



**SEW**  
**EURODRIVE**

# Operating Instructions



## G..7 hoist gear unit



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## 1 General information

### 1.1 About this documentation

**The documentation at hand is the original.**

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or if you require further information, contact SEW-EURODRIVE.

### 1.2 Structure of the safety notes

#### 1.2.1 Meaning of signal words

The following table shows the graduation and meaning of the signal words in the safety notes.

| Signal word        | Meaning                                                        | Consequences if not observed             |
|--------------------|----------------------------------------------------------------|------------------------------------------|
| <b>▲ DANGER</b>    | Imminent danger                                                | Death or severe injuries                 |
| <b>▲ WARNING</b>   | Possibly dangerous situation                                   | Death or severe injuries                 |
| <b>▲ CAUTION</b>   | Possibly dangerous situation                                   | Minor injuries                           |
| <b>NOTICE</b>      | Possible damage to property                                    | Damage to the product or its environment |
| <b>INFORMATION</b> | Useful information or tip: Simplifies handling of the product. |                                          |

#### 1.2.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:



##### **SIGNAL WORD**

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

### 1.2.3 Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

| Hazard symbol                                                                     | Meaning                 |
|-----------------------------------------------------------------------------------|-------------------------|
|  | General hazard          |
|  | Warning of hot surfaces |

### 1.2.4 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous step.

This is the formal structure of an embedded safety note:

**▲ SIGNAL WORD!** Type and source of danger. Possible consequence(s) if disregarded. Measure(s) to prevent danger.

## 1.3 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

## 1.4 Recycling, reprocessing, reuse

When manufacturing products, SEW-EURODRIVE makes sure to keep the use of new natural resources to a minimum in the interests of the circular economy. Key aspects here are the recycling of materials as well as the inspection and/or processing of returned components and their reuse in new products. These processes are only used at SEW-EURODRIVE if the resulting materials and components correspond to the quality of new products.

## 1.5 Product names and trademarks

The product names mentioned in this documentation are trademarks or registered trademarks of the respective titleholders.

## 1.6 Copyright notice

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## **2 Safety notes**

### **2.1 Preliminary information**

The following general safety notes serve the purpose of preventing injury to persons and damage to property. They primarily apply to the use of products described in this documentation. If you use additional components, also observe the relevant warning and safety notes.

### **2.2 Duties of the user**

As the user, you must ensure that the basic safety notes are observed and complied with. Make sure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it.

As the user, you must ensure that all of the work listed in the following is carried out only by qualified specialists:

- Setup and installation
- Installation and connection
- Startup
- Maintenance and repairs
- Shutdown
- Disassembly

Ensure that the persons who work on the product pay attention to the following regulations, conditions, documentation, and information:

- The national and regional regulations governing safety and the prevention of accidents
- Product safety label on the product
- All other associated project planning documents, installation and startup instructions, as well as connection and wiring diagrams
- Do not assemble, install, or operate damaged products
- All system-specific specifications and regulations

Ensure that systems in which the product is installed are equipped with additional monitoring and protection devices. Observe the applicable safety regulations and legislation governing technical work equipment and accident prevention regulations.

## 2.3 Target group

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specialist for mechanical work       | <p>Any mechanical work may be performed only by adequately qualified specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting, and maintenance of the product, and who possess the following qualifications:</p> <ul style="list-style-type: none"> <li>• Qualifications in the field of mechanics in accordance with the national regulations</li> <li>• Familiarity with this documentation</li> </ul>                                                        |
| Specialist for electrotechnical work | <p>Any electrotechnical work may be performed only by electrically skilled persons with a suitable education. Electrically skilled persons in the context of this documentation are persons who are familiar with electrical installation, startup, troubleshooting, and maintenance of the product, and who possess the following qualifications:</p> <ul style="list-style-type: none"> <li>• Qualifications in the field of electrical engineering in accordance with the national regulations</li> <li>• Familiarity with this documentation</li> </ul> |
| Additional qualifications            | <p>In addition to that, these persons must be familiar with the valid safety regulations and laws, as well as with the requirements of the standards, directives, and laws specified in this documentation.</p> <p>The persons must have the express authorization of the company to operate, program, parameterize, label, and ground devices, systems, and circuits in accordance with the standards of safety technology.</p>                                                                                                                            |
| Instructed persons                   | <p>All work in the areas of transport, storage, installation, operation and waste disposal may only be carried out by persons who are trained and instructed appropriately. These instructions must enable the persons to carry out the required activities and work steps safely and in accordance with regulations.</p>                                                                                                                                                                                                                                   |

## 2.4 Designated use

The product is intended for use in industrial and commercial systems.

In case of installation in electrical systems or machines, startup of the product is prohibited until it is determined that the machine meets the requirements stipulated in the local laws and directives. For Europe, Machinery Directive 2006/42/EC as well as the EMC Directive 2014/30/EU apply.

Use in potentially explosive atmospheres is prohibited, unless specifically designated otherwise.

## **2.5 Creating a safe working environment**

Before you work on the product, ensure a safe working environment. Observe the following basic safety notes:

### **2.5.1 Performing work on the product safely**

#### **Defective or damaged product**

Never install defective or damaged products. Observe the following information to avoid injuries or damage:

- Before installation, check the product for external damage and replace a damaged product.

#### **Use of hazardous substances, lubricants, adhesives**

Observe the following information to avoid poisoning or fire hazards:

- Observe the safety data sheets of the used hazardous substances, lubricants and adhesives.
- Wear safety gloves.

#### **Hot surfaces**

The surfaces of the product can become very hot during operation. Observe the following information to avoid burns:

- Let the product and its accessories cool down before touching it.
- Do not touch any surfaces of the product during operation, except for the control elements.
- Observe the information signs and product safety labels on the product.

#### **Falling load**

Observe the following information to avoid death or severe injury due to falling loads:

- Do not stand under the load.
- Secure the area where loads can fall down.
- Use personal protective equipment (such as helmet and safety shoes).
- Use a suitable lifting tool (chain hoist, forklift) and transport protection.

#### **Rotating parts**

When working on the product, there may be a risk of exposed rotating parts and uncontrolled movement of the components. Observe the following information to avoid body parts getting crushed or pulled in:

- Switch off the product before you start working on it.
- Observe all technical data of the product.
- Do not reach into the hazard zone.

#### **Sharp edges**

Observe the following information to avoid cuts caused by sharp or non-deburred cutting edges:

- Wear safety gloves.

**Toxic vapors due to heating of fluorocarbon rubber**

Fluorocarbon rubber is very stable and safe under normal operating conditions and temperatures < 200 °C. However, if fluorocarbon rubber is heated to more than 300 °C, e.g. by fire or the flame of a cutting torch, harmful gases, vapors, and residues can form. The following components can contain elastomers made of fluorocarbon rubber: Oil seals, breather valves, screw plugs. Observe the following information:

- Make sure that components made of fluorocarbon rubber are not exposed to thermal loads > 200 °C. Remove the components, if necessary.
- Observe the temperature ranges specified in the operating instructions when heating components with fluorocarbon rubber.
- Avoid inhaling fluorocarbon rubber gases and vapors, as well as contact with cooled fluorocarbon rubber, as hazardous residues form during thermal load.

**Missing protective equipment**

To avoid injuries, wear the appropriate protective equipment during all work on the product:

- Wear safety gloves.
- Wear safety shoes.
- Wear protective goggles.

**2.5.2 Performing electrical work safely**

Observe the following information to perform electrical work safely:

Electrical work may only be performed by an electrically skilled person or an electronically instructed person under the supervision of an electrically skilled person.

The fact that the operation or display elements are no longer illuminated does not indicate that the product has been disconnected from the supply system and no longer carries any voltage.

**Live parts**

Always adhere to the 5 safety rules for all work on electrical components:

1. Disconnect.
2. Secure the device against a restart.
3. Check that no voltage is applied.
4. Ground and short-circuit.
5. Cover or isolate neighboring live parts.

Depending on the situation, it is possible to deviate from rules 4 and 5. Observe standard EN 50110-1.

**2.6 Transportation/storage**

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. If the product is damaged, it must not be assembled, installed or started up.

If the product is not immediately installed, it must be stored in a dry and dust-free location. The product can be stored for up to 9 months without requiring any special measures before startup. Do not store the product outdoors.

The permissible storage temperature is -30 °C to +50 °C.

The installed lifting eyebolts are in accordance with DIN 580. Observe the loads and regulations specified there. The tension force vector of the slings must not exceed a 45° angle in accordance with DIN 580.

If the product has several lifting eyes or lifting eyebolts, then you should use all lifting eyes and lifting eyebolts for attaching transport ropes. Tighten lifting eyebolts. The lifting eyes or lifting eyebolts are designed to carry only the weight of the product. Do not apply any additional loads.

Use suitable, sufficiently rated handling equipment, that can be used for further transport.

## **2.7 Installation/assembly**

Ensure that the product is installed and cooled according to the regulations in the documentation.

Protect the product from strong mechanical strain. The product and its mounting parts must never protrude into the path of persons or vehicles. Ensure that components are not deformed, particularly during transportation and handling. Electrical components must not be mechanically damaged or destroyed.

The following applications are prohibited unless the device is explicitly designed for such use:

- Use in applications with impermissibly high mechanical vibration and shock loads
- Use in areas exposed to harmful oils, acids, gases, vapors, dust, radiation, etc.

## **2.8 Startup/operation**

In the event of deviations from normal operation, switch off the product. Possible deviations are increased temperatures, noise, or vibration, for example. Determine the cause. Contact SEW-EURODRIVE if necessary.

## **2.9 Inspection/maintenance**

Observe the information in chapter "Inspection/maintenance" (→ 27).

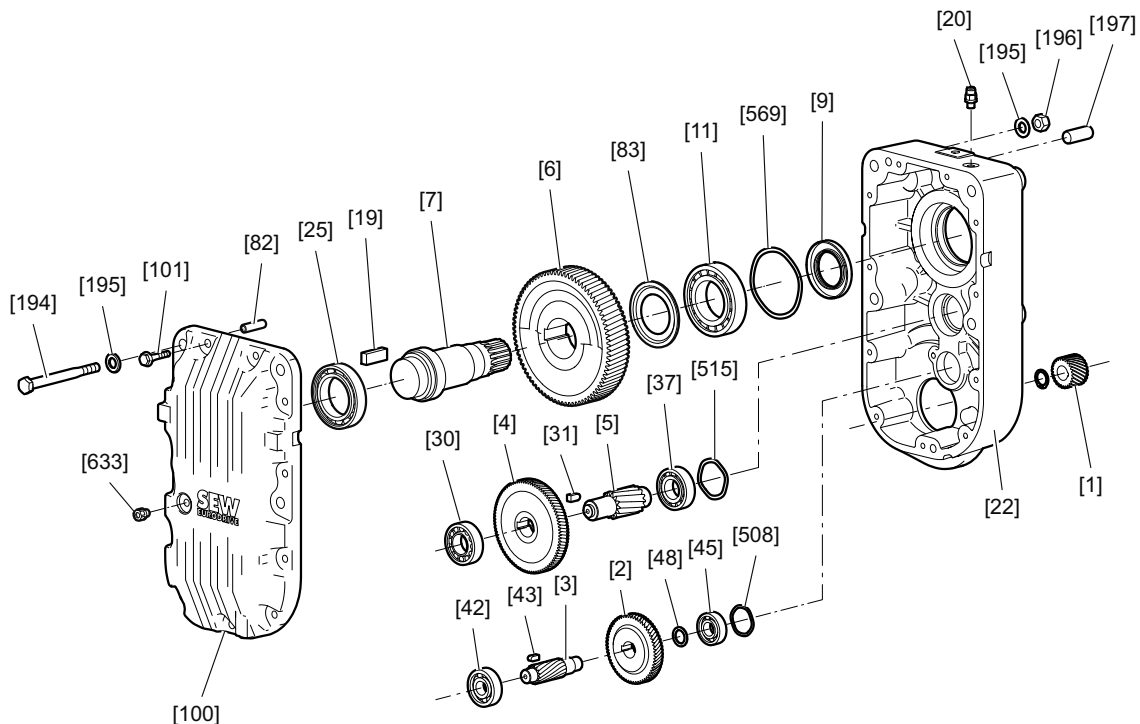
### 3 Gear unit structure

#### INFORMATION



The following figures are block diagrams. Their purpose is only to make it easier to assign components to the spare parts lists. Discrepancies may occur depending on the gear unit size and version.

#### 3.1 Basic structure of G..7 hoist gear units



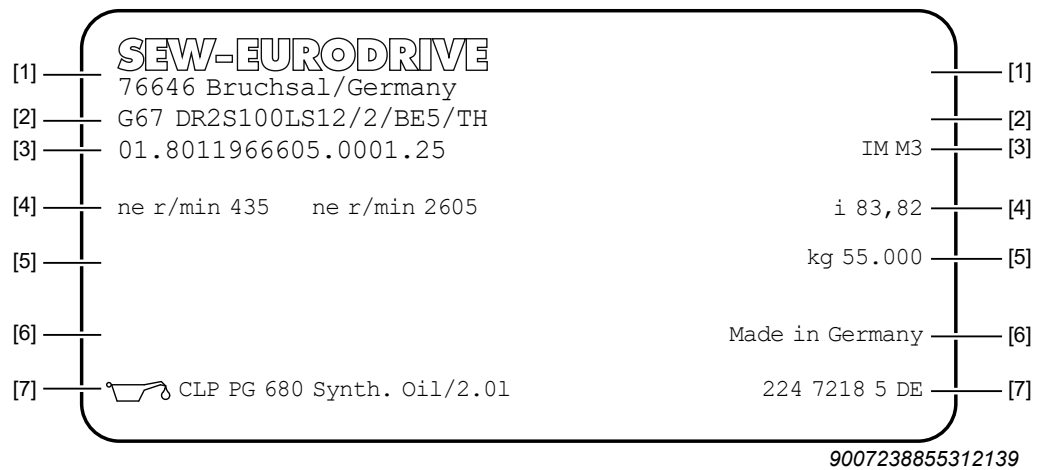
9007229322669707

|                  |                                 |                                    |                       |
|------------------|---------------------------------|------------------------------------|-----------------------|
| [1] Pinion       | [11] Cylindrical roller bearing | [42] Deep groove ball bearing      | [194] Hex head screw  |
| [2] Gear         | [19] Key                        | [43] Key                           | [195] Washer          |
| [3] Pinion shaft | [20] Breather valve             | [45] Deep groove ball bearing      | [196] Hex nut         |
| [4] Gear         | [22] Gear unit housing          | [48] Supporting ring (in G67 only) | [197] Parallel pin    |
| [5] Pinion shaft | [25] Deep groove ball bearing   | [82] Parallel pin                  | [508] Shim            |
| [6] Gear         | [30] Cylindrical roller bearing | [83] Shield ring                   | [515] Shim            |
| [7] Output shaft | [31] Key                        | [100] Cover                        | [569] Shim            |
| [9] Oil seal     | [37] Cylindrical roller bearing | [101] Hex head screw               | [633] Oil sight glass |

## 3.2 Nameplate/type designation

### 3.2.1 Nameplate of gear unit – G..7DR2S.. (12/2-pole)

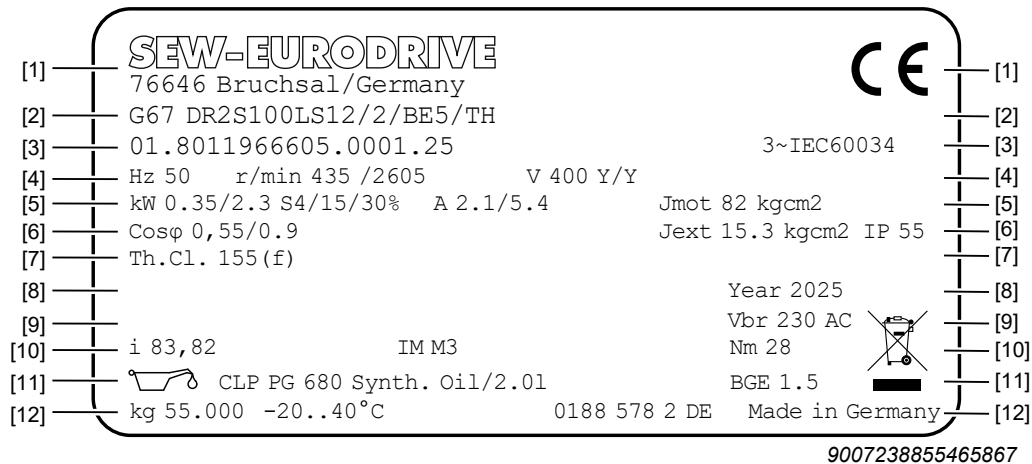
The following figure shows the English nameplate as an example:



| Line | Information                                                                                                                                                  |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1]  | <ul style="list-style-type: none"> <li>Manufacturer, address</li> </ul>                                                                                      |
| [2]  | <ul style="list-style-type: none"> <li>Type designation</li> </ul>                                                                                           |
| [3]  | <ul style="list-style-type: none"> <li>Serial number</li> <li>Mounting position</li> </ul>                                                                   |
| [4]  | <ul style="list-style-type: none"> <li>Input speed for high number of poles</li> <li>Input speed for low number of poles</li> <li>Gear unit ratio</li> </ul> |
| [5]  | <ul style="list-style-type: none"> <li>Gearmotor weight</li> </ul>                                                                                           |
| [6]  | <ul style="list-style-type: none"> <li>Country of manufacture</li> </ul>                                                                                     |
| [7]  | <ul style="list-style-type: none"> <li>Oil type and oil fill volume</li> <li>Nameplate number</li> </ul>                                                     |

## 3.2.2 Nameplate of motor – G..7DR2S.. (12/2-pole)

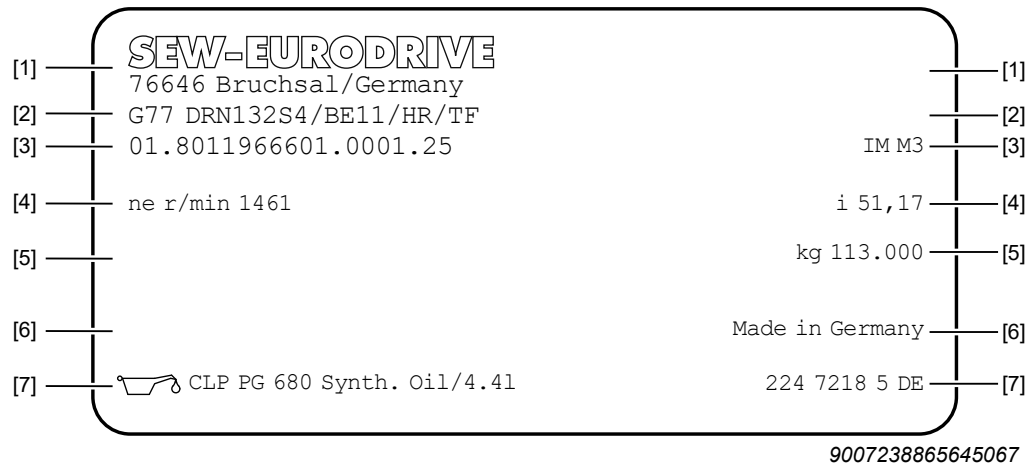
The following figure shows the English nameplate as an example:



| Line | Information                                                                                                                          |
|------|--------------------------------------------------------------------------------------------------------------------------------------|
| [1]  | • Manufacturer, address, CE mark                                                                                                     |
| [2]  | • Type designation                                                                                                                   |
| [3]  | • Serial number<br>• Degree of protection according to IEC 60034                                                                     |
| [4]  | • Rated frequency<br>• Rated speed of the motor for high or low number of poles<br>• Nominal voltage                                 |
| [5]  | • Rated power and operating mode<br>• Rated current<br>• Mass moment of inertia of the motor                                         |
| [6]  | • Power factor<br>• Mass moment of inertia (extern) reduced to the motor shaft<br>• Degree of protection according to IEC/EN 60034-5 |
| [7]  | • Thermal class                                                                                                                      |
| [8]  | • Year of manufacture                                                                                                                |
| [9]  | • Brake voltage<br>• Waste disposal according to WEEE Directive                                                                      |
| [10] | • Gear unit ratio<br>• Mounting position<br>• Nominal braking torque                                                                 |
| [11] | • Oil type and oil fill volume<br>• Brake control                                                                                    |
| [12] | • Gearmotor weight<br>• Permitted ambient temperature range of the motor<br>• Nameplate number<br>• Country of manufacture           |

### 3.2.3 Nameplate of gear unit – G..7DRN.. (4-pole)

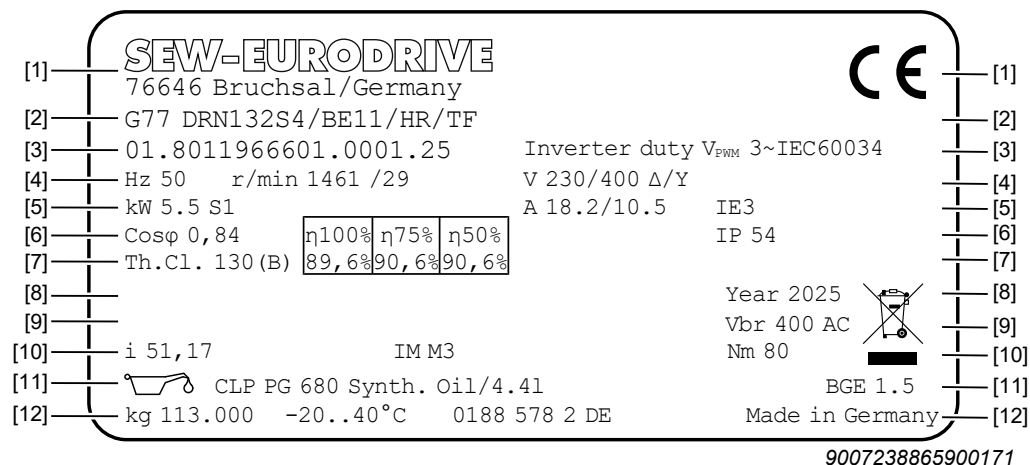
The following figure shows the English nameplate as an example:



| Line | Information                                          |
|------|------------------------------------------------------|
| [1]  | • Manufacturer, address                              |
| [2]  | • Type designation                                   |
| [3]  | • Serial number<br>• Mounting position               |
| [4]  | • Input speed<br>• Gear unit ratio                   |
| [5]  | • Gearmotor weight                                   |
| [6]  | • Country of manufacture                             |
| [7]  | • Oil type and oil fill volume<br>• Nameplate number |

## 3.2.4 Nameplate of motor – G..7DRN.. (4-pole)

The following figure shows the English nameplate as an example:



| Line | Information                                                                                                                          |
|------|--------------------------------------------------------------------------------------------------------------------------------------|
| [1]  | • Manufacturer, address, CE mark                                                                                                     |
| [2]  | • Type designation                                                                                                                   |
| [3]  | • Serial number<br>• Suitable for inverters, standard specification                                                                  |
| [4]  | • Rated frequency<br>• Rated speed of the motor / speed of the gear unit output shaft<br>• Nominal voltage                           |
| [5]  | • Rated power and operating mode<br>• Rated current<br>• IE class for motors included in the validity of the IEC 60034-30-1 standard |
| [6]  | • Power factor<br>• Efficiency at X% of the rated power<br>• Degree of protection according to IEC/EN 60034-5                        |
| [7]  | • Thermal class                                                                                                                      |
| [8]  | • Year of manufacture<br>• Waste disposal according to WEEE Directive                                                                |
| [9]  | • Brake voltage                                                                                                                      |
| [10] | • Gear unit ratio<br>• Mounting position<br>• Nominal braking torque                                                                 |
| [11] | • Oil type and oil fill volume<br>• Brake control                                                                                    |
| [12] | • Gearmotor weight<br>• Permitted ambient temperature range of the motor<br>• Nameplate number<br>• Country of manufacture           |

### 3.2.5 Product label

Product label with QR code. The QR code can be scanned. You will be redirected to the digital services of SEW-EURODRIVE. There, you have access to product-specific data, documents, and further services.

The following figure shows an example of a product label:



18014433531072523

### 3.2.6 Type designation for hoist gearmotor G..7

For example, a DRN.. hoist gearmotor has the following type designation:

| Example: G77 DRN112M4/BE5HR/TF |      |           |
|--------------------------------|------|-----------|
| Gear unit type                 | G    | Gear unit |
| Size                           | 77   |           |
| Product family                 | DR   | Motor     |
| Product line identifier        | N    |           |
| Size                           | 112M |           |
| Number of poles                | 4    |           |
| Brake                          | /BE5 |           |
| Manual brake release           | HR   |           |
| Thermal motor protection       | /TF  |           |

## 4 Mechanical installation

### 4.1 Before you start

Only install the device if the following conditions are met:

- The drive is undamaged (no damage caused by transportation or storage).
- The entries on the nameplate of the gearmotor match the voltage supply system.
- When the drive is installed in abrasive ambient conditions, protect the output end oil seals against wear.
- Motor shaft ends, output shafts, and flange surfaces must be thoroughly cleaned of anti-corrosion agents, contamination, or similar. Use a commercially available solvent for this purpose. The solvent must not get into the bearings or sealing rings as this can damage the material.
- The gear unit/gearmotor is designed for the ambient temperature. For the application limits refer to the technical documentation, the nameplate, or the lubricant table.
- You have ensured that there are no oils, acids, gases, vapors, radiation, etc. present.

#### 4.1.1 Required tools/resources

The following tools and resources are required for the mechanical installation:

- Wrench
- Torque wrench for:
  - Gear unit mounting
- Mounting device
- Fasteners for input and output elements
- Lubricant (e.g. NOCO-Paste)

### INFORMATION



Standard parts are not included in the delivery.

#### 4.1.2 Installation tolerances

| Shaft end                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Diameter tolerance for multiple-spline shaft in accordance with DIN 5480                                                                                                      |
| <ul style="list-style-type: none"> <li>• Tooth thickness tolerance: 8f</li> <li>• Centering on the shaft: ISO h6</li> <li>• Position tolerance of the pins: 0.2 mm</li> </ul> |

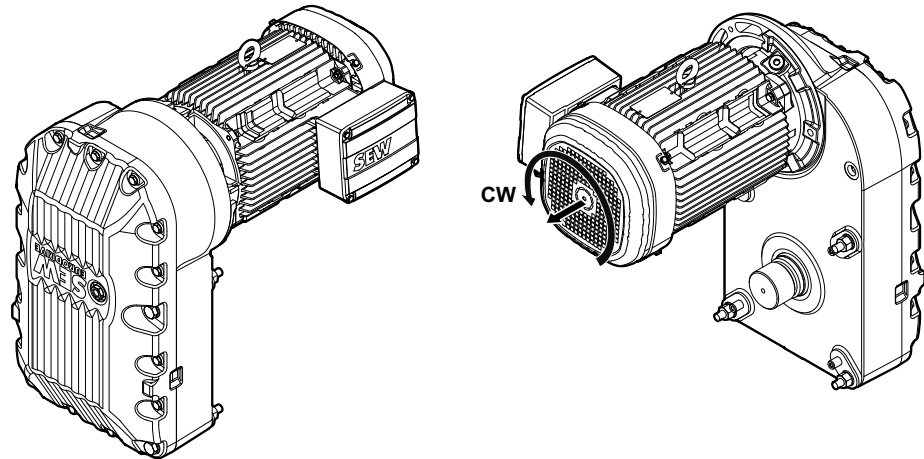
## 4.2 Directions of rotation

### 4.2.1 Direction of rotation of the motor shaft

In accordance with the standard IEC 60034-8 defined as standard:

Clockwise (CW) direction of rotation when looking onto the pinion shaft end of the motor.

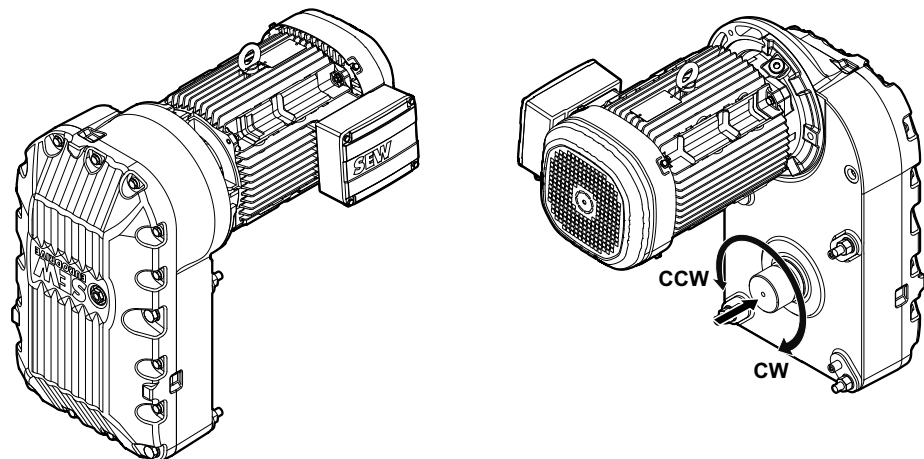
Prerequisite: Connection U1-V1-W1



### 4.2.2 Direction of rotation of the output shaft

Standard direction of rotation when looking onto the output shaft of the gear unit:

- CW (clockwise)  
Clockwise direction of rotation
- CCW (counterclockwise)  
Counterclockwise direction of rotation



### 4.2.3 Direction of rotation of the gear unit

| Series | Size     | Gear unit stages | Standard direction of rotation when looking onto output shaft <sup>1)</sup> |
|--------|----------|------------------|-----------------------------------------------------------------------------|
| G..7   | 67 – 157 | 3                | CCW                                                                         |

1) CW = clockwise; CCW = counterclockwise.

### 4.3 Installing the gear unit

Only install the device if the following conditions are met:

- De-energize the drive before starting work.
- Secure the drive against unintended power-up.
- Secure heavy components against falling during installation/removal.
- Make sure that there is a sufficient safety distance around the gear unit/gearmotor.
- Protect the gear unit from cold air flows. Condensed water in the gear unit can cause damage.
- During the installation of the gear unit, note that the oil level and oil drain plugs as well as the breather plugs and breather valves must be easily accessible.
- In cases where there is a high dirt and dust load, use a breather filter instead of a breather valve.

#### 4.3.1 Information on the mounting positions

The gear unit or the gearmotor may only be installed in the specified mounting position. Observe the information on the nameplate.

**Adjust the lubricant fill quantities and the position of the breather valve accordingly when changing the mounting position.** Observe the information in chapters "Lubricant fill quantities" (→ 43) and "Mounting positions" (→ 36).

Contact SEW-EURODRIVE in the event of changes in the mounting position.

#### 4.3.2 Oil level information

Before startup, check that the oil level matches the mounting position. For more information, refer to chapter "Inspection/maintenance of the gear unit" (→ 31). The gear units are filled with the required oil quantity at the factory. Minor deviations at the oil level plug are possible due to the mounting position and are permitted within the limits of the manufacturing tolerances.

#### 4.3.3 Support structure information

The support structure must have the following characteristics:

- Evenness
- Vibration damping
- Torsionally rigid

The following table shows the maximally permitted flatness defects for foot and flange mounting (guide values based on DIN ISO 1101):

| Gear unit size | Flatness defect |
|----------------|-----------------|
| 67 – 157       | Max. 0.5 mm     |

#### 4.3.4 Information regarding tightening torques

The tightening torques specified in the following chapters are based on the following friction coefficients:

| Friction coefficient $\mu_{G,K}$ for thread and head contact surface | Strength class of screw |
|----------------------------------------------------------------------|-------------------------|
| 0.14                                                                 | 8.8                     |

If you use screws with a different friction coefficient, you must adapt the tightening torques accordingly.

#### 4.3.5 Tightening torques for retaining screws

Mount the gearmotors with the following tightening torques:

| Screw/nut | Tightening torque $\pm 15\%$<br>Strength class 8.8<br>Nm |
|-----------|----------------------------------------------------------|
| M12       | 96                                                       |
| M16       | 235                                                      |
| M20       | 460                                                      |

#### 4.3.6 Installing the gear unit

Always mount gearmotors using screws of strength class 8.8.

The following table shows the thread sizes of the gear units depending on the size:

| Screw | Gear unit type G..7 |
|-------|---------------------|
| M12   | G67, G77            |
| M16   | G97, G107           |
| M20   | G157                |

#### 4.3.7 Installation in damp locations or outdoors

##### NOTICE

Paint can block the breather valve and damage the sealing lips of the oil seals.

Damage to property.

- Thoroughly cover the breather valve and sealing lip of the oil seals with strips prior to painting/re-painting.
- Remove the adhesive strips after painting.

Drives are supplied in corrosion-resistant design with appropriate surface protection treatment for use in damp areas or outdoors.

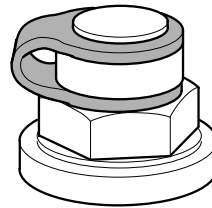
- Repair damage to the paint work e.g. on the breather valve or the lifting eyes.
- The drives must not be exposed to direct sunlight when installed outdoors. Install an appropriate protection device, e.g. a cover or a canopy. The protection device must not cause heat build-up.
- The system operator must ensure that no foreign objects (e.g. falling objects or coverings) affect the operation of the gear unit.

#### 4.3.8 Venting the gear unit

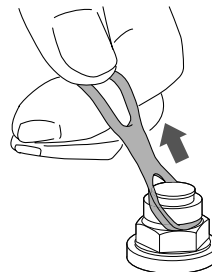
Depending on gear unit size and mounting position, the gear units are delivered with the activated breather valve installed according to the mounting position. If the breather valve has not yet been activated, you must remove the transport protection. This activates the breather valve.

##### Activating the breather valve

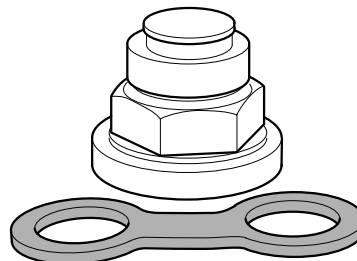
1. Before startup, check whether the transport protection on the breather valve has been removed and the valve is therefore activated. The following figure shows a breather valve with transport protection:



2. Remove the transport protection.



⇒ The following figure shows an activated breather valve.



## 4.4 Gear unit with multiple-spline shaft

### 4.4.1 Mounting output elements

#### NOTICE

Damage to bearing, housing or shafts due to incorrect mounting.

Possible damage to property.

- Never force mount-on components of the rope drum or other components onto the shaft end by hitting them with a hammer.

#### INFORMATION



Mounting is easier if you first apply lubricant to the output element or heat it briefly to 80 °C up to a **maximum** of 100 °C.

## 4.5 Direct mounting of a motor on a gear unit

#### INFORMATION

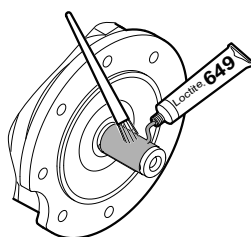


Secure all pinions on the motor or input shaft with Loctite® 649, even if a retaining ring is additionally present.

If the pinion is already fastened to the shaft, start cleaning the sealing surface (step 6).

#### Joining the pinion to the motor or input shaft

1. Clean and degrease the shaft and the bore of the pinion.
2. Apply Loctite® 649 to the shaft behind the groove over the entire area of the circumference. For information on Loctite®, refer to "Selecting and using Loctite®" (→ 25).



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3. Warm the pinion up to **at least** 100 °C to a **maximum of** 130 °C.
4. Push the pinion onto the shaft.
5. Secure the pinion on the shaft with the retaining ring.

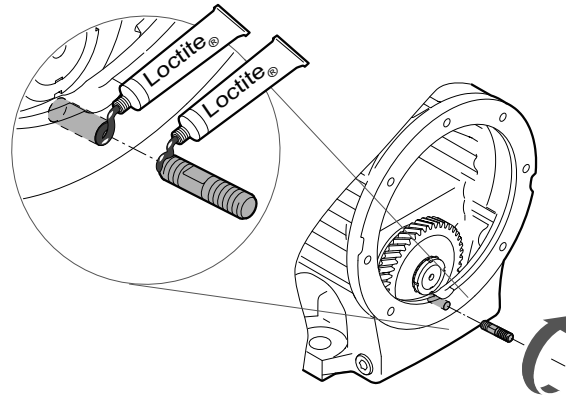
#### Cleaning the sealing surfaces

6. Remove oils, grease, irregularities of the surface, rust, and old Loctite® residue from the flange surfaces.

### Sealing threads that lead into the housing interior

To prevent oil from escaping after installation, flange threads that lead into the housing interior must be sealed!

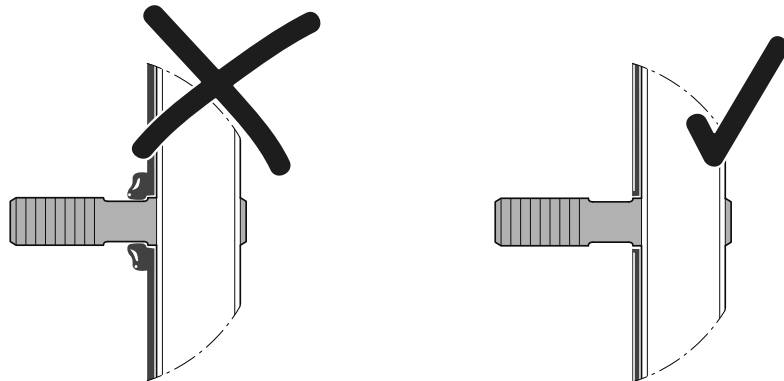
7. Clean and degrease the thread through bores that lead into the housing interior and their studs.
8. Apply Loctite® 5188 in a continuous ring on the upper threads of the flange thread and the stud. For information on Loctite®, refer to "Selecting and using Loctite®" (→ 25).



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### Screwing in the studs

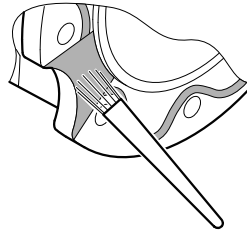
9. Screw the studs into the thread up to the shoulder.
10. Remove any excess Loctite® from the sealing surface 60 minutes after screwing in at the latest.



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### Sealing the flange surface

11. Only apply Loctite® 5188 to one of the sealing surfaces. **Apply the sealant to the entire surface without leaving any gaps.** Use a suitable application tool that does not contaminate the sealing surface, for example, a non-shedding brush or a short-hair lamb's wool roller. For information on Loctite®, refer to "Selecting and using Loctite®" (→ 25).



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### Joining flange surfaces

12. Join the flange surfaces together. Next, **immediately** tighten the nuts with the specified torque. If you tighten the nuts too late, the sealing film can tear. For information on the tightening torques, refer to chapter "Tightening torques for direct mounting of a motor to a gear unit" (→ 25).
13. The sealant must harden for 30 minutes and must not come into contact with the gear oil during this time.

#### 4.5.1 Tightening torques for direct mounting of a motor to a gear unit

| Screw/nut | Tightening torque |
|-----------|-------------------|
|           | Nm                |
| M8        | 28                |
| M10       | 56                |
| M12       | 96                |
| M16       | 235               |

#### 4.5.2 Selecting and using Loctite®

##### Selecting and using Loctite®

| Sealant       | Use                       | Suitability     | Batch size | Part number |
|---------------|---------------------------|-----------------|------------|-------------|
| Loctite® 649  | Locking agent for pinions | All gear units  | 50 ml      | 09120998    |
| Loctite® 5188 | Surface sealant           | G..7 gear units | 50 ml      | 03207013    |

## 5 Startup

### 5.1 Before you start

Ensure the following before startup:

- Before startup, always check that the oil level matches the mounting position. Observe the information in chapter "Checking the oil level and changing the oil" (→ 31). For the lubricant fill quantities, refer to the respective nameplate.
- All transport protection has been removed.
- Check that the direction of rotation is correct in the **decoupled** state. Listen out for unusual grinding noises as the shaft rotates.
- The oil level plugs and drain plugs as well as the breather plugs and breather valves must be freely accessible.
- Do not deactivate monitoring and protection devices even for a test run.
- Observe the information on the nameplate. Additional data relevant for operation is available in drawings and on the order confirmation.
- After installing the gear unit, check to verify that all retaining screws are tight.
- Make sure that the alignment has not changed after tightening the mounting elements.
- Prior to startup, ensure that rotating shafts and couplings are equipped with suitable protection covers.
- If an oil sight glass is used for oil level monitoring, protect it against damage.
- Protect the gear unit from falling objects.

#### 5.1.1 Inverter-operated gearmotors

Observe the maximum and effective values of project planning during startup of inverter-operated gearmotors. The buyer is obliged to provide the data to the user.

When starting up gear units in combination with controlled motors, activate the "speed" and "torque or current limit" application limit in the frequency inverter. For further details, refer to the respective operating instructions of the motor.

### 5.2 Checking the oil level

Before startup, always check that the oil level matches the mounting position. Observe the information in chapter "Checking the oil level and changing the oil" (→ 31).

### 5.3 Pseudo-leakage at shaft seals

Due to the operating principle, seals of moving sealing surfaces on shaft feedthroughs cannot be completely tight because a lubricating film forms during operation. The lubricating film between the shaft and the sealing lip minimizes heat development and wear on the sealing system and provides the prerequisites for the intended service life. The optimum sealing properties are achieved after the run-in phase.

## 6 Inspection/maintenance

### 6.1 Before you start

Ensure the following before inspection/maintenance:

- De-energize the drive before starting work.
- Secure the drive against unintended power-up.
- Let the unit cool down sufficiently before you start working on it.
- Before releasing any shaft connections, make sure there is no active torsional torque present that could lead to tension within the system.
- Do not clean the device with a high-pressure cleaning device.
- Prevent foreign particles from entering into the gear unit during maintenance and inspection work.
- Observe the inspection and maintenance intervals to ensure operational safety.
- Always perform a safety and functional check following any maintenance and repair work.

## 6.2 Wearing parts

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gearing</b>          | <p>If you observe the SEW-EURODRIVE design criteria and the inspection and maintenance intervals, the service life of the gearing components specified during project planning will apply.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Rolling bearings</b> | <p>Rolling bearings in the gear unit, adapter, and input shaft assembly have a limited service life, even under ideal operating conditions. This nominal bearing service life is a solely statistical value. The actual service life of an individual bearing may deviate greatly from this value. The main influencing factors are:</p> <ul style="list-style-type: none"> <li>• Speed</li> <li>• Equivalent bearing load</li> <li>• Operating temperature</li> <li>• Lubricant (type, viscosity, additives, pollution)</li> <li>• Lubricant supply of the bearing</li> <li>• Misalignment under operating load</li> </ul> <p>The rolling bearings must therefore be inspected regularly. Observe the corresponding inspection and maintenance intervals in chapters "Inspection/maintenance intervals" (→ 29) and "Lubricant change intervals" (→ 30).</p> <p>For information on the nominal bearing service life under certain operating conditions, contact SEW-EURODRIVE.</p> |
| <b>Lubricants</b>       | <p>Lubricants are subject to aging. Their service life is limited depending on the load conditions.</p> <p>The service life depends significantly on the oil operating temperature. For information on the lubricant change intervals depending on the operating temperature, refer to the figure in chapter "Lubricant change intervals" (→ 30).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Oil seals</b>        | <p>Oil seals are contact seals that seal unit housings at emerging elements, such as shafts, from the environment. Oil seals are wear parts with a service life that is influenced by the following factors, among others:</p> <ul style="list-style-type: none"> <li>• Shaft speed and circumferential speed at the sealing lip</li> <li>• Ambient conditions (temperature, dust, humidity, pressure, chemicals, radiation)</li> <li>• Lubricant (type, viscosity, additives, pollution)</li> <li>• Surface quality of the sealing</li> <li>• Lubricant supply of the sealing</li> <li>• Oil seal material</li> </ul> <p>Due to the various influencing factors, it is not possible to predict the service life. Therefore the oil seals must be inspected regularly. Observe the corresponding inspection and maintenance intervals in chapters "Inspection/maintenance intervals" (→ 29), "Lubricant change intervals" (→ 30).</p>                                              |

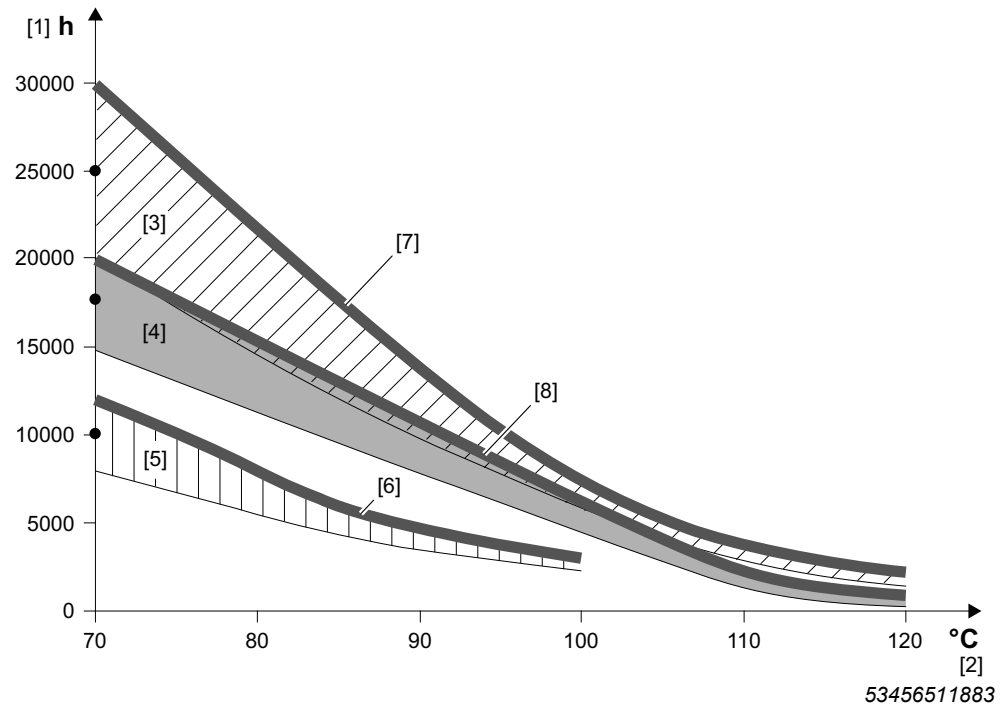
### 6.3 Inspection/maintenance intervals

The following table shows the time intervals to be observed and the corresponding measures:

|                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Every 3000 operating hours, at least every 6 months</li> </ul>                                                                                                       | <ul style="list-style-type: none"> <li>• Check the oil and oil level.</li> <li>• Check running noise for possible bearing damage.</li> <li>• Visual inspection of the seals for leakage.</li> <li>• Check that all screw plugs, any oil sight glass, the breather valve, and the gear unit cover screws are tight.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Depending on the operating conditions (see figure in "Lubricant change intervals" (→ 30)), at least every 5 years</li> <li>• According to oil temperature</li> </ul> | <ul style="list-style-type: none"> <li>• Change the synthetic oil.</li> <li>• Replace the oil seal (do not install it in the same track as the previous oil seal).</li> </ul>                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• Varies (depending on external factors)</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>• Touch up or renew the surface/corrosion protection paint.</li> <li>• Check the function of breather valve (if present).</li> </ul>                                                                                                                                                   |

## 6.4 Lubricant change intervals

Use the following figure to determine the number of operating hours between 2 oil changes based on the sustained oil bath temperature at normal ambient conditions. In case of special designs under severe/aggressive ambient conditions, change the lubricant more frequently. For more information on the approved oils, refer to the lubricant table or to [www.sew-eurodrive.de/lubricants](http://www.sew-eurodrive.de/lubricants).



- [1] Operating hours
- [2] Continuous oil bath temperature
- [3] CLP PG / CLP PG NSF H1
- [4] CLP HC / CLP HC NSF H1
- [5] CLP / E
- [6] GearOil Base by SEW-EURODRIVE
- [7] GearOil Poly (H1) / GearFluid Poly (H1) by SEW-EURODRIVE
- [8] GearOil Synth (H1) by SEW-EURODRIVE
- Average value for each oil type at 70 °C

## 6.5 Inspection/maintenance of the gear unit

### 6.5.1 Checking the oil level and changing the oil



#### **⚠ WARNING**

Risk of burns due to hot gear unit and hot gear unit lubricant.

Severe injury.

- Allow the gear unit to cool before commencing work.
- Carefully remove the oil level plug and the oil drain plug.

The procedure for checking the oil level and changing the oil depends on the mounting position. The following table lists the procedure for the relevant gear unit.

| Mount-<br>ing po-<br>sition | Oil level check | Oil change                 |                                   |
|-----------------------------|-----------------|----------------------------|-----------------------------------|
|                             |                 | Draining possibility       | Pressure compensation provided by |
| M1                          | Oil level plug  | Drain plug                 | Breather plug on motor flange     |
| M3                          | Oil sight glass | Drain plug on motor flange | Breather plug                     |
| M5                          | Oil level plug  | Drain plug on motor flange | Breather plug                     |
| M6                          | Oil level plug  | Drain plug                 | Breather plug on motor flange     |

For more information on mounting positions, refer to "Mounting positions" (→ 36).

You cannot check the oil level of gear units in a pivoted mounting position. The gear units are delivered with the correct oil fill quantity. Observe the information and fill quantities on the nameplate when changing the oil.

### Tightening torques for oil level plugs, oil drain plugs, screw plugs, breather valves and oil sight glasses

Observe the tightening torques in the following table when screwing in:

| Thread    | Tightening torque<br>Nm |
|-----------|-------------------------|
| M10 × 1   | 12                      |
| M12 × 1.5 | 15                      |
| M22 × 1.5 | 60                      |

### Checking the oil level using the oil sight glass

If the gear unit is equipped with an oil sight glass, you can determine the oil level using the oil sight glass.

#### NOTICE

Gear unit damage due to leaking gear oil at the damaged oil sight glass.

Possible device damage.

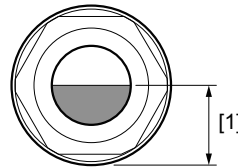
- Attach a protective device to prevent the oil sight glass from being damaged by mechanical impacts.

✓ The drive is de-energized and protected against unintended restart.

1. **⚠ WARNING!** Risk of burns due to hot gear unit and hot gear unit oil. Severe injuries.

Allow the gear unit to cool down before starting work.

2. Check the oil level at the oil sight glass according to the following figure:



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[1] The oil level must be within this range.

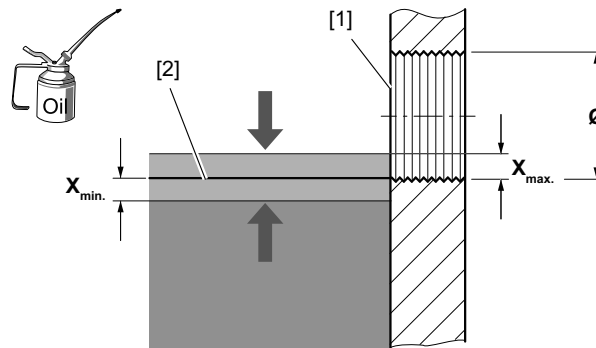
If the oil level is too low, proceed as follows:

3. Remove the breather valve.
4. Fill in fresh oil of the same type via the breather bore up to the marking. If necessary, contact SEW-EURODRIVE regarding the type of oil.
5. Screw the breather valve back in.

## Checking the oil level at the oil level plug

Proceed as follows to check the oil level of the gear unit via the oil level plug:

- ✓ The drive is de-energized and protected against unintended restart.
- 1. **▲ WARNING!** Risk of burns due to hot gear unit and hot gear unit oil. Severe injuries.  
Allow the gear unit to cool down before starting work.
- 2. Determine the positions of the oil level plug and the breather valve using the mounting position sheets. See "Mounting positions" (→ 36).
- 3. Place a container underneath the oil level plug.
- 4. Slowly remove the oil level plug. Small amounts of oil may leak out as the permitted maximum oil level might be higher than the lower edge of the oil level bore.
- 5. Check the oil level using the oil level plug according to the following figure and the corresponding table:



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[1] Ø oil level bore

[2] Target oil level

| Ø Oil level bore | Approved fluctuation "x" of the oil level mm |
|------------------|----------------------------------------------|
| M10 × 1          | 1.5                                          |
| M12 × 1.5        | 2                                            |
| M22 × 1.5        | 3                                            |

If the oil level is too low, proceed as follows:

- 6. Remove the breather valve.
- 7. Fill in new oil of the same grade via the breather bore up to the lower edge of the oil level bore. If necessary, contact SEW-EURODRIVE regarding the type of oil.
- 8. Screw the breather valve back in.
- 9. Screw the oil level plug back in. Observe the tightening torques in chapter "Tightening torques for oil level plugs, oil drain plugs, screw plugs, breather valves and oil sight glasses" (→ 31).

### Checking the oil using the oil drain plug

Proceed as follows to check the gear unit oil:

- ✓ The drive is de-energized and protected against unintended restart.
- 1. **▲ WARNING!** Risk of burns due to hot gear unit and hot gear unit oil. Severe injuries.  
Allow the gear unit to cool down before starting work.
- 2. Determine the position of the oil drain plug using the mounting position sheets, see chapter "Mounting positions" (→ 36).
- 3. Carefully remove the oil drain plug and take out some oil.
- 4. Check the oil consistency:
  - ⇒ Viscosity (have this carried out by a suitable laboratory if necessary)
  - ⇒ If you can see that the oil is heavily contaminated, it is recommended to change the oil outside the specified maintenance intervals.
- 5. Check the oil level.

### Changing the oil using the oil drain plug and breather valve

- ✓ The drive is de-energized and protected against unintended restart.
- 1. **▲ WARNING!** Risk of burns due to hot gear unit and hot gear unit oil. Severe injuries.  
Allow the gear unit to cool down before starting work.
  - ⇒ However, for better flowability, the gear oil should be warm when it is drained to ensure optimum gear unit drainage.
- 2. Determine the positions of the oil drain plug, the oil level plug and the breather valve using the mounting position sheets. Refer to chapter "Mounting positions" (→ 36).
- 3. Place a container underneath the oil drain plug.
- 4. Carefully remove the oil level plug, the breather valve, and the oil drain plug.
- 5. Drain all the oil.
- 6. Re-insert the oil drain plug. Observe the tightening torques in chapter "Tightening torques for oil level plugs, oil drain plugs, screw plugs, breather valves and oil sight glasses" (→ 31).
- 7. Pour in new oil of the same grade through the breather bore. Do not mix different synthetic lubricants. Contact SEW-EURODRIVE if necessary.
  - ⇒ Fill in a quantity of oil that corresponds to the specifications on the nameplate or according to the mounting position. Refer to chapter "Lubricant fill quantities" (→ 43).
- 8. Check the oil level using the oil level plug.
- 9. Screw the oil level plug and the breather valve back in. Observe the tightening torques in chapter "Tightening torques for oil level plugs, oil drain plugs, screw plugs, breather valves and oil sight glasses" (→ 31).

### 6.5.2 Replacing the oil seal



#### ▲ WARNING

Risk of injury if preloaded shaft connections are loosened.

Severe or fatal injuries.

- Before releasing any shaft connections, make sure there is no active torsional torque present that could lead to tension within the system.

#### NOTICE

Damage to oil seal due to mounting below 0 °C.

Damage to oil seal.

- Store oil seals at an ambient temperature above 0 °C.
- If necessary, heat the oil seal slightly before mounting it.

Proceed as follows:

1. Make sure that there is a sufficient amount of grease between the dust lip and the sealing lip, depending on the design.
2. If you use double oil seals, fill the space to one-third with grease.

### 6.5.3 Painting the gear unit

#### NOTICE

Paint can block the breather valve and damage the sealing lips of the oil seals.

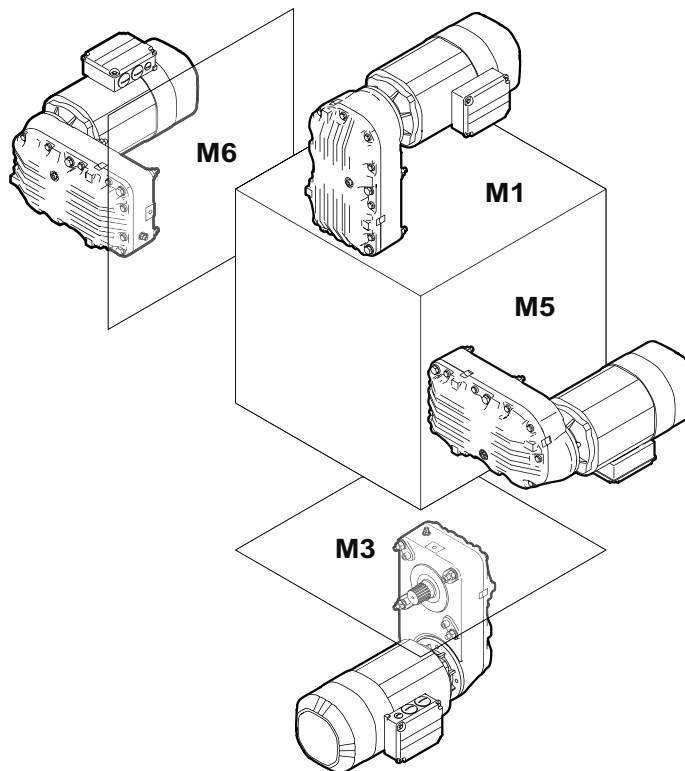
Damage to property.

- Thoroughly cover the breather valve and sealing lip of the oil seals with strips prior to painting/re-painting.
- Remove the adhesive strips after painting.

## 7 Mounting positions

### 7.1 Designation of the mounting positions

The following illustration shows the SEW-EURODRIVE mounting positions M1 – M6:



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### 7.2 Change of mounting position

Observe the following information when operating the gearmotor in a mounting position other than the one indicated in the order:

- Changes of the mounting position require new project planning. Contact SEW-EURODRIVE.
- Adjust the lubricant fill quantity to the changed mounting position.
- Adjust the position of the breather valve.

## 7.3 Mounting position sheets

### 7.3.1 Key to the mounting position sheets



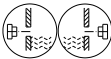
#### INFORMATION

The positions of the breather valve, oil level plug, and oil drain plug specified in the mounting position sheets are binding and comply with the assembly specifications.

The motors are only depicted symbolically on the mounting position sheets.

#### Symbols used

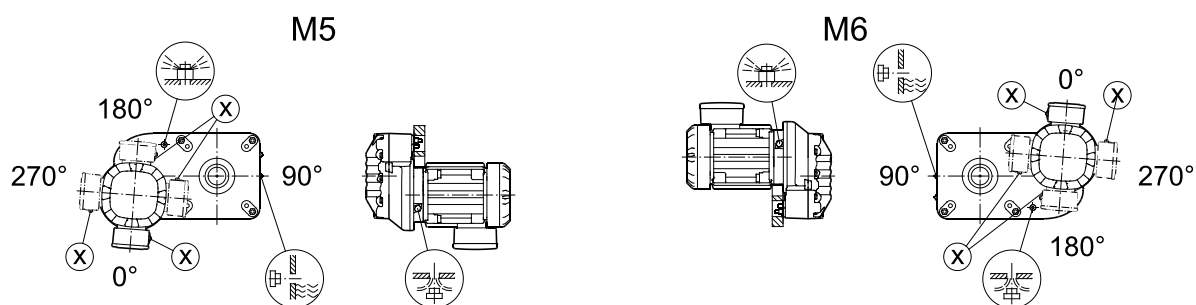
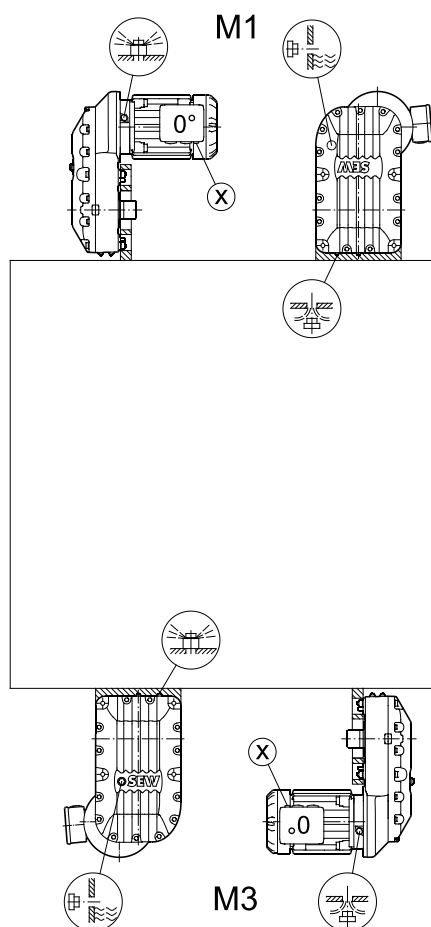
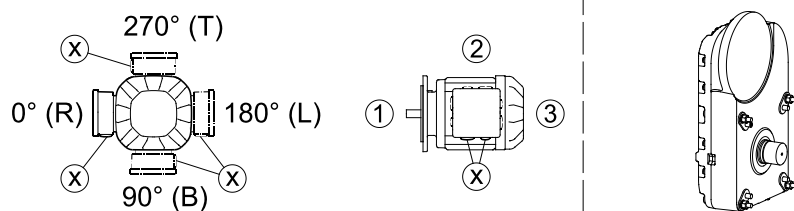
The following table shows the symbols used in the mounting position sheets.

| Symbol                                                                            | Meaning        |
|-----------------------------------------------------------------------------------|----------------|
|  | Breather valve |
|  | Oil level plug |
|  | Oil drain plug |

## 7.3.2 Mounting positions for hoist gear units

G67 – G157

10 013 01 19



## 8 Technical data

### 8.1 Lubricants

Unless a special arrangement has been made, SEW-EURODRIVE supplies the drives with a lubricant fill adapted for the specific gear unit and mounting position. The decisive factor is the specification of the mounting position when ordering the drive. You must adapt the lubricant fill to any subsequent changes made to the mounting position. For quantity information, refer to chapter "Lubricant fill quantities" (→ 43).

#### 8.1.1 Bearing greases

The gear unit rolling bearings are given a factory-fill with the greases described below.

The following table shows the lubricants recommended by SEW-EURODRIVE:

| Area of application | Ambient temperature | Manufacturer  | Type                            |
|---------------------|---------------------|---------------|---------------------------------|
| Standard            | -40 °C to +80 °C    | SEW-EURODRIVE | Grease HL 2 E1 <sup>1)</sup>    |
|                     |                     | Fuchs         | Renolit CX-TOM 15 <sup>1)</sup> |
|                     |                     | Klüber        | Petamo GHY 133 N                |

1) Bearing grease based on semi-synthetic base oil.

The rolling bearings do not need to be re-greased. If the rolling bearings have been washed or new ungreased rolling bearings are installed, the rolling bearings must be filled with the following grease quantities:

- **For fast-running bearings (gear unit input side):** Fill the cavities between the rolling elements one-third full with grease.
- **For slow-running bearings (gear unit output side):** Fill the cavities between the rolling elements two-thirds full with grease.

### INFORMATION



If a customer wants to use a grease that is not listed in the above table, the customer has to make sure that it is suitable for the intended application.

## 8.1.2 Lubricant table

**NOTICE**

Damage to the gear unit due to improper lubricants.

Possible damage to property.

- Do not mix synthetic lubricants.
- Do not mix synthetic lubricants and mineral lubricants.

The lubricant recommendation provided in the lubricant table in no way represents a guarantee as to the quality of the lubricant delivered by each respective supplier. Each lubricant manufacturer is responsible for the quality of their product.

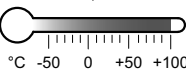
Oils of the same viscosity class from different manufacturers do not have the same characteristics. In particular, the minimum and maximum permitted oil bath temperatures are manufacturer-specific. These temperatures are specified in the lubricant tables.

The oil viscosity and type (mineral/synthetic) to be used are determined by SEW-EURODRIVE specifically for each order. This information is noted in the order confirmation and on the gear unit's nameplate. If you use other lubricants for the gear units and/or use the lubricants at temperatures outside the recommended temperature range, SEW-EURODRIVE does not assume liability.

The values specified in the lubricant tables apply as of the time of printing of this document. The data of the lubricants are subject to dynamic change on the part of the lubricant manufacturers. For the latest information about the lubricants, visit: **[www.sew-eurodrive.de/lubricants](http://www.sew-eurodrive.de/lubricants)**.

To avoid gear unit damage, use only one lubricant type.

Information on the table structure

|                                                                                                  |                                                                                                                       |     |                                      |  |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------|--|
| <div>[1]</div>  | <div>[2]</div> <br>°C -50 0 +50 +100 |     | <div>[3]</div> ISO, SAE<br>NLGI      |  |
|                                                                                                  | -15                                                                                                                   | +40 | VG 460                               |  |
|                                                                                                  | -25                                                                                                                   | +30 | VG 220                               |  |
|                                                                                                  | <div>[4]</div>                      |     | <div>[5]</div> CLP HC - NSF H1 - PSS |  |

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- [1] Gear unit type
- [2] Ambient temperature range
- [3] Viscosity class
- [4] Information about special approvals
- [5] Lubricant type

The specified ambient temperatures are guide values for selecting a suitable lubricant. The exact upper and lower temperature limits for project planning are specified in the table with the respective trade name. Bear in mind during project planning that the viscosity increases at low temperatures and that this might influence the starting behavior.

Information on the various lubricants

|                |        |                |                |
|----------------|--------|----------------|----------------|
|                |        | <div>[3]</div> |                |
| <div>[1]</div> | -15    | +80            | <div>[4]</div> |
| <div>[2]</div> | XYZ108 |                |                |
|                |        | SEW070030014   | <div>[5]</div> |

- [1] Lowest oil sump temperature in °C, going below this value during operation is not permitted.
- [2] Trade name
- [3] Manufacturer
- [4] Highest oil sump temperature in °C. The service life will be considerably reduced when this temperature is exceeded. Observe the lubricant change intervals. For more information, refer to chapter "Lubricant change intervals" (→ 30).
- [5] Approvals regarding compatibility of the lubricant with approved oil seals

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## Lubricant compatibility with oil seals

| Approval      | Explanation                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SEW07004__13: | A lubricant especially recommended with regard to compatibility with the approved oil seals. The lubricant exceeds the state-of-the-art requirements regarding elastomer compatibility. |

## Key

The following table shows the symbols and abbreviations used in the lubricant table and their meaning.

| Abbreviation/symbol                                                               | Meaning                                                                                                                            |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|  | Synthetic lubricant (marked gray)                                                                                                  |
|  | Mineral lubricant                                                                                                                  |
| CLP                                                                               | Mineral oil                                                                                                                        |
| CLP PG                                                                            | Polyglycol (PG)                                                                                                                    |
| CLP HC                                                                            | Synthetic hydrocarbons to polyalphaolefins (PAO)                                                                                   |
| E                                                                                 | Ester-based oil                                                                                                                    |
| RWDR                                                                              | Oil seal                                                                                                                           |
| PSS                                                                               | Oil seal of the Premium Sine Seal type. The addendum "PSS" for the lubricant type indicates compatibility with the sealing system. |

## Lubricant table for G.. gear units

The lubricant table is valid on the day this document is published. Refer to [www.sew-eurodrive.de/lubricants](http://www.sew-eurodrive.de/lubricants) for the latest tables.

Observe the thermal application limit of the oil seal materials under "Lubricant compatibility with oil seals" (→ 42).

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[1] Note on special approvals

[2] Oil type

[3] Ambient temperature range

[4] Standard

### 8.1.3 Lubricant fill quantities

The following table shows guide values for lubricant fill quantities in relation to the mounting positions M1 – M6.

The exact values vary depending on the number of gear stages and the gear ratio. Always check the oil level plug during filling for the exact oil quantity.

Unless a special arrangement is made, SEW-EURODRIVE supplies the drives with a lubricant fill adapted for the specific mounting position. The decisive factor is the specification of the mounting position when ordering the drive.

When the mounting position is changed, the lubricant fill quantity must be adapted accordingly. Do not change the mounting position without prior consultation with SEW-EURODRIVE, otherwise the rights to claim under limited warranty become void.

### G.. series hoist gear units

The following table shows guide values for lubricant fill quantities in relation to the mounting position.

| Mounting position | G67 | G77 | Size G97 | G107 | G157 |
|-------------------|-----|-----|----------|------|------|
| M1                | 2.5 | 4.8 | 14.6     | 20.8 | 29.2 |
| M3                | 2   | 4.4 | 9.3      | 14.7 | 21.9 |
| M5                | 1.8 | 3.6 | 10.1     | 14.7 | 21.1 |
| M6                | 1.8 | 3.6 | 9.1      | 13   | 18.4 |

## 9 Malfunctions and remedies

### 9.1 Before you start

Observe the following notes when working on the drive:

- De-energize the drive before starting work.
- Secure the drive against unintended power-up.
- Let the unit cool down sufficiently before you start working on it.
- Repair works at SEW-EURODRIVE gear units may only be performed by qualified specialists. In the context of this documentation, qualified specialists are persons who are familiar with the "Technical regulations on operating safety" (TRBS).
- Gear unit and motor may only be disconnected by qualified specialists. Contact SEW-EURODRIVE.

### 9.2 Gear units

| Fault                                                           | Possible cause                                                                                                                                                                                                                                                                                  | Measure                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unusual, regular running noise                                  | <ul style="list-style-type: none"> <li>• Meshing/grinding noise: Bearing damage</li> <li>• Knocking noise: Irregularity in the gearing</li> <li>• Deformation of the housing upon tightening</li> <li>• Noise generation caused by insufficient rigidity of the gear unit foundation</li> </ul> | <ul style="list-style-type: none"> <li>• Check the oil consistency; change bearings</li> <li>• Contact SEW-EURODRIVE. For a better assessment of the failure, send an audio recording of the noise</li> <li>• Check the gear unit mounting for possible deformation and correct if necessary</li> <li>• Reinforce the gear unit foundation</li> </ul> |
| Unusual, irregular running noises                               | <ul style="list-style-type: none"> <li>• Foreign objects in the oil</li> </ul>                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Check the oil consistency</li> <li>• Stop the drive, contact SEW-EURODRIVE</li> </ul>                                                                                                                                                                                                                        |
| Oil leaking from gear unit cover                                | <ul style="list-style-type: none"> <li>• Seal of the gear unit cover leaking</li> </ul>                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Tighten the screws of the gear unit cover and observe the gear unit. Contact SEW-EURODRIVE if oil is still leaking</li> </ul>                                                                                                                                                                                |
|                                                                 | <ul style="list-style-type: none"> <li>• Seal defective</li> </ul>                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Contact SEW-EURODRIVE</li> </ul>                                                                                                                                                                                                                                                                             |
| Small amounts of oil leak from the oil seal during run-in phase | <ul style="list-style-type: none"> <li>• Function-related pseudo-leakage</li> </ul>                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• There is no failure. Remove with a soft, lint-free cloth and keep monitoring it.</li> </ul>                                                                                                                                                                                                                  |
| Film of moisture around the dust lip of the oil seal            | <ul style="list-style-type: none"> <li>• Function-related pseudo-leakage</li> </ul>                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• There is no failure. Remove with a soft, lint-free cloth and keep monitoring it.</li> </ul>                                                                                                                                                                                                                  |
| Oil leaking from oil seal                                       | <ul style="list-style-type: none"> <li>• Oil seal leaking/defective</li> </ul>                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Check sealing system. It may be necessary to consult SEW-EURODRIVE</li> </ul>                                                                                                                                                                                                                                |

| Fault                                                                                  | Possible cause                                           | Measure                                                              |
|----------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------|
| Oil leaking from motor (e.g. terminal box or fan)                                      | • Too much oil                                           | • Check oil level, correct if necessary                              |
|                                                                                        | • Gear unit not ventilated                               | • Vent gear unit                                                     |
|                                                                                        | • Oil seal leaking/defective                             | • Check sealing system. It may be necessary to consult SEW-EURODRIVE |
| Oil leaking from flange                                                                | • Flange gasket leaking/defective                        | • Check sealing system. It may be necessary to consult SEW-EURODRIVE |
|                                                                                        | • Too much oil                                           | • Check oil level, correct if necessary                              |
|                                                                                        | • Gear unit not ventilated                               | • Vent gear unit                                                     |
| Oil emerging from breather valve                                                       | • Too much oil                                           | • Check oil quantity, correct if necessary                           |
|                                                                                        | • Function-related oil mist                              | • There is no failure.                                               |
|                                                                                        | • Drive not installed in proper mounting position        | • Install breather valve correctly and adjust the oil level.         |
|                                                                                        | • Frequent cold starts (oil foams) and/or high oil level | • Install oil expansion tank                                         |
| Output shaft does not turn although the motor is running or the input shaft is rotated | • Shaft-hub connection in the gear unit interrupted      | • Send in the gear unit/gearmotor for repair                         |

### 9.3 Service

If you require customer service, include the following information:

- Nameplate data (complete)
- Type and extent of the failure
- Time the failure occurred and any accompanying circumstances
- Assumed cause
- A digital picture of the failure, if possible

### 9.4 Waste disposal

Dispose of the product and all parts separately in accordance with their material structure and the national regulations. Put the product through a recycling process or contact a specialist waste disposal company. If possible, divide the product into the following categories:

- Iron, steel or cast iron
- Stainless steel
- Aluminum
- Copper
- Plastics

The following materials are hazardous to health and the environment. These materials must be collected and disposed of separately:

- Oil and grease

Collect used oil and grease separately according to type. Ensure that the used oil is not mixed with solvent. Dispose of used oil and grease correctly.

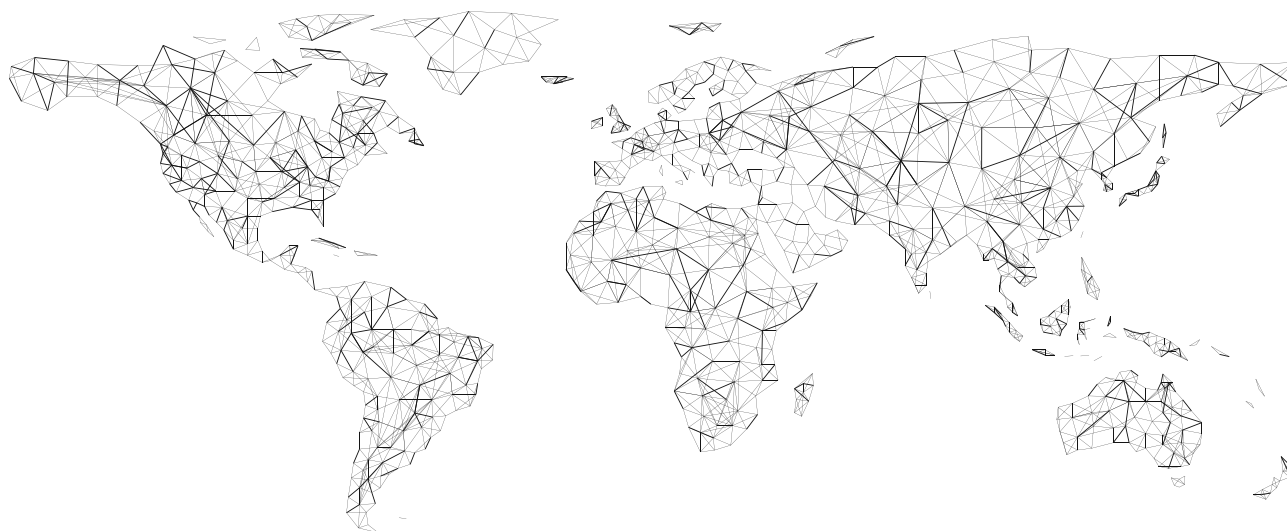
## 10 Contacting SEW-EURODRIVE

You can find the worldwide contact data and locations on the **SEW-EURODRIVE website** via the following link or the QR code shown below.

<https://www.sew-eurodrive.de/contacts-worldwide>



**SEW**  
**EURODRIVE**



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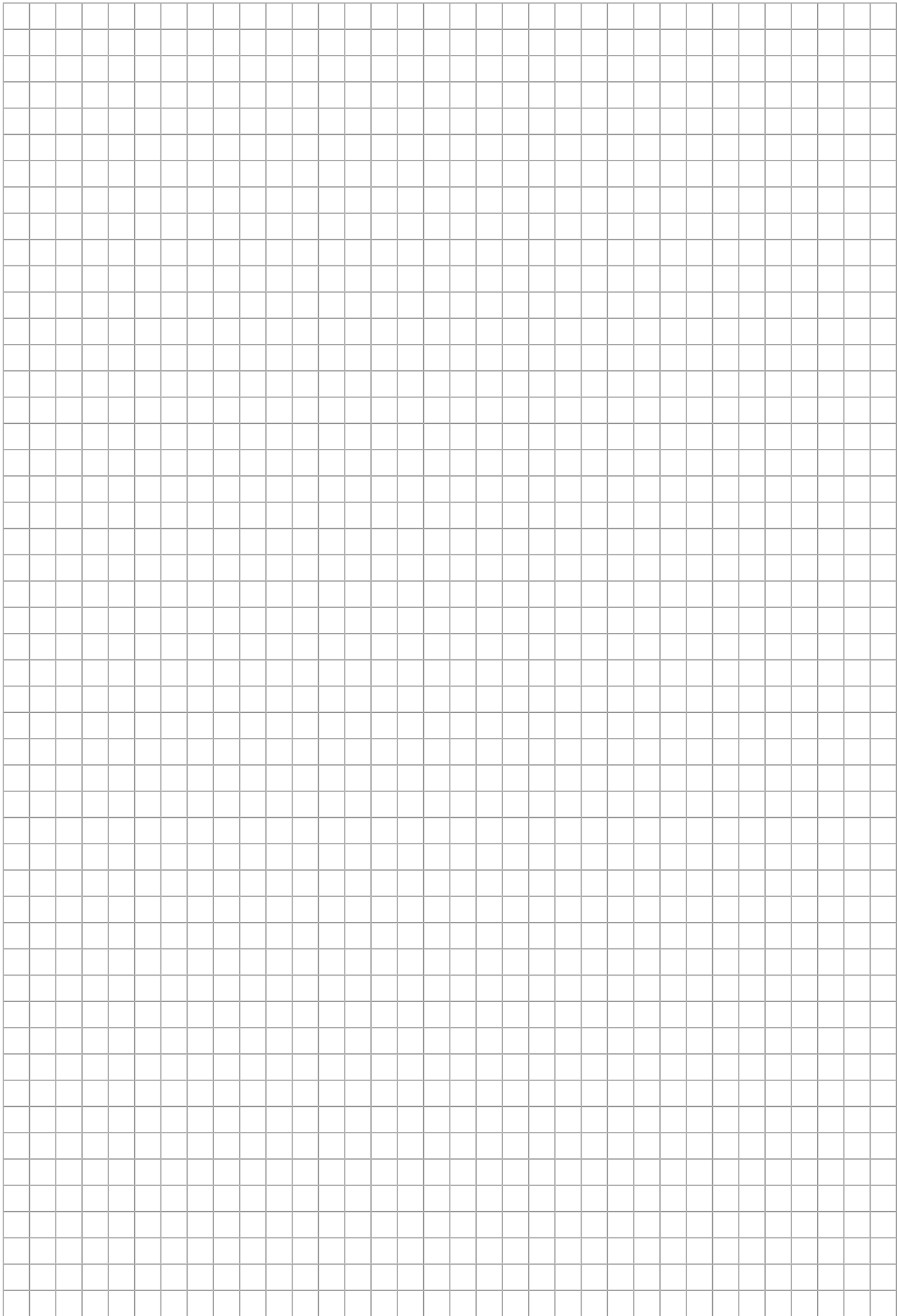
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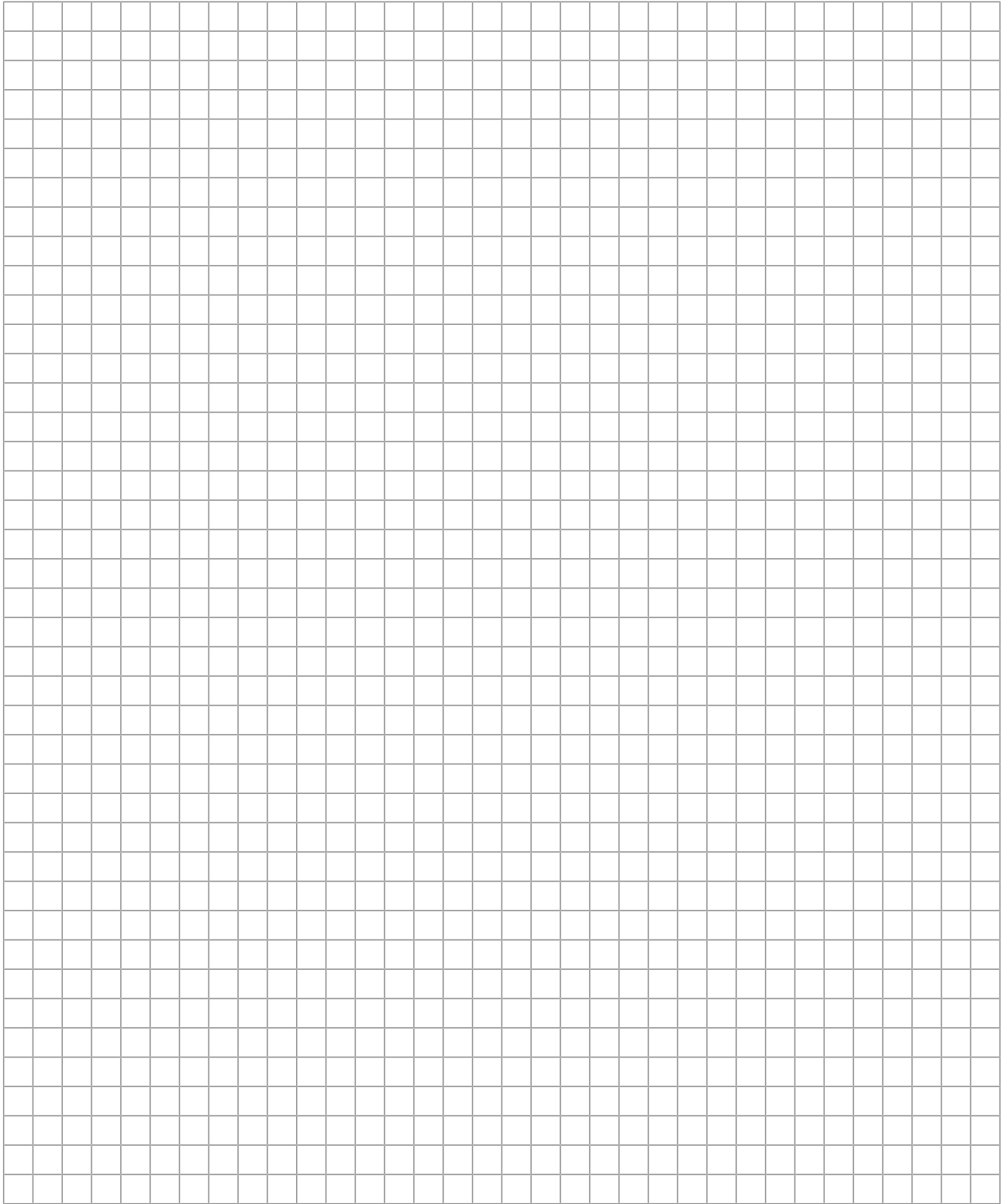
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