STÖBER TRASMISSIONI s.r.l.
società controllata da Stober Antriebstechnik Gmbh & Co. - Germany
VIA RISORGIMENTO 8 , 20017 MAZZO DI RHO (MI)
tel 02-93909570 fax 02- 93909325
PARTITA IVA 02930610965

In allegato alla presente vi consegniamo la documentazione

da voi richiesta relativa ai seguente ordini:

NR.100983 del 08/06/2010 – commessa 1E35Z/009 item 62 A 1B.3

Milano,14/09/2010

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ATTESTATO DI FUNZIONAMENTO E MATERIALI RIDUTTORI STOEBER
MATERIALS AND DECLARATION OF OPERATING TEST STOEBER GEARBOX

FABBRICANTE MANUFACTORER	: STOEBER ANTRIEBSTECHNICK GmbH PFORZHEIM-D
TIPO TYPE	: C402F0039MR40 V1
MATRICOLA SERIAL NUMBER	: 2041923
RAPPORTO RIDUZIONE RATIO	: 1/3,894
FORMA COSTRUTTIVA MOUNTING POSITION	: IMV1, VERTICALE VERSO IL BASSO
MOTORE(vs.fornitura) MOTOR	:
ACCESSORI ADDITIONAL PARTS	: Lanterna MR40
DATA PROVA DATE OF TESTING	: 10/09/2010
DATA CONSEGNA DATE OF DELIVERY	: 13/09/2010

MATERIALI
MATERIALS

ALBERI SHAFTS	: 16MnCV5
INGRANAGGI WHEELS	: 16MnCV5
CARCASSA CASING	: GG25

Manufacturer

STÖBER ANTRIEBSTECHNIK GmbH + Co.
Kieselbronner Straße 12
75177 Pforzheim
Germany

Product designation

- *Helical gear units C*
- *Shaft-mounted helical gear units F, FS*
- *Helical bevel gear units K*
- *Bevel gear units KX*
- *Helical worm gear units S*
- *Worm gear units W*
- *Planetary gear units P, PE, PH*
- *Variable speed drives R*
- *Small variable speed drives RD11*
- *Combinations of these gear units*

- *A. C. motors with squirrel cage rotor D*
- *Servo motors ED + EK*
- *Servo motors ES*
- *Permanent magnet motors PF*

*The above products (as well as their component parts) of **STÖBER ANTRIEBSTECHNIK GmbH + Co.** are not machines within the meaning of EC Directive 98/37/EC, but only intended as components for the incorporation into machines or plants. Their commissioning is not permitted until the machines or plants into which these STÖBER products are incorporated correspond to the provisions of EC Directive 98/37/EC!*

The compliance of the above named products with the provisions of EC Directive 98/37/EC is proven by their conformance to the following standards:

EN 292 Parts 1 and 2
EN 294
EN 563
EN 953
EN 60204 Part 1 [1)]
EN 60034 [1)]

[1)] *not valid for gear units (only for motors)*

This certificate attests the conformity with the named directives, however, it is not a promise of properties in the meaning of product liability.

08.04.2003
Date

F. Müller
F. Müller, Head of Department Division MCT

Ausgabe: 10.08.1999

Ersatzteilliste

für Stirnradgetriebe -
Gewindelochkreis und Flansch

Spare Parts List

for helical gears -
tapped holes and flange

Nr.: 440 814.01

STÖBER ANTRIEBSTECHNIK
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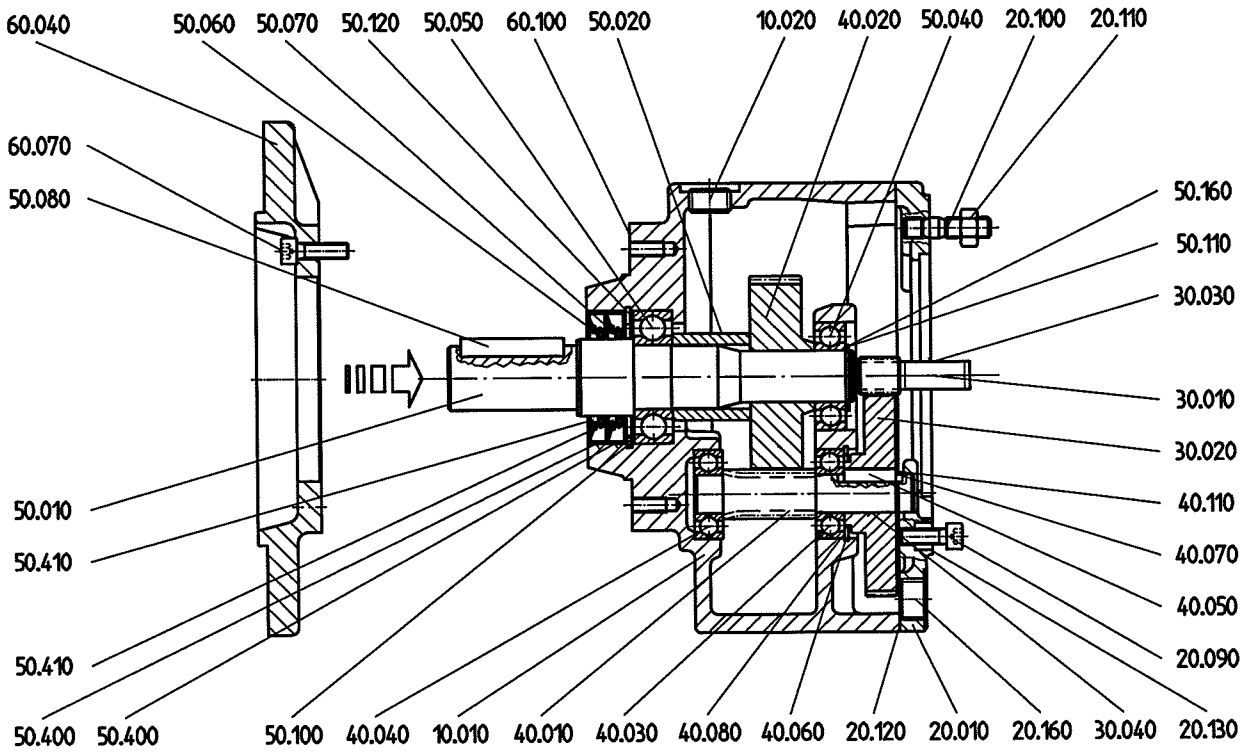
Telefon 07231-5820, Telefax 07231-582-197
eMail: mail@stoeber.de • Internet: http://www.stoeber.de

C002G(F) - C502G(F)



Pos. Nr.	Bezeichnung
10.010	Getriebegehäuse
10.020	Verschlußschraube
20.010	Motoranschlußflansch
20.090	Zylinderschraube
20.100	Stiftschraube
20.110	Mutter
20.120	Dichtmasse (bei C0 Flachdichtung)
20.130	Flachdichtung
20.160	Verschlußschraube
30.010	Einsteckritzel
30.020	Zahnrad
30.030	Klebstoff
30.040	Dichtmasse
40.010	Vorgelegewelle
40.020	Zahnrad
40.030	Rillenkugellager
40.040	Rillenkugellager
40.050	Paßfeder
40.060	Sicherungsring
40.070	Sicherungsring
40.080	Paßscheibe
40.110	Paßscheibe
50.010	Endwelle
50.020	Distanzbuchse
50.040	Rillenkugellager
50.050	Rillenkugellager
50.060	Wellendichtring
50.070	Wellendichtring
50.080	Paßfeder
50.100	Sicherungsring
50.110	Sicherungsring
50.120	Paßscheibe
50.160	Paßscheibe
50.400	Dichtmasse
50.410	Montagefett
60.040	Abtriebsflansch
60.070	Zylinderschraube
60.100	Dichtmasse

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 gear housing***
- ***Serial No. acc. to type plate at the gear housing***

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Item No.	Description
10.010	Gearbox housing
10.020	Screw plug
20.010	Motor connection flange
20.090	Cheese-head screw
20.100	Locking screw stud
20.110	Nut
20.120	Sealing compound (CO with flat gasket)
20.130	Flat gasket
20.160	Screw plug
30.010	Shank pinion
30.020	Gear wheel
30.030	Adhesive
30.040	Sealing compound
40.010	Intermediate shaft
40.020	Gear wheel
40.030	Deep-grooved ball bearing
40.040	Deep-grooved ball bearing
40.050	Feather key
40.060	Circlip
40.070	Circlip
40.080	Shim
40.110	Shim
50.010	Solid shaft
50.020	Spacer sleeve
50.040	Deep-grooved ball bearing
50.050	Deep-grooved ball bearing
50.060	Oil seal
50.070	Oil seal
50.080	Feather key
50.100	Circlip
50.110	Circlip
50.120	Shim
50.160	Shim
50.400	Sealing compound
50.410	Assembly grease
60.040	Output flange
60.070	Cheese-head screw
60.100	Sealing compound

Ersatzteilliste

für Motoradapter MGS mit Bogenzahnkupplung

Spare Parts List

for motor adapter MGS with curved teeth coupling

Nr.: 440950.02

STÖBER ANTRIEBSTECHNIK
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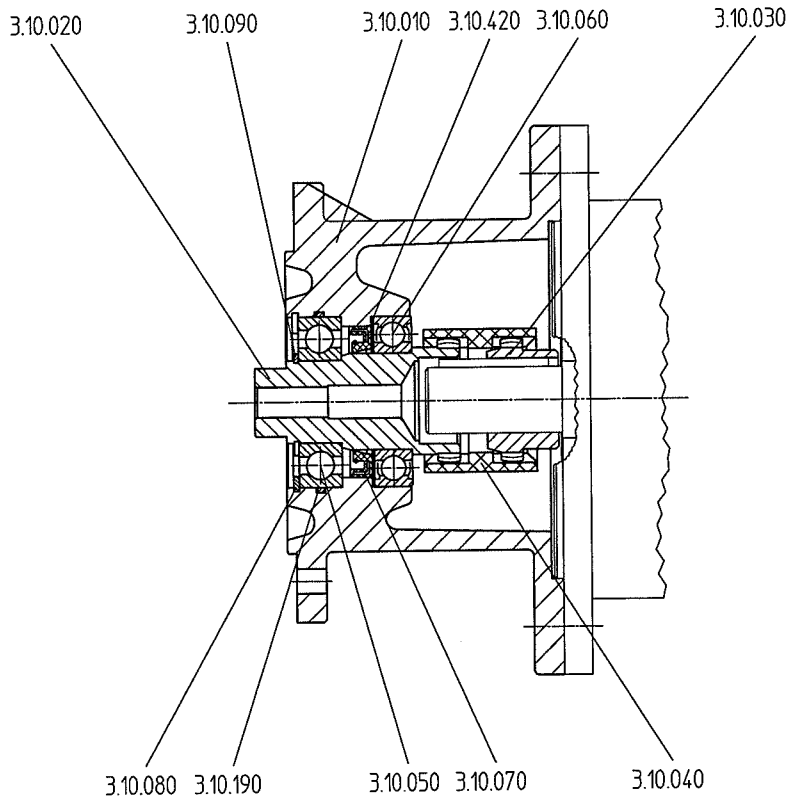
MR10 - MR60, MQ10 - MQ50



Pos. Nr.	*Bezeichnung*	*Item No.*	*Description*
3.10.010	Kupplungsgehäuse	*3.10.010*	*Coupling housing*
3.10.020	Wellenkupplung	*3.10.020*	*Shaft coupling*
3.10.030	Wellenkupplung Nabe	*3.10.030*	*Shaft coupling hub*
3.10.040	Wellenkupplung Hülse	*3.10.040*	*Shaft coupling bush*
3.10.050	Rillenkugellager	*3.10.050*	*Deep-grooved ball bearing*
3.10.060	Rillenkugellager	*3.10.060*	*Deep-grooved ball bearing*
3.10.070	Wellendichtring	*3.10.070*	*Oil seal*
3.10.080	Sicherungsring	*3.10.080*	*Circlip*
3.10.090	Sicherungsring	*3.10.090*	*Circlip*
3.10.190	O-Ring	*3.10.190*	*O ring*
3.10.420	Ausgleichscheibe	*3.10.420*	*Equalizing ring*

Ausgabe: 25.04.2000

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 gear housing*
- *Serial No. acc. to type plate at the gear housing*

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It is essential to read these instructions before commissioning the drive!

1. General information

The operating instructions contain all the information necessary for installation, commissioning, maintenance, etc. of STÖBER MGS helical gears and helical gear motors (both models are referred to jointly as "MGS helical gears/motors") and their components. Strict observation of the information and specifications in these operating instructions is a prerequisite for the acceptance of any claims made under guarantee. Subsequent modifications to the entire drive must be agreed with us in advance, as no guarantee can otherwise be provided.

We emphasize to observe the security-, as well as the risk-indications of the operating manual.

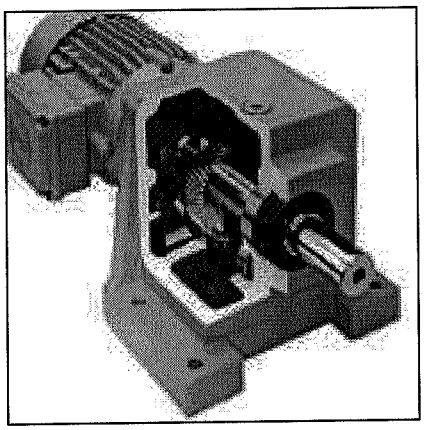
2. Technical data

The technical data of the drive are shown on the name plate and on the enclosed order confirmation and apply to the gearoil which is also shown on the name plate. Dimensions may be obtained from the dimension sheets in the appropriate STÖBER catalogue or from the specific installation drawing.

For gearboxes with motor adapter:
Please account the permissible torque. If neccessary limit the current of the servo inverter.

3. Design and method of operation

STÖBER MGS helical gears/ motors are (like all the gears in the MGS range) constructed on a modular principle and available in eleven gear sizes. The input shaft and output shaft are arranged coaxially. Several versions of the housing make for a wide range of potential uses of MGS helical gears/motors. The helical gearing is finished to a high standard. In conjunction with the inherently rigid modular block design and damping effect of the housing this results in low sound pressure levels.



4. Safety

4.1 Correct use of the drive

MGS helical gears/motors are designed for the power outputs and loads specified in the catalogue. For reasons of operating safety, the gears may therefore only be used for the application for which they were designed, making allowance for all the service factors (see selection aids in the STÖBER catalogues).
Their use must meet the requirements of these operating instructions in every respect. Speed, torque, load coefficient, basic service factors, etc. are specified in the confirmation of the order.

4.2 Mechanical, electrical and therminal risks

Instructions for avoiding both mechanical and electrical hazards in assembly, installation, handling, maintenance, etc. should be taken from the TECHNICAL INFORMATION SHEETS or OPERATING INSTRUCTIONS for mechanical or electrical parts made by other manufacturers (see Appendix). Mechanical hazards, e.g. from a moving gear shaft, must be precluded by efficient safety guards. Potential electrical hazards must also be prevented by strict observation of the instructions shown in para. 7 under the heading "Commissioning".
When touching the gearbox housing by pure hand, it may cause, because of the operating temperature, nervous reactions or burns!
Caution in the case of hoist operations!
The gear is not self-locking. When carrying out assembly work on the holding brake or on the brake motor the applicable safety instructions (e.g. VBG) for work under suspended loads must be strictly observed!

5. Carriage, storage and preservation

The drive has been tested at the factory and then correctly packed. However, the consignment must be checked for completeness immediately after receipt and the gear and its accessories examined for damage which may have occurred during carriage. Any claims must be registered with the carrier immediately. The lifting eyebolt must be used for internal carriage of the unpacked drive in the case of C6 to C10 gears. Smaller and lighter gears must be lifted by suitable carrying straps attached directly to the gear housing. Shafts and their bearings must not be damaged by shocks!
Condensation in the oil well of the gear will cause rust to form. It is imperative that this be avoided. The intensity of this process depends on the relative humidity, variations in temperature and the duration of storage.
If long-term storage is anticipated, the gear must be completely filled with lubricant, which must then be reduced to the correct level in accordance with the name plate before commissioning takes place. The bare parts of the gear must be preserved.
The factory must be consulted if intermediate storage of the gear is anticipated.

6. Assembly

6.1 General information

The protective paint on the ends of the shafts must be completely removed prior to assembly.
N.B. If solvents are used, they must not come into contact with the lips of the oil seals.

6.2 Installation position and site

The gear may only be installed in the mounting position for which it was ordered. If the mounting position is changed, the inner structure of the gear and the volume of lubricant may also change. In gear sizes K5 to K9 the lubricators must also be replaced. In this case consultation with the factory is essential. Standard versions of helical gears/motors are suitable for ambient temperatures from + 10°C to +40°C.

N.B. The gear must be fitted ex works for operation at lower or higher temperatures. (It is essential that the ambient temperature is specified when ordering!)

An uninterrupted air supply must be guaranteed to prevent heat from accumulating in the gear as a whole.

6.3 Ventilation

Gears in sizes C0 to C5 are fully enclosed on all sides and are not ventilated. Gears in sizes C6 to C10 are, however, ventilated, whereby the type of breather valve depends on the mounting position of the gear.

N.B. *Closable breather valves must be opened before the drive is commissioned, by turning the knurled knob to the left (see symbol). Loosely-attached breather valves must be exchanged for the plug located in the gear housing in the intended gear mounting position.*

6.4 Gear installation, fitting of transmission elements

The substructure for mounting the foot- or flange-mounted gear must be level and torsionally rigid, to prevent warping of the gear housing or the output shaft bearings.
The output shaft is fitted with a centring thread in accordance with DIN 332 sheet 2, which is intended both for slip-on and axial mounting of transmission elements (gear wheel, sprocket, belt pulley, coupling hub), using a centring screw. Shaft ends up to a diameter of 55 have a tolerance of ISO k6 and those of over 55 in diameter, ISO m6. The key corresponds to DIN 6885 sheet 1.

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N.B. The output shaft must not be subjected to any blows, as this will damage the bearing race.

6.5 Fitting electrical and mechanical drive components

Installation and safety instructions (and maintenance instructions, if applicable) for individual drive components should be taken from the relevant "TECHNICAL INFORMATION SHEET", under "Recommendations for assembly ..." (see Appendix).

6.6 Mounting the motor using the motor adapter

A range of motor adapters with round or square flanges is available for mounting standard motors (in accordance with IEC or NEMA-C) or current makes of servo motors on the gear, including their mounting by the client. The assembly and safety instructions for the respective versions of adapters and couplings (and maintenance instructions, if applicable) for gears with motor adapters will be found in the "TECHNICAL INFORMATION SHEET" under "Recommendations for assembly information of motor adapters" (see Appendix).

7. Commissioning

Electrical connections must fulfil applicable regulations and be properly implemented by suitably qualified staff (see DIN VDE 0105 or IEC 364 for a ruling on qualified staff). The necessary details are specified in the rating and name plates on the motor and its attachments (brake, forced cooling fan, tachogenerator, PTC thermistor, etc.). It is important to use a device to protect the motor winding against thermal overload. If the motor is not protected, our guarantee for the motor winding will be void.
Commissioning and safety instructions, primarily for electrical connections (e.g. for three-phase AC motors, DC motors, brakes, etc.) will be found in the "TECHNICAL INFORMATION SHEET" under "Commissioning ..." or in the "OPERATING INSTRUCTIONS" for components made by other manufacturers (see Appendix).

N.B. Before commissioning the gear, ensure that:
- the drive is not running against a stop;
- any brakes are released;
- all protective and safety devices have been correctly installed, even for the purposes of test running;
- the drive is rotating in the correct direction (important in the case of backstops).

8. Care and maintenance

8.1 General information

Due to their design, the maintenance of STÖBER helical gears/motors is kept to a minimum. Individually necessary maintenance instructions may be found in the "TECHNICAL INFORMATION SHEET" under "Recommendations for assembly ..." (see Appendix). The instructions must be strictly observed in order to justify any claims made under guarantee.
Refer to the OPERATING INSTRUCTIONS for parts made by other manufacturers for the care and maintenance of such parts belonging to drives. Components which are subject to wear due to the operating conditions (e.g. frictional brake linings) must be included in regular care and maintenance procedures. Care must be taken to ensure that it is impossible for the drive to be powered up during maintenance work and that no exposed parts can unintentionally become live.
The protective and safety devices must be reinstalled on the gear when these procedures have been concluded.

8.2 Lubrication

Gears in sizes C0-C5 have long-term lubrication and do not require any maintenance if used correctly. An oil change must be carried out on gears in sizes C6 to C10 after 5000 operating hours, or after 2000 operating hours in the case of use in wet areas (this must be specified in the order). The disposal of old lubricants, cleaning agents, receptacles, etc. must be in accordance with statutory requirements.
In the absence of any specification to the contrary on the name plate, the gears must be filled with CLP 198 - 242 mm ^{2}/ s high-pressure gear oil at 40° C ISO VG 220. The quantity of lubricant to be used depends on the gear mounting position and is also specified on the name plate.
It is important that point 6.2 "Installation position" and point 6.3 "Ventilation" are observed.

N.B. POLYGLYCOL-based lubricants cannot be mixed with mineral oil.

9. Rectifying faults

If any faults occur in a drive, the STÖBER Service Department can be reached by telephone on ++49 7231 582190/191/224 or 225. If necessary they will provide the name of the nearest STÖBER service agent for any further action.

In urgent cases the STÖBER 24-hour service can be contacted on ++49 172 7273 204 outside office hours.

10. Spare parts

The gear is shown with part numbers in the TECHNICAL INFORMATION SHEET under "Spare parts list - Helical gears/motors", etc. (see Appendix). The following must be stated when ordering spare parts:

- The part number according to the illustration
- The designation stated on the name plate on the gear housing
- The serial number on the name plate on the gear housing

The STÖBER Spare Parts Service can be reached by telephone on ++49 7231 582190/191/224 or 225, or by fax on ++49 7231 582 234.

Important note: Spare parts lists are not assembly instructions. They are not binding for the purposes of assembling gears. Only original parts supplied by ourselves may be used as spare parts, otherwise no claims will be admitted under guarantee.

11. Disposal

Observe the pertaining disposal regulations:
- *Oil according to the used oil ordinance (e.g. no contamination with solvents, cleaning agents or paint residues)*
- *Separate components for recycling into:*
  - *scrap iron*
  - *aluminium*
  - *non-ferrous metals (grub gears, motor windings)*

Assembly Instructions

for MGS motor adapter with curved-tooth coupling

Nr.: 440 703.01

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1. General information

Standardised motors (with round or square flange) to IEC and NEMA-C, 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 (USA Standard for NEMA motor shafts).

***N.B.** Shaft shoulder and flange face of the motor must be in the same plane according to the IEC specification, and appropriately offset according to the NEMA specification. The motor shaft must not be longer than is quoted in these two standards!*

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:	M8-8.8	M10-8.8	M12-8.8	3/8" - 3F	1/2" - 3F
Tightening torque in Nm:	25	49	85	45	109

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).