

Operating manual

Planetary gear unit and planetary geared motors P/PA/PE/PH/PHA/PHQ/PHQA/PHV/PHVA



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These operating instructions contain information about the transport, assembly, commissioning and service of , gear units/geared motors from STÖBER.

Observe the applicable documents of attached motors and additional drive components.

1 Operation in accordance with its intended use

Gear units/geared motors from STÖBER comply with the valid standards and regulations. They are intended for installation in commercial machines and systems. Intended use includes:

- Use of the gear unit/geared motor exclusively for the application that it was designed for.
- No modifications to the gear unit/geared motor by the customer.
- No overload of the gear unit/geared motor with regard to the maximum permitted speeds, torques and temperatures that are specified in the order confirmation.
- Compliance with the inspection and maintenance intervals.
- Observance of this documentation.

If the gear units/geared motors are to be used to left or hold loads, the machine manufacturer must check whether additional safety measures are required.

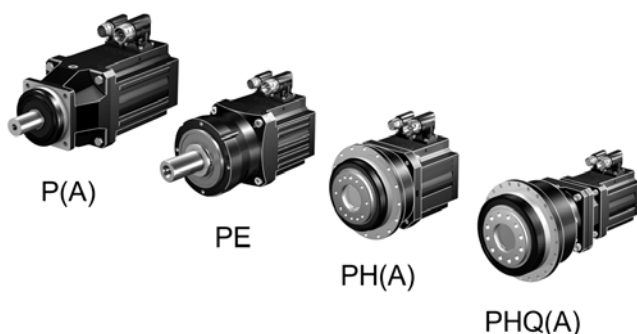
1.1 Surface temperature

To ensure safe operation of the gear unit, the surface temperature of the gear unit must not exceed the following temperature values:

- For mineral lubricants 80° C,
- For synthetic lubricants 90° C.

For this reason, observe the following:

- The standard version of gear units/geared motors from STÖBER may be used at surrounding temperatures between 0 °C and +40 °C. Different surround temperature ranges are specified in the order confirmation for special versions.
- The gear units must be protected from overload and be adequately ventilated. More detailed information can be found in the Assembly chapter.



2 Safety information



Burns!

The surface temperature of the gear unit can significantly exceed 65° C in operation!

- Allow the gear unit to cool down sufficiently before touching it or wear protective gloves.

Also follow the applicable national, local and system-specific requirements.

2.1 Personnel requirements

All work on the electrical equipment of the drive units must be performed by qualified electricians. Installation, maintenance and repairs of mechanical parts must be performed by fitters, industrial mechanics or persons with comparable qualifications.

3 Technical data

The technical data of the gear unit/geared motor can be found in the order confirmation. This refers to the lubricant used that is specified on the nameplate of the gear unit. Other technical data as well as dimensional drawings can be found in the appropriate catalog from STÖBER.

4 Transportation and storage

When transporting the gear units/geared motors make certain not to damage the shafts and bearings with impacts.

Sling the gear with a suitable support cable directly in the gear unit housing. In addition sling the motor mounted on the gear unit and make sure that there is no diagonal pull.

The gear units/geared motors may only be stored in enclosed, dry rooms. Storage in open air areas with a roof is only permitted for brief periods. Protect the gear units/geared motors from all damaging environmental effects and mechanical damage.

Avoid extreme temperature fluctuations with high relative humidity when the gear units/geared motors are being stored temporarily to prevent formation of water from condensation.

Long-term storage

If long-term storage is planned, protect the bare parts of the gear unit against corrosion.

For all gear units except for PE gear units: completely fill the gear unit with lubricant that is specified on the nameplate. Reduce the lubricant to the correct filling quantity according to the nameplate before commissioning the drive.

5 Mounting

Inspect the delivery for any transport damage immediately after you receive it. Notify the transport company of any damage immediately. Do not operate damaged gear units/geared motors.

Remove the packaging of the gear unit/geared motor and dispose of it according to the applicable legal requirements on site.

NOTICE

The lip seals of the shaft seal rings can be damaged by the use of solvents.

- ▶ When removing the corrosion protection, make sure that the lip seals of the shaft seal rings do not come into contact with solvents.

Completely remove all corrosion protection on the shaft ends prior to installation.

5.1 Installation positions

STOBER fills the gear units with the amount and type of lubricant specified on the nameplate. As the lubricant amount is independent of the installation position, the gear unit can be operated in any installation position.

For cyclic reverse operation (does not apply to PE gear units)

To ensure lubrication for circulating gearing parts for cyclic reverse operation from $\pm 20^\circ$ to $\pm 90^\circ$, pay careful attention to the position of the output shaft for the horizontal installation of the gear unit. Details can be found in the STOBER ServoFit catalog.

5.2 Installation of gear unit

Mount the planetary gear unit on an even, vibration-reducing and torsion resistant substructure. Use screws of strength class 10.9 to fasten the planetary gear unit P/PE/PA. Use screws of strength class 12.9 for all other planetary gear units. Fit the planetary gear unit on the pilot (H7 fit).

Observe the following for assembly:

- The permitted shear and axial forces may not be exceeded.
- Earthing the gear unit housing via metal components of the system must be ensured.

Gear units/geared motor with solid shaft; installation of power transmission elements:

The output shaft is equipped with a centering thread according to DIN 332, Sheet 2, which is provided both for fitting and for axial mounting of transmission elements (gear, chain wheel, pulley, coupling hub) by means of a central screw. Shaft ends with a diameter up to 55 have tolerance ISO k6, those larger than 55 have tolerance ISO m6. The fitting keys correspond to DIN 6885, Sheet 1.

NOTICE

Damage to the bearing race.

- ▶ Avoid all impacts to the output shafts.

5.2.1 Ventilation

The gear units are closed on all sides and are not vented.

6 Commissioning

Check the following before commissioning:

- Is it ensured that the gear unit is adequately vented and no external heat input (e.g. Via a coupling) is present? The cooling air may not exceed a temperature of 40°C .
- Does the attached motor cover the full flange surface of the motor adapter for gear units with motor adapters so that IP65 protection class is provided?
- For gear units with motor adapter ME: is the clamp coupling tightened to the specified torque? Is the plug properly mounted?
- If ring screws were dismantled, are the holes sealed with appropriate plugs?
- Is it ensured that no gear unit overload relating to the permitted torque can occur due to the mounted motor? (The permitted torque can be found in the order confirmation.)
- When operating the attached motor at a drive controller: is the drive controller parameterized so that a gear unit overload is prevented?

**WARNING!**

Risk of injury due to moving parts!

Before switching on the drive, check the following:

- ▶ Are no persons in danger due to start-up?
- ▶ Is all protection and safety equipment properly installed, in test operation too?
- ▶ Is the drive not blocked?
- ▶ Are the brakes released?
- ▶ Is the direction of rotation of the drive correct?
- ▶ Are components attached to the output such as feather keys or coupling elements adequately secured against centrifugal forces?

7 Service

7.1 Inspection and maintenance

The gear units are provided with life-long lubrication. The specification and filling quantity of the lubricant is given on the nameplate of the gear unit.

To ensure problem-free operation, check the shaft seal rings for leaks every 3000 operating hours or every 6 months at the latest.

7.2 In the event of disruptions

Changes compared to normal operation indicate that the function of the drive has been impaired. This includes:

- Higher power consumption, temperatures or vibrations
- Unusual noises or odors
- Leaks on the gear unit
- Monitoring devices responding

In this case, stop the drive as quickly as possible and contact STOBER Service.

7.3 Contact

STOBER Service will be happy to help you:

- If you have queries about the product
- In the event of a fault
- Carrying out maintenance work
- If you need spare parts.

Have the serial number and the type designation of the gear unit ready when you contact us. This can be found on the nameplate of the gear unit.

For spare part orders, you will also need the item number of the spare part in the relevant spare parts list.

Contact data Parent company Germany:

STÖBER ANTRIEBSTECHNIK GmbH & Co. KG
Kieselbronner Str. 12
75177 Pforzheim
Service Hotline +49 7231 582-3000
mail@stoeber.de

Contact data Subsidiary USA:

STOBER Drives Inc.
1781 Downing Drive
Maysville KY 41056
Service Hotline +1 606 563-6035
service@stober.com

7.4 Disposal

This product contains recyclable materials. Observe local applicable regulations for disposal.