



Commissioning and  
Maintenance Guide

**for Braking Motors GZ 02  
in Hoisting Gearing**

**TAM 00383 engl.**

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**Commissioning Guide and Maintenance Instructions  
for Braking Motors GZ02 in Hoisting Gearing**

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Always keep these operating instructions at hand at the machine's place of operation in the tool drawer or an appropriate container.

The publication of this technical description invalidates all information in previous documentation.

# 1 Safety Information

## 1.1 General Dangers in the Case of Failure to Observe the Safety Information

The electric drive is designed to the state of the art and was checked for operating safety before delivery. Nevertheless, the machine can represent a danger when it is improperly operated by insufficiently trained personnel or employed for inappropriate use.

This means:

- Danger to life and limb
- Danger to the machine and other material property of the owner
- Danger to efficient operation of the machine



This symbol shows information about protecting the system.



This symbol shows general safety information for the protection of operating personnel.



This symbol shows safety information about sources of electrical danger.

## 1.2 Safety-Sensitive Work

Any person occupied in the owner's company with setup, operation, corrective maintenance and repair of the electric drive must have read and understood the Commissioning Instructions, especially the section on safety.

It is advisable that the owner has that confirmed in writing by all such persons.

The drive must only be connected and maintenance carried out by qualified and authorized specialists.

The responsibilities for operation and maintenance of the drive must be clearly defined and observed in order to avoid indefinite responsibilities as far as safety is concerned.

For all work related to setup, operation, resetting, adjustment, maintenance and repair, the system must be shut down, „shut-down of the system“ meaning that the drive is turned off with the main switch, all components of the drive thus being voltageless. The emergency stopping functions must also be checked.

## 1.3 Various Safety Information for Operating and Maintenance Personnel

Electric drives must be used only in systems corresponding to the VDE specifications.

In operation the power unit and the motor coils are live! Never touch these components during operation! Connect measuring instruments only when the motor is deenergized and disconnected from the mains.



Start working on the motor connections only after you made sure that they carry neither potential nor voltage.

Be particularly careful when touching the drive shaft directly or indirectly. You must only do this when the drive is stationary and disconnected from the mains!



Refrain from any operation impairing machine safety.

The operator is to ensure that only authorized persons operate the machine.

The operator is obliged to immediately report modifications having occurred on the machine that might impair its safety.

The user is to oblige himself to operate the machine only in perfect condition.

Safety equipment must never be dismantled or disabled.

If safety devices are removed during commissioning, repair and maintenance work, disable the machine. Remount the safety equipment immediately after completion of commissioning, repair or maintenance work.

After any and all operator activity involving the machine, the owner must carry out acceptance testing and document it chronologically in the machine log (maintenance book etc.) (name of the person/firm carrying out acceptance testing, date of testing, signature and report number). If this is not carried out, the owner may be faced with consequences relating to liability legislation.

## 1.4 Indication of Special Dangers

**Important!** Before starting any maintenance work, lower the load.

Current: Check that the equipment is deenergized.  
Main switch OFF!



Contact: Before starting work on the motor, check that the unit is switched off, idle and secured from being switched on again.  
Risk of personal damage!  
Do not disconnect the motor connections in operation.  
Danger to life!  
Do not touch the motor casing in rated operation.  
Risk of burns!



## 1.5 No Unauthorized Additions or Modifications to the Drive

In the section on safety it is indicated that for safety reasons, unauthorized additions or modifications to the drive are not allowed.

In case of doubt please contact the manufacturer.

## 2 Information about the Product

### 2.1 Motor Type, Product Number and Technical Data

Refer to the rating plate on the motor.

### 3 Requirements to the Site

#### 3.1 Transportation, Intermediate Storage (see Enclosure)

Check the motors on delivery. In the case of transport damage, inform Baumüller GmbH or the sales office responsible immediately (for addresses see back).

When storing the motors for a longer period of time, damage can be avoided by taking the following precautions:

- Store the motors only in dry rooms with constant temperature and without aggressive atmosphere.
- Store them out of doors only in dust- and water-tight packages.
- Avoid permanent vibration acting on the motor.
- Protect shaft and connecting flange from corrosion.

#### 3.2 Mounting Space Required

Mount the motors so that the cooling air comes in and the warm air is removed freely. This is ensured when the distance to neighbouring machine components is at least 10 cm.

#### 3.3 Site

On site, the effective vibration severity of 4.5 mm/s must not be exceeded over the entire speed range. Measurement to DIN 45665.

#### 3.4 Ambient Conditions

The power output stated in the list is valid for continuous running duty (S1) at nominal speed and at a maximum ambient temperature of 40 °C with the machines at a site altitude of 1000 m above seal level or less. With the conditions differing, the required list power  $P_L$  is a product of the factors explained below and the required power  $P_L = P \times k_1 \times k_2$ .

If three-phase generators are to be operated at an ambient temperature of more than 40 °C or at site altitudes of more than 1000 m above sea level, the required list power  $P_L$  is the product of factors  $k_1$ ,  $k_2$  given in the Table below and the required power  $P$ .

Ambient temperature	40°C	45°C	50°C	55°C	60°C
Correction factor $k_1$ approx.	1	1,05	1,1	1,16	1,24
Height above sea level	to 1000 m	to 2000 m	to 3000 m	to 4000 m	to 5000 m
Correction factor $k_2$ approx.	1	1,06	1,17	1,3	1,55

If with a site altitude above 1000 m, the ambient temperature drops by approx. 10 °C per 1000 m height increase, power correction is not necessary.

At ambient temperatures above 40 °C and encased design of the motors, contact the manufacturer because of the possibly required design modifications.

#### 3.5 Environmental Influences

The motor is surface-cooled. Nevertheless it is useful to protect it from aggressive vapours.



## 4 Operation

### 4.1 Instructions for Initial Commissioning

Compare the available mains voltages to the values specified on the rating plate. Mount all guards before starting commissioning.



### 4.2 Wiring Diagrams

Connect the motor according to the supplied wiring diagrams.

### 4.3 Notes

The motor must only be mounted to the appropriate attachment points (flange) in the installation position for which it is designed.  
When mounting, ensure that the motor is attached unwarped.



## 5 Preventive Maintenance

### Important!

Before starting maintenance work, lower load.  
Before starting maintenance work, disconnect the machine from the mains.  
Retighten as specified all connections, e.g. screws, that were loosened during maintenance work.



### 5.1 Brake

Readjust the brake every 2000 operating hours.

Readjustment or adjustment of the brake:

In order to compensate for wear of the brake lining, the brake must be readjusted as follows:

- a) Unscrew 4 screws item 30.
- b) Rotate end shield item 3 clockwise so far that resistance can clearly be felt. Do not resort to force.
- c) Then rotate the end shield anticlockwise by at least 1/4 to 1/2 rotation.
- d) Place in position the 4 screws item 30 and tighten them diagonally.

### 5.2 Replacement of Rolling Bearings and Shaft Seals

#### a) Motor

After unscrewing of the screws item 30, the end shield B-S can be dismantled by turning it anticlockwise. Slowly remove the end shield in axial direction to prevent the spring item 12 from making the impeller dart out. Now pull out the shaft item 9 from the back. Unscrew screws item 31 between gearing and motor casing (4xM6x25) and remove the stator. Now the shaft seal item 14 is accessible in the gearing casing item 1 and can be replaced. The two ball bearings items 15 and 16 are replaced accordingly in the reverse order. The correct arrangement of the ball bearing equalizing rings and adjusting washers must absolutely be observed (see detail „X“ of drawing).

#### b)Gearing

To replace the ball bearings in the gearing, unscrew the screws holding item 5 and remove the cover. Now pinion shaft item 8 can be taken out completely. Take out retaining ring item 26. Pull gearwheel item 6 from the shaft. For dismantling the output pinion shaft item 10, remove retaining ring item 27. Now take out the output pinion shaft and replace the bearings supporting the pinion shaft and the output pinion shaft. Remount the components in the reverse order. Fit cover item 5 at the gearing casing oil-tight, using sealant Loctite 573.

### 5.3 Change of Gear Lubricant

After approx. 10.000 operating hours, the used-up lubricant must be removed from the gearing and new, equivalent lubricant filled in. As standard, the gearing is filled with 0.8 kg gear grease Calypsol SF 7-022 or Fuchs Renosod FK 140.

To change the lubricant and wash out the gearing, the cover item 5 must be removed.

After new grease filling of the gearing remount the cover at the gearing casing oil-tight, using a sealant, e.g. Loctite 573.

### 5.4 Regreasing of the Shifting Seat Brake Cone - Shaft

After approx. 5.000 operating hours, the shaft item 9 must be dismantled, as described under 5a. Remove ball bearing item 15, take off brake cone item 4. Clean the brake cone and shaft thoroughly, removing all old grease (use solvent), and apply a thin coat of grease Chevron SRI Grease or Fuchs Renax FH 300. Take care to also fill the lubricant grooves. Push the brake cone onto the shaft and manually press it in to the stop several times. Carefully remove excess grease. Then remount the motor.

On regreasing of the shifting seat, take care not to apply any grease onto the braking surface of the cone or the brake lining.

## 6 List of Spare Parts

### Important!

In all spare parts orders, specify the motor type, the motor and item numbers and component designations.

Item	Quantity	Designation	Designation DIN	
1	1	Gearing casing		
2	1	Stator housing, complete		
3	1	End shield B-S, complete		
4	1	Impeller, complete		
5	1	Cover		
6	1	Gearwheel		
7	1	Gearwheel		
8	1	Pinion shaft		
9	1	Gearing shaft		
10	1	Output pinion shaft		
11	1	Thrust collar		
12	1	Pressure spring		
13	1	Disk spring		
14	1	Shaft seal		
15	1	Deep groove ball bearing	6203.2RS	625
16	1	Deep groove ball bearing	6004.RS	625
17	1	Deep groove ball bearing	6202	625
18	1	Deep groove ball bearing at item 5.1	6303	625
18	1	Deep groove ball bearing at item 5.2	6203	625
19	1	Deep groove ball bearing	6204.2RS	625
20	1	Deep groove ball bearing	6004.2Z	625
21	1	Feather key	A 6x6x80	6885
22	1	Feather key	A 6x6x20	6885
23	1	Feather key	A 6x6x28	6885
24	1	Adjusting washer	26x40x1	988
25	1	Adjusting washer	22x32x0,5	988
26	1	Retaining ring	20x1,2	471
27	1	Retaining ring	47x1,75	472
28	1	Ball bearing equalizing ring		
29	2	Ball bearing equalizing ring		
30	4	Cheese head screw	M 5x25	
31	4	Cheesehead screw	M 6x25	
32	1	Terminal box		
33	1	Terminal box shifting device		
34	1	Terminal box seal		
35	1	Terminal board, complete		

In spare part orders specify item number and motor number exactly.

## 7 Decommissioning, Disassembly and Disposal

At decommissioning of the motors, the following also applies:

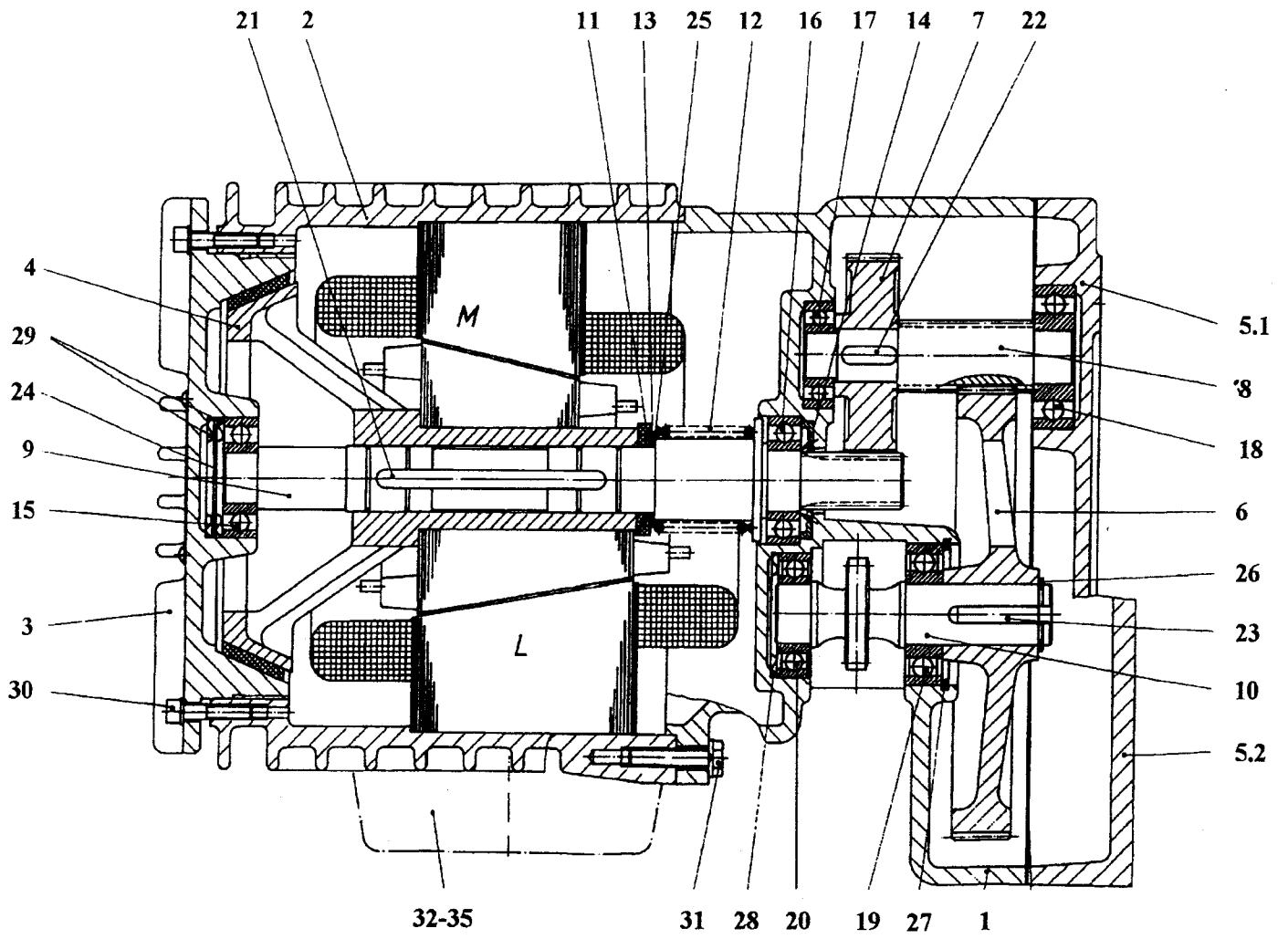
- Before starting work, lower loads.
- Disconnect the motor from the mains.

Take the steps below to dismount the motor:

- Disconnect the electrical connection.
- Dismount complete end shield B-S (item 3).
- Remove the linkage from the linkage guide by rotating the impeller (item 4).
- Release the motor attachment screws.

The motor contains materials like steel, copper, gear grease, brake lining and insulation material. You must disassemble the unit appropriately and dispose of the material separately.





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