Oriental motor

HG-9026

OPERATING MANUAL

Right Angle Gearhead

(Solid Shaft Type)

Thank you for purchasing an Oriental Motor product.
To ensure correct operation, please read this manual carefully before using your gearhead.

Introduction

■ Before using the gearhead

Only qualified personnel should work with the product. To ensure correct operation, please read this manual carefully before using your gearhead. Should you require the inspection or repair of internal parts, contact the Oriental Motor office where you purchased the product.

■ Hazardous substances

RoHS (Directive 2002/95/EC 27Jan.2003) Compliant

Verifying the product name and accessories

Check the model names of the motor and gearhead.
Gearheads and motors will fit together only if they are both of the same frame size and of the same gear type.
See explanation below.

Model designation: **4GN□RAA 5GN□RAA**
5GU□RAA 5GE□RAA

∗ The square box in the gearhead model will contain a value representing the gear ratio.

・Motor model name ・Gearhead model name

<Example> 5 IK60 GE -AW2 5 GE 25RAA

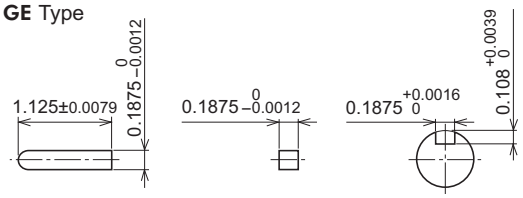
Frame size
Gear type series

Accessories

- Hexagonal socket screws, Spring washers, Flat washers 4 pcs. each (Screws are provided for connecting motor and gearhead.)
- Parallel key 1 pc.
  (Key is not provided with **GN** type gearheads that have a flat on the our shaft.)
- Gasket 1 sheet

Key and key slot dimensions (Unit = in.)

GU, **GE** Type



Assembly

Align the gearhead and motor as shown in the figure at right, then engage the pinion section of the shaft to the gear gently by turning the gearhead slightly in both directions until the gearhead and motor fit flush together. Install the supplied gasket by making sure there is no gap between the motor flange surface and the end face of the gearhead pilot section.

Note

- Forcing the motor and gearhead together during assemble or permitting contamination by foreign matter inside the gearhead will cause excess noise and/or shorter life of the gearhead. Remove any particles of dust or other waste that may be clinging to the O-ring or the pilot section of the motor or gearhead.
- Do not bend or damage the gasket supplied with the **GN** type, **GU** type, and **GE** type. It may cause grease to leak.

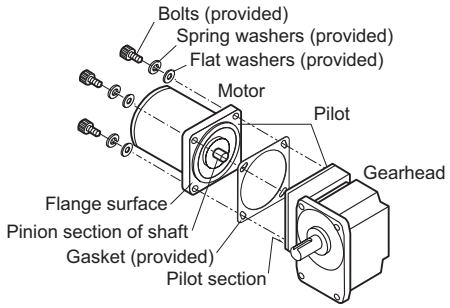


Illustration shows **4GN□RAA** type.

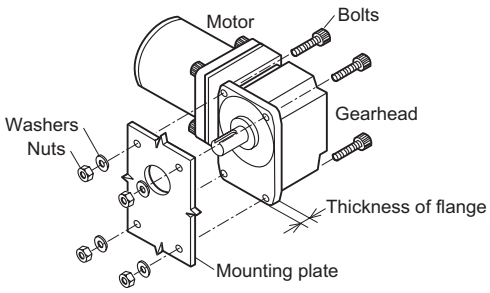
Use the screws provided to secure the motor to the gearhead.
Tightening torque is as the table.

Gearhead model name	Nominal diameter of bolt	Tightening torque (lb-in)
4GN□RAA	M5	33
5GN□RAA 5GU□RAA 5GE□RAA	M6	56

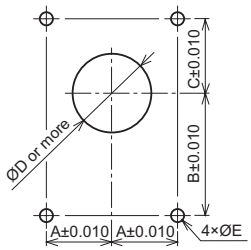
∗ The square box in the gearhead model will contain a value representing the gear ratio.

Installing gearmotor

Connect the gearhead and motor using the screws provided before mounting them on equipment. When mounting, use a mounting plate about 0.31 in. thick and screws long enough to ensure adequate bite.



Installation hole dimensions (Unit: in.)



Gearhead model name	Screw type	Thickness of flange	A	B	C	ØD	ØE
4GN□RAA	No.10-24UNC	0.35	1.10	2.17	0.98	1.38	0.22
5GN□RAA	1/4-20UNC	0.39	1.14	2.24	1.30	1.46	0.27
5GU□RAA **5GE□RAA**	5/16-18UNC	0.47	1.18	2.64	1.30	1.38	0.33

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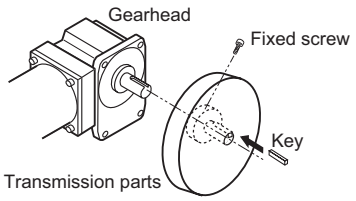
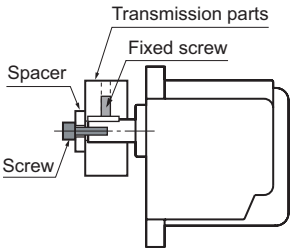
Attaching load

The shaft of the gearhead has been machined to an outer diameter tolerance of h7 and is provided with a key slot for connecting the transmission parts. When connecting the transmission parts, ensure that the shaft and parts have a clearance fit, and secure with a screw to prevent the parts from wobbling. Use a screw hole (No.10-24UNC, effective depth 0.39 in.) provided at the tip of the output shaft of **5GU□RAA** and **5GE□RAA** as an auxiliary means for preventing the transfer mechanism from disengaging.

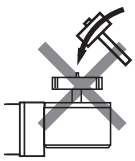
< The example of output axis tip screw hole use >





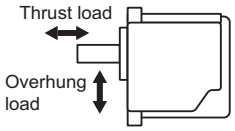
Note

- Do not use excessive force, or hammer the transmission parts onto the gearmotor shaft as damage may occur.
- Output shaft of **5GU120RAA** to **5GU180RAA**, **5GE120RAA** to **5GE180RAA** cannot be turned by hand. For position alignment, turn on the motor.



Precautions for operation

- Use your gearmotor under ambient temperature of +14 to +122 °F and 85% humidity.
- Do not use your gearmotor where it may be exposed direct sunlight water and/or oil.
- Do not use your gearmotor in locations subject to severe vibration or shock, a large amount of dust, inflammable gas and or corrosive gas.
- On rare occasions, a small amount of grease may ooze out from the gearhead. If there is concern over possible environmental damage resulting from the leakage of grease, check for grease stains during regular inspections. Alternatively, install an oil pan or other device to prevent leakage from causing further damage. Oil leakage may lead to problems in the customer's equipment or products.
- If the ambient temperature is low, the motor may take a longer time to start or its speed may drop. This is caused, among others, by an increased friction torque of the oil seal used on the gearhead output shaft. As the motor continues to operate and the sliding part of the oil seal breaks in, the friction torque will drop and the motor will operate at the specified speed.
- Direction of rotation of the gearhead output shaft
  The motor and gearhead output shaft rotate in opposite directions.
- Maximum permissible torque
  Since the output torque of the gearhead increases proportionally with the reduction of speed, a high reduction ratio of the gearhead will result in an output torque that cannot be taken up by the physical construction of the gearhead. Use gearheads within the maximum permissible torque set for each speed reduction ratio. Also, be sure shaft rotation is not stopped by an external force or load obstruction. The resulting shock may damage the gearhead.
- Permissible overhung load and permissible thrust load
  "Overhung load" refers to load placed on the output shaft of the gearhead in a direction perpendicular to the shaft as shown in the Figure below. The "Thrust load" is a load applied in the axial direction of the output shaft. Since the overhung load and thrust load have a great influence on the life of the bearings and strength of the shaft, be careful not to exceed the maximum values shown in the table at following.



< Permissible overhung load and permissible thrust load >

Gearhead model name	Gear ratio	Maximum permissible torque (lb-in)	Permissible overhung load (lb) From the end of shaft 0.39 in.	Permissible overhung load (lb) From the end of shaft 0.79 in.	Permissible thrust load (lb)
4GN□RAA	**3** to **18**	70	22	33	22
	25 to **180**		45	67	
5GN□RAA	**3** to **18**	88	56	78	45
	25 to **180**		67	101	
5GU□RAA **5GE□RAA**	**3** to **9**	177	90	112	56
	12.5 to **25**		101	135	
	30 to **180**		112	157	

∗ The square box in the gearhead model will contain a value representing the gear ratio.

• Please contact your nearest Oriental Motor office for further information.

ORIENTAL MOTOR U.S.A. CORP.
Technical Support Line Tel:(800)468-3982
Available from 7:30 AM to 5:00 PM, P.S.T.
E-mail: techsupport@orientalmotor.com
www.orientalmotor.com

ORIENTAL MOTOR CO., LTD.
Headquarters **Tokyo, Japan**
Tel:(03)3835-0684 Fax:(03)3835-1890

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