wilo

Wilo-CronoLine IL 250...

en Installation and operating instructions

2 140 040-Ed.01/2013-09

Demontage der Gleitringdichtung / Unmounting the mechanical seal / Démontage de la garniture mécanique / Demontage van de mechanische afdichting

Fig. 1

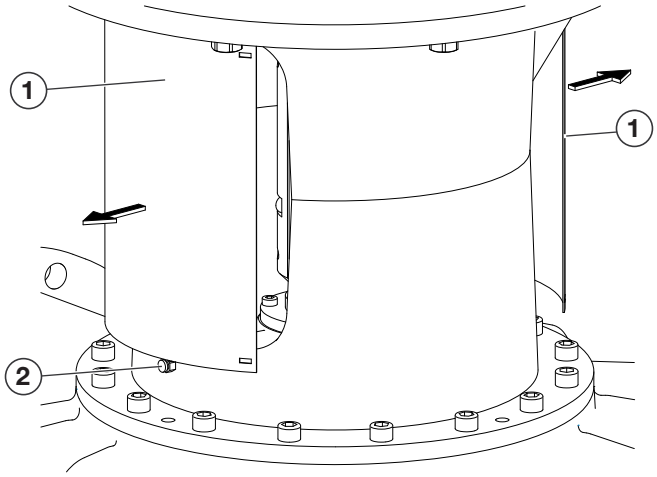


Fig. 2

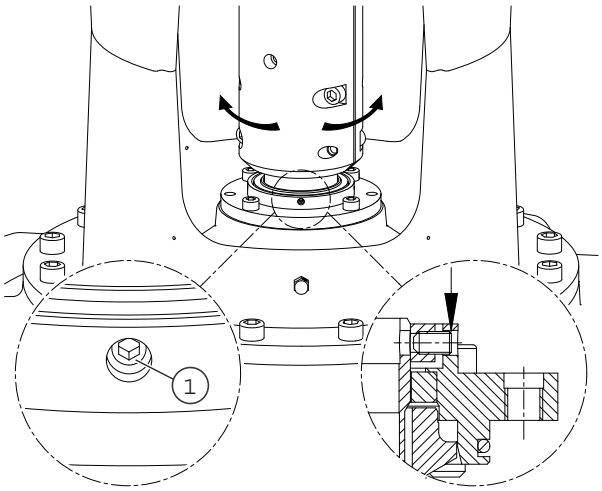
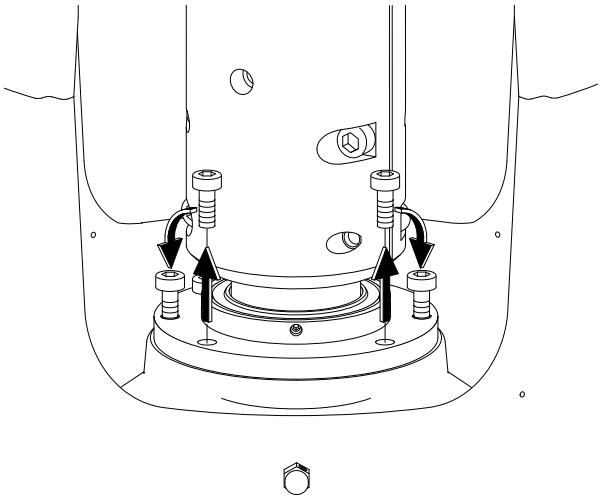


Fig. 3



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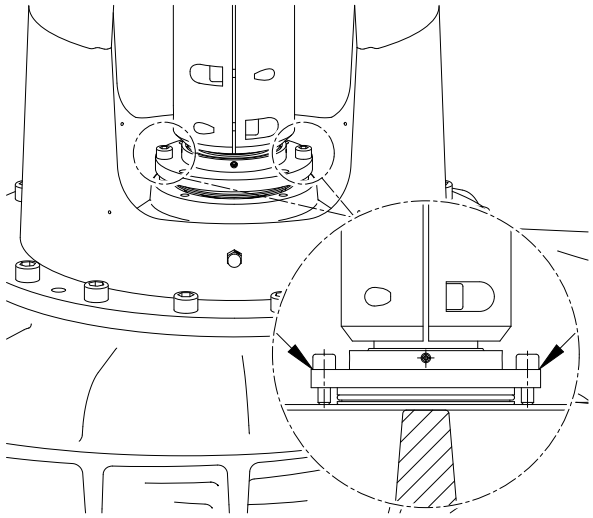

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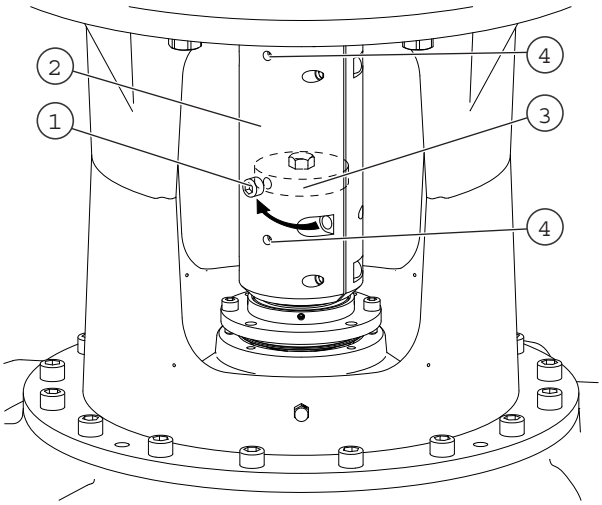

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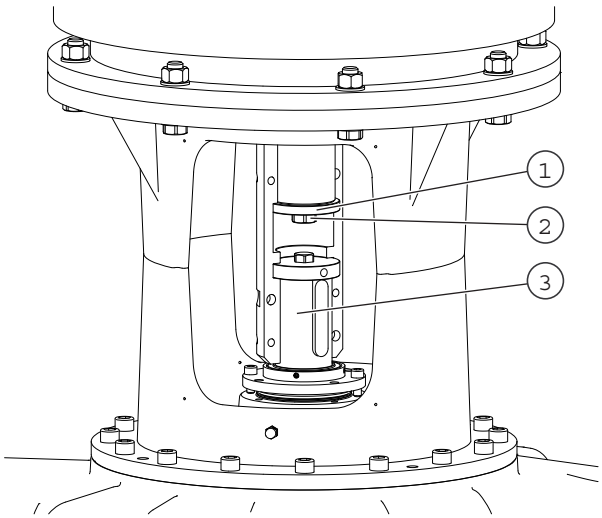

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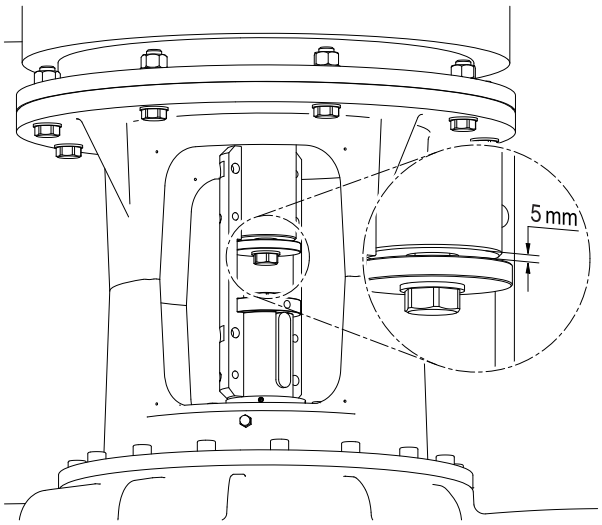

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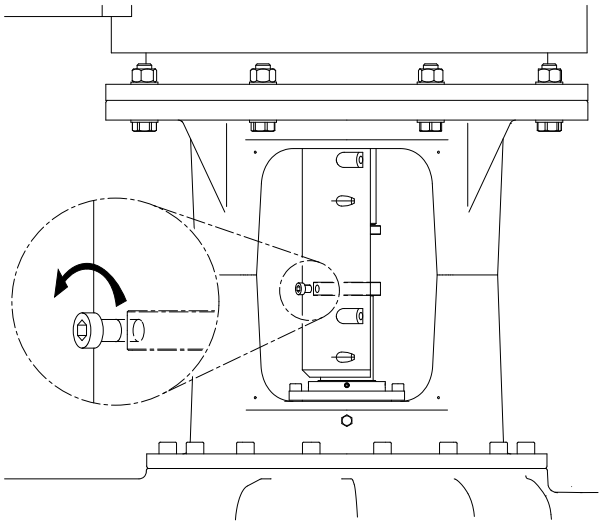

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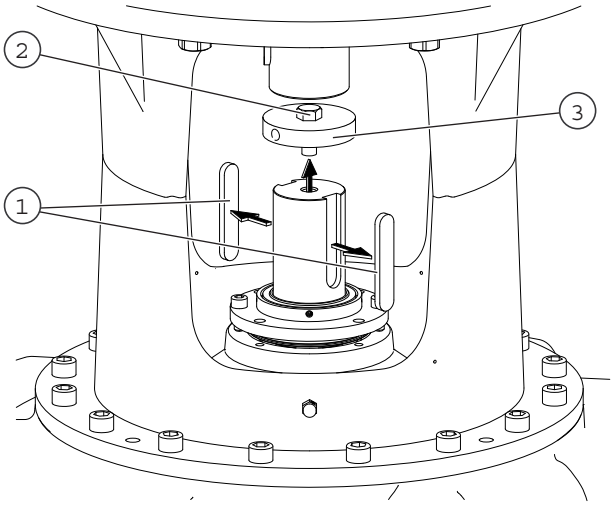
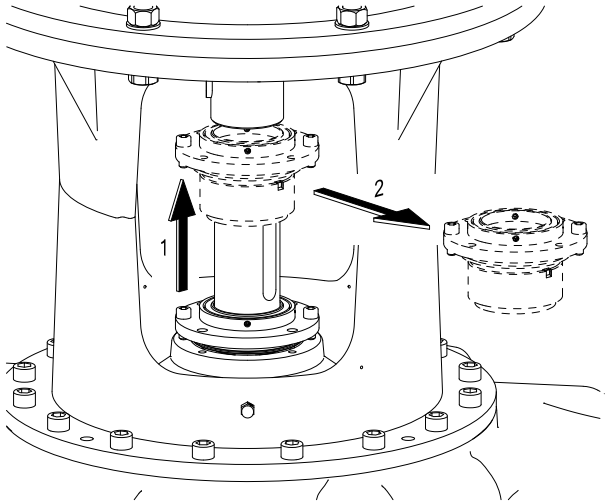
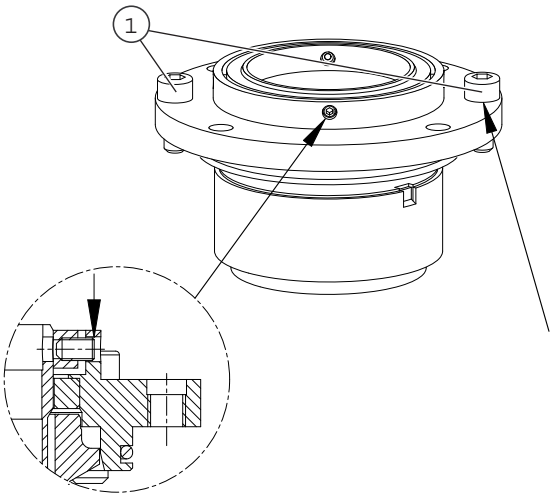


Fig. 10



Montage der Gleitringdichtung / Mounting the mechanical seal / Montage de la garniture mécanique / Montage van de mechanische afdichting

Fig. 11



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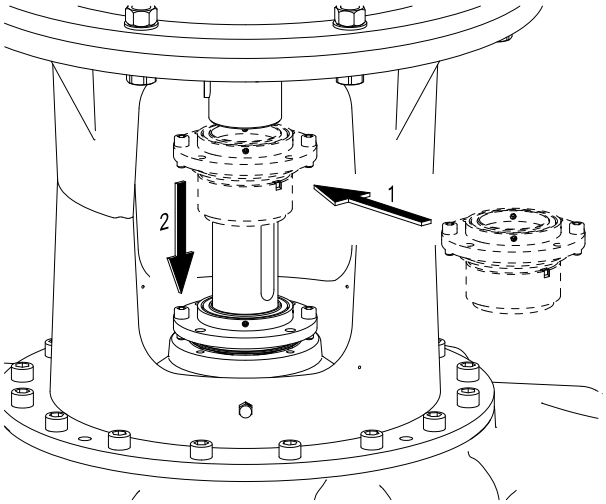

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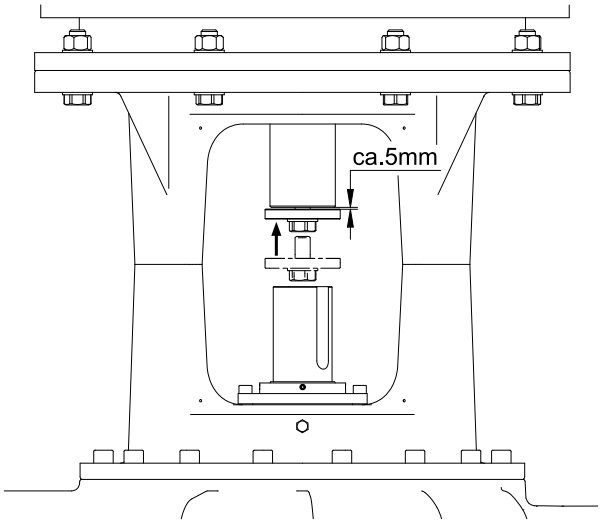

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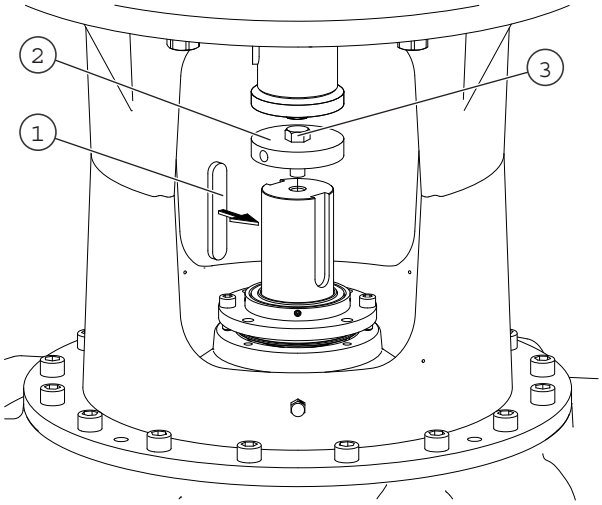

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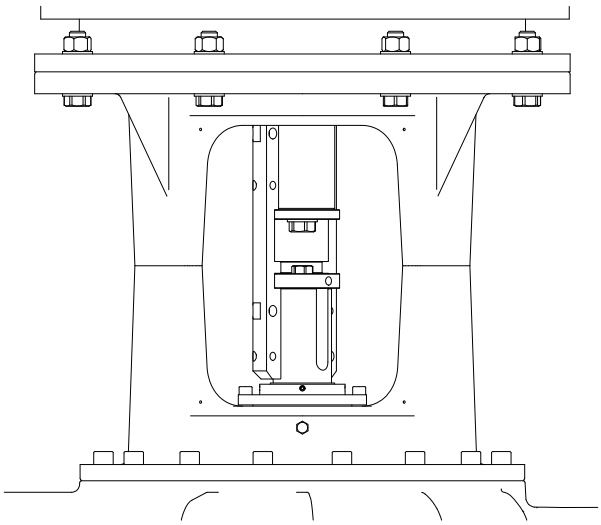

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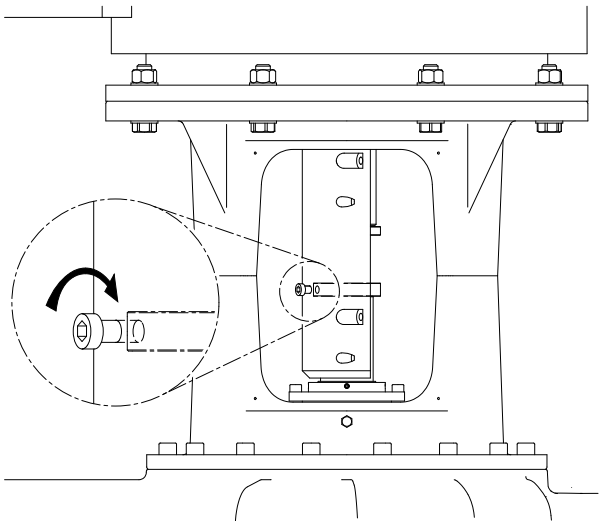

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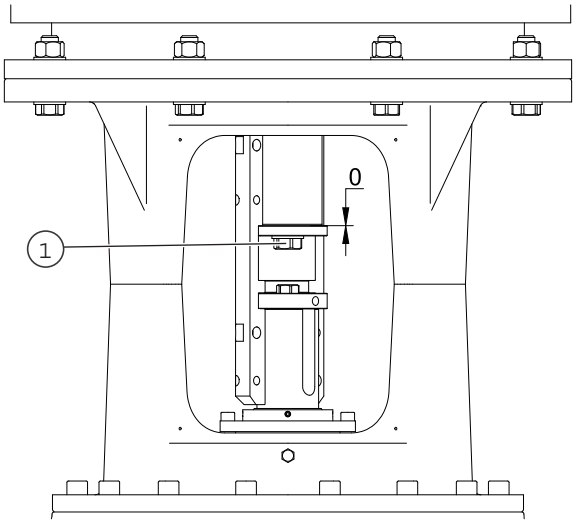

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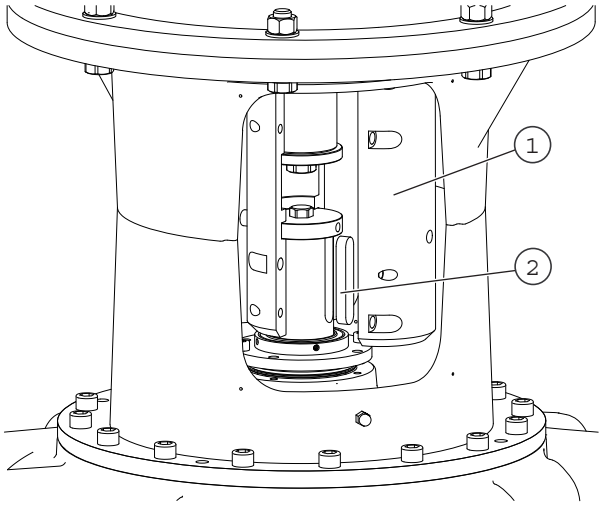


Fig. 19

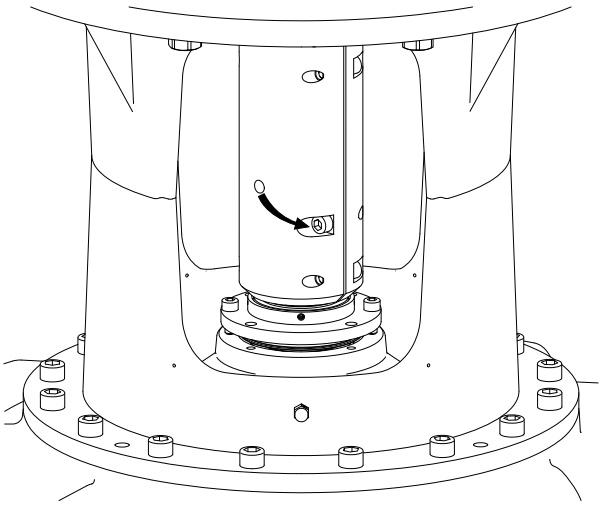


Fig. 20

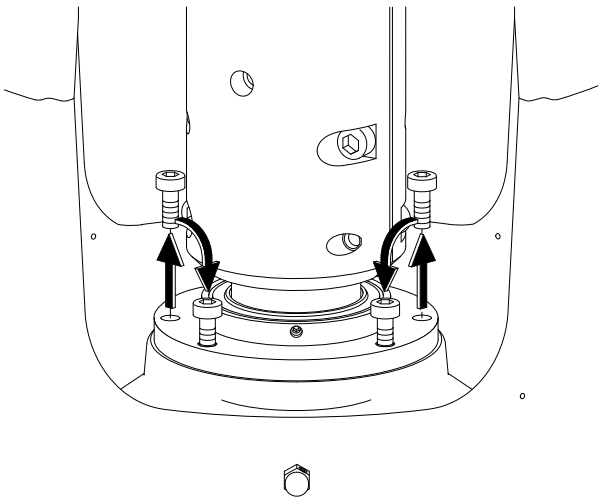


Fig. 21

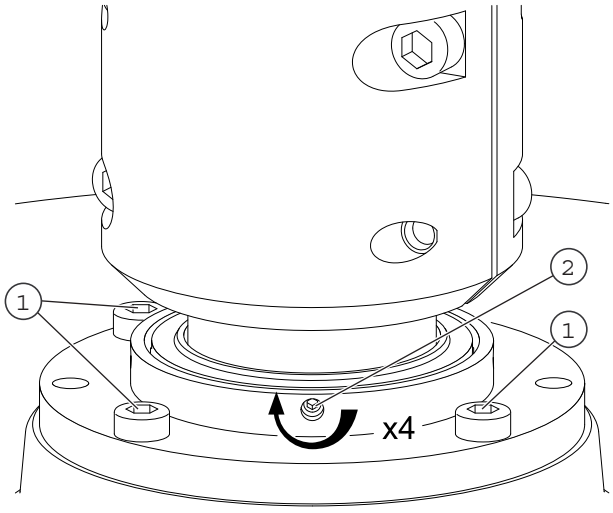
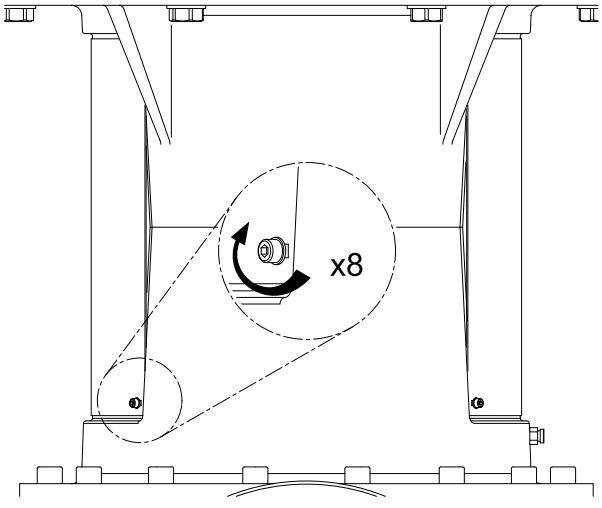


Fig. 22



Motorwechsel / Exchange of Motor / Remplacement du moteur / Vervanging van de motor

Fig. 23

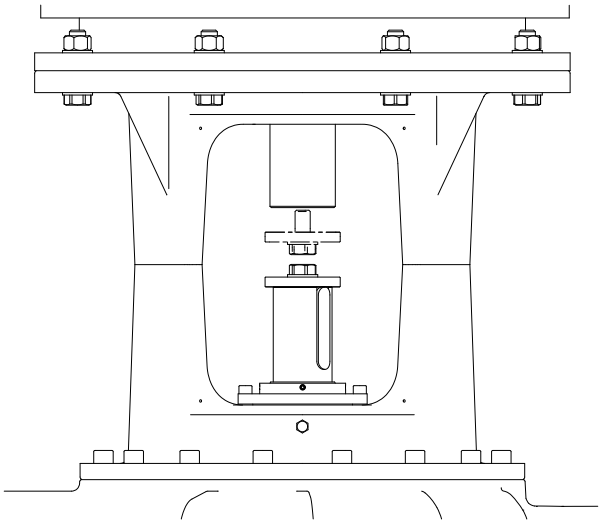


Fig. 24

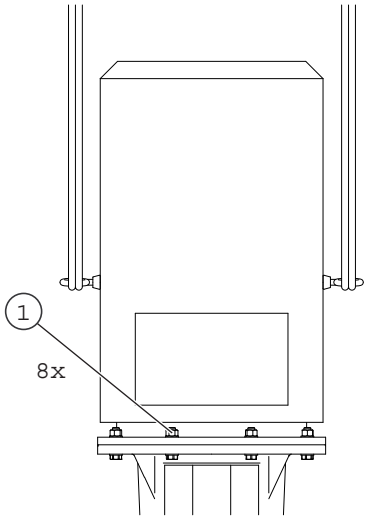


Fig. 25

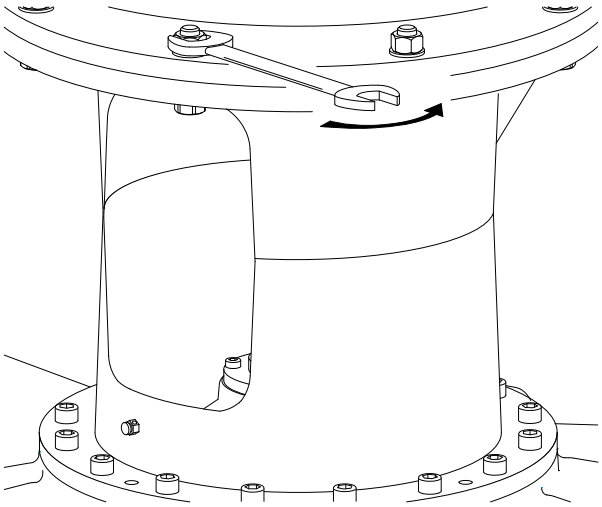


Fig. 26

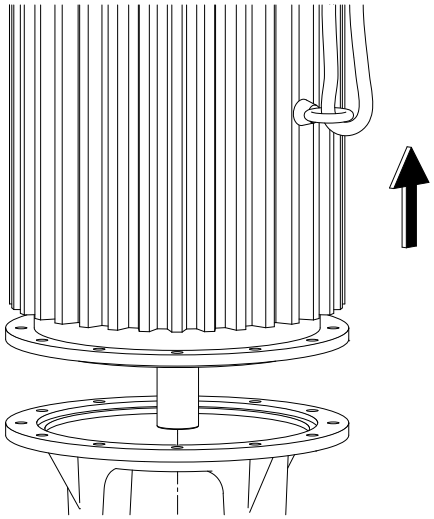
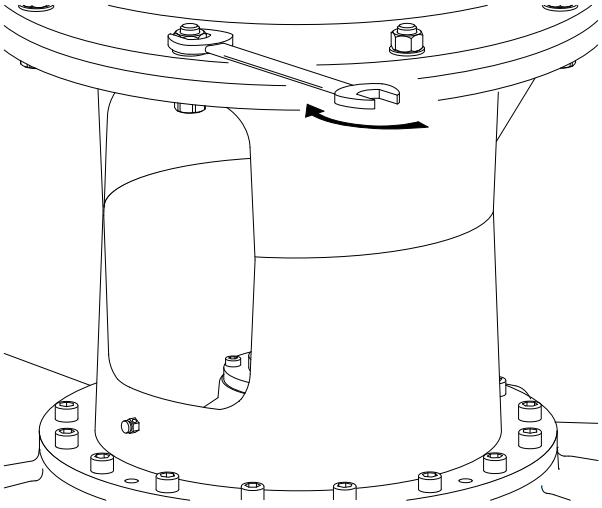


Fig. 27



1 General

About this document

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.

The installation and operating instructions correspond to the relevant version of the product and the underlying safety regulations and standards valid at the time of going to print.

EC declaration of conformity:

A copy of the EC declaration of conformity is a component of these operating instructions.

If a technical modification is made on the designs named there without our agreement or the declarations made in the installation and operating instructions on the safety of the product/personnel are not observed, this declaration loses its validity.

2 Safety

These operating instructions contain basic information which must be adhered to during installation, operation and maintenance. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible specialist/operator before installation and commissioning.

It is not only the general safety instructions listed under the main point “safety” that must be adhered to but also the special safety instructions with danger symbols included under the following main points.

2.1 Indication of instructions in the operating instructions

Symbols

General danger symbol

Danger due to electrical voltage

NOTE

Signal words

DANGER!
Acutely dangerous situation.
Non-observance results in death or the most serious of injuries.

WARNING!
The user can suffer (serious) injuries. 'Warning' implies that (serious) injury to persons is probable if this information is disregarded.

CAUTION!
There is a danger of damaging the product/unit. 'Caution' implies that damage to the product is likely if this information is disregarded.

NOTE:
Useful information on handling the product. It draws attention to possible problems.

Information applied directly to the product must be strictly complied with and kept in a fully legible condition. Such information includes:

- Direction of rotation arrow
- Identification for fluid connections
- Rating plate
- Warning sticker

2.2 Personnel qualifications

The installation, operating and maintenance personnel must have the appropriate qualifications for this work. Area of responsibility, terms of reference and monitoring of the personnel are to be ensured by the operator. If the personnel are not in possession of the necessary knowledge, they are to be trained and instructed. If the personnel are not in possession of the necessary knowledge, they are to be trained and instructed.

2.3 Danger in the event of non-observance of the safety instructions

Non-observance of the safety instructions can result in risk of injury to persons and damage to the product/unit. Non-observance of the safety instructions results in the loss of any claims to damages. Non-observance of the safety instructions can result in the loss of any claims to damages.

In detail, non-observance can, for example, result in the following risks:

- Danger to persons from electrical, mechanical and bacteriological influences
- Damage to the environment due to leakage of hazardous materials
- Property damage
- Failure of important product/unit functions
- Failure of required maintenance and repair procedures.

2.4 Safety consciousness on the job

The safety instructions included in these installation and operating instructions, the existing national regulations for accident prevention together with any internal working, operating and safety regulations of the operator are to be complied with.

2.5 Safety instructions for the operator

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

- If hot or cold components on the product/the unit lead to hazards, local measures must be taken to guard them against touching.
- Guards protecting against touching moving components (such as the coupling) must not be removed whilst the product is in operation.
- Leakages (e.g. from a shaft seal) of hazardous fluids (e.g. explosive, toxic or hot) must be led away so that no danger to persons or to the environment arises. National statutory provisions are to be complied with.
- Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and local power supply companies must be adhered to.

2.6 Safety instructions for installation and maintenance work

The operator must ensure that all installation and maintenance work is carried out by authorised and qualified personnel who are sufficiently informed from their own detailed study of the operating instructions.

Work to the product/unit must only be carried out when at a standstill. It is mandatory that the procedure described in the installation and operating instructions for shutting down the product/unit be complied with.

Immediately on conclusion of the work, all safety and protective devices must be put back in position and/or recommissioned.

2.7 Unauthorised modification and manufacture of spare parts

Unauthorised modification and manufacture of spare parts will impair the safety of the product/personnel and will make void the manufacturer's declarations regarding safety.

Modifications to the product are only permissible after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of other parts will absolve us of liability for consequential events.

2.8 Improper use

The operating reliability of the supplied product is only guaranteed when used properly in accordance with the section in the operating instructions titled “Intended use”. The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3 Transport and interim storage

3.1 Shipping

The pump is delivered from the factory packaged in a cardboard box or secured to a pallet and protected against dust and moisture.

Transport inspection

On arrival, inspect the pump immediately for any transport damage. If damage is found, the necessary procedure involving the forwarding agent must be taken within the specified period.

Storage

Before installation, the pump must be kept dry, frost-free and protected from mechanical damage.

If available, leave the covers on the pipe connections so that no dirt and other foreign matter can get into the pump housing.

Rotate the pump shaft once a week to prevent scoring at the bearings and sticking.

Consult Wilo about which corrosion-proofing measures are to be carried out in the event of a long storage time.

CAUTION! Risk of damage due to incorrect packaging!
If the pump is transported again at a later time, it must be packaged so that it cannot be damaged during transport.

- **Use the original packaging for this, or select equivalent packaging.**

3.2 Transport for installation/removal purposes

WARNING! Danger of personal injury!
Improper transport can lead to personal injury.

- **Unload boxes, lathed spaces , pallets or cartons, depending on their size and construction, with forklifts or with slings.**

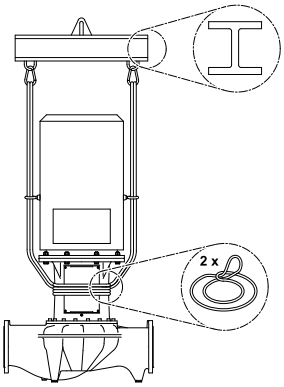


Fig.28: Fitting load slings

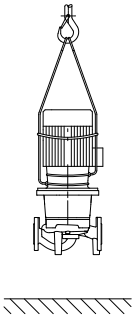


Fig. 29: Transporting the pump

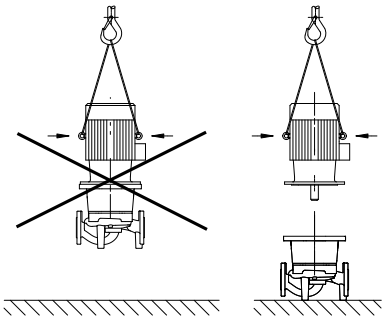


Fig. 30: Transporting the motor

- **Always lift heavy parts of more than 30 kg with hoisting gear that is in accordance with local regulations. The bearing capacity has to be adapted to the weight.**
- **The pump must be transported using approved load-bearing equipment (e.g. block and tackle, crane, etc.). This must be secured to the pump flanges and, if necessary, to the outer diameter of the motor (protection against slipping is required!).**
- **When lifting machines or parts using eyes, only use load hooks or shackles that are in accordance with local regulations.**
- **To lift with the crane, the pump must be supported by suitable belts as shown in (Fig. 28). Place loops around the pump which tighten from the pump's own weight.**
- **The transport eyes on the motor are only for guiding while bearing the load (Fig. 29).**
- **The transport eyes on the motor are only for transporting the motor and are not approved for transporting the complete pump (Fig. 30).**
- **If load chains or ropes are put over sharp edges, a guard has to be used or they have to be put through eyes.**
- **When using pulley block or other hoisting gear, be sure that the load is lifted vertically.**
- **Prevent the suspended load from swinging. This can be done, for example, by using a second pulley block, whereby the pulling direction of the two pulley blocks should be less than 30° to vertical.**
- **Never subject load hooks, eyes or shackles to bending forces – their load axes have to be in the direction of the tractive forces.**
- **When lifting, be sure that the load limit of a rope is reduced for diagonal pulling. The safety and effectiveness of a stranding is best ensured when all load-bearing elements are loaded in the vertical direction to the greatest extent possible. If need be, use a lifting arm which can be attached vertically to the load rope.**
- **Set up a safety zone in such a way that there is no danger in the event that the load or a part of the load slips or the hoisting gear breaks or tears.**
- **Never leave a load longer than necessary in a suspended position. Be sure there is no danger to personnel when accelerating and slowing down during the lifting procedure.**

WARNING! Danger of personal injury!
Setting up the pump without securing it can lead to personal injury.

- **Do not place the pump unsecured on the pump base. The base with the threaded holes is only used for attachment. When standing freely, the pump might not be sufficiently stable.**

WARNING! Risk of injury due to high dead weight!
The pump itself and pump parts can be extremely heavy. Falling parts pose a risk of cuts, crush injuries, bruises or impacts which may lead to death.

- **Always use suitable lifting equipment and secure parts against falling.**
- **Never stand underneath a suspended load.**
- **Make sure the pump is securely positioned and is stable during storage and transport as well as prior to all installation and other assembly work.**
- **Always wear protective clothing, protective gloves and protective goggles when working.**

4 Intended use

Purpose

The glanded pumps of the IL (Inline) series are meant to be used as circulation pumps in building services.

Fields of application

They may be used for:

- Hot water heating systems
- Cooling and cold water circulation systems
- Industrial circulation systems

Restrictions

The pumps are exclusively intended for installation and operation in enclosed rooms. Typical installation locations are technical rooms within the building with other domestic installations. No provision has been made for direct installation of the device in rooms used for other purposes (residential and work rooms). The following is not permitted:

- Outdoor installation and operation outdoors

CAUTION! Risk of damage to property!
Impermissible substances in the fluid can destroy the pump. Abrasive solids (e.g. sand) increase pump wear.
Pumps without an Ex certificate are not suitable for use in potentially explosive areas.

- **Correct use of the pump/installation also includes following these instructions.**
- **Any use over and beyond these is interpreted as incorrect use.**

5 Product information

5.1 Type key

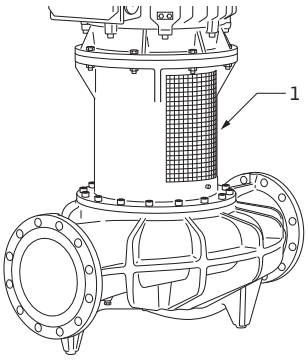


Fig. 31: Arrangement of the pump rating plate

The type key consists of the following elements:

Example:	IL 250/420-110/4
IL	Flange-end pump as **I**nline pump
250	Nominal diameter DN of the pipe connection
420	Nominal impeller diameter [mm]
110	Nominal power of the motor [kW]
4	Number of poles of the motor

Pump rating plate:
Fig. 31, Item 1 shows the arrangement of the pump rating plate.

5.2 Technical data

Property	Value	Remarks
Speed	50 Hz version: 1450 rpm 60 Hz version: 1740 rpm	Compare pump rating plate Fig. 31 Item 2.
Nominal diameters DN	250	
Pipe connections	Flanges PN 16	EN 1092-2
Permissible min./max. fluid temperature	-20°C to +140°C	
Max. permitted ambient temperature:	40°C	
Max. permitted operating pressure	16 bar	
Insulation class	F	
Protection class	IP 55	
Pipe and pressure measurement connections	PN 16 flange in accordance with EN 1092-2 With pressure measurement connections Rp $^1/_8$ In accordance with DIN 3858	
Approved fluids	• Heating water in acc. with VDI 2035 • Industrial water • Cooling/cold water • Water/glycol mixtures up to 40% vol. glycol at max 40°C • Other media upon request	• Standard version • Standard version • Standard version • Standard version • Special version or auxiliary equipment[1)]
Electrical connection	• 3~400 V, 50 Hz • 3~380 V, 60 Hz • Other voltages on request	• Standard version • Special version or auxiliary equipment[1)] • Special version or auxiliary equipment[1)]
PTC thermistor sensor		• Standard version
Speed switch over, speed control	• Control devices (Wilo CC system) • Pole switchover	• Standard version • Special version or auxiliary equipment[1)]
Motor special version (on request)	• Special voltage/frequency	• Special version or auxiliary equipment[1)]

[1)] for a surcharge

When ordering spare parts be sure to state all the information given on the pump and motor rating plates.

Fluids

If water/glycol mixtures with up to 40% glycol (or fluids with a different viscosity to pure water) are used:

- the pump data must be corrected...
  - to match the higher viscosity
  - depending on the percentage mixing ratio
  - depending on the fluid's temperature
- Adjust the motor power if need be

Only use brand-name goods with corrosion inhibitors. The respective manufacturer's instructions are to be observed.

- The fluid must be sediment-free.
- Wilo's approval must be obtained for use of other media.
- Mixtures with a proportion of glycol of > 10 % influence the Δp-v pump curve and the flow calculation.

NOTE
Always read and follow the material safety data sheet for the fluid being pumped.

5.3 Scope of delivery

- Pump IL including mounting foot for installation and foundation fixation
- Installation and operating instructions

5.4 Accessories

Accessories must be ordered separately:

- PTC thermistor tripping unit for switch cabinet installation

See catalogue for detailed list.

6 Description and function

6.1 Description of the product

All the pumps described are single-stage low-pressure centrifugal pumps in a compact construction with a coupled motor. The mechanical seal is maintenance free. The pumps have to be sufficiently anchored and placed on a foundation base.

In conjunction with a control device (Wilo-CC system), the power of the pumps can also be continuously controlled. This allows optimisation of the pump output for the demands of the installation and economically efficient pump operation.

6.2 Anticipated noise levels

Anticipated noise levels for orientation:

Motor power P_N [kW]	Sound-pressure level Lp (A) [dB(A)] [1] (Pump with motor 1450 rpm)
75	72
90	70
110	72
132	72
160	72
200	73

1) Spatial mean value of sound-pressure levels on a square measuring surface at a distance of 1 m from the surface of the motor.

7 Installation and electrical connection

Safety

DANGER! Danger of death!
Incorrect installation and inexpert electrical connection can pose a risk of fatal injury.

- **Have the electrical connections established by approved electricians only, in compliance with the applicable regulations.**
- **Accident prevention regulations must be observed!**

DANGER! Danger of death!
Failure to install safety devices on the terminal box or near the coupling can cause electrical shock or contact with rotating parts, potentially resulting in life-threatening injuries.

- **Before commissioning, all safety devices (such as terminal box covers or coupling covers) that were removed must be reinstalled.**

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **Have the pump installed by qualified personnel only.**

CAUTION! Damage to the pump due to overheating!
The pump must not be allowed to operate dry for more than 1 minute. Dry running causes a build-up of energy in the pump, which can damage the shaft, impeller, and mechanical seal.

- **Make sure that the volume flow does not go below the minimum value Q_{min}.**
  Calculation of Q_{min}:

$$Q_{min} = 10\% \times Q_{max\ pump} \times \frac{\text{Actual speed}}{\text{Max. speed}}$$

7.1 Installation

Preparation

- The pump has to be checked for compliance with the specifications on the delivery receipt; Wilo has to be informed of any damage or missing parts. Check slat crates/cartons/wrappings for spare parts or accessory components which could be included with the pump.

Installation location

- The pumps must be protected from the weather and installed in a frost/dust-free, well-ventilated and vibration-insulated environment which is not potentially explosive. The pump must not be installed outdoors.
- Install the pump in a place that is easy to access so that subsequent inspections, maintenance (e.g. mechanical seal) or replacement is easily possible.
- The suction line is to be kept as short as possible.

Foundation

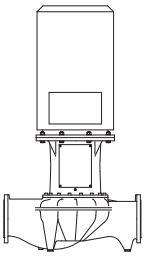
- For a vibration-insulated installation, a simultaneous isolation of the base block itself from the building structure by an elastic intermediate layer (e.g. cork or Mafund pad) is required.

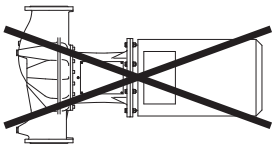
CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **A missing foundation or an incorrect installation of the unit on the foundation can lead to a malfunction of the pump; this is not covered by the warranty.**
- Anchor bolts (M20) for the base plate drilled holes are necessary for anchoring.
- The concrete foundation has to be hardened before the unit is put on. Its surface has to be horizontal.

Positioning/alignment

- The pump should only be installed after completion of all welding and soldering work and, if necessary, flushing of the pipe system. Dirt can cause pump failure.





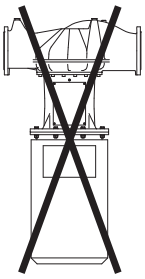


Fig. 32: Permitted/impermissible installation positions

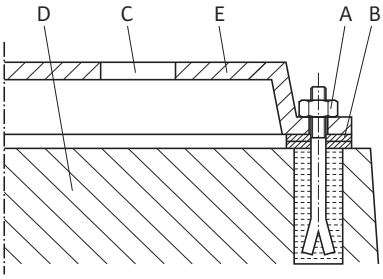


Fig. 33: Example of a foundation screwed connection

- Only lift the pump using permitted load-bearing equipment (see chapter 3 “Transport and interim storage” on page 27).

NOTE

Shut-off devices shall be installed in front of and behind the pump in all cases in order to avoid having to drain the entire system when checking, servicing or replacing the pump. If need be, the necessary non-return valves are to be provided.

- The pipes and pump must be free of mechanical stress when installed. The pipes must be fastened in such a way that the pump does not bear the weight of the pipes.
- Installation position: Only vertical installation is permitted (see Fig. 32).

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **When pumping out a tank, ensure that the fluid level is always high enough above the suction port of the pump so that the pump never runs dry. The minimum inlet pressure must be maintained.**

NOTE

In the case of insulated systems, only the pump housing may be insulated, not the lantern or drive.

Example for a foundation screwed connection (Fig. 33):

- Align the whole unit when installing on the foundation with the help of the spirit level (at the shaft/pressure port).
- Always put the washers (B) to the left and right directly at the fixation material (e.g. stone bolts (A)) between the baseplate (E) and foundation (D).
- Evenly and firmly tighten the fixation material.

Connection of the piping

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **Under no circumstances may the pump be used as a fixed point for the pipe.**
- The present NPSH of the system always has to be greater than the required NPSH of the pump.
- The forces and torques being exerted by the pipe system on the pump flange (e.g., by warping, thermal expansion) may not exceed the permitted forces and torques.
- Intercept the pipes direct before the pump and connect them without tension. Their weight must not put a strain on the pump.
- The suction line is to be kept as short as possible. Lay the suction line to the pump so that it continuously rises while the intake falls. Possible air entry points are to be avoided.
- If a dirt trap in the suction line is required, then its free cross-section has to be 3-4 times the cross-section of the piping.
- For short pipes, the nominal diameters should be at least that of the pump connections. The long pipes, the most economical nominal diameter is to be determined on a case-by-case basis.

- Adapters for larger nominal diameters should be made with an flaring angle of about 8° to prevent greater pressure losses.

NOTE

Shut-off devices shall be installed in front of and behind the pump in all cases, in order to avoid having to drain the entire system when checking, servicing or replacing the pump. If need be, the necessary non-return valves are to be provided.

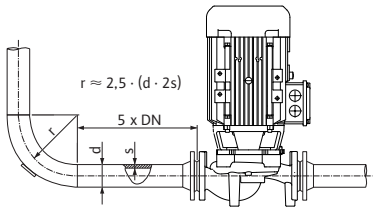


Fig. 34: Settling section before and after the pump

NOTE

A settling section must be provided before and after the pump, in the form of a straight pipe. The length of this settling section should be at least 5 x DN of the pump flange (Fig. 34). This measure serves to avoid flow cavitation.

- Only connect the pipes after the conclusion of all welding and soldering work as well as the cleaning/flushing of the system.
- Remove the flange covers at the suction and pressure ports of the pump before attaching the piping.

Final check

Check the alignment of the unit again as described in chapter 7.1 “Installation” on page 32.

- Tighten the foundation bolts if necessary.
- Check all connections for correctness and function.
- It must be possible to turn the coupling/shaft by hand.

Do not allow the coupling/shaft to turn:

- Release the coupling and re-tighten.

In case this measure is not successful:

- Remove the motor (see chapter 9.3 “Motor” on page 41).
- Clean the motor centring and flange
- Reinstall the motor.

7.2 Electrical connection

Safety

DANGER! Danger of death!
A fatal shock may occur if the electrical connection is not made correctly.

- **Only allow the electrical connection to be made by an electrician approved by the local electricity supplier and in accordance with the local regulations in force.**
- **Observe the installation and operating instructions for the accessories.**

WARNING! Risk of mains overload!
An inadequate mains design can lead to system failures and even to cable fires due to mains overload.

- **When designing the mains, with regard to the cable cross-sections and fuses, give special consideration to the fact that short-term simultaneous operation of all pumps is possible in multi-pump operation.**

Preparation/Notes

- The electrical connection must be done in accordance with EN 50178, EN 60204-1/IEC 60204-1, IEC 60364 via a fixed connected load.
- To ensure protection from drips and strain relief of the PG screwed connection, a connected load is to be used with sufficient outer diameter. By positioning the PG screwed connection or by laying the cables accordingly, ensure that no drips can enter the terminal box.
- When pumps are used in systems with water temperatures above 90°C, a suitably heat-resistant connection line must be used.
- The connection line is to be placed in such a way that it can under no circumstances come into contact with the pipe and/or the pump and motor housing.

- Check the current type and voltage of the mains connection.
- Observe the type plate information for the pump. The current type and voltage of the mains connection must correspond to the specifications on the name plate.
- Mains-side fuse protection: dependent on nominal motor current.
- Observe earthing.

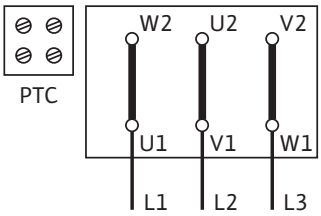


Fig. 35: Y-Δ-start (standard)

- The connection diagram for the electrical connection is in the terminal box (also see Fig. 35/36).
- Secure the motor against overloading with a motor-protective circuit-breaker or by the PTC thermistor tripping unit. The use of a motor-protective circuit-breaker is recommended.

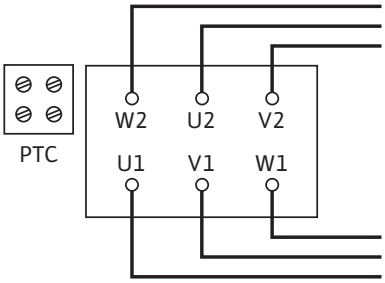


Fig. 36: Δ connection

Setting the motor-protective circuit-breaker:

- Y-Δ start: If the motor protection switch is switched in the supply line to a Y-Δ contactor combination, set the switch as for direct starting (setting to the motor nominal current of the motor rating plate).
  If the motor protection switch is switched in a thread of the motor supply line (U1/V1/W1 or U2/V2/W2), set the motor protection switch to 0.58 x nominal motor current.
- The special motor design is equipped with PTC thermistor sensors. Connect the PTC thermistor sensors to the PTC thermistor tripping unit.

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **Only a maximum voltage of 7.5 V DC may be applied to the terminal. a higher voltage will destroy the PTC thermistor sensor.**

The mains connection to the terminal board is dependent on the rated power PN, the mains voltage and the start-up type.

Required connection of the connecting bridges in the terminal box:

Activation type	Mains voltage 3~400 V
Y-Δ start (default)	Remove connecting bridges (Fig. 35)
Start via Soft starter	Δ connection (Fig. 36)

- When connecting automatic switchgears, observe the relevant installation and operating instructions.
- For three phase motors with Y-Δ connection, be sure that the switch-over points between star and triangle are very close together in time. Longer switch-over times can lead to pump damage.

Recommendation for setting the times for Y-Δ activation:

Motor power	Y time to be set
> 30 kW	< 5 seconds

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **Only carry out the rotation direction monitoring after the system is filled. Even brief dry running will destroy the mechanical seal.**

8 Commissioning

Safety

DANGER! Danger of death!
Failure to install safety devices on the terminal box or near the coupling can cause electrical shock or contact with rotating parts, potentially resulting in life-threatening injuries.

- **Before commissioning, all safety devices (such as terminal box covers or coupling covers) that were removed must be reinstalled.**
- **Keep a safe distance during commissioning!**

WARNING! Risk of injury!
If the pump/system is installed improperly, liquid may be ejected during commissioning. Individual components may also become loose.

- **Keep a safe distance from the pump during commissioning.**
- **Wear protective clothing, protective gloves and protective goggles.**

NOTE:
It is recommended to have the pump serviced and checked by Wilo-Customer Service.

Preparation

The pump has to reach ambient temperature before commissioning.

8.1 Initial commissioning

- Check whether the shaft can be rotated without any grinding. In case the impeller is blocked or grinds, loosen the coupling screws and tighten them with the specified torque.
- Fill and bleed the system as required.

WARNING! Danger due to extremely hot or extremely cold pressurised fluid!
Depending on the temperature of the fluid and the system pressure, when the vent screw is opened completely, extremely hot or extremely cold fluid in liquid or vapour may escape or shoot out at high pressure.

- **Always exercise caution when opening the vent screw.**

CAUTION! Risk of damage to property!
Dry running will destroy the mechanical seal.

- **Make sure that the pump does not run dry.**

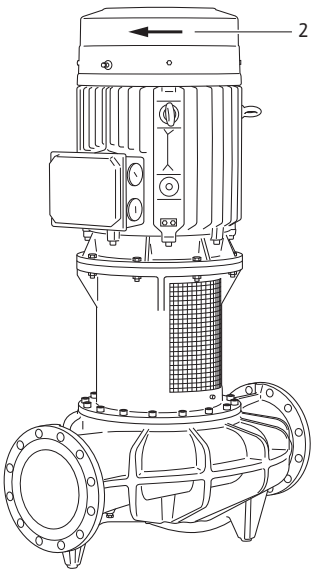


Fig. 37: Checking the direction of rotation

- To avoid cavitation noise and damage, a minimum intake pressure must be guaranteed at the suction port of the pump. This minimum intake pressure depends on the operating situation and the duty point of the pump, and must be defined accordingly.
  The main parameters for defining the minimum intake pressure are the NPSH of the pump at its duty point and the vapour pressure of the fluid.
- By briefly switching on, check whether the direction of rotation agrees with the arrow on the fan cover (see Fig. 37, Item 2). If the direction of rotation is incorrect, proceed as follows:
- For Y-Δ start, swap the winding start and winding end of 2 windings on the motor terminal board (e.g. V1 for V2 and W1 for W2).

8.1.1 Switching on

- The unit may only be switched on when the check valve on the pressure side is closed. Only after full speed has been reached may this be slowly opened and be adjusted to the dutypoint.
- The unit must run smoothly and free of vibration.
- The mechanical seal ensures that a seal will not leak and requires no special setting. Should there be a small leak at the beginning, it will stop when the initial break-in phase of the seal is over.

  Immediately after the conclusion of all work, all the provided safety and protection equipment items have to be properly installed and put into operation.

DANGER! Danger of death!
Failure to install safety devices on the terminal box or near the coupling can cause electrical shock or contact with rotating parts, potentially resulting in life-threatening injuries.

- **Immediately after maintenance, all previously removed safety devices, such as terminal box covers or coupling covers, must be reinstalled.**

8.1.2 Switching off

- Close the check valve in the pressure pipe.

NOTE:
In case a non-return valve is installed in the pressure pipe, the check valve can remain open insofar as a counter pressure is present.

CAUTION! Risk of damage to property!
Danger of damage due to incorrect handling.

- **When switching off the pump, the check valve in the inlet pipe may not be closed.**
- Switch off the motor and allow it to coast down completely. Ensure the coasting is smooth.
- For longer downtimes, close the check valve in the inlet pipe.
- For longer periods of non-use and/or danger of freezing, empty the pump and secure it against freezing.

8.2 Operation

NOTE:
The pump should always run smoothly and vibration-free and not be operated in conditions other than those specified in the catalogue/ data sheet.

DANGER! Risk of burns or freezing to the pump when body parts come into contact with the pump!
Depending on the pump or system operating conditions (fluid temperature), the entire pump can become very hot or very cold.

- **Keep a safe distance during operation!**
- **In the case of high water temperatures and system pressures, allow the pump to cool down before all work.**
- **Always wear protective clothing, protective gloves and protective goggles when working.**

DANGER! Danger of death!
Due to protective equipment in the coupling area which has not been installed, contact with rotating parts can lead to deadly injuries.

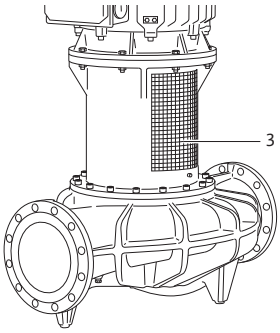


Fig. 38: Installed coupling protection metal sheet

- **The pump may only be operated with the coupling protection metal sheets installed (Fig. 38, Item 3).**
- Depending on the different operating conditions and the degree of installation's automation, the pump can be switched on and off in different ways. Observe the following:
  - Stop procedure: – Prevent return flow to the pump.
    – Do not work too long with an insufficient volume flow.
  - Start procedure: – Be sure that the pump is completely filled up.
    – Do not work too long with an insufficient volume flow. Larger pumps require a minimum flow amount to operate properly. Operating against a closed slide valve can lead to overheating in the centrifugal chamber and to damage of the shaft seal.
    – Ensure a continual flow to the pump with a sufficiently large NPSH.
    – Prevent insufficient counter pressure leading to a motor overload.
- To prevent significant increases in motor temperature and excessive strain on the pump, coupling, motor, seals and bearings, no more than 10 switch-on procedure should be performed per hour.

9 Maintenance

Safety

Have maintenance and repair work carried out by qualified personnel only.

It is recommended to have the pump serviced and checked by Wilo-Customer Service.

When drafting a maintenance plan, expensive repairs can be avoided and a fault-free operation of the system can be achieved with a minimum of maintenance effort.

DANGER! Danger of death!
There is a mortal danger through shock when working on electrical equipment.

- **Work on electrical equipment may only be done by electricians approved by the local electricity supplier.**
- **Before working on electrical equipment, switch it off and prevent it from being switched on again.**
- **Any damage to the connecting cable should always be rectified by a qualified electrician only.**
- **Never use an object to poke around the openings on the module or motor and never insert anything into the module or motor.**
- **Follow the installation and operating instructions for the pump, level control and other accessories.**

DANGER! Danger of death!
Failure to install safety devices on the terminal box or near the coupling can cause electrical shock or contact with rotating parts, potentially resulting in life-threatening injuries.

- **Immediately after maintenance, all previously removed safety devices, such as terminal box covers or coupling covers, must be reinstalled.**

DANGER! Danger of death!
The pump itself and the parts of pump can be extremely heavy. Falling parts pose a risk of cuts, crush injuries, bruises or impacts, which may lead to death.

- **Always use suitable lifting equipment and secure parts against falling.**

- **Never stand underneath a suspended load.**
- **Make sure the pump is securely positioned and is stable during storage and transport as well as prior to all installation and other assembly work.**

DANGER! Risk of burns or freezing to the pump when body parts come into contact with the pump!
Depending on the pump or system operating conditions (fluid temperature), the entire pump can become very hot or very cold.

- **Keep a safe distance during operation!**
- **In the case of high water temperatures and system pressures, allow the pump to cool down before all work.**
- **Always wear protective clothing, protective gloves and protective goggles when working.**

DANGER! Danger of death!
The tools used during maintenance work on the motor shaft can be flung out if they come into contact with rotating parts, and cause serious or even fatal injuries.

- **The tools used during maintenance work must be removed completely before the pump is started up.**

9.1 Air supply

The air supply to the motor housing must be checked at regular intervals. In case of contamination, ensure that an air supply is re-established in order to allow the both the motor and the module to cool sufficiently.

9.2 Maintenance work

DANGER! Danger of death!
Falling pumps or pump parts may result in life-threatening injuries.

- **When performing installation work, protect the pump components against falling.**

DANGER! Danger of death!
There is a mortal danger through shock when working on electrical equipment.

- **Check for absence of voltage and cover or cordon off adjacent live parts.**

9.2.1 On-going maintenance

Maintenance work should always be done with the seals removed.

9.2.2 Replacing the mechanical seal

The mechanical seal is maintenance free. During the running-in period, a minor amount of dripping is to be expected. a visual inspection should be performed from time to time, however. If there is clearly detectable leakage, the seal must be changed. Wilo offers a repair kit which contains the necessary parts for replacement.

Dismantling

Dismantling:

- Disconnect the system from the power supply and secure it against being switched on again.
- Make sure it is not live.
- Earth and short-circuit the working area.
- Close the check valves in front of and behind the pump.
- Disconnect the power cable.
- Depressurise the pump by opening the vent screw (Fig. 1, Item 2).

DANGER! Risk of scalding!
Due to high fluid temperatures there is a risk of scalding.

- **At high fluid temperatures, let the pump cool down before starting any work.**
- Dismantle the coupling protection metal sheets (Fig. 1, Item 1).

- Rotate the coupling/shaft in such a way that the four hexagon socket screws (twist guard; Fig. 2 Item 1) are opposite the cover drilled holes.
- Unscrew the hexagon socket screws (locking pins) one after the other far enough that the head is countersunk half way in the cover collar (Fig. 2).
- Unscrew the four cover screws (Fig. 3).
- Screw in two of the cover screws up to the stop into the press-off drilled holes to press the cover out of its seat (Fig. 3, 4).
- Unscrew one of the coupling screws and turn it all the way into one of the installation drilled holes (Fig. 5, Item 1). To do this, the coupling half is fixed by the retaining washer (Fig. 5, Item 3) at the impeller shaft.
- Unscrew the remaining coupling screws and take off the loose coupling half. If need be, use the provided press-off drilled holes (Fig. 5, Item 4). The impeller shaft is now held up by the motor shaft washer (Fig. 6, Item 1).
- Unscrew the hexagon screw (Fig. 6, Item 2) at the motor shaft to lower the retaining washer (Fig. 6, Item 1), thereby lowering the impeller/impeller shaft (Fig. 6, Item 3). When the impeller has been completely lowered (Fig. 7, after a travel of about 5 mm), completely take out the hexagon screw and the retaining washer.
- Unscrew the coupling screw out of the installation drilled hole and remove the remaining coupling half (Fig. 8). If need be, use the provided press-off drilled holes.
- Unscrew the central screw (Fig. 9, Item 2) of the impeller shaft and remove it with the retaining washer (Fig. 9, Item 3).
- Take out both impeller shaft keys (Fig. 9, Item 1).
- Carefully pull off and remove the mechanical seal (Fig. 10) from the impeller shaft.

Installation

Installation:

NOTE:
Thoroughly clean the sliding/seat surfaces of the impeller shaft and the lantern. If the shaft is damaged, it must be replaced.
Always use new screws for the twist guard.
Replace the O-rings in the cover groove and in the shaft bushing groove
with new ones.

- Completely screw in a cover screw (Fig. 11, Item 1) into each of the two press-off drilled holes of the cover.
- Be sure that all hexagon socket screws (locking pins) are countersunk half way into the cover collar (Fig. 11).
- Put the mechanical seal onto the impeller shaft in such a way that the four drilled holes for the cover screws are opposite the threads (Fig. 12). Push the mechanical seal on until the push-off screws are on the housing. a commercially available washing-up liquid can be used as a lubricant.
- Check the keys in the motor shaft for correct seating.
- Push the motor shaft retaining washer on and fix with central screw (Fig. 13).
  Ensure that the motor shaft retaining washer is well seated when the central screw is completely screwed in and that the central screw thread bears at least 12 mm in the motor shaft thread in this position. In case necessary, use the supplied washers.
- By unscrewing the central screw, lower the retaining washer of the motor shaft by about five mm (Fig. 13).
- Put the first key (Fig. 14, Pos. 1) in the impeller shaft, put on the retaining washer (Fig. 14, Pos. 2) of the impeller shaft and screw in the hexagon screw (Fig. 14, Pos. 3) **by hand**.

- Rotate the motor shaft in such a way that the motor shaft key and the impeller key oppose each other.
- Put the first coupling half on the two keys and the retaining washers (Fig. 15).
- Align the threaded hole in the impeller shaft retaining washer to the installation drilled hole of the coupling half.
- Insert one of the coupling screws into the installation drilled hole and screw in (Fig. 16) half way.
- Tighten the central screw of the impeller shaft with the prescribed torque (see 7.5). Use a strap wrench to apply counter pressure.
- Tighten the assembly screw (Fig. 16) (see 7.5).
- Tighten the central screw of the motor shaft with the prescribed torque (see 7.5). (Fig. 17, Item 1). Use a strap wrench to apply counter pressure.
- Insert the second key (Fig. 18, Item 2) of the impeller shaft.
- Put on the second coupling half (Fig. 18, Item 1).
- Evenly screw the available coupling screws; as a final step, the coupling screw from the assembly drilled hole (Fig. 19).

NOTE:
Pay attention to the prescribed screw torque (see the table in chapter 9.4 “Screw tightening torques” on page 43).

- Unscrew both mechanical seal press-out screws from the cover.
- Carefully vertically press the mechanical seal into its seat. Avoid damage to the mechanical seal due to jamming. (Fig. 20).
- Screw in the four cover screws (Fig. 21, Item 1) and tighten them with the prescribed torque (see the table in chapter 9.4 “Screw tightening torques” on page 43).
- One after the other, screw in and tighten the four hexagon socket screws (locking pins; Fig. 21, Item 2) (see 7.5).
- Install the coupling protection metal sheets (Fig. 22).
- Connect the motor cable.

9.3 Motor

The motor bearings have been lifetime lubricated. Increased bearing noise and unusual vibrations are a sign of bearing wear. The bearing or motor must then be replaced.

9.3.1 Changing the motor

DANGER! Danger of death!
There is a mortal danger through shock when working on electrical equipment.

- **Before working on electrical equipment, switch it off and prevent it from being switched on again.**
- Close the check valves in front of and behind the pump.
- Depressurise the pump by opening the vent screw (Fig. 1, Item 2).

DANGER! Risk of scalding!
Due to high fluid temperatures there is a risk of scalding.

- **At high fluid temperatures, let the pump cool down before starting any work.**
- Disconnect the motor connection cables.
- Dismantle the coupling protection metal sheets (Fig. 1, Item 1).
- Press the mechanical seal out of its seat and dismantle the coupling (see “Dismantling” in chapter 9.2.2 “Replacing the mechanical seal” on page 39 and Fig. 1 ... 8).

WARNING! Danger of personal injury!
Incorrect dismantling of the motor can result in personal injury.

- **Before dismantling the motor, be sure that the centre of gravity is not above the holding point.**
- **Secure the motor against tipping over during transport.**

- **Always use suitable lifting equipment and secure parts against falling.**
- **Never stand underneath a suspended load.**
- Loosen the motor fastening screws (Fig. 24, Item 1) at the motor flange (Fig. 25).
- Lift up the motor with suitable hoisting gear from the pump (Fig. 26).
- Install the new motor using suitable hoisting gear and diagonally tighten the connection between lantern and motor. (Fig. 27).

NOTE:
Pay attention to the prescribed screw torque (see the table in chapter 9.4 “Screw tightening torques” on page 43).

- Check the coupling sliding surfaces and the shaft sliding surfaces; clean if need be.
- Install the coupling and fasten the mechanical seal (see “Installation” in chapter 9.2.2 “Replacing the mechanical seal” on page 39 and Fig. 13 ...21).

NOTE:
Pay attention to the prescribed screw torque (see the table in chapter 9.4 “Screw tightening torques” on page 43).

- Install the coupling protection metal sheets (Fig. 22).
- Connect the motor cable.

9.4 Screw tightening torques

Screw connection		Tightening torque Nm ± 10 %	Installation instructions
Impeller — Shaft	M20	100	
Pump housing — Lantern	M16–8.8	160	• Tighten evenly and diagonally
Lantern — Motor	M16 M20	100 160	
Retaining washer — Impeller shaft	M16	60	
Retaining washer Motor shaft	M20	60	
Baseplate — Pump housing	M16	100	
Coupling (2 versions possible)	M12–10.9 M16–10.9	100 230	• Tighten evenly and diagonally
Mechanical seal — Lantern	M10	35	
Mechanical seal (Twist guard)	M6	7	

10 Faults, causes and remedies

Only have faults remedied by qualified personnel. Observe the safety instructions at chapter 9 “Maintenance” on page 38 .

- **If the malfunction cannot be rectified, consult a specialist technician or the nearest customer service or representative office.**

10.1 Mechanical faults

Fault	Cause	Remedy
Pump does not start or stops working	Pump blocked	Disconnect motor from power supply, remove cause of blockage; if motor blocked, overhaul/replace motor/plugs
	Incorrectly installed mechanical seal	Remove the mechanical seal; replace defective parts; install mechanical seal in accordance to the instructions
	Cable terminal loose	Check/tighten all terminal screws
	Fuses faulty	Check fuses; replace defective fuses
	Motor damaged	Contact customer service
	Motor protection switch has triggered	Throttle the pump to the rated volume flow on the pressure side
	Motor protection switch set incorrectly	Set the motor protection switch to the correct nominal current as shown on the rating plate.
	Motor protection switch affected by excessive ambient temperature	Move the motor protection switch or protect it using heat insulation
	PTC thermistor tripping unit has triggered	Check the motor and fan cover for contaminants and clean if necessary, check ambient temperature and ensure an ambient temperature of ≤ 40°C by forced venting if necessary
Pump is running at reduced output	Incorrect direction of rotation	Check direction of rotation, change if necessary
	Stop valve on pressure side throttled	Slowly open the stop valve
	Speed too slow	Remedy incorrect terminal bridging (Y instead of Δ)
	Air in the suction line	Seal leaks at the flanges; bleed pump
Pump is making noise	Cavitation due to insufficient supply pressure	Increase supply pressure, observe minimum pressure at the suction port, check slide valve and filter on the suction side and clean if necessary
	Incorrectly installed mechanical seal	Remove the mechanical seal; replace defective parts; install mechanical seal in accordance to the instructions
	Motor has bearing damage	Have the pump checked by Wilo customer service or a specialised service centre and serviced if necessary
	Impeller grinding	Check faces and centrings and between lanterns and motor and lantern and pump housing; clean if necessary. Check the coupling and shaft sliding surfaces. If necessary, clean and lightly oil them.

11 Spare parts

Spare parts can be ordered from your local specialist and/or via Wilo customer service.

To avoid queries and incorrect orders, all data on the name plate should be submitted for each order.

CAUTION! Risk of damage to property!
Trouble-free pump operation can only be guaranteed when original spare parts are used.

- **Only use original Wilo spare parts.**
- **Required information when ordering spare parts:**
  - **Spare part numbers**
  - **Name/description of the spare part**
  - **All data on the pump and motor rating plate**

NOTE:
List of genuine spare parts: see Wilo spare parts documentation.

12 Disposal

Proper disposal and recycling of this product prevents damage to the environment and risks to personal health.

Proper disposal requires the drainage and cleaning and the dismantling of the pump unit.

Lubricants must be collected. The pump components are to be separated according to material (metal, plastic, electronics).

1. Use public or private disposal organisations when disposing of all or part of the product.
2. For more information on proper disposal, please contact your local council or waste disposal office or the supplier from whom you obtained the product.

Subject to change without prior notice.

D EG – Konformitätserklärung
GB EC – Declaration of conformity
F Déclaration de conformité CE

(gemäß 2006/42/EG Anhang II,1A und 2004/108/EG Anhang IV,2,
according 2006/42/EC annex II,1A and 2004/108/EC annex IV,2,
conforme 2006/42/CE appendice II,1A et 2004/108/CE l'annexe IV,2)

Hiermit erklären wir, dass die Bauart der Baureihe : **IL/DL/BL**
Herewith, we declare that this pump type of the series:
Par le présent, nous déclarons que le type de pompes de la série:
(Die Seriennummer ist auf dem Typenschild des Produktes angegeben./
The serial number is marked on the product site plate./ Le numéro de série est inscrit sur la plaque signalétique du produit.)

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:
in its delivered state complies with the following relevant provisions:
est conforme aux dispositions suivantes dont il relève:

EG-Maschinenrichtlinie **2006/42/EG**
EC-Machinery directive
Directive CE relative aux machines
Die Schutzziele der Niederspannungsrichtlinie 2006/95/EG werden gemäß Anhang I, Nr. 1.5.1 der 2006/42/EG Maschinen-richtlinie eingehalten.
The protection objectives of the low-voltage directive 2006/95/EC are realized according annex I, No. 1.5.1 of the EC-Machinery directive 2006/42/EC.
Les objectifs de protection (sécurité) de la directive basse-tension 2006/95/CE sont respectés conformément à l'annexe I, n° 5.1 de la directive CE relatives aux machines 2006/42/CE.

Elektromagnetische Verträglichkeit - Richtlinie **2004/108/EG**
Electromagnetic compatibility - directive
Directive compatibilité électromagnétique

Richtlinie energieverbrauchsrelevanter Produkte **2009/125/EG**
Energy-related products - directive
Directive des produits liés à l'énergie
Die verwendeten 50Hz Induktionselektromotoren - Drehstrom, Käfigläufer, einstufig - entsprechen den Ökodesign - Anforderungen der Verordnung 640/2009 und der Verordnung 547/2012 von Wasserpumpen.
This applies according to eco-design requirements of the regulation 640/2009 to the versions with an induction electric motor, squirrel cage, three-phase, single speed, running at 50 Hz and of the regulation 547/2012 for water pumps.
Qui s'applique suivant les exigences d'éco-conception du règlement 640/2009 aux versions comportant un moteur électrique à induction à cage d'écureuil, triphasé, mono-vitesse, fonctionnant à 50 Hz et, du règlement 547/2012 pour les pompes à eau,

und entsprechender nationaler Gesetzgebung,
and with the relevant national legislation,
et aux législations nationales les transposant,

angewendete harmonisierte Normen, insbesondere: **EN 809+A1**
as well as following harmonized standards: **EN 60034-1**
ainsi qu'aux normes (européennes) harmonisées suivantes:

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen ist:
Authorized representative for the completion of the technical documentation:
Personne autorisée à constituer le dossier technique est:

WILO SE
Division Pumps & Systems
PBU Pumps - Quality
Nortkirchenstraße 100
44263 Dortmund
Germany

Dortmund, 15. Januar 2013

ppa. H. Herchenhein

Holger Herchenhein
Group Quality Manager

wilo

WILO SE
Nortkirchenstraße 100
44263 Dortmund
Germany

Document: 2117831.1

NL

EG-verklaring van overeenstemming

Hiermede verklaren wij dat dit aggregaat in de geleverde uitvoering voldoet aan de volgende bepalingen:

EG-richtlijnen betreffende machines 2006/42/EG

De veiligheidsdoelstellingen van de laagspanningsrichtlijn worden overeenkomstig bijlage I, nr. 1.5.1 van de machinerichtlijn 2006/42/EG aangehouden.

Elektromagnetische compatibiliteit 2004/108/EG

Richtlijn voor energieverbruiksrelevante producten 2009/125/EG

De gebruikte 50 Hz inductie-elektromotoren – draaistroom, kooianker, ééntraps – conform de ecodesign-vereisten van de verordening 640/2009.

Conform de ecodesign-vereisten van de verordening 547/2012 voor waterpompen.

gebruikte geharmoniseerde normen, in het bijzonder: zie vorige pagina

IT

Dichiarazione di conformità CE

Con la presente si dichiara che i presenti prodotti sono conformi alle seguenti disposizioni e direttive rilevanti:

Direttiva macchine 2006/42/EG

Gli obiettivi di protezione della direttiva macchine vengono rispettati secondo allegato I, n. 1.5.1 dalla direttiva macchine 2006/42/CE.

Compatibilità elettromagnetica 2004/108/EG

Direttiva relativa ai prodotti connessi all'energia 2009/125/CE

I motori elettrici a induzione utilizzati da 50 Hz – corrente trifase, motore a gabbia di scoiattolo, monostadio – soddisfano i requisiti di progettazione ecocompatibile del regolamento 640/2009.

Ai sensi dei requisiti di progettazione ecocompatibile del regolamento 547/2012 per le pompe per acqua.

norme armonizzate applicate, in particolare: vedi pagina precedente

ES

Declaración de conformidad CE

Por la presente declaramos la conformidad del producto en su estado de suministro con las disposiciones pertinentes siguientes:

Directiva sobre máquinas 2006/42/EG

Se cumplen los objetivos en materia de seguridad establecidos en la Directiva de Baja tensión según lo especificado en el Anexo I, punto 1.5.1 de la Directiva de Máquinas 2006/42/CE.

Directiva sobre compatibilidad electromagnética 2004/108/EG

Directiva 2009/125/CE relativa a los productos relacionados con el consumo de energía

Los motores eléctricos de inducción de 50 Hz utilizados (de corriente trifásica, rotores en jaula deardilla, motores de una etapa) cumplen los requisitos relativos al ecodiseño establecidos en el Reglamento 640/2009.

De conformidad con los requisitos relativos al ecodiseño del Reglamento 547/2012 para bombas hidráulicas.

normas armonizadas adoptadas, especialmente: véase página anterior

PT

Declaração de Conformidade CE

Pela presente, declaramos que esta unidade no seu estado original, está conforme os seguintes requisitos:

Directivas CEE relativas a máquinas 2006/42/EG

Os objectivos de protecção da directiva de baixa tensão são cumpridos de acordo com o anexo I, nº 1.5.1 da directiva de máquinas 2006/42/CE.

Compatibilidade electromagnética 2004/108/EG

Directiva relativa à criação de um quadro para definir os requisitos de concepção ecológica dos produtos relacionados com o consumo de energia 2009/125/CE

Os motores eléctricos de indução de 50 Hz utilizados – corrente trifásica, com rotor em curto-circuito, monocelular – cumprem os requisitos de concepção ecológica do Regulamento 640/2009.

Cumprem os requisitos de concepção ecológica do Regulamento 547/2012 para as bombas de água.

normas harmonizadas aplicadas, especialmente: ver página anterior

SV

CE- försäkran

Härmed förklarar vi att denna maskin i levererat utförande motsvarar följande tillämpliga bestämmelser:

EG–Maskindirektiv 2006/42/EG

Produkten uppfyller säkerhetsmålen i lågspänningsdirektivet enligt bilaga I, nr 1.5.1 i maskindirektiv 2006/42/EG.

EG–Elektromagnetisk kompatibilitet – riktlinje 2004/108/EG

Direktivet om energirelaterade produkter 2009/125/EG

De använda elektriska induktionsmotorerna på 50 Hz – trefas, kortslutningsmotor, enstegs – motsvarar kraven på ekodesign för elektriska motorer i förordning 640/2009.

Motsvarande ekodesignkraven i förordning 547/2012 för vattenpumpar.

tillämpade harmoniserade normer, i synnerhet: se föregående sida

NO

EU-Overensstemmelseserklæring

Vi erklærer hermed at denne enheten i utførelse som levert er i overensstemmelse med følgende relevante bestemmelser:

EG–Maskindirektiv 2006/42/EG

Lavspenningsdirektivets vernemål overholdes i samsvar med vedlegg I, nr. 1.5.1 i maskindirektivet 2006/42/EF.

EG–EMV–Elektromagnetisk kompatibilitet 2004/108/EG

Direktiv energirelaterte produkter 2009/125/EF

De 50 Hz induksjonsmotorene som finner anvendelse – trefasevekselstrøms kortslutningsmotor, ettrinns – samsvarer med kravene til økodesign i forordning 640/2009.

I samsvar med kravene til økodesign i forordning 547/2012 for vannpumper.

anvendte harmoniserte standarder, særlig: se forrige side

FI

CE-standardinmukaisuusseloste

Ilmoitamme täten, että tämä laite vastaa seuraavia asiaankuuluvia määräyksiä:

EU–konedirektiivit: 2006/42/EG

Pienjännitedirektiivin suojatavoitteita noudatetaan konedirektiivin 2006/42/EY liitteen I, nro 1.5.1 mukaisesti.

Sähkömagneettinen soveltuvuus 2004/108/EG

Energiaan liittyviä tuotteita koskeva direktiivi 2009/125/EY

Käytettävät 50 Hz:n induktio-sähkömoottorit (vaihevirta- ja oikosulkumoottori, yksivaiheinen moottori) vastaavat asetuksen 640/2009 ekologista suunnittelua koskevia vaatimuksia.

Asetuksessa 547/2012 esitettyjä vesipumppujen ekologista suunnittelua koskevia vaatimuksia vastaava.

käytetyt yhteensovitetut standardit, erityisesti: katso edellinen sivu.

DA

EF-overensstemmelseserklæring

Vi erklærer hermed, at denne enhed ved levering overholder følgende relevante bestemmelser:

EU–maskindirektiver 2006/42/EG

Lavspændingsdirektivets mål om beskyttelse overholdes i henhold til bilag I, nr. 1.5.1 i maskindirektivet 2006/42/EF.

Elektromagnetisk kompatibilitet: 2004/108/EG

Direktiv 2009/125/EF om energirelaterede produkter

De anvendte 50 Hz induktionselektromotorer - trefasestrøm, kortslutningsmotor, et-trins - opfylder kravene til miljøvenligt design i forordning 640/2009.

I overensstemmelse med kravene til miljøvenligt design i forordning 547/2012 for vandpumper.

anvendte harmoniserede standarder, særligt: se forrige side

HU

EK-megfelelőségi nyilatkozat

Ezennel kijelentjük, hogy az berendezés megfelel az alábbi irányelveknek:

Gépek irányelv: 2006/42/EK

A kisfeszültségű irányelv védelmi előírásait a 2006/42/EK gépekre vonatkozó irányelv I. függelékének 1.5.1. sz. pontja szerint teljesíti.

Elektromágneses összeférhetőség irányelv: 2004/108/EK

Energiával kapcsolatos termékekről szóló irányelv: 2009/125/EK

A használt 50 Hz-es indukciós villanymotorok – háromfázisú, kalickás forgórész, egyfokozatú – megfelelnek a 640/2009 rendelet környezetbarát tervezésre vonatkozó követelményeinek.

A vízszivattyúkról szóló 547/2012 rendelet környezetbarát tervezésre vonatkozó követelményeinek megfelelően.

alkalmazott harmonizált szabványoknak, különösen: lásd az előző oldalt

CS

Prohlášení o shodě ES

Prohlašujeme tímto, že tento agregát v dodaném provedení odpovídá následujícím příslušným ustanovením:

Směrnice ES pro strojní zařízení 2006/42/ES

Cíle týkající se bezpečnosti stanovené ve směrnici o elektrických zařízeních nízkého napětí jsou dodrženy podle přílohy I, č. 1.5.1 směrnice o strojních zařízeních 2006/42/ES.

Směrnice o elektromagnetické kompatibilitě 2004/108/ES

Směrnice pro výrobky spojené se spotřebou energie 2009/125/ES

Použité 50Hz třífázové indukční motory, s klecovým rotorem, jednostupňové – vyhovují požadavkům na ekodesign dle nařízení 640/2009.

Vyhovuje požadavkům na ekodesign dle nařízení 547/2012 pro vodní čerpadla.

použité harmonizační normy, zejména: viz předchozí strana

PL

Deklaracja Zgodności WE

Niniejszym deklarujemy z pełną odpowiedzialnością, że dostarczony wyrób jest zgodny z następującymi dokumentami:

dyrektywą maszynową WE 2006/42/WE

Przestrzegane są cele ochrony dyrektywy niskonapięciowej zgodnie z załącznikiem I, nr 1.5.1 dyrektywy maszynowej 2006/42/WE.

dyrektywą dot. kompatybilności elektromagnetycznej 2004/108/WE

Dyrektywa w sprawie ekoprojektu dla produktów związanych z energią 2009/125/WE.

Stosowane elektryczne silniki indukcyjne 50 Hz – trójfazowe, wirniki klatkowe, jednostopniowe – spełniają wymogi rozporządzenia 640/2009 dotyczące ekoprojektu.

Spełniają wymogi rozporządzenia 547/2012 dotyczącego ekoprojektu dla pomp wodnych.

stosowanymi normami zharmonizowanymi, a w szczególności: patrz poprzednia strona

RU

Декларация о соответствии Европейским нормам

Настоящим документом заявляем, что данный агрегат в его объеме поставки соответствует следующим нормативным документам:

Директивы ЕС в отношении машин 2006/42/EG

Требования по безопасности, изложенные в директиве по низковольтному напряжению, соблюдаются согласно приложению I, № 1.5.1 директивы в отношении машин 2006/42/EG.

Электромагнитная устойчивость 2004/108/EG

Директива о продукции, связанной с энергопотреблением 2009/125/EC

Используемые асинхронные электродвигатели 50 Гц – трехфазного тока, короткозамкнутые, одноступенчатые – соответствуют требованиям к экодизайну

Соответствует требованиям к экодизайну предписания 547/2012 для водяных насосов.

Используемые согласованные стандарты и нормы, в частности : см. предыдущую страницу

EL

Δήλωση συμμόρφωσης της ΕΕ

Δηλώνουμε ότι το προϊόν αυτό σ' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις :

Οδηγίες ΕΚ για μηχανήματα 2006/42/ΕΚ

Οι απαιτήσεις προστασίας της οδηγίας χαμηλής τάσης τηρούνται σύμφωνα με το παράρτημα I, αρ. 1.5.1 της οδηγίας σχετικά με τα μηχανήματα 2006/42/ΕΚ.

Ηλεκτρομαγνητική συμβατότητα ΕΚ-2004/108/ΕΚ

Ευρωπαϊκή οδηγία για συνδεόμενα με την ενέργεια προϊόντα 2009/125/ΕΚ

Οι χρησιμοποιούμενοι επαγωγικοί ηλεκτροκινητήρες 50 Hz – τριφασικοί, δρομέας κλωβού, μονοβάθμιοι – ανταποκρίνονται στις απαιτήσεις οικολογικού σχεδιασμού του κανονισμού 640/2009.

Σύμφωνα με τις απαιτήσεις οικολογικού σχεδιασμού του κανονισμού 547/2012 για υδραντλίες.

Εναρμονισμένα χρησιμοποιούμενα πρότυπα, ιδιαίτερα: Βλέπε προηγούμενη σελίδα

TR

CE Uygunluk Teyid Belgesi

Bu cihazın teslim edildiği şekliyle aşağıdaki standartlara uygun olduğunu teyid ederiz:

AB-Makina Standartları 2006/42/EG

Alçak gerilim yönergesinin koruma hedefleri, 2006/42/AT makine yönergesi Ek I, no. 1.5.1'e uygundur.

Elektromanyetik Uyumluluk 2004/108/EG

Enerji ile ilgili ürünlerin çevreye duyarlı tasarımına ilişkin yönetmelik 2009/125/AT

Kullanılan 50 Hz indüksiyon elektromotorları – trifaze akım, sincap kafes motor, tek kademeli – 640/2009 Düzenlemesinde ekolojik tasarımla ilgili gerekliliklere uygundur.

Su pompaları ile ilgili 547/2012 Düzenlemesinde ekolojik tasarıma ilişkin gerekliliklere uygun.

kısmen kullanılan standartlar için: bkz. bir önceki sayfa

RO

EC-Declarație de conformitate

Prin prezenta declarăm că acest produs aşa cum este livrat, corespunde cu următoarele prevederi aplicabile:

Directiva CE pentru maşini 2006/42/EG

Sunt respectate obiectivele de protecţie din directiva privind joasa tensiune conform Anexei I, Nr. 1.5.1 din directiva privind maşinile 2006/42/CE.

Compatibilitatea electromagnetică – directiva 2004/108/EG

Directivă privind produsele cu impact energetic 2009/125/CE

Electromotoarele cu inducţie, de 50 Hz, utilizate – curent alternativ, motor în scurtcircuit, cu o treaptă – sunt în conformitate cu parametrii ecologici cuprinşi în Ordonanţa 640/2009.

În conformitate cu parametrii ecologici cuprinşi în Ordonanţa 547/2012 pentru pompe de apă.

standarde armonizate aplicate, îndeosebi: vezi pagina precedentă

ET

EÜ vastavusdeklaratsioon

Käesolevaga tõendame, et see toode vastab järgmistele asjakohastele direktiividele:

Masinadirektiiv 2006/42/EÜ

Madalpingedirektiivi kaitse-eesmärgid on täidetud vastavalt masinate direktiivi 2006/42/EÜ I lisa punktile 1.5.1.

Elektromagnetilise ühilduvuse direktiiv 2004/108/EÜ

Energiamõjuga toodete direktiiv 2009/125/EÜ

Kasutatud 50 Hz vaheldUvvoolu elektrimootorid (vaheldUvvool, lühisrootor, üheastmeline) vastavad määruses 640/2009 sätestatud ökodisaini nõuetele.

Kooskõlas veepumpade määruses 547/2012 sätestatud ökodisaini nõuega.

kohaldatud harmoneeritud standardid, eriti: vt eelmist lk

LV

EC - atbilstības deklarācija

Ar šo mēs apliecinām, ka šis izstrādājums atbilst sekojošiem noteikumiem:

Mašīnu direktīva 2006/42/EK

Zemsprieguma direktīvas drošības mērķi tiek ievēroti atbilstoši Mašīnu direktīvas 2006/42/EK

Pielikumam I, Nr. 1.5.1.

Elektromagnētiskās savietojamības direktīva 2004/108/EK

Direktīva 2009/125/EK par ar enerģiju saistītiem produktiem

Izmantotie 50 Hz indukcijas elektromotori – maiņstrāva, īsslēguma rotora motors, vienpakāpes – atbilst Regulas Nr. 640/2009 ekodizaina prasībām.

Atbilstoši Regulas Nr. 547/2012 ekodizaina prasībām ūdenssūkņiem.

piemēroti harmonizēti standarti, tai skaitā: skatīt iepriekšējo lappusi

LT

EB atitikties deklaracija

Šiuo pažymima, kad šis gaminys atitinka šias normas ir direktyvas:

Mašinų direktyvą 2006/42/EB

Laikomasi Žemos įtampos direktyvos keliamų saugos reikalavimų pagal Mašinų direktyvos 2006/42/EB I priedo 1.5.1 punktą.

Elektromagnetinio suderinamumo direktyvą 2004/108/EB

Su energija susijusių produktų direktyva 2009/125/EB

Naudojami 50 Hz indukciniai elektriniai varikliai – trifazės įtampos, su narveliniu rotoriumi, vienos pakopos – atitinka ekologinio projektavimo reikalavimus pagal Reglamentą 640/2009.

Atitinka ekologinio projektavimo reikalavimus pagal Reglamentą 547/2012 dėl vandens siurblių.

pritaikytus vieningus standartus, o būtent: žr. ankstesniame puslapyje

SK

ES vyhlásenie o zhode

Týmto vyhlasujeme, že konštrukcie tejto konštrukčnej série v dodanom vyhotovení vyhovujú nasledujúcim príslušným ustanoveniam:

Stroje - smernica 2006/42/ES

Bezpečnostné ciele smernice o nízkom napätí sú dodržiavané v zmysle prílohy I, č. 1.5.1 smernice o strojových zariadeniach 2006/42/ES.

Elektromagnetická zhoda - smernica 2004/108/ES

Smernica 2009/125/ES o energeticky významných výrobkoch

Použité 50 Hz indukčné elektromotory – jednostupňové, na trojfázový striedavý prúd, s rotormi nakrátko – zodpovedajú požiadavkám na ekodizajn uvedeným v nariadení 640/2009.

V súlade s požiadavkami na ekodizajn uvedenými v nariadení 547/2012 pre vodné čerpadlá.

používané harmonizované normy, najmä: pozri predchádzajúcu stranu

SL

ES – izjava o skladnosti

Izjavljamo, da dobavljene vrste izvedbe te serije ustrezajo sledečim zadevnim določilom:

Direktiva o strojih 2006/42/ES

Cilji Direktive o nizkonapetostni opremi so v skladu s prilogo I, št. 1.5.1 Direktive o strojih 2006/42/EG doseženi.

Direktiva o elektromagnetni združljivosti 2004/108/ES

Direktiva 2009/125/EG za okoljsko primerno zasnovo izdelkov, povezanih z energijo

Uporabljeni 50 Hz indukcijski elektromotorji – trifazni tok, kletkasti rotor, enostopenjski – izpolnjujejo zahteve za okoljsko primerno zasnovo iz Uredbe 640/2009.

izpolnjujejo zahteve za okoljsko primerno zasnovo iz Uredbe 547/2012 za vodne črpalke.

uporabljeni harmonizirani standardi, predvsem: glejte prejšnjo stran

BG

ЕО-Декларация за съответствие

Декларираме, че продуктът отговаря на следните изисквания:

Машинна директива 2006/42/ЕО

Целите за защита на разпоредбата за ниско напрежение са съставени съгласно Приложение I, № 1.5.1 от Директивата за машини 2006/42/ЕС.

Електромагнитна съвместимост – директива 2004/108/ЕО

Директива за продуктите, свързани с енергопотреблението 2009/125/ЕО

Използваните индукционни електродвигатели 50 Hz – трифазен ток, тръкалящи се лагери, едностъпални – отговарят на изискванията за екодизайн на Регламент 640/2009.

Съгласно изискванията за екодизайн на Регламент 547/2012 за водни помпи.

Хармонизирани стандарти: вж. предната страница

MT

Dikjarazzjoni ta' konformità KE

B'dan il-mezz, niddikjaraw li l-prodotti tas-serje jissodisfaw id-dispożizzjonijiet relevanti li ġejjin:

Makkinarju - Direttiva 2006/42/KE

L-objettivi tas-sigurta tad-Direttiva dwar il-Vultaġġ Baxx huma konformi mal-Anness I, Nru 1.5.1 tad-Direttiva dwar il-Makkinarju 2006/42/KE.

Kompatibbiltà elettromanjetika - Direttiva 2004/108/KE

Linja Gwida 2009/125/KE dwar prodotti relatati mal-użu tal-enerġija

Il-muturi elettriċi b'induzzjoni ta' 50 Hz użati- tliet fażijiet, squirrel-cage, singola - jissodisfaw ir-rekwiżiti tal-ekodisinn tar-Regolament 640/2009.

b'mod partikolari: ara l-paġna ta' qabel

HR

EZ izjava o sukladnosti

Ovim izjavljujemo da vrste konstrukcije serije u isporučenoj izvedbi odgovaraju sljedećim važećim propisima:

EZ smjernica o strojevima 2006/42/EZ

Ciljevi zaštite smjernice o niskom naponu ispunjeni su sukladno prilogu I, br. 1.5.1 smjernice o strojevima 2006/42/EZ.

Elektromagnetna kompatibilnost - smjernica 2004/108/EZ

Smjernica za proizvode relevantne u pogledu potrošnje energije 2009/125/EZ

Korišteni 50 Hz-ni indukcijski elektromotori – trofazni, s kratko spojenim rotorom, jednostupanjski – odgovaraju zahtjevima za ekološki dizajn iz uredbe 640/2009.

primijenjene harmonizirane norme, posebno: vidjeti prethodnu stranicu

SR

EZ izjava o usklađenosti

Ovim izjavljujemo da vrste konstrukcije serije u isporučenoj verziji odgovaraju sledećim važećim propisima:

EZ direktiva za mašine 2006/42/EZ

Ciljevi zaštite direktive za niski napon ispunjeni su u skladu sa prilogom I, br. 1.5.1 direktive za mašine 2006/42/EZ.

Elektromagnetna kompatibilnost - direktiva 2004/108/EZ

Direktiva za proizvode relevantne u pogledu potrošnje energije 2009/125/EZ

Korišćeni 50 Hz-ni indukcioni elektromotori – trofazni, s kratkospojenim rotorom, jednostepeni – odgovaraju zahtevima za ekološki dizajn iz uredbe 640/2009.

primenjeni harmonizovani standardi, a posebno: vidi prethodnu stranu

Wilo – International (Subsidiaries)

Argentina
WILO SALMSON
Argentina S.A.
C1295ABI Ciudad
Autónoma de Buenos Aires
T+ 54 11 4361 5929
info@salmson.com.ar

Australia
WILO Australia Pty Limited
Murrarrie, Queensland,
4172
T +61 7 3907 6900
chris.dayton@wilo.com.au

Austria
WILO Pumpen
Österreich GmbH
2351 Wiener Neudorf
T +43 507 507-0
office@wilo.at

Azerbaijan
WILO Caspian LLC
1014 Baku
T +994 12 5962372
info@wilo.az

Belarus
WILO Bel OOO
220035 Minsk
T +375 17 2535363
wilo@wilo.by

Belgium
WILO SA/NV
1083 Ganshoren
T +32 2 4823333
info@wilo.be

Bulgaria
WILO Bulgaria Ltd.
1125 Sofia
T +359 2 9701970
info@wilo.bg

Brazil
WILO Brasil Ltda
Jundiaí – SP – CEP
13.201-005
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wilo@wilo-brasil.com.br

Canada
WILO Canada Inc.
Calgary, Alberta T2A 5L4
T +1 403 2769456
bill.lowe@wilo-na.com

China
WILO China Ltd.
101300 Beijing
T +86 10 58041888
wilobj@wilo.com.cn

Croatia
WILO Hrvatska d.o.o.
10090 Zagreb
T +38 51 3430914
wilo-hrvatska@wilo.hr

Czech Republic
WILO Praha s.r.o.
25101 Cestlice
T +420 234 098711
info@wilo.cz

Denmark
WILO Danmark A/S
2690 Karlslunde
T +45 70 253312
wilo@wilo.dk

Estonia
WILO Eesti OÜ
12618 Tallinn
T +372 6 509780
info@wilo.ee

Finland
WILO Finland OY
02330 Espoo
T +358 207401540
wilo@wilo.fi

France
WILO S.A.S.
78390 Bois d'Arcy
T +33 1 30050930
info@wilo.fr

Great Britain
WILO (U.K.) Ltd.
DE14 2WJ Burton-
Upon-Trent
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sales@wilo.co.uk

Greece
WILO Hellas AG
14569 Anixi (Attika)
T +302 10 6248300
wilo.info@wilo.gr

Hungary
WILO Magyarország Kft
2045 Törökbálint
(Budapest)
T +36 23 889500
wilo@wilo.hu

India
WILO India Mather and
Platt Pumps Ltd.
Pune 411019
T +91 20 27442100
service@
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Indonesia
WILO Pumps Indonesia
Jakarta Selatan 12140
T +62 21 7247676
citrawilo@cbn.net.id

Ireland
WILO Ireland
Limerick
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sales@wilo.ie

Italy
WILO Italia s.r.l.
20068 Peschiera
Borromeo (Milano)
T +39 25538351
wilo.italia@wilo.it

Kazakhstan
WILO Central Asia
050002 Almaty
T +7 727 2785961
info@wilo.kz

Korea
WILO Pumps Ltd.
621-807 Gimhae
Gyeongnam
T +82 55 3405890
wilo@wilo.co.kr

Latvia
WILO Baltic SIA
1019 Riga
T +371 7 145229
mail@wilo.lv

Lebanon
WILO SALMSON
Lebanon
12022030 El Metn
T +961 4 722280
wsl@cyberia.net.lb

Lithuania
WILO Lietuva UAB
03202 Vilnius
T +370 5 2136495
mail@wilo.lt

Morocco
WILO Maroc
SARLQUARTIER
INDUSTRIEL AIN SEBAA
20250
CASABLANCA
T +212 (0) 5 22 660 924
contact@wilo.ma

The Netherlands
WILO Nederland b.v.
1551 NA Westzaan
T +31 88 9456 000
info@wilo.nl

Norway
WILO Norge AS
0975 Oslo
T +47 22 804570
wilo@wilo.no

Poland
WILO Polska Sp. z.o.o.
05-090 Raszyn
T +48 22 7026161
wilo@wilo.pl

Portugal
Bombas Wilo-Salmson
Portugal Lda.
4050-040 Porto
T +351 22 2080350
bombas@wilo.pt

Romania
WILO Romania s.r.l.
077040 Com. Chiajna
Jud. Ilfov
T +40 21 3170164
wilo@wilo.ro

Russia
WILO Rus ooo
123592 Moscow
T +7 495 7810690
wilo@wilo.ru

Saudi Arabia
WILO ME - Riyadh
Riyadh 11465
T +966 1 4624430
wshoula@wataniaind.com

Serbia and Montenegro
WILO Beograd d.o.o.
11000 Beograd
T +381 11 2851278
office@wilo.co.yu

Slovakia
WILO Slovakia s.r.o.
83106 Bratislava
T +421 2 33014511
wilo@wilo.sk

Slovenia
WILO Adriatic d.o.o.
1000 Ljubljana
T +386 1 5838130
wilo.adriatic@wilo.si

South Africa
Salmson South Africa
1610 Edenvale
T +27 11 6082780
errol.cornelius@
salmson.co.za

Spain
WILO Ibérica S.A.
28806 Alcalá de Henares
(Madrid)
T +34 91 8797100
wilo.iberica@wilo.es

Sweden
WILO Sverige AB
35246 Växjö
T +46 470 727600
wilo@wilo.se

Switzerland
EMB Pumpen AG
4310 Rheinfelden
T +41 61 83680-20
info@emb-pumpen.ch

Taiwan
WILO-EMU Taiwan Co. Ltd.
110 Taipeh
T +886 227 391655
nelson.wu@
wiloemutaiwan.com.tw

Turkey
WILO Pompa Sistemleri
San. ve Tic. A.Ş.
34956 İstanbul
T +90 216 2509400
wilo@wilo.com.tr

Ukraina
WILO Ukraina t.o.w.
01033 Kiew
T +38 044 2011870
wilo@wilo.ua

United Arab Emirates
WILO Middle East FZE
Jebel Ali Free Zone –
South - Dubai
T +971 4 880 91 77
info@wilo.ae

USA
WILO USA LLC
Rosemont, IL 60018
T +1 866 945 6872
info@wilo-usa.com

Vietnam
WILO Vietnam Co Ltd.
Ho Chi Minh City, Vietnam
T +84 8 38109975
nkminh@wilo.vn

WILO SE
Nortkirchenstraße 100
44263 Dortmund
Germany
T 0231 4102-0
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wilo@wilo.com
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Wilo-Vertriebsbüros in Deutschland

Nord
WILO SE
Vertriebsbüro Hamburg
Beim Strohhause 27
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hamburg.anfragen@wilo.com

Ost
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Vertriebsbüro Dresden
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dresden.anfragen@wilo.com

Süd-West
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Vertriebsbüro Stuttgart
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stuttgart.anfragen@wilo.com

West I
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Vertriebsbüro Berlin
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12051 Berlin-Neukölln
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Süd-Ost
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Mitte
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F 0231 4102-6565
dortmund.anfragen@wilo.com

Kompetenz-Team Gebäudetechnik

WILO SE
Nortkirchenstraße 100
44263 Dortmund
T 0231 4102-7516
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WILO Pumpen Österreich GmbH
Wilo Straße 1
A-2351 Wiener Neudorf
T +43 507 507-0
F +43 507 507-15
office@wilo.at
www.wilo.at

Vertriebsbüro Salzburg:
Gnigler Straße 56
A-5020 Salzburg
T +43 507 507-13
F +43 662 878470
office.salzburg@wilo.at
www.wilo.at

Vertriebsbüro Oberösterreich:
Trattnachtalstraße 7
A-4710 Grieskirchen
T +43 507 507-26
F +43 7248 65054
office.oberoesterreich@wilo.at
www.wilo.at

Schweiz
EMB Pumpen AG
Gerstenweg 7
CH-4310 Rheinfelden
T +41 61 83680-20
F +41 61 83680-21
info@emb-pumpen.ch
www.emb-pumpen.ch

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