

Reversible Motors

90 W

90 mm



Lead Wire Type



Terminal Box Type

Gearheads shown in the photograph are sold separately

Specifications – 30 Minutes Rating (RoHS)



Product Name and Type Upper Product Name: Pinion Shaft Type Lower Product Name ( ): Round Shaft Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	W	VAC	Hz	A	mN-m	mN-m	r/min	μF
<b>TP</b> <b>5RK90GE-CW3E</b> <b>(5RK90A-CW3E)</b>	<b>TP</b> <b>5RK90GE-CW3TE</b> <b>(5RK90A-CW3TE)</b>	90	Single-Phase 220	50	0.83	600	730	1200	7.0
				60	0.96	590	605	1450	
			Single-Phase 230	50	0.83	600	730	1200	
				60	0.95	590	605	1450	

- The rated torque and the starting torque of reversible motors are shown without the friction brake installed.
- The product name listed on the motor nameplate does not include the code (E) that indicates the type of capacitor. Certification regarding various safety standards is acquired for the product name on the motor nameplate, please visit [www.orientalmotor.eu](http://www.orientalmotor.eu).
- Safety standards → Page H-2

**TP**: This indicates that there is 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 automatically. Be sure to turn the power supply off before inspecting.

Degree of Protection

Type	Product Name		Degree of Protection
	Pinion Shaft Type	Round Shaft Type	
Lead Wire	<b>5RK90GE-CW3E</b>	<b>5RK90A-CW3E</b>	IP20
Terminal Box	<b>5RK90GE-CW3TE</b>	<b>5RK90A-CW3TE*</b>	IP40

\*Excluding the installation surface of the round shaft type.

Product Line

Motors (RoHS)

Type	Product Name	
	Pinion Shaft Type	Round Shaft Type
Lead Wire	<b>5RK90GE-CW3E</b>	<b>5RK90A-CW3E</b>
Terminal Box	<b>5RK90GE-CW3TE</b>	<b>5RK90A-CW3TE</b>

The following items are included in each product.  
Motor, Capacitor, Capacitor Cap, Operating Manual

Parallel Shaft Gearheads/Right-Angle Gearheads (Sold separately) (RoHS)

These products can be attached to pinion shafts.

Gearhead Type		Gearhead Product Name	Gear Ratio
Parallel Shaft	Long Life	<b>5GE□S</b>	<b>3~180</b>
	<b>GE-S</b> Gearhead	<b>5GE10XS</b> (Decimal Gearhead)	
Right-Angle Shaft	Hollow Shaft Gearhead	<b>5GE□RH</b>	<b>3~180</b>
	Solid Shaft Gearhead	<b>5GE□RA</b>	<b>3~180</b>

● A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.

- Parallel Shaft Gearhead  
Gearhead, Mounting Screws, Parallel Key, Operating Manual
- Hollow Shaft Gearhead  
Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual
- Solid Shaft Gearhead  
Gearhead, Mounting Screws, Parallel Key, Gasket, Operating Manual

High Strength, Long Life, Low Noise  
V Series

Highest Maximum Permissible torque, 10,000 hours\* of life and quiet operation. For more details on V Series see page C-149. \*For the rated life time definition, refer to "Service Life of Gearheads" on page G-35.



## Permissible Torque When Gearhead is Attached

- A code (T) indicating the terminal box type is entered where the box □ is located within the motor product name.  
A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background □ indicates gear shaft rotation in the same direction as the motor shaft. 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 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.  
In that case, the permissible torque is 20 N·m.

### ◇ 50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
		Gear Ratio																			
Motor/ Gearhead		<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>5RK90GE-CW3□E</b> / <b>5GE□S</b>		1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20

### ◇ 60 Hz

Unit = N·m

Product Name	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																			
Motor/ Gearhead		<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>5RK90GE-CW3□E</b> / <b>5GE□S</b>		1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20

## Gearmotor – Torque Table When Right-Angle Gearhead is Attached

→ Page C-216

## Permissible Overhung Load and Permissible Thrust Load

Motors (Round shaft type) → Page C-16

Gearheads → Page C-16

## Permissible Load Inertia: J of Gearhead

→ Page C-17

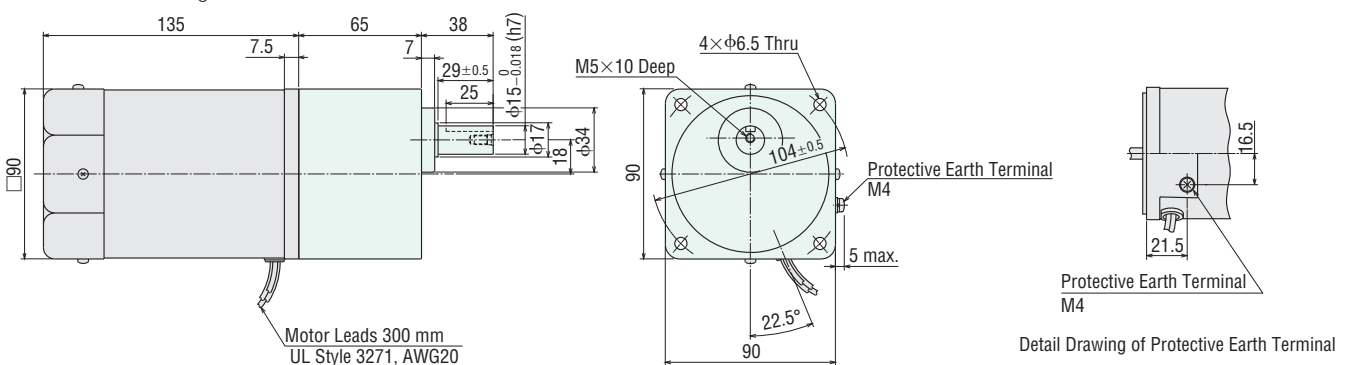
## Dimensions (Unit = mm)

- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-254

### ◇ Lead Wire Type ①

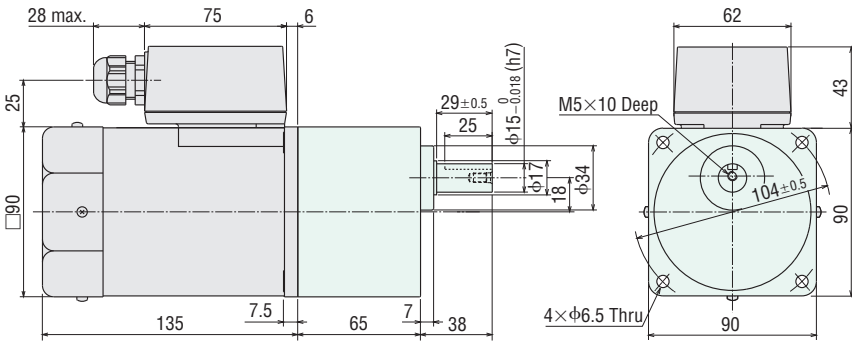
Mass: Motor 3.2 kg

Gearhead 1.5 kg



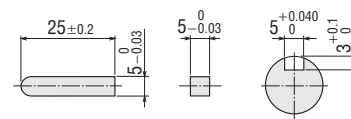
## ◇ Terminal Box Type ②

Mass: Motor 3.3 kg  
Gearhead 1.5 kg



- Applicable cable diameter is  $\phi 6 \sim \phi 12$ .
- Details of terminal box → Page C-255

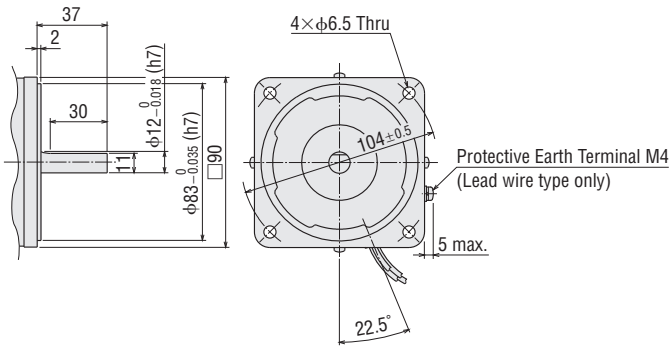
## ◇ Key and Key Slot (The key is included with the gearhead.)



## ◇ Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

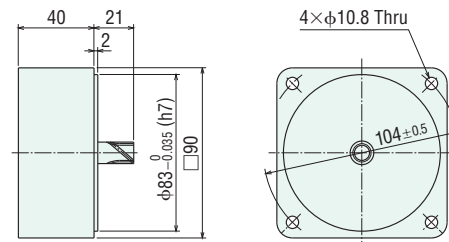
Mass: 3.2 kg (Lead wire type)  
3.3 kg (Terminal box type)



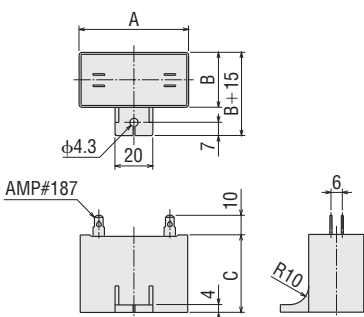
## ◇ Decimal Gearhead

This can be attached to the **GE** pinion shaft type.  
**5GE10XS**

Mass: 0.6 kg



## ◇ Capacitor (Included)



## ◇ Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Capacitor Cap
Upper Product Name: Pinion Shaft Type	Lower Product Name ( ): Round Shaft Type						
Lead Wire Type	Terminal Box Type	CH70BFAUL	58	35	50	138	Included
<b>5RK90GE-CW3E</b> <b>(5RK90A-CW3E)</b>	<b>5RK90GE-CW3TE</b> <b>(5RK90A-CW3TE)</b>						

## ■ Connection Diagrams

→ Page C-80

### Gearheads, Peripheral Equipment

#### Space Saving

Right-Angle Gearheads  
→ Page C-213



#### Instantaneous Stop

Brake Pack  
→ Page E-178



#### Accessories

Mounting Brackets  
→ Page C-240



Couplings  
→ Page C-245

