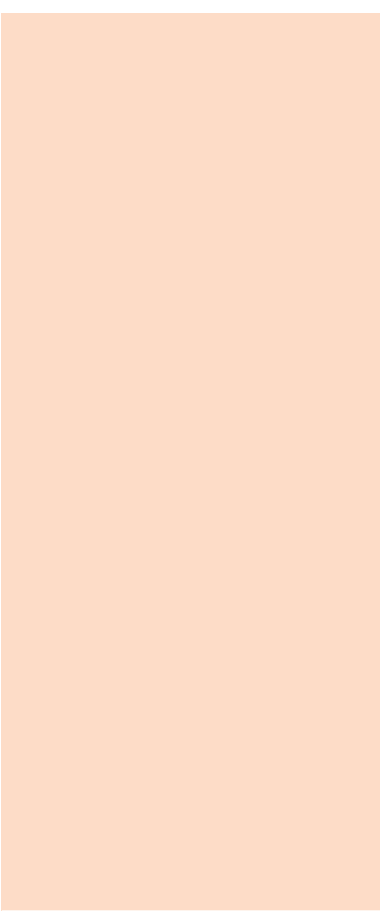


Stepping Motors

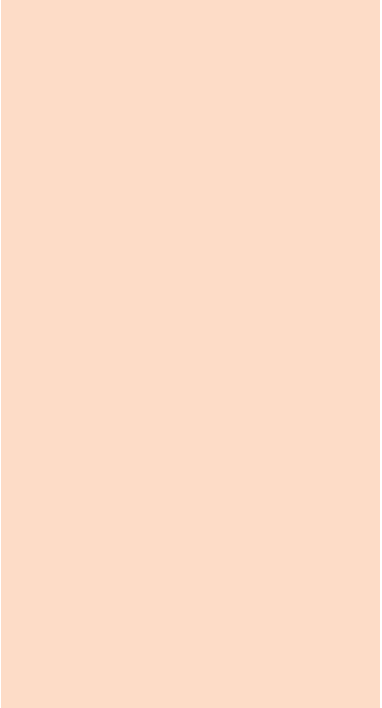
Stepping Motors (Motor Only)



0.72°
5-Phase Stepping Motors
PK Series

1.8°/Geared
2-Phase Stepping Motors
High-Torque **PKP Series**

0.9°/1.8°/Geared
2-Phase Stepping Motors
PK Series



Introduction

0.36°/Geared
AR
AC Input Motor & Driver

0.36°/Geared
AR

0.36°/0.72°/
Geared
CRK
DC Input Motor & Driver

1.8°/Geared
RBK

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
PKP
Motor Only

0.9°/1.8°/Geared
PK

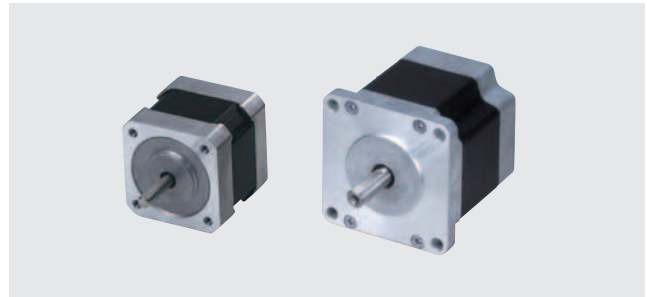
Controllers
SG8030JY

Accessories

Page

5-Phase Stepping Motors PK Series	A-244
2-Phase Stepping Motors High-Torque PKP Series	A-250
2-Phase Stepping Motors PK Series	A-278

5-phase **PK** Series products are the high-torque, low-vibration stepping motors with resolution of 500 steps per revolution (0.72°/step). Motors with 10 lead wires are provided so that they can be used for all types of drive system. The dedicated driver is required separately to operate the motor.



Product Number Code

PK 5 6 6 - B E

- ① ② ③ ④ ⑤ ⑥

①	Series	PK: PK Series
②	5: 5-Phase	
③	Motor Frame Size	4: 42 mm 6: 60 mm 9: 85 mm
④	Motor Case Length	
⑤	Shaft Type	A: Single Shaft B: Double Shaft
⑥	Reference Code	

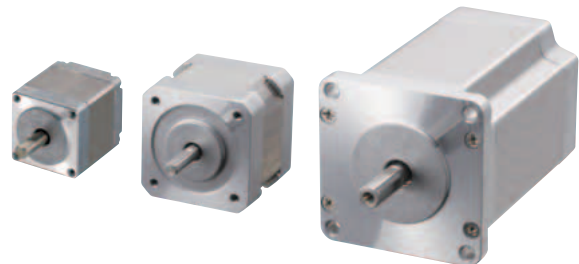
Product Line

Product Name (Single shaft)	Product Name (Double shaft)
PK543-A PK544-A PK545-A	PK543-B PK544-B PK545-B
PK564-AE PK566-AE PK569-AE	PK564-BE PK566-BE PK569-BE
PK596-AE PK599-AE PK5913-AE	PK596-BE PK599-BE PK5913-BE

The following items are included in each product.
 Motor, Operating Manual

Vacuum Type

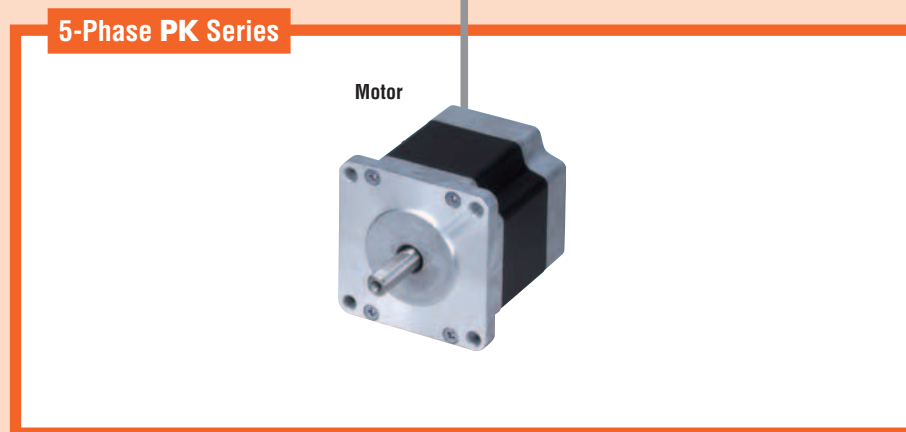
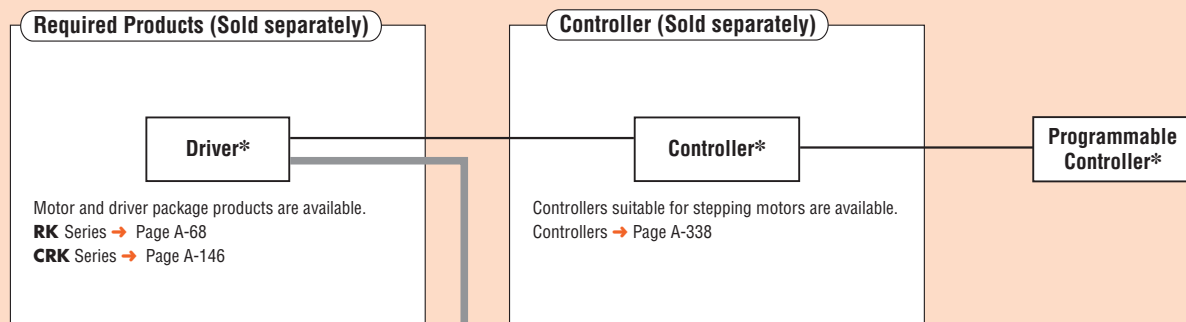
The vacuum type is also available. Please contact the nearest Oriental Motor Sales office.



System Configuration

These accessories enable 5-phase **PK** Series products to be used for more various operations.

*Not supplied



Accessories (Sold separately)



① **Motor Mounting Brackets**
(→ Page A-369)



② **Flexible Couplings**
(→ Page A-359)



③ **Clean Dampers**
(→ Page A-375)

Number	Name	Overview
①	Motor Mounting Brackets	Dedicated mounting bracket for the motor.
②	Flexible Couplings	Coupling that connects the motor shaft to the driven shaft.
③	Clean Dampers	Dedicated damper for suppressing stepping motor vibration.

System Configuration Example

5-Phase PK Series PK566-BE	+	Sold Separately		
		Motor Mounting Bracket PAL2P-5	Flexible Coupling MCS200808	Clean Damper D6CL-8.0F

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

Introduction

AC Input Motor & Driver

- 0.36°/Geared AR Q_{STEP}
- 0.72°/Geared RK

DC Input Motor & Driver

- 0.36°/Geared AR Q_{STEP}
- 0.36°/0.72°/Geared CRK
- 1.8°/Geared RBK
- 0.9°/1.8°/Geared CMK

Motor Only

- 0.72° PK
- 1.8°/Geared High-Torque PKD
- 0.9°/1.8°/Geared PK

Controllers

SG80301Y

Accessories

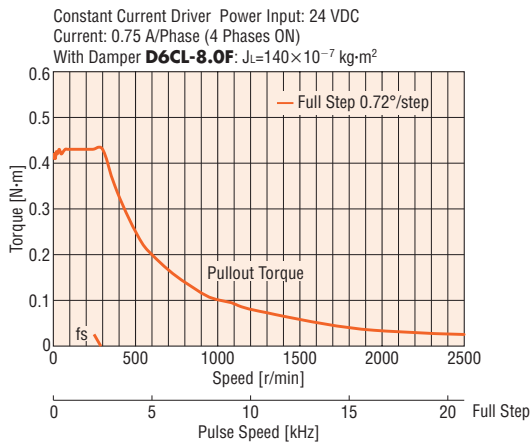
Specifications **RoHS**

Frame Size mm	Product Name		Maximum Holding Torque N·m	Rotor Inertia J: kg·m ²	Rated Current A/Phase	Winding Resistance Ω/Phase	Basic Step Angle	Mass kg	Corresponding Package Product Name and Speed-Torque Characteristics Page
	Single Shaft	Double Shaft							
42	PK543-A	PK543-B	0.13	35×10^{-7}	0.75	1.7	0.72°	0.21	CRK543 □ P A-160
	PK544-A	PK544-B	0.18	54×10^{-7}		2.2		0.27	CRK544 □ P A-160
	PK545-A	PK545-B	0.24	68×10^{-7}		3.4		0.35	CRK545 □ P A-160
60	PK564-AE	PK564-BE	0.42	175×10^{-7}	1.4	2.3	0.72°	0.6	—
	PK566-AE	PK566-BE	0.83	280×10^{-7}		3.4		0.8	—
	PK569-AE	PK569-BE	1.66	560×10^{-7}		1.7		1.3	RK569 □ CE A-75 CRK569 □ P A-160
85	PK596-AE	PK596-BE	2.1	1400×10^{-7}	2.8	1.5	0.72°	1.7	RK596 □ CE A-75
	PK599-AE	PK599-BE	4.1	2700×10^{-7}		2.3		2.8	RK599 □ CE A-75
	PK5913-AE	PK5913-BE	6.3	4000×10^{-7}		0.75		3.8	—

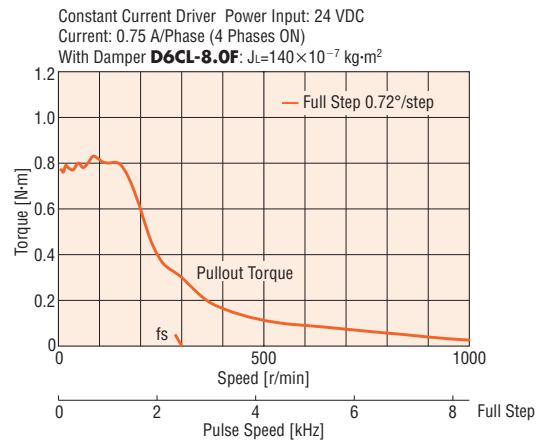
● For the speed – torque characteristics of the motors in the table above, refer to the corresponding package. If there is no corresponding package name, refer to the following characteristics.
● **A** or **B** indicating motor shaft type is entered where the box □ is located within the product name.

Speed – Torque Characteristics

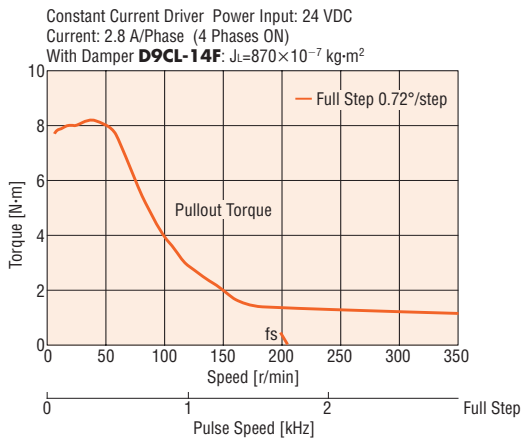
PK564-AE/PK564-BE



PK566-AE/PK566-BE



PK5913-AE/PK5913-BE



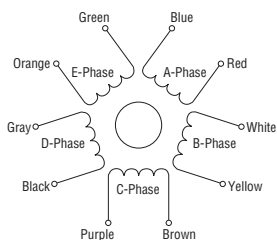
Note

● 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 100°C or less.

Permissible Overhung Load and Permissible Thrust Load

→ Page A-14

Inner Wiring Diagram for Motor



General Specifications

Specifications		Motor
Thermal Class		130 (B)
Insulation Resistance		The measured value is 100 MΩ min. when a 500 VDC megger is applied between the windings and the case under normal ambient temperature and humidity.
Dielectric Strength		No abnormality is judged even with application of 1.0 kVAC (PK54 □: 0.5 kV) at 50 Hz or 60 Hz between the windings and the case for 1 minute under normal ambient temperature and humidity.
Operating Environment (In operation)	Ambient Temperature	-10 ~ +50°C (non-freezing)
	Ambient Humidity	85% max. (non-condensing)
	Atmosphere	Use in an area without corrosive gases or dust. The product should not be exposed to water, oil or other liquids.
Temperature Rise		Temperature rise of windings is 80°C max. at rated current and 5-phases excitation, at standstill (resistance change method).
Stop Position Accuracy*1		±3 min (±0.05°)
Shaft Runout		0.05 T. I. R. (mm)*4
Radial Play*2		0.025 mm max. of 5 N
Axial Play*3		0.075 mm max. of 10 N
Concentricity to Shaft for Mounting Pilot		0.075 T. I. R. (mm)*4
Perpendicularity		0.075 T. I. R. (mm)*4

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

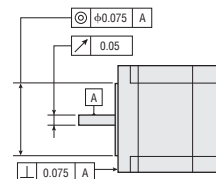
*2 Radial Play: Displacement in shaft position in the radial direction when 5 N load is applied in the vertical direction to the tip of the motor's shaft.

*3 Axial Play: Displacement in shaft position in the axial direction when a 10 N load is applied to the motor's 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

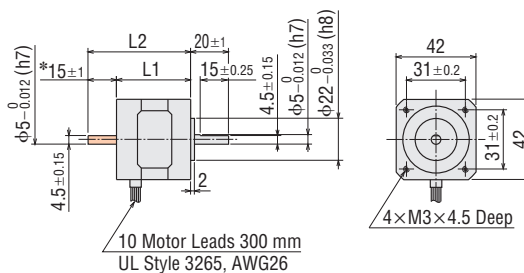
● Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.



Dimensions (Unit = mm)

Frame Size 42 mm

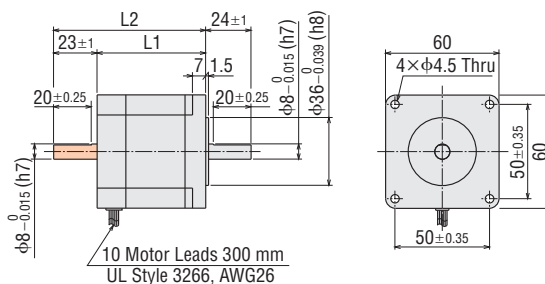
Product Name	L1	L2	Mass kg
PK543-A	33	—	0.21
PK543-B		48	
PK544-A	39	—	0.27
PK544-B		54	
PK545-A	47	—	0.35
PK545-B		62	



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

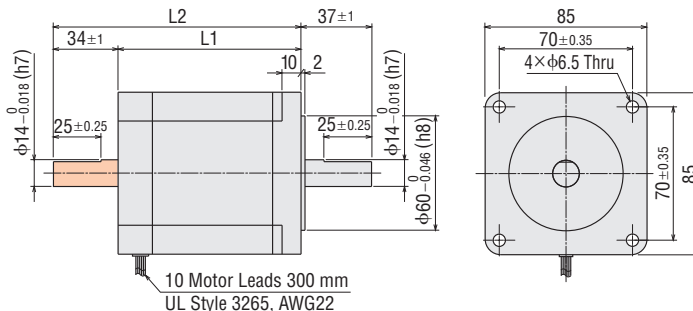
Frame Size 60 mm

Product Name	L1	L2	Mass kg
PK564-AE	46.5	—	0.6
PK564-BE		69.5	
PK566-AE	57.5	—	0.8
PK566-BE		80.5	
PK569-AE	87	—	1.3
PK569-BE		110	



Frame Size 85 mm

Product Name	L1	L2	Mass kg
PK596-AE	66	—	1.7
PK596-BE		100	
PK599-AE	96	—	2.8
PK599-BE		130	
PK5913-AE	126	—	3.8
PK5913-BE		160	



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