Power Off Activated Type Electromagnetic Brake 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

● Motor Specifications

◆ World K Series (General Purpose)

Model Pinion Shaft Type Round Shaft Type	Rating	Output Power HP	Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque oz-in	Starting Torque mN·m	Rated Torque oz-in	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
(TP) **3RK15GN-AWMU** **3RK15A-AWMU**	30 minutes	1/50	15	Single-Phase 110 Single-Phase 115	60	0.42 0.41	14.2	100	14.9	105	1450	6
(TP) **3RK15GN-CWME** **3RK15A-CWME**	30 minutes	1/50	15	Single-Phase 220 Single-Phase 220 Single-Phase 230 Single-Phase 230	50 60 50 60	0.19 0.21 0.20 0.21	14.2 14.2 14.2 14.2	100 100 100 100	17.7 14.9 17.7 14.9	125 105 125 105	1200 1450 1200 1450	1.5

(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.

- This type of motor does not contain a built-in simple brake mechanism.
- 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 Standards**→Page G-2

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

Model Combination Type	Rating	Output Power HP	Output Power W	Voltage VAC	Frequency Hz	Current A	Starting Torque oz-in	Starting Torque mN·m	Rated Torque oz-in	Rated Torque mN·m	Rated Speed r/min	Capacitor μF
(TP) **VHR315AM-□U**	30 minutes	1/50	15	Single-Phase 110 Single-Phase 115	60	0.42 0.41	14.2	100	14.9	105	1450	6
(TP) **VHR315CM-□E**	30 minutes	1/50	15	Single-Phase 220 Single-Phase 220 Single-Phase 230 Single-Phase 230	50 60 50 60	0.19 0.21 0.20 0.16	14.2	100	17.7 14.9 17.7 14.9	125 105 125 105	1200 1450 1200 1450	1.5

(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.

- 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 type with motor and gearhead pre-assembled.
- Enter the gear ratio in the box (□) within the model name.
- The values in the table are for the motor only.

● Electromagnetic Brake (Power Off Activated Type) Specifications

◆ World K Series

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque oz-in	Holding Brake Torque mN·m
3RK15GN-AWMU **3RK15A-AWMU**	Single-Phase 110 Single-Phase 115	60 60	0.06	4	11.3	80
3RK15GN-CWME **3RK15A-CWME**	Single-Phase 220 Single-Phase 220 Single-Phase 230 Single-Phase 230	50 60 50 60	0.05	7	11.3	80

◆ V Series

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque oz-in	Holding Brake Torque mN·m
VHR315AM-□U	Single-Phase 110 Single-Phase 115	60 60	0.09	7	11.3	80
VHR315CM-□E	Single-Phase 220 Single-Phase 220 Single-Phase 230 Single-Phase 230	50 60 50 60	0.05	7	11.3	80

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

■ Gearheads for World K Series (Sold Separately)

● Parallel Shaft

Gearhead Model	Gear Ratio
3GN□KA	**3～180**
3GN10XK (Decimal Gearhead)	

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

Dimensions A-139 | Connection Diagrams A-141 | List of Motor and Gearhead Combinations for V Series A-141

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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
3RK15GN-AWMU / 3GN□KA **3RK15GN-CWME / 3GN□KA**		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	15	18	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**
3RK15GN-CWME / 3GN□KA		2.6 0.30	3.1 0.36	4.5 0.51	5.4 0.61	6.7 0.76	8 0.91	11.5 1.3	13.2 1.5	15.9 1.8	20 2.3	23.4 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	**5**	**6**	**9**	**15**	**18**	**30**	**36**	**60**	**90**	**120**	**180**	**300**	**360**
VHR315AM-□U **VHR315CM-□E**		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	**5**	**6**	**9**	**15**	**18**	**30**	**36**	**60**	**90**	**120**	**180**	**300**	**360**
VHR315CM-□E		4.9 0.56	6 0.68	8.8 1.0	15 1.7	17.7 2.0	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.

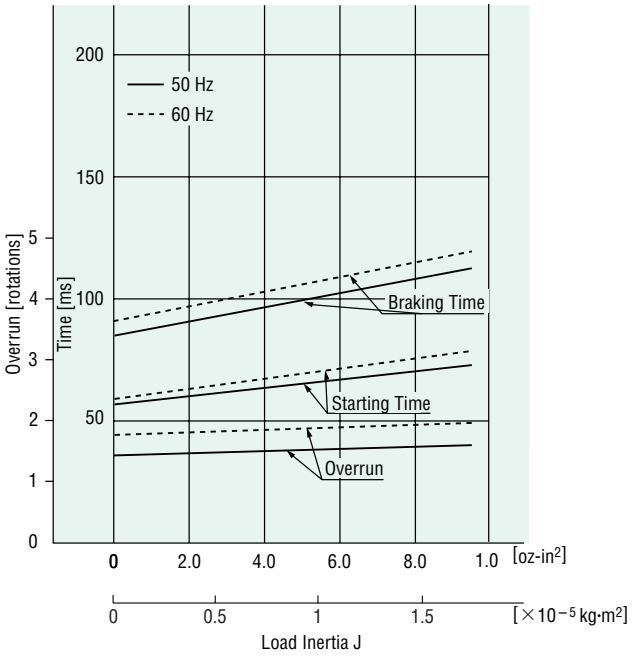
Permissible Overhung Load and Permissible Thrust Load

Motor (Round shaft motor)→Page A-11
Gearhead→Page A-11

Permissible Load Inertia J for Gearhead

→Page A-12

Starting and Braking Characteristics Common to 15W Type (Reference Values)



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

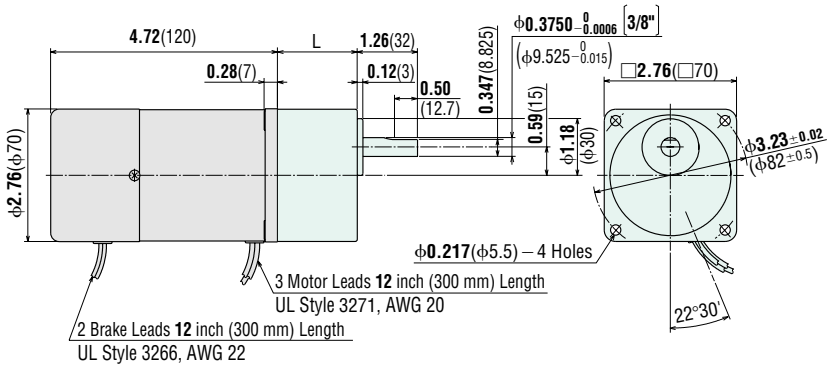
Mounting screws are included with gearheads. Dimensions for screws→A-223

World K Series

Motor
3RK15GN-AWMU
Weight: 2.9 lb. (1.3 kg)

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

DXF A087AU (**3GN3KA**~**18KA**)
A087BU (**3GN25KA**~**180KA**)



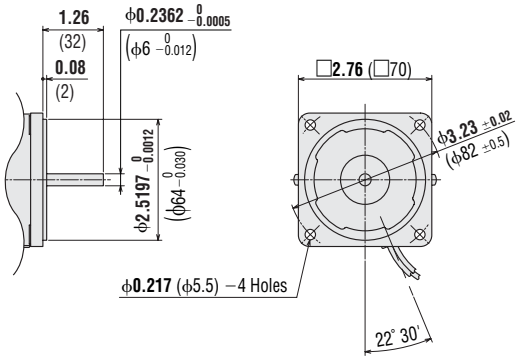
3GN3KA~**18KA**: L = **1.26** (32)
3GN25KA~**180KA**: L = **1.65** (42)

Round Shaft Type

3RK15A-AWMU
Weight: 2.9 lb. (1.3 kg)

DXF A347

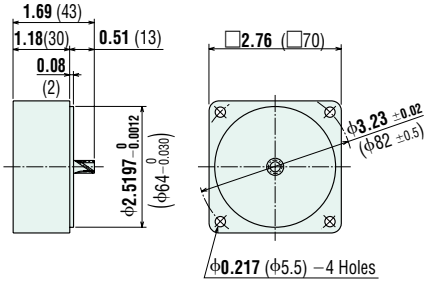
1/4 inch shaft motors are also available. Contact your Oriental Motor Representative for more information.



Decimal Gearhead (for World K Series)

3GN10XK Weight: 0.66 lb. (0.3 kg)

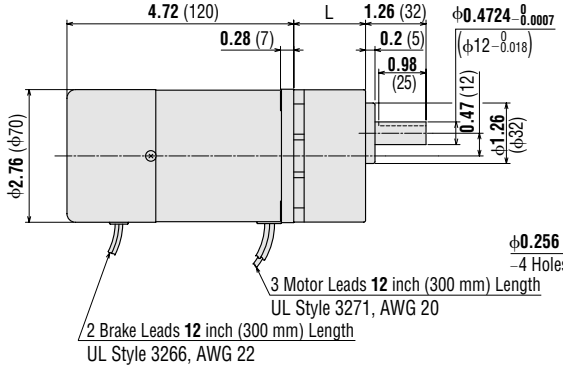
DXF A009

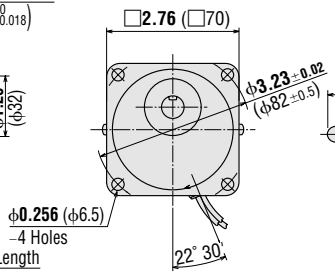


V Series

VHR315AM-□U, **VHR315CM-□E** (Combination Type)
Weight: 4.2 lb. (1.9 kg) including gearhead
Motor Model: VHR315AM-GV, VHR315CM-GV
Gearhead Model: GV3G□

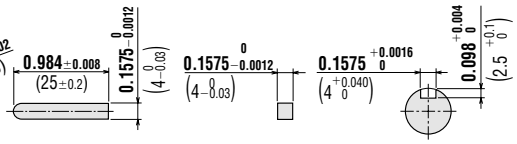
DXF A391A (GV3G5~18)
A391B (GV3G30~120)
A391C (GV3G180~360)





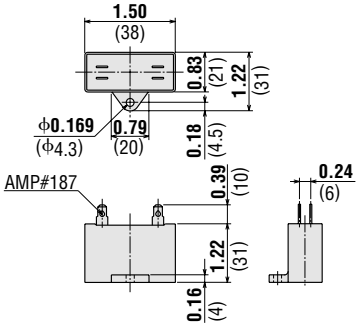
●Key and Key Slot (Scale 1/2)

(The key is included with the gearhead)



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

Capacitor (included with the motors)

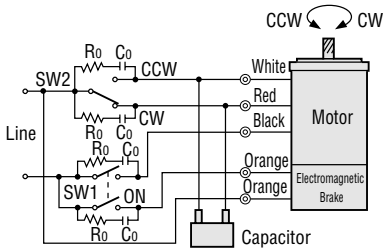


Motor Model	Capacitor Model	Weight oz. (g)
3RK15GN-AWMU **3RK15A-AWMU** **VHR315AM-□U**	CH60CFAUL	1.4 (40)
3RK15GN-CWME **3RK15A-CWME** **VHR315CM-□E**	CH15BFAUL	1.2 (35)

- 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

3RK15GN-AWMU
3RK15GN-CWME
VHR315AM-□U
VHR315CM-□E



SW1 operates both motor and electromagnetic brake action. The motor will rotate when SW1 is switched simultaneously to ON (short circuit). When SW1 is switched simultaneously to OFF (open), the motor stops immediately with the electromagnetic brake and holds the load.
(To release the brake while the motor is stopped, apply voltage between the two brake lead wires (orange).)

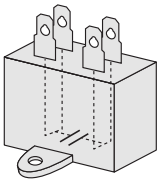
Direction of Rotation
To rotate the motor in a clockwise (CW) direction, flip SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, flip SW2 to CCW.

Switch No.	Specifications		Note
	Single-Phase 110 VAC Input Single-Phase 115 VAC Input	Single-Phase 220 VAC Input Single-Phase 230 VAC Input	
SW1	125 VAC 3 A minimum	250 VAC 1.5 A minimum	Switched Simultaneously
SW2	(Inductive Load)	(Inductive Load)	—

- 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 motors.
- Ro and Co indicates surge absorber circuit. [Ro = 5～200Ω, Co = 0.1～0.2μF, 200WV (400WV)]
  EPCR1201-2 is available as an optional surge absorber. →Page A-218
- **How to connect a capacitor**→Page A-225

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
VHR315AM-□U	VHR315AM-GV	GV3G□
VHR315CM-□E	VHR315CM-GV	

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