

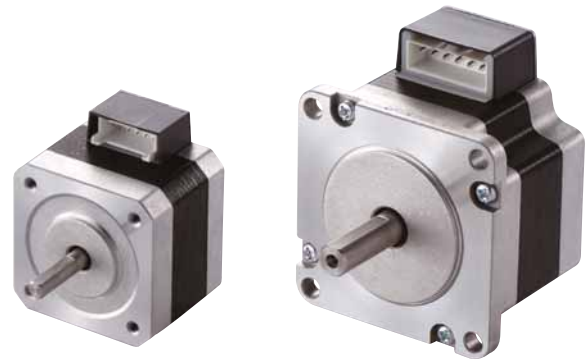
High-Torque 2-Phase Stepping Motors

PKP Series

High-Resolution Type

Frame Size 42 mm, 56.4 mm

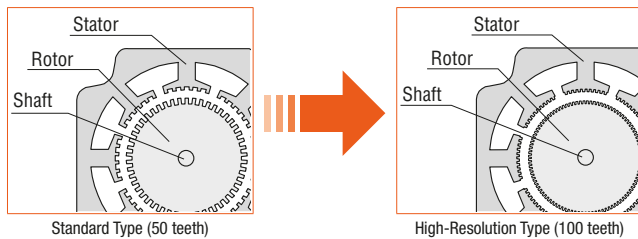
High-Torque 2-phase Stepping Motors - A new high-resolution addition to the **PKP** Series. With a basic step angle of 0.9° , high resolution is combined with increased stopping accuracy.



Features

● Increased Resolution (compared to standard type)

With 100 teeth on the rotor, twice as many as the standard type, at 0.9° the basic step angle is half that of the standard type.



● Avoidance of the Resonance Region

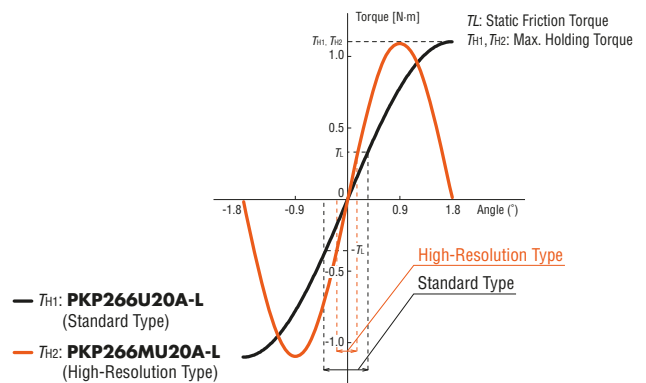
If the pulse speed being used falls within the resonance region, vibration may increase. By switching to a high resolution-type motor, the resonance region can be avoided.

● For details, please contact the nearest Oriental Motor sales office.

● Stopping Accuracy is Improved (compared to standard type)

Because the torque increases sharply and the negative effect of frictional load is minimized, the stopping accuracy is improved.

Comparison of Angle - Torque Characteristics



Product Number Code

PKP 2 6 4 M D 28 A - L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Series Name	PKP: PKP Series
②	2-Phase	
③	Motor Frame Size	4: 42 mm 6: 56.4 mm
④	Motor Case Length	
⑤	Motor Type	M: High-resolution type
⑥	Number of Lead Wires	D: 4 U: 6
⑦	Winding Specification	
⑧	Shaft Type	A: Single shaft B: Double shaft
⑨	Connection Cable	L: Included (0.6 m) Blank: Not included

Product Line

● Bipolar 4 Lead Wires

Product Name (Single shaft)	Product Name (Double shaft)
PKP243MD15A-L	PKP243MD15B-L
PKP244MD15A-L	PKP244MD15B-L
PKP264MD28A-L	PKP264MD28B-L
PKP266MD28A-L	PKP266MD28B-L
PKP268MD28A-L	PKP268MD28B-L

● Unipolar 6 Lead Wires

Product Name (Single shaft)	Product Name (Double shaft)
PKP243MU09A-L	PKP243MU09B-L
PKP244MU12A-L	PKP244MU12B-L
PKP264MU20A-L	PKP264MU20B-L
PKP266MU20A-L	PKP266MU20B-L
PKP268MU20A-L	PKP268MU20B-L

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

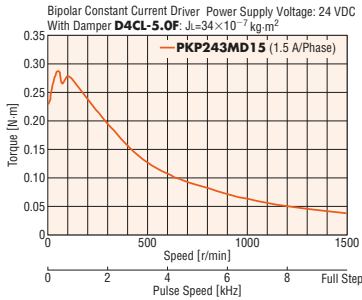
Specifications RoHS

Product Name		Max. Holding Torque N·m	Rotor Inertia J: kg·m ²	Rated Current A/Phase	Voltage V	Winding Resistance Ω/Phase	Basic Step Angle
Single Shaft	Double Shaft						
PKP243MD15A-L	PKP243MD15B-L	0.30	36×10^{-7}	1.5	2.85	1.9	0.9°
PKP244MD15A-L	PKP244MD15B-L	0.42	57×10^{-7}		3.9	2.6	

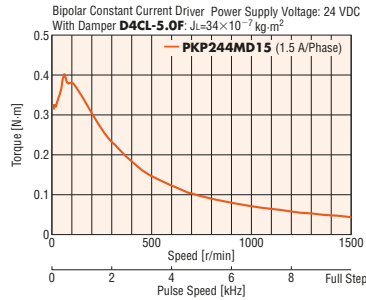
● A 0.6 m motor connection cable is included with these products.

Speed – Torque Characteristics fs: Max. starting frequency

PKP243MD15A-L/ PKP243MD15B-L



PKP244MD15A-L/ PKP244MD15B-L



Note

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

Dimensions (Unit = mm)

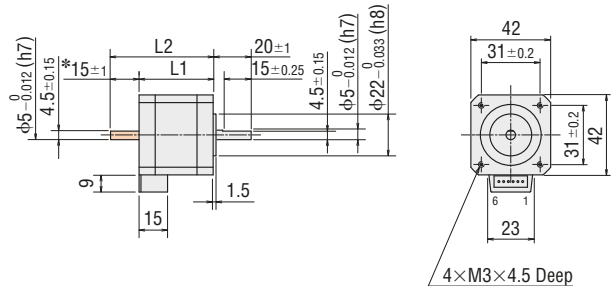
Product Name	Motor Product Name	L1	L2	Mass kg
PKP243MD15A-L	PKP243MD15A	33	—	0.25
PKP243MD15B-L	PKP243MD15B		48	
PKP244MD15A-L	PKP244MD15A	39	—	0.3
PKP244MD15B-L	PKP244MD15B		54	

● Applicable Connector

Connector Housing: 51103-0600 (Molex)

Contact: 50351-8100 (Molex)

Crimp Tool: 57295-5000 (Molex)



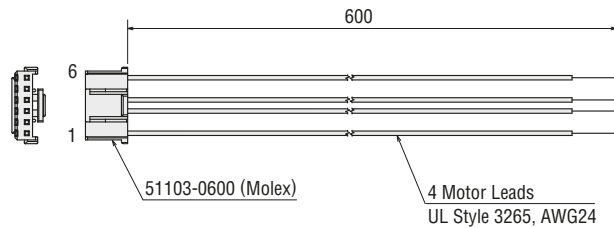
*The length of the shaft flat on the double shaft model is 15 ± 0.25 .

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

● Included

Connection Cable

Product Name: **LC2B06B**



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

Specifications RoHS

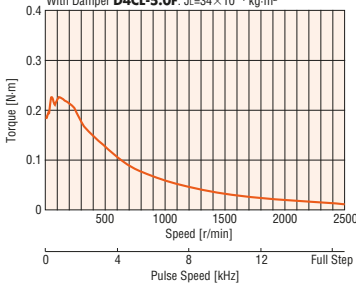
Product Name		Max. Holding Torque N·m	Rotor Inertia J: kg·m ²	Rated Current A/Phase	Voltage V	Winding Resistance Ω/Phase	Basic Step Angle
Single Shaft	Double Shaft						
PKP243MU09A-L	PKP243MU09B-L	0.25	36×10^{-7}	0.95	4.47	4.7	0.9°
PKP244MU12A-L	PKP244MU12B-L	0.35	57×10^{-7}	1.2	4.8	4	

● A 0.6 m motor connection cable is included with these products.

Speed – Torque Characteristics fs: Max. starting frequency

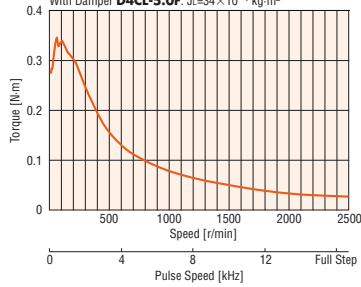
PKP243MU09A-L/PKP243MU09B-L

Unipolar Constant Current Driver Power Supply Voltage: 24 VDC
Current: 0.95 A/Phase (At 2-phase excitation)
With Damper **D4CL-5.0F**: $J = 34 \times 10^{-7}$ kg·m²



PKP244MU12A-L/PKP244MU12B-L

Unipolar Constant Current Driver Power Supply Voltage: 24 VDC
Current: 1.2 A/Phase (At 2-phase excitation)
With Damper **D4CL-5.0F**: $J = 34 \times 10^{-7}$ kg·m²



Note

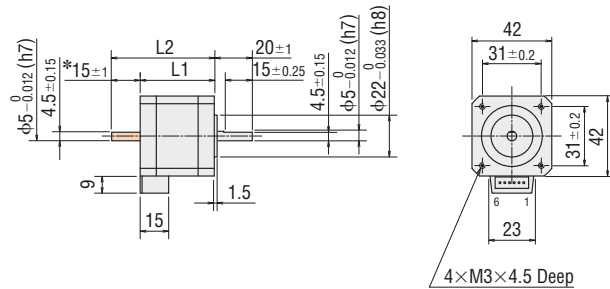
● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 100°C max.

Dimensions (Unit = mm)

Product Name	Motor Product Name	L1	L2	Mass kg
PKP243MU09A-L	PKP243MU09A	33	—	0.25
PKP243MU09B-L	PKP243MU09B		48	
PKP244MU12A-L	PKP244MU12A	39	—	0.3
PKP244MU12B-L	PKP244MU12B		54	

● Applicable Connector

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

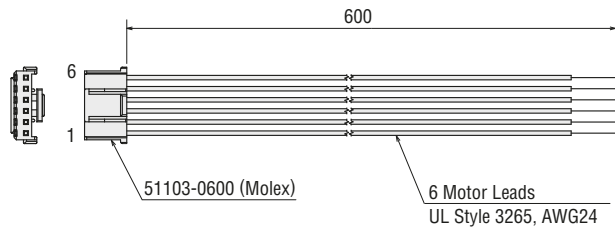


* The length of the shaft flat on the double shaft model is 15 ± 0.25 .

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

● Included

Connection Cable
Product Name: **LC2U06B**



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

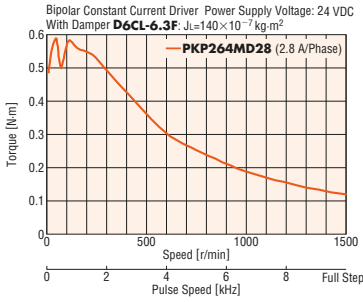
Specifications RoHS

Product Name		Max. Holding Torque N·m	Rotor Inertia J: kg·m ²	Rated Current A/Phase	Voltage V	Winding Resistance Ω/Phase	Basic Step Angle
Single Shaft	Double Shaft						
PKP264MD28A-L	PKP264MD28B-L	0.6	120×10^{-7}	2.8	2	0.73	0.9°
PKP266MD28A-L	PKP266MD28B-L	1.32	290×10^{-7}		2.8	1	
PKP268MD28A-L	PKP268MD28B-L	2.23	490×10^{-7}		3.4	1.23	

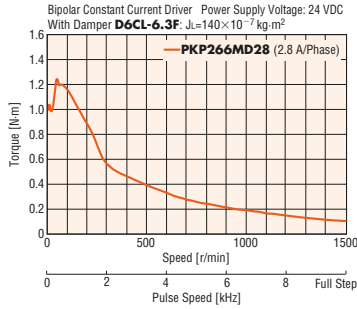
● A 0.6 m motor connection cable is included with these products.

Speed – Torque Characteristics fs: Max. starting frequency

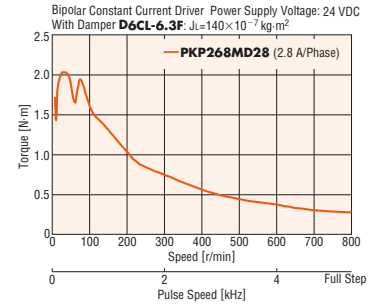
PKP264MD28A-L/ PKP264MD28B-L



PKP266MD28A-L/ PKP266MD28B-L



PKP268MD28A-L/ PKP268MD28B-L



Note

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

Dimensions (Unit = mm)

Product Name	Motor Product Name	L1	L2	Mass kg
PKP264MD28A-L	PKP264MD28A	39	—	0.46
PKP264MD28B-L	PKP264MD28B		62	
PKP266MD28A-L	PKP266MD28A	54	—	0.73
PKP266MD28B-L	PKP266MD28B		77	
PKP268MD28A-L	PKP268MD28A	76	—	1.1
PKP268MD28B-L	PKP268MD28B		99	

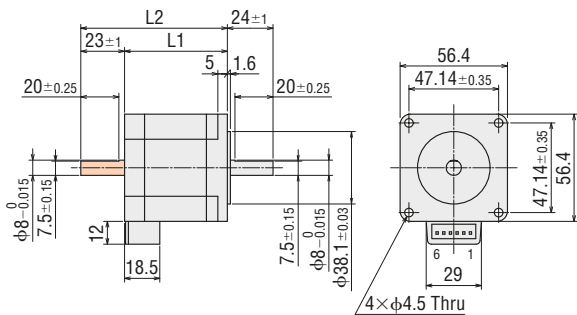
● Applicable Connector

Connector Housing: 51067-0600 (Molex)

Contact: 50217-9101 (Molex)

Crimp Tool: 57189-5000 (Molex)

57190-5000 (Molex)

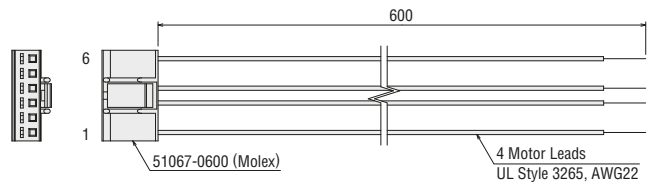


● These dimensions are for double shaft models.
For single shaft models, ignore the areas.

● Included

Connection Cable

Product Name: **LC2B06C**



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

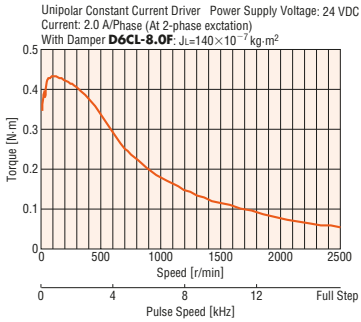
Specifications (RoHS)

Product Name		Max. Holding Torque N·m	Rotor Inertia J: kg·m ²	Rated Current A/Phase	Voltage V	Winding Resistance Ω/Phase	Basic Step Angle
Single Shaft	Double Shaft						
PKP264MU20A-L	PKP264MU20B-L	0.51	120×10^{-7}	2	2.9	1.45	0.9°
PKP266MU20A-L	PKP266MU20B-L	1.1	290×10^{-7}		4	2	
PKP268MU20A-L	PKP268MU20B-L	1.75	490×10^{-7}		4.9	2.45	

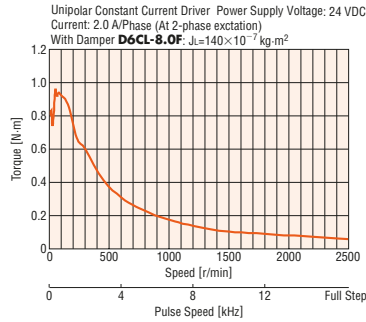
● A 0.6 m motor connection cable is included with these products.

Speed – Torque Characteristics fs: Max. starting frequency

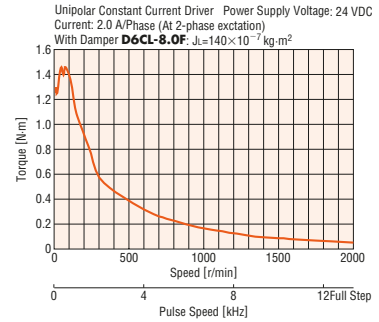
PKP264MU20A-L/ PKP264MU20B-L



PKP266MU20A-L/ PKP266MU20B-L



PKP268MU20A-L/ PKP268MU20B-L



Note

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

Dimensions (Unit = mm)

Product Name	Motor Product Name	L1	L2	Mass kg
PKP264MU20A-L	PKP264MU20A	39	—	0.46
PKP264MU20B-L	PKP264MU20B		62	
PKP266MU20A-L	PKP266MU20A	54	—	0.73
PKP266MU20B-L	PKP266MU20B		77	
PKP268MU20A-L	PKP268MU20A	76	—	1.1
PKP268MU20B-L	PKP268MU20B		99	

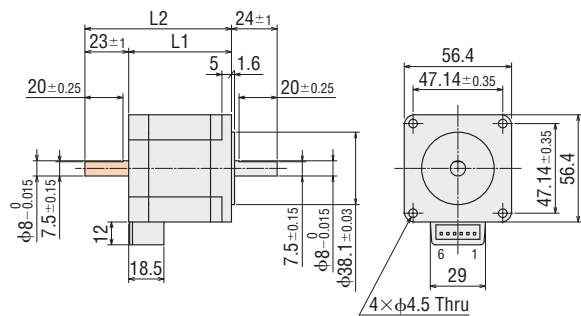
● Applicable Connector

Connector Housing: 51067-0600 (Molex)

Contact: 50217-9101 (Molex)

Crimp Tool: 57189-5000 (Molex)

57190-5000 (Molex)

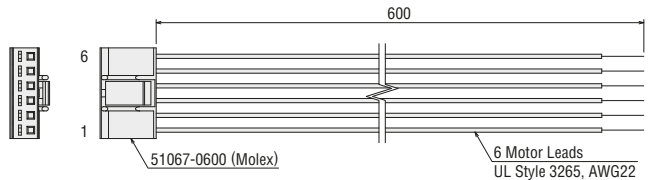


● These dimensions are for double shaft models.
For single shaft models, ignore the areas.

● Included

Connection Cable

Product Name: **LC2U06C**



General Specifications

Specifications		Motor
Heat-Resistant Class		130 (B)
Insulation Resistance		100 MΩ or higher 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 at 50 Hz or 60 Hz between the windings and the case for 1 minute under normal ambient temperature and humidity. (0.5 kV for models with a frame size of 42 mm)
Operating Environment (In operation)	Ambient Temperature	-10~+50°C (non-freezing)
	Ambient Humidity	85% max. (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 is 80°C max. (measured by the resistance change method) at the rated voltage, at standstill, and 2-phase excitation.
Stop Position Accuracy*1		±3 arc minutes (±0.05°)
Shaft Runout		0.05 T.I.R. (mm)*4
Radial Play*2		0.025 mm max. (Load 5 N)
Axial Play*3		0.075 mm max. (Load 10 N)
Concentricity of Installing 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 full step under no load. (The value changes with the size of the load).

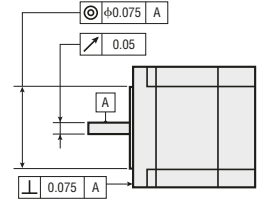
*2 Radial Play: Displacement in shaft position in the radial direction when a 5 N load is applied in the vertical direction to the tip of the motor shaft.

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

*4 T. I. R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

Note

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



Permissible Radial Load and Permissible Axial Load

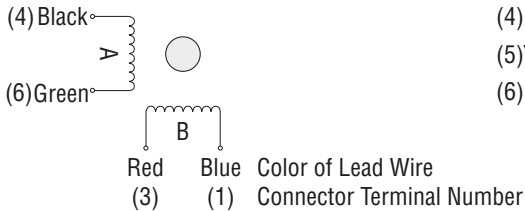
Unit N

Motor Frame Size	Product Name	Permissible Radial Load					Permissible Axial Load
		Distance from Shaft End mm					
		0	5	10	15	20	
42 mm	PKP243, PKP244	20	25	34	52	—	Motor Self-Weight max.
56.4 mm	PKP264, PKP266, PKP268	61	73	90	110	160	

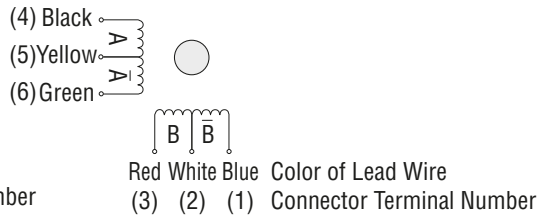
The applicable motor products are listed such that the model can be determined.

Inner Wiring Diagram for Motor

Bipolar 4 Lead Wires



Unipolar 6 Lead Wires



Orientalmotor

These products are manufactured at plants certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** (for systems of environmental management).

Specifications are subject to change without notice.
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