Swing Piston Pump

Pump GZ

Installation / Operating manual

Order number:
Order Item number:
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Installation/Operating Manual GZ
Translation of the original operating manual

KSB Aktiengesellschaft

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Glossary

Certificate of Decontamination
A certificate of decontamination certifies that the pump (set) has been properly drained to eliminate any environmental and health hazards arising from components in contact with the fluid handled.

Drive
Electric drive included, single piece pump

Pump set
Pump set complete including pump, drive, components and accessories.

Pump
Complete set, single piece

Pool of pumps
Pumps which are purchased and stored independently of their later use
1. General

1.1 Principles

This manual is supplied as an integral part of the type series and variants indicated on the front cover. It describes the proper and safe use of this equipment in all phases of operation.

The name plate indicates the type series and size, the main operating data, the order number and the order item number. The order number and order item number clearly identify the pump (set) and serve as identification for all further business processes.

In the event of damage, immediately contact your nearest KSB service centre to maintain the right to claim under warranty.

1.2 Installation of partly completed machinery

To install partly completed machinery supplied by KSB, please refer to the subsections under Servicing/Maintenance.

1.3 Target group

This manual is aimed at the target group of trained and qualified specialist technical personnel. (⇨ Section 2.4)

1.4 Other applicable documents

Table 1: Overview of other applicable documents

<table>
<thead>
<tr>
<th>Document</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data sheet</td>
<td>Description of the technical data of the pump (set)</td>
</tr>
<tr>
<td>General arrangement drawing/</td>
<td>Description of mating and installation dimensions for the pump (set)</td>
</tr>
<tr>
<td>Outline drawing</td>
<td></td>
</tr>
<tr>
<td>Drawing of auxiliary connections</td>
<td>Description of auxiliary connections</td>
</tr>
<tr>
<td>Hydraulic characteristic curve</td>
<td>Characteristic curves showing head, NPSH required, efficiency and power input</td>
</tr>
<tr>
<td>General assembly drawing 1)</td>
<td>Sectional drawing of the pump</td>
</tr>
<tr>
<td>Sub-supplier documentation 1)</td>
<td>Operating manuals and other documentation of accessories and integrated machinery component</td>
</tr>
</tbody>
</table>

1) If agreed to be included in the scope of supply

1.5 Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Conditions which need to be fulfilled before proceeding with the step-by-step instructions</td>
</tr>
<tr>
<td>►</td>
<td>Safety instructions</td>
</tr>
<tr>
<td>⇒</td>
<td>Result of an action</td>
</tr>
<tr>
<td>⇒</td>
<td>Cross-references</td>
</tr>
<tr>
<td>1.</td>
<td>Step-by-step instructions</td>
</tr>
<tr>
<td>2.</td>
<td>Step-by-step instructions</td>
</tr>
<tr>
<td>🚨</td>
<td>Note Recommendations and important information on how to handle the product.</td>
</tr>
</tbody>
</table>

Note

Recommendations and important information on how to handle the product.
2. Safety

All the information contained in this section refers to hazardous situations

2.1 Key to safety / symbols

Table 2: Definition of safety symbols / markings

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DANGER" /></td>
<td>This signal word indicates a high-risk hazard which, if not avoided, will result in death or serious injury.</td>
</tr>
<tr>
<td><img src="image" alt="WARNING" /></td>
<td>This signal word indicates a medium-risk hazard which, if not avoided, could result in death or serious injury.</td>
</tr>
<tr>
<td><img src="image" alt="CAUTION" /></td>
<td>This signal word indicates a hazard which, if not avoided, could result in damage to the machine and its functions.</td>
</tr>
<tr>
<td><img src="image" alt="General hazard" /></td>
<td>In conjunction with one of the signal words this symbol indicates a hazard which will or could result in death or serious injury.</td>
</tr>
<tr>
<td><img src="image" alt="Electrical hazard" /></td>
<td>In conjunction with one of the signal words this symbol indicates a hazard involving electrical voltage and identifies information about protection against electrical voltage.</td>
</tr>
<tr>
<td><img src="image" alt="Machine damage" /></td>
<td>In conjunction with the signal word CAUTION this symbol indicates a hazard for the machine and its functions.</td>
</tr>
</tbody>
</table>

2.2 General

This manual contains general installation, operating and maintenance instructions that must be observed to ensure safe pump operation and prevent personal injury and damage to property.

The safety information in all sections of this manual must be complied with.

This manual must be read and completely understood by the responsible specialist operators prior to installation and commissioning.

The contents of this manual must be available to the specialist personnel at the site at all times.

Information attached directly to the pump must always be complied with and be kept in a perfectly legible condition at all times. This applies to, for example:

- Arrow indicating the direction of rotation
- Markings for connections
- Name plate

The operator is responsible for ensuring compliance with all local regulations which are not taken into account in this manual.

2.3 Intended use

The pump (set) must only be operated within the operating limits described in the other applicable documents.

- only operate pumps/pump sets which are in perfect technical condition.
- do not operate partially assembled pumps/pump sets.
• the pump must only be used to handle the fluids specified in the data sheet or product literature of the respective design variant.
• never operate the pump without the fluid to be handled.
• Observe the minimum flow rates indicated in the data sheet or product literature (to prevent overheating, bearing damage, etc).
• Observe the maximum flow rates indicated in the data sheet or product literature (to prevent overheating, mechanical seal damage, cavitations damage, bearing damage, etc).
• do not throttle the flow rate on the suction side of the pump (to prevent cavitations damage).
• Consult the manufacturer about any use or mode of operation not described in the data sheet or product literature.

Prevention of foreseeable misuse

• never open discharge-side shut-off elements further than permitted.
  – The maximum flow rate specified in the data sheet or product literature would be exceeded.
  – Risk of cavitations damage.
• never exceed the permissible operating limits specified in the data sheet or product literature regarding pressure, temperature, etc...
• Observe all safety information and instructions in this manual.

2.4 Personnel qualification and training

All personnel involved must be fully qualified to install, operate, maintain and inspect the machinery this manual refers to.

The responsibilities, competence and supervision of all personnel involved in installation, operation, maintenance and inspection must be clearly defined by the operator.

Deficits in knowledge must be rectified by sufficiently trained specialist personnel training and instructing the personnel who will carry out the respective tasks. If required, the operator can commission the manufacturer/supplier to train the personnel.

Training on the pump (set) must always be supervised by technical specialist personnel

2.5 Consequences and risks caused by non-compliance with these operating instructions

• Non-compliance with these operating instructions will lead to forfeiture of warranty cover and of any and all rights to claims for damages.
• Non-compliance can, for example, have the following consequences:
  – Hazards to persons due to electrical, thermal, mechanical and chemical effects and explosions
  – Failure of important product functions
  – Failure of prescribed maintenance and servicing practices
  – Hazard to the environment due to leakage of hazardous substances

2.6 Safety awareness

In addition to the safety information contained in this manual and the intended use, the following safety regulations shall be complied with:
• Accident prevention, health and safety regulations
• Explosion protection regulations
• Applicable standards and laws

2.7 Safety information for the operator/user

• the operator shall fit contact guards for hot, cold or moving parts and check that the guards functions properly.
• do not remove the contact guard while the pump is running.
• Connect an earth conductor to the metal jacket if the fluid handled is electro statically charged.
• provide the personnel with protective equipment and make sure it is used.
• Contain leakages (e.g. at the shaft seal) of hazardous fluids handled (e.g. explosive, toxic, hot) so as to avoid any danger to persons and the environment.
Adhere to all relevant laws.
• Eliminate all electrical hazards. (In this respect refer to the applicable national safety regulations and/or regulations issued by the local energy supply companies.)

2.8 Safety information for maintenance, inspection and installation work

• Modifications or alterations of the pump are only permitted with the manufacturer’s prior consent.
• use only original spare parts or parts authorised by the manufacturer. The use of other parts can invalidate any liability of the manufacturer for consequential damage.
• the operator ensures that all maintenance, inspection and installation work is performed by authorised, qualified specialist personnel who are thoroughly familiar with the manual.
• Carry out work on the pump (set) during standstill only
• the pump casing must have cooled down to ambient temperature.
• Pump pressure must have been released and the pump must have been drained.
• when taking the pump set out of service always adhere to the procedure described in the manual. (☞ Section 6.1.2)
• Decontaminate pumps which handle fluids posing a health hazard.
• As soon as the work is completed, re-install and/or re-activate any safety-relevant and protective devices. Before returning the product to service, observe all instructions on commissioning. (☞ Section 6.1)

2.9 Unauthorised modes of operation

Never operate the pump (set) outside the limits stated in the data sheet and in this manual.

The warranty relating to the operating reliability and safety of the supplied pump (set) is only valid if the equipment is used in accordance with its intended use. (☞ Section 2.3)

2.10 Explosion protection

Always observe the instructions on explosion protection given in this section when operating the pump in potentially explosive atmospheres.

► Only pumps/pump sets marked as explosion-proof and identified as such in the data sheet may be used in potentially explosive atmospheres.

► Special conditions apply to the operation of explosion-proof pump sets to EC Directive 94/9/EC (ATEX).

Never operate these pumps / pump sets in explosive atmospheres!
3. Transport / Temporary storage / Disposal

3.1 Transport

**CAUTION**

*Improper pump transport*
*Damage to the pump!*

► Only lift or hold the pump by the suction or discharge nozzle
► Never hold by the power cable

The pump is supplied filled with clean, decalcified water.
The suction and discharge nozzles are closed with protective covers

3.2 Temporary storage / Preservation

**CAUTION**

*Damage during storage by humidity, dirt, or vermin*
*Corrosion/contamination of the pump (set)!*

► For outdoor storage cover the pump (set) or the packaged pump (set) and accessories with waterproof material.

*Wet, contaminated or damaged openings and connections*
*Leakage or damage to the pump set!*

► Only remove caps/covers from the openings of the pump set at the time of installation.

Store the pump (set) in a dry, protected room where the atmospheric humidity is as constant as possible.

If properly stored indoors, the pump set is protected for a maximum of three months (please refer to order or order confirmation)

New pumps/pump sets are supplied by our factory duly prepared for storage..

For storage periods exceeding three months, the pump set is preserved as specified in the purchase order (please refer to order or order confirmation).

3.3 Return to supplier

1. Drain the pump as per operating instructions (⇨ Section 7.3)
2. Always flush and clean the pump, particularly if it has been used for handling noxious, explosive, hot or other hazardous fluids. If the fluids handled by the pump leave residues which might lead to corrosion.
3. If the fluids handled by the pump leave residues which might lead to corrosion damage when coming into contact with atmospheric humidity, or which might ignite when coming into contact with oxygen, the pump set must also be neutralised, and anhydrous gas must be blown through the pump for drying purposes
4. Always complete and enclose a certificate of decontamination when returning the pump set (⇨ Section 11)
   It is imperative to indicate any safety and decontamination measures taken.
3.4 Disposal

**WARNING**

Fluids posing a health hazard
Hazardous to persons and the environment!

- Collect and properly dispose of flushing liquid and any fluid residues.
- Wear safety clothing and a protective mask, if required.
- Observe all legal regulations on the disposal of fluids posing a health hazard.

1. Dismantle the pump (set).
   Collect greases and other lubricants during dismantling.

2. Separate and sort the pump materials, e.g. by:
   - metals,
   - plastics,
   - electronic waste,
   - greases and other lubricants.

3. Dispose of materials in acc. with local regulations or in another controlled manner.
4. Description of the pump set

4.1 General description

Swing piston pump for handling clean, non-crystallizing liquids up to a max viscosity of 12mm²/s, not chemically or mechanically aggressive to the pump materials

4.2 Designation

GZ 9 300-10 MS 1 A

<table>
<thead>
<tr>
<th>Type series</th>
<th>Pump size</th>
<th>Material variant</th>
<th>Seal material</th>
<th>Nozzle connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>GZ 9</td>
<td>300-10</td>
<td>MS = Brass CuZn40Pb2</td>
<td>1 = Buna N</td>
<td>A = hose connection on suction and discharge side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C = Stainless steel</td>
<td>2 = EPDM</td>
<td>B = threaded connection on suction side and discharge side</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 = Viton</td>
<td>AB = hose connection on suction side, Threaded connection on discharge side</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BA = threaded connection on suction side, Hose connection on discharge side</td>
</tr>
</tbody>
</table>

4.3 Name plate

Fig. 1: Name plate GZ

<table>
<thead>
<tr>
<th>1 Type series</th>
<th>4 Motor frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 KSB pump code</td>
<td>5 Motor voltage</td>
</tr>
<tr>
<td>3 KSB order number (10 digits)</td>
<td>6 Motor rating</td>
</tr>
</tbody>
</table>
4.4 Design details

Electromagnetic, self-priming swing piston pump, ready for connection, splash-proof, with 1.05 m power cable 3 x 0.75 mm² h 03 VVF.

4.5 Configuration and function

1.05 m cable for installation ready to be plugged

Spring loaded discharge valve reliably retains the system pressure

Spring loaded suction valve for shorter closing times

Corrosion proof delivery piston, self-oscillating with mains frequency

Cylinder bush designed for continuous operation

Suction nozzle for hose or threaded connection

Discharge nozzle for hose or threaded connection

Wear-resistant coll, electromagnetic drive

Piston spring of corrosion-resistant bronze

Self-priming up to 0.5 m or up to 1 bar inlet
4.6 Noise characteristics
Contact manufacturer.

4.7 Scope of supply
Depending on the model, the following items are included in the scope of supply:
- Pump
- Mounting bracket with rubber sole plate
- Clamping ring

Accessories

4.8 Dimensions and weight
For dimensions and weights please refer to the general arrangement drawing/outline drawing of the pump/pump set.

5. Installation at site
5.1 Installing the pump unit

⚠️ WARNING
Discharge of the pump on the power cable side
Short-circuit hazard!
► Ensure that the ends connections are correctly sealed

The pump can be horizontally or vertically installed. We highly recommend mounting the pump vertically whenever it is possible.

In this case, a mounting bracket equipped with rubber sole plate conceived to absorb pump vibrations can be supplied upon request.

5.2 Place of installation

⚠️ WARNING
The pump takes on roughly the same temperature as the medium handled!
Burns hazard!
► Take the necessary precautions to avoid burns.

The pump shall be installed in a dry location.

5.3 Connecting the Hoses / Piping

⚠️ CAUTION
The suction nozzle of the pump must not be located at a higher level than the discharge nozzle.
5.4 Electrical connection

### DANGER

**Danger of life when hot media are handled.**

The covers on the pump suction and discharge nozzle must be removed prior to installation in the hose pipe/ pipeline. Before commissioning new installation, thoroughly clean, flush and blow through all vessels, hose pipes/ pipelines and connections.

We strongly recommend you to install a strainer at the suction nozzle.

### DANGER

**Work on the pump set by unqualified personnel**

Danger of death from electric shock!

- Always have the electrical connections installed by a trained electrician.
- Observe regulations IEC 30364 (DIN VDE 0100)

### WARNING

**Incorrect connection to the mains**

Damage to the mains network, short circuit!

- Observe the technical specifications of the local energy supply companies

Check the available mains voltage against the data on the motor name plate

#### 5.4.1 Connection with Single-Phase Alternating Current

**Fig. 2:**

3 conductor power cable

1 : Blue conductor

2 : Brown or red conductor

3 : Yellow/green conductor

\{ Phase or neutral \}

\{ Earth \}
6. Commissioning/ Start-up/Shutdown

6.1 Commissioning/start-up

**DANGER**

Work on the pump set by unqualified personnel
Danger of death from electric shock!

Before starting up the pump ensure that the shutoff element in the discharge line is fully open:

- Make sure that the unit has been properly connected to the electrical power supply and is equipped with all protection device
- Make sure that the pump is not exposed to splash water or excessive atmospheric humidity.

6.1.1 Start up

Before starting the pump, ensure that the shut off element in the discharge line is fully open.

6.1.2 Shutdown

Disconnect the pump from the power supply
In the event of frost, the pump must be protected against freezing.

6.2 Operating limits

6.2.1 Temperature of the medium handled

<table>
<thead>
<tr>
<th>Medium handle</th>
<th>Max. product temperature</th>
<th>Max. ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>60°C</td>
<td>30°C</td>
</tr>
<tr>
<td></td>
<td>30°C</td>
<td>60°C</td>
</tr>
<tr>
<td>Oil</td>
<td>100°C</td>
<td>30°C</td>
</tr>
<tr>
<td></td>
<td>70°C</td>
<td>60°C</td>
</tr>
</tbody>
</table>

6.2.2 Minimum flow

If the plant configuration is such that the pump might be opened against a closed discharge side valve, a minimum flow of 5L/h must be ensured.

6.2.3 Density of the medium handled

**CAUTION**

Impermissibly high density of the fluid handled
Motor overload!

- Observe the information on fluid density indicated in the data sheet.

The power input of the pump will increase in proportion to the density of the medium handled.
To avoid overloading, the density of the medium must comply with the data specified on the purchase order.
Max. Viscosity: 12 mm²/s
6.3 Shutdown / Storage / Preservation

Each KSB pump leaves the factory carefully assembled. If commissioning is to take place some time after delivery, we recommend that the following measures be taken for pump storage.

6.3.1 Measures to be taken for prolonged shutdown

The pump remains installed; periodic check of operation

In order to make sure that the pump is always ready for instant start-up and to prevent the formation of deposits within the pump and the pump intake area, start-up the pump set regularly once a month or once every 3 months for a short time (approx. 5 minutes) during prolonged shutdown periods. Prior to an operation check run ensure that there is sufficient liquid available for operating the pump.

The pump is removed from the pipe and stored

✓ The pump has been properly drained (⇨ Section 7.3)
✓ The safety instructions for dismantling the pump have been observed

It is recommended to close suction and discharge ends during the storage of the pump.

6.4 Returning to service after storage

The instructions laid down in the section son "Commissioning" (⇨ Section 6.1) and "operating limits" (⇨ Section 6.2) must be observed.

In addition, carry out all servicing/maintenance operations before returning the pump (set) to service (⇨ Section 7)

![WARNING]

**Failure to re-install or re-activate protective devices**
Risk of personal injury from moving parts or escaping fluid!

► As soon as the work is completed, re-install and/or re-activate any safety relevant and protective devices.
7. Servicing/Maintenance

7.1 Safety regulation

**DANGER**

Improperly serviced pump set
Damage to the pump set!

► Service the pump set regularly.
► Prepare a maintenance schedule.

The operator is responsible for ensuring that all maintenance, inspection and installation work is carried out by authorised, duly qualified staff who are thoroughly familiar with these operating instructions.

**WARNING**

Pump set started up inadvertently
Risk of injury by moving parts!

► Always make sure the electrical connections are disconnected before carrying out work on the pump set.
► Make sure that the pump set cannot be started up accidentally.

**WARNING**

Fluids posing a health hazard or hot fluids
Risk of personal injury!

► Observe all relevant laws.
► When draining the fluid take appropriate measures to protect persons and the environment.
► Decontaminate pumps handling fluids posing a health hazard.

A regular maintenance schedule will help avoid expensive repairs and contribute to trouble-free, reliable operation of the pump (set) with a minimum of maintenance expenditure and work.

**NOTE**

All maintenance, service and installation work can be carried out by KSB Service. Find your contact in the attached "Addresses" booklet or on the Internet at http://www.ksb.com/contact

Never use force when dismantling and reassembling a pump set.
7.2 Servicing/Inspection

7.2.1 Supervision of operation

**CAUTION**

*Increased wear due to dry running*
Damage to the pump set!

► Never operate the pump set without liquid fill.
► Never close the shut-off element in the suction line and/or supply line during pump operation

**CAUTION**

*Impermissibly high temperature of fluid handled*
Damage to the pump!

► Prolonged operation against a closed shut-off element is not permitted heating up of the fluid.
► Observe the temperature limits in the data sheet.

While the pump is in operation, observe and check the following:

- The pump must run quietly and free from vibrations at all times.
- The pump must never be allowed to run dry

**CAUTION**

*The pump must not be exposed to splash water or excessive atmospheric humidity.*
Damage to the pump set!

► The pump connections shall be examined for absolute tightness

The pump is maintenance-free.

7.3 Drainage / Disposal

**WARNING**

*Fluids posing a health hazard*
Hazardous to persons and the environment!

► Collect and properly dispose of flushing liquid and any fluid residues.
► Wear safety clothing and a protective mask, if required.
► Observe all legal regulations on the disposal of fluids posing a health hazard

If the fluids handled by the pump (set) leave residues which might lead to corrosion when coming into contact with atmospheric humidity, or which might ignite when coming into contact with oxygen, the pump (set) must be flushed through, neutralised, and blown through with anhydrous gas for drying purposes.
7.4 Dismantling the pump set

In the event of damage, the pump is replaced

7.4.1 General notes / Safety regulations

**WARNING**

Unqualified personnel performing work on the pump (set)
Risk of personal injury!
► Always have repair and maintenance work performed by specially trained, qualified personnel.

**WARNING**

Hot surface
Risk of personal injury!
► Allow the pump set to cool down to ambient temperature.

**DANGER**

Insufficient preparation of work on the pump (set)
Risk of personal injury!
► Properly shut down the pump set
► Close the shut-off elements in the suction and discharge line.
► Drain the pump and release the pump pressure.
► Close any auxiliary connections.
► Allow the pump set to cool down to ambient temperature.

Observe the general safety instructions and information

**NOTE**

All maintenance, service and installation work can be carried out by KSB Service. Find your contact in the attached "Addresses" booklet or on the Internet at http://www.ksb.com/contact

7.4.2 Preparing the pump set

1. Disconnect the power supply
2. Disconnect the power cable
3. Detach the discharge and suction nozzles from the hose pipe/pipeline
8. Trouble-shooting

Pump does not start:

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No main voltage</td>
<td>Check power supply</td>
</tr>
<tr>
<td>Incorrect connection to power supply</td>
<td>Check electrical connection</td>
</tr>
<tr>
<td>Defective fuse</td>
<td>Check installation</td>
</tr>
<tr>
<td>Piston blocked by deposits</td>
<td>Light blows (with wooden object) on pump casing</td>
</tr>
</tbody>
</table>

Pump operates but does not draw liquid.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suction head is too high</td>
<td>Contact KSB</td>
</tr>
<tr>
<td>Air intake at the suction nozzle</td>
<td>Check nozzle connection</td>
</tr>
<tr>
<td>Suction line is clogged</td>
<td>Clean</td>
</tr>
<tr>
<td>Pump not filled with liquid, due to storage without protective cover</td>
<td>Fill water in suction nozzle</td>
</tr>
</tbody>
</table>
9. Relevant documentation

9.1 Typical installations

**RIGHT**

**WRONG**
9.2 General drawing GZ 9
10. EC Declaration of Conformity

Manufacturer:                      KSB SAS
                                    Centre de Service
                                    10-14 rue de la Gare
                                    76250 Déville-lès-Rouen

The manufacturer herewith declares that the pump/pump set:

GZ

KSB order number: .................................................................
KSB order item number: ..............................................

• is in conformity with the provisions of the following directives as applicable in their current version:
  – EC Machinery Directive 2006/42/EC

The manufacturer also declares that:

• The following harmonised international standards were applied:
  – ISO 12100-1/A1, ISO 12100-2/A1,
  – ISO 14121-1,
  – EN 809/A1

Déville-lès-Rouen, 06.09.2010

...........................................................
Delalandre B.
Responsible of technical development
Responsible for compiling the technical documentation
KSB S.A.S.
Centre de Service
10-14 rue de la Gare
76250 Déville-lès-Rouen
11. Certificate of Decontamination

Type ..............................................................................................................................................................................

Order number/Order item number 21) ...............................................................................................................................

Delivery date ..................................................................................................................................................................

Field of applications .......................................................................................................................................................

Fluid handled 21) ...............................................................................................................................................................

Please tick where applicable 21)

☐ radioactive ☐ explosive ☐ corrosive ☐ toxic

☐ Harmful ☐ bio-hazardous ☐ highly flammable ☐ safe

Reason for return 21) ...........................................................................................................................................................

Comments ........................................................................................................................................................................

..............................................................................................................................................................................

..............................................................................................................................................................................

..............................................................................................................................................................................

..............................................................................................................................................................................

We confirm that the above data and information are correct and complete and that dispatch is affected in accordance with the relevant legal provisions.

..............................................................................................................................................................................

Place, date and signature

Address

Company stamp

21) Required fields
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