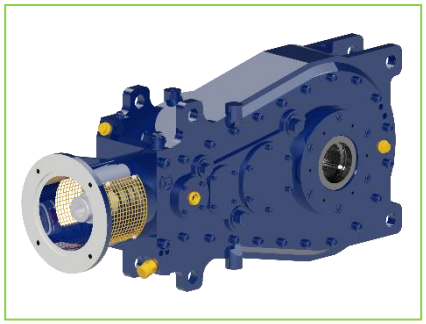
EXPANDED OPERATING MANUAL
EX AREAS

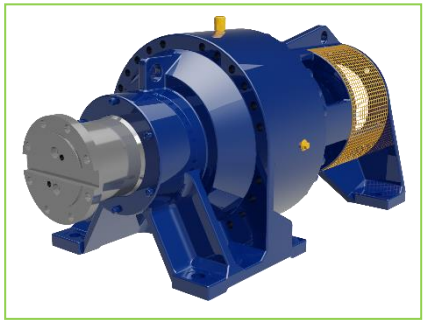
ZIMM® Germany
Reliable - Powerful - Experienced

ZIMM Industrial gearboxes

Spiral bevel, angle, spur, transfer, planetary and bevel planetary gear units

Assembly | Operation | Maintenance | Inspection





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This operating manual is also available for download in other languages.

Additional interesting information on industrial gear units and suitable components can be found on our website.

1 About this document

1.1 Using this operating manual

This operating manual is part of the ZIMM industrial gearboxes.

➔ Read the operating manual carefully before use.

➔ Keep the operating manual for the entire service life of the gearbox.

➔ Keep the operating manual available to operating and maintenance personnel at all times.

➔ Forward the operating manual to the following owners or users.

➔ Update the operating manual whenever a supplement is received from the manufacturer.

1.2 Symbols and labels

Symbol	Meaning
Ex	**NOTES: RISK OF EXPLOSION / AT RISK AREA** Important information on conduct in at risk areas and protection from explosions.
⚠ **DANGER**	Hazardous to persons. Non-compliance can lead to death or severe injuries.
⚠ **WARNING**	Hazardous to persons. Non-compliance can lead to death or severe injuries.
⚠ **CAUTION**	Hazardous to persons. Non-compliance can lead to slight injuries.
CAUTION	Information on avoiding material damage
❗ **NOTES**	Note on understanding or optimising the workflow
✓	Prerequisite for an instruction manual
➔	One-step action request
1. … 2. …	Multi-step action request. ➔ Observe sequence.

Tab. 1: Symbols and labels

2 Safety - Expansion

These expanded safety instructions also apply to the general operating manual ZG-BV-001 and are a component of the product documentation. For safety reasons, this operating manual must be strictly complied with at all times. In case of doubt, the measures contained in this document take precedence over the general operating manual. These instructions apply to gearboxes, their components and add-on components (such as motors and oil systems); these are summarised/designated as gearboxes in these additional instructions.
The safety instructions should protect people and objects from injuries and dangers arising from improper use, faulty operation, inadequate maintenance, or other incorrect handling of gearboxes in industrial plants.

⚠ WARNING

RISK OF INJURY!

Gearboxes have rotating surfaces which can become hot under some circumstances. All warning and information signs on the machines must be strictly observed.

⚠ WARNING

RISK OF BURNS!

The housing surfaces can become hot under certain operating conditions, even if oil temperatures are within the permissible range

This operating manual contains no details or instructions on occupational safety; such documents must be included with the product by the end producer. If the gearbox is used, the end producer is required to cover the rotating shaft ends and the parts attached to them. The gearbox must be set up so that it is not exposed to any harmful effects (such as water, chemical fumes, acid, and extreme temperatures). If these instructions are violated or not followed, or if unauthorised parties interfere, the gearbox manufacturer does not assume any warranty and any resulting claim for damages will be rejected. The manufacturer must be consulted in the event of additional axial and radial forces or torque to the gear shaft ends that were not previously mentioned here. The gearboxes shall be used in accordance with the respective contract.

NOTE: RISK OF EXPLOSION / AT RISK AREA

The use of gearboxes in potentially explosive atmospheres is permitted only for gearboxes intended for such places. Noncompliance or improper use can lead to severe damage, injury or death.

2.1 Duties of the operator

⚠ CAUTION

All necessary work to electrical and mechanical drives, in particular planning, transport, assembly, installation, commissioning, maintenance and repair, may be performed only by sufficiently qualified personnel who are thoroughly familiar with explosion protection and any precautions to avoid damage and explosions and can implement those precautions.

3 Intended use - Expansion

These gearboxes are intended for commercial facilities unless otherwise expressly agreed. They comply with the contractually agreed standards. Use in Ex zones is permitted only within the specified surrounding area. Their use is expressly forbidden in areas with higher than the agreed protection requirements. The gearboxes are designed and manufactured as specified in the respective order. Deviating statements on the type plate must be strictly observed.

CAUTION
The conditions at the site must comply with all documentation relevant to performance specifications (such as a dimension drawing or type plate). Gearboxes are components to be installed in machines as defined in the Machinery Directive 2006/42/EC. Commissioning is prohibited until it has been determined that the end product is in conformity with this directive (in compliance with EN 60204-1).

4 Type plate - Expansion

Fig. 2: ZIMM industrial gearboxes type plate

1 Manufacturer / country of manufacture / web address
2 Type designation
3 Article number
4 Lubricant
5 ID number gearboxes (continuous)
6 Gearbox weight in kg
7 Amount of lubricant in l
8 Year of build

NOTES: RISK OF EXPLOSION / AT RISK AREA

If special measures are required to use gearboxes, this is indicated by a special mark “II...X”. These measures may be needed for various reasons (such as reduced output torque, etc.). The necessary information regarding the special measures to be taken was communicated to the buyer the first time the gearboxes were placed onto the market. The buyer must ensure the special measures are implemented and complied with.

5 Transport and storage - Expansion

NOTES: RISK OF EXPLOSION / AT RISK AREA

Check the transport packaging for oil residues and damage. Oil residues can indicate that the gearbox has a leak. Lubrication of the gearbox can no longer be ensured when the oil status is too low. This can lead to greater wear and increased temperatures in the gearbox. You must contact ZIMM Germany GmbH if you see any oil residues.

6 Setup, assembly - Expansion

➔ Before installation,

– das Getriebe auf etwaige (Lack-)Schäden zu untersuchen,

– check the information on the type plate and the technical documentation of the gearbox to determine that it conforms with the environmental conditions of the operation site

If you find any deviations, you must contact ZIMM Germany GmbH.

NOTE: RISK OF EXPLOSION / AT RISK AREA

Avoid any strong charge-generating processes caused by quickly moving parts on the coating layer.

6.1 Alignment, connection

You may change the type only after obtaining the written consent of ZIMM Germany GmbH. Without such consent, such an exchange will void the guarantee and ATEX permit.

NOTES: RISK OF EXPLOSION / AT RISK AREA

When add-on components such as couplings, motors, shrink-on discs, etc. are connected, only ATEX-approved components may be used insofar as they are within the scope of Directive 94/9/EC. You must COMPLY with the relevant operating instructions and any additional regulations. The connection of components is permitted only with special tools intended for that purpose (such as a fitting device) and by adequately trained personnel. The use of spacer sleeves as an assembly aid is forbidden! Contact ZIMM Germany GmbH if necessary.
Make sure no risk of explosion arises due to improper use and/or an explosive atmosphere. Make sure there is no electrochemical corrosion between the gearbox and the add-on parts. In case of doubt, use a 2–3 mm thick plastic spacer piece with an electrical conductive resistance of < 10^9 Ω. This also applies to screws and similar fastening components.

NOTES: RISK OF EXPLOSION / AT RISK AREA

Sparks might be generated if the gearbox housing is insufficiently grounded. Install an additional grounding to the gearbox and use the grounding screws if available.

NOTES: RISK OF EXPLOSION / AT RISK AREA

When connecting electrical wiring, COMPLY with the applicable safety provisions and technical documents. If necessary, ask the manufacturer.

6.2 Commissioning

NOTES: RISK OF EXPLOSION / AT RISK AREA

Check the gearbox for damage before start-up.
Continue checking the oil status using the oil level controller (e.g. a gauge glass) provided for that purpose. If the oil status is too low, the gearbox's surface temperature might increase.
Before commissioning the gearbox, make sure that surrounding conditions conform to the information on the type plate and the additional technical documents.

NOTES: RISK OF EXPLOSION / AT RISK AREA

When the gearbox is commissioned, the surface temperature must be measured in maximum load condition. If the differential values increase, the gearbox must be shut down immediately.
If this occurs, contact ZIMM Germany GmbH.

NOTES: RISK OF EXPLOSION / AT RISK AREA

A motor attached to the gearbox may not exceed the performance data and information in the technical documents.

⚠ WARNING

The surface temperature should be measured over at least two hours; this should be repeated until the temperature on the gearbox no longer increases. If the permissible temperature of the oil/environment/ gearbox is exceeded, the gearbox must be shut down immediately.

6.3 Components

NOTES: RISK OF EXPLOSION / AT RISK AREA

When add-on components such as couplings, motors, shrink-on discs, etc. are connected, only ATEX-approved components may be used insofar as they are within the scope of Directive 94/9/EC. You must COMPLY with the relevant operating instructions and any additional regulations. The connection of components is permitted only with special tools intended for that purpose (such as a fitting device) and by adequately trained personnel. The use of spacer sleeves as an assembly aid is forbidden! Contact ZIMM Germany GmbH if necessary.
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7 Operation and maintenance - Expansion

7.1 Inspection

NOTES: RISK OF EXPLOSION / AT RISK AREA

The plant operator must ensure that the maximum thickness of a possible dust deposit in accordance with EN 50281-1-2 does not exceed 5 mm.

NOTES: RISK OF EXPLOSION / AT RISK AREA

No materials or procedures (such as compressed air) that initiate charge-generating processes on the coating layer during cleaning of the gearbox may be used.

7.2 Lubrication

NOTES: RISK OF EXPLOSION / AT RISK AREA

When using gearboxes in at risk areas,
consult with ZIMM Germany GmbH before changing the lubricant.

8 Cleaning

NOTES

Do not clean the gearbox with solvents that would damage the sealing elements. Cleaning with pressure blast devices is generally forbidden. The guarantee is immediately forfeited if any water or solvents enter the gearbox housing.

9 Operating manuals

For reasons of simplicity, operating manuals and safety instructions cannot contain all information on all designs of the gearboxes and cannot consider every conceivable case of installation, operation or maintenance. These instructions are essentially limited to what is needed for proper work performed by qualified personnel. If anything is unclear, please check with the manufacturer.

10 Warranty and liability

The manufacturer's warranty obligations are set forth in the respective delivery contract, which is neither supplemented nor restricted by these safety instructions or other instructions. These safety instructions must be kept in a safe place!

NOTES

The warranty is forfeited if the ZIMM industrial gearbox is taken apart.

➔ ZIMM industrial gearboxes may be taken apart only by ZIMM or personnel authorised by ZIMM.

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