

Reversible Motors

40 W (1/19 HP)

Frame Size: □ 3.54 in. (□ 90 mm)



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



V Series/Combination Type
(Pre-assembled Gearmotor)



Specifications — 30 Minute 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	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②											
TP 5RK40GN-AWU (5RK40A-AWU)	5RK40GN-AWTU (5RK40A-AWTU)	1/19	40	Single-Phase 110	60	0.81	36	260	38	270	1450	12
				Single-Phase 115	60							
Single-Phase 220	50			0.40	38	270	44	315	1250			
Single-Phase 220	60			0.46	36	260	36	260	1500	3.5		
TP 5RK40GN-CWE (5RK40A-CWE)	5RK40GN-CWTE (5RK40A-CWTE)	Single-Phase 230	50	0.40	38	270	44	315	1250			
		Single-Phase 230	60	0.46	36	260	36	260	1500			

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.

- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- 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 Standards →Page G-2

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



Model Combination Type		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ③	Terminal Box Type Dimension ④	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
TP VHR540A-□U	VHR540AT-□U	1/19	40	Single-Phase 110	60	0.81	36	260	38	270	1450	12
				Single-Phase 115	60							
Single-Phase 220	50			0.40	38	270	44	315	1250			
Single-Phase 220	60			0.46	36	260	36	260	1500	3.5		
TP VHR540C-□E	VHR540CT-□E	Single-Phase 230	50	0.40	38	270	44	315	1250			
		Single-Phase 230	60	0.46	36	260	36	260	1500			

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.

- Values shown for rated torque and starting torque are measured for operation without the brake applied.
- 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-12
- Details of Safety Standards →Page G-2
- Models above are provided as combination types 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
5GN□KA	3~180
5GN10XK (Decimal Gearhead)	

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

Right-Angle

Type	Gearhead Model	Gear Ratio
Hollow Shaft	5GN□RH	3.6~180
Solid Shaft	5GN□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 88 lb-in (10 N·m).

◆ Single-Phase 115/230 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
5RK40GN-AWU / 5GN□KA	5.8	6.9	9.7	11.5	14.1	17.7	23	29	34	43	52	62	78	88	88	88	88	88	88	88	88
5RK40GN-AWTU / 5GN□KA	0.66	0.79	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.9	5.9	7.1	8.9	10	10	10	10	10	10	10	10
5RK40GN-CWE / 5GN□KA	5.5	6.7	9.7	11.5	14.1	16.8	23	28	33	41	50	60	76	88	88	88	88	88	88	88	88
5RK40GN-CWTE / 5GN□KA	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	10

◆ 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
5RK40GN-CWE / 5GN□KA	6.8	8.1	11.5	13.2	16.8	20	28	33	40	50	61	73	88	88	88	88	88	88	88	88	88
5RK40GN-CWTE / 5GN□KA	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	10

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

◆ Single-Phase 115/230 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
VHR540A-□U	10.6	13.2	19.4	31	38	62	74	123	184	230	260	260	
VHR540AT-□U	1.2	1.5	2.2	3.6	4.4	7	8.4	13.9	20.9	26.2	30	30	
VHR540C-□E	10.6	12.3	18.5	30	37	59	70	118	177	220	260	260	
VHR540CT-□E	1.2	1.4	2.1	3.5	4.2	6.7	8	13.4	20.1	25.3	30	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
VHR540C-□E	12.3	15	23	38	45	71	86	144	210	260	260	260	
VHR540CT-□E	1.4	1.7	2.6	4.3	5.1	8.1	9.8	16.3	24.4	30	30	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 World **K** Series only.

→Page A-196

■ Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft motor) →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

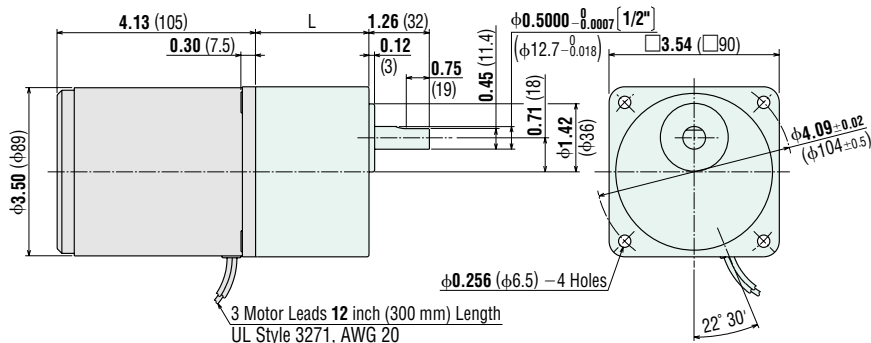
World K Series

Lead Wire Type ①

Motor
5RK40GN-AWU
5RK40GN-CWE
Weight: 5.5 lb. (2.5 kg)

Gearhead
5GN□KA
Weight: 3.3 lb. (1.5 kg)

DXF A019AU (5GN3KA~18KA)
A019BU (5GN25KA~180KA)



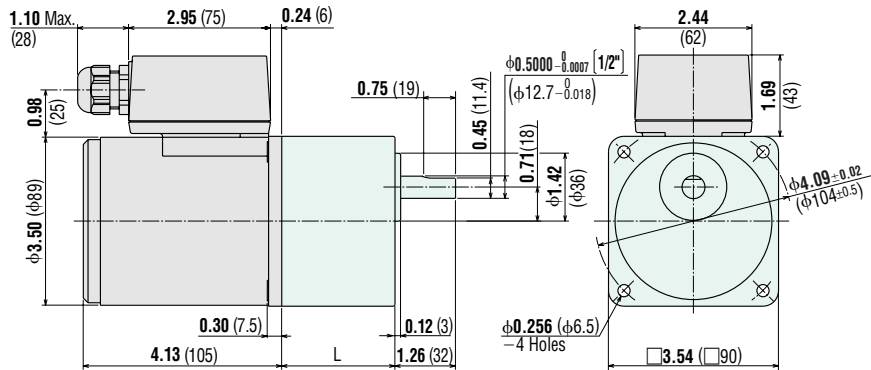
5GN3KA~18KA: L = 1.65 (42)
5GN25KA~180KA: L = 2.36 (60)

Terminal Box Type ②

Motor
5RK40GN-AWTU
5RK40GN-CWTE
Weight: 5.7 lb. (2.6 kg)

Gearhead
5GN□KA
Weight: 3.3 lb. (1.5 kg)

DXF A021AU (5GN3KA~18KA)
A021BU (5GN25KA~180KA)



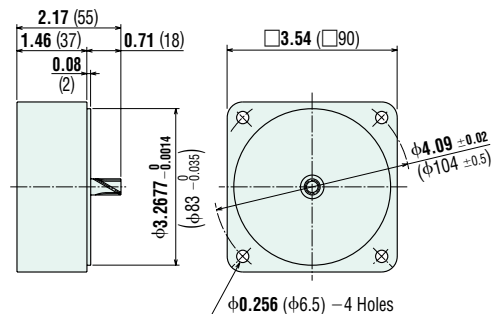
5GN3KA~18KA: L = 1.65 (42)
5GN25KA~180KA: L = 2.36 (60)

- 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

Decimal Gearhead (for World K Series)

5GN10XK Weight: 1.3 lb. (0.6 kg)

DXF A022

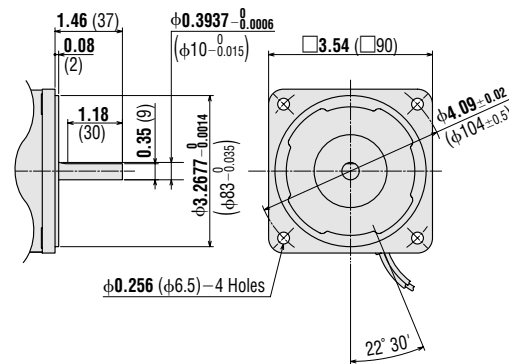


Round Shaft Type

5RK40A-AWU
5RK40A-CWE
Weight: 5.5 lb. (2.5 kg)

DXF A329

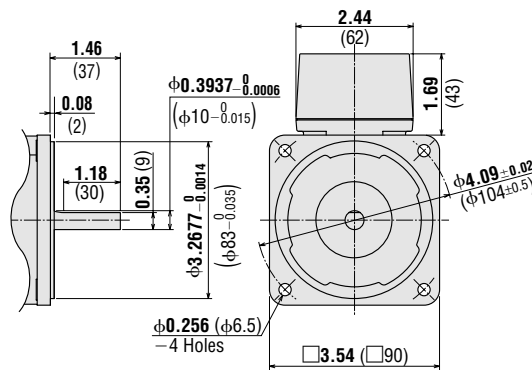
3/8 inch shaft motors are also available. Contact your Oriental Motor Representative for more information.



Round Shaft Type

5RK40A-AWTU
5RK40A-CWTE
Weight: 5.7 lb. (2.6 kg)

DXF A330



● V Series

◆ Lead Wire Type ③

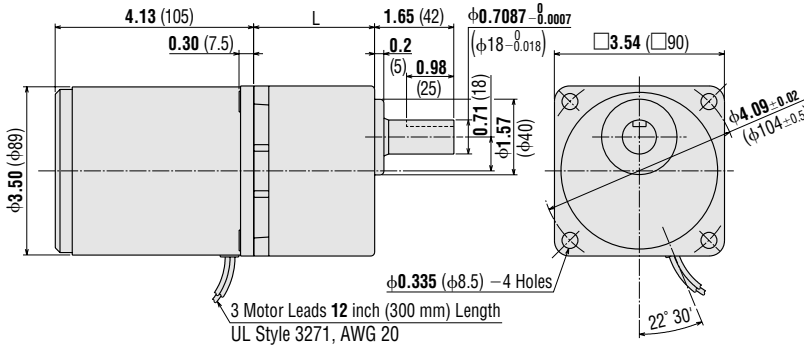
VHR540A-□U, VHR540C-□E (Combination Type)

Weight: 8.8 lb. (4.0 kg) including gearhead

Motor Model: VHR540A-GVH, VHR540C-GVH

Gearhead Model: GVH5G□

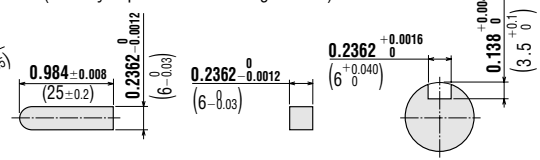
- DXF A203A (GVH5G5~18)
A203B (GVH5G30~90)
A203C (GVH5G120~300)



- 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 ④

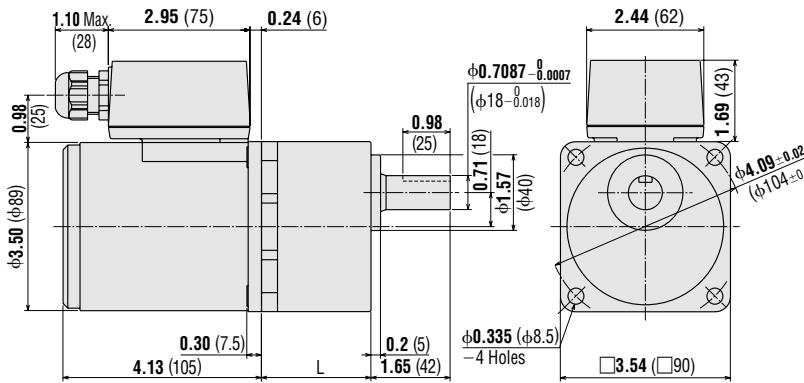
VHR540AT-□U, VHR540CT-□E (Combination Type)

Weight: 9.0 lb. (4.1 kg) including gearhead

Motor Model: VHR540AT-GVH, VHR540CT-GVH

Gearhead Model: GVH5G□

- DXF A212A (GVH5G5~18)
A212B (GVH5G30~90)
A212C (GVH5G120~300)

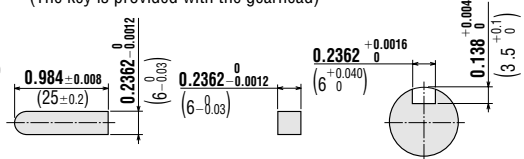


- GVH5G5-GVH5G18: L = 1.77 (45)
GVH5G30-GVH5G90: L = 2.28 (58)
GVH5G120-GVH5G300: L = 2.52 (64)

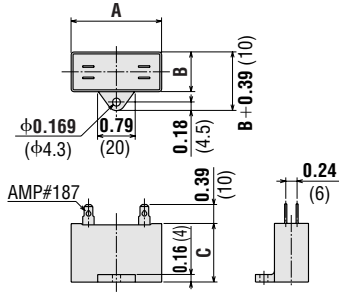
- Use cable (VCTF) with the diameter of φ0.24 inch (φ6 mm)~φ0.47 inch (φ12 mm).
- Details of Terminal Box → Page A-224

● Key and Key Slot (Scale 1/2)

(The key is provided with the gearhead)



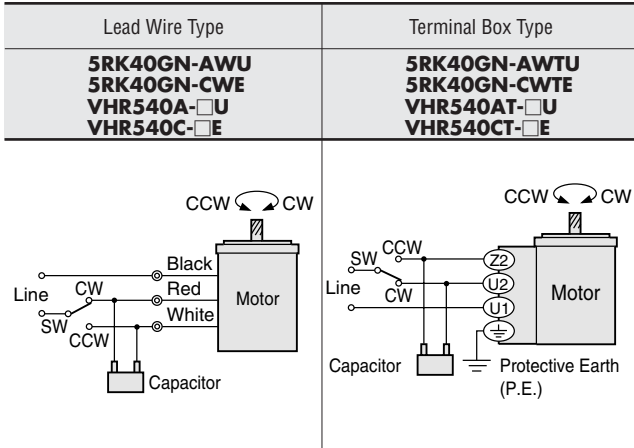
● **Capacitor** (included with the motors)



Motor Model	Capacitor Model	Dimension inch (mm)			Weight oz. (g)
		A	B	C	
5RK40GN-AW(T)U 5RK40A-AW(T)U VHR540A(T)-□U	CH120CFAUL	2.28 (58)	0.83 (21)	1.22 (31)	1.8 (50)
5RK40GN-CW(T)E 5RK40A-CW(T)E VHR540C(T)-□E	CH35BFAUL	2.28 (58)	0.87 (22)	1.38 (35)	1.9 (55)

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

■ **Connection Diagrams**



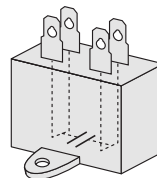
- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- **How to connect a capacitor** → Page A-225

Note:

- Connect a CR circuit to the forward/reverse select switch (SW) to protect the contact.
Connecting CR circuit, contact capacity → Page A-226

● **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 for V Series**

Model numbers for motor and gearhead combinations are shown below.

Model	Motor Model	Gearhead Model
VHR540A-□U	VHR540A-GVH	GVH5G□
VHR540C-□E	VHR540C-GVH	
VHR540AT-□U	VHR540AT-GVH	
VHR540CT-□E	VHR540CT-GVH	

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