



GEARED MOTOR TECHNICAL INFORMATION

Coreless Motor Co.,Ltd

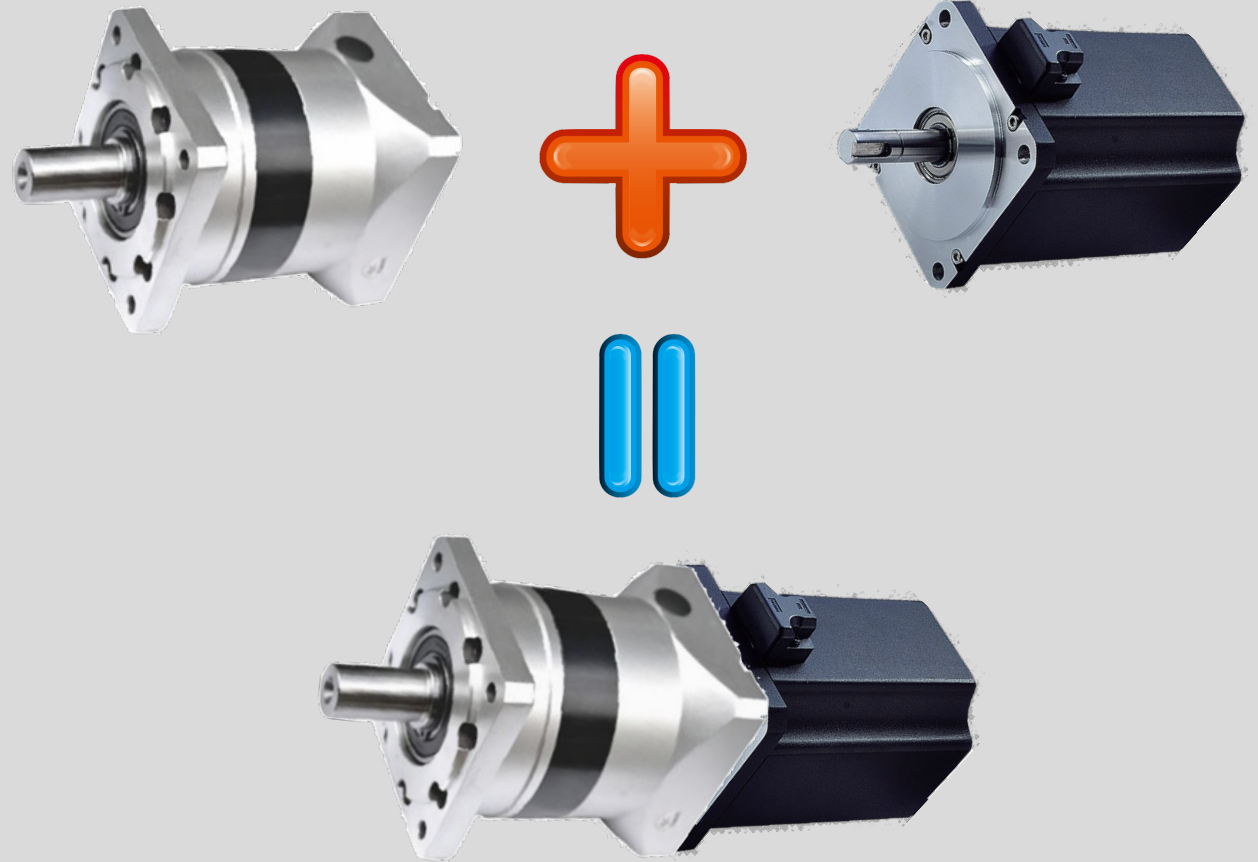
WHAT'S GEARED MOTOR?



Coreless Motor Co.,Ltd: www.cls-motor.com
Tel: 046-277-5022 FAX: 046-204-6664



- Motor integrated with gear head (speed reducer)
 - * By adjusting the reduction ratio, the output shaft speed and torque can be adjusted.



© 2019 Coreless Motor Co.,Ltd

GEAR RATIO SELECTION METHOD

- Select a single motor from the voltage (V) and output (W)
 - Considering the loss due to gears, the output of the motor alone should be estimated roughly 20% larger.
 - $\text{Output (W)} = \text{Speed (rpm)} \times \text{トルク (Nm)} \times 2\pi/60$

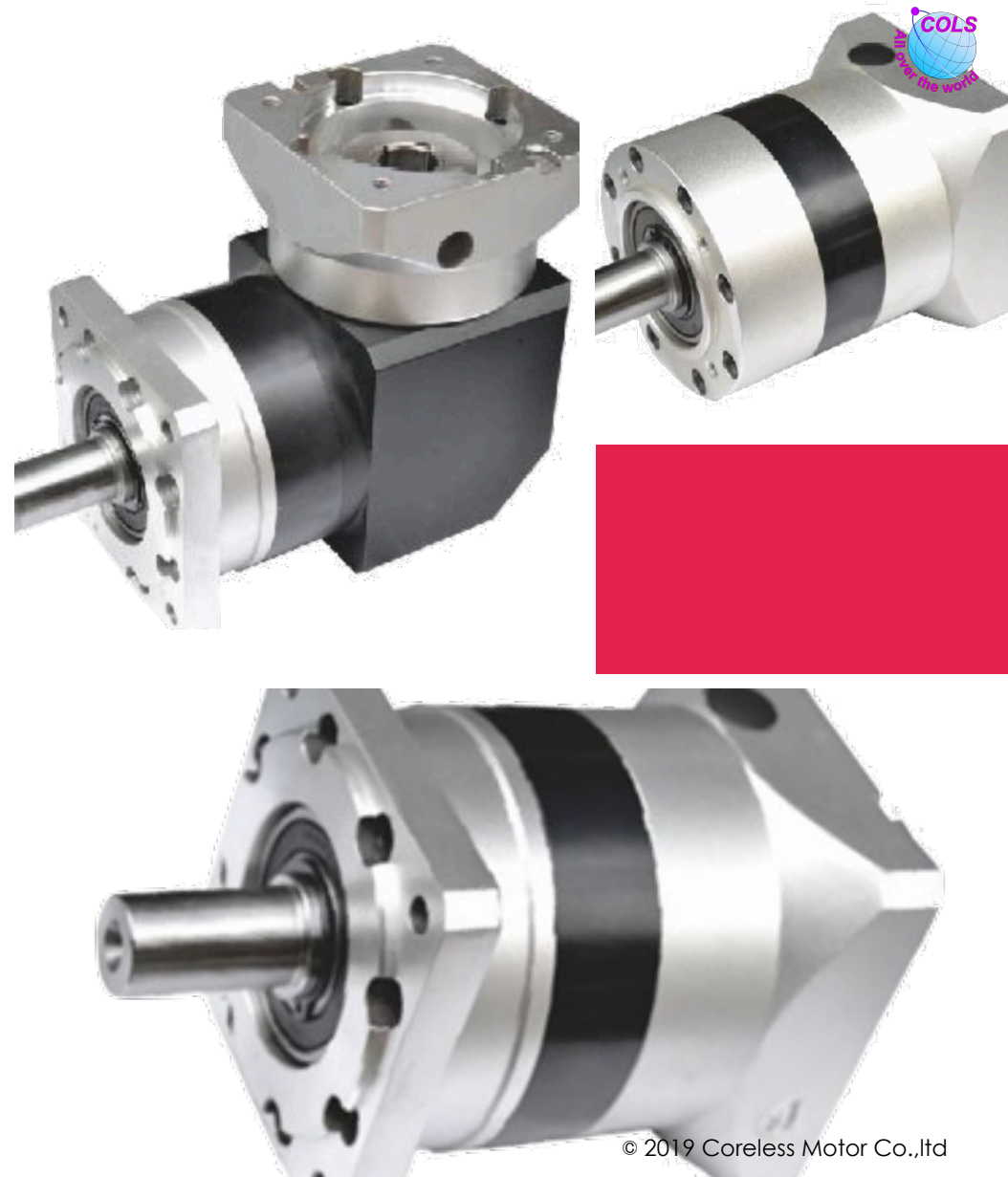
- Calculate the gear ratio using the following formula using the rated speed and torque of the motor itself.
 - Gear ratio = $\text{Motor speed (rpm)} / \text{Gear output speed (rpm)}$
 - * Check if the rotation speed of the gear output shaft is too slow!
 - Gear ratio = $\text{Gear output shaft torque (Nm)} / \text{Motor torque (Nm)}$
 - * Check if the gear output shaft torque is sufficient!



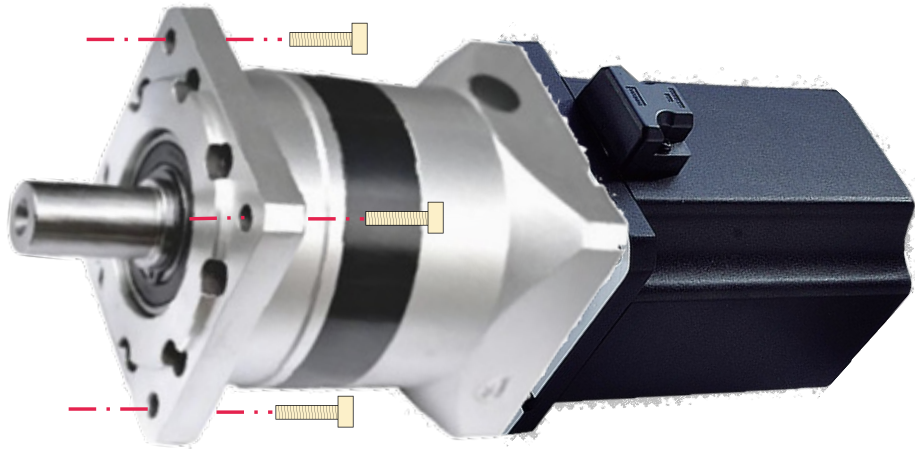


FEATURES OF OUR GEAR HEAD

- OEM product with low price
- You can choose from many reduction ratios
- PHF series installed from the motor body side
- PHE series installed from the output shaft side
- Orthogonal axis gear head
- Hollow shaft is also available



DIFFERENCE IN MOUNTING METHOD



- PHF series

- * Type that inserts and fixes screws from the motor body side



- PHE series

- * Type that inserts and fixes screws from the shaft side

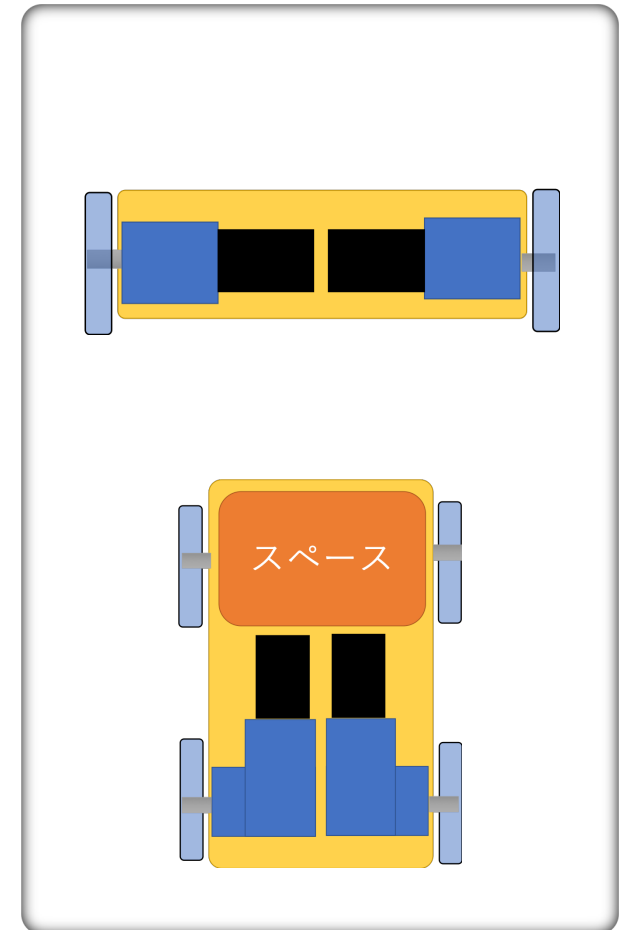
ORTHOGONAL AXIS GEAR HEAD

- Merits

1. By making the gear head an orthogonal axis, the length of the geared motor can be suppressed.
2. By controlling the length of the geared motor, the width of the AGV can be narrowed or the height can be lowered.

- Demerits

1. Orthogonal shaft gearheads are about twice as expensive as parallel shaft gearheads.
2. Since there are orthogonal gears, the idling torque correspondingly increases, and it is difficult to produce the original force of the motor.



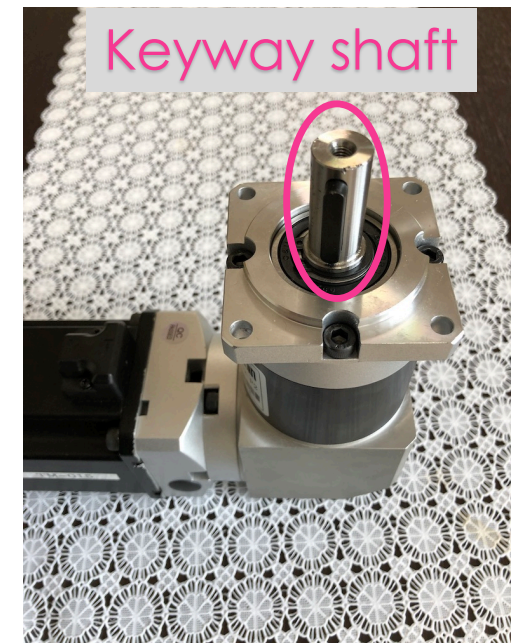
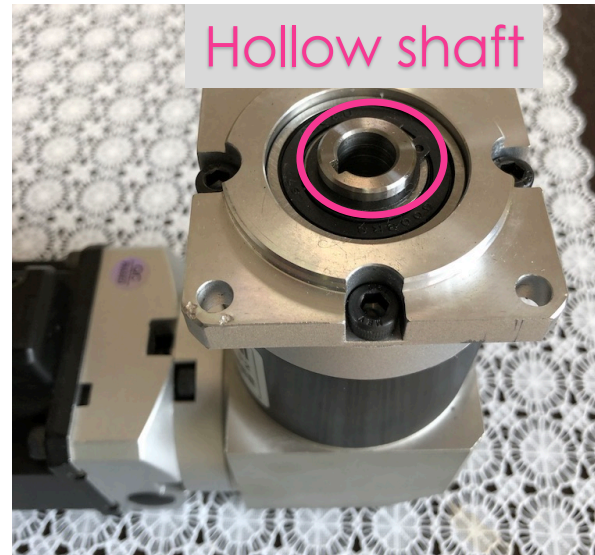
HOLLOW SHAFT IS ALSO AVAILABLE

Advantages of hollow shaft

1. Since the mating output shaft can be directly attached, it can contribute to space saving.
2. You can design your own shaft.
*Shape, material, hardness, etc.
3. Large OHL can be secured

Disadvantages of hollow shaft

1. Expensive
2. The strength of the shaft becomes weak
3. There is a limit to the depth of the groove



MERITS: A MOTOR JUST FOR YOU

- Motors are good at high speed rotation due to their characteristics.
- The motor output is designed to obtain a large amount of output by rotating at high speed.
- However, it takes a lot of cost and time to develop a new motor for yourself.

Therefore...

- You can use the gearbox to change the motor to suit your purpose!

That means...

You can make a cheap motor that suits you! !!

DEMERITS : BECOMES BIGGER

1. Large gear head space.
2. Gearhead reduces efficiency
3. Heat generation due to gear head loss

