

Reversible Motors

25 W (1/30 HP)

Frame Size: 3.15 in. (80 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	4RK25GN-AWU 4RK25GN-AWTU (4RK25A-AWU) (4RK25A-AWTU)	Single-Phase 110		60	60	0.54	19.8	140	24	170	1450	8
		Single-Phase 115		60								
TP	4RK25GN-CWE 4RK25GN-CWTE (4RK25A-CWE) (4RK25A-CWTE)	1/30	25	Single-Phase 220	50	0.26	19.8	140	29	205	1200	2
				Single-Phase 220	60	0.28	19.8	140	24	170	1450	
				Single-Phase 230	50	0.26	22	160	29	205	1200	
				Single-Phase 230	60	0.28	19.8	140	24	170	1450	

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		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Combination Type		HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
Lead Wire Type Dimension ③	Terminal Box Type Dimension ④											
TP	VHR425A-□U VHR425AT-□U	Single-Phase 110		60	60	0.54	19.8	140	24	170	1450	8
		Single-Phase 115		60								
TP	VHR425C-□E VHR425CT-□E	1/30	25	Single-Phase 220	50	0.26	19.8	140	29	205	1200	2
				Single-Phase 220	60	0.28	19.8	140	24	170	1450	
				Single-Phase 230	50	0.26	22	160	29	205	1200	
				Single-Phase 230	60	0.28	19.8	140	24	170	1450	

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
4GN□KA	3~180
4GN10XK (Decimal Gearhead)	

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

Right-Angle

Type	Gearhead Model	Gear Ratio
Hollow Shaft	4GN□RH	3.6~180
Solid Shaft	4GN□RAA	3.6~180

- 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 70 lb-in (8 N·m).

The value is 53 lb-in (6 N·m) when 25:1~36:1 gearheads are connected.

◆ 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
4RK25GN-AWU 4RK25GN-AWTU / 4GN□KA 4RK25GN-CWE 4RK25GN-CWTE		3.6	4.4	6.1	7.3	8.8	10.6	15	18.5	22	27	32	39	49	59	70	70	70	70	70	70
		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

◆ 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
4RK25GN-CWE 4RK25GN-CWTE / 4GN□KA		4.4	5.3	7.3	8.8	10.6	13.2	18.5	22	26	32	39	47	60	70	70	70	70	70	70	70
		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

● 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	5
	Gear Ratio	5	6	9	15	18	30	36	60	90	120	180	300	360
VHR425A-□U VHR425AT-□U VHR425C-□E VHR425CT-□E		6.8	8.1	12.3	20	24	38	46	77	116	141	141	141	141
		0.77	0.92	1.4	2.3	2.8	4.4	5.3	8.8	13.2	16	16	16	16

◆ 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	4.2
	Gear Ratio	5	6	9	15	18	30	36	60	90	120	180	300	360
VHR425C-□E VHR425CT-□E		8.1	9.7	15	24	29	46	55	93	140	141	141	141	141
		0.92	1.1	1.7	2.8	3.3	5.3	6.3	10.6	15.9	16	16	16	16

- 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

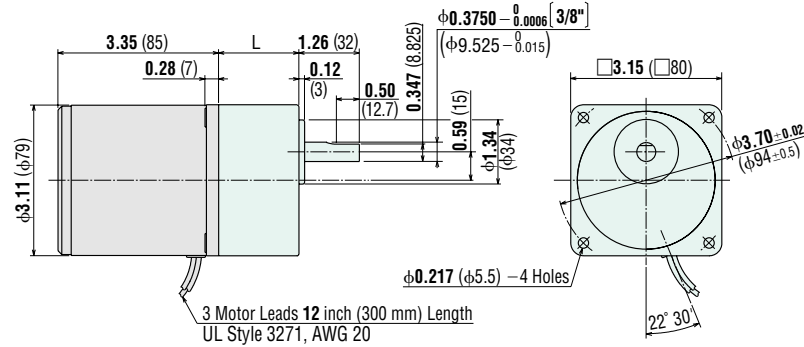
World K Series

Lead Wire Type ①

Motor
4RK25GN-AWU
4RK25GN-CWE
Weight: 3.3 lb. (1.5 kg)

Gearhead
4GN□KA
Weight: 1.4 lb. (0.65 kg)

DXF A014AU (4GN3KA~18KA)
A014BU (4GN25KA~180KA)



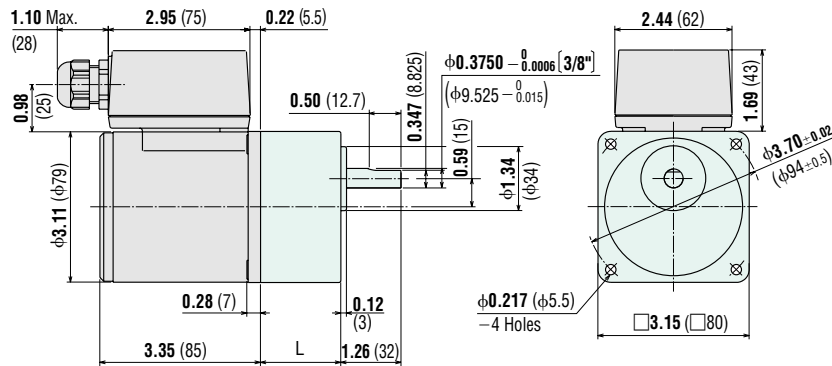
4GN3KA-18KA: L = 1.26 (32)
4GN25KA-180KA: L = 1.67 (42.5)

Terminal Box Type ②

Motor
4RK25GN-AWTU
4RK25GN-CWTE
Weight: 3.7 lb. (1.7 kg)

Gearhead
4GN□KA
Weight: 1.4 lb. (0.65 kg)

DXF A015AU (4GN3KA~18KA)
A015BU (4GN25KA~180KA)



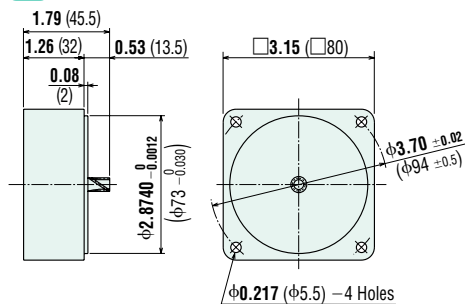
4GN3KA-18KA: L = 1.26 (32)
4GN25KA-180KA: L = 1.67 (42.5)

- 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)

4GN10XK Weight: 0.88 lb. (0.4 kg)

DXF A013

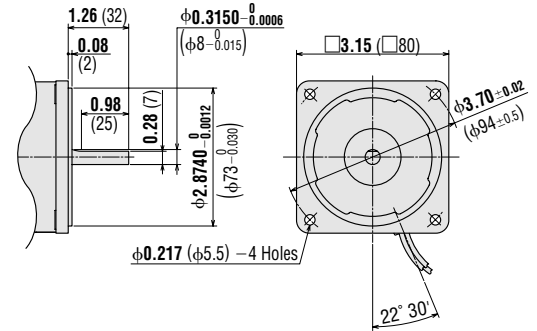


Round Shaft Type

4RK25A-AWU
4RK25A-CWE
Weight: 3.3 lb. (1.5 kg)

DXF A327

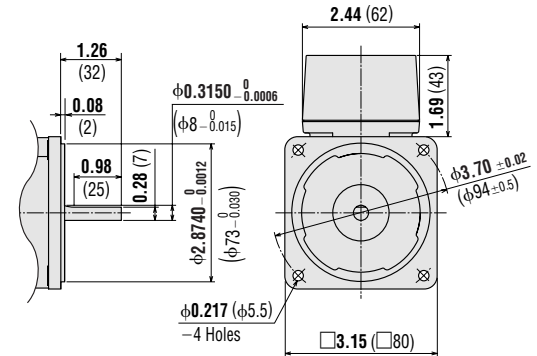
5/16 inch shaft motors are also available. Contact your Oriental Motor Representative for more information.



Round Shaft Type

4RK25A-AWTU
4RK25A-CWTE
Weight: 3.7 lb. (1.7 kg)

DXF A328



● **V Series**

◆ **Lead Wire Type ③**

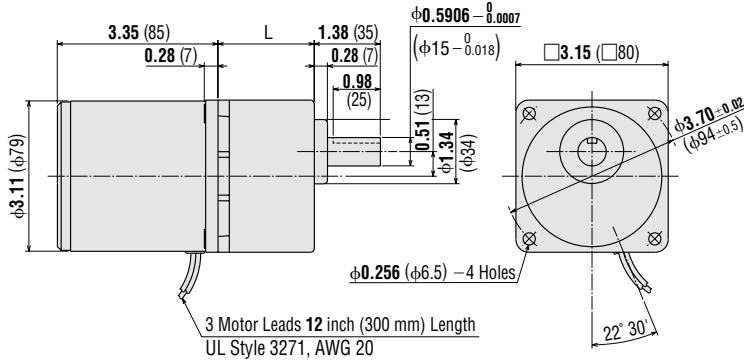
VHR425A-□U, VHR425C-□E (Combination Type)

Weight: 5.5 lb. (2.5 kg) including gearhead

Motor Model: VHR425A-GV, VHR425C-GV

Gearhead Model: GV4G□

- DXF** A202A (GV4G5~18)
 A202B (GV4G30~120)
 A202C (GV4G180~360)



- GV4G5-GV4G18: L = 1.61 (41)
 GV4G30-GV4G120: L = 1.81 (46)
 GV4G180-GV4G360: L = 2.01 (51)

◆ **Terminal Box Type ④**

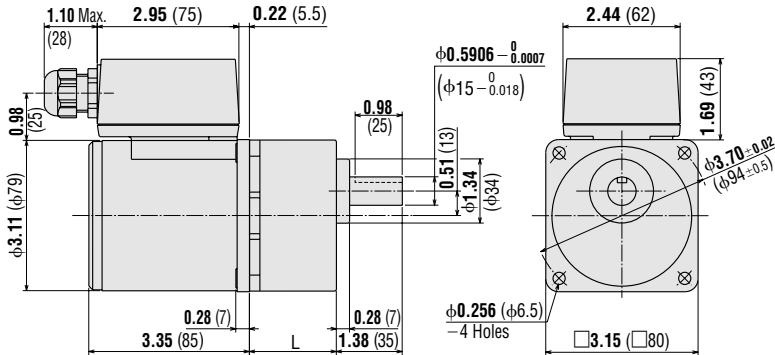
VHR425AT-□U, VHR425CT-□E (Combination Type)

Weight: 5.9 lb. (2.7 kg) including gearhead

Motor Model: VHR425AT-GV, VHR425CT-GV

Gearhead Model: GV4G□

- DXF** A211A (GV4G5~18)
 A211B (GV4G30~120)
 A211C (GV4G180~360)

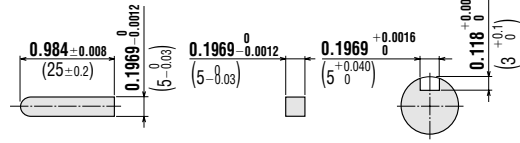


- GV4G5-GV4G18: L = 1.61 (41)
 GV4G30-GV4G120: L = 1.81 (46)
 GV4G180-GV4G360: L = 2.01 (51)

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

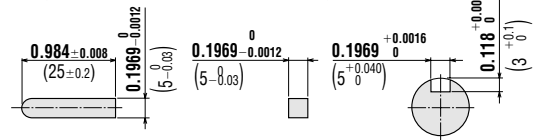
● **Key and Key Slot (Scale 1/2)**

(The key is provided with the gearhead)

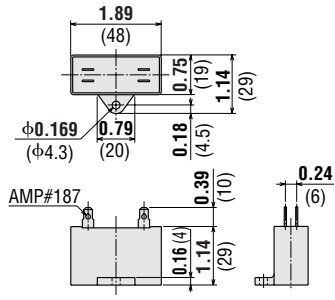


● **Key and Key Slot (Scale 1/2)**

(The key is provided with the gearhead)



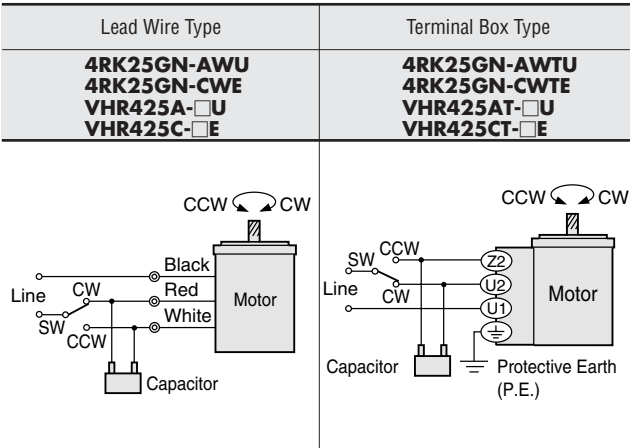
● **Capacitor** (included with the motors)



Motor Model	Capacitor Model	Weight oz. (g)
4RK25GN-AW(T)U 4RK25A-AW(T)U VHR425A(T)-□U	CH80CFAUL	1.4 (40)
4RK25GN-CW(T)E 4RK25A-CW(T)E VHR425C(T)-□E	CH20BFAUL	1.2 (35)

- 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**



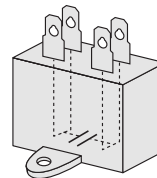
- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- **How to connect a capacitor** → Page A-225

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
VHR425A-□U	VHR425A-GV	GV4G□
VHR425C-□E	VHR425C-GV	
VHR425AT-□U	VHR425AT-GV	
VHR425CT-□E	VHR425CT-GV	

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