

## Induction Motors

## 15 W (1/50 HP)

Frame Size: □ 2.76 in. (□ 70 mm)

World **K** Series  
(Gearhead Sold Separately)**V** Series/Combination Type  
(Pre-assembled Gearmotor)

## Specifications — Continuous Rating

● World **K** Series (General Purpose)

Model Upper Model Name: Pinion Shaft Type Lower Model Name( ): Round Shaft Type	Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
<sup>(TP)</sup> <b>3IK15GN-AWU</b> ( <b>3IK15A-AWU</b> )	1/50	15	Single-Phase 110	60	0.33	9.2	65	14.9	105	1450	4.5
			Single-Phase 115		0.34						
<sup>(TP)</sup> <b>3IK15GN-CWE</b> ( <b>3IK15A-CWE</b> )	1/50	15	Single-Phase 220	50	0.19	9.9	70	17.7	125	1200	1
			Single-Phase 220	60	0.16	9.2	65	14.9	105	1450	
			Single-Phase 230	50	0.19	10.6	75	17.7	125	1200	
			Single-Phase 230	60	0.16	9.2	65	14.9	105	1450	

<sup>(TP)</sup> 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

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

Model Combination Type	Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
	HP	W	VAC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
<sup>(TP)</sup> <b>VHI315A-□U</b>	1/50	15	Single-Phase 110	60	0.33	9.2	65	14.9	105	1450	4.5
			Single-Phase 115		0.34						
<sup>(TP)</sup> <b>VHI315C-□E</b>	1/50	15	Single-Phase 220	50	0.19	9.9	70	17.7	125	1200	1
			Single-Phase 220	60	0.16	9.2	65	14.9	105	1450	
			Single-Phase 230	50	0.19	10.6	75	17.7	125	1200	
			Single-Phase 230	60	0.16	9.2	65	14.9	105	1450	

<sup>(TP)</sup> 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
<b>3GN□KA</b>	<b>3~180</b>
<b>3GN10XK</b> (Decimal Gearhead)	

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

## ■ Gearmotor — Torque Table

### ● World K Series (General Purpose)

The maximum permissible torque with a decimal gearhead with a gear ratio of 10:1 is 44 lb-in (5 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	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>3IK15GN-AWU</b> <b>3IK15GN-CWE</b> / <b>3GN□KA</b>		2.3 0.26	2.7 0.31	3.8 0.43	4.5 0.51	5.6 0.64	6.8 0.77	9.7 1.1	11.5 1.3	13.2 1.5	16.8 1.9	20 2.3	24 2.8	30 3.5	37 4.2	44 5	44 5	44 5	44 5	44 5	44 5

#### ◆ 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	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>3IK15GN-CWE</b> / <b>3GN□KA</b>		2.6 0.30	3.1 0.36	4.5 0.51	5.3 0.61	6.7 0.76	8 0.91	11.5 1.3	13.2 1.5	15.9 1.8	20 2.3	23 2.7	29 3.3	36 4.1	44 5	44 5	44 5	44 5	44 5	44 5	44 5

### ● 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	<b>5</b>	<b>6</b>	<b>9</b>	<b>15</b>	<b>18</b>	<b>30</b>	<b>36</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>180</b>	<b>300</b>	<b>360</b>
<b>VHI315A-□U</b> <b>VHI315C-□E</b>		4.1 0.47	5 0.57	7.5 0.85	12.3 1.4	15 1.7	23 2.7	29 3.3	47 5.4	71 8.1	88 10	88 10	88 10	88 10

#### ◆ 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	<b>5</b>	<b>6</b>	<b>9</b>	<b>15</b>	<b>18</b>	<b>30</b>	<b>36</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>180</b>	<b>300</b>	<b>360</b>
<b>VHI315C-□E</b>		4.9 0.56	6 0.68	8.8 1	15 1.7	17.7 2	28 3.2	34 3.9	57 6.5	85 9.7	88 10	88 10	88 10	88 10

- 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.

## ■ 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

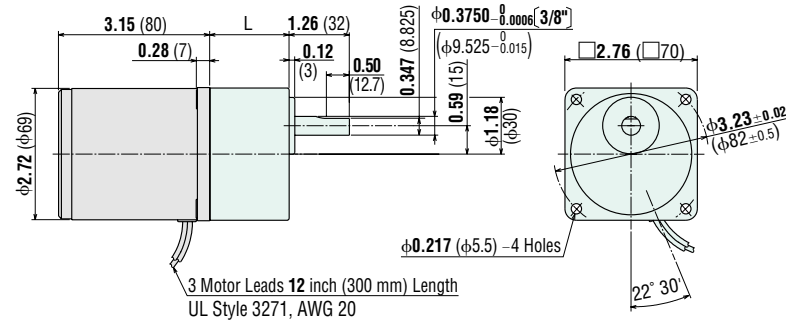
### World K Series

#### Lead Wire Type ①

**Motor**  
3IK15GN-AWU  
3IK15GN-CWE  
Weight: 2.4 lb. (1.1 kg)

**Gearhead**  
3GN□KA  
Weight: 1.2 lb. (0.55 kg)

**DXF** A010AU (3GN3KA~18KA)  
A010BU (3GN25KA~180KA)

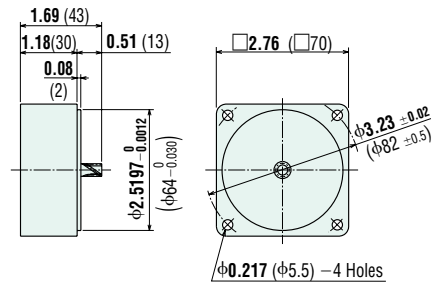


**3GN3KA-18KA:** L = 1.26 (32)  
**3GN25KA-180KA:** L = 1.65 (42)

### Decimal Gearhead (for World K Series)

**3GN10XK** Weight: 0.66 lb. (0.3 kg)

**DXF** A009

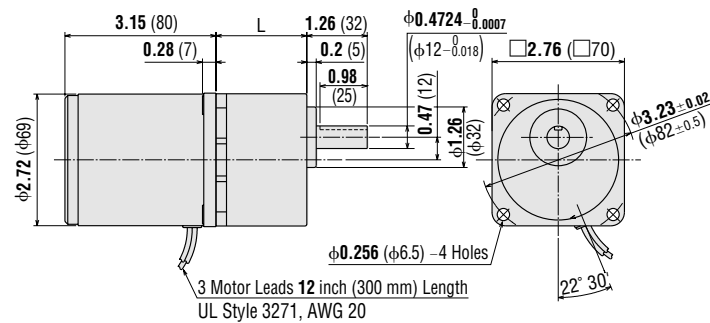


### V Series

#### Lead Wire Type ②

**VHI315A-□U, VHI315C-□E** (Combination Type)  
Weight: 3.7 lb. (1.7 kg) including gearhead  
Motor Model: VHI315A-GV, VHI315C-GV  
Gearhead Model: GV3G□

**DXF** A242A (GV3G5~18)  
A242B (GV3G30~120)  
A242C (GV3G180~360)



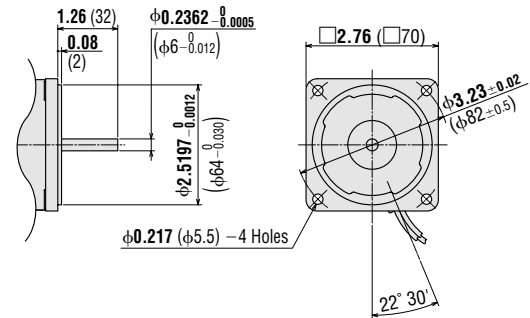
**GV3G5-GV3G18:** L = 1.5 (38)  
**GV3G30-GV3G120:** L = 1.69 (43)  
**GV3G180-GV3G360:** L = 1.89 (48)

### Round Shaft Type

**3IK15A-AWU**  
**3IK15A-CWE**  
Weight: 2.4 lb. (1.1 kg)

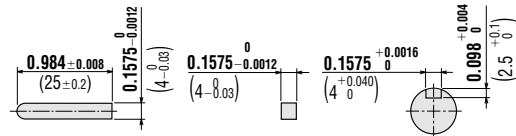
**DXF** A326

1/4 inch shaft motors are also available. Contact your Oriental Motor Representative for more information.

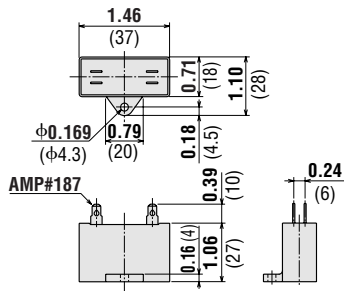


### Key and Key Slot (Scale 1/2)

(The key is provided with the gearhead)



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

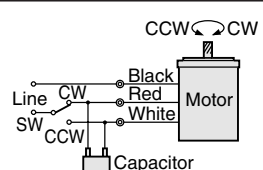


Motor Model	Capacitor Model	Weight oz. (g)
<b>3IK15GN-AWU</b> <b>3IK15A-AWU</b> <b>VHI315A-□U</b>	CH45FAUL	1.1 (30)
<b>3IK15GN-CWE</b> <b>3IK15A-CWE</b> <b>VHI315C-□E</b>	CH10BFAUL	1.1 (30)

- 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**

Lead Wire Type
<b>3IK15GN-AWU</b> <b>3IK15GN-CWE</b> <b>VHI315A-□U</b> <b>VHI315C-□E</b>



To rotate the motor in a clockwise (CW) direction, flip switch SW to CW.  
 To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.

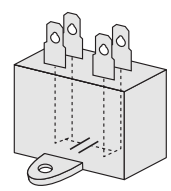
- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- **How to connect a capacitor** → Page A-225

**Note:**

- Change the direction of 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.

● **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
<b>VHI315A-□U</b>	VHI315A-GV	GV3G□
<b>VHI315C-□E</b>	VHI315C-GV	

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