

Induction Motors

60 W (1/12 HP)

Frame Size: □ 3.54 in. (□ 90 mm)



World **K** Series
(Gearhead Sold Separately)



V Series/Combination Type
(Pre-assembled Gearmotor)

Specifications — Continuous Rating

World K Series (General Purpose)



Model			Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor			
Upper Model Name: Pinion Shaft Type Lower Model Name(): Round Shaft Type													
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	Conduit Box Type Dimension ③	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
ⓉP	5IK60GU-AWU (5IK60A-AWU)	5IK60GU-AWTU (5IK60A-AWTU)	1/12	60	Single-Phase 110	110	1.09	45	320	57	405	1450	18
						115	1.10						
ⓉP	5IK60GU-CWE (5IK60A-CWE)	5IK60GU-CWTE (5IK60A-CWTE)	1/12	60	Single-Phase 220*	50	0.55	45	320	57	405	1450	4
					220	60	0.54						
					230	50	0.57						
					230	60	0.54						
					Three-Phase 200	50	0.50	85	600	63	450	1300	
ⓉP	5IK60GU-SW (5IK60A-SW)	5IK60GU-SWT (5IK60A-SWT)	1/12	60	Three-Phase 200	60	0.43	71	500	53	380	1550	—
					Three-Phase 220	60	0.45	71	500	53	380	1600	
					Three-Phase 230	60	0.46	71	500	53	380	1600	

ⓉP 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.

• The "U" and "E" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate.

When the motor is approved under various safety standards, the model name on the nameplate is the approved model name. →Page G-10

• Details of Safety Standard →Page G-2

* The conduit box type motors are not VDE approved. The conduit box type does not have a specification for Single-Phase 220 VAC 50 Hz.

V Series (Quiet Operation, High Strength, Long Life)



Model		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor			
Combination Type												
Lead Wire Type Dimension ④	Terminal Box Type Dimension ⑤	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
ⓉP	VHI560A-□U	1/12	60	Single-Phase 110	110	1.09	45	320	57	405	1450	18
					115	60						
ⓉP	VHI560C-□E	1/12	60	Single-Phase 220	50	0.55	45	320	57	405	1450	4
				220	60	0.54						
				230	50	0.57						
				230	60	0.54						
				Three-Phase 200	50	0.50	85	600	63	450	1300	
ⓉP	VHI560S-□	1/12	60	Three-Phase 200	60	0.43	71	500	53	380	1550	—
				Three-Phase 220	60	0.45	71	500	53	380	1600	
				Three-Phase 230	60	0.46	71	500	53	380	1600	

ⓉP 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.

• The "U" and "E" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate.

When the motor is approved under various safety standards, the model name on the nameplate is the approved model name. →Page G-11

• Details of Safety Standard →Page G-2

• Models above are provided as combination type with motor and gearhead pre-assembled.

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

• The values in the table are for the motor only.

Gearheads for World K Series (Sold Separately)

Parallel Shaft

Gearhead Model	Gear Ratio
5GU□KA	3~180
5GU10XKB (Decimal Gearhead)	

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

Right-Angle

Type	Gearhead Model	Gear Ratio
Hollow Shaft	5GU□RH	3.6~180
Solid Shaft	5GU□RAA	3~180

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

• Right-Angle Gearheads →Page A-189

■ Gearmotor — Torque Table

● World K Series (General Purpose)

The maximum permissible torque with a decimal gearhead with a gear ratio of 10:1 is 177 lb-in (20 N·m).

◆ 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	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
5IK60GU-AWU 5IK60GU-AWTU 5IK60GU-CWE 5IK60GU-CWTE 5IK60GU-FCH 5IK60GU-ECH	5GU□KA	8.6 0.98	10.6 1.2	14.1 1.6	17.7 2.0	22 2.5	26 3.0	32 3.7	38 4.4	46 5.3	59 6.7	70 8.0	84 9.6	118 13.4	141 16.0	158 17.9	177 20	177 20	177 20	177 20	177 20
	5IK60GU-SW 5IK60GU-SWT 5IK60GU-SH	5GU□KA	8.1 0.92	9.7 1.1	13.2 1.5	15.9 1.8	20 2.3	24 2.8	30 3.5	37 4.2	44 5.0	55 6.3	66 7.5	79 9.0	110 12.5	132 15.0	148 16.8	177 20	177 20	177 20	177 20

◆ Single-Phase 230 VAC 50 Hz

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

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	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
5IK60GU-CWE 5IK60GU-CWTE 5IK60GU-ECH	5GU□KA	10.6 1.2	12.3 1.4	17.7 2.0	21 2.4	26 3.0	31 3.6	39 4.5	47 5.4	56 6.4	71 8.1	85 9.7	102 12	143 16	171 19	177 20	177 20	177 20	177 20	177 20	

● V Series (Quiet Operation, High Strength, Long Life)

◆ 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	360	300	200	120	100	60	50	30	20	15	10	6
	Gear Ratio	5	6	9	15	18	30	36	60	90	120	180	300
VHI560A-□U VHI560AT-□U VHI560C-□E VHI560CT-□E		15.9 1.8	19.4 2.2	29 3.3	48 5.5	58 6.6	92 10.4	110 12.5	184 20.9	260 30	260 30	260 30	260 30
VHI560S-□ VHI560ST-□		15 1.7	18.5 2.1	27 3.1	45 5.1	54 6.2	86 9.8	104 11.8	173 19.6	260 29.4	260 30	260 30	260 30

◆ Single-Phase 230 VAC 50 Hz

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

Model	Speed r/min	300	250	166	100	83	50	41	25	16	12.5	8.3	5
	Gear Ratio	5	6	9	15	18	30	36	60	90	120	180	300
VHI560C-□E VHI560CT-□E		19.4 2.2	23 2.6	35 4	58 6.6	69 7.9	111 12.6	134 15.2	230 26.3	260 30	260 30	260 30	260 30

- Gearheads and decimal gearheads are sold separately. Decimal gearheads are not available for V Series.
- 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; a white background indicates rotation 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 size of the load.

■ Gearmotor — Torque Table when Right-Angle Gearhead is Attached

Right-Angle Gearheads are available for the World K Series only.

→Page A-196

■ 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

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

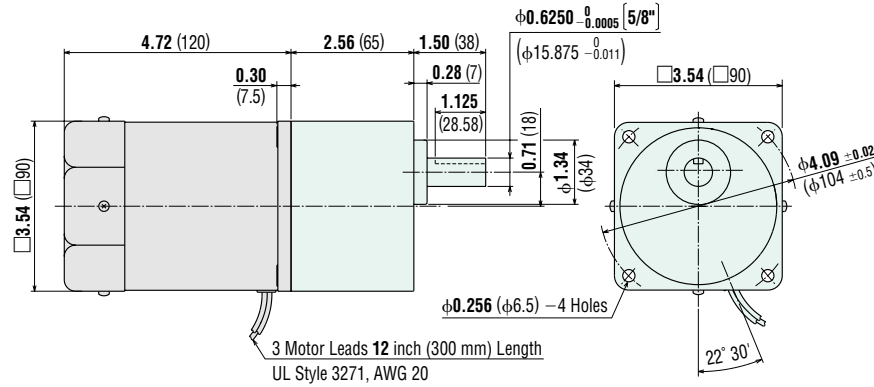
Mounting screws are included with gearheads. Dimensions for screws → A-223

World K Series

Lead Wire Type ①

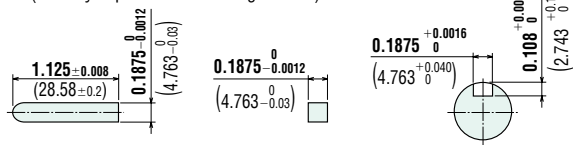
Motor	Gearhead
5IK60GU-AWU	5GU□KA
5IK60GU-CWE	5GU□KA
5IK60GU-SW	5GU□KA
Weight: 5.9 lb. (2.7 kg)	Weight: 3.3 lb. (1.5 kg)

DXF A026U (5GU3KA~180KA)



Key and Key Slot (Scale 1/2)

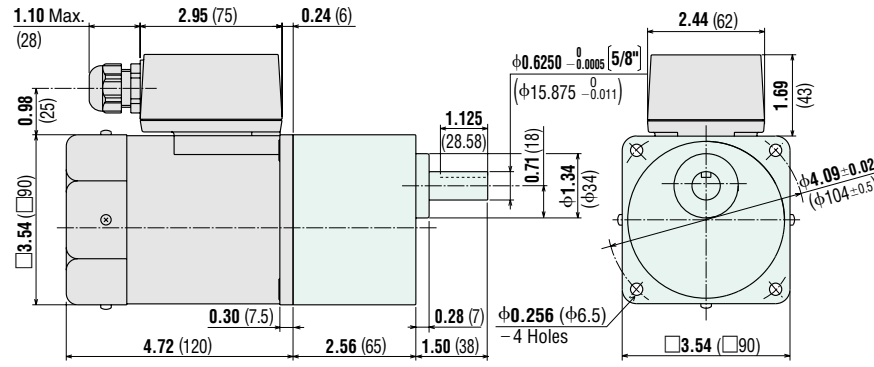
(The key is provided with the gearhead)



Terminal Box Type ②

Motor	Gearhead
5IK60GU-AWTU	5GU□KA
5IK60GU-CWTE	5GU□KA
5IK60GU-SWT	5GU□KA
Weight: 6.2 lb. (2.8 kg)	Weight: 3.3 lb. (1.5 kg)

DXF A027U (5GU3KA~180KA)

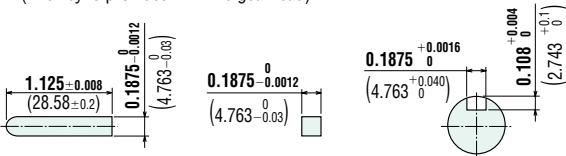


● Use cable (VCTF) with a diameter of φ0.24 inch (φ6 mm)~φ0.47 inch (φ12 mm).

● Details of Terminal Box → Page A-224

Key and Key Slot (Scale 1/2)

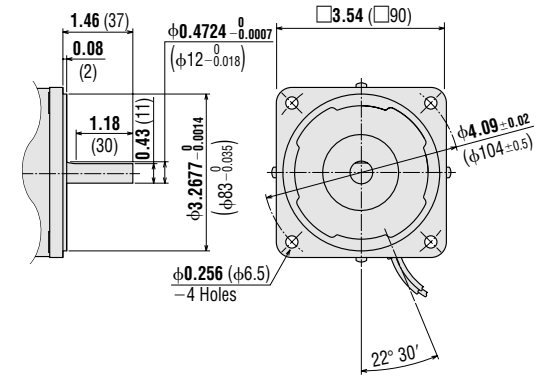
(The key is provided with the gearhead)



Round Shaft Type

5IK60A-AWU
5IK60A-CWE
5IK60A-SW
Weight: 5.9 lb. (2.7 kg)

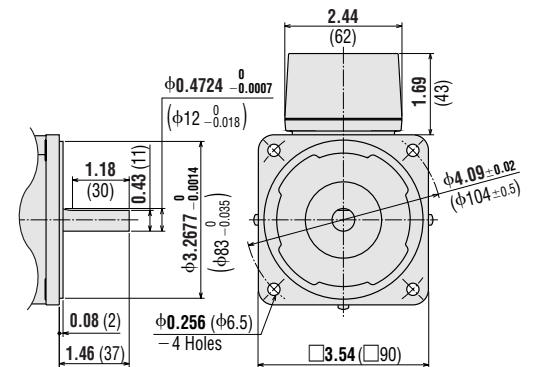
DXF A331



Round Shaft Type

5IK60A-AWTU
5IK60A-CWTE
5IK60A-SWT
Weight: 6.2 lb. (2.8 kg)

DXF A332



◆ Conduit Box Type ③

Motor
51K60GU-FCH
51K60GU-ECH

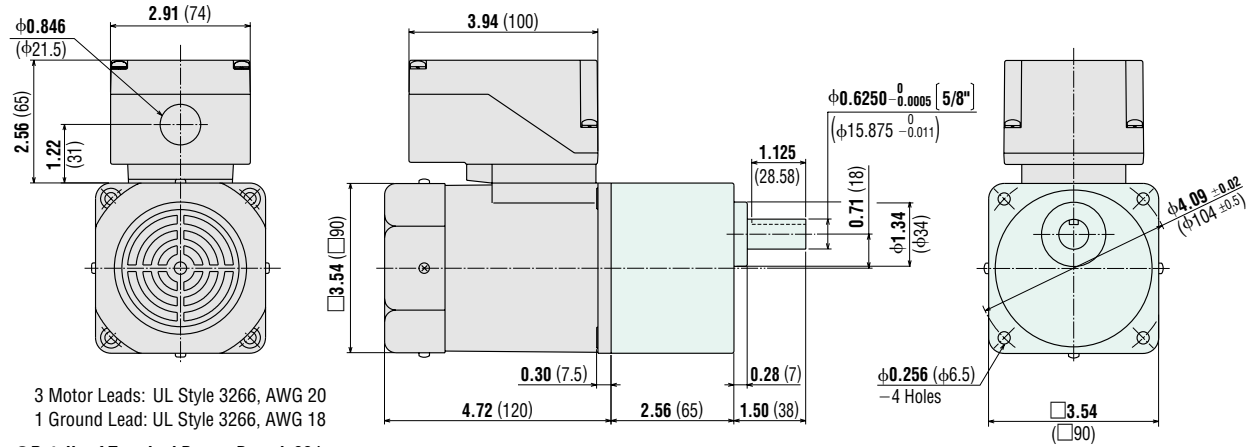
Weight: 7.0 lb. (3.2 kg)

Gearhead

5GU□KA

Weight: 3.3 lb. (1.5 kg)

DXF A804 (5GU3KA~180KA)

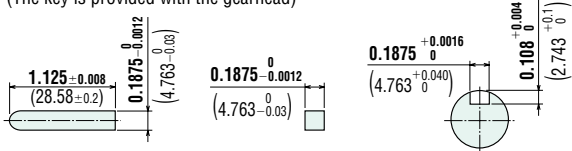


3 Motor Leads: UL Style 3266, AWG 20
1 Ground Lead: UL Style 3266, AWG 18

●Details of Terminal Box → Page A-224

●Key and Key Slot (Scale 1/2)

(The key is provided with the gearhead)



Motor
51K60GU-SH

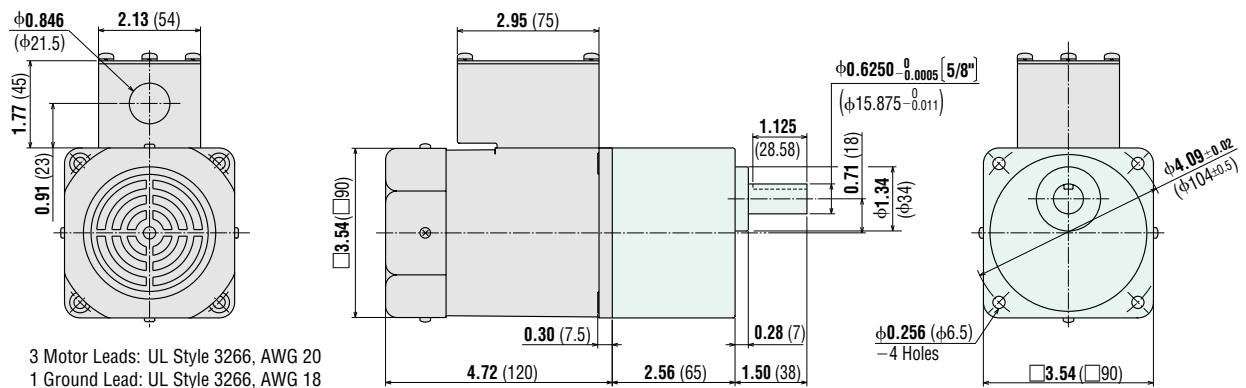
Weight: 6.2 lb. (2.8 kg)

Gearhead

5GU□KA

Weight: 3.3 lb. (1.5 kg)

DXF A805 (5GU3KA~180KA)

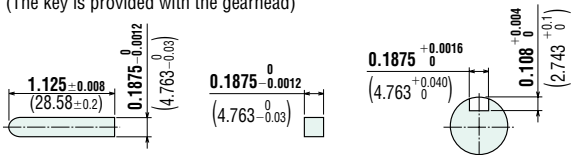


3 Motor Leads: UL Style 3266, AWG 20
1 Ground Lead: UL Style 3266, AWG 18

●Details of Terminal Box → Page A-224

●Key and Key Slot (Scale 1/2)

(The key is provided with the gearhead)



Introduction

Induction Motors

Reversible Motors

Synchronous Motors

Torque Motors

Waterlight Motors

Magnetic Brake

Clutch & Brake

Brake Pack

Right-Angle Gearheads

Accessories

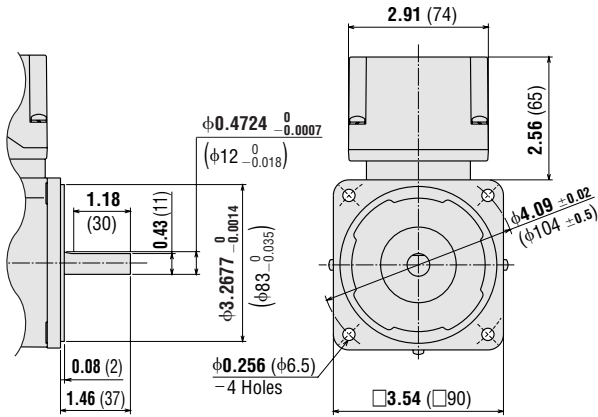
Before Using a Standard AC Motor

Round Shaft Type

51K60A-FCH
51K60A-ECH

Weight: 7.0 lb. (3.2 kg)

DXF A813



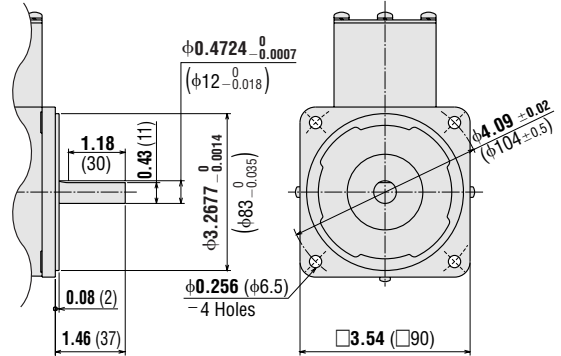
● Details of Terminal Box → Page A-224

Round Shaft Type

51K60A-SH

Weight: 6.2 lb. (2.8 kg)

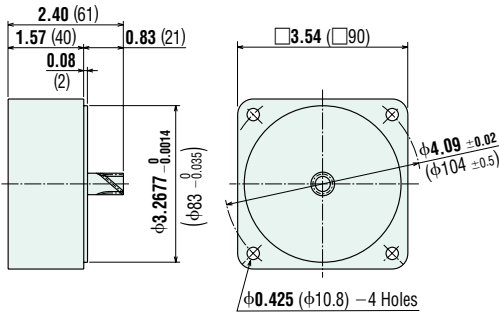
DXF A814



● **Decimal Gearhead (for World K Series)**

5GU10XKB Weight: 1.3 lb. (0.6 kg)

DXF A029



● **V Series**

◆ **Lead Wire Type ④**

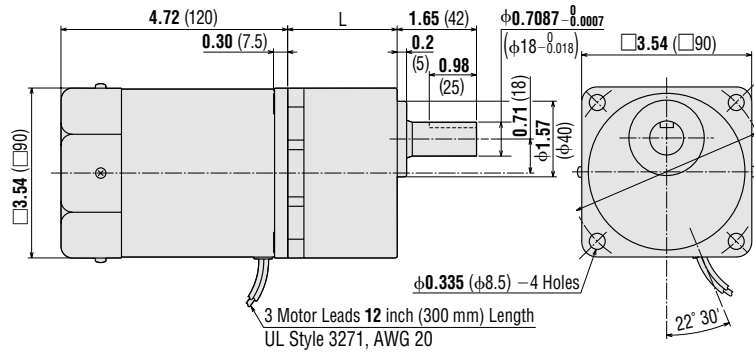
VH1560A-U, VH1560C-E, VH1560S-□ (Combination Type)

Weight: 9.2 lb. (4.2 kg) including gearhead

Motor Model: VH1560A-GVH, VH1560C-GVH, VH1560S-GVH

Gearhead Model: GVH5G□

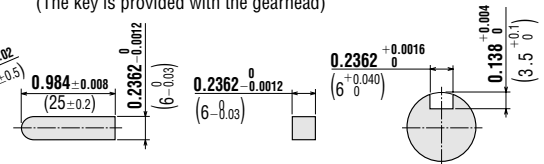
DXF A244A (GVH5G5~18)
A244B (GVH5G30~90)
A244C (GVH5G120~300)



GVH5G5-GVH5G18: L = 1.77 (45)
GVH5G30-GVH5G90: L = 2.28 (58)
GVH5G120-GVH5G300: L = 2.52 (64)

● **Key and Key Slot (Scale 1/2)**

(The key is provided with the gearhead)

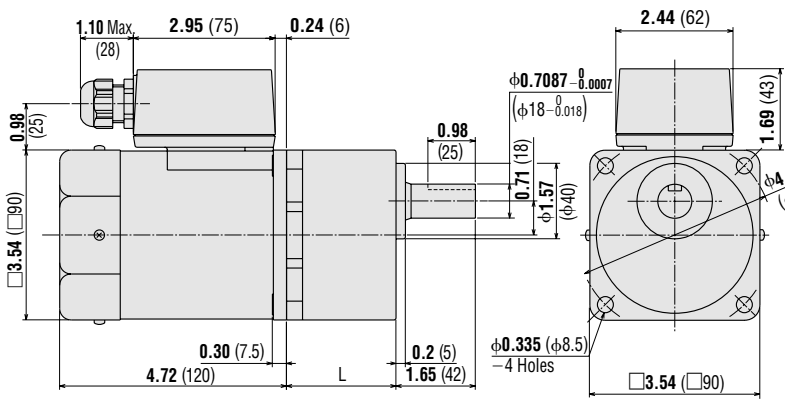


◆ Terminal Box Type ⑤

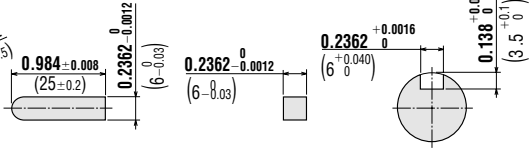
VH1560AT-□U, VH1560CT-□E, VHI560ST-□ (Combination Type)

Weight: 9.5 lb. (4.3 kg) including gearhead
 Motor Model: VH1560AT-GVH, VH1560CT-GVH, VHI560ST-GVH
 Gearhead Model: GVH5G□

DXF A245A (GVH5G5~18)
 A245B (GVH5G30~90)
 A245C (GVH5G120~300)



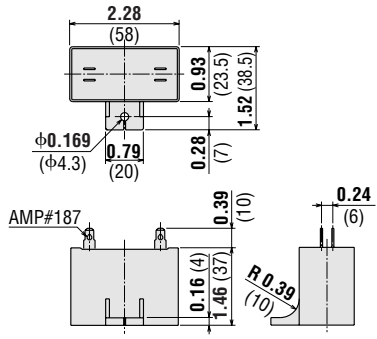
● Key and Key Slot (Scale 1/2)
 (The key is provided with the gearhead)



GVH5G5-GVH5G18: L = 1.77 (45)
 GVH5G30-GVH5G90: L = 2.28 (58)
 GVH5G120-GVH5G300: L = 2.52 (64)

- Use cable (VCTF) with a diameter of φ0.24 inch (φ6 mm)~φ0.47 inch (φ12 mm).
- Details of Terminal Box → Page A-224

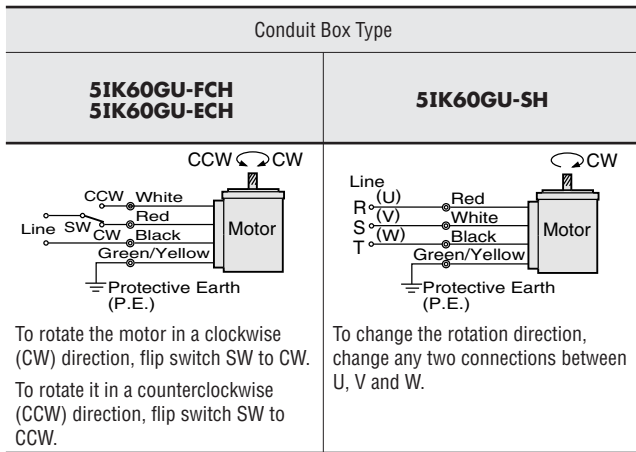
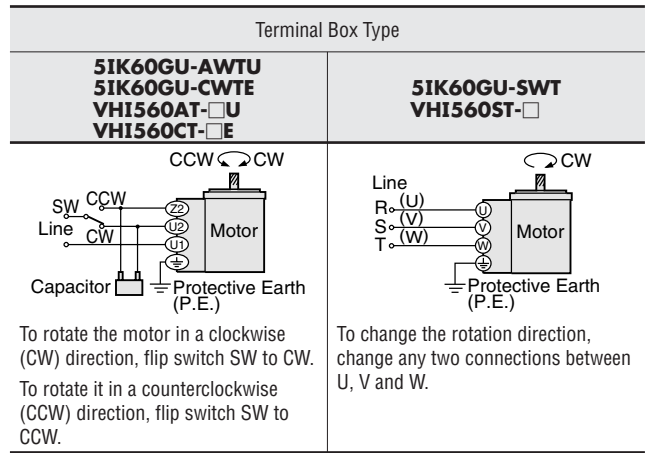
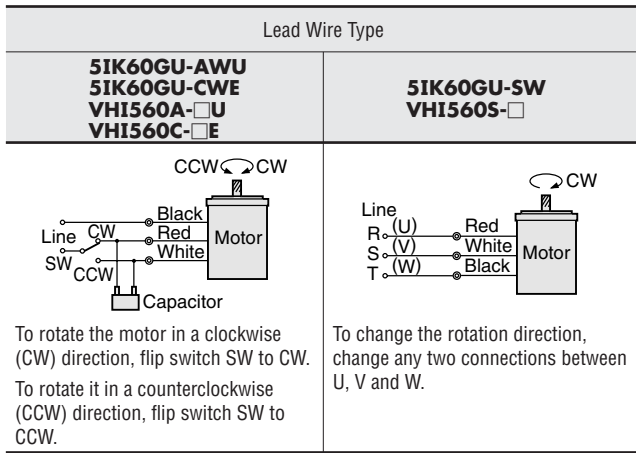
● Capacitor (included with single-phase motors)



Motor Model	Capacitor Model	Weight oz. (g)
5IK60GU-AW(T)U 5IK60A-AW(T)U VHI560A-□U VHI560AT-□U	CH180CFAUL	2.5 (70)
5IK60GU-CW(T)E 5IK60A-CW(T)E VHI560C-□E VHI560CT-□E	CH40BFAUL	

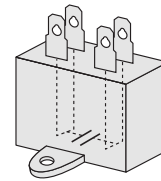
- If you need to order a capacitor without a motor, add "-C" to the capacitor model name shown. A capacitor cap is included with a capacitor.

Connection Diagrams



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.



- 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.
- Connection diagrams are also valid for the equivalent round shaft type.
- **How to connect a capacitor** → Page A-225

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.

List of Motor and Gearhead Combinations for V Series

Model numbers for motor and gearhead combinations are shown below.

Model	Motor Model	Gearhead Model
VH1560A-□U	VH1560A-GVH	GVH5G□
VH1560C-□E	VH1560C-GVH	
VH1560S-□	VH1560S-GVH	
VH1560AT-□U	VH1560AT-GVH	
VH1560CT-□E	VH1560CT-GVH	
VH1560ST-□	VH1560ST-GVH	

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