

Standard AC Motors

## Constant Speed Motors

High Strength, Long Life, Low Noise

# V Series

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

## V Series

Introduction

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

V Series

Clutch & Brake Motors

Synchronous Motors

Low-Speed Synchronous Motors

Waterright Dust-Resistant Motors

Torque Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

Page

Induction Motors, Reversible Motors .....	C-154
Electromagnetic Brake Motors .....	C-168

# High Strength, Long Life, Low Noise

## V Series

### Induction Motors/Reversible Motors/Electromagnetic Brake Motors

● Additional Information ●  
 Technical reference → Page G-1  
 Safety standards → Page H-2

Our **V** Series provides a set of standard AC motors that maintain the utility of the World **K** Series while offering quieter operation, greater strength, longer life and improved reliability, thereby meeting increasingly specialized customer needs.

If you want to drive larger loads without changing the motor size or if you're looking for a quieter motor that can be used in a quiet environment such as a hospital or library you're sure to find it in the **V** Series.

### Features

#### ● High Strength, Long Life

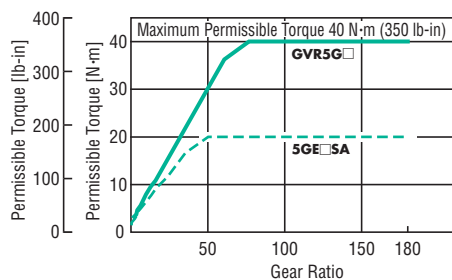
The motor's considerable strength has resulted from the use of a rigid case, a proprietary side-panel construction and an optimized gear design. Moreover, the use of a larger-diameter bearing serves to extend its useful life.



#### ◇ Maximum Permissible Torque: The Highest in Class

The gearhead for the **GVR** type, designed for 90 W (1/8 HP) applications, achieves a maximum permissible torque of 40 N·m (350 lb-in), which is the highest in the class of motors with a frame size of □90 mm (□3.54 in.). Its high-strength design allows the **GVR** to produce this amazing torque, which is twice the permissible torque of the **GE** type's gearhead.

With the **V** Series, you need not increase the size of the motor or gearhead in the situation where a gearhead of higher strength becomes necessary due to changes of the load conditions.



● For detailed product safety standard information including standards, file number and certification body, please visit [www.orientalmotor.com](http://www.orientalmotor.com).



#### ◇ Long Rated Life of 10000 Hours

The **V** Series achieves a long rated life of 10000 hours, providing the maximum permissible torque of approximately twice as large as that of the **GN** type or **GE** type gearhead.

This results in a considerable savings in time and effort with regard to maintenance.

#### ● Quiet Operation

The **V** Series utilizes a comprehensive set of noise-reduction technologies: a special tooth-surface machining technology to remove cutting marks of 1 to 2 μm from the surface of the motor shaft teeth, an optimized quiet-running design that considers the circular speed of the motor while maintaining its strength, and a high-accuracy assembly-technology that ensures precision at micron levels.

#### Note

● The reversible motors and electromagnetic brake motors may generate sliding noises due to the brake mechanism.

#### ● Combination Type for Easy Installation

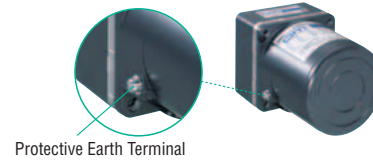
The motor and gearhead are pre-assembled with dedicated screws, so installation is easy. There's no need to worry about the shaft being scratched. Motors and gearheads are also available separately to facilitate repairs.

## ● Conforms to Major Safety Standards and Global Power Supply Voltages

The **V** Series is recognized by UL and CSA and certified under the China Compulsory Certification System (CCC System). CE Marking is used in accordance with the Low Voltage Directive. Additionally, our wide range of products includes those that meet the power supply voltages of major countries in Asia, North America and Europe.

## ● High Reliability

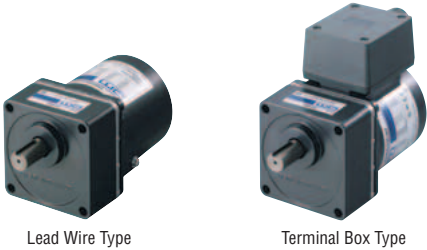
The motors have a built-in overheat protection device and a protective earth terminal. Offering high reliability, the **V** Series supports effective equipment design.



## ■ Types of Motor

### ● Induction Motors, Reversible Motors

### ● Electromagnetic Brake Motors



Type		Output Power	Features
Induction Motors	Lead Wire Type	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	Induction motors are optimal for uni-directional continuous operation such as a conveyor system.
	Terminal Box Type	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	
Reversible Motors	Lead Wire Type	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	Reversible motors permit instantaneous switching of rotation direction. Most suitable for applications where instantaneous reversal of direction is frequently required.
	Terminal Box Type	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	
Electromagnetic Brake Motors		6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	These motors utilize a power off activated type electromagnetic brake. Since the electromagnetic brakes exert holding power even while the power is off, they are highly suitable for use as emergency brakes.

Introduction

Induction Motors

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Torque Motors

Right-Angle Gearheads

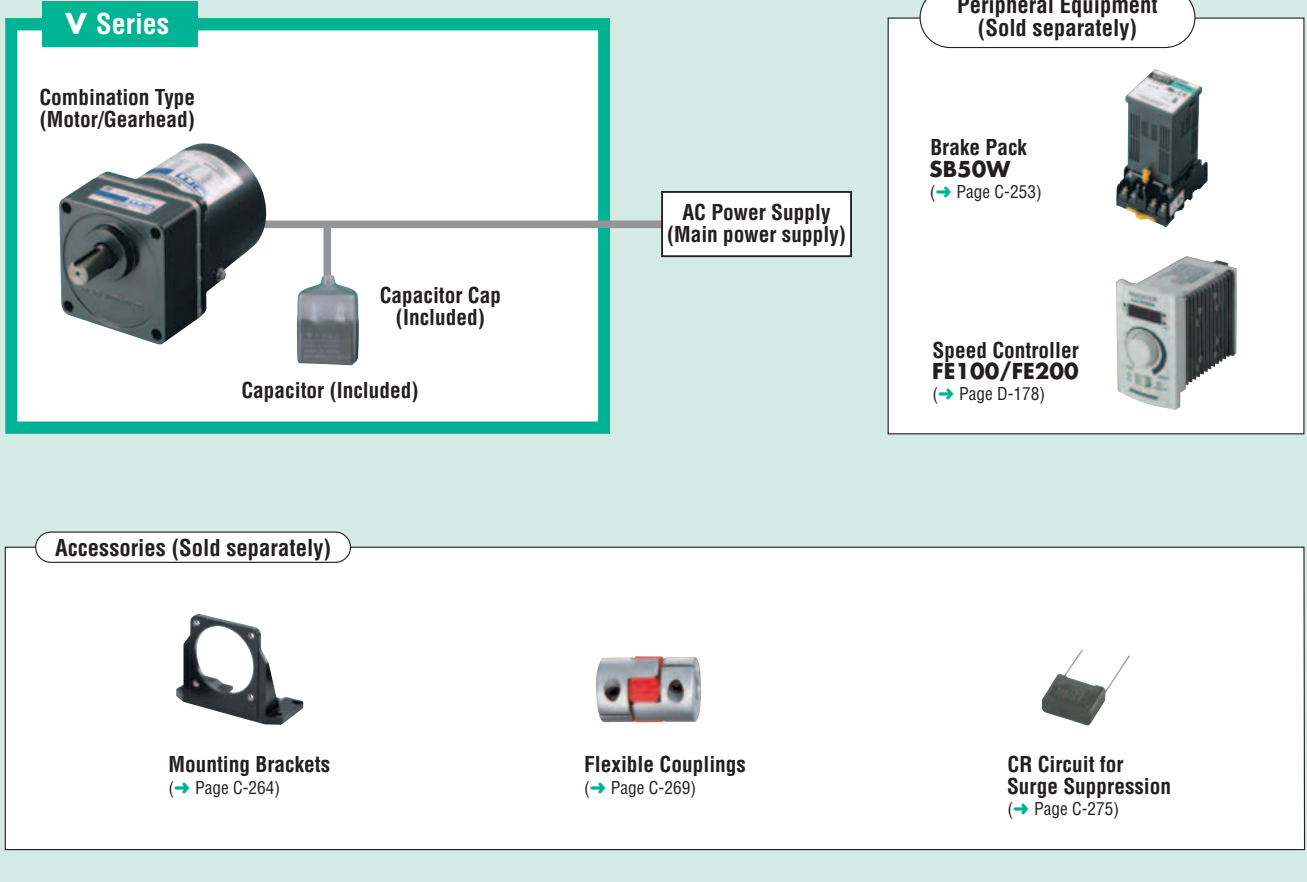
Linear Heads

Brake Pack

Accessories

Installation

## System Configuration



### ● Example of System Configuration

V Series Combination Type	Sold Separately		
	Brake Pack	Mounting Bracket	Flexible Coupling
<b>VHI425A2-100U</b>	<b>SB50W</b>	<b>SOL4M6</b>	<b>MCL4015F10</b>

● The system configuration shown above is an example. Other combinations are available. Motors and gearheads are also available separately.

## Product Number Code

### Combination Type

# V H R 5 40 A 2 M-100 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series	<b>V: V Series</b>
②	<b>H: High Power</b>	
③	Motor Type	<b>I: Induction Motor</b> <b>R: Reversible Motor</b>
④	Motor Frame Size	<b>2:</b> 60 mm (2.36 in.) <b>3:</b> 70 mm (2.76 in.) <b>4:</b> 80 mm (3.15 in.) <b>5:</b> 90 mm (3.54 in.)
⑤	Output Power (W)	(Example) <b>40:</b> 40 W (1/19 HP)
⑥	Power Supply Voltage	<b>A:</b> Single-Phase 110/115 VAC <b>C:</b> Single-Phase 220/230 VAC <b>S:</b> Three-Phase 200/220/230 VAC
⑦	<b>2, 3:</b> RoHS-Compliant	
⑧	<b>M:</b> Power Off Activated Type Electromagnetic Brake <b>T:</b> Terminal Box Type	
⑨	Gear Ratio of Combination Type	(Example) <b>100:</b> Gear Ratio of 100:1
⑩	Included Capacitor	<b>U:</b> For Single-Phase 110/115 VAC <b>E:</b> For Single-Phase 220/230 VAC Blank: Three-Phase Type

The following items are included in each product.  
Motor, Gearhead, Capacitor\*, Capacitor Cap\*, Mounting Screws, Parallel Key, Operating Manual  
\*Only for single-phase motors

### Motor

# V H R 5 40 A 2 M-GVH U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series	<b>V: V Series</b>
②	<b>H: High Power</b>	
③	Motor Type	<b>I: Induction Motor</b> <b>R: Reversible Motor</b>
④	Motor Frame Size	<b>2:</b> 60 mm (2.36 in.) <b>3:</b> 70 mm (2.76 in.) <b>4:</b> 80 mm (3.15 in.) <b>5:</b> 90 mm (3.54 in.)
⑤	Output Power (W)	(Example) <b>40:</b> 40 W (1/19 HP)
⑥	Power Supply Voltage	<b>A:</b> Single-Phase 110/115 VAC <b>C:</b> Single-Phase 220/230 VAC <b>S:</b> Three-Phase 200/220/230 VAC
⑦	<b>2, 3:</b> RoHS-Compliant	
⑧	<b>M:</b> Power Off Activated Type Electromagnetic Brake <b>T:</b> Terminal Box Type	
⑨	Motor Shaft Type	<b>GV:</b> GV Type Pinion Shaft <b>GVH:</b> GVH Type Pinion Shaft <b>GVR:</b> GVR Type Pinion Shaft
⑩	Included Capacitor	<b>U:</b> For Single-Phase 110/115 VAC <b>E:</b> For Single-Phase 220/230 VAC Blank: Three-Phase Type

The following items are included in each product.  
Motor, Capacitor\*, Capacitor Cap\*, Operating Manual  
\*Only for single-phase motors

● The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These 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.

(Example) Model: **VHR540A2M-GVHU** → Motor nameplate and product approved under various safety standards: **VHR540A2M-GVH**

### Gearhead

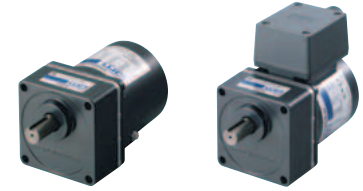
# GVH 5G 50

① ② ③

①	Type of Pinion	<b>GV:</b> GV Type Pinion <b>GVH:</b> GVH Type Pinion <b>GVR:</b> GVR Type Pinion
②	Gearhead Frame Size	<b>2:</b> 60 mm (2.36 in.) <b>3:</b> 70 mm (2.76 in.) <b>4:</b> 80 mm (3.15 in.) <b>5:</b> 90 mm (3.54 in.)
③	Gear Ratio	(Example) <b>50:</b> Gear Ratio of 50:1

The following items are included in each product.  
Gearhead, Mounting Screws, Parallel Key, Operating Manual

# High Strength, Long Life, Low Noise V Series Induction Motors, Reversible Motors



## Product Line

### ● Induction Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHI206A2-□U</b>	<b>VHI315A2-□U</b>	<b>VHI425A2-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
	Single-Phase 220/230 VAC	<b>VHI206C2-□E</b>	<b>VHI315C2-□E</b>	<b>VHI425C2-□E</b>	
	Three-Phase 200/220/230 VAC	—	—	<b>VHI425S2-□</b>	
Terminal Box Type	Single-Phase 110/115 VAC	—	—	<b>VHI425A2T-□U</b>	
	Single-Phase 220/230 VAC	—	—	<b>VHI425C2T-□E</b>	
	Three-Phase 200/220/230 VAC	—	—	<b>VHI425S2T-□</b>	

### ● Induction Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHI540A2-□U</b>	<b>VHI560A2-□U</b>	<b>VHI590A2-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*</b>
	Single-Phase 220/230 VAC	<b>VHI540C2-□E</b>	<b>VHI560C2-□E</b>	<b>VHI590C2-□E</b>	
	Three-Phase 200/220/230 VAC	<b>VHI540S2-□</b>	<b>VHI560S2-□</b>	<b>VHI590S2-□</b>	
Terminal Box Type	Single-Phase 110/115 VAC	<b>VHI540A2T-□U</b>	<b>VHI560A2T-□U</b>	<b>VHI590A2T-□U</b>	
	Single-Phase 220/230 VAC	<b>VHI540C2T-□E</b>	<b>VHI560C2T-□E</b>	<b>VHI590C2T-□E</b>	
	Three-Phase 200/220/230 VAC	<b>VHI540S2T-□</b>	<b>VHI560S2T-□</b>	<b>VHI590S2T-□</b>	

\*Except for 90 W (1/8 HP) type.

### ● Induction Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

#### ◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHI206A2-GVU</b>	<b>VHI315A2-GVU</b>	<b>VHI425A2-GVU</b>
	Single-Phase 220/230 VAC	<b>VHI206C2-GVE</b>	<b>VHI315C2-GVE</b>	<b>VHI425C2-GVE</b>
	Three-Phase 200/220/230 VAC	—	—	<b>VHI425S2-GV</b>
Terminal Box Type	Single-Phase 110/115 VAC	—	—	<b>VHI425A2T-GVU</b>
	Single-Phase 220/230 VAC	—	—	<b>VHI425C2T-GVE</b>
	Three-Phase 200/220/230 VAC	—	—	<b>VHI425S2T-GV</b>

#### ◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHI540A2-GVHU</b>	<b>VHI560A2-GVHU</b>	<b>VHI590A2-GVRU</b>
	Single-Phase 220/230 VAC	<b>VHI540C2-GVHE</b>	<b>VHI560C2-GVHE</b>	<b>VHI590C2-GVRE</b>
	Three-Phase 200/220/230 VAC	<b>VHI540S2-GVH</b>	<b>VHI560S2-GVH</b>	<b>VHI590S2-GVR</b>
Terminal Box Type	Single-Phase 110/115 VAC	<b>VHI540A2T-GVHU</b>	<b>VHI560A2T-GVHU</b>	<b>VHI590A2T-GVRU</b>
	Single-Phase 220/230 VAC	<b>VHI540C2T-GVHE</b>	<b>VHI560C2T-GVHE</b>	<b>VHI590C2T-GVRE</b>
	Three-Phase 200/220/230 VAC	<b>VHI540S2T-GVH</b>	<b>VHI560S2T-GVH</b>	<b>VHI590S2T-GVR</b>

#### ◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	<b>GV2G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
15 W (1/50 HP)	<b>GV3G□</b>	
25 W (1/30 HP)	<b>GV4G□</b>	
40 W (1/19 HP)	<b>GVH5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300</b>
60 W (1/12 HP)		
90 W (1/8 HP)	<b>GVR5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180</b>

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

## ● Reversible Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHR206A2-□U</b>	<b>VHR315A2-□U</b>	<b>VHR425A2-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
	Single-Phase 220/230 VAC	<b>VHR206C2-□E</b>	<b>VHR315C2-□E</b>	<b>VHR425C2-□E</b>	
Terminal Box Type	Single-Phase 110/115 VAC	–	–	<b>VHR425A2T-□U</b>	
	Single-Phase 220/230 VAC	–	–	<b>VHR425C2T-□E</b>	

## ● Reversible Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHR540A2-□U</b>	<b>VHR560A2-□U</b>	<b>VHR590A2-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*</b>
	Single-Phase 220/230 VAC	<b>VHR540C2-□E</b>	<b>VHR560C2-□E</b>	<b>VHR590C3-□E</b>	
Terminal Box Type	Single-Phase 110/115 VAC	<b>VHR540A2T-□U</b>	<b>VHR560A2T-□U</b>	<b>VHR590A2T-□U</b>	
	Single-Phase 220/230 VAC	<b>VHR540C2T-□E</b>	<b>VHR560C2T-□E</b>	<b>VHR590C3T-□E</b>	

\* Except for 90 W (1/8 HP) type.

## ● Reversible Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

### ◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHR206A2-GVU</b>	<b>VHR315A2-GVU</b>	<b>VHR425A2-GVU</b>
	Single-Phase 220/230 VAC	<b>VHR206C2-GVE</b>	<b>VHR315C2-GVE</b>	<b>VHR425C2-GVE</b>
Terminal Box Type	Single-Phase 110/115 VAC	–	–	<b>VHR425A2T-GVU</b>
	Single-Phase 220/230 VAC	–	–	<b>VHR425C2T-GVE</b>

### ◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	<b>VHR540A2-GVHU</b>	<b>VHR560A2-GVHU</b>	<b>VHR590A2-GVRU</b>
	Single-Phase 220/230 VAC	<b>VHR540C2-GVHE</b>	<b>VHR560C2-GVHE</b>	<b>VHR590C3-GVRE</b>
Terminal Box Type	Single-Phase 110/115 VAC	<b>VHR540A2T-GVHU</b>	<b>VHR560A2T-GVHU</b>	<b>VHR590A2T-GVRU</b>
	Single-Phase 220/230 VAC	<b>VHR540C2T-GVHE</b>	<b>VHR560C2T-GVHE</b>	<b>VHR590C3T-GVRE</b>

### ◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	<b>GV2G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
15 W (1/50 HP)	<b>GV3G□</b>	
25 W (1/30 HP)	<b>GV4G□</b>	
40 W (1/19 HP)	<b>GVH5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300</b>
60 W (1/12 HP)		
90 W (1/8 HP)	<b>GVR5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180</b>

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



## Specifications

### ● Induction Motors – Continuous Rating **(RoHS)**



Model/Type		Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m (oz-in)	Rated Torque mN·m (oz-in)	Rated Speed r/min	Capacitor μF
Lead Wire Type	Terminal Box Type								
<b>(ZP)</b> VHI206A2-□U	-	6 (1/125)	Single-Phase 110	60	0.188	40 (5.6)	41 (5.8)	1450	2.5
			Single-Phase 115	60	0.194	40 (5.6)	41 (5.8)	1450	
<b>(ZP)</b> VHI206C2-□E	-	5.5 (1/136)	Single-Phase 220	50	0.106	38 (5.3)	46 (6.5)	1150	0.6
			Single-Phase 230	50	0.099	40 (5.6)	41 (5.8)	1450	
		6 (1/125)	50	0.111	45 (6.3)	49 (6.9)	1150		
			60	0.100	40 (5.6)	41 (5.8)	1450		
<b>(TP)</b> VHI315A2-□U	-	15 (1/50)	Single-Phase 110	60	0.33	65 (9.2)	105 (14.9)	1450	4.5
			Single-Phase 115	60	0.34	65 (9.2)	105 (14.9)	1450	
<b>(TP)</b> VHI315C2-□E	-	15 (1/50)	Single-Phase 220	50	0.19	70 (9.9)	125 (17.7)	1200	1.0
			Single-Phase 230	60	0.16	65 (9.2)	105 (14.9)	1450	
			50	0.19	75 (10.6)	125 (17.7)	1200		
			60	0.16	65 (9.2)	105 (14.9)	1450		
<b>(TP)</b> VHI425A2-□U	VHI425A2T-□U	25 (1/30)	Single-Phase 110	60	0.46	120 (17.0)	170 (24)	1450	6.5
			Single-Phase 115	60	0.46	120 (17.0)	170 (24)	1450	
<b>(TP)</b> VHI425C2-□E	VHI425C2T-□E	25 (1/30)	Single-Phase 220	50	0.27	110 (15.6)	205 (29)	1200	1.5
			Single-Phase 230	60	0.23	110 (15.6)	170 (24)	1450	
			50	0.27	120 (17.0)	205 (29)	1200		
			60	0.23	120 (17.0)	170 (24)	1450		
<b>(TP)</b> VHI425S2-□	VHI425S2T-□	25 (1/30)	Three-Phase 200	50	0.23	240 (34)	190 (26)	1300	-
			Three-Phase 220	60	0.21	160 (22)	160 (22)	1600	
			Three-Phase 230	60	0.22	160 (22)	160 (22)	1600	
			60	0.21	160 (22)	160 (22)	1550		
<b>(TP)</b> VHI540A2-□U	VHI540A2T-□U	40 (1/19)	Single-Phase 110	60	0.68	200 (28)	260 (36)	1500	9.0
			Single-Phase 115	60	0.67	200 (28)	260 (36)	1500	
<b>(TP)</b> VHI540C2-□E	VHI540C2T-□E	40 (1/19)	Single-Phase 220	50	0.39	200 (28)	315 (44)	1250	2.3
			Single-Phase 230	60	0.35	200 (28)	260 (36)	1500	
			50	0.39	200 (28)	300 (42)	1300		
			60	0.34	200 (28)	260 (36)	1500		
<b>(TP)</b> VHI540S2-□	VHI540S2T-□	40 (1/19)	Three-Phase 200	50	0.32	400 (56)	300 (42)	1300	-
			Three-Phase 220	60	0.30	260 (36)	260 (36)	1550	
			Three-Phase 230	60	0.30	260 (36)	260 (36)	1600	
			60	0.31	260 (36)	260 (36)	1600		
<b>(TP)</b> VHI560A2-□U	VHI560A2T-□U	60 (1/12)	Single-Phase 110	60	1.09	320 (45)	405 (57)	1450	18
			Single-Phase 115	60	1.10	320 (45)	405 (57)	1450	
<b>(TP)</b> VHI560C2-□E	VHI560C2T-□E	60 (1/12)	Single-Phase 220	50	0.55	320 (45)	490 (69)	1200	4.0
			Single-Phase 230	60	0.54	320 (45)	405 (57)	1450	
			50	0.57	320 (45)	490 (69)	1200		
			60	0.54	320 (45)	405 (57)	1450		
<b>(TP)</b> VHI560S2-□	VHI560S2T-□	60 (1/12)	Three-Phase 200	50	0.50	600 (85)	450 (63)	1300	-
			Three-Phase 220	60	0.43	500 (71)	380 (53)	1550	
			Three-Phase 230	60	0.45	500 (71)	380 (53)	1600	
			60	0.46	500 (71)	380 (53)	1600		
<b>(TP)</b> VHI590A2-□U	VHI590A2T-□U	90 (1/8)	Single-Phase 110	60	1.56	450 (63)	585 (83)	1500	25
			Single-Phase 115	60	1.55	450 (63)	585 (83)	1500	
<b>(TP)</b> VHI590C2-□E	VHI590C2T-□E	90 (1/8)	Single-Phase 220	50	0.74	450 (63)	730 (103)	1200	6.0
			Single-Phase 230	60	0.82	450 (63)	605 (85)	1450	
			50	0.76	450 (63)	730 (103)	1200		
			60	0.81	450 (63)	605 (85)	1450		
<b>(TP)</b> VHI590S2-□	VHI590S2T-□	90 (1/8)	Three-Phase 200	50	0.64	850 (120)	680 (96)	1300	-
			Three-Phase 220	60	0.59	700 (99)	570 (80)	1550	
			Three-Phase 230	60	0.60	700 (99)	570 (80)	1600	
			60	0.61	700 (99)	570 (80)	1600		

**(ZP)**: Impedance protected.

**(TP)**: Contains a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

- Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.
- The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These 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.



## ● Reversible Motors – 30 Minute Rating (RoHS)



Model/Type		Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m (oz·in)	Rated Torque mN·m (oz·in)	Rated Speed r/min	Capacitor μF
Lead Wire Type	Terminal Box Type								
Ⓜ <b>VHR206A2-□U</b>	-	6 (1/125)	Single-Phase 110	60	0.251	45 (6.3)	41 (5.8)	1450	3.5
			Single-Phase 115	60	0.256	45 (6.3)	41 (5.8)	1450	
Ⓜ <b>VHR206C2-□E</b>	-	6 (1/125)	Single-Phase 220	50	0.120	45 (6.3)	49 (6.9)	1150	0.8
			Single-Phase 220	60	0.125	45 (6.3)	41 (5.8)	1450	
				50	0.122	50 (7.1)	49 (6.9)	1200	
			Single-Phase 230	60	0.127	45 (6.3)	41 (5.8)	1450	
Ⓜ <b>VHR315A2-□U</b>	-	15 (1/50)	Single-Phase 110	60	0.41	100 (14.2)	105 (14.9)	1450	6.0
			Single-Phase 115	60	0.41	100 (14.2)	105 (14.9)	1450	
Ⓜ <b>VHR315C2-□E</b>	-	15 (1/50)	Single-Phase 220	50	0.20	100 (14.2)	125 (17.7)	1200	1.5
			Single-Phase 220	60	0.21	100 (14.2)	105 (14.9)	1450	
				50	0.20	100 (14.2)	125 (17.7)	1200	
			Single-Phase 230	60	0.21	100 (14.2)	105 (14.9)	1450	
Ⓜ <b>VHR425A2-□U</b>	<b>VHR425A2T-□U</b>	25 (1/30)	Single-Phase 110	60	0.56	140 (19.8)	170 (24)	1450	8.0
			Single-Phase 115	60	0.56	140 (19.8)	170 (24)	1450	
Ⓜ <b>VHR425C2-□E</b>	<b>VHR425C2T-□E</b>	25 (1/30)	Single-Phase 220	50	0.29	140 (19.8)	205 (29)	1200	2.5
			Single-Phase 220	60	0.35	140 (19.8)	170 (24)	1450	
				50	0.30	160 (22)	205 (29)	1200	
			Single-Phase 230	60	0.35	140 (19.8)	170 (24)	1450	
Ⓜ <b>VHR540A2-□U</b>	<b>VHR540A2T-□U</b>	40 (1/19)	Single-Phase 110	60	0.88	260 (36)	270 (38)	1450	12
			Single-Phase 115	60	0.87	260 (36)	270 (38)	1450	
Ⓜ <b>VHR540C2-□E</b>	<b>VHR540C2T-□E</b>	40 (1/19)	Single-Phase 220	50	0.43	270 (38)	315 (44)	1250	3.5
			Single-Phase 220	60	0.48	260 (36)	260 (36)	1500	
				50	0.43	270 (38)	315 (44)	1250	
			Single-Phase 230	60	0.48	260 (36)	260 (36)	1500	
Ⓜ <b>VHR560A2-□U</b>	<b>VHR560A2T-□U</b>	60 (1/12)	Single-Phase 110	60	1.27	380 (53)	405 (57)	1450	20
			Single-Phase 115	60	1.27	380 (53)	405 (57)	1450	
Ⓜ <b>VHR560C2-□E</b>	<b>VHR560C2T-□E</b>	60 (1/12)	Single-Phase 220	50	0.61	420 (59)	490 (69)	1200	5.0
			Single-Phase 220	60	0.67	380 (53)	405 (57)	1450	
				50	0.63	470 (66)	490 (69)	1200	
			Single-Phase 230	60	0.66	380 (53)	405 (57)	1450	
Ⓜ <b>VHR590A2-□U</b>	<b>VHR590A2T-□U</b>	90 (1/8)	Single-Phase 110	60	1.87	590 (83)	585 (83)	1500	30
			Single-Phase 115	60	1.86	590 (83)	585 (83)	1500	
Ⓜ <b>VHR590C3-□E</b>	<b>VHR590C3T-□E</b>	90 (1/8)	Single-Phase 220	50	0.83	600 (85)	730 (103)	1200	7.0
			Single-Phase 220	60	0.96	590 (83)	605 (85)	1450	
				50	0.83	600 (85)	730 (103)	1200	
			Single-Phase 230	60	0.95	590 (83)	605 (85)	1450	

Ⓜ: Impedance protected.

Ⓜ: Contains a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

- Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.
- The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These 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.
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.

## ■ General Specifications

### ● Induction Motors, Reversible Motors

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings is 80°C (144°F) or less [three-phase type: 70°C (126°F) or less] measured by the resistance change method after rated operation under normal ambient temperature and humidity. For the <b>VHR590C</b> type, a heat radiation plate that is 200×200 mm (7.87×7.87 in.) with a thickness of 5 mm (0.20 in.) is necessary.
Thermal Class	130 (B)
Overheat Protection	6 W (1/125 HP) type has impedance protection. All others have built-in thermal protector (automatic return type). Open: 130±5°C (266±9°F), Close: 82±15°C (179.6±27°F)
Ambient Temperature	Three-phase 200 VAC: -10~+50°C (+14~+122°F) (non-freezing) Single-phase 110/115 VAC, Single-phase 220/230 VAC, Three-phase 220/230 VAC: -10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead wire type: IP20 Terminal box type: <b>VHI425</b> , <b>VHI540</b> , <b>VHI560</b> , <b>VHI590</b> type IP54 <b>VHR425</b> , <b>VHR540</b> , <b>VHR560</b> , <b>VHR590</b> type IP40

## Gearmotor – Torque Table

### ● Induction Motors 50 Hz

Unit = N·m (lb-in)

Model Combination Type	Speed r/min Gear Ratio	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHI206C2-□E</b> (230 VAC)		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.5 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHI206C2-□E</b> (220 VAC)		0.21 (1.85)	0.25 (2.2)	0.31 (2.7)	0.37 (3.2)	0.52 (4.6)	0.62 (5.4)	0.75 (6.6)	1.0 (8.8)	1.2 (10.6)	1.4 (12.3)	2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	4.0 (35)	4.7 (41)	5.6 (49)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHI315C2-□E</b>		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15.0)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHI425C2-□E, VHI425C2T-□E</b>		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15.0)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI425S2-□, VHI425S2T-□</b>		0.86 (7.6)	1.0 (8.8)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	4.9 (43)	5.9 (52)	8.2 (72)	9.8 (86)	12.3 (108)	14.7 (130)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI540C2-□E, VHI540C2T-□E</b> (220 VAC)		1.4 (12.3)	1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI540C2-□E, VHI540C2T-□E</b> (230 VAC)		1.4 (12.3)	1.6 (14.1)	2.0 (17.7)	2.4 (21)	3.4 (30)	4.1 (36)	4.9 (43)	6.5 (57)	7.7 (68)	9.3 (82)	12.9 (114)	15.5 (137)	19.4 (171)	23.2 (200)	25.8 (220)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI540S2-□, VHI540S2T-□</b>		1.4 (12.3)	1.6 (14.1)	2.0 (17.7)	2.4 (21)	3.4 (30)	4.1 (36)	4.9 (43)	6.5 (57)	7.7 (68)	9.3 (82)	12.9 (114)	15.5 (137)	19.4 (171)	23.2 (200)	25.8 (220)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560C2-□E, VHI560C2T-□E</b>		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560S2-□, VHI560S2T-□</b>		2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	5.1 (45)	6.1 (53)	7.3 (64)	9.7 (85)	11.6 (102)	13.9 (123)	19.4 (171)	23.2 (200)	29.0 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI590C2-□E, VHI590C2T-□E</b>		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHI590S2-□, VHI590S2T-□</b>		3.1 (27)	3.7 (32)	4.6 (40)	5.5 (48)	7.7 (68)	9.2 (81)	10.5 (92)	14.6 (129)	17.5 (154)	21.1 (186)	29.2 (250)	35.1 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

### ● Induction Motors 60 Hz

Unit = N·m (lb-in)

Model Combination Type	Speed r/min Gear Ratio	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHI206A2-□U, VHI206C2-□E</b>		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (28)	3.5 (30)	4.2 (37)	5.0 (44)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHI315A2-□U, VHI315C2-□E</b>		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15.0)	2.4 (21)	2.7 (23)	3.3 (29)	4.5 (47)	5.4 (60)	6.8 (71)	8.1 (88)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHI425A2-□U, VHI425A2T-□U</b> <b>VHI425C2-□E, VHI425C2T-□E</b>		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI425S2-□, VHI425S2T-□</b>		0.72 (6.3)	0.86 (7.6)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.2 (19.4)	2.6 (23)	3.6 (31)	4.1 (36)	5.0 (44)	6.9 (61)	8.3 (73)	10.3 (91)	12.4 (109)	13.8 (122)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI540A2-□U, VHI540A2T-□U</b> <b>VHI540C2-□E, VHI540C2T-□E</b> <b>VHI540S2-□, VHI540S2T-□</b>		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560A2-□U, VHI560A2T-□U</b> <b>VHI560C2-□E, VHI560C2T-□E</b>		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560S2-□, VHI560S2T-□</b>		1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	5.1 (45)	6.2 (54)	8.2 (72)	9.8 (86)	11.8 (104)	16.3 (144)	19.6 (173)	24.5 (210)	29.4 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI590A2-□U, VHI590A2T-□U</b>		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHI590C2-□E, VHI590C2T-□E</b>		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHI590S2-□, VHI590S2T-□</b>		2.6 (23)	3.1 (27)	3.8 (33)	4.6 (40)	6.4 (56)	7.7 (68)	8.8 (77)	12.3 (108)	14.7 (130)	17.6 (155)	24.5 (210)	29.4 (260)	34.6 (300)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

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

## ● Reversible Motors 50 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHR206C2-□E</b>		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.5 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHR315C2-□E</b>		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15.0)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHR425C2-□E, VHR425C2T-□E</b>		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15.0)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHR540C2-□E, VHR540C2T-□E</b>		1.4 (12.3)	1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR560C2-□E, VHR560C2T-□E</b>		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR590C3-□E, VHR590C3T-□E</b>		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	—	—

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

## ● Reversible Motors 60 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHR206A2-□U, VHR206C2-□E</b>		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (28)	3.5 (30)	4.2 (37)	5.0 (44)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHR315A2-□U, VHR315C2-□E</b>		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15.0)	2.4 (21)	2.7 (23)	3.3 (29)	4.5 (39)	5.4 (47)	6.8 (60)	8.1 (71)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHR425A2-□U, VHR425A2T-□U VHR425C2-□E, VHR425C2T-□E</b>		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHR540A2-□U, VHR540A2T-□U</b>		1.2 (10.6)	1.5 (13.2)	1.8 (15.9)	2.2 (19.4)	3.0 (26)	3.6 (31)	4.4 (38)	5.8 (51)	7.0 (61)	8.4 (74)	11.6 (102)	13.9 (123)	17.4 (153)	20.9 (184)	23.2 (200)	26.2 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR540C2-□E, VHR540C2T-□E</b>		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR560A2-□U, VHR560A2T-□U VHR560C2-□E, VHR560C2T-□E</b>		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR590A2-□U, VHR590A2T-□U</b>		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	—	—	—
<b>VHR590C3-□E, VHR590C3T-□E</b>		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	—	—	—

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

## ■ Permissible Overhung Load and Permissible Thrust Load

→ Page C-17

## ■ Permissible Load Inertia J of Gearhead

→ Page C-18

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

**Dimensions** Unit = mm (in.)

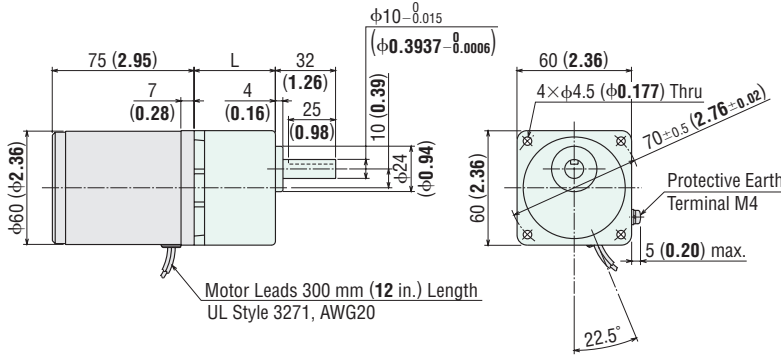
● Mounting screws are included with the motor. Dimensions for mounting screws → Page C-280

● 6 W (1/125 HP)

◇ Motor/Gearhead (Lead Wire Type)

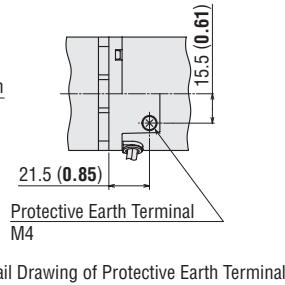
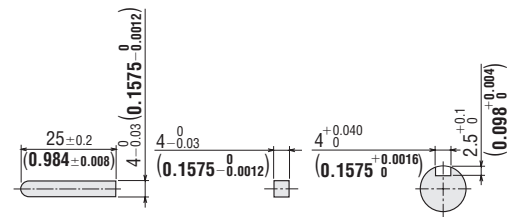
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI206 $\square$ 2- $\square$	VHI206 $\square$ 2-GV	GV2G $\square$	5~25	34 (1.34)	A474A
VHR206 $\square$ 2- $\square$	VHR206 $\square$ 2-GV		30~120	38 (1.50)	A474B
			150~360	43 (1.69)	A474C

Mass: 1.2 kg (2.6 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)

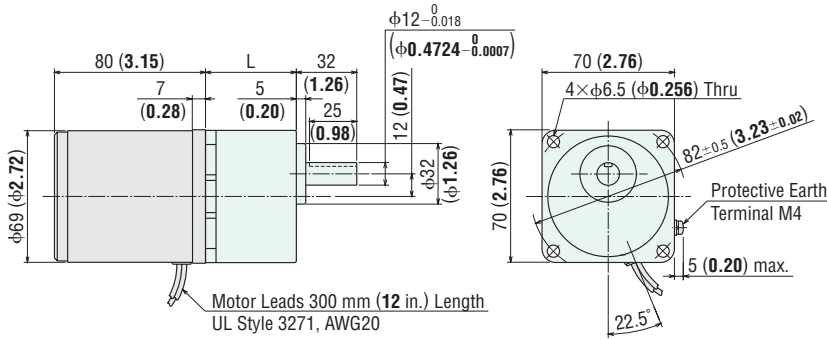


● 15 W (1/50 HP)

◇ Motor/Gearhead (Lead Wire Type)

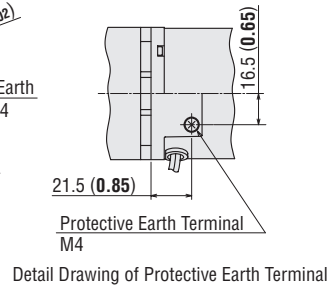
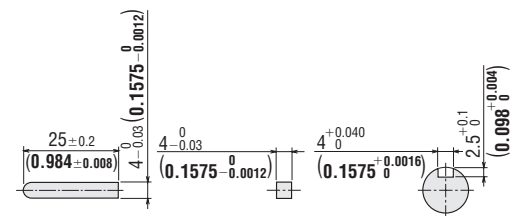
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI315 $\square$ 2- $\square$	VHI315 $\square$ 2-GV	GV3G $\square$	5~25	38 (1.50)	A475A
VHR315 $\square$ 2- $\square$	VHR315 $\square$ 2-GV		30~120	43 (1.69)	A475B
			150~360	48 (1.89)	A475C

Mass: 1.7 kg (3.7 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



● Enter the power supply voltage (A or C) in the box (□) within the model name.  
 Enter the gear ratio in the box (□) within the model name.  
 Enter the type of the capacitor (U or E) in the box (□) within the model name.

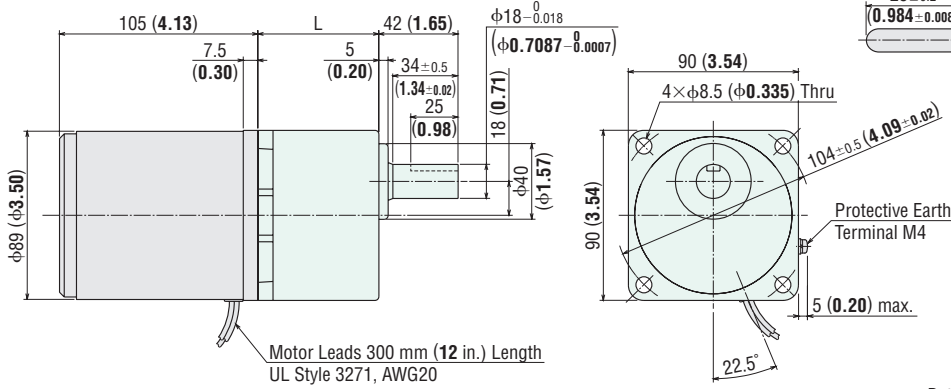


## ● 40 W (1/19 HP)

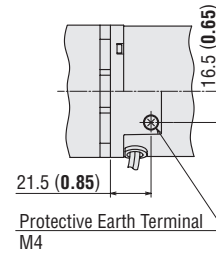
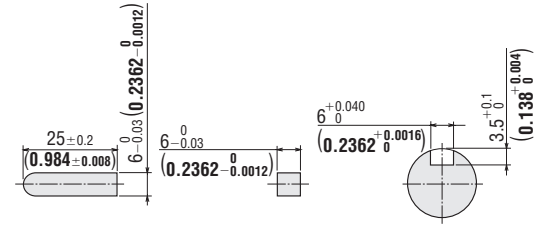
### ◇ Motor/Gearhead (Lead Wire Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI540 $\square$ 2- $\square$	VHI540 $\square$ 2-GVH	GVH5G $\square$	5~18	45 (1.77)	A477A
VHI540S2- $\square$	VHI540S2-GVH		25~100	58 (2.28)	A477B
VHR540 $\square$ 2- $\square$	VHR540 $\square$ 2-GVH		120~300	64 (2.52)	A477C

Mass: 4.0 kg (8.8 lb.) (Including gearhead)



### ◇ Key and Key Slot (The key is included with the gearhead)

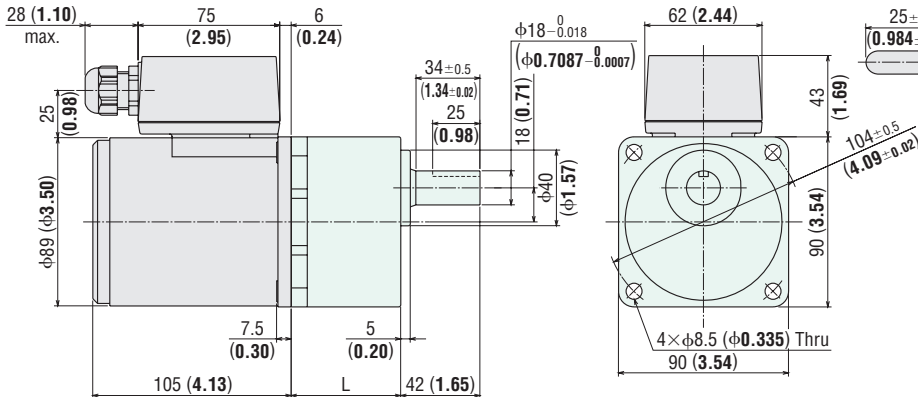


Detail Drawing of Protective Earth Terminal

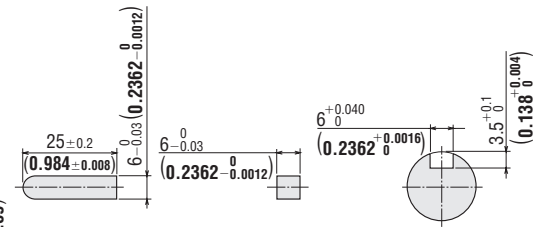
### ◇ Motor/Gearhead (Terminal Box Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI540 $\square$ 2T- $\square$	VHI540 $\square$ 2T-GVH	GVH5G $\square$	5~18	45 (1.77)	A212A
VHI540S2T- $\square$	VHI540S2T-GVH		25~100	58 (2.28)	A212B
VHR540 $\square$ 2T- $\square$	VHR540 $\square$ 2T-GVH		120~300	64 (2.52)	A212C

Mass: 4.1 kg (9.0 lb.) (Including gearhead)



### ◇ Key and Key Slot (The key is included with the gearhead)



- Use cable with a diameter of φ6~φ12 mm (φ0.24~φ0.47 in.).
- Details of terminal box → Page C-283

- Enter the power supply voltage (**A** or **C**) in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box (□) within the model name.

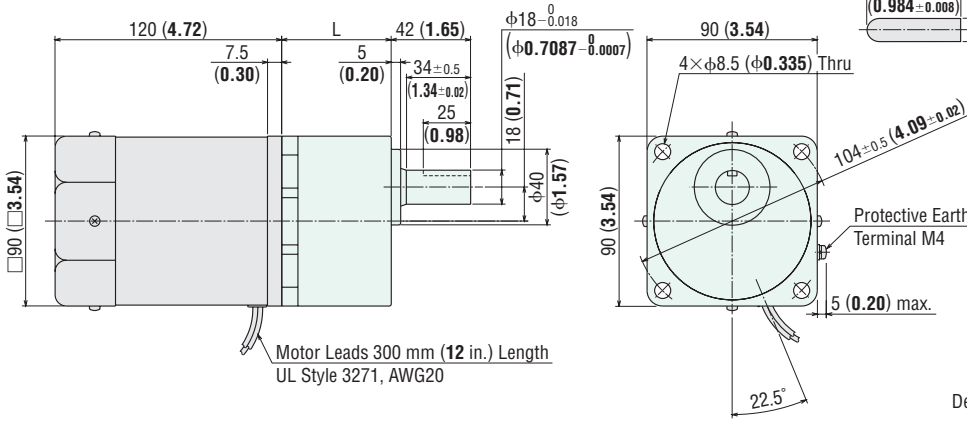


## ● 60 W (1/12 HP)

### ◇ Motor/Gearhead (Lead Wire Type)

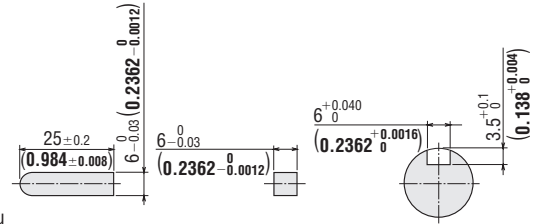
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI560 $\square$ 2- $\square$	VHI560 $\square$ 2-GVH	GVH5G $\square$	5~18	45 (1.77)	A478A
VHI560S2- $\square$	VHI560S2-GVH		25~100	58 (2.28)	A478B
VHR560 $\square$ 2- $\square$	VHR560 $\square$ 2-GVH		120~300	64 (2.52)	A478C

Mass: 4.2 kg (9.2 lb.) (Including gearhead)



### ◇ Key and Key Slot

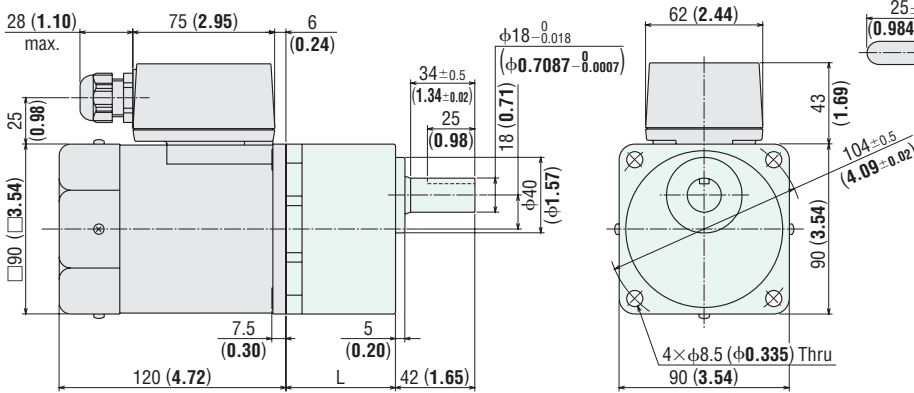
(The key is included with the gearhead)



### ◇ Motor/Gearhead (Terminal Box Type)

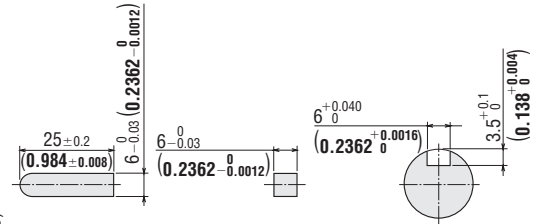
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI560 $\square$ 2T- $\square$	VHI560 $\square$ 2T-GVH	GVH5G $\square$	5~18	45 (1.77)	A245A
VHI560S2T- $\square$	VHI560S2T-GVH		25~100	58 (2.28)	A245B
VHR560 $\square$ 2T- $\square$	VHR560 $\square$ 2T-GVH		120~300	64 (2.52)	A245C

Mass: 4.3 kg (9.5 lb.) (Including gearhead)



### ◇ Key and Key Slot

(The key is included with the gearhead)



- Use cable with a diameter of  $\phi 6 \sim \phi 12$  mm ( $\phi 0.24 \sim \phi 0.47$  in.).
- Details of terminal box → Page C-283

- Enter the power supply voltage (**A** or **C**) in the box ( $\square$ ) within the model name.
- Enter the gear ratio in the box ( $\square$ ) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box ( $\square$ ) within the model name.

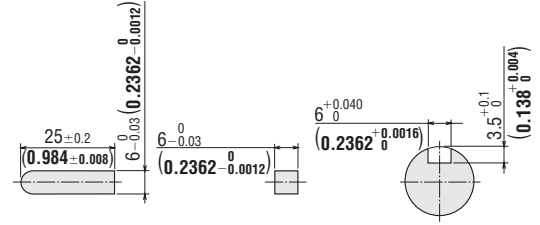
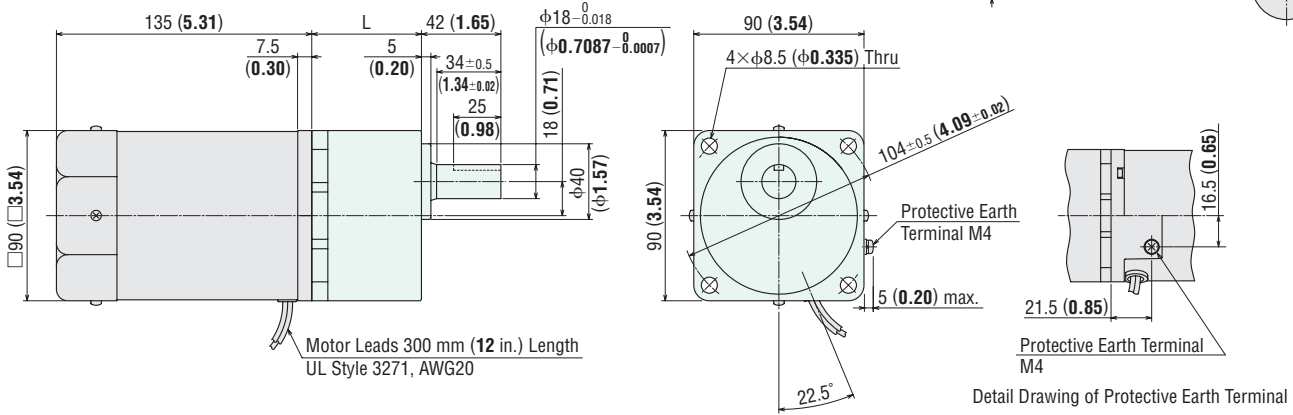


## ● 90 W (1/8 HP)

### ◇ Motor/Gearhead (Lead Wire Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI590 $\square$ 2- $\square$	VHI590 $\square$ 2-GVR	GVR5G $\square$	5~15	45 (1.77)	A479A
VHI590S2- $\square$	VHI590S2-GVR		18~36	58 (2.28)	A479B
VHR590A2- $\square$ U	VHR590A2-GVR		50~180	70 (2.76)	A479C
VHR590C3- $\square$ E	VHR590C3-GVR				

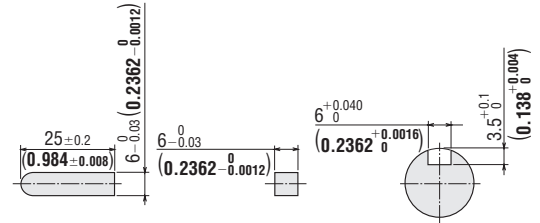
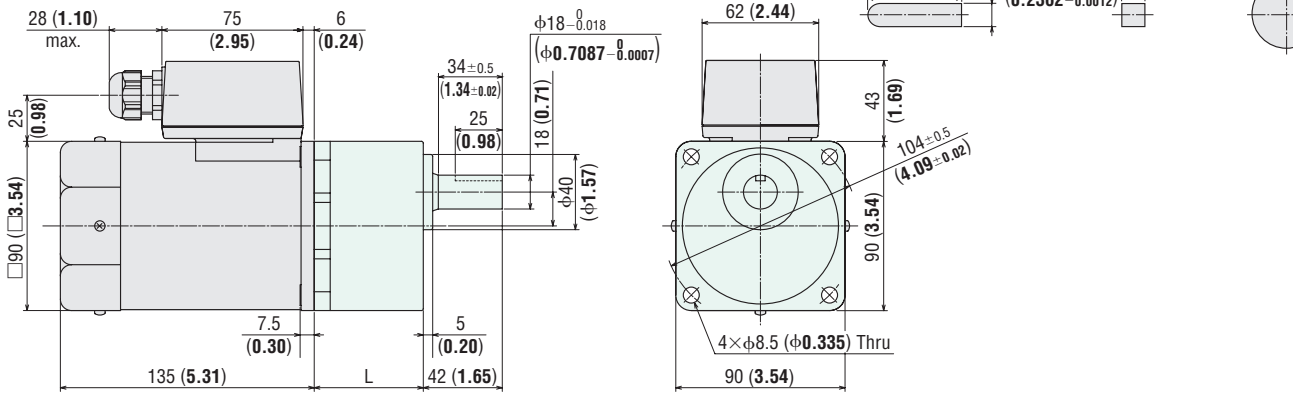
Mass: 4.7 kg (10.3 lb.) (Including gearhead)



### ◇ Motor/Gearhead (Terminal Box Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI590 $\square$ 2T- $\square$	VHI590 $\square$ 2T-GVR	GVR5G $\square$	5~15	45 (1.77)	A398A
VHI590S2T- $\square$	VHI590S2T-GVR		18~36	58 (2.28)	A398B
VHR590A2T- $\square$ U	VHR590A2T-GVR		50~180	70 (2.76)	A398C
VHR590C3T- $\square$ E	VHR590C3T-GVR				

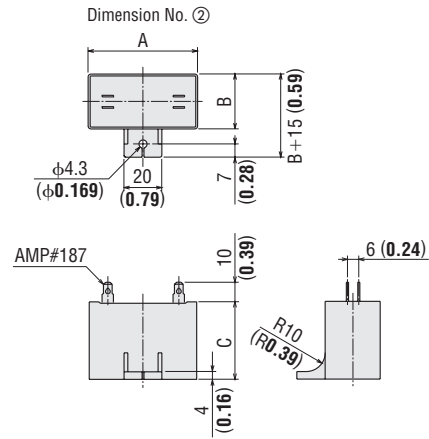
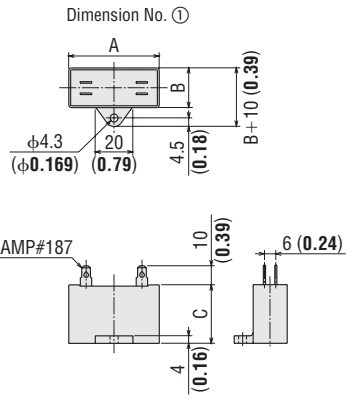
Mass: 4.8 kg (10.6 lb.) (Including gearhead)



- Use cable with a diameter of  $\phi 6 \sim \phi 12$  mm ( $\phi 0.24 \sim \phi 0.47$  in.).
- Details of terminal box → Page C-283

- Enter the power supply voltage (**A** or **C**) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box (□) within the model name.

● Capacitor (Included with single-phase motors)



● Capacitor Dimensions Unit = mm (in.)

◇ Induction Motors

Model		Capacitor Model	A	B	C	Mass g (oz.)	Dimension No.
Lead Wire Type	Terminal Box Type						
VHI206A2-□U	-	CH25FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	21 (0.74)	①
VHI206C2-□E	-	CH06BFAUL	31 (1.22)	14.5 (0.57)	23.5 (0.93)	18 (0.64)	
VHI315A2-□U	-	CH45FAUL2	37 (1.46)	18 (0.71)	27 (1.06)	26 (0.92)	
VHI315C2-□E	-	CH10BFAUL	37 (1.46)	18 (0.71)	27 (1.06)	27 (0.95)	
VHI425A2-□U	VHI425A2T-□U	CH65CFAUL2	48 (1.89)	19 (0.75)	29 (1.14)	35 (1.24)	
VHI425C2-□E	VHI425C2T-□E	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
VHI540A2-□U	VHI540A2T-□U	CH90CFAUL2	48 (1.89)	22.5 (0.89)	31.5 (1.24)	45 (1.59)	
VHI540C2-□E	VHI540C2T-□E	CH23BFAUL	48 (1.89)	21 (0.83)	31 (1.22)	43 (1.52)	
VHI560A2-□U	VHI560A2T-□U	CH180CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	92 (3.2)	
VHI560C2-□E	VHI560C2T-□E	CH40BFAUL	58 (2.28)	23.5 (0.93)	37 (1.46)	73 (2.6)	
VHI590A2-□U	VHI590A2T-□U	CH250CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	②
VHI590C2-□E	VHI590C2T-□E	CH60BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	92 (3.2)	

● A capacitor cap is included with a capacitor.

◇ Reversible Motors

Model		Capacitor Model	A	B	C	Mass g (oz.)	Dimension No.
Lead Wire Type	Terminal Box Type						
VHR206A2-□U	-	CH35FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	22 (0.78)	①
VHR206C2-□E	-	CH08BFAUL	31 (1.22)	17 (0.67)	27 (1.06)	23 (0.81)	
VHR315A2-□U	-	CH60CFAUL2	38 (1.50)	21 (0.83)	31 (1.22)	35 (1.24)	
VHR315C2-□E	-	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
VHR425A2-□U	VHR425A2T-□U	CH80CFAUL2	48 (1.89)	21 (0.83)	31 (1.22)	41 (1.45)	
VHR425C2-□E	VHR425C2T-□E	CH25BFAUL	48 (1.89)	21 (0.83)	31 (1.22)	42 (1.48)	
VHR540A2-□U	VHR540A2T-□U	CH120CFAUL2	58 (2.28)	22 (0.87)	35 (1.38)	60 (2.1)	
VHR540C2-□E	VHR540C2T-□E	CH35BFAUL	58 (2.28)	22 (0.87)	35 (1.38)	59 (2.1)	
VHR560A2-□U	VHR560A2T-□U	CH200CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	91 (3.2)	
VHR560C2-□E	VHR560C2T-□E	CH50BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	93 (3.3)	
VHR590A2-□U	VHR590A2T-□U	CH300CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	②
VHR590C2-□E	VHR590C2T-□E	CH70BFAUL	58 (2.28)	35 (1.38)	50 (1.97)	138 (4.9)	

● A capacitor cap is included with a capacitor.

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

## 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.
- The direction of gearhead shaft rotation may differ from motor shaft rotation depending on the gear ratio of the gearhead. Refer to the gearmotor – torque table for the rotation direction.

### Induction Motors

Single-Phase 110/115 VAC Single-Phase 220/230 VAC		Three-Phase 200/220/230 VAC	
Lead Wire Type	Terminal Box Type	Lead Wire Type	Terminal Box Type
<p><b>Clockwise</b></p>	<p><b>Clockwise</b></p>	<p><b>Clockwise</b></p>	<p><b>Clockwise</b></p>
<p><b>Counterclockwise</b></p>	<p><b>Counterclockwise</b></p>	<p><b>Counterclockwise</b></p> <p>To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).</p>	<p><b>Counterclockwise</b></p> <p>To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).</p>

PE: Protective Earth

**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, motor may ignore reversing command or change its direction of rotation after some delay.

- How to connect a capacitor → Page C-282

### Reversible Motors

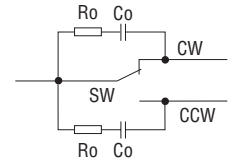
Single-Phase 110/115 VAC Single-Phase 220/230 VAC	
Lead Wire Type	Terminal Box Type
<p><b>Clockwise</b></p> <p>To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b></p> <p>To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>	<p><b>Clockwise</b></p> <p>To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p><b>Counterclockwise</b></p> <p>To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>

PE: Protective Earth

- How to connect a capacitor → Page C-282

### Contact Capacity

Connect a CR circuit for surge suppression shown on the right to protect the contact.



Code	Contact Capacity, Others	Note
SW	125 VAC 5 A min. or 250 VAC 5 A min. (Inductive load)	—
Ro, Co	Ro = 5~200 Ω Co = 0.1~0.2 μF    200 W (400 W)	Accessories <b>EPCRT201-2</b> Page C-275

## Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

### ● Induction Motors

Type	Model	Motor Model	Gearhead Model
Lead Wire Type	<b>VHI206A2-□U</b>	VHI206A2-GV	GV2G□
	<b>VHI206C2-□E</b>	VHI206C2-GV	
	<b>VHI315A2-□U</b>	VHI315A2-GV	GV3G□
	<b>VHI315C2-□E</b>	VHI315C2-GV	
	<b>VHI425A2-□U</b>	VHI425A2-GV	GV4G□
	<b>VHI425C2-□E</b>	VHI425C2-GV	
	<b>VHI425S2-□</b>	VHI425S2-GV	GVH5G□
	<b>VHI540A2-□U</b>	VHI540A2-GVH	
	<b>VHI540C2-□E</b>	VHI540C2-GVH	
	<b>VHI540S2-□</b>	VHI540S2-GVH	GVH5G□
	<b>VHI560A2-□U</b>	VHI560A2-GVH	
	<b>VHI560C2-□E</b>	VHI560C2-GVH	
	<b>VHI560S2-□</b>	VHI560S2-GVH	GVR5G□
	<b>VHI590A2-□U</b>	VHI590A2-GVR	
<b>VHI590C2-□E</b>	VHI590C2-GVR		
<b>VHI590S2-□</b>	VHI590S2-GVR	Terminal Box Type	
<b>VHI425A2T-□U</b>	VHI425A2T-GV		GV4G□
<b>VHI425C2T-□E</b>	VHI425C2T-GV		
<b>VHI425S2T-□</b>	VHI425S2T-GV		GVH5G□
<b>VHI540A2T-□U</b>	VHI540A2T-GVH		
<b>VHI540C2T-□E</b>	VHI540C2T-GVH		
<b>VHI540S2T-□</b>	VHI540S2T-GVH		GVH5G□
<b>VHI560A2T-□U</b>	VHI560A2T-GVH		
<b>VHI560C2T-□E</b>	VHI560C2T-GVH		
<b>VHI560S2T-□</b>	VHI560S2T-GVH		GVR5G□
<b>VHI590A2T-□U</b>	VHI590A2T-GVR		
<b>VHI590C2T-□E</b>	VHI590C2T-GVR		
<b>VHI590S2T-□</b>	VHI590S2T-GVR		

### ● Reversible Motors

Type	Model	Motor Model	Gearhead Model	
Lead Wire Type	<b>VHR206A2-□U</b>	VHR206A2-GV	GV2G□	
	<b>VHR206C2-□E</b>	VHR206C2-GV		
	<b>VHR315A2-□U</b>	VHR315A2-GV	GV3G□	
	<b>VHR315C2-□E</b>	VHR315C2-GV		
	<b>VHR425A2-□U</b>	VHR425A2-GV	GV4G□	
	<b>VHR425C2-□E</b>	VHR425C2-GV		
	<b>VHR540A2-□U</b>	VHR540A2-GVH	GVH5G□	
	<b>VHR540C2-□E</b>	VHR540C2-GVH		
	<b>VHR560A2-□U</b>	VHR560A2-GVH	GVH5G□	
	<b>VHR560C2-□E</b>	VHR560C2-GVH		
	<b>VHR590A2-□U</b>	VHR590A2-GVR	GVR5G□	
	<b>VHR590C3-□E</b>	VHR590C3-GVR		
	Terminal Box Type	<b>VHR425A2T-□U</b>	VHR425A2T-GV	GV4G□
		<b>VHR425C2T-□E</b>	VHR425C2T-GV	
<b>VHR540A2T-□U</b>		VHR540A2T-GVH	GVH5G□	
<b>VHR540C2T-□E</b>		VHR540C2T-GVH		
<b>VHR560A2T-□U</b>		VHR560A2T-GVH	GVH5G□	
<b>VHR560C2T-□E</b>		VHR560C2T-GVH		
<b>VHR590A2T-□U</b>		VHR590A2T-GVR	GVR5G□	
<b>VHR590C3T-□E</b>		VHR590C3T-GVR		

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

# High Strength, Long Life, Low Noise V Series Electromagnetic Brake Motors



## Product Line

### ● Electromagnetic Brake Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
	Model	Model	Model	
Single-Phase 110/115 VAC	<b>VHR206A2M-□U</b>	<b>VHR315A2M-□U</b>	<b>VHR425A2M-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
Single-Phase 220/230 VAC	<b>VHR206C2M-□E</b>	<b>VHR315C2M-□E</b>	<b>VHR425C2M-□E</b>	
Three-Phase 200/220/230 VAC	-	-	<b>VHI425S2M-□</b>	

### ● Electromagnetic Brake Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
	Model	Model	Model	
Single-Phase 110/115 VAC	<b>VHR540A2M-□U</b>	<b>VHR560A2M-□U</b>	<b>VHR590A2M-□U</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*</b>
Single-Phase 220/230 VAC	<b>VHR540C2M-□E</b>	<b>VHR560C2M-□E</b>	<b>VHR590C2M-□E</b>	
Three-Phase 200/220/230 VAC	<b>VHI540S2M-□</b>	<b>VHI560S2M-□</b>	<b>VHI590S2M-□</b>	

\* Except for 90 W (1/8 HP) type.

### ● Electromagnetic Brake Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

#### ◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)
	Model	Model	Model
Single-Phase 110/115 VAC	<b>VHR206A2M-GVU</b>	<b>VHR315A2M-GVU</b>	<b>VHR425A2M-GVU</b>
Single-Phase 220/230 VAC	<b>VHR206C2M-GVE</b>	<b>VHR315C2M-GVE</b>	<b>VHR425C2M-GVE</b>
Three-Phase 200/220/230 VAC	-	-	<b>VHI425S2M-GV</b>

#### ◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)
	Model	Model	Model
Single-Phase 110/115 VAC	<b>VHR540A2M-GVHU</b>	<b>VHR560A2M-GVHU</b>	<b>VHR590A2M-GVRU</b>
Single-Phase 220/230 VAC	<b>VHR540C2M-GVHE</b>	<b>VHR560C2M-GVHE</b>	<b>VHR590C2M-GVRE</b>
Three-Phase 200/220/230 VAC	<b>VHI540S2M-GVH</b>	<b>VHI560S2M-GVH</b>	<b>VHI590S2M-GVR</b>

#### ◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	<b>GV2G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360</b>
15 W (1/50 HP)	<b>GV3G□</b>	
25 W (1/30 HP)	<b>GV4G□</b>	
40 W (1/19 HP)	<b>GVH5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300</b>
60 W (1/12 HP)		
90 W (1/8 HP)	<b>GVR5G□</b>	<b>5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180</b>

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

## Specifications

● Motor (RoHS)

◇ Single-Phase Type – 30 Minute Rating



Model	Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN-m (oz-in)	Rated Torque mN-m (oz-in)	Rated Speed r/min	Capacitor μF
ZP VHR206A2M-□U	6 (1/125)	Single-Phase 110	60	0.235	45 (6.3)	41 (5.8)	1450	3.5
		Single-Phase 115	60	0.242	45 (6.3)	41 (5.8)	1450	
ZP VHR206C2M-□E	6 (1/125)	Single-Phase 220	50	0.111	50 (7.1)	49 (6.9)	1150	0.8
			60	0.115	45 (6.3)	41 (5.8)	1450	
		Single-Phase 230	50	0.115	50 (7.1)	49 (6.9)	1200	
			60	0.118	45 (6.3)	41 (5.8)	1450	
TP VHR315A2M-□U	15 (1/50)	Single-Phase 110	60	0.42	100 (14.2)	105 (14.9)	1450	6.0
		Single-Phase 115	60	0.41	100 (14.2)	105 (14.9)	1450	
TP VHR315C2M-□E	15 (1/50)	Single-Phase 220	50	0.18	100 (14.2)	125 (17.7)	1200	1.5
			60	0.20	100 (14.2)	105 (14.9)	1450	
		Single-Phase 230	50	0.19	100 (14.2)	125 (17.7)	1200	
			60	0.20	100 (14.2)	105 (14.9)	1450	
TP VHR425A2M-□U	25 (1/30)	Single-Phase 110	60	0.54	140 (19.8)	170 (24)	1450	8.0
		Single-Phase 115	60	0.54	140 (19.8)	170 (24)	1450	
TP VHR425C2M-□E	25 (1/30)	Single-Phase 220	60	0.28	140 (19.8)	170 (24)	1450	2.0
			50	0.25	160 (22)	205 (29)	1200	
		Single-Phase 230	60	0.28	140 (19.8)	170 (24)	1450	
			60	0.28	140 (19.8)	170 (24)	1450	
TP VHR540A2M-□U	40 (1/19)	Single-Phase 110	60	0.81	260 (36)	270 (38)	1450	12
		Single-Phase 115	60	0.81	260 (36)	270 (38)	1450	
TP VHR540C2M-□E	40 (1/19)	Single-Phase 220	60	0.43	260 (36)	260 (36)	1500	3.5
			50	0.38	270 (38)	315 (44)	1250	
		Single-Phase 230	60	0.43	260 (36)	260 (36)	1500	
			60	0.43	260 (36)	260 (36)	1500	
TP VHR560A2M-□U	60 (1/12)	Single-Phase 110	60	1.24	380 (53)	405 (57)	1450	20
		Single-Phase 115	60	1.24	380 (53)	405 (57)	1450	
TP VHR560C2M-□E	60 (1/12)	Single-Phase 220	60	0.61	380 (53)	405 (57)	1450	5.0
			50	0.59	470 (66)	490 (69)	1200	
		Single-Phase 230	60	0.61	380 (53)	405 (57)	1450	
			60	0.61	380 (53)	405 (57)	1450	
TP VHR590A2M-□U	90 (1/8)	Single-Phase 110	60	1.81	590 (83)	585 (83)	1500	30
		Single-Phase 115	60	1.81	590 (83)	585 (83)	1500	
TP VHR590C2M-□E	90 (1/8)	Single-Phase 220	60	0.96	590 (83)	605 (85)	1450	7.0
			50	0.82	600 (85)	730 (103)	1200	
		Single-Phase 230	60	0.96	590 (83)	605 (85)	1450	
			60	0.96	590 (83)	605 (85)	1450	

ZP: Impedance protected.

TP: Contains a built-in thermal protector (automatic return type).

If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. (The power supply to the electromagnetic brake is kept and the brake is released.) When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

● Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

● The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These 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.

◇ Three-Phase Type – Continuous Rating



Model	Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN-m (oz-in)	Rated Torque mN-m (oz-in)	Rated Speed r/min
TP VHI425S2M-□	25 (1/30)	Three-Phase 200	50	0.23	240 (34)	190 (26)	1300
			60	0.21	160 (22)	160 (22)	1550
		Three-Phase 220	60	0.20	160 (22)	150 (21)	1600
			Three-Phase 230	60	0.21	160 (22)	150 (21)
TP VHI540S2M-□	40 (1/19)	Three-Phase 200	50	0.32	400 (56)	300 (42)	1300
			60	0.30	260 (36)	260 (36)	1550
		Three-Phase 220	60	0.28	260 (36)	240 (34)	1600
			Three-Phase 230	60	0.29	260 (36)	240 (34)
TP VHI560S2M-□	60 (1/12)	Three-Phase 200	50	0.50	600 (85)	450 (63)	1300
			60	0.43	500 (71)	380 (53)	1550
		Three-Phase 220	60	0.45	500 (71)	380 (53)	1600
			Three-Phase 230	60	0.46	500 (71)	380 (53)
TP VHI590S2M-□	90 (1/8)	Three-Phase 200	50	0.64	850 (120)	680 (96)	1300
			60	0.59	700 (99)	570 (80)	1550
		Three-Phase 220	60	0.60	700 (99)	570 (80)	1600
			Three-Phase 230	60	0.61	700 (99)	570 (80)

TP: Contains a built-in thermal protector (automatic return type).

If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. (The power supply to the electromagnetic brake is kept and the brake is released.) When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

● Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

## ● Electromagnetic Brake (Power off activated type)

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque mN·m (oz-in)
<b>VHR206A2M-□U</b>	Single-Phase 110	60	0.03	3	30 (4.2)
	Single-Phase 115	60			
<b>VHR206C2M-□E</b>	Single-Phase 220	50	0.02	3	30 (4.2)
		60			
	Single-Phase 230	50 60	0.02	3	30 (4.2)
	60				
<b>VHR315A2M-□U</b>	Single-Phase 110	60	0.09	7	80 (11.3)
	Single-Phase 115	60			
<b>VHR315C2M-□E</b>	Single-Phase 220	50	0.05	7	80 (11.3)
		60			
	Single-Phase 230	50 60	0.05	7	80 (11.3)
	60				
<b>VHR425A2M-□U</b>	Single-Phase 110	60	0.09	6	100 (14.2)
	Single-Phase 115	60			
<b>VHR425C2M-□E</b>	Single-Phase 220	60	0.05	7	100 (14.2)
		60			
	Single-Phase 230	50 60	0.05	7	100 (14.2)
	60				
<b>VHR540A2M-□U</b>	Single-Phase 110	60	0.09	7	200 (28)
	Single-Phase 115	60			
<b>VHR540C2M-□E</b>	Single-Phase 220	60	0.04	6	200 (28)
		60			
	Single-Phase 230	50 60	0.04	6	200 (28)
	60				
<b>VHR560A2M-□U</b>	Single-Phase 110	60	0.13	10	500 (71)
	Single-Phase 115	60			
	Single-Phase 220	60	0.07	10	500 (71)
	60				
<b>VHR560C2M-□E</b>	Single-Phase 230	50	0.07	10	500 (71)
		60			
		60			
<b>VHR590A2M-□U</b>	Single-Phase 110	60	0.13	10	500 (71)
	Single-Phase 115	60			
<b>VHR590C2M-□E</b>	Single-Phase 220	60	0.07	10	500 (71)
		60			
	Single-Phase 230	50 60	0.07	10	500 (71)
	60				

- The values for each specification apply to the motor only.
- Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

## ■ General Specifications

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings is 80°C (144°F) or less measured by the resistance change method after rated operation under normal ambient temperature and humidity. [Three-phase type: 70°C (126°F) or less]
Thermal Class	130 (B)
Overheat Protection	6 W (1/125 HP) type has impedance protection. All others have built-in thermal protector (automatic return type). Open: 130±5°C (266±9°F), Close: 82±15°C (179.6±27°F)
Ambient Temperature	Three-phase 200 VAC: -10~+50°C (+14~+122°F) (non-freezing) Single-phase 110/115 VAC, Single-phase 220/230 VAC, Three-phase 220/230 VAC: -10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP): IP20 60 W (1/12 HP), 90 W (1/8 HP): IP40

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque mN·m (oz-in)
<b>VHI425S2M-□</b>	Single-Phase 200	50	0.05	7	100 (14.2)
		60			
	Single-Phase 220	60	0.05	7	100 (14.2)
Single-Phase 230	60				
<b>VHI540S2M-□</b>	Single-Phase 200	50	0.04	6	200 (28)
		60			
	Single-Phase 220	60	0.04	6	200 (28)
Single-Phase 230	60				
<b>VHI560S2M-□</b>	Single-Phase 200	50	0.07	10	500 (71)
		60			
	Single-Phase 220	60	0.07	10	500 (71)
Single-Phase 230	60				
<b>VHI590S2M-□</b>	Single-Phase 200	50	0.07	10	500 (71)
		60			
	Single-Phase 220	60	0.07	10	500 (71)
Single-Phase 230	60				



## Gearmotor – Torque Table

● 50 Hz

Unit = N·m (lb-in)

Model Combination Type	Speed r/min Gear Ratio	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHR206C2M-□E</b>		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.2 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHR315C2M-□E</b>		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHR425C2M-□E</b>		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHR540C2M-□E</b>		1.4 (12.3)	1.7 (15)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR560C2M-□E</b>		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR590C2M-□E</b>		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHI425S2M-□</b>		0.86 (7.6)	1.0 (8.8)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	4.9 (43)	5.9 (52)	8.2 (72)	9.8 (86)	12.3 (108)	14.7 (130)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI540S2M-□</b>		1.4 (12.3)	1.6 (14.1)	2.0 (17.7)	2.4 (21)	3.4 (30)	4.1 (36)	4.9 (43)	6.5 (57)	7.7 (68)	9.3 (82)	12.9 (114)	15.5 (137)	19.4 (171)	23.2 (200)	25.8 (220)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560S2M-□</b>		2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	5.1 (45)	6.1 (53)	7.3 (64)	9.7 (85)	11.6 (102)	13.9 (123)	19.4 (171)	23.2 (200)	29.0 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI590S2M-□</b>		3.1 (27)	3.7 (32)	4.6 (40)	5.5 (48)	7.7 (68)	9.2 (81)	10.5 (92)	14.6 (129)	17.5 (154)	21.1 (186)	29.2 (250)	35.1 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

● 60 Hz

Unit = N·m (lb-in)

Model Combination Type	Speed r/min Gear Ratio	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
		<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>250</b>	<b>300</b>	<b>360</b>
<b>VHR206A2M-□U</b>		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (28)	3.5 (30)	4.2 (37)	5.0 (44)	6 (53)	6 (53)	6 (53)	6 (53)
<b>VHR206C2M-□E</b>		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15)	2.1 (18.5)	2.7 (24)	3.3 (29)	4.5 (39)	5.4 (47)	6.8 (60)	8.1 (71)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
<b>VHR315A2M-□U</b>		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHR425A2M-□U</b>		1.2 (10.6)	1.5 (13.2)	1.8 (15.9)	2.2 (19.4)	3.0 (26)	3.6 (31)	4.4 (38)	5.8 (51)	7.0 (61)	8.4 (74)	11.6 (102)	13.9 (123)	17.4 (153)	20.9 (184)	23.2 (200)	26.2 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR425C2M-□E</b>		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR560A2M-□U</b>		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHR560C2M-□E</b>		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHR590A2M-□U</b>		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHR590C2M-□E</b>		0.72 (6.3)	0.86 (7.6)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.2 (19.4)	2.6 (23)	3.6 (31)	4.1 (36)	5.0 (44)	6.9 (61)	8.3 (73)	10.3 (91)	12.4 (109)	13.8 (122)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI425S2M-□ (200 VAC)</b>		0.68 (6.0)	0.81 (7.1)	1.0 (8.8)	1.2 (10.6)	1.7 (15)	2.0 (17.7)	2.4 (21)	3.4 (30)	3.9 (34)	4.6 (40)	6.5 (57)	7.7 (68)	9.7 (85)	11.6 (102)	12.9 (114)	15.5 (137)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
<b>VHI425S2M-□ (220/230 VAC)</b>		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI540S2M-□ (200 VAC)</b>		1.1 (9.7)	1.3 (11.5)	1.6 (14.1)	1.9 (16.8)	2.7 (23)	3.2 (28)	3.9 (34)	5.2 (46)	6.2 (54)	7.4 (65)	10.3 (91)	12.4 (109)	15.5 (137)	18.6 (164)	20.6 (182)	23.3 (200)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI540S2M-□ (220/230 VAC)</b>		1.7 (15)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	5.1 (45)	6.2 (54)	8.2 (72)	9.8 (86)	11.8 (104)	16.3 (144)	19.6 (173)	24.5 (210)	29.4 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
<b>VHI560S2M-□</b>		2.6 (23)	3.1 (27)	3.8 (33)	4.6 (40)	6.4 (56)	7.7 (68)	8.8 (77)	12.3 (108)	14.7 (130)	17.6 (155)	24.5 (210)	29.4 (260)	34.6 (300)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
<b>VHI590S2M-□</b>		3.1 (27)	3.7 (32)	4.6 (40)	5.5 (48)	7.7 (68)	9.2 (81)	10.5 (92)	14.6 (129)	17.5 (154)	21.1 (186)	29.2 (250)	35.1 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate 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 load.

## Permissible Overhung Load and Permissible Thrust Load

→ Page C-17

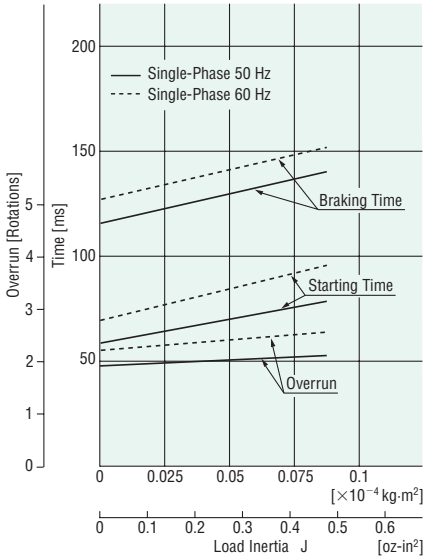
## Permissible Load Inertia J of Gearhead

→ Page C-18

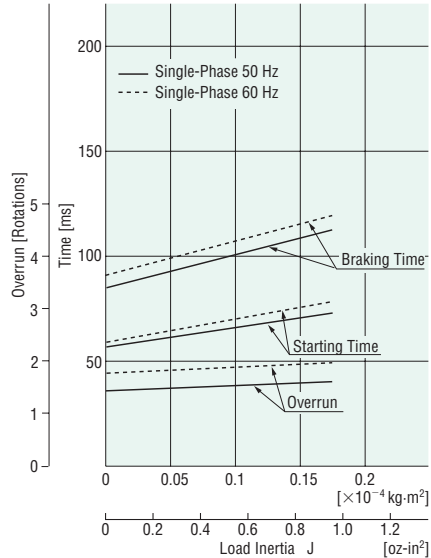
- Enter the gear ratio in the box (□) within the model name.

**Starting and Braking Characteristics** (Reference values, motor only)

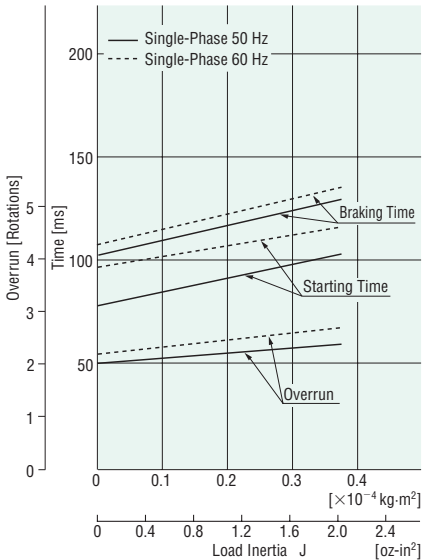
**VHR206A2M**  
**VHR206C2M**



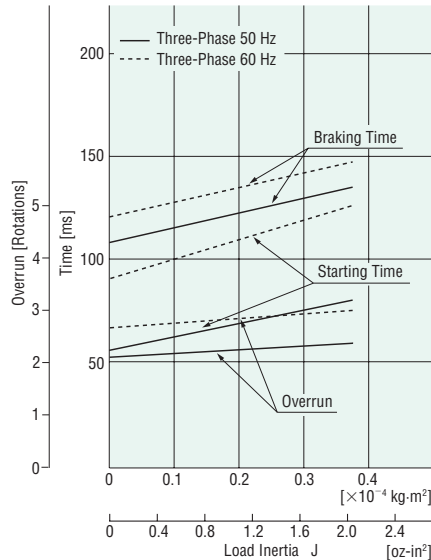
**VHR315A2M**  
**VHR315C2M**



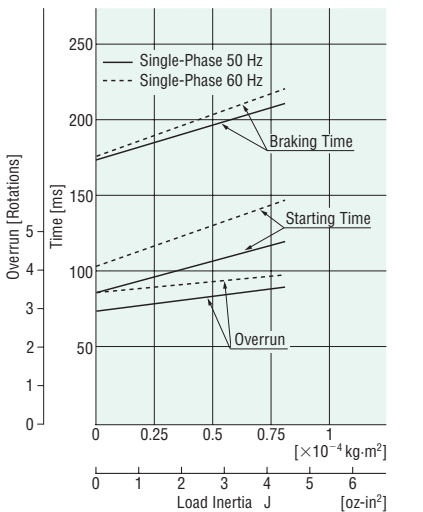
**VHR425A2M**  
**VHR425C2M**



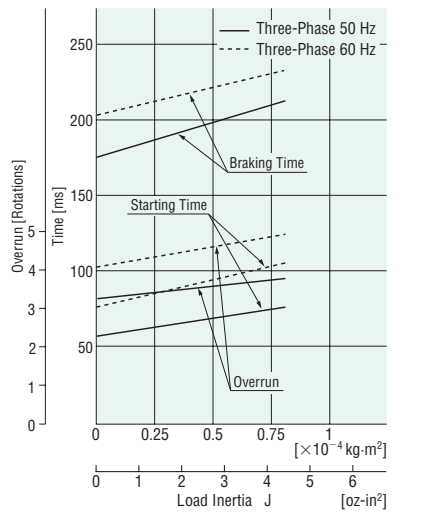
**VHI425S2M**



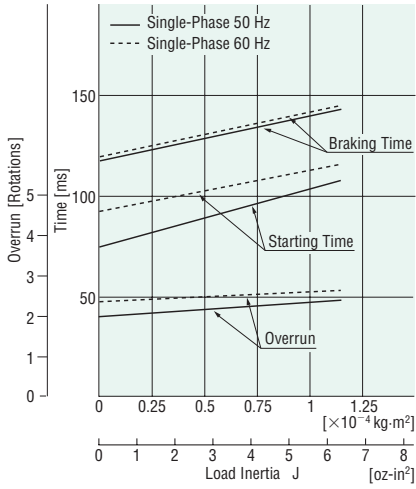
**VHR540A2M**  
**VHR540C2M**



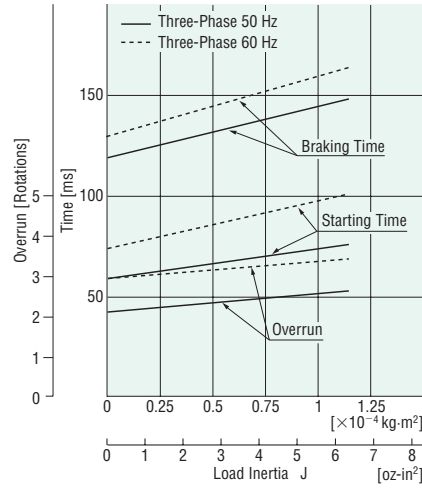
**VHI540S2M**



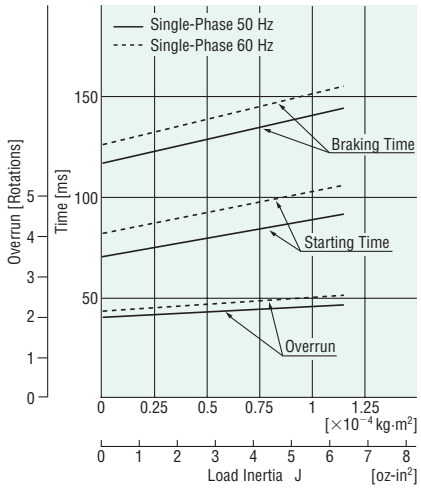
## VHR560A2M VHR560C2M



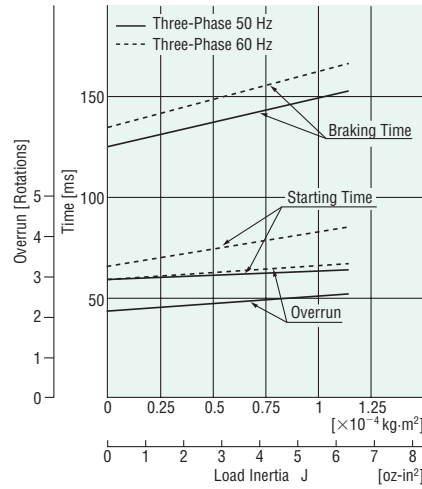
## VHI560S2M



## VHR590A2M VHR590C2M



## VHI590S2M



Introduction

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

V Series

Clutch & Brake Motors

Synchronous Motors

Low-Speed Synchronous Motors

Waterright Dust-Resistant Motors

Torque Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

Installation

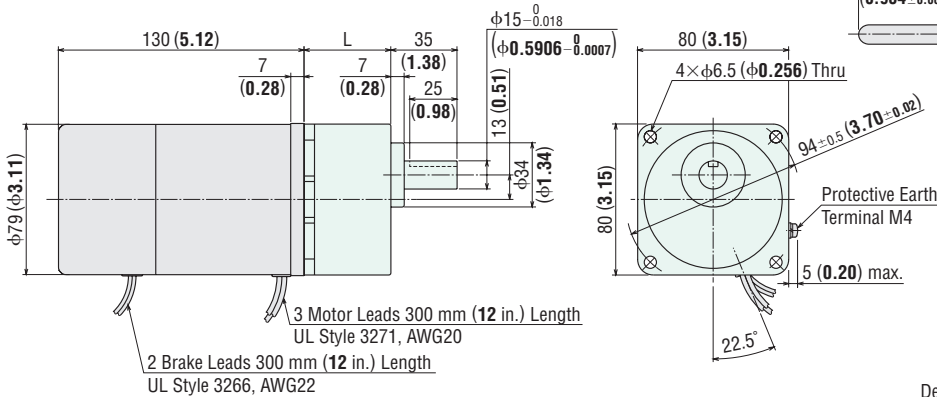


## ● 25 W (1/30 HP)

### ◇ Motor/Gearhead

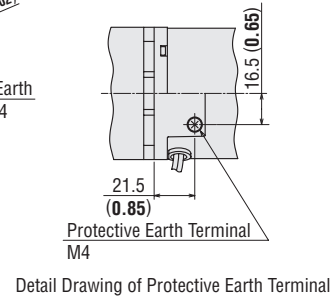
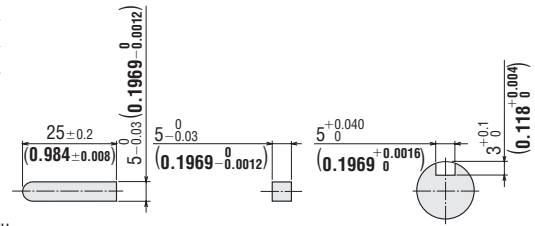
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
<b>VHR425</b> ■ <b>2M</b> -□□	VHR425■2M-GV	GV4G□	<b>5~25</b>	41 (1.61)	A482A
<b>VHI425S2M</b> -□	VHI425S2M-GV		<b>30~120</b>	46 (1.81)	A482B
			<b>150~360</b>	51 (2.01)	A482C

Mass: 2.95 kg (6.5 lb.) (Including gearhead)



### ◇ Key and Key Slot

(The key is included with the gearhead)

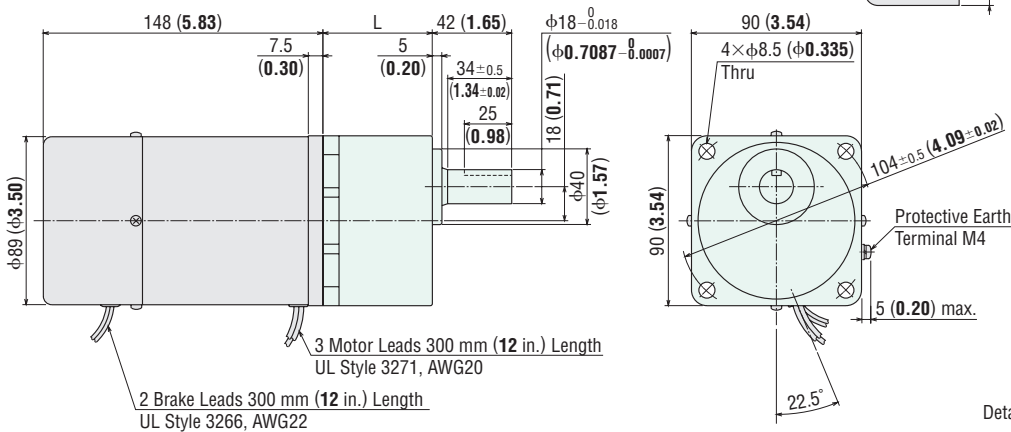


## ● 40 W (1/19 HP)

### ◇ Motor/Gearhead

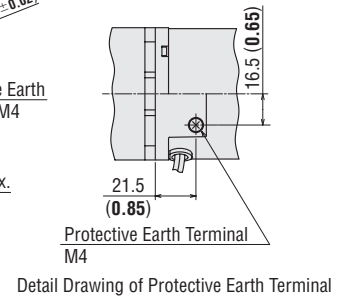
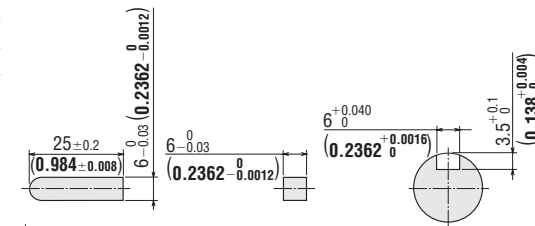
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
<b>VHR540</b> ■ <b>2M</b> -□□	VHR540■2M-GVH	GVH5G□	<b>5~18</b>	45 (1.77)	A483A
<b>VHI540S2M</b> -□	VHI540S2M-GVH		<b>25~100</b>	58 (2.28)	A483B
			<b>120~300</b>	64 (2.52)	A483C

Mass: 4.4 kg (9.7 lb.) (Including gearhead)



### ◇ Key and Key Slot

(The key is included with the gearhead)



- Enter the power supply voltage (**A** or **C**) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box (□) within the model name.

## 60 W (1/12 HP)

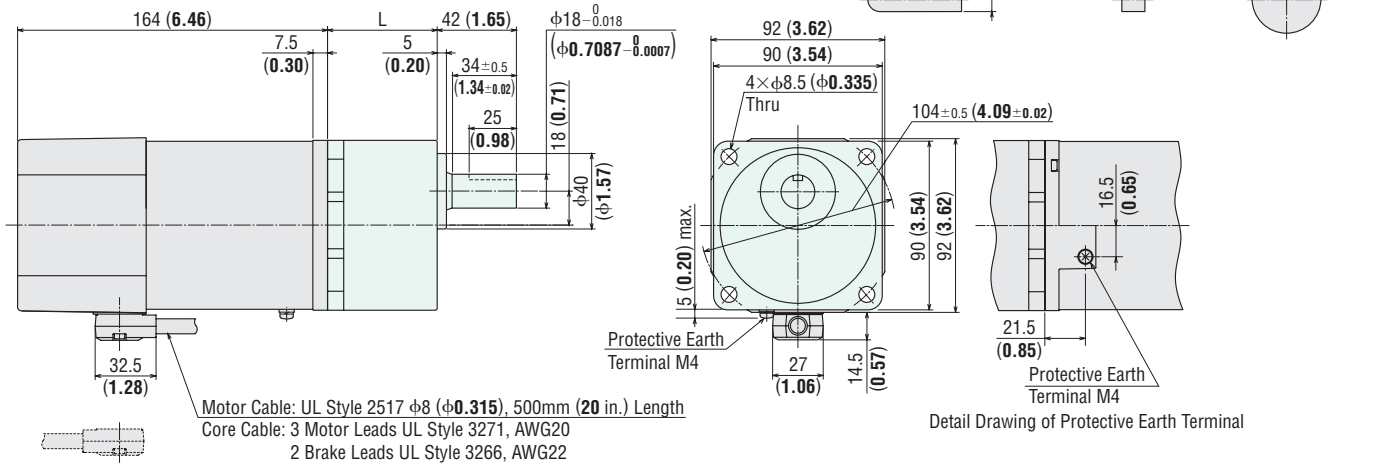
### Motor/Gearhead

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR560 <input type="checkbox"/> 2M- <input type="checkbox"/>	VHR560 <input type="checkbox"/> 2M-GVH	GVH5G <input type="checkbox"/>	5~18	45 (1.77)	A484A
VHI560S2M- <input type="checkbox"/>	VHI560S2M-GVH		25~100	58 (2.28)	A484B
			120~300	64 (2.52)	A484C

Mass: 4.9 kg (10.8 lb.) (Including gearhead)

### Key and Key Slot

(The key is included with the gearhead)



Cable direction can be switched to the opposite direction.

## 90 W (1/8 HP)

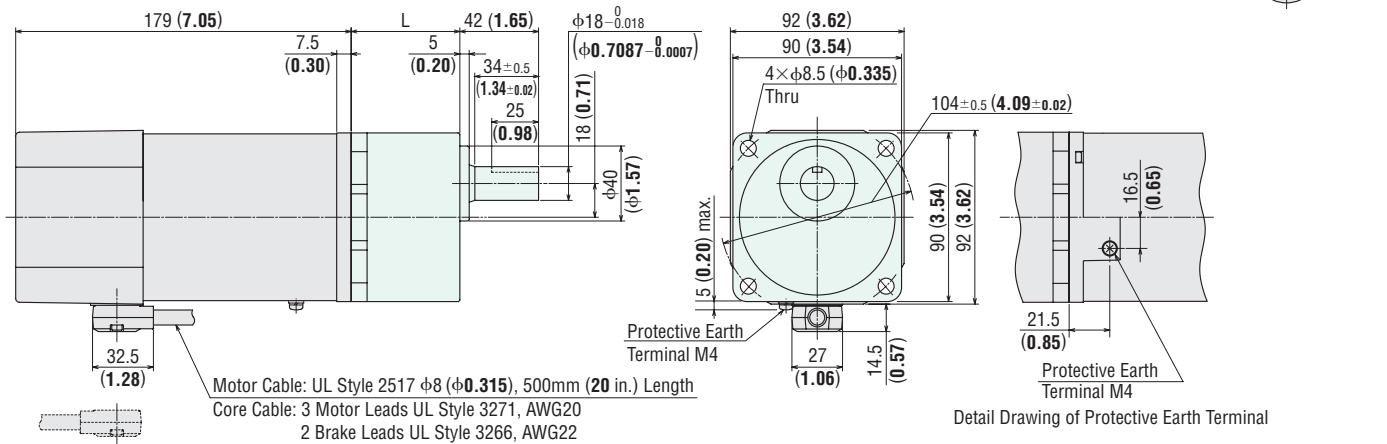
### Motor/Gearhead

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR590 <input type="checkbox"/> 2M- <input type="checkbox"/>	VHR590 <input type="checkbox"/> 2M-GVR	GVR5G <input type="checkbox"/>	5~15	45 (1.77)	A485A
VHI590S2M- <input type="checkbox"/>	VHI590S2M-GVR		18~36	58 (2.28)	A485B
			50~180	70 (2.76)	A485C

Mass: 5.4 kg (11.9 lb.) (Including gearhead)

### Key and Key Slot

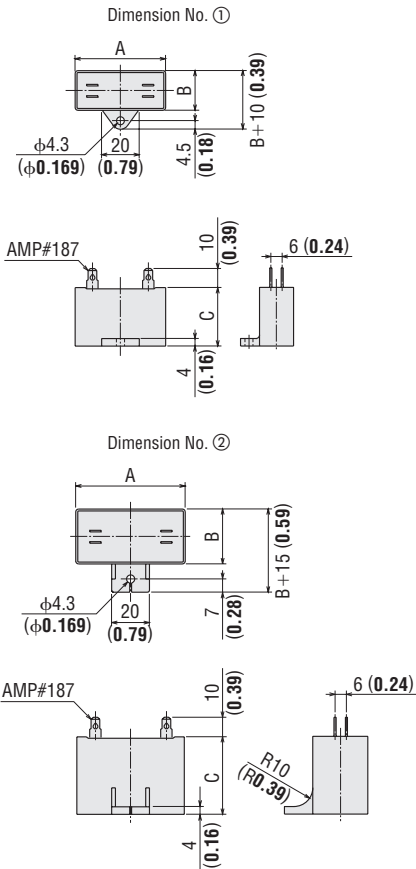
(The key is included with the gearhead)



Cable direction can be switched to the opposite direction.

- Enter the power supply voltage (**A** or **C**) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box (□) within the model name.

## ● Capacitor (Included with single-phase motors)



## ● Capacitor Dimensions Unit = mm (in.)

Model	Capacitor Model	A	B	C	Mass (oz.)	Dimension No.
<b>VHR206A2M-□U</b>	CH35FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	22 (0.78)	①
<b>VHR206C2M-□E</b>	CH08BFAUL	31 (1.22)	17 (0.67)	27 (1.06)	23 (0.81)	
<b>VHR315A2M-□U</b>	CH60CFAUL2	38 (1.50)	21 (0.83)	31 (1.22)	35 (1.24)	
<b>VHR315C2M-□E</b>	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
<b>VHR425A2M-□U</b>	CH80CFAUL2	48 (1.89)	21 (0.83)	31 (1.22)	41 (1.45)	
<b>VHR425C2M-□E</b>	CH20BFAUL	48 (1.89)	19 (0.75)	29 (1.14)	36 (1.27)	
<b>VHR540A2M-□U</b>	CH120CFAUL2	58 (2.28)	22 (0.87)	35 (1.38)	60 (2.1)	
<b>VHR540C2M-□E</b>	CH35BFAUL	58 (2.28)	22 (0.87)	35 (1.38)	59 (2.1)	
<b>VHR560A2M-□U</b>	CH200CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	91 (3.2)	
<b>VHR560C2M-□E</b>	CH50BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	93 (3.3)	
<b>VHR590A2M-□U</b>	CH300CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	②
<b>VHR590C2M-□E</b>	CH70BFAUL	58 (2.28)	35 (1.38)	50 (1.97)	138 (4.9)	

● A capacitor cap is included with a capacitor.

## ■ Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

Model	Motor Model	Gearhead Model
<b>VHR206A2M-□U</b>	VHR206A2M-GV	GV2G□
<b>VHR206C2M-□E</b>	VHR206C2M-GV	
<b>VHR315A2M-□U</b>	VHR315A2M-GV	
<b>VHR315C2M-□E</b>	VHR315C2M-GV	GV3G□
<b>VHR425A2M-□U</b>	VHR425A2M-GV	
<b>VHR425C2M-□E</b>	VHR425C2M-GV	GV4G□
<b>VHI425S2M-□</b>	VHI425S2M-GV	
<b>VHR540A2M-□U</b>	VHR540A2M-GVH	GVH5G□
<b>VHR540C2M-□E</b>	VHR540C2M-GVH	
<b>VHI540S2M-□</b>	VHI540S2M-GVH	
<b>VHR560A2M-□U</b>	VHR560A2M-GVH	GVH5G□
<b>VHR560C2M-□E</b>	VHR560C2M-GVH	
<b>VHI560S2M-□</b>	VHI560S2M-GVH	
<b>VHR590A2M-□U</b>	VHR590A2M-GVR	GVR5G□
<b>VHR590C2M-□E</b>	VHR590C2M-GVR	
<b>VHI590S2M-□</b>	VHI590S2M-GVR	

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



## 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.
- The direction of gearhead shaft rotation may differ from motor shaft rotation depending on the gear ratio of the gearhead. Refer to the gearmotor – torque table for the rotation direction.

Single-Phase 110/115 VAC  
Single-Phase 220/230 VAC

SW1 operates both motor and electromagnetic brake action. The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.

If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (orange).

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

Switch No.	Specifications		Note
	Single-Phase 110/115 VAC Input	Single-Phase 220/230 VAC Input	
SW1	125 VAC 3 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP); 5 A minimum] (Inductive Load)	250 VAC 1.5 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP); 5 A minimum] (Inductive Load)	Switched Simultaneously
SW2			-

Three-Phase 200/220/230 VAC

SW1 operates both motor and electromagnetic brake action. The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.

If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (orange).

**Rotation Direction**  
To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).

Switch No.	Specifications	Note
SW1	25 W (1/30 HP): 250 VAC 1.5 A minimum 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 250 VAC 5 A minimum (Inductive Load)	Switched Simultaneously

PE: Protective Earth

● R<sub>0</sub> and C<sub>0</sub> indicate CR circuit for surge suppression. [R<sub>0</sub> = 5~200 Ω, C<sub>0</sub> = 0.1~0.2 μF, 200 WV (400 WV)]

● **EPCR1201-2** (CR circuit) is available as an accessory. → Page C-275

● How to connect a capacitor → Page C-282