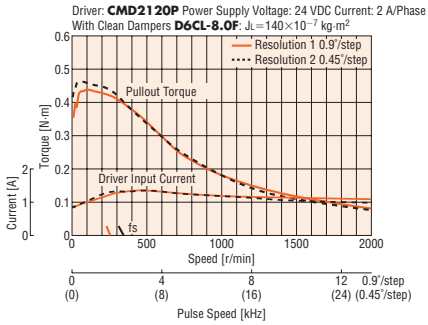
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

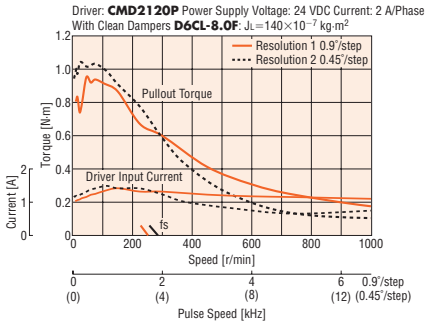
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

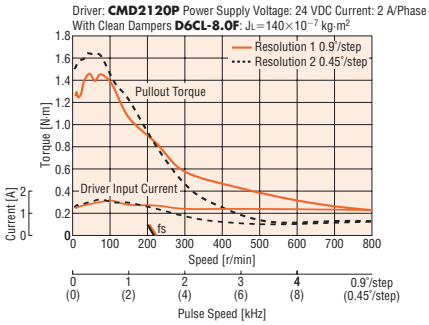
PKP264MU20A/PKP264MU20B



PKP266MU20A/PKP266MU20B



PKP268MU20A/PKP268MU20B



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP264MU20A	39	—	0.46	B972
PKP264MU20B		62		
PKP266MU20A	54	—	0.73	B973
PKP266MU20B		77		
PKP268MU20A	76	—	1.1	B974
PKP268MU20B		99		

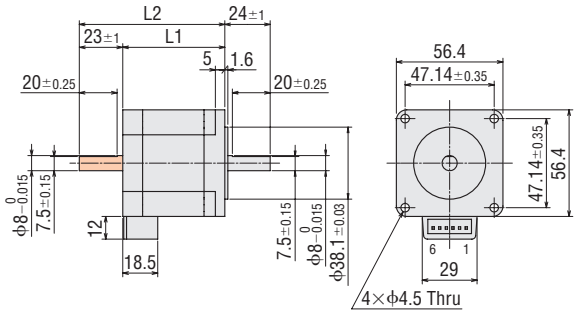
● Applicable Connectors

Connector Housing: 51067-0600 (Molex)

Contact: 50217-9101 (Molex)

Crimp Tool: 57189-5000 (Molex)

57190-5000 (Molex)



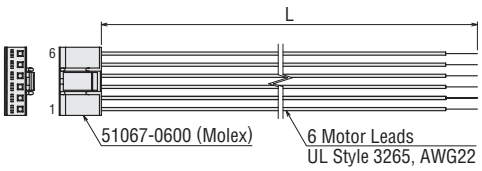
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06C	0.6
LC2U10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

High-Resolution Type with Encoder Frame Size 56.4 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

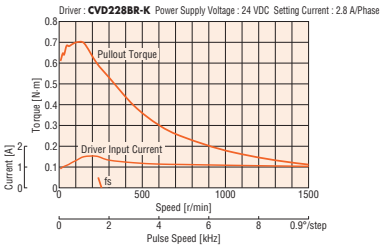
Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MD28A2-R3F■	0.7	150×10^{-7}	2.8	2	0.73	2.1	0.9°	**CVD228BR-K**
PKP266MD28A2-R3F■	1.4	310×10^{-7}		1.8	0.65	3		
PKP268MD28A2-R3F■	2.3	520×10^{-7}		2.7	0.97	4.7		

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
● Refer to the common specifications page for encoder specifications.
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

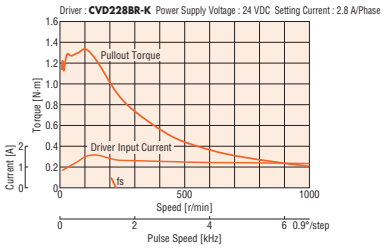
Note
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

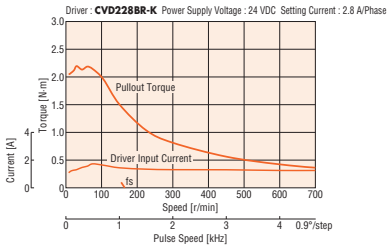
PKP264MD28A2-R3F■



PKP266MD28A2-R3F■



PKP268MD28A2-R3F■



Note
● 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.
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
● The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

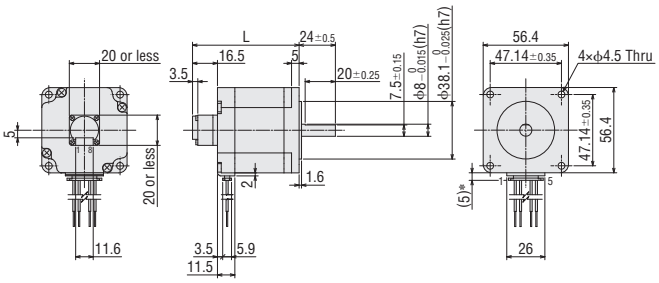
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264MD28A2-R3F■	55.5	0.47	B1325
PKP266MD28A2-R3F■	70.5	0.72	B1326
PKP268MD28A2-R3F■	92.5	1.12	B1327

● Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

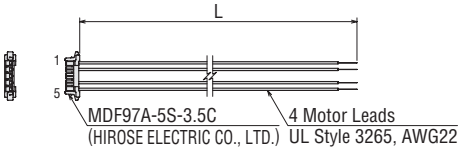


*With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

●For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

●For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

High-Resolution Type with Encoder Frame Size 56.4 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP264MU20A2-R2FL	0.55	150×10^{-7}	2	2.9	1.45	2.1	0.9°	**CMD2120P**
PKP266MU20A2-R2FL	1.2	310×10^{-7}		2.8	1.39	3.5		
PKP268MU20A2-R2FL	1.8	520×10^{-7}		3.6	1.81	4.3		

● See "Common Specifications" page for encoder specifications.

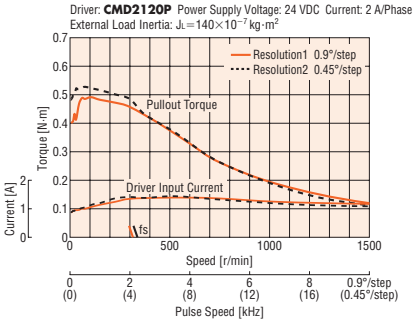
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

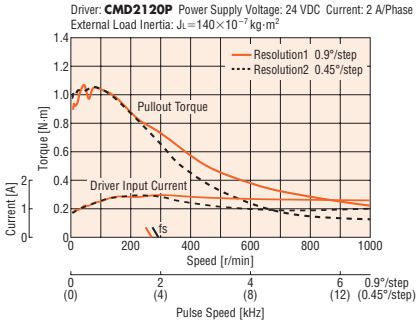
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

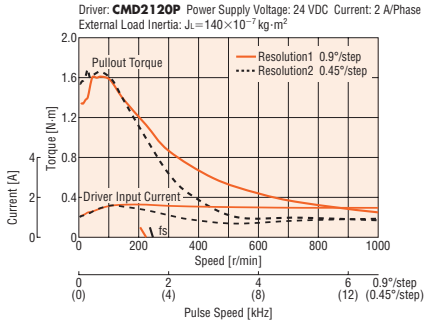
PKP264MU20A2-R2FL



PKP266MU20A2-R2FL



PKP268MU20A2-R2FL



Note

● 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.

● The data in the speed – torque characteristics represents the use of an external load inertia.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit: mm)

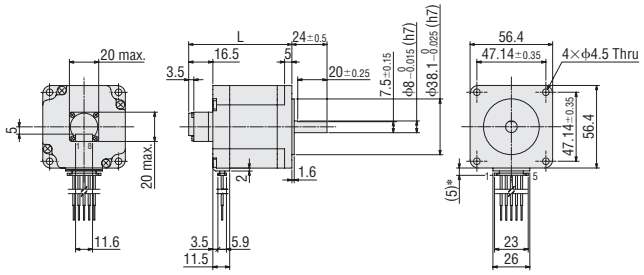
●Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264MU20A2-R2FL	55.5	0.45	B1332
PKP266MU20A2-R2FL	70.5	0.7	B1333
PKP268MU20A2-R2FL	92.5	1.1	B1334

● Applicable Connectors

	Motor (HIROSE ELECTRIC CO.,LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

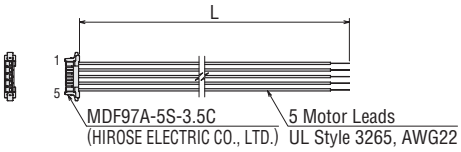


*With connection cable

●Connection Cables (Sold separately)

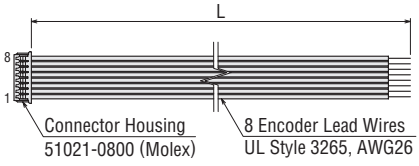
◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type with Electromagnetic Brake Frame Size 56.4 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP264MD28M	0.6	270×10^{-7}*	2.8	2	0.73	2.1	0.9°	1.5
PKP266MD28M	1.32	440×10^{-7}*		2.8	1	3.9		
PKP268MD28M	2.23	640×10^{-7}*		3.4	1.23	5.6		

- Refer to the common specification page for electromagnetic brake specifications.

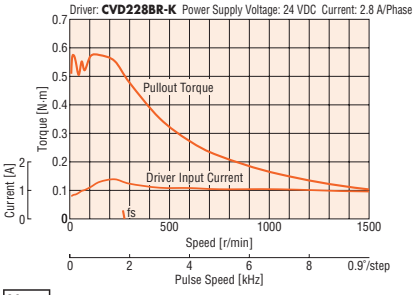
*This value is including the electromagnetic brake inertia.

Note

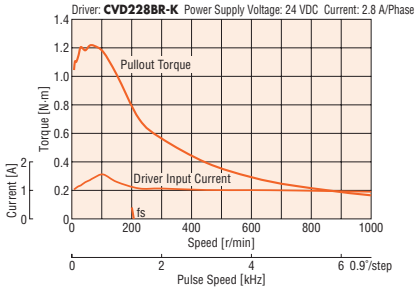
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

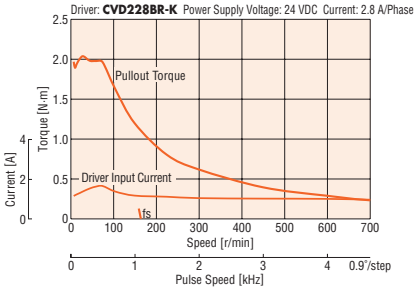
PKP264MD28M



PKP266MD28M



PKP268MD28M



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

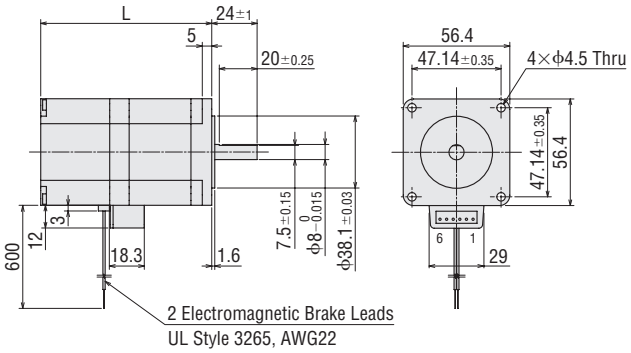
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264MD28M	75.5	0.76	B1140
PKP266MD28M	90.5	1.03	B1141
PKP268MD28M	112.5	1.4	B1142

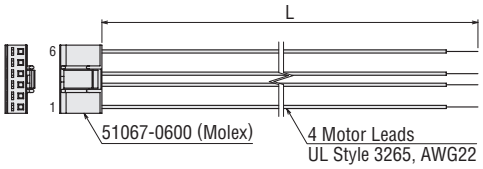
- Applicable Connector (Molex)
  Connector Housing: 51067-0600
  Contact: 50217-9101
  Crimp Tool: 57189-5000
  57190-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06C	0.6
LC2B10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

High-Resolution Type with Electromagnetic Brake Frame Size 56.4 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Electromagnetic Brake Static Friction Torque N·m
PKP264MU20M	0.51	270×10^{-7}*	2	2.9	1.45	2.1	0.9°	1.5
PKP266MU20M	1.1	440×10^{-7}*		4	2	3.9		
PKP268MU20M	1.75	640×10^{-7}*		4.9	2.45	5.6		

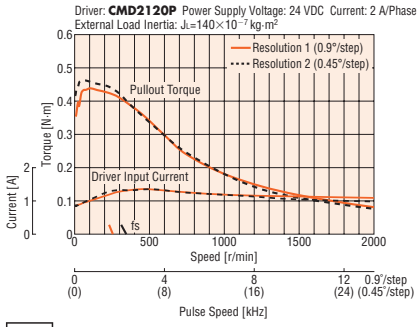
● Refer to the common specification page for electromagnetic brake specifications.
*This value is including the electromagnetic brake inertia.

Note

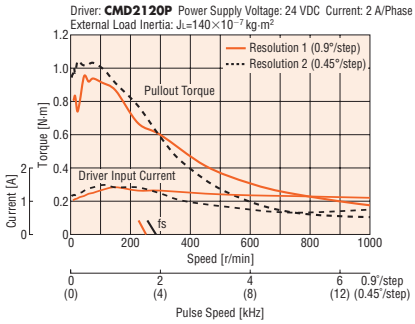
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

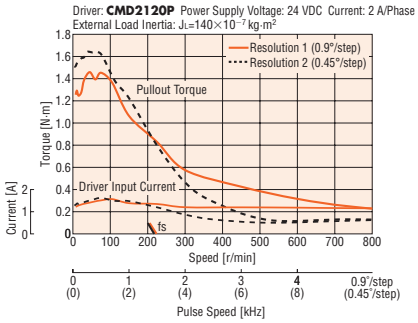
PKP264MU20M



PKP266MU20M



PKP268MU20M



Note

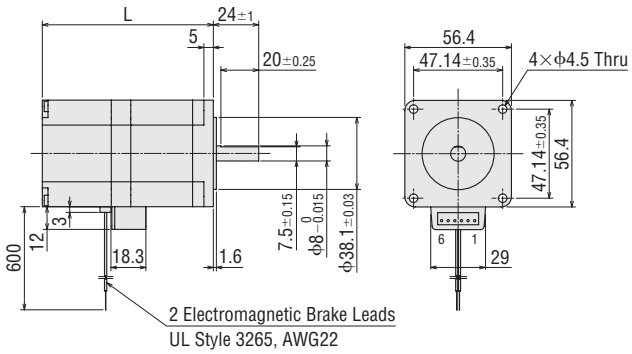
● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
● The data in the speed – torque characteristics represents the use of an external load inertia.
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP264MU20M	75.5	0.76	B1140
PKP266MU20M	90.5	1.03	B1141
PKP268MU20M	112.5	1.4	B1142

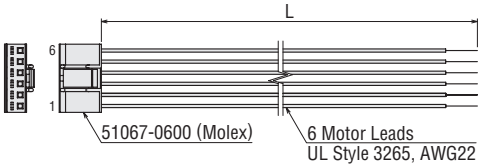


● Applicable Connector (Molex)
Connector Housing: 51067-0600
Contact: 50217-9101
Crimp Tool: 57189-5000
57190-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06C	0.6
LC2U10C	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Flat Type Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP242D23A2	0.1	13×10^{-7}	2.3	1.4	0.61	0.53	1.8°	**CVD223FBR-K**

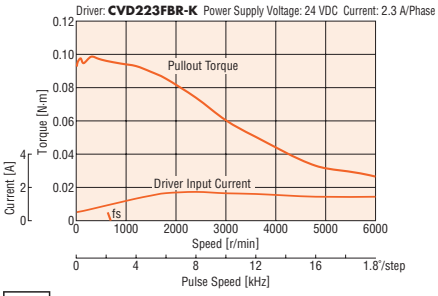
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP242D23A2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

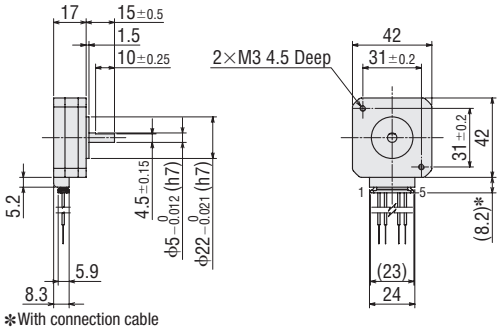
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Mass kg	2D CAD
PKP242D23A2	0.11	B1355

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)

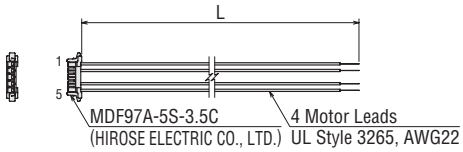


*With connection cable

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Flat Type Frame Size 60 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP262FD15AW	0.18	68×10^{-7}	1.5	2.25	1.5	1.4	1.8°	**CVD215BR-K**

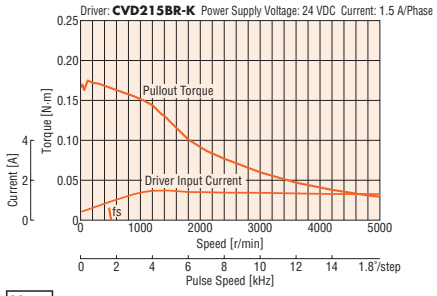
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP262FD15AW



Note

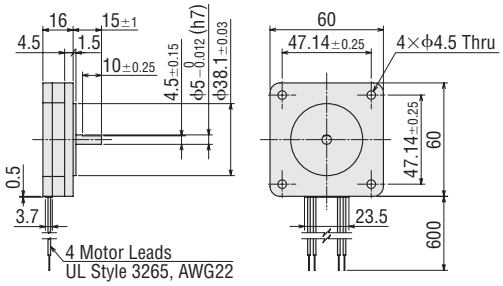
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Mass kg	2D CAD
PKP262FD15AW	0.2	B1170



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Flat Type with Harmonic Gear

Frame Size 51 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Maximum Instantaneous Torque N·m	Lost Motion (Load Torque) arcmin	Speed Range r/min	Recommended Driver Product Name*
PKP242D23A2-H50	1.8	17×10^{-7}	2.3	1.4	0.61	0.53	0.036°	50	1.8	3.3	1.5 max. (±0.09 N·m)	0 – 70	**CVD223FBR-K**
PKP242D23A2-H100	2.4						0.018°	100	2.4	4.8	1.5 max. (±0.12 N·m)	0 – 35	

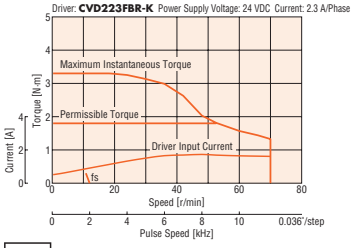
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

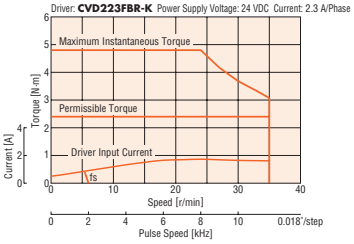
- The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP242D23A2-H50



PKP242D23A2-H100



Note

- 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.
- The speed – torque characteristics is data when the gear case temperature is at 25 to 30°C. As the temperature decreases, the viscosity of the grease in the gear increases and the torque decreases.
- In order to prevent deterioration of the gear grease in the harmonic geared type, keep the temperature of the gear case at 70°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

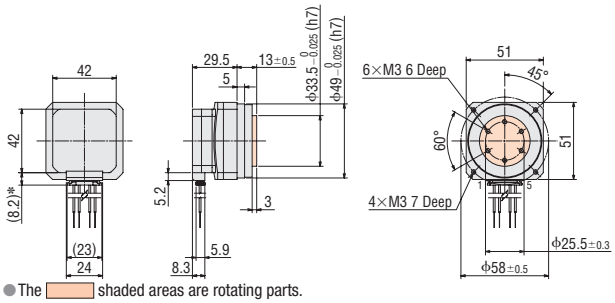
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Mass kg	2D CAD
PKP242D23A2-H50	0.32	B1356
PKP242D23A2-H100		

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



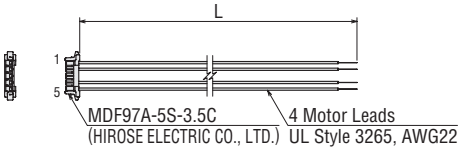
- The shaded areas are rotating parts.

*With connection cable

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

Flat Type with Harmonic Gear

Frame Size 61 mm (Bipolar 4 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Maximum Instantaneous Torque N·m	Lost Motion (Load Torque) arcmin	Speed Range r/min	Recommended Driver Product Name*
PKP262FD15AW-H50S	3.5	83×10^{-7}	1.5	1.65	1.1	0.8	0.036°	50	3.5	✻	1.5 max. (±0.17 N·m)	0 to 70	**CVD215BR-K**
PKP262FD15AW-H100S	5						0.018°	100	5	✻	1.5 max. (±0.25 N·m)	0 to 35	

✻For the output torque of the geared motor, refer to the speed–torque characteristics.

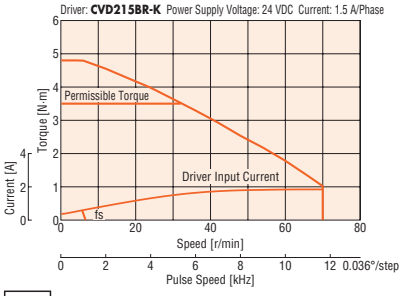
✻See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

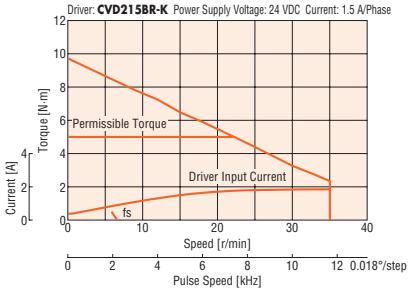
- The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP262FD15AW-H50S



PKP262FD15AW-H100S



Note

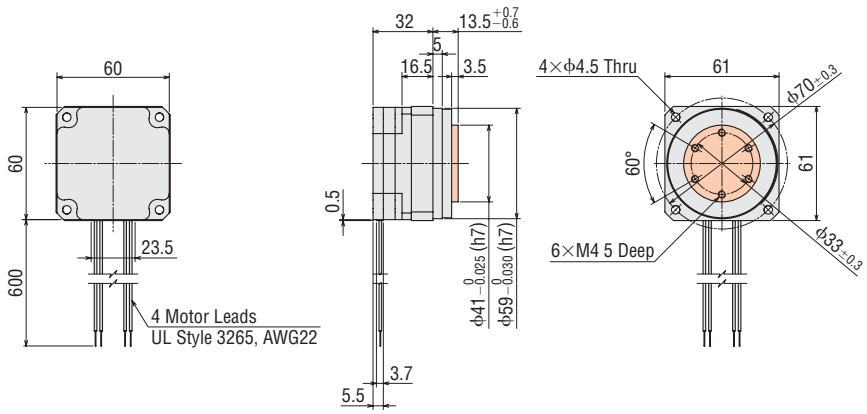
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- The speed – torque characteristics is data when the gear case temperature is at 25 to 30˚C. As the temperature decreases, the viscosity of the grease in the gear increases and the torque decreases.
- In order to prevent deterioration of the gear grease in the harmonic geared type, keep the temperature of the gear case at 70˚C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Mass kg	2D CAD
PKP262FD15AW-H50S	0.54	B1451
PKP262FD15AW-H100S		



- The shaded areas are rotating parts.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑤

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP223D15□-SG7.2	0.3	9×10^{-7}	1.5	1.8	1.2	0.74	0.25°	7.2	0.3	0 – 416	90 (1.5°)	**CVD215BR-K**
PKP223D15□-SG9							0.2°	9		0 – 333		
PKP223D15□-SG10							0.18°	10		0 – 300		
PKP223D15□-SG18	0.4						0.1°	18	0.4	0 – 166		
PKP223D15□-SG36							0.05°	36		0 – 83		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

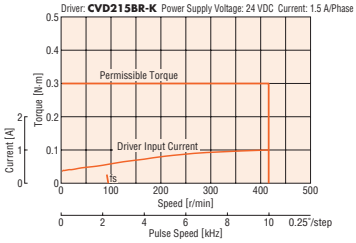
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

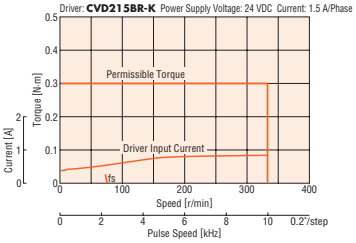
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

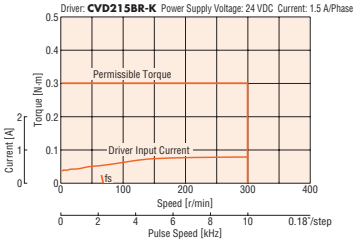
PKP223D15A-SG7.2/PKP223D15B-SG7.2



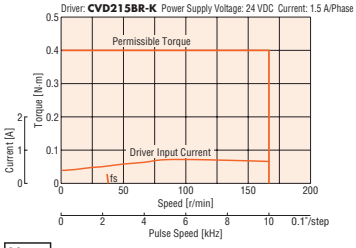
PKP223D15A-SG9/PKP223D15B-SG9



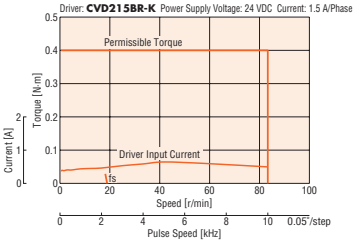
PKP223D15A-SG10/PKP223D15B-SG10



PKP223D15A-SG18/PKP223D15B-SG18



PKP223D15A-SG36/PKP223D15B-SG36



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP223D15A-SG□	**7.2**, **9**, **10**, **18**, **36**	0.16	B985
PKP223D15B-SG□			

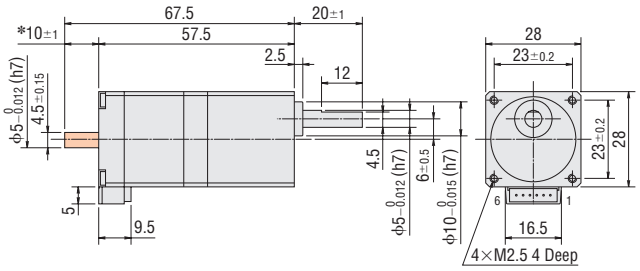
● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors

Connector Housing: 51065-0600 (Molex)

Contact: 50212-8100 (Molex)

Crimp Tool: 57176-5000 (Molex)



*The length of the shaft flat on the double shaft model is 10±0.25.

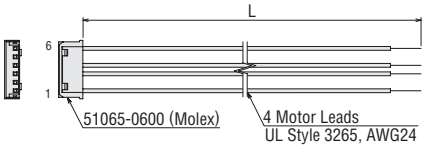
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP223U09□-SG7.2	0.3	9×10^{-7}	0.95	2.66	2.8	1	0.25°	7.2	0.3	0 – 416	90 (1.5°)	**CMD2109P**
PKP223U09□-SG9							0.2°	9		0 – 333		
PKP223U09□-SG10							0.18°	10		0 – 300		
PKP223U09□-SG18	0.4						0.1°	18	0.4	0 – 166		
PKP223U09□-SG36							0.05°	36		0 – 83		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

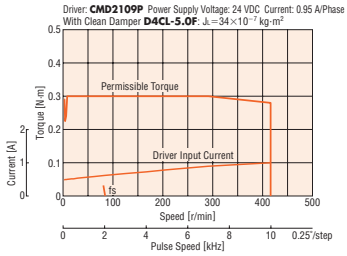
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

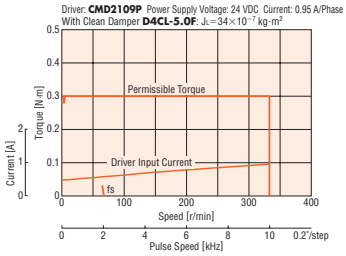
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

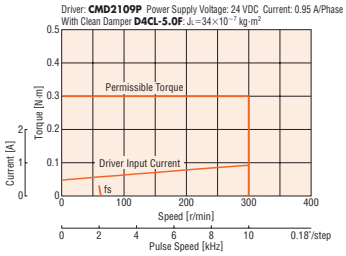
PKP223U09A-SG7.2/PKP223U09B-SG7.2



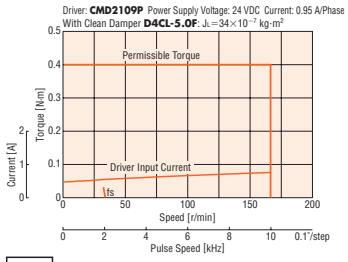
PKP223U09A-SG9/PKP223U09B-SG9



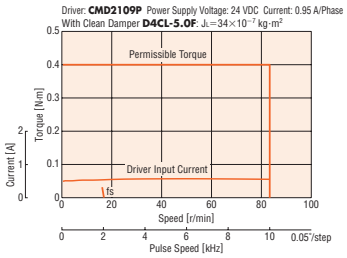
PKP223U09A-SG10/PKP223U09B-SG10



PKP223U09A-SG18/PKP223U09B-SG18



PKP223U09A-SG36/PKP223U09B-SG36



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

Motors

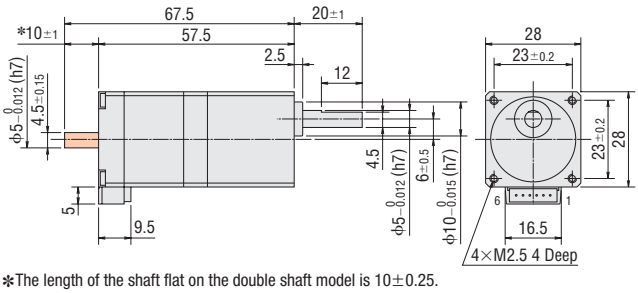
2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP223U09A-SG□	**7.2**, **9**, **10**, **18**, **36**	0.16	B985
PKP223U09B-SG□			

● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors

Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



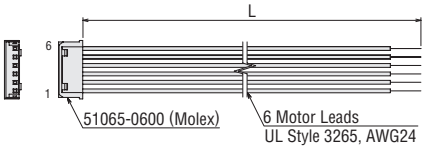
*The length of the shaft flat on the double shaft model is 10±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

NEW

SH Geared Type with Encoder

Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Value Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Back lash arcmin	Recommended Driver Product Name*
PKP223D15A-SG7.2-R3F■	0.3	9.9×10^{-7}	1.5	1.8	1.2	0.74	0.25°	7.2	0.3	0～416	90 (1.5°)	**CVD215BR-K**
PKP223D15A-SG9-R3F■							0.2°	9		0～333		
PKP223D15A-SG10-R3F■							0.18°	10		0～300		
PKP223D15A-SG18-R3F■	0.4						0.1°	18	0.4	0～166		
PKP223D15A-SG36-R3F■							0.05°	36		0～83		

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

● Refer to the common specifications page for encoder specifications.

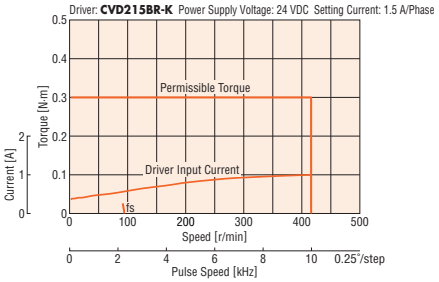
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

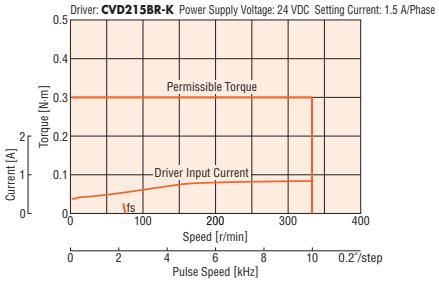
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

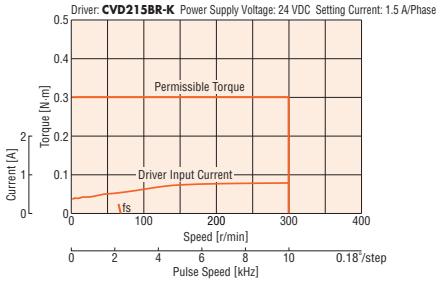
PKP223D15A-SG7.2-R3F■



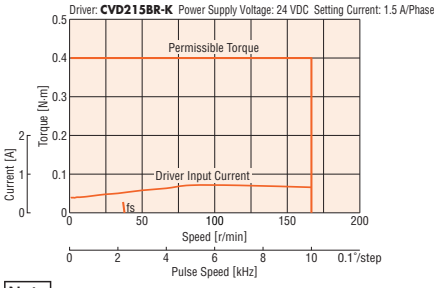
PKP223D15A-SG9-R3F■



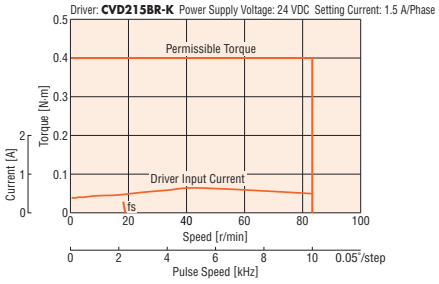
PKP223D15A-SG10-R3F■



PKP223D15A-SG18-R3F■



PKP223D15A-SG36-R3F■



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

● The characteristics are the same if combined with an RS-485 communication type driver.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Dimensions (Unit = mm)

Motor

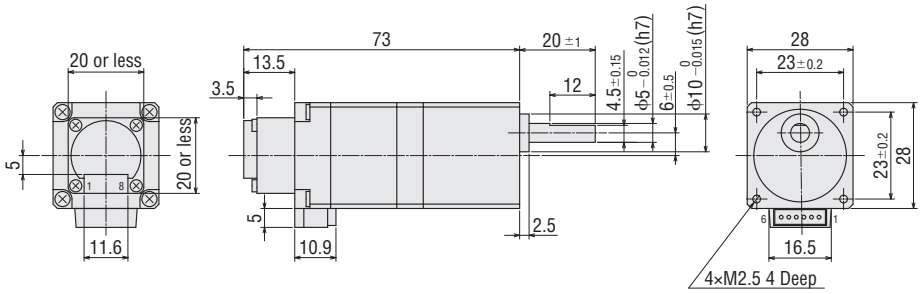
2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP223D15A-SG□-R3F■	**7.2, 9, 10, 18, 36**	0.18	B1582

● A number indicating the gear ratio is specified where the box □ is located in the product name.

● Applicable Connector (Molex)

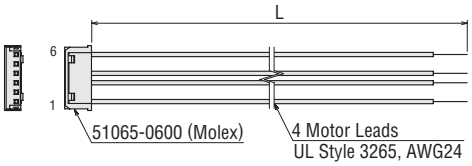
	Motor	Encoder
Connector Housing	51065-0600	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

SH Geared Type Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP243D15□2-SG3.6	0.2	36×10^{-7}	1.5	0.83	0.55	0.77	0.5°	3.6	0.2	0 – 833	90 (1.5°)	**CVD223FBR-K**
PKP243D23□2-SG3.6			2.3	0.87	0.38	0.41						
PKP243D15□2-SG7.2	0.4		1.5	0.83	0.55	0.77	0.25°	7.2	0.4	0 – 416	60 (1°)	
PKP243D23□2-SG7.2			2.3	0.87	0.38	0.41						
PKP243D15□2-SG9	0.5		1.5	0.83	0.55	0.77	0.2°	9	0.5	0 – 333		
PKP243D23□2-SG9			2.3	0.87	0.38	0.41						
PKP243D15□2-SG10	0.56		1.5	0.83	0.55	0.77	0.18°	10	0.56	0 – 300		
PKP243D23□2-SG10			2.3	0.87	0.38	0.41						
PKP243D15□2-SG18	0.8		1.5	0.83	0.55	0.77	0.1°	18	0.8	0 – 166		
PKP243D23□2-SG18			2.3	0.87	0.38	0.41						
PKP243D15□2-SG36	0.8		1.5	0.83	0.55	0.77	0.05°	36	0.8	0 – 83		
PKP243D23□2-SG36			2.3	0.87	0.38	0.41						

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

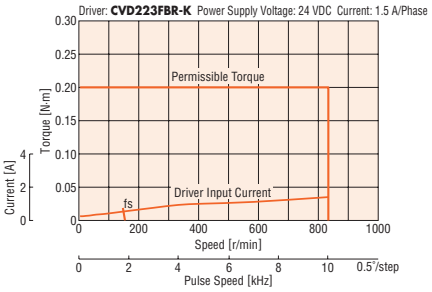
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

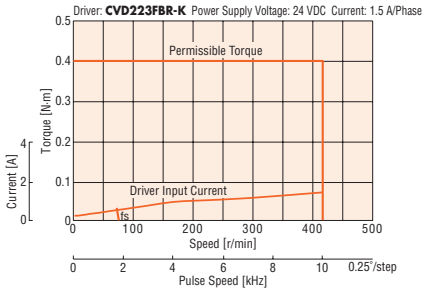
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

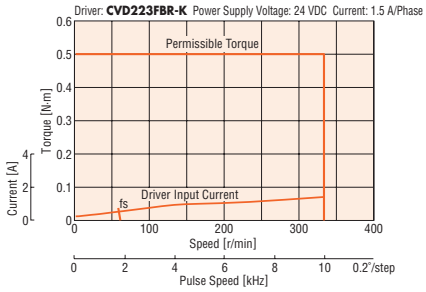
PKP243D15A2-SG3.6/PKP243D15B2-SG3.6



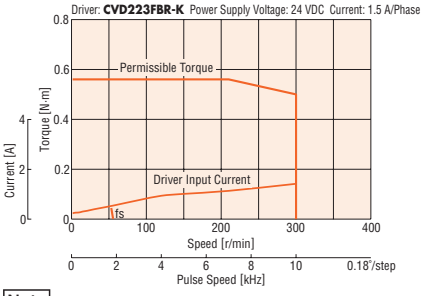
PKP243D15A2-SG7.2/PKP243D15B2-SG7.2



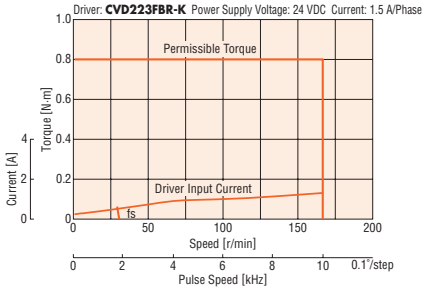
PKP243D15A2-SG9/PKP243D15B2-SG9



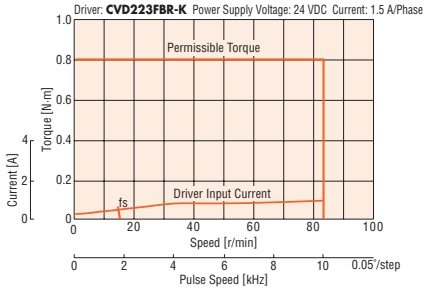
PKP243D15A2-SG10/PKP243D15B2-SG10



PKP243D15A2-SG18/PKP243D15B2-SG18



PKP243D15A2-SG36/PKP243D15B2-SG36



Note

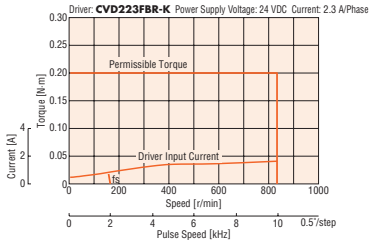
● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

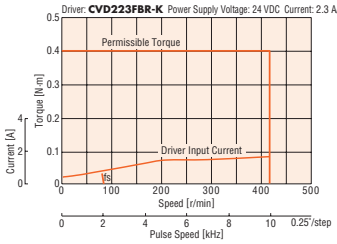
● The characteristics are the same when RS-485 communication type driver is used in combination.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

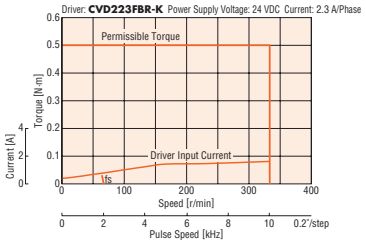
PKP243D23A2-SG3.6/PKP243D23B2-SG3.6



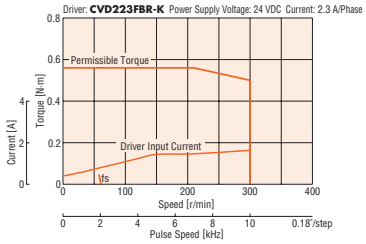
PKP243D23A2-SG7.2/PKP243D23B2-SG7.2



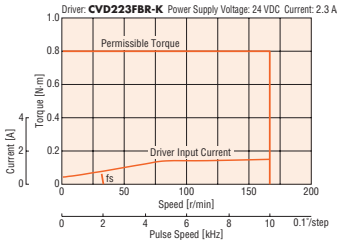
PKP243D23A2-SG9/PKP243D23B2-SG9



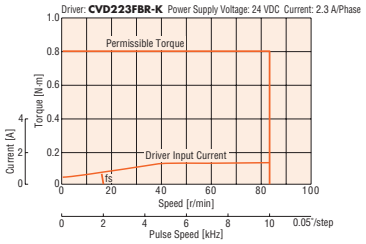
PKP243D23A2-SG10/PKP243D23B2-SG10



PKP243D23A2-SG18/PKP243D23B2-SG18



PKP243D23A2-SG36/PKP243D23B2-SG36



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

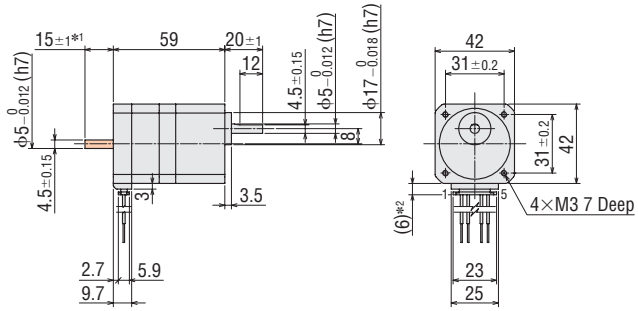
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP243D15A2-SG□	**3.6**, **7.2**, **9**, **10**, **18**, **36**	0.33	B1340
PKP243D15B2-SG□			
PKP243D23A2-SG□			
PKP243D23B2-SG□			

- The box □ in the product name indicates a number representing the gear ratio.

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD,)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



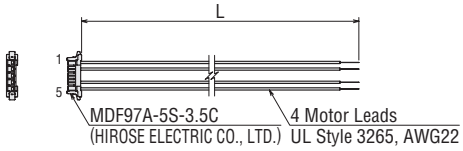
*1 The length of the shaft flat on the double shaft model is 15±0.25.
*2 With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type Frame Size 42 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP243U09□2-SG3.6	0.2	36×10^{-7}	0.95	2	2.1	1.8	0.5°	3.6	0.2	0 – 833	90 (1.5°)	**CMD2109P**
PKP243U09□2-SG7.2	0.4						0.25°	7.2	0.4	0 – 416		
PKP243U09□2-SG9	0.5						0.2°	9	0.5	0 – 333		
PKP243U09□2-SG10	0.56						0.18°	10	0.56	0 – 300	60 (1°)	
PKP243U09□2-SG18	0.8						0.1°	18	0.8	0 – 166		
PKP243U09□2-SG36	0.8						0.05°	36	0.8	0 – 83		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

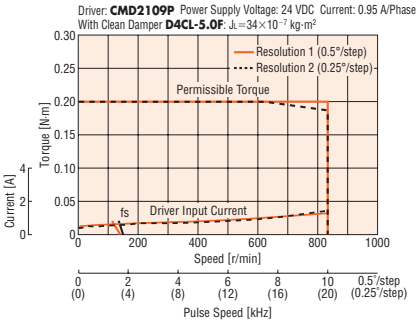
✻See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

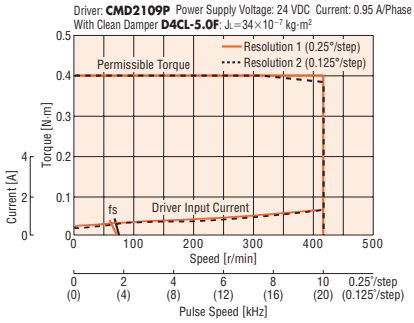
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

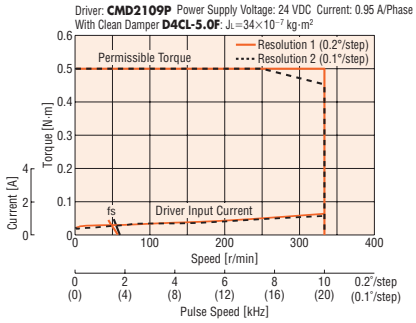
PKP243U09A2-SG3.6/PKP243U09B2-SG3.6



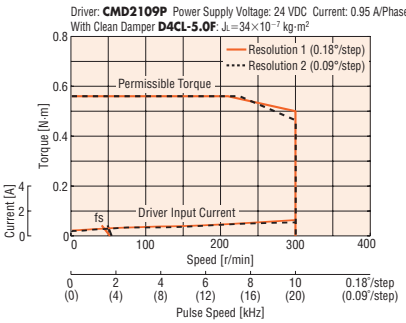
PKP243U09A2-SG7.2/PKP243U09B2-SG7.2



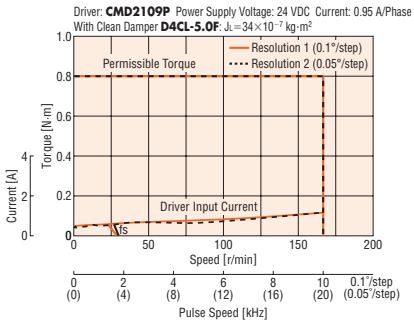
PKP243U09A2-SG9/PKP243U09B2-SG9



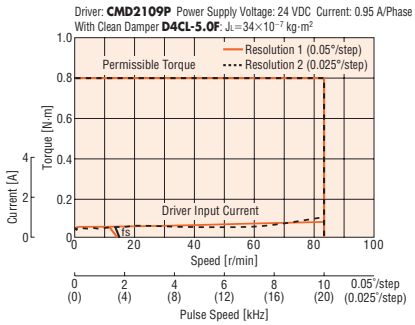
PKP243U09A2-SG10/PKP243U09B2-SG10



PKP243U09A2-SG18/PKP243U09B2-SG18



PKP243U09A2-SG36/PKP243U09B2-SG36



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

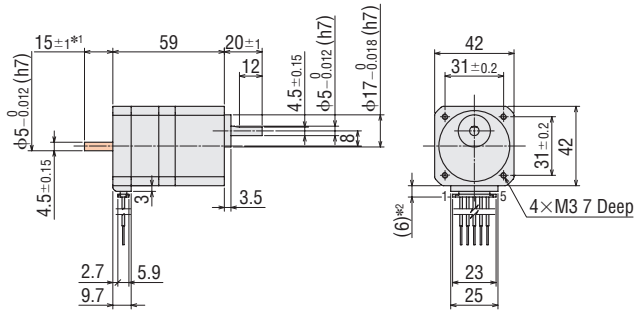
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP243U09A2-SG□	**3.6**, **7.2**, **9**, **10**, **18**, **36**	0.33	B1339
PKP243U09B2-SG□			

● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors
Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)

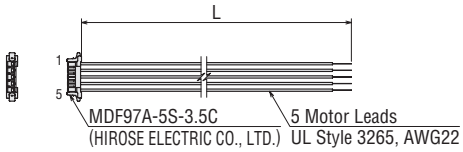


✻1 The length of the shaft flat on the double shaft model is 15±0.25.
✻2 With connection cable
● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type with Encoder Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Value Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP243D15A2-SG3.6-R3F■	0.2	37×10^{-7}	1.5	0.83	0.55	0.77	0.5°	3.6	0.2	0~833	90 (1.5°)	**CVD223FBR-K**
PKP243D23A2-SG3.6-R3F■			2.3	0.87	0.38	0.41						
PKP243D15A2-SG7.2-R3F■	0.4		1.5	0.83	0.55	0.77	0.25°	7.2	0.4	0~416	60 (1°)	
PKP243D23A2-SG7.2-R3F■			2.3	0.87	0.38	0.41						
PKP243D15A2-SG9-R3F■	0.5		1.5	0.83	0.55	0.77	0.2°	9	0.5	0~333		
PKP243D23A2-SG9-R3F■			2.3	0.87	0.38	0.41						
PKP243D15A2-SG10-R3F■	0.56		1.5	0.83	0.55	0.77	0.18°	10	0.56	0~300		
PKP243D23A2-SG10-R3F■			2.3	0.87	0.38	0.41						
PKP243D15A2-SG18-R3F■	0.8		1.5	0.83	0.55	0.77	0.1°	18	0.8	0~166		
PKP243D23A2-SG18-R3F■			2.3	0.87	0.38	0.41						
PKP243D15A2-SG36-R3F■			1.5	0.83	0.55	0.77	0.05°	36	0.8	0~83		
PKP243D23A2-SG36-R3F■			2.3	0.87	0.38	0.41						

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

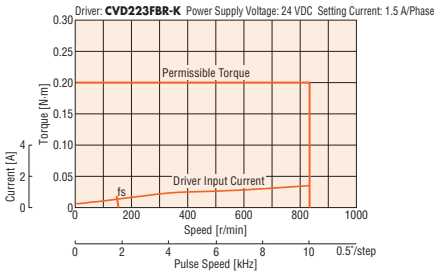
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

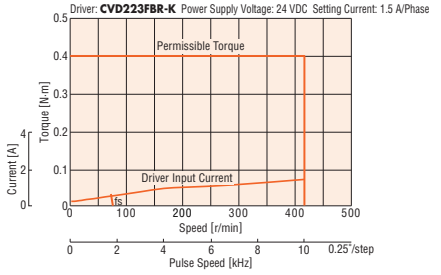
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

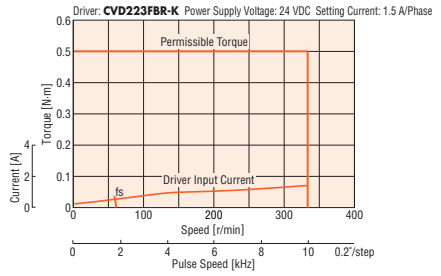
PKP243D15A2-SG3.6-R3F■



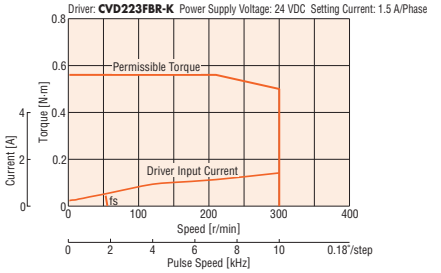
PKP243D15A2-SG7.2-R3F■



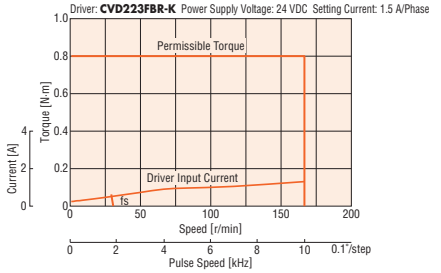
PKP243D15A2-SG9-R3F■



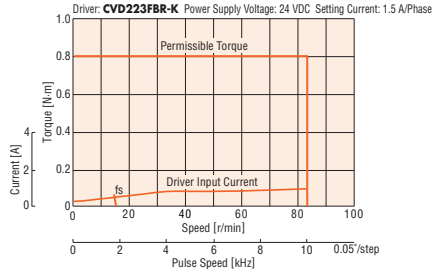
PKP243D15A2-SG10-R3F■



PKP243D15A2-SG18-R3F■



PKP243D15A2-SG36-R3F■



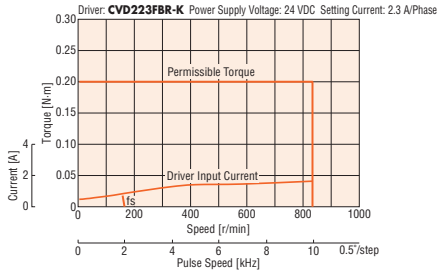
Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

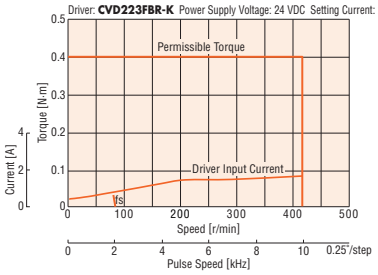
- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

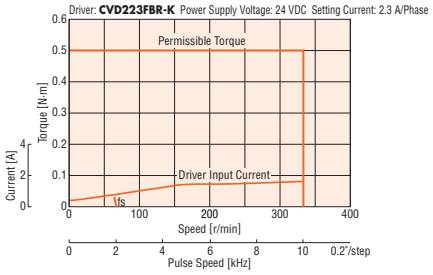
PKP243D23A2-SG3.6-R3F■



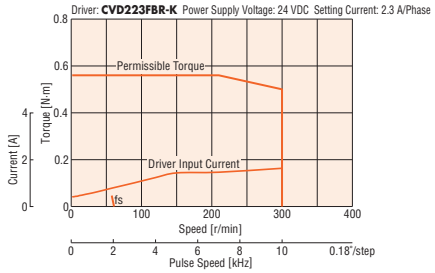
PKP243D23A2-SG7.2-R3F■



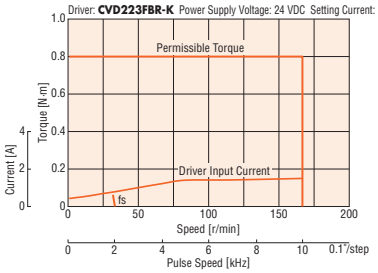
PKP243D23A2-SG9-R3F■



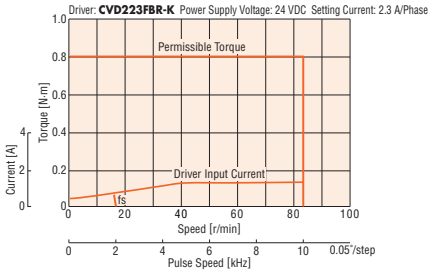
PKP243D23A2-SG10-R3F■



PKP243D23A2-SG18-R3F■



PKP243D23A2-SG36-R3F■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

Motor

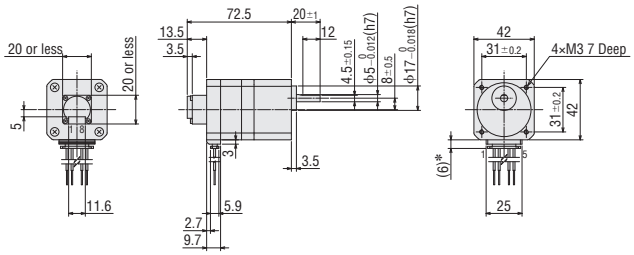
2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP243D15A2-SG□-R3F■	**3.6, 7.2, 9, 10, 18, 36**	0.35	B1508
PKP243D23A2-SG□-R3F■			

- A number indicating the gear ratio is specified where the box □ is located in the product name.

- Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

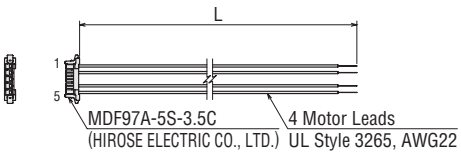


*With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- Refer to the motor inner wiring page for an inner wiring diagram of the motor.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

SH Geared Type Frame Size 60 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP264D14□2-SG3.6	1	140×10^{-7}	1.4	2	1.4	3.1	0.5°	3.6	1	0 – 833	70 (1.17°)	**CVD228BR-K**
PKP264D28□2-SG3.6			2.8	0.92	0.33	0.81						
PKP264D14□2-SG7.2	2		1.4	2	1.4	3.1	0.25°	7.2	2	0 – 416	45 (0.75°)	
PKP264D28□2-SG7.2			2.8	0.92	0.33	0.81						
PKP264D14□2-SG9	2.5		1.4	2	1.4	3.1	0.2°	9	2.5	0 – 333		
PKP264D28□2-SG9			2.8	0.92	0.33	0.81						
PKP264D14□2-SG10	2.7		1.4	2	1.4	3.1	0.18°	10	2.7	0 – 300		
PKP264D28□2-SG10			2.8	0.92	0.33	0.81						
PKP264D14□2-SG18	3		1.4	2	1.4	3.1	0.1°	18	3	0 – 166		
PKP264D28□2-SG18			2.8	0.92	0.33	0.81						
PKP264D14□2-SG36	4		1.4	2	1.4	3.1	0.05°	36	4	0 – 83		
PKP264D28□2-SG36			2.8	0.92	0.33	0.81						

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

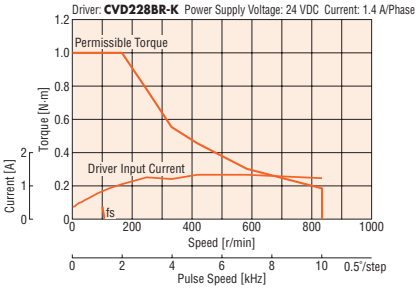
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

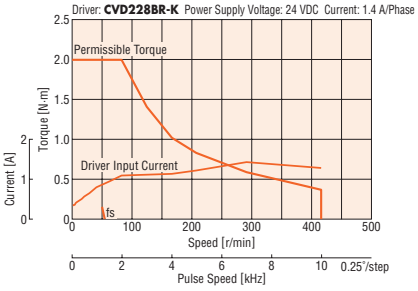
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

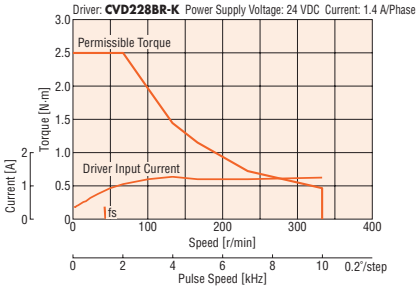
PKP264D14A2-SG3.6/PKP264D14B2-SG3.6



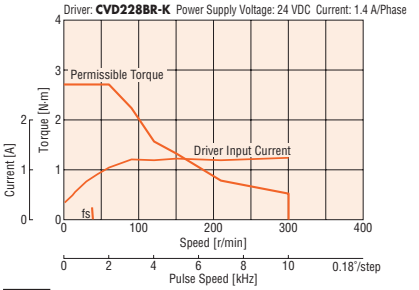
PKP264D14A2-SG7.2/PKP264D14B2-SG7.2



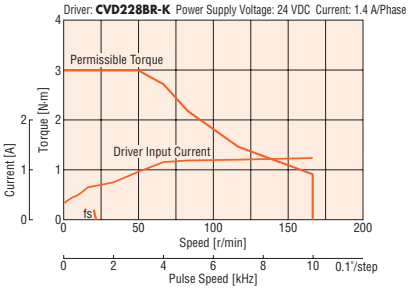
PKP264D14A2-SG9/PKP264D14B2-SG9



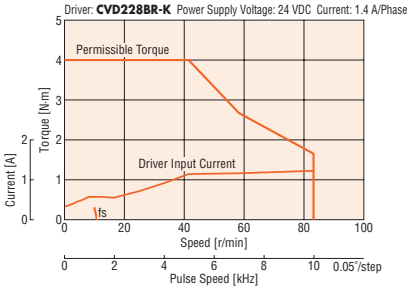
PKP264D14A2-SG10/PKP264D14B2-SG10



PKP264D14A2-SG18/PKP264D14B2-SG18



PKP264D14A2-SG36/PKP264D14B2-SG36

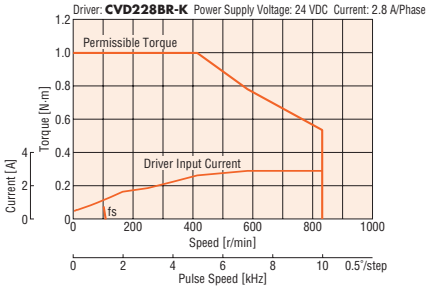


Note

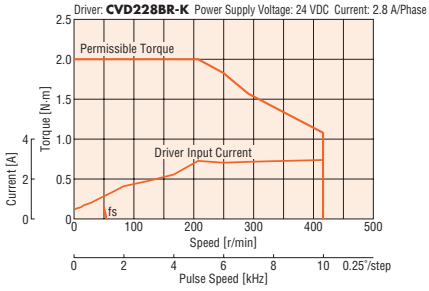
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

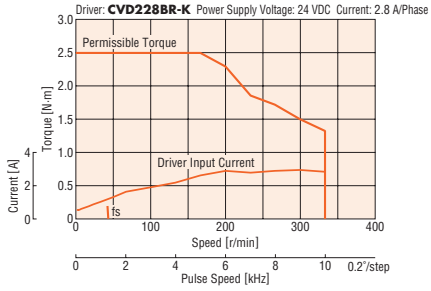
PKP264D28A2-SG3.6/PKP264D28B2-SG3.6



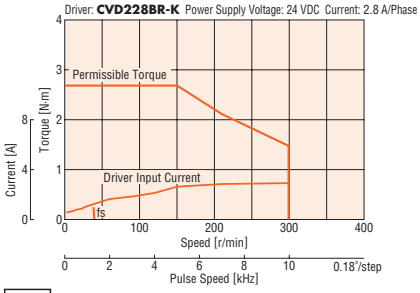
PKP264D28A2-SG7.2/PKP264D28B2-SG7.2



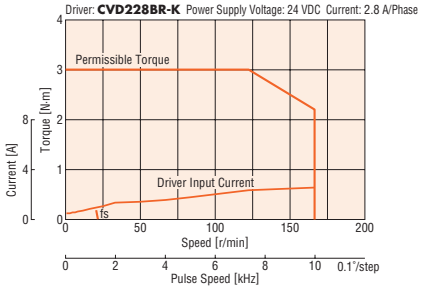
PKP264D28A2-SG9/PKP264D28B2-SG9



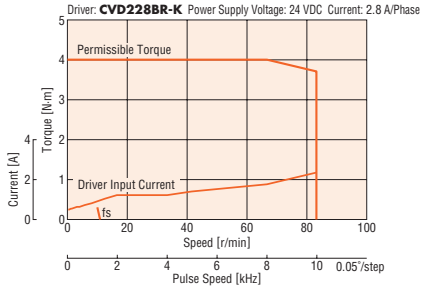
PKP264D28A2-SG10/PKP264D28B2-SG10



PKP264D28A2-SG18/PKP264D28B2-SG18



PKP264D28A2-SG36/PKP264D28B2-SG36



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

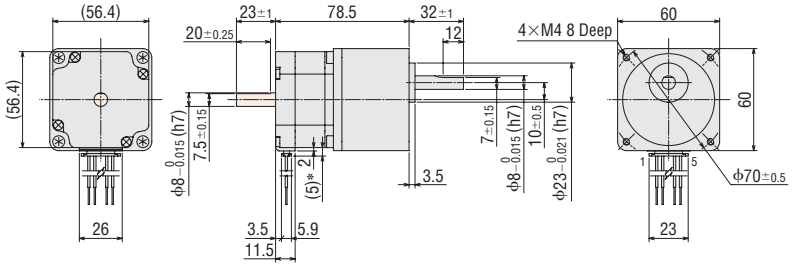
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP264D14A2-SG□	**3.6, 7.2, 9, 10, 18, 36**	0.76	B1342
PKP264D14B2-SG□			
PKP264D28A2-SG□			
PKP264D28B2-SG□			

- The box □ in the product name indicates a number representing the gear ratio.

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



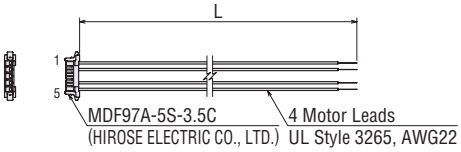
✻With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type Frame Size 60 mm (Unipolar 5 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP264U10□2-SG3.6	1	140×10^{-7}	1	2.9	2.9	4.2	0.5°	3.6	1	0 – 833	70 (1.17°)	**CMD2120P**
PKP264U20□2-SG3.6			2	1.5	0.76	1						
PKP264U10□2-SG7.2	2		1	2.9	2.9	4.2	0.25°	7.2	2	0 – 416	45 (0.75°)	
PKP264U20□2-SG7.2			2	1.5	0.76	1						
PKP264U10□2-SG9	2.5		1	2.9	2.9	4.2	0.2°	9	2.5	0 – 333		
PKP264U20□2-SG9			2	1.5	0.76	1						
PKP264U10□2-SG10	2.7		1	2.9	2.9	4.2	0.18°	10	2.7	0 – 300		
PKP264U20□2-SG10			2	1.5	0.76	1						
PKP264U10□2-SG18	3		1	2.9	2.9	4.2	0.1°	18	3	0 – 166		
PKP264U20□2-SG18			2	1.5	0.76	1						
PKP264U10□2-SG36	4		1	2.9	2.9	4.2	0.05°	36	4	0 – 83		
PKP264U20□2-SG36			2	1.5	0.76	1						

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

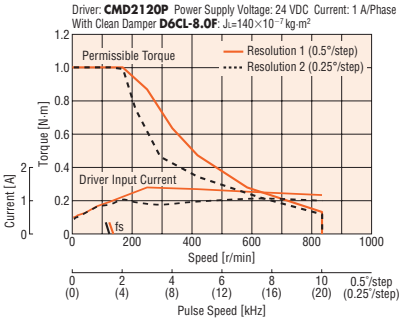
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

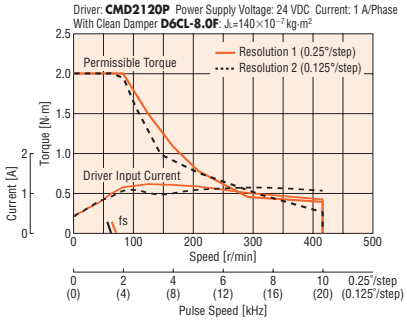
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

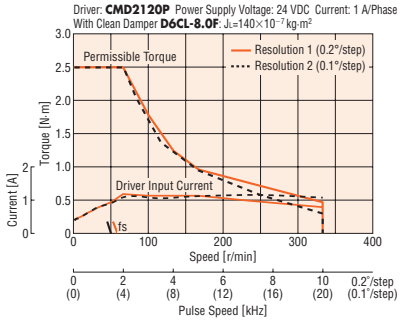
PKP264U10A2-SG3.6/PKP264U10B2-SG3.6



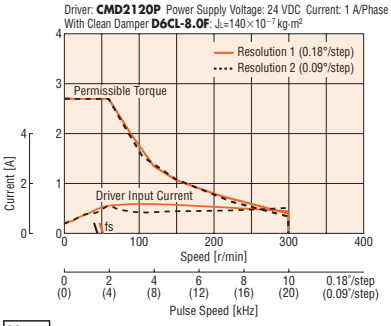
PKP264U10A2-SG7.2/PKP264U10B2-SG7.2



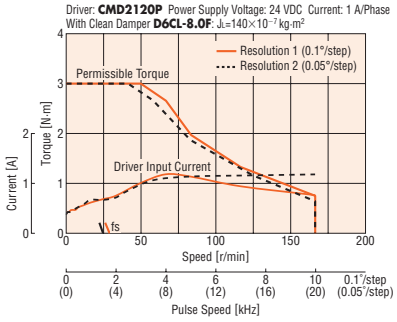
PKP264U10A2-SG9/PKP264U10B2-SG9



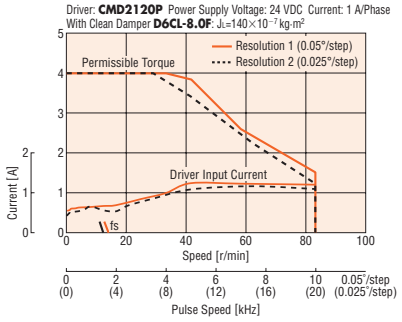
PKP264U10A2-SG10/PKP264U10B2-SG10



PKP264U10A2-SG18/PKP264U10B2-SG18



PKP264U10A2-SG36/PKP264U10B2-SG36



Note

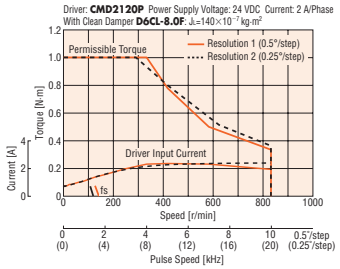
● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

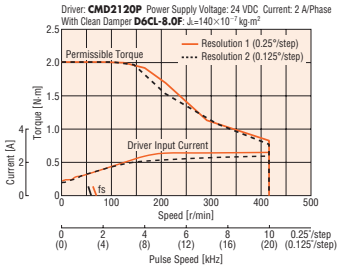
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

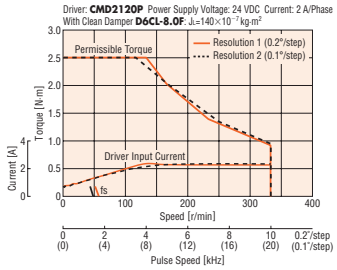
PKP264U20A2-SG3.6/PKP264U20B2-SG3.6



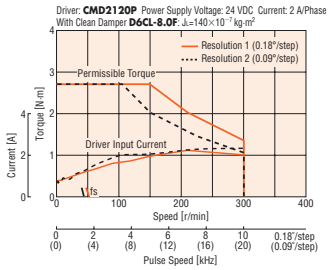
PKP264U20A2-SG7.2/PKP264U20B2-SG7.2



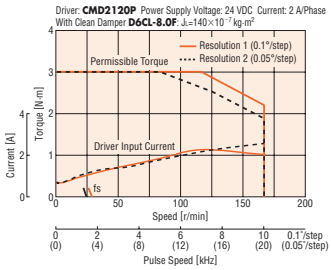
PKP264U20A2-SG9/PKP264U20B2-SG9



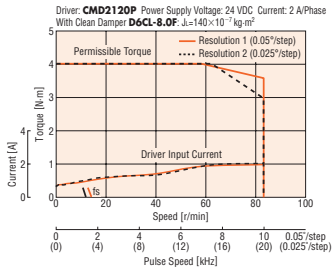
PKP264U20A2-SG10/PKP264U20B2-SG10



PKP264U20A2-SG18/PKP264U20B2-SG18



PKP264U20A2-SG36/PKP264U20B2-SG36



Note

- 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.
- If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

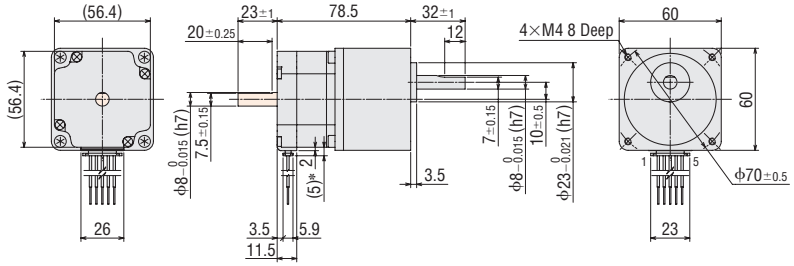
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP264U10A2-SG□	**3.6**, **7.2**, **9**, **10**, **18**, **36**	0.76	B1341
PKP264U10B2-SG□			
PKP264U20A2-SG□			
PKP264U20B2-SG□			

- The box □ in the product name indicates a number representing the gear ratio.

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



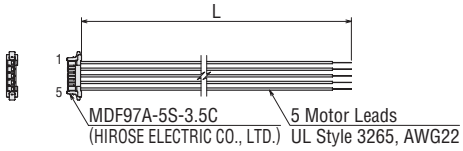
*With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06E	0.6
LC2U10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A②

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

SH Geared Type with Encoder

Frame Size 60 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Value Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Back lash arcmin	Recommended Driver Product Name*
PKP264D28A2-SG3.6-R3F□	1	140×10^{-7}	2.8	0.92	0.33	0.81	0.5°	3.6	1	0~833	70 (1.17°)	**CVD228BR-K**
PKP264D28A2-SG7.2-R3F□	2						0.25°	7.2	2	0~416	45 (0.75°)	
PKP264D28A2-SG9-R3F□	2.5						0.2°	9	2.5	0~333		
PKP264D28A2-SG10-R3F□	2.7						0.18°	10	2.7	0~300		
PKP264D28A2-SG18-R3F□	3						0.1°	18	3	0~166		
PKP264D28A2-SG36-R3F□	4						0.05°	36	4	0~83		

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

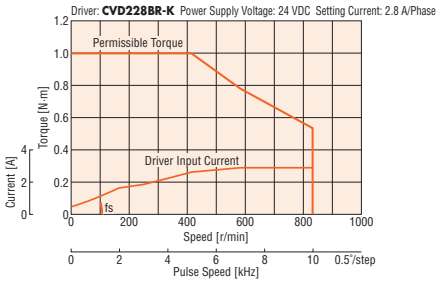
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

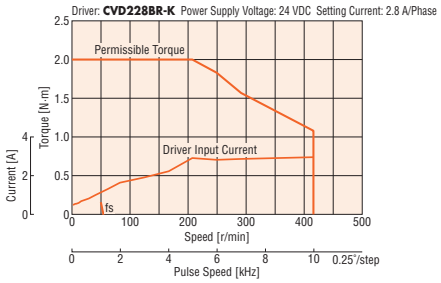
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

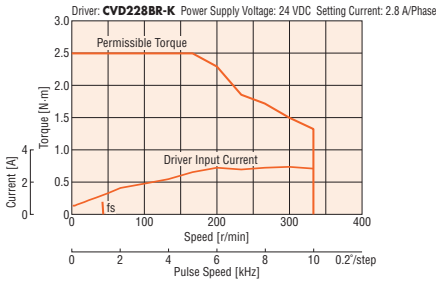
PKP264D28A2-SG3.6-R3F□



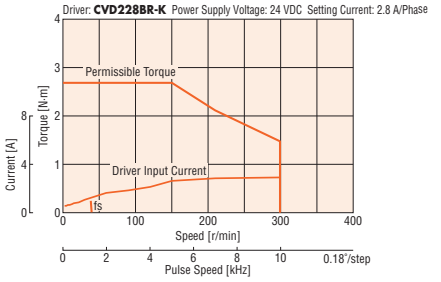
PKP264D28A2-SG7.2-R3F□



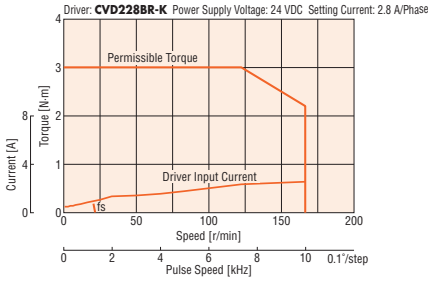
PKP264D28A2-SG9-R3F□



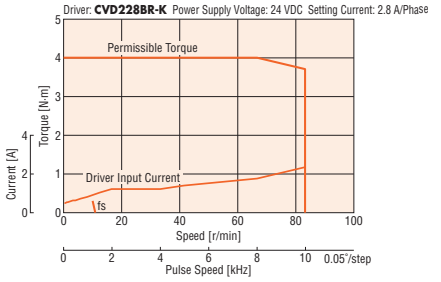
PKP264D28A2-SG10-R3F□



PKP264D28A2-SG18-R3F□



PKP264D28A2-SG36-R3F□



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

Dimensions (Unit: mm)

Motor

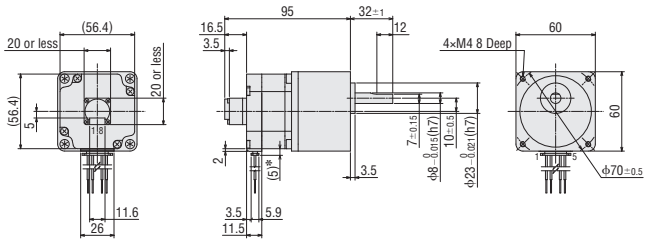
2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP264D28A2-SG□-R3F■	**3.6, 7.2, 9, 10, 18, 36**	0.78	B1509

● A number indicating the gear ratio is specified where the box □ is located in the product name.

● Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

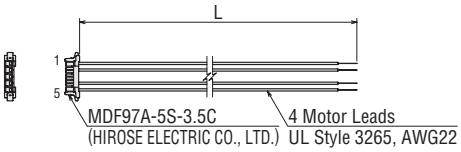


✻With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

● Refer to the motor inner wiring page for an inner wiring diagram of the motor.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

SH Geared Type Frame Size 90 mm (Unipolar 6 lead wires)

Lead Wire Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min
PK296□1-SG3.6	2.5	1400×10^{-7}	1.5	3.3	2.2	7.7	0.5°	3.6	2.5	0 – 500
PK296□2-SG3.6			3	1.4	0.48	1.5				
PK296□1-SG7.2	5		1.5	3.3	2.2	7.7	0.25°	7.2	5	0 – 250
PK296□2-SG7.2			3	1.4	0.48	1.5				
PK296□1-SG9	6.3		1.5	3.3	2.2	7.7	0.2°	9	6.3	0 – 200
PK296□2-SG9			3	1.4	0.48	1.5				
PK296□1-SG10	7		1.5	3.3	2.2	7.7	0.18°	10	7	0 – 180
PK296□2-SG10			3	1.4	0.48	1.5				
PK296□1-SG18	9		1.5	3.3	2.2	7.7	0.1°	18	9	0 – 100
PK296□2-SG18			3	1.4	0.48	1.5				
PK296□1-SG36	12		1.5	3.3	2.2	7.7	0.05°	36	12	0 – 50
PK296□2-SG36			3	1.4	0.48	1.5				

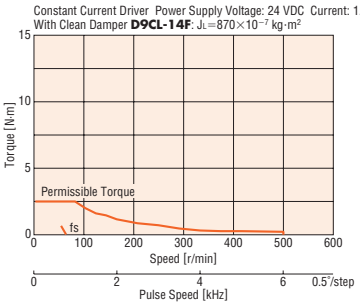
- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).
- Backlash value is approximately 1 to 2°.

Note

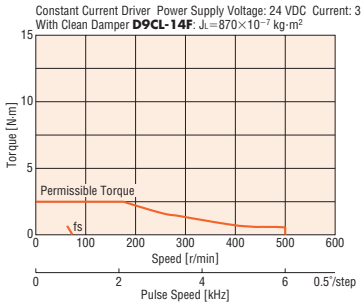
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

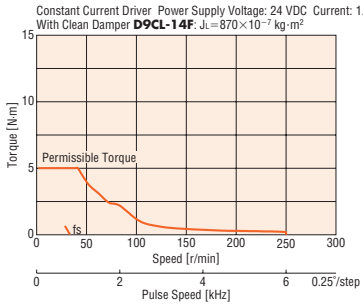
PK296A1-SG3.6/PK296B1-SG3.6



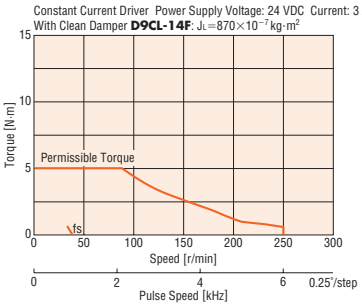
PK296A2-SG3.6/PK296B2-SG3.6



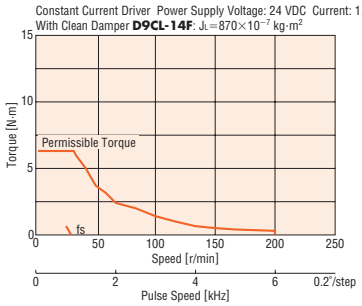
PK296A1-SG7.2/PK296B1-SG7.2



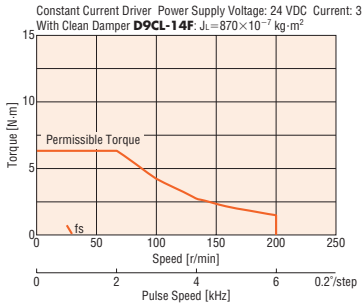
PK296A2-SG7.2/PK296B2-SG7.2



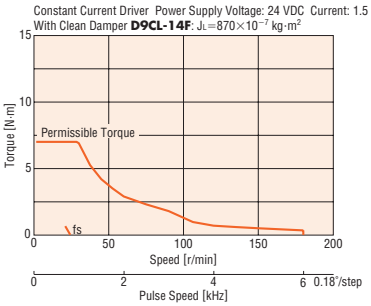
PK296A1-SG9/PK296B1-SG9



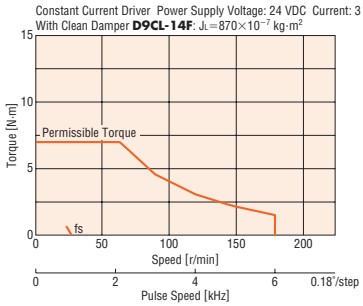
PK296A2-SG9/PK296B2-SG9



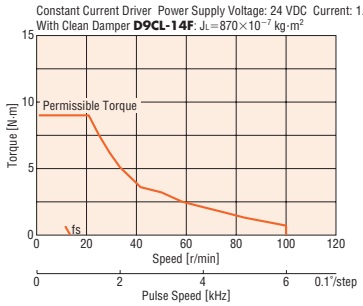
PK296A1-SG10/PK296B1-SG10



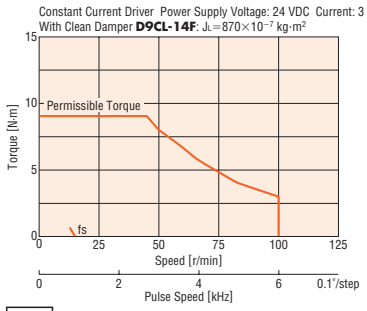
PK296A2-SG10/PK296B2-SG10



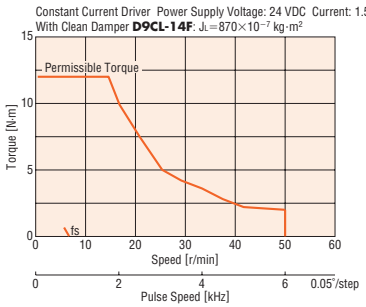
PK296A1-SG18/PK296B1-SG18



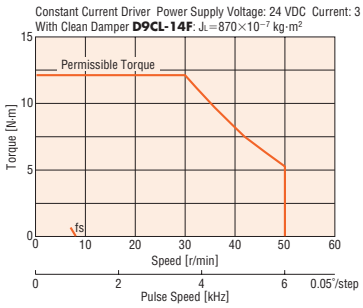
PK296A2-SG18/PK296B2-SG18



PK296A1-SG36/PK296B1-SG36



PK296A2-SG36/PK296B2-SG36



Note

- 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.
- If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

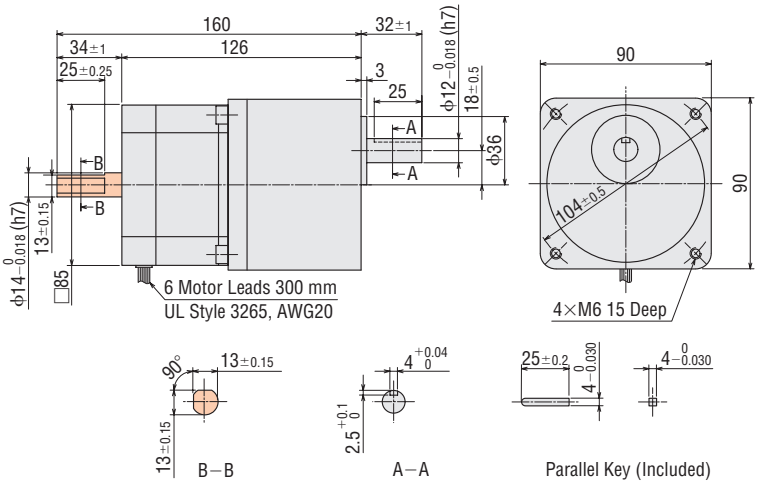
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PK296A1-SG□	**3.6**, **7.2**, **9**, **10**, **18**, **36**	2.8	B242
PK296B1-SG□			
PK296A2-SG□			
PK296B2-SG□			

- The box □ in the product name indicates a number representing the gear ratio.



- These dimensions are for double shaft motors. For single shaft motors, ignore the shaded areas.
- Included

  Installation Screws: M6 length 18 mm × 4

Inner Wiring Diagram of Motor

Wiring Diagram No.: Model C⑦

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

CS Geared Type Frame Size 28 mm (Bipolar 4 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP223D15□-CS10	0.4	9×10^{-7}	1.5	1.8	1.2	0.74	0.18	10	0.4	0 – 600	90 (1.5°)	**CVD215BR-K**
PKP223D15□-CS15	0.6						0.12	15	0.6	0 – 400		
PKP223D15□-CS20	0.8						0.09	20	0.8	0 – 300		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

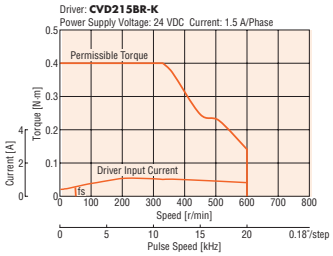
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

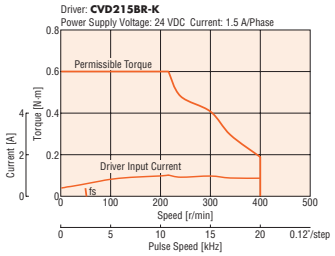
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

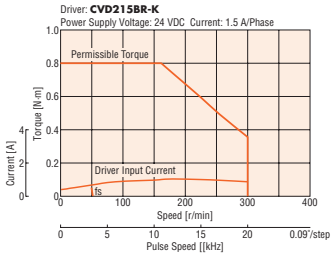
PKP223D15A-CS10/PKP223D15B-CS10



PKP223D15A-CS15/PKP223D15B-CS15



PKP223D15A-CS20/PKP223D15B-CS20



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

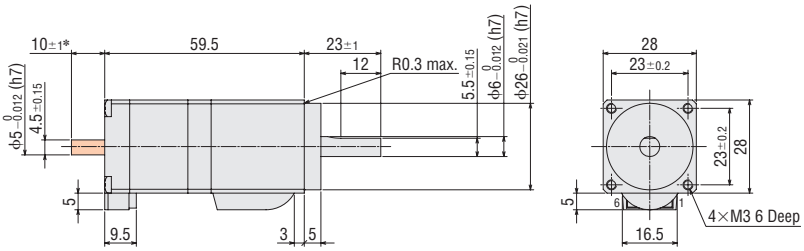
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP223D15A-CS□	**10, 15, 20**	0.17	B1524A
PKP223D15B-CS□			B1524B

● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors
Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



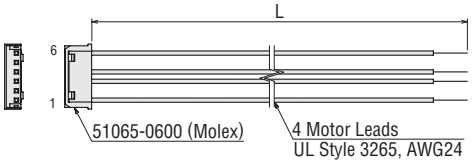
*The length of the shaft flat on the double shaft model is 10±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06A	0.6
LC2B10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B③

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

CS Geared Type Frame Size 28 mm (Unipolar 6 lead wires)

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP223U09□-CS10	0.4	9×10^{-7}	0.95	2.66	2.8	1	0.18	10	0.4	0 – 600	90 (1.5°)	**CMD2109P**
PKP223U09□-CS15	0.6						0.12	15	0.6	0 – 400		
PKP223U09□-CS20	0.8						0.09	20	0.8	0 – 300		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

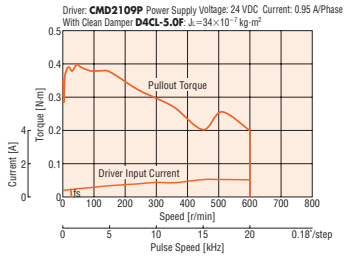
*See "Drivers for 2-Phase / 5-Phase Motors" page for details on the recommended drivers.

Note

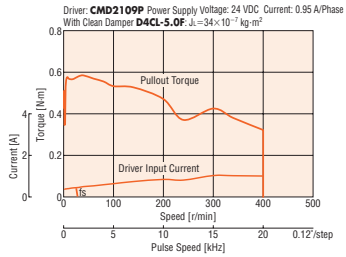
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

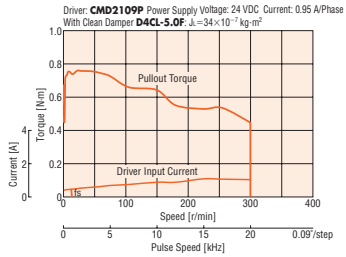
PKP223U09A-CS10/PKP223U09B-CS10



PKP223U09A-CS15/PKP223U09B-CS15



PKP223U09A-CS20/PKP223U09B-CS20



Note

● 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.

● If there is a "clean damper" entry in the speed – torque characteristics, the data is for a double shaft motor when a clean damper is equipped.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

Dimensions (Unit: mm)

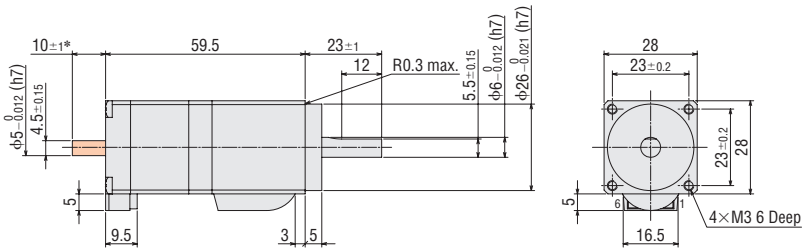
Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP223U09A-CS□	**10, 15, 20**	0.17	B1524A
PKP223U09B-CS□			B1524B

● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors
Connector Housing: 51065-0600 (Molex)
Contact: 50212-8100 (Molex)
Crimp Tool: 57176-5000 (Molex)



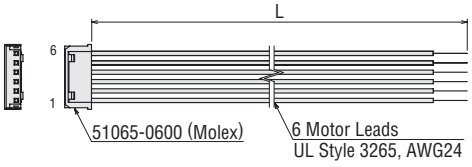
*The length of the shaft flat on the double shaft model is 10±0.25.

● These dimensions are for double shaft motors.
For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2U06A	0.6
LC2U10A	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model B④

● See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

CS Geared Type Frame Size 42 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Recommended Driver Product Name*
PKP243D15□2-CS5	0.5	37×10^{-7}	1.5	0.83	0.55	0.77	0.36°	5	0.5	0 – 600	**CVD223FBR-K**
PKP243D23□2-CS5			2.3	0.87	0.38	0.41					
PKP243D15□2-CS10	1		1.5	0.83	0.55	0.77	0.18°	10	1	0 – 300	
PKP243D23□2-CS10			2.3	0.87	0.38	0.41					
PKP243D15□2-CS15	1.5		1.5	0.83	0.55	0.77	0.12°	15	1.5	0 – 200	
PKP243D23□2-CS15			2.3	0.87	0.38	0.41					
PKP243D15□2-CS20	2		1.5	0.83	0.55	0.77	0.09°	20	2	0 – 150	
PKP243D23□2-CS20			2.3	0.87	0.38	0.41					

- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).
- The backlash is 1.5° for the gear ratio 5 and 1° for other gear ratios. (Reference value).

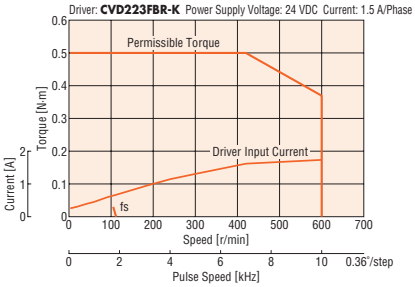
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

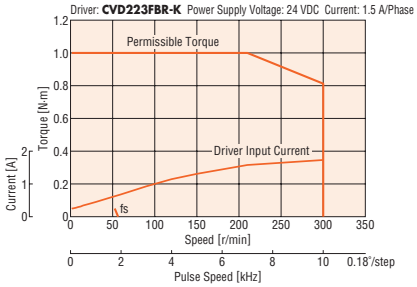
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

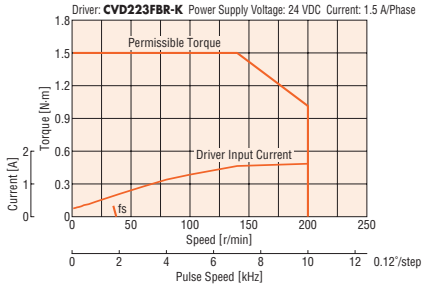
PKP243D15A2-CS5/PKP243D15B2-CS5



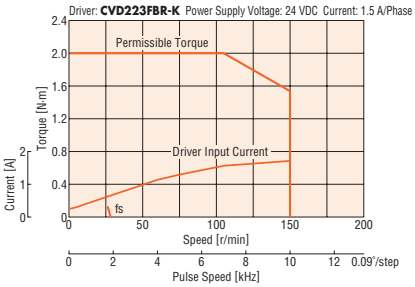
PKP243D15A2-CS10/PKP243D15B2-CS10



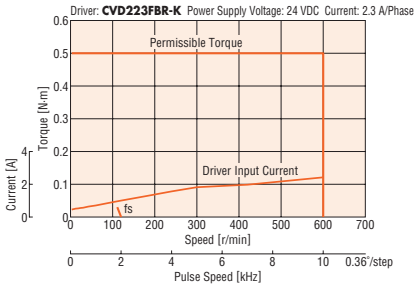
PKP243D15A2-CS15/PKP243D15B2-CS15



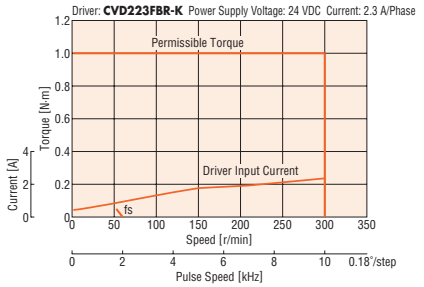
PKP243D15A2-CS20/PKP243D15B2-CS20



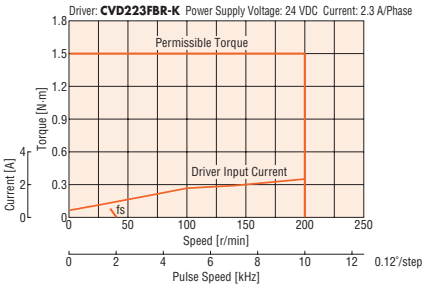
PKP243D23A2-CS5/PKP243D23B2-CS5



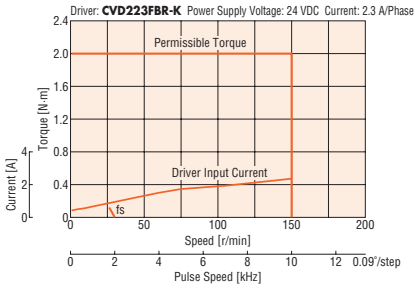
PKP243D23A2-CS10/PKP243D23B2-CS10



PKP243D23A2-CS15/PKP243D23B2-CS15



PKP243D23A2-CS20/PKP243D23B2-CS20



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same when RS-485 communication type driver is used in combination.

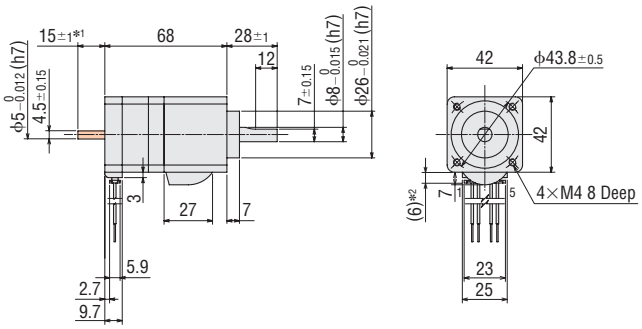
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP243D15A2-CS□	**5**, **10**, **15**, **20**	0.4	B1510A
PKP243D15B2-CS□			B1510B
PKP243D23A2-CS□			B1510A
PKP243D23B2-CS□			B1510B

- The box □ in the product name indicates a number representing the gear ratio.
- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD.)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



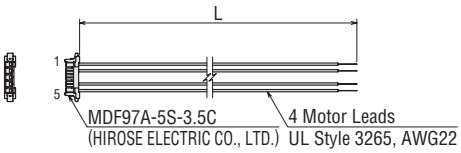
*1 The length of the shaft flat on the double shaft model is 15±0.25.
*2 With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

CS Geared Type Frame Size 60 mm (Bipolar 4 lead wires)

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP264D14□2-CS5	1.3	140×10^{-7}	1.4	2	1.4	3.1	0.36	5	1.3	0 – 600	70 (1.17°)	**CVD228BR-K**
PKP264D28□2-CS5			2.8	0.92	0.33	0.81						
PKP264D14□2-CS10	2.7		1.4	2	1.4	3.1	0.18	10	2.7	0 – 300	45 (0.75°)	
PKP264D28□2-CS10			2.8	0.92	0.33	0.81						
PKP264D14□2-CS15	4		1.4	2	1.4	3.1	0.12	15	4	0 – 200		
PKP264D28□2-CS15			2.8	0.92	0.33	0.81						
PKP264D14□2-CS20	4.5		1.4	2	1.4	3.1	0.09	20	4.5	0 – 150		
PKP264D28□2-CS20			2.8	0.92	0.33	0.81						

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

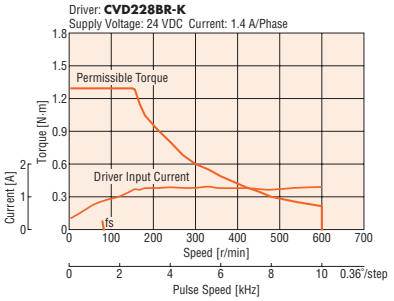
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

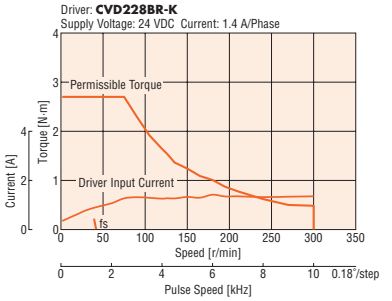
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

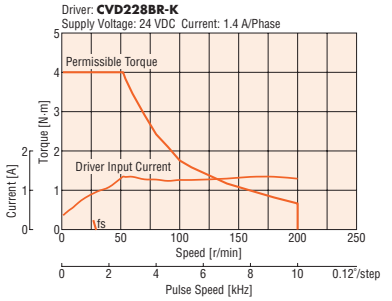
PKP264D14A2-CS5/PKP264D14B2-CS5



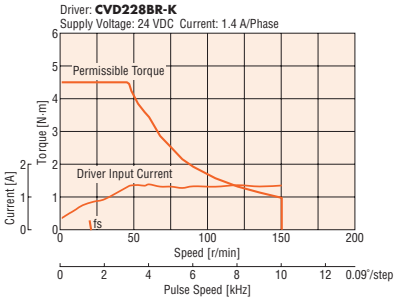
PKP264D14A2-CS10/PKP264D14B2-CS10



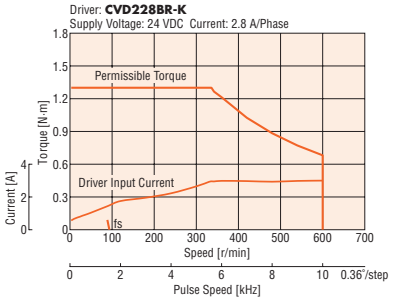
PKP264D14A2-CS15/PKP264D14B2-CS15



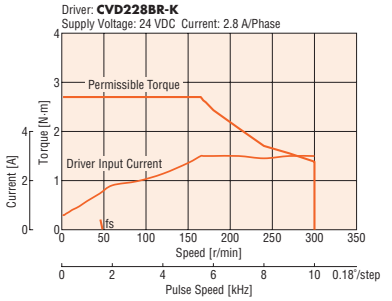
PKP264D14A2-CS20/PKP264D14B2-CS20



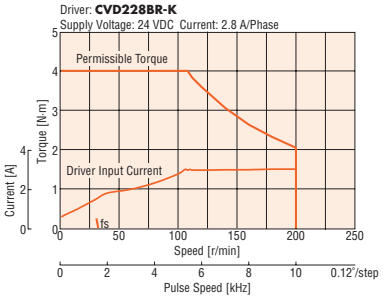
PKP264D28A2-CS5/PKP264D28B2-CS5



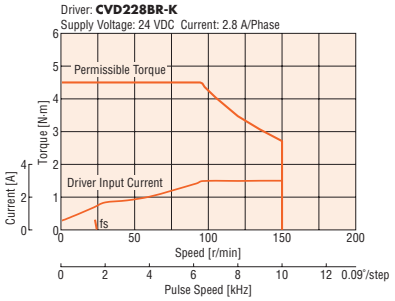
PKP264D28A2-CS10/PKP264D28B2-CS10



PKP264D28A2-CS15/PKP264D28B2-CS15



PKP264D28A2-CS20/PKP264D28B2-CS20



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.

● The characteristics are the same when RS-485 communication type driver is used in combination.

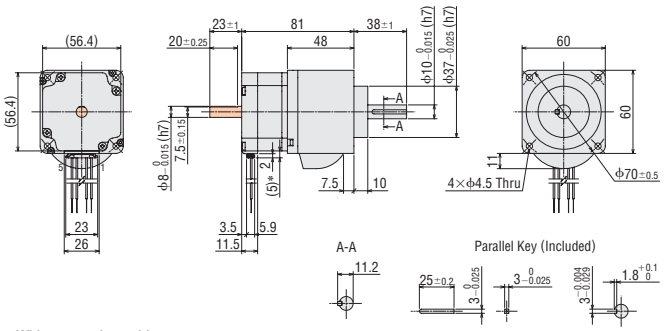
Dimensions (Unit: mm)

Motors

2D & 3D CAD

Product Name	Gear Ratio	Mass kg	2D CAD
PKP264D14A2-CS□	**5**, **10**, **15**, **20**	0.86	B1523A
PKP264D14B2-CS□			B1523B
PKP264D28A2-CS□			B1523A
PKP264D28B2-CS□			B1523B

- The box □ in the product name indicates a number representing the gear ratio.
- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD.)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD,)
  Crimp Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)



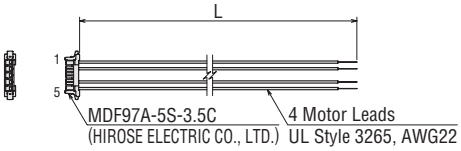
✻With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cables (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC2B06E	0.6
LC2B10E	1



Inner Wiring Diagram of Motor

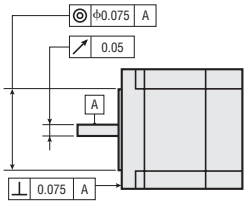
Wiring Diagram No.: Model A①

- See "Inner Wiring Diagram of Motor" page for the inner wiring diagram of the motor.

General Specifications

Specifications		Motor
Thermal Class		130 (B)
Insulation Resistance		The measured value is 100 MΩ min. when a 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.
Dielectric Strength		No abnormalities are observed, even when applying voltage between the windings and the case for 1 minute under normal ambient temperature and humidity with the following conditions. · Frame size 42 mm max., **PKP262**: 0.5 kVAC 50/60 Hz · Frame size 56.4 mm or more: 1.0 kVAC 50/60 Hz · **PKP29**□: 1.5 kVAC 50/60 Hz
Operating Environment (In operation)	Ambient Temperature	−10 =≤ +50˚C (Non-freezing) [0 =≤ +40˚C for Flat Type with Harmonic Gear]
	Ambient Humidity	85% or less (Non-Condensing)
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.
Temperature Rise		Winding temperature rise 80˚C max. (Based on Oriental Motor's internal measurement conditions)
Stop Position Accuracy*1		± 3 arcmin (±0.05˚) [**PKP21**□, **PKP242** and **PKP262** are ±5 arcmin (±0.083˚), **PK26**□**J** and **PK26**□**JD** are ±2 arcmin (±0.034˚)]
Shaft Runout		0.05T.I.R. (mm)*4
Radial Play*2		0.025 mm Max. (Load 5 N)
Axial Play*3		0.075 mm Max. (10 N load) [**PKP21**□ ios 1 N load, **PKP22**□, **PKP242** and **PKP262** are 2.5 N load]
Concentricity of Installation Pilot to the Shaft		0.075T.I.R. (mm)*4
Perpendicularity of Installation Surface to the Shaft		0.075T.I.R. (mm)*4

*1 This value is for a full step under no load. (The value changes with the size of the load.)
*2 Radial Play: Displacement in shaft position in the radial direction when a 5 N load is applied perpendicular to the tip of the motor shaft.
*3 Axial Play: Displacement in shaft position in the axial direction when a 10 N (**PKP21**□ and is 1 N, **PKP22**□, **PKP242** and **PKP262** are 2.5 N).
*4 T. I. R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated once around the reference axis center.



Note

● Separate the motor and driver when measuring insulation resistance or performing a dielectric voltage withstand test.
Also, do not conduct these tests on the motor encoder section.

Electromagnetic Brake Specifications

Product Name		PKP22	PKP23·PKP24	PKP26	PKP26□M2
Type		Power Off Activated Type			
Power Supply Voltage		24 VDC±5%			
Power Supply Current	A	0.05	0.07	0.23	0.18
Static Friction Torque	N·m	0.08	0.3	1.5	0.8
Brake Activation Time	ms	20*			
Brake Release Time	ms	50*			
Time Rating		Continuous			

*The value is when the included surge suppressor (varistor) is used. [Recommended varistor: Z15D121 (Manufactured by SEMITEC)]

Encoder Specifications

Encoder Product Name	R3E	R3F	R3J	R3EL	R3FL	R3JL
Resolution (P/R)	200	400	1000	200	400	1000
Angular Accuracy	±0.36˚ (Motor output shaft conversion value)					
Output Circuit Type	Voltage Output			Line Driver Output*		
Output Type	Incremental					
Output Signals	A phase, B phase, Z phase (3 ch)					
Power Supply Voltage	5 VDC±10%					
Current	45 mA max.			30 mA max.		

*26C31 or Equivalent

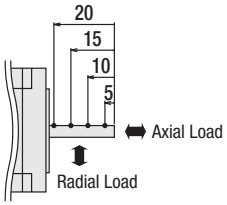
Permissible Radial Load and Permissible Axial Load

Unit: N

Type	Motor Frame Size	Product Name	Gear Ratio	Permissible Radial Load Distance from Shaft End [mm] 0	5	10	15	20	Permissible Axial Load
Standard Type	13 mm	**PKP203**	–	5	6	–	–	–	1
	20 mm	**PKP213**, **PKP214**		12	15	–	–	–	3
	28 mm	**PKP223**, **PKP225**		25	34	52	–	–	5
	35 mm	**PKP233**, **PKP235**		20	25	34	52	–	10
	42 mm	**PKP243**, **PKP244**, **PKP245**, **PKP246**		20	25	34	52	–	10
		PKP243□2, **PKP244□2**, **PKP245□2**, **PKP246□2**		35	44	58	85	–	15
	50 mm	**PKP254**, **PKP256**, **PKP258**		61	73	90	110	–	20
	56.4 mm	**PKP264**, **PKP266**, **PKP268**		61	73	90	110	160	20
		PKP264□2, **PKP266□2**, **PKP268□2**		90	100	130	180	270	30
	60 mm	**PK264J**, **PK266J**, **PK267J**, **PK269J**		50	60	75	100	150	20
	85 mm	**PKP296**, **PKP299**, **PKP2913**		260	290	340	390	480	60
High-Resolution Type	28 mm	**PKP223**, **PKP225**	–	25	34	52	–	–	5
	42 mm	**PKP243**, **PKP244**		20	25	34	52	–	10
		PKP243□2, **PKP244□2** **PKP245□2**, **PKP246□2**		35	44	58	85	–	15
	56.4 mm	**PKP264**, **PKP266**, **PKP268**		61	73	90	110	160	20
		PKP264□2, **PKP266□2**, **PKP268□2**		90	100	130	180	270	30
Flat Type · Standard	42 mm	**PKP242**	–	20	25	34	–	–	5
	60 mm	**PKP262**							
Flat Type with Harmonic Gear	51 mm	**PKP242**	**50**, **100**	–	–	–	–	–	200
	61 mm	**PKP262**							450
SH Geared Type	28 mm	**PKP223**	**7.2**, **9**, **10**, **18**, **36**	15	17	20	23	–	10
	42 mm	**PKP243**	**3.6**, **7.2**, **9**, **10**, **18**, **36**	10	15	20	30	–	15
	60 mm	**PKP264**	**3.6**, **7.2**, **9**, **10**	30	40	50	60	70	30
			18, **36**	80	100	120	140	160	
	90 mm	**PK296**	**3.6**, **7.2**, **9**, **10**, **18**, **36**	220	250	300	350	400	100
CS Geared Type	28 mm	**PKP223**	**10**, **15**, **20**	30	37	50	73	–	30
	42 mm	**PKP243**	**5**, **10**, **15**, **20**	59	68	80	96	–	40
	60 mm	**PKP264**		160	170	200	220	260	70

Radial Load and Axial Load

Distance from Shaft End [mm]



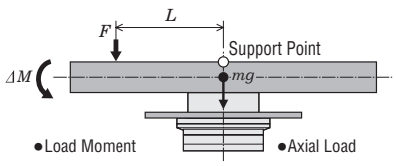
Permissible Moment Load of Flat Type with Harmonic Gear

When an eccentric load is applied to the output flange-installation surface, the load moment acts on the bearing.
Use the following formula to check whether the axial load and load moment are within specifications.

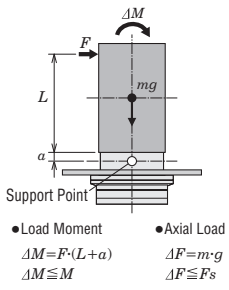
Product Name	Gear Ratio	Permissible Axial Load (N)	Permissible Moment Load (N·m)	Constant a (m)
PKP242-H□	**50**, **100**	200	8.5	0.0129
PKP262-H□S	**50**, **100**	450	10.1	0.0140

m: Load mass (kg)
g: Gravitational acceleration (m/s^2)
F: External force (N)
L: Overhung distance (m)
a: Constant (m)
⊿F: Load on output flange surface (N)
Fs: Permissible axial load (N)
⊿M: Load moment (N·m)
M: Permissible moment load (N·m)

Example 1: An external force F (N) is applied at L (m) overhang position in a horizontal direction from the center of the output flange

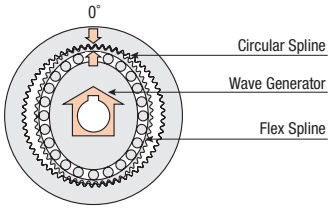


Example 2: An external force F (N) is applied at L (m) overhang position in a vertical direction from the output flange-installation surface



Details of the Flat Type with Harmonic Gear

◇Principle and Structure



◇Details of the Accuracy

Unlike the conventional spur gear gearhead, the harmonic gear has no backlash. The harmonic gear has many teeth in simultaneous meshing engagement, and is designed to average out the effects of tooth pitch error and cumulative pitch error on rotation accuracy to ensure high positioning accuracy. Also, harmonic gears have high gear ratio, so that the torsion when the load torque is applied to the output shaft is much smaller than a single motor and other geared motor, and the rigidity is high. High rigidity is less subject to load fluctuation and enables stable positioning. When the high positioning accuracy and rigidity are required, refer to the following characteristics.

◇Angular Transmission Accuracy

Angular transmission error is the difference between the theoretical rotation angle of the output shaft, as calculated from the input pulse count, and actual rotation angle. Represented as the difference between the min. value and max. value in the set of measurements taken for a single rotation of the output shaft starting from an arbitrary position.

Product Name	Angular Transmission Accuracy [arcmin]
PKP242-H□	2 (0.034°)
PKP262-H□S	1.5 (0.025°)

●Values in no-load condition (reference of gear part)

◇Torque – Torsion Characteristics

In actual applications, there is always frictional load, and displacement is produced as a result of this load. If the frictional load is constant, the displacement will be constant for unidirectional operation. However, in bidirectional operation, double the displacement is produced over a round trip. This displacement can be estimated from the following torque – torsion characteristics.

This displacement occurs when an external force is applied as the gear is stopped, or when the gear is driven under a frictional load. The slope can be approximated with the spring constant in the following 3 classes, depending on the size of the load torque, and can be estimated through calculation.

1. Load torque T_L is T_1 max.

$$\theta = \frac{T_L}{K_1} \text{ [min]}$$

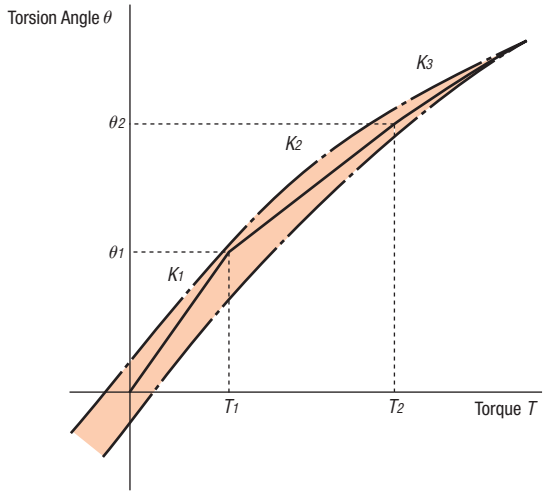
2. Load torque T_L exceeds T_1 and is T_2 max.

$$\theta = \theta_1 + \frac{T_L - T_1}{K_2} \text{ [min]}$$

3. Load torque T_L exceeds T_2

$$\theta = \theta_2 + \frac{T_L - T_2}{K_3} \text{ [min]}$$

The torsion angle of the harmonic gear alone is calculated according to the size of the load torque.



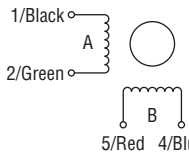
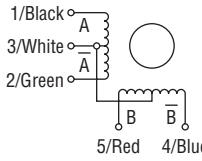
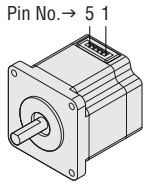
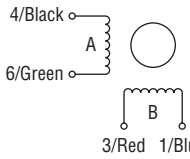
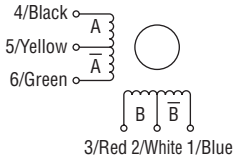
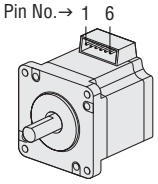
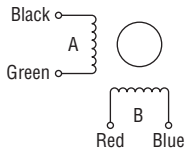
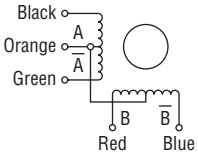
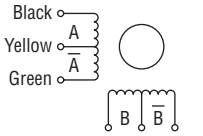
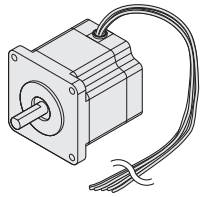
Torsion Angle – Torque Characteristics

Values for Determining Torsion Angle

Item / Product Name	Gear Ratio	T_1 N·m	K_1 N·m/min	θ_1 min	T_2 N·m	K_2 N·m/min	θ_2 min	K_3 N·m/min
PKP242-H50	50	0.29	0.13	2.3	0.75	0.19	4.5	0.24
PKP242-H100	100	0.29	0.26	1.1	0.75	0.29	2.8	0.35
PKP262-H50S	50	0.8	0.64	1.2	2	0.87	2.8	0.93
PKP262-H100S	100	0.8	0.79	1	2	0.99	2.1	1.28

Motor Inner Wiring Diagram and Rotation Direction

Inner Wiring Diagram

Motor Model Type	Connection Diagram/Pin Arrangement
Model A Mini-Connector Type	① Bipolar (4 Lead Wires)  ② Unipolar (5 Lead Wires)  ● The colors in the wiring diagram are the colors of the separately sold connection cables. · Pin Arrangement 
Model B Connector Type	③ Bipolar (4 Lead Wires)  ④ Unipolar (6 Lead Wires)  ● The colors in the wiring diagram are the colors of the separately sold connection cables. · Pin Arrangement 
Model C Lead Wire Type	⑤ Bipolar (4 Lead Wires)  ⑥ Unipolar (5 Lead Wires)  ⑦ Unipolar (6 Lead Wires)  · Pin Arrangement  Motor lead wire colors: Blue, white, red, black, yellow, green

Rotation Direction

When excited in the order shown below, it rotates in a clockwise direction viewed from the output shaft direction.

•Bipolar

STEP	Black	Green	Red	Blue
1	–	+	+	–
2	–	+	–	+
3	+	–	–	+
4	+	–	+	–

•Unipolar

STEP	A	$\overline{A}$	B	$\overline{B}$
1	ON		ON	
2		ON	ON	
3		ON		ON
4	ON			ON

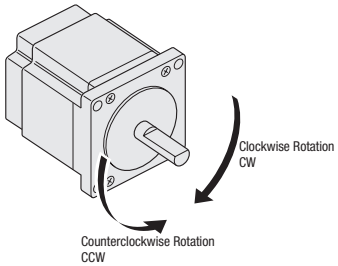
Geared Motor Rotation Direction

The rotation direction of the output gear shaft relative to the standard type motor output shaft varies depending on the gear type and gear ratio.

Please check the following table.

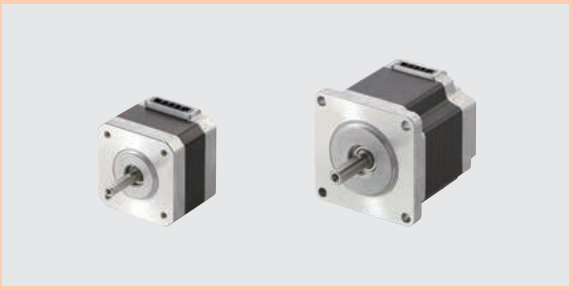
Geared Type		Gear Ratio	Rotation Direction when Viewed from the Output Shaft Side of the Motor
SH Geared Type	Frame Size 28 mm	**7.2**, **36**	Same Direction
		9, **10**, **18**	Opposite Direction
	Frame Size 42 mm, 60 mm	**3.6**, **7.2**, **9**, **10**	Same Direction
		18, **36**	Opposite Direction
	Frame Size 90 mm	**3.6**, **7.2**, **9**, **10**, **18**	Same Direction
		36	Opposite Direction
CS Geared Type		**5**, **10**, **15**, **20**	Same Direction
Flat Type with Harmonic Gears		**50**, **100**	Opposite Direction

Standard Type Motor



5-Phase Stepper Motors

PKP Series



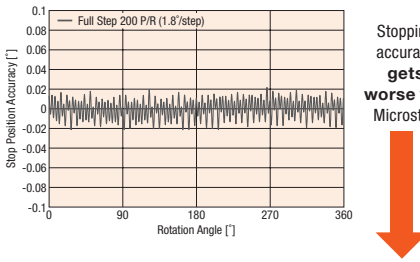
This is a high torque and low vibration stepper motor with a basic step angle of 0.72˚ (resolution of 500 steps per revolution).
High Positioning accuracy is possible, as well as low vibration and reduced noise.
(A separate dedicated driver is required to operate each motor.)

Features

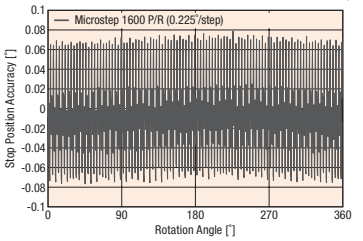
High Accuracy

Since the step angle of 5-Phase Stepper Motors in the **PKP** Series is at 0.72˚ (high-resolution type at 0.36˚) and the stopping accuracy is at ±0.05˚, highly accurate positioning is possible. In addition, the stop position accuracy controlled by a microstep driver has almost the same high accuracy as that controlled by a full-step driver.

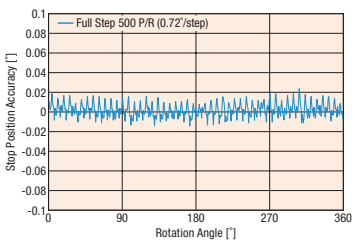
● General 2-Phase Motor



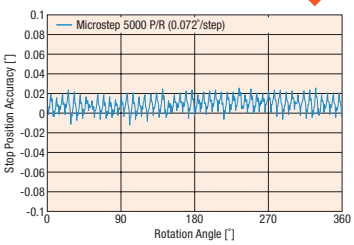
Stopping accuracy **gets worse** with Microstep



● 5-Phase **PKP** Series
(Driver: 5-phase **CVD** driver)



Stopping accuracy does **not get worse** with Microstep

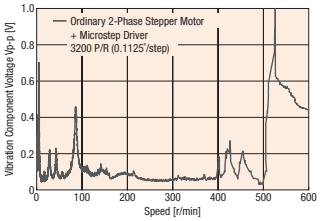


PKP Series Highly accurate positioning for 5-phase is possible

Low Vibration and Reduced Noise

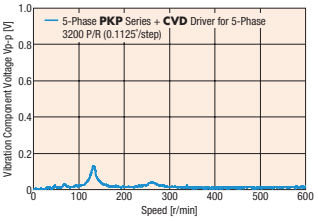
Because the basic step angle is small at 0.72˚ (0.36˚ for high-resolution type), the vibrations and noise are lower than the 2-phase stepper motor with a basic step angle of 1.8˚. Also, vibrations and noise can be further reduced with the driver of the microstep drive.

● Example of 2-Phase Stepper Motor Vibration Characteristics



PKP Series Vibration characteristics for 5-phase are further improved

● Example of 5-Phase Stepper Motor Vibration Characteristics

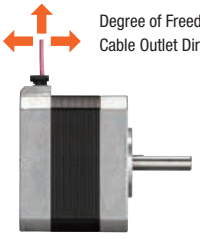


Lineup of Products Using Compact, Flat Connectors

The product line offers products that use compact, flat connectors. The degree of freedom for the motor cable outlet direction has been increased, because the outlet direction points upward.

● The connector configuration depends on the motor. Check the details in the motor dimensions.





Degree of Freedom for Motor Cable Outlet Direction Increased

Product Line

—: Not Offered in This Product Line

Type (Basic Step Angle)	Features	Frame Size					
		20 mm	28 mm	42 mm	56.4 mm	60 mm	85 mm
Standard Type (0.72°)	・Standard model ・High torque, low vibration	 ✻1					 ✻1 Lead Wire Type
High-Resolution Type (0.36°)	・Resolution double that of standard type ・Results in high positioning accuracy and reduced vibration	—	—		—		—
Standard Type with Encoder (0.72°)	・En resolution 500 P/R, A, B, Z (3 ch) signal output ・Uses compact encoder ・Encoder with superior noise resistance due to line driver (differential output) output	 ✻1	—	 ✻2		 ✻2	—
TS Geared Type (0.024° to 0.2°)	・Spur gear mechanism ・A wide variety of low gear ratios, high-speed operations ・Gear ratio types: 3.6, 7.2, 10, 20, 30	—	—		—		—

✻1 This is the conventional **PK** Series.

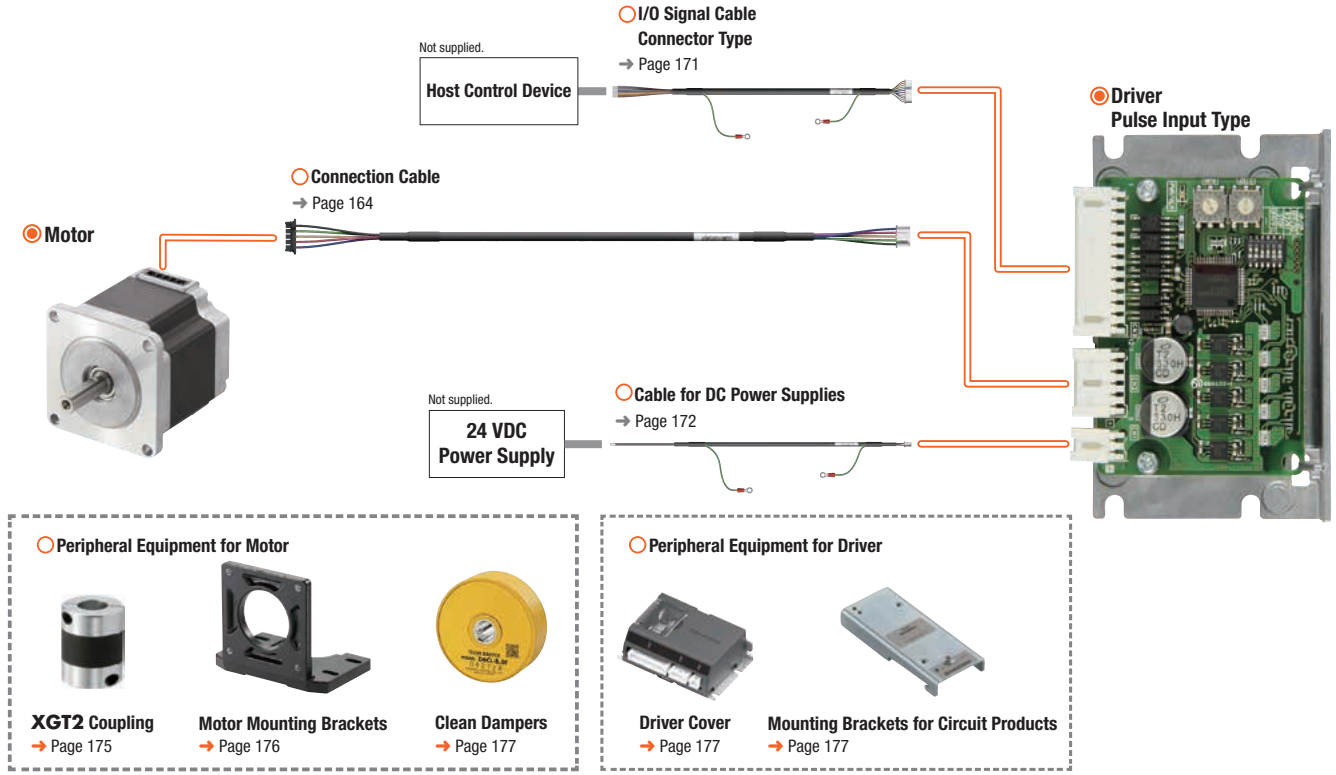
✻2 With frame sizes of 42 mm and 60 mm, a product line with resolution of 1000 P/R is also available.

System Configuration

Combination of the 5-Phase Stepper Motor **PKP** Series and the **CVD** Series Pulse Input Type Driver

An example of a system configuration using a host control device (with built-in pulse generator function) is shown below. Motors, drivers, and connection cables must be ordered individually.

◉ Required
○ Optional



Example of System Configuration

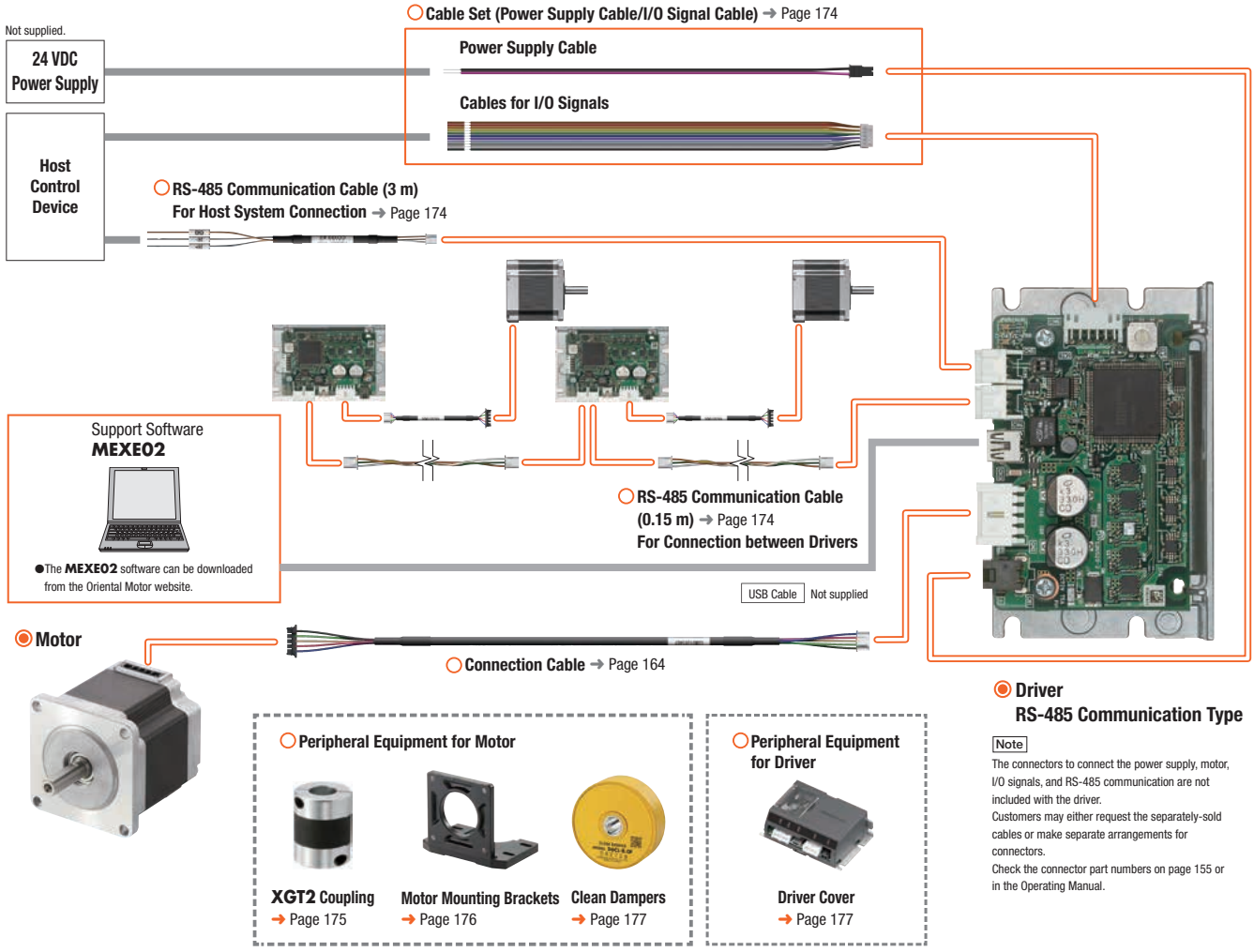
Motor		Driver		Cables				Peripheral Equipment		
	+		+	Connection Cable (1 m)	Cable for I/O Signal (1 m)	Cable for DC Power Supplies (1 m)	+	Motor Mounting Brackets	Flexible Couplings	Clean Damper
PKP566FN24B2		CVD524BR-K		CCM010V5AEF	CC12D010-2	CC02D010-2		PALW2P-5	XGT2-19C-8-8	D6CL-8.0F
◉		◉		○	○	○		○	○	○

● The system configuration shown above is an example. Other combinations are also available.

●Combination of the 5-Phase Stepper Motor **PKP** Series and the **CVD** Series RS-485 Communication Type Driver

An example of a three axis system configuration using RS-485 communication is shown below. Motors, drivers, and connection cables must be ordered individually.

◉ Required
○ Optional



◉ **Driver**
RS-485 Communication Type

Note

The connectors to connect the power supply, motor, I/O signals, and RS-485 communication are not included with the driver.
Customers may either request the separately-sold cables or make separate arrangements for connectors.
Check the connector part numbers on page 155 or in the Operating Manual.

●Example of System Configuration

Motor		Driver		Cables			Peripheral Equipment		
	+		+	Connection Cable (1 m)	RS-485 Communication Cable (3 m)	Cable Set (0.3 m)	Motor Mounting Brackets	Flexible Couplings	Clean Damper
PKP566FN24B2		CVD5BR-KR		CCM010V5AEF	CC030-RS	LHS003CC	PALW2P-5	XGT2-19C-8-8	D6CL-8.0F
◉		◉		○	○	○	○	○	○

● The system configuration shown above is an example. Other combinations are also available.

Product Number

Motor

◇Frame Size 20 mm, 85 mm

Standard Type

PK 5 1 3 P A
① ② ③ ④ ⑤ ⑧

PK 5 9 6 H N A W
① ② ③ ④ ⑥ ⑦ ⑧ ⑪

Standard Type with Encoder

PK 5 1 3 P A - R3G L
① ② ③ ④ ⑤ ⑧ ⑨ ⑩

①	Series Name	**PK**: **PK** Series
②	**5**: 5-Phase	
③	Motor Frame Size	**1**: 20 mm **9**: 85 mm
④	Motor Case Length	
⑤	Motor Classification	
⑥	Motor Type	Blank: Standard Model **H**: High Speed Specification
⑦	Number of Lead Wires	**N**: 5 Leads
⑧	Configuration	**A**: Single Shaft **B**: Double Shaft
⑨	Encoder Resolution	**R3G**: 500 P/R
⑩	Encoder Output Circuit Type	Blank: Voltage Output **L**: Line Driver Output
⑪	Cable Identification	Blank: Connector Coupled Type **W**: Lead Wire Type

◇Frame Size 28 mm, 42 mm, 56.4 mm, 60 mm

Standard Type, High-Resolution Type

PKP 5 6 6 F N 24 A 2
① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩

PKP 5 4 4 M N 18 A
① ② ③ ④ ⑥ ⑦ ⑧ ⑨

Standard Type with Encoder/High-Resolution Type with Encoder

PKP 5 6 6 F N 24 A 2 - R3G L
① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

①	Series Name	**PKP**: **PKP** Series
②	**5**: 5-Phase	
③	Motor Frame Size	**2**: 28 mm **4**: 42 mm **6**: 56.4 mm (60 mm when the motor classification is "**F**")
④	Motor Case Length	
⑤	Motor Classification	**F**: Motor Frame Size 60 mm
⑥	Motor Type	Blank: Standard Type **M**: High-Resolution Type
⑦	Number of Lead Wires	**N**: 5 Leads
⑧	Motor Winding Specifications	
⑨	Configuration	**A**: Single Shaft **B**: Double Shaft
⑩	Reference Number	
⑪	Encoder Resolution	**R3G**: 500 P/R **R3J**: 1000 P/R
⑫	Encoder Output Circuit Type	Blank: Voltage Output **L**: Line Driver Output

● Some products with a shaft diameter of ϕ6.35 mm are also available. For details, please contact your nearest Oriental Motor sales office.

TS Geared Type

PKP 5 4 3 N 18 A 2 - TS 30
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series Name	**PKP**: **PKP** Series
②	**5**: 5-Phase	
③	Motor Frame Size	**4**: 42 mm **6**: 60 mm
④	Motor Case Length	
⑤	Number of Lead Wires	**N**: 5 Leads
⑥	Motor Winding Specifications	
⑦	Configuration	**A**: Single Shaft **B**: Double Shaft
⑧	Reference Number	
⑨	Geared Type	**TS**: **TS** Geared Type
⑩	Gear Ratio	

Driver

Refer to page D-1 for details on drivers.

Connection Cable

◇Motor Connection Cable

LC 5 N 06 E
① ② ③ ④ ⑤

①	Cables	**LC**: Connector Leads
②	**5**: 5-Phase	
③	Cable Type	**N**: For 5-Phase
④	Cable Length	**06**: 0.6 m **10**: 1 m
⑤	Reference Number	

◇Encoder Connection Cable

LC E 08 A - 006
① ② ③ ④ ⑤

①	Cables	**LC**: Connector Leads
②	Cable Type	**E**: For Encoder
③	Applicable Model	**05**: For Voltage Output **08**: For Line Driver Output
④	Reference Number	
⑤	Cable Length	**006**: 0.6 m

Product Line

A connection cable is required for connector-coupled motors.
Motors, drivers, and cables are must be ordered individually. Refer to page 163 for connection cable.

Motor

◇Standard Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PK513PA		**PK513PB**	
PKP523N12A		**PKP523N12B**	
PKP525N12A		**PKP525N12B**	
PKP543N18A2		**PKP543N18B2**	
PKP544N18A2		**PKP544N18B2**	
PKP544N18A		**PKP544N18B**	
PKP545N18A2		**PKP545N18B2**	
PKP546N18A2		**PKP546N18B2**	
PKP546N18A		**PKP546N18B**	
PKP564N28A2		**PKP564N28B2**	
PKP566N28A2		**PKP566N28B2**	
PKP568N28A2		**PKP568N28B2**	
PKP564FN24A2		**PKP564FN24B2**	
PKP564FN38A2		**PKP564FN38B2**	
PKP566FN24A2		**PKP566FN24B2**	
PKP566FN38A2		**PKP566FN38B2**	
PKP569FN24A2		**PKP569FN24B2**	
PKP569FN38A2		**PKP569FN38B2**	
PK596HNAW		**PK596HNBW**	
PK599HNAW		**PK599HNBW**	
PK5913HNAW		**PK5913HNBW**	

◇Standard Type with Encoder

Product Name	List Price
PK513PA-R2GL	
PKP543N18A2-R2GL	
PKP544N18A2-R2GL	
PKP545N18A2-R2GL	
PKP546N18A2-R2GL	
PKP564N28A2-R2GL	
PKP566N28A2-R2GL	
PKP568N28A2-R2GL	
PKP564FN24A2-R2GL	
PKP564FN38A2-R2GL	
PKP566FN24A2-R2GL	
PKP566FN38A2-R2GL	
PKP569FN24A2-R2GL	
PKP569FN38A2-R2GL	

◇High-Resolution Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP544MN18A		**PKP544MN18B**	
PKP546MN18A		**PKP546MN18B**	
PKP564FMN24A		**PKP564FMN24B**	
PKP566FMN24A		**PKP566FMN24B**	
PKP569FMN24A		**PKP569FMN24B**	

◇**TS** Geared Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP544N18A2-TS3.6		**PKP544N18B2-TS3.6**	
PKP544N18A2-TS7.2		**PKP544N18B2-TS7.2**	
PKP544N18A2-TS10		**PKP544N18B2-TS10**	
PKP543N18A2-TS20		**PKP543N18B2-TS20**	
PKP543N18A2-TS30		**PKP543N18B2-TS30**	
PKP566N28A2-TS3.6		**PKP566N28B2-TS3.6**	
PKP566N28A2-TS7.2		**PKP566N28B2-TS7.2**	
PKP566N28A2-TS10		**PKP566N28B2-TS10**	
PKP564N28A2-TS20		**PKP564N28B2-TS20**	
PKP564N28A2-TS30		**PKP564N28B2-TS30**	

Driver

For details about drivers refer to page 146.

Connection Cable

For the applicable motor of the connection cable, refer to the dimension page of each product.
Some cables that can be directly connected to the recommended driver are also available. See page 163.

Included

Type \ Included		Parallel Key	Motor Installation Screw	Operating Manual
Standard Type High-Resolution Type		–	–	–
With Encoder		–	–	1 Set
TS Geared Type	Frame Size 42 mm	–	–	–
	Frame Size 60 mm	1 Piece	M4×60 P0.7 (4 Screws)	

How to Read Specifications

Maximum Holding Torque : This is the maximum holding torque (holding force) the motor has when power is supplied (at rated current) but the motor is not rotating. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque : The permissible torque represents the maximum value limited by the mechanical strength of the output gear shaft when operated at a constant speed.
Maximum Instantaneous Torque : This is the maximum torque that can be applied to the gear output shaft during acceleration/deceleration such when an inertial load is started and stopped.

Standard Type Frame Size 20 mm

Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PK513PA	**PK513PB**	0.0231	1.6×10^{-7}	0.35	3.5	0.72°	**CVD503BR-K**

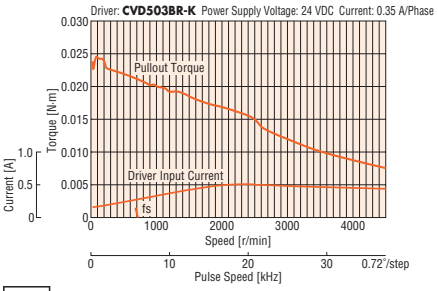
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PK513PA/PK513PB



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

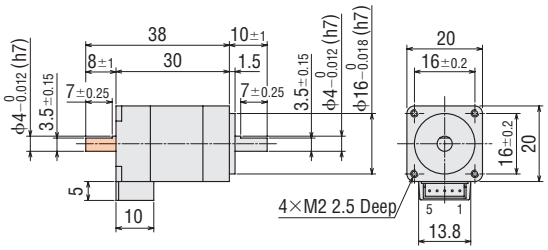
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	Mass kg	2D CAD
PK513PA	0.05	B316
PK513PB		

- Applicable Connectors
  Connector Housing: 51065-0500 (Molex)
  Contact: 50212-8100 (Molex)
  Crimping Tool: 57176-5000 (Molex)

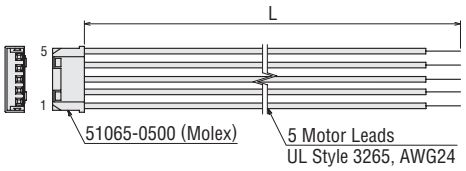


- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06A	0.6
LC5N10A	1



Motor Pin Assignments

Motor Pin Assignments: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type with Encoder Frame Size 20 mm

Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PK513PA-R2GL	0.0231	1.66×10^{-7}	0.35	3.5	0.72°	**CVD503BR-K**

- See "Common Specifications" page for encoder specifications.

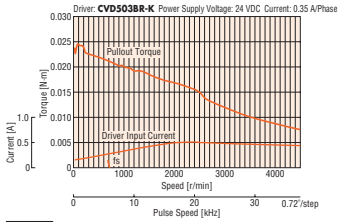
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PK513PA-R2GL



Note

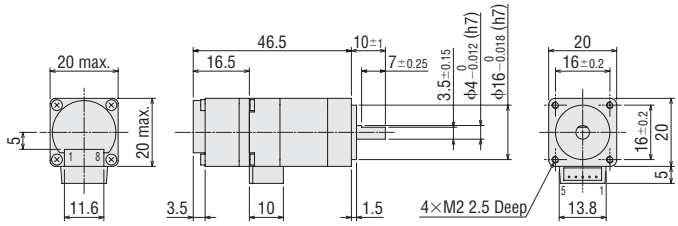
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	Mass kg	2D CAD
PK513PA-R2GL	0.06	B1069



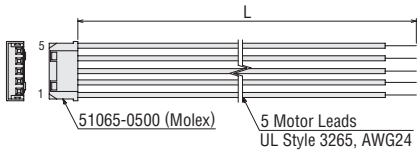
- Applicable Connectors (Molex)

	Motor	Encoder
Connector Housing	51065-0500	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

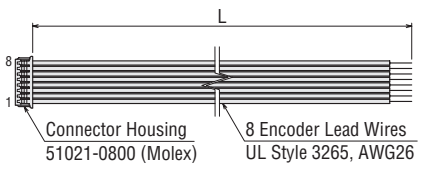
Product Name	Length L (m)
LC5N06A	0.6
LC5N10A	1



Connection Cable (Included)

◇Encoder Connection Cable

Product Name	Length L (m)
LCE08A-006	0.6



Motor Pin Assignments

Motor Pin Assignments: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type Frame Size 28 mm

Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PKP523N12A	**PKP523N12B**	0.052	9×10^{-7}	1.2	0.63	0.72°	**CVD512BR-K**
PKP525N12A	**PKP525N12B**	0.091	18×10^{-7}		1		

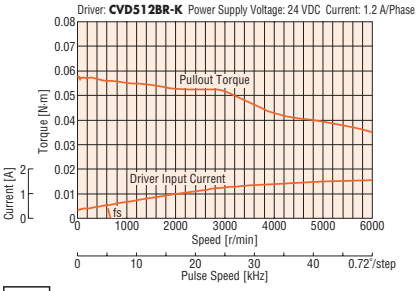
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

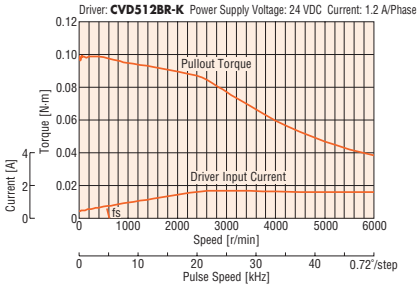
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP523N12A/PKP523N12B



PKP525N12A/PKP525N12B



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

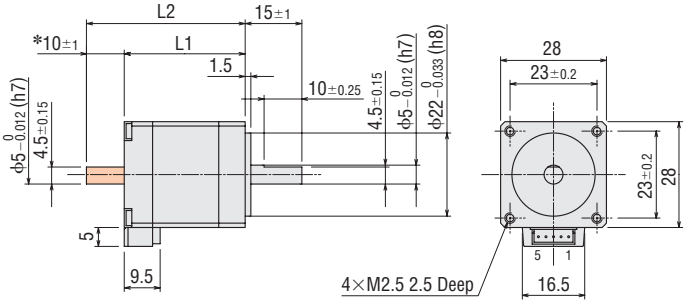
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP523N12A	32	–	0.11	B1146
PKP523N12B		42		
PKP525N12A	51.5	–	0.2	B1147
PKP525N12B		61.5		

- Applicable Connectors
  Connector Housing: 51065-0500 (Molex)
  Contact: 50212-8100 (Molex)
  Crimping Tool: 57176-5000 (Molex)



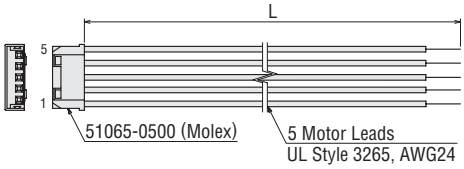
*The length of the shaft flat on the double shaft model is 10±0.25.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06A	0.6
LC5N10A	1



Motor Pin Assignments

Motor Pin Assignments: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

NEW Standard Type with Encoder Frame Size 28 mm
Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP523N03A-R3G□	0.048	9.9×10^{-7}	0.35	4.95	0.72°	**CVD503BR-K**
PKP523N07A-R3G□			0.75	1.1		**CVD507BR-K**
PKP523N12A-R3G□	0.052		1.2	0.63		**CVD512BR-K**
PKP525N03A-R3G□	0.078	19×10^{-7}	0.35	6.5		**CVD503BR-K**
PKP525N07A-R3G□			0.75	1.41		**CVD507BR-K**
PKP525N12A-R3G□	0.091		1.2	1		**CVD512BR-K**

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

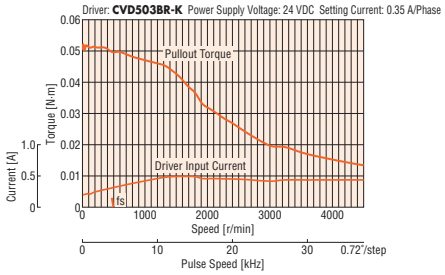
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

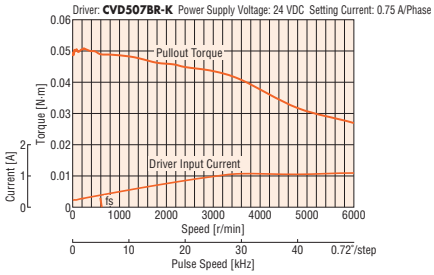
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

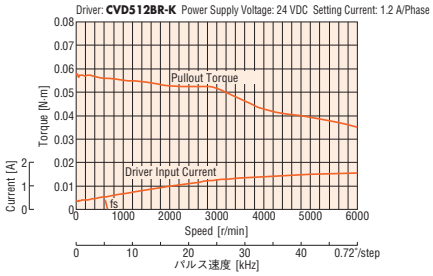
PKP523N03A-R3G□



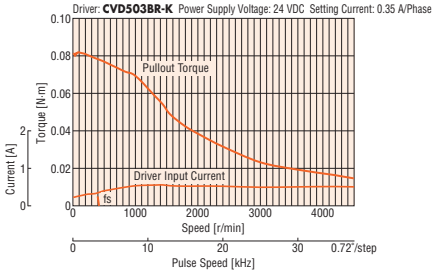
PKP523N07A-R3G□



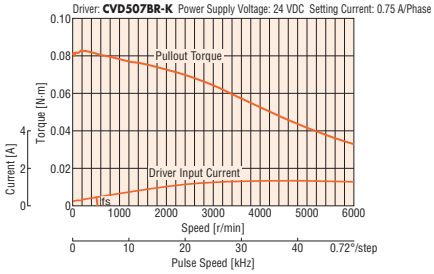
PKP523N12A-R3G□



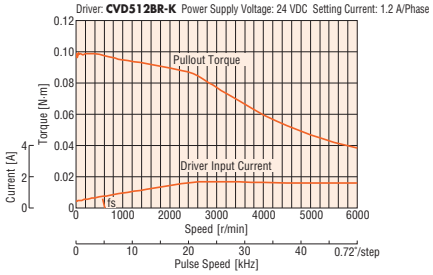
PKP525N03A-R3G□



PKP525N07A-R3G□



PKP525N12A-R3G□



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

Dimensions (Unit = mm)

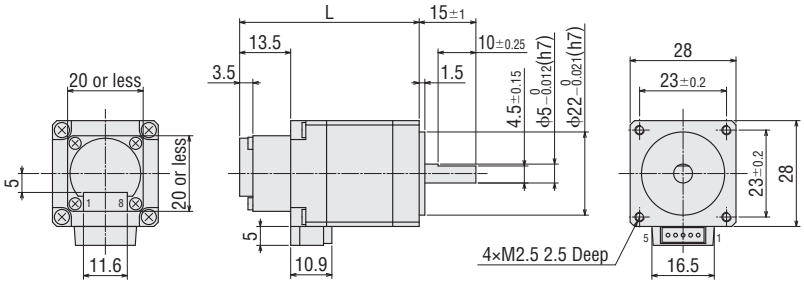
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP523N03A-R3G■	47.5	0.13	B1070
PKP523N07A-R3G■			
PKP523N12A-R3G■			
PKP525N03A-R3G■	67	0.22	B1071
PKP525N07A-R3G■			
PKP525N12A-R3G■			

● Applicable Connector (Molex)

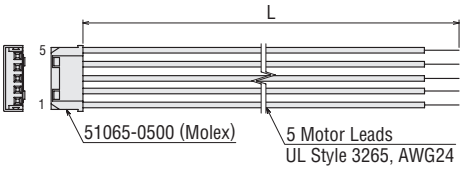
	Motor	Encoder
Connector Housing	51065-0500	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06A	0.6
LC5N10A	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model B

● Refer to the motor pin arrangement page for information on motor pin arrangement.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type Frame Size 42 mm

Mini-Connector Type

Specifications

Product Name		Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft						
PKP543N18A2	**PKP543N18B2**	0.22	35×10^{-7}	1.8	0.4	0.72°	**CVD518BR-K**
PKP544N18A2	**PKP544N18B2**	0.3	55×10^{-7}		0.48		
PKP545N18A2	**PKP545N18B2**	0.37	71×10^{-7}		0.55		
PKP546N18A2	**PKP546N18B2**	0.5	110×10^{-7}		0.64		

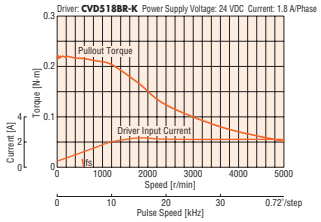
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

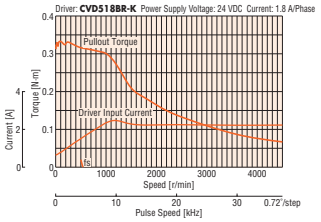
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

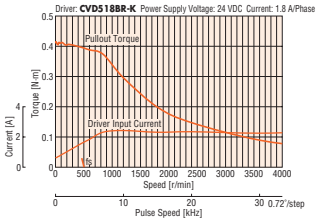
PKP543N18A2/PKP543N18B2



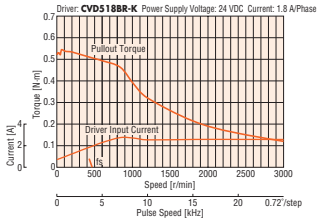
PKP544N18A2/PKP544N18B2



PKP545N18A2/PKP545N18B2



PKP546N18A2/PKP546N18B2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

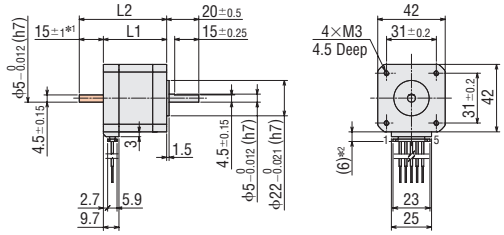
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP543N18A2	33	–	0.23	B1264
PKP543N18B2		48		
PKP544N18A2	39	–	0.29	B1265
PKP544N18B2		54		
PKP545N18A2	47	–	0.37	B1266
PKP545N18B2		62		
PKP546N18A2	59	–	0.49	B1267
PKP546N18B2		74		

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD)
  Crimping Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD)



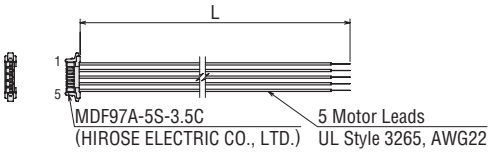
*1 The length of the shaft flat on the double shaft model is 15±0.25.
*2 With connection cable.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



Motor Pin Assignments

Motor Pin Assignments: Model A

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type Frame Size 42 mm

Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PKP544N18A	**PKP544N18B**	0.26	57×10^{-7}	1.8	0.51	0.72°	**CVD518BR-K**
PKP546N18A	**PKP546N18B**	0.44	114×10^{-7}		0.66		

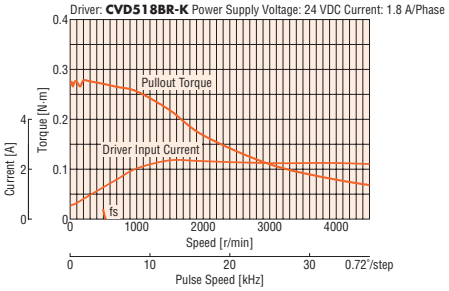
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

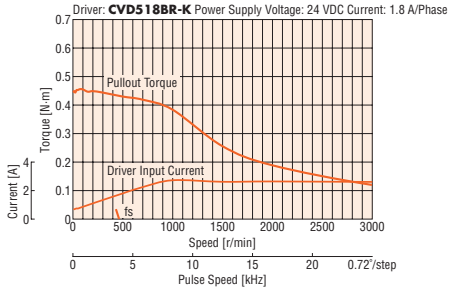
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP544N18A/PKP544N18B



PKP546N18A/PKP546N18B



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C or less.
- The characteristics are the same if combined with an RS-485 communication type driver.

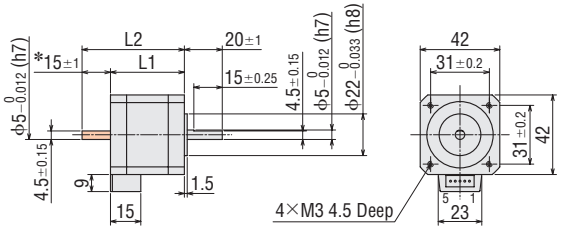
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP544N18A	39	—	0.3	B1120
PKP544N18B		54		
PKP546N18A	59	—	0.5	B1121
PKP546N18B		74		

- Applicable Connectors
  Connector Housing: 51103-0600 (Molex)
  Contact: 50351-8100 (Molex)
  Crimp Tool: 57295-5000 (Molex)



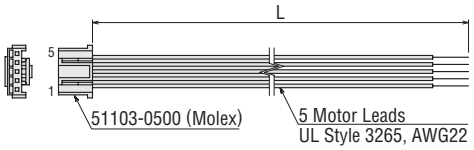
*The length of the shaft flat on the double shaft model is 15±0.25.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06B	0.6
LC5N10B	1



Motor Pin Assignments

Motor Pin Arrangement: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type with Encoder Frame Size 42 mm

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP543N18A2-R3G■	0.22	36×10^{-7}	1.8	0.4	0.72°	**CVD518BR-K**
PKP544N18A2-R3□■	0.3	56×10^{-7}		0.48		
PKP545N18A2-R3G■	0.37	72×10^{-7}		0.55		
PKP546N18A2-R3G■	0.5	111×10^{-7}		0.64		

- A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

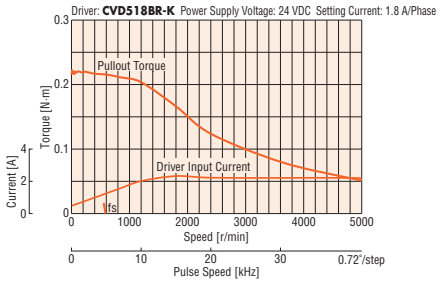
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

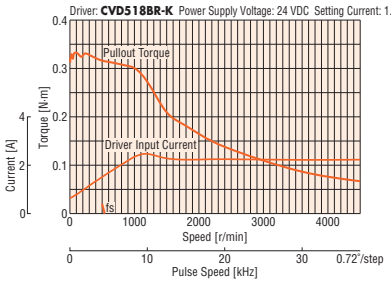
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

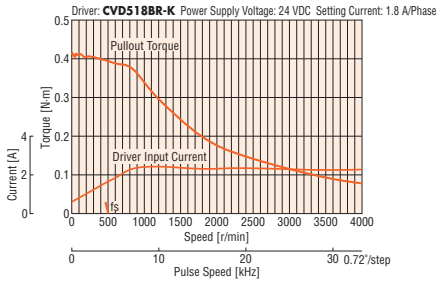
PKP543N18A2-R3G■



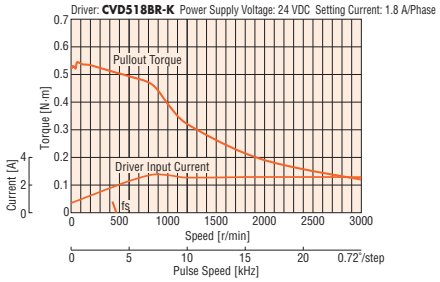
PKP544N18A2-R3□■



PKP545N18A2-R3G■



PKP546N18A2-R3G■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

- A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Dimensions (Unit = mm)

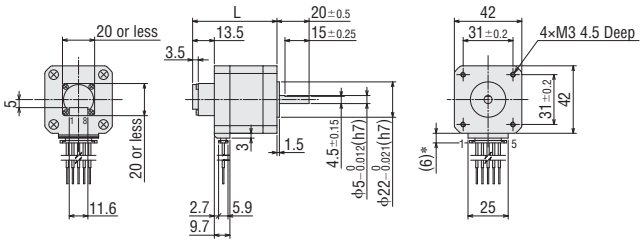
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP543N18A2-R3G■	46.5	0.25	B1343
PKP544N18A2-R3□■	52.5	0.31	B1344
PKP545N18A2-R3G■	60.5	0.39	B1345
PKP546N18A2-R3G■	72.5	0.51	B1346

● Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000



✻With connection cable

Motor Pin Arrangement

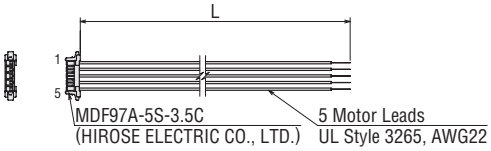
Motor Pin Arrangement: Model A

● Refer to the motor pin arrangement page for information on motor pin arrangement.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

● A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type Frame Size 56.4 mm

Mini-Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PKP564N28A2	**PKP564N28B2**	0.44	140×10^{-7}	2.8	0.16	0.72°	**CVD528BR-K**
PKP566N28A2	**PKP566N28B2**	0.81	270×10^{-7}		0.24		
PKP568N28A2	**PKP568N28B2**	1.5	500×10^{-7}		0.37		

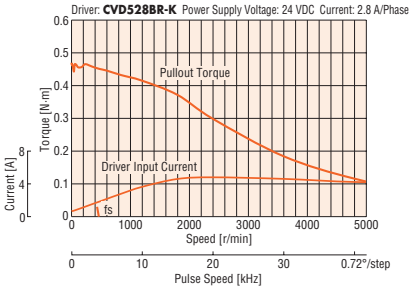
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

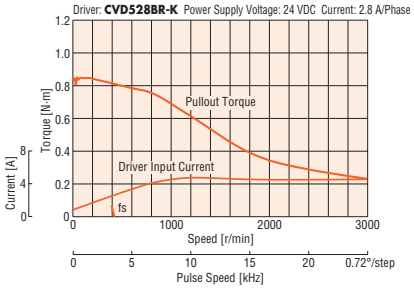
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

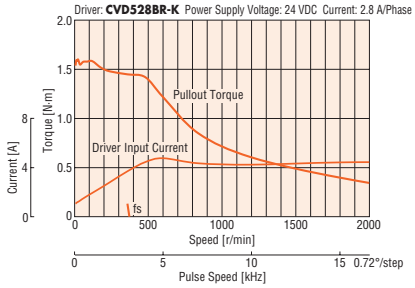
PKP564N28A2/PKP564N28B2



PKP566N28A2/PKP566N28B2



PKP568N28A2/PKP568N28B2



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

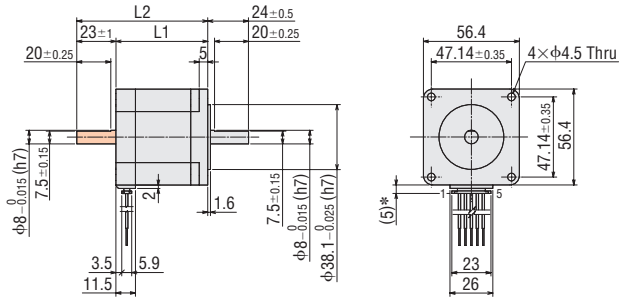
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP564N28A2	39	—	0.43	B1257
PKP564N28B2		62		
PKP566N28A2	54	—	0.67	B1258
PKP566N28B2		77		
PKP568N28A2	76	—	1	B1259
PKP568N28B2		99		

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD)
  Crimping Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD)



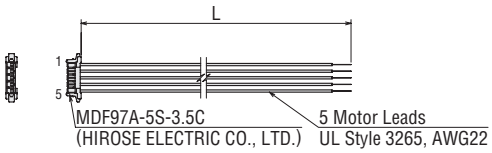
*With connection cable

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



Motor Pin Assignments

Motor Pin Assignments: Model A

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type with Encoder Frame Size 56.4 mm

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP564N28A2-R3G□	0.44	140×10^{-7}	2.8	0.16	0.72°	**CVD528BR-K**
PKP566N28A2-R3G□	0.81	270×10^{-7}		0.24		
PKP568N28A2-R3G□	1.5	500×10^{-7}		0.37		

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

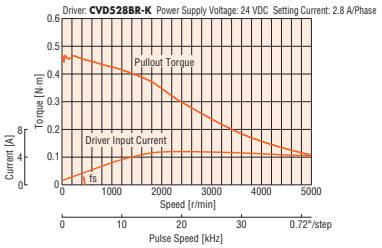
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

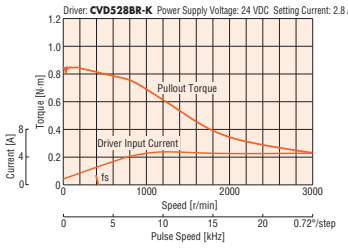
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

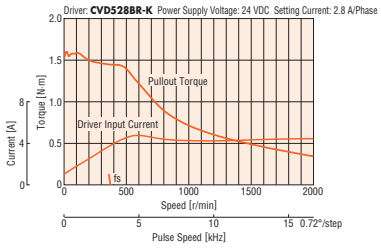
PKP564N28A2-R3G□



PKP566N28A2-R3G□



PKP568N28A2-R3G□



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.

Dimensions (Unit = mm)

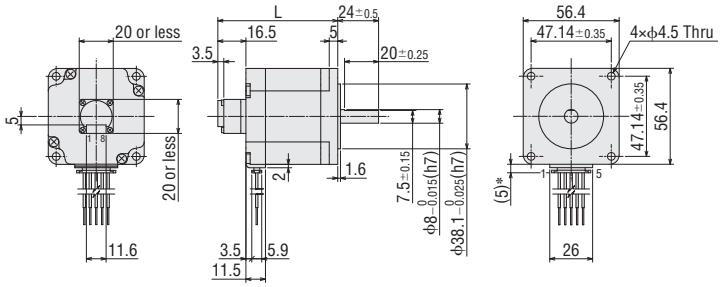
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP564N28A2-R3G□	55.5	0.45	B1347
PKP566N28A2-R3G□	70.5	0.69	B1348
PKP568N28A2-R3G□	92.5	1.02	B1349

- Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

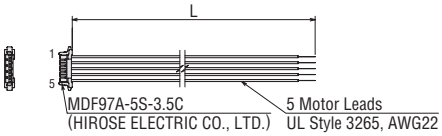


*With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model A

- Refer to the motor pin arrangement page for information on motor pin arrangement.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

Standard Type Frame Size 60 mm

Mini-Connector Type

Specifications

Product Name		Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft						
PKP564FN24A2	**PKP564FN24B2**	0.66	160×10^{-7}	2.4	0.28	0.72°	**CVD524BR-K**
PKP564FN38A2	**PKP564FN38B2**			3.8	0.12		**CVD538BR-K**
PKP566FN24A2	**PKP566FN24B2**	1.15	290×10^{-7}	2.4	0.38		**CVD524BR-K**
PKP566FN38A2	**PKP566FN38B2**			3.8	0.16		**CVD538BR-K**
PKP569FN24A2	**PKP569FN24B2**	2.1	540×10^{-7}	2.4	0.64		**CVD524BR-K**
PKP569FN38A2	**PKP569FN38B2**			3.8	0.22		**CVD538BR-K**

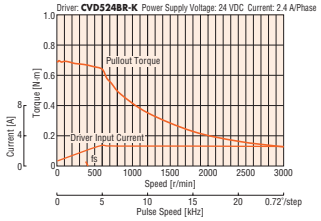
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

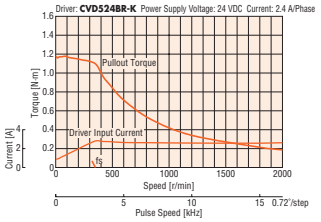
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

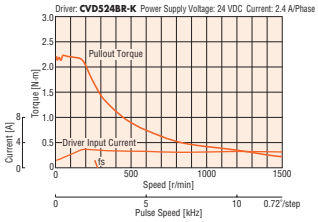
PKP564FN24A2/PKP564FN24B2



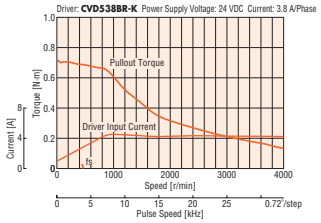
PKP566FN24A2/PKP566FN24B2



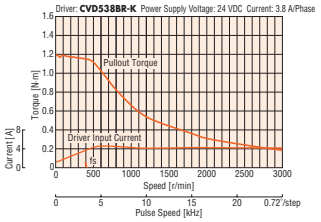
PKP569FN24A2/PKP569FN24B2



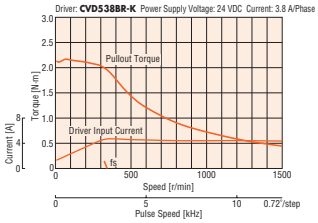
PKP564FN38A2/PKP564FN38B2



PKP566FN38A2/PKP566FN38B2



PKP569FN38A2/PKP569FN38B2



Note

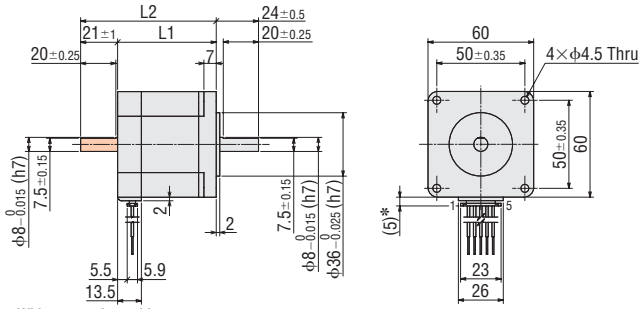
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP564FN24A2	44	–	0.56	B1252
PKP564FN24B2		65		
PKP564FN38A2		–		
PKP564FN38B2		65		
PKP566FN24A2	56	–	0.79	B1253
PKP566FN24B2		77		
PKP566FN38A2		–		
PKP566FN38B2		77		
PKP569FN24A2	84.5	–	1.3	B1254
PKP569FN24B2		105.5		
PKP569FN38A2		–		
PKP569FN38B2		105.5		



*With connection cable

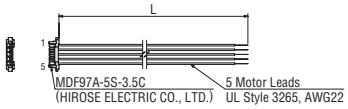
- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

- Applicable Connectors
  Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD)
  Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD)
  Crimping Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD)

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



Motor Pin Assignments

Motor Pin Assignments: Model A

- Refer to the motor pin arrangement page for information on motor pin arrangement.

Standard Type with Encoder Frame Size 60 mm

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP564FN24A2-R3G■	0.66	160×10^{-7}	2.4	0.28	0.72°	**CVD524BR-K**
PKP564FN38A2-R3G■			3.8	0.12		**CVD538BR-K**
PKP566FN24A2-R3□■	1.15	290×10^{-7}	2.4	0.38		**CVD524BR-K**
PKP566FN38A2-R3G■			3.8	0.16		**CVD538BR-K**
PKP569FN24A2-R3G■	2.1	540×10^{-7}	2.4	0.64		**CVD524BR-K**
PKP569FN38A2-R3G■			3.8	0.22		**CVD538BR-K**

- A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

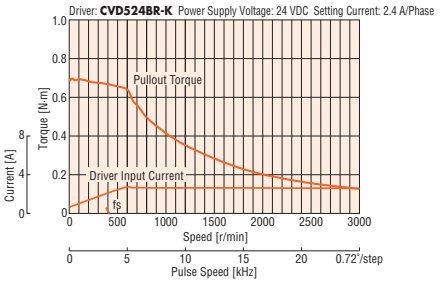
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

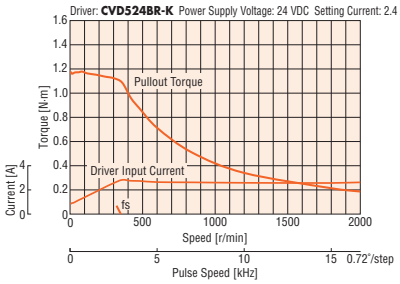
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

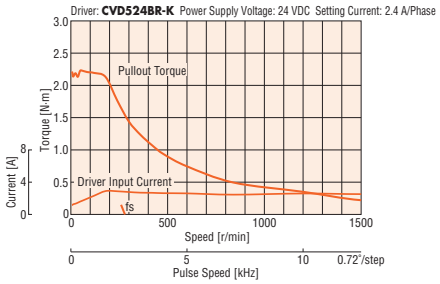
PKP564FN24A2-R3G■



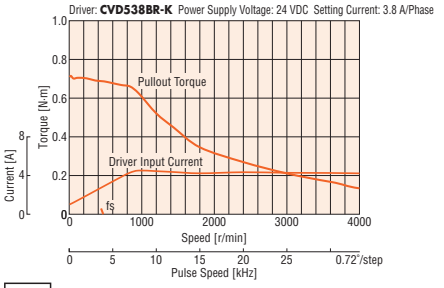
PKP566FN24A2-R3□■



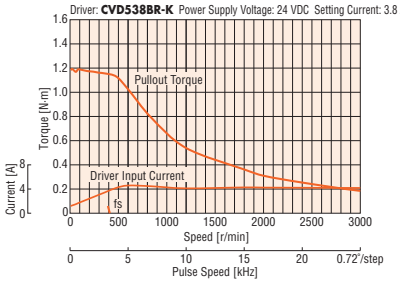
PKP569FN24A2-R3G■



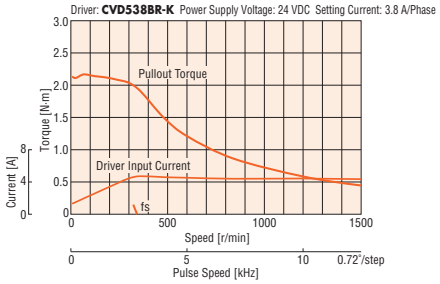
PKP564FN38A2-R3G■



PKP566FN38A2-R3G■



PKP569FN38A2-R3G■



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

- A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
  A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Dimensions (Unit = mm)

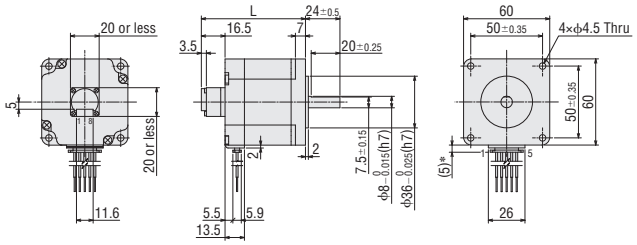
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP564FN24A2-R3G■	60.5	0.58	B1350
PKP564FN38A2-R3G■			
PKP566FN24A2-R3□■	72.5	0.81	B1351
PKP566FN38A2-R3G■			
PKP569FN24A2-R3G■	101	1.32	B1352
PKP569FN38A2-R3G■			

● Applicable Connector (Molex)

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97A-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57177-5000

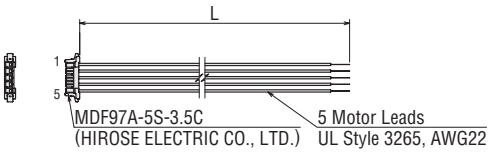


✻With connection cable

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model A

● Refer to the motor pin arrangement page for information on motor pin arrangement.

● A letter "**G**" (500 P/R) or "**J**" (1000 P/R) indicating the encoder resolution is specified where the box □ is located in the product name.
A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

Standard Type Frame Size 85 mm

Lead Wire Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PK596HNAW	**PK596HNBW**	2.1	1400×10^{-7}	2.8	0.41	0.72°	**CVD528BR-K**
PK599HNAW	**PK599HNBW**	4.1	2700×10^{-7}		0.46		
PK5913HNAW	**PK5913HNBW**	6.3	4000×10^{-7}		0.72		

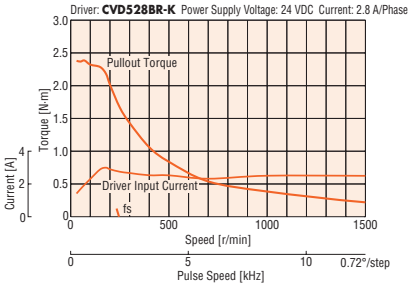
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

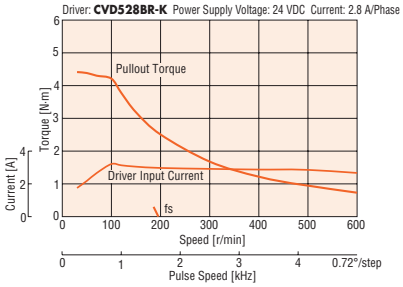
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

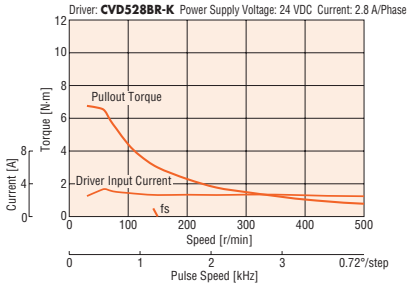
PK596HNAW/PK596HNBW



PK599HNAW/PK599HNBW



PK5913HNAW/PK5913HNBW



Note

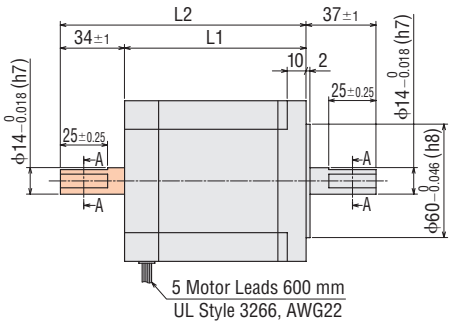
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

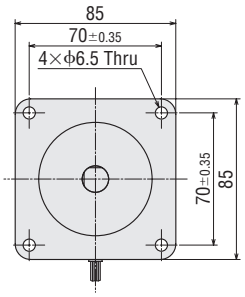
Dimensions (Unit: mm)

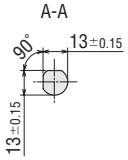
Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PK596HNAW	66	–	1.7	B155
PK596HNBW		100		
PK599HNAW	96	–	2.8	B156
PK599HNBW		130		
PK5913HNAW	126	–	3.8	B157
PK5913HNBW		160		







- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the areas.

Motor Pin Assignments

Motor Pin Assignments: Model C

- Refer to the motor pin arrangement page for information on motor pin arrangement.

NEW High Resolution Type with Encoder Frame Size 28 mm
Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP523MN03A-R3J□	0.042	9.9×10^{-7}	0.35	4.7	0.36°	**CVD503BR-K**
PKP523MN07A-R3J□			0.75	1.06		**CVD507BR-K**
PKP524MN03A-R3J□	0.061	14×10^{-7}	0.35	6.0		**CVD503BR-K**
PKP524MN07A-R3J□			0.75	1.36		**CVD507BR-K**
PKP525MN03A-R3J□	0.09	20×10^{-7}	0.35	6.6		**CVD503BR-K**
PKP525MN07A-R3J□			0.75	1.44		**CVD507BR-K**

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

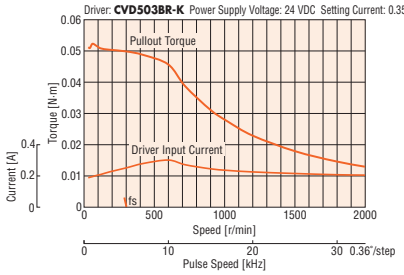
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

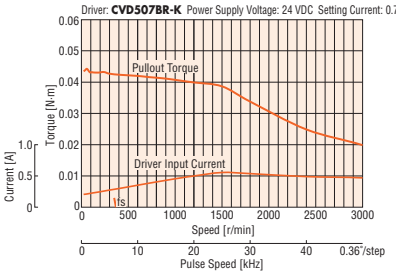
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

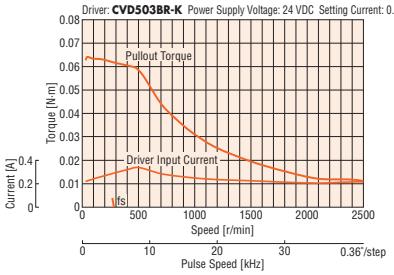
PKP523MN03A-R3J□



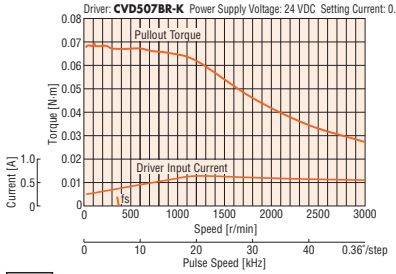
PKP523MN07A-R3J□



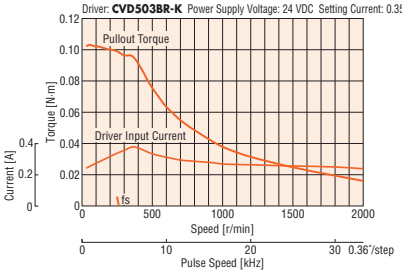
PKP524MN03A-R3J□



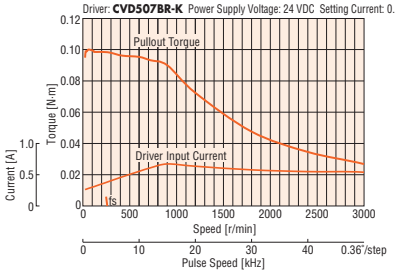
PKP524MN07A-R3J□



PKP525MN03A-R3J□



PKP525MN07A-R3J□



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

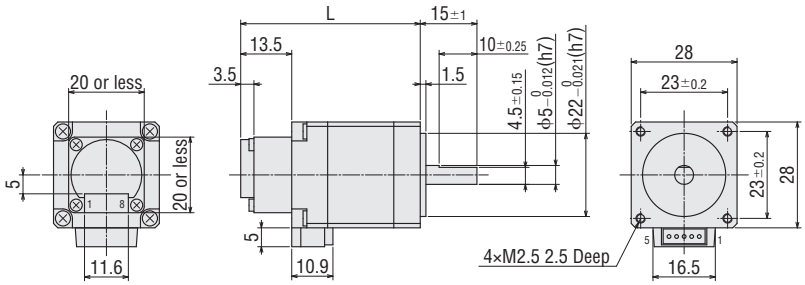
- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

Dimensions (Unit = mm)

Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP523MN03A-R3J■	47.5	0.13	B1070
PKP523MN07A-R3J■			
PKP524MN03A-R3J■	55.5	0.17	B1579
PKP524MN07A-R3J■			
PKP525MN03A-R3J■	67	0.22	B1071
PKP525MN07A-R3J■			



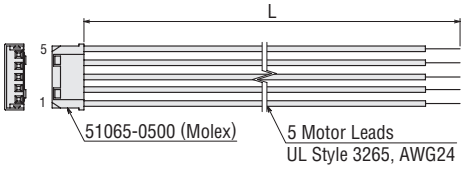
● Applicable Connector (Molex)

	Motor	Encoder
Connector Housing	51065-0500	51021-0800
Contact	50212-8100	50079-8100
Crimp Tool	57176-5000	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06A	0.6
LC5N10A	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

● Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model B

● Refer to the motor pin arrangement page for information on motor pin arrangement.

● A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

High-Resolution Type Frame Size 42 mm

Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PKP544MN18A	**PKP544MN18B**	0.26	60×10^{-7}	1.8	0.51	0.36°	**CVD518BR-K**
PKP546MN18A	**PKP546MN18B**	0.44	121×10^{-7}		0.66		

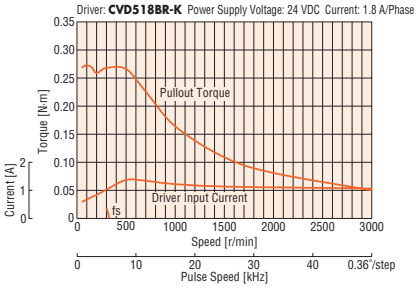
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

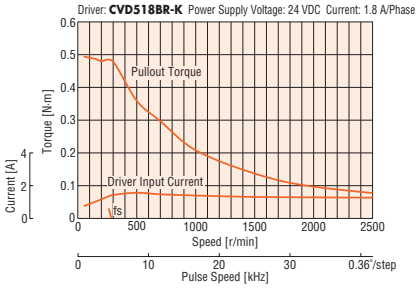
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP544MN18A/PKP544MN18B



PKP546MN18A/PKP546MN18B



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

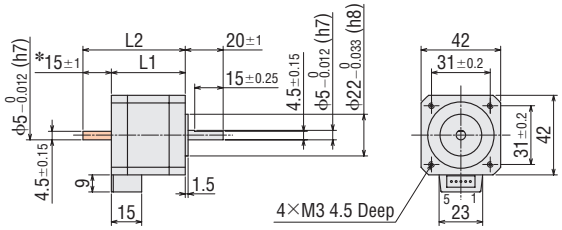
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	Mass kg	2D CAD
PKP544MN18A	39	–	0.3	B1120
PKP544MN18B		54		
PKP546MN18A	59	–	0.5	B1121
PKP546MN18B		74		

- Applicable Connectors
  Connector Housing: 51103-0500 (Molex)
  Contact: 50351-8100 (Molex)
  Crimp Tool: 57295-5000 (Molex)



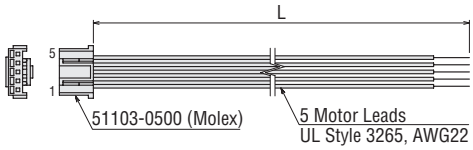
*The length of the shaft flat on the double shaft model is 15±0.25.

- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06B	0.6
LC5N10B	1



Motor Pin Assignments

Motor Pin Assignments: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

NEW High-Resolution Type with Encoder Frame Size 42 mm
Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP544MN18A-R3J■	0.26	61×10^{-7}	1.8	0.51	0.36°	**CVD518BR-K**
PKP546MN18A-R3J■	0.44	122×10^{-7}		0.66		

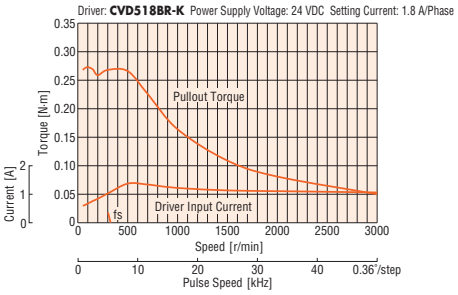
- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.
- Refer to the common specifications page for encoder specifications.

*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

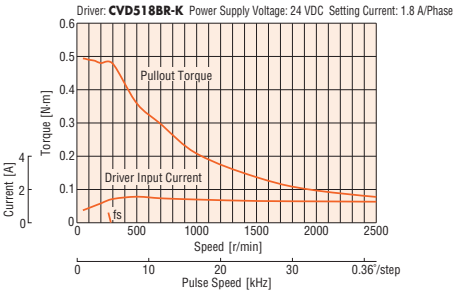
Note
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

PKP544MN18A-R3J■



PKP546MN18A-R3J■



Note
- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

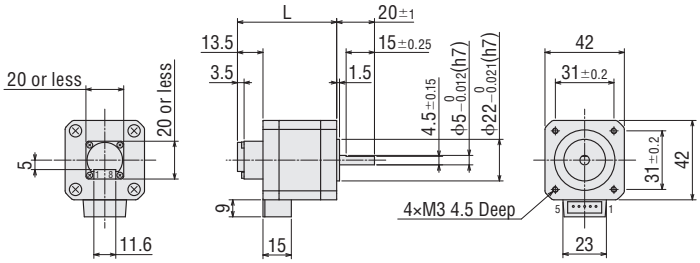
Motor

2D & 3D CAD

Product Name	L	Mass kg	2D CAD
PKP544MN18A-R3J■	52.5	0.32	B1580
PKP546MN18A-R3J■	72.5	0.52	B1581

- Applicable Connector (Molex)

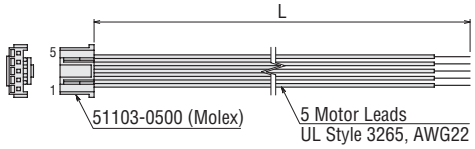
	Motor	Encoder
Connector Housing	51103-0500	51021-0800
Contact	50351-8100	50079-8100
Crimp Tool	57295-5000	57177-5000



Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06B	0.6
LC5N10B	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model B
- Refer to the motor pin arrangement page for information on motor pin arrangement.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box ■ is located in the product name. For voltage output, there is no letter in the ■ box.

High-Resolution Type Frame Size 60 mm

Connector Type

Specifications

Product Name		Maximum Holding Torque	Rotor Inertia	Rated Current	Winding Resistance	Basic Step Angle	Recommended Driver Product Name*
Single Shaft	Double Shaft	N·m	J: kg·m^2	A/Phase	Ω/Phase		
PKP564FMN24A	**PKP564FMN24B**	0.78	310×10^{-7}	2.4	0.32	0.36°	**CVD524BR-K**
PKP566FMN24A	**PKP566FMN24B**	1.25	490×10^{-7}		0.4		
PKP569FMN24A	**PKP569FMN24B**	2.3	970×10^{-7}		0.66		

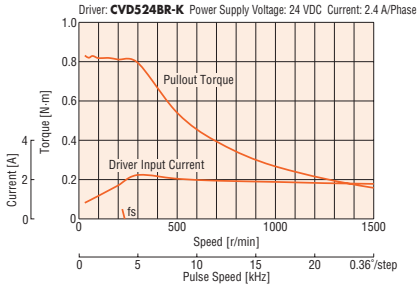
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

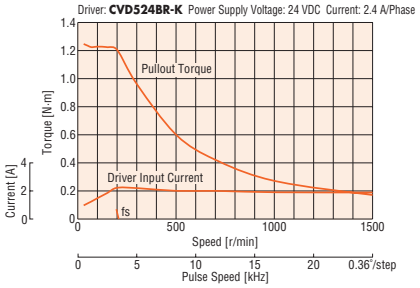
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

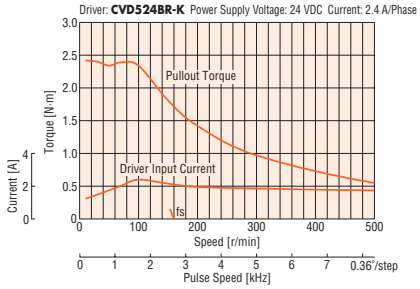
PKP564FMN24A/PKP564FMN24B



PKP566FMN24A/PKP566FMN24B



PKP569FMN24A/PKP569FMN24B



Note

- 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.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

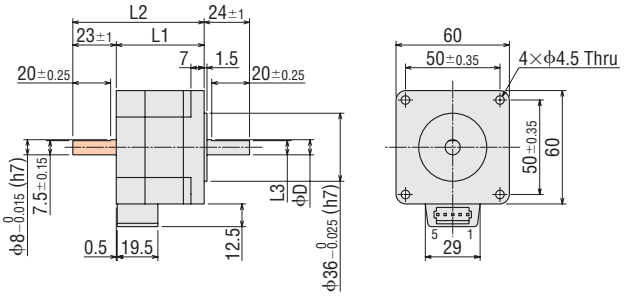
Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	L1	L2	L3	ϕD	Mass kg	2D CAD
PKP564FMN24A	46.5	–	7.5±0.15	$8^{0}_{-0.015}$	0.65	B1125
PKP564FMN24B		69.5				
PKP566FMN24A	56	–			0.87	B1126
PKP566FMN24B		79				
PKP569FMN24A	87	–	9.5±0.15	$10^{0}_{-0.015}$	1.5	B1127
PKP569FMN24B		110				

- Applicable Connectors
  Connector Housing: VHR-5N (J.S.T.MFG.CO.,LTD.)
  Contact: BVH-21T-P1.1 (J.S.T.MFG.CO.,LTD.)
  Crimp Tool: YC-160R (J.S.T.MFG.CO.,LTD.)

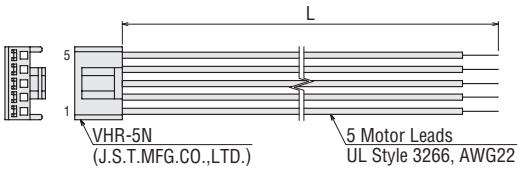


- These dimensions are for double shaft motors.
  For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06C2	0.6
LC5N10C2	1



Motor Pin Assignments

Motor Pin Assignments: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

NEW High-Resolution Type with Encoder Frame Size 60 mm
Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Recommended Driver Product Name*
PKP564FMN24A-R3J□	0.78	310×10^{-7}	2.4	0.32	0.36°	**CVD524BR-K**
PKP566FMN24A-R3J□	1.25	490×10^{-7}		0.4		
PKP569FMN24A-R3J□	2.3	970×10^{-7}		0.66		

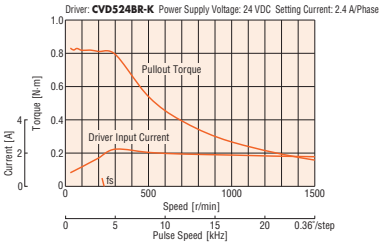
- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.
- Refer to the common specifications page for encoder specifications.

*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

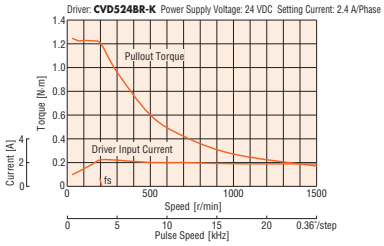
Note
- Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed - Torque Characteristics (Reference values) fs: Max. Starting Frequency

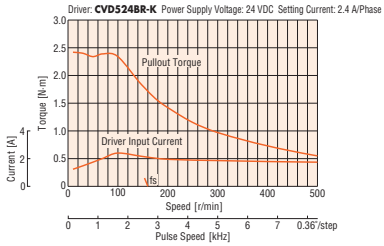
PKP564FMN24A-R3J□



PKP566FMN24A-R3J□



PKP569FMN24A-R3J□



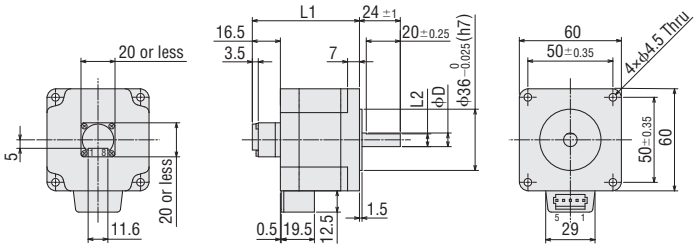
Note
- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the encoder, be sure to keep the motor case temperature at 85°C max.
- The characteristics are the same if combined with an RS-485 communication type driver.

Dimensions (Unit = mm)

Motor

2D & 3D CAD

Product Name	L1	L2	ϕD	Mass kg	2D CAD
PKP564FMN24A-R3J□	63	$7.5_{\pm0.15}$	$8_{-0.015}^{0}$ (h7)	0.67	B1583
PKP566FMN24A-R3J□	72.5			0.89	B1584
PKP569FMN24A-R3J□	103.5	$9.5_{\pm0.15}$	$10_{-0.015}^{0}$ (h7)	1.52	B1585



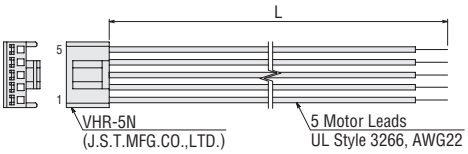
- Applicable Connector (Molex)

	Motor (J.S.T.MFG.CO.,LTD.)	Encoder (Molex)
Connector Housing	VHR-5N	51021-0800
Contact	BVH-21T-P1.1	50079-8100
Crimp Tool	YC-160R	57177-5000

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06C2	0.6
LC5N10C2	1



◇Encoder Connection Cable

•For Voltage Output

Product Name	Length L (m)
LCE05A-006	0.6

•For Line Driver Output

Product Name	Length L (m)
LCE08A-006	0.6

- Refer to the cables page for dimensions.

Motor Pin Arrangement

Motor Pin Arrangement: Model B

- Refer to the motor pin arrangement page for information on motor pin arrangement.

- A letter "**L**" (line driver output) indicating the encoder output circuit configuration is specified where the box □ is located in the product name. For voltage output, there is no letter in the □ box.

TS Geared Type Frame Size 42 mm

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m²	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Maximum Instantaneous Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP544N18□2-TS3.6	0.65	55×10^{-7}	1.8	0.48	0.2°	3.6	0.65	0.85	0 – 833	45 (0.75°)	**CVD518BR-K**
PKP544N18□2-TS7.2	1.2				0.1°	7.2	1.2	1.6	0 – 416	25 (0.42°)	
PKP544N18□2-TS10	1.7				0.072°	10	1.7	2	0 – 300		
PKP543N18□2-TS20	2	35×10^{-7}		0.4	0.036°	20	2	3	0 – 150	15 (0.25°)	
PKP543N18□2-TS30	2.3				0.024°	30	2.3	3	0 – 100		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

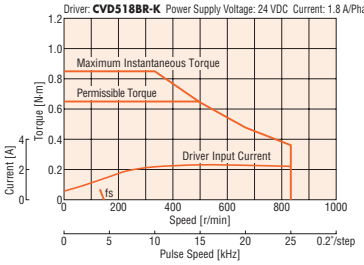
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

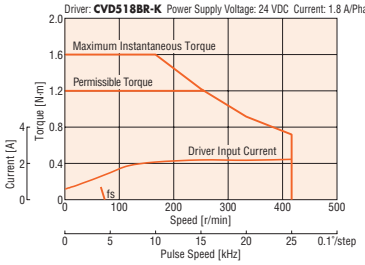
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

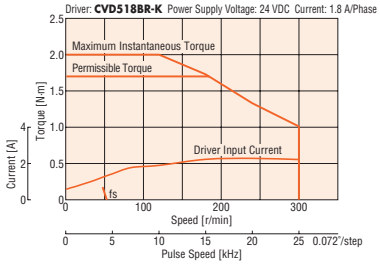
PKP544N18A2-TS3.6/PKP544N18B2-TS3.6



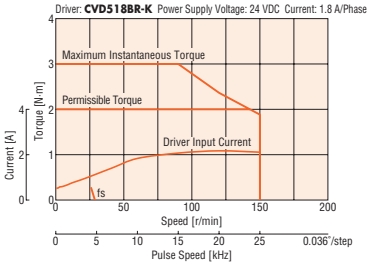
PKP544N18A2-TS7.2/PKP544N18B2-TS7.2



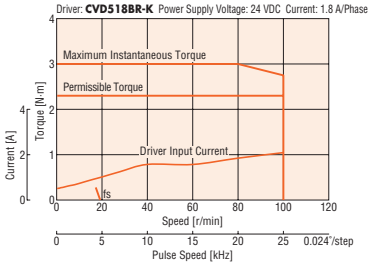
PKP544N18A2-TS10/PKP544N18B2-TS10



PKP543N18A2-TS20/PKP543N18B2-TS20



PKP543N18A2-TS30/PKP543N18B2-TS30



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg	2D CAD
PKP544N18A2-TS□	**3.6, 7.2, 10**	70.5	0.41	B1362
PKP544N18B2-TS□				
PKP543N18A2-TS□	**20, 30**	64.5	0.36	B1363
PKP543N18B2-TS□				

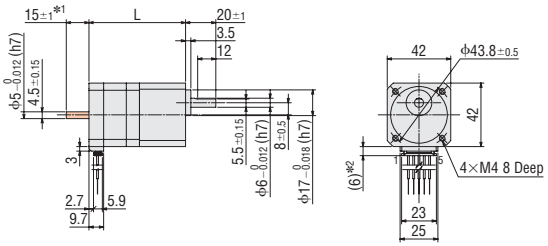
● The box □ in the product name indicates a number representing the gear ratio.

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD)

Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD)

Crimping Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD)



*1 The length of the shaft flat on the double shaft model is 15±0.25.

*2 With connection cable.

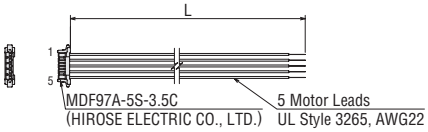
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



Motor Pin Assignments

Motor Pin Assignments: Model A

● Refer to the motor pin arrangement page for information on motor pin arrangement.

TS Geared Type Frame Size 60 mm

Mini-Connector Type

Specifications

Product Name	Maximum Holding Torque N·m	Rotor Inertia J: kg·m^2	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Gear Ratio	Permissible Torque N·m	Maximum Instantaneous Torque N·m	Speed Range r/min	Backlash arcmin	Recommended Driver Product Name*
PKP566N28□2-TS3.6	1.8	270×10^{-7}	2.8	0.24	0.2°	3.6	1.8	2.5	0 – 833	35 (0.59°)	**CVD528BR-K**
PKP566N28□2-TS7.2	3				0.1°	7.2	3	4.5	0 – 416	15 (0.25°)	
PKP566N28□2-TS10	4				0.072°	10	4	6	0 – 300		
PKP564N28□2-TS20	5	140×10^{-7}		0.16	0.036°	20	5	8	0 – 150	10 (0.17°)	
PKP564N28□2-TS30	6				0.024°	30	6	10	0 – 100		

● The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).

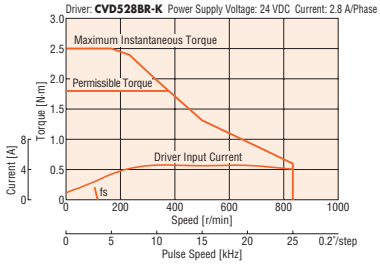
*See "Drivers for 2-Phase / 5-Phase Motors" page for drivers that can be used in combination.

Note

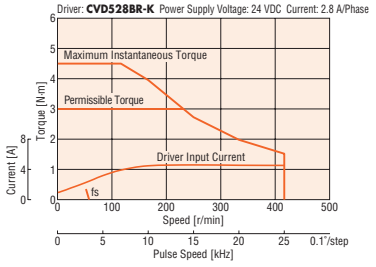
● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Speed – Torque Characteristics (Reference values) fs: Max. Starting Frequency

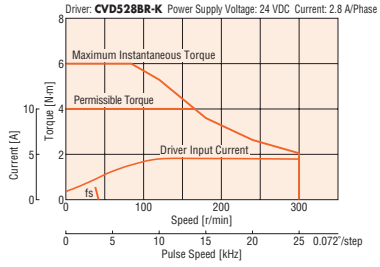
PKP566N28A2-TS3.6/PKP566N28B2-TS3.6



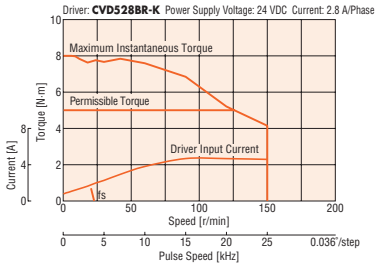
PKP566N28A2-TS7.2/PKP566N28B2-TS7.2



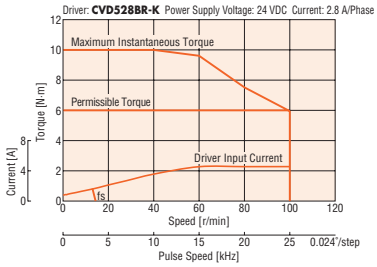
PKP566N28A2-TS10/PKP566N28B2-TS10



PKP564N28A2-TS20/PKP564N28B2-TS20



PKP564N28A2-TS30/PKP564N28B2-TS30



Note

● 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.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

● The characteristics are the same when RS-485 communication type driver is used in combination.

Dimensions (Unit: mm)

Motor

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg	2D CAD
PKP566N28A2-TS□	**3.6, 7.2, 10**	98	0.99	B1364
PKP566N28B2-TS□				
PKP564N28A2-TS□	**20, 30**	83	0.78	B1365
PKP564N28B2-TS□				

● The box □ in the product name indicates a number representing the gear ratio.

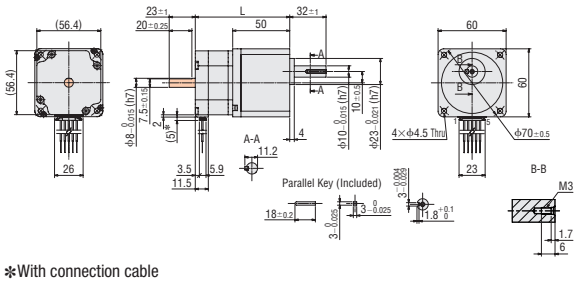
● Mounting Screw: M4×60 P0.7 (4 screws included)

● Applicable Connectors

Connector Housing: MDF97A-5S-3.5C (HIROSE ELECTRIC CO., LTD)

Contact: MDF97-22SC (HIROSE ELECTRIC CO., LTD)

Crimping Tool: HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD)



*With connection cable

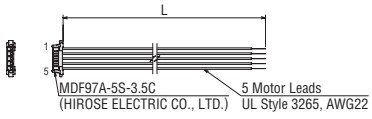
● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded in the ▭ areas.

Connection Cable (Sold separately)

◇Motor Connection Cable

Product Name	Length L (m)
LC5N06E	0.6
LC5N10E	1



Motor Pin Assignments

Motor Pin Assignments: Model A

● Refer to the motor pin arrangement page for information on motor pin arrangement.

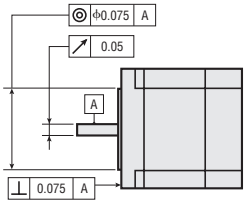
General Specifications

Specifications		Motor
Thermal Class		130 (B)
Insulation Resistance		The measured value is 100 MΩ min. when a 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.
Dielectric Strength		No abnormalities are observed, even when applying voltage between the windings and the case for 1 minute under normal ambient temperature and humidity with the following conditions. · **PK513**, **PKP52**□, **PKP54**□: 0.5 kVAC 50/60 Hz · **PKP56**□: 1.0 kVAC 50/60 Hz · **PKP56**□**FMN**, **PK59**□: 1.5 kVAC 50/60 Hz
Operating Environment (In operation)	Ambient Temperature	−10 =≤ +50°C (Non-freezing)
	Ambient Humidity	85% or less (Non-Condensing)
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.
Temperature Rise		Winding temperature rise 80°C max. (Based on Oriental Motor's internal measurement conditions)
Stop Position Accuracy*1		Standard Type: ±3 arcmin (±0.05°) [**PK513** is ±10 arcmin (±0.17°)] High-Resolution Type: ±2 arcmin (±0.034°)
Shaft Runout		0.05 T.I.R (mm)*4
Radial Play*2		0.025 mm Max. (Load 5 N)
Axial Play*3		0.075 mm Max. (load 10 N) [Load for **PK513** is 1 N, load for **PKP52**□ is 2.5 N]
Concentricity of Installation Pilot to the Shaft		0.075 T.I.R (mm)*4
Perpendicularity of Installation Surface to the Shaft		0.075 T.I.R (mm)*4

*1 This value is for a full step under no load. (The value changes with the size of the load.)
*2 Radial Play: Displacement in shaft position in the radial direction when a 5 N load is applied perpendicular to the tip of the motor shaft.
*3 Axial Play: Displacement in shaft position in the axial direction when a 10 N load (1 N for **PK513**, load for **PKP52**□ is 2.5 N) is applied to the motor shaft in the axial direction.
*4 T. I. R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated once around the reference axis center.

Note

● Separate the motor and driver when measuring insulation resistance or performing a dielectric voltage withstand test. Also, do not conduct these tests on the motor encoder section.

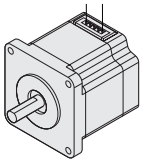
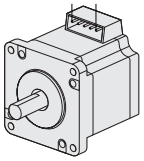
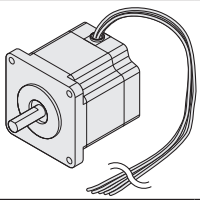


Encoder Specifications

Encoder Product Name	R3G	R3J	R3GL	R3JL
Resolution (P/R)	500	1000	500	1000
Angular Accuracy	±0.36° (Motor output shaft conversion value)			
Output Circuit Type	Voltage Output		Line Driver*	
Output Type	Incremental			
Output Signals	A phase, B phase, Z phase (3 ch)			
Power Supply Voltage	5 VDC±10%			
Current	45 mA max.		30 mA max.	

*26C31 or Equivalent

Motor Pin Arrangement

Motor Model Type	Pin Arrangement/Lead Wire Color
Model A Mini-Connector Type	Pin No.→ 5 1  *The colors of the lead wires are the colors of the separately sold connection cables.
Model B Connector Type	Pin No.→ 1 5  *The colors of the lead wires are the colors of the separately sold connection cables.
Model C Lead Wire Type	

Pin No.	Lead Wire Color*
5	Blue
4	Red
3	Orange
2	Green
1	Black

Pin No.	Lead Wire Color*
1	Blue
2	Red
3	Orange
4	Green
5	Black

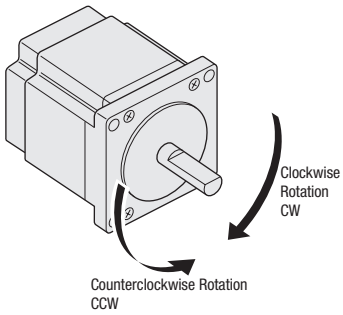
Lead Wire Color
Blue
Red
Orange
Green
Black

Rotation Direction

This indicates the rotation direction as viewed from the output shaft side of the motor.
The rotation direction of the output gear shaft relative to the standard type motor output shaft varies depending on the gear type and gear ratio.
Please check the following table.

Geared Type		Gear Ratio	Rotation Direction of the Gear Output Shaft
TS Geared	Frame Size 42 mm, 60 mm	**3.6**, **7.2**, **10**	Same as the motor output shaft
		20, **30**	Opposite as the motor output shaft

●Standard Type Motor



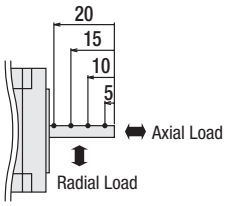
Permissible Radial Load and Permissible Axial Load

Unit: N

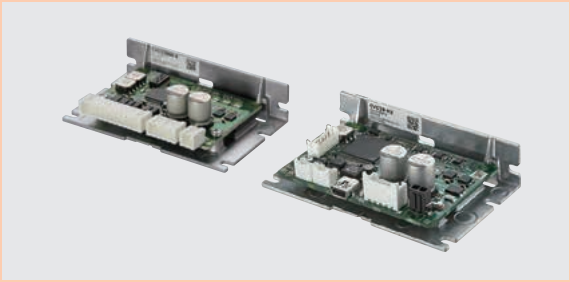
Type	Motor Frame Size	Product Name	Gear Ratio	Permissible Radial Load Distance from the Tip of Motor Output Shaft [mm] 0	5	10	15	20	Permissible Axial Load
Standard Type	20 mm	**PK513**	–	12	15	–	–	–	3
	28 mm	**PKP523**, **PKP525**	–	25	34	52	–	–	5
	42 mm	**PKP543**, **PKP544□2**, **PKP545**, **PKP546□2**	–	35	44	58	85	–	15
	42 mm	**PKP544**, **PKP546**	–	20	25	34	52	–	10
	56.4 mm	**PKP564**, **PKP566**, **PKP568**	–	90	100	130	180	270	30
	60 mm	**PKP564**, **PKP566**, **PKP569**	–	90	100	130	180	270	30
	85 mm	**PK596**, **PK599**, **PK5913**	–	260	290	340	390	480	60
High-Resolution Type	42 mm	**PKP544**, **PKP546**	–	20	25	34	52	–	10
	60 mm	**PKP564**, **PKP566**, **PKP569**	–	90	100	130	180	270	20
TS Geared	42 mm	**PKP544**	**3.6**, **7.2**, **10**	20	30	40	50	–	15
		PKP543	**20**, **30**	40	50	60	70	–	
	60 mm	**PKP566**	**3.6**, **7.2**, **10**	120	135	150	165	180	40
		PKP564	**20**, **30**	170	185	200	215	230	

●Radial Load and Axial Load

Distance from Shaft End [mm]



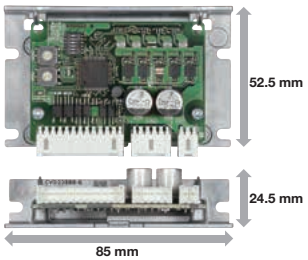
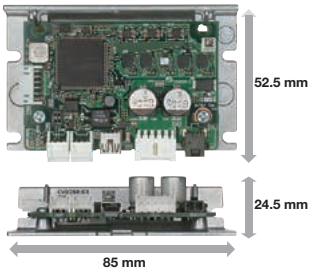
CVD Series 5-Phase Driver for 2-Phase Stepper Motors
Unipolar Driver for 2-Phase Stepper Motors



These are DC power supply input drivers for stepper motors. The bipolar/unipolar driver for 2-phase stepper motors and the driver for 5-phase stepper motors are available.
Using the microstep drive function for a low-vibration driver reduces vibration and noise.

Features and Types

Bipolar Driver for 2-Phase Stepper Motor
Driver for 5-Phase Stepper Motor
CVD Series

Driver Type		External View	Overview	Driver Installation Direction
CVD Series Pulse Input Type Page 147 to 153  ・Mass 20 g to 70 g (The value differs according to the driver type)	Right Angle with Installation Plate	The connector points outward. 	・Can be controlled depending on the positioning module (pulse generator) ・Running current can be easily set with the digital switch	・Horizontal Installation ・Vertical Installation
	With Installation Plate	The connector points upward. 		
	Without Installation Plate	The connector points upward. 		
CVD Series RS-485 Communication Type Page 154 to 159  ・Mass 65 g	Right Angle with Installation Plate	The connector points outward. 	・Compatible with RS-485 communication (Modbus Protocol) ・Easy overwriting of data and multi-axis settings ・Reduced wiring of equipment and remote monitoring by host system possible ・Compatible with **MEXE02** support software	
	With Installation Plate	The connector points upward. 		

Note
● The driver cannot be shared by both a 2-phase stepper motor and 5-phase stepper motor. Each must use its respective dedicated driver.

For 2-Phase/5-Phase Stepper Motors
Bipolar Driver
CVD Series **S** Type




・SPI Communication-Compatible ・Pulse Input-Compatible

This is a compact board driver. For details, please contact your nearest Oriental Motor sales office.

For 5-Phase Stepper Motors
Driver
CVD Series **SC** Type



This driver can easily control speed by sensing the speed control motor. For details, please contact your nearest Oriental Motor sales office.

For 2-Phase Stepper Motors
Unipolar Driver



The Microstep Drive drivers are compact and lightweight. Refer to page 160.

Product Number

CVD 2 23 F B R - K

① ② ③ ④ ⑤ ⑥ ⑦

①	Series Name	**CVD**: **CVD** Series
②	**2**: 2-Phase **5**: 5-Phase	
③	Rated Current	
④	Driver Identification	
⑤	Driver Shape	**B**: With Installation Plate Blank: Without Installation Plate
⑥	Connector Shape	**R**: Right Angle
⑦	Power Supply Input	**K**: DC Power Supply

Product Line

We have prepared a connection cable set (sold separately) consisting of motor, power supply, and I/O signal cables. The connectors are already crimped, which makes them easy to wire without crimp tools. For details, refer to page 163.

●Bipolar Driver for 2-Phase Stepper Motors

◇Right Angle Type with Installation Plate

Product Name	List Price
CVD205BR-K	
CVD206BR-K	
CVD215BR-K	
CVD223BR-K	
CVD223FBR-K	
CVD228BR-K	
CVD242BR-K	
CVD245BR-K	

◇With Installation Plate

Product Name	List Price
CVD205B-K	
CVD206B-K	
CVD215B-K	
CVD223B-K	
CVD223FB-K	
CVD228B-K	
CVD242B-K	
CVD245B-K	

◇Without Installation Plate

Product Name	List Price
CVD205-K	
CVD206-K	
CVD215-K	
CVD223-K	
CVD223F-K	
CVD228-K	

●Driver for 5-Phase Stepper Motors

◇Right Angle Type with Installation Plate

Product Name	List Price
CVD503BR-K	
CVD507BR-K	
CVD512BR-K	
CVD514BR-K	
CVD518BR-K	
CVD524BR-K	
CVD528BR-K	
CVD538BR-K	

◇With Installation Plate

Product Name	List Price
CVD503B-K	
CVD507B-K	
CVD512B-K	
CVD514B-K	
CVD518B-K	
CVD524B-K	
CVD528B-K	
CVD538B-K	

◇Without Installation Plate

Product Name	List Price
CVD503-K	
CVD507-K	
CVD512-K	
CVD514-K	
CVD518-K	
CVD524-K	

Included

Type	Connector for Driver Connection
Common to All Types	CN1 Connector (1 pc.), CN2 Connector (1 pc.), CN3 Connector (1 pc.)

Specifications

Bipolar Driver for 2-Phase Stepper Motors

Product Name		CVD205□□-K	CVD206□□-K	CVD215□□-K	CVD223□□-K CVD223F□□-K	CVD228□□-K	CVD242B□-K	CVD245B□-K
Driving Method		Microstep Drive, Bipolar, Constant Current Drive Method						
Motor Driving Current (Factory Setting)		0.5 A/Phase	0.6 A/Phase	1.5 A/Phase	2.3 A/Phase	2.8 A/Phase	4.2 A/Phase	4.5 A/Phase
Power Supply Voltage		24 VDC±10%						
Input Current	A	0.5	0.5	1.9	2.0	3.0	3.6	3.9
Max. Input Pulse Frequency		Line driver output by programmable controller: 1 MHz (When the pulse duty is 50%) Open-collector output by programmable controller: 250 kHz (When the pulse duty is 50%) Negative Logic Pulse Input						
Operating Environment	Ambient Temperature	0 to +50°C (Non-freezing)						
	Ambient Humidity	85% or less (Non-condensing)						
	Surrounding Atmosphere	No corrosive gas or dust. No water or oil.						

Driver for 5-Phase Stepper Motors

Product Name		CVD503□□-K	CVD507□□-K	CVD512□□-K	CVD514□□-K	CVD518□□-K	CVD524B□-K	CVD528B□-K	CVD538B□-K
Driving Method		Microstep Drive, Bipolar, Constant Current Drive Method							
Motor Driving Current (Factory Setting)		0.35 A/Phase	0.75 A/Phase	1.2 A/Phase	1.4 A/Phase	1.8 A/Phase	2.4 A/Phase	2.8 A/Phase	3.8 A/Phase
Power Supply Voltage		24 VDC±10%							
Input Current	A	0.6	1.4	1.7	1.8	2.8	3.0	4.8	4.8
Max. Input Pulse Frequency		Line driver output by programmable controller: 1 MHz (When the pulse duty is 50%) Open-collector output by programmable controller: 250 kHz (When the pulse duty is 50%) Negative Logic Pulse Input							
Operating Environment	Ambient Temperature	0 to +50°C (Non-freezing)							
	Ambient Humidity	85% or less (Non-condensing)							
	Surrounding Atmosphere	No corrosive gas or dust. No water or oil.							

● For the type with a installation plate, the box □ in the product name indicates the driver shape **B** (with installation plate).
For the right angle type with a installation plate, the box □ in the product name indicates the connector shape **R** (right angle).

Dimensions (Unit: mm)

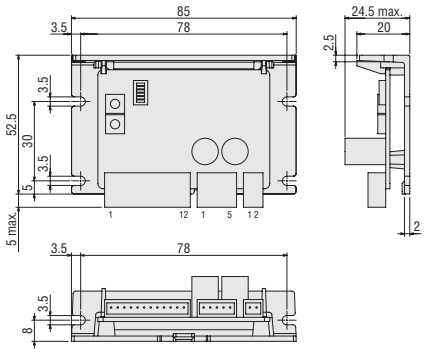
Right Angle Type with Installation Plate

2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD205BR-K	0.06	B1210
CVD206BR-K		
CVD215BR-K		
CVD223BR-K		
CVD223FBR-K		
CVD228BR-K		
CVD503BR-K		
CVD507BR-K		
CVD512BR-K		
CVD514BR-K		
CVD518BR-K		
CVD524BR-K		

● Included

Connector Housing: 51103-0200 (Molex)
51103-0500 (Molex)
51103-1200 (Molex)
Contact: 50351-8100 (Molex)

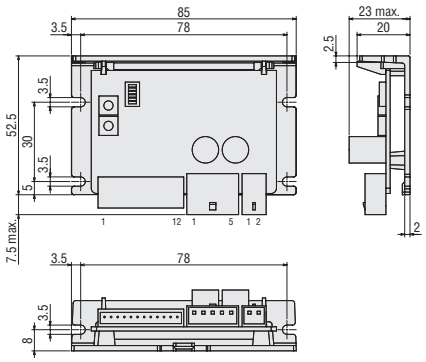


2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD242BR-K	0.07	B1211
CVD245BR-K		
CVD528BR-K		
CVD538BR-K		

● Included

Connector Housing: 51067-0200 (Molex)
51067-0500 (Molex)
51103-1200 (Molex)
Contact: 50217-9101 (Molex)
50351-8100 (Molex)



● We have prepared a connection cable set (sold separately) consisting of motor, power supply, and I/O signal cables. The connectors are already crimped, which makes them easy to wire without crimp tools.
For details, refer to page 163.

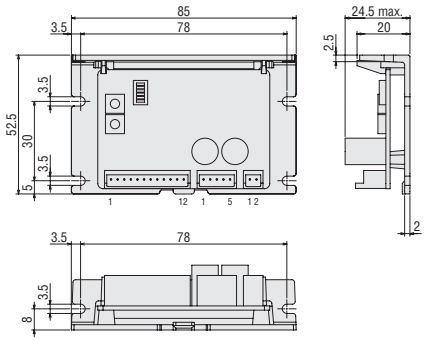
With Installation Plate

2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD205B-K	0.06	B1255
CVD206B-K		
CVD215B-K		
CVD223B-K		
CVD223FB-K		
CVD228B-K		
CVD503B-K		
CVD507B-K		
CVD512B-K		
CVD514B-K		
CVD518B-K		
CVD524B-K		

● Included

Connector Housing: 51103-0200 (Molex)
51103-0500 (Molex)
51103-1200 (Molex)
Contact: 50351-8100 (Molex)

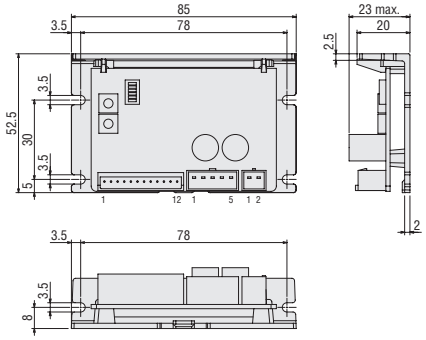


2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD242B-K	0.07	B1256
CVD245B-K		
CVD528B-K		
CVD538B-K		

● Included

Connector Housing: 51067-0200 (Molex)
51067-0500 (Molex)
51103-1200 (Molex)
Contact: 50217-9101 (Molex)
50351-8100 (Molex)

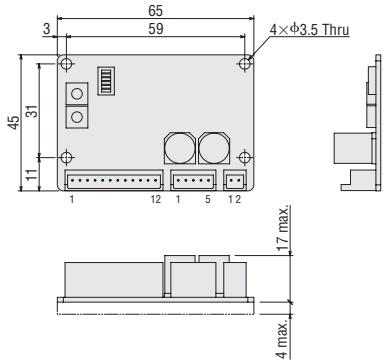


● We have prepared a connection cable set (sold separately) consisting of motor, power supply, and I/O signal cables. The connectors are already crimped, which makes them easy to wire without crimp tools.
For details, refer to page 163.

Without Installation Plate

2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD205-K	0.02	B1128
CVD206-K		
CVD215-K		
CVD223-K		
CVD223F-K		
CVD228-K		
CVD503-K		
CVD507-K		
CVD512-K		
CVD514-K		
CVD518-K		
CVD524-K		



● Included

Connector Housing: 51103-0200 (Molex)
51103-0500 (Molex)
51103-1200 (Molex)
Contact: 50351-8100 (Molex)

● We have prepared a connection cable set (sold separately) consisting of motor, power supply, and I/O signal cables. The connectors are already crimped, which makes them easy to wire without crimp tools.
For details, refer to page 163.

List of Applicable Motors

Bipolar Driver for 2-Phase Stepper Motors

Driver Product Name			Motor Drive Current	Applicable Motor	
Right Angle with Installation Plate	With Installation Plate	Without Installation Plate		Connector Type	Motor Product Name
CVD205BR-K	**CVD205B-K**	**CVD205-K**	0.5 A/Phase	Model C	**PKP213D**
CVD206BR-K	**CVD206B-K**	**CVD206-K**	0.6 A/Phase	Model C	**PKP214D**
				Model D	**PKP203D**
CVD215BR-K	**CVD215B-K**	**CVD215-K**	1.5 A/Phase	Model B	**PKP22□■D**, **PKP23□D15**, **PKP24□■D15**
				Model C	**PKP262FD**
CVD223BR-K	**CVD223B-K**	**CVD223-K**	2.3 A/Phase	Model B	**PKP23□D23**, **PKP24□D23**
CVD223FBR-K	**CVD223FB-K**	**CVD223F-K**	2.3 A/Phase	Model A	**PKP24□■D**
CVD228BR-K	**CVD228B-K**	**CVD228-K**	2.8 A/Phase	Model A	**PKP25□D**, **PKP26□D14**, **PKP26□■D28**
				Model B	**PKP26□■D28**
CVD242BR-K	**CVD242B-K**	–	4.2 A/Phase	Model A	**PKP26□D42**
CVD245BR-K	**CVD245B-K**	–	4.5 A/Phase	Model C	**PKP29□D**

● A number indicating the length of the motor case is entered where the box □ is located within the names of the applicable motors.
● For high-resolution type, the code **M** (high-resolution type) indicating the motor type is entered where the box ■ is located within the names of the applicable motors.
● The applicable motors are listed such that the available combinations with the driver are distinguishable.
Combinations with the encoder type and geared type are also available.
For details on the product name, please see the Oriental Motor website.

Note

● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Driver for 5-Phase Stepper Motors

Driver Product Name			Motor Drive Current	Applicable Motor
Right Angle with Installation Plate	With Installation Plate	Without Installation Plate		
CVD503BR-K	**CVD503B-K**	**CVD503-K**	0.35 A/Phase	**PK513**, **PK52□**
CVD507BR-K	**CVD507B-K**	**CVD507-K**	0.75 A/Phase	**PK52□H**, **PK54□**
CVD512BR-K	**CVD512B-K**	**CVD512-K**	1.2 A/Phase	**PKP52□**
CVD514BR-K	**CVD514B-K**	**CVD514-K**	1.4 A/Phase	**PK56□**
CVD518BR-K	**CVD518B-K**	**CVD518-K**	1.8 A/Phase	**PKP54□**
CVD524BR-K	**CVD524B-K**	**CVD524-K**	2.4 A/Phase	**PKP56□FN24**, **PKP56□FMN**
CVD528BR-K	**CVD528B-K**	–	2.8 A/Phase	**PKP56□N28**, **PK56□H**, **PK59□H**
CVD538BR-K	**CVD538B-K**	–	3.8 A/Phase	**PKP56□FN38**

● A number indicating the length of the motor case is entered where the box □ is located within the names of the applicable motors.
● The applicable motors are listed such that the available combinations with the driver are distinguishable.
Combinations with the encoder type and geared type are also available.
For details on the product name, please see the Oriental Motor website.

Note

● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

Connection and Operation

Names and Functions of Driver Parts

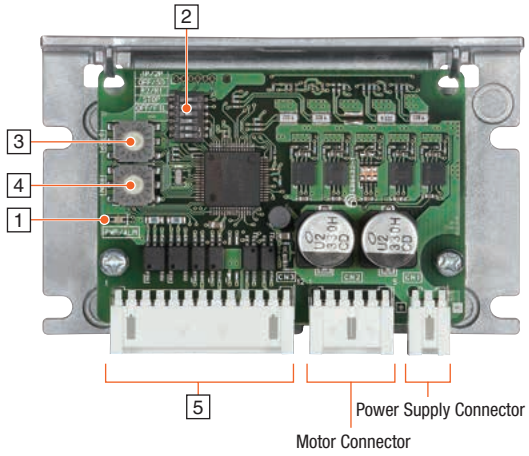
1 Signal Monitor Indicators

◇LED Indicator

Indication	Color	Function	Lighting Condition
PWR/ALM	Green	Power Supply Indication	When power is applied
	Red	Alarm Indication	When a protective function is activated (blinking)

◇Alarm Contents

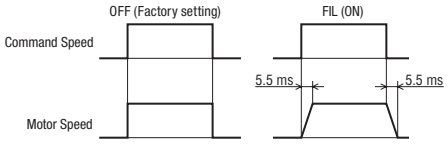
Blink Count	Function	Operating Condition
2	Overheat Protection	When the temperature of the driver board reaches 85˚C
3	Overvoltage Protection	When the power supply voltage exceeds its permissible value When a large inertial load is stopped suddenly When a large load is hoisted
5	Overcurrent Protection	When an excessive current flows to the motor's output circuit
9	EEPROM Error	When data of the driver is damaged
Lighting	CPU Error	When the CPU driver malfunctions



2 Function Setting Switch

Indication	No.	Function
1P/2P	1	Switches the pulse input mode between 1-pulse input mode and 2-pulse input mode.
OFF/SD	2	Switches the smooth drive function between enabled and disabled.
R2/R1	3	Use in combination with the step angle setting switch to set the step angle.
STOP	4	Switches the standstill current of motors to 25% or 50%.
OFF/FIL	5	Switches the command filter between enabled and disabled.
–	6	Not used.

● Difference in the Motor Responsiveness Depending on the Command Filter (OFF/FIL Switch)



3 Step Angle Setting Switch

Indication	Function
STEP	Use in combination with the R2/R1 switch to set the step angle.

Step Angle Setting Switch (STEP) Scale	R2/R1 Switch: When Set to ON (R1)		R2/R1 Switch: When Set to OFF (R2)	
	Resolution (P/R)	Step Angle	Resolution (P/R)	Step Angle
0	500	0.72˚	200	1.8˚
1	1000	0.36˚	400	0.9˚
2	1250	0.288˚	800	0.45˚
3	2000	0.18˚	1000	0.36˚
4	2500	0.144˚	1600	0.225˚
5	4000	0.09˚	2000	0.18˚
6	5000	0.072˚	3200	0.1125˚
7	10000	0.036˚	5000	0.072˚
8	12500	0.0288˚	6400	0.05625˚
9	20000	0.018˚	10000	0.036˚
A	25000	0.0144˚	12800	0.028125˚
B	40000	0.009˚	20000	0.018˚
C	50000	0.0072˚	25000	0.0144˚
D	62500	0.00576˚	25600	0.0140625˚
E	100000	0.0036˚	50000	0.0072˚
F	125000	0.00288˚	51200	0.00703125˚

● Compared to the standard type, the high-resolution type has 2 times the resolution and 1/2 the step angle.

Example: When the R2/R1 switch is set to ON (R1) and the STEP switch is set to "0"
Resolution of High-Resolution Type: 500 × 2 = 1000
Step Angle of High-Resolution Type: 0.72˚/2 = 0.36˚

● With the geared types, the actual step angle is the value obtained by dividing the step angle by the gear ratio.

4 Running Current Setting Switch

Indication	Function
RUN	Sets the motor running current.

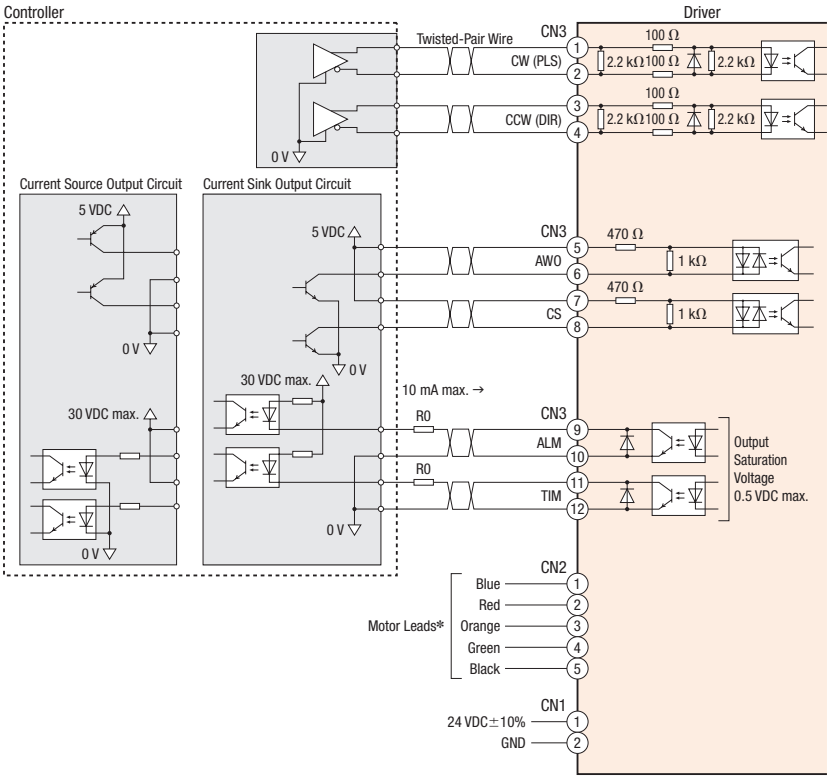
5 I/O Signal Connector

Indication	Pin No.	I/O	Signal Name	Function
CN3	1	Input	CW+ (PLS+)	Rotates the motor in the CW direction. (Operation command pulse signal when in 1-pulse input mode)
	2		CW− (PLS−)	
	3		CCW+ (DIR+)	Rotates the motor in the CCW direction. (Rotation direction signal when in 1-pulse input mode)
	4		CCW− (DIR−)	
	5		AWO+	Stop motor excitation.
	6		AWO−	
	7		CS+	Switches the step angle.
	8		CS−	
	9	Output	ALM+	Outputs the alarm status for the driver (normally closed).
	10		ALM−	
	11		TIM+	Output when the state of excitation of the motor is the excitation home position.
	12		TIM−	

Connection Diagrams

When the Input Signal Voltage is 5 VDC

◇When the pulse input is the line driver

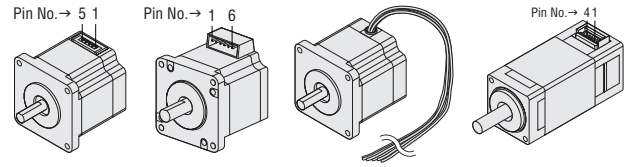


*The pin arrangement of the connector differs depending on the motor. See the connection table below for details.

◇Connection Table of 2-Phase **CVD** Drivers

- Motor: 2-Phase **PKP**/**PK** Series Bipolar 4 Lead Wires
- Driver: Bipolar Driver for 2-Phase Stepper Motors

Model A Model B Model C Model D



Driver CN2 Pin No.	Model A		Model B		Model C	Model D	
	Pin No.	Color	Pin No.	Color	Color	Pin No.	Color
1	4	Blue	1	Blue	Blue	3	Blue
2	5	Red	3	Red	Red	4	Red
3	–		–		–	–	
4	2	Green	6	Green	Green	2	Green
5	1	Black	4	Black	Black	1	Black

- The colors in the table represent colors of the lead wires of the connection cables sold separately.

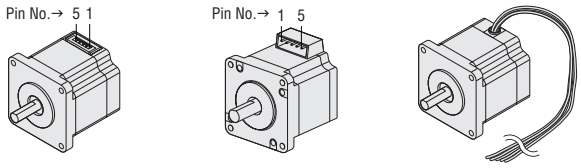
Note

- The pin arrangement varies depending on the model. It will not rotate normally if the connection is wrong.

◇Connection Table of 5-Phase **CVD** Drivers

- Motor: 5-Phase **PKP**/**PK** Series
- Driver: Driver for 5-Phase Stepper Motors

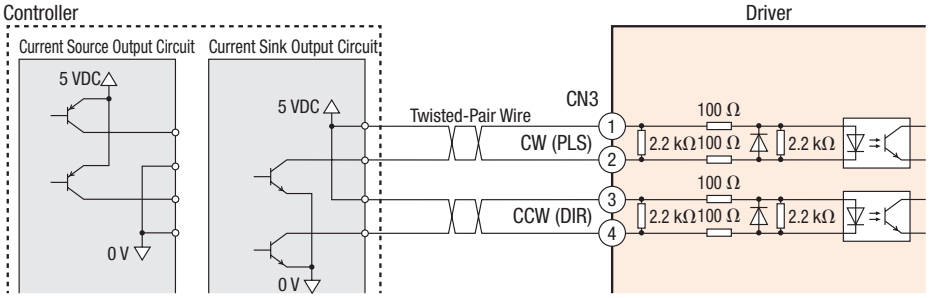
Model A Model B Model C



Driver CN2 Pin No.	Model A		Model B		Model C
	Pin No.	Color	Pin No.	Color	Color
1	5	Blue	1	Blue	Blue
2	4	Red	2	Red	Red
3	3	Orange	3	Orange	Orange
4	2	Green	4	Green	Green
5	1	Black	5	Black	Black

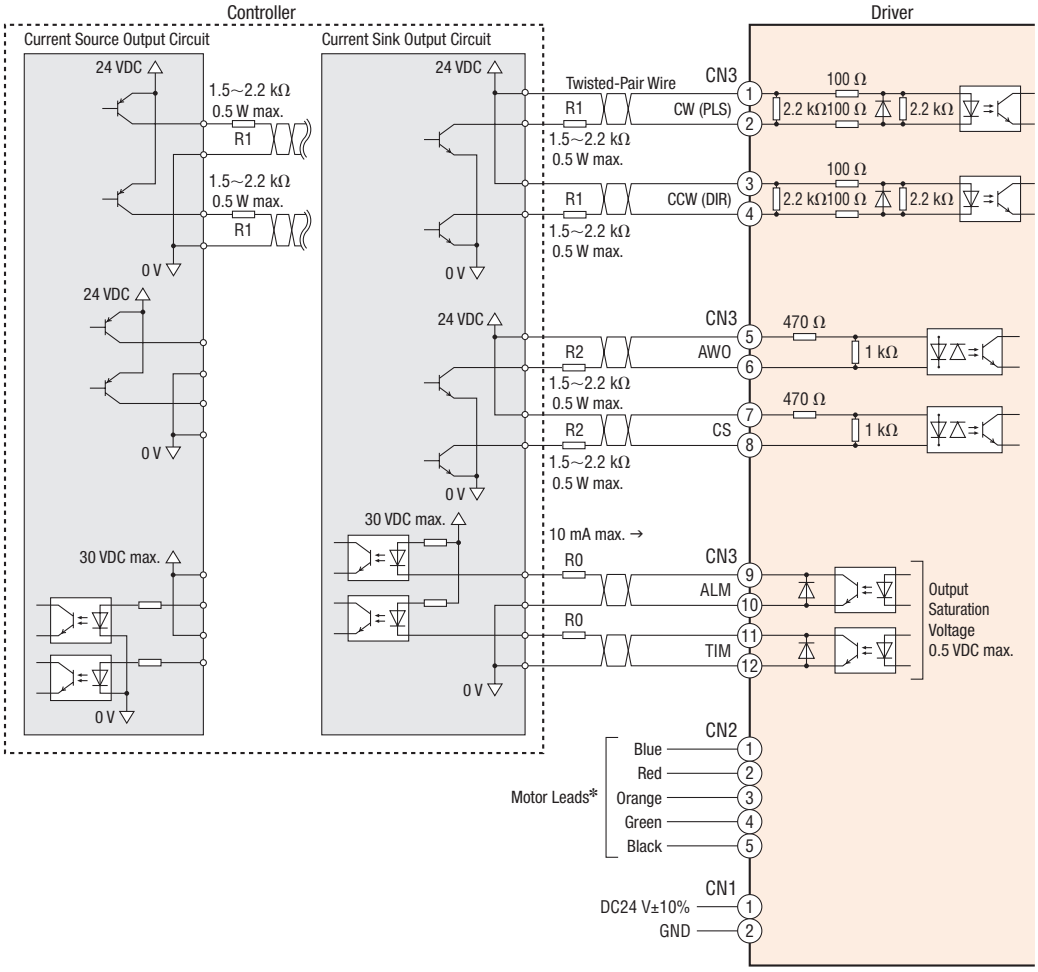
- The colors in the table represent colors of the lead wires of the connection cables sold separately.

◇When the pulse input is open collector



●When the Input Signal Voltage is 24 VDC

◇When the pulse input is open collector



*The pin arrangement of the connector differs depending on the motor. See the connection table on page 152 for details.

[Notes on Wiring]

◇I/O Signal Connection

- Input signal
  - Use 5 VDC for the CW input and CCW input signals. If voltage exceeding 5 VDC is applied, connect an external resistor R1 so that the current becomes 7 - 20 mA.
    Example: When connecting to 24 VDC, R1 should be 1.5 - 2.2 kΩ, 0.5 W or more
  - Use 5 VDC for the AWO input and CS input signals. If voltage exceeding 5 VDC is applied, connect an external resistor R2 so that the current becomes 5 - 15 mA.
    Example: When connecting to 24 VDC, R2 should be 1.5 - 2.2 kΩ, 0.5 W or more
- Output signal
  Use output signals at 30 VDC 10 mA max. When the current value exceeds 10 mA, connect an external resistor R0.
- Either a twisted-pair wire or shielded wire is recommended for the I/O signal cable.
- Note that as the length of the pulse line increases, the max. transmission frequency decreases, and keep the wiring length as short as possible (2 m max.).
- Provide a distance of 100 mm min. between the signal lines and power lines (such as power supply lines and motor lines).

◇Power Supply Connection

- Incorrect polarities of the DC power-supply input will damage the driver. Make sure that the polarity is correct before turning the power on.

◇Motor Cable Extension

- Up to 3 cables can be connected between the motor and driver.
- Maximum extension length is 10 m. (5 m for **CVD242**, **CVD528** or **CVD538**.)

◇General

- A separate hand crimp tool is required to crimp the connector and lead wires included with the driver. Connection cable sets which are available as accessories (sold separately) have already had their lead wires crimped.
- If a specific wiring and layout causes the motor cable or power supply cable to generate a noise problem, shield the cable or use ferrite cores.

Bipolar Driver for 2-Phase Stepper Motors
Driver for 5-Phase Stepper Motors
CVD Series RS-485 Communication Type

Product Number

CVD 2 B R - K R
① ② ③ ④ ⑤ ⑥

①	Series Name	**CVD**: **CVD** Series
②	**2**: 2-Phase **5**: 5-Phase	
③	Driver Configuration	**B**: With an Installation Plate
④	Connector Configuration	**R**: Right Angle
⑤	Power Supply Input	**K**: DC Power Supply
⑥	Product Line	**R**: RS-485 Communication Type

Product Line

Motor cables, power supply and I/O signal cables, and RS-485 communication cables (sold separately) are available. The connectors are already crimped, so they can be easily wired without the need for a crimp tool. Refer to page 163 for details.

●Bipolar Driver for 2-Phase Stepper Motors

◇Right Angle Type with Installation Plate

Product Name	List Price
CVD2BR-KR	

◇With Installation Plate

Product Name	List Price
CVD2B-KR	

●Driver for 5-Phase Stepper Motors

◇Right Angle Type with Installation Plate

Product Name	List Price
CVD5BR-KR	

◇With Installation Plate

Product Name	List Price
CVD5B-KR	

Specifications

CE

Driver Product Name		**CVD2B□-KR**	**CVD5B□-KR**
Drive Method		Microstep Drive, Bipolar Constant Current Drive Method	
Power Supply Voltage		24 VDC±10%	
Input Current*	A	0.5～3.0	0.6～3.0
Interface	Control Input	7 points, Photocoupler	
	Control Output	2 points, Photocoupler and Open-Collector	
	Field Network	Modbus RTU (RS-485 communication)	
Operating Environment (In operation)	Ambient Temperature	0～+50°C (Non-freezing)	
	Ambient Humidity	85% or less (Non-condensing)	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.	

●For the right angle type with installation plate, an **R** (right angle) indicating the connector configuration is specified where the □ box is located in the driver product name.
*Varies depending on the combined motor. Refer to page 155.

RS-485 Communication Specifications

Electrical Characteristics	Complies with EIA-485. Use twisted-pair wire. The max. total extension length is 10 m.
Communication Mode	Half duplex and start-stop synchronization (Data: 8 bits, stop bit: 1 bit or 2 bits, parity: none, even, or odd)
Baud Rate	9,600 bps, 19,200 bps, 38,400 bps, 57,600 bps, 115,200 bps, and 230,400 bps are available
Protocol	Modbus RTU mode
Connection Type	Up to 31 units can be connected to a single host system.

Dimensions (Unit: mm)

Right Angle Type with Installation Plate

2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD2BR-KR	0.065	B1512
CVD5BR-KR		

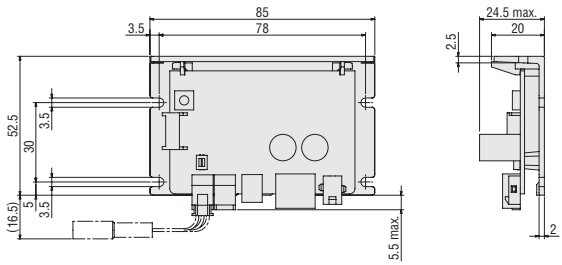
● Applicable Connector (Molex)

Power Connector (CN1)
- Connector Housing: 43645-0200 (Molex)
- Contact: 43030-0001 (Molex)

Motor Connector (CN2)
- Connector Housing: 51103-0500 (Molex)
- Contact: 50351-8100 (Molex)

RS-485 Communication Connector (CN4, CN5)
- Connector Housing: PAP-03V-S (J.S.T.MFG.CO.,LTD.)
- Contact: SPHD-001T-P0.5 or SPHD-002T-P0.5 (J.S.T.MFG.CO.,LTD.)

I/O signal connector (CN6)
- Connector Housing: PHDR-12VS (J.S.T.MFG.CO.,LTD.)
- Contact: SPHD-001T-P0.5 (J.S.T.MFG.CO.,LTD.)



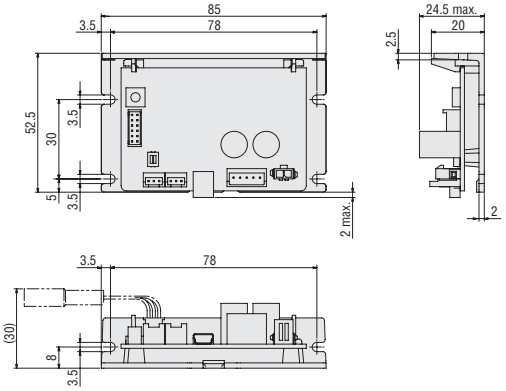
With Installation Plate

2D & 3D CAD

Product Name	Mass kg	2D CAD
CVD2B-KR	0.065	B1511
CVD5B-KR		

● Applicable Connector (Molex)

Same as the right angle with installation plate.



● Motor cables, power supply and I/O signal cables, and RS-485 communication cables (sold separately) are available. The connectors are already crimped, so they can be easily wired without the need for a crimp tool. Refer to page 163 for details.

List of Applicable Motors

Driver for 2-Phase Stepper Motors

Driver Product Name		Motor Drive Current	Input Current A	Applicable Motor
Right Angle with Installation Plate	With Installation Plate			
CVD2BR-KR	**CVD2B-KR**	0.5 A/Phase	0.5	**PKP213D05□**
		0.6 A/Phase	0.5	**PKP203D06□**, **PKP214D06□**
		0.85 A/Phase	0.8	**PKP24□D08□2**
		1.4 A/Phase	1.3	**PKP26□D14□2**
		1.5 A/Phase	1.9	**PKP22□D15□**, **PKP22□MD15□**, **PKP22□D15□2**, **PKP23□D15□**, **PKP24□D15□**, **PKP24□MD15□**, **PKP262FD15A**
			1.4	**PKP24□D15□2**, **PKP24□MD15□2**
		2.3 A/Phase	2.0	**PKP23□D23□**, **PKP24□D23□2**, **PKP24□D23□**
		2.8 A/Phase	3.0	**PKP25□D28□A2**, **PKP26□D28□2**, **PKP26□D28□**, **PKP26□MD28□2**, **PKP26□MD28**

Driver for 5-Phase Stepper Motors

Driver Product Name		Motor Drive Current	Input Current A	Applicable Motor
Right Angle with Installation Plate	With Installation Plate			
CVD5BR-KR	**CVD5B-KR**	0.35 A/Phase	0.6	**PK513**, **PK52□P**
		0.75 A/Phase	1.4	**PK52□H**, **PK54□**
		1.2 A/Phase	1.7	**PKP52□**
		1.4 A/Phase	1.8	**PK56□**
		1.8 A/Phase	2.8	**PKP54□N18□2**, **PKP54□N18□**, **PKP54□MN**
		2.4 A/Phase	3.0	**PKP56□FN24□2**, **PKP56□FMN**

● A number indicating the length of the motor case is entered where the box □ is located within the names of the applicable motors.

● Either **A** (single shaft) or **B** (double shaft) indicating the configuration is specified where the box □ is located in the names of the applicable motors.

● The applicable motors are listed such that the available combinations with the driver are distinguishable.
Combinations with the encoder type and geared type are also available.
For details on the product name, please see the Oriental Motor website.

Note

● Be sure to set the driver current at or below the motor rated current. If the motor rated current is exceeded, the product will be damaged.

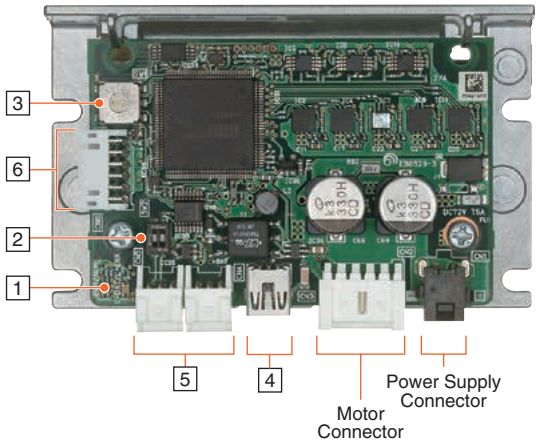
Connection and Operation

Names and Functions of Driver Parts

1 Signal Monitor Indicators

◇LED Indicators

Indication	Color	Function	Lighting Condition
PWR/ALM	Green	Power Supply Indication	When power is applied
	Red	Alarm Indication	When a protective function is activated (blinking)
C-DAT/C-ERR	Green	Communication Indication	When communication data is being sent or received
	Red	Communication Error Indication	When communication data is in error



2 Terminating Resistor Setting Switch

Indication	No.	Function
SW2	1	Set the RS-485 communication terminating resistor (120 Ω) (factory setting: OFF for both No.1 and No.2).
	2	

3 Motor Setting Switch

Indication	Function
SW1	Set the applicable motor (factory setting: 0).

4 USB Communication Connector (CN3)

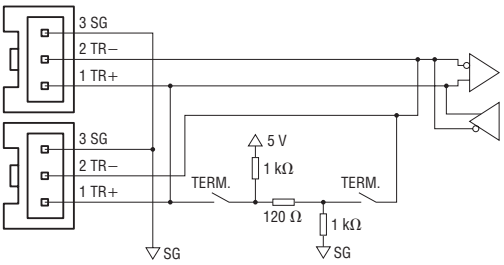
◇USB Communication Cable Specifications

Specifications	USB 2.0 (Full speed)
Cables	Length: 3 m or less
	Configuration: A to mini B

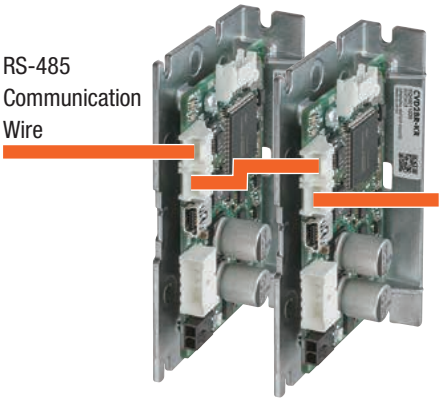
5 RS-485 Communication Connector (CN4, CN5)

Connect when controlling with RS-485 communication. If connecting multiple drivers, connect the RS-485 communication cable (sold separately) to either the CN4 or CN5 connector. Another driver can be connected to the open connectors.

Internal Input Circuit



Pin No.	Signal Name	Description
1	TR+	RS-485 Communication Signal (+)
2	TR−	RS-485 Communication Signal (−)
3	SG	Signal GND



6 I/O Signal Connector (CN6)

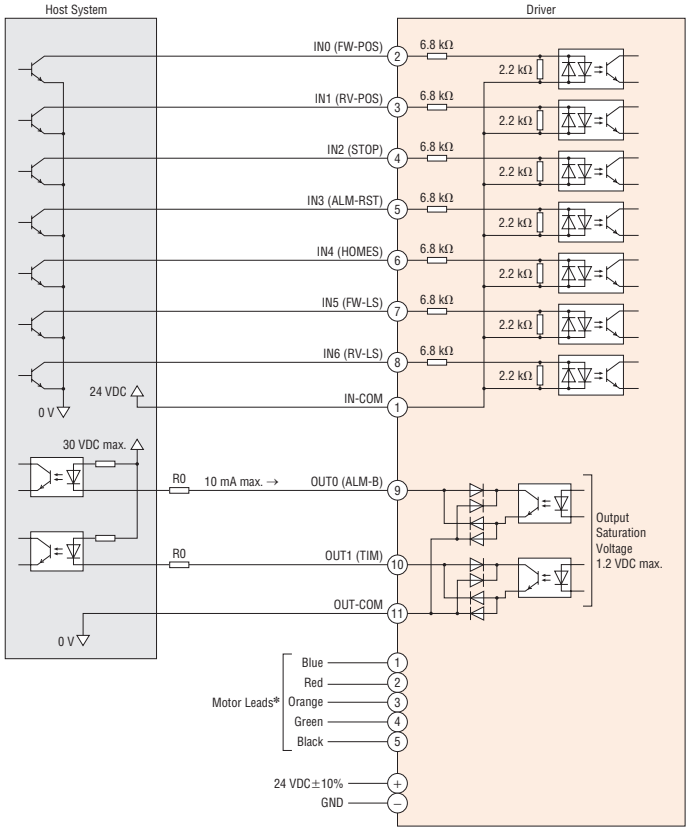
Indication	Pin No.	Signal Name	Description	
CN6	1	IN-COM	Input Common	
	2	IN0	Control Input 0 [FW-POS]	Execute continuous operation in the FWD direction.
	3	IN1	Control Input 1 [RV-POS]	Execute continuous operation in the RVS direction.
	4	IN2	Control Input 2 [STOP]	Stop the motor.
	5	IN3	Control Input 3 [ALM-RST]	Reset the alarms.
	6	IN4	Control Input 4 [HOMES]	The signal input from the mechanical home sensor.
	7	IN5	Control Input 5 [FW-LS]	The signal input from the FWD direction limit sensor.
	8	IN6	Control Input 6 [RV-LS]	The signal input from the RVS direction limit sensor.
	9	OUT0	Control Output 0 [ALM-B]	Output the alarm status for the driver (B contact).
	10	OUT1	Control Output 1 [TIM]	Output each time the motor output shaft rotates 7.2° from home.
	11	OUT-COM	Output Common	
	12	N.C.	N.C.	

Alarm Contents

Blink Count	Function	Operating Condition
5	Overcurrent Protection	When an excessive current flows to the motor's output circuit
2	Main Circuit Overheat Protection	When the temperature of the driver board reaches 85˚C
3	Overvoltage Protection	When the power supply voltage exceeds its permissible value When a large inertial load is stopped suddenly When a large load is hoisted
3	Undervoltage	When the power supply suddenly shuts down or the voltage is insufficient
2	Command Pulse Error	When the command pulse frequency exceeds the specification value
9	EEPROM Error	When data of the driver is damaged
7	Return-to-Home Not Completed	When absolute positioning operation starts with the coordinates not fixed
7	±LS Simultaneous Input	Both FW-LS input and RV-LS input are detected when there is an alarm for the “FW-LS/RV-LS input operation” parameter Return-to-home operation executed when both FW-LS input and RV-LS input are detected
7	±LS Reverse Connection	When a reverse LS input to the operation direction is detected during return-to-home operation in either 3-sensor mode or 2-sensor mode
7	Return-to-Home Operation Error	When the FW-LS and RV-LS sensor and the HOME sensor are installed near one another When the HOME sensor is exceeded during a deceleration stop during return-to-home operation in 1-direction rotation mode
7	HOMES Not Detected	When HOMES input is not detected between the FW-LS input and RV-LS input during return-to-home operation in 3-sensor mode
7	TIM, SLIT Signal Error	When TIM output and SLIT input cannot be detected during return-to-home operation
7	Hardware Overtravel	Either FW-LS input or RV-LS input is detected when there is an alarm for the "FW-LS/RV-LS input operation" parameter
7	Software Overtravel	When the software limit is reached when there is an alarm for the "Software overtravel" parameter
7	Return-to-Home Operation Offset Error	When either FW-LS input or RV-LS is detected during offset traveling during return-to-home operation
7	Operating Data Error	When a positioning SD operation is executed with operating speed 0 data
7	RS-485 Communication Error	When a set number of consecutive errors occurs with the "Communication error alarm" parameter in RS-485 communication
7	RS-485 Communication Timeout	When there is no communication with the host system even when the set time in the "Communication timeout" parameter has elapsed
Lit up	CPU Error	When the CPU driver malfunctions

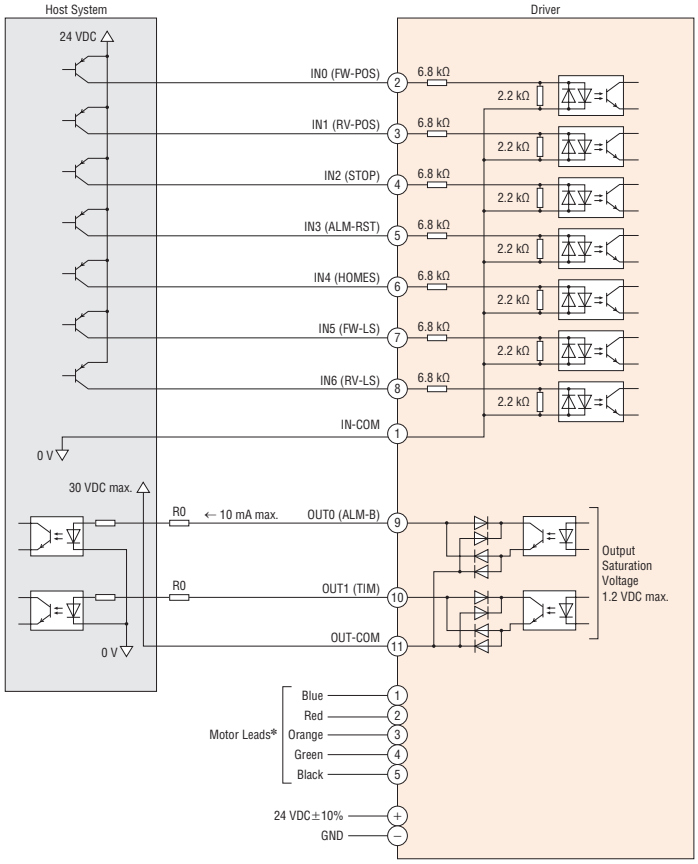
Connection Diagrams

◇Connection with Current Sink Output Circuit



*The connector pin arrangement varies depending on the motor. Refer to the connection table on page 159 for details.

◇Connection with Current Source Output Circuit



*The connector pin arrangement varies depending on the motor. Refer to the connection table on page 159 for details.

[Notes on Wiring]

◇I/O Signal Connection

- Output Signals
  Use output signals at 30 VDC 10 mA max. When the current value exceeds 10 mA, connect an external resistor R0.
- Either a twisted-pair wire or shielded wire is recommended for the I/O signal cable.
- Keep the cable as short as possible (under 2 m) to suppress the effects of noise.
- Provide a distance of 100 mm min. between the signal lines and power lines (such as power supply lines and motor lines).

◇Power Supply Connection

- Incorrect polarities of the DC power-supply input will damage the driver. Make sure that the polarity is correct before turning the power on.

◇Motor Connection

- Up to three cables can be used to connect the motor and driver.
- The maximum extension length is 10 m.

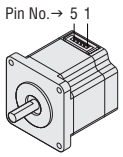
◇General

- A separate hand crimp tool is required to crimp the connector and lead wires included with the driver. The separately sold connection cables have already had their lead wires crimped.
- If a specific wiring and layout causes the motor cable or power supply cable to generate a noise problem, shield the cable or use ferrite cores.

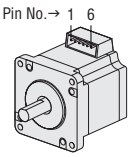
◇2-Phase **CVD** Driver Connection Table

- Motor: 2-Phase **PKP**/**PK** Series Bipolar 4 Lead Wires
- Driver: Bipolar Driver for 2-Phase Stepper Motors

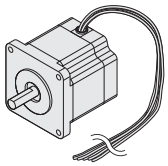
Model A



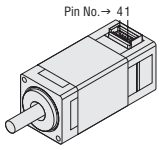
Model B



Model C



Model D



Driver CN2 Pin No.	Model A		Model B		Model C	Model D	
	Pin No.	Color	Pin No.	Color	Color	Pin No.	Color
1	4	Blue	1	Blue	Blue	3	Blue
2	5	Red	3	Red	Red	4	Red
3	–		–		–	–	
4	2	Green	6	Green	Green	2	Green
5	1	Black	4	Black	Black	1	Black

● The colors in the table indicate the colors of the lead wires in the separately sold connection cables.

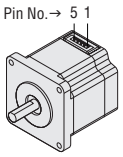
Note

● The pin arrangement varies depending on the model. It will not rotate normally if the connection is wrong.

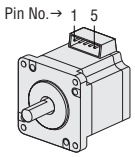
◇5-Phase **CVD** Driver Connection Table

- Motor: 5-Phase **PKP**/**PK** Series
- Driver: Driver for 5-Phase Stepper Motors

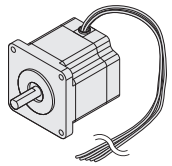
Model A



Model B



Model C



Driver CN2 Pin No.	Model A		Model B		Model C
	Pin No.	Color	Pin No.	Color	Color
1	5	Blue	1	Blue	Blue
2	4	Red	2	Red	Red
3	3	Orange	3	Orange	Orange
4	2	Green	4	Green	Green
5	1	Black	5	Black	Black

● The colors in the table indicate the colors of the lead wires in the separately sold connection cables.

Unipolar Drivers for 2-Phase Stepper Motors

Product Number

CMD 2 1 09 P

① ② ③ ④ ⑤

①	Driver Type	
②	**2**: 2-Phase	
③	Power Supply Input Voltage	**1**: 24 VDC
④	Rated Current	
⑤	Signal I/O Mode	**P**: Photocoupler

Product Line

We have prepared a connection cable set (sold separately) consisting of cables for motor, power supply, and I/O signals. The connectors are already crimped, which makes them easy to wire without crimp tools. For details, refer to page 163.

Product Name	List Price
CMD2109P	
CMD2112P	
CMD2120P	

Included

Type	Connector for Driver Connection	Operating Manual
Common to All Types	CN1 Connector (1 pc.), CN2 Connector (1 pc.), CN3 Connector (1 pc.)	1 Copy

Specifications

CE

Product Name		CMD2109P	CMD2112P	CMD2120P
Drive Method		Microstep Drive, Unipolar Constant-Current Drive Method		
Motor Drive Current (Factory setting)		0.95 A/Phase	1.2 A/Phase	2 A/Phase
Power Supply Voltage		24 VDC±10%		
Input Current	A	1.5	1.7	2.9
Max. Input Pulse Frequency		100 kHz (When the pulse duty is 50%) Negative Logic Pulse Input		
Operating Environment (In operation)	Ambient Temperature	0～+40°C (Non-freezing)		
	Ambient Humidity	85% or Less (Non-condensing)		
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.		

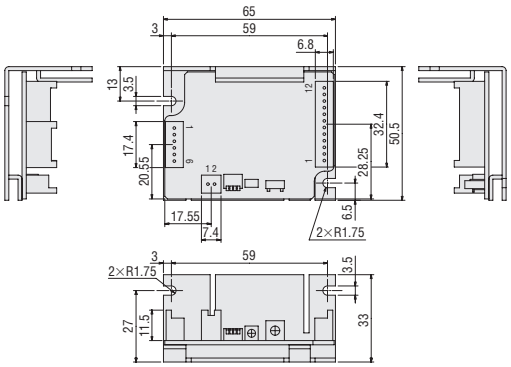
Dimensions (Unit: mm)

2D & 3D CAD

Product Name	Mass kg	2D CAD
CMD2109P	0.05	B441
CMD2112P		
CMD2120P		

● Included

Connector Housing: 51103-0200 (Molex)
51103-1200 (Molex)
51103-0600 (Molex)
Contact: 50351-8100 (Molex)



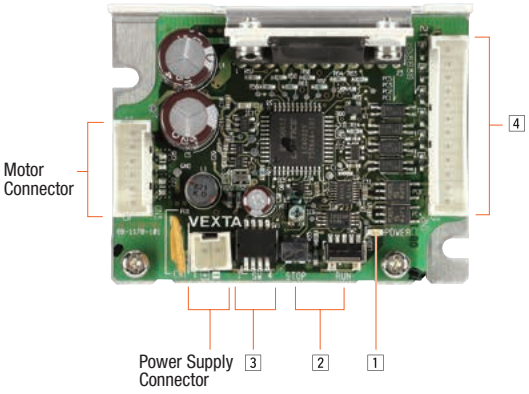
List of Applicable Motors

Driver Product Name	Motor Drive Current	Applicable Motor
CMD2109P	0.95 A/Phase	**PKP21□U**, **PKP22□■U**, **PKP24□U04**, **PKP245U05**, **PKP243U06**, **PKP24□U08**, **PKP243U09**
CMD2112P	1.2 A/Phase	**PKP23□U**, **PKP24□■U12**
CMD2120P	2 A/Phase	**PKP246U16**, **PKP25□U**, **PKP26□U10**, **PKP26□■U20**

● A number indicating the length of the motor case is entered where the box □ is located within the names of the applicable motors.
● For high-resolution type, the code **M** (high-resolution type) indicating the motor type is entered where the box ■ is located within the names of the applicable motors.
● The applicable motors are listed such that the available combinations with the driver are distinguishable.
Combination with the encoder type and geared type are also available.
For details on the product name, please see the Oriental Motor website.

Connection and Operation (Unipolar Driver for 2-phase Stepper Motors)

Names and Functions of Driver Parts



1 Power Supply Input Indicator

Color	Function	Lighting Condition
Green	Power Supply Indication	When power is applied.

2 Current Adjustment Switch

Indication	Switch Name	Function
RUN	Motor Running Current Adjustment Switch	The motor running current can be adjusted.
STOP	Motor Standstill Current Adjustment Potentiometer	The motor's standstill current can be adjusted.

3 Function Switches

Indication	Switch Name	Function
1	Pulse Input Mode Select Switch	The pulse input mode can be switched to 1-pulse input mode or 2-pulse input mode.
2, 3, 4	Step Angle Setting Switch	The switches can set any of 5 step angles.

Step Angle Setting Switch

SW-2	SW-3	SW-4	Resolution	Resolution	Step Angle
OFF	OFF	OFF	1	200	1.8°
OFF	OFF	ON	2	400	0.9°
OFF	ON	OFF	4	800	0.45°
OFF	ON	ON	8	1600	0.225°
ON	OFF	OFF	16	3200	0.1125°

Note

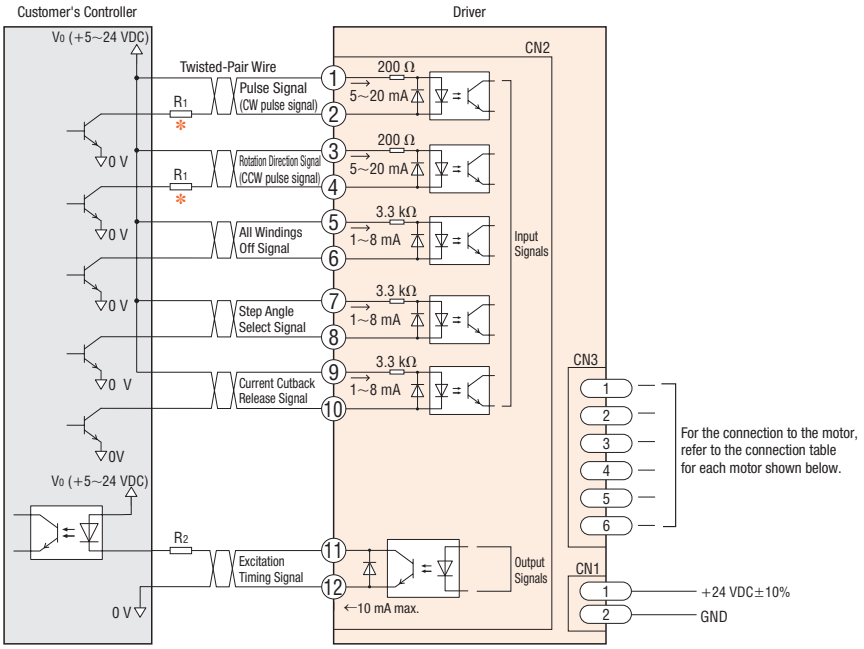
- If a combination not listed in the table is set, the resolution becomes 1, and the motor operates at the basic step angle.
- The step angle is calculated by dividing the basic step angle by the resolution number. The above figures are based on a basic step angle of 1.8°.
- With the high-resolution type, the basic step angle is 0.9°, and the resolution is 400 at resolution 1.
- With geared types, the step angle/gear ratio is the actual step angle.
- The step angle set with the step angle setting switches is effective when the step angle select (CS) input signal is OFF.
- Do not change the step angle select input signal or step angle setting switches while the motor is operating.The motor may misstep and stop. Change the step angle setting switches when the step angle select input signal is OFF and the excitation timing output signal is ON.

4 I/O Signals

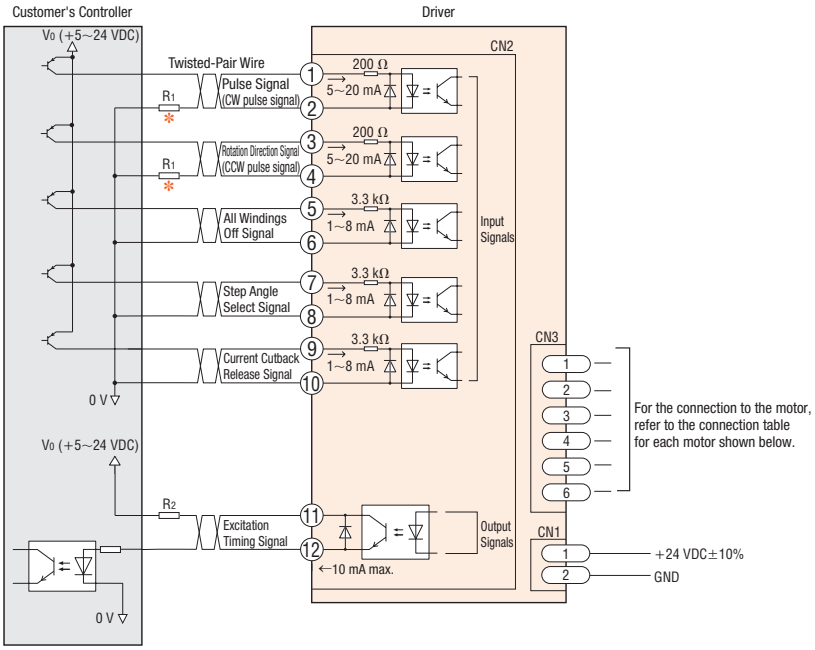
Indication	I/O	Pin No.	Signal Name	Function
CN2	Input Signals	1	Pulse Signal (CW Pulse Signal)	Rotates the motor in the CW direction. (Operation command pulse signal when in 1-pulse input mode)
		2		
		3	Rotation Direction Signal (CCW Pulse Signal)	Rotates the motor in the CCW direction. (Rotation direction signal when in 1-pulse input mode as follows, photocoupler "OFF": CCW and photocoupler "ON": CCW)
		4		
		5	All Windings Off Signal	All windings of the motor are set to OFF and the motor shaft can be rotated by external force.
		6		
		7	Step Angle Select Input Signal	The motor operates at the basic step angle regardless of how the step angle setting switches are set.
		8		
		9	Automatic Current Cutback Release Signal	This signal is used to disable the automatic current cutback function.
		10		
	Output Signals	11	Excitation Timing Signal	This signal is output when the excitation sequence is step "0."
		12		

●Connection Diagrams

◇Connection with Current Sink Output Circuit



◇Connection with Current Sorce Output Circuit



[Notes on Wiring]

◇I/O Signal Connection

✻Pulse Input Signals

The external resistor is not needed when 5 VDC is applied. If voltage exceeding 5 VDC is applied, connect an external resistor R1 so that the current becomes 5 - 20 mA.
Example) When V_0 is 24 VDC, R_1: 1.5 - 2.2 kΩ 0.5 W min.

- Output Signals
  Check the specifications of the connected devices, and if the current exceeds 10 mA, connect the external resistor R_2.
- Use twisted-pair wires of AWG24 - 22 (0.2 - 0.3 mm^2).
- Note that as the length of the pulse line increases, the max. transmission frequency decreases, and keep the wiring length as short as possible (2 m max.).
- Provide a distance of 100 mm min. between the I/O signal lines and power lines (such as power supply lines and motor lines).

◇Connecting the Power Supply

- Use a wire of AWG22 (0.3 mm^2).
- Incorrect polarities of the DC power supply input will damage the driver. Make sure that the polarity is correct before turning the power on.

◇Motor Cable Extension

- Use a wire of AWG22 (0.3 mm^2) min.
- The max. extension length is 2 m.

◇General

- A separate hand crimp tool is required to crimp the connector and lead wires included with the driver. Connection cable sets which are available as accessories (sold separately) have already had their lead wires crimped.
- If a specific wiring and layout causes the motor cable or power supply cable to generate a noise problem, shield the cable or use ferrite cores.

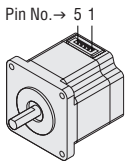
●Table for 2-Phase CMD Driver Connection

- Motor: 2-Phase **PKP**/**PK** Series Unipolar 5 Lead Wires (6 Lead Wires)
- Driver: Unipolar Driver for 2-Phase Stepper Motors

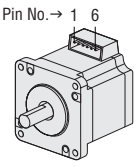
Driver CN3 Pin No.	Model A		Model B		Model C
	Pin No.	Color	Pin No.	Color	Color
1	4	Blue	1	Blue	Blue
2	3	White	2	White	White
3	5	Red	3	Red	Red
4	1	Black	4	Black	Black
5	–		5	Yellow	Yellow
6	2	Green	6	Green	Green

- The colors in the table represent colors of the lead wires of the connection cables sold separately.

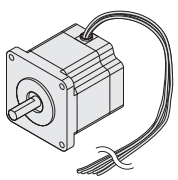
Model A
Pin No.→ 5 1



Model B
Pin No.→ 1 6



Model C



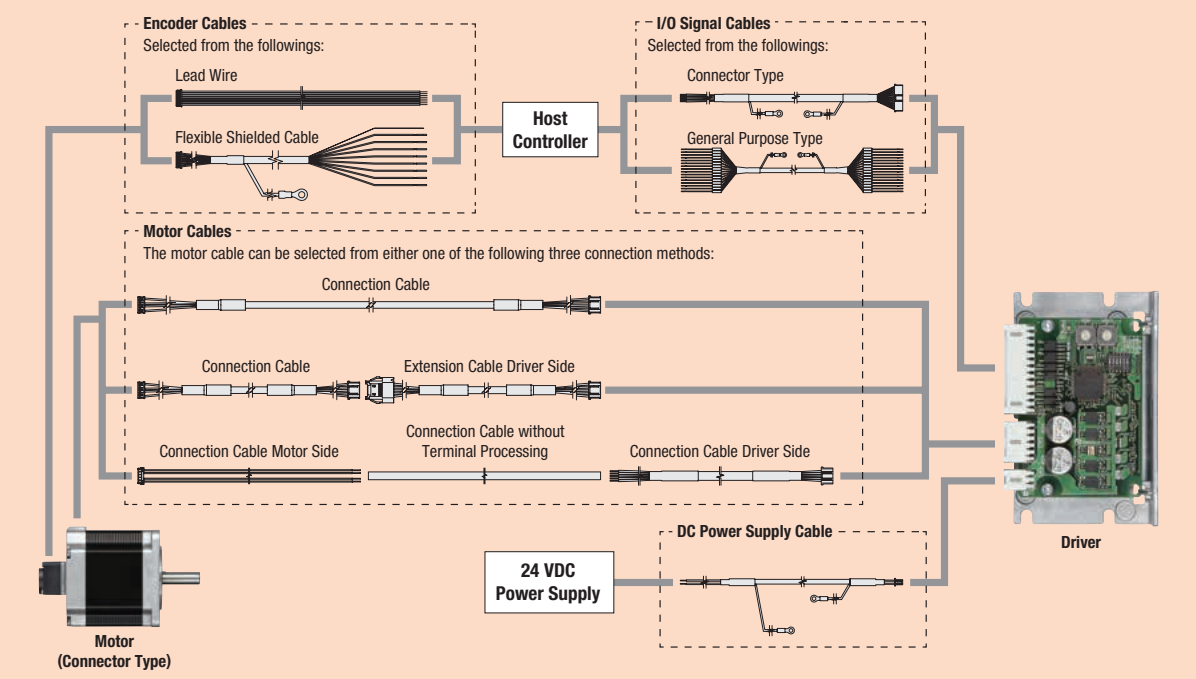
Note

- The motors of the model A and model B are different in pin assignments. Wrong connection will not cause the motor to operate properly.

Cables

Cable System Configuration Example

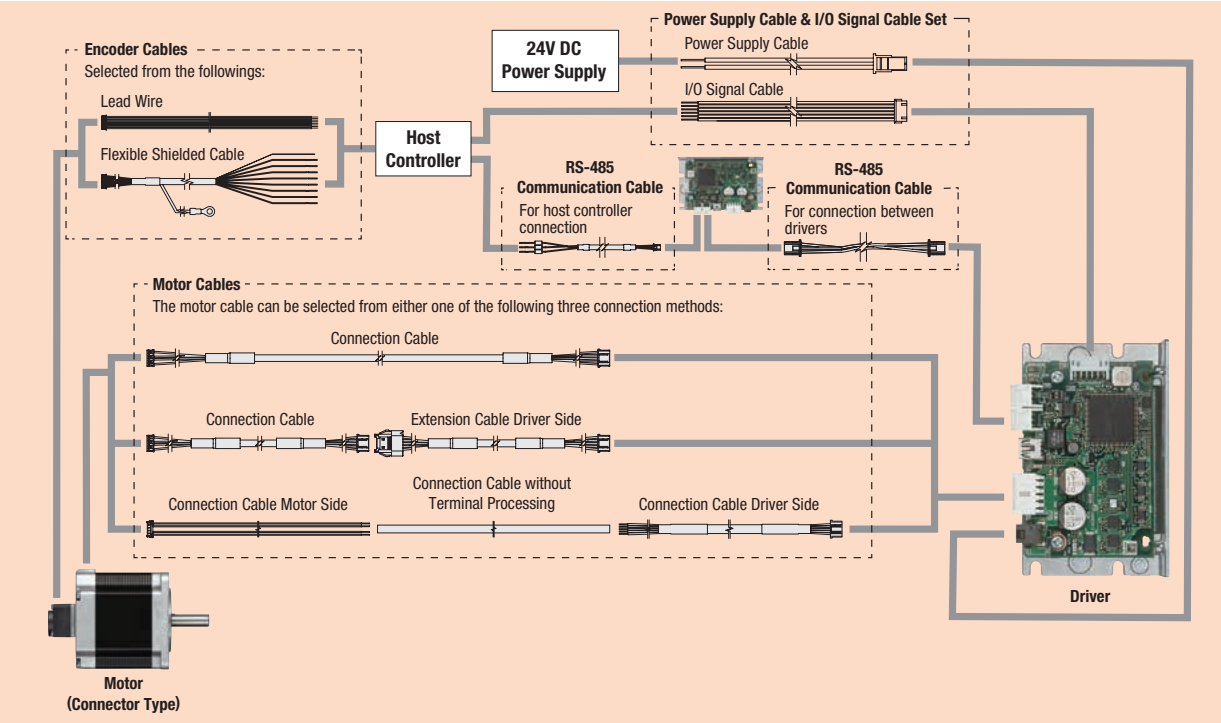
Pulse Input Type Driver



Note

- Up to three cables can be used to connect the motor and driver.
- The maximum extension lengths between the motor and driver is shown below.
  2-Phase Bipolar Motor and 2-Phase **CVD** Driver: 10 m
  2-Phase Unipolar Motor and 2-Phase **CMD** Driver: 2 m
  5-Phase Motor and 5-Phase **CVD** Driver: 10 m

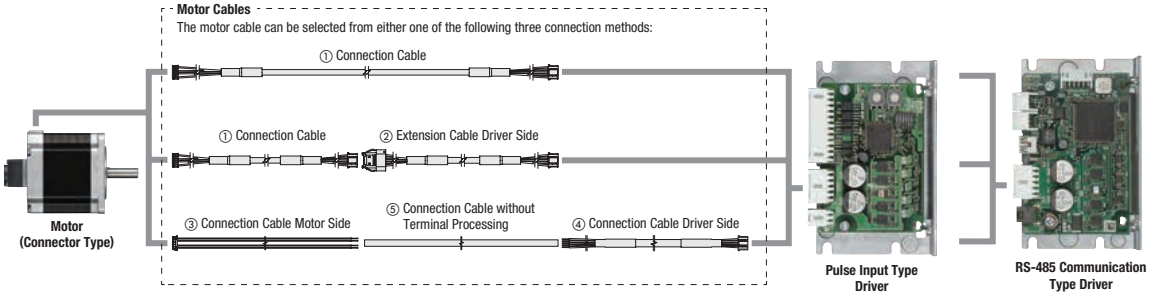
RS-485 Communication Type Driver



Note

- Up to three cables can be used to connect the motor and driver.
- The maximum extension lengths between the motor and driver is 10 m.

Motor Cables



① Connection Cables

These cables are used to connect the connector type motor and the driver.
The motor and the driver can be connected directly since these cables have connectors on both ends.

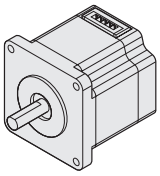


●Notes on Applicable Products

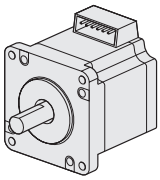
◇Two connector shapes are available for the connector type motor.

Select a suitable cable for each connector shape.

Model A



Model B

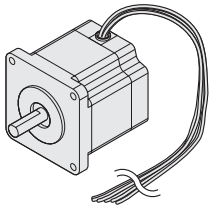


●Same for the geared motors and motors with encoder.

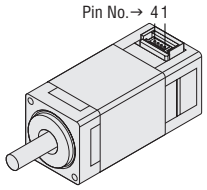
◇Connection cables that can be connected to the following motors are not available:

- 2-Phase Unipolar (5 or 6 Lead Wires)
- Model C and Model D motors

Model C



Model D



●2-Phase Frame Size 28 mm Bipolar (4 Lead Wires) Connector Type

◇Product Line

●Connection Cables

Product Name	Length L (m)	List Price
CCM005V2AAF	0.5	
CCM010V2AAF	1	
CCM015V2AAF	1.5	
CCM020V2AAF	2	
CCM025V2AAF	2.5	
CCM030V2AAF	3	
CCM040V2AAF	4	
CCM050V2AAF	5	
CCM070V2AAF	7	
CCM100V2AAF	10	

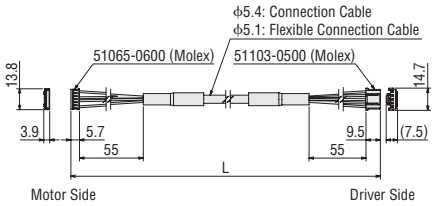
●Flexible Connection Cable

Product Name	Length L (m)	List Price
CCM005V2AAR	0.5	
CCM010V2AAR	1	
CCM015V2AAR	1.5	
CCM020V2AAR	2	
CCM025V2AAR	2.5	
CCM030V2AAR	3	
CCM040V2AAR	4	
CCM050V2AAR	5	
CCM070V2AAR	7	
CCM100V2AAR	10	

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	28 mm	**CVD215**	**CVD2**

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that can be used to extend the connection cable.

●2-Phase Frame Size 35/42 mm Bipolar (4 Lead Wires) Connector Type

◇Product Line

●Connection Cables

Product Name	Length L (m)	List Price
CCM005V2ABF	0.5	
CCM010V2ABF	1	
CCM015V2ABF	1.5	
CCM020V2ABF	2	
CCM025V2ABF	2.5	
CCM030V2ABF	3	
CCM040V2ABF	4	
CCM050V2ABF	5	
CCM070V2ABF	7	
CCM100V2ABF	10	

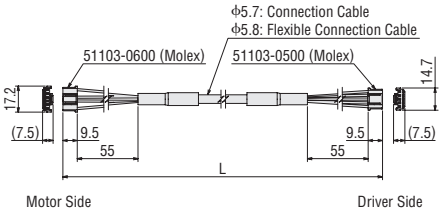
●Flexible Connection Cables

Product Name	Length L (m)	List Price
CCM005V2ABR	0.5	
CCM010V2ABR	1	
CCM015V2ABR	1.5	
CCM020V2ABR	2	
CCM025V2ABR	2.5	
CCM030V2ABR	3	
CCM040V2ABR	4	
CCM050V2ABR	5	
CCM070V2ABR	7	
CCM100V2ABR	10	

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	35 mm 42 mm	**CVD215** **CVD223**	**CVD2**

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

●2-Phase Frame Size 56.4 mm Bipolar (4 Lead Wires) Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V2ACF	0.5	
CCM010V2ACF	1	
CCM015V2ACF	1.5	
CCM020V2ACF	2	
CCM025V2ACF	2.5	
CCM030V2ACF	3	
CCM040V2ACF	4	
CCM050V2ACF	5	
CCM070V2ACF	7	
CCM100V2ACF	10	

•Flexible Connection Cables

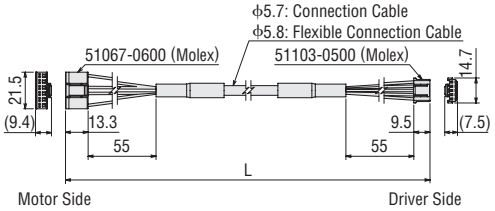
Product Name	Length L (m)	List Price
CCM005V2ACR	0.5	
CCM010V2ACR	1	
CCM015V2ACR	1.5	
CCM020V2ACR	2	
CCM025V2ACR	2.5	
CCM030V2ACR	3	
CCM040V2ACR	4	
CCM050V2ACR	5	
CCM070V2ACR	7	
CCM100V2ACR	10	

●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	56.4 mm	**CVD228**	**CVD2**

◇Dimensions (Unit: mm)



●2-Phase Frame Size 42/50/51/56.4/60 mm Bipolar (4 Lead Wires) Mini-Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V2AEF	0.5	
CCM010V2AEF	1	
CCM015V2AEF	1.5	
CCM020V2AEF	2	
CCM025V2AEF	2.5	
CCM030V2AEF	3	
CCM040V2AEF	4	
CCM050V2AEF	5	
CCM070V2AEF	7	
CCM100V2AEF	10	

•Flexible Connection Cables

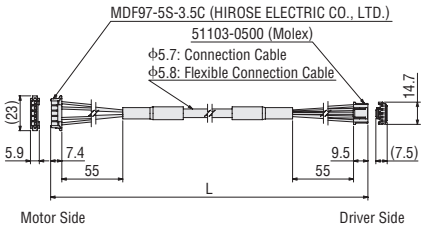
Product Name	Length L (m)	List Price
CCM005V2AER	0.5	
CCM010V2AER	1	
CCM015V2AER	1.5	
CCM020V2AER	2	
CCM025V2AER	2.5	
CCM030V2AER	3	
CCM040V2AER	4	
CCM050V2AER	5	
CCM070V2AER	7	
CCM100V2AER	10	

●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model A	42 mm	**CVD223F**	**CVD2**
	50 mm	**CVD228**	
	51 mm	**CVD223F**	
	56.4 mm	**CVD228**	
	60 mm		

◇Dimensions (Unit: mm)



●2-Phase Frame Size 56.4 mm Bipolar (4 Lead Wires) Mini-Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V2BEF	0.5	
CCM010V2BEF	1	
CCM020V2BEF	2	
CCM030V2BEF	3	
CCM050V2BEF	5	

•Flexible Connection Cables

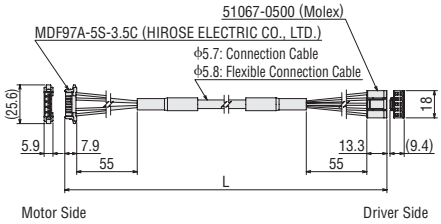
Product Name	Length L (m)	List Price
CCM005V2BER	0.5	
CCM010V2BER	1	
CCM020V2BER	2	
CCM030V2BER	3	
CCM050V2BER	5	

●See page 167 for "Extension Cables Driver Side (**CCM□□□V5BFFT**)" that are used to extend the connection cable.

◇Applicable Products

Motor		Driver
Connector Type	Frame Size	Pulse Input
Model A	56.4 mm	**CVD242**

◇Dimensions (Unit: mm)



●5-Phase Frame Size 20/28 mm Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V5AAF	0.5	
CCM010V5AAF	1	
CCM015V5AAF	1.5	
CCM020V5AAF	2	
CCM025V5AAF	2.5	
CCM030V5AAF	3	
CCM040V5AAF	4	
CCM050V5AAF	5	
CCM070V5AAF	7	
CCM100V5AAF	10	

•Flexible Connection Cables

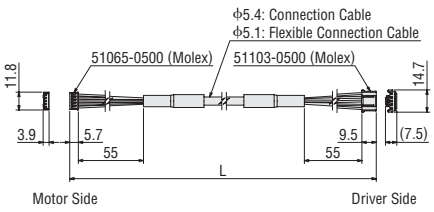
Product Name	Length L (m)	List Price
CCM005V5AAR	0.5	
CCM010V5AAR	1	
CCM015V5AAR	1.5	
CCM020V5AAR	2	
CCM025V5AAR	2.5	
CCM030V5AAR	3	
CCM040V5AAR	4	
CCM050V5AAR	5	
CCM070V5AAR	7	
CCM100V5AAR	10	

●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	20 mm	**CVD503**	**CVD5**
	28 mm	**CVD512**	

◇Dimensions (Unit: mm)



●5-Phase Frame Size 42/60 mm Mini-Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V5AEF	0.5	
CCM010V5AEF	1	
CCM015V5AEF	1.5	
CCM020V5AEF	2	
CCM025V5AEF	2.5	
CCM030V5AEF	3	
CCM040V5AEF	4	
CCM050V5AEF	5	
CCM070V5AEF	7	
CCM100V5AEF	10	

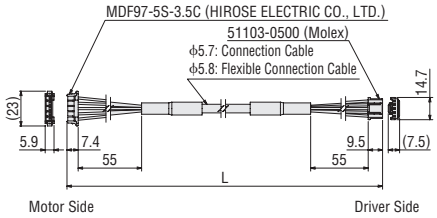
•Flexible Connection Cables

Product Name	Length L (m)	List Price
CCM005V5AER	0.5	
CCM010V5AER	1	
CCM015V5AER	1.5	
CCM020V5AER	2	
CCM025V5AER	2.5	
CCM030V5AER	3	
CCM040V5AER	4	
CCM050V5AER	5	
CCM070V5AER	7	
CCM100V5AER	10	

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model A	42 mm	**CVD518**	**CVD5**
	60 mm	**CVD524**	

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

●5-Phase Frame Size 42 mm Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V5ABF	0.5	
CCM010V5ABF	1	
CCM015V5ABF	1.5	
CCM020V5ABF	2	
CCM025V5ABF	2.5	
CCM030V5ABF	3	
CCM040V5ABF	4	
CCM050V5ABF	5	
CCM070V5ABF	7	
CCM100V5ABF	10	

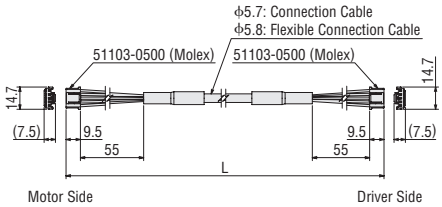
•Flexible Connection Cables

Product Name	Length L (m)	List Price
CCM005V5ABR	0.5	
CCM010V5ABR	1	
CCM015V5ABR	1.5	
CCM020V5ABR	2	
CCM025V5ABR	2.5	
CCM030V5ABR	3	
CCM040V5ABR	4	
CCM050V5ABR	5	
CCM070V5ABR	7	
CCM100V5ABR	10	

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	42 mm	**CVD518**	**CVD5**

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

●5-Phase Frame Size 56.4/60 mm Mini-Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V5BEF	0.5	
CCM010V5BEF	1	
CCM020V5BEF	2	
CCM030V5BEF	3	
CCM050V5BEF	5	

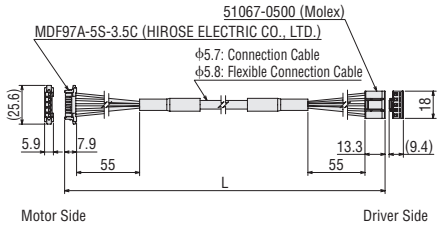
•Flexible Connection Cables

Product Name	Length L (m)	List Price
CCM005V5BER	0.5	
CCM010V5BER	1	
CCM020V5BER	2	
CCM030V5BER	3	
CCM050V5BER	5	

◇Applicable Products

Motor		Driver
Connector Type	Frame Size	Pulse Input
Model A	56.4 mm	**CVD528**
	60 mm	**CVD538**

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5BFFT**)" that are used to extend the connection cable.

●5-Phase Frame Size 60 mm Connector Type

◇Product Line

•Connection Cables

Product Name	Length L (m)	List Price
CCM005V5ACF2	0.5	
CCM010V5ACF2	1	
CCM015V5ACF2	1.5	
CCM020V5ACF2	2	
CCM025V5ACF2	2.5	
CCM030V5ACF2	3	
CCM040V5ACF2	4	
CCM050V5ACF2	5	
CCM070V5ACF2	7	
CCM100V5ACF2	10	

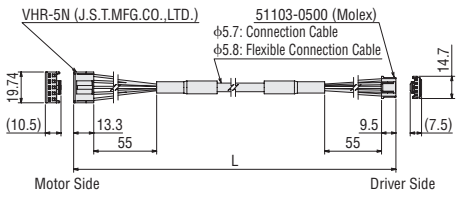
•Flexible Connection Cables

Product Name	Length L (m)	List Price
CCM005V5ACR2	0.5	
CCM010V5ACR2	1	
CCM015V5ACR2	1.5	
CCM020V5ACR2	2	
CCM025V5ACR2	2.5	
CCM030V5ACR2	3	
CCM040V5ACR2	4	
CCM050V5ACR2	5	
CCM070V5ACR2	7	
CCM100V5ACR2	10	

◇Applicable Products

Motor		Driver	
Connector Type	Frame Size	Pulse Input	RS-485 Communication
Model B	60 mm	**CVD524**	**CVD5**

◇Dimensions (Unit: mm)



●See page 167 for "Extension Cables Driver Side (**CCM□□□V5ADFT**)" that are used to extend the connection cable.

② Extension Cables Driver Side



These cables can be used to extend the connection cables.
The cables can connect the connection cable and the driver directly.

◇Product Line

•Extension Cables

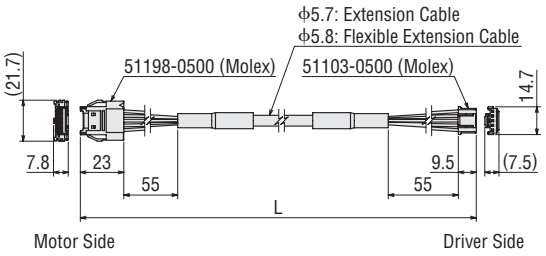
Product Name	Applicable Drivers		Length L (m)	List Price
	Pulse Input	RS-485 Communication		
CCM005V5ADFT	**CVD215**, **CVD223**, **CVD223F**, **CVD228**, **CVD503**, **CVD512**, **CVD518**, **CVD524**	**CVD2**, **CVD5**	0.5	
CCM010V5ADFT			1	
CCM015V5ADFT			1.5	
CCM020V5ADFT			2	
CCM025V5ADFT			2.5	
CCM030V5ADFT			3	
CCM040V5ADFT			4	
CCM050V5ADFT			5	
CCM070V5ADFT			7	
CCM090V5ADFT			9	
CCM005V5BFFT	**CVD242**, **CVD528**, **CVD538**	–	0.5	
CCM010V5BFFT			1	
CCM020V5BFFT			2	
CCM030V5BFFT			3	
CCM040V5BFFT			4	

•Flexible Extension Cables

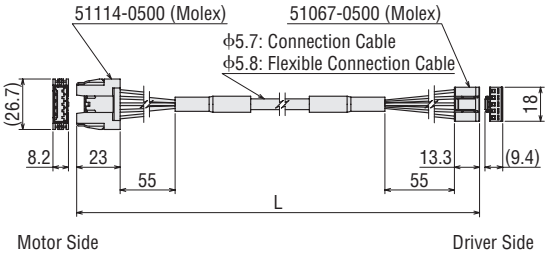
Product Name	Applicable Drivers		Length L (m)	List Price
	Pulse Input	RS-485 Communication		
CCM005V5ADRT	**CVD215**, **CVD223**, **CVD223F**, **CVD228**, **CVD503**, **CVD512**, **CVD518**, **CVD524**	**CVD2**, **CVD5**	0.5	
CCM010V5ADRT			1	
CCM015V5ADRT			1.5	
CCM020V5ADRT			2	
CCM025V5ADRT			2.5	
CCM030V5ADRT			3	
CCM040V5ADRT			4	
CCM050V5ADRT			5	
CCM070V5ADRT			7	
CCM090V5ADRT			9	
CCM005V5BFRT	**CVD242**, **CVD528**, **CVD538**	–	0.5	
CCM010V5BFRT			1	
CCM020V5BFRT			2	
CCM030V5BFRT			3	
CCM040V5BFRT			4	

◇Dimensions (Unit: mm)

Product Name: **CCM□□□V5ADFT**, **CCM□□□V5ADRT**



Product Name: **CCM□□□V5BFFT**, **CCM□□V5BFRT**



③ Connection Cables Motor Side



These cables have a connector on motor side.
Refer to pages on motor specifications and dimensions for "Applicable Motors" and "Cable Dimensions."

◇Product Line (For 2-Phase Bipolar Motors)

Product Name	Length L (m)	List Price
LC2B06A	0.6	
LC2B10A	1	
LC2B06B	0.6	
LC2B10B	1	
LC2B06C	0.6	
LC2B10C	1	
LC2B06E	0.6	
LC2B10E	1	
LC2B10G	1	

◇Product Line (For 2-Phase Unipolar Motors)

Product Name	Length L (m)	List Price
LC2U06A	0.6	
LC2U10A	1	
LC2U06B	0.6	
LC2U10B	1	
LC2U06C	0.6	
LC2U10C	1	
LC2U06E	0.6	
LC2U10E	1	

◇Product Line (For 5-Phase Motors)

Product Name	Length L (m)	List Price
LC5N06A	0.6	
LC5N10A	1	
LC5N06B	0.6	
LC5N10B	1	
LC5N06C2	0.6	
LC5N10C2	1	
LC5N06E	0.6	
LC5N10E	1	

④ Connection Cables Driver Side



These cables are used to connect the motor and the driver.
These cables have a connector on driver side.

- Cables for connecting bipolar driver for 2-phase stepper motor (product name: **CVD2**～) are not available. The lead wire type driver cable set which is a set of cables for I/O signals, motor, and DC power supply (➜ page 173) is available. (Pulse Input Type)

◇Product Line

Product Name	Applicable Driver	Length L (m)	Type	Conductor AWG	List Price
CC005N1	Driver for 5-Phase Stepper Motors* (Product Name: **CVD5**～)	0.5	Not Flexible	22 (0.3 mm^2)	
CC010N1		1			
CC005N1R		0.5	Flexible		
CC010N1R		1			
CC005U1	Unipolar Driver for 2-Phase Stepper Motors (Product Name: **CMD2**～)	0.5	Not Flexible		
CC010U1		1			
CC005U1R		0.5	Flexible		
CC010U1R		1			

*Excluding **CVD528** and **CVD538**.

- For dimensions, please see the Oriental Motor website.

⑤ Connection Cables without Terminal Processing



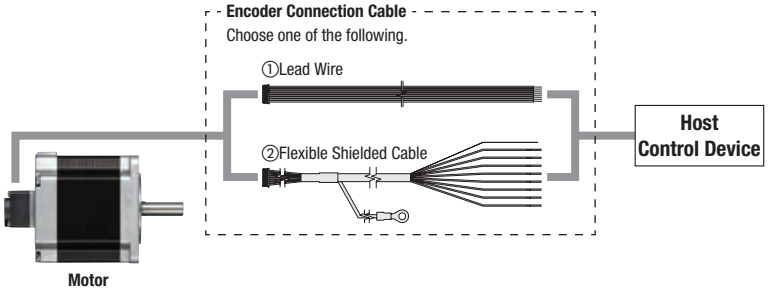
These cables are used to extend the connection between the 5-Phase or 2-Phase bipolar motors and the drivers. When wiring the motor and the driver, keep a maximum distance of 10 m.

◇Product Line

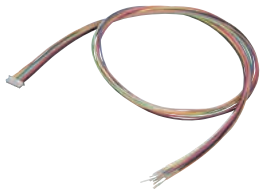
Product Name	Cable Type	Length L (m)	Conductor AWG	Finished Diameter (mm)	List Price
CC05PK5	Connection Cable for Stand Motor	5	22 (0.3 mm^2)	ϕ7.2	
CC10PK5		10			
CC05PK5R	Flexible Connection Cable for Standard Motor	5	22 (0.3 mm^2)	ϕ5.8	
CC10PK5R		10			

- Cable Core Structure: 5 cores (blue, red, orange, green, black)
- Cable Rated Temperature: 105℃
- Cable Sheath: Oil-resistant, heat-resistant, non-transferable vinyl
- Applicable Products:
  These cables can be used for 2-phase stepper motors with a motor rated current of 2.8 A or lower.
  These cables can be used for 5-phase stepper motors with a motor rated current of 2.4 A or lower.
- The flexible connection cables can only be used for 5-phase stepper motors.
- For dimensions, please see the Oriental Motor website.

Encoder Connection Cable



① Lead Wire



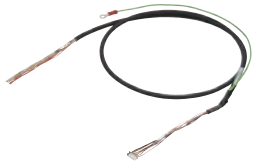
An encoder connection cable with an encoder connector on the motor end. Check the specifications and dimensions page of each motor for the cable dimensions.

◇Product Line

Product Name	Applicable Motor	Length L (m)	Conductor AWG	List Price
LCE08A-006	2-Phase/5-Phase Motors with Encoder	0.6	26 (0.13 mm^2)	

- A voltage output type cable is also available. For details, please contact your nearest Oriental Motor sales office.
- For dimensions, please see the Oriental Motor website.

② Flexible Shielded Cable



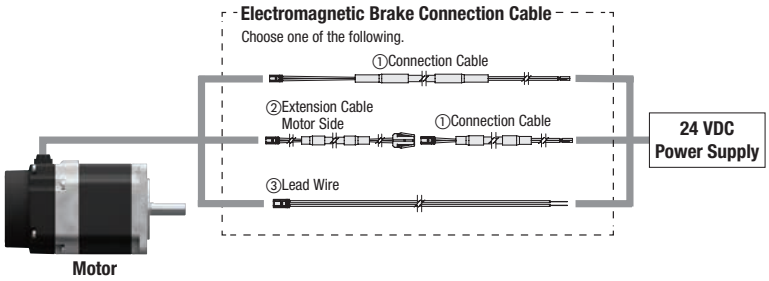
A flexible shielded cable with an encoder connector on the motor end. Features an exposed shielded ground wire for easy grounding.

◇Product Line

Product Name	Applicable Motor	Length L (m)	Conductor AWG	List Price
CC010E1R	2-Phase/5-Phase Motor with Encoder	1	26 (0.13 mm^2)	
CC020E1R		2		
CC030E1R		3		

- For dimensions, please see the Oriental Motor website.

Electromagnetic Brake Connection Cable



① Connection Cable

A connection cable with an electromagnetic brake connector on the motor end.
Can be used on electromagnetic brakes with the connector connection method.



◇Product Line

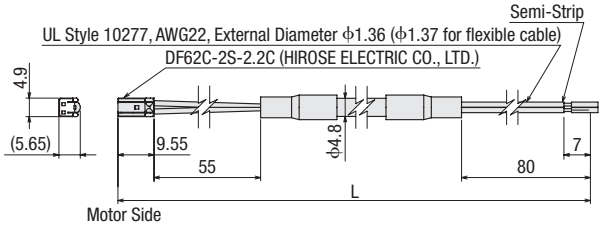
•Connection Cables

Product Name	Length L (m)	List Price
CCB005VYAF	0.5	
CCB010VYAF	1	
CCB015VYAF	1.5	
CCB020VYAF	2	
CCB025VYAF	2.5	
CCB030VYAF	3	
CCB040VYAF	4	
CCB050VYAF	5	
CCB070VYAF	7	
CCB100VYAF	10	

•Flexible Connection Cables

Product Name	Length L (m)	List Price
CCB005VYAR	0.5	
CCB010VYAR	1	
CCB015VYAR	1.5	
CCB020VYAR	2	
CCB025VYAR	2.5	
CCB030VYAR	3	
CCB040VYAR	4	
CCB050VYAR	5	
CCB070VYAR	7	
CCB100VYAR	10	

◇Dimensions (Unit: mm)



② Extension Cable

These cables can be used to extend connection cables.
They can be directly connected between the connection cable and the electromagnetic brake.



◇Product Line

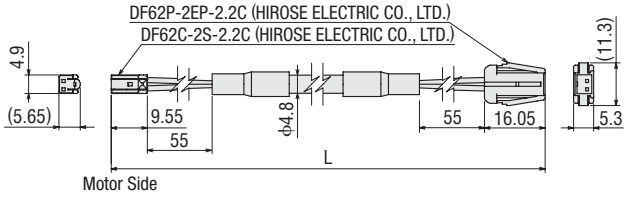
•Extension Cable

Product Name	Length L (m)	List Price
CCB005VBAFT	0.5	
CCB010VBAFT	1	
CCB015VBAFT	1.5	
CCB020VBAFT	2	
CCB025VBAFT	2.5	
CCB030VBAFT	3	
CCB040VBAFT	4	
CCB050VBAFT	5	
CCB070VBAFT	7	
CCB090VBAFT	9	

•Flexible Extension Cable

Product Name	Length L (m)	List Price
CCB005VBART	0.5	
CCB010VBART	1	
CCB015VBART	1.5	
CCB020VBART	2	
CCB025VBART	2.5	
CCB030VBART	3	
CCB040VBART	4	
CCB050VBART	5	
CCB070VBART	7	
CCB090VBART	9	

◇Dimensions (Unit: mm)



③ Lead Wire

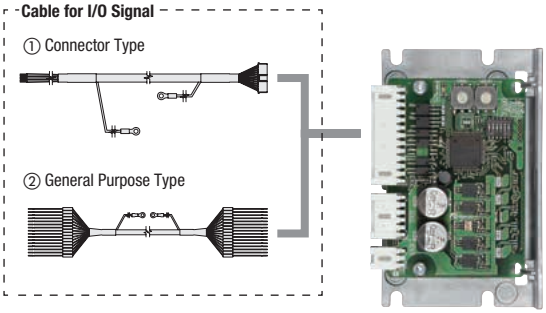


An electromagnetic brake connection cable with an electromagnetic brake connector on the motor end. Can be used on electromagnetic brakes with the connector connection method. Check the specifications and dimensions page of each motor for the cable dimensions.

◇Product Line

Product Name	Applicable Motor	Length L (m)	Conductor AWG	List Price
LCM02A-006	**PKP24□M2**	0.6	22	
LCM02A-010	**PKP26□M2**	1	(0.3 mm^2)	

Cable for I/O Signal (for pulse input type)



① Connector Type



These cables are used to connect the host system and the driver.
A shielded cable is used, and both ends of the cable are equipped with ground wires for easy grounding.

◇Product Line

Product Name	Applicable Drivers	Length L (m)	Conductor AWG	List Price
CC12D005-2	Bipolar Driver for 2-Phase Stepper Motors (Product name: **CVD2**～) Unipolar Driver for 2-Phase Stepper Motors (Product name: **CMD2**～) Driver for 5-Phase Stepper Motors (Product name: **CVD5**～)	0.5	24 (0.2 mm^2)	
CC12D010-2		1		
CC12D015-2		1.5		
CC12D020-2		2		

● For dimensions, please see the Oriental Motor website.

② General Purpose Type



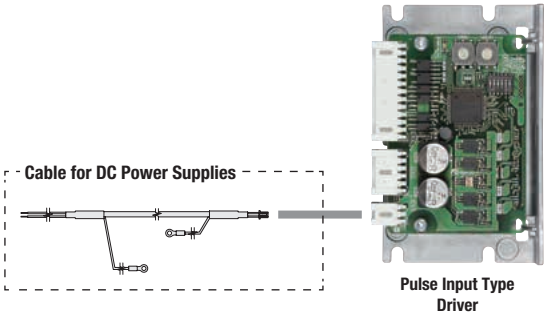
These cables are used to connect the host system and the driver.
Both ends are unbundled.
A shielded cable is used, and both ends of the cable are equipped with ground wires for easy grounding.

◇Product Line

Product Name	Length L (m)	Number of Lead Wire Cores	Outer Diameter D (mm)	AWG	List Price
CC06D005B-1	0.5	6	ϕ5.4	24 (0.2 mm^2)	
CC06D010B-1	1				
CC06D015B-1	1.5				
CC06D020B-1	2				
CC10D005B-1	0.5	10	ϕ6.7		
CC10D010B-1	1				
CC10D015B-1	1.5				
CC10D020B-1	2				
CC12D005B-1	0.5	12	ϕ7.5		
CC12D010B-1	1				
CC12D015B-1	1.5				
CC12D020B-1	2				

● For dimensions, please see the Oriental Motor website.

Cable for DC Power Supply (for pulse input type)





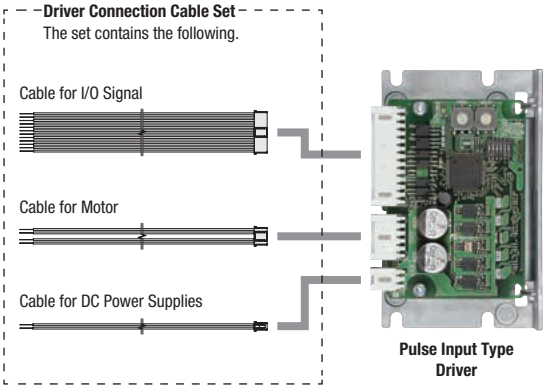
These cables are used to connect the power supply and the driver.
A shielded cable is used, and both ends of the cable are equipped with ground wires for easy grounding.

◇Product Line

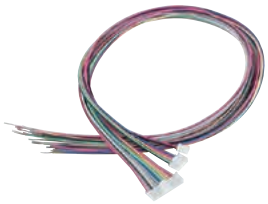
Product Name	Applicable Drivers	Length L (m)	Conductor AWG	List Price
CC02D005-2	**CVD205**, **CVD206**, **CVD215**, **CVD223**, **CVD228**, **CVD503**, **CVD507**, **CVD512**, **CVD514**, **CVD518**, **CVD524**, **CMD2**	0.5	22 (0.3 mm^2)	
CC02D010-2		1		
CC02D015-2		1.5		
CC02D020-2		2		
CC02D005-4	**CVD242**, **CVD245**, **CVD528**, **CVD538**	0.5	18 (0.87 mm^2)	
CC02D010-4		1		
CC02D020-4		2		

● For dimensions, please see the Oriental Motor website.

Driver Connection Cable Set (for pulse input type)



The connection cables to connect the motor to the driver, for the I/O signal, and for the DC power supply, bundled in a set.
There are connectors on the driver end.



Product Line

Product Name	Applicable Drivers	Connector Name	Connector Product Name	Length L1	Length L2	Conductor AWG	List Price
LCS04SD5	**CVD503, CVD507 CVD512, CVD514 CVD518, CVD524**	For Motor	51103-0500	0.6 m	10 mm	22 (0.3 mm^2)	
		For Power Supply	51103-0200				
		For I/O Signal	51103-1200				
LCS05SD5	**CVD528, CVD538**	For Motor	51067-0500			20 (0.5 mm^2)	
		For Power Supply	51067-0200				
		For I/O Signal	51103-1200			22 (0.3 mm^2)	
LCS01CVK2	**CVD205, CVD206 CVD215, CVD223 CVD228**	For Motor	51103-0500			22 (0.3 mm^2)	
		For Power Supply	51103-0200				
		For I/O Signal	51103-1200				
LCS02CVK2	**CVD242, CVD245**	For Motor	51067-0500			20 (0.5 mm^2)	
		For Power Supply	51067-0200				
		For I/O Signal	51103-1200			22 (0.3 mm^2)	
LCS01CMK2	**CMD2109P CMD2112P CMD2120P**	For Motor	51103-0600			22 (0.3 mm^2)	
		For Power Supply	51103-0200				
		For I/O Signal	51103-1200				

● The applicable driver product names are listed such that the product names are distinguishable.

Connector Arrangement

◇For Motor

•LCS0□SD5

Pin No.	Wire Color
1	Blue
2	Red
3	Orange
4	Green
5	Black

•LCS0□CVK2

Pin No.	Wire Color
1	Blue
2	Red
3	–
4	Green
5	Black

•LCS01CMK2

Pin No.	Wire Color
1	Blue
2	White
3	Red
4	Black
5	Yellow
6	Green

◇For Power Supply

•Common to All Cables

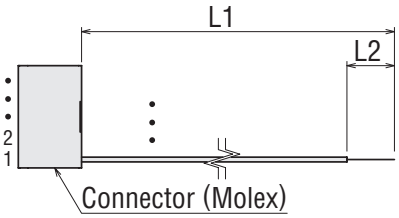
Pin No.	Wire Color
1	Red
2	Black

◇For I/O Signal

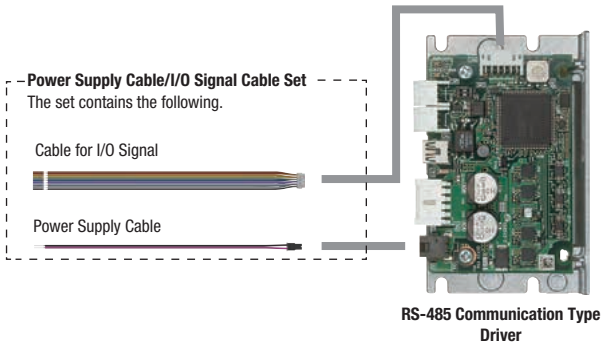
•Common to All Cables

Pin No.	Wire Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Gray
9	White
10	Black
11	Brown
12	Red

Dimensions



Power Supply Cable/I/O Signal Cable Set (RS-485 communication type)



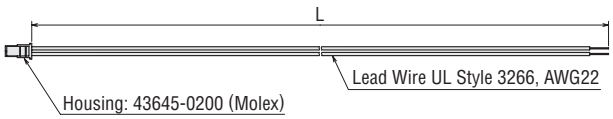
Power supply cables are used to connect the driver and the DC power supply.
I/O signal cables are used to connect the driver and the host control device.
A power supply cable and I/O signal cable come as a set.

Product Line

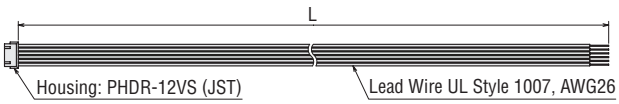
Product Name	Length L (m)	List Price
LHS003CC	0.3	
LHS010CC	1	

Dimensions (Unit: mm)

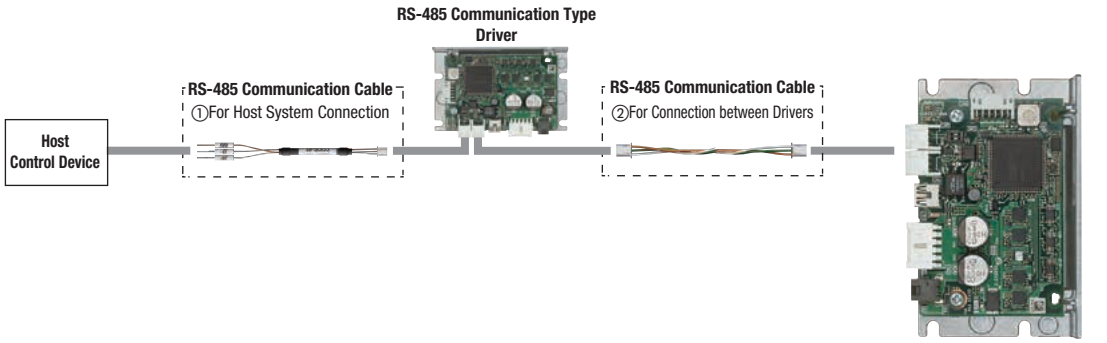
◇Power Supply Cable



◇Cable for I/O Signal



RS-485 Communication Cable (RS-485 communication type)



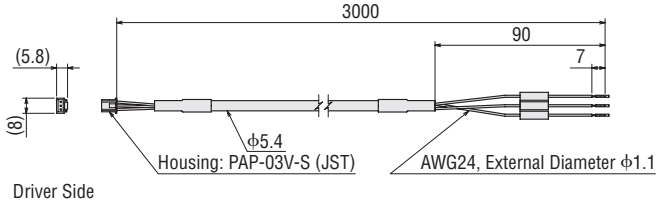
① For Host System Connection

These cables are used to connect the driver and the host control device.

◇Product Line

Product Name	Length (m)	List Price
CC030-RS	3	

◇Dimensions (Unit: mm)



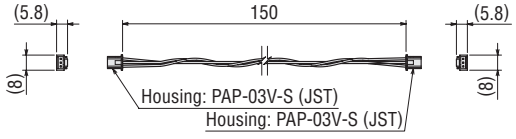
② For Connection between Drivers

These cables are used to connect between drivers.

◇Product Line

Product Name	Length (m)	List Price
LH0015-RWN	0.15	

◇Dimensions (Unit: mm)



Peripheral Equipment (Sold separately)

For details, check the Oriental Motor website or contact the Oriental Motor sales office. **https://www.orientalmotor.co.jp/**

Flexible Couplings

Coupling Types		XGT2*1
External View of Product		
Coupling Type		High-damping rubber
Overview		Zero backlash with a one-piece configuration featuring high-damping rubber formed between aluminum alloy hubs. Excellent vibration absorption for high positioning accuracy operations by a control motor in a short period of time.
Characteristics*2	Zero Backlash	◎
	Torque	◎
	Torsional Rigidity	○
	Permissible Misalignment	○
	Vibration Absorption	◎
Fastening Method		Clamping
Materials	Body	Aluminum alloy
	Vibration Absorption/Buffer	Fluorine-containing rubber

*1 Manufactured by Nabeya Bi-tech Kaisha
*2 The characteristics legend is as follows.
◎: Extremely good ○: Good

■XGT2 Coupling

The coupling is a one-piece configuration featuring vibration-proof rubber formed between aluminum alloy hubs.

● For Standard Type, High-Resolution Type



●Product Line

Product Name	List Price
XGT2-15C-□-■	
XGT2-19C-□-■	
XGT2-25C-□-■	
XGT2-27C-□-■	
XGT2-30C-□-■	
XGT2-34C-□-■	
XGT2-39C-□-■	
XGT2-44C-□-■	

● A number indicating the inner diameter of the coupling is specified where the boxes □ and ■ are located in the product name.

Motor Mounting Brackets

Mounting brackets convenient for installing motors are available.



PFB



PAF



PALS



PALW01, **PALW02**, **PALW03**



PALW0, **PALW1**, **PALW2**, **PALW4**, **SOL**



SOLS



SOLW

●Product Line

◇For Standard Type, High-Resolution Type

Product Name	List Price	Motor Frame Size	Applicable Products
PALS03P-2		20 mm	**PKP21**□
PALW03P-2			
PALS03P-5		20 mm	**PK51**□
PALW03P-5			
PALS02P		28 mm	**PKP22**□ **PKP52**□
PALW02P			
PFB28A			
PALS01P		35 mm	**PKP23**□
PALW01P			
PAF0PA		42 mm	**PKP24**□ **PKP54**□
PALW0P			
PFB42A			
PALW1P		50 mm	**PKP25**□
PALW2P-2		56.4 mm	**PKP26**□ **PKP56**□
		60 mm	**PK26**□**J**
PALW2P-5		60 mm	**PKP56**□**F**
PALW4P-2		85 mm	**PKP29**□
PALW4P-5			**PK59**□

● The stepper motor's pilot can be used for mated installation. (Excluding **PFB28A** and **PFB42A**)

◇For **SH** Geared Type

Product Name	List Price	Motor Frame Size	Applicable Products
SOLS02P		28 mm	**PKP223**
SOLW02P			
PFB28A			
SOL0A		42 mm	**PKP243**
PFB42A			
SOL2A		60 mm	**PKP264**
SOL5A		90 mm	**PK296**

Note

● The above mounting brackets are not compatible with fitted installation.

◇For **CS** Geared Type and **TS** Geared Type

Product Name	List Price	Motor Frame Size	Applicable Products
SOL0B		42 mm	**PKP243** **PKP54**□
SOL2M4		60 mm	**PKP264** **PKP56**□

Note

● The above mounting brackets are not compatible with fitted installation.

Motor Connector Set

This is a set of connector housings and contacts compatible with connector type (model B) motors.
Use this set if extra housings and contacts are necessary, although they are included with the products.

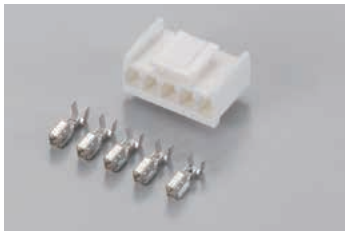
Product Line

Product Name	List Price	Applicable Products
CS2U30A		**PKP223**, **PKP225**, **PKP223M**, **PKP225M**
CS2U30B		**PKP233**, **PKP235**, **PKP243**, **PKP244**, **PKP245**, **PKP246**, **PKP243M**, **PKP244M**
CS5N30A		**PK513**, **PKP523**, **PKP525**
CS5N30B		**PKP544**, **PKP546**, **PKP544M**, **PKP546M**
CS5N30C2		**PKP564FM**, **PKP566FM**, **PKP569FM**

- Each package contains enough housings and contacts for 30 motors. Please order in units of 1 package.
  The list price shows the price of 1 package.

Note

- A crimp tool is not included.
  Please prepare separately.

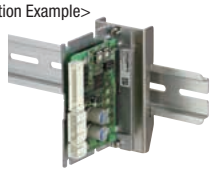


This photograph shows **CS5N30B**.

Mounting Brackets for Circuit Products

This bracket is for installation on a DIN rail.

<**MADP07** Application Example>



Product Line

Material: SPCC

Product Name	List Price	Applicable Drivers	Surface Treatment
MADP01		**CMD21□□P**	Electroless nickel plating
MADP07		**CVD□□□BR-K** **CVD□□□B-K** **CVD□BR-KR** **CVD□B-KR**	
MADP01S1		**CVD□□□-K**	

Driver Cover

This is a protection cover to prevent contact with the circuit board.
Available for the right angle type driver with an installation plate.

<Application Example>



Product Line

Material: Resin

Product Name	List Price	Applicable Drivers
PADC-CVD2		**CVD□□□BR-K** **CVD□BR-KR**

Clean Dampers

These mechanical dampers are effective for suppressing stepper motor vibration and improving high-speed performance.
They consist of an inertial load and silicon gel sealed inside a plastic case.



Product Line

- Exclusively for the double shaft type.

Product Name	Inertia [kg·m^2]	Mass [g]	Motor Frame Size	Applicable Products	List Price
D4CL-5.0F	34×10^{-7}	24	28 mm 35 mm 42 mm	**PKP223**, **PKP225**, **PKP523**, **PKP525** **PKP233**, **PKP235** **PKP243**, **PKP244**, **PKP543**, **PKP544** **PKP245**, **PKP246**, **PKP545**, **PKP546**	
D6CL-6.3F	140×10^{-7}	62	50 mm	**PKP254**, **PKP256**, **PKP258**	
D6CL-8.0F	140×10^{-7}	61	56.4 mm 60 mm	**PKP264**, **PKP266**, **PKP268** **PK264**, **PK266**, **PKP564**, **PKP566** **PK267**, **PK269**, **PKP568**, **PKP569**	
D9CL-14F	870×10^{-7}	105	85 mm 90 mm	**PKP296**, **PKP299**, **PKP2913** **PK296**, **PK596**, **PK599**, **PK5913**	

Temperature environment: −20～+80°C