# Assembly Instructions

*for MGS motor adapter with curved-tooth coupling*

**ID 440703.04**



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en

### 1. General information

*Standardised motors (with round or square flange) to IEC or servo motors of common makes, can be mounted on the gear unit via MGS motor adapters. Standardised motors with normal rotational accuracy, axial run-out and concentricity values to DIN 42955-N for shaft end and mounting flange can be mounted. Oil-tightness is not essential. The centring diameter must be produced to tolerance ISO j6, the shaft end to tolerance ISO k6, and the key to DIN 6885, Sheet 1. It is possible to mount and dismount the motor without coming into contact with lubricant. The motor shaft is connected to the gear input shaft by the flexible, torsionally-rigid and maintenance-free curved-tooth coupling. This coupling runs dry and permits a continuous operating temperature of 80°C. The motor adapter requires no special maintenance.*

### 1.1 Motor adapters with backstops

*are used for drives which operate in only one direction, and with which it is required to prevent reverse rotation of the drive due to restoring forces after switching off the motor.*

***N.B.** The free direction of rotation of the drive must be quoted in the order. Before switching on the motor it is essential to ensure that the directions of rotation of motor and backstop are the same!*

### 2. Mounting the motor

### 2.1 Preparatory assembly work

*Unscrew the cardboard cover at the adapter housing and take the coupling hub for the motor out of the housing (leave plastic coupling sleeve pushed onto the counter hub). Check that the hole diameter and keyway of the coupling hub fit the motor shaft. The hole in the coupling hub is to tolerance ISO H7, and the keyway is produced to DIN 6885, Sheet 1.*

***N.B.** Shaft shoulder and flange face of the motor must be in the same plane according to the IEC specification. The motor shaft must not be longer than is quoted in this standard!*

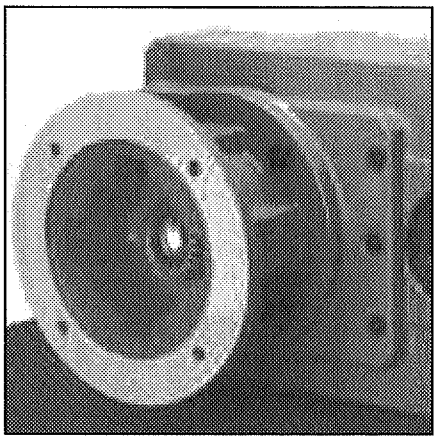
### 2.2 Assembly sequence

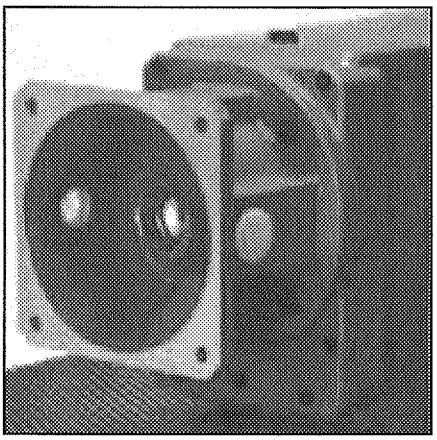
*- Grease motor shaft lightly.*
*- Press coupling hub onto motor shaft up to shaft shoulder (see illustration).*
*- Firmly tighten up grub set screw of the coupling hub.*
*- Place motor carefully on adapter housing so that the curved teeth of the coupling hub locate easily into the internal toothing of the plastic sleeve.*
*- Screw motor tightly onto adapter housing. Quality of fixing screws (metric and UNC threads) and tightening torques must be taken from the table below;*

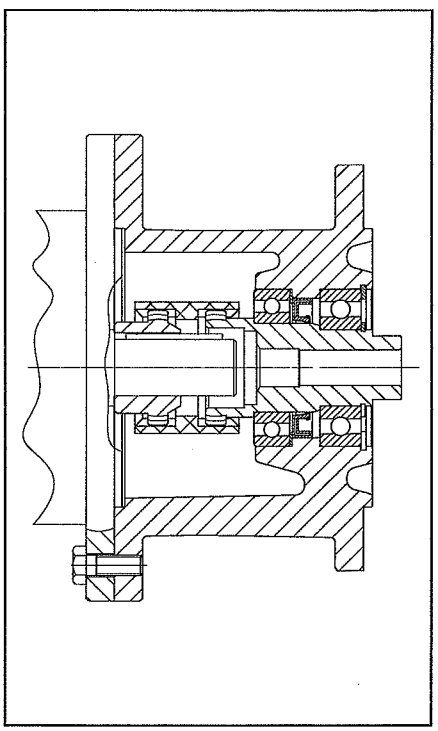
| ***Fixing screw:*** | *M5-8.8* | *M6-8.8* | *M8-8.8* | *M10-8.8* | *M12-8.8* |
|---|---|---|---|---|---|
| ***Tightening torque in Nm:*** | *5,9* | *10* | *25* | *49* | *85* |

***N.B. Before switching on the motor ensure that:***
*- the drive is not running against a stop*
*- all protective and safety devices are correctly installed, even for the purposes of test running!*
*- the drive is rotating in the correct direction (important in the case of with backstops).*

***For motor attachment via NEMA motor adapters see assembly instructions no. 441582 !***

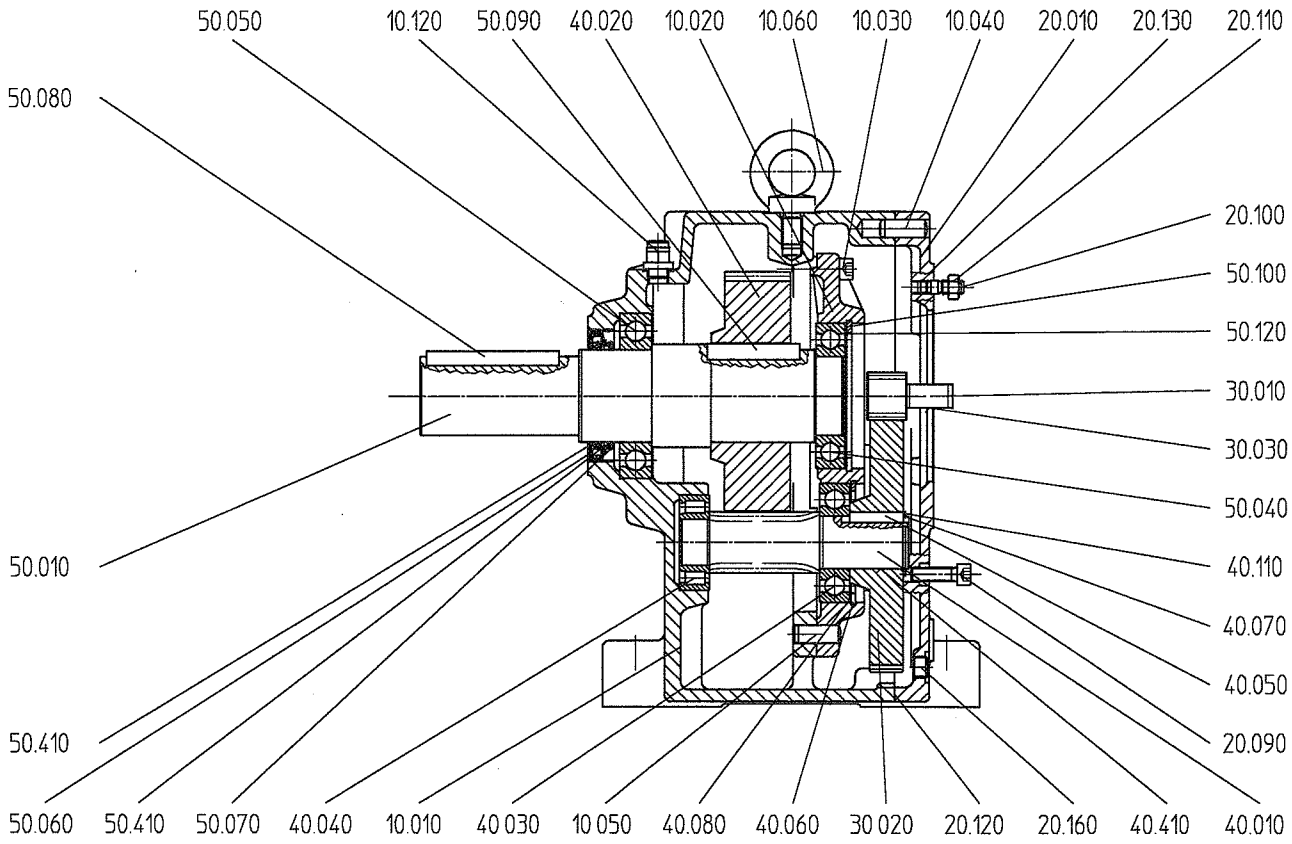






**Ausgabe: 20.11.2009**

## C602N - C902N / C612N - C912N




| Pos. Nr. | Bezeichnung |
|---|---|
| 10.010 | Getriebegehäuse |
| 10.020 | Lagerdeckel |
| 10.030 | Zylinderschraube |
| 10.040 | Zylinderstift |
| 10.050 | Zylinderstift |
| 10.060 | Ringschraube |
| 10.120 | Entlüftung |
| 20.010 | Motoranschlussflansch |
| 20.090 | Zylinderschraube |
| 20.100 | Stiftschraube |
| 20.110 | Mutter |
| 20.120 | Dichtmasse |
| 20.130 | Flachdichtung |
| 20.160 | Verschlussschraube |
| 30.010 | Einsteckritzel |
| 30.020 | Zahnrad |
| 30.030 | Klebstoff |
| 40.010 | Vorgelegewelle |
| 40.020 | Zahnrad |
| 40.030 | Rillenkugellager |
| 40.040 | Zylinderrollenlager |
| 40.050 | Passfeder |
| 40.060 | Sicherungsring |
| 40.070 | Sicherungsring |
| 40.080 | Passscheibe |
| 40.110 | Passscheibe |
| 40.410 | Klebstoff |
| 50.010 | Endwelle |
| 50.040 | Rillenkugellager |
| 50.050 | Rillenkugellager |
| 50.060 | Wellendichtring |
| 50.070 | Wellendichtring |
| 50.080 | Passfeder |
| 50.090 | Passfeder |
| 50.100 | Sicherungsring |
| 50.120 | Passscheibe |
| 50.410 | Montagefett |

**Für die Bestellung von Ersatzteilen muss angegeben werden:**
- **Positions-Nr. des Teiles nach Abbildung**
- **Typenbezeichnung nach Typschild am Getriebegehäuse**
- **Fabrikations-Nr. nach Typschild am Getriebegehäuse**

***For ordering of spare parts the following is to be indicated:***
- ***Item No. acc. to illustration***
- ***Type designation acc. to type plate at the gearbox housing***
- ***Serial No. acc. to type plate at the gearbox housing***

# Ersatzteilliste
für Stirnradgetriebe - Fußausführung

# *Spare Parts List*
*for helical gear units - foot mounting*

**ID 440821.02**



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| Item No. | Description |
|---|---|
| 10.010 | Gearbox housing |
| 10.020 | Bearing cover |
| 10.030 | Cheese-head screw |
| 10.040 | Parallel pin |
| 10.050 | Parallel pin |
| 10.060 | Lifting eyebolt |
| 10.120 | Breather plug |
| 20.010 | Motor connection flange |
| 20.090 | Cheese-head screw |
| 20.100 | Locking screw stud |
| 20.110 | Nut |
| 20.120 | Sealing compound |
| 20.130 | Flat gasket |
| 20.160 | Screw plug |
| 30.010 | Shank pinion |
| 30.020 | Gear wheel |
| 30.030 | Adhesive |
| 40.010 | Intermediate shaft |
| 40.020 | Gear wheel |
| 40.030 | Deep-grooved ball bearing |
| 40.040 | Cylindrical roller bearing |
| 40.050 | Feather key |
| 40.060 | Circlip |
| 40.070 | Circlip |
| 40.080 | Shim |
| 40.110 | Shim |
| 40.410 | Adhesive |
| 50.010 | Solid shaft |
| 50.040 | Deep-grooved ball bearing |
| 50.050 | Deep-grooved ball bearing |
| 50.060 | Oil seal |
| 50.070 | Oil seal |
| 50.080 | Feather key |
| 50.090 | Feather key |
| 50.100 | Circlip |
| 50.120 | Shim |
| 50.410 | Assembly grease |

**Please comply with the supplementary operating manual ID 442045 for use of the gear units in areas where there is risk of explosion !**

This operating manual contains information on the transport, installation and commissioning of STÖBER Gear Units, Geared Motors and their components.

In the event of any unclear points, we recommend that you contact STÖBER with the model designation and serial number, or have the installation and maintenance work carried out by a STÖBER service partner.

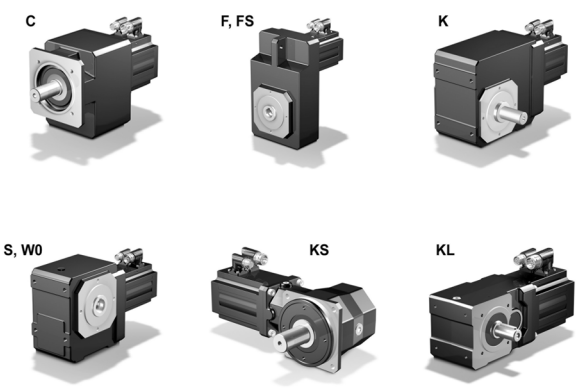
## 1 Operation in accordance with its intended use

Gear Units/Geared Motors may be used only for the operation of machines and equipment. It is necessary to comply with the limits defined by the technical data.
If Gear Units/Geared Motors are to be used for lifting or holding loads, the machine design engineer must determine whether additional safety measures are necessary.
All operating factors must be taken into account when configuring Gear Units/Geared Motors (see configuration aids in the STÖBER catalogs). On grounds of operational safety, the Gear Units/Geared Motors may then be used only for the purpose for which they were configured. Any overload to the gear units is deemed non-intended use.
The fulfillment of any warranty claims requires exact compliance with the information and instructions in this operating manual. Modifications to the Gear Units/Geared Motors will void the warranty.
Standard models of Gear Units/Geared Motors may be operated only at ambient temperatures between 0 °C and +40 °C.

***NOTICE***

**Provide for unhindered air circulation in order to prevent heat accumulation in the entire drive system (maximum permissible gear unit temperature ≤ 80 °C, with synthetic transmission oil ≤ 90 °C).**

▶ For operation outside of this temperature range, the drive unit must be equipped accordingly at the factory (for deviating ambient temperatures, see the attached order confirmation).




Observe the safety and hazard information in this operating manual and all supplementary documents on Gear Units/ Geared Motors and other components!

## 2 Technical data

The technical data for the Gear Units/Geared Motors and associated components is specified on the respective rating plates. This refers to the transmission oil used (also specified on the rating plate). Further technical data and dimensional drawings can be found in the corresponding STÖBER catalogs.

***NOTICE***

**For gear units with motor adapter:**

▶ Please comply with the permissible torques. Limit the power at the inverter, if necessary.

## 3 Safety information

In addition to the information in this operating manual, you must also comply with the applicable national, local and facility-specific regulations.

**⚠ WARNING!**

**- electric shock due to contact with live bare parts**

**- injuries due to moving or rotating parts**

**- burns due to contact with the gear unit or motor housing (surface temperatures above 100 °C are possible)**

▶ The machine design engineer must provide for covers or other protective measures, if needed. Connector or terminal box covers on the motor must be closed during operation. All work on the drive unit may be performed only in the de-energized state.

### 3.1 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.

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### 3.2 In the event of disruptions

**NOTICE**

**Irregularities in operation indicate impaired functionality. Examples of this include:**

**- increased power consumption, temperatures or vibrations**

**- unusual noises or odors**

**- leaks in the gear unit**

**- triggering of monitoring devices**

- ▶ In this case, shut down the machine as quickly as possible and notify the responsible technician immediately.
- ▶ For entering the movement area of a motor, e.g. within a system / machine, in particular under raised loads, the machine design engineer must determine the protective measures to be taken.

## 4 Transport, storage and preservation

When transporting the Gear Units/Geared Motors, take measures to ensure that the shafts and bearings are not damaged by impacts.
Store the Gear Units/Geared Motors only in closed, dry indoor areas. Storage in outdoor areas covered by a roof is permitted only temporarily. Protect the gear unit/ geared motors against all harmful environmental influences and mechanical damage.
Avoid extreme temperature fluctuations combined with high humidity during intermediate storage of the Gear Units/ Geared Motors in order to prevent the condensation of water. If long-term storage is planned, protect bare parts of the gear unit against corrosion. The customer must fill the gear unit completely with lubricant. Before operating the unit, the lubricant must be reduced to the correct level according to the rating plate.

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.

## 5 Mounting

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

**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.

### 5.1 Ventilation

The gear units of the sizes C0-C5, F1-F6, FS1-FS6, K1-K4, KL1 - KL2, KS4-KS7 and W0 are enclosed on all sides and are not ventilated. The gear units of the sizes C6-C10, K5-K10, S0-S4 are as standard ventilated unless otherwise spezified; the position of ventilation valve depends on the mounting position of the gear unit.
The metal ventilation valves are closed with a transport safety device to prevent oil leakage. Remove the transport safety device before commissioning the drive unit.

### 5.2 Installation of gear unit

The underlying construction for mounting the gear unit must be level and torsion resistant, in order to prevent distortion of the gear unit housing or of the output shaft bearings.

**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.

**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 MoS2 paste
- Coat hollow shaft spiral groove and keyway with antirust grease

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- 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.

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**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”.

## 6 Commissioning

Electrical connections provided by the customer must comply with applicable regulations.
**Note:**
The electrical connection diagram and safety regulations are with the delivery documents of the motor. Comply exactly with the information and safety regulations therein.

**⚠ WARNING!**

**Danger of injury from moving parts.**

Before commissioning the drive unit, ensure that...

▶ no one will be endangered by startup of the machine.

▶ all protective guards and safety equipment have been properly installed, also for a test run!

▶ the drive unit is not blocked.

▶ the brakes have been bled.

▶ the direction of rotation is correct.

▶ components mounted on the power take-off end are sufficiently secured against centrifugal force (e.g. fitting keys, coupling elements, etc.)

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## 7 Maintenance

The gear units with the sizes C0-C5, F1-F6, FS1-FS6, KL1-KL2, K1-K4, KS4-KS7 and W0 are equipped with long-term lubrication and require no maintenance when used as intended. The gear units of the sizes C6-C9, K5-K10 require an oil change after 10.000 service hours; if used in wet areas, after 5000 service hours. Helical worm gear unit S0-S4 always needs an oil change after 5000 hours.
The gear units are filled with the quantity and type of lubricant specified on the rating plate. The lubricant fill level and the setup of the gear units depend on the mounting position.
**Therefore, any modification of the gear units is permitted only after consulting STÖBER.**

***NOTICE***

**Problems when mixing lubricants.**

▶ Do not mix POLYGLYCOL based lubricants with mineral oil.

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## 8 Troubleshooting

In the event of a malfunction of the drive unit, call the STÖBER service department at 07231 582-1190 (-1191, -1224, -1225) in order to locate the nearest STÖBER service partner for further action.
**In urgent cases outside of normal business hours, you can call the STÖBER 24-hour service hotline at 01805 786323 / 01805 STOEBER**

## 9 Spare parts

Include the following when ordering replacement parts:
– item no. of the part according to the replacement parts lis
– model designation according to the rating plate
– serial number according to rating plate
You can reach the STÖBER replacement parts service by phone: 07231 582-1190 (-1191, -1224, -1225), or fax: 07231 582-1010.
Important notice: The replacement parts lists are not assembly instructions! They are not binding for assembly of the gear unit. Use only original replacement parts from Stöber. Otherwise we will provide no guarantee and will assume no liability for resulting damages!

## 10 Disposal

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

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