

Standard AC Motors

Constant Speed Motors

Induction Motors

Induction Motors

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Introduction

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

V Series

TM Series Torque Motors

Torque Motors

Watertight, Dust-Resistant Motors

Right-Angle Gearheads

Brake Pack

Accessories

Installation

Features and Types of Induction Motors

Features of Induction Motors

● Optimal for Uni-Directional and Continuous Operation

These products are ideal for uni-directional continuous applications such as driving a conveyor.

● Easy Operation

All you need is to connect a capacitor and plug the motor into an AC power supply, and the motor can be easily operated. (No capacitor is needed for a three-phase motor.)


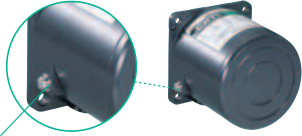

● Wide Variety of Products

The product lineup includes the World **K** Series and **BH** Series. We have models with motor outputs ranging from 6 W to 200 W, so you can surely find one that meets your specific application. In addition, products that conform to various safety standards as well as the RoHS Directive are also available.

● Available to Combine with Various Gearheads

Combination with a gearhead allows the motor to slow down to a required speed or generate higher torque.

Types of Induction Motors

Series Name	Features, Lineup									
<p>World K Series</p>  <p>cRU^{us} CCC CE</p>	<ul style="list-style-type: none"> ● Conforms to Major Safety Standards All World K Series models have a built-in overheat protection device and conform to various safety standards. ● Applicable Standards UL/CSA Standards Certified under the China Compulsory Certification System (CCC System) CE Marking (Low Voltage Directive) ● Motor Overheat Protection Device Thermal protector, Impedance protected ● Conforms to Global Power Supply Voltages Our products support the power supply voltages used in many countries around the world, and they are readily available across the globe. ● IP65 Terminal Box Type Introducing new motors with terminal box conforming to IP65 rating for degree of protection. The terminal box provided at the back of the motor has an easy-to-wire construction. 	<ul style="list-style-type: none"> ● Twice the Motor Bearing Life (Compared with a conventional model) A motor's life is determined by its bearing. We adopted high-performance bearing grease to lubricate this important component. Life is twice as long as a conventional model ● Protective Earth Terminal on Motor  <p>Protective Earth Terminal</p> <ul style="list-style-type: none"> ● Lineup <table border="1" data-bbox="975 1131 1449 1319"> <tr> <td>Frame Size</td> <td>□60 mm~□90 mm</td> </tr> <tr> <td>Output Power</td> <td>Lead Wire Type: 6 W~90 W Terminal Box Type: 6 W~90 W IP65 Terminal Box Type: 6 W~40 W 2-Pole, High-Speed Type: 40 W~150 W</td> </tr> <tr> <td>Voltage</td> <td>Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC</td> </tr> </table>	Frame Size	□60 mm~□90 mm	Output Power	Lead Wire Type: 6 W~90 W Terminal Box Type: 6 W~90 W IP65 Terminal Box Type: 6 W~40 W 2-Pole, High-Speed Type: 40 W~150 W	Voltage	Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC		
Frame Size	□60 mm~□90 mm									
Output Power	Lead Wire Type: 6 W~90 W Terminal Box Type: 6 W~90 W IP65 Terminal Box Type: 6 W~40 W 2-Pole, High-Speed Type: 40 W~150 W									
Voltage	Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC									
<p>BH Series</p>  <p>cRU^{us} CCC CE</p>	<ul style="list-style-type: none"> ● Smallest Frame Size among 200 W Output Power Achieves a high-output power of 200 W with a frame size of 104 mm. ● Right-Angle Shaft Type Employing Hypoid Gear is Available ● "Combination Type" for Easy Mounting The combination type is available with the motor and its gearhead pre-mounted. This enables easy mounting in equipment. ● Conforms to the Safety Standards and Supports the Power Supply Voltages Used in Many Countries Around the World 	<ul style="list-style-type: none"> ● Tapped Hole at the Shaft End The gearhead shaft features a tapped hole for convenient connection with loads. ● Lineup <table border="1" data-bbox="975 1487 1449 1675"> <tr> <td>Frame Size</td> <td>□104 mm</td> </tr> <tr> <td>Output Power</td> <td>200 W</td> </tr> <tr> <td>Type</td> <td>Right-Angle Shaft, Hollow Shaft; Right-Angle Shaft, Solid Shaft; Parallel Shaft, Round Shaft</td> </tr> <tr> <td>Voltage</td> <td>Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC</td> </tr> </table>	Frame Size	□104 mm	Output Power	200 W	Type	Right-Angle Shaft, Hollow Shaft; Right-Angle Shaft, Solid Shaft; Parallel Shaft, Round Shaft	Voltage	Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC
Frame Size	□104 mm									
Output Power	200 W									
Type	Right-Angle Shaft, Hollow Shaft; Right-Angle Shaft, Solid Shaft; Parallel Shaft, Round Shaft									
Voltage	Single-Phase 220/230 VAC, Three-Phase 200/220/230 VAC, Three-Phase 380/400/415 VAC									

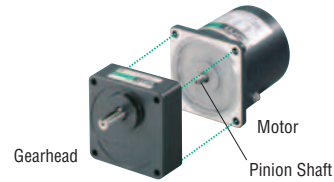
Features of Gearheads

Easy Speed Reduction and Torque Increase

Combination with a gearhead allows the motor to slow down to a required speed or generate higher torque.


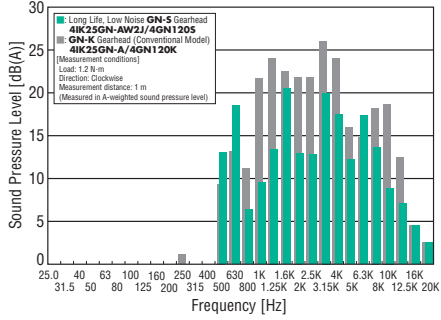

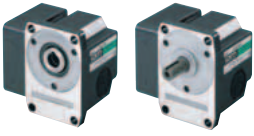
Wide Variety of Products

Gearheads come in various types including the long life, low noise gearhead and right-angle gearhead. Most gearheads are available with 20 different gear ratios from 1:3 to 1:180.



- Gearheads can be used with pinion shaft type motors.
- World **K** Series gearheads are sold separately.
- The **BH** Series is a combination type that comes with the gearhead pre-assembled.

Gearhead Types

Types	Features
<p>Long Life, Low Noise GN-S Gearhead</p> 	<ul style="list-style-type: none"> ● Long Rated Life of 10000 Hours* The GN-S gearhead achieves a long rated life of 10000 hours, twice the level of a conventional gearhead, by adopting a large, specially designed bearing and reinforced gears. *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35. ● Low Noise Design The GN-S gearhead generates less noise thanks to gears with a special shape and surface machining assembled with the use of advanced technology. ● Applicable Products 6 W, 15 W, 25 W or 40 W GN pinion motor 
<p>Long Life GE-S Gearhead</p> 	<ul style="list-style-type: none"> ● Long Rated Life of 10000 Hours* The GE-S gearhead achieves a long rated life of 10000 hours, twice the level of a conventional gearhead, by adopting a large, specially designed bearing and reinforced gears. *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35. ● The GE-S gearhead comes with a tapped hole at the tip of the shaft. ● Applicable Products 60 W or 90 W GE pinion motor
<p>Right-Angle Gearheads → Page C-213</p> 	<ul style="list-style-type: none"> ● Ideal for Space Saving The output shaft of the gearhead is perpendicular to the motor shaft, enabling space saving. ● Hollow Shaft Type and Solid Shaft Type are Available Select the type that best suits your specific application. ● The GE pinion solid shaft type comes with a tapped hole at the shaft end. ● Applicable Products World K Series 25 W, 40 W, 60 W or 90 W Pinion Motor

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque, 10,000 hours* of life and quiet operation. For more details on **V** Series see page C-149.

*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Types of Induction Motors

Series	Frame Size (mm), Output Power		□60		□70		□80			□90			□104
	Voltage (VAC)	Type	6 W	15 W	25 W	40 W	60 W	40 W	60 W	90 W	150 W	200 W	
World K Series	Single-Phase 220/230	Lead Wire	●	●	●				●	●	●		
		Terminal Box	●	●	●				●	●	●		
	Three-Phase 200/220/230	Lead Wire	●	●	●				●	●	●		
		Terminal Box	●	●	●				●	●	●		
	Three-Phase 380/400/415	Lead Wire			●				●	●	●		
		Terminal Box			●				●	●	●		
2-Pole, High-Speed Type	Single-Phase 220/230	Lead Wire				●	●		●	●	●		
	IP65 Terminal Box Type	Single-Phase 220/230	Terminal Box	●	●	●			●				
		Three-Phase 200/220/230	Terminal Box	●	●	●			●				
	BH Series	Single-Phase 220/230	Terminal Box										●
Three-Phase 200/220/230		Terminal Box										●	
Three-Phase 380/400/415		Terminal Box										●	

Types of Gearheads


Gearheads			Applicable Motor			Rated Life* (hours)	Low Noise
Type of Gearhead	Type of Pinion	Series Name	Output Power	Type of Pinion			
Parallel Shaft	Long Life, Low Noise GN-S Gearhead	GN Type Pinion Shaft	World K Series	6 W~40 W	GN Type Pinion Shaft	10000	●
	Long Life GE-S Gearhead	GE Type Pinion Shaft	World K Series	60 W, 90 W	GE Type Pinion Shaft	10000	
Right-Angle Shaft	Hollow Shaft Gearhead	GN Type Pinion Shaft	World K Series	25 W, 40 W	GN Type Pinion Shaft	5000	
		GE Type Pinion Shaft	World K Series	60 W, 90 W	GE Type Pinion Shaft	5000	
	Solid Shaft Gearhead	GN Type Pinion Shaft	World K Series	25 W, 40 W	GN Type Pinion Shaft	5000	
		GE Type Pinion Shaft	World K Series	60 W, 90 W	GE Type Pinion Shaft	5000	

*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.

System Configuration

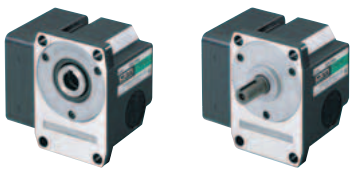
Gearheads (Sold separately)

Parallel Shaft Gearheads (→ Page C-21)




Right-Angle Gearheads (→ Page C-213)

Hollow Shaft Type Solid Shaft Type



Induction Motors

Motor (Pinion shaft)




AC Power Supply (Main power supply)

Capacitor Cap (Included)


Capacitor (Included)

Peripheral Equipment (Sold separately)


① Brake Pack **SB50W**
(→ Page C-229)




② Inverters **FE100/FE200**
(→ Page D-136)



Accessories (Sold separately)



③ Mounting Brackets
(→ Page C-240)



④ Flexible Couplings
(→ Page C-245)

Number	Name	Overview
①	Brake Pack	Use the brake pack to stop the motor instantaneously, perform bi-directional operation, and for other applications.
②	Inverters	Combine this inverter with a three-phase motor for easy speed control. It comes equipped with a digital display.
③	Mounting Brackets	Dedicated mounting bracket for the motor and gearhead.
④	Flexible Couplings	Clamp type coupling for connecting the motor/gearhead shaft with the driven shaft.

System Configuration Example



● Gearheads cannot be combined with round shaft type motors.

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

Product Number Code

World K Series

5 I K 40 GN - CW 2 T E

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Motor Frame Size	2: 60 mm 3: 70 mm 4: 80 mm 5: 90 mm
②	Motor Type	I: Induction Motor
③	Series Name	K: K Series
④	Output Power (W)	(Example) 40: 40 W
⑤	Motor Shaft Type, Type of Pinion	A: Round Shaft GN: GN Type Pinion GE: GE Type Pinion
⑥	Power Supply Voltage and Number of Poles	AW: Single-Phase 100 VAC, 110/115 VAC 4 Poles BW: Single-Phase 100 VAC, 110/115 VAC 2 Poles CW: Single-Phase 200 VAC, 220/230 VAC 4 Poles DW: Single-Phase 200 VAC 220/230 VAC 2 Poles SW: Three-Phase 200/220/230 VAC 4 Poles TW: Three-Phase 200/220/230 VAC 2 Poles UW: Three-Phase 380/400/415 VAC 4 Poles
⑦	2, 3: RoHS Directive-Compliant	
⑧	T, T2, B: Terminal Box Type	
⑨	Included Capacitor	J: Capacitor for Single-Phase 100 VAC and 200 VAC U: Capacitor for Single-Phase 110/115 VAC E: Capacitor for Single-Phase 220/230 VAC Blank: Three-Phase

● The product name listed on the motor nameplate does not include the code (**J**, **U** and **E**) that indicates the type of capacitor. Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu. (Example) Product Name: **5IK40GN-CW2E** → Motor nameplate and product approved under various safety standards: **5IK40GN-CW2**

Gearheads

5 GN 50 S

① ② ③ ④

①	Gearhead Frame Size	2: 60 mm 3: 70 mm 4: 80 mm 5: 90 mm
②	Type of Pinion	GN: GN Type Pinion GE: GE Type Pinion
③	Gear Ratio	(Example) 50: Gear Ratio of 1:50 10X denotes the decimal gearhead of gear ratio 1:10
④	GN Type Pinion	S: Long Life, Low Noise GN-S Gearhead RH: Right-Angle Shaft, Hollow Shaft Gearhead RA: Right-Angle Shaft, Solid Shaft Gearhead
	GE Type Pinion	S: Long Life GE-S Gearhead RH: Right-Angle Shaft, Hollow Shaft Gearhead RA: Right-Angle Shaft, Solid Shaft Gearhead

World K Series IP65 Terminal Box Type

4 I K 25 E B - 18 S S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Motor Frame Size	2: 60 mm 3: 70 mm 4: 80 mm 5: 90 mm
②	Motor Type	I: Induction Motor
③	Series Name	K: K Series
④	Output Power (W)	(Example) 25: 25 W
⑤	Power Supply Voltage	A: Single-Phase 100 VAC F: Single-Phase 110/115 VAC C: Single-Phase 200 VAC E: Single-Phase 220/230 VAC S: Three-Phase 200/220/230 VAC
⑥	B: Terminal Box Type	
⑦	Gear Ratio	Number: Gear Ratio of Combination Type
⑧	Gearhead Type (Combination type only)	S: Parallel Shaft
⑨	Thermal Protector Specifications	Blank: Automatic Return Type S: Signal Type

BH Series

BH I 6 2 E T - 100 RH

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series Name	BH: BH Series
②	Motor Type	I: Induction Motor
③	Motor Frame Size	6: 104 mm
④	Output Power (W)	2: 200 W
⑤	Power Supply Voltage	A: Single-Phase 100 VAC F: Single-Phase 110/115 VAC C: Single-Phase 200 VAC E: Single-Phase 220/230 VAC S: Three-Phase 200/220/230 VAC U: Three-Phase 380/400/415 VAC
⑥	Blank: Cable Type T, T2: Terminal Box Type	
⑦	Gear Ratio, Motor Shaft Type	A: Round Shaft Number: Gear Ratio of Combination Type
⑧	Gearhead Type (Combination type only)	RH: Right-Angle Shaft, Hollow Shaft Type RA: Right-Angle Shaft, Solid Shaft Type Blank: Parallel Shaft

Variation of Induction Motors

World K Series

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇ 1 W, 3 W

Power Supply Voltage	Type	Lead Wire Type (1 W)		Lead Wire Type (3 W)	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		0IK1GN-AW2J	0IK1A-AW2J	0IK3GN-BW2J	0IK3A-BW2J
Single-Phase 110/115 VAC		0IK1GN-AW3U	0IK1A-AW3U	0IK3GN-BW3U	0IK3A-BW3U
Single-Phase 200 VAC		0IK1GN-CW2J	0IK1A-CW2J	0IK3GN-DW2J	0IK3A-DW2J

◇ 6 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		2IK6GN-AW2J	2IK6A-AW2J	2IK6GN-AW2BJ	2IK6A-AW2BJ
Single-Phase 110/115 VAC		2IK6GN-AW2U	2IK6A-AW2U	2IK6GN-AW2BU	2IK6A-AW2BU
Single-Phase 200 VAC		2IK6GN-CW2J	2IK6A-CW2J	2IK6GN-CW2BJ	2IK6A-CW2BJ
Single-Phase 220/230 VAC		2IK6GN-CW2E	2IK6A-CW2E	2IK6GN-CW2BE	2IK6A-CW2BE
Three-Phase 200/220/230 VAC		2IK6GN-SW2	2IK6A-SW2	2IK6GN-SW2B	2IK6A-SW2B

◇ 15 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		3IK15GN-AW2J	3IK15A-AW2J	3IK15GN-AW2BJ	3IK15A-AW2BJ
Single-Phase 110/115 VAC		3IK15GN-AW2U	3IK15A-AW2U	3IK15GN-AW2BU	3IK15A-AW2BU
Single-Phase 200 VAC		3IK15GN-CW2J	3IK15A-CW2J	3IK15GN-CW2BJ	3IK15A-CW2BJ
Single-Phase 220/230 VAC		3IK15GN-CW2E	3IK15A-CW2E	3IK15GN-CW2BE	3IK15A-CW2BE
Three-Phase 200/220/230 VAC		3IK15GN-SW2	3IK15A-SW2	3IK15GN-SW2B	3IK15A-SW2B

◇ 25 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		4IK25GN-AW2J	4IK25A-AW2J	4IK25GN-AW2TJ	4IK25A-AW2TJ
Single-Phase 110/115 VAC		4IK25GN-AW2U	4IK25A-AW2U	4IK25GN-AW2TU	4IK25A-AW2TU
Single-Phase 200 VAC		4IK25GN-CW2J	4IK25A-CW2J	4IK25GN-CW2TJ	4IK25A-CW2TJ
Single-Phase 220/230 VAC		4IK25GN-CW2E	4IK25A-CW2E	4IK25GN-CW2TE	4IK25A-CW2TE
Three-Phase 200/220/230 VAC		4IK25GN-SW2	4IK25A-SW2	4IK25GN-SW2T	4IK25A-SW2T
Three-Phase 380/400/415 VAC		4IK25GN-UW2	4IK25A-UW2	4IK25GN-UW2T2	4IK25A-UW2T2

◇ 40 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		5IK40GN-AW2J	5IK40A-AW2J	5IK40GN-AW2TJ	5IK40A-AW2TJ
Single-Phase 110/115 VAC		5IK40GN-AW2U	5IK40A-AW2U	5IK40GN-AW2TU	5IK40A-AW2TU
Single-Phase 200 VAC		5IK40GN-CW2J	5IK40A-CW2J	5IK40GN-CW2TJ	5IK40A-CW2TJ
Single-Phase 220/230 VAC		5IK40GN-CW2E	5IK40A-CW2E	5IK40GN-CW2TE	5IK40A-CW2TE
Three-Phase 200/220/230 VAC		5IK40GN-SW2	5IK40A-SW2	5IK40GN-SW2T	5IK40A-SW2T
Three-Phase 380/400/415 VAC		5IK40GN-UW2	5IK40A-UW2	5IK40GN-UW2T2	5IK40A-UW2T2

◇ 60 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		5IK60GE-AW2J	5IK60A-AW2J	5IK60GE-AW2TJ	5IK60A-AW2TJ
Single-Phase 110/115 VAC		5IK60GE-AW2U	5IK60A-AW2U	5IK60GE-AW2TU	5IK60A-AW2TU
Single-Phase 200 VAC		5IK60GE-CW2J	5IK60A-CW2J	5IK60GE-CW2TJ	5IK60A-CW2TJ
Single-Phase 220/230 VAC		5IK60GE-CW2E	5IK60A-CW2E	5IK60GE-CW2TE	5IK60A-CW2TE
Three-Phase 200/220/230 VAC		5IK60GE-SW2	5IK60A-SW2	5IK60GE-SW2T	5IK60A-SW2T
Three-Phase 380/400/415 VAC		5IK60GE-UW2	5IK60A-UW2	5IK60GE-UW2T2	5IK60A-UW2T2

◇ 90 W

Power Supply Voltage	Type	Lead Wire Type		Terminal Box Type	
		Pinion Shaft Type	Round Shaft Type	Pinion Shaft Type	Round Shaft Type
Single-Phase 100 VAC		5IK90GE-AW2J	5IK90A-AW2J	5IK90GE-AW2TJ	5IK90A-AW2TJ
Single-Phase 110/115 VAC		5IK90GE-AW2U	5IK90A-AW2U	5IK90GE-AW2TU	5IK90A-AW2TU
Single-Phase 200 VAC		5IK90GE-CW2J	5IK90A-CW2J	5IK90GE-CW2TJ	5IK90A-CW2TJ
Single-Phase 220/230 VAC		5IK90GE-CW2E	5IK90A-CW2E	5IK90GE-CW2TE	5IK90A-CW2TE
Three-Phase 200/220/230 VAC		5IK90GE-SW2	5IK90A-SW2	5IK90GE-SW2T	5IK90A-SW2T
Three-Phase 380/400/415 VAC		5IK90GE-UW2	5IK90A-UW2	5IK90GE-UW2T2	5IK90A-UW2T2

● World K Series IP65 Terminal Box Type

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇ 6 W

Type	Combination Type	Round Shaft Type
Power Supply Voltage		
Single-Phase 100 VAC	2IK6AB-□S	2IK6A-AW2BJ
Single-Phase 110/115 VAC	2IK6FB-□S	2IK6A-AW2BU
Single-Phase 200 VAC	2IK6CB-□S	2IK6A-CW2BJ
Single-Phase 220/230 VAC	2IK6EB-□S	2IK6A-CW2BE
Three-Phase 200/220/230 VAC	2IK6SB-□S	2IK6A-SW2B

◇ 15 W

Type	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Power Supply Voltage				
Single-Phase 100 VAC	3IK15AB-□S	3IK15A-AW2BJ	3IK15AB-□SS	3IK15A-AW2BSJ
Single-Phase 110/115 VAC	3IK15FB-□S	3IK15A-AW2BU	3IK15FB-□SS	3IK15A-AW2BSU
Single-Phase 200 VAC	3IK15CB-□S	3IK15A-CW2BJ	3IK15CB-□SS	3IK15A-CW2BSJ
Single-Phase 220/230 VAC	3IK15EB-□S	3IK15A-CW2BE	3IK15EB-□SS	3IK15A-CW2BSE
Three-Phase 200/220/230 VAC	3IK15SB-□S	3IK15A-SW2B	3IK15SB-□SS	3IK15A-SW2BS

◇ 25 W

Type	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Power Supply Voltage				
Single-Phase 100 VAC	4IK25AB-□S	4IK25A-AW2BJ	4IK25AB-□SS	4IK25A-AW2BSJ
Single-Phase 110/115 VAC	4IK25FB-□S	4IK25A-AW2BU	4IK25FB-□SS	4IK25A-AW2BSU
Single-Phase 200 VAC	4IK25CB-□S	4IK25A-CW2BJ	4IK25CB-□SS	4IK25A-CW2BSJ
Single-Phase 220/230 VAC	4IK25EB-□S	4IK25A-CW2BE	4IK25EB-□SS	4IK25A-CW2BSE
Three-Phase 200/220/230 VAC	4IK25SB-□S	4IK25A-SW2B	4IK25SB-□SS	4IK25A-SW2BS

◇ 40 W

Type	Thermal Protector for Automatic Return Type		Thermal Protector for Signal Type	
	Combination Type	Round Shaft Type	Combination Type	Round Shaft Type
Power Supply Voltage				
Single-Phase 100 VAC	5IK40AB-□S	5IK40A-AW2BJ	5IK40AB-□SS	5IK40A-AW2BSJ
Single-Phase 110/115 VAC	5IK40FB-□S	5IK40A-AW2BU	5IK40FB-□SS	5IK40A-AW2BSU
Single-Phase 200 VAC	5IK40CB-□S	5IK40A-CW2BJ	5IK40CB-□SS	5IK40A-CW2BSJ
Single-Phase 220/230 VAC	5IK40EB-□S	5IK40A-CW2BE	5IK40EB-□SS	5IK40A-CW2BSE
Three-Phase 200/220/230 VAC	5IK40SB-□S	5IK40A-SW2B	5IK40SB-□SS	5IK40A-SW2BS

● BH Series

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

◇ Combination Type

Type	Terminal Box Type, Right-Angle Gearhead		Terminal Box Type, Parallel Shaft Type
	Hollow Shaft Type	Solid Shaft Type	
Power Supply Voltage			
Single-Phase 100 VAC	BHI62AT-□RH	BHI62AT-□RA	BHI62AT-□
Single-Phase 110/115 VAC	BHI62FT-□RH	BHI62FT-□RA	BHI62FT-□
Single-Phase 200 VAC	BHI62CT-□RH	BHI62CT-□RA	BHI62CT-□
Single-Phase 220/230 VAC	BHI62ET-□RH	BHI62ET-□RA	BHI62ET-□
Three-Phase 200/220/230 VAC	BHI62ST-□RH	BHI62ST-□RA	BHI62ST-□
Three-Phase 380/400/415 VAC	BHI62UT2-□RH	BHI62UT2-□RA	BHI62UT2-□

◇ Round Shaft Type

Type	Terminal Box Type
Power Supply Voltage	
Single-Phase 100 VAC	BHI62AT-A
Single-Phase 110/115 VAC	BHI62FT-A
Single-Phase 200 VAC	BHI62CT-A
Single-Phase 220/230 VAC	BHI62ET-A
Three-Phase 200/220/230 VAC	BHI62ST-A
Three-Phase 380/400/415 VAC	BHI62UT2-A

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

● World K Series 2-Pole, High-Speed Type

For the single-phase 100 VAC, the single-phase 110/115 VAC, the single-phase 200 VAC and the three-phase 200/220/230 VAC models, please contact the nearest Oriental Motor sales office.

◇ 40 W

Power Supply Voltage	Type	Lead Wire Type (Round Shaft Type)
Single-Phase 100 VAC		4IK40A-BW2J
Single-Phase 110/115 VAC		4IK40A-BW2U
Single-Phase 200 VAC		4IK40A-DW2J
Single-Phase 220/230 VAC		4IK40A-DW3E

◇ 60 W

Power Supply Voltage	Type	Lead Wire Type (Round Shaft Type)	
Single-Phase 100 VAC		4IK60A-BW2J	5IK60A-BW2J
Single-Phase 110/115 VAC		4IK60A-BW2U	5IK60A-BW2U
Single-Phase 200 VAC		4IK60A-DW2J	5IK60A-DW2J
Single-Phase 220/230 VAC		4IK60A-DW3E	5IK60A-DW3E
Three-Phase 200/220/230 VAC		—	5IK60A-TW2

◇ 90 W

Power Supply Voltage	Type	Lead Wire Type (Round Shaft Type)
Single-Phase 100 VAC		5IK90A-BW2J
Single-Phase 110/115 VAC		5IK90A-BW2U
Single-Phase 200 VAC		5IK90A-DW2J
Single-Phase 220/230 VAC		5IK90A-DW3E
Three-Phase 200/220/230 VAC		5IK90A-TW2

◇ 150 W

Power Supply Voltage	Type	Lead Wire Type (Round Shaft Type)	Terminal Box Type (Round Shaft Type)
Single-Phase 100 VAC		5IK150A-BW2J	—
Single-Phase 110/115 VAC		5IK150A-BW2U	—
Single-Phase 200 VAC		5IK150A-DW2J	—
Single-Phase 220/230 VAC		5IK150A-DW3E	—
Three-Phase 200/220/230 VAC		5IK150A-TW2	5IK150A-TW2T

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

General Specifications

World K Series - 6 W to 90 W

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC (2 kVAC for three-phase 380/400/415 VAC) at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 80°C or less (70°C or less for three-phase type) using the resistance change method after rated operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Overheat Protection	6 W Type Impedance Protected Other Types Built-In Thermal Protector (Automatic return type) Open: 130±5°C, Close: 82±15°C Three-Phase 15 W Type, IP65 Terminal Box Type Open: 130±5°C, Close: 90±15°C (40 W Type: 82±15°C) Three-Phase 380/400/415 VAC Type Open: 130±5°C, Close: 83±15°C
Operating Ambient Temperature	-10~+40°C (Three-Phase 200 VAC: -10~+50°C) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead Wire Type: IP20 Terminal Box Type (25 W, 40 W, 60 W, 90 W): IP54 (Except for the installation surface) IP65 Terminal Box Type (6 W, 15 W, 25 W, 40 W): IP65 (Except for the installation surface)

*Heat radiation plate size (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
6 W Type	115×115	5
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W, 90 W Type	200×200	

BH Series

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC (2 kVAC for three-phase 380/400/415 VAC) at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 70°C or less using the resistance change method after rated operation under normal ambient temperature and humidity.
Thermal Class	130 (B)
Overheat Protection	Built-In Thermal Protector (Automatic return type) Open: 150±5°C, Close: 96±15°C Three-Phase 380/400/415 VAC Type Open: 130±5°C, Close: 83±15°C
Operating Ambient Temperature	-10~+40°C (Three-Phase 200 VAC: -10~+50°C) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead Wire Type: IP40 Terminal Box Type: IP54 (Excluding the installation surface of the round shaft type)

*Heat Radiation Plate Size: 230×230 mm, Thickness: 5 mm (Material: Aluminum)

Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Lead Wire Type		Terminal Box Type	
Single-Phase 220/230 VAC	Three-Phase 200/220/230 VAC Three-Phase 380/400/415 VAC	Single-Phase 220/230 VAC	Three-Phase 200/220/230 VAC Three-Phase 380/400/415 VAC
<p>Clockwise</p>	<p>Clockwise</p> <p>Counterclockwise To change the rotation direction, change any two connections between L1(R), L2(S) and L3(T).</p>	<p>Clockwise</p>	<p>Clockwise</p> <p>Counterclockwise To change the rotation direction, change any two connections between L1(R), L2(S) and L3(T).</p>
<p>Counterclockwise</p>		<p>Counterclockwise</p>	

PE: Protective Earth

Note

- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.
- How to connect a capacitor → Page C-255

Introduction

Induction Motors

Reversible Motors

Constant Speed Motors

Electromagnetic Brake Motors

V Series

TM Series Torque Motors

Torque Motors

Water-tight, Dust-Resistant Motors

Right-Angle Gearheads

Brake Pack

Accessories

Installation

Induction Motors

6 W

60 mm



Lead Wire Type



Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name in (): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(ZP) 2IK6GN-CW2E (2IK6A-CW2E)	(ZP) 2IK6GN-CW2BE (2IK6A-CW2BE)	6	Single-Phase 220	50	0.103	38	49	1150	0.6
				60	0.091	40	41	1450	
				Single-Phase 230		50	0.107	45	
(ZP) 2IK6GN-SW2 (2IK6A-SW2)	(ZP) 2IK6GN-SW2B (2IK6A-SW2B)	6	Three-Phase 200	50	0.081	49	49	1200	-
				60	0.072	41	41	1400	
				Three-Phase 220		60	0.076	41	
			Three-Phase 230	60	0.079	41	41	1500	

- The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards → Page H-2
- (ZP): These products are impedance protected.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	2IK6GN-CW2E 2IK6GN-SW2	2IK6A-CW2E 2IK6A-SW2	IP20
Terminal Box	2IK6GN-CW2BE 2IK6GN-SW2B	2IK6A-CW2BE* 2IK6A-SW2B*	IP65

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	2IK6GN-CW2E	2IK6A-CW2E
	2IK6GN-SW2	2IK6A-SW2
Terminal Box	2IK6GN-CW2BE	2IK6A-CW2BE
	2IK6GN-SW2B	2IK6A-SW2B

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise	2GN□S	3~180
	GN-S Gearhead	2GN10XS (Decimal gearhead)	

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
Gearhead, Mounting Screws, Operating Manual

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque, 10,000 hours* of life and quiet operation.
For more details on V Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Permissible Torque When Gearhead is Attached

- A code **(B)** indicating the terminal box type is entered where the box \square is located within the motor product name.
A number indicating the gear ratio is entered where the box \square is located within the gearhead product name.
- A colored background \square indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
In that case, the permissible torque is 3 N·m.

◇ 50 Hz

Unit = N·m

Product Name Motor/ Gearhead	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
2IK6GN-CW2 \square E 2IK6GN-SW2 \square	2GN \square S	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3

◇ 60 Hz

Unit = N·m

Product Name Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
2IK6GN-CW2 \square E 2IK6GN-SW2 \square	2GN \square S	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16

Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

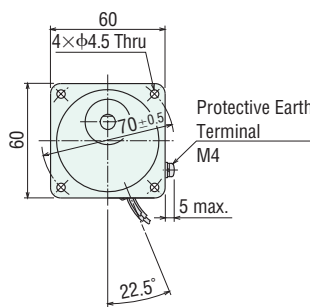
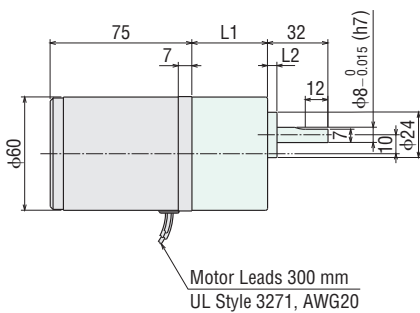
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box \square is located within the product name.

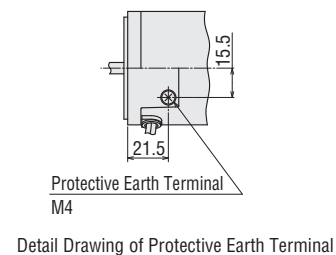
◇ Lead Wire Type ①

Mass: Motor 0.7 kg

Gearhead 0.4 kg



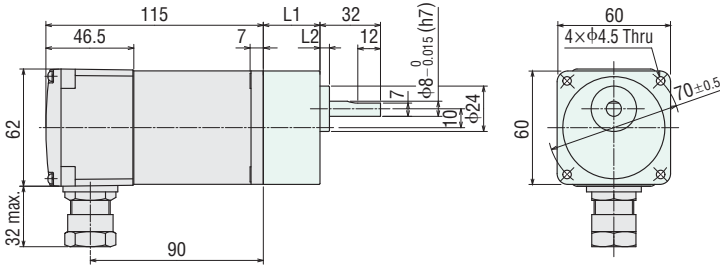
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
2IK6GN-CW2E 2IK6GN-SW2	2GN \square S	3~18	30	5
		25~180	40	



Detail Drawing of Protective Earth Terminal

◇ Terminal Box Type ②

Mass: Motor 0.9 kg
Gearhead 0.4 kg

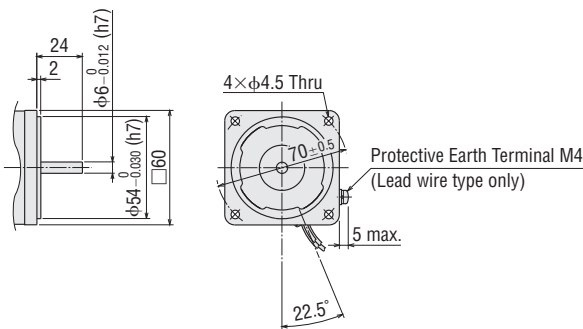


- Applicable cables diameter is $\phi 8 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 0.7 kg (Lead wire type)
0.9 kg (Terminal box type)



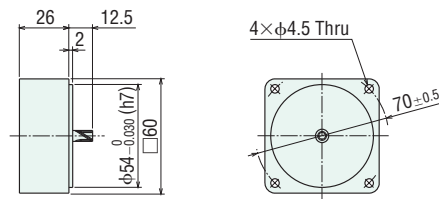
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
2IK6GN-CW2BE	2GN□S	3~18	30	5
2IK6GN-SW2B		25~180	40	

◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

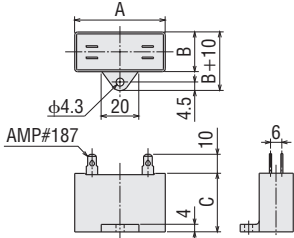
2GN10XS

Mass: 0.2 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
2IK6GN-CW2E (2IK6A-CW2E)	2IK6GN-CW2BE (2IK6A-CW2BE)	CH06BFAUL	31	14.5	23.5	18	Included

■ Connection Diagrams

→ Page C-29

Peripheral Equipment

Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240



Couplings
→ Page C-245



Induction Motors

15 W

□ 70 mm



Lead Wire Type



Terminal Box Type

Gearhead shown in the photograph is sold separately.

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name in (): Round Shaft Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②								
(TP) 3IK15GN-CW2E (3IK15A-CW2E)	(TP) 3IK15GN-CW2BE (3IK15A-CW2BE)	15	Single-Phase 220	50	0.19	70	125	1200	1.0
				60	0.16	65	105	1450	
			Single-Phase 230	50	0.19	75	125	1200	
				60	0.16	65	105	1450	
(TP) 3IK15GN-SW2 (3IK15A-SW2)	(TP) 3IK15GN-SW2B (3IK15A-SW2B)	15	Three-Phase 200	50	0.17	110	110	1350	-
				60	0.14	85	100	1600	
			Three-Phase 220	60	0.15	100	100	1650	
Three-Phase 230	60	0.16		100	100	1650			

- The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor. Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards → Page H-2
- (TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	3IK15GN-CW2E 3IK15GN-SW2	3IK15A-CW2E 3IK15A-SW2	IP20
Terminal Box	3IK15GN-CW2BE 3IK15GN-SW2B	3IK15A-CW2BE* 3IK15A-SW2B*	IP65

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	3IK15GN-CW2E	3IK15A-CW2E
	3IK15GN-SW2	3IK15A-SW2
Terminal Box	3IK15GN-CW2BE	3IK15A-CW2BE
	3IK15GN-SW2B	3IK15A-SW2B

The following items are included in each product.
 Motor, Capacitor*, Capacitor Cap*, Operating Manual
 *Single-Phase Motors only

Parallel Shaft Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise	3GN□S	3~180
	GN-S Gearhead	3GN10XS (Decimal gearhead)	

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
 Gearhead, Mounting Screws, Parallel Key, Operating Manual

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque,
 10,000 hours* of life and quiet operation.
 For more details on V Series see page C-149.
 *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Permissible Torque When Gearhead is Attached

- A code **(B)** indicating the terminal box type is entered where the box is located within the motor product name.
A number indicating the gear ratio is entered where the box is located within the gearhead product name.
- A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
In that case, the permissible torque is 5 N·m.

◇ 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3	
		Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
3IK15GN-CW2 <input type="checkbox"/> E / 3GN <input type="checkbox"/> S		0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5	5
3IK15GN-SW2 <input type="checkbox"/> / 3GN <input type="checkbox"/> S		0.27	0.32	0.45	0.53	0.67	0.80	1.1	1.3	1.6	2.0	2.4	2.9	3.6	4.4	5	5	5	5	5	5	5

◇ 60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
		Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
3IK15GN-CW2 <input type="checkbox"/> E / 3GN <input type="checkbox"/> S		0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5	5
3IK15GN-SW2 <input type="checkbox"/> / 3GN <input type="checkbox"/> S		0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5	5

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16
Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

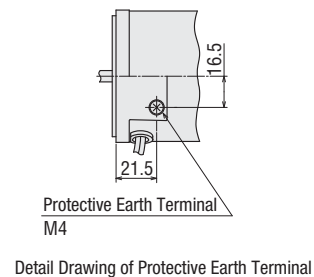
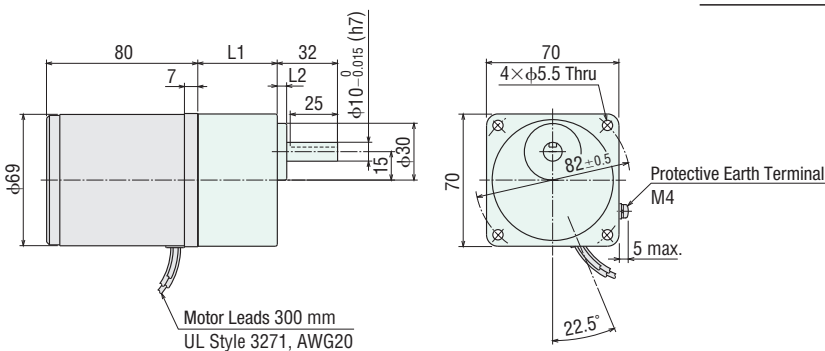
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box is located within the product name.

◇ Lead Wire Type①

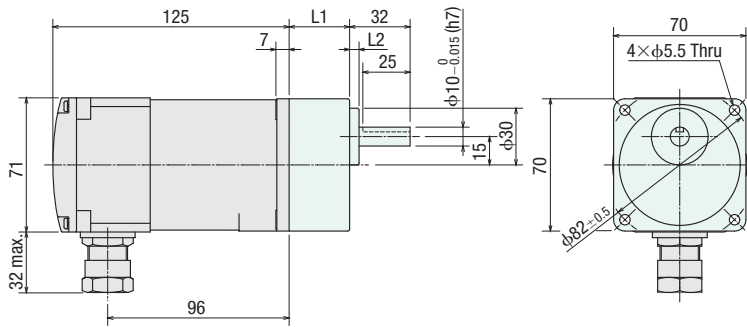
Mass: Motor 1.1 kg
Gearhead 0.55 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
3IK15GN-CW2E 3IK15GN-SW2	3GN <input type="checkbox"/> S	3~18	32	5
		25~180	42	



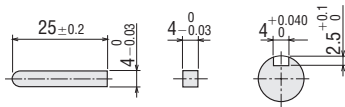
◇ Terminal Box Type②

Mass: Motor 1.4 kg
Gearhead 0.55 kg



- Applicable cables diameter is $\phi 8 \sim \phi 12$.
- Details of terminal box → Page C-255

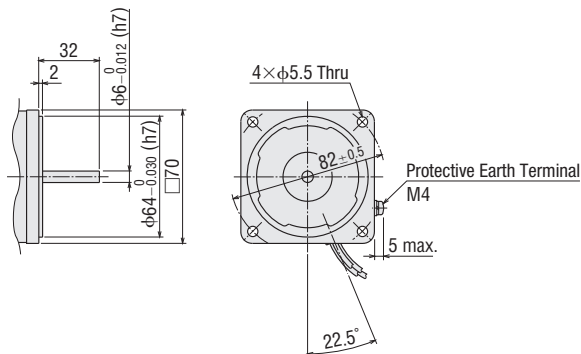
◇ Key and Key Slot (The key is included with the gearhead.)



◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.1 kg (Lead Wire Type)
1.4 kg (Terminal Box Type)



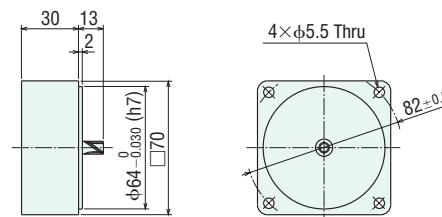
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
3IK15GN-CW2BE 3IK15GN-SW2B	3GN□S	3~18	32	5
		25~180	42	

◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

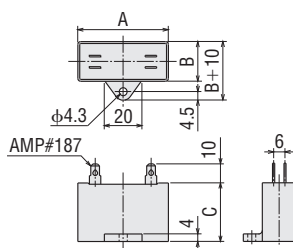
3GN10XS

Mass: 0.3 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
3IK15GN-CW2E (3IK15A-CW2E)	3IK15GN-CW2BE (3IK15A-CW2BE)	CH10BFAUL	37	18	27	27	Included

■ Connection Diagrams

→ Page C-29

Peripheral Equipment

Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

Inverters
→ Page D-136

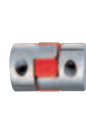


Accessories

Mounting Brackets
→ Page C-240



Couplings
→ Page C-245



Induction Motors

25 W

80 mm



Lead Wire Type



Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name (): Round Shaft Type			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor	
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	W	VAC	Hz	A	mN·m	mN·m	r/min	μF	
(TP) 4IK25GN-CW2E (4IK25A-CW2E)	(TP) 4IK25GN-CW2TE (4IK25A-CW2TE)	-	25	Single-Phase 220	50	0.27	110	205	1200	1.5	
					60	0.23		170	1450		
Single-Phase 230	50	0.27		120	205	1200					
	60	0.23			170	1450					
(TP) 4IK25GN-SW2 (4IK25A-SW2)	(TP) 4IK25GN-SW2T (4IK25A-SW2T)	-	25	Three-Phase 200	50	0.23	240	190	1300	-	
					60	0.21		160	1550		
				Three-Phase 220	60	0.21	160	160	1600		
60	0.22	160			1600						
Three-Phase 380	-	(TP) 4IK25GN-UW2T* (4IK25A-UW2T*)		25	50	0.113	270	205	1200		-
						60		0.102	170		
			Three-Phase 400		50	0.116	270	205	1200		
60	0.103	170			1450						
Three-Phase 415	-	(TP) 4IK25GN-UW2T* (4IK25A-UW2T*)	50		0.118	270	205	1200			

- The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor. Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.
- Safety standards → Page H-2
- *These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

- A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.
- (TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	4IK25GN-CW2E 4IK25GN-SW2 4IK25GN-UW2	4IK25A-CW2E 4IK25A-SW2 4IK25A-UW2	IP20
Terminal Box	4IK25GN-CW2TE 4IK25GN-SW2T 4IK25GN-UW2T2	4IK25A-CW2TE* 4IK25A-SW2T* 4IK25A-UW2T2*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	4IK25GN-CW2E	4IK25A-CW2E
	4IK25GN-SW2	4IK25A-SW2
	4IK25GN-UW2	4IK25A-UW2
Terminal Box	4IK25GN-CW2TE	4IK25A-CW2TE
	4IK25GN-SW2T	4IK25A-SW2T
	4IK25GN-UW2T2	4IK25A-UW2T2

The following items are included in each product.
 Motor, Capacitor*, Capacitor Cap*, Operating Manual
 *Single-phase motors only

High Strength, Long Life, Low Noise
V Series

Highest Maximum Permissible torque,
 10,000 hours* of life and quiet operation.
 For more details on V Series see page C-149.
 *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

	Gearhead Type	Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise GN-S Gearhead	4GN□S	3~180
		4GN10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	4GN□RH	3~180
	Solid Shaft Gearhead	4GN□RA	3~180

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

- The following items are included in each product.
- Parallel Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Operating Manual
 - Hollow Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
 - Solid Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box □ is located within the motor product name.
A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
In that case, the permissible torque is 8 N·m. When a gearhead of 1/25 to 1/36 is attached, the value for permissible torque is 6 N·m.

◇ 50 Hz

Product Name Motor/Gearhead	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3	
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
4IK25GN-CW2 □E	/ 4GN □S	0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8	
4IK25GN-UW2 □		0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	6.3	7.5	8	8	8	8	8	8	8
4IK25GN-SW2 □	/ 4GN □S	0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	6.3	7.5	8	8	8	8	8	8	8

◇ 60 Hz

Product Name Motor/Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
4IK25GN-CW2 □E	/ 4GN □S	0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8	8
4IK25GN-UW2 □		0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8	8
4IK25GN-SW2 □	/ 4GN □S	0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8	8

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16, Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

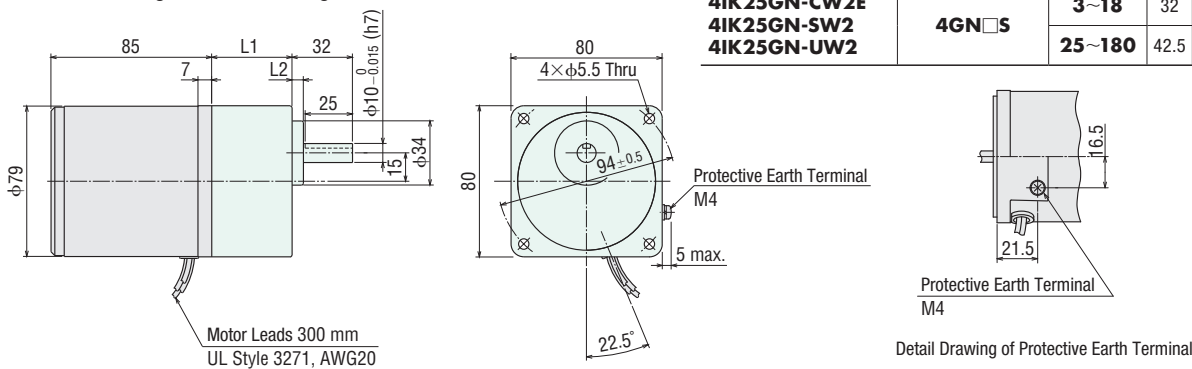
→ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

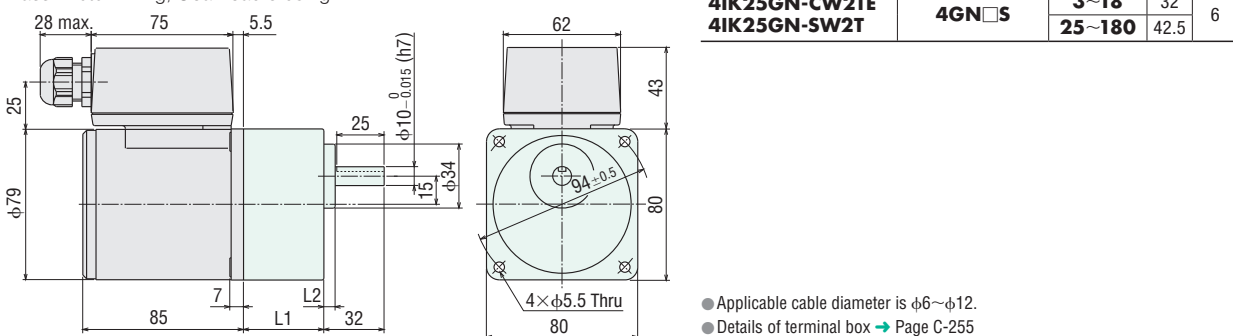
◇ Lead Wire Type ①

Mass: Motor 1.5 kg, Gearhead 0.65 kg



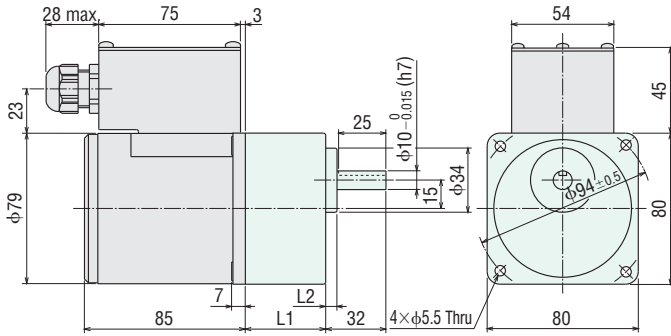
◇ Terminal Box Type ②

Mass: Motor 1.7 kg, Gearhead 0.65 kg



◇ Terminal Box Type ③

Mass: Motor 1.7 kg
Gearhead 0.65 kg

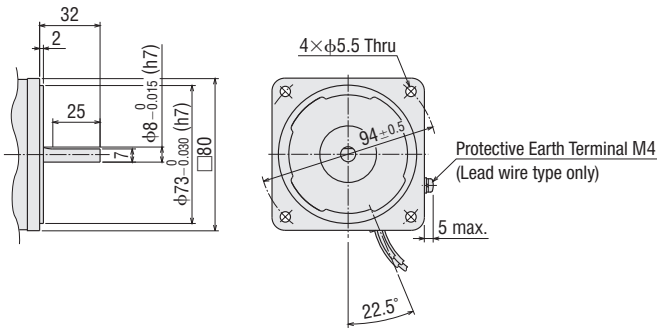


- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Cable glands can be installed in three directions.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

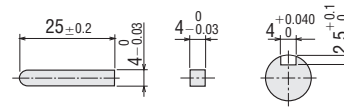
The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.5 kg (Lead wire type)
1.7 kg (Terminal box type)



Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
4IK25GN-UW2T2	4GN□S	3~18	32	6
		25~180	42.5	

◇ Key and Key Slot (The key is included with the gearhead.)

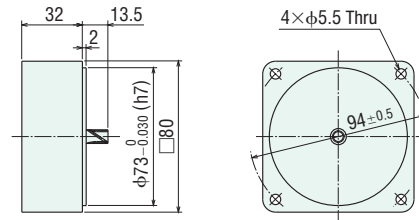


◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

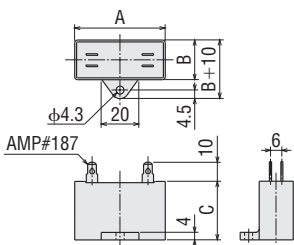
4GN10XS

Mass: 0.4 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
4IK25GN-CW2E (4IK25A-CW2E)	4IK25GN-CW2TE (4IK25A-CW2TE)	CH15BFAUL	38	21	31	37	Included

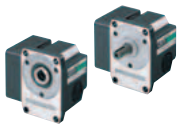
■ Connection Diagrams

→ Page C-29

Gearheads, Peripheral Equipment

Space Saving

Right-Angle Gearheads
→ Page C-213



Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240

Couplings
→ Page C-245



Induction Motors

40 W

□ 90 mm



Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name (): Round Shaft Type			Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③								
(TP) 5IK40GN-CW2E (5IK40A-CW2E)	(TP) 5IK40GN-CW2TE (5IK40A-CW2TE)	-	40	Single-Phase 220	50	0.39	200	315	1250	2.3
					60	0.35		260	1500	
					50	0.39		300	1300	
					60	0.34		260	1500	
(TP) 5IK40GN-SW2 (5IK40A-SW2)	(TP) 5IK40GN-SW2T (5IK40A-SW2T)	-	40	Three-Phase 200	50	0.32	400	300	1300	-
					60	0.30	260	260	1550	
					60	0.30	260	260	1600	
(TP) 5IK40GN-UW2* (5IK40A-UW2*)	-	(TP) 5IK40GN-UW2T2* (5IK40A-UW2T2*)	40	Three-Phase 380	50	0.172	400	300	1300	-
					60	0.154	340	260	1550	
				Three-Phase 400	50	0.178	400	300	1300	
					60	0.156	340	260	1550	
				Three-Phase 415	50	0.183	400	300	1300	
					60	0.183	400	300	1300	

● The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.

● Safety standards → Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

● A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	5IK40GN-CW2E 5IK40GN-SW2 5IK40GN-UW2	5IK40A-CW2E 5IK40A-SW2 5IK40A-UW2	IP20
Terminal Box	5IK40GN-CW2TE 5IK40GN-SW2T 5IK40GN-UW2T2	5IK40A-CW2TE* 5IK40A-SW2T* 5IK40A-UW2T2*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5IK40GN-CW2E	5IK40A-CW2E
	5IK40GN-SW2	5IK40A-SW2
	5IK40GN-UW2	5IK40A-UW2
Terminal Box	5IK40GN-CW2TE	5IK40A-CW2TE
	5IK40GN-SW2T	5IK40A-SW2T
	5IK40GN-UW2T2	5IK40A-UW2T2

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
* Single-phase motors only

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on V Series see page C-149.
*For the rated life time definition, refer to "Service Life of
Gearheads" on page G-35.



Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life, Low Noise	5GN□S	3~180
	GN-S Gearhead	5GN10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	5GN□RH	3~180
	Solid Shaft Gearhead	5GN□RA	3~180

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.

- Parallel Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box □ is located within the motor product name.
A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
In that case, the permissible torque is 10 N·m.

◇ 50 Hz

Product Name Motor/Gearhead	Speed r/min Gear Ratio	Unit = N·m																			
		500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
5IK40GN-CW2E (220 VAC) / 5GN □ S		0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10
5IK40GN-CW2E (230 VAC) / 5GN □ S		0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10
5IK40GN-SW2 □																					
5IK40GN-UW2 □																					

◇ 60 Hz

Product Name Motor/Gearhead	Speed r/min Gear Ratio	Unit = N·m																			
		600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
5IK40GN-CW2E / 5GN □ S		0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10
5IK40GN-SW2 □																					
5IK40GN-UW2 □																					

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16, Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

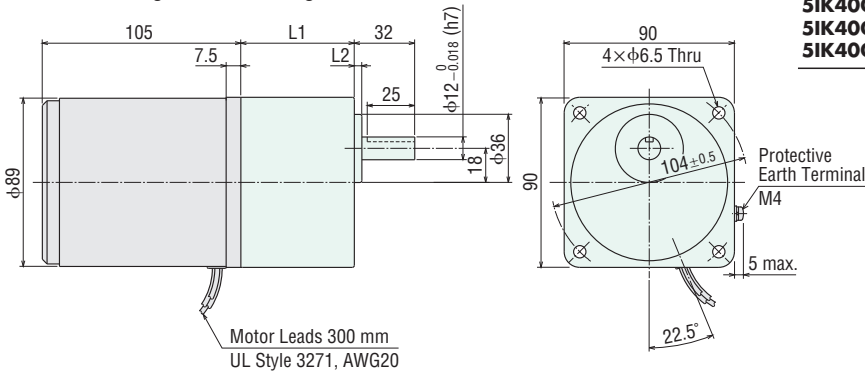
→ Page C-17

Dimensions (Unit = mm)

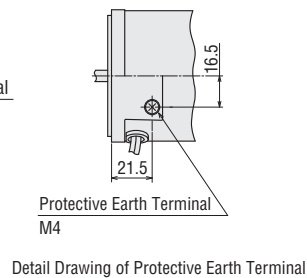
- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

◇ Lead Wire Type ①

Mass: Motor 2.5 kg, Gearhead 1.5 kg

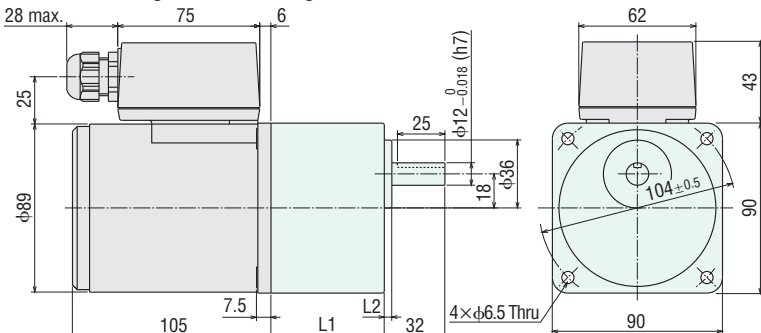


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-CW2E 5IK40GN-SW2 5IK40GN-UW2	5GN □ S	3~18	42	4
		25~180	60	



◇ Terminal Box Type ②

Mass: Motor 2.6 kg, Gearhead 1.5 kg

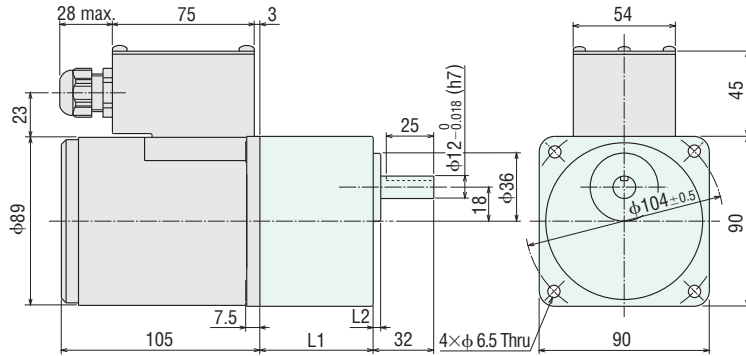


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-CW2TE 5IK40GN-SW2T	5GN □ S	3~18	42	4
		25~180	60	

- Applicable cable diameter is φ6~φ12.
- Details of terminal box → Page C-255

◇ Terminal Box Type ③

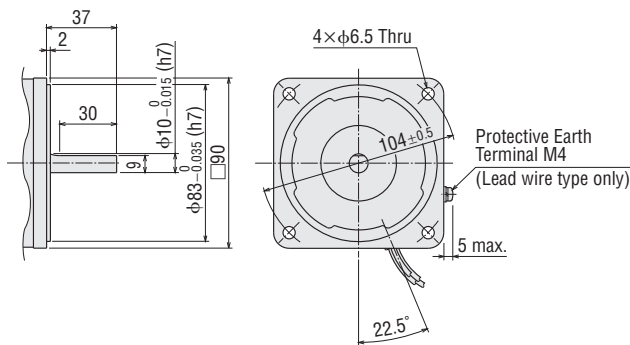
Mass: Motor 2.6 kg
Gearhead 1.5 kg



◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

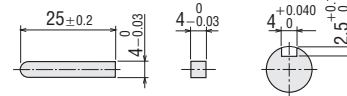
Mass: 2.5 kg (Lead wire type)
2.6 kg (Terminal box type)



Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2
5IK40GN-UW2T2	5GN□S	3~18	42	4
		25~180	60	

◇ Key and Key Slot

(The key is included with the gearhead.)



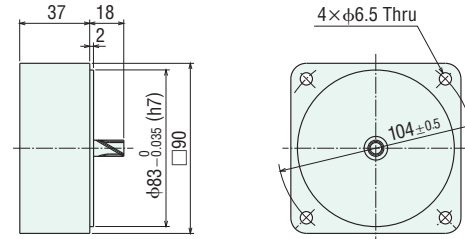
- Applicable cable diameter is φ6~φ12.
- Cable glands can be installed in three directions.
- Details of terminal box → Page C-255

◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

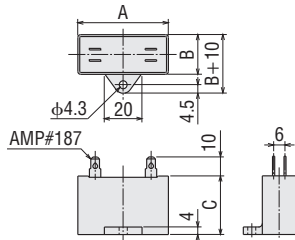
5GN10XS

Mass: 0.6 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type						
5IK40GN-CW2E (5IK40A-CW2E)	5IK40GN-CW2TE (5IK40A-CW2TE)	CH23BFAUL	48	21	31	43	Included

■ Connection Diagrams

→ Page C-29

Gearhead, Peripheral Equipment

Space Saving

Right-Angle Gearheads
→ Page C-213

Instantaneous Stop

Brake Pack
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Speed Control

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- Introduction
- Induction Motors
- Reversible Motors
- Constant Speed Motors
- Electromagnetic Brake Motors
- V Series
- TM Series Torque Motors
- Torque Motors
- Water-tight, Dust-Resistant Motors
- Right-Angle Gearheads
- Brake Pack
- Accessories
- Installation

Induction Motors

60 W

90 mm



Lead Wire Type



Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name (): Round Shaft Type			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
(TP) 5IK60GE-CW2E (5IK60A-CW2E)	(TP) 5IK60GE-CW2TE (5IK60A-CW2TE)	-	60	Single-Phase 220	50	0.55	320	490	1200	4.0
					60	0.54		405	1450	
					50	0.57		490	1200	
					60	0.54		405	1450	
(TP) 5IK60GE-SW2 (5IK60A-SW2)	(TP) 5IK60GE-SW2T (5IK60A-SW2T)	-	60	Three-Phase 200	50	0.50	600	450	1300	-
					60	0.43	500	380	1550	
				Three-Phase 220	60	0.45	500	380	1600	
					60	0.46	500	380	1600	
				Three-Phase 230	50	0.28	600	450	1300	
					60	0.24	500	380	1550	
(TP) 5IK60GE-UW2* (5IK60A-UW2*)	-	(TP) 5IK60GE-UW2T2* (5IK60A-UW2T2*)	60	Three-Phase 380	50	0.30	600	450	1300	-
					60	0.24	500	380	1550	
				Three-Phase 400	50	0.30	600	450	1300	
					60	0.24	500	380	1550	
Three-Phase 415	50	0.32	600	450	1300					

● The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor. Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.

● Safety standards → Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

● A three-phase 400 VAC specification motors cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	5IK60GE-CW2E 5IK60GE-SW2 5IK60GE-UW2	5IK60A-CW2E 5IK60A-SW2 5IK60A-UW2	IP20
Terminal Box	5IK60GE-CW2TE 5IK60GE-SW2T 5IK60GE-UW2T2	5IK60A-CW2TE* 5IK60A-SW2T* 5IK60A-UW2T2*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5IK60GE-CW2E	5IK60A-CW2E
	5IK60GE-SW2	5IK60A-SW2
	5IK60GE-UW2	5IK60A-UW2
Terminal Box	5IK60GE-CW2TE	5IK60A-CW2TE
	5IK60GE-SW2T	5IK60A-SW2T
	5IK60GE-UW2T2	5IK60A-UW2T2
	5IK60GE-UW2T2	5IK60A-UW2T2

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

	Gearhead Type	Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life	5GE□S	3~180
	GE-S Gearhead	5GE10XS (Decimal gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	5GE□RH	3~180
	Solid Shaft Gearhead	5GE□RA	3~180

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.

- Parallel Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque, 10,000 hours* of life and quiet operation. For more details on V Series see page C-149. *For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box \square is located within the motor product name.
A number indicating the gear ratio is entered where the box \square is located within the gearhead product name.
- A colored background \square indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

◇ 50 Hz

Product Name Motor/Gearhead	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
51K60GE-CW2 \square E	5GE \square S	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	11.6	16.2	19.4	20	20	20	20	20	20
51K60GE-SW2 \square	5GE \square S	1.1	1.3	1.8	2.2	2.7	3.3	4.1	4.9	5.9	7.4	8.9	10.7	14.9	17.8	19.9	20	20	20	20	20
51K60GE-UW2 \square	5GE \square S	1.1	1.3	1.8	2.2	2.7	3.3	4.1	4.9	5.9	7.4	8.9	10.7	14.9	17.8	19.9	20	20	20	20	20

◇ 60 Hz

Product Name Motor/Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
51K60GE-CW2 \square E	5GE \square S	0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13.4	16.0	17.9	20	20	20	20	20
51K60GE-SW2 \square	5GE \square S	0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5.0	6.3	7.5	9.0	12.5	15.0	16.8	20	20	20	20	20
51K60GE-UW2 \square	5GE \square S	0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5.0	6.3	7.5	9.0	12.5	15.0	16.8	20	20	20	20	20

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16, Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

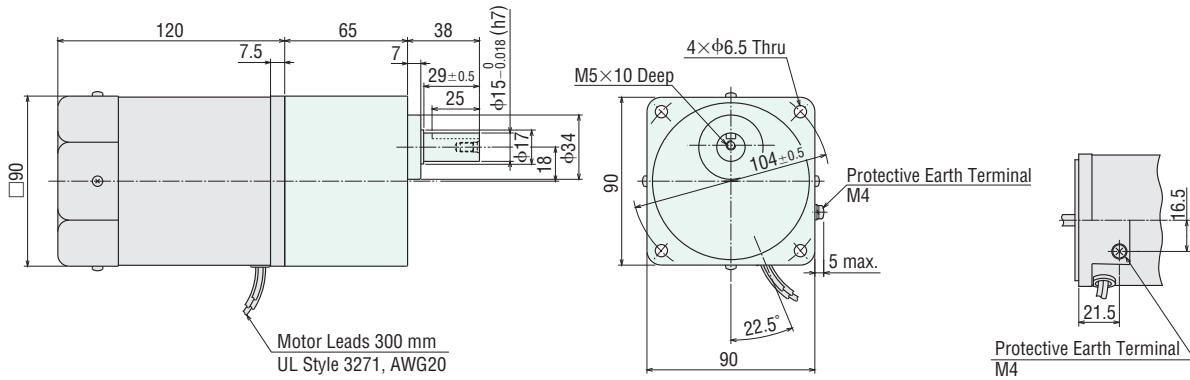
→ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254

◇ Lead Wire Type ①

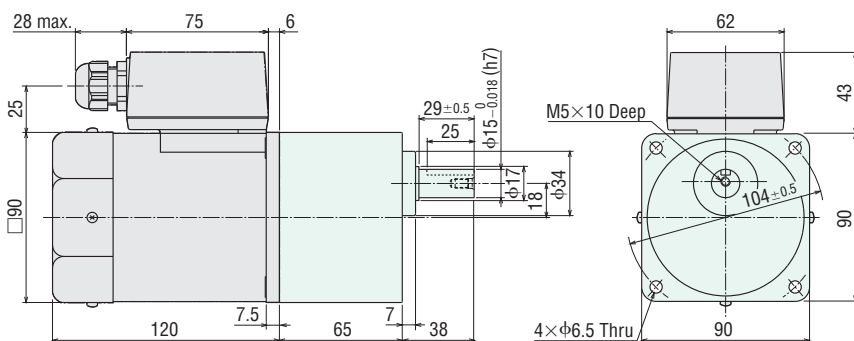
Mass: Motor 2.7 kg, Gearhead 1.5 kg



Detail Drawing of Protective Earth Terminal

◇ Terminal Box Type ②

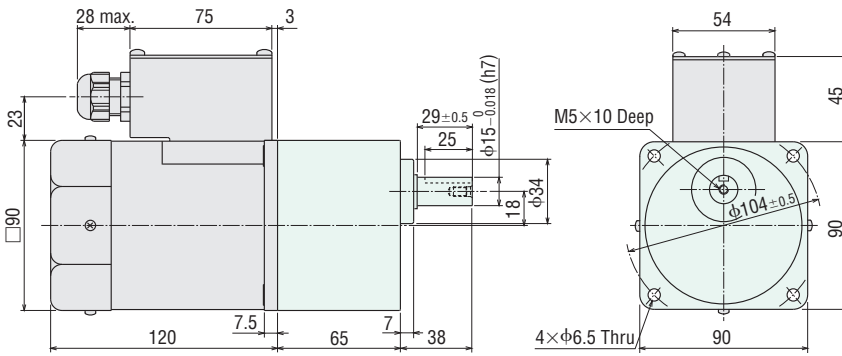
Mass: Motor 2.8 kg, Gearhead 1.5 kg



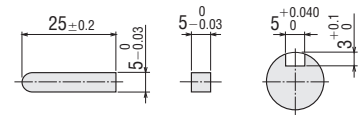
- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Terminal Box Type ③

Mass: Motor 2.8 kg
Gearhead 1.5 kg



◇ Key and Key Slot (The key is included with the gearhead.)

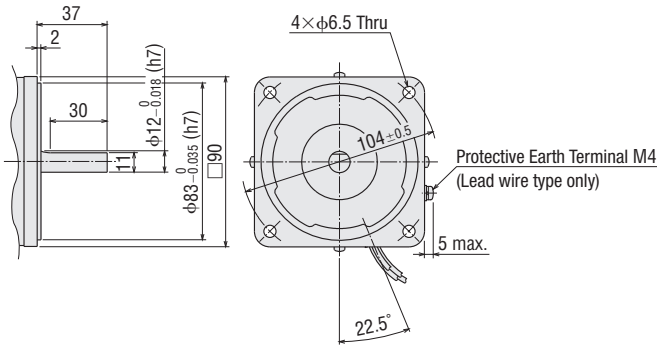


- Applicable cable diameter is φ6~φ12.
- Cable glands can be installed in three directions.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.7 kg (Lead wire type)
2.8 kg (Terminal box type)

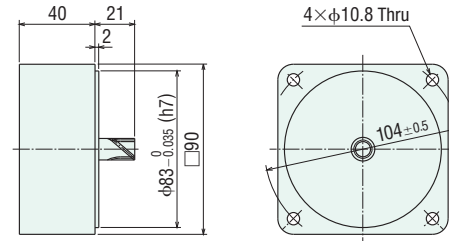


◇ Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

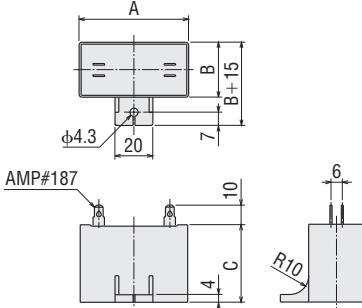
5GE10XS

Mass: 0.6 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type	CH40BFAUL	58	23.5	37	73	Included
5IK60GE-CW2E (5IK60A-CW2E)	5IK60GE-CW2TE (5IK60A-CW2TE)						

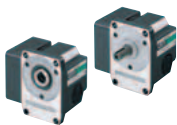
■ Connection Diagrams

→ Page C-29

Gearheads, Peripheral Equipment

Space Saving

Right-Angle Gearheads
→ Page C-213



Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240

Couplings
→ Page C-245



Induction Motors

90 W

□ 90 mm



Lead Wire Type



Terminal Box Type

Gearheads shown in the photograph are sold separately.

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name (): Round Shaft Type			Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF	
Lead Wire Type Dimensions ①	Terminal Box Type Dimensions ②	Terminal Box Type Dimensions ③									
(TP) 5IK90GE-CW2E (5IK90A-CW2E)	(TP) 5IK90GE-CW2TE (5IK90A-CW2TE)	-	90	Single-Phase 220	50	0.74	450	730	1200	6.0	
					60	0.82		605	1450		
					Single-Phase 230	50		0.76	730		1200
						60		0.81	605		1450
(TP) 5IK90GE-SW2 (5IK90A-SW2)	(TP) 5IK90GE-SW2T (5IK90A-SW2T)	-	90	Three-Phase 200	50	0.64	850	680	1300	-	
					60	0.59	700	570	1550		
					Three-Phase 220	60	0.60	700	570		1600
Three-Phase 230	60	0.61	700	570		1600					
	(TP) 5IK90GE-UW2* (5IK90A-UW2*)	-	(TP) 5IK90GE-UW2T* (5IK90A-UW2T*)	90	Three-Phase 380	50	0.39	850	680	1300	-
60						0.33	700	570	1550		
Three-Phase 400					50	0.41	850	680	1300		
					60	0.34	700	570	1550		
						50	0.44	850	680	1300	

● The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit www.orientalmotor.eu.

● Safety standards → Page H-2

*These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

● A three-phase 400 VAC specification motors cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	5IK90GE-CW2E 5IK90GE-SW2 5IK90GE-UW2	5IK90A-CW2E 5IK90A-SW2 5IK90A-UW2	IP20
Terminal Box	5IK90GE-CW2TE 5IK90GE-SW2T 5IK90GE-UW2T2	5IK90A-CW2TE* 5IK90A-SW2T* 5IK90A-UW2T2*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	5IK90GE-CW2E	5IK90A-CW2E
	5IK90GE-SW2	5IK90A-SW2
	5IK90GE-UW2	5IK90A-UW2
Terminal Box	5IK90GE-CW2TE	5IK90A-CW2TE
	5IK90GE-SW2T	5IK90A-SW2T
	5IK90GE-UW2T2	5IK90A-UW2T2

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

High Strength, Long Life, Low Noise V Series

Highest Maximum Permissible torque,
10,000 hours* of life and quiet operation.
For more details on V Series see page C-149.
*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

Gearhead Type	Gearhead Product Name		Gear Ratio
	Long Life	GE-S Gearhead	
Parallel Shaft	5GE□S	5GE10XS (Decimal gearhead)	3~180
	5GE□RH	5GE□RA	
Right-Angle Shaft	Hollow Shaft Gearhead	5GE□RH	3~180
	Solid Shaft Gearhead	5GE□RA	3~180

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.

- Parallel Shaft Gearhead
Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead
Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead
Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

Permissible Torque When Gearhead is Attached

- A code (**T** or **T2**) indicating the terminal box type is entered where the box is located within the motor product name.
A number indicating the gear ratio is entered where the box is located within the gearhead product name.
- A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 20 N·m.

50 Hz

Product Name Motor/Gearhead	Speed r/min Gear Ratio	Unit = N·m																			
		500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
5IK90GE-CW2 <input type="checkbox"/> E	5GE <input type="checkbox"/> S	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20
5IK90GE-SW2 <input type="checkbox"/> 5IK90GE-UW2 <input type="checkbox"/>	5GE <input type="checkbox"/> S	1.7	2.0	2.8	3.3	4.1	5.0	6.2	7.4	8.9	11.2	13.5	16.2	20	20	20	20	20	20	20	20

60 Hz

Product Name Motor/Gearhead	Speed r/min Gear Ratio	Unit = N·m																			
		600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
5IK90GE-CW2 <input type="checkbox"/> E	5GE <input type="checkbox"/> S	1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20
5IK90GE-SW2 <input type="checkbox"/> 5IK90GE-UW2 <input type="checkbox"/>	5GE <input type="checkbox"/> S	1.4	1.7	2.3	2.8	3.5	4.2	5.2	6.2	7.5	9.4	11.3	13.5	18.8	20	20	20	20	20	20	20

Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16, Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

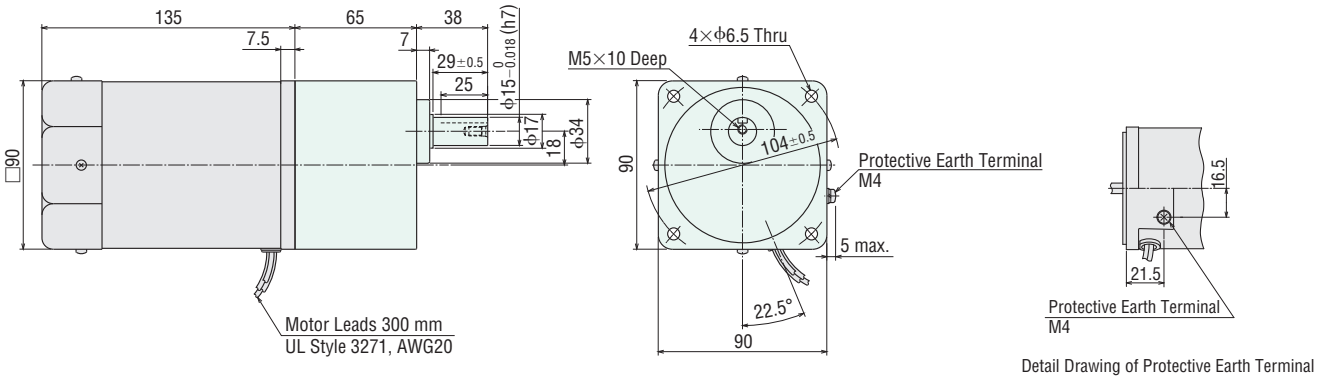
→ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254

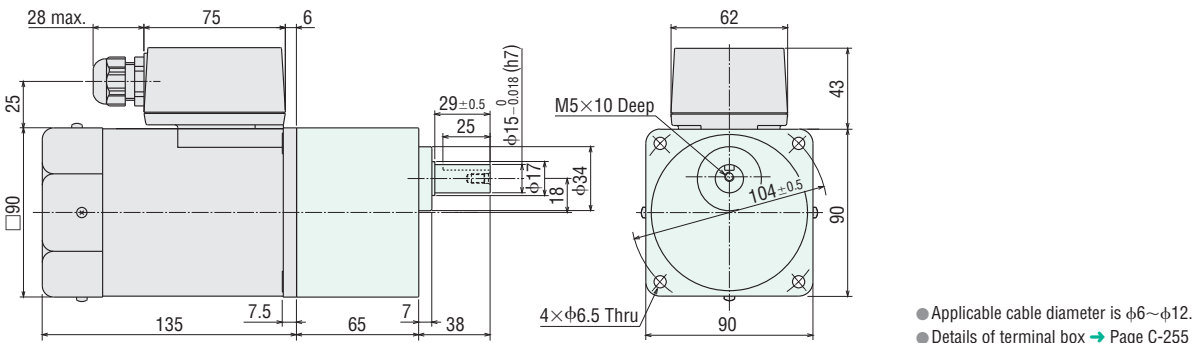
Lead Wire Type ①

Mass: Motor 3.2 kg, Gearhead 1.5 kg



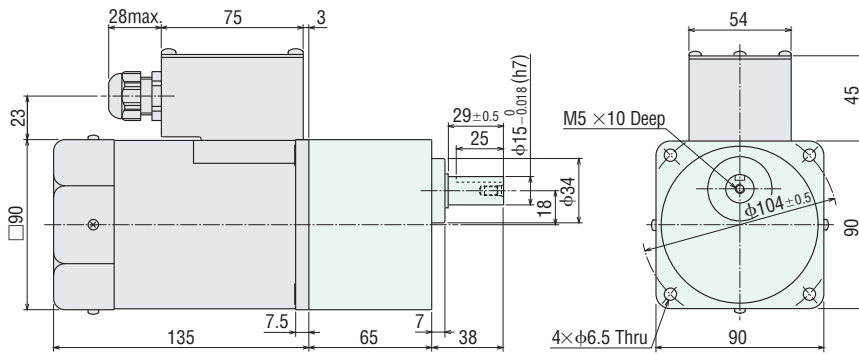
Terminal Box Type ②

Mass: Motor 3.3 kg, Gearhead 1.5 kg

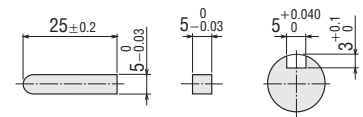


◇ Terminal Box Type ③

Mass: Motor 3.3 kg
Gearhead 1.5 kg



◇ Key and Key Slot (The key is included with the gearhead.)

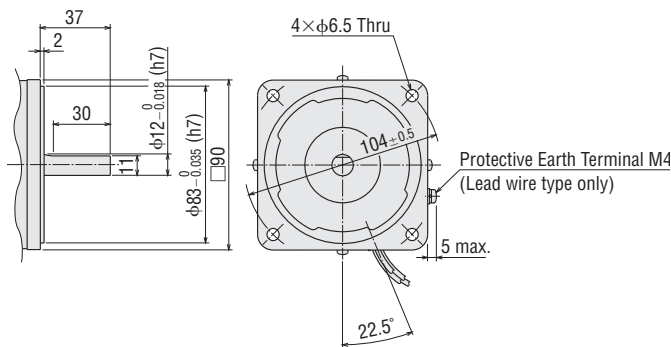


- Applicable cable diameter is φ6~φ12.
- Cable glands can be installed in three directions.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 3.2 kg (Lead wire type)
3.3 kg (Terminal box type)

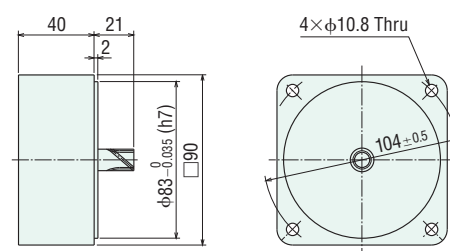


◇ Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

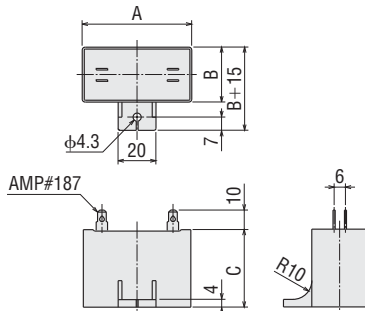
5GE10XS

Mass: 0.6 kg



◇ Capacitor

(Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name in (): Round Shaft Type						
Lead Wire Type	Terminal Box Type	CH60BFAUL	58	29	41	92	Included
5IK90GE-CW2E (5IK90A-CW2E)	5IK90GE-CW2TE (5IK90A-CW2TE)						

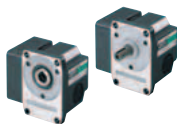
Connection Diagrams

→ Page C-29

Gearheads, Peripheral Equipment

Space Saving

Right-Angle Gearheads
→ Page C-213



Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

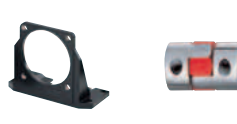
Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240

Couplings
→ Page C-245



World K Series IP65 Terminal Box Type Induction Motors

6 W, 15 W, 25 W, 40 W

□ 60 mm, □ 70 mm, □ 80 mm, □ 90 mm



Features

● IP65 Specification Suitable for Use in Factory Environment

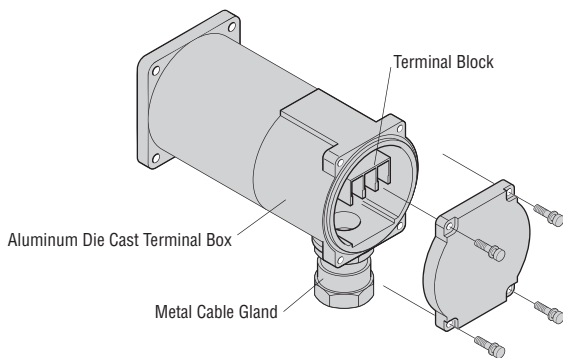
The world **K** series IP65 terminal box type include parts with excellent environmental resistance to meet the needs of factory environments.

◇ Protection Performance against Dust and Water Conforming to IP65 Rating for Degree of Protection

The degree of protection conforms to IP65 by using an O-ring in the motor and an oil seal construction in the gearhead. These motors are ideal for use in an environment requiring dust resistance and water resistance to protect against cutting powder suspended in air, splashed water droplets, etc.

◇ Strong Metal Terminal Box

A sturdy aluminum die-cast terminal box is fitted with a metal cable gland.

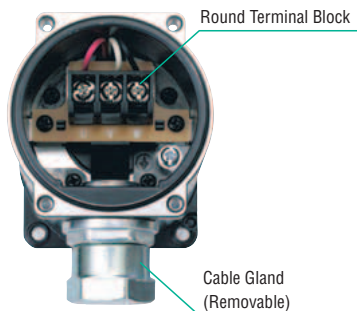


● Terminal Box with Easy-to-Use Structure

The terminal box provided at the back of the motor not only offers high environmental resistance, but it is also structured to ensure ease of use.

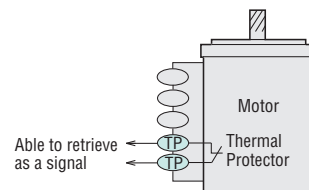
User-Friendly Design

- Wires can be connected using round crimp terminals.
- The direction in which the cables are taken out can be changed according to the combination of motor and gearhead.
- The cable gland can be removed to connect a conduit pipe, etc., instead.



● Lineup of Overheat Protection Devices (Thermal Protectors) for Signal

An overheat protection device (thermal protector) is built into 15 W to 40 W motors. A signal type that can use a conventional automatic return type thermal protector to retrieve the operation of the overheat protection device as a signal and control the operation and stopping of the motor is available. *Oriental Motor has a thermal protector for automatic return type and signal type to meet your various needs.



*Connect the motor properly so that the power of the motor can be interrupted when the thermal protector is activated. Connection example → Page C-59

● Combination Type with Assembled Motor and Gearhead

Combination type products are delivered with the motor and gearhead pre-assembled. This can reduce the number of assembly man-hours and alleviate any worries about damaging the motor shaft during assembly. The combination type uses a **GN-S** gearhead.

◇ Long Life, Low Noise **GN-S** Gearhead is Available

Adopting innovative technologies and structure, the “long life, low noise **GN-S** gearhead” achieves a long rated life of 10000 hours*, twice as long as the level of a conventional gearhead. Also, the gearhead is designed for low noise.



* For the rated life time definition, refer to “Life of Gearheads” on page G-35.

- Can be combined with a right-angle gearhead. For details, please contact the nearest Oriental Motor sales office.

Note

- It does not conform to the IP65 rating when used with a decimal gearhead.

Product Line

Combination Type

This type comes with the motor and its dedicated gearhead pre-assembled. This simplifies installing in equipment. Motors and gearheads are also available separately to facilitate changes in motor and gearhead combinations and if spare gearheads are required.

For the single-phase 100 VAC, the single-phase 110/115 VAC and the single-phase 200 VAC models, please contact the nearest Oriental Motor sales office.

Combination Type

Thermal Protector for Automatic Return Type (RoHS)

Output Power	Power Supply Voltage	Product Name	Gear Ratio
6 W*	Single-Phase 100 VAC	2IK6AB-□S	3~180
	Single-Phase 110/115 VAC	2IK6FB-□S	
	Single-Phase 200 VAC	2IK6CB-□S	
	Single-Phase 220/230 VAC	2IK6EB-□S	
	Three-Phase 200/220/230 VAC	2IK6SB-□S	
15 W	Single-Phase 100 VAC	3IK15AB-□S	3~180
	Single-Phase 110/115 VAC	3IK15FB-□S	
	Single-Phase 200 VAC	3IK15CB-□S	
	Single-Phase 220/230 VAC	3IK15EB-□S	
	Three-Phase 200/220/230 VAC	3IK15SB-□S	

*6 W models are impedance protected. A thermal protector is not built in.

Thermal Protector for Signal Type (RoHS)

Output Power	Power Supply Voltage	Product Name	Gear Ratio
15 W	Single-Phase 100 VAC	3IK15AB-□SS	3~180
	Single-Phase 110/115 VAC	3IK15FB-□SS	
	Single-Phase 200 VAC	3IK15CB-□SS	
	Single-Phase 220/230 VAC	3IK15EB-□SS	
	Three-Phase 200/220/230 VAC	3IK15SB-□SS	
25 W	Single-Phase 100 VAC	4IK25AB-□SS	3~180
	Single-Phase 110/115 VAC	4IK25FB-□SS	
	Single-Phase 200 VAC	4IK25CB-□SS	
	Single-Phase 220/230 VAC	4IK25EB-□SS	
	Three-Phase 200/220/230 VAC	4IK25SB-□SS	

Output Power	Power Supply Voltage	Product Name	Gear Ratio
25 W	Single-Phase 100 VAC	4IK25AB-□S	3~180
	Single-Phase 110/115 VAC	4IK25FB-□S	
	Single-Phase 200 VAC	4IK25CB-□S	
	Single-Phase 220/230 VAC	4IK25EB-□S	
	Three-Phase 200/220/230 VAC	4IK25SB-□S	
40 W	Single-Phase 100 VAC	5IK40AB-□S	3~180
	Single-Phase 110/115 VAC	5IK40FB-□S	
	Single-Phase 200 VAC	5IK40CB-□S	
	Single-Phase 220/230 VAC	5IK40EB-□S	
	Three-Phase 200/220/230 VAC	5IK40SB-□S	

Output Power	Power Supply Voltage	Product Name	Gear Ratio
40 W	Single-Phase 100 VAC	5IK40AB-□SS	3~180
	Single-Phase 110/115 VAC	5IK40FB-□SS	
	Single-Phase 200 VAC	5IK40CB-□SS	
	Single-Phase 220/230 VAC	5IK40EB-□SS	
	Three-Phase 200/220/230 VAC	5IK40SB-□SS	

The following items are included in each product.
 Motor, Gearhead, Capacitor*1, Capacitor Cap*1, Mounting Screws, Parallel Key*2,
 Operating Manual
 *1 Single-phase motors only
 *2 Only for products with a key slot on the output shaft

Round Shaft Type

Thermal Protector for Automatic Return Type (RoHS)

Output Power	Power Supply Voltage	Product Name
6 W*	Single-Phase 100 VAC	2IK6A-AW2BJ
	Single-Phase 110/115 VAC	2IK6A-AW2BU
	Single-Phase 200 VAC	2IK6A-CW2BJ
	Single-Phase 220/230 VAC	2IK6A-CW2BE
	Three-Phase 200/220/230 VAC	2IK6A-SW2B
15 W	Single-Phase 100 VAC	3IK15A-AW2BJ
	Single-Phase 110/115 VAC	3IK15A-AW2BU
	Single-Phase 200 VAC	3IK15A-CW2BJ
	Single-Phase 220/230 VAC	3IK15A-CW2BE
	Three-Phase 200/220/230 VAC	3IK15A-SW2B
25 W	Single-Phase 100 VAC	4IK25A-AW2BJ
	Single-Phase 110/115 VAC	4IK25A-AW2BU
	Single-Phase 200 VAC	4IK25A-CW2BJ
	Single-Phase 220/230 VAC	4IK25A-CW2BE
	Three-Phase 200/220/230 VAC	4IK25A-SW2B
40 W	Single-Phase 100 VAC	5IK40A-AW2BJ
	Single-Phase 110/115 VAC	5IK40A-AW2BU
	Single-Phase 200 VAC	5IK40A-CW2BJ
	Single-Phase 220/230 VAC	5IK40A-CW2BE
	Three-Phase 200/220/230 VAC	5IK40A-SW2B

*6 W models are impedance protected. A thermal protector is not built in.

Thermal Protector for Signal Type (RoHS)

Output Power	Power Supply Voltage	Product Name
15 W	Single-Phase 100 VAC	3IK15A-AW2BSJ
	Single-Phase 110/115 VAC	3IK15A-AW2BSU
	Single-Phase 200 VAC	3IK15A-CW2BSJ
	Single-Phase 220/230 VAC	3IK15A-CW2BSE
	Three-Phase 200/220/230 VAC	3IK15A-SW2BS
25 W	Single-Phase 100 VAC	4IK25A-AW2BSJ
	Single-Phase 110/115 VAC	4IK25A-AW2BSU
	Single-Phase 200 VAC	4IK25A-CW2BSJ
	Single-Phase 220/230 VAC	4IK25A-CW2BSE
	Three-Phase 200/220/230 VAC	4IK25A-SW2BS
40 W	Single-Phase 100 VAC	5IK40A-AW2BSJ
	Single-Phase 110/115 VAC	5IK40A-AW2BSU
	Single-Phase 200 VAC	5IK40A-CW2BSJ
	Single-Phase 220/230 VAC	5IK40A-CW2BSE
	Three-Phase 200/220/230 VAC	5IK40A-SW2BS

The following items are included in each product.
 Motor, Capacitor*, Capacitor Cap*, Operating Manual
 *Single-phase motors only

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

IP65 Terminal Box Type Induction Motors

6 W

□ 60 mm



Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Combination Type Lower Product Name in (): Round Shaft Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
ZP	2IK6EB-□S (2IK6A-CW2BE)	6	Single-Phase 220	50	0.103	38	49	1150	0.6
				60	0.091	40	41	1450	
			Single-Phase 230	50	0.107	45	49	1200	
				60	0.094	40	41	1450	
ZP	2IK6SB-□S (2IK6A-SW2B)	6	Three-Phase 200	50	0.081	49	49	1200	-
				60	0.072	41	41	1400	
			Three-Phase 220	60	0.076	41	41	1500	
Three-Phase 230	60	0.079		41	41	1500			

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards → Page H-2
- ZP: These products are impedance protected.

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 3 N·m.

◇ 50Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
2IK6EB-□S 2IK6SB-□S		0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3

◇ 60Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
2IK6EB-□S 2IK6SB-□S		0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16

Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

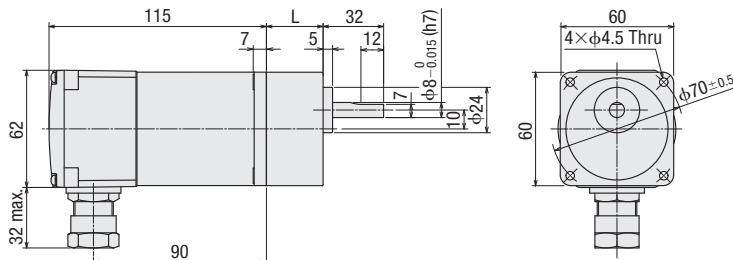
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● 6 W

◇ Combination Type

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
2IK6EB-□S	2IK6GN-CW2BE	2GN□S	3~18	30	1.3
2IK6SB-□S	2IK6GN-SW2B		25~180	40	

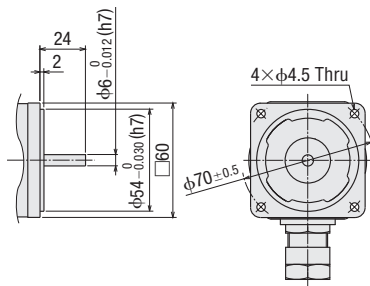


- Applicable cable diameter is φ8~φ12.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 0.9 kg

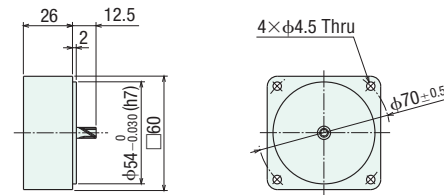


◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

2GN10XS

Mass: 0.2 kg



IP65 Terminal Box Type Induction Motors

15 W

□ 70 mm



Specifications – Continuous Rating (RoHS)

Product Name and Type Upper Product Name: Combination Type Lower Product Name in (): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor	
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF	
(TP) 3IK15EB-□S (3IK15A-CW2BE)	(TP) 3IK15EB-□SS (3IK15A-CW2BSE)	15	Single-Phase 220	50	0.19	70	125	1200	1.0	
				60	0.16	65	105	1450		
				Single-Phase 230	50	0.19	75	125		1200
					60	0.16	65	105		1450
(TP) 3IK15SB-□S (3IK15A-SW2B)	(TP) 3IK15SB-□SS (3IK15A-SW2BS)	15	Three-Phase 200	50	0.17	110	110	1350	-	
				60	0.14	85	100	1600		
				Three-Phase 220	60	0.15	100	100		1650
					Three-Phase 230	60	0.16	100		100

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

● The values in the table are characteristics for the motor only.

● Safety standards → Page H-2

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

(TP): This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example → Page C-59

Permissible Torque When Combination Type

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

S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.

● A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.

● The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.

The actual speed is 2 to 20% less, depending on the load.

● To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.

In that case, the permissible torque is 5 N·m.

◇ 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
3IK15EB-□S◇	0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5	5
3IK15SB-□S◇	0.27	0.32	0.45	0.53	0.67	0.80	1.1	1.3	1.6	2.0	2.4	2.9	3.6	4.4	5	5	5	5	5	5	5

◇ 60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
3IK15EB-□S◇	0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5	5
3IK15SB-□S◇	0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5	5

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16

Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

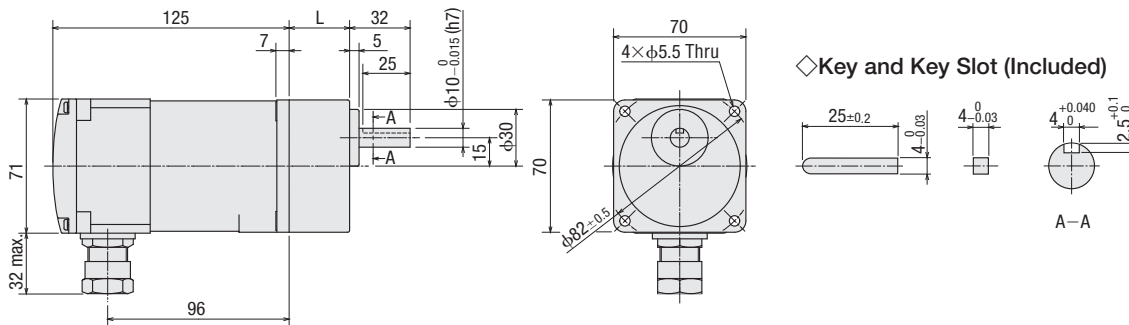
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

15 W

◇ Combination Type (Thermal Protector for Automatic Return Type)

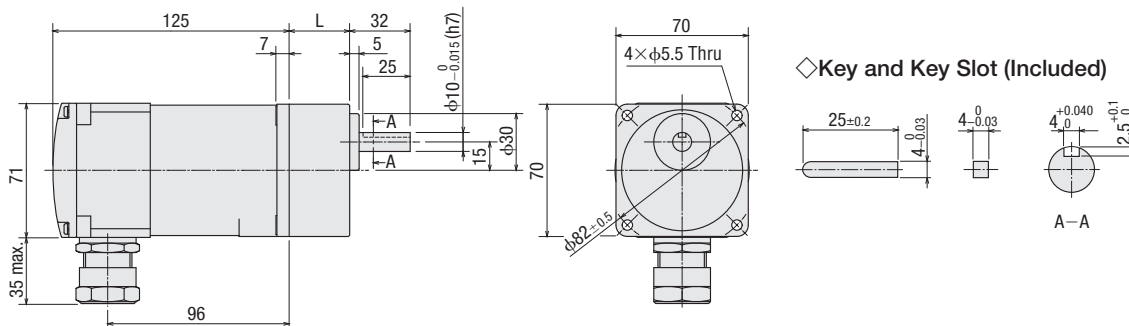
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
3IK15EB-□S	3IK15GN-CW2BE	3GN□S	3~18	32	1.95
3IK15SB-□S	3IK15GN-SW2B		25~180	42	



- Applicable cable diameter is φ8~φ12.
- Details of terminal box → Page C-255

◇ Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
3IK15EB-□SS	3IK15GN-CW2BSE	3GN□S	3~18	32	1.95
3IK15SB-□SS	3IK15GN-SW2BS		25~180	42	

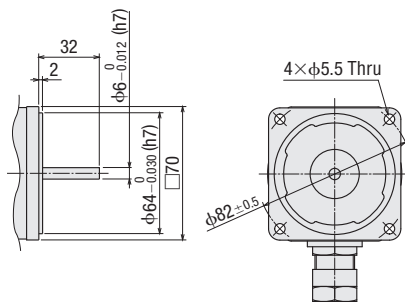


- Applicable cable diameter is φ12~φ16.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.4 kg

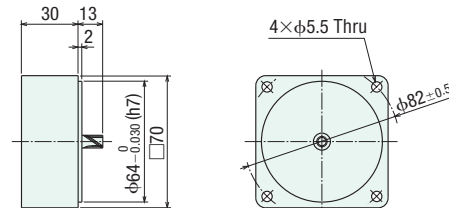


◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

3GN10XS

Mass: 0.3 kg



IP65 Terminal Box Type Induction Motors

25 W

□ 80 mm



Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Combination Type Lower Product Name in (): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(TP) 4IK25EB-□S (4IK25A-CW2BE)	(TP) 4IK25EB-□SS (4IK25A-CW2BSE)	25	Single-Phase 220	50	0.27	110	205	1200	1.5
				60	0.23		170	1450	
			Single-Phase 230	50	0.27	120	205	1200	
				60	0.23		170	1450	
(TP) 4IK25SB-□S (4IK25A-SW2B)	(TP) 4IK25SB-□SS (4IK25A-SW2BS)	25	Three-Phase 200	50	0.23	240	190	1300	-
				60	0.21		160	1550	
			Three-Phase 220	60	0.21	160	160	1600	
				60	0.22		160	1600	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards → Page H-2
- (TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.
- (TP): This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example → Page C-59

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.
- A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 8 N·m. When a gearhead of 1/25 to 1/36 is attached, the value for permissible torque is 6 N·m.

◇ 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
4IK25EB-□S◇		0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8
4IK25SB-□S◇		0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	6.3	7.5	8	8	8	8	8	8

◇ 60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
4IK25EB-□S◇		0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8
4IK25SB-□S◇		0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16

Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

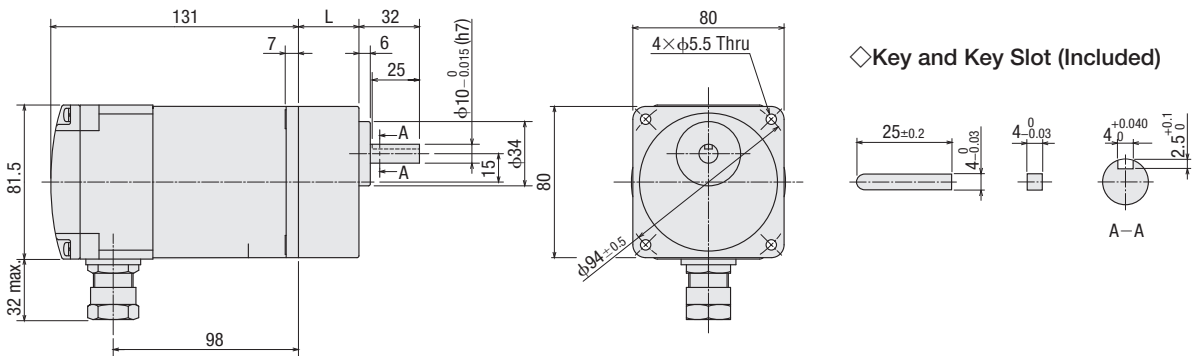
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● 25 W

◇ Combination Type (Thermal Protector for Automatic Return Type)

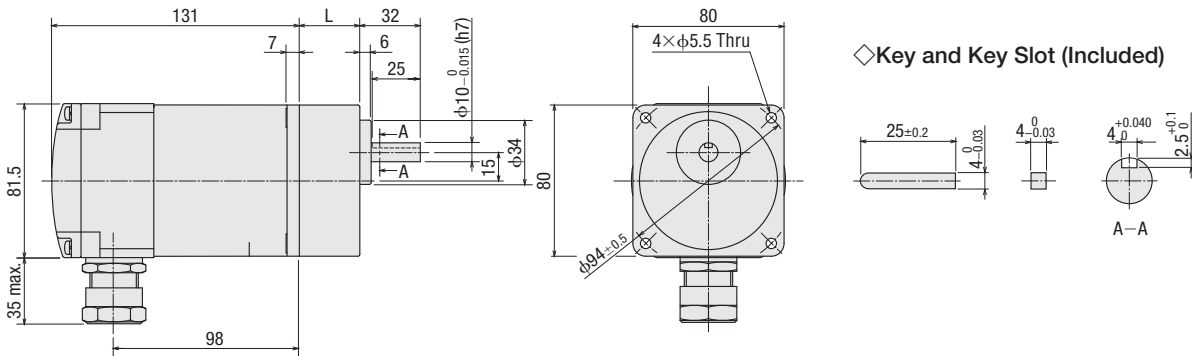
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
4IK25EB-□S	4IK25GN-CW2BE	4GN□S	3~18	32	2.55
4IK25SB-□S	4IK25GN-SW2B		25~180	42.5	



- Applicable cable diameter is $\phi 8 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
4IK25EB-□SS	4IK25GN-CW2BSE	4GN□S	3~18	32	2.55
4IK25SB-□SS	4IK25GN-SW2BS		25~180	42.5	

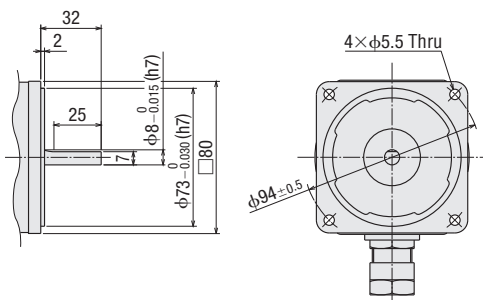


- Applicable cable diameter is $\phi 12 \sim \phi 16$.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.9 kg

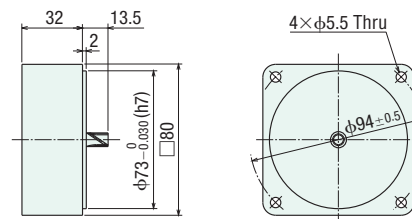


◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

4GN10XS

Mass: 0.4 kg





IP65 Terminal Box Type Induction Motors

40 W

□ 90 mm

Specifications – Continuous Rating (RoHS)



Product Name and Type Upper Product Name: Combination Type Lower Product Name in (): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
(TP) 5IK40EB-□S (5IK40A-CW2BE)	(TP) 5IK40EB-□SS (5IK40A-CW2BSE)	40	Single-Phase 220	50	0.39	200	315	1250	2.3
				60	0.35		260	1500	
			Single-Phase 230	50	0.39		300	1300	
				60	0.34		260	1500	
(TP) 5IK40SB-□S (5IK40A-SW2B)	(TP) 5IK40SB-□SS (5IK40A-SW2BS)	40	Three-Phase 200	50	0.32	400	300	1300	-
				60	0.30	260	260	1550	
			Three-Phase 220	60	0.30	260	260	1600	
				60	0.31	260	260	1600	

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- The values in the table are characteristics for the motor only.
- Safety standards → Page H-2
- (TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.
- (TP): This indicates that there is a built-in thermal protector for signal that enables the retrieval of whether the thermal protector contacts are open or closed. Connection example → Page C-59

Permissible Torque When Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- S indicating the thermal protector for signal is entered where the box ◇ is located within the product name.
- A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor. In that case, the permissible torque is 10 N-m.

◇ 50 Hz

Unit = N-m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
5IK40EB-□S ◇ (Single-Phase 220 VAC)		0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10
5IK40EB-□S ◇ (Single-Phase 230 VAC)		0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10
5IK40SB-□S ◇																					

◇ 60 Hz

Unit = N-m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
5IK40EB-□S ◇		0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10
5IK40SB-□S ◇																					

Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16
 Gearheads → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

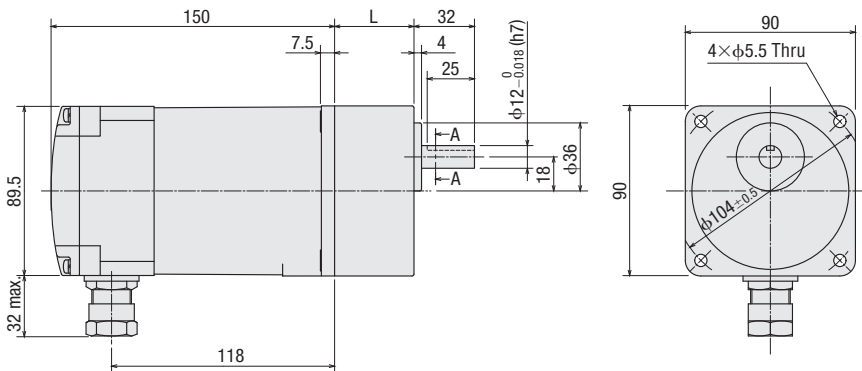
Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

● 40 W

◇ Combination Type (Thermal Protector for Automatic Return Type)

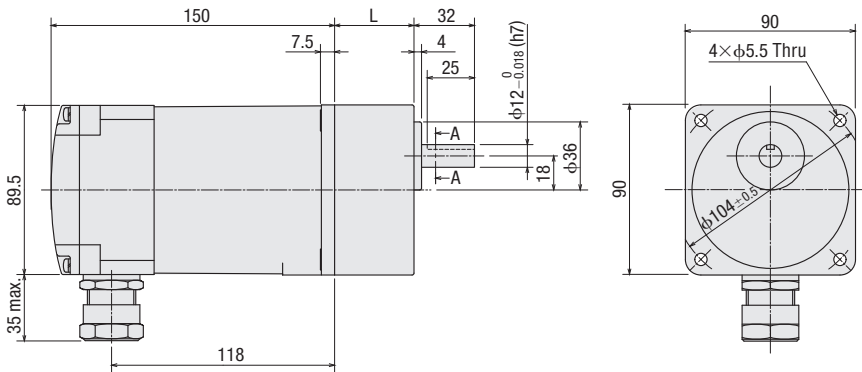
Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
5IK40EB-□S	5IK40GN-CW2BE	5GN□S	3~18	42	4.2
5IK40SB-□S	5IK40GN-SW2B		25~180	60	



- Applicable cable diameter is φ8~φ12.
- Details of terminal box → Page C-255

◇ Combination Type (Thermal Protector for Signal Type)

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg
5IK40EB-□SS	5IK40GN-CW2BSE	5GN□S	3~18	42	4.2
5IK40SB-□SS	5IK40GN-SW2BS		25~180	60	

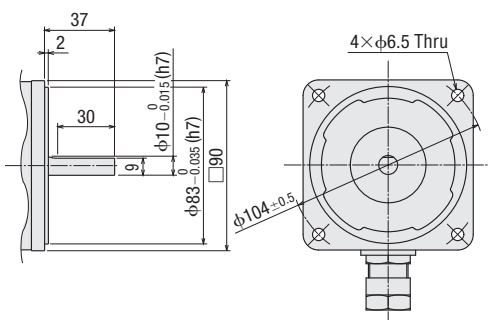


- Applicable cable diameter is φ12~φ16.
- Details of terminal box → Page C-255

◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.7 kg

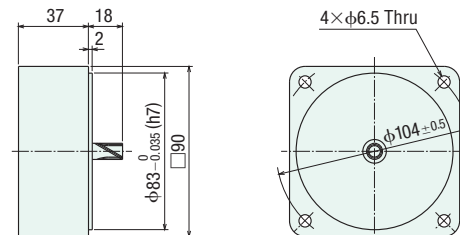


◇ Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

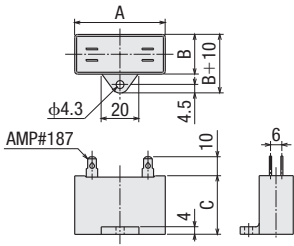
5GN10XS

Mass: 0.6 kg



Dimensions (Unit = mm)

Capacitor (Included with single-phase motors)



Capacitor Dimensions (mm)

Product Name and Type Upper Product Name: Combination Type Lower Product Name in (): Round Shaft Type		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Thermal Protector for Automatic Return Type	Thermal Protector for Signal Type						
2IK6EB-□S (2IK6A-CW2BE)	—	CH06BFAUL	31	14.5	23.5	18	Included
3IK15EB-□S (3IK15A-CW2BE)	3IK15EB-□SS (3IK15A-CW2BSE)	CH10BFAUL	37	18	27	27	
4IK25EB-□S (4IK25A-CW2BE)	4IK25EB-□SS (4IK25A-CW2BSE)	CH15BFAUL	38	21	31	37	
5IK40EB-□S (5IK40A-CW2BE)	5IK40EB-□SS (5IK40A-CW2BSE)	CH23BFAUL	48	21	31	43	

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

Connection Diagram

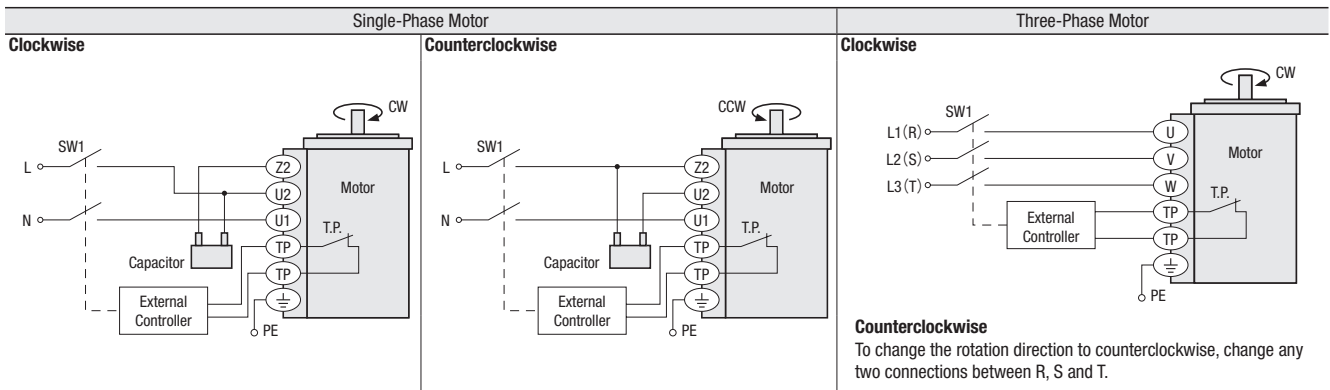
- The rotation direction of the motor is as viewed from the output shaft of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- The rotation direction of the gearhead output shaft may differ from that of the motor output shaft depending on the gear ratio of the gearhead. Refer to the permissible torque table of the combination type for the rotation direction.

Thermal Protector for Automatic Return Type, Impedance Protected

Single-Phase Motor		Three-Phase Motor
Clockwise 	Counterclockwise 	Clockwise
		Counterclockwise To change the rotation direction to counterclockwise, change any two connections between R, S and T.

● Thermal Protector for Signal Type

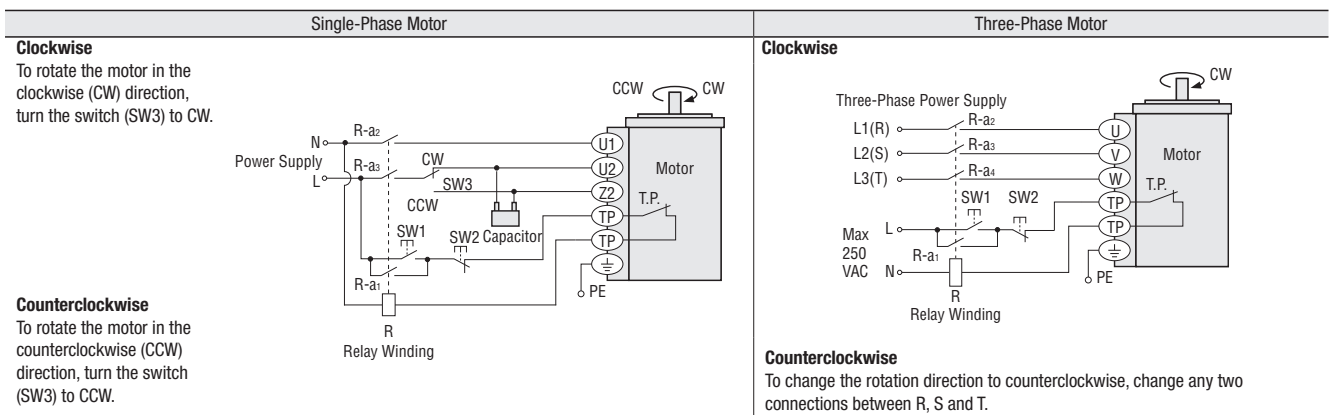
- If the motor with built-in thermal protector abnormally heats for some reason, the contacts (normally closed) become open. When the temperature of the motor decreases, the contacts of the thermal protector are reset (closed).
- Operate SW1 with the external controller and shut off the motor's power supply in order to stop the motor when the thermal protector has been activated.
- Even if the thermal protector automatically returns, ensure that the power supply remains shut off with SW1.



◇ Connection Example of Thermal Protector for Signal Type

When Relays and Switches are Used

- Connect the motor properly so that the power of the motor can be interrupted when the thermal protector is activated.
- When switch SW1 (normally open) is turned ON, the motor operates. When switch SW2 (normally closed) is turned ON, the motor stops.



Note

- Configure the circuit properly so that the motor does not unexpectedly start even when the thermal protector is automatically reset.
- Do not connect the thermal protector directly to a power source. Always connect a switch or relay.

◇ Contact Capacity

Number	Single-Phase 220/230 VAC	Remarks
SW1 SW2 SW3	250 VAC 5 A min. (Inductive load)	—
R-a1 R-a2 R-a3 R-a4	250 VAC 5 A min. (Inductive load)	Switched simultaneously

- Connect a CR circuit for surge suppression to the forward/reverse select switch to protect the contact. **EPCR1201-2** (sold separately) is available as an accessory. → Page C-250
- How to connect a capacitor → Page C-255
- Z2, U2, U1 U, V, W: Motor power line, TP: Thermal protector

◇ Thermal Protector Specifications (Thermal Protector for Signal Type)

Item	Specifications
Operating Temperature	Open: 130±5°C, Close: 90±15°C (Normally Closed)
Contact Specifications	Rated operational voltage and rated operational current (resistance load) 250 VAC 2 A, 26 VDC 2 A Minimum Load Condition: 85 VAC 50 mA, 5 VDC 5 mA Initial Contact Resistance: 50 mΩ max.
Dielectric Strength	No abnormality is judged even with application of 3.0 kVAC at 50 Hz or 60 Hz between the motor windings and the thermal protector lead wire cores for 1 minute after rated operation under normal ambient temperature and humidity.

● Connecting Method

◇ Applicable Cable Diameter

φ8~12 mm (Thermal Protector for Automatic Return Type, Impedance Protected)
φ12~16 mm (Thermal Protector for Signal Type)

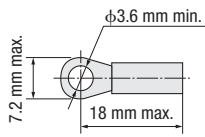
◇ Applicable Lead Wire Diameter

AWG18 (0.75 mm²) min.

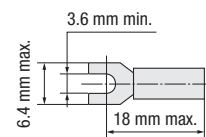
◇ Applicable Crimp Terminal

Connection to Terminal Block

● Insulated Round Terminal

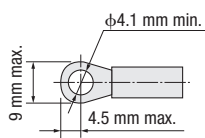


● Insulated Fork Terminal



Connection to Protective Earth Terminal

● Insulated Round Terminal



◇ Inside of the Terminal Box

Thermal Protector for Automatic Return Type, Impedance Protected		Thermal Protector for Signal Type	
Single-Phase Motor	Three-Phase Motor	Single-Phase Motor	Three-Phase Motor

● Z2, U2, U1 U, V, W: Motor power line, TP: Thermal protector

■ List of Motor and Gearhead Combinations

● Combination Type

◇ Thermal Protector for Automatic Return Type

Output Power	Product Name	Motor Product Name	Gearhead Product Name
6 W	2IK6EB-□S	2IK6GN-CW2BE	2GN□S
	2IK6SB-□S	2IK6GN-SW2B	
15 W	3IK15EB-□S	3IK15GN-CW2BE	3GN□S
	3IK15SB-□S	3IK15GN-SW2B	
25 W	4IK25EB-□S	4IK25GN-CW2BE	4GN□S
	4IK25SB-□S	4IK25GN-SW2B	
40 W	5IK40EB-□S	5IK40GN-CW2BE	5GN□S
	5IK40SB-□S	5IK40GN-SW2B	

◇ Thermal Protector for Signal Type

Output Power	Product Name	Motor Product Name	Gearhead Product Name
15 W	3IK15EB-□SS	3IK15GN-CW2BSE	3GN□S
	3IK15SB-□SS	3IK15GN-SW2BS	
25 W	4IK25EB-□SS	4IK25GN-CW2BSE	4GN□S
	4IK25SB-□SS	4IK25GN-SW2BS	
40 W	5IK40EB-□SS	5IK40GN-CW2BSE	5GN□S
	5IK40SB-□SS	5IK40GN-SW2BS	

Gearheads, Peripheral Equipment

Space Saving

Right-Angle Gearheads
→ Page C-213



Instantaneous Stop

Brake Pack
→ Page C-229



Speed Control

Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240



Couplings
→ Page C-245

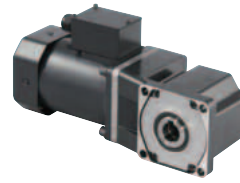


● A number indicating the gear ratio is entered where the box □ is located within the product name.

High Power Induction Motors BH Series

200 W

□ 104 mm



Right-Angle Hollow Shaft



Parallel Shaft

Features

● High Power 200 W

Smallest frame size among 200 W output power.

● Right-Angle Gearheads Employing Hypoid Gears

The right-angle gearheads employ hypoid gears. Hollow shafts and solid shafts are available to enable space saving.

● Tapped Hole at the Shaft End

The gearhead shafts feature a tapped hole for convenient connection with loads.

● "Combination Type" for Easy Mounting

The combination type comes with the motor and its dedicated gearhead pre-assembled. This enables easy mounting in equipment.

Combination Type:	This type comes with the motor and its dedicated gearhead pre-assembled. This simplifies installation in equipment. Motors and gearheads are also available separately to facilitate changes in motor and gearhead combinations and if spare gearheads are required.
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Specifications – Continuous Rating



Product Name and Type Combination Type (): Round Shaft Type	Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque N-m	Rated Torque N-m	Rated Speed r/min	Capacitor μF
(TP) BHI62ET-□RH BHI62ET-□RA BHI62ET-□ (BHI62ET-A)	200	Single-Phase 220	50	1.5	0.98	1.52	1250	10
			60			1.27	1500	
		Single-Phase 230	50	1.52	1250			
			60	1.27	1500			
(TP) BHI62ST-□RH BHI62ST-□RA BHI62ST-□ (BHI62ST-A)	200	Three-Phase 200	50	1.1	1.49	1.49	1250	-
			60		1.25	1.25	1500	
		Three-Phase 220	60	0.95	1.23	1.23	1550	
			60		1.18	1.18	1600	
		Three-Phase 380	50	0.56	1.47	1.47	1300	
			60		0.54	1.24	1.24	
Three-Phase 400	50	0.55	1.47	1.47	1300			
	60		0.52	1.24	1.24	1550		
(TP) BHI62UT2-□RH* BHI62UT2-□RA* BHI62UT2-□* (BHI62UT2-A*)	200	Three-Phase 415	50	0.54	1.47	1.47	1300	
			60		1.24	1.24	1550	

● A number indicating the gear ratio is entered where the box □ is located within the product name. Also, the values in the table are characteristics for the motor only.

● Safety standards → Page H-2

* These products only conform to the China Compulsory Certification (CCC) System. The CE Marking is affixed.

Note

● A three-phase 400 VAC specification motor cannot be used with an inverter. Using them together may lead to deterioration of the motor winding insulation and damage the products.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the power supply off before inspecting.

● Degree of Protection

Product Name				Degree of Protection
Hollow Shaft Type	Solid Shaft Type	Parallel Shaft Type	Round Shaft Type	
BHI62ET-□RH BHI62ST-□RH BHI62UT2-□RH	BHI62ET-□RA BHI62ST-□RA BHI62UT2-□RA	BHI62ET-□ BHI62ST-□ BHI62UT2-□	BHI62ET-A* BHI62ST-A* BHI62UT2-A*	IP54

*Excluding the installation surface of the round shaft type.

Product Line

● Combination Type (RoHS)

◇ Right-Angle Shaft

Type	Power Supply Voltage	Product Name	Gear Ratio
Hollow Shaft Terminal Box Type	Single-Phase 220/230 VAC	BHI62ET-□RH	5~180
	Three-Phase 200/220/230 VAC	BHI62ST-□RH	5~180
	Three-Phase 380/400/415 VAC	BHI62UT2-□RH	5~180
Solid Shaft Terminal Box Type	Single-Phase 220/230 VAC	BHI62ET-□RA	5~180
	Three-Phase 200/220/230 VAC	BHI62ST-□RA	5~180
	Three-Phase 380/400/415 VAC	BHI62UT2-□RA	5~180

The following items are included in each product.

Motor, Gearhead, Capacitor*, Capacitor Cap*, Parallel Key, Operating Manual
*Single-phase motors only

● Round Shaft Type (RoHS)

Type	Power Supply Voltage	Product Name
Terminal Box Type	Single-Phase 220/230 VAC	BHI62ET-A
	Three-Phase 200/220/230 VAC	BHI62ST-A
	Three-Phase 380/400/415 VAC	BHI62UT2-A

The following items are included in each product.

Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

◇ Parallel Shaft

Type	Power Supply Voltage	Product Name	Gear Ratio
Terminal Box Type	Single-Phase 220/230 VAC	BHI62ET-□	3~180
	Three-Phase 200/220/230 VAC	BHI62ST-□	3~180
	Three-Phase 380/400/415 VAC	BHI62UT2-□	3~180

The following items are included in each product.

Motor, Gearhead, Capacitor*, Capacitor Cap*, Mounting Screws, Parallel Key, Operating Manual
*Single-phase motors only

6 W

15 W

25 W

40 W

60 W

90 W

IP65 Terminal
Box Types
6 W to 40 W200 W
BH Series2-pole
40 W to 150 W

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

Permissible Torque of Combination Type

- A number indicating the gear ratio is entered where the box □ is located within the product name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- Decimal gearheads are not available.

Right-Angle Shaft - 50 Hz

Unit = N·m

Product Name	Speed r/min	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
BHI62ET-□RH, BHI62ET-□RA		5.5	6.7	8.3	10.0	13.9	16.6	20.0	27.7	33.3	36	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA		5.4	6.5	8.2	9.8	13.6	16.3	19.6	27.2	32.6	36	40	43	47	51.5	54.5	60	60	60
BHI62UT2-□RH, BHI62UT2-□RA		5.4	6.4	8.0	9.7	13.4	16.1	19.3	26.8	32.2	36	40	43	47	51.5	54.5	60	60	60

Right-Angle Shaft - 60 Hz

Unit = N·m

Product Name	Speed r/min	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
BHI62ET-□RH, BHI62ET-□RA		4.6	5.6	7.0	8.3	11.6	13.9	16.7	23.2	27.8	33.4	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (200 VAC)		4.6	5.5	6.8	8.2	11.4	13.7	16.4	22.8	27.4	32.9	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (220 VAC)		4.5	5.4	6.7	8.1	11.2	13.5	16.2	22.4	26.9	32.3	40	43	47	51.5	54.5	60	60	60
BHI62ST-□RH, BHI62ST-□RA (230 VAC)		4.3	5.2	6.5	7.8	10.8	12.9	15.5	21.5	25.8	31.0	40	43	47	51.5	54.5	60	60	60
BHI62UT2-□RH, BHI62UT2-□RA		4.5	5.4	6.8	8.1	11.3	13.6	16.3	22.6	27.2	32.6	40	43	47	51.5	54.5	60	60	60

Parallel Shaft - 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3	
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
BHI62ET-□		4.1	4.9	6.8	8.2	10.3	12.3	16.3	19.6	23.5	32.7	39.2	40	40	40	40	40	40	40	40	40	40
BHI62ST-□		4.0	4.8	6.7	8.0	10.1	12.1	16.0	19.2	23.1	32.0	38.4	40	40	40	40	40	40	40	40	40	40
BHI62UT2-□		4.0	4.8	6.6	7.9	9.9	11.9	15.8	19.0	22.8	31.6	37.9	40	40	40	40	40	40	40	40	40	40

Parallel Shaft - 60 Hz

Unit = N·m

Product Name	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
BHI62ET-□		3.4	4.1	5.7	6.9	8.6	10.3	13.7	16.4	19.7	27.3	32.8	39.3	40	40	40	40	40	40	40	40	40
BHI62ST-□ (200 VAC)		3.4	4.1	5.6	6.8	8.4	10.1	13.4	16.1	19.4	26.9	32.3	38.7	40	40	40	40	40	40	40	40	40
BHI62ST-□ (220 VAC)		3.3	4.0	5.5	6.6	8.3	10.0	13.2	15.9	19.0	26.4	31.7	38.1	40	40	40	40	40	40	40	40	40
BHI62ST-□ (230 VAC)		3.2	3.8	5.3	6.4	8.0	9.6	12.7	15.2	18.3	25.4	30.4	36.5	40	40	40	40	40	40	40	40	40
BHI62UT2-□		3.3	4.0	5.6	6.7	8.4	10.0	13.3	16.0	19.2	26.7	32.0	38.4	40	40	40	40	40	40	40	40	40

Permissible Overhung Load and Permissible Thrust Load

Combination type → Page C-16

Round shaft type → Page C-16

Permissible Load Inertia: J of Gearhead

→ Page C-17

Dimensions (Unit = mm)

- Mounting screws are included with the combination type with a parallel shaft. Mounting screw dimensions → Page C-254
- A number indicating the gear ratio is entered where the box □ is located within the product name.

◇ Combination Type - Right-Angle Shaft, Hollow Shaft (Terminal box type)

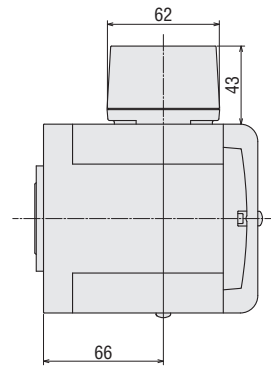
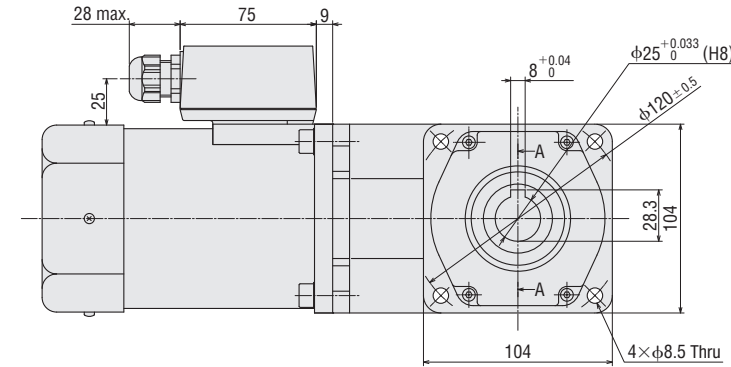
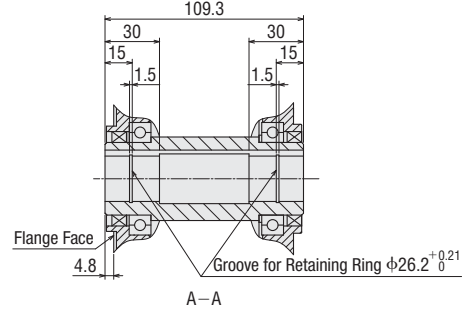
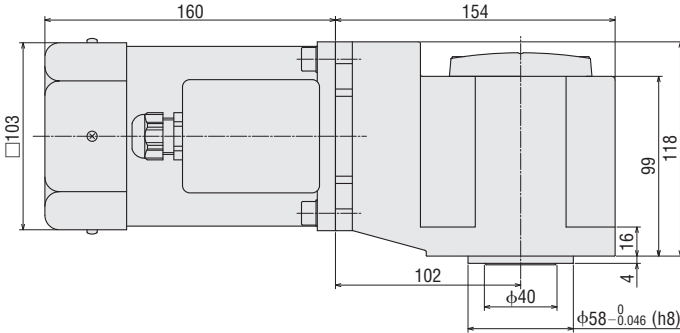
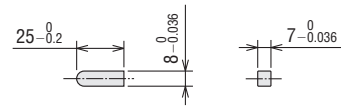
BHI62ET-□RH, BHI62ST-□RH

Motor: BHI62ET-G2, BHI62ST-G2

Gearhead: BH6G2-□RH

Mass: 10.0 kg

◇ Key (Included)



- Applicable cable diameter is φ6~φ12.
- Details of terminal box → Page C-255

◇ Combination Type - Right-Angle Shaft, Hollow Shaft (Terminal box type)

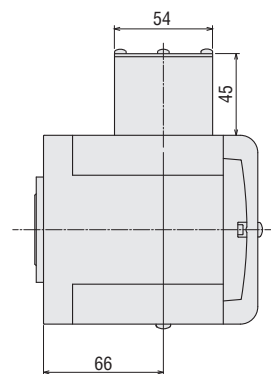
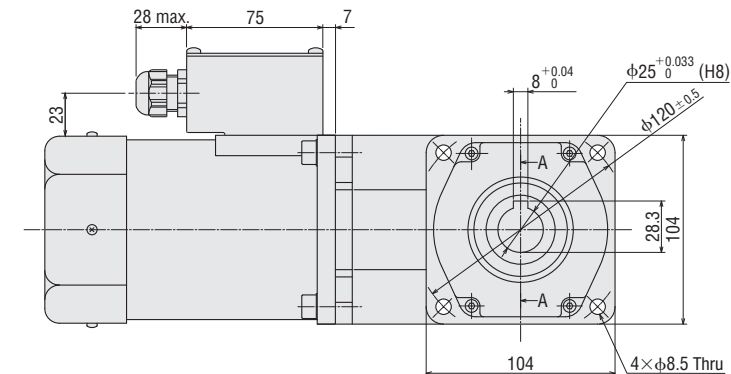
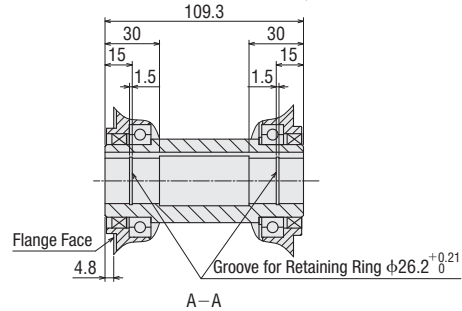
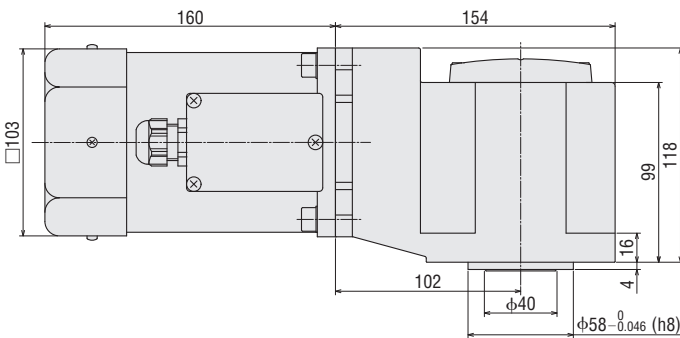
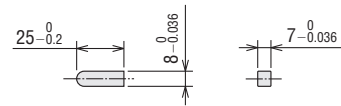
BHI62UT2-□RH

Motor: BHI62UT2-G2

Gearhead: BH6G2-□RH

Mass: 10.0 kg

◇ Key (Included)



- Applicable cable diameter is φ6~φ12.
- Details of terminal box → Page C-255

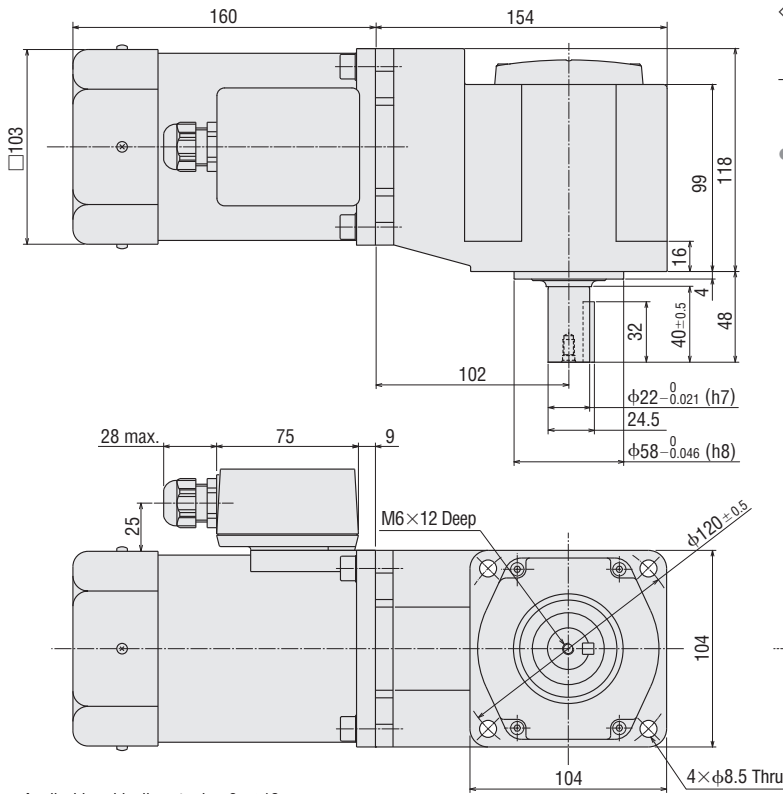
◇ Combination Type - Right-Angle Shaft, Solid Shaft (Terminal box type)

BHI62ET-□RA, BHI62ST-□RA

Motor: BHI62ET-G2, BHI62ST-G2

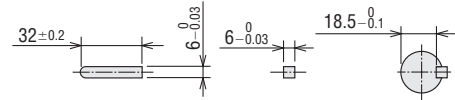
Gearhead: BH6G2-□RA

Mass: 10.0 kg



- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Key and Key Slot (Included)



- At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

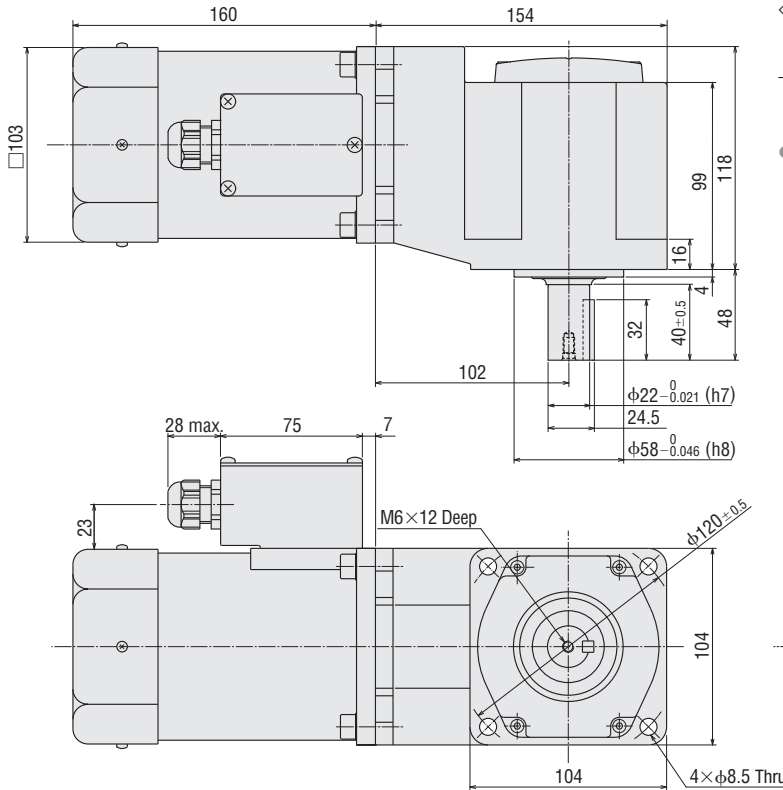
◇ Combination Type - Right-Angle Shaft, Solid Shaft (Terminal box type)

BHI62UT2-□RA

Motor: BHI62UT2-G2

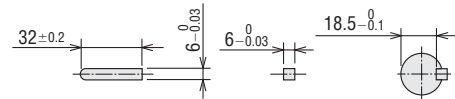
Gearhead: BH6G2-□RA

Mass: 10.0 kg



- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Key and Key Slot (Included)



- At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

- Introduction
- Induction Motors
- Reversible Motors
- Constant Speed Motors
- Electromagnetic Brake Motors
- V Series
- TM Series Torque Motors
- Torque Motors
- Water-tight, Dust-Resistant Motors
- Right-Angle Gearheads
- Brake Pack
- Accessories
- Installation

◇ Combination Type - Parallel Shaft (Terminal box type)

BHI62ET-□

BHI62ST-□

Motor:

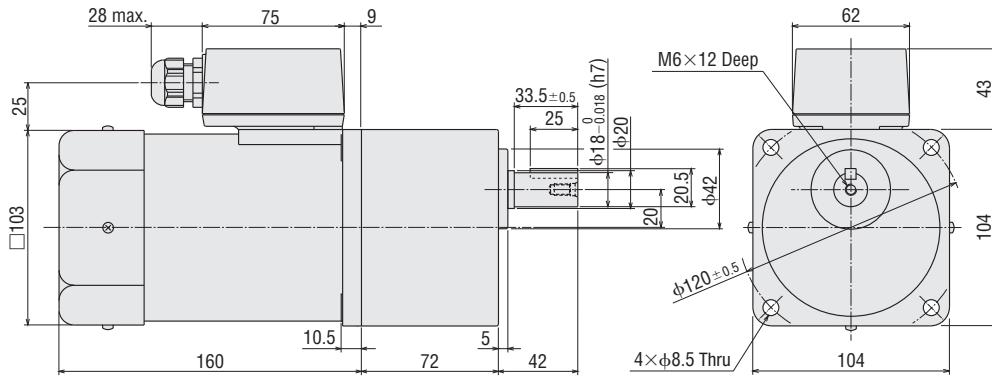
BHI62ET-G2

BHI62ST-G2

Gearhead:

BH6G2-□

Mass: 8.0 kg



- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Combination Type - Parallel Shaft (Terminal box type)

BHI62UT2-□

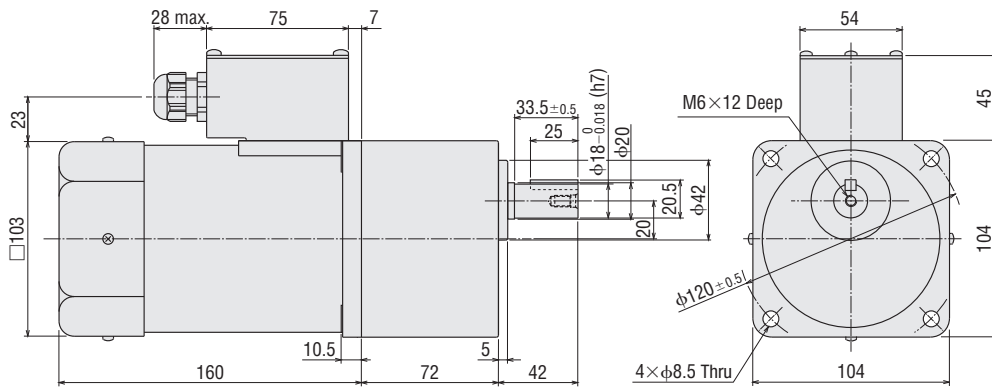
Motor:

BHI62UT2-G2

Gearhead:

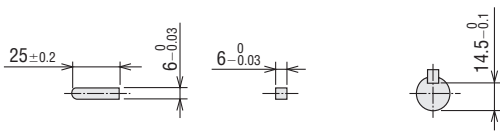
BH6G2-□

Mass: 8.0 kg



- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Key and Key Slot (Included, common to BHI62 type)

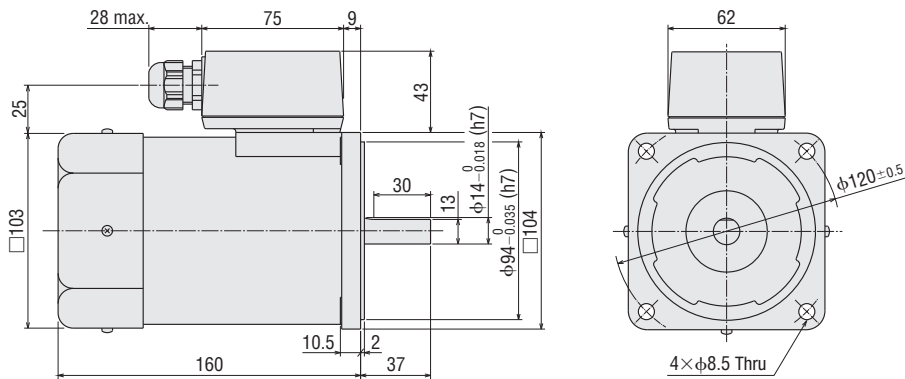


- At the time of shipment, a key is inserted in the key slot of the gearhead shaft.

◇ Round Shaft Type - Terminal Box Type

BHI62ET-A, BHI62ST-A

Mass: 5.0 kg

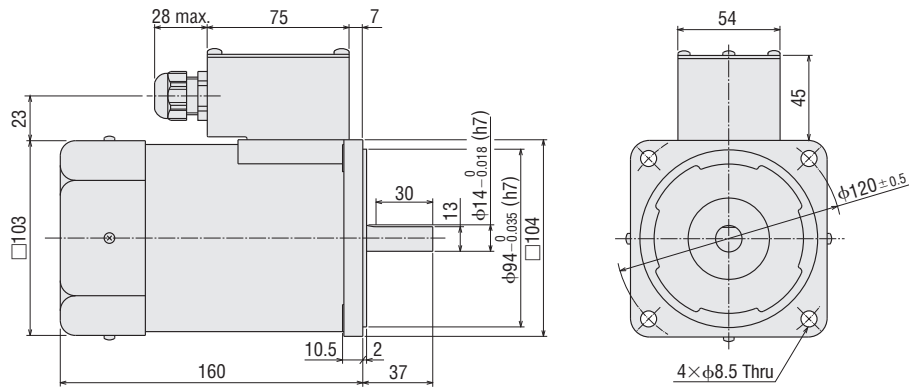


- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Round Shaft Type - Terminal Box Type

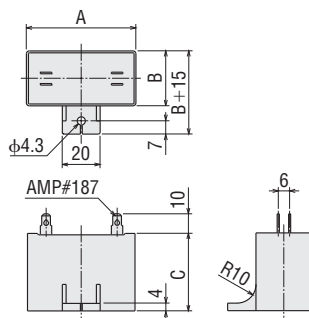
BHI62UT2-A

Mass: 5.0 kg



- Applicable cable diameter is $\phi 6 \sim \phi 12$.
- Details of terminal box → Page C-255

◇ Capacitor (Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Product Name	Capacitor Product Name	A	B	C	Mass (g)
BHI62ET-□RH BHI62ET-□RA BHI62ET-□ BHI62ET-A	CH100BFAUL	58	35	50	132

- A capacitor cap is included with the capacitor.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

■ Mounting Method for Right Angle - Hollow Shaft Type

→ Page C-220

Introduction

Induction Motors

Reversible Motors

Constant Speed Motors

Electromagnetic Brake Motors

V Series

TM Series Torque Motors

Torque Motors

Water-tight, Dust-Resistant Motors

Right-Angle Gearheads

Brake Pack

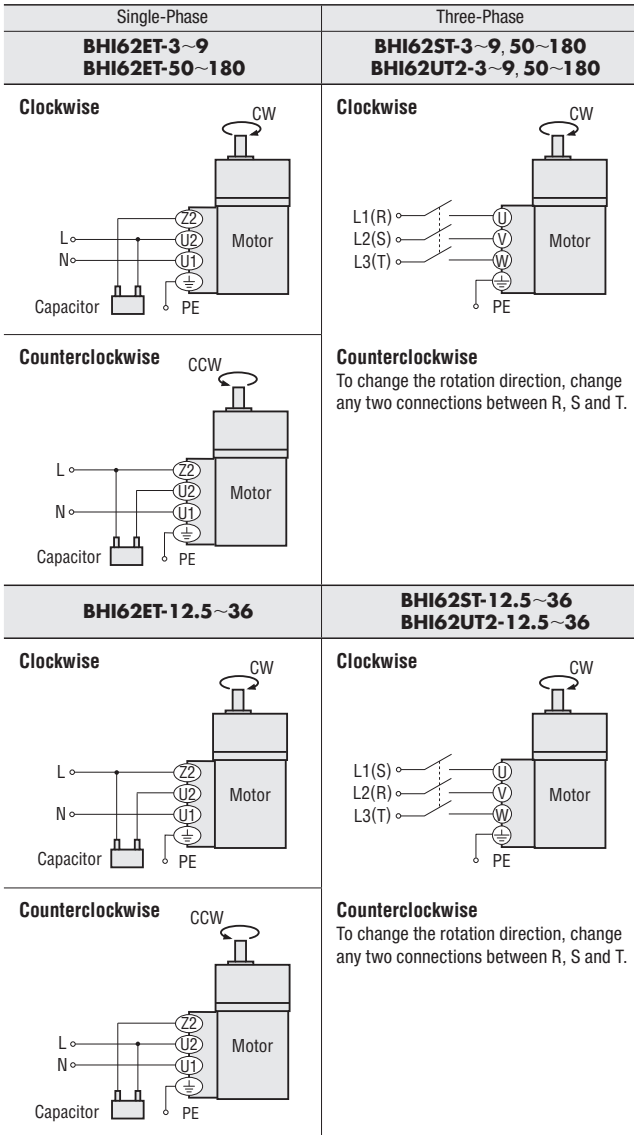
Accessories

Installation

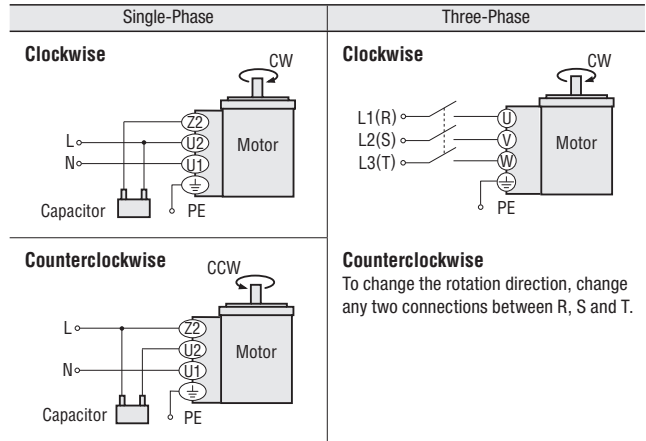
Connection Diagrams

● The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

● Combination Type: Parallel Shaft



● Round Shaft Type



Note

- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.
- Connect a CR circuit to protect the connector point of switches.
Connecting CR circuit, contact capacity → Page C-255
- For added safety, provide a breaker or fuse on the power supply input.
- How to connect a capacitor → Page C-255

List of Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

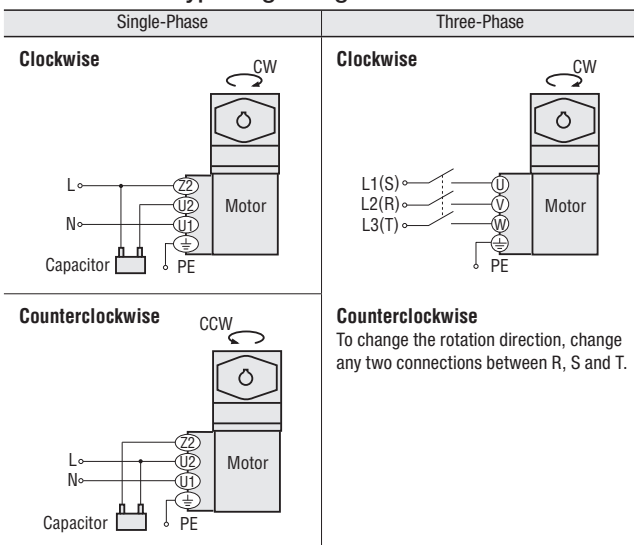
● Combination Type: Right Angle Shaft

Product Name	Motor Product Name	Gearhead Product Name
BHI62ET-□RH	BHI62ET-G2	BH6G2-□RH
BHI62ET-□RA		BH6G2-□RA
BHI62ST-□RH	BHI62ST-G2	BH6G2-□RH
BHI62ST-□RA		BH6G2-□RA
BHI62UT2-□RH	BHI62UT2-G2	BH6G2-□RH
BHI62UT2-□RA		BH6G2-□RA

● Combination Type: Parallel Shaft

Product Name	Motor Product Name	Gearhead Product Name
BHI62ET-□	BHI62ET-G2	BH6G2-□
BHI62ST-□	BHI62ST-G2	BH6G2-□
BHI62UT2-□	BHI62UT2-G2	BH6G2-□

● Combination Type: Right Angle Shaft



Peripheral Equipment

Speed Control

Inverters
→ Page D-136



Accessories

Mounting Brackets
→ Page C-240



Couplings
→ Page C-245



● A number indicating the gear ratio is entered where the box □ is located within the product name or gearhead product name.