

Installation and operating instructions

1.0 Technical documentation

The documentation sent with each shipment comprises:

1. Catalogue
2. Technical description of unit
3. Circuit diagram

Above items are secured to the drive in a protective envelope when delivered.

The documentation is available in
German
English
French.

IMPORTANT!

Read all documents carefully before commissioning or assembly. An appropriately skilled person must carry out installation and electrical connection! Technical operating data and other important information is attached to the drive with adhesive film and must be followed!

2.0 Delivery condition and warranty

2.1 Warranty claims

All gear units are put through a thorough test run before delivery and are checked in accordance with the order data. During the warranty period, the cover of the terminal box or switching unit may be opened only in order to connect the unit. If the unit is disassembled in any other way, we are no longer obliged to provide a warranty service.

2.2 Repair

If repairs are necessary, we recommend that you send the unit to Messrs. Franz Morat KG or to the appropriate foreign representative. In urgent cases, a service technician can be requested at short notice from the manufacturer's works (subject to a charge).

3.0 Installation and electrical start-up

3.1 Installation and Fitting

The gear unit must be mounted so as to avoid distortion of the casing. There is a risk of damaging the roller bearings and retaining rings if force or hammer blows are used to assemble couplings, gear wheels, chains sprockets etc. We recommend always that parts to be assembled to the plug shaft (if supplied) should be warmed to c.a. 200°C to ease mounting. The gear motor can be mounted using the 4 tapped holes. It is important to avoid using excessively long screws as this can split the casing. In order to simplify adjustment of limit switches we recommend that mid-position of limit switches is equivalent to mid-position of travel during assembly of gear motor.

3.2 Preparation

For drive units where the duty rating is in excess of 60 % it is important to ensure that the top seal screw is removed and the air vent screw put in its place (separately supplied). Gear motors less than 60 % duty rating do not require an air vent.

3.3 Electrical start-up

Note: It is important to ensure that when working on an open terminal box, that your work area is volt free and power cannot be turned on accidentally. The gear motor should not be connected to mains power before you have ensured that the earth connection is made. The following always applies for first electrical start-up:

Read the circuit diagram and check that the motor voltage (refer name plate) is correct for the given supply. All terminals are to be connected in accordance with the circuit diagram. It is important to note that for COMPACTA units with limit switches, but without reversing contactors the limit switch circuit is connected through external contactors, otherwise the limit switches may be damaged. The motor thermal cut-out and limit switches must not be bridged or disconnected otherwise there is a risk of electrical overload and mechanical damage.

Subject to technical changes

First check the direction of rotation by jogging. If necessary reverse the direction of rotation by changing the 2phases of the mains lead. Refer to separate instructions Page 32 for adjustment of the limit switch control.

3.4 Note

It is not advisable to reverse polarity in order to stop the gear motor as it will lead to an accelerated rate of wear of the components.

4.0 Maintenance

4.1 Lubricant

The drives are delivered with a long-life lubricant (sufficient for approx. 5 to 7 years) and require no relubrication for normal short-time operation. For continuous operation (100 % duty cycle), the oil should be changed after approximately 18 months. When doing so, use lubricant as follows:

COMPACTA Types MS and MR:

These units have a single oil chamber and the oil fill quantity is independent of installation geometry (MS 0.3 litre/MR 0.6 litre). A synthetic oil ISO.VG680 based on Polyglycol ist to be used.

COMPACTA AG

These gear units have two separate oil chambers and the quantities required will need to vary with installation geometry. Directly behind the motor is chamber 1 for the primary spur gear, oil type ISO-VG680. Chamber 2 is for the worm gear with additional planetary gears for the AG60 which requires lubricant Type ISO VG 1000. Where the COMPACTA is used for continuous duty, each chamber requires an air vent to be fitted. To avoid oil leakage during transport, the air vents are supplied loose and seal screws fitted.

5.0 Safety instructions

5.1 Rotating parts

All rotating parts are to be provided with guards to prevent unintentional contact .
(legislation on technical work equipment dated 24.06.68).

5.2 Approved Usage

It is not permissible to use the gear motors in any way which may endanger human life. The application of gear units in equipment which is intended for the transport of passengers is only permissible after prior written consultation and the agreement of the manufacturer MORAT or their representatives.
We would refer users of gear motors to safety rules, regulations and laws governing the protection of personnel working in the area of moving equipment and to the need for protective guards or barriers. Similarly protective measures are required where suspended loads are involved.

6. Self-locking

Self-locking is affected by lead angle, face surface roughness, running speed, lubricant and temperature rise. A distinction must be made between dynamic (from motion) and static (standstill) self-locking.

Shaking or vibration can cancel out self-locking.

Similarly a number of factors associated with lubrication, running speed and loading can favour slip characteristics to such an extent that self-locking is counteracted.

This means that gearing which is self-locking in theory is no substitute for a brake or reverse lock. It is therefore impossible for us to accept warranty obligations in respect of self-locking.

7.0 Miscellaneous**7.1 Ambient Temperature, water condensation**

Normally, the gear units are designed for an ambient temperature of 0 °C to +60 °C. Delayed speed pick-up performance can be expected at temperatures below 0 °C. If the gear unit is constantly used at low temperatures, a low-viscosity lubricant should be specified. If temperatures are constantly fluctuating between minus and plus temperatures, this promotes the formation of condensation, as does frequent or continuous use outside buildings or when humidity is high. The provision of condensed water drain holes (ø 2mm) in the motor casing and in the terminal box (in conjunction with a moisture protection varnish coat on the rotor/stator) produces a significant improvement. The provision of stand-by heating of the gear unit serves the same purpose. This is simply arranged by providing a low current through one phase connection whilst the gear unit is at a standstill, the gear unit will remain warm to the touch. Each motor type has a different tension, we therefore recommend to contact the manufacturer's work or foreign agent in any case.

7.2 Hand Crank

In case of operation with hand crank an overtravel of the limit switches must be avoided. It is possible to incorporate a sight glass to the switch box cover as an optional if preferred.

7.3 Operating Temperature

The operating temperature (measured on the gear casing) should not exceed +90 °C. Excessive temperatures adversely affect the service life of the lubricant and seals.

7.4 Safety Coupling for MS and AG

If the limit switch control is incorrect or not connected, the drive spindle nut can be driven to an end position, however to prevent mechanical damage, a safety coupling (white plastic 12 mm dia) is provided which will break on overload. A spare coupling is wired loose in the terminal box.

To replace the coupling, the 4 screws holding the complete terminal box casing at the base to the motor housing need to be loosened.

7.5 Load-bearing capability of the output shaft:

Type	Radial load	Axial load
MS 12	1500 N	750 N
MR 30	2000 N	1000 N
AG 60	2000 N	1000 N
AG60 PLUS	5000 N	1000 N

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