

1.8°/0.72°/0.36°/Geared Stepper Motor and Driver Packages

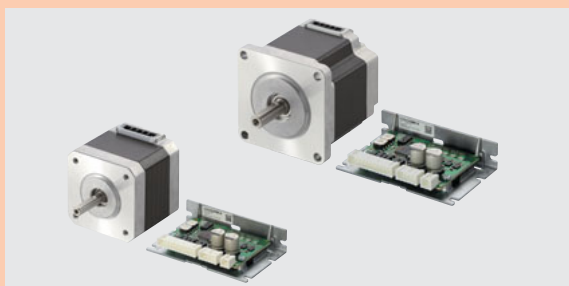
CVK Series

<Additional Information>

- Technical reference → Page H-1
- Regulations & Standards → Page I-2



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



Freedom of choice between 1.8° stepper motor and 0.72°/0.36° stepper motor.

The compatibility is enhanced while utilizing either the 1.8° stepper motor or 0.72°/0.36° stepper motor characteristics.

The most suitable motor can be selected according to its intended use.

The prices of the motors have been revised significantly, and they are offered at affordable prices.

Features

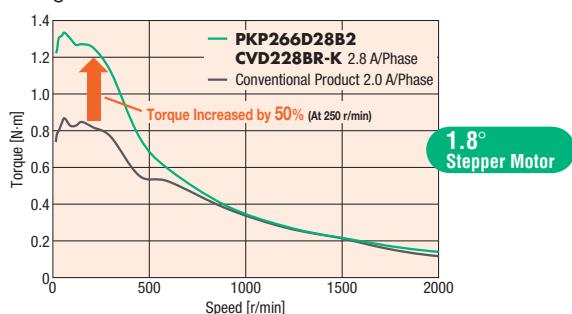
1.8° Stepper Motor and 0.72°/0.36° Stepper Motor CVK Series with Improved Basic Performance

● 1.8° Stepper Motor with Higher Torque and Less Vibration in the Low Speed Range

High current is possible thanks to the revised motor winding design and the highly efficient design of the drive circuit, and the torque has been increased significantly at low speeds. In particular, the torque at around 250 r/min is 50% higher than that of a conventional product. In addition, the motor vibrates less and produces less noise than a typical 1.8° stepper motor. This product consists of the 1.8° stepper motor and bipolar driver with improved overall basic performance.

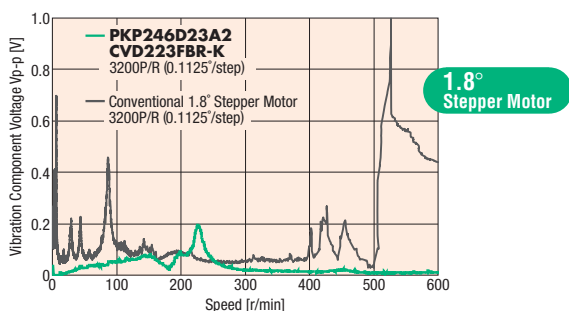
◇ Higher Torque in the Low Speed Range

The maximum holding torque has been increased by bipolar wiring.



◇ Low Vibration

Utilizing a digitally-controlled full-time microstep driver improves the vibration at all speeds.

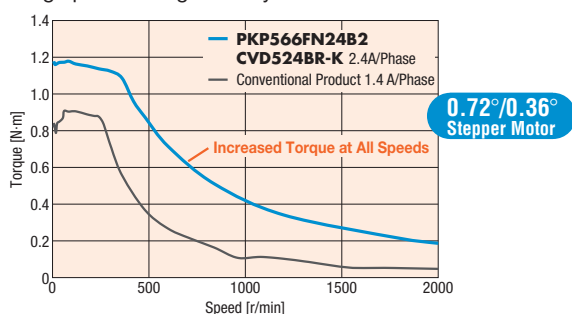


● 0.72°/0.36° Stepper Motor with Higher Torque and Reduced Vibration and Noise at All Speeds

The performance of the 0.72°/0.36° stepper motor has been maximized thanks to the revised motor winding design and the highly efficient design of the drive circuit, and the torque has been increased significantly at all speeds. In addition, this product consists of the high-performance 0.72°/0.36° stepper motor and bipolar driver, which acts as a digitally-controlled full-time microstep driver to reduce vibration and noise, compared to conventional products.

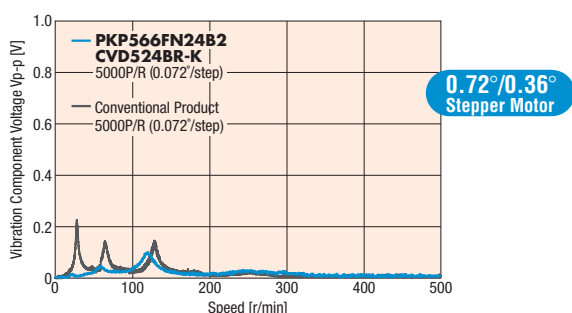
◇ Higher Torque at All Speeds

Making the motor winding suitable for high currents expands the usage potential significantly.



◇ Lower Vibration and Reduced Noise

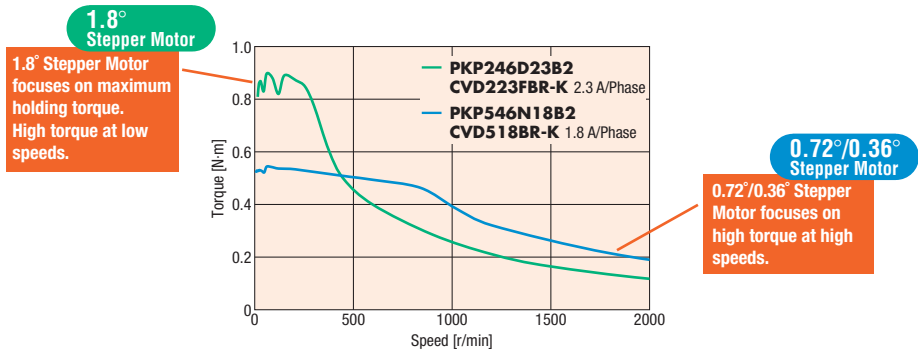
Utilizing a digitally-controlled full-time microstep driver reduces both vibration and noise.



1.8° Stepper Motor Focuses on High Torque at Low Speeds. 0.72°/0.36° Stepper Motor Focuses on Low Vibration and High Positioning Accuracy.

● The Torque has been Increased Significantly. More Applications for High Torque.

With higher currents, the maximum holding torque at low speeds for the 1.8° stepper motor **CVK** Series and the torque at high speeds or the 0.72°/0.36° stepper motor **CVK** Series have been increased significantly. More motor selections are available, so a motor that matches your desired specifications can be selected from a wide range of speed and torque variations.

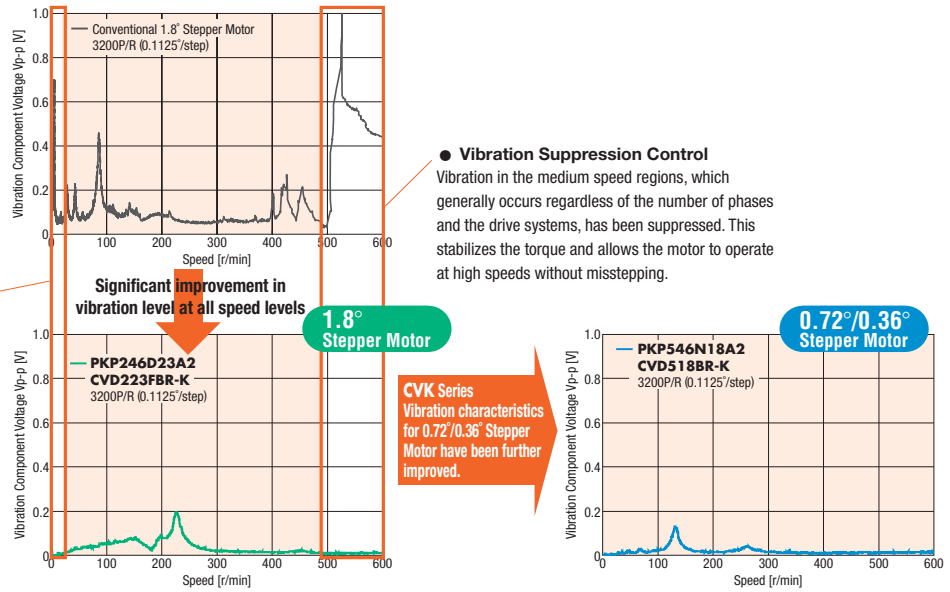


● Low Vibration Achieved by Full-Time Microstep Drive

Utilizing a digitally-controlled full-time microstep driver improves the vibration levels and reduces both vibration and noise at all speeds. The 0.72°/0.36° stepper motor **CVK** Series has the superior vibration characteristics.

● Reduction in Step Vibration

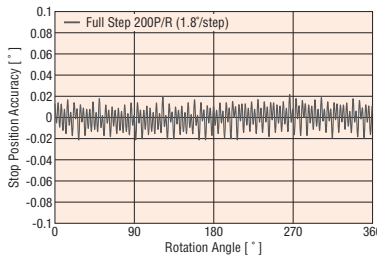
The new smooth drive control with its increased current control resolution allows the basic step angle to be divided into a max. of 2048 microstep angles. This has greatly reduced the step vibration at low speeds.



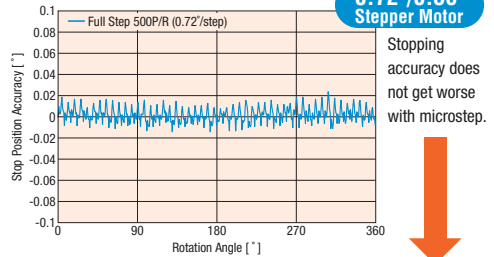
● 0.72°/0.36° Stepper Motor for High Accuracy Positioning

The resolution can be set to a maximum of 125000 P/R via the full-time microstep drive. Stopping accuracy generally drops when using the full-time microstep drive, as compared to a full-step type drive, especially with the 1.8° stepper motor. In such cases, using the 0.72°/0.36° stepper motor **CVK** Series can result in greater positioning accuracy.

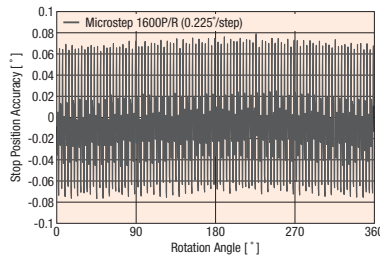
◇ General 1.8° Stepper Motor



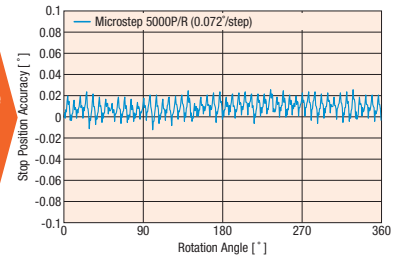
◇ 0.72°/0.36° Stepper Motor CVK Series Motor



- Stopping accuracy
- 0.72° Stepper Motor ±0.05° (±3 arc minutes)
- 0.36° Stepper Motor ±0.034° (±2 arc minutes)



High Positioning Accuracy Possible with the CVK Series 0.72°/0.36° Stepper Motor



Overview, Product Series

AC Input Motor & Driver

0.36°/Geared α STEP Absolute AZ

0.36°/Geared α STEP AR

0.72°/Geared RKII

DC Input Motor & Driver

0.36°/Geared α STEP Absolute AZ

0.36°/Geared α STEP AR

1.8°/0.72°/0.36° CVK

0.72°/0.36°/Geared CRK

1.8°/Geared RBK

Motor Only /Driver Only

1.8°/0.9° PKP/PK

Geared PKP/PK

0.72°/0.36° PKP/PK

Driver

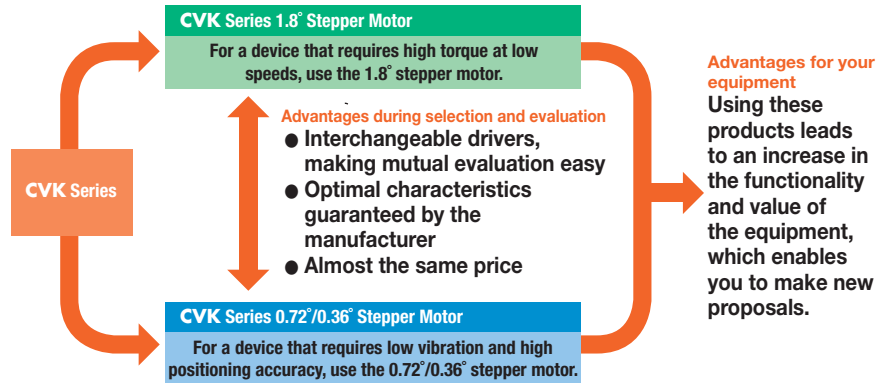
Accessories

Providing the Freedom to Choose between 1.8° Stepper Motor and 0.72°/0.36° Stepper Motor

● Freely Evaluate from 1.8° Stepper Motor to 0.72°/0.36° Stepper Motor or from 0.72°/0.36° Stepper Motor to 1.8° Stepper Motor

The drivers in the 1.8° stepper motor and 0.72°/0.36° stepper motor **CVK** Series are similar in size, installation and I/O connectors. This allows you to select 1.8° stepper motor or 0.72°/0.36° stepper motor according to your required specifications and evaluate them. In addition, the motors are among the best in the industry for compactness and lightness.

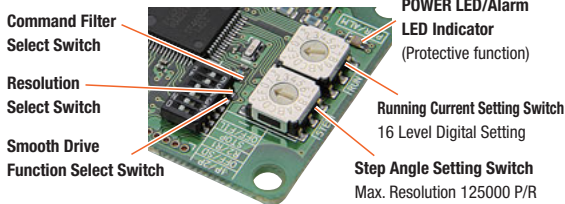
● A driver cannot be shared by both a 1.8° stepper motor and 0.72°/0.36° stepper motor. Each uses a respective dedicated driver.



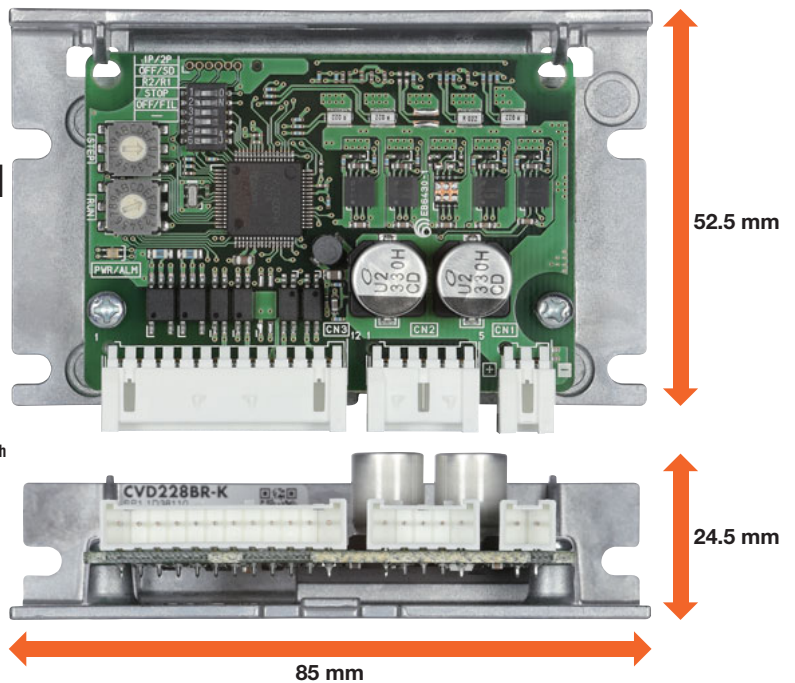
● Industry's-Top-Class Compact High Performance Driver

- Compact and lightweight drivers that contribute to saving space
- Protective function that enables you to find driver errors early
- Smooth drive function that enables smoother operation
- Set the running current using a digital switch

● Functions and Names of Driver Parts



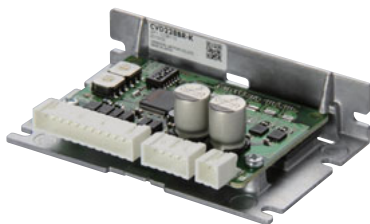
Actual Size



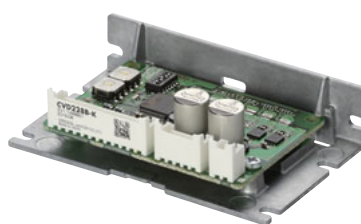
● 2 Types of Drivers are Available.

2 types of drivers are provided for both 1.8° stepper motor and 0.72°/0.36° stepper motor.

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



- With Installation Plate
The connector points upward.



- A driver cannot be shared by both a 1.8° stepper motor and 0.72°/0.36° stepper motor. Each uses a respective dedicated driver.
- A type without an installation plate is also available. For details, please contact your nearest Oriental Motor sales office.

● The Price of the 1.8° Stepper Motor and 0.72°/0.36° Stepper Motor is Almost the Same.




























In the **CVK** Series, in addition to the performance and functionality being significantly improved, the prices have been revised. There is only a slight price difference between the 1.8° stepper motor and 0.72°/0.36° stepper motor, and both of them are offered at affordable prices.

● Comparison between 1.8° Stepper Motor and 0.72°/0.36° Stepper Motor



Product Line

–: Not Offered in This Product Line

Type	Basic Step Angle	Frame Size							Driver
		20 mm	28 mm	35 mm	42 mm	56.4 mm	60 mm	85 mm	
Standard Type	1.8°						–		 Driver for 1.8° Stepper Motor
	0.72°			–					
High-Resolution Type	0.36°	–	–	–		–		–	–
Standard Type with Encoder	1.8°			–			–	–	 Driver for 0.72°/0.36° Stepper Motor
	0.72°		–	–				–	
SH Geared Type	0.5° ~ 0.05°	–		–		–		–	–

● A driver cannot be shared by both a 1.8° stepper motor and 0.72°/0.36° stepper motor. Each uses a respective dedicated driver.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
*α*STEP Absolute
AZ

0.36°/Geared
*α*STEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
*α*STEP Absolute
AZ

0.36°/Geared
*α*STEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Motor Types

● Standard Type

This is an easy-to-use basic model. Some products use a slim and compact connector, so the overhang distance of the connector becomes shorter. In addition, the degree of freedom for the cable direction has been increased, because the outlet points upward. [Basic Step Angle] 1.8°/step, 0.72°/step



Compact and Slim Connector

● Standard Type with Encoder

Using a motor with an encoder enables operations such as monitoring the current position and detecting positional errors. Doing this increases the reliability of the equipment. [Basic Step Angle] 1.8°/step, 0.72°/step



● High-Resolution Type (0.36° Stepper Motor)

This motor's basic resolution is double that of the standard type. The slight displacement angle against the load torque provides high positioning accuracy. Vibration is also reduced. [Basic Step Angle] 0.36°/step



● SH Geared Type (For 1.8° Stepper Motor)

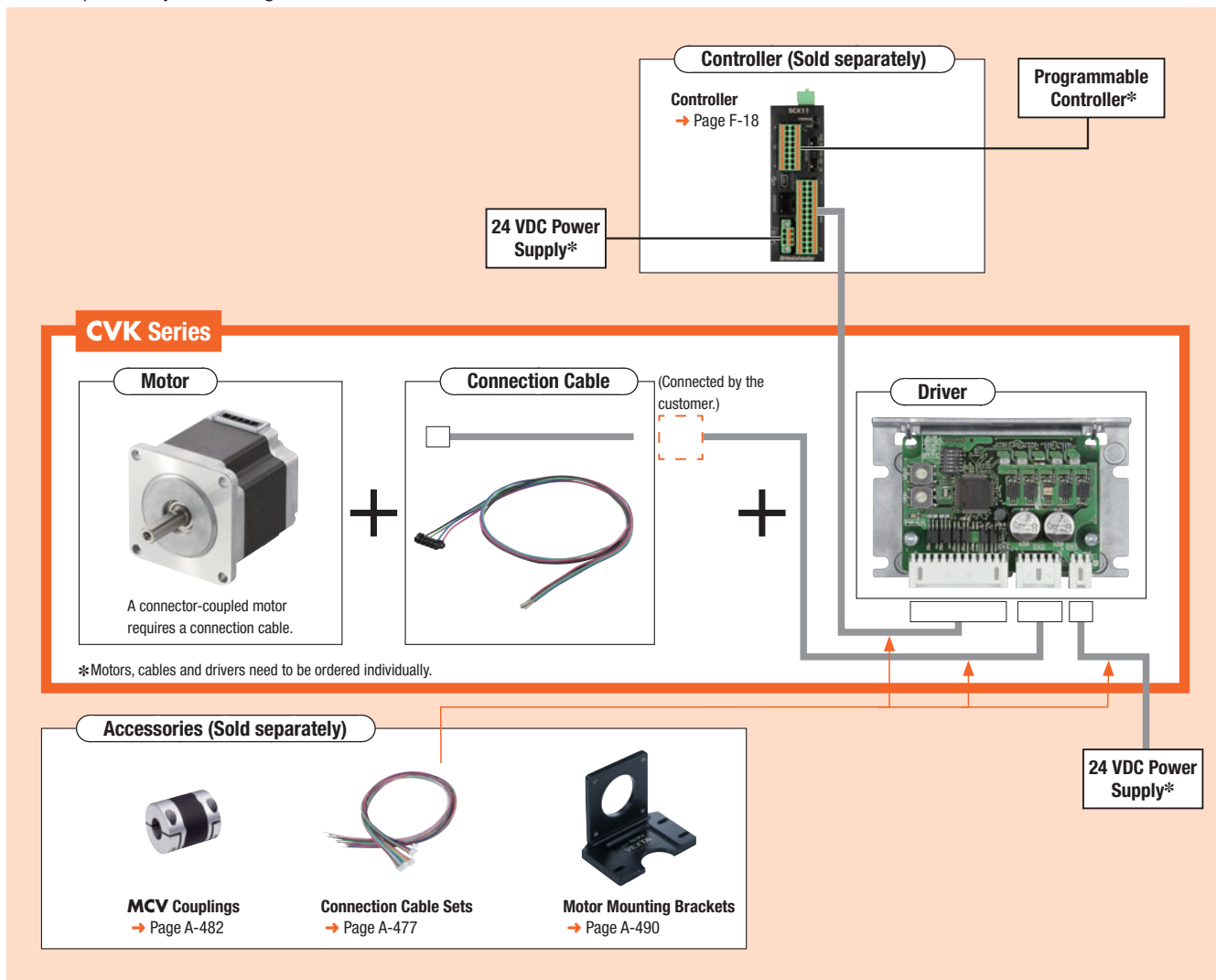
This type is well-suited for deceleration, increased torque, high resolution, and limited vibration. There is less backlash than you get with the conventional product. [Basic Step Angle] 0.5° ~ 0.05°/step



System Configuration

An example of a system configuration with the **SCX11** controller is shown below.

* Not supplied.



Example of System Configuration

CVK Series			Accessory						
Motor	+	Connection Cable	+	Driver	+	Controller	Motor Mounting Bracket	Flexible Coupling	Connection Cable Set (0.6 m)
PKP266D28A2		LC2B06E		CVD228BR-K		SCX11	PAL2P-2	MCV190808	LCS01CVK2
€42.00		€5.00		€105.00		€215.00	€13.00	€48.00	€18.00

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

Product Number

Motor

◇ 1.8° Stepper Motor

Standard Type

PKP 2 6 6 D 28 A 2

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Standard Type with Encoder

PKP 2 4 3 D 15 A 2 - R2E L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series Name	PKP: PKP Series
②	1.8° Stepper Motor	
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	Number of Lead Wires	D: 4 Leads
⑥	Motor Winding Specifications	
⑦	Configuration	A: Single Shaft B: Double Shaft
⑧	Reference Number	
⑨	Encoder Resolution	R2E: 200 P/R R2F: 400 P/R
⑩	Encoder Output Circuit Type	L: Line Driver Output*

*A voltage output type of encoder output circuit is also available.

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

SH Geared Type

PKP 2 4 3 D 23 B 2 - SG 18

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

◇ 0.72°/0.36° Stepper 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 - R2G L

① ② ③ ④ ⑤ ⑧ ⑨ ⑩

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

PKP 5 6 6 F N 24 A 2 - R2G L

① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

● Driver

CVD 2 23 F B R - K

① ② ③ ④ ⑤ ⑥ ⑦

● Connection Cable

◇ Connection Cable for Motor

LC 2 B 06 A

① ② ③ ④ ⑤

◇ Connection Cable for Encoder

LC E 08 A - 006

① ② ③ ④ ⑤

①	Series Name	PKP: PKP Series
②	2: 1.8° Stepper Motor	
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 B: Double Shaft
⑧	Reference Number	
⑨	Geared Type	SG: SH Geared Type
⑩	Gear Ratio	

①	Series Name	PK: PK Series
②	5: 0.72°/0.36° Stepper Motor	
③	Motor Frame Size	1: 20 mm 9: 85 mm
④	Motor Case Length	
⑤	Motor Classification	
⑥	Motor Specification	Blank: Standard Specifications H: High-Speed Specifications
⑦	Number of Lead Wires	N: 5 Leads
⑧	Configuration	A: Single Shaft B: Double Shaft
⑨	Encoder Resolution	R2G: 500 P/R
⑩	Encoder Output Circuit Type	L: Line Driver Output
⑪	Cable Identification	Blank: Connector Connection Method W: Lead Wire Type

①	Series Name	PKP: PKP Series
②	5: 0.72°/0.36° Stepper Motor	
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 of 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	R2G: 500 P/R
⑫	Encoder Output Circuit Type	L: Line Driver Output*

*A voltage output type of encoder output circuit is also available.
For details, please contact your nearest Oriental Motor sales office.

①	Driver Type	CVD: CVK Series Driver
②	2: 1.8° Stepper Motor 5: 0.72°/0.36° Stepper Motor	
③	Rated Current	
④	Driver Identification	
⑤	Driver Configuration	B: With Installation Plate*
⑥	Connector Configuration	R: Right Angle
⑦	Power Supply Input	K: DC Power Supply

*Types without an installation plate are available.
For details, please contact your nearest Oriental Motor sales office.

①	Cables	LC: Connector-Type Leads
②	2: 1.8° Stepper Motor 5: 0.72°/0.36° Stepper Motor	
③	Cable Type	B: For 1.8° Stepper Motor Bipolar N: For 0.72°/0.36° Stepper Motor
④	Cable Length	06: 0.6 m 10: 1 m
⑤	Reference Number	

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

*A voltage output cable is available.
For details, please contact your nearest Oriental Motor sales office.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Product Line

● Motor

◇ 1.8° Stepper Motor

● Standard Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP213D05A	€44.00	PKP213D05B	€46.00
PKP214D06A	€47.00	PKP214D06B	€49.00
PKP223D15A2	€30.00	PKP223D15B2	€32.00
PKP225D15A2	€36.00	PKP225D15B2	€38.00
PKP233D23A	€30.00	PKP233D23B	€32.00
PKP235D23A	€36.00	PKP235D23B	€38.00
PKP243D23A2	€30.00	PKP243D23B2	€32.00
PKP244D23A2	€32.00	PKP244D23B2	€34.00
PKP245D23A2	€36.00	PKP245D23B2	€38.00
PKP246D23A2	€38.00	PKP246D23B2	€40.00
PKP264D28A2	€38.00	PKP264D28B2	€40.00
PKP266D28A2	€42.00	PKP266D28B2	€44.00
PKP268D28A2	€52.00	PKP268D28B2	€54.00
PKP296D45A	€89.00	PKP296D45B	€96.00
PKP299D45A	€137.00	PKP299D45B	€144.00
PKP2913D45A	€173.00	PKP2913D45B	€180.00

● SH Geared Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP223D15A-SG7.2	€90.00	PKP223D15B-SG7.2	€92.00
PKP223D15A-SG9	€90.00	PKP223D15B-SG9	€92.00
PKP223D15A-SG10	€90.00	PKP223D15B-SG10	€92.00
PKP223D15A-SG18	€105.00	PKP223D15B-SG18	€107.00
PKP223D15A-SG36	€105.00	PKP223D15B-SG36	€107.00
PKP243D23A2-SG3.6	€90.00	PKP243D23B2-SG3.6	€92.00
PKP243D23A2-SG7.2	€90.00	PKP243D23B2-SG7.2	€92.00
PKP243D23A2-SG9	€90.00	PKP243D23B2-SG9	€92.00
PKP243D23A2-SG10	€90.00	PKP243D23B2-SG10	€92.00
PKP243D23A2-SG18	€105.00	PKP243D23B2-SG18	€107.00
PKP243D23A2-SG36	€105.00	PKP243D23B2-SG36	€107.00
PKP264D28A2-SG3.6	€108.00	PKP264D28B2-SG3.6	€110.00
PKP264D28A2-SG7.2	€108.00	PKP264D28B2-SG7.2	€110.00
PKP264D28A2-SG9	€108.00	PKP264D28B2-SG9	€110.00
PKP264D28A2-SG10	€108.00	PKP264D28B2-SG10	€110.00
PKP264D28A2-SG18	€118.00	PKP264D28B2-SG18	€120.00
PKP264D28A2-SG36	€118.00	PKP264D28B2-SG36	€120.00

◇ 0.72°/0.36° Stepper Motor

● Standard Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PK513PA	€93.00	PK513PB	€97.00
PKP523N12A	€35.00	PKP523N12B	€37.00
PKP525N12A	€41.00	PKP525N12B	€43.00
PKP543N18A2	€35.00	PKP543N18B2	€37.00
PKP544N18A2	€37.00	PKP544N18B2	€39.00
PKP545N18A2	€41.00	PKP545N18B2	€43.00
PKP546N18A2	€43.00	PKP546N18B2	€45.00
PKP564N28A2	€43.00	PKP564N28B2	€45.00
PKP566N28A2	€47.00	PKP566N28B2	€49.00
PKP568N28A2	€59.00	PKP568N28B2	€61.00
PKP564FN24A2	€47.00	PKP564FN24B2	€49.00
PKP564FN38A2	€47.00	PKP564FN38B2	€49.00
PKP566FN24A2	€51.00	PKP566FN24B2	€53.00
PKP566FN38A2	€51.00	PKP566FN38B2	€53.00
PKP569FN24A2	€63.00	PKP569FN24B2	€65.00
PKP569FN38A2	€63.00	PKP569FN38B2	€65.00
PK596HNAW	€107.00	PK596HNBW	€110.00
PK599HNAW	€142.00	PK599HNBW	€146.00
PK5913HNAW	€178.00	PK5913HNBW	€185.00

● High-Resolution Type

Product Name (Single Shaft)	List Price	Product Name (Double Shaft)	List Price
PKP544MN18A	€37.00	PKP544MN18B	€39.00
PKP546MN18A	€43.00	PKP546MN18B	€45.00
PKP564FMN24A	€47.00	PKP564FMN24B	€49.00
PKP566FMN24A	€51.00	PKP566FMN24B	€53.00
PKP569FMN24A	€63.00	PKP569FMN24B	€65.00

● Standard Type with Encoder

Product Name	List Price
PKP213D05A-R2EL	€94.00
PKP214D06A-R2EL	€97.00
PKP223D15A2-R2EL	€80.00
PKP225D15A2-R2EL	€86.00
PKP243D23A2-R2EL	€80.00
PKP243D23A2-R2FL	€80.00
PKP244D23A2-R2EL	€82.00
PKP244D23A2-R2FL	€82.00
PKP245D23A2-R2EL	€86.00
PKP245D23A2-R2FL	€86.00
PKP246D23A2-R2EL	€88.00
PKP246D23A2-R2FL	€88.00
PKP264D28A2-R2EL	€88.00
PKP264D28A2-R2FL	€88.00
PKP266D28A2-R2EL	€92.00
PKP266D28A2-R2FL	€92.00
PKP268D28A2-R2EL	€102.00
PKP268D28A2-R2FL	€102.00

● Standard Type with Encoder

Product Name	List Price
PK513PA-R2GL	€147.00
PKP543N18A2-R2GL	€85.00
PKP544N18A2-R2GL	€87.00
PKP545N18A2-R2GL	€91.00
PKP546N18A2-R2GL	€93.00
PKP564N28A2-R2GL	€93.00
PKP566N28A2-R2GL	€97.00
PKP568N28A2-R2GL	€109.00
PKP564FN24A2-R2GL	€97.00
PKP564FN38A2-R2GL	€97.00
PKP566FN24A2-R2GL	€101.00
PKP566FN38A2-R2GL	€101.00
PKP569FN24A2-R2GL	€113.00
PKP569FN38A2-R2GL	€113.00

● Bipolar Driver for 1.8° Stepper Motor

◇ Right Angle Type with Installation Plate

Product Name	List Price
CVD205BR-K	€105.00
CVD206BR-K	
CVD215BR-K	
CVD223BR-K	
CVD223FBR-K	
CVD228BR-K	
CVD245BR-K	€120.00

◇ With Installation Plate

Product Name	List Price
CVD205B-K	€105.00
CVD206B-K	
CVD215B-K	
CVD223B-K	
CVD223FB-K	
CVD228B-K	
CVD245B-K	€120.00

● Driver for 0.72°/0.36° Stepper Motor

◇ Right Angle Type with Installation Plate

Product Name	List Price
CVD503BR-K	€115.00
CVD512BR-K	
CVD518BR-K	
CVD524BR-K	
CVD528BR-K	€130.00
CVD538BR-K	

◇ With Installation Plate

Product Name	List Price
CVD503B-K	€115.00
CVD512B-K	
CVD518B-K	
CVD524B-K	
CVD528B-K	€130.00
CVD538B-K	

● Connection Cable for Motors

◇ For 1.8° Stepper Motor

Product Name	Length L (m)	List Price
LC2B06A	0.6	€5.00
LC2B06B	0.6	
LC2B06E	0.6	

◇ For 0.72°/0.36° Stepper Motor

Product Name	Length L (m)	List Price
LC5N06A	0.6	€5.00
LC5N10A	1	€7.00
LC5N06B	0.6	€5.00
LC5N10B	1	€7.00
LC5N06C	0.6	€7.00
LC5N10C	1	€9.00
LC5N06E	0.6	€5.00

● Connection Cable for Encoders

◇ For Line Driver Output

Product Name	Length L (m)	List Price
LCE08A-006	0.6	€10.00

Included

● Motor

Type	Included	Operating Manual
Common to All Types		1 Set

● Driver

Type	Included	Connector	Operating Manual
Common to All Types		For CN1 (1 Piece) For CN2 (1 Piece) For CN3 (1 Piece)	1 Set

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
*α*STEP
Absolute
AZ

0.36°/Geared
*α*STEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
*α*STEP
Absolute
AZ

0.36°/Geared
*α*STEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 20 mm, 28 mm

1.8° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



Motor Product Name	Single Shaft	PKP213D05A	PKP214D06A	PKP223D15A2	PKP225D15A2
	Double Shaft	PKP213D05B	PKP214D06B	PKP223D15B2	PKP225D15B2
Driver Product Name	With Encoder	PKP213D05A-R2EL	PKP214D06A-R2EL	PKP223D15A2-R2EL	PKP225D15A2-R2EL
		CVD205B□-K	CVD206B□-K	CVD215B□-K	CVD215B□-K
Maximum Holding Torque	N·m	0.02	0.036	0.095	0.19
Holding Torque at Motor Standstill	N·m	0.01	0.018	0.047	0.095
Rotor Inertia	J: kg·m ²	1.6×10 ⁻⁷ [1.66×10 ⁻⁷]	2.9×10 ⁻⁷ [2.96×10 ⁻⁷]	9×10 ⁻⁷	18×10 ⁻⁷
Rated Current	A / Phase	0.5	0.6	1.5	
Basic Step Angle		1.8°			
Power Supply Input		24 VDC±10% 0.5 A		24 VDC±10% 1.3 A	
Excitation Mode		Microstep			

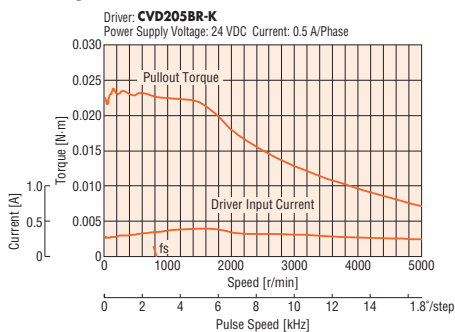
● Encoder Specifications → Page A-291

● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

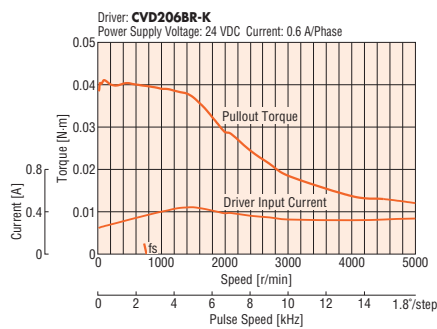
● The brackets [] indicate the specifications for the type with an encoder.

Speed – Torque Characteristics (Reference values)

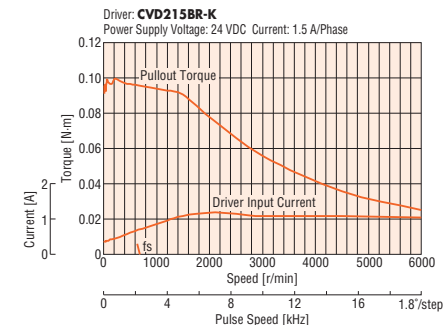
PKP213



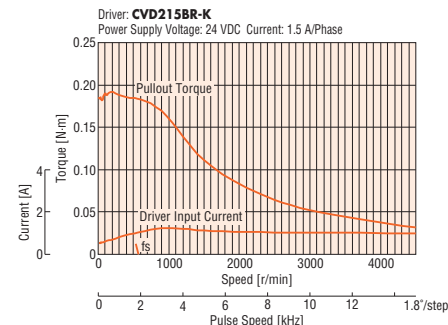
PKP214



PKP223



PKP225



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Frame Size 35 mm

1.8° Stepper Motor and Driver Package: Standard Type

Specifications

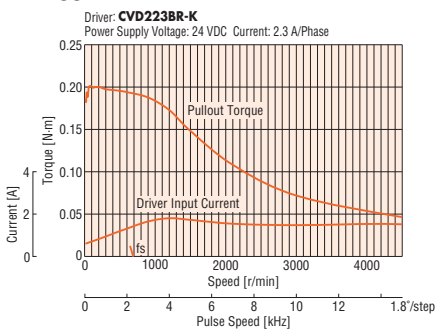


Motor Product Name	Single Shaft	PKP233D23A	PKP235D23A
	Double Shaft	PKP233D23B	PKP235D23B
Driver Product Name		CVD223B <input type="checkbox"/> -K	CVD223B <input type="checkbox"/> -K
Maximum Holding Torque	N·m	0.2	0.37
Holding Torque at Motor Standstill	N·m	0.1	0.19
Rotor Inertia	J: kg·m ²	24×10 ⁻⁷	50×10 ⁻⁷
Rated Current	A / Phase	2.3	
Basic Step Angle		1.8°	
Power Supply Input		24 VDC ± 10% 2.0 A	
Excitation Mode		Microstep	

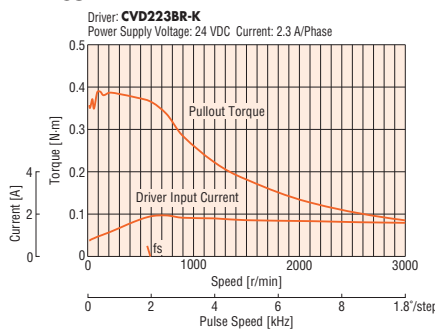
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

PKP233



PKP235



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.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 42 mm

1.8° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



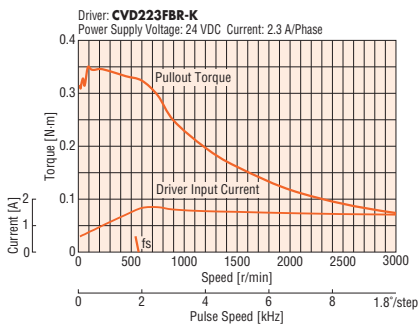
Motor Product Name	Single Shaft	PKP243D23A2	PKP244D23A2	PKP245D23A2	PKP246D23A2
	Double Shaft	PKP243D23B2	PKP244D23B2	PKP245D23B2	PKP246D23B2
	With Encoder	PKP243D23A2-R2EL	PKP244D23A2-R2EL	PKP245D23A2-R2EL	PKP246D23A2-R2EL
PKP243D23A2-R2FL		PKP244D23A2-R2FL	PKP245D23A2-R2FL	PKP246D23A2-R2FL	
Driver Product Name		CVD223FB□-K	CVD223FB□-K	CVD223FB□-K	CVD223FB□-K
Maximum Holding Torque	N·m	0.35	0.48	0.66	0.99
Holding Torque at Motor Standstill	N·m	0.18	0.24	0.33	0.5
Rotor Inertia	J: kg·m ²	36×10 ⁻⁷	54×10 ⁻⁷	73×10 ⁻⁷	110×10 ⁻⁷
Rated Current	A / Phase	2.3			
Basic Step Angle		1.8°			
Power Supply Input		24 VDC±10% 2.0 A			
Excitation Mode		Microstep			

● Encoder Specifications → Page A-291

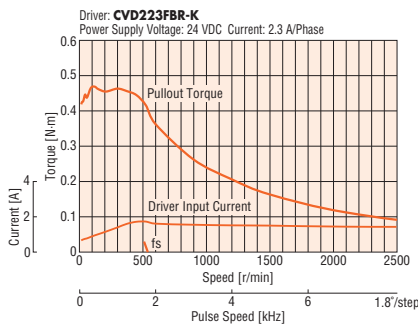
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

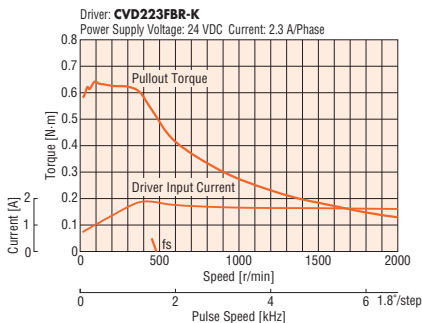
PKP243



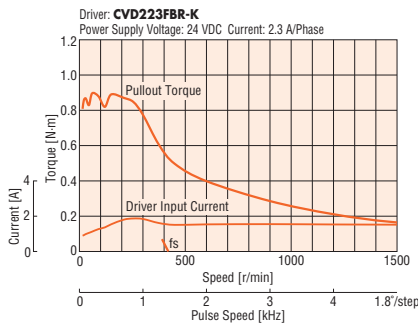
PKP244



PKP245



PKP246



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Frame Size 56.4 mm

1.8° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



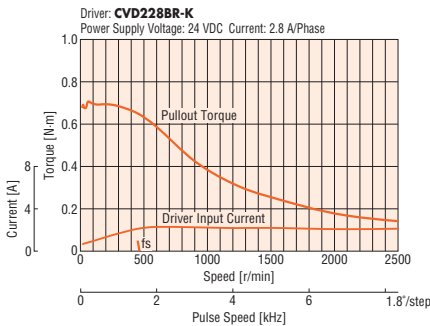
Motor Product Name	Single Shaft	PKP264D28A2	PKP266D28A2	PKP268D28A2
	Double Shaft	PKP264D28B2	PKP266D28B2	PKP268D28B2
	With Encoder	PKP264D28A2-R2EL	PKP266D28A2-R2EL	PKP268D28A2-R2EL
PKP264D28A2-R2FL		PKP266D28A2-R2FL	PKP268D28A2-R2FL	
Driver Product Name		CVD228B□-K	CVD228B□-K	CVD228B□-K
Maximum Holding Torque	N·m	0.74	1.4	2.5
Holding Torque at Motor Standstill	N·m	0.37	0.7	1.3
Rotor Inertia	J: kg·m ²	140×10 ⁻⁷	270×10 ⁻⁷	500×10 ⁻⁷
Rated Current	A / Phase	2.8		
Basic Step Angle		1.8°		
Power Supply Input		24 VDC±10% 3.0 A		
Excitation Mode		Microstep		

● Encoder Specifications → Page A-291

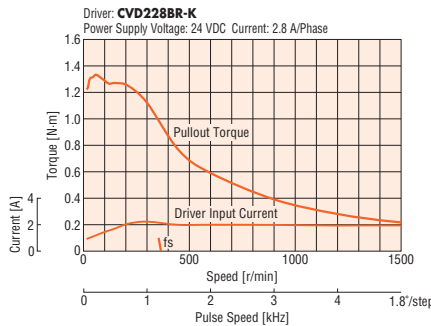
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

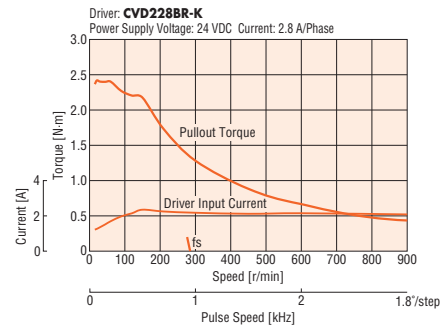
PKP264



PKP266



PKP268



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
α_{STEP}
Absolute
AZ

0.36°/Geared
α_{STEP}
AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
α_{STEP}
Absolute
AZ

0.36°/Geared
α_{STEP}
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 85 mm

1.8° Stepper Motor and Driver Package: Standard Type

Specifications

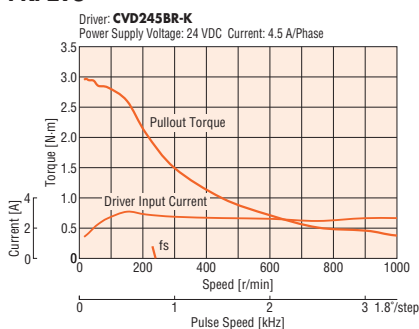


Motor Product Name	Single Shaft	PKP296D45A	PKP299D45A	PKP2913D45A
	Double Shaft	PKP296D45B	PKP299D45B	PKP2913D45B
Driver Product Name		CVD245B□-K	CVD245B□-K	CVD245B□-K
Maximum Holding Torque	N·m	3.3	6.4	9.5
Holding Torque at Motor Standstill	N·m	1.7	3.2	4.8
Rotor Inertia	J: kg·m ²	1100×10 ⁻⁷	2200×10 ⁻⁷	3400×10 ⁻⁷
Rated Current	A / Phase	4.5		
Basic Step Angle	1.8°			
Power Supply Input	24 VDC±10% 3.9 A			
Excitation Mode	Microstep			

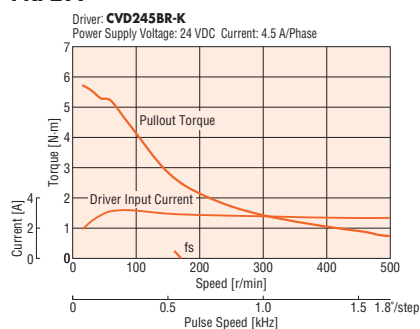
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

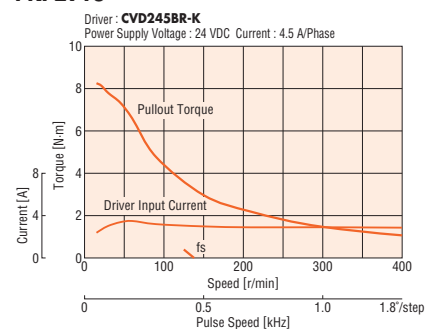
PKP296



PKP299



PKP2913



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.

Frame Size 28 mm

1.8° Stepper Motor and Driver Package: SH Geared Type

Specifications

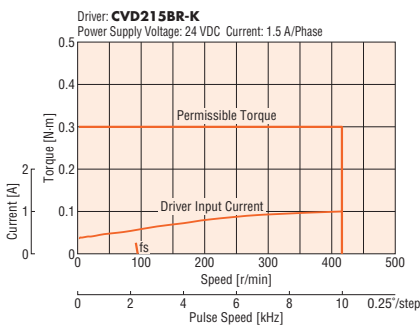


Motor Product Name	Single Shaft	PKP223D15A-SG7.2	PKP223D15A-SG9	PKP223D15A-SG10	PKP223D15A-SG18	PKP223D15A-SG36
	Double Shaft	PKP223D15B-SG7.2	PKP223D15B-SG9	PKP223D15B-SG10	PKP223D15B-SG18	PKP223D15B-SG36
Driver Product Name		CVD215B□-K	CVD215B□-K	CVD215B□-K	CVD215B□-K	CVD215B□-K
Maximum Holding Torque	N·m	0.3	0.3	0.3	0.4	0.4
Rotor Inertia	J: kg·m ²	9×10 ⁻⁷				
Rated Current	A / Phase	1.5				
Basic Step Angle		0.25°	0.2°	0.18°	0.1°	0.05°
Gear Ratio		7.2	9	10	18	36
Permissible Torque	N·m	0.3	0.3	0.3	0.4	0.4
Holding Torque at Motor Standstill	N·m	0.3	0.3	0.3	0.4	0.4
Backlash	arcmin	90 (1.5°)				
Speed Range	r/min	0~416	0~333	0~300	0~166	0~83
Power Supply Input		24 VDC±10% 1.3 A				
Excitation Mode		Microstep				

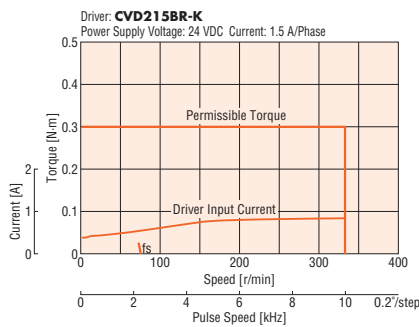
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

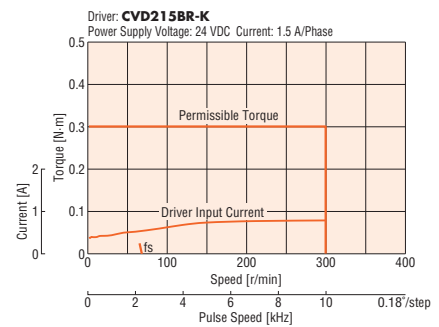
PKP223 Gear Ratio 7.2



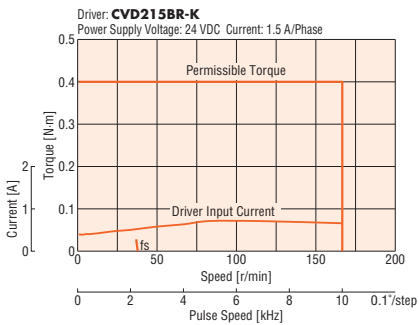
PKP223 Gear Ratio 9



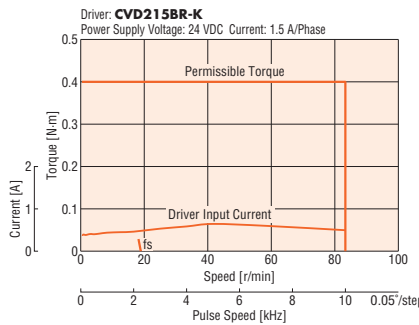
PKP223 Gear Ratio 10



PKP223 Gear Ratio 18



PKP223 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 motor case temperature at 100°C or less.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
α_{STEP} Absolute
AZ

0.36°/Geared
α_{STEP} AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
α_{STEP} Absolute
AZ

0.36°/Geared
α_{STEP} AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 42 mm

1.8° Stepper Motor and Driver Package: SH Geared Type

Specifications

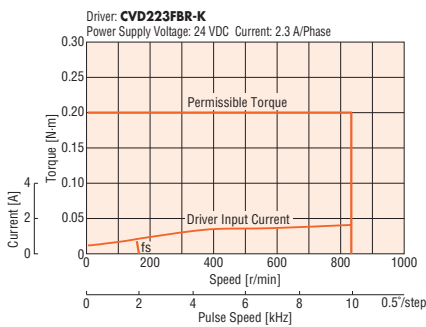


Motor Product Name	Single Shaft	PKP243D23A2-SG3.6	PKP243D23A2-SG7.2	PKP243D23A2-SG9	PKP243D23A2-SG10	PKP243D23A2-SG18	PKP243D23A2-SG36
	Double Shaft	PKP243D23B2-SG3.6	PKP243D23B2-SG7.2	PKP243D23B2-SG9	PKP243D23B2-SG10	PKP243D23B2-SG18	PKP243D23B2-SG36
Driver Product Name		CVD223FB <input type="checkbox"/> -K	CVD223FB <input type="checkbox"/> -K	CVD223FB <input type="checkbox"/> -K	CVD223FB <input type="checkbox"/> -K	CVD223FB <input type="checkbox"/> -K	CVD223FB <input type="checkbox"/> -K
Maximum Holding Torque	N·m	0.2	0.4	0.5	0.56	0.8	0.8
Rotor Inertia	J: kg·m ²	36×10^{-7}					
Rated Current	A / Phase	2.3					
Basic Step Angle		0.5°	0.25°	0.2°	0.18°	0.1°	0.05°
Gear Ratio		3.6	7.2	9	10	18	36
Permissible Torque	N·m	0.2	0.4	0.5	0.56	0.8	0.8
Holding Torque at Motor Standstill	N·m	0.2	0.4	0.5	0.56	0.8	0.8
Backlash	arcmin	90 (1.5°)					
Speed Range	r/min	0~833	0~416	0~333	0~300	0~166	0~83
Power Supply Input		24 VDC ± 10% 2.0 A					
Excitation Mode		Microstep					

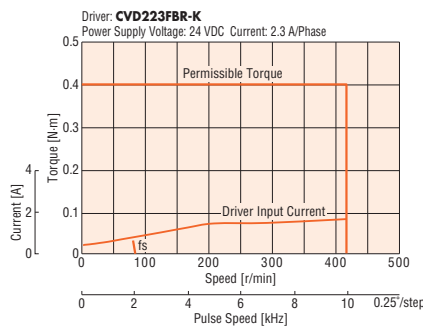
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

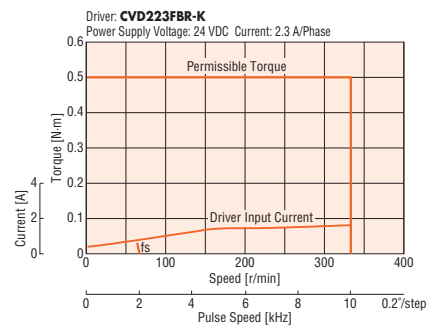
PKP243 Gear Ratio 3.6



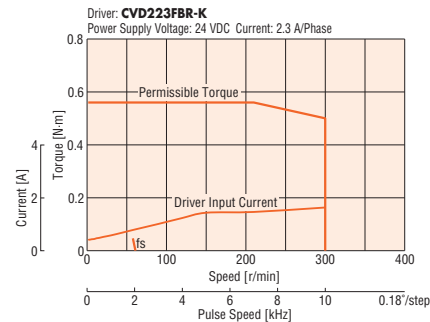
PKP243 Gear Ratio 7.2



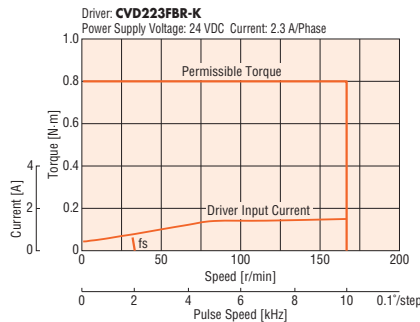
PKP243 Gear Ratio 9



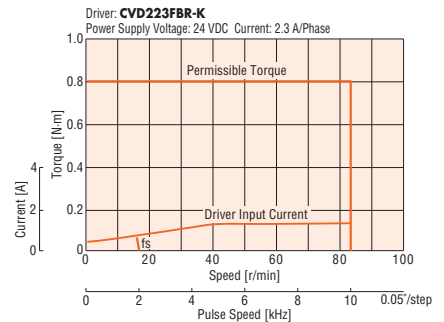
PKP243 Gear Ratio 10



PKP243 Gear Ratio 18



PKP243 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 motor case temperature at 100°C or less.

Frame Size 60 mm

1.8° Stepper Motor and Driver Package: SH Geared Type

Specifications

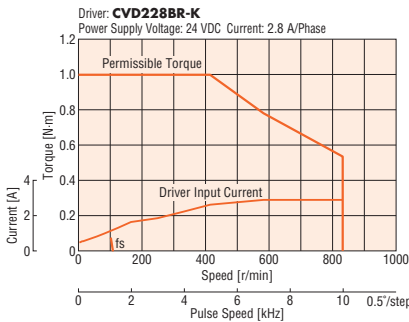


Motor Product Name	Single Shaft	PKP264D28A2-SG3.6	PKP264D28A2-SG7.2	PKP264D28A2-SG9	PKP264D28A2-SG10	PKP264D28A2-SG18	PKP264D28A2-SG36
	Double Shaft	PKP264D28B2-SG3.6	PKP264D28B2-SG7.2	PKP264D28B2-SG9	PKP264D28B2-SG10	PKP264D28B2-SG18	PKP264D28B2-SG36
Driver Product Name		CVD228B-K	CVD228B-K	CVD228B-K	CVD228B-K	CVD228B-K	CVD228B-K
Maximum Holding Torque	N·m	1	2	2.5	2.7	3	4
Rotor Inertia	J: kg·m ²	140 × 10 ⁻⁷					
Rated Current	A / Phase	2.8					
Basic Step Angle		0.5°	0.25°	0.2°	0.18°	0.1°	0.05°
Gear Ratio		3.6	7.2	9	10	18	36
Permissible Torque	N·m	1	2	2.5	2.7	3	4
Holding Torque at Motor Standstill	N·m	1	2	2.5	2.7	3	4
Backlash	arcmin	70 (1.17) / 45 (0.75°)					
Speed Range	r/min	0~833	0~416	0~333	0~300	0~166	0~83
Power Supply Input		24 VDC ± 10% 3.0 A					
Excitation Mode		Microstep					

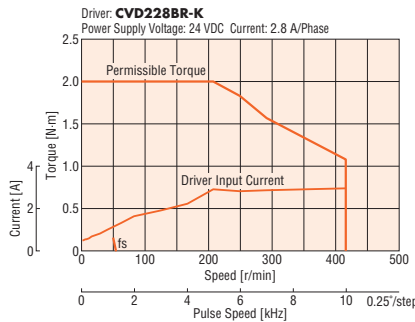
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

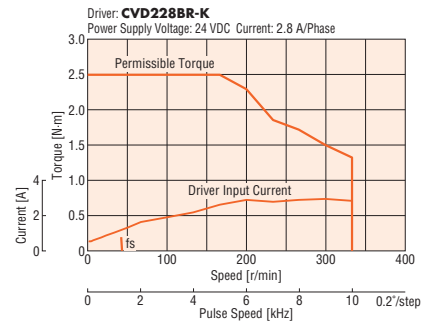
PKP264 Gear Ratio 3.6



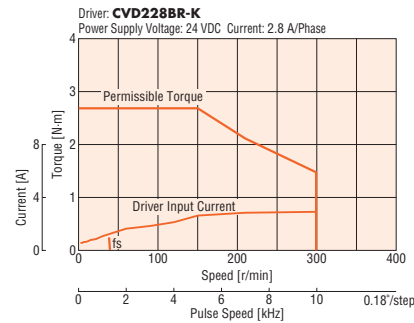
PKP264 Gear Ratio 7.2



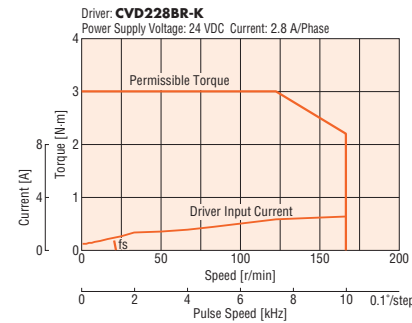
PKP264 Gear Ratio 9



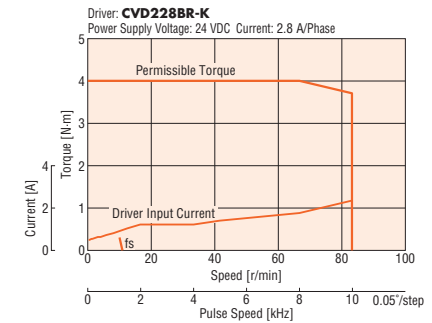
PKP264 Gear Ratio 10



PKP264 Gear Ratio 18



PKP264 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 motor case temperature at 100°C or less.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
AZ

0.36°/Geared
AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
AZ

0.36°/Geared
AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 20 mm, 28 mm

0.72° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



Motor Product Name	Single Shaft	PK513PA	PKP523N12A	PKP525N12A
	Double Shaft	PK513PB	PKP523N12B	PKP525N12B
Driver Product Name	With Encoder	PK513PA-R2GL	—	—
		CVD503B□-K	CVD512B□-K	CVD512B□-K
Maximum Holding Torque	N·m	0.0231	0.052	0.091
Holding Torque at Motor Standstill	N·m	0.012	0.026	0.045
Rotor Inertia	J: kg·m ²	1.6×10 ⁻⁷ [1.66×10 ⁻⁷]	9×10 ⁻⁷	18×10 ⁻⁷
Rated Current	A / Phase	0.35	1.2	
Basic Step Angle		0.72°		
Power Supply Input		24 VDC±10% 0.6 A	24 VDC±10% 1.7 A	
Excitation Mode		Microstep		

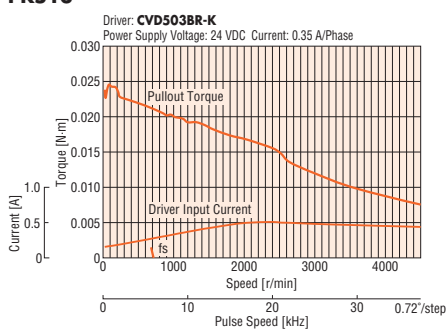
● Encoder Specifications → Page A-291

● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

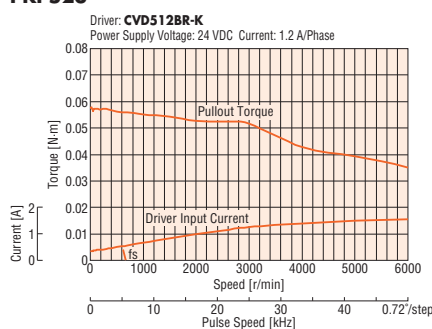
● The brackets [] indicate the specifications for the type with an encoder.

Speed – Torque Characteristics (Reference values)

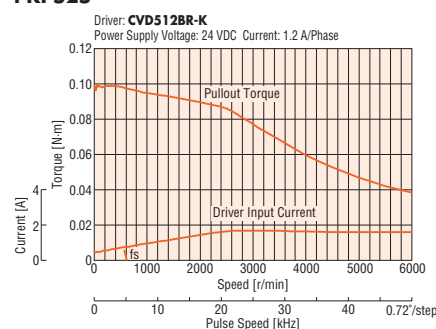
PK513



PKP523



PKP525



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Frame Size 42 mm

0.72° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



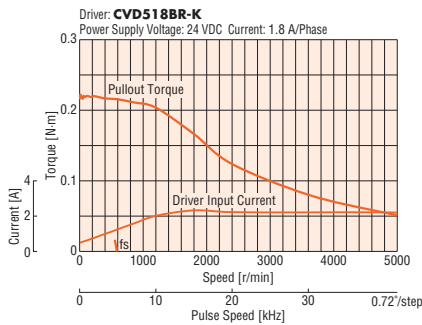
Motor Product Name	Single Shaft	PKP543N18A2	PKP544N18A2	PKP545N18A2	PKP546N18A2
	Double Shaft	PKP543N18B2	PKP544N18B2	PKP545N18B2	PKP546N18B2
	With Encoder	PKP543N18A2-R2GL	PKP544N18A2-R2GL	PKP545N18A2-R2GL	PKP546N18A2-R2GL
Driver Product Name		CVD518B□-K	CVD518B□-K	CVD518B□-K	CVD518B□-K
Maximum Holding Torque	N·m	0.22	0.3	0.37	0.5
Holding Torque at Motor Standstill	N·m	0.11	0.15	0.19	0.25
Rotor Inertia	J: kg·m ²	35×10 ⁻⁷	55×10 ⁻⁷	71×10 ⁻⁷	110×10 ⁻⁷
Rated Current	A / Phase	1.8			
Basic Step Angle		0.72°			
Power Supply Input		24 VDC±10% 2.8 A			
Excitation Mode		Microstep			

● Encoder Specifications → Page A-291

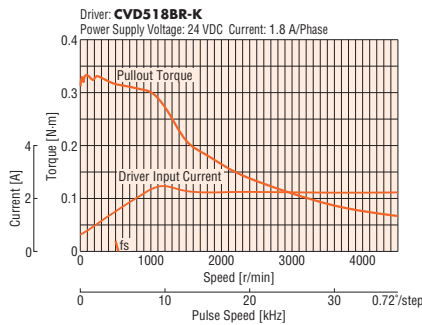
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

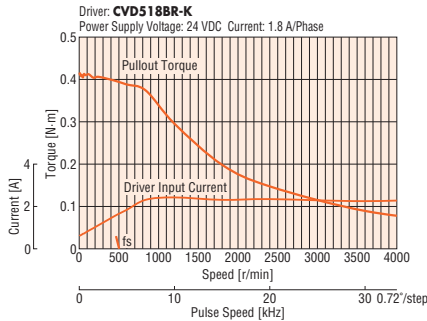
PKP543



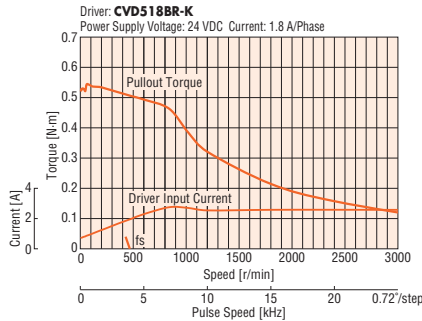
PKP544



PKP545



PKP546



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 42 mm

0.36° Stepper Motor and Driver Package: High-Resolution Type

Specifications

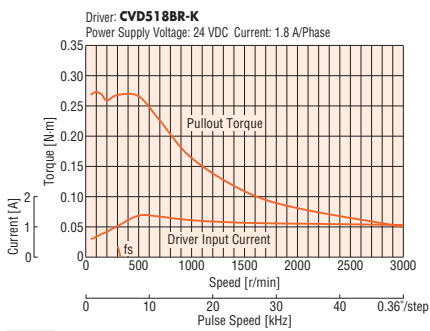


Motor Product Name	Single Shaft	PKP544MN18A	PKP546MN18A
	Double Shaft	PKP544MN18B	PKP546MN18B
Driver Product Name		CVD518B□-K	CVD518B□-K
Maximum Holding Torque	N·m	0.26	0.44
Holding Torque at Motor Standstill	N·m	0.13	0.22
Rotor Inertia	J: kg·m ²	60×10 ⁻⁷	121×10 ⁻⁷
Rated Current	A / Phase	1.8	
Basic Step Angle		0.36°	
Power Supply Input		24 VDC±10% 2.8 A	
Excitation Mode		Microstep	

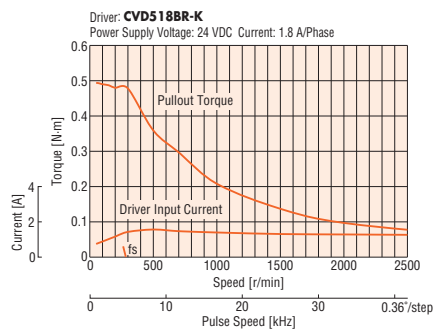
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box □ is located in the product name.

Speed – Torque Characteristics (Reference values)

PKP544M



PKP546M



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.

Frame Size 56.4 mm

0.72° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



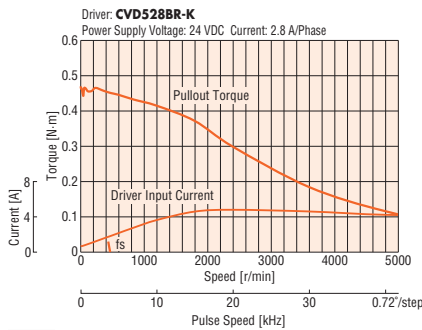
Motor Product Name	Single Shaft	PKP564N28A2	PKP566N28A2	PKP568N28A2
	Double Shaft	PKP564N28B2	PKP566N28B2	PKP568N28B2
Driver Product Name	With Encoder	PKP564N28A2-R2GL	PKP566N28A2-R2GL	PKP568N28A2-R2GL
Maximum Holding Torque	N·m	0.44	0.81	1.5
Holding Torque at Motor Standstill	N·m	0.22	0.41	0.75
Rotor Inertia	J: kg·m ²	140 × 10 ⁻⁷	270 × 10 ⁻⁷	500 × 10 ⁻⁷
Rated Current	A / Phase	2.8		
Basic Step Angle		0.72°		
Power Supply Input		24 VDC ± 10% 4.8 A		
Excitation Mode		Microstep		

● Encoder Specifications → Page A-291

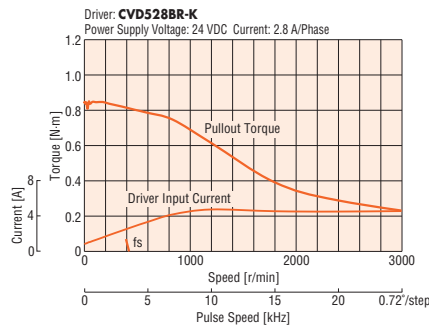
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

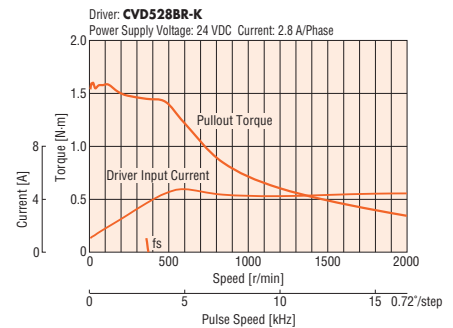
PKP564



PKP566



PKP568



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
**αSTEP
Absolute
AZ**

0.36°/Geared
**αSTEP
AR**

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
**αSTEP
Absolute
AZ**

0.36°/Geared
**αSTEP
AR**

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 60 mm

0.72° Stepper Motor and Driver Package: Standard Type/Standard Type with Encoder

Specifications



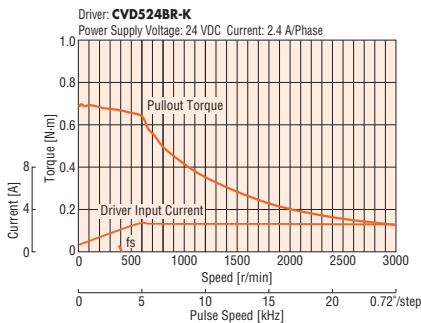
Motor Product Name	Single Shaft	PKP564FN24A2	PKP564FN38A2	PKP566FN24A2	PKP566FN38A2	PKP569FN24A2	PKP569FN38A2
	Double Shaft	PKP564FN24B2	PKP564FN38B2	PKP566FN24B2	PKP566FN38B2	PKP569FN24B2	PKP569FN38B2
	With Encoder	PKP564FN24A2-R2GL	PKP564FN38A2-R2GL	PKP566FN24A2-R2GL	PKP566FN38A2-R2GL	PKP569FN24A2-R2GL	PKP569FN38A2-R2GL
Driver Product Name		CVD524B <input type="checkbox"/> -K	CVD538B <input type="checkbox"/> -K	CVD524B <input type="checkbox"/> -K	CVD538B <input type="checkbox"/> -K	CVD524B <input type="checkbox"/> -K	CVD538B <input type="checkbox"/> -K
Maximum Holding Torque	N·m	0.66		1.15		2.1	
Holding Torque at Motor Standstill	N·m	0.33		0.58		1.1	
Rotor Inertia	J: kg·m ²	160×10 ⁻⁷		290×10 ⁻⁷		540×10 ⁻⁷	
Rated Current	A / Phase	2.4	3.8	2.4	3.8	2.4	3.8
Basic Step Angle		0.72°					
Power Supply Input		24 VDC±10% 3.0 A	24 VDC±10% 4.8 A	24 VDC±10% 3.0 A	24 VDC±10% 4.8 A	24 VDC±10% 3.0 A	24 VDC±10% 4.8 A
Excitation Mode		Microstep					

● Encoder Specifications → Page A-291

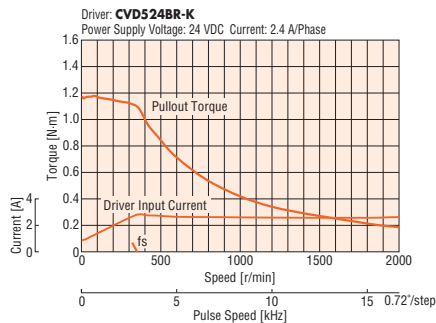
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

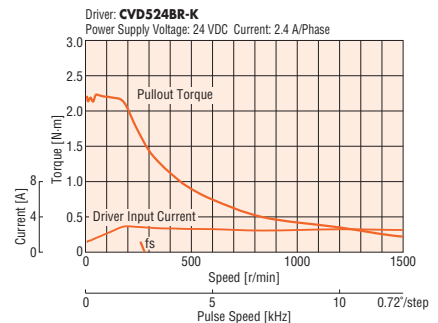
PKP564FN24



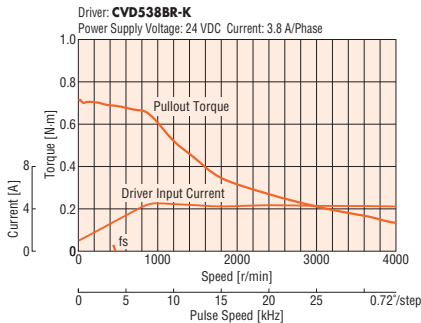
PKP566FN24



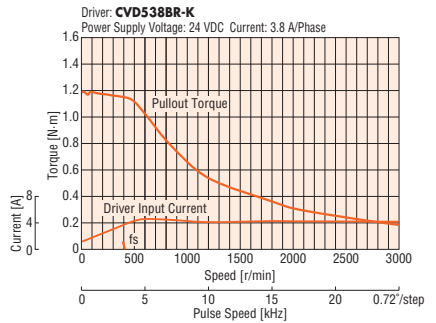
PKP569FN24



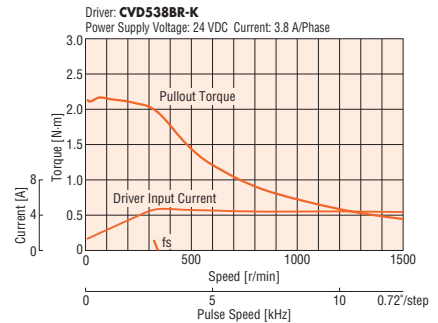
PKP564FN38



PKP566FN38



PKP569FN38



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. For the type with an encoder, to protect the encoder, be sure to keep the motor case temperature at 85°C max.

Frame Size 60 mm

0.36° Stepper Motor and Driver Package: High-Resolution Type

Specifications

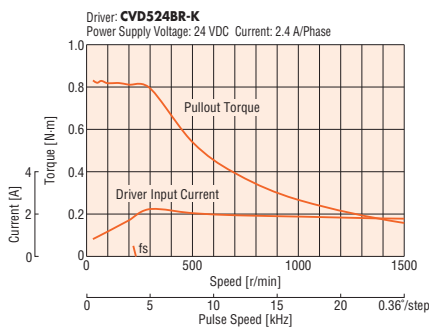


Motor Product Name	Single Shaft	PKP564FMN24A	PKP566FMN24A	PKP569FMN24A
	Double Shaft	PKP564FMN24B	PKP566FMN24B	PKP569FMN24B
Driver Product Name		CVD524B <input type="checkbox"/> -K	CVD524B <input type="checkbox"/> -K	CVD524B <input type="checkbox"/> -K
Maximum Holding Torque	N·m	0.78	1.25	2.3
Holding Torque at Motor Standstill	N·m	0.39	0.63	1.15
Rotor Inertia	J: kg·m ²	310×10 ⁻⁷	490×10 ⁻⁷	970×10 ⁻⁷
Rated Current	A / Phase	2.4		
Basic Step Angle	0.36°			
Power Supply Input	24 VDC ±10% 2.7 A			
Excitation Mode	Microstep			

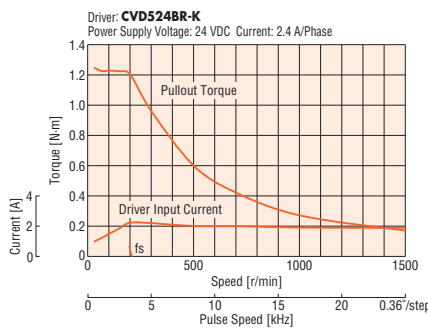
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

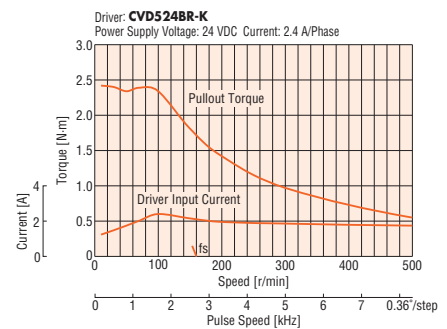
PKP564FMN24



PKP566FMN24



PKP569FMN24



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.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Frame Size 85 mm

0.72° Stepper Motor and Driver Package: Standard Type

Specifications

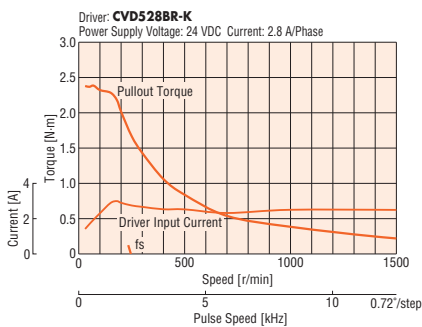


Motor Product Name	Single Shaft	PK596HNAW	PK599HNAW	PK5913HNAW
	Double Shaft	PK596HNBW	PK599HNBW	PK5913HNBW
Driver Product Name		CVD528B -K	CVD528B -K	CVD528B -K
Maximum Holding Torque	N·m	2.1	4.1	6.3
Holding Torque at Motor Standstill	N·m	1.1	2.1	3.2
Rotor Inertia	J: kg·m ²	1400×10 ⁻⁷	2700×10 ⁻⁷	4000×10 ⁻⁷
Rated Current	A / Phase	2.8		
Basic Step Angle		0.72°		
Power Supply Input		24 VDC±10% 4.8 A		
Excitation Mode		Microstep		

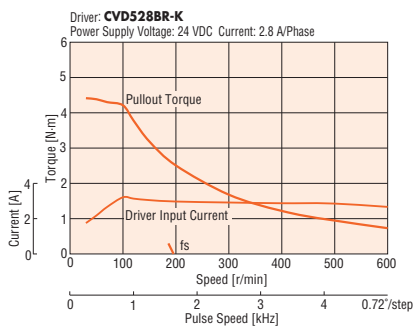
● For the right angle type with an installation plate, an **R** (right angle) indicating the connector configuration is specified where the box is located in the product name.

Speed – Torque Characteristics (Reference values)

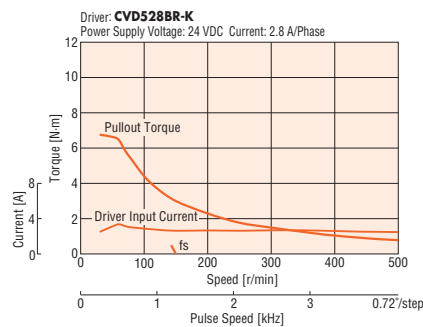
PK596



PK599



PK5913



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.

Driver Specifications

Maximum 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
Input Signal	Photocoupler Input, input current 5~15 mA, input voltage 3~5.25 VDC [PLS (CW), DIR. (CCW)] Photocoupler Input, input current 5~15 mA, input voltage 4.5~5.25 VDC (AWO, CS)
Output Signal	Photocoupler and open-collector output, External operating conditions: 30 VDC 10 mA max. (ALM, TIM)

General Specifications

	Motor	Driver
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 Voltage	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. • PKP21 □, PKP22 □, PKP23 □, PKP24 □, PK513 , PKP52 □, PKP54 □: 0.5 kVAC 50/60 Hz • PKP26 □, PKP56 □: 1.0 kVAC 50/60 Hz • PKP29 □, 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 arc minutes (±0.05°) [PKP21 □ is ±5 arc minutes (±0.083°), PK513 is ±10 arc minutes (±0.17°)] High-resolution type: ±2 arc minutes (±0.034°)	-
Shaft Runout	0.05 T.I.R. (mm)*4	-
Radial Play*2	0.025 mm max. (5 N load)	-
Axial Play*3	0.075 mm max. (10 N load) [PKP21 □ and PK513 are 1 N load, PKP22 □ and PKP52 □ are 2.5 N load]	-
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.)

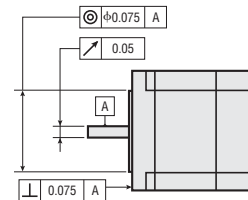
*2 Radial Play: Displacement in shaft position in the radial direction when a 5 N load is applied perpendicular to the tip of the motor shaft.

*3 Axial Play: Displacement in shaft position in the axial direction when a 10 N (**PKP21**□ and **PK513** are 1 N, **PKP22**□ and **PKP52**□ are 2.5 N) 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 once around the reference axis center.

Note

- Do not measure 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.



Encoder Specifications

Encoder Product Name	R2EL	R2FL	R2GL
Resolution	200P/R	400P/R	500P/R
Output Circuit Type	Line Driver		
Output Mode	Incremental		
Output Signal	A phase, B phase, Z phase (3 ch)		
Power Supply Voltage	5 VDC ±10%		
Current	30 mA max.		

- A voltage output type of encoder output circuit is also available.
For details, please contact your nearest Oriental Motor sales office.

Permissible Radial Load and Permissible Axial Load

→ Page A-18

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Dimensions (Unit = mm)

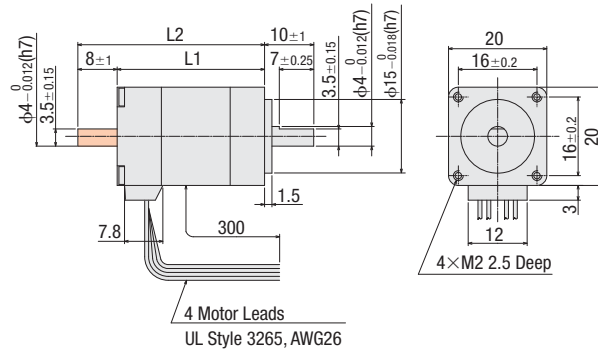
● Motor

◇ 1.8° Stepper Motor

● Standard Type

Frame Size 20 mm

Product Name	L1	L2	Mass kg
PKP213D05A	30	-	0.05
PKP213D05B		38	
PKP214D06A	40	-	0.07
PKP214D06B		48	



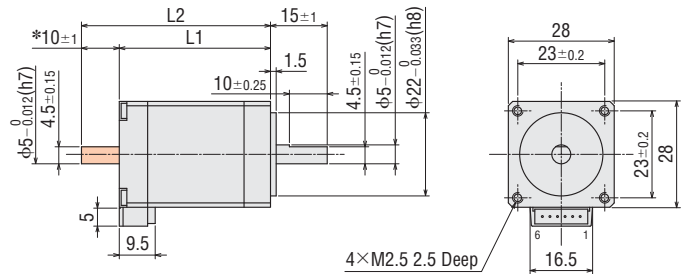
● The back shaft side of the double shaft model is entirely shaft flat.

● Standard Type

Frame Size 28 mm

Product Name	L1	L2	Mass kg
PKP223D15A2	32	-	0.11
PKP223D15B2		42	
PKP225D15A2	51.5	-	0.2
PKP225D15B2		61.5	

● Connection Cable (Sold separately)
Product Name: **LC2B06A**



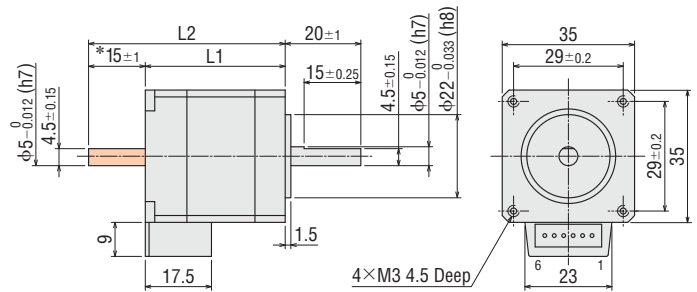
* The length of the shaft flat on the double shaft model is 10±0.25.

● Standard Type

Frame Size 35 mm

Product Name	L1	L2	Mass kg
PKP233D23A	37	-	0.18
PKP233D23B		52	
PKP235D23A	52	-	0.285
PKP235D23B		67	

● Connection Cable (Sold separately)
Product Name: **LC2B06B**



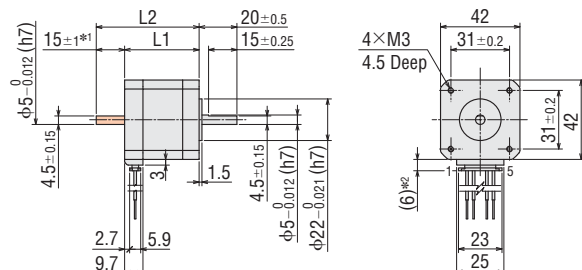
* The length of the shaft flat on the double shaft model is 15±0.25.

● Standard Type

Frame Size 42 mm

Product Name	L1	L2	Mass kg
PKP243D23A2	33	-	0.23
PKP243D23B2		48	
PKP244D23A2	39	-	0.3
PKP244D23B2		54	
PKP245D23A2	47	-	0.37
PKP245D23B2		62	
PKP246D23A2	59	-	0.5
PKP246D23B2		74	

● Connection Cable (Sold separately)
Product Name: **LC2B06E**



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

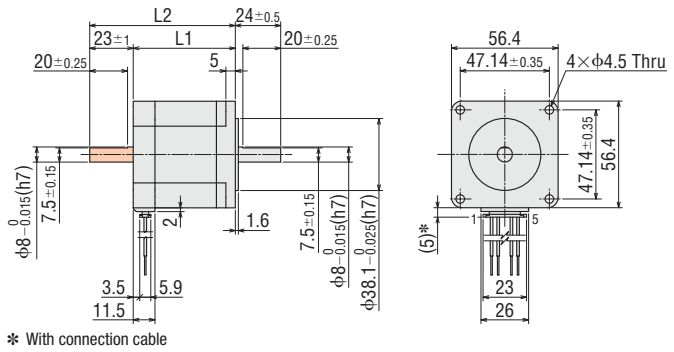
● These dimensions are for double shaft motors. For single shaft motors, ignore the shaded areas.

•Standard Type

Frame Size 56.4 mm

Product Name	L1	L2	Mass kg
PKP264D28A2	39	—	0.45
PKP264D28B2		62	
PKP266D28A2	54	—	0.7
PKP266D28B2		77	
PKP268D28A2	76	—	1.1
PKP268D28B2		99	

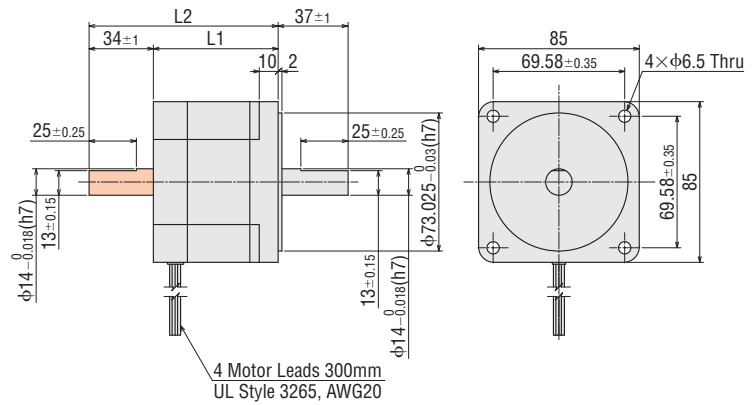
● Connection Cable (Sold separately)
Product Name: **LC2B06E**



•Standard Type

Frame Size 85 mm

Product Name	L1	L2	Mass kg
PKP296D45A	66	—	1.8
PKP296D45B		100	
PKP299D45A	96	—	2.9
PKP299D45B		130	
PKP2913D45A	126	—	4
PKP2913D45B		160	

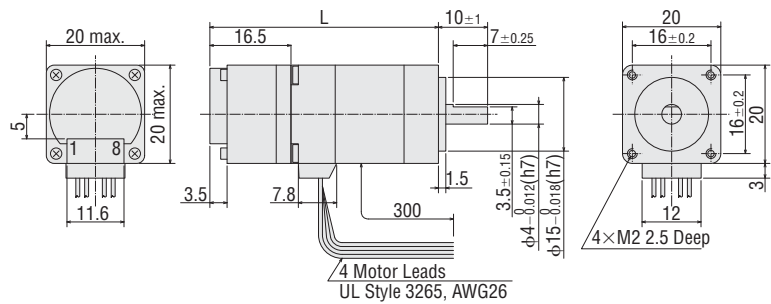


•Standard Type with Encoder

Frame Size 20 mm

Product Name	L	Mass kg
PKP213D05A-R2EL	46.5	0.06
PKP214D06A-R2EL	56.5	0.08

● Connection Cable (Sold separately)
Product Name: **LCE08A-006** (For encoder)



Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

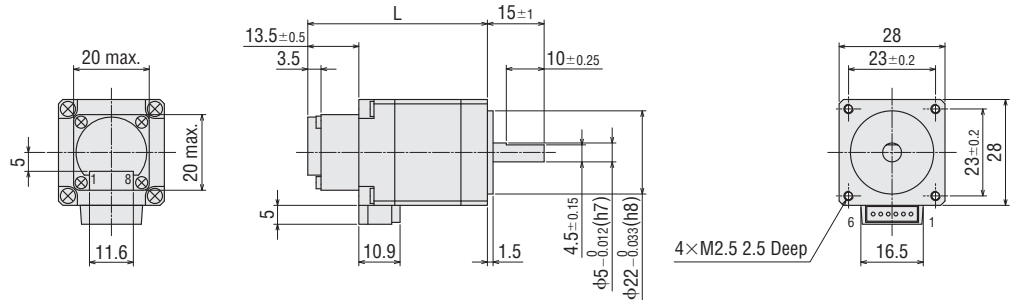
● These dimensions are for double shaft motors. For single shaft motors, ignore the shaded areas.

● Standard Type with Encoder

Frame Size 28 mm

Product Name	L	Mass kg
PKP223D15A2-R2EL	47.5	0.12
PKP225D15A2-R2EL	67	0.21

- Connection Cable (Sold separately)
Product Name: **LC2B06A** (For motor)
LCE08A-006 (For encoder)

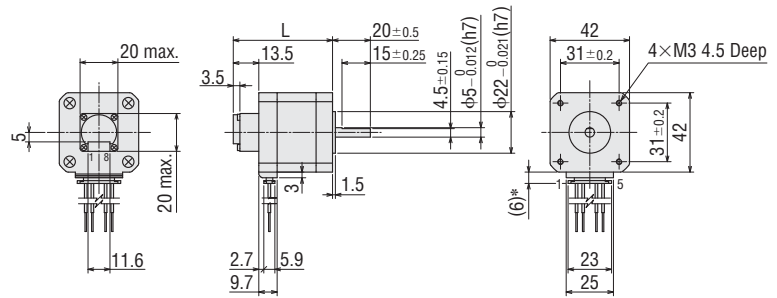


● Standard Type with Encoder

Frame Size 42 mm

Product Name	L	Mass kg
PKP243D23A2-R2EL	46.5	0.24
PKP243D23A2-R2FL		
PKP244D23A2-R2EL	52.5	0.31
PKP244D23A2-R2FL		
PKP245D23A2-R2EL	60.5	0.38
PKP245D23A2-R2FL		
PKP246D23A2-R2EL	72.5	0.51
PKP246D23A2-R2FL		

- Connection Cable (Sold separately)
Product Name: **LC2B06E** (For motor)
LCE08A-006 (For encoder)



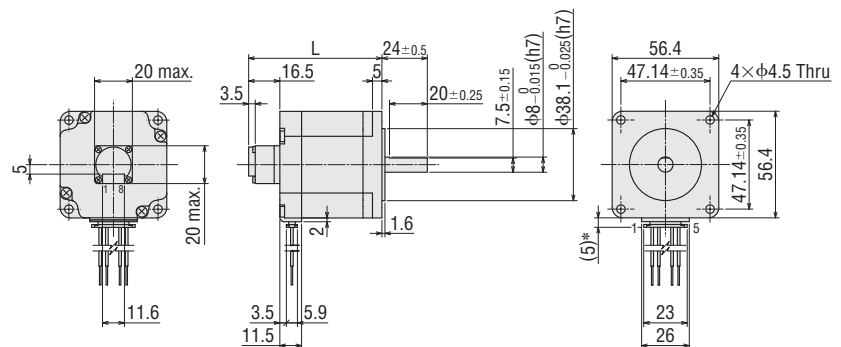
* With connection cable

● Standard Type with Encoder

Frame Size 56.4 mm

Product Name	L	Mass kg
PKP264D28A2-R2EL	55.5	0.45
PKP264D28A2-R2FL		
PKP266D28A2-R2EL	70.5	0.7
PKP266D28A2-R2FL		
PKP268D28A2-R2EL	92.5	1.1
PKP268D28A2-R2FL		

- Connection Cable (Sold separately)
Product Name: **LC2B06E** (For motor)
LCE08A-006 (For encoder)



* With connection cable

●SH Geared Type

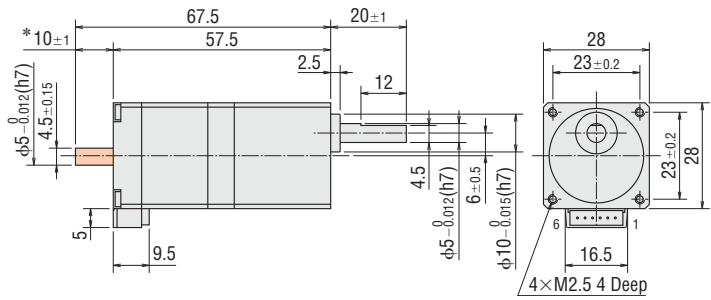
Frame Size 28 mm

Product Name	Gear Ratio	Mass kg
PKP223D15A-SG□	7.2, 9, 10, 18, 36	0.16
PKP223D15B-SG□		

● A number indicating the gear ratio is specified where the box □ is located in the product name.

● Connection Cable (Sold separately)

Product Name: **LC2B06A**



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

●SH Geared Type

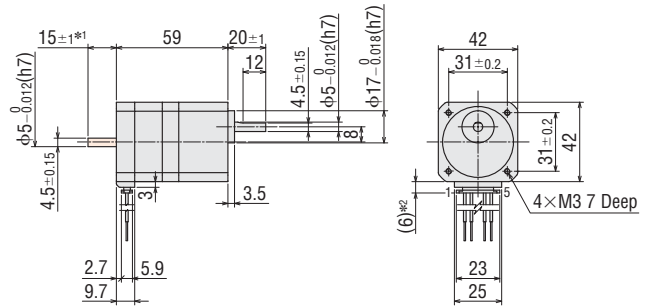
Frame Size 42 mm

Product Name	Gear Ratio	Mass kg
PKP243D23A2-SG□	3.6, 7.2, 9, 10, 18, 36	0.33
PKP243D23B2-SG□		

● A number indicating the gear ratio is specified where the box □ is located in the product name.

● Connection Cable (Sold separately)

Product Name: **LC2B06E**



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

*2 With connection cable

●SH Geared Type

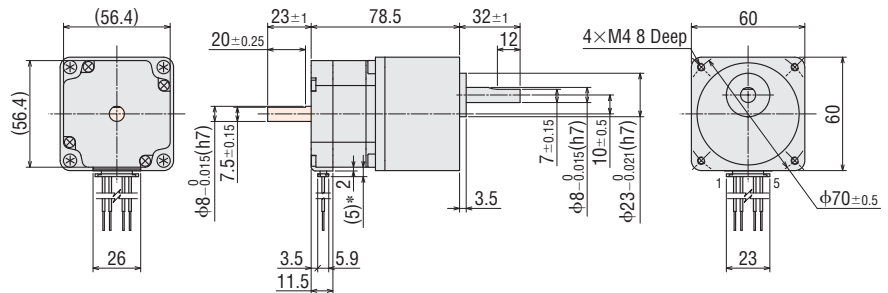
Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
PKP264D28A2-SG□	3.6, 7.2, 9, 10, 18, 36	0.76
PKP264D28B2-SG□		

● A number indicating the gear ratio is specified where the box □ is located in the product name.

● Connection Cable (Sold separately)

Product Name: **LC2B06E**



* With connection cable

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

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

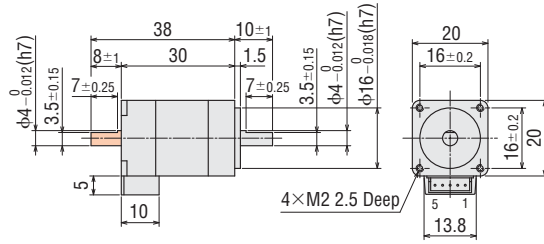
◇0.72°/0.36° Stepper Motor

●Standard Type

Frame Size 20 mm

Product Name	Mass kg
PK513PA	0.05
PK513PB	

● Connection Cable (Sold separately)
Product Name: LC5N06A

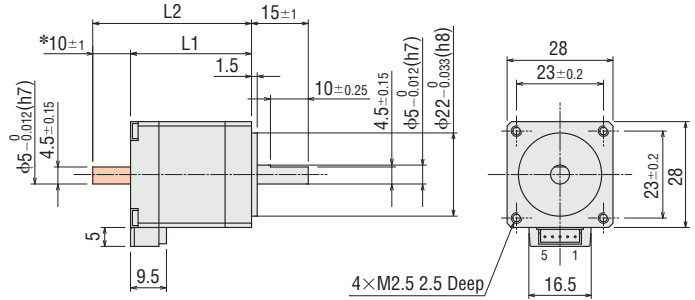


●Standard Type

Frame Size 28 mm

Product Name	L1	L2	Mass kg
PKP523N12A	32	-	0.11
PKP523N12B		42	
PKP525N12A	51.5	-	0.2
PKP525N12B		61.5	

● Connection Cable (Sold separately)
Product Name: LC5N06A



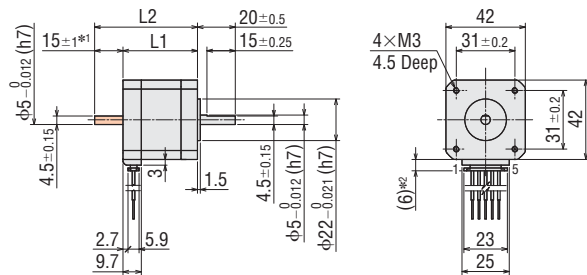
* The length of the shaft flat on the double shaft model is 10±0.25.

●Standard Type

Frame Size 42 mm

Product Name	L1	L2	Mass kg
PKP543N18A2	33	-	0.23
PKP543N18B2		48	
PKP544N18A2	39	-	0.29
PKP544N18B2		54	
PKP545N18A2	47	-	0.37
PKP545N18B2		62	
PKP546N18A2	59	-	0.49
PKP546N18B2		74	

● Connection Cable (Sold separately)
Product Name: LC5N06E



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

*2 With connection cable

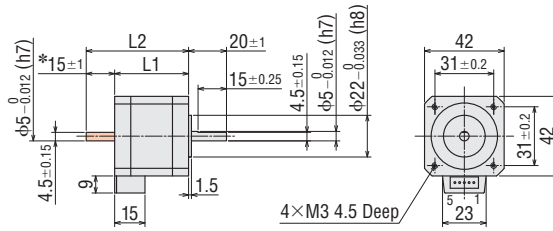
● These dimensions are for double shaft motors. For single shaft motors, ignore the shaded areas.

•High-Resolution Type

Frame Size 42 mm

Product Name	L1	L2	Mass kg
PKP544MN18A	39	-	0.3
PKP544MN18B		54	
PKP546MN18A	59	-	0.5
PKP546MN18B		74	

● Connection Cable (Sold separately)
Product Name: **LC5N06B**



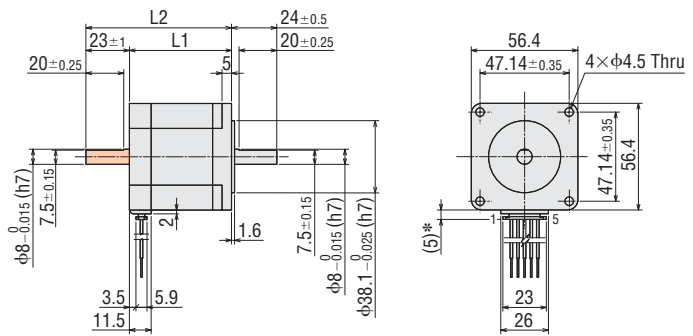
* The length of the shaft flat on the double shaft model is 15±0.25.

•Standard Type

Frame Size 56.4 mm

Product Name	L1	L2	Mass kg
PKP564N28A2	39	-	0.43
PKP564N28B2		62	
PKP566N28A2	54	-	0.67
PKP566N28B2		77	
PKP568N28A2	76	-	1
PKP568N28B2		99	

● Connection Cable (Sold separately)
Product Name: **LC5N06E**



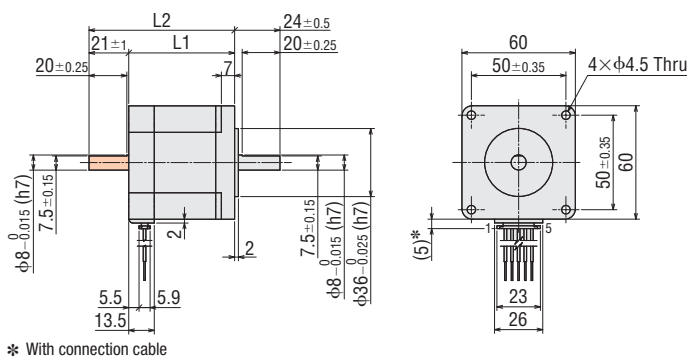
* With connection cable

•Standard Type

Frame Size 60 mm

Product Name	L1	L2	Mass kg
PKP564FN24A2	44	-	0.56
PKP564FN24B2		65	
PKP564FN38A2		65	
PKP566FN24A2	56	-	0.79
PKP566FN24B2		77	
PKP566FN38A2		77	
PKP569FN24A2	84.5	-	1.3
PKP569FN24B2		105.5	
PKP569FN38A2		105.5	

● Connection Cable (Sold separately)
Product Name: **LC5N06E**



* With connection cable

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

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

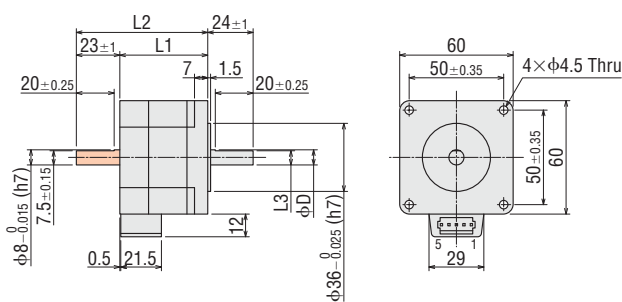
●High-Resolution Type

Frame Size 60 mm

Product Name	L1	L2	L3	φD	Mass kg
PKP564FMN24A	46.5	-	7.5±0.15	8 ⁰ _{-0.015}	0.65
PKP564FMN24B		69.5			
PKP566FMN24A	56	-	7.5±0.15	8 ⁰ _{-0.015}	0.87
PKP566FMN24B		79			
PKP569FMN24A	87	-	9.5±0.15	10 ⁰ _{-0.015}	1.5
PKP569FMN24B		110			

● Connection Cable (Sold separately)

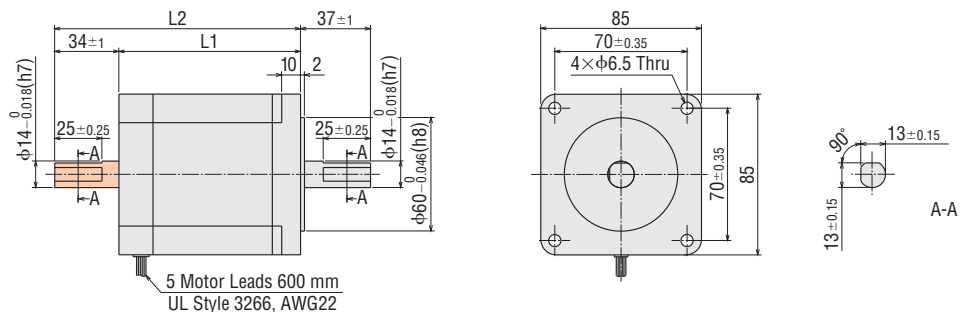
Product Name: **LC5N06C**



●Standard Type

Frame Size 85 mm

Product Name	L1	L2	Mass kg
PK596HNAW	66	-	1.7
PK596HNBW		100	
PK599HNAW	96	-	2.8
PK599HNBW		130	
PK5913HNAW	126	-	3.8
PK5913HNBW		160	



●Standard Type with Encoder

Frame Size 20 mm

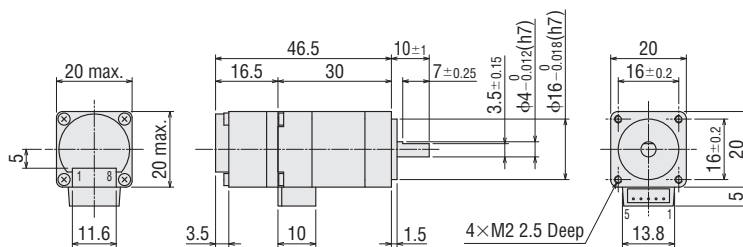
Product Name	Mass kg
PK513PA-R2GL	0.06

● Connection Cable (Sold separately)

Product Name: **LC5N06A** (For motor)

● Connection Cable (Included)

Product Name: **LCE08A-006** (For encoder)

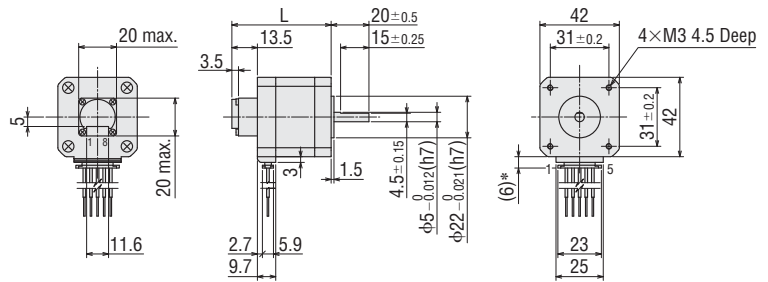


● These dimensions are for double shaft motors. For single shaft motors, ignore the shaded areas.

● Standard Type with Encoder
Frame Size 42 mm

Product Name	L	Mass kg
PKP543N18A2-R2GL	46.5	0.24
PKP544N18A2-R2GL	52.5	0.3
PKP545N18A2-R2GL	60.5	0.38
PKP546N18A2-R2GL	72.5	0.5

- Connection Cable (Sold separately)
Product Name: **LC5N06E** (For motor)
LCE08A-006 (For encoder)

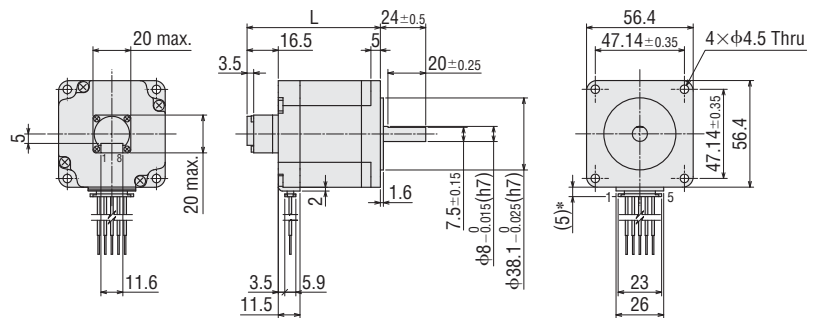


* With connection cable

● Standard Type with Encoder
Frame Size 56.4 mm

Product Name	L	Mass kg
PKP564N28A2-R2GL	55.5	0.43
PKP566N28A2-R2GL	70.5	0.67
PKP568N28A2-R2GL	92.5	1

- Connection Cable (Sold separately)
Product Name: **LC5N06E** (For motor)
LCE08A-006 (For encoder)

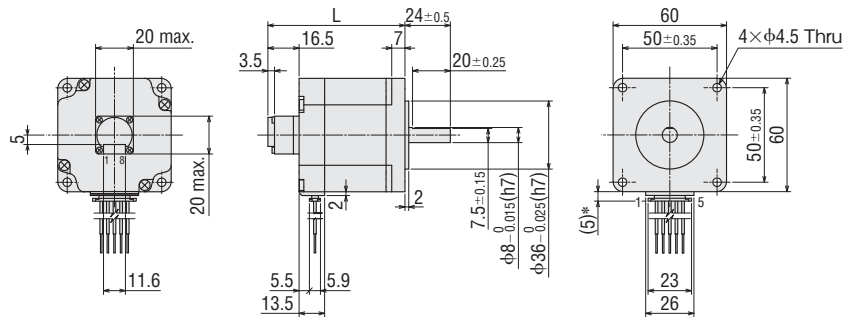


* With connection cable

● Standard Type with Encoder
Frame Size 60 mm

Product Name	L	Mass kg
PKP564FN24A2-R2GL	60.5	0.56
PKP564FN38A2-R2GL		
PKP566FN24A2-R2GL	72.5	0.79
PKP566FN38A2-R2GL		
PKP569FN24A2-R2GL	101	1.3
PKP569FN38A2-R2GL		

- Connection Cable (Sold separately)
Product Name: **LC5N06E** (For motor)
LCE08A-006 (For encoder)



* With connection cable

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

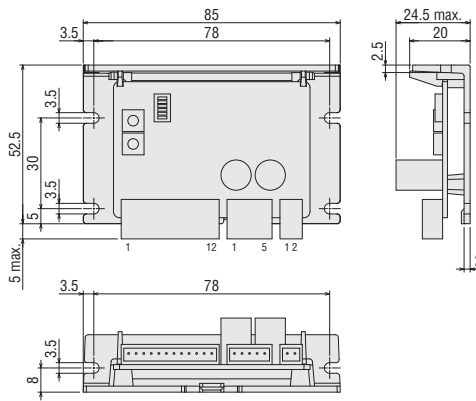
● Driver

◇ Right Angle Type with an Installation Plate

Product Name	Mass kg
CVD205BR-K	0.06
CVD206BR-K	
CVD215BR-K	
CVD223BR-K	
CVD223FBR-K	
CVD228BR-K	
CVD503BR-K	
CVD512BR-K	
CVD518BR-K	
CVD524BR-K	

● Included

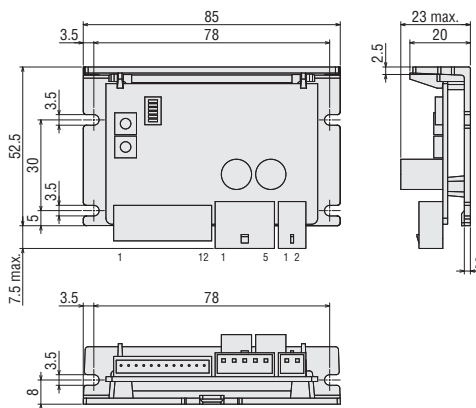
Connector Housing: 51103-0200 (Molex)
51103-0500 (Molex)
51103-1200 (Molex)
Contact: 50351-8100 (Molex)



Product Name	Mass kg
CVD245BR-K	0.07
CVD528BR-K	
CVD538BR-K	

● Included

Connector Housing: 51067-0200 (Molex)
51067-0500 (Molex)
51103-1200 (Molex)
Contact: 50217-9101 (Molex)
50351-8100 (Molex)

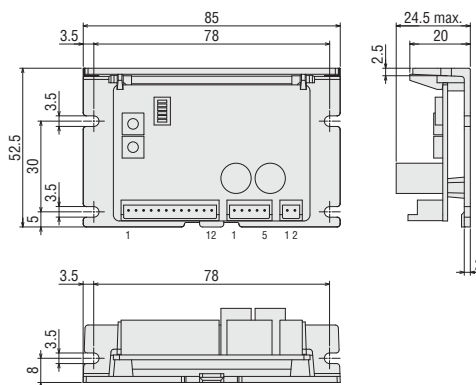


◇ With an Installation Plate

Product Name	Mass kg
CVD205B-K	0.06
CVD206B-K	
CVD215B-K	
CVD223B-K	
CVD223FBR-K	
CVD228B-K	
CVD503B-K	
CVD512B-K	
CVD518B-K	
CVD524B-K	

● Included

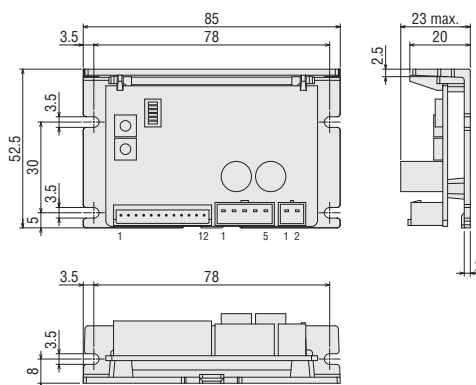
Connector Housing: 51103-0200 (Molex)
51103-0500 (Molex)
51103-1200 (Molex)
Contact: 50351-8100 (Molex)



Product Name	Mass kg
CVD245B-K	0.07
CVD528B-K	
CVD538B-K	

● Included

Connector Housing: 51067-0200 (Molex)
51067-0500 (Molex)
51103-1200 (Molex)
Contact: 50217-9101 (Molex)
50351-8100 (Molex)



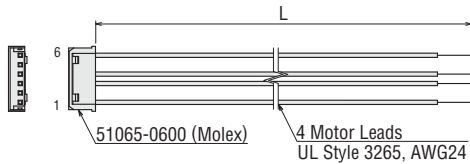
● Connection Cable

A connection cable is required for connector-coupled motors.

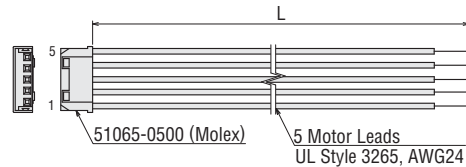
◇ Connection Cable for Motor (Sold separately)

	Type	Frame Size	Product Name	Length L (m)	
1.8° Stepper Motor	Standard Type	28 mm	LC2B06A	0.6	
	Standard Type with Encoder	35 mm	LC2B06B		
	SH Geared Type	42 mm, 56.4 mm, 60 mm	LC2B06E		
0.72°/0.36° Stepper Motor	Standard Type	20 mm, 28 mm	LC5N06A	0.6	
		Standard Type with Encoder	42 mm, 56.4 mm, 60 mm	LC5N10A	1
				LC5N06E	0.6
	High-Resolution Type	42 mm	LC5N06B	1	
			LC5N10B	0.6	
		60 mm	LC5N06C	1	
			LC5N10C	1	

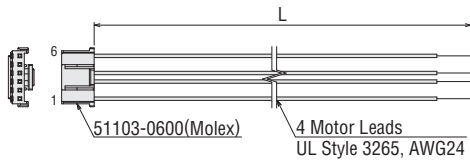
Product Name: **LC2B06A**



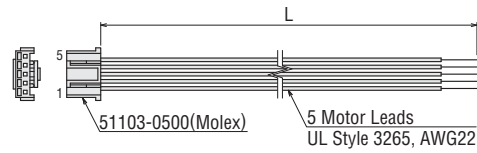
Product Name: **LC5N06A/LC510A**



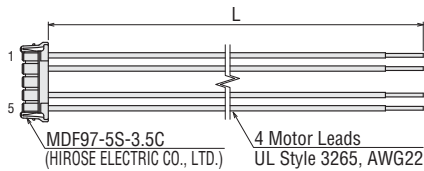
Product Name: **LC2B06B**



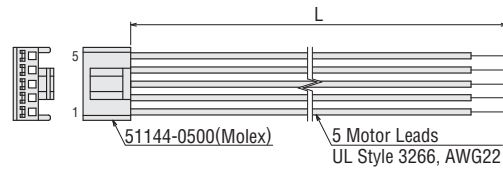
Product Name: **LC5N06B/LC5N10B**



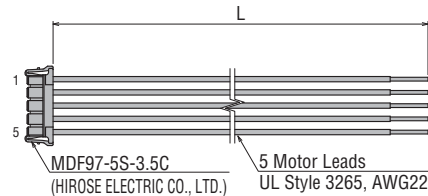
Product Name: **LC2B06E**



Product Name: **LC5N06C/LC5N10C**



Product Name: **LC5N06E**

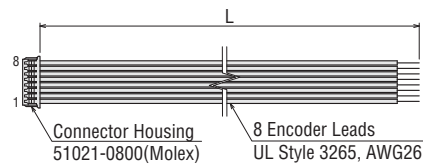


◇ Connection Cable for Encoder (Sold separately)

A connection cable for encoder is required for the type with an encoder.

Product Name	Length L (m)
LCE08A-006	0.6

Product Name: **LCE08A-006**



● Applicable Connector

The table below shows the applicable connectors.

◇ Motor

	Type	Frame Size	Connector Housing	Contact	Crimp Tool	
1.8° Stepper Motor	Standard Type	28 mm	51065-0600	50212-8100	57176-5000 (Molex)	
	Standard Type with Encoder	35 mm	51103-0600	50351-8100	57295-5000 (Molex)	
	SH Geared Type	42 mm, 56.4 mm, 60 mm	MDF97-5S-3.5C	MDF97-22SC	HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)	
0.72°/0.36° Stepper Motor	Standard Type	20 mm, 28 mm	51065-0500	50212-8100	57176-5000 (Molex)	
		Standard Type with Encoder	42 mm, 56.4 mm, 60 mm	MDF97-5S-3.5C	MDF97-22SC	HT801/MDF97-22S (HIROSE ELECTRIC CO., LTD.)
	High-Resolution Type		42 mm	51103-0500	50351-8100	57295-5000 (Molex)
			60 mm	51144-0500	50539-8100	57189-5000 (Molex)

◇ Encoder (Molex)

Connector Housing	Contact	Crimp Tool
51021-0800	50079-8100	57067-3000

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Connection and Operation

Names and Functions of Driver Parts

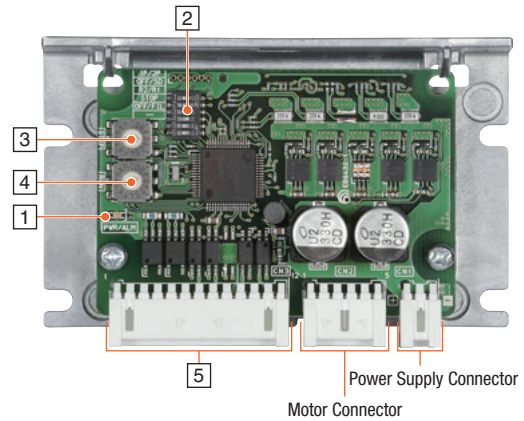
1 Signal Monitor Indicators

◇ 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

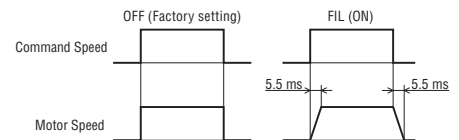
Blink Count	Function	Operating Condition
2	Overheat Protection	When the temperature of the driver board reaches 85°C
3	Overvoltage Protection	When the power supply voltage exceeds its permissible value
		When a large inertial load is stopped suddenly
		When a large load is hoisted
5	Overcurrent Protection	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 a malfunction of CPU driver occurs



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 motor 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 standard type, the high-resolution type has 2 times the resolution and 1/2 the step angle.

Example: When R2/R1 switch is set to ON (R1) and STEP switch is set to "0"

Resolution of High-Resolution Type: $500 \times 2 = 1000$

Step Angle of High-Resolution Type: $0.72^\circ / 2 = 0.36^\circ$

4 Running Current Setting Switch

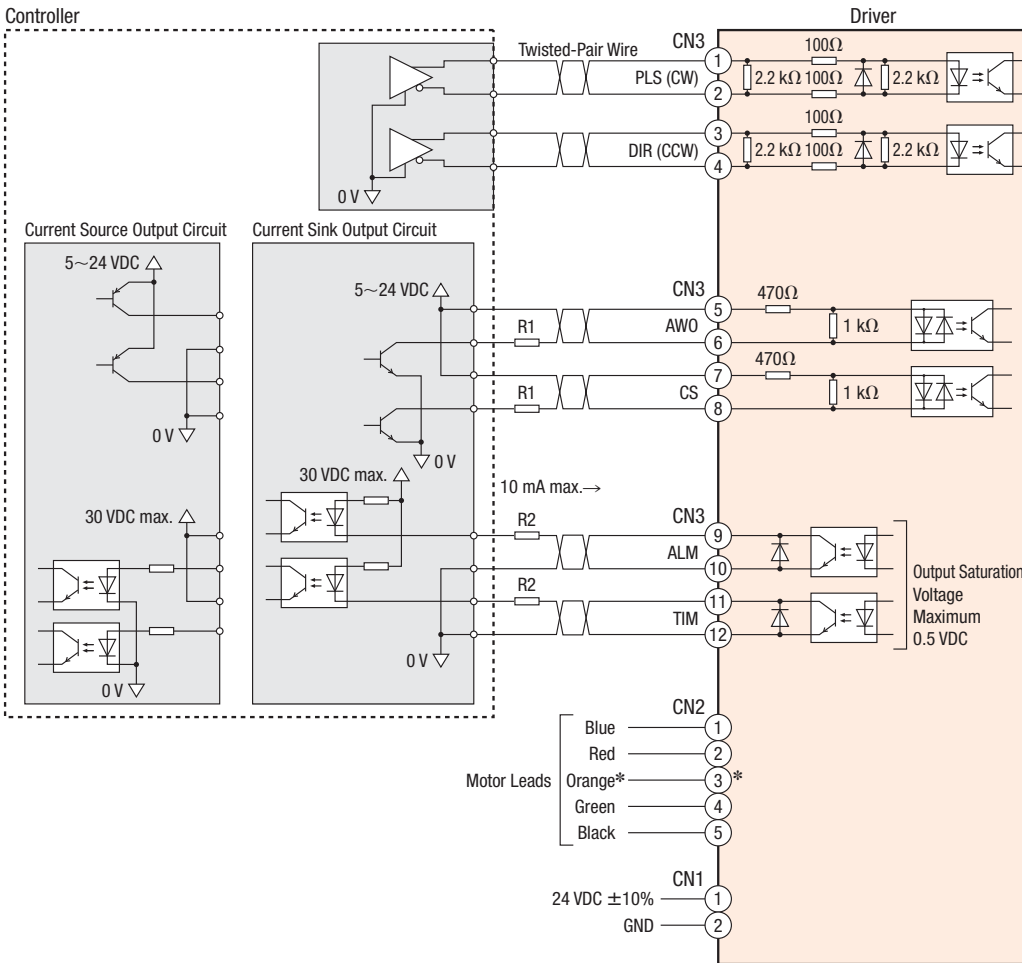
Indication	Function
RUN	Sets the motor running current.

5 I/O Signal Connector

Indication	Pin No.	I/O	Signal Name	Function
CN3	1	Input	PLS+ (CW+)	Operation command pulse signal (Rotates the motor in the CW direction when in 2-pulse input mode.)
	2		PLS- (CW-)	
	3		DIR+ (CCW+)	Rotation direction signal (Rotates the motor in the CCW direction when in 2-pulse input mode.)
	4		DIR- (CCW-)	
	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 excitation state of the motor is step "0".
	12		TIM-	

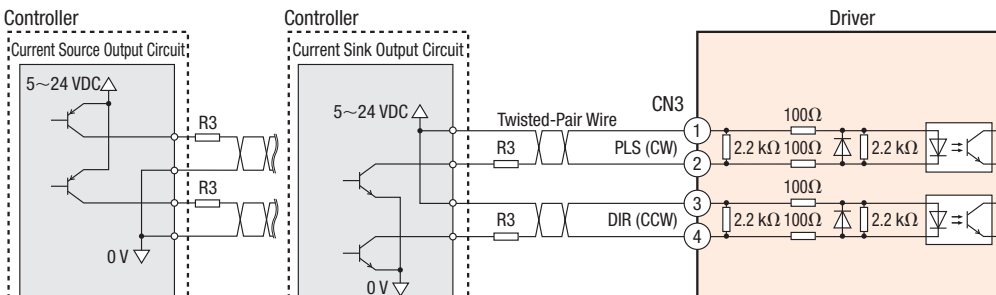
Connection Diagram

When the pulse input is the line driver



* This is not available for 1.8° Stepper Motor. Do not connect anything to pin No. 3.

When the pulse input is open collector



[Notes on Wiring]

◇ I/O Signal Connection

● Input Signal

Use 5 VDC for the input signals.

If voltage exceeding 5 VDC is applied, connect an external resistor R1 so that the current becomes 5~15 mA. (AWO, CS)

If voltage exceeding 5 VDC is applied to CW input and CCW input when the pulse input is open collector, connect an external resistor R3 so that the current becomes 7~20 mA.

● Output Signal

Use output signals at 30 VDC 10 mA max. When the current value exceeds 10 mA, connect an external resistor R2.

● Use twisted-pair cables of AWG24~22 (0.2~0.3 mm²).

● 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

● Use a wire of AWG22 (0.3 mm²). Use a wire of AWG20 (0.5 mm²) for **CVD245**, **CVD528** and **CVD538**.

● 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 mm²) min. Use a wire of AWG20 (0.5 mm²) min. for **CVD245**, **CVD528** and **CVD538**.

◇ General

● A separate hand crimp tool is required to crimp the connector and lead wires included with the driver. Connection cables 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.

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0.36°/Geared
αSTEP
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/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories