These operating instructions contain information about the transport, assembly, commissioning and service of gear units/geared motors from STOBER.
Observe the applicable documents of attached motors and additional drive components.

1 Operation in accordance with its intended use

Gear units/geared motors from STOBER 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.

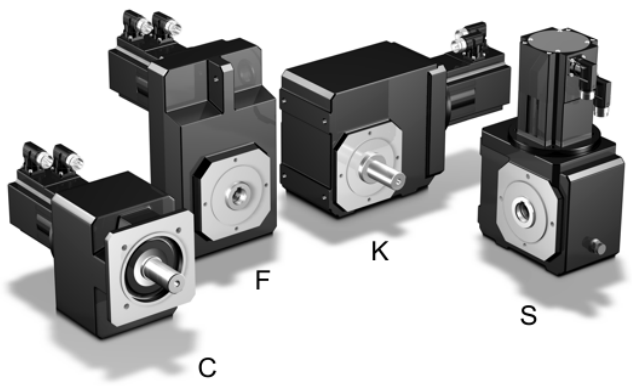
1.1 Surface temperature

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 STOBER 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 Mounting chapter.



2 Safety information

⚠ CAUTION!

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 STOBER.

4 Transportation and storage

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

For transport of the gear units/geared motors C6-C10 and K5 - K10 use the eyebolts on the gear unit housing. Lift the other gear units/geared motors directly on the gear unit housing using a suitable lifting cable.
Eyebolts are provided only for lifting the gear units/geared motors without additional attachments. When you remove the eyebolts after installation, the threaded holes must be permanently closed corresponding to the protection type of the gear units/geared motors.

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. 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.

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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 Mounting a motor to the gear unit

If you have a STOBER geared motor, you can skip this chapter.

Gear units from STOBER can be equipped with various motor adapter types, depending on the order. The motor adapter type of your gear unit can be found on the nameplate of the gear unit. Details on mounting a motor to the gear unit can be found in the following documents:

Document number	Motor adapter type
443161	ME
441247	MQ/MR
441846	MB

Tightening torques for the locking screw of the ME motor adapter
The corresponding tightening torque for the locking screw of an ME motor adapter can be found on the adhesive label on the motor adapter or in the following table.

Type	d2 [mm]	KS	s [mm]	M_A [Nm]
ME10	d2 ≤ 14	M5	4	5,9
ME10	14 < d2 ≤ 19	M6	5	10
ME20	d2 ≤ 19	M6	5	10
ME20	19 < d2 ≤ 24	M8	6	25
ME20	24 < d2 ≤ 32	M10	8	49
ME30	d2 ≤ 24	M8	6	25
ME30	24 < d2 ≤ 38	M10	8	49
ME40	d2 ≤ 38	M10	8	49
ME40	38 < d2 ≤ 48	M12	10	85
ME50	55 < d2 ≤ 60	M16	14	210

Abbreviations used:
d2 = Motor shaft diameter
KS = Nominal diameter of the locking screw
s = Size of the hexagon insert
M_A = Tightening torque for the locking screw

5.2 Installation positions

The version of the gear unit and the lubricant amount filled at the factory is matched to the installation position of the gear unit. The gear unit may therefore only be installed at the installation position specified in the order confirmation. A sign on the gear units shows which gear unit side must point downwards.

5.3 Installation of gear unit

Mount the gear unit on an even, vibration-reducing and torsion resistant substructure. Use screws of strength class 10.9 to fasten the gear unit via the pitch circle diameter. Use screws of strength class 8.8 for all other fastening types.
Observe the following for assembly:

- The housing feet and attachment area may not be braced against each other.
- The permitted shear and axial forces may not be exceeded.
- Screws for filling and draining the lubricant as well as available ventilation valves must be freely accessible.
- 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.

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Gear units/geared motor with hollow shaft and fitting key connection:
a) Shaft-mounted gear units are mounted on the drive shaft of the machine to be driven. The reactive torque must be supported either by flange-mounting of the gear unit or a torque bracket. If flange-mounted, the flange connection point on the machine must not exceed a right-angle deviation to the shaft axis of 0,03/100 mm (danger of distortion of bearings, excessive bending strain on the machine shaft).For gear units with a hollow shaft, always make sure that the machine shaft is aligned with the hollow shaft of the gear unit (max. deviation ≤ 0.03 mm).b) The hollow shaft bore is designed according to tolerance ISO H7 and the keyway according to DIN 6885 Sheet 1. The machine shaft must be ISO k6! The machine shaft must have a centering thread according to DIN 332, Sheet 2. The integrated fitting/push-off disk is provided for axial mounting of the gear unit by means of a central screw.

Fitting the gear unit onto the machine shaft:
- Coat machine shaft with mounting grease
- Coat hollow shaft spiral groove and keyway with mounting grease
- Fit gear unit by means of central screw. **Do not use hammer!**

NOTICE

Rust on of the gear unit.

▶ Never mount the gear unit without lubrication, since it will rust on and cannot be removed for repairs.

Disassembly: Press the gear unit off by means of the push-off disk and matching push-off screw. Support machine shaft to keep it centered! If the shaft is stuck, we recommend applying rust penetrating oil to the shaft ends in the key seat for an extended period.

Gear units/geared motor with hollow shaft and shrink disk:
The information under a) applies here as well and must be observed! The description of the shrink disk connection and the installation and safety instructions can be found in the TECHNICAL INFORMATION SHEET “Installation instructions for hollow shaft with shrink disk”.

5.4 Ventilation

Gear units of sizes C0 - C5, F1 - F6 and K1 - K4 are closed on all sides and are not vented. In contrast, gear units of sizes C6 - C10, K5 - K10, S0 - S4 are vented as standard, whereby the position of the vent valve depends on the installation position.
The vent valves are sealed with a transport lock to prevent lubricant escaping. Remove the transport lock after assembling the gear unit.

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.
- Is the transport lock of the vent valves removed?
- 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?

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7 Service

7.1 Maintenance

To ensure problem-free operation, carry out the following maintenance work:
Every 3000 operating hours, every 6 months at the latest
- Visually check the shaft seal rings for leaks
- Check operating noise for possible bearing damage
- If present, check rubber buffer of the torque arm and replace if wear or damage is detected

Every 5 years at the latest depending on operating conditions
- Replace shaft seal rings

Intervals for lubricant change

Gear unit type	Lubricant change
C0 – C5	not required
C6 – C9	every 10000 operating hours
F1 – F6	not required
K1 – K4	not required
K5 – K10	every 10000 operating hours
S0 – S4	every 5000 operating hours

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Comply with the lubricant specification and amount that is stated on the nameplate of the gear unit when changing the lubricant. Do not mix lubricants with different specifications.

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.

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