



R&M Materials Handling, Inc.
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- If defects have been noticed in the drive, carry out the necessary inspections and repair work. Be sure that the drive operates properly before you start to use it again.
- Avoid short, jerky motions. Unnecessary short starts will cause the motor to overheat quickly.
- Do not change the size of the fuses provided in the controls. A qualified electrician should carry out all electrical work.

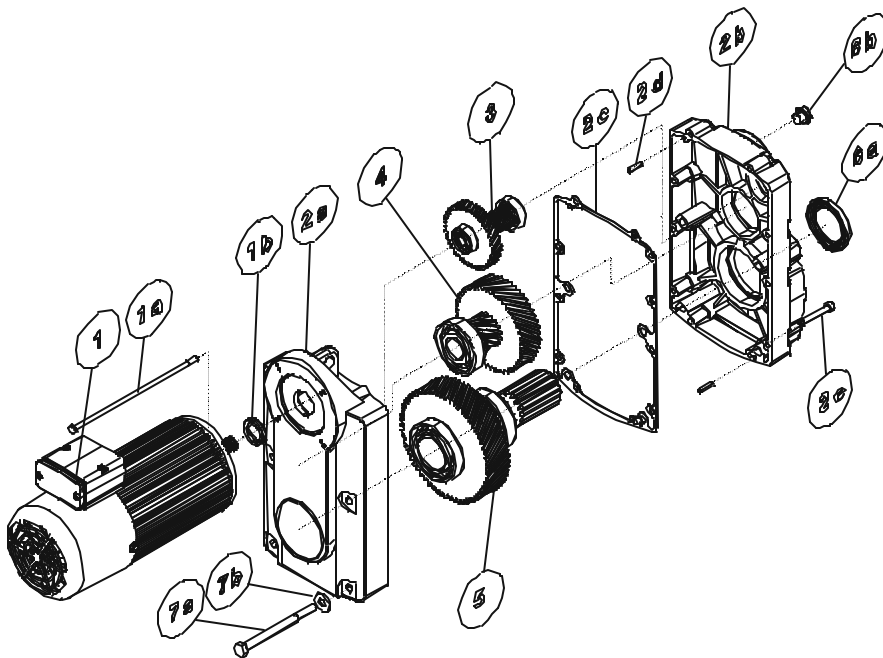
2.3 Safety instructions for servicing the drive



Follow these instructions when servicing the drive:

- Carry out regular inspections and preventive maintenance in compliance with the instructions. Keep a record of inspections and servicing. Regular servicing and inspection procedures are necessary for the safe and efficient operation of the drive. In uncertain or unusual cases, contact the supplier of the drive.
- Pay special attention to the operation of the brake. It is essential that safety devices work correctly and are in full operating order.
- Use trained service personnel for servicing the drive. The person servicing the drive must be competent for the task and must be familiar with the servicing and inspection instructions.
- Use only genuine spare parts approved by the manufacturer of the drive.

3 GES Drive



- 1 Motor with drive pinion
- 1a Motor mounting bolt
- 1b Motor shaft seal
- 2a Gear cover
- 2b Gear housing
- 2c Gasket
- 2d Aligning pins
- 2e Gear mounting bolts
- 3 First intermediate shaft set (gear shaft, wheel and bearings)
- 4 Second intermediate shaft set
- 5 Secondary shaft set
- 6a Secondary shaft sealing
- 6b Breather plug
- 7a Mounting bolt
- 7b Washer



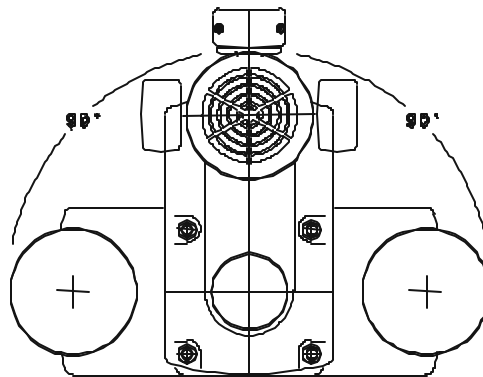
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3.1 General

The drives are designed to perform the traveling movement of the crane or trolley. The drive is not suitable for hoisting loads. The unit is suitable for both indoor and outdoor use. Please note possible restrictions for special environments (e.g. galvanization plants).

The main components of the drive are the motor and the gear reducer. The gear reducer is used to reduce the motor speed and to increase the motor torque to the desired level. The gear ratio is constant and is selected according to the motor speed and the desired traveling speed. Several sets of different gear ratios are available, especially for two-speed motor drives.

3.2 Mounting position of the drive



The standard unit is equipped with a breather plug located at the center near the top, opposite side of the motor. With this arrangement the drive can be mounted in any angle not exceeding 90° from the vertical position (motor up, output shaft down). The unit can be turned in 90° increments.

The standard position of the terminal box (plug connector) on the motor is at the top. The position of the junction box (plug) can be changed by turning the motor in 90° steps to either side.

3.3 Assembling the drive



Ensure that the working area is safe and the machine cannot be started accidentally when doing the assembly work. Be sure to switch off and lock out power at the main switch to avoid an electrical hazard.

- Lightly grease the spline on the output shaft before assembling the unit to the wheel.
- Align the the splines of the wheel and output shaft and push the in unit until it is seated against the bearing housing surface.
- Rotate the unit or the drive wheel to align the bolt holes. Note that the motor brake prevents the free rotation of the output shaft. Manually release the brake, (see the Motor instructions) or jack the wheel off the rail to rotate it for alignment of the mounting bolt holes.
- Insert and hand-tighten the mounting bolts . Be sure to include the washers.
- If the wheel is jacked up, lower it down before tightening the mounting bolts to the recommended tightening torque. (see 'Recommended tightening torques' section)



Before tightening the mounting bolts, make sure the wheel is sitting on the rail in its normal position. This is to ensure that a misaligned load is not directed towards the output shaft.



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- Remove the pin from the breather plug.



The pin in the breather plug prevents the lubricant from leaking during shipment of the unit. If the pin is not removed from the breather plug before operating, pressure could build up in the gearbox and cause lubrication leakage.

- Connect the power supply plug to the motor.

3.4 Start-up procedure

- Make sure that the conditions at the operating site correspond to the operating conditions for which the drive is designed or selected for (including indoor/outdoor use, ambient temperature/radiance temperature, wind, dust, splashing, snow, water, handling hazardous materials, fire risk, etc).
- Check that the supply voltage and frequency are suitable for the motor and brake.
- Check that the direction of rotation is correct. Verify that the direction corresponds to the control signal. In multi-motor systems, check that all the units function correctly in series. If any of the motors do not operate properly, an electrician must check and correct the electrical connections. Refer to the electrical instructions and wiring diagram for further information.



Be prepared for the equipment to move in the wrong direction when first testing.

- Check the function of the brake. The brake is factory set. Adjust the air gap if the braking distance is too long (with nominal load) or too short or the brake is not releasing. Refer to the motor instructions section for further information. If an inverter controls the motor, check that inverter parameters are set up correctly.
- Make an audible check of the machinery while operating. A very loud growling sound indicates an incorrect electrical connection to the motor. This must be corrected immediately. A regular distinct clatter sound is an indication of a bad bearing in the geartrain.
- Check with your hand for excessive vibration while the unit is running. The cause of the excessive vibration must be identified. If the machinery causes an inverter fault, it must be checked out.
- Check the running temperature of the motor during the long-term operation. The temperature rise of the F-class motor must not exceed 100°C. If the motor is overheating, it may be due to a faulty motor, or poor cooling or an overloaded motor. The reason must be identified and corrected.
- Make sure that any safety devices (limit switches, etc) bypassed for testing purposes are restored to full operational status.

3.5 Inspection and service procedure for Drive

Carry out the following inspections and servicing procedures at regular intervals. See 'Inspection and servicing intervals' section for the inspections and servicing schedule.

- Check the tightness of the bolts.
- Check that the breather plug is not blocked by foreign obstacles or remove the pin from the plug.
- Check the gearbox for leakage.
- Check the traveling motion: acceleration and deceleration.
- Check the brake for wear. If necessary, clean the brake and replace the friction discs.
- Check the air gap and adjust if necessary. Refer to the motor instructions section for further information.
- If an inverter controls the motor, check that the inverter operates correctly.
- Gears are lubricated with semi-fluid grease and does not require adding or changing the lubricant when used in normal operating conditions.



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If machinery is operating under heavy conditions (high temperature, high humidity level, difficult atmosphere) the lubricant shall be changed regularly. When necessary, pump the old lubricant out from the breather plughole and refill the gear with a fresh lubricant. See 'Lubricants' section for the correct lubricant type and lubricant amount.

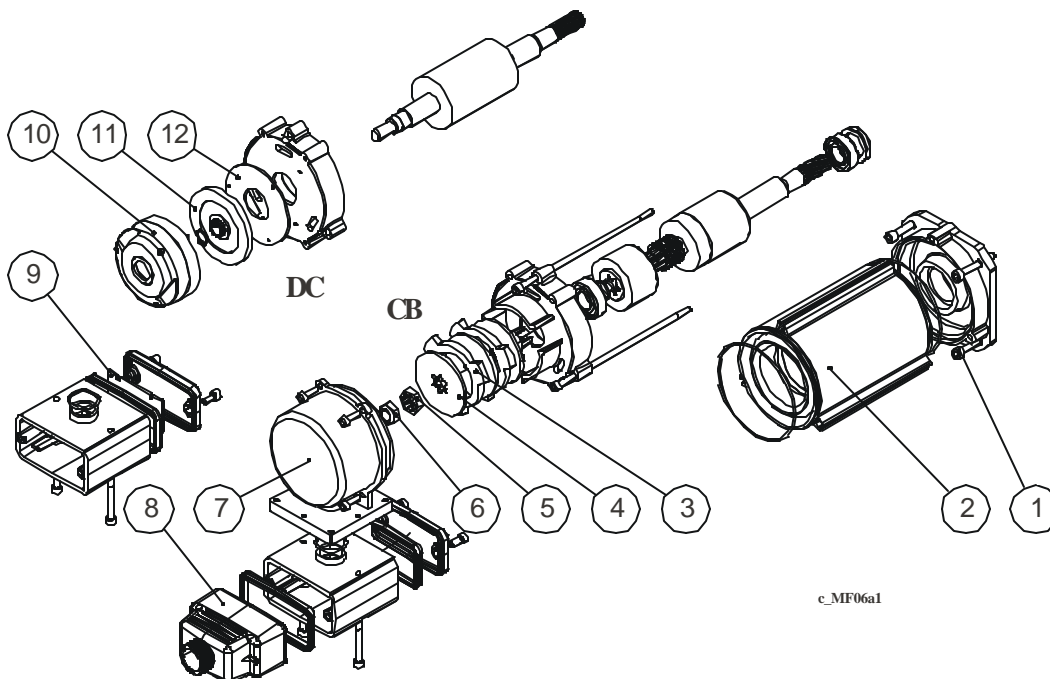
3.6 Removing the drive



Ensure that the working area is safe and the machine cannot be started accidentally when doing the assembly work. Be sure to switch off and lock out power at the main switch to avoid an electrical hazard.

- Disconnect the power supply plug from the motor.
- Remove the mounting bolts from the drive.
- Pull out the unit from the wheel.
- Assemble the new unit according to the instructions in section 'Assembling the drive'.

4 MF06 motor with Compact or DC brake



c_MF06a1

DC=DC-brake

CB=Compact brake

1. Mounting bolts for traveling gear

2. Motor

3. Friction disc

4. Brake disc

5. Aluminum ring

6. Adjustment nut for brake air gap (self-locking)

7. Brake cover

8. Power supply plug

9. Rectifier (DC brake motor)

10. Brake (DC brake motor)

11. Brake disc (DC brake motor)

12. Friction plate (DC brake motor)