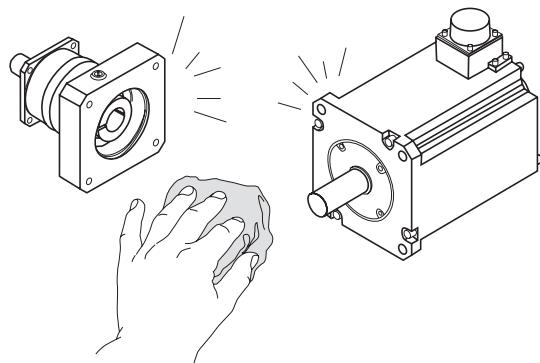
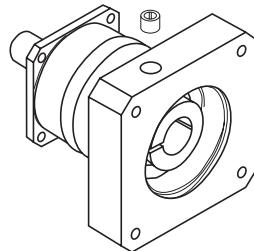


Installation Instructions

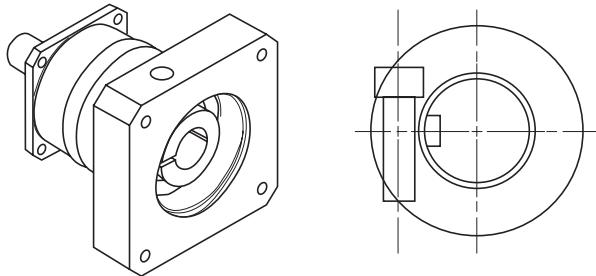
Mounting Procedure to Motor



1. Wipe off anti-rust agent and oil on the motor shaft.

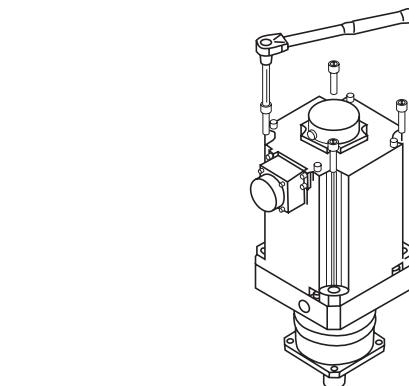


2. Remove the plug.



3. Turn the input shaft until the cap screw is seen. Make sure the cap screw is loosened. Place reducer vertically on the flat surface so the motor mounting part faces up.

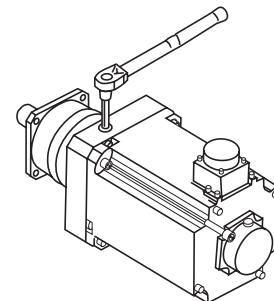
NOTE: In case the bushing has been attached, see reducer drawing example below to fix.



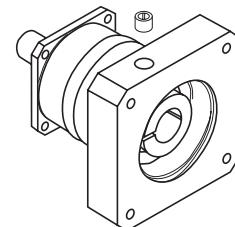
4. Carefully and gently insert the motor shaft into the input shaft. Make sure the motor flange is perfectly fit to the reducer's flange. Tighten the motor by installing and tightening bolts to the proper torque. (See table 1)

Reducer Installation

After confirming the installation surface is flat and clean, tighten the bolt using a torque wrench to the proper torque. (See table 2)



5. Tighten the clamping bolt of the input shaft with torque wrench to the proper torque. (See table 1)



6. Reinstall the plug. The procedure is complete.

Table 1

| Bolt Size | Motor Installing Bolts | | Clamping Bolts | |
|-----------|------------------------|------|----------------|------|
| | Nm | kgfm | Nm | kgfm |
| M3 | 1.3 | 0.11 | 1.9 | 0.18 |
| M4 | 3.0 | 0.26 | 4.3 | 0.44 |
| M5 | 6.0 | 0.52 | 8.7 | 0.89 |
| M6 | 10 | 0.89 | 15 | 1.5 |
| M8 | 20 | 2.1 | 36 | 3.7 |
| M10 | 38 | 4.3 | 71 | 7.2 |
| M12 | 67 | 7.3 | 125 | 13 |
| M16 | 134 | 14 | -- | -- |

Table 2

| Bolt Size | Tightening Torque | |
|-----------|-------------------|------|
| | Nm | kgfm |
| M3 | 2.0 | 0.18 |
| M4 | 4.3 | 0.44 |
| M5 | 9.0 | 0.89 |
| M6 | 16 | 1.5 |
| M8 | 36 | 3.7 |
| M10 | 72 | 7.2 |
| M12 | 125 | 13 |
| M16 | 310 | 32 |
| M20 | 603 | 62 |

* Recommended bolt: Strength 12.9

Cautions for Operation

- When the reducer is delivered to you, confirm that you received the exact model that you ordered.
Please wipe out the input and output shaft of the reducer which is covered by anti-corrosive oil.
 - * Remove rubber cap on the input shaft before you wipe the shafts.
 - * Lubricant (grease) is already filled in the reducer. The reducer is ready for operation out of the box.

Fixation and Installation

- Avoid use in places where rain or water drops directly, unless special wash down design.
- In case of use outdoors or in a places where dust and water drops directly, consult SHIMPO in advance.
- Install at 0°~40°C of surrounding temperature.
 - In case of use at temperature out of the mentioned (0°~40°C) range, consult SHIMPO in advance.
- Firmly fix with a bolt onto a solid stand without vibration.
- Install in a convenient location for future repair and inspection.

Cautions Prior to Starting the Operation

- Reducer can be used on arrival, since it has already been filled with lubrication.
- At initial operation, check the rotating direction of the output shaft and then gradually apply load.

Cautions During Operation

- Avoid overload.
- Ensure that input speed shall not exceed the number of maximum revolutions per minute specified.
- In the event the following occurs, stop the operation and check the following points:
 - If temperature sharply increases
 - If an abnormal noise appears sharply
 - If the number of revolutions becomes unstable sharply
- In the event the following occurs, respond immediately to the issue or contact us as soon as possible.
 - Is it under overload condition?
 - Is lubricant insufficient or deteriorated, or was another lubricant applied?
 - Is the axis, gear, and/or motor input damaged?
 - Are any connections unstable?

Disassembly

- ABLE REDUCER is designed to not be disassembled.

Lubricant Use

- The ABLE REDUCER is of grease-seal type in all models.
A specified amount of grease is filled at factory release so you can use as soon as it is delivered to you.
- It is impossible to exchange grease.
- In case of use outside of the recommended temperature range, consult SHIMPO in advance.

Daily Check Points

- Is the reducer case temperature excessively high during operation? (Up to + 50°C is not significant.)
- Is there an abnormal noise in the bearing, gear, etc?
- Is there an abnormal vibration in the reducer?
 - * Upon an abnormal phenomenon, immediately stop the operation and contact us.
- Is there a lubricant leak?

Periodic Check Points

- Are there overload and abnormal rotation?
- Are free, sprocket, and reducer assembling bolts loose?
- Is there an abnormal condition in the electric system?
- Checkup and repair of major parts
 - * Upon an abnormal condition, immediately stop the operation and contact us.
- Oil leak
 - * Upon an oil leak, contact us.

Scraping

Whenever scrapping the ABLE REDUCER, classify the parts by material into industrial wastes as specified in the laws and regulations of your local government. Materials of construction can be divided into the following four categories:

1. Rubber parts: Oil seal, seat packing, rubber cap, seal used for bearing on the motor flange, etc.
2. Aluminum parts: Motor flange, output shaft holder
3. Grease: Wipe off the grease from the individual parts with dry cloth and scrap into oils.
4. Iron parts: Parts other than those mentioned in the above