

Motor

Overview

Motor & Driver

5-Phase
RKII

Driver

Motor

2-Phase Stepper Motors
PKP Series

2-Phase
PKP

5-Phase Stepper Motors
PKP Series

5-Phase
PKP

Page

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|---|------|
| 2-Phase Stepper Motor PKP Series | A-52 |
| 5-Phase Stepper Motor PKP Series | A-80 |

2-Phase Stepper Motors

PKP Series

- For detailed information about regulations and standards, please refer to 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.

- 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)
- SH** Geared Type for Higher Torque and Higher Resolution.
- Bipolar (4 lead wires) and Unipolar (5 or 6 lead wires) are Available
- Type with Encoder and Type with Electromagnetic Brake are Available
- Many Motor Current Models are Available



See Full Product Details Online
www.orientalmotor.com

Manual

Specifications

Dimensions

CAD

Characteristics

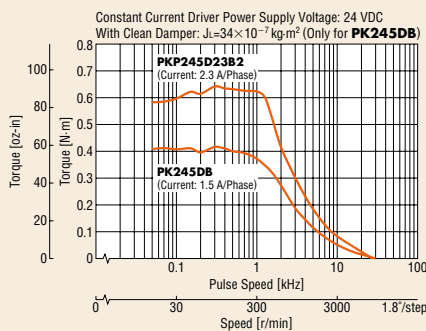
Connection and Operation

Features

Increased Torque over the Entire Speed Range from Low to High

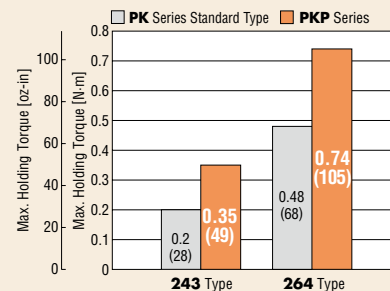
After revising the magnetic and structure design of the **PKP** Series, it produces much more torque than the standard **PK** Series motors of the same size. In addition, torque can be increased in the high-speed range by using high current motors.

Comparison of Speed – Torque Characteristics of the Same Size Motors



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.

Comparison of Maximum Holding Torque



Compact and Flat Connector

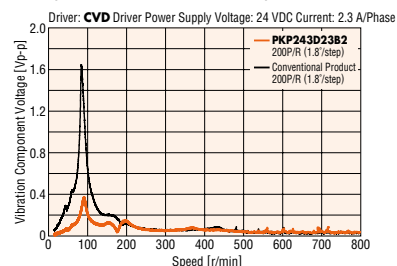
The **PKP** Series uses a compact and flat connector, which shortens the length of the connector's overhang. In addition, the degree of freedom for the cable outlet direction has been increased, because the outlet direction points upward.

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



Lower Vibration

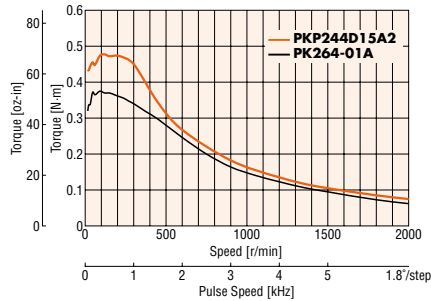
Revising the magnetic design has achieved lower vibration compared to conventional products.



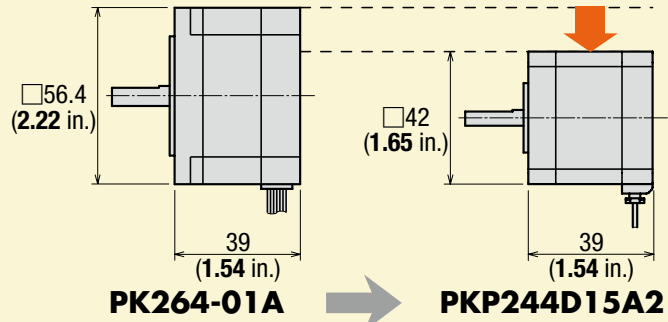
Downsizing

The **PKP** Series provides torque equivalent to a motor of the next larger frame size, allowing for the downsizing of equipment.

Torque Characteristics Comparison of **PKP244D15A2** and **PK264-01A**



Provides torque equivalent to the next larger frame size!

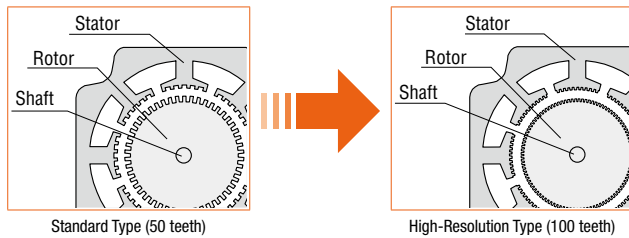


High-Resolution Type (0.9°/Step)

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 becomes 0.9°/step, which is half that of the standard type.



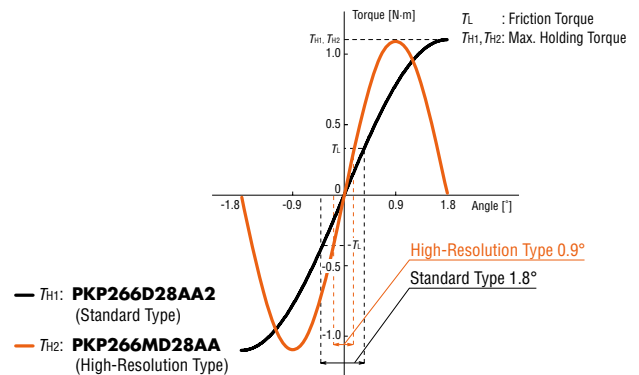
● Avoidance of Resonance Regions

If the pulse speed is within a resonance region, vibration may increase. Resonance regions can be avoided by switching to a 0.9° high-resolution type stepper motor.

● Improved Stopping Accuracy (Compared to Standard Type)

Stopping accuracy improves as the torque increases while minimizing the negative effect of the frictional load.

Comparison of Angle – Torque Characteristics

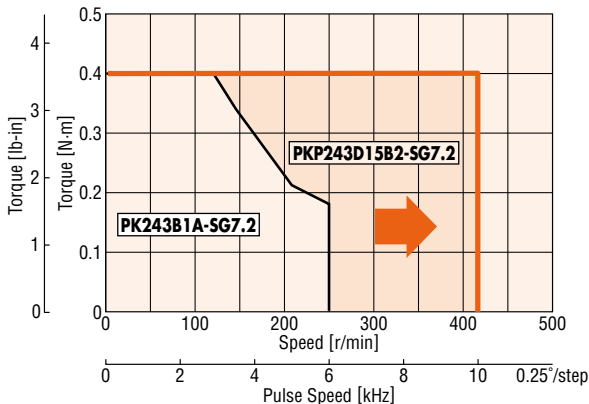


SH Geared Type

This type is advantageous for its deceleration, greater torque, higher resolution and anti-vibration measures.

It experiences less backlash than conventional products.

The increased speed range makes it even easier to use.



Product Line Equipped with Additional Functions to Further Broaden Applications

● With Encoder

(Provided for standard type and high-resolution type)

Encoder Specifications → Page A-79

● Main Specifications

| Type | Standard Type | High-Resolution Type |
|---------------|---------------------------------|----------------------|
| Resolution | 200 P/R, 400 P/R | 400 P/R |
| Output Signal | A Phase, B Phase, Z Phase (3ch) | |

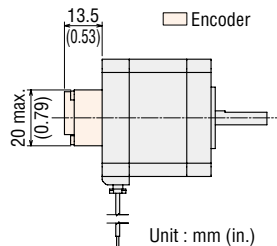


◇ Motor Position Detection is Possible

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 42 mm (1.65 in.)



◇ 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.

● With Electromagnetic Brake

(Provided for standard type and high-resolution type)

Electromagnetic Brake Specifications → Page A-79



◇ 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.

Combined Drivers (Sold Separately)

Compact and lightweight bipolar driver and unipolar driver are available.

● Bipolar Drivers




- Right Angle Type with an Installation Plate
The connector points outward.



- Without an Installation Plate
The connector direction is upward.



■ Product Line

| Motor Product Line (Basic Step Angle) | Frame Size, Wiring Type | | | | | | | | | | | | | |
|---|-------------------------|----------|------------------|----------|------------------|----------|------------------|----------|--------------------|----------|------------------|----------|------------------|----------|
| | 20 mm (0.79 in.) | | 28 mm (1.10 in.) | | 35 mm (1.38 in.) | | 42 mm (1.65 in.) | | 56.4 mm (2.22 in.) | | 60 mm (2.36 in.) | | 85 mm (3.35 in.) | |
| | Bipolar | Unipolar | Bipolar | Unipolar | Bipolar | Unipolar | Bipolar | Unipolar | Bipolar | Unipolar | Bipolar | Unipolar | Bipolar | Unipolar |
| Standard Type (1.8°) | ○ | ○ | ● | ● | ● | ● | ● | ● | ● | ● | - | - | ○ | ○ |
|  With Encoder | ○ | ○ | ● | ● | ● | ● | ● | ● | ● | ● | - | - | - | - |
| With Electromagnetic Brake | - | - | ● | ● | ● | ● | ● | ● | ● | ● | - | - | - | - |
| High-Resolution Type (0.9°) | - | - | - | - | - | - | ● | ● | ● | ● | - | - | - | - |
|  With Encoder | - | - | - | - | - | - | ● | ● | ● | ● | - | - | - | - |
| With Electromagnetic Brake | - | - | - | - | - | - | ● | ● | ● | ● | - | - | - | - |
| SH Geared Type (0.5°~0.05°) | - | - | ● | ● | - | - | ● | ● | - | - | ● | ● | - | - |
|  | - | - | ● | ● | - | - | ● | ● | - | - | ● | ● | - | - |

● : Connector-coupled motors ○ : Lead Wire Type

Overview

Motor & Driver

5-Phase
RKII

Driver

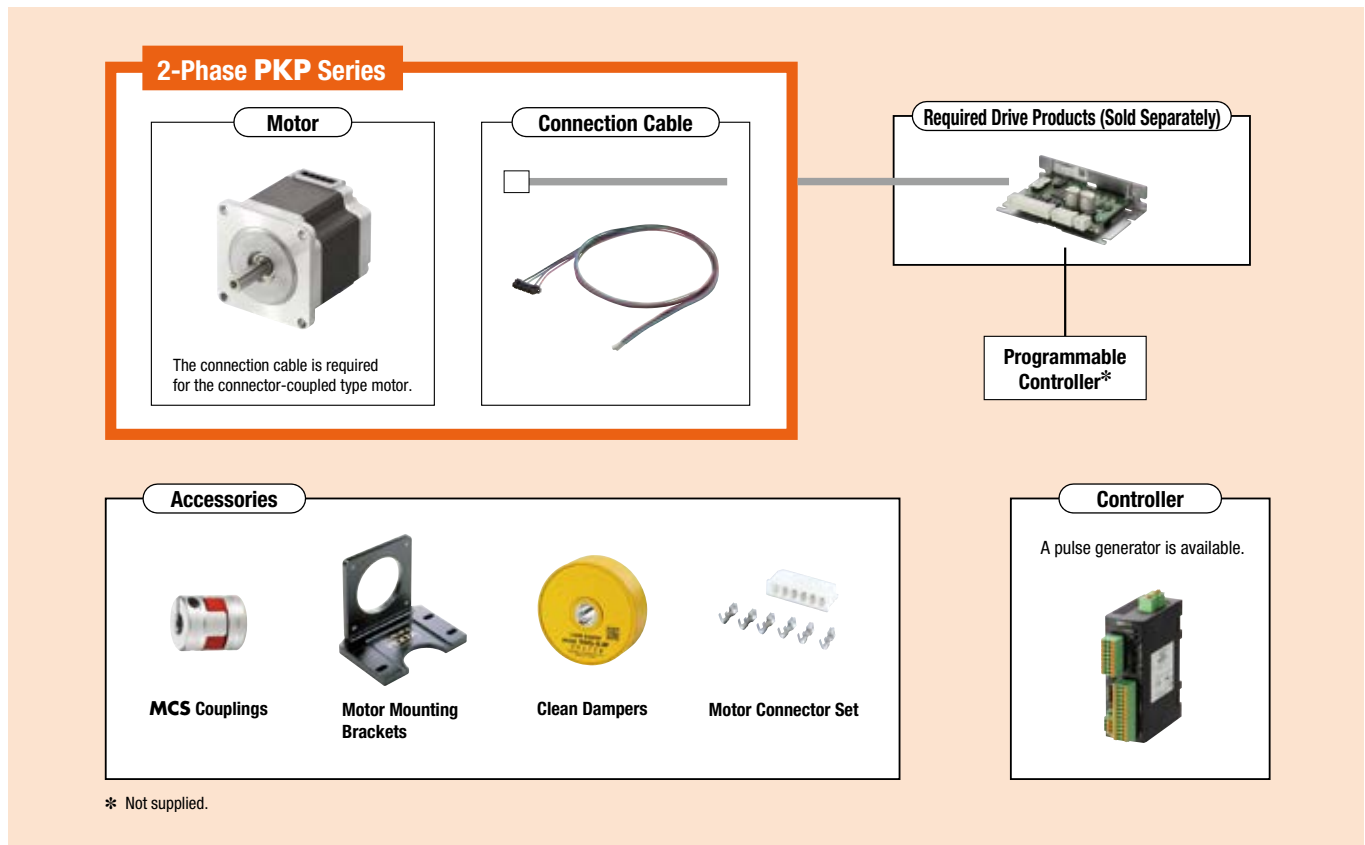
Motor

2-Phase
PKP

5-Phase
PKP

System Configuration

These accessories allow 2-phase stepper motors in the **PKP** Series to be used for various operations. Motors and connection cables must be ordered separately.



Example of System Configuration Pricing

| 2-Phase Stepper Motor PKP Series | | + | Sold Separately | | |
|----------------------------------|------------------|---|------------------------|-------------------|------------------|
| Motor | Connection Cable | | Motor Mounting Bracket | Flexible Coupling | Clean Damper |
| PKP264D28BA2 | LC2B06E | | PAL2P-2 | MCS20F0408 | D6CL-6.3F |
| \$58.00 | \$6.00 | | \$17.00 | \$50.00 | \$42.00 |

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

Product Number

Motor

Standard Type/Standard Type with Electromagnetic Brake

PKP 2 6 4 D 28 A A 2

① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩

High-Resolution Type/High-Resolution Type with Electromagnetic Brake

PKP 2 6 4 M D 28 A A

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 (0.79 in.) 2: 28 mm (1.10 in.) 3: 35 mm (1.38 in.) 4: 42 mm (1.65 in.) 6: 56.4 mm (2.22 in.) 9: 85 mm (3.35 in.) |
| ④ | Motor Case Length | |
| ⑤ | Motor Type | Blank: Standard Type M: High-Resolution Type |
| ⑥ | Number of Lead Wires | D: 4 U: 5 or 6 |
| ⑦ | Motor Winding Specification | |
| ⑧ | Shaft/Electromagnetic Brake | A: Single Shaft B: Double Shaft M: with Electromagnetic Brake |
| ⑨ | Output Shaft Diameter | A: Imperial Blank: Metric |
| ⑩ | Reference Number | |

SH 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 (1.10 in.) 4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.) |
| ④ | Motor Case Length | |
| ⑤ | Number of Lead Wires | D: 4 U: 5 or 6 |
| ⑥ | Motor Winding Specification | |
| ⑦ | Shaft | A: Single Shaft B: Double Shaft |
| ⑧ | Reference Number | |
| ⑨ | Geared Type | SG: SH Geared Type |
| ⑩ | Gear Ratio | |

Standard Type with Encoder

PKP 2 4 3 D 15 A 2 - R2F L

① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

High-Resolution Type with Encoder

PKP 2 4 3 M D 15 A - R2F L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑩ ⑪

| | | |
|---|-----------------------------|--|
| ① | Series Name | PKP: PKP Series |
| ② | 2: 2-Phase | |
| ③ | Motor Frame Size | 1: 20 mm (0.79 in.) 2: 28 mm (1.10 in.) 3: 35 mm (1.38 in.) 4: 42 mm (1.65 in.) 6: 56.4 mm (2.22 in.) |
| ④ | Motor Case Length | |
| ⑤ | Motor Type | Blank: Standard Type M: High-Resolution Type |
| ⑥ | Number of Lead Wires | D: 4 U: 5 or 6 |
| ⑦ | Motor Winding Specification | |
| ⑧ | Shaft | A: Single Shaft |
| ⑨ | Reference Number | |
| ⑩ | Encoder Resolution | R2E: 200P/R R2F: 400P/R |
| ⑪ | Encoder Output Circuit Type | L: Line Driver Output Blank: Voltage Output |

Connection Cable

Connection Cable for Motor

LC 2 B 06 A

① ② ③ ④ ⑤

| | | |
|---|------------------|---|
| ① | Cable | LC: Lead Wire with Connector |
| ② | 2: 2-Phase | |
| ③ | Cable Type | B: Bipolar U: Unipolar |
| ④ | Cable Length | 06: 0.6 m (2 ft.) 10: 1 m (3.3 ft.) |
| ⑤ | Reference Number | |

Connection Cable for Encoder

LC E 08 A - 006

① ② ③ ④ ⑤

| | | |
|---|------------------|---|
| ① | Cable | LC: Lead Wire with Connector |
| ② | Cable Type | E: Cable for Encoder |
| ③ | Applicable Model | 05: Voltage Output 08: Line Driver Output |
| ④ | Reference Number | |
| ⑤ | Cable Length | 006: 0.6 m (2 ft.) |

Overview

Motor & Driver

5-Phase RkII

Driver

Motor

2-Phase PKP

5-Phase PKP

Product Line

A connector-coupled motor requires a connection cable.
Motors and connection cables must be ordered separately.

● Motor

◇ Standard Type, Standard Type with Encoder, Standard Type with Electromagnetic Brake

● Bipolar

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP213D05A | \$65.00 | PKP213D05B | \$67.00 |
| PKP214D06A | \$72.00 | PKP214D06B | \$74.00 |
| PKP223D15A2 | \$50.00 | PKP223D15B2 | \$52.00 |
| PKP225D15A2 | \$57.00 | PKP225D15B2 | \$59.00 |
| PKP233D15A | \$48.00 | PKP233D15B | \$50.00 |
| PKP233D23A | \$48.00 | PKP233D23B | \$50.00 |
| PKP235D15A | \$55.00 | PKP235D15B | \$57.00 |
| PKP235D23A | \$55.00 | PKP235D23B | \$57.00 |
| PKP243D08A2 | \$45.00 | PKP243D08B2 | \$47.00 |
| PKP243D15A2 | \$45.00 | PKP243D15B2 | \$47.00 |
| PKP243D23A2 | \$45.00 | PKP243D23B2 | \$47.00 |
| PKP244D08A2 | \$47.00 | PKP244D08B2 | \$49.00 |
| PKP244D15A2 | \$47.00 | PKP244D15B2 | \$49.00 |
| PKP244D23A2 | \$47.00 | PKP244D23B2 | \$49.00 |
| PKP245D08A2 | \$53.00 | PKP245D08B2 | \$55.00 |
| PKP245D15A2 | \$53.00 | PKP245D15B2 | \$55.00 |
| PKP245D23A2 | \$53.00 | PKP245D23B2 | \$55.00 |
| PKP246D15A2 | \$56.00 | PKP246D15B2 | \$58.00 |
| PKP246D23A2 | \$56.00 | PKP246D23B2 | \$58.00 |
| PKP264D14AA2 | \$56.00 | PKP264D14BA2 | \$58.00 |
| PKP264D28AA2 | \$56.00 | PKP264D28BA2 | \$58.00 |
| PKP264D42AA2 | \$56.00 | PKP264D42BA2 | \$58.00 |
| PKP266D14AA2 | \$62.00 | PKP266D14BA2 | \$64.00 |
| PKP266D28AA2 | \$62.00 | PKP266D28BA2 | \$64.00 |
| PKP266D42AA2 | \$62.00 | PKP266D42BA2 | \$64.00 |
| PKP296D45AA | \$108.00 | PKP296D45BA | \$112.00 |
| PKP296D63AA | \$108.00 | PKP296D63BA | \$112.00 |
| PKP299D45AA | \$165.00 | PKP299D45BA | \$171.00 |
| PKP299D63AA | \$165.00 | PKP299D63BA | \$171.00 |
| PKP2913D45AA | \$209.00 | PKP2913D45BA | \$218.00 |
| PKP2913D56AA | \$209.00 | PKP2913D56BA | \$218.00 |

● Bipolar with Electromagnetic Brake

| Product Name | List Price |
|--------------|------------|
| PKP223D15M2 | \$115.00 |
| PKP225D15M2 | \$122.00 |
| PKP233D15M | \$148.00 |
| PKP235D15M | \$155.00 |
| PKP243D15M | \$148.00 |
| PKP244D15M | \$149.00 |
| PKP245D15M | \$155.00 |
| PKP246D15M | \$157.00 |
| PKP264D28M | \$171.00 |
| PKP266D28M | \$177.00 |
| PKP268D28M | \$193.00 |

◇ High-Resolution Type, High-Resolution Type with Encoder, High-Resolution Type with Electromagnetic Brake

● Bipolar

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP243MD15A | \$48.00 | PKP243MD15B | \$50.00 |
| PKP244MD15A | \$49.00 | PKP244MD15B | \$51.00 |
| PKP264MD28AA | \$56.00 | PKP264MD28BA | \$58.00 |
| PKP266MD28AA | \$62.00 | PKP266MD28BA | \$64.00 |
| PKP268MD28AA | \$78.00 | PKP268MD28BA | \$80.00 |

● Bipolar with Encoder

| Product Name (Voltage) | List Price | Product Name (Line Driver) | List Price |
|------------------------|------------|----------------------------|------------|
| PKP213D05A-R2E | \$148.00 | PKP213D05A-R2EL | \$148.00 |
| PKP214D06A-R2E | \$155.00 | PKP214D06A-R2EL | \$155.00 |
| PKP223D15A2-R2E | \$123.00 | PKP223D15A2-R2EL | \$123.00 |
| PKP225D15A2-R2E | \$133.00 | PKP225D15A2-R2EL | \$133.00 |
| PKP233D15A-R2E | \$123.00 | PKP233D15A-R2EL | \$123.00 |
| PKP235D15A-R2E | \$130.00 | PKP235D15A-R2EL | \$130.00 |
| PKP243D15A2-R2E | \$104.00 | PKP243D15A2-R2EL | \$104.00 |
| PKP243D15A2-R2F | \$104.00 | PKP243D15A2-R2FL | \$104.00 |
| PKP243D23A2-R2E | \$104.00 | PKP243D23A2-R2EL | \$104.00 |
| PKP243D23A2-R2F | \$104.00 | PKP243D23A2-R2FL | \$104.00 |
| PKP244D15A2-R2E | \$106.00 | PKP244D15A2-R2EL | \$106.00 |
| PKP244D15A2-R2F | \$106.00 | PKP244D15A2-R2FL | \$106.00 |
| PKP244D23A2-R2E | \$106.00 | PKP244D23A2-R2EL | \$106.00 |
| PKP244D23A2-R2F | \$106.00 | PKP244D23A2-R2FL | \$106.00 |
| PKP245D15A2-R2E | \$113.00 | PKP245D15A2-R2EL | \$113.00 |
| PKP245D15A2-R2F | \$113.00 | PKP245D15A2-R2FL | \$113.00 |
| PKP245D23A2-R2E | \$113.00 | PKP245D23A2-R2EL | \$113.00 |
| PKP245D23A2-R2F | \$113.00 | PKP245D23A2-R2FL | \$113.00 |
| PKP246D15A2-R2E | \$115.00 | PKP246D15A2-R2EL | \$115.00 |
| PKP246D15A2-R2F | \$115.00 | PKP246D15A2-R2FL | \$115.00 |
| PKP246D23A2-R2E | \$115.00 | PKP246D23A2-R2EL | \$115.00 |
| PKP246D23A2-R2F | \$115.00 | PKP246D23A2-R2FL | \$115.00 |
| PKP264D14A2-R2E | \$115.00 | PKP264D14A2-R2EL | \$115.00 |
| PKP264D14A2-R2F | \$115.00 | PKP264D14A2-R2FL | \$115.00 |
| PKP264D28A2-R2E | \$115.00 | PKP264D28A2-R2EL | \$115.00 |
| PKP264D28A2-R2F | \$115.00 | PKP264D28A2-R2FL | \$115.00 |
| PKP264D42A2-R2E | \$115.00 | PKP264D42A2-R2EL | \$115.00 |
| PKP264D42A2-R2F | \$115.00 | PKP264D42A2-R2FL | \$115.00 |
| PKP266D14A2-R2E | \$121.00 | PKP266D14A2-R2EL | \$121.00 |
| PKP266D14A2-R2F | \$121.00 | PKP266D14A2-R2FL | \$121.00 |
| PKP266D28A2-R2E | \$121.00 | PKP266D28A2-R2EL | \$121.00 |
| PKP266D28A2-R2F | \$121.00 | PKP266D28A2-R2FL | \$121.00 |
| PKP266D42A2-R2E | \$121.00 | PKP266D42A2-R2EL | \$121.00 |
| PKP266D42A2-R2F | \$121.00 | PKP266D42A2-R2FL | \$121.00 |
| PKP268D14A2-R2E | \$138.00 | PKP268D14A2-R2EL | \$138.00 |
| PKP268D14A2-R2F | \$138.00 | PKP268D14A2-R2FL | \$138.00 |
| PKP268D28A2-R2E | \$138.00 | PKP268D28A2-R2EL | \$138.00 |
| PKP268D28A2-R2F | \$138.00 | PKP268D28A2-R2FL | \$138.00 |
| PKP268D42A2-R2E | \$138.00 | PKP268D42A2-R2EL | \$138.00 |
| PKP268D42A2-R2F | \$138.00 | PKP268D42A2-R2FL | \$138.00 |

● Bipolar with Encoder

| Product Name (Voltage) | List Price | Product Name (Line Driver) | List Price |
|------------------------|------------|----------------------------|------------|
| PKP243MD15A-R2F | \$133.00 | PKP243MD15A-R2FL | \$133.00 |
| PKP244MD15A-R2F | \$134.00 | PKP244MD15A-R2FL | \$134.00 |
| PKP264MD28A-R2F | \$131.00 | PKP264MD28A-R2FL | \$131.00 |
| PKP266MD28A-R2F | \$137.00 | PKP266MD28A-R2FL | \$137.00 |
| PKP268MD28A-R2F | \$153.00 | PKP268MD28A-R2FL | \$153.00 |

•Bipolar with Electromagnetic Brake

| Product Name | List Price |
|--------------------|------------|
| PKP243MD15M | \$148.00 |
| PKP244MD15M | \$149.00 |
| PKP264MD28M | \$171.00 |
| PKP266MD28M | \$177.00 |
| PKP268MD28M | \$193.00 |

◇SH Geared Type

•Bipolar

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP223D15A-SG7.2 | \$168.00 | PKP223D15B-SG7.2 | \$170.00 |
| PKP223D15A-SG9 | \$168.00 | PKP223D15B-SG9 | \$170.00 |
| PKP223D15A-SG10 | \$168.00 | PKP223D15B-SG10 | \$170.00 |
| PKP223D15A-SG18 | \$182.00 | PKP223D15B-SG18 | \$184.00 |
| PKP223D15A-SG36 | \$182.00 | PKP223D15B-SG36 | \$184.00 |
| PKP243D15A2-SG3.6 | \$121.00 | PKP243D15B2-SG3.6 | \$123.00 |
| PKP243D23A2-SG3.6 | \$121.00 | PKP243D23B2-SG3.6 | \$123.00 |
| PKP243D15A2-SG7.2 | \$121.00 | PKP243D15B2-SG7.2 | \$123.00 |
| PKP243D23A2-SG7.2 | \$121.00 | PKP243D23B2-SG7.2 | \$123.00 |
| PKP243D15A2-SG9 | \$121.00 | PKP243D15B2-SG9 | \$123.00 |
| PKP243D23A2-SG9 | \$121.00 | PKP243D23B2-SG9 | \$123.00 |
| PKP243D15A2-SG10 | \$121.00 | PKP243D15B2-SG10 | \$123.00 |
| PKP243D23A2-SG10 | \$121.00 | PKP243D23B2-SG10 | \$123.00 |
| PKP243D15A2-SG18 | \$138.00 | PKP243D15B2-SG18 | \$140.00 |
| PKP243D23A2-SG18 | \$138.00 | PKP243D23B2-SG18 | \$140.00 |
| PKP243D15A2-SG36 | \$138.00 | PKP243D15B2-SG36 | \$140.00 |
| PKP243D23A2-SG36 | \$138.00 | PKP243D23B2-SG36 | \$140.00 |
| PKP264D14A2-SG3.6 | \$138.00 | PKP264D14B2-SG3.6 | \$141.00 |
| PKP264D28A2-SG3.6 | \$138.00 | PKP264D28B2-SG3.6 | \$141.00 |
| PKP264D14A2-SG7.2 | \$138.00 | PKP264D14B2-SG7.2 | \$141.00 |
| PKP264D28A2-SG7.2 | \$138.00 | PKP264D28B2-SG7.2 | \$141.00 |
| PKP264D14A2-SG9 | \$138.00 | PKP264D14B2-SG9 | \$141.00 |
| PKP264D28A2-SG9 | \$138.00 | PKP264D28B2-SG9 | \$141.00 |
| PKP264D14A2-SG10 | \$138.00 | PKP264D14B2-SG10 | \$141.00 |
| PKP264D28A2-SG10 | \$138.00 | PKP264D28B2-SG10 | \$141.00 |
| PKP264D14A2-SG18 | \$154.00 | PKP264D14B2-SG18 | \$157.00 |
| PKP264D28A2-SG18 | \$154.00 | PKP264D28B2-SG18 | \$157.00 |
| PKP264D14A2-SG36 | \$154.00 | PKP264D14B2-SG36 | \$157.00 |
| PKP264D28A2-SG36 | \$154.00 | PKP264D28B2-SG36 | \$157.00 |

Overview

Motor &
Driver5-Phase
RKII

Driver

Motor

2-Phase
PKP5-Phase
PKP

◇ Standard Type, Standard Type with Encoder, Standard Type with Electromagnetic Brake

• Unipolar

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP213U05A | \$65.00 | PKP213U05B | \$67.00 |
| PKP214U06A | \$72.00 | PKP214U06B | \$74.00 |
| PKP223U09A2 | \$50.00 | PKP223U09B2 | \$52.00 |
| PKP225U09A2 | \$57.00 | PKP225U09B2 | \$59.00 |
| PKP233U12A | \$48.00 | PKP233U12B | \$50.00 |
| PKP235U12A | \$55.00 | PKP235U12B | \$57.00 |
| PKP243U08A2 | \$45.00 | PKP243U08B2 | \$47.00 |
| PKP243U09A2 | \$45.00 | PKP243U09B2 | \$47.00 |
| PKP243U12A2 | \$45.00 | PKP243U12B2 | \$47.00 |
| PKP244U08A2 | \$47.00 | PKP244U08B2 | \$49.00 |
| PKP244U12A2 | \$47.00 | PKP244U12B2 | \$49.00 |
| PKP245U08A2 | \$53.00 | PKP245U08B2 | \$55.00 |
| PKP245U12A2 | \$53.00 | PKP245U12B2 | \$55.00 |
| PKP246U12A2 | \$56.00 | PKP246U12B2 | \$58.00 |
| PKP246U16A2 | \$56.00 | PKP246U16B2 | \$58.00 |
| PKP264U10AA2 | \$56.00 | PKP264U10BA2 | \$58.00 |
| PKP264U20AA2 | \$56.00 | PKP264U20BA2 | \$58.00 |
| PKP266U10AA2 | \$62.00 | PKP266U10BA2 | \$64.00 |
| PKP266U20AA2 | \$62.00 | PKP266U20BA2 | \$64.00 |
| PKP296U20AA | \$108.00 | PKP296U20BA | \$112.00 |
| PKP296U30AA | \$108.00 | PKP296U30BA | \$112.00 |
| PKP296U45AA | \$108.00 | PKP296U45BA | \$112.00 |
| PKP299U20AA | \$165.00 | PKP299U20BA | \$171.00 |
| PKP299U30AA | \$165.00 | PKP299U30BA | \$171.00 |
| PKP299U45AA | \$165.00 | PKP299U45BA | \$171.00 |
| PKP2913U20AA | \$209.00 | PKP2913U20BA | \$218.00 |
| PKP2913U40AA | \$209.00 | PKP2913U40BA | \$218.00 |

• Unipolar with Electromagnetic Brake

| Product Name | List Price |
|--------------|------------|
| PKP223U09M2 | \$115.00 |
| PKP225U09M2 | \$122.00 |
| PKP233U12M | \$148.00 |
| PKP235U12M | \$155.00 |
| PKP243U09M | \$148.00 |
| PKP244U12M | \$149.00 |
| PKP245U12M | \$155.00 |
| PKP246U12M | \$157.00 |
| PKP264U20M | \$171.00 |
| PKP266U20M | \$177.00 |
| PKP268U20M | \$193.00 |

◇ High-Resolution Type, High-Resolution Type with Encoder, High-Resolution Type with Electromagnetic Brake

• Unipolar

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP243MU09A | \$48.00 | PKP243MU09B | \$50.00 |
| PKP244MU12A | \$49.00 | PKP244MU12B | \$51.00 |
| PKP264MU20AA | \$56.00 | PKP264MU20BA | \$58.00 |
| PKP266MU20AA | \$62.00 | PKP266MU20BA | \$64.00 |
| PKP268MU20AA | \$78.00 | PKP268MU20BA | \$80.00 |

• Unipolar with Electromagnetic Brake

| Product Name | List Price |
|--------------|------------|
| PKP243MU09M | \$148.00 |
| PKP244MU12M | \$149.00 |
| PKP264MU20M | \$171.00 |
| PKP266MU20M | \$177.00 |
| PKP268MU20M | \$193.00 |

• Unipolar with Encoder

| Product Name (Voltage) | List Price | Product Name (Line Driver) | List Price |
|------------------------|------------|----------------------------|------------|
| PKP213U05A-R2E | \$148.00 | PKP213U05A-R2EL | \$148.00 |
| PKP214U06A-R2E | \$155.00 | PKP214U06A-R2EL | \$155.00 |
| PKP223U09A2-R2E | \$123.00 | PKP223U09A2-R2EL | \$123.00 |
| PKP225U09A2-R2E | \$133.00 | PKP225U09A2-R2EL | \$133.00 |
| PKP233U12A-R2E | \$123.00 | PKP233U12A-R2EL | \$123.00 |
| PKP235U12A-R2E | \$130.00 | PKP235U12A-R2EL | \$130.00 |
| PKP243U09A2-R2E | \$104.00 | PKP243U09A2-R2EL | \$104.00 |
| PKP243U09A2-R2F | \$104.00 | PKP243U09A2-R2FL | \$104.00 |
| PKP244U12A2-R2E | \$106.00 | PKP244U12A2-R2EL | \$106.00 |
| PKP244U12A2-R2F | \$106.00 | PKP244U12A2-R2FL | \$106.00 |
| PKP245U12A2-R2E | \$113.00 | PKP245U12A2-R2EL | \$113.00 |
| PKP245U12A2-R2F | \$113.00 | PKP245U12A2-R2FL | \$113.00 |
| PKP246U12A2-R2E | \$115.00 | PKP246U12A2-R2EL | \$115.00 |
| PKP246U12A2-R2F | \$115.00 | PKP246U12A2-R2FL | \$115.00 |
| PKP264U10A2-R2E | \$115.00 | PKP264U10A2-R2EL | \$115.00 |
| PKP264U10A2-R2F | \$115.00 | PKP264U10A2-R2FL | \$115.00 |
| PKP264U20A2-R2E | \$115.00 | PKP264U20A2-R2EL | \$115.00 |
| PKP264U20A2-R2F | \$115.00 | PKP264U20A2-R2FL | \$115.00 |
| PKP266U10A2-R2E | \$121.00 | PKP266U10A2-R2EL | \$121.00 |
| PKP266U10A2-R2F | \$121.00 | PKP266U10A2-R2FL | \$121.00 |
| PKP266U20A2-R2E | \$121.00 | PKP266U20A2-R2EL | \$121.00 |
| PKP266U20A2-R2F | \$121.00 | PKP266U20A2-R2FL | \$121.00 |
| PKP268U10A2-R2E | \$138.00 | PKP268U10A2-R2EL | \$138.00 |
| PKP268U10A2-R2F | \$138.00 | PKP268U10A2-R2FL | \$138.00 |
| PKP268U20A2-R2E | \$138.00 | PKP268U20A2-R2EL | \$138.00 |
| PKP268U20A2-R2F | \$138.00 | PKP268U20A2-R2FL | \$138.00 |

• Unipolar with Encoder

| Product Name (Voltage) | List Price | Product Name (Line Driver) | List Price |
|------------------------|------------|----------------------------|------------|
| PKP243MU09A-R2F | \$133.00 | PKP243MU09A-R2FL | \$133.00 |
| PKP244MU12A-R2F | \$134.00 | PKP244MU12A-R2FL | \$134.00 |
| PKP264MU20A-R2F | \$131.00 | PKP264MU20A-R2FL | \$131.00 |
| PKP266MU20A-R2F | \$137.00 | PKP266MU20A-R2FL | \$137.00 |
| PKP268MU20A-R2F | \$153.00 | PKP268MU20A-R2FL | \$153.00 |

◇ **SH Geared Type**

● **Unipolar**

| Product Name (Single Shaft) | List Price | Product Name (Double Shaft) | List Price |
|-----------------------------|------------|-----------------------------|------------|
| PKP223U09A-SG7.2 | \$168.00 | PKP223U09B-SG7.2 | \$170.00 |
| PKP223U09A-SG9 | \$168.00 | PKP223U09B-SG9 | \$170.00 |
| PKP223U09A-SG10 | \$168.00 | PKP223U09B-SG10 | \$170.00 |
| PKP223U09A-SG18 | \$182.00 | PKP223U09B-SG18 | \$184.00 |
| PKP223U09A-SG36 | \$182.00 | PKP223U09B-SG36 | \$184.00 |
| PKP243U09A2-SG3.6 | \$121.00 | PKP243U09B2-SG3.6 | \$123.00 |
| PKP243U09A2-SG7.2 | \$121.00 | PKP243U09B2-SG7.2 | \$123.00 |
| PKP243U09A2-SG9 | \$121.00 | PKP243U09B2-SG9 | \$123.00 |
| PKP243U09A2-SG10 | \$121.00 | PKP243U09B2-SG10 | \$123.00 |
| PKP243U09A2-SG18 | \$138.00 | PKP243U09B2-SG18 | \$140.00 |
| PKP243U09A2-SG36 | \$138.00 | PKP243U09B2-SG36 | \$140.00 |
| PKP264U10A2-SG3.6 | \$138.00 | PKP264U10B2-SG3.6 | \$141.00 |
| PKP264U20A2-SG3.6 | \$138.00 | PKP264U20B2-SG3.6 | \$141.00 |
| PKP264U10A2-SG7.2 | \$138.00 | PKP264U10B2-SG7.2 | \$141.00 |
| PKP264U20A2-SG7.2 | \$138.00 | PKP264U20B2-SG7.2 | \$141.00 |
| PKP264U10A2-SG9 | \$138.00 | PKP264U10B2-SG9 | \$141.00 |
| PKP264U20A2-SG9 | \$138.00 | PKP264U20B2-SG9 | \$141.00 |
| PKP264U10A2-SG10 | \$138.00 | PKP264U10B2-SG10 | \$141.00 |
| PKP264U20A2-SG10 | \$138.00 | PKP264U20B2-SG10 | \$141.00 |
| PKP264U10A2-SG18 | \$154.00 | PKP264U10B2-SG18 | \$157.00 |
| PKP264U20A2-SG18 | \$154.00 | PKP264U20B2-SG18 | \$157.00 |
| PKP264U10A2-SG36 | \$154.00 | PKP264U10B2-SG36 | \$157.00 |
| PKP264U20A2-SG36 | \$154.00 | PKP264U20B2-SG36 | \$157.00 |

● **Connection Cable**

◇ **Motor Cable (For bipolar)**

| Product Name | Length m (ft.) | List Price |
|----------------|----------------|------------|
| LC2B06A | 0.6 (2) | \$5.00 |
| LC2B06B | 0.6 (2) | \$5.00 |
| LC2B06C | 0.6 (2) | \$5.00 |
| LC2B06E | 0.6 (2) | \$6.00 |

◇ **Encoder Type**

| Product Name | Length m (ft.) | List Price |
|-------------------|----------------|------------|
| LCE05A-006 | 0.6 (2) | \$11.00 |
| LCE08A-006 | 0.6 (2) | \$11.00 |

■ **Included**

| Type | Included | Surge Suppressor | Operating Manual |
|--|----------|------------------|------------------|
| Standard High-Resolution SH Geared | | — | 1 Copy |
| with Electromagnetic Brake | | 1 pc. | |

◇ **Motor Cable (For unipolar)**

| Product Name | Length m (ft.) | List Price |
|----------------|----------------|------------|
| LC2U06A | 0.6 (2) | \$5.00 |
| LC2U10A | 1 (3.3) | \$7.00 |
| LC2U06B | 0.6 (2) | \$5.00 |
| LC2U10B | 1 (3.3) | \$7.00 |
| LC2U06C | 0.6 (2) | \$5.00 |
| LC2U10C | 1 (3.3) | \$8.00 |
| LC2U06E | 0.6 (2) | \$6.00 |

Overview

Motor & Driver

5-Phase
RKII

Driver

Motor

2-Phase
PKP

5-Phase
PKP

Standard Type

Standard Type with Encoder

Frame Size 20 mm (0.79 in.) (Bipolar 4 Lead Wires)

Specifications

| Product Name | Maximum Holding Torque N·m (oz·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Recommended Driver Product Name* |
|-----------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|----------------------------------|
| PKP213D05□ | 0.02 (2.8) | 1.6×10^{-7} (0.0088) | 0.5 | 4.25 | 8.5 | 4.1 | 1.8° | CVD205BR-K |
| PKP214D06□ | 0.036 (5.1) | 2.9×10^{-7} (0.0159) | 0.6 | 3.9 | 6.5 | 3.5 | | CVD206BR-K |
| PKP213D05A-R2E■ | 0.02 (2.8) | 1.66×10^{-7} (0.0091) | 0.5 | 4.25 | 8.5 | 4.1 | | CVD205BR-K |
| PKP214D06A-R2E■ | 0.036 (5.1) | 2.96×10^{-7} (0.0162) | 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).

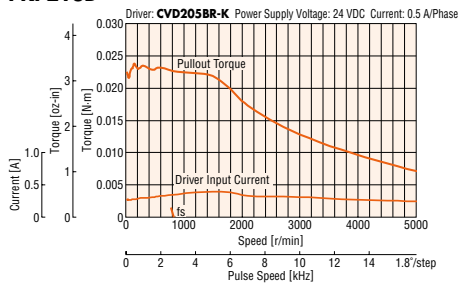
The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no " ■ " in the product name.

● See page A-79 for encoder specifications.

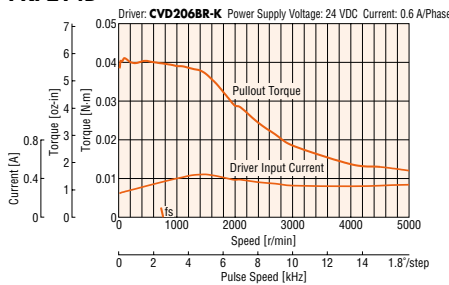
* See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) f_s : Max. Starting Frequency

PKP213D



PKP214D



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Standard Type Standard Type with Encoder Standard Type with Electromagnetic Brake

Frame Size 28 mm (1.10 in.) (Bipolar 4 Lead Wires)

Specifications

| Product Name | Maximum Holding Torque N·m (oz-in) | Rotor Inertia J : kg·m ² (oz-in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electromagnetic Brake Static Friction Torque N·m (oz-in) | Recommended Driver Product Name*2 |
|------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|--|-----------------------------------|
| PKP223D15□2 | 0.095 (13.4) | 9×10 ⁻⁷ (0.049) | 1.5 | 1.77 | 1.18 | 0.96 | 1.8° | - | CVD215BR-K |
| PKP225D15□2 | 0.19 (26) | 18×10 ⁻⁷ (0.098) | | 3 | 2 | 1.6 | | | |
| PKP223D15M2 | 0.095 (13.4) | 14×10 ⁻⁷ *1 (0.077) | | 1.77 | 1.18 | 0.96 | | 0.08 (11.3) | - |
| PKP225D15M2 | 0.19 (26) | 23×10 ⁻⁷ *1 (0.126) | | 3 | 2 | 1.6 | | | |
| PKP223D15A2-R2E■ | 0.095 (13.4) | 9.1×10 ⁻⁷ (0.05) | | 1.77 | 1.18 | 0.96 | | - | CVD215BR-K |
| PKP225D15A2-R2E■ | 0.19 (26) | 18×10 ⁻⁷ (0.098) | | 3 | 2 | 1.6 | | | |

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

The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no "■" in the product name.

● See page A-79 for electromagnetic brake specifications.

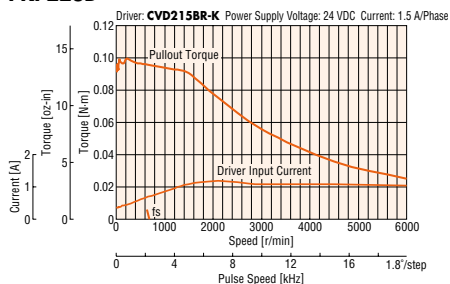
● See page A-79 for encoder specifications.

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

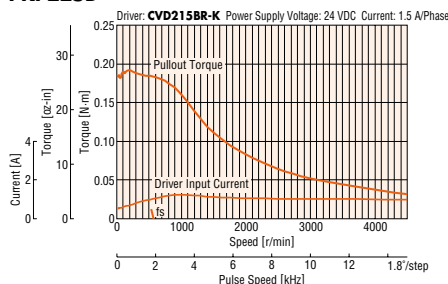
*2 See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

PKP223D



PKP225D



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Standard Type

Standard Type with Encoder

Standard Type with Electromagnetic Brake

Frame Size 35 mm (1.38 in.) (Bipolar 4 Lead Wires)

Specifications

| Product Name | Maximum Holding Torque N·m (oz·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electricmagnetic Brake Static Friction Torque N·m (oz·in) | Recommended Driver Product Name*2 |
|-----------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|---|-----------------------------------|
| PKP233D15□ | 0.2 | 24×10 ⁻⁷ | 1.5 | 2.43 | 1.62 | 1.5 | 1.8° | - | CVD215BR-K |
| PKP233D23□ | (28) | (0.131) | 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□ | (52) | (0.27) | 2.3 | 2.23 | 0.97 | 1.2 | | | CVD223BR-K |
| PKP233D15M | 0.2 | 36×10 ⁻⁷ *1 (0.197) | 1.5 | 2.43 | 1.62 | 1.5 | | 0.3 (42) | - |
| PKP235D15M | 0.37 | 62×10 ⁻⁷ *1 (0.34) | | 3.6 | 2.4 | 2.6 | | - | |
| PKP233D15A-R2E■ | 0.2 | 24×10 ⁻⁷ | | 2.43 | 1.62 | 1.5 | | - | CVD215BR-K |
| PKP235D15A-R2E■ | 0.37 | 50×10 ⁻⁷ | | 3.6 | 2.4 | 2.6 | | | |

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

The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no "■" in the product name.

● See page A-79 for electromagnetic brake specifications.

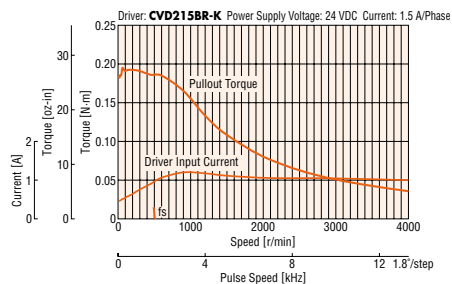
● See page A-79 for encoder specifications.

*1 The value includes the inertia of the electromagnetic brake.

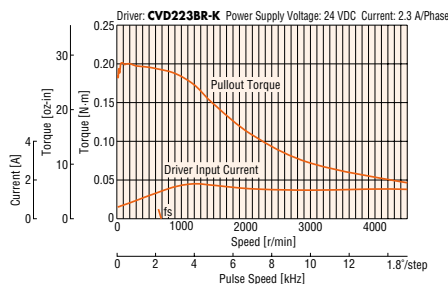
*2 See page A-49 for details on the recommended drivers.

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

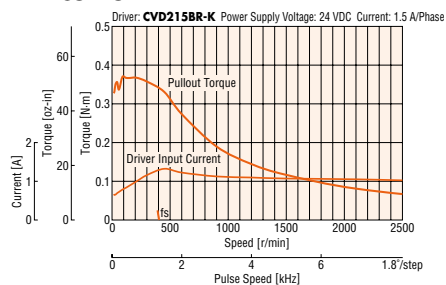
PKP233D15



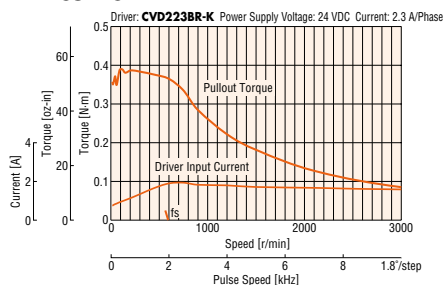
PKP233D23



PKP235D15



PKP235D23



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Standard Type Standard Type with Encoder

Frame Size 42 mm (1.65 in.) (Bipolar 4 Lead Wires)

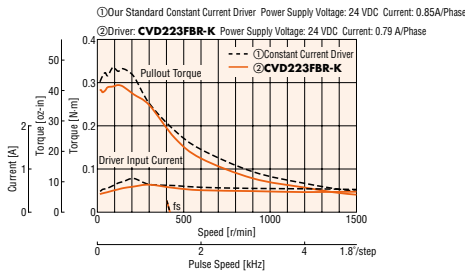
Specifications

| Product Name | Maximum Holding Torque | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current | Voltage | Winding Resistance | Inductance | Basic Step Angle | Recommended Driver Product Name* |
|---------------------------|------------------------|---|---------------|---------|--------------------|------------|------------------|----------------------------------|
| | N·m (oz·in) | | A/Phase | VDC | Ω/Phase | mH/Phase | | |
| PKP243D08 □ 2 | 0.35 (49) | 36 × 10 ⁻⁷ (0.197) | 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 (68) | 54 × 10 ⁻⁷ (0.3) | 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 (93) | 73 × 10 ⁻⁷ (0.4) | 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 (140) | 110 × 10 ⁻⁷ (0.6) | 1.5 | 4.4 | 2.9 | 7.9 | | |
| PKP246D23 □ 2 | | | 2.3 | 3.2 | 1.4 | 3.3 | | |
| PKP243D15A2-R2 □ ■ | 0.35 (49) | 36 × 10 ⁻⁷ (0.2) | 1.5 | 2.7 | 1.8 | 3.3 | | |
| PKP243D23A2-R2 □ ■ | | | 2.3 | 1.8 | 0.78 | 1.4 | | |
| PKP244D15A2-R2 □ ■ | 0.48 (68) | 54 × 10 ⁻⁷ (0.3) | 1.5 | 3.2 | 2.1 | 4.4 | | |
| PKP244D23A2-R2 □ ■ | | | 2.3 | 2.1 | 0.93 | 1.9 | | |
| PKP245D15A2-R2 □ ■ | 0.66 (93) | 73 × 10 ⁻⁷ (0.4) | 1.5 | 3.3 | 2.2 | 5.3 | | |
| PKP245D23A2-R2 □ ■ | | | 2.3 | 2.3 | 1 | 2.2 | | |
| PKP246D15A2-R2 □ ■ | 0.99 (140) | 110 × 10 ⁻⁷ (0.6) | 1.5 | 4.4 | 2.9 | 7.9 | | |
| PKP246D23A2-R2 □ ■ | | | 2.3 | 3.2 | 1.4 | 3.3 | | |

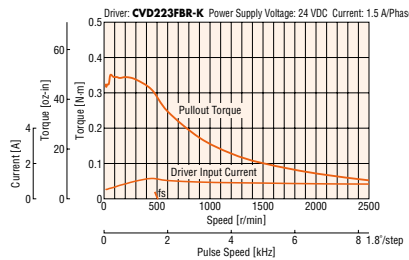
- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).
- The box ■ in the product name indicates the encoder resolution **E** (200 P/R) or **F** (400 P/R).
- The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no "■" in the product name.
- See page A-79 for encoder specifications.
- * See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

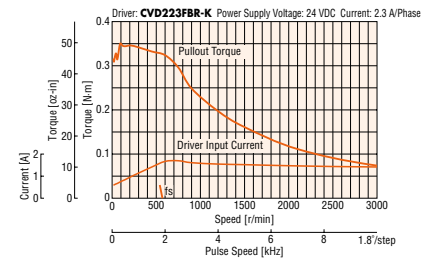
PKP243D08



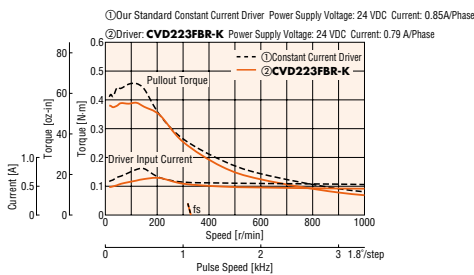
PKP243D15



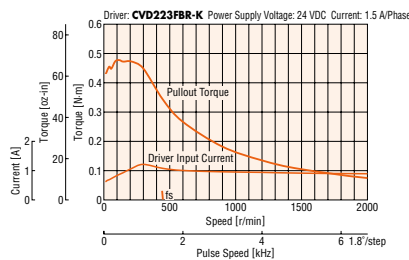
PKP243D23



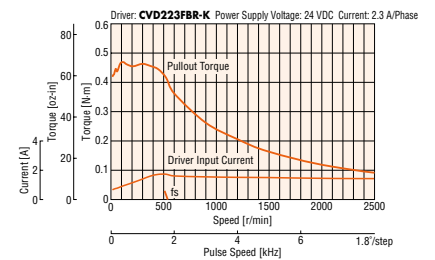
PKP244D08



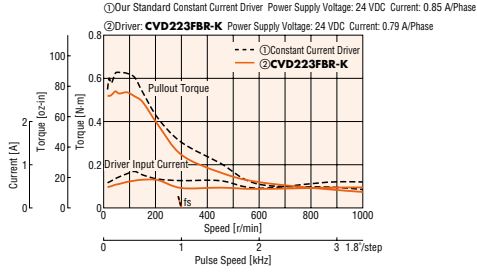
PKP244D15



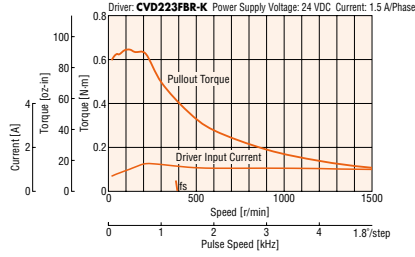
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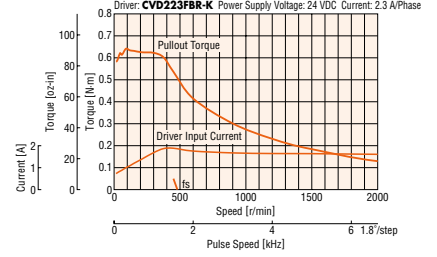
PKP245D08



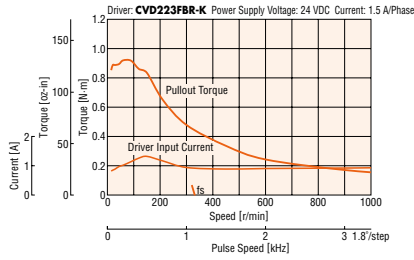
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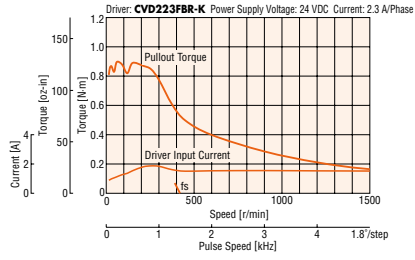
PKP245D23



PKP246D15



PKP246D23



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Standard Type with Electromagnetic Brake Frame Size 42 mm (1.65 in.) (Bipolar 4 Lead Wires)

Specifications

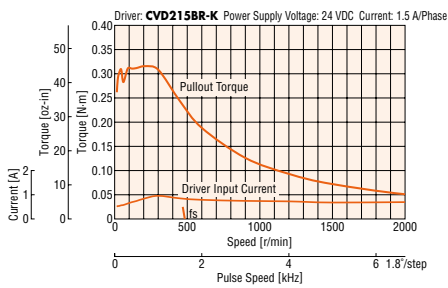
| Product Name | Maximum Holding Torque N-m (oz-in) | Rotor Inertia J : kg·m ² (oz-in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electromagnetic Brake Static Friction Torque N-m (oz-in) |
|-------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|--|
| PKP243D15M | 0.35 (49) | 48 × 10 ⁻⁷ * (0.26) | 1.5 | 2.85 | 1.9 | 5 | 1.8° | 0.3 (42) |
| PKP244D15M | 0.48 (68) | 69 × 10 ⁻⁷ * (0.38) | | 3.9 | 2.6 | 4.9 | | |
| PKP245D15M | 0.58 (82) | 95 × 10 ⁻⁷ * (0.52) | | 3.6 | 2.4 | 6.6 | | |
| PKP246D15M | 0.93 (132) | 126 × 10 ⁻⁷ * (0.69) | | 5.8 | 3.87 | 8 | | |

● See page A-79 for electromagnetic brake specifications.

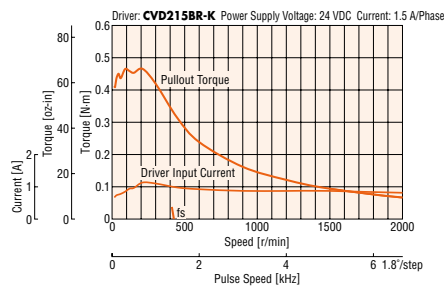
*The value includes the inertia of electromagnetic brake.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

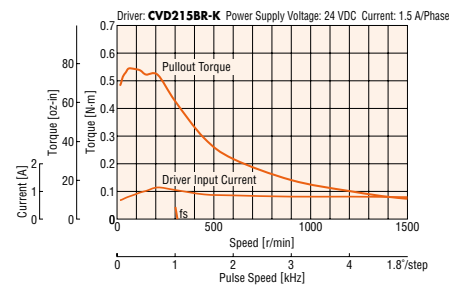
PKP243D15



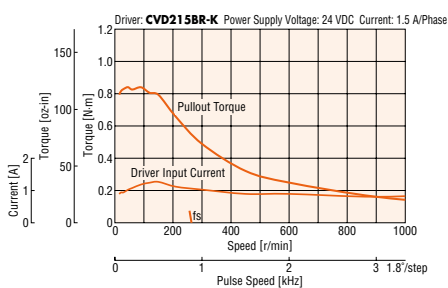
PKP244D15



PKP245D15



PKP246D15



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase
RKII

Driver

Motor

2-Phase
PKP

5-Phase
PKP

Standard Type Frame Size 56.4 mm (2.22 in.) (Bipolar 4 Lead Wires)

Standard Type with Encoder

Specifications

| Product Name | Maximum Holding Torque N·m (oz-in) | Rotor Inertia J : kg·m ² (oz-in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Recommended Driver Product Name* |
|------------------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|-------------------|----------------------------------|
| PKP264D14 □ A2 | 0.74 (105) | 140×10 ⁻⁷ (0.77) | 1.4 | 2.9 | 2.1 | 6 | 1.8° | CVD228BR-K |
| PKP264D28 □ A2 | | | 2.8 | 1.6 | 0.57 | 1.5 | | CVD242BR-K |
| PKP264D42 □ A2 | | | 4.2 | 1 | 0.24 | 0.65 | | |
| PKP266D14 □ A2 | 1.4 (198) | 270×10 ⁻⁷ (1.48) | 1.4 | 4.6 | 3.3 | 12 | | CVD228BR-K |
| PKP266D28 □ A2 | | | 2.8 | 2.4 | 0.86 | 2.9 | | CVD242BR-K |
| PKP266D42 □ A2 | | | 4.2 | 1.6 | 0.38 | 1.3 | | |
| PKP264D14A2-R2 ■ | 0.74 (105) | 140×10 ⁻⁷ (0.77) | 1.4 | 2.9 | 2.1 | 6 | | CVD228BR-K |
| PKP264D28A2-R2 ■ | | | 2.8 | 1.6 | 0.57 | 1.5 | | CVD242BR-K |
| PKP264D42A2-R2 ■ | | | 4.2 | 1 | 0.24 | 0.65 | | |
| PKP266D14A2-R2 ■ | 1.4 (198) | 270×10 ⁻⁷ (1.48) | 1.4 | 4.6 | 3.3 | 12 | | CVD228BR-K |
| PKP266D28A2-R2 ■ | | | 2.8 | 2.4 | 0.86 | 2.9 | | CVD242BR-K |
| PKP266D42A2-R2 ■ | | | 4.2 | 1.6 | 0.38 | 1.3 | | |
| PKP268D14A2-R2 ■ | 2.5 (350) | 500×10 ⁻⁷ (2.7) | 1.4 | 6.6 | 4.7 | 18 | CVD228BR-K | |
| PKP268D28A2-R2 ■ | | | 2.8 | 3.4 | 1.2 | 4.6 | CVD228BR-K | |
| PKP268D42A2-R2 ■ | | | 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).

The box ■ in the product name indicates the encoder resolution **E** (200 P/R) or **F** (400 P/R).

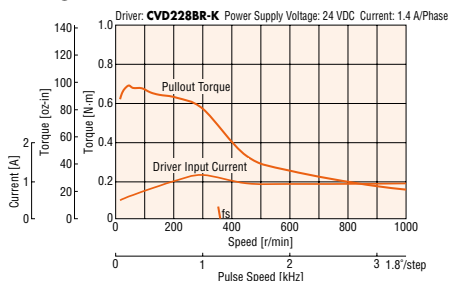
The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no "■" in the product name.

● See page A-79 for encoder specifications.

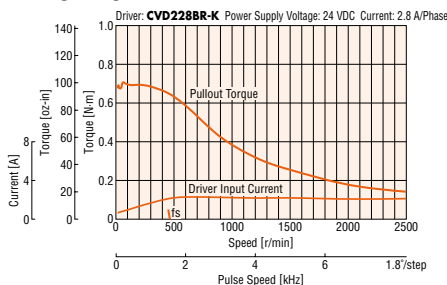
*See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f*_s: Max. Starting Frequency

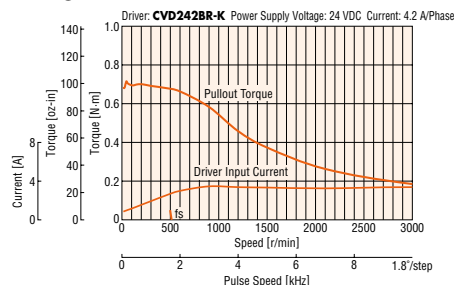
PKP264D14



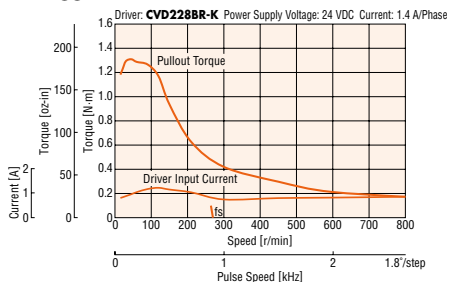
PKP264D28



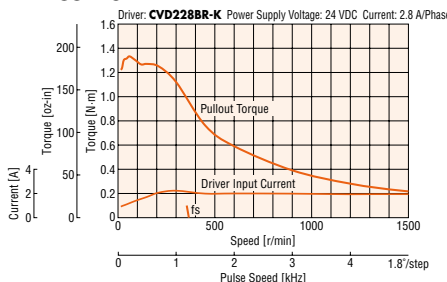
PKP264D42



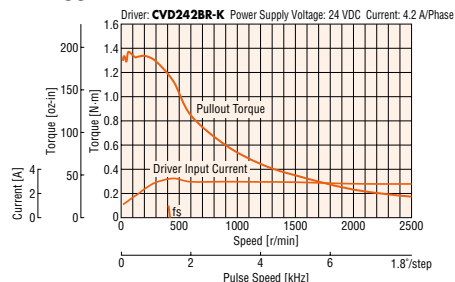
PKP266D14



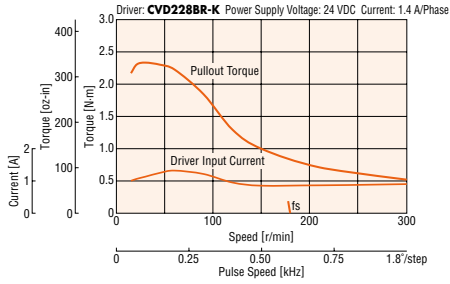
PKP266D28



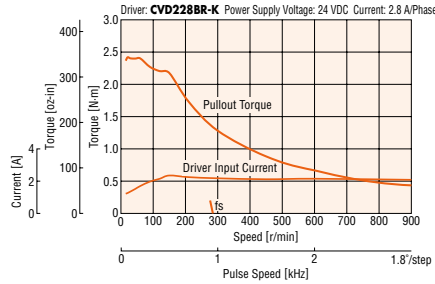
PKP266D42



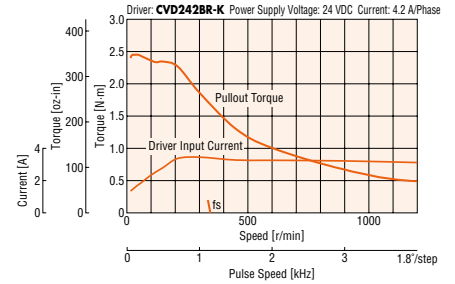
PKP268D14



PKP268D28



PKP268D42



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase
RKII

Driver

Motor

2-Phase
PKP

5-Phase
PKP

Standard Type with Electromagnetic Brake Frame Size 56.4 mm (2.22 in.) (Bipolar 4 Lead Wires)

Specifications

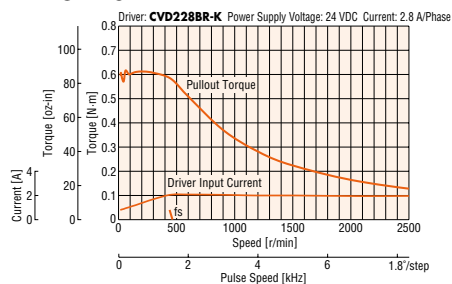
| Product Name | Maximum Holding Torque N·m (oz·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electromagnetic Brake Static Friction Torque N·m (oz·in) |
|-------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|--|
| PKP264D28M | 0.6 (85) | 270×10^{-7} * (1.48) | 2.8 | 2 | 0.73 | 1.8 | 1.8° | 1.5 (213) |
| PKP266D28M | 1.4 (198) | 440×10^{-7} * (2.4) | | 2.8 | 1 | 2.9 | | |
| PKP268D28M | 2.3 (320) | 640×10^{-7} * (3.5) | | 3.4 | 1.23 | 4.4 | | |

● See page A-79 for electromagnetic brake specifications.

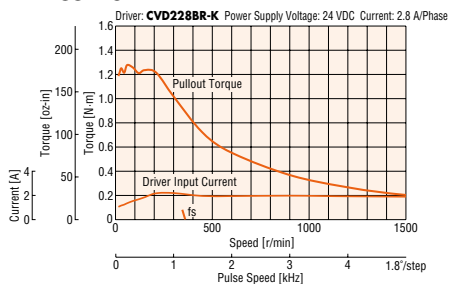
*The value includes the inertia of electromagnetic brake.

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

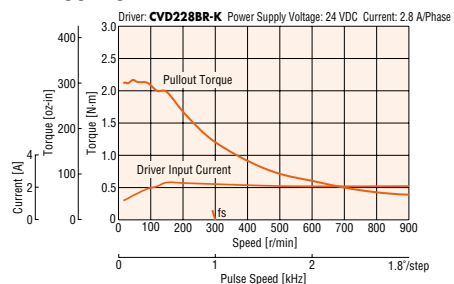
PKP264D28



PKP266D28



PKP268D28



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

Standard Type

Frame Size 85 mm (3.35 in.) (Bipolar 4 Lead Wires)

Specifications

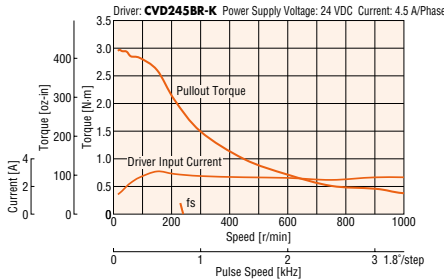
| Product Name | Maximum Holding Torque N·m (lb·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Recommended Driver Product Name* |
|----------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|----------------------------------|
| PKP296D45 □A | 3.3 (29) | 1100×10 ⁻⁷ (6) | 4.5 | 1.9 | 0.42 | 3.1 | 1.8° | CVD245BR-K |
| PKP296D63 □A | | | 6.3 | 1.4 | 0.23 | 1.6 | | - |
| PKP299D45 □A | 6.4 (56) | 2200×10 ⁻⁷ (12) | 4.5 | 2.7 | 0.6 | 5.4 | | CVD245BR-K |
| PKP299D63 □A | | | 6.3 | 2 | 0.32 | 2.6 | | - |
| PKP2913D45 □A | 9.5 (84) | 3400×10 ⁻⁷ (18.6) | 4.5 | 3.5 | 0.78 | 6.9 | | CVD245BR-K |
| PKP2913D56 □A | | | 5.6 | 2.6 | 0.47 | 4.4 | | - |

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

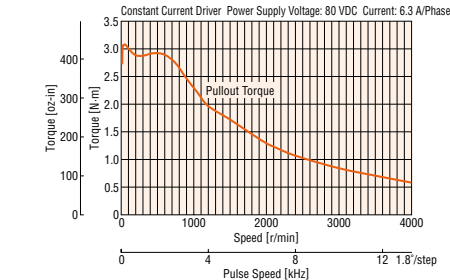
*See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

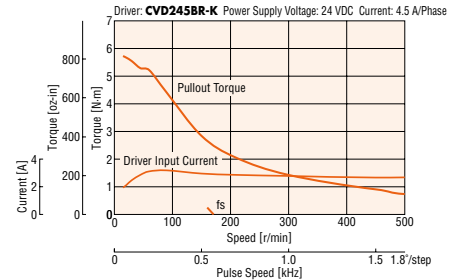
PKP296D45



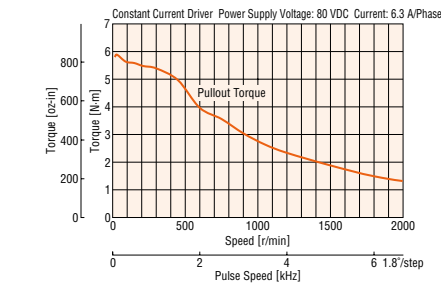
PKP296D63



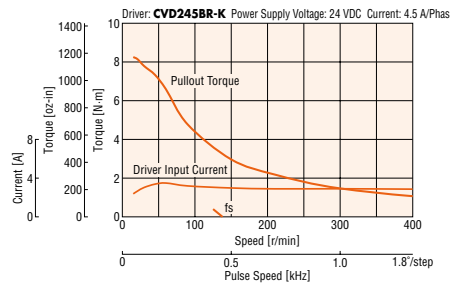
PKP299D45



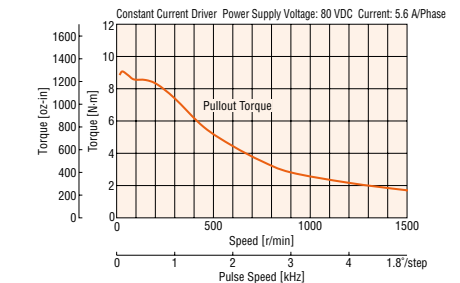
PKP299D63



PKP2913D45



PKP2913D56



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase RKII

Driver

Motor

2-Phase PKP

5-Phase PKP

High-Resolution Type Frame Size 42 mm (1.65 in.) (Bipolar 4 Lead Wires)

High-Resolution Type with Encoder

High-Resolution Type with Electromagnetic Brake

Specifications

| Product Name | Maximum Holding Torque N·m (oz-in) | Rotor Inertia J : kg·m ² (oz-in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electromagnetic Brake Static Friction Torque N·m (oz-in) | Recommended Driver Product Name*2 | |
|--------------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|---|--------------------------------------|-------------------|
| PKP243MD15 □ | 0.30 (42) | 36×10^{-7} (0.197) | 1.5 | 2.85 | 1.9 | 6.6 | 0.9° | - | CVD215BR-K | |
| PKP244MD15 □ | 0.42 (59) | 57×10^{-7} (0.31) | | 3.9 | 2.6 | 7.6 | | | | |
| PKP243MD15M | 0.30 (42) | 48×10^{-7} *1 (0.26) | | 2.85 | 1.9 | 6.6 | | 0.3 (42) | | |
| PKP244MD15M | 0.42 (59) | 69×10^{-7} *1 (0.38) | | 3.9 | 2.6 | 7.6 | | | | |
| PKP243MD15A-R2F ■ | 0.30 (42) | 36×10^{-7} (0.197) | | 2.85 | 1.9 | 6.6 | | - | | CVD215BR-K |
| PKP244MD15A-R2F ■ | 0.42 (59) | 57×10^{-7} (0.31) | | 3.9 | 2.6 | 7.6 | | | | |

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

The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no " ■ " in the product name.

● See page A-79 for electromagnetic brake specifications.

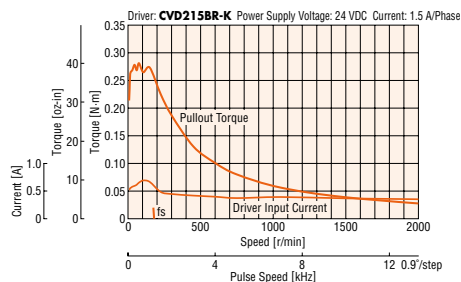
● See page A-79 for encoder specifications.

*1 The value includes the inertia of the electromagnetic brake.

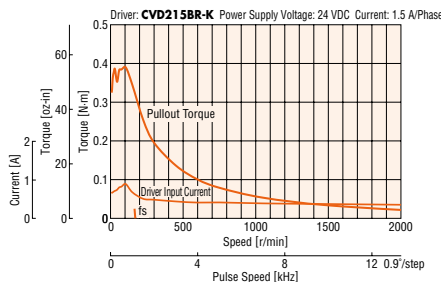
*2 See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) f_s : Max. Starting Frequency

PKP243MD



PKP244MD



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 temperature of the motor case under 100°C (212°F).

● For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.

● Set the current of the driver so that it does not exceed the rated current of the motor.

High-Resolution Type Frame Size 56.4 mm (2.22 in.) (Bipolar 4 Lead Wires) High-Resolution Type with Encoder High-Resolution Type with Electromagnetic Brake

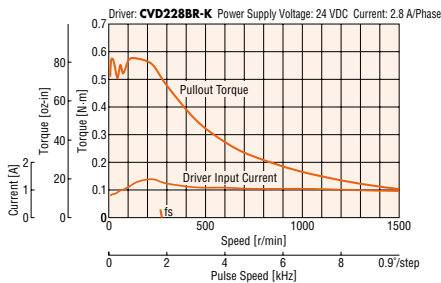
Specifications

| Product Name | Maximum Holding Torque N·m (oz·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Electromagnetic Brake Static Friction Torque N·m (oz·in) | Recommended Driver Product Name*2 | |
|-------------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|--|-----------------------------------|-------------------|
| PKP264MD28□A | 0.6 (85) | 120×10 ⁻⁷ (0.66) | 2.8 | 2 | 0.73 | 2.1 | 0.9° | - | CVD228BR-K | |
| PKP266MD28□A | 1.32 (187) | 290×10 ⁻⁷ (1.59) | | 2.8 | 1 | 3.9 | | | | |
| PKP268MD28□A | 2.23 (316) | 490×10 ⁻⁷ (2.7) | | 3.4 | 1.23 | 5.6 | | | | |
| PKP264MD28M | 0.6 (85) | 270×10 ⁻⁷ *1 (1.48) | | 2 | 0.73 | 2.1 | | 1.5 (213) | | |
| PKP266MD28M | 1.32 (187) | 440×10 ⁻⁷ *1 (2.4) | | 2.8 | 1 | 3.9 | | | | |
| PKP268MD28M | 2.23 (316) | 640×10 ⁻⁷ *1 (3.5) | | 3.4 | 1.23 | 5.6 | | | | |
| PKP264MD28A-R2F■ | 0.6 (85) | 120×10 ⁻⁷ (0.66) | | 2 | 0.73 | 2.1 | | - | | CVD228BR-K |
| PKP266MD28A-R2F■ | 1.32 (187) | 290×10 ⁻⁷ (1.59) | | 2.8 | 1 | 3.9 | | | | |
| PKP268MD28A-R2F■ | 2.23 (316) | 490×10 ⁻⁷ (2.7) | | 3.4 | 1.23 | 5.6 | | | | |

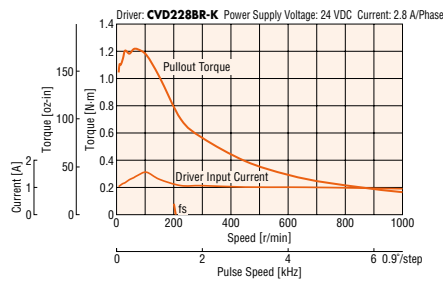
- The box □ in the product name indicates the shaft **A** (single shaft) or **B** (double shaft).
- The box ■ in the product name indicates the encoder output circuit type **L** (line driver output). The voltage output type will have no " ■ " in the product name.
- See page A-79 for electromagnetic brake specifications.
- See page A-79 for encoder specifications.
- *1 The Inertia of the electromagnetic brake is included in the value.
- *2 See page A-49 for details on the recommended drivers.

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

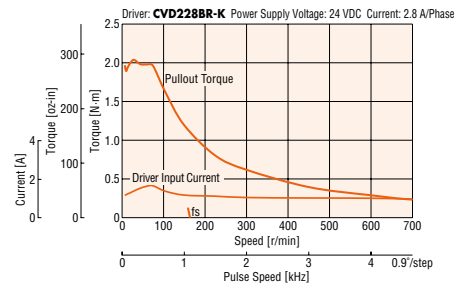
PKP264MD



PKP266MD



PKP268MD



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 temperature of the motor case under 100°C (212°F).
- For motors with encoders, to protect the encoder, keep the motor case temperature at 85°C (185°F) max.
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase RKII

Driver

Motor

2-Phase PKP

5-Phase PKP

SH Geared Type

Frame Size 28 mm (1.10 in.) (Bipolar 4 Lead Wires)

Specifications

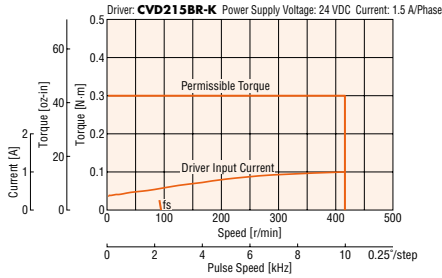
| Product Name | Maximum Holding Torque N·m (oz·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Gear Ratio | Permissible Torque N·m (oz·in) | Speed Range r/min | Backlash arcmin | Recommended Driver Product Name* |
|------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|------------|--------------------------------------|----------------------|--------------------|-------------------------------------|
| PKP223D15□-SG7.2 | 0.3 (42) | 9 × 10 ⁻⁷ (0.049) | 1.5 | 1.8 | 1.2 | 0.74 | 0.25° | 7.2 | 0.3 (42) | 0 - 416 | 90 (1.5°) | CVD215BR-K |
| PKP223D15□-SG9 | | | | | | | 0.2° | 9 | | 0 - 333 | | |
| PKP223D15□-SG10 | 0.18° | | | | | | 10 | 0 - 300 | | | | |
| PKP223D15□-SG18 | 0.1° | | | | | | 18 | 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).

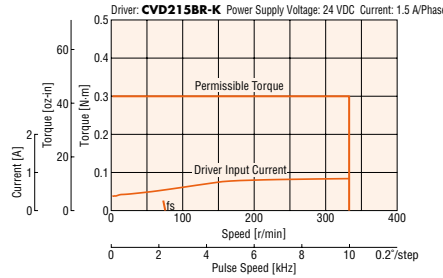
*See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

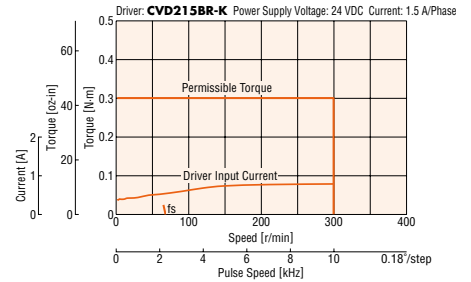
PKP223D Gear Ratio: 7.2



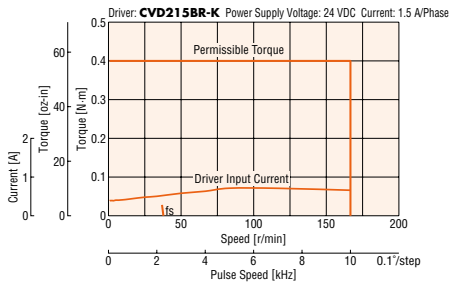
PKP223D Gear Ratio: 9



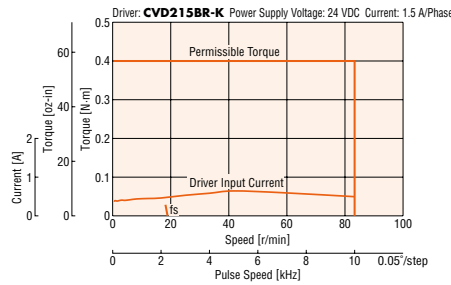
PKP223D Gear Ratio: 10



PKP223D Gear Ratio: 18



PKP223D Gear Ratio: 36



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

SH Geared Type

Frame Size 42 mm (1.65 in.) (Bipolar 4 Lead Wires)

Specifications

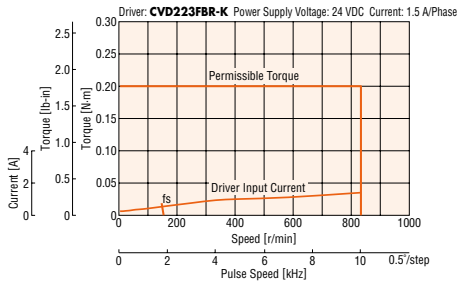
| Product Name | Maximum Holding Torque N·m (lb·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current A/Phase | Voltage VDC | Winding Resistance Ω/Phase | Inductance mH/Phase | Basic Step Angle | Gear Ratio | Permissible Torque N·m (lb·in) | Speed Range r/min | Backlash arcmin | Recommended Driver Product Name* |
|-----------------------------------|--|---|--------------------------|----------------|-------------------------------|------------------------|------------------|------------|--------------------------------------|----------------------|--------------------|----------------------------------|
| PKP243D15 □ 2-SG3.6 | 0.2 | 36×10 ⁻⁷ (0.197) | 1.5 | 0.83 | 0.55 | 0.77 | 0.5° | 3.6 | 0.2 (1.77) | 0 - 833 | 90 (1.5) | CVD223FBR-K |
| PKP243D23 □ 2-SG3.6 | (1.77) | | 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 (3.5) | 0 - 416 | 60 (1°) | |
| PKP243D23 □ 2-SG7.2 | (3.5) | | 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 (4.4) | 0 - 333 | | |
| PKP243D23 □ 2-SG9 | (4.4) | | 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 (4.9) | 0 - 300 | | |
| PKP243D23 □ 2-SG10 | (4.9) | | 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 (7) | 0 - 166 | | |
| PKP243D23 □ 2-SG18 | (7) | | 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 (7) | 0 - 83 | | |
| PKP243D23 □ 2-SG36 | (7) | | 2.3 | 0.87 | 0.38 | 0.41 | | | | | | |

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

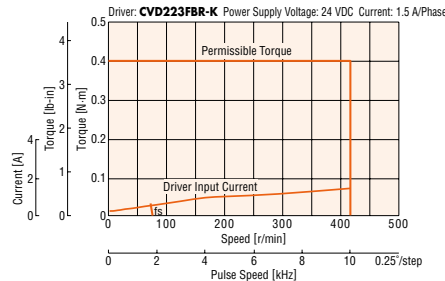
*See page A-49 for details on the recommended drivers.

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

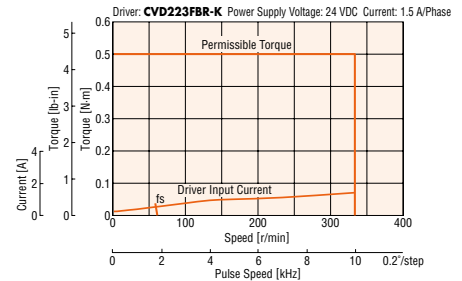
PKP243D15 Gear Ratio: 3.6



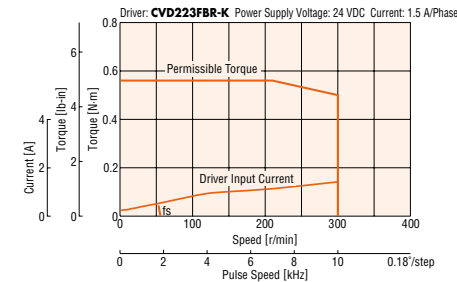
PKP243D15 Gear Ratio: 7.2



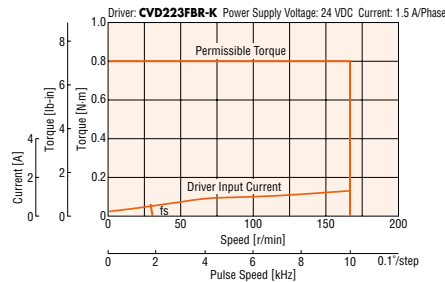
PKP243D15 Gear Ratio: 9



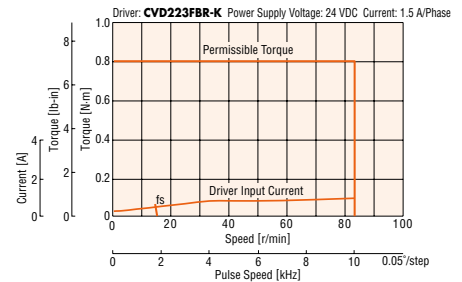
PKP243D15 Gear Ratio: 10



PKP243D15 Gear Ratio: 18



PKP243D15 Gear Ratio: 36



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase RKII

Driver

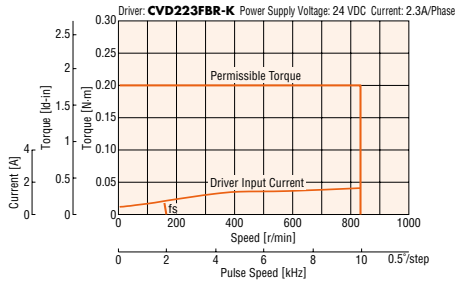
Motor

2-Phase PKP

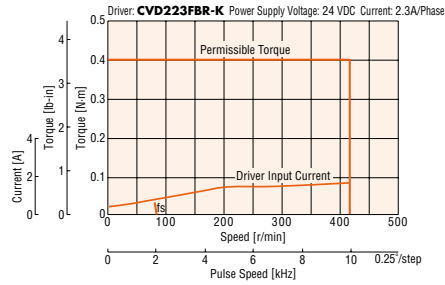
5-Phase PKP

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

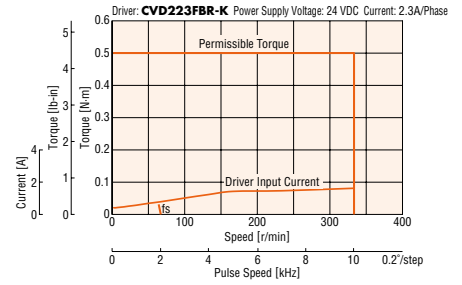
PKP243D23 Gear Ratio: 3.6



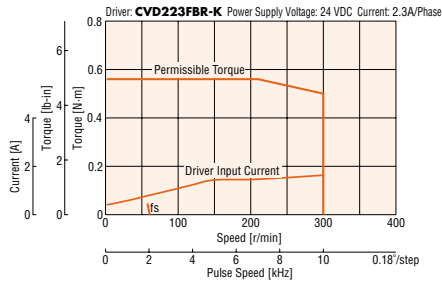
PKP243D23 Gear Ratio: 7.2



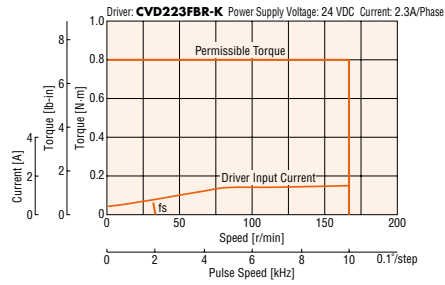
PKP243D23 Gear Ratio: 9



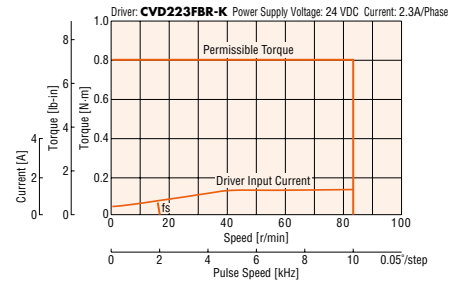
PKP243D23 Gear Ratio: 10



PKP243D23 Gear Ratio: 18



PKP243D23 Gear Ratio: 36



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

SH Geared Type

Frame Size 60 mm (2.36 in.) (Bipolar 4 Lead Wires)

Specifications

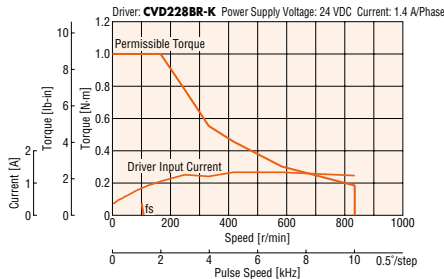
| Product Name | Maximum Holding Torque N·m (lb·in) | Rotor Inertia J : kg·m ² (oz·in ²) | Rated Current | Voltage | Winding Resistance | Inductance | Basic Step Angle | Gear Ratio | Permissible Torque | Speed Range | Backlash arcmin | Recommended Driver Product Name* | |
|-------------------|--|---|---------------|---------|--------------------|------------|------------------|------------|--------------------|-------------|--------------------|-------------------------------------|---------|
| | | | A/Phase | VDC | Ω/Phase | mH/Phase | | | N·m (lb·in) | r/min | | | |
| PKP264D14□2-SG3.6 | 1 (8.8) | 140×10 ⁻⁷ (0.77) | 1.4 | 2 | 1.4 | 3.1 | 0.5° | 3.6 | 1 (8.8) | 0 - 833 | 45 (0.75°) | CVD228BR-K | |
| PKP264D28□2-SG3.6 | | | 2.8 | 0.92 | 0.33 | 0.81 | | | | | | | |
| PKP264D14□2-SG7.2 | 2 (17.7) | | 1.4 | 1.4 | 2 | 1.4 | 3.1 | 0.25° | 7.2 | 2 (17.7) | | | 0 - 416 |
| PKP264D28□2-SG7.2 | | | | 2.8 | 0.92 | 0.33 | 0.81 | | | | | | |
| PKP264D14□2-SG9 | 2.5 (22) | | 1.4 | 1.4 | 2 | 1.4 | 3.1 | 0.2° | 9 | 2.5 (22) | | | 0 - 333 |
| PKP264D28□2-SG9 | | | | 2.8 | 0.92 | 0.33 | 0.81 | | | | | | |
| PKP264D14□2-SG10 | 2.7 (23) | | 1.4 | 1.4 | 2 | 1.4 | 3.1 | 0.18° | 10 | 2.7 (23) | | | 0 - 300 |
| PKP264D28□2-SG10 | | | | 2.8 | 0.92 | 0.33 | 0.81 | | | | | | |
| PKP264D14□2-SG18 | 3 (26) | | 1.4 | 1.4 | 2 | 1.4 | 3.1 | 0.1° | 18 | 3 (26) | | | 0 - 166 |
| PKP264D28□2-SG18 | | | | 2.8 | 0.92 | 0.33 | 0.81 | | | | | | |
| PKP264D14□2-SG36 | 4 (35) | 1.4 | 1.4 | 2 | 1.4 | 3.1 | 0.05° | 36 | 4 (35) | 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).

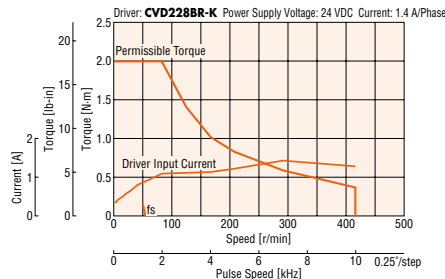
*See page A-49 for details on the recommended drivers.

Speed – Torque Characteristics (Reference Values) *f_s*: Max. Starting Frequency

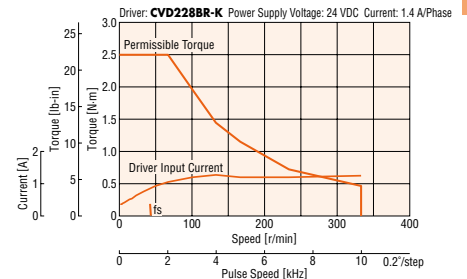
PKP264D14 Gear Ratio: 3.6



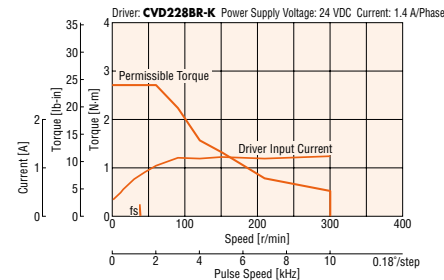
PKP264D14 Gear Ratio: 7.2



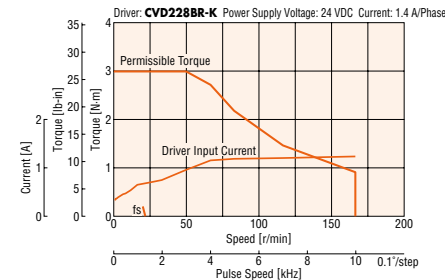
PKP264D14 Gear Ratio: 9



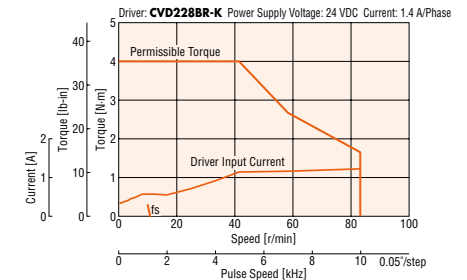
PKP264D14 Gear Ratio: 10



PKP264D14 Gear Ratio: 18



PKP264D14 Gear Ratio: 36



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

Overview

Motor & Driver

5-Phase
RKII

Driver

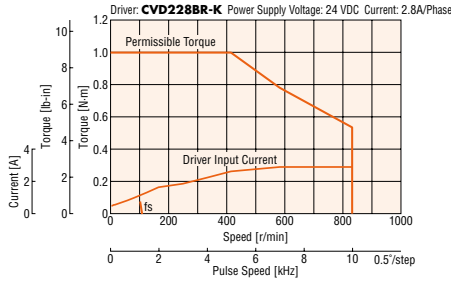
Motor

2-Phase
PKP

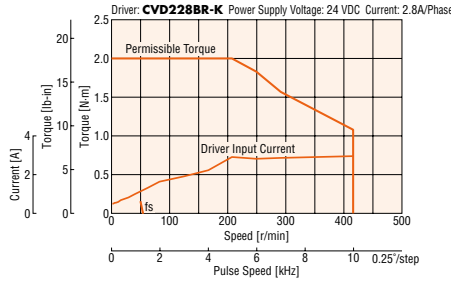
5-Phase
PKP

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

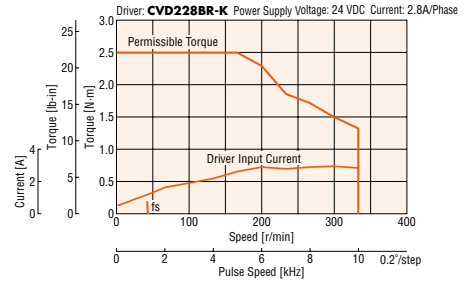
PKP264D28 Gear Ratio: 3.6



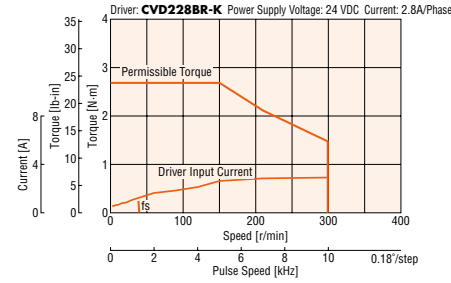
PKP264D28 Gear Ratio: 7.2



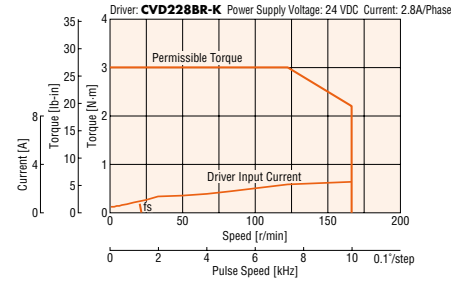
PKP264D28 Gear Ratio: 9



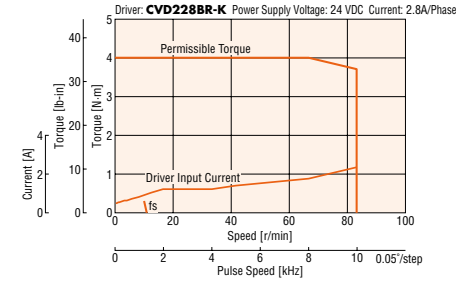
PKP264D28 Gear Ratio: 10



PKP264D28 Gear Ratio: 18



PKP264D28 Gear Ratio: 36



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 temperature of the motor case under 100°C (212°F).
- Set the current of the driver so that it does not exceed the rated current of the motor.

General Specifications

| Specification | Motor | |
|---|---|---|
| Thermal Class | 130 (B) | |
| Insulation Resistance | 100 MΩ or more when 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. <ul style="list-style-type: none"> • Frame size 42 mm (1.65 in.) max. : 0.5 kVAC 50/60 Hz • Frame size 56.4 mm (2.22 in.) min. : 1.0 kVAC 50/60 Hz • Frame size 85 mm (3.35 in.) : 1.5 kVAC 50/60 Hz | |
| Operating Environment | Ambient Temperature | -10 to +50°C (+14 to +122°F) (Non-Freezing) |
| | Ambient Humidity | 85% or less (Non-Condensing) |
| | Surrounding Atmosphere | No corrosive gas or dust. No water or oil. |
| Temperature Rise | Winding temperature rise 80°C (176°F) max. (Based on Oriental Motor's measurement conditions) | |
| Stop Position Accuracy*1 | ±3 arcmin (±0.05°) [PKP21□ is ±5 arcmin (±0.083°)] | |
| Shaft Runout | 0.05 mm (0.002 in.) T.I.R.*4 | |
| Radial Play*2 | 0.025 mm (0.001 in.) Max. [load 5 N (1.12 lb.)] | |
| Axial Play*3 | 0.075 mm (0.003 in.) Max. [load 10 N (2.2 lb.)] [PKP21□ is load 1 N (0.225 lb.), PKP22□ is load 2.5 N (0.566 lb.)] | |
| Concentricity of Installing Pilot to the Shaft | 0.075 mm (0.003 in.) T.I.R.*4 | |
| Perpendicularity of Installation Surface to the Shaft | 0.075 mm (0.003 in.) T.I.R.*4 | |

*1 This value is for full step under no load (The value changes with the size of the load).

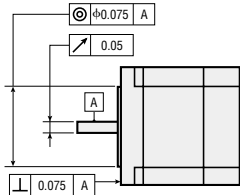
*2 Radial Play: Displacement in shaft position in the radial direction when a 5 N (1.12 lb.) load is applied in the vertical direction to the tip of the motor shaft.

*3 Axial Play: Displacement in shaft position in the axial direction when a 10 N (2.2 lb.) [PKP21□ is 1 N (0.225 lb.), PKP22□ is 2.5 N (0.566 lb.)] load 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 one revolution centered on the reference axis center.

Note

- Do not measure the insulation resistance or perform a dielectric strength test while the motor and driver are connected. Also, do not conduct these tests on the motor encoder section.

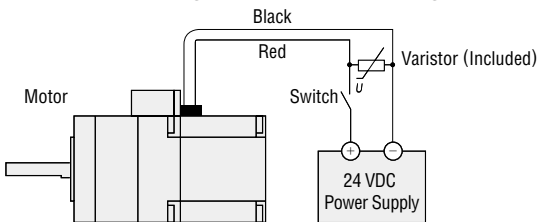


Electromagnetic Brake Specifications

| Product Name | PKP22 | PKP23 and PKP24 | PKP26 |
|------------------------|--------------------------|-----------------|-----------|
| Brake Type | Power Off Activated Type | | |
| Power Supply Voltage | 24 VDC ±5% | | |
| Power Supply Current | A 0.05 | 0.07 | 0.23 |
| Static Friction Torque | N·m (oz-in) 0.08 (11.3) | 0.3 (42) | 1.5 (213) |
| Brake Operating Time | ms 20 | | |
| Brake Releasing Time | ms 50 | | |
| Time Rating | Continuous | | |

● The product names are listed such that the product names are distinguishable.

Connecting the Electromagnetic Brake



Encoder Specifications

| Encoder Product Name | R2EL | R2FL | R2E | R2F |
|----------------------|-------------------------------------|--------|----------------|--------|
| Resolution | 200P/R | 400P/R | 200P/R | 400P/R |
| Output Circuit Type | Line Driver Output* | | Voltage Output | |
| Output Mode | Incremental | | | |
| Output Signal | A Phase, B Phase, and Z Phase (3ch) | | | |
| Power Supply Voltage | 5 VDC ±10% | | | |
| Current | 30 mA max. | | 45 mA max. | |

*26C31 or equivalent

Permissible Radial Load and Permissible Axial Load

→ Page A-13

Rotation Direction

→ Page A-12