

High-Torque 2-Phase Stepper Motors **PKP Series** with PLE Gearhead

High-Torque Combination

Bipolar 2-phase Stepper Motors
with Neugart Planetary Gearheads

Motor and Gearhead are Pre-assembled

Short Delivery Time



Planetary
Gearheads
Pre-assembled

Free
Service

ASSEMBLY SERVICE

You can use as soon as you get it!

PLE Gearhead

- High Torque
- Low Backlash

Planetary Gear



PKP Series

Compact and High Torque
2-phase Stepper Motor



Orientalmotor

YOUR BENEFITS:

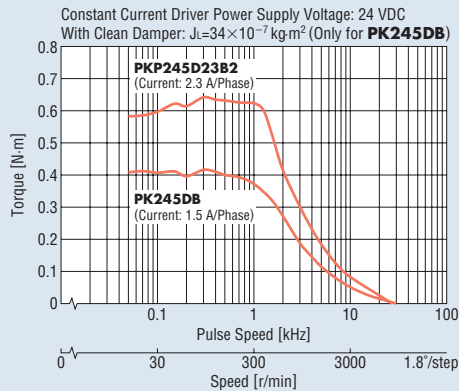
- »»» Save time and cost for assembly
- »»» Save inventory space
- »»» Save the number of vendors

PKP Motor Features

Increased Torque over the Entire Speed Range

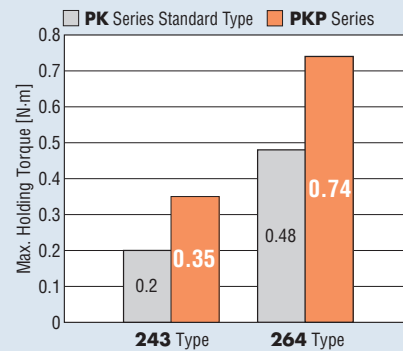
After revising the magnetic design and structure design of the **PKP** Series, it produces much more torque than standard **PK** Series motors of the same size. In addition, torque can be increased in the high-speed range by using high current motors.

Comparison of Speed – Torque Characteristics of the Same Size Motors



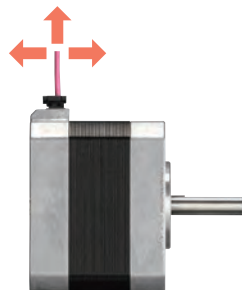
High current is possible due to the revised motor winding design and the highly efficient design of the drive circuit that can be combined. Increased torque over the entire speed range from low to high is achieved.

Comparison of Maximum Holding Torque



Compact and Flat Connector

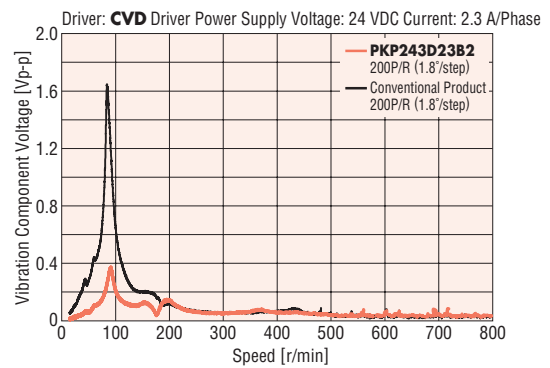
The **PKP** Series uses a compact and flat connector, which shortens the length of the connector's overhang. In addition, the degree of freedom for the cable outlet direction has been increased, because the outlet direction points upward.



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

Lower Vibration

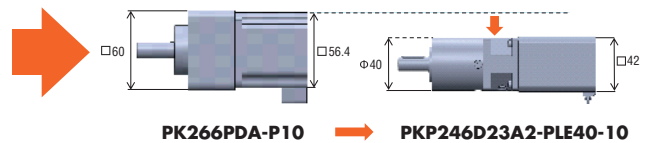
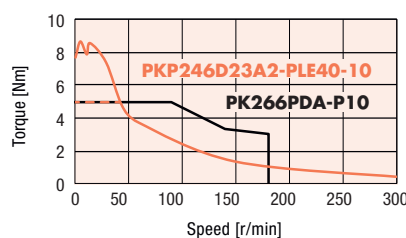
Revising the magnetic design has achieved lower vibration than with conventional products.



Downsizing is Possible with the Same Torque!

Use a **PKP** Series motor with **PLE** gearhead in place of a standard motor from the **PK** series motor with **PL** gearhead with the equivalent torque in order to downsize motors.

● Comparison of Torque Characteristics of **PKP246D23A2-PLE40-10** and **PK266PDA-P10**



Product Line Equipped with Encoder

Provided for Standard Type

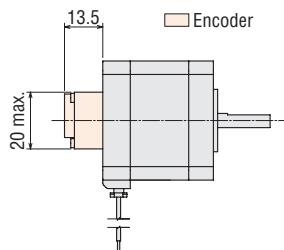


◇ Motor Position Detection is Possible.

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

◇ Equipped with a Compact Encoder

- When frame size is 42 mm



◇ High Reliability with Line Driver Output Circuit Type

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

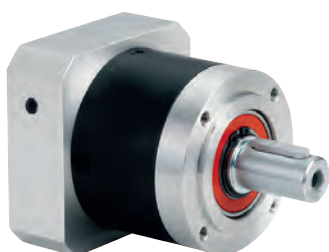
● Encoder Specifications

Encoder Product Name	R2EL	R2FL
Resolution	200P/R	400P/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.

PLE Gearhead Features

Pre-assembled Motor and Gearhead



PLE Series employs optimized planetary gear mechanism and is composed of fully hardened gears. Sun gear and planetary gears are honed (precision final machining after heat treatment). This technology guarantees extremely high torque density, long life, low backlash, and so on.

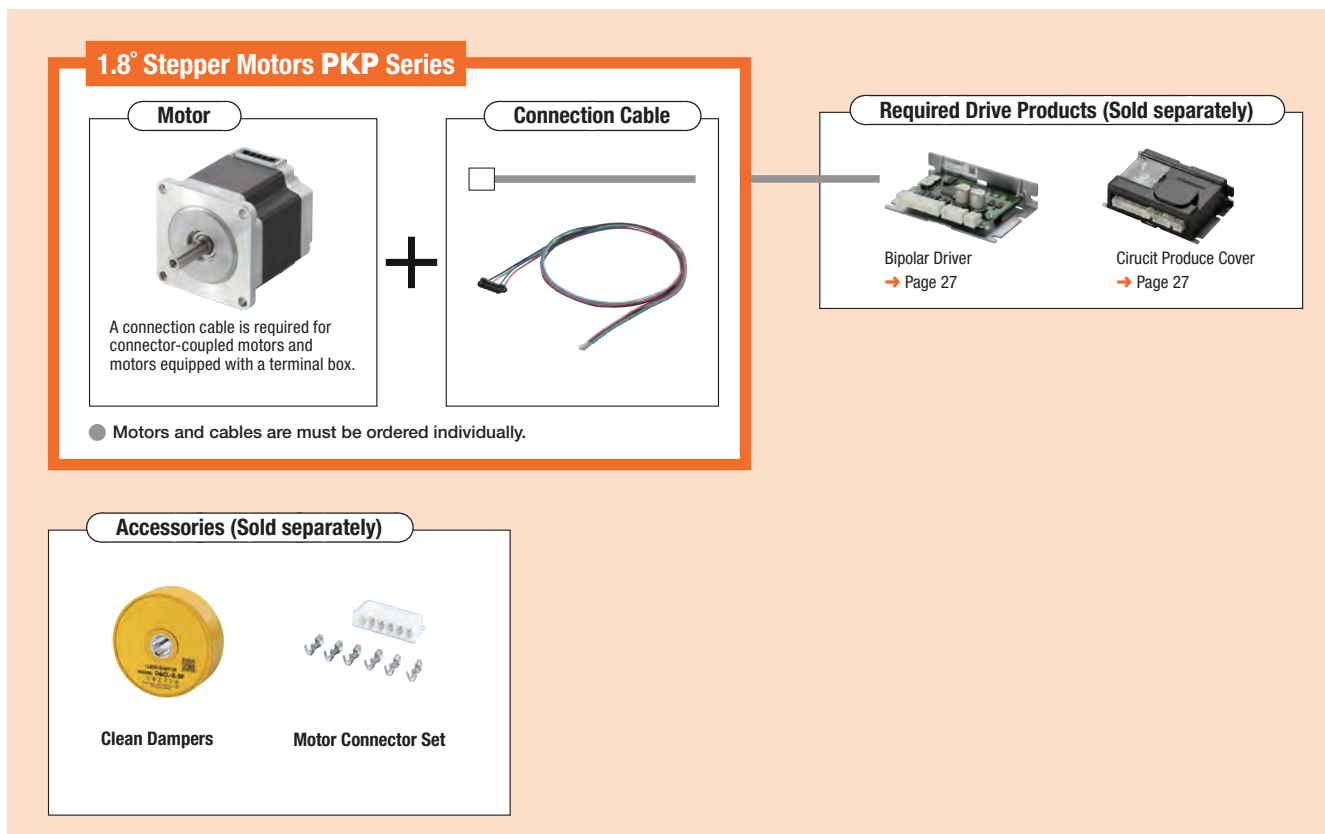


- Low Backlash
- High Output Torque
Max 170Nm

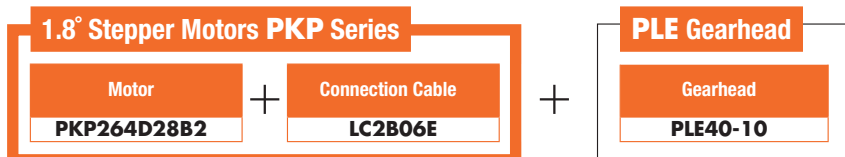
System Configuration

These accessories allow the 1.8° Stepper Motor **PKP** Series to be used for various operations. An example of a system configuration with the **SCX11** controller is shown below.

* Not supplied.



● Example of System Configuration



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

General Specifications

Specification	Motor	
Thermal Class	130(B)	
Insulation Resistance	The measured value is 100 MΩ or more 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. <ul style="list-style-type: none"> • Frame size 42 mm max.: 0.5 kVAC 50/60 Hz • Frame size 50 mm min.: 1.0 kVAC 50/60 Hz • PKP29□: 1.5 kVAC 50/60 Hz 	
Operating Environment (In Operation)	Ambient temperature	-10 - +50°C (Non-freezing) [0 - +40°C for Flat Type with Harmonic Gear]
	Ambient humidity	85% or less (Non-condensing)
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.
Temperature Rise	Winding temperature rise 80°C max. (Based on Oriental Motor's internal measurement conditions)	

■ Product Number Code

PKP 2 4 3 D 15 A 2 - R2F L-PLE 40 - 10

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

①	Motor Series Name	PKP: PKP Series
②	2: 1.8° Stepper Motor	
③	Motor Frame Size	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 Specification	
⑦	Configuration	A: Single Shaft B: Double Shaft
⑧	Reference Number	
⑨	Encoder Resolution	R2E: 200P/R R2F: 400P/R
⑩	Encoder Output Circuit Type	L: Line Driver Output*
⑪	Gear Series Name	PLE: PLE Series
⑫	Gear Size	40: PLE40 60: PLE60 80: PLE80
⑬	Gear Ratio	5, 10, 20, 40

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

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

Specifications*

Product Name	Maximum Holding Torque Nm	Rotor Inertia J: kgm ²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name
PKP243D15□2	0.35	36×10 ⁻⁷	1.5	2.7	1.8	3.3	1.8°	CVD223FBR-K
PKP243D23□2			2.3	1.8	0.78	1.4		
PKP244D15□2	0.48	54×10 ⁻⁷	1.5	3.2	2.1	4.4		
PKP244D23□2			2.3	2.1	0.93	1.9		
PKP245D15□2	0.66	73×10 ⁻⁷	1.5	3.3	2.2	5.3		
PKP245D23□2			2.3	2.3	1	2.2		
PKP246D15□2	0.99	110×10 ⁻⁷	1.5	4.4	2.9	7.9		
PKP246D23□2			2.3	3.2	1.4	3.3		

● Either **A** (Single Shaft) or **B** (Double Shaft) indicating the configuration is specified where the box □ is located in the product name.

*There is no difference in specifications between with or without encoder.

PLE40 Gearhead Specifications

Type	PLE40 (1)			
Stage	1		2	
Reduction ratio	5	10	20	40
Backlash [arcmin]	15		19	
Nominal output torque [Nm] ⁽²⁾⁽³⁾	14	5	20	18
Max. output torque [Nm] ⁽²⁾⁽³⁾⁽⁴⁾	22	8	32	29
Emergency stop torque [Nm] ⁽⁵⁾	36	27	40	36
Max. input speed [r/min] ⁽⁶⁾	18000			
Running noise [dB (A)] ⁽⁷⁾	58			
Permitted radial load for 30000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	160			
Permitted axial load for 30000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	160			
Permitted radial load for 20000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	200			
Permitted axial load for 20000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	200			
Degree of protection	-			
Lifetime [h]	30000			

(1) These values refer only to the Gearhead. The actual value depends on the motor combination.

(2) These values refer to a speed of the output shaft of n₂=100 r/min on duty cycle KA=1 and S1-mode for electrical machines and T=30°C.

(3) With key, at tumescent load.

(4) Allowable for 30000 revolutions at the output shaft.

(5) Allowed 1000 times.

(6) Allowed operating temperature must be kept; other input speeds on inquiry.

(7) Sound pressure level; distance 1 m; measured on idle running with an input speed of n₁=3000 r/min, ratio=5.

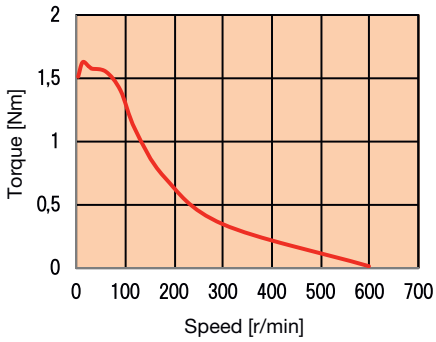
(8) Half way along the output shaft.

(9) With respect to center of output shaft.

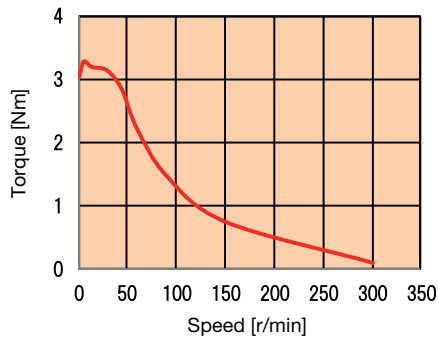
Speed – Torque Characteristics

◇ PKP243D15A2-PLE40 / PKP243D15B2-PLE40 / PKP243D15A2-R2EL-PLE40 / PKP243D15A2-R2FL-PLE40

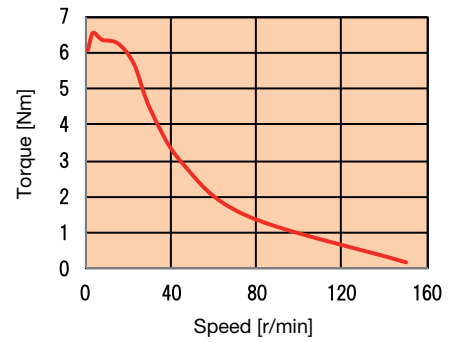
PKP243D15 Gear Ratio 5



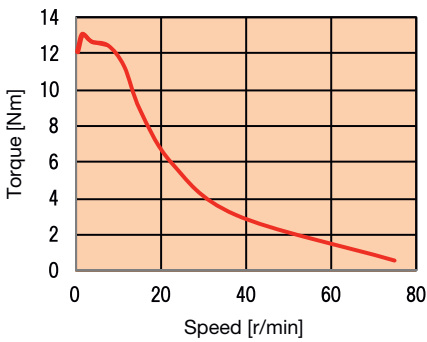
PKP243D15 Gear Ratio 10



PKP243D15 Gear Ratio 20

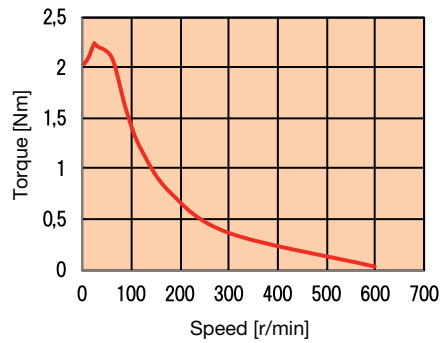


PKP243D15 Gear Ratio 40

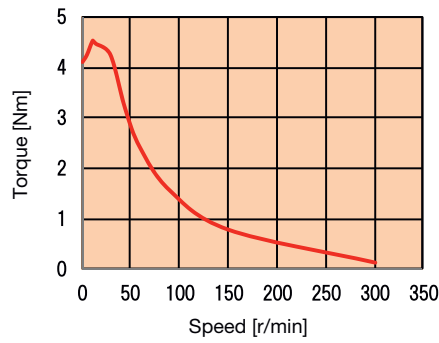


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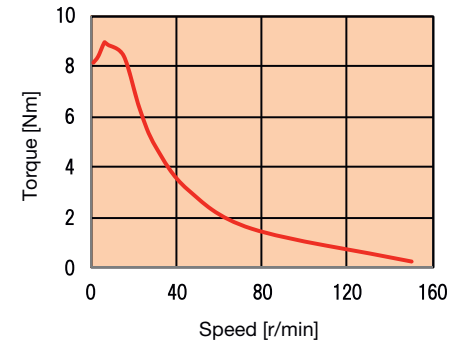
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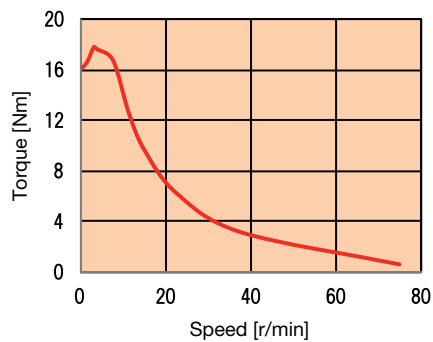
PKP244D15 Gear Ratio 10



PKP244D15 Gear Ratio 20

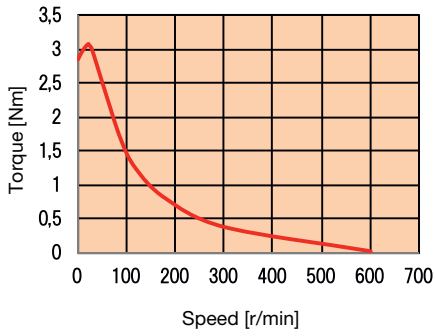


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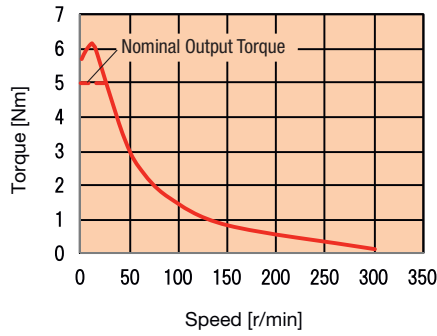


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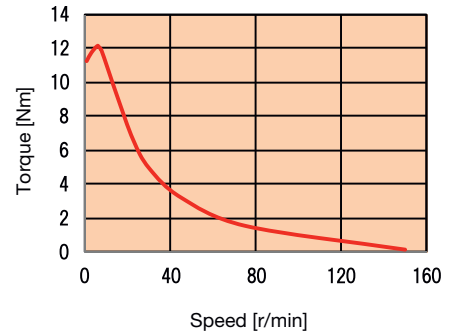
PKP245D15 Gear Ratio 5



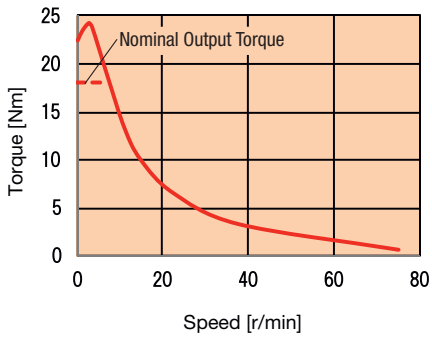
PKP245D15 Gear Ratio 10



PKP245D15 Gear Ratio 20

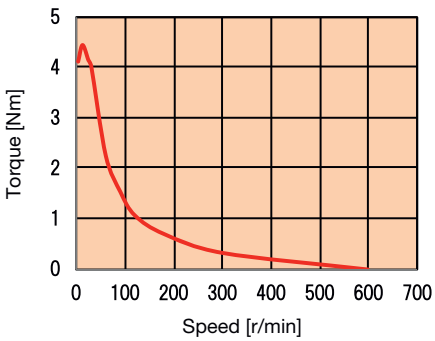


PKP245D15 Gear Ratio 40

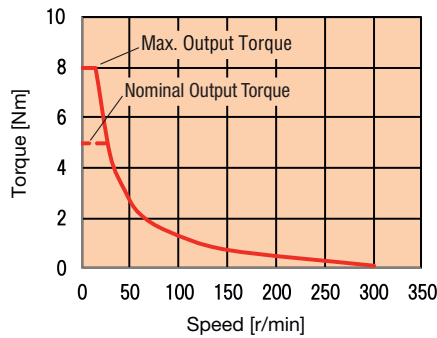


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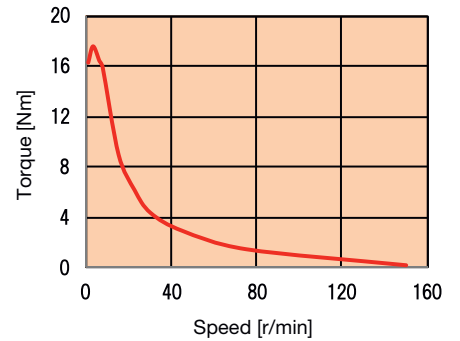
PKP246D15 Gear Ratio 5



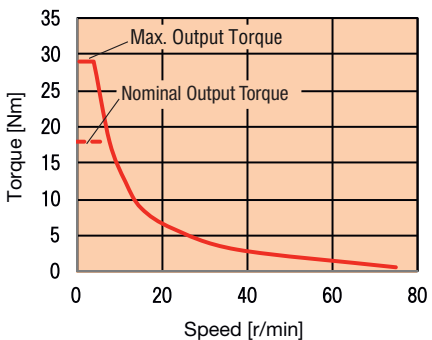
PKP246D15 Gear Ratio 10



PKP246D15 Gear Ratio 20

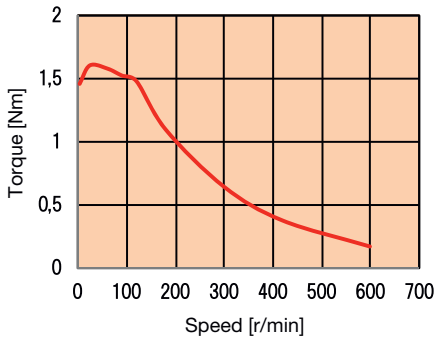


PKP246D15 Gear Ratio 40

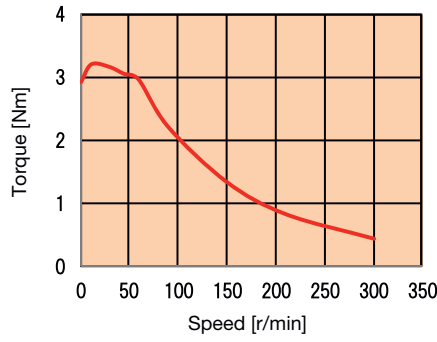


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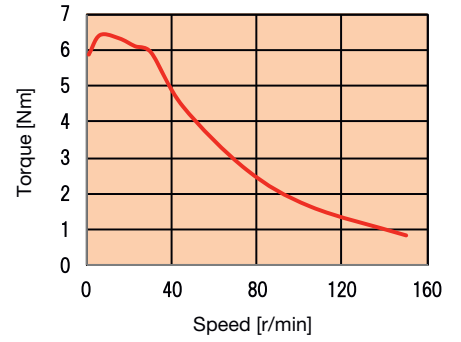
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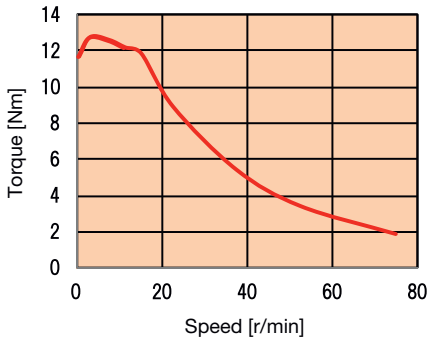
PKP243D23 Gear Ratio 10



PKP243D23 Gear Ratio 20

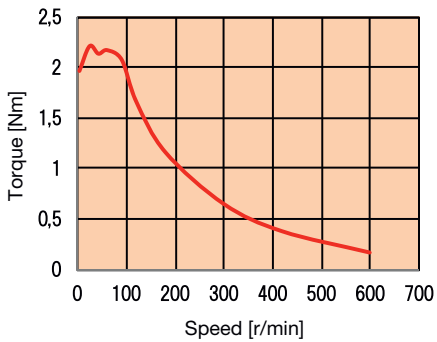


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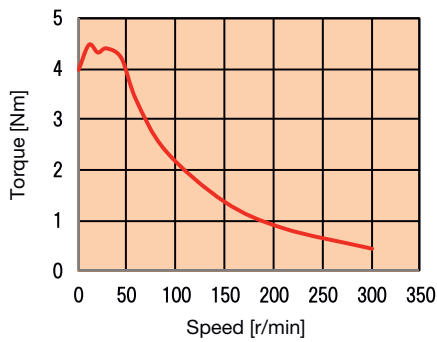


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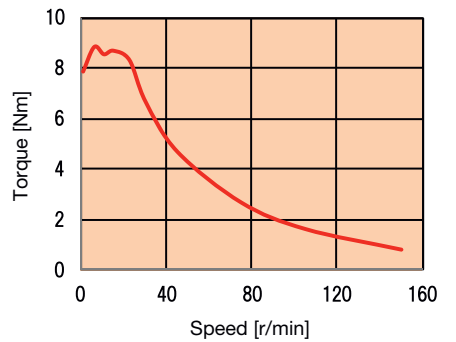
PKP244D23 Gear Ratio 5



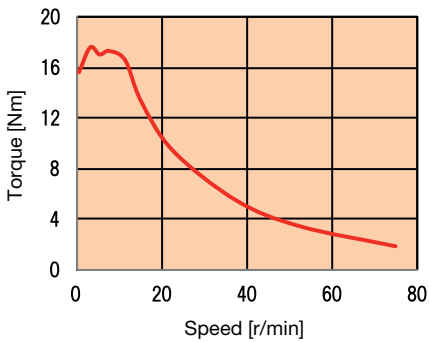
PKP244D23 Gear Ratio 10



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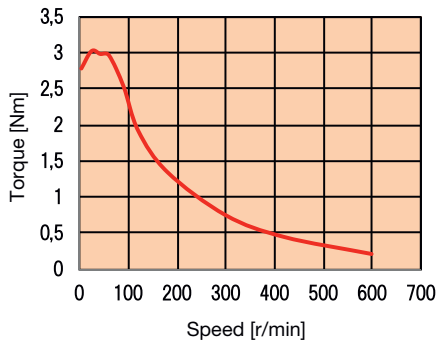


PKP244D23 Gear Ratio 40

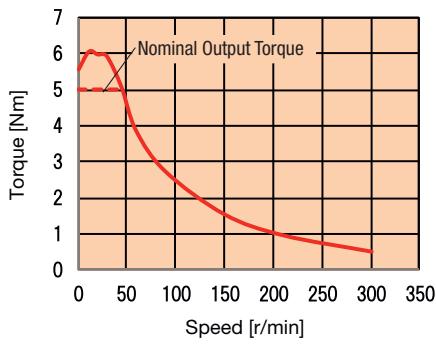


◇ PKP245D23A2-PLE40 / PKP245D23B2-PLE40 / PKP245D23A2-R2EL-PLE40 / PKP245D23A2-R2FL-PLE40

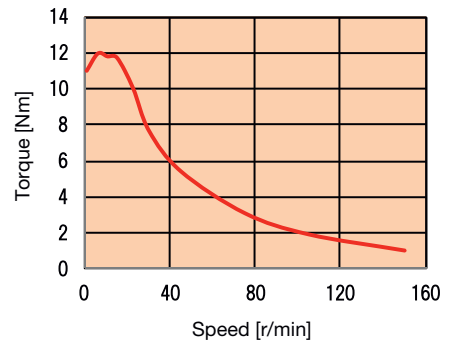
PKP245D23 Gear Ratio 5



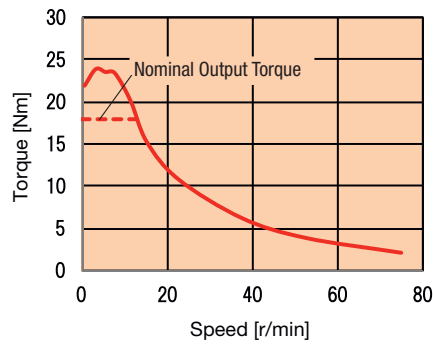
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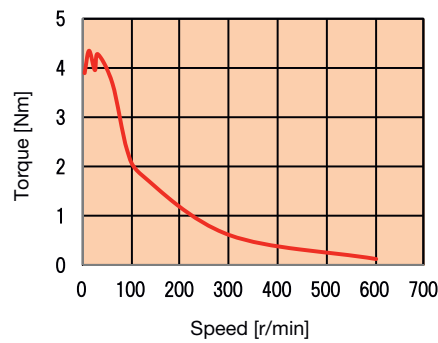


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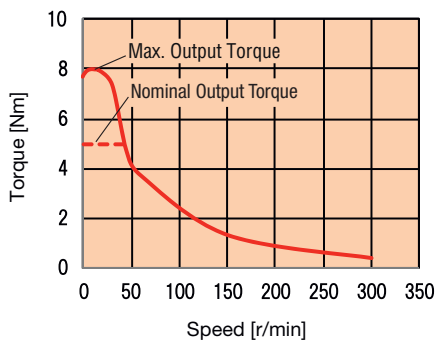


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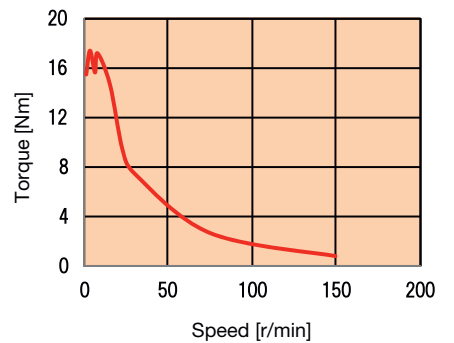
PKP246D23 Gear Ratio 5



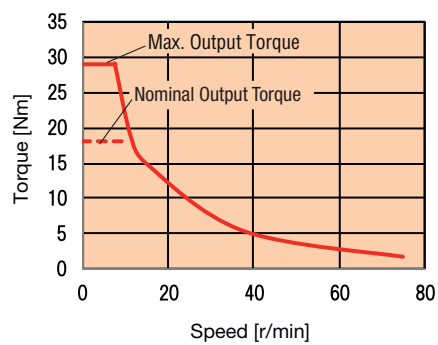
PKP246D23 Gear Ratio 10



PKP246D23 Gear Ratio 20



PKP246D23 Gear Ratio 40



Dimensions for Standard Type (Unit = mm)

Motors

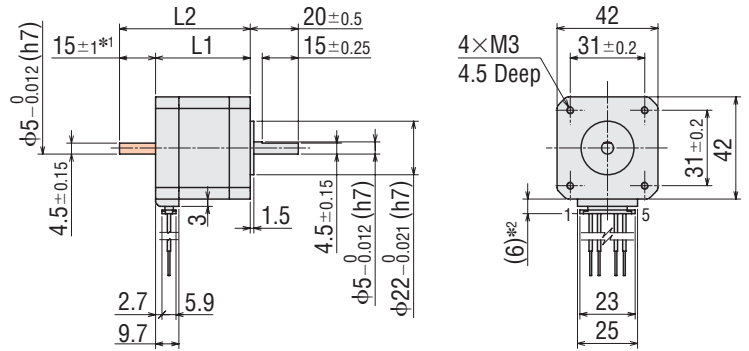
Product Name	L1	L2	Mass [kg]
PKP243D15A2	33	-	0.23
PKP243D15B2		48	
PKP243D23A2		-	
PKP243D23B2		48	
PKP244D15A2	39	-	0.3
PKP244D15B2		54	
PKP244D23A2		-	
PKP244D23B2		54	
PKP245D15A2	47	-	0.37
PKP245D15B2		62	
PKP245D23A2		-	
PKP245D23B2		62	
PKP246D15A2	59	-	0.5
PKP246D15B2		74	
PKP246D23A2		-	
PKP246D23B2		74	

Applicable Connector

Connector Housing: MDF97-5S-3.5C (HIROSE ELECTRIC CO., LTD.)

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

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



* With connection cable

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

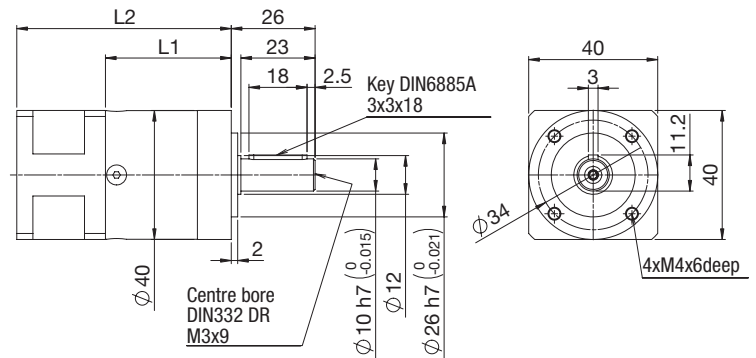
*2 With connection cable

● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded areas.

PLE40 Gearhead

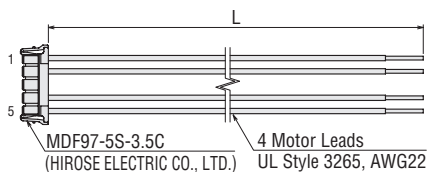
Ratio	L1	L2	Mass [kg]
5,10	39	66.5	0.35
20,40	52	79.5	0.45



Connection Cable (Sold separately)

For Motor

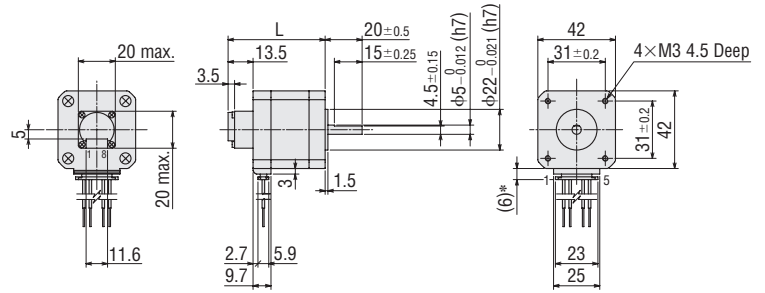
Product Name	Length L [m]
LC2B06E	0.6



Dimensions for Encoder Type (Unit = mm)

Motors

Product Name	L	Mass [kg]
PKP243D15A2-R2EL	46.5	0.24
PKP243D15A2-R2FL		
PKP243D23A2-R2EL		
PKP243D23A2-R2FL		
PKP244D15A2-R2EL	52.5	0.31
PKP244D15A2-R2FL		
PKP244D23A2-R2EL		
PKP244D23A2-R2FL		
PKP245D15A2-R2EL	60.5	0.38
PKP245D15A2-R2FL		
PKP245D23A2-R2EL		
PKP245D23A2-R2FL		
PKP246D15A2-R2EL	72.5	0.51
PKP246D15A2-R2FL		
PKP246D23A2-R2EL		
PKP246D23A2-R2FL		



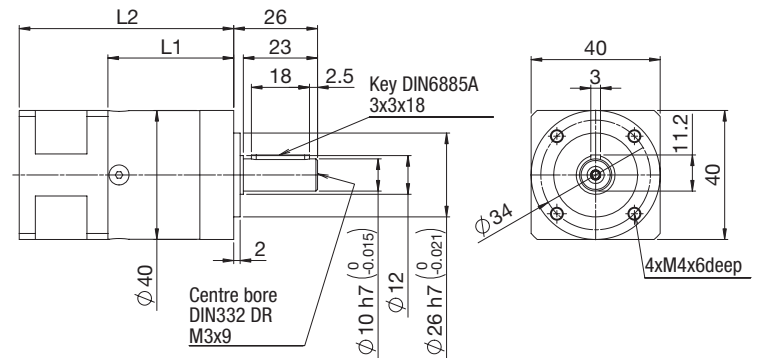
* With connection cable

Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57067-3000

PLE40 Gearhead

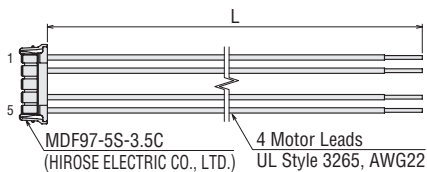
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20,40	52	79.5	0.45



Connection Cable (Sold separately)

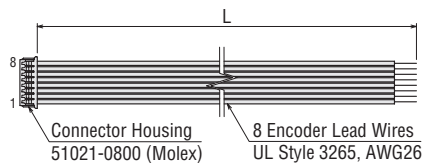
For Motor

Product Name	Length L [m]
LC2B06E	0.6



For Encoder

Product Name	Length L [m]
LCE08A-006	0.6



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

Specifications*

Product Name	Maximum Holding Torque Nm	Rotor Inertia J: kgm ²	Rated Current A/Phase	Voltage VDC	Winding Resistance Ω/Phase	Inductance mH/Phase	Basic Step Angle	Recommended Driver Product Name
PKP264D28□□2	0.74	140×10 ⁻⁷	2.8	1.6	0.57	1.5	1.8°	CVD228BR-K
PKP264D42□□2			4.2	1	0.24	0.65		CVD242BR-K
PKP266D28□□2	1.4	270×10 ⁻⁷	2.8	2.4	0.86	2.9		CVD228BR-K
PKP266D42□□2			4.2	1.6	0.38	1.3		CVD242BR-K
PKP268D28□□2	2.5	500×10 ⁻⁷	2.8	3.4	1.2	4.6		CVD228BR-K
PKP268D42□□2			4.2	2.2	0.53	2		CVD242BR-K

● Either **A** (Single Shaft) or **B** (Double Shaft) indicating the configuration is specified where the box □ is located in the product name.

*There is no difference in specifications between with or without encoder.

PLE60 Gearhead Specifications

Type	PLE60 (1)			
Stage	1		2	
Reduction ratio	5	10	20	40
Backlash [arcmin]	10		12	
Nominal output torque [Nm] ⁽²⁾⁽³⁾	40	15	44	40
Max. output torque [Nm] ⁽²⁾⁽³⁾⁽⁴⁾	64	24	70	64
Emergency stop torque [Nm] ⁽⁵⁾	80	80	88	80
Max. input speed [r/min] ⁽⁶⁾	13000			
Running noise [dB (A)] ⁽⁷⁾	58			
Permitted radial load for 30000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	340			
Permitted axial load for 30000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	450			
Permitted radial load for 20000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	400			
Permitted axial load for 20000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	500			
Degree of protection	-			
Lifetime [h]	30000			

(1) These values refer only to the Gearhead. The actual value depends on the motor combination.

(2) These values refer to a speed of the output shaft of n₂=100 r/min on duty cycle KA=1 and S1-mode for electrical machines and T=30°C.

(3) With key, at tumescent load.

(4) Allowable for 30000 revolutions at the output shaft.

(5) Allowed 1000 times.

(6) Allowed operating temperature must be kept; other input speeds on inquiry.

(7) Sound pressure level; distance 1 m; measured on idle running with an input speed of n₁=3000 r/min, ratio=5.

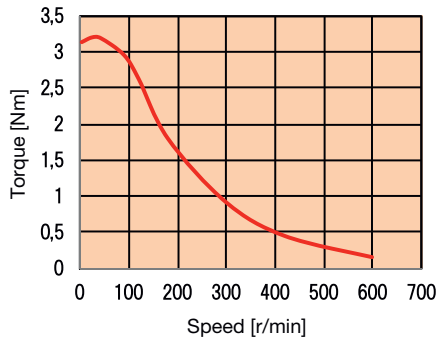
(8) Half way along the output shaft.

(9) With respect to center of output shaft.

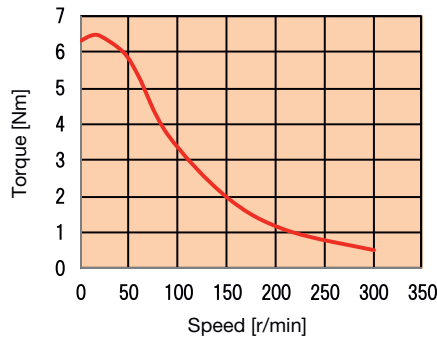
Speed – Torque Characteristics

◇ PKP264D28A2-PLE60 / PKP264D28B2-PLE60 / PKP264D28A2-R2EL-PLE60 / PKP264D28A2-R2FL-PLE60

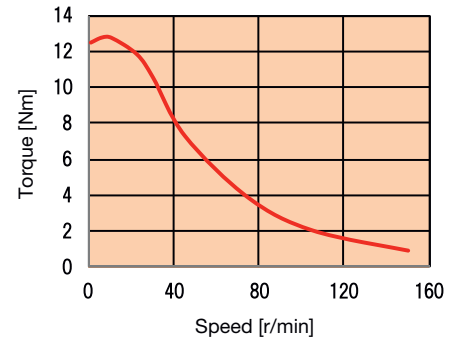
PKP264D28 Gear Ratio 5



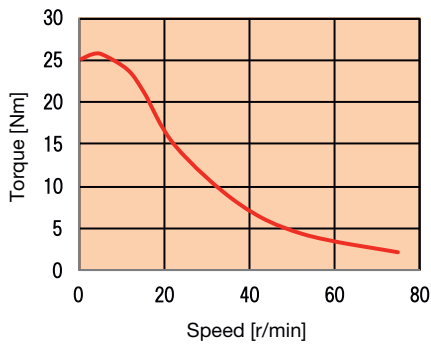
PKP264D28 Gear Ratio 10



PKP264D28 Gear Ratio 20

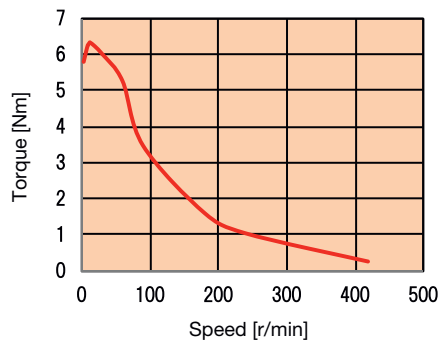


PKP264D28 Gear Ratio 40

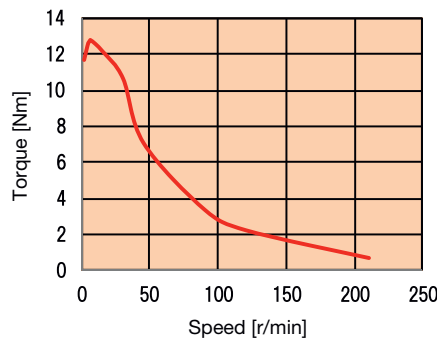


◇ PKP266D28A2-PLE60 / PKP266D28B2-PLE60 / PKP266D28A2-R2EL-PLE60 / PKP266D28A2-R2FL-PLE60

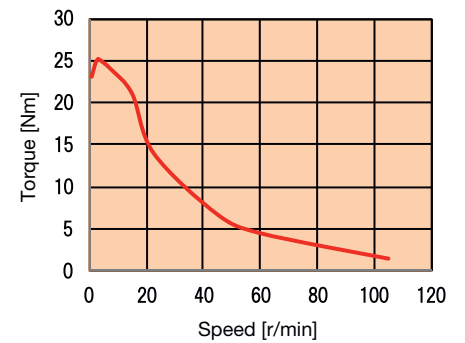
PKP266D28 Gear Ratio 5



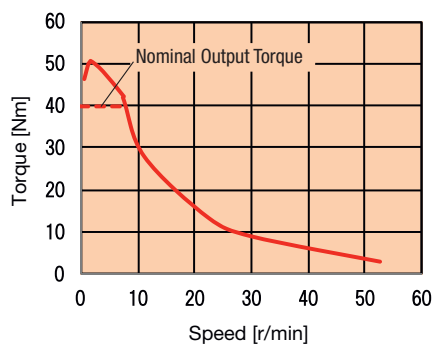
PKP266D28 Gear Ratio 10



PKP266D28 Gear Ratio 20

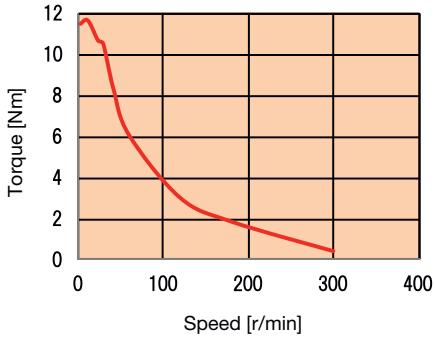


PKP266D28 Gear Ratio 40

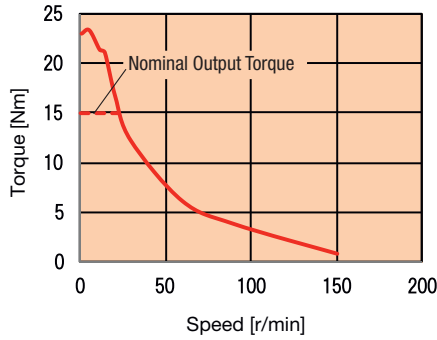


◇ PKP268D28A2-PLE60 / PKP268D28B2-PLE60 / PKP268D28A2-R2EL-PLE60 / PKP268D28A2-R2FL-PLE60

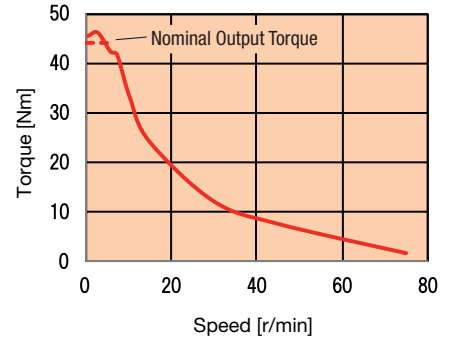
PKP268D28 Gear Ratio 5



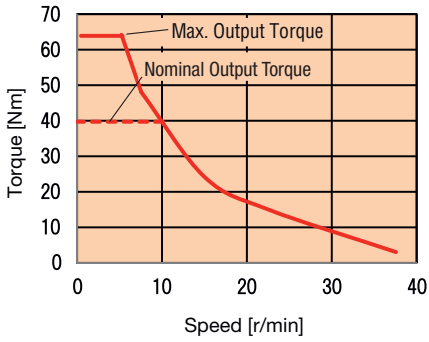
PKP268D28 Gear Ratio 10



PKP268D28 Gear Ratio 20

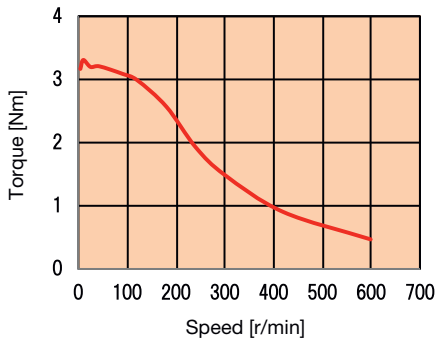


PKP268D28 Gear Ratio 40

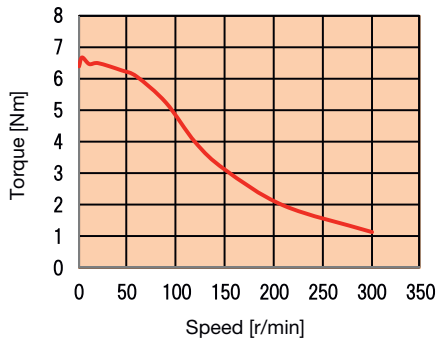


◇ PKP264D42A2-PLE60 / PKP264D42B2-PLE60 / PKP264D42A2-R2EL-PLE60 / PKP264D42A2-R2FL-PLE60

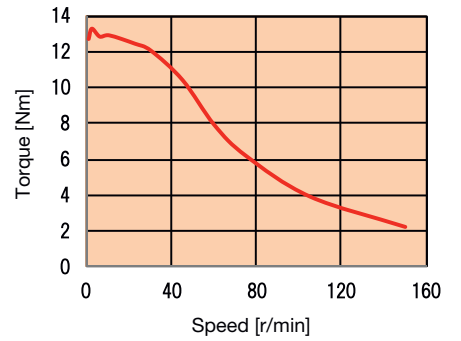
PKP264D42 Gear Ratio 5



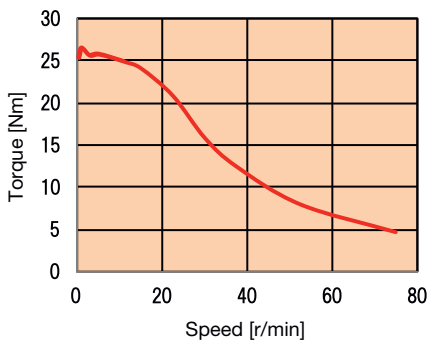
PKP264D42 Gear Ratio 10



PKP264D42 Gear Ratio 20

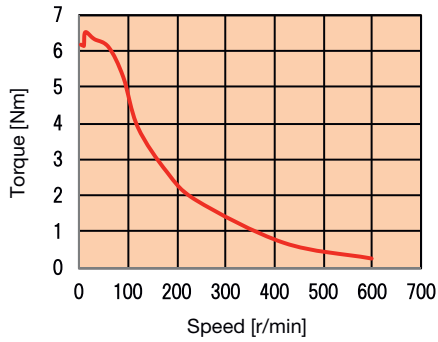


PKP264D42 Gear Ratio 40

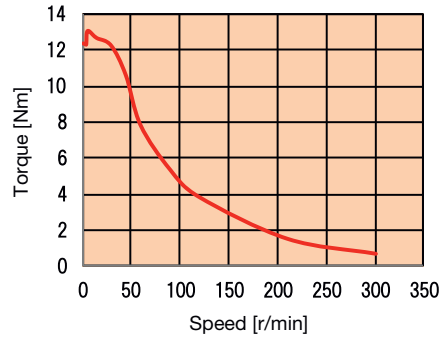


◇ PKP266D42A2-PLE60 / PKP266D42B2-PLE60 / PKP266D42A2-R2EL-PLE60 / PKP266D42A2-R2FL-PLE60

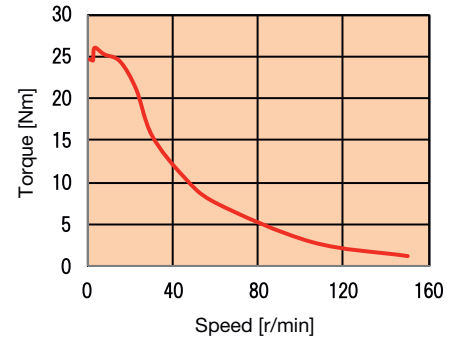
PKP266D42 Gear Ratio 5



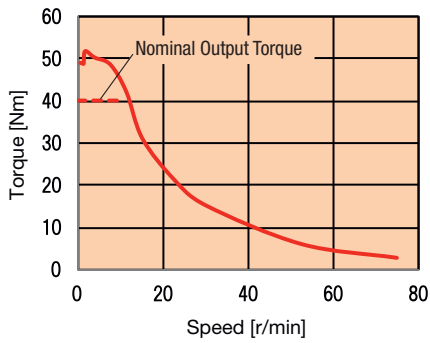
PKP266D42 Gear Ratio 10



PKP266D42 Gear Ratio 20

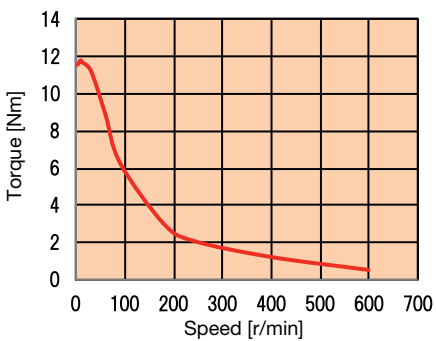


PKP266D42 Gear Ratio 40

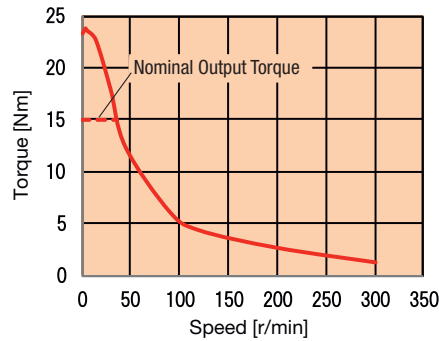


◇ PKP268D42A2-PLE60 / PKP268D42B2-PLE60 / PKP268D42A2-R2EL-PLE60 / PKP268D42A2-R2FL-PLE60

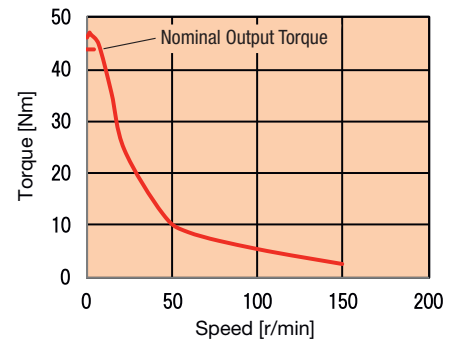
PKP268D42 Gear Ratio 5



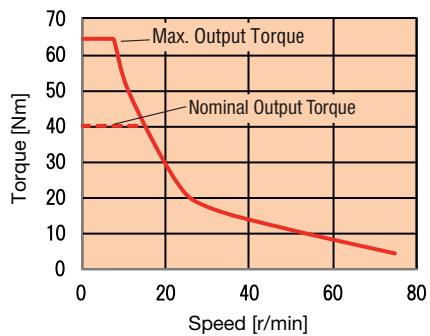
PKP268D42 Gear Ratio 10



PKP268D42 Gear Ratio 20



PKP268D42 Gear Ratio 40



Dimensions for Standard Type (Unit = mm)

Motors

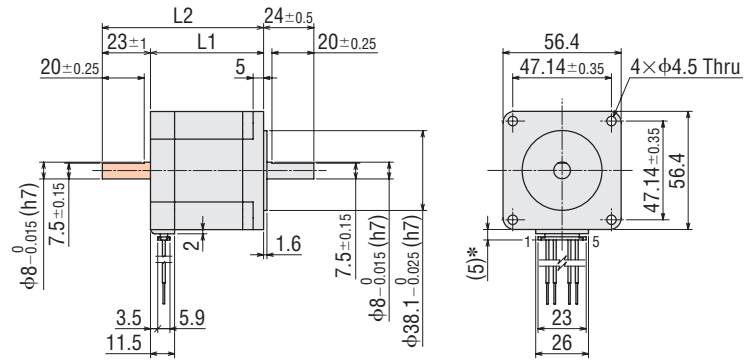
Product Name	L1	L2	Mass [kg]
PKP264D28A2	39	-	0.45
PKP264D28B2		62	
PKP264D42A2		-	
PKP264D42B2		62	
PKP266D28A2	54	-	0.7
PKP266D28B2		77	
PKP266D42A2		-	
PKP266D42B2		77	
PKP268D28A2	76	-	1.1
PKP268D28B2		99	
PKP268D42A2		-	
PKP268D42B2		99	

● Applicable Connector

Connector Housing: MDF97-5S-3.5C (HIROSE ELECTRIC CO., LTD.)

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

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



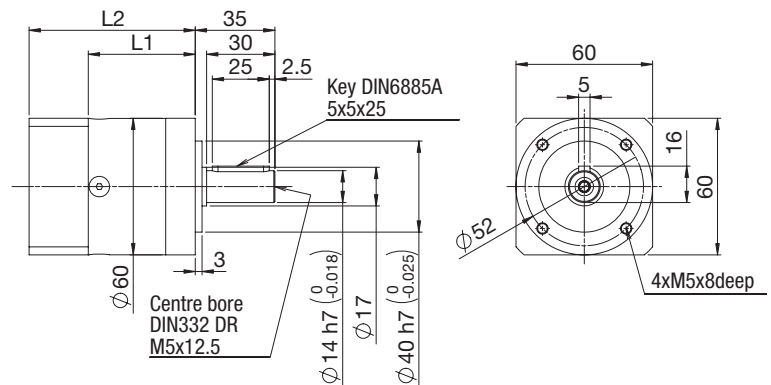
* With connection cable

● These dimensions are for double shaft motors.

For single shaft motors, ignore the shaded (5)* areas.

PLE60 Gearhead

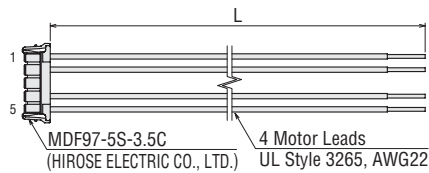
Ratio	L1	L2	Mass [kg]
5, 10	47	73	0.9
20, 40	59.5	85.5	1.1



● Connection Cable (Sold separately)

◇ For Motor

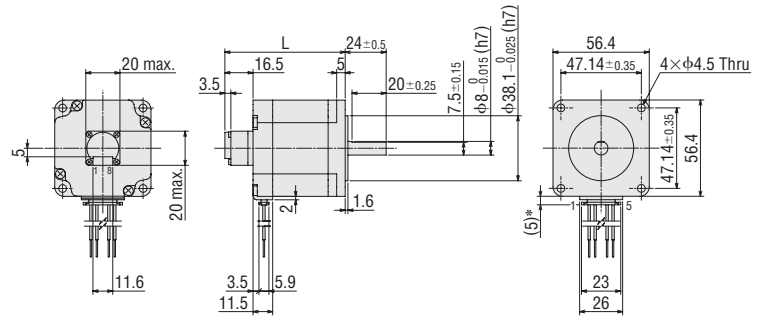
Product Name	Length L [m]
LC2B06E	0.6



■ Dimensions for Encoder Type (Unit = mm)

● Motors

Product Name	L	Mass [kg]
PKP264D28A2-R2EL	55.5	0.45
PKP264D28A2-R2FL		
PKP264D42A2-R2EL		
PKP264D42A2-R2FL		
PKP266D28A2-R2EL	70.5	0.7
PKP266D28A2-R2FL		
PKP266D42A2-R2EL		
PKP266D42A2-R2FL		
PKP268D28A2-R2EL	92.5	1.1
PKP268D28A2-R2FL		
PKP268D42A2-R2EL		
PKP268D42A2-R2FL		

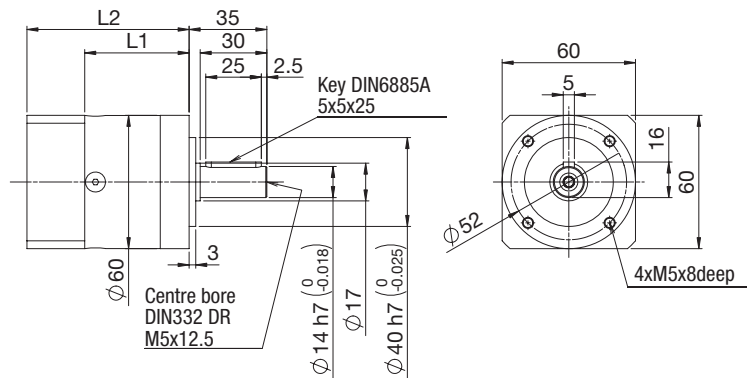


● Applicable Connector

	Motor (HIROSE ELECTRIC CO., LTD.)	Encoder (Molex)
Connector Housing	MDF97-5S-3.5C	51021-0800
Contact	MDF97-22SC	50079-8100
Crimp Tool	HT801/MDF97-22S	57067-3000

● PLE60 Gearhead

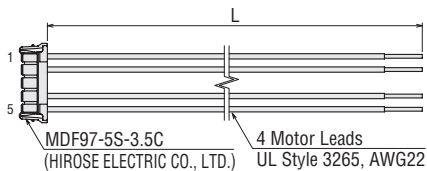
Ratio	L1	L2	Mass [kg]
5, 10	47	73	0.9
20, 40	59.5	85.5	1.1



● Connection Cable (Sold separately)

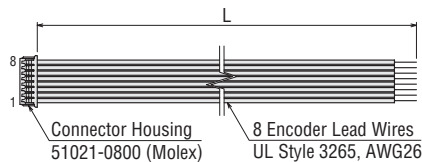
◇ For Motor

Product Name	Length L [m]
LC2B06E	0.6



◇ For Encoder

Product Name	Length L [m]
LCE08A-006	0.6



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

Specifications

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

● Either **A** (Single Shaft) or **B** (Double Shaft) indicating the configuration is specified where the box □ is located in the product name.

PLE80 Gearhead Specifications

Type	PLE80 (1)			
Stage	1		2	
Reduction ratio	5	10	20	40
Backlash [arcmin]	7		9	
Nominal output torque [Nm] ⁽²⁾⁽³⁾	110	38	120	110
Max. output torque [Nm] ⁽²⁾⁽³⁾⁽⁴⁾	176	61	192	176
Emergency stop torque [Nm] ⁽⁵⁾	220	200	240	220
Max. input speed [r/min] ⁽⁶⁾	7000			
Running noise [dB (A)] ⁽⁷⁾	60			
Permitted radial load for 30000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	650			
Permitted axial load for 30000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	900			
Permitted radial load for 20000h (Fa=0) [N] ⁽²⁾⁽⁸⁾	750			
Permitted axial load for 20000h (Fr=0) [N] ⁽²⁾⁽⁹⁾	1000			
Degree of protection	-			
Lifetime [h]	30000			

(1) These values refer only to the Gearhead. The actual value depends on the motor combination.

(2) These values refer to a speed of the output shaft of n₂=100 r/min on duty cycle KA=1 and S1-mode for electrical machines and T=30°C.

(3) With key, at tumescent load.

(4) Allowable for 30000 revolutions at the output shaft.

(5) Allowed 1000 times.

(6) Allowed operating temperature must be kept; other input speeds on inquiry.

(7) Sound pressure level; distance 1 m; measured on idle running with an input speed of n₁=3000 r/min, ratio=5.

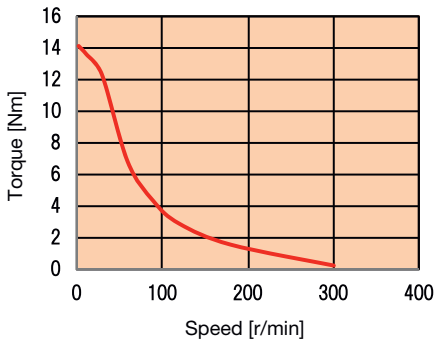
(8) Half way along the output shaft.

(9) With respect to center of output shaft.

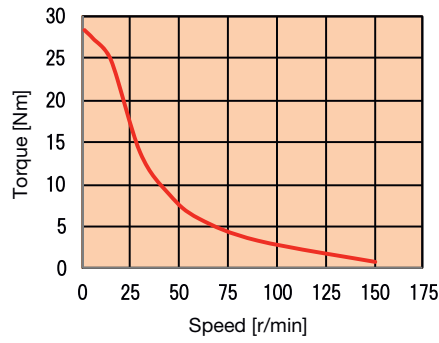
Speed – Torque Characteristics

◇ PKP296D45A-PLE80 / PKP296D45B-PLE80

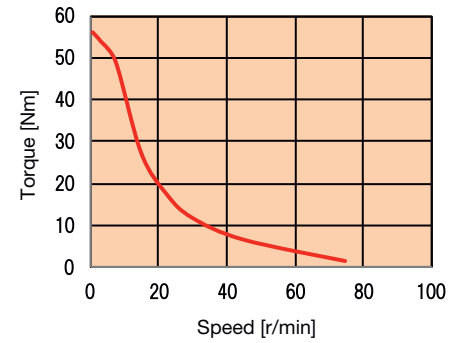
PKP296D45 Gear Ratio 5



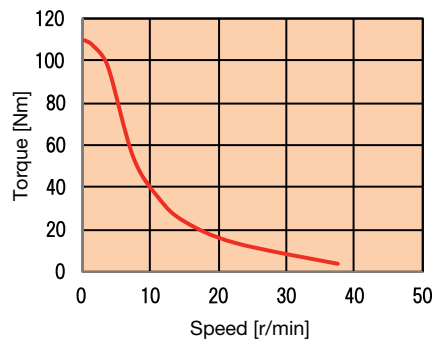
PKP296D45 Gear Ratio 10



PKP296D45 Gear Ratio 20

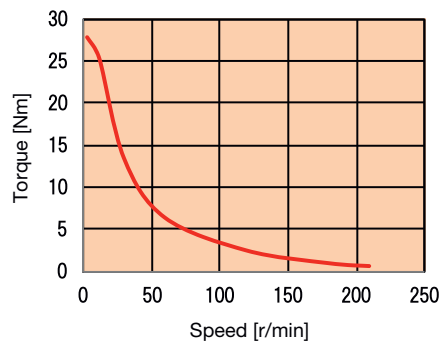


PKP296D45 Gear Ratio 40

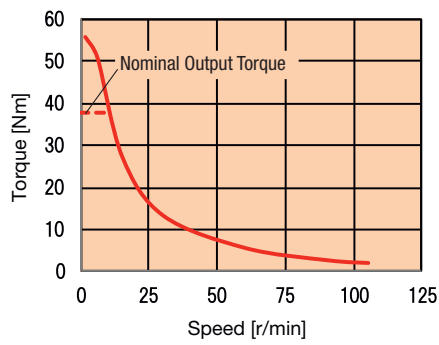


◇ PKP299D45A-PLE80 / PKP299D45B-PLE80

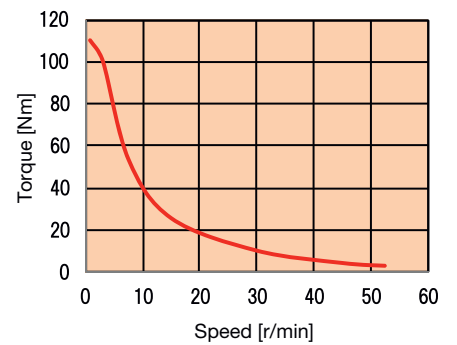
PKP299D45 Gear Ratio 5



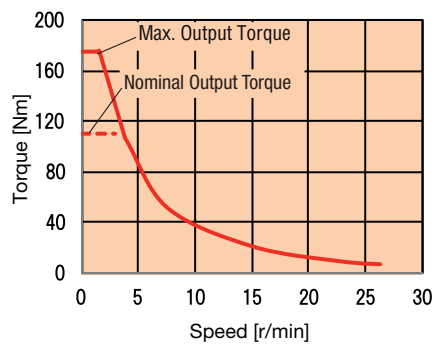
PKP299D45 Gear Ratio 10



PKP299D45 Gear Ratio 20

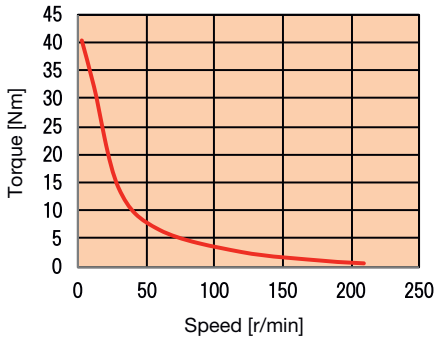


PKP299D45 Gear Ratio 40

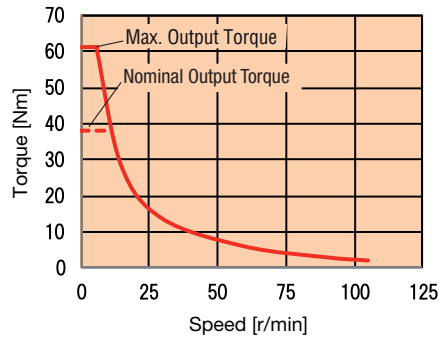


◇ PKP2913D45A-PLE80 / PKP2913D45B-PLE80

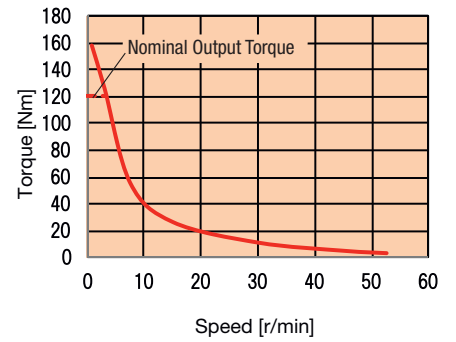
PKP2913D45 Gear Ratio 5



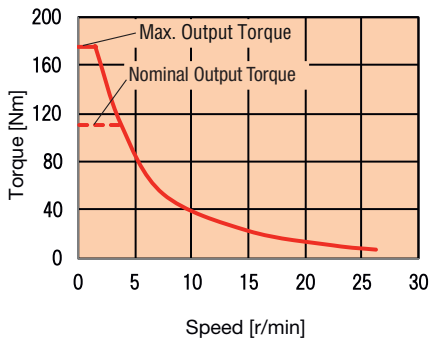
PKP2913D45 Gear Ratio 10



PKP2913D45 Gear Ratio 20

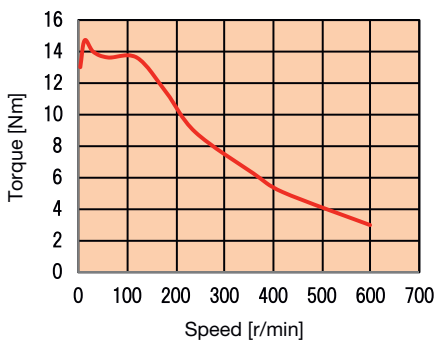


PKP2913D45 Gear Ratio 40

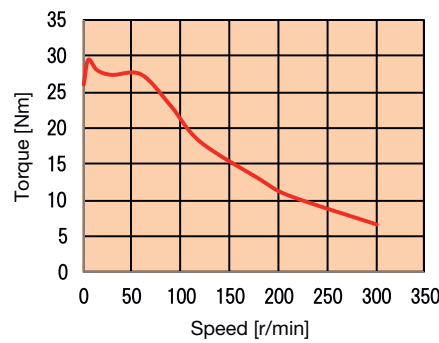


◇ PKP296D63A-PLE80 / PKP296D63B-PLE80

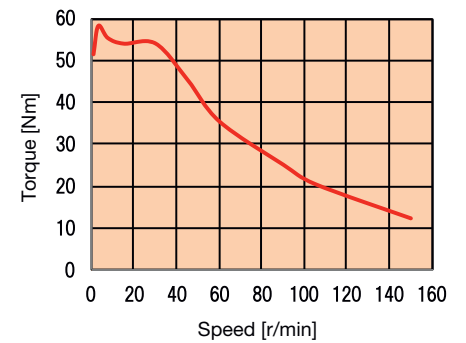
PKP296D63 Gear Ratio 5



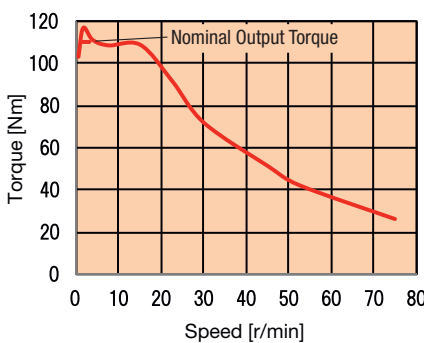
PKP296D63 Gear Ratio 10



PKP296D63 Gear Ratio 20

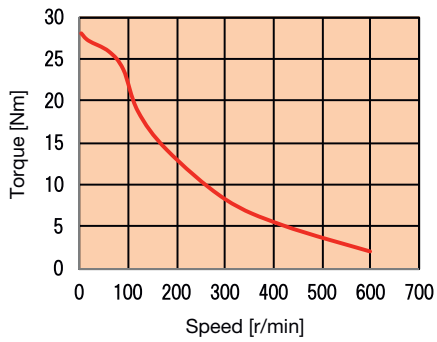


PKP296D63 Gear Ratio 40

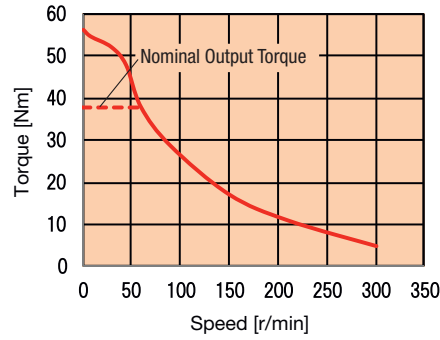


◇ PKP299D63A-PLE80 / PKP299D63B-PLE80

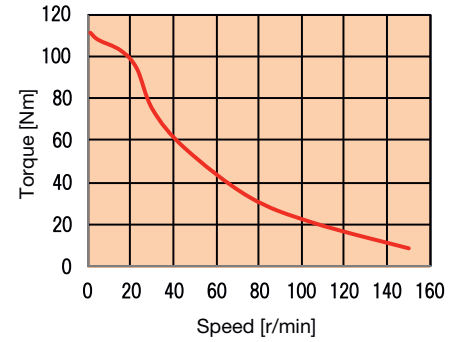
PKP299D63 Gear Ratio 5



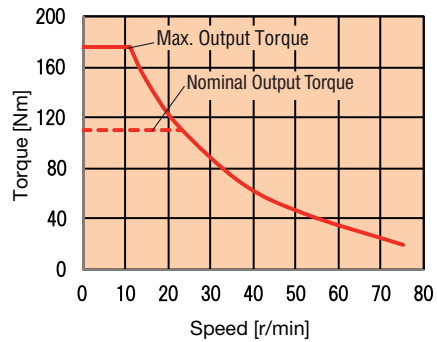
PKP299D63 Gear Ratio 10



PKP299D63 Gear Ratio 20

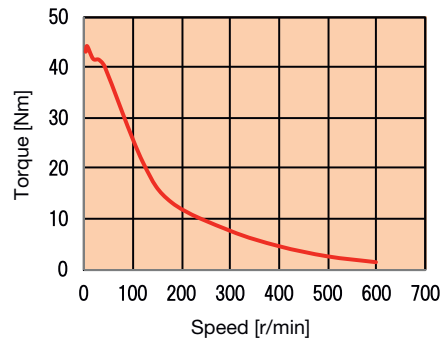


PKP299D63 Gear Ratio 40

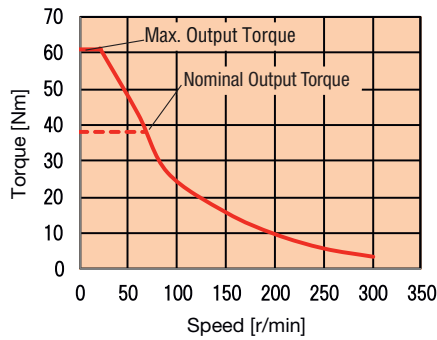


◇ PKP2913D56A-PLE80 / PKP2913D56B-PLE80

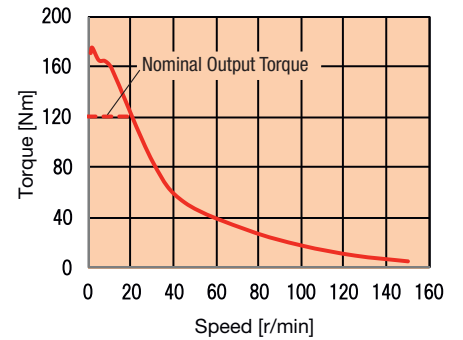
PKP2913D56 Gear Ratio 5



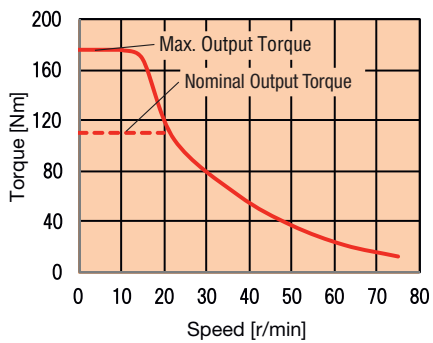
PKP2913D56 Gear Ratio 10



PKP2913D56 Gear Ratio 20



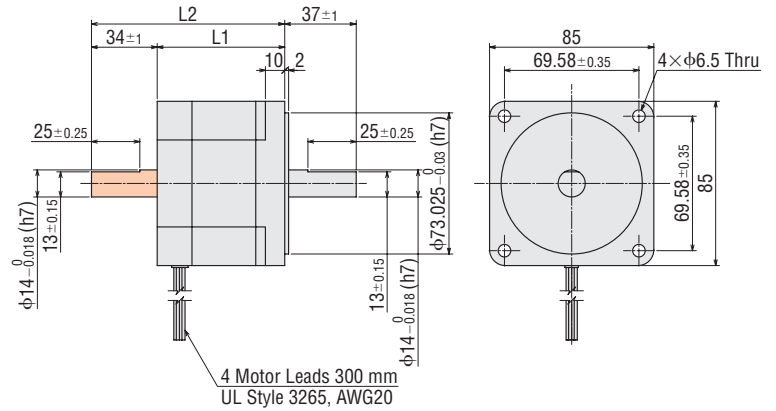
PKP2913D56 Gear Ratio 40



■ Dimensions for Standard Type (Unit = mm)

● Motors

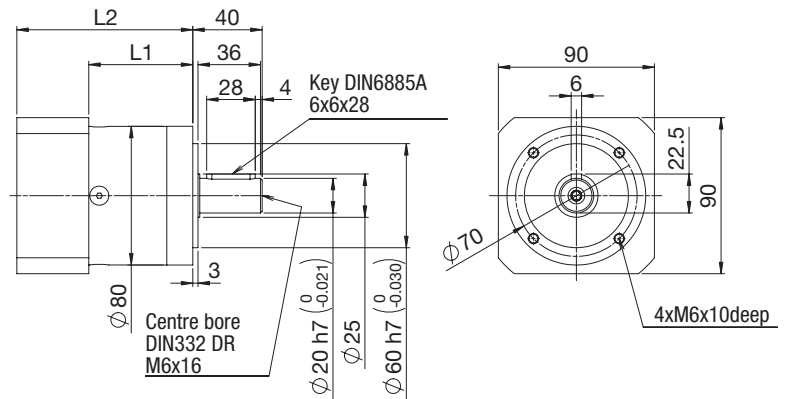
Product Name	L1	L2	Mass [kg]
PKP296D45A	66	-	1.8
PKP296D45B		100	
PKP296D63A		-	
PKP296D63B		100	
PKP299D45A	96	-	2.9
PKP299D45B		130	
PKP299D63A		-	
PKP299D63B		130	
PKP2913D45A	126	-	4
PKP2913D45B		160	
PKP2913D56A		-	
PKP2913D56B		160	



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

● PLE80 Gearhead

Ratio	L1	L2	Mass [kg]
5,10	60	101.5	2.2
20,40	77.5	119	2.7



Price List

● PLE40 Geared Type

Product Name	Ratio
PKP243D15A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D15A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D15A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D15A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D23A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D23A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D23A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D23A2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D15B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D15B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D15B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D15B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D23B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D23B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D23B2- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D23B2- <input type="checkbox"/> -PLE40-	5,10
	20,40

● PLE40 Geared Type with Encoder

Product Name	Ratio
PKP243D15A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D15A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D15A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D15A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D15A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D15A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D15A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D15A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D23A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP243D23A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D23A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP244D23A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D23A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP245D23A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D23A2-R2EL- <input type="checkbox"/> -PLE40-	5,10
	20,40
PKP246D23A2-R2FL- <input type="checkbox"/> -PLE40-	5,10
	20,40

● PLE60 Geared Type

Product Name	Ratio
PKP264D28A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D28A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D28A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D42A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D42A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D42A2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D28B2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D28B2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D28B2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D42B2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D42B2- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D42B2- <input type="checkbox"/> -PLE60-	5,10
	20,40

● PLE60 Geared Type with Encoder

Product Name	Ratio
PKP264D28A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D28A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D28A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D28A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D28A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D28A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D42A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP264D42A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D42A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP266D42A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D42A2-R2EL- <input type="checkbox"/> -PLE60-	5,10
	20,40
PKP268D42A2-R2FL- <input type="checkbox"/> -PLE60-	5,10
	20,40

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

Price List

● PLE80 Geared Type

Product Name	Ratio
PKP296D45A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP299D45A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP2913D45A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP296D63A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP299D63A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP2913D56A-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP296D45B-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP299D45B-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP2913D45B-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP296D63B-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP299D63B-PLE80- <input type="checkbox"/>	5,10
	20,40
PKP2913D56B-PLE80- <input type="checkbox"/>	5,10
	20,40

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

Bipolar Driver (sold separately)

CVD Series

These are DC power supply input drivers for stepper motors. Using the microstep drive function for a low-vibration driver reduces vibration and noise. The driver is equipped with a protective function that enables you to find driver errors early. Running current can be easily set with the digital switch.



Product Number

CVD 2 23 F B R - K

① ② ③ ④ ⑤ ⑥ ⑦

①	Driver Type
②	2 : 1.8° Stepper Motor
③	Rated Current
④	Driver Identification
⑤	Driver Configuration B : With Installation Plate Blank: Without Installation Plate
⑥	Connector Configuration R : Right Angle
⑦	Power Supply Input K : DC Power Supply

Product Line

Bipolar Driver for 1.8° Stepper Motor

◇ Right Angle Type with Installation Plate

Product Name
CVD223FBR-K
CVD228BR-K
CVD242BR-K
CVD245BR-K

Included

Type	Connector for Driver Connection	Operating manual
Common to All Types	For CN1 (1 Piece) For CN2 (1 Piece) For CN3 (1 Piece)	1 set

Accessories (sold separately)

Circuit Product Cover

This is a protection cover to prevent contact with the circuit board. Available for the right angle type driver with an installation plate.

Product Line

Material: Resin

Product Name	Applicable Drivers
PADC-CVD	CVD223FBR-K, CVD228BR-K, CVD242BR-K, CVD245BR-K,



<Application Example>

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. This catalogue was published in June 2024.

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