

Induction Motors BH Series

200 W (1/4 HP)

Frame Size: 4.09 in. (104 mm sq.)



(Cable Type, Right-Angle Hollow Shaft)

(Terminal Box Type, Parallel Shaft)

(Terminal Box Type, Right-Angle Solid Shaft)

Features

- **BH** Series motors provide 200W output power and up to 530 lb-in (60 N·m) of torque in a compact 4.09 in. sq. (104 mm sq.) mounting configuration.
 - Right-angle gearheads are available.
 - For easy installation, the **BH** Series motor and gearhead come pre-assembled.
- * Motors and gearheads are also available separately.

Specifications — Continuous Rating



Model		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor	
Upper Model Name: Combination Type Lower Model Name(): Round Shaft Type		HP	W	VAC	Hz	A	oz-in N·m	oz-in N·m	r/min	μF
Cable Type Dimension ①	Terminal Box Type Dimension ②									
BHI62F-<input type="checkbox"/>RH BHI62F-<input type="checkbox"/>RA BHI62F-<input type="checkbox"/> (BHI62F-A)	BHI62FT-<input type="checkbox"/>RH BHI62FT-<input type="checkbox"/>RA BHI62FT-<input type="checkbox"/> (BHI62FT-A)	1/4	200	Single-Phase 110 Single-Phase 115	60 60	3	124 0.88	180 1.27	1500	40
							139 0.98			
BHI62E-<input type="checkbox"/>RH BHI62E-<input type="checkbox"/>RA BHI62E-<input type="checkbox"/> (BHI62E-A)	BHI62ET-<input type="checkbox"/>RH BHI62ET-<input type="checkbox"/>RA BHI62ET-<input type="checkbox"/> (BHI62ET-A)	1/4	200	Single-Phase 220	60	1.5	180 1.27	210 1.52	1500	10
				Single-Phase 230	50		139 0.98	180 1.27		
				Single-Phase 230	60		180 1.27	1500		
BHI62ST-<input type="checkbox"/>RH BHI62ST-<input type="checkbox"/>RA BHI62ST-<input type="checkbox"/> (BHI62ST-A)				Three-Phase 200	50	1.1	210 1.49	210 1.49	1250	-
				Three-Phase 200	60	1.1	177 1.25	177 1.25		
				Three-Phase 220	60	0.95	174 1.23	174 1.23		
				Three-Phase 230	60	0.95	167 1.18	167 1.18		

(TP): Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

- **Details of Safety Standard** → Page G-2
- Enter the gear ratio in the box () within the model name.
- The values in the table are for the motor only.

Product Line

- **Combination Type**
- ◆ **Right-Angle Shaft**

Type	Power Supply Voltage	Model	Gear Ratio
Hollow Shaft Cable Type	Single-Phase 110/115 VAC	BHI62F-<input type="checkbox"/>RH	6~180
	Single-Phase 220/230 VAC	BHI62E-<input type="checkbox"/>RH	6~180
Hollow Shaft Terminal Box Type	Single-Phase 110/115 VAC	BHI62FT-<input type="checkbox"/>RH	6~180
	Single-Phase 220/230 VAC	BHI62ET-<input type="checkbox"/>RH	6~180
	Three-Phase 200/220/230 VAC	BHI62ST-<input type="checkbox"/>RH	6~180
Solid Shaft Cable Type	Single-Phase 110/115 VAC	BHI62F-<input type="checkbox"/>RA	6~180
	Single-Phase 220/230 VAC	BHI62E-<input type="checkbox"/>RA	6~180
Solid Shaft Terminal Box Type	Single-Phase 110/115 VAC	BHI62FT-<input type="checkbox"/>RA	6~180
	Single-Phase 220/230 VAC	BHI62ET-<input type="checkbox"/>RA	6~180
	Three-Phase 200/220/230 VAC	BHI62ST-<input type="checkbox"/>RA	6~180

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

◆ Parallel Shaft

Type	Power Supply Voltage	Model	Gear Ratio
Cable Type	Single-Phase 110/115 VAC	BHI62F-<input type="checkbox"/>	3.6~180
	Single-Phase 220/230 VAC	BHI62E-<input type="checkbox"/>	3.6~180
Terminal Box Type	Single-Phase 110/115 VAC	BHI62FT-<input type="checkbox"/>	3.6~180
	Single-Phase 220/230 VAC	BHI62ET-<input type="checkbox"/>	3.6~180
	Three-Phase 200/220/230 VAC	BHI62ST-<input type="checkbox"/>	3.6~180

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

● Round Shaft Type

Type	Power Supply Voltage	Model
Cable Type	Single-Phase 110/115 VAC	BHI62F-A
	Single-Phase 220/230 VAC	BHI62E-A
Terminal Box Type	Single-Phase 110/115 VAC	BHI62FT-A
	Single-Phase 220/230 VAC	BHI62ET-A
	Three-Phase 200/220/230 VAC	BHI62ST-A

■ Gearmotor — Torque Table

● Right-Angle Shaft

◆ Single-Phase 115/230 VAC 60 Hz, Three-Phase 230 VAC 60 Hz

Unit = Upper Values: lb-in/Lower Values: N·m

Model	Speed r/min	300	200	120	100	60	50	30	20	15	10
	Gear Ratio	6	9	15	18	30	36	60	90	120	180
BHI62F-□RH, BHI62F-□RA, BHI62FT-□RH BHI62FT-□RA, BHI62E-□RH, BHI62E-□RA BHI62ET-□RH, BHI62ET-□RA	49	73	123	147	240	290	380	450	530	530	
	5.6	8.3	13.9	16.7	27.8	33.4	43	51.5	60	60	
BHI62ST-□RH, BHI62ST-□RA (230 VAC)	46	69	114	137	220	270	380	450	530	530	
	5.2	7.8	12.9	15.5	25.8	31	43	51.5	60	60	

◆ Single-Phase 230 VAC 50 Hz

Unit = Upper Values: lb-in/Lower Values: N·m

Model	Speed r/min	250	167	100	83	50	42	25	17	12.5	8.3
	Gear Ratio	6	9	15	18	30	36	60	90	120	180
BHI62E-□RH, BHI62E-□RA BHI62ET-□RH, BHI62ET-□RA	59	88	146	177	290	310	380	450	530	530	
	6.7	10	16.6	20	33.3	36	43	51.5	60	60	

● Parallel Shaft

◆ Single-Phase 115/230 VAC 60 Hz, Three-Phase 230 VAC 60 Hz

Unit = Upper Values: lb-in/Lower Values: N·m

Model	Speed r/min	500	300	200	120	100	60	50	30	20	15	10
	Gear Ratio	3.6	6	9	15	18	30	36	60	90	120	180
BHI62F-□, BHI62FT-□ BHI62E-□, BHI62ET-□	36	61	91	145	174	290	340	350	350	350	350	
	4.1	6.9	10.3	16.4	19.7	32.8	39.3	40	40	40	40	
BHI62ST-□ (230 VAC)	33	56	84	134	161	260	320	350	350	350	350	
	3.8	6.4	9.6	15.2	18.3	30.4	36.5	40	40	40	40	

◆ Single-Phase 230 VAC 50 Hz

Unit = Upper Values: lb-in/Lower Values: N·m

Model	Speed r/min	417	250	167	100	83	50	42	25	17	12.5	8.3
	Gear Ratio	3.6	6	9	15	18	30	36	60	90	120	180
BHI62E-□, BHI62ET-□	43	72	108	173	200	340	350	350	350	350	350	
	4.9	8.2	12.3	19.6	23.5	39.2	40	40	40	40	40	

- Enter the gear ration in the box (□) within the model name. A colored background indicates gear shaft ration in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- Decimal gearheads are not available for the **BH** Series.
- 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 size of the load.

■ Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft type) →Page A-11

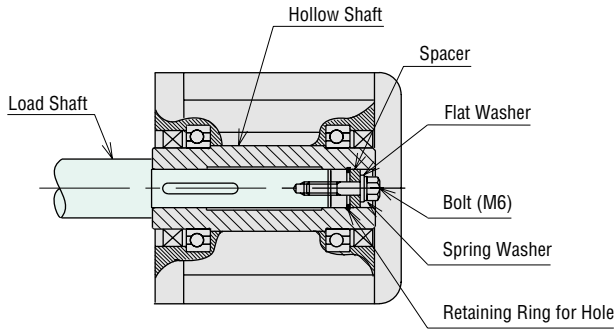
Gearhead →Page A-11

■ Permissible Load Inertia J for Gearhead

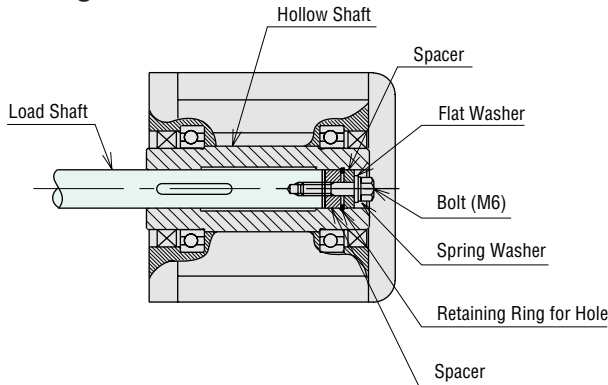
→Page A-12

Mounting Method for Hollow Shaft Gearheads

Stepped-Down Shaft



Straight Load Shaft



These diagrams 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 inner diameter of the load shaft to prevent binding. Recommended load shaft dimensions are shown below.

Recommended size of inner diameter for the hollow shaft and load shaft

Unit = inch (mm)

Model	BH6G2-□RH
Inner diameter of hollow shaft H8	$\phi 0.9843^{+0.0013}_0$ ($\phi 25^{+0.033}_0$)
Recommended load shaft diameter h7	$\phi 0.9843^{0}_{-0.0008}$ ($\phi 25^{0}_{-0.021}$)

- Replace the safety cover after installing the load shaft.

Note:

- Be careful not to apply a shock to the hollow shaft when mounting a load. It may damage the bearing inside the gearhead.

Dimensions Scale 1/4, Unit = inch (mm)

Mounting screws are included with the combination type parallel shaft. →Page A-223

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

◆ Combination Type Right-Angle, Hollow Shaft Cable Type

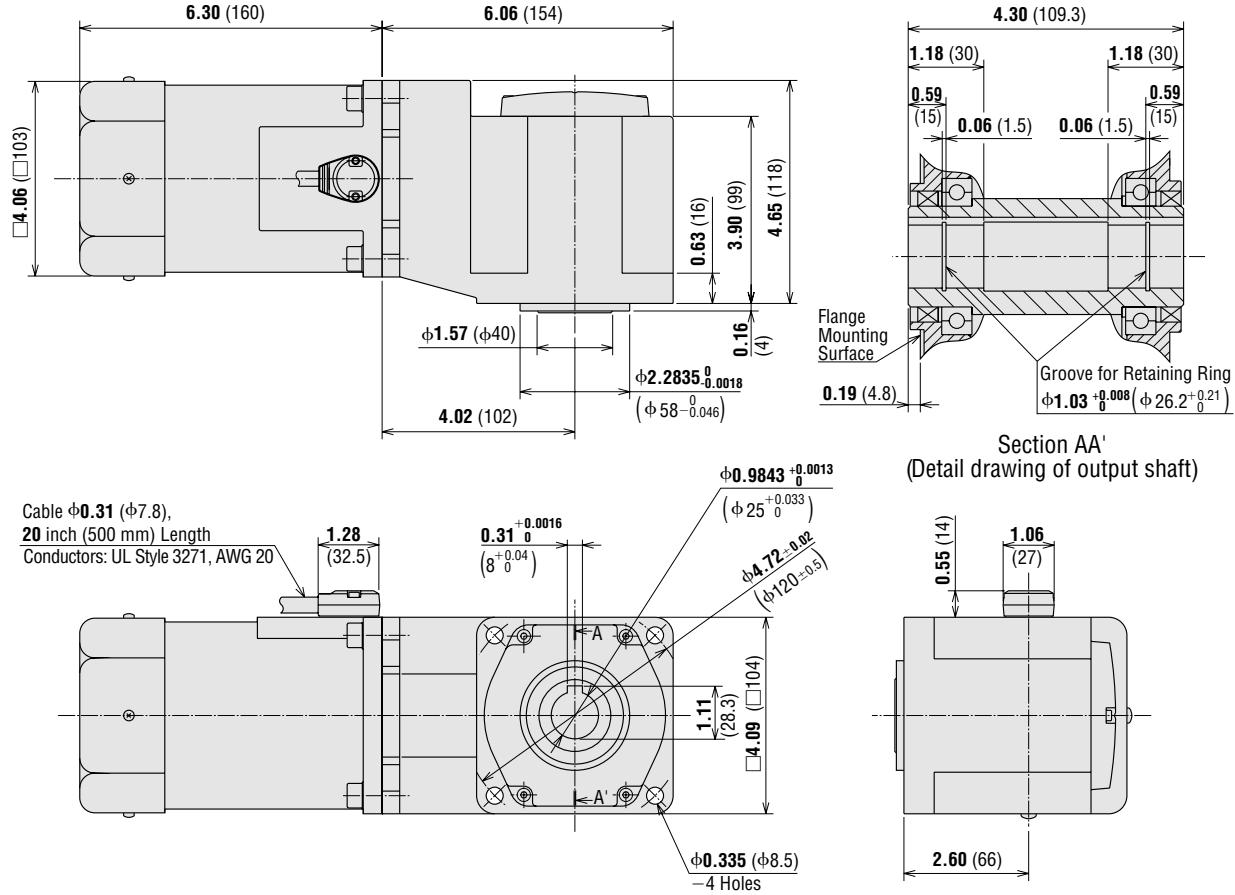
BHI62F-□RH, BHI62E-□RH

Weight: 22 lb. (10.0 kg) including gearhead

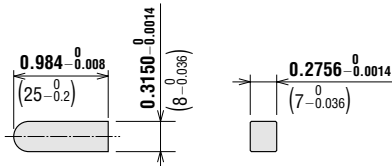
Motor Model: BHI62F-G2, BHI62E-G2

Gearhead Model: BH6G2-□RH

DXF A299



● Key (Included) (Scale 1/2)



◆ Combination Type Right-Angle, Solid Shaft Cable Type

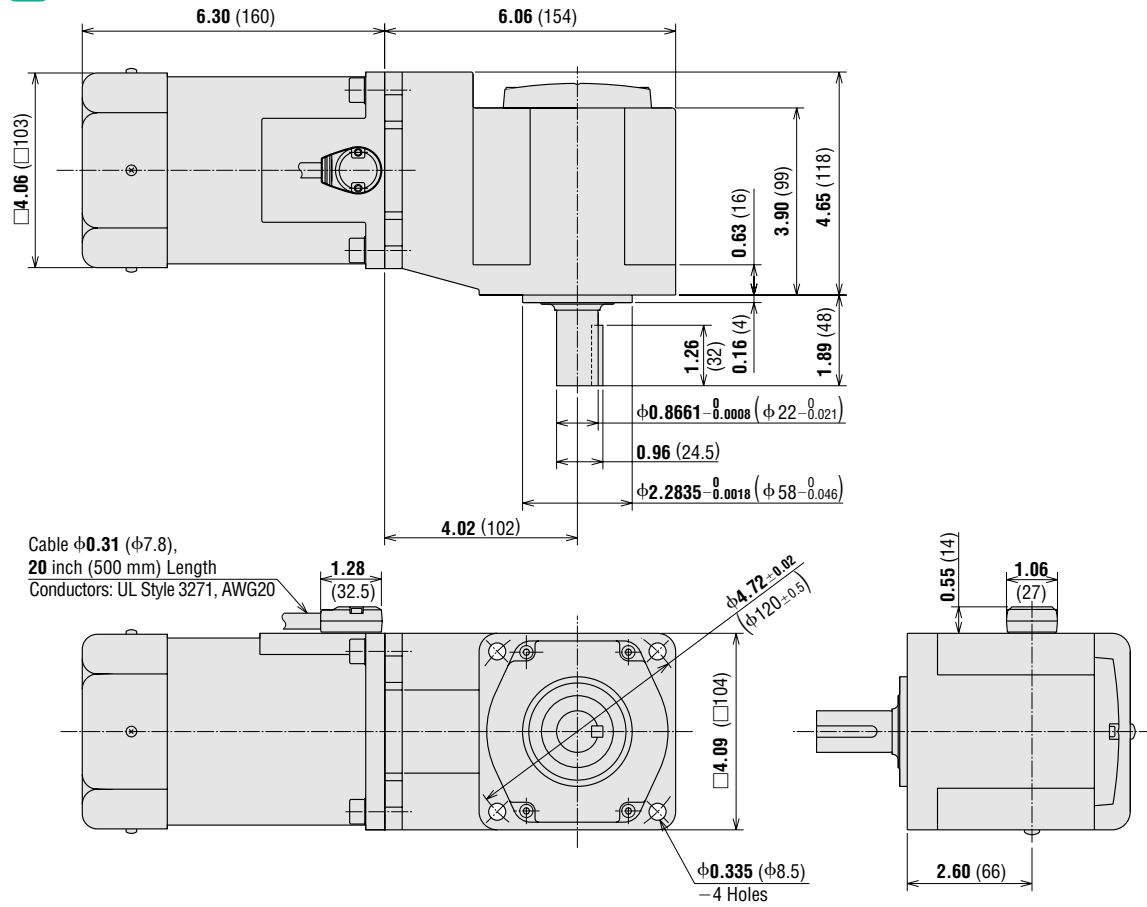
BHI62F-□RA, BHI62E-□RA

Weight: 22 lb. (10.0 kg) including gearhead

Motor Model: BHI62F-G2, BHI62E-G2

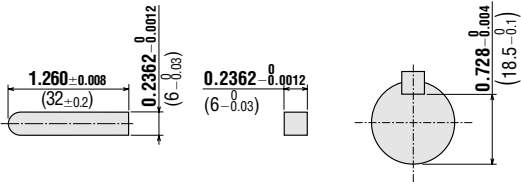
Gearhead Model: BH6G2-□RA

DXF A300



● Key and Key Slot (Included) (Scale 1/2)

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



◆ Combination Type Right-Angle, Hollow Shaft with Terminal Box

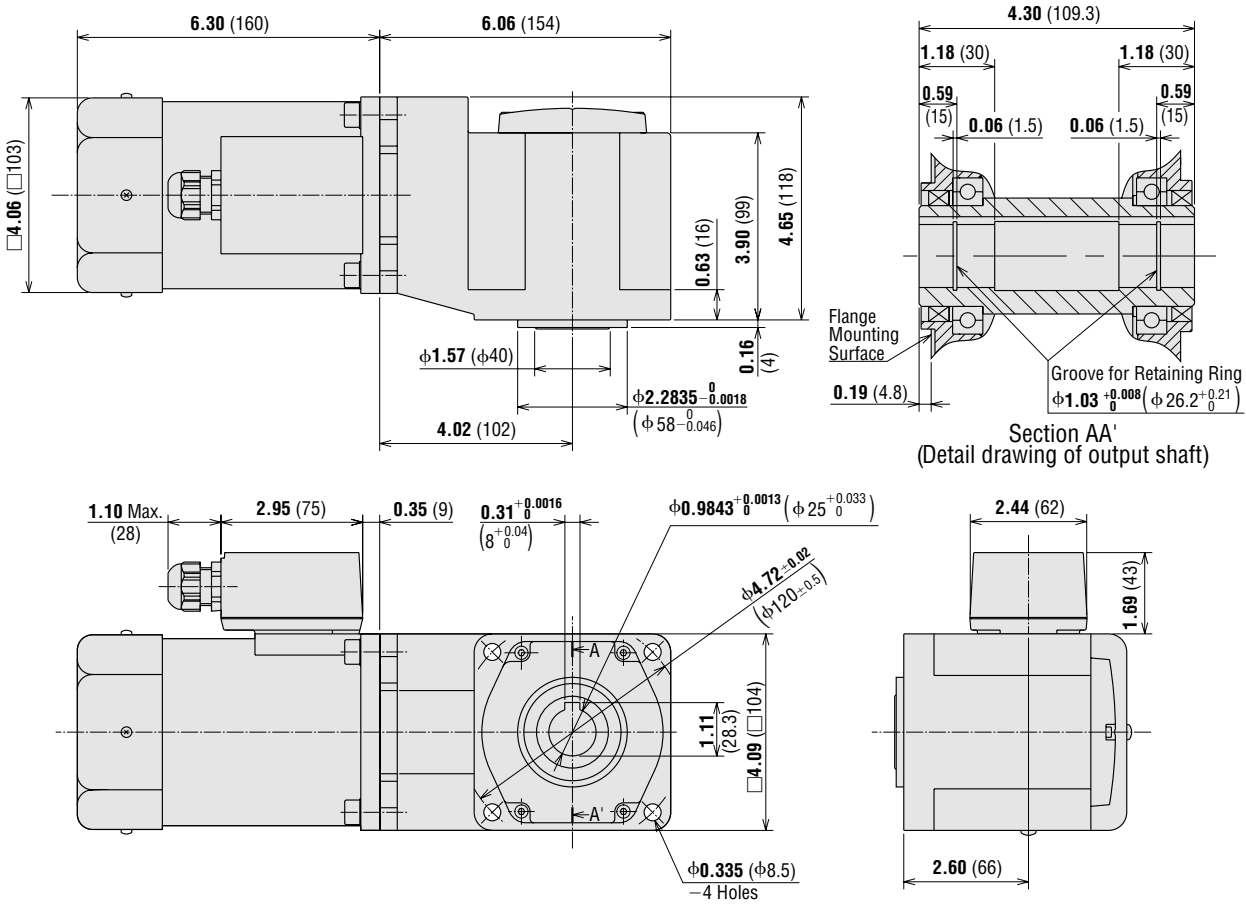
BHI62FT-□RH, BHI62ET-□RH, BHI62ST-□RH

Weight: 22 lb. (10.0 kg) including gearhead

Motor Model: BHI62FT-G2, BHI62ET-G2, BHI62ST-G2

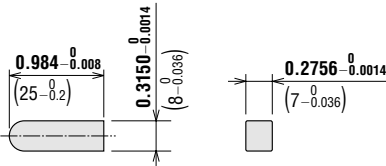
Gearhead Model: BH6G2-□RH

DXF A301



- Use cable (VCTF) with a diameter of $\phi 0.24$ inch ($\phi 6$ mm) ~ $\phi 0.47$ inch ($\phi 12$ mm).
- Details of Terminal Box → Page A-224

● Key (Included) (Scale 1/2)



Introduction

Induction Motors

Reversible Motors

Synchronous Motors

Torque Motors

Waterlight Motors

Magnetic Brake

Clutch & Brake

Brake Pack

Right-Angle Gearheads

Accessories

Before Using a Standard AC Motor

◆ Combination Type Right-Angle, Solid Shaft with Terminal Box

BHI62FT-□RA, BHI62ET-□RA, BHI62ST-□RA

Weight: 22 lb. (10.0 kg) including gearhead

Motor Model: BHI62FT-G2, BHI62ET-G2, BHI62ST-G2

Gearhead Model: BH6G2-□RA

DXF A302

1/750 HP
1 W

1/125 HP
6 W

1/50 HP
15 W

1/30 HP
25 W

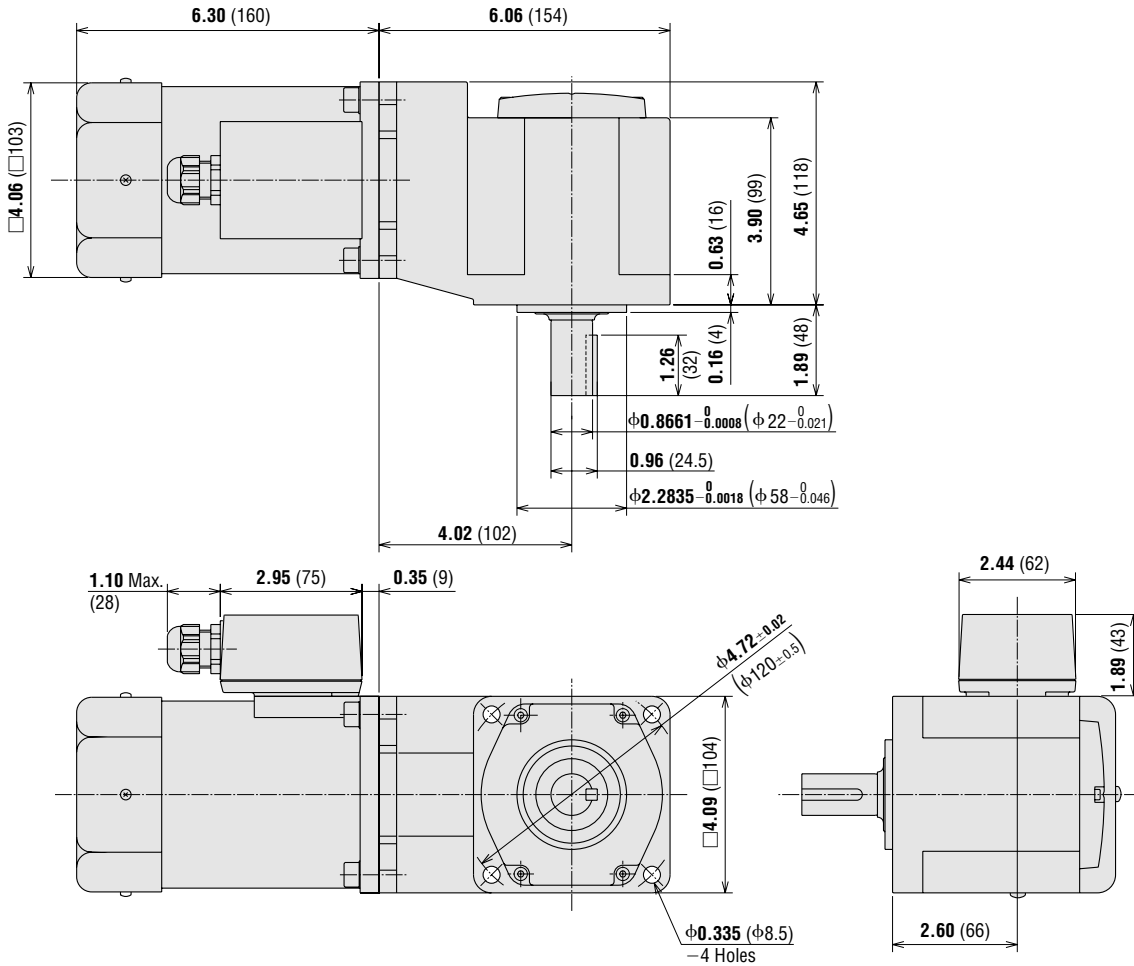
1/19 HP
40 W

1/12 HP
60 W

1/8 HP
90 W

1/4 HP
200 W

1/1.9-1/8 HP
40-90 W
(2-Pole)



- Use cable (VCTF) with a diameter of $\phi 0.24$ inch ($\phi 6$ mm)~ $\phi 0.47$ inch ($\phi 12$ mm).
- Details of Terminal Box → Page A-224

● Key and Key Slot (Included) (Scale 1/2)

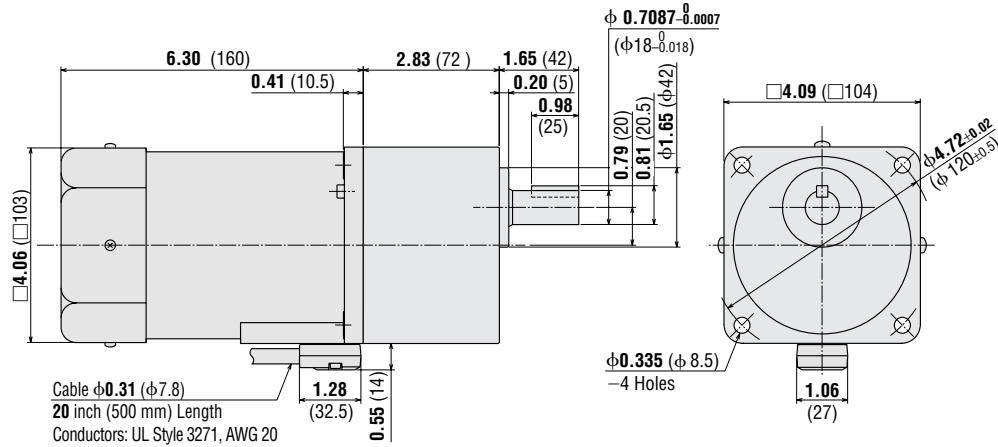
*At the time of shipment, a parallel key is inserted on the gearhead's shaft.



◆ Combination Type, Parallel Shaft Type Cable Type

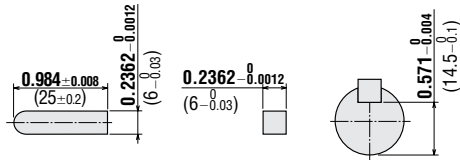
BHI62F-□, BHI62E-□
 Weight: 18 lb. (8.0 kg) including gearhead
 Motor Model: BHI62F-G2, BHI62E-G2
 Gearhead Model: BH6G2-□

DXF A303



●Key and Key Slot (Included) (Scale 1/2)

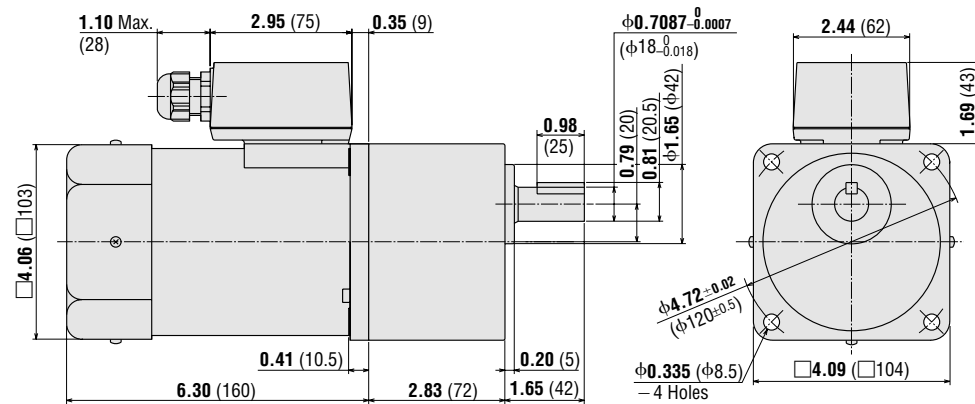
*At the time of shipment, a parallel key is inserted on the gearhead's shaft.



◆ Combination Type, Parallel Shaft Type with Terminal Box

BHI62FT-□, BHI62ET-□, BHI62ST-□
 Weight: 18 lb. (8.0 kg) including gearhead
 Motor Model: BHI62FT-G2, BHI62ET-G2, BHI62ST-G2
 Gearhead Model: BH6G2-□

DXF A304

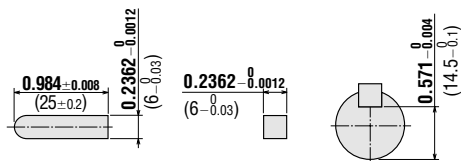


●Use cable (VCTF) with a diameter of φ 0.24 inch (φ6 mm)~φ0.47 inch (φ12 mm).

●Details of Terminal Box → Page A-224

●Key and Key Slot (Included) (Scale 1/2)

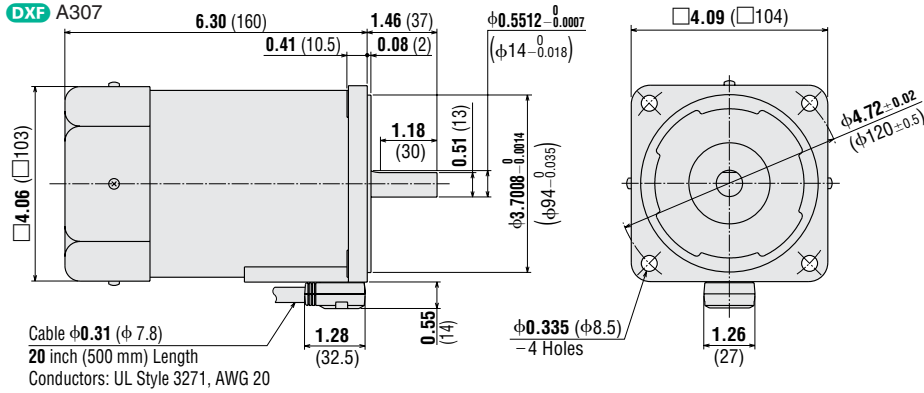
*At the time of shipment, a parallel key is inserted on the gearhead's shaft.



◆ Round Shaft Type Cable Type

BHI62F-A, BHI62E-A

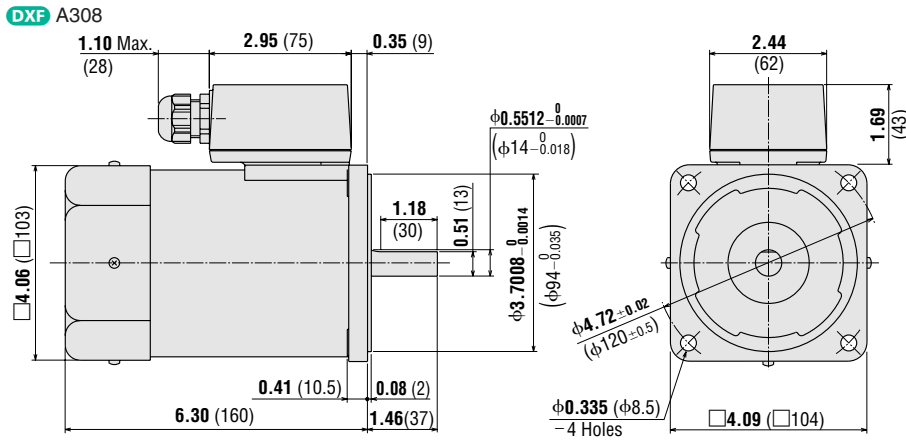
Weight: 11 lb. (5 kg)



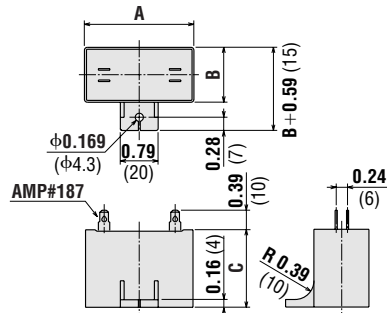
◆ Round Shaft Type with Terminal Box

BHI62FT-A, BHI62ET-A, BHI62ST-A

Weight: 11 lb. (5 kg)



● Capacitor (Included with single-phase motors)



◆ Capacitor Dimensions Unit = inch (mm)

Model		Capacitor Model	A	B	C	Weight oz. (g)
Cable Type	Terminal Box Type					
BHI62F-□RH	BHI62FT-□RH	CH400CFAUL2	2.28 (58)	1.61 (41)	2.28 (58)	6.18 (175)
BHI62F-□RA	BHI62FT-□RA					
BHI62F-□	BHI62FT-□					
BHI62F-A	BHI62FT-A					
BHI62E-□RH	BHI62ET-□RH	CH100BFAUL	2.28 (58)	1.38 (35)	1.97 (50)	4.66 (132)
BHI62E-□RA	BHI62ET-□RA					
BHI62E-□	BHI62ET-□					
BHI62E-A	BHI62ET-A					

- If you need to order a capacitor without a motor, add "-C" to the capacitor model name shown. A capacitor cap is included with a capacitor.
- Enter the gear ratio in the box (□) within the model name.

Connection Diagrams

Motor Type	Single-Phase Induction Motor *1		Three-Phase Induction Motor
	Cable Type	Terminal Box Type *2	Terminal Box Type *2
	Clockwise: To rotate the motor in a clockwise(CW) direction, flip SW to CW. Counterclockwise: To rotate the motor in a counterclockwise(CCW) direction, flip SW to CCW.		To rotate the motor in a counterclockwise direction, change any two connections between U, V and W.
Parallel Shaft Combination Type	BHI62□-3.6~9 BHI62□-60~180	BHI62□T-3.6~9 BHI62□T-60~180	BHI62ST-3.6~9 BHI62ST-60~180
Right-Angle Shaft Combination Type	BHI62□-15~36	BHI62□T-15~36	BHI62ST-15~36
Round Shaft Type	BHI62□-6RH~180RH BHI62□-6RA~180RA	BHI62□T-6RH~180RH BHI62□T-6RA~180RA	BHI62ST-6RH~180RH BHI62ST-6RA~180RA
	BHI62□-A	BHI62□T-A	BHI62ST-A

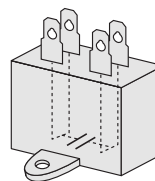
- *1 Enter **F** or **E** (power supply voltage) in the box (□) within the model name.
- *2 Connecting to the terminal block for terminal box type
Applicable lead wire: AWG 24~12 (0.2 mm² ~4.0 mm²)
Strip length: 0.31 inch (8 mm)

- 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, the motor may ignore the reversing command or change its direction of rotation after some delay.
 - To protect the contact point of switches, connect a CR circuit. Connecting CR circuit, contact capacity → Page A-226
 - For increased safety, provide a breaker or fuse on the power-supply input.
 - **How to Connect a Capacitor**
→ Page A-225

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

Inner Connection Diagram for 4-Terminal Capacitor

Terminals of the capacitor are connected as shown in the figure. For lead wire connection, use one lead wire per terminal.



List of Motor and Gearhead Combinations

Combination Type Right-Angle Shaft

Model	Motor Model	Gearhead Model
BHI62F-□RH	BHI62F-G2	BH6G2-□RH
BHI62F-□RA		BH6G2-□RA
BHI62FT-□RH	BHI62FT-G2	BH6G2-□RH
BHI62FT-□RA		BH6G2-□RA
BHI62E-□RH	BHI62E-G2	BH6G2-□RH
BHI62E-□RA		BH6G2-□RA
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 Model	Gearhead Model
BHI62F-□	BHI62F-G2	BH6G2-□
BHI62FT-□	BHI62FT-G2	
BHI62E-□	BHI62E-G2	
BHI62ET-□	BHI62ET-G2	
BHI62ST-□	BHI62ST-G2	

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

1/750 HP
1 W1/125 HP
6 W1/50 HP
15 W1/30 HP
25 W1/19 HP
40 W1/12 HP
60 W1/8 HP
90 W1/4 HP
200 W1/19-1/8 HP
40-90 W
(2-Pole)