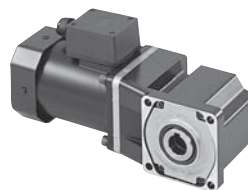


High Power Induction Motors BH Series

200 W

Frame Size: □104 mm



Right-Angle Shaft



Parallel Shaft

Features

● High Power 200 W

Smallest frame size among 200 W motors

● Hypoid Gear-Employed Right Angle Gearheads

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

● (RoHS) RoHS-Compliant

BH Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

● Details of RoHS Directive → Page G-23

● "Combination Type" for Easy Installation

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

Combination Type:

The combination type comes with the motor and its dedicated gearhead pre-assembled, which simplifies installation in equipment. Motors and gearheads are also available separately to facilitate changes or repairs.

Specifications – Continuous Rating (RoHS)



Model 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	Degree of Protection
(TP) BHI62ET-□RH BHI62ET-□RA BHI62ET-□ (BHI62ET-A)	200	Single-Phase 220	60	1.5	0.98	1.27	1500	10	IP54*
			50			1.52	1250		
		Single-Phase 230	60	1.27	1500				
			50	1.49	1.49	1250			
(TP) BHI62ST-□RH BHI62ST-□RA BHI62ST-□ (BHI62ST-A)	200	Three-Phase 200	60	1.1	1.25	1.25	1500	-	IP54*
			60		1.23	1.23	1550		
		Three-Phase 220	60	0.95	1.18	1.18	1600		
			Three-Phase 230	60					

● Enter the gear ratio in the box (□) within the model name. The values for each specification applies to the motor only.

● Details of safety standards → Page G-2

● List of safety standard approved products (Model, Standards, Standards File No., Certification Body) → Page G-10

● In addition to the products shown above, the products for single-phase 100 VAC, single-phase 110/115 VAC and single-phase 200 VAC are also available. Please contact the nearest Oriental Motor sales office.

*Excluding the installation surface of the round shaft type.

(TP): Contains 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 motor off before inspecting.

Product Line

● Combination Type (RoHS)

◇ Right-Angle Shaft

Type	Voltage	Model	Gear Ratio
Hollow Shaft Terminal Box	Single-Phase 220/230 VAC	BHI62ET-□RH	5~180
	Three-Phase 200/220/230 VAC	BHI62ST-□RH	5~180
Solid Shaft Terminal Box	Single-Phase 220/230 VAC	BHI62ET-□RA	5~180
	Three-Phase 200/220/230 VAC	BHI62ST-□RA	5~180

● Enter the gear ratio in the box (□) within the model name.

The following items are included in each product.

Motor, Gearhead, Capacitor*, Capacitor Cap*, Parallel Key, Operating Manual
*Only for single-phase motors

● Round Shaft Type (RoHS)

Type	Voltage	Model
Terminal Box	Single-Phase 220/230 VAC	BHI62ET-A
	Three-Phase 200/220/230 VAC	BHI62ST-A

The following items are included in each product.

Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Only for single-phase motors

◇ Parallel Shaft (RoHS)

Type	Voltage	Model	Gear Ratio
Terminal Box	Single-Phase 220/230 VAC	BHI62ET-□	3~180
	Three-Phase 200/220/230 VAC	BHI62ST-□	3~180

● Enter the gear ratio in the box (□) within the model name.

The following items are included in each product.

Motor, Gearhead, Capacitor*, Capacitor Cap*, Mounting Screws, Parallel Key, Operating Manual
*Only for single-phase motors

Speed Control
Inverter
→ Page A-195

Accessories
→ Page A-229



■ Gearmotor – Torque Table for Combination Type

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the 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 2-20% less than the displayed value, depending on the load.
- Decimal gearheads are not available for the **BH** series.

● Right-Angle Shaft 50 Hz

Unit = N·m

Model	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	36.0	40.0	43.0	47.0	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	36.0	40.0	43.0	47.0	51.5	54.5	60	60	60

● Right-Angle Shaft 60 Hz

Unit = N·m

Model	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	40.0	43.0	47.0	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	40.0	43.0	47.0	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	40.0	43.0	47.0	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	40.0	43.0	47.0	51.5	54.5	60	60	60

● Parallel Shaft 50 Hz

Unit = N·m

Model	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
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

● Parallel Shaft 60 Hz

Unit = N·m

Model	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
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
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
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

■ Permissible Overhung Load and Permissible Thrust Load

Combination Type → Page A-15

Round Shaft Type → Page A-15

■ Permissible Load Inertia of Gearhead: J

→ Page A-16

Dimensions (Unit = mm)

● Mounting screws are included with the combination type, parallel shaft. Dimensions for mounting screws → Page A-246

● Enter the gear ratio in the box (□) within the model name.

◇ Combination Type: Right-Angle, Hollow Shaft (Terminal Box Type)

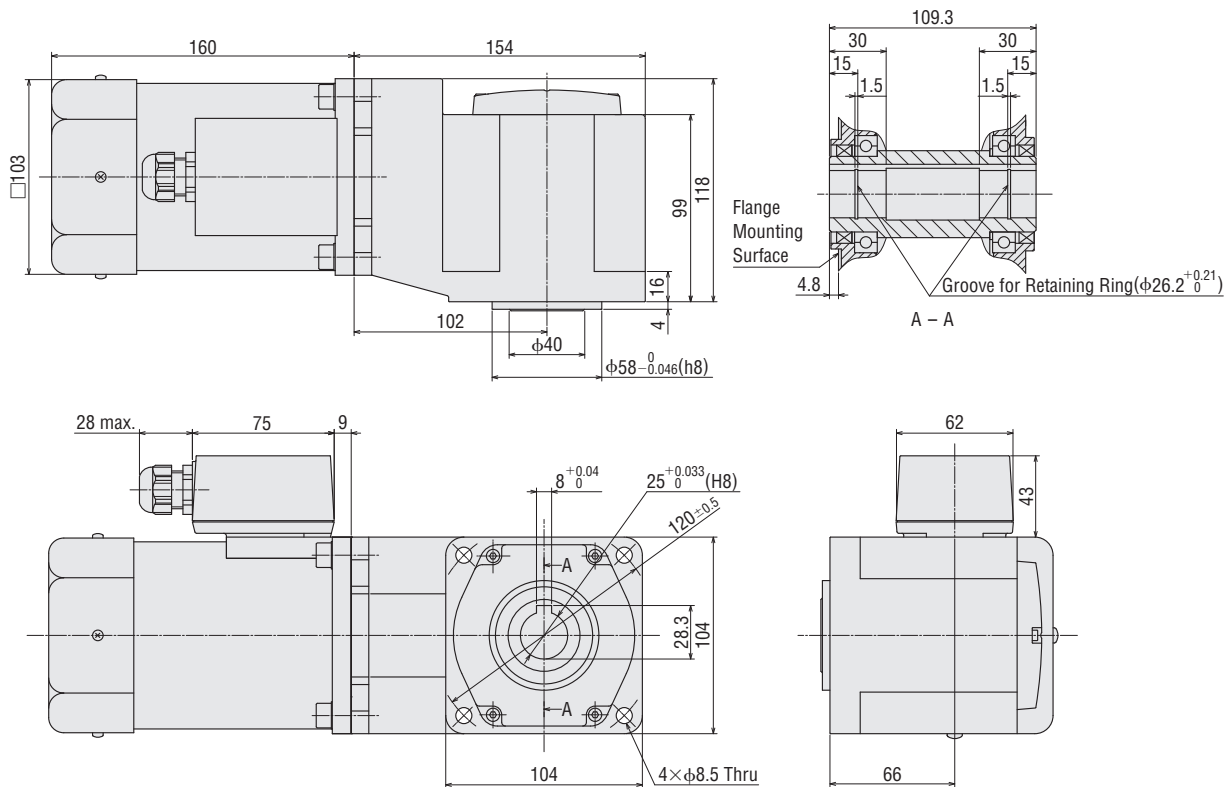
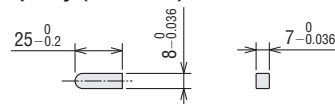
BHI62ET-□RH, BHI62ST-□RH

Mass: 10.0 kg

Motor: BHI62ET-G2, BHI62ST-G2

Gearhead: BH6G2-□RH

◇ Key (Included)



● Use cable with a diameter of $\phi 6 \sim \phi 12$ mm.

● Details of terminal box → Page A-248

◇ Combination Type: Right-Angle, Solid Shaft (Terminal Box Type)

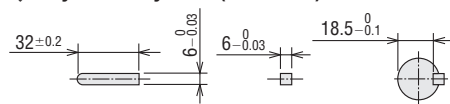
BHI62ET-□RA, BHI62ST-□RA

Mass: 10.0 kg

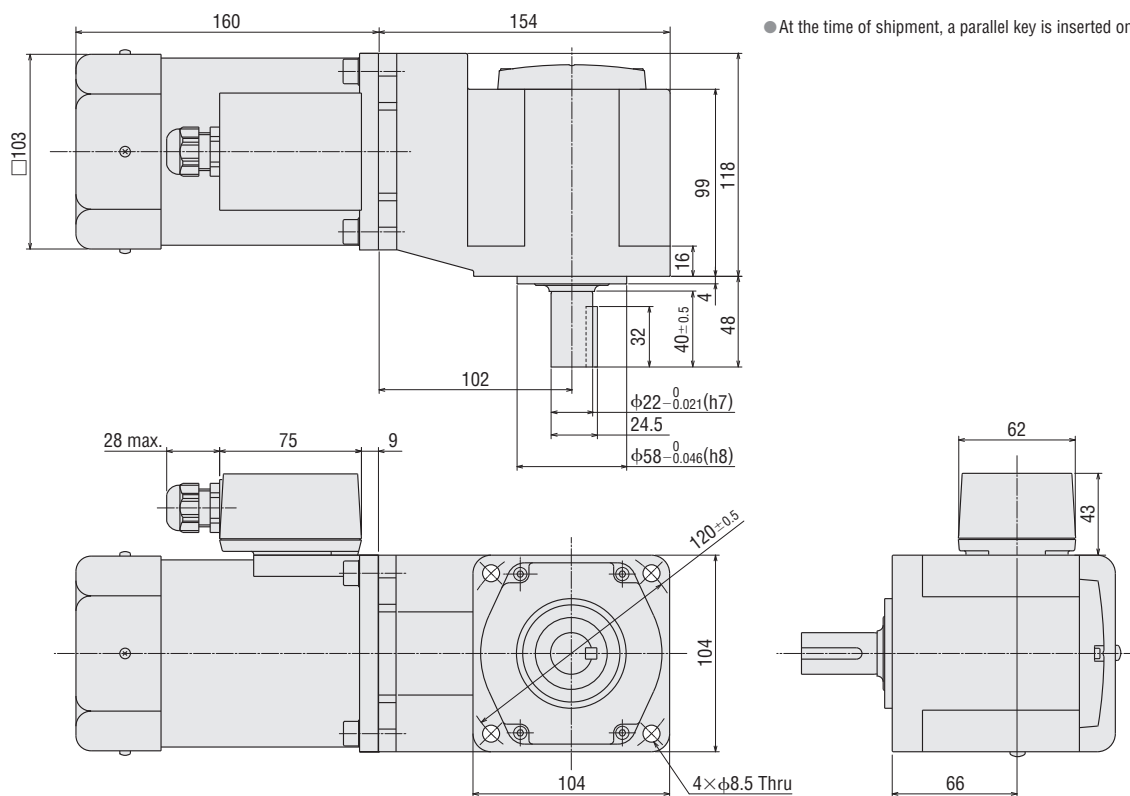
Motor: BHI62ET-G2, BHI62ST-G2

Gearhead: BH6G2-□RA

◇ Key and Key Slot (Included)



● At the time of shipment, a parallel key is inserted on the gearhead's shaft.



● Use cable with a diameter of $\phi 6 \sim \phi 12$ mm.

● Details of terminal box → Page A-248

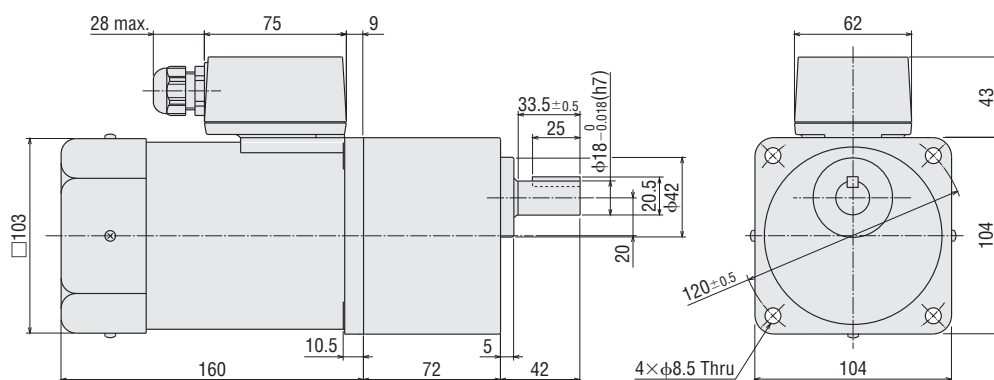
◇ Combination Type: Parallel Shaft (Terminal Box Type)

BHI62ET-□, BHI62ST-□

Mass: 8.0 kg

Motor: BHI62ET-G2, BHI62ST-G2

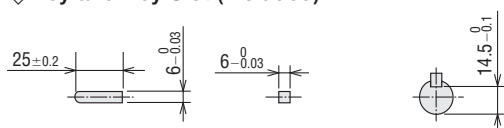
Gearhead: BH6G2-□



● Use cable with a diameter of $\phi 6 \sim \phi 12$ mm.

● Details of terminal box → Page A-248

◇ Key and Key Slot (Included)

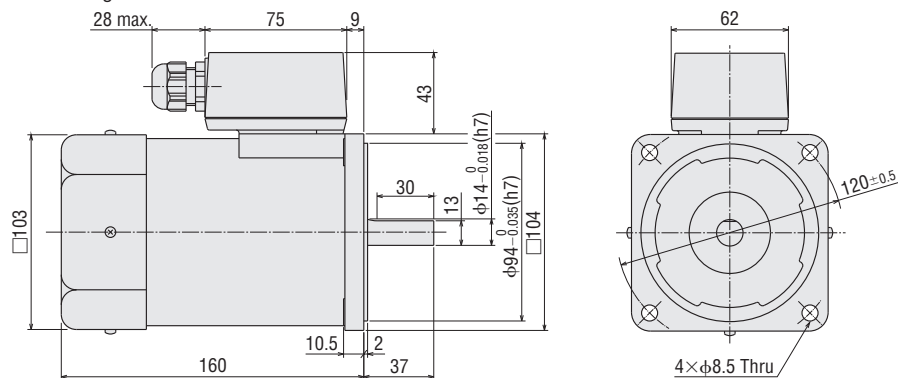


● At the time of shipment, a parallel key is inserted on the gearhead's shaft.

◇ Round Shaft Type (Terminal Box Type)

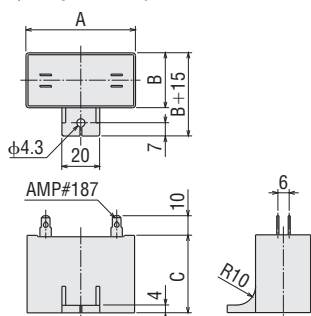
BH162ET-A, BH162ST-A

Mass: 5.0 kg



- Use cable with a diameter of φ6 ~ φ12 mm.
- Details of terminal box → Page A-248

◇ Capacitor (Included with single-phase motors)



◇ Capacitor Dimensions (mm)

Model	Capacitor Model	A	B	C	Mass (g)
BH162ET-□RH BH162ET-□RA BH162ET-□ BH162ET-A	CH100BFAUL	58	35	50	132

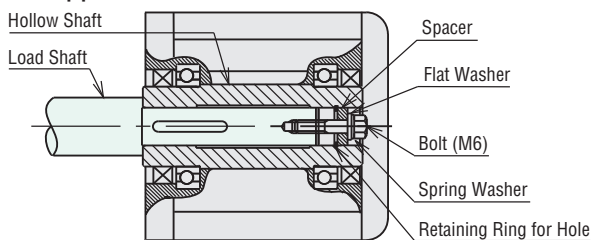
- A capacitor cap is included with a capacitor.
- Enter the gear ratio in the box (□) within the model name.

■ Mounting Method for Right Angle, Hollow Shaft Type

These figures below show how to mount loads depending on the shape of the shaft. The tolerance of the inner diameter for the hollow shaft is finished as H8, and "key slot" processing is given to mount the load shaft. The recommended tolerance of the load shaft is h7. Apply a coating of molybdenum disulfide or similar grease to the surface of load-shaft and to the inner diameter of the load shaft to prevent binding.

Recommended load shaft diameter is shown in the table on the right.

● Stepped Load Shaft



- After securing a load, attach the safety cover included.

Notes:

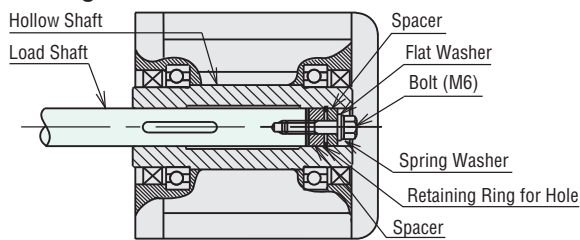
- Be careful not to apply a shock to the hollow shaft when mounting a load shaft. It may damage the bearing inside the gearhead.
- Bolts or other fasteners used to install the load shaft are not included. These parts must be purchased separately.

● Inner Diameter of Hollow Shaft and Recommended Load Shaft Diameter

Unit = mm

Model	BH6G2-□RH
Inner Diameter of Hollow Shaft H8	φ25 ^{+0.033} ₀
Recommended Load Shaft Diameter h7	φ25 ⁰ _{-0.021}

● Straight Load Shaft



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

Single-Phase Induction Motor	Three-Phase Induction Motor
BHI62ET-3~9 BHI62ET-50~180	BHI62ST-3~9 BHI62ST-50~180
Clockwise 	Clockwise
Counterclockwise 	Counterclockwise To change the rotation direction, change any two connections between R, S and T.
BHI62ET-12.5~36	BHI62ST-12.5~36
Clockwise 	Clockwise
Counterclockwise 	Counterclockwise To change the rotation direction, change any two connections between R, S and T.

Combination Type: Right Angle Shaft

Single-Phase Induction Motor	Three-Phase Induction Motor
BHI62ET-5RH~180RH BHI62ET-5RA~180RA	BHI62ST-5RH~180RH BHI62ST-5RA~180RA
Clockwise 	Clockwise
Counterclockwise 	Counterclockwise To change the rotation direction, change any two connections between R, S and T.

Round Shaft Type

Single-Phase Induction Motor	Three-Phase Induction Motor
BHI62ET-A	BHI62ST-A
Clockwise 	Clockwise
Counterclockwise 	Counterclockwise To change the rotation direction, change any two connections between R, S and T.

Connecting to the terminal
 Applicable lead wires: AWG24~12 (0.2~4.0 mm²)
 Strip length: 8 mm

Notes:

- 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 A-249
- For added safety, provide a breaker or fuse on the power supply input.

How to connect a capacitor → page A-247

List of Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

Combination Type: Right Angle Shaft

Model	Motor Type	Gearhead Type
BHI62ET-□RH	BHI62ET-G2	BH6G2-□RH
BHI62ET-□RA		BH6G2-□RA
BHI62ST-□RH	BHI62ST-G2	BH6G2-□RH
BHI62ST-□RA		BH6G2-□RA

Enter the gear ratio in the box (□) within the model name.

Combination Type: Parallel Shaft

Model	Motor Type	Gearhead Type
BHI62ET-□	BHI62ET-G2	BH6G2-□
BHI62ST-□	BHI62ST-G2	BH6G2-□

Enter the gear ratio in the box (□) within the model name.